

Status Report

Total Records: 3022

Top 3 County Records		Top 3 Log Type Records		Top 3 Coal Records		Top 3 Member Records	
Perry	3022	Drillers Log	2356	HERRIN	2193	HERRIN COAL	2193
		Electric Log	148	SPRINGFIELD	494	BRERETON LIMESTONE	822
		Survey Core Study	56	DANVILLE	379	BANKSTON FORK LIMESTONE	607

Data Summary

Cross-tabulation of all selected logs, individual logs will vary.

Tabulation of logged intervals only, individual logs will vary.

Depth and Thickness measurements in feet

Member	Lithology	Avg. Depth	Min. Depth	Max. Depth	Avg. Thk	Min. Thk	Max. Thk
PENNSYLVANIAN SYSTEM		24.6	17.0	29.5	13.2	8.0	26.4
BRERETON CYCLOTHEM		283.3	283.3	283.3	1.0	1.0	1.0
CHAPEL	COAL	63.0	28.0	129.0	0.9	0.4	2.0
TRIVOLI	SANDSTONE	40.1	23.0	57.0	38.1	5.0	51.0
POND CREEK	COAL	85.5	29.0	142.0	0.3	0.3	0.3
ROCK BRANCH	COAL	154.2	94.0	253.7	1.0	0.3	2.0
DEGRAFF	COAL	88.3	15.0	228.0	0.8	0.1	2.5
PIASA	LIMESTONE	112.9	4.0	503.0	8.8	1.0	32.5
DANVILLE	COAL	150.3	11.0	522.3	1.6	0.1	7.0
GALUM	LIMESTONE	77.6	10.2	556.5	2.3	0.2	11.3
BANKSTON FORK	LIMESTONE	100.8	6.0	569.0	6.0	0.5	23.3
ANVIL ROCK	SANDSTONE	258.7	230.0	313.5	61.5	5.5	136.4
LAWSON	SHALE	138.4	10.0	576.5	8.9	0.8	32.8
CONANT	LIMESTONE	102.8	15.0	286.0	2.9	0.3	11.8
JAMESTOWN	COAL	73.2	9.0	530.3	1.2	0.1	14.1
BRERETON	LIMESTONE	91.4	8.0	590.0	6.3	0.5	68.0
ANNA	SHALE	99.6	11.0	597.0	2.6	0.1	26.0
ENERGY	SHALE	132.6	10.0	601.0	19.3	0.3	136.8
HERRIN	COAL	107.4	3.0	622.0	6.1	0.2	14.7
HIGGINSVILLE	LIMESTONE	156.2	33.5	280.0	5.2	0.5	13.6
BRIAR HILL	COAL	81.8	78.0	85.6	2.6	2.5	2.6
ST. DAVID	LIMESTONE	97.7	21.0	505.0	3.3	0.2	15.5
TURNER MINE	SHALE	106.2	16.0	506.0	2.1	0.2	9.0
DYKERSBURG	SHALE	124.5	59.0	190.0	4.8	3.0	6.5
SPRINGFIELD	COAL	109.5	11.5	510.0	3.7	0.2	8.4
HANOVER	LIMESTONE	182.5	109.5	310.5	1.4	0.5	3.0
EXCELLO	SHALE	184.3	110.0	290.0	4.5	1.0	8.2
HOUCHIN CREEK	COAL	256.8	46.0	394.5	2.8	0.2	22.0
SURVANT	COAL	274.5	188.1	360.8	0.5	0.2	0.8

OAK GROVE	LIMESTONE	224.8	155.4	313.9	1.8	1.0	2.5
MECCA QUARRY	SHALE	218.8	157.9	326.0	3.9	1.5	10.0
COLCHESTER	COAL	298.7	97.0	768.0	1.6	0.5	4.8
SEELYVILLE	COAL	360.7	360.7	360.7	3.4	3.4	3.4
DEKOVEN	COAL	242.5	138.0	314.3	1.9	0.7	5.0
DAVIS	COAL	321.7	141.7	575.0	2.8	0.8	6.5
SEAHORNE LS	LIMESTONE	256.3	200.7	286.0	2.2	1.0	3.5
MT. RORAH	COAL	323.4	296.6	375.6	3.7	0.5	9.5
CREAL SPRING	LIMESTONE	316.9	316.9	316.9	3.6	3.6	3.6
MURPHYSBORO	COAL	353.5	203.7	527.0	4.0	1.0	7.2
BEECH CREEK	LIMESTONE	1163.8	1033.0	2359.0	-	-	-
UPPER DEVONIAN S		2869.9	2686.0	3403.0	-	-	-
BASE UPPER DEVON		2893.5	2702.0	3424.0	-	-	-
GRASSY CREEK	SHALE	2871.2	2686.0	3403.0	-	-	-
				Net Coal	38.9		

Coal Logs

This report contains non-confidential coal log descriptions from the Coal Section's stratigraphic database in the county listed. Coal logs are sorted by township/range and section. For each log, North American Datum 1983 (NAD83) Longitude/Latitude coordinates in decimal degrees are provided as well as a legal description which uses the Public Land Survey System (PLSS). The following are two examples of coal log locations:

Example location 1: COUNTY: SALINE TWP/RNG: 7S 5E SECTION: 19 QUARTERS/FOOTAGES: 330'S line, 330'W line of SE NE
LONGITUDE: -88.691911 LATITUDE: 37.900435

This log is from a borehole located in Saline County, Township 7 South, Range 5 East, 330 feet from the south line and 330 feet from the west line of the southeast quarter of the northeast quarter of section 19.

Example location 2: COUNTY: SALINE TWP/RNG: 9S 5E SECTION: 36 QUARTERS/FOOTAGES: 530'N, 530'W, SE/c NE NW
LONGITUDE: -88.60834 LATITUDE: 37.700006

This log is from a borehole located in Saline County, Township 9 South, Range 5 East, 530 feet north and 530 feet west of the southeast corner of the northeast quarter of the northwest quarter of section 36.

Beneath the header is geology information for that data point. The Coal Section stratigraphic database from which this .PDF file is derived is a multi-project database which contains drill hole and outcrop descriptions of Pennsylvanian stratigraphy in Illinois. Consequently, the level of detail and accuracy in the data and their interpretation vary (sometimes widely) with the geologist, project type, or original data source. Multiple descriptions of a particular location may be present. Note that both the coal stratigraphic database and this .PDF listing are only a subset of the total amount of data available from the ISGS Geologic Records Library archives, and reflect only coal-specific data and interpretations of past and present Coal Section geologists. They are not a comprehensive listing of all data that may be available from the ISGS.

MAPID: 14528505000C VERSION: 1 PROJECT: J JOHNSON
COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 1 QUARTERS/FOOTAGES: 330' S line, 660' W line of NW SE
QUADRANGLE: TAMAROA LONGITUDE: -89.154735 GEOLOGIST: J JOHNSON
CONFIDENTIAL: N LATITUDE: 38.202979 DATE COLLECTED:
SURFACE ELEVATION (FT.): 481.0 LOGGED (FT.): 1234.0 LOG TYPE: Electric Log
SOURCE: JORDAN OIL & GAS CO. WELL TYPE: Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
-753.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1234.0	

MAPID: 14502963000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 2 QUARTERS/FOOTAGES: 2970' N line, 330' W line

QUADRANGLE: TAMAROA LONGITUDE: -89.182533

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.205069

DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 271.1

LOG TYPE: Drillers Log

SOURCE: NO COMPANY

WELL TYPE: Coal Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
234.5	CARBONDALE	DANVILLE	BLACK SHALE	1.0	215.5
233.5	CARBONDALE		CLAYSTONE	2.0	216.5
231.5	CARBONDALE	ENERGY	MOTTLED SHALE	4.0	218.5
227.5	CARBONDALE	ENERGY	SILTY SHALE	38.5	222.5
189.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	10.1	261.0

MAPID: 14502150000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 3 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE

QUADRANGLE: TAMAROA LONGITUDE: -89.191987

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.20573

DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.0

LOGGED (FT.): 1185.0

LOG TYPE: Electric Log

SOURCE: HIGGINS&WHITTINGHILL

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
170.0	CARBONDALE	SPRINGFIELD	COAL	-	320.0
74.0	CARBONDALE	COLCHESTER	COAL	-	416.0
-695.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1185.0

MAPID: 14502965000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 3 QUARTERS/FOOTAGES: 187' N line, 610' E line of SW SE

QUADRANGLE: TAMAROA LONGITUDE: -89.190532 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.202446 DATE COLLECTED:

SURFACE ELEVATION (FT.): 496.6 LOGGED (FT.): 301.6 LOG TYPE: Drillers Log

SOURCE: BELL AND ZOLLER T37K WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
260.7	CARBONDALE	DANVILLE	BLACK SHALE	1.5	235.9
259.2	CARBONDALE		CLAYSTONE	2.6	237.4
256.6	CARBONDALE		SANDSTONE	7.0	240.0
249.6	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	1.0	247.0
248.6	CARBONDALE	LAWSON	CLAYSTONE	2.0	248.0
246.6	CARBONDALE	LAWSON	MOTTLED SHALE	2.0	250.0
244.6	CARBONDALE	BRERETON	LIMESTONE	3.0	252.0
241.6	CARBONDALE	ENERGY	GRAY SHALE	6.0	255.0
235.6	CARBONDALE	ENERGY	SILTY SHALE	34.0	261.0
201.6	CARBONDALE	HERRIN	COAL	6.6	295.0

MAPID: 14502968000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 4 QUARTERS/FOOTAGES: 836' N line, 1987' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.209433 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.211628 DATE COLLECTED:

SURFACE ELEVATION (FT.): 525.0 LOGGED (FT.): 275.0 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
299.7	CARBONDALE	DANVILLE	BLACK SHALE	2.0	225.3
297.7	CARBONDALE		CLAYSTONE	3.0	227.3
294.7	CARBONDALE	BANKSTON FORK	SHALE	7.3	230.3
287.4	CARBONDALE	LAWSON	MOTTLED SHALE	1.8	237.6
285.7	CARBONDALE	LAWSON	GRAY SHALE	3.5	239.3
282.2	CARBONDALE	CONANT	LIMESTONE	3.7	242.8
278.5	CARBONDALE		GRAY SHALE	6.8	246.5
271.7	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	14.0	253.3
257.7	CARBONDALE	ANNA	BLACK SHALE	2.7	267.3
255.0	CARBONDALE	HERRIN	COAL	5.0	270.0

MAPID: 14502806000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 5 QUARTERS/FOOTAGES: 990' N line, 330' W line

QUADRANGLE: TAMAROA LONGITUDE: -89.238927 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.211527 DATE COLLECTED:

SURFACE ELEVATION (FT.): 513.0 LOGGED (FT.): 260.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
301.0	MODESTO	PIASA	LIMESTONE & SHALE	3.0	212.0
298.0	CARBONDALE		SHALE	10.0	215.0
288.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	225.0
283.0	CARBONDALE	LAWSON	SHALE	9.0	230.0
274.0	CARBONDALE	CONANT	LIMESTONE & SHALE	6.0	239.0
268.0	CARBONDALE		SHALE	2.0	245.0
266.0	CARBONDALE	BRERETON	LIMESTONE	4.0	247.0
262.0	CARBONDALE	ANNA	BLACK SHALE	3.0	251.0
259.0	CARBONDALE	HERRIN	COAL	6.0	254.0

MAPID: 14523259000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 5 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW NE

QUADRANGLE: TAMAROA LONGITUDE: -89.229539 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.209639 DATE COLLECTED:

SURFACE ELEVATION (FT.): 528.0 LOGGED (FT.): 1193.0 LOG TYPE: Electric Log

SOURCE: JUNIPER PETROLEUM CORP. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
147.0	CARBONDALE	COLCHESTER	COAL	-	381.0
-665.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1193.0

MAPID: 14502540000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 6 QUARTERS/FOOTAGES: 1650' S line, 330' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.241399 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.204255 DATE COLLECTED:

SURFACE ELEVATION (FT.): 519.0 LOGGED (FT.): 254.5 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
315.0	MODESTO	PIASA	LIMESTONE	3.0	204.0
312.0	CARBONDALE		SHALE	12.0	207.0
300.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	219.0
296.0	CARBONDALE	LAWSON	SHALE	8.0	223.0
288.0	CARBONDALE	CONANT	LIMESTONE & SHALE	6.0	231.0
282.0	CARBONDALE		SHALE	7.0	237.0
275.0	CARBONDALE	BRERETON	LIMESTONE	6.0	244.0
269.0	CARBONDALE	ANNA	BLACK SHALE	0.5	250.0
269.0	CARBONDALE	HERRIN	COAL	4.5	250.0

MAPID: 14502420000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 7 QUARTERS/FOOTAGES: 1650' N line, 990' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.243982 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.195131 DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 1112.0 LOG TYPE: Electric Log

SOURCE: DULL, JOE A. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
231.0	CARBONDALE	SPRINGFIELD	COAL	-	263.0
134.0	CARBONDALE	COLCHESTER	COAL	-	360.0
-618.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1112.0

MAPID: 14502420000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 7 QUARTERS/FOOTAGES: 1650' N line, 990' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.243982 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.195131 DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 245.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
302.0	MODESTO	PIASA	LIMESTONE	10.0	192.0
292.0	CARBONDALE		SHALE	10.0	202.0
282.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	212.0
279.0	CARBONDALE	LAWSON	SHALE	5.0	215.0
274.0	CARBONDALE	CONANT	LIMESTONE	5.0	220.0
269.0	CARBONDALE		SHALE	4.0	225.0
265.0	CARBONDALE	BRERETON	LIMESTONE	5.0	229.0
260.0	CARBONDALE	ANNA	BLACK SHALE	3.0	234.0
256.0	CARBONDALE	HERRIN	COAL	7.0	238.0

MAPID: 14502049000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 8 QUARTERS/FOOTAGES: 1650' S line, 330' W line

QUADRANGLE: TAMAROA LONGITUDE: -89.239437 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.189655 DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 251.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
290.0	MODESTO	PIASA	LIMESTONE	6.0	200.0
284.0	CARBONDALE		SHALE	7.0	206.0
277.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	213.0
270.0	CARBONDALE	LAWSON	SHALE	10.0	220.0
260.0	CARBONDALE	BRERETON	LIMESTONE	10.0	230.0
250.0	CARBONDALE	ANNA	BLACK SHALE	2.0	240.0
245.0	CARBONDALE	HERRIN	COAL	6.0	245.0

MAPID: 14523209000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 8 QUARTERS/FOOTAGES: 414' N line, 330' E line of SE NW

QUADRANGLE: TAMAROA LONGITUDE: -89.232138 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.194914 DATE COLLECTED:

SURFACE ELEVATION (FT.): 519.0 LOGGED (FT.): 2959.0 LOG TYPE: Electric Log

SOURCE: JUNIPER PETROLEUM CORP. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
237.0	CARBONDALE	SPRINGFIELD	COAL	-	282.0	
140.0	CARBONDALE	COLCHESTER	COAL	-	379.0	
-655.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1174.0	
-2396.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2915.0	TOP OF NEW ALBANY
-2399.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2918.0	
-2440.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2959.0	BASE OF NEW ALBANY

MAPID: 14502479000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 10 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE SW

QUADRANGLE: TAMAROA LONGITUDE: -89.197354 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.185949 DATE COLLECTED:

SURFACE ELEVATION (FT.): 499.0 LOGGED (FT.): 1197.0 LOG TYPE: Electric Log

SOURCE: KELORMA OIL WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
185.0	CARBONDALE	SPRINGFIELD	COAL	-	314.0	
81.0	CARBONDALE	COLCHESTER	COAL	-	418.0	
-698.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1197.0	

MAPID: 14502962000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 10 QUARTERS/FOOTAGES: 1345' N line, 1593' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.189341

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.195593

DATE COLLECTED:

SURFACE ELEVATION (FT.): 505.0

LOGGED (FT.): 297.9

LOG TYPE: Drillers Log

SOURCE: NO COMPANY

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
255.0	CARBONDALE	DANVILLE	BLACK SHALE	1.0	250.0
254.0	CARBONDALE		CLAYSTONE	2.0	251.0
252.0	CARBONDALE		MOTTLED SHALE	6.0	253.0
246.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	5.0	259.0
241.0	CARBONDALE	LAWSON	MOTTLED SHALE	4.0	264.0
237.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	8.0	268.0
229.0	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	5.0	276.0
224.0	CARBONDALE	ANNA	BLACK SHALE	3.3	281.0
220.7	CARBONDALE	ENERGY	SILTY SHALE	6.8	284.3
214.0	CARBONDALE	HERRIN	COAL	6.9	291.0

MAPID: 14502048000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 11 QUARTERS/FOOTAGES: 2310' N line, 2310' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.174008

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.192564

DATE COLLECTED:

SURFACE ELEVATION (FT.): 483.0

LOGGED (FT.): 1209.0

LOG TYPE: Electric Log

SOURCE: BLANKENSHIP, G. A.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
73.0	CARBONDALE	COLCHESTER	COAL	-	410.0
-726.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1209.0

MAPID: 14502048000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 11 QUARTERS/FOOTAGES: 2310' N line, 2310' E line
 QUADRANGLE: TAMAROA LONGITUDE: -89.174008 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.192564 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 483.0 LOGGED (FT.): 351.0 LOG TYPE: Electric Log
 SOURCE: WELL TYPE: Oil and Gas Test
 COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
251.0	MODESTO	PIASA	LIMESTONE	8.0	232.0	
243.0	MODESTO		SILTY SHALE	12.0	240.0	
231.0	CARBONDALE	ENERGY	ARGILLACEOUS SANDSTONE	49.0	252.0	
182.0	CARBONDALE	ENERGY	SHALE	6.0	301.0	
176.0	CARBONDALE	ENERGY	ARGILLACEOUS SANDSTONE	44.0	307.0	

MAPID: 14528508000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 12 QUARTERS/FOOTAGES: 330' N line, 660' E line
 QUADRANGLE: TAMAROA LONGITUDE: -89.150337 GEOLOGIST: C TREWORGY
 CONFIDENTIAL: N LATITUDE: 38.197447 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 478.0 LOGGED (FT.): 509.0 LOG TYPE: Electric Log
 SOURCE: WELL TYPE:
 COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	0.0		WALSHVILLE CHANNEL - NO COAL
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		
-	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	0.0		
119.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	0.0	359.0	
78.0	SPOON	DAVIS	UNCLASSIFIED	0.0	400.0	THIN OR ABSENT
-15.0	SPOON	MURPHYSBORO	UNCLASSIFIED	2.5	493.0	UPPER BENCH?
-31.0	SPOON	MURPHYSBORO	UNCLASSIFIED	2.5	509.0	LOWER BENCH?

MAPID: 14528510000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 12 QUARTERS/FOOTAGES: 330' N line, 580' W line of NW
 QUADRANGLE: TAMAROA LONGITUDE: -89.164363 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.197784 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 448.0 LOGGED (FT.): 1209.0 LOG TYPE: Electric Log
 SOURCE: JORDAN OIL & GAS CO. WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
72.0	CARBONDALE	COLCHESTER	COAL	-	376.0	
-761.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1209.0	

MAPID: 14502047000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 4S 1W **SECTION:** 13 **QUARTERS/FOOTAGES:** 330' S line, 330' E line of NE SW
QUADRANGLE: TAMAROA **LONGITUDE:** -89.15888 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.173835 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 443.0 **LOGGED (FT.):** 1388.0 **LOG TYPE:** Electric Log
SOURCE: MAGNOLIA PETROLEUM **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-945.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1388.0

MAPID: 14502981000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 4S 1W **SECTION:** 13 **QUARTERS/FOOTAGES:** 660' N line, 1980' E line
QUADRANGLE: TAMAROA **LONGITUDE:** -89.155379 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.181974 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 473.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Drillers Log
SOURCE: BELL & ZOLLER **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION, DEPTHS CORRECTED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
285.0	CARBONDALE	DANVILLE	BLACK SHALE	0.5	188.0
284.5	CARBONDALE		GRAY SHALE	7.0	188.5
277.5	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	1.2	195.5 UPPER BENCH
276.3	CARBONDALE	BANKSTON FORK	SILTY SHALE	6.3	196.7 SHALE PARTING
270.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	203.0 LOWER BENCH
268.0	CARBONDALE	LAWSON	MOTTLED SHALE	4.0	205.0
264.0	CARBONDALE	LAWSON	CALCAREOUS SHALE	3.0	209.0
261.0	CARBONDALE	ENERGY	SHALE & SANDSTONE	57.0	212.0
204.0	CARBONDALE	ENERGY	ARGILLACEOUS SANDSTONE	2.7	269.0
201.3	CARBONDALE	ENERGY	SHALE & SANDSTONE	14.6	271.7

MAPID: 14502482000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 4S 1W **SECTION:** 14 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of NE SE
QUADRANGLE: TAMAROA **LONGITUDE:** -89.170217 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.174208 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 473.0 **LOGGED (FT.):** 1119.0 **LOG TYPE:** Electric Log
SOURCE: DUNCAN, WALTER **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
213.0	CARBONDALE	SPRINGFIELD	COAL	-	260.0
133.0	CARBONDALE	COLCHESTER	COAL	-	340.0
-646.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1119.0

MAPID: 14502983000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 14 QUARTERS/FOOTAGES: 1334' S line, 2595' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.175924 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.173429 DATE COLLECTED:

SURFACE ELEVATION (FT.): 481.0 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	DANVILLE	BLACK SHALE	1.5		
-	CARBONDALE		CLAYSTONE	7.8		
-	CARBONDALE	BANKSTON FORK	LIMESTONE	1.1		UPPER BENCH
-	CARBONDALE	BANKSTON FORK	ROCK	21.2		SHALE PARTING
-	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0		LOWER BENCH
-	CARBONDALE	ENERGY	SANDSTONE	67.0		
-	CARBONDALE	ENERGY	CALCAREOUS SANDSTONE	2.3		
-	CARBONDALE	ENERGY	ARGILLACEOUS SANDSTONE	19.3		

MAPID: 14502976000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 15 QUARTERS/FOOTAGES: 1320' N line, 1320' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.189169 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.181151 DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 289.4 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
245.2	CARBONDALE	DANVILLE	BLACK SHALE	1.2	248.8	
244.1	CARBONDALE		CLAYSTONE	2.7	249.9	
241.4	CARBONDALE		MOTTLED SHALE	1.0	252.6	
240.4	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	2.5	253.6	UPPER BENCH
237.9	CARBONDALE	BANKSTON FORK	ROCK	4.7	256.1	SHALE PARTING
233.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	260.8	LOWER BENCH
230.2	CARBONDALE	LAWSON	MOTTLED SHALE	4.8	263.8	
225.4	CARBONDALE	CONANT	LIMESTONE W/ SHALE	11.8	268.6	
213.6	CARBONDALE	ANNA	BLACK SHALE	2.6	280.4	
211.0	CARBONDALE	HERRIN	COAL	6.4	283.0	

MAPID: 14502278000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 16 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE SW

QUADRANGLE: TAMAROA LONGITUDE: -89.216673 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.170916 DATE COLLECTED:

SURFACE ELEVATION (FT.): 511.0 LOGGED (FT.): 1181.0 LOG TYPE: Electric Log

SOURCE: HAMMACK & HOOREBEKE WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
128.0	CARBONDALE	COLCHESTER	COAL	-	383.0	
-670.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1181.0	

MAPID: 14502992000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 16 QUARTERS/FOOTAGES: 2310' N line, 330' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.204747 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.178826 DATE COLLECTED:

SURFACE ELEVATION (FT.): 497.0 LOGGED (FT.): 271.6 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
285.0	MODESTO	PIASA	LIMESTONE AND SANDSTONE	3.0	212.0	
282.0	MODESTO		SILTY SHALE	6.0	215.0	
276.0	CARBONDALE	DANVILLE	BLACK SHALE	1.0	221.0	
275.0	CARBONDALE		CLAYSTONE	2.0	222.0	
273.0	CARBONDALE		MOTTLED SHALE	2.5	224.0	
270.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	226.5	UPPER BENCH
267.0	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	12.0	230.0	SHALE PARTING
255.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	242.0	LOWER BENCH
250.7	CARBONDALE	LAWSON	MOTTLED SHALE	6.1	246.3	
244.7	CARBONDALE	CONANT	LIMESTONE	5.9	252.3	
238.7	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	4.7	258.3	
234.1	CARBONDALE	ANNA	BLACK SHALE	2.0	262.9	
231.0	CARBONDALE	HERRIN	COAL	5.6	266.0	

MAPID: 14502530000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 4S 1W **SECTION:** 19 **QUARTERS/FOOTAGES:** 330' N line, 330' W line
QUADRANGLE: TODDS MILL **LONGITUDE:** -89.258202 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.169357 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 510.0 **LOGGED (FT.):** 1088.0 **LOG TYPE:** Electric Log
SOURCE: PEARSON, C. E. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
302.0	CARBONDALE	SPRINGFIELD	COAL	-	208.0
202.0	CARBONDALE	COLCHESTER	COAL	-	308.0
-578.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1088.0

MAPID: 14502530000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 4S 1W **SECTION:** 19 **QUARTERS/FOOTAGES:** 330' N line, 330' W line
QUADRANGLE: TODDS MILL **LONGITUDE:** -89.258202 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.169357 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 510.0 **LOGGED (FT.):** 213.0 **LOG TYPE:** Electric Log
SOURCE: **WELL TYPE:** Oil and Gas Test
COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
345.0	MODESTO	PIASA	LIMESTONE	5.0	165.0
340.0	MODESTO		SHALE	3.0	170.0
337.0	CARBONDALE	DANVILLE	COAL	2.0	173.0
335.0	CARBONDALE		SHALE	5.0	175.0
330.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	180.0
325.0	CARBONDALE	LAWSON	SHALE	10.0	185.0
315.0	CARBONDALE	CONANT	LIMESTONE & SHALE	2.0	195.0
313.0	CARBONDALE		SHALE	3.0	197.0
310.0	CARBONDALE	BRERETON	LIMESTONE	6.0	200.0
304.0	CARBONDALE	ANNA	BLACK SHALE	2.0	206.0
302.0	CARBONDALE	HERRIN	COAL	5.0	208.0

MAPID: 14501215000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 4S 1W **SECTION:** 20 **QUARTERS/FOOTAGES:** 1500' S line, 1200' W line
QUADRANGLE: TAMAROA **LONGITUDE:** -89.237221 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.159544 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 509.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: TAMAROA CC0043 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
272.0	CARBONDALE	HERRIN	COAL	5.6	237.0

MAPID: 14501215000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 20 QUARTERS/FOOTAGES: 1500' S line, 1200' W line

QUADRANGLE: TAMAROA

LONGITUDE: -89.237221

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.159544

DATE COLLECTED:

SURFACE ELEVATION (FT.): 509.0

LOGGED (FT.): 242.6

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
309.5	MODESTO	PIASA	LIMESTONE	5.0	199.5
304.5	CARBONDALE		CLAYSTONE	6.5	204.5
298.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	211.0
292.5	CARBONDALE	LAWSON	CLAYSTONE	4.5	216.5
288.0	CARBONDALE	LAWSON	CLAYSTONE & SHALE	3.0	221.0
285.0	CARBONDALE	LAWSON	SILTY SHALE	7.0	224.0
278.0	CARBONDALE	BRERETON	LIMESTONE	2.0	231.0
276.0	CARBONDALE	ANNA	BLACK SHALE	2.0	233.0
274.0	CARBONDALE	ENERGY	DARK GRAY SHALE	2.0	235.0
272.0	CARBONDALE	HERRIN	COAL	5.6	237.0

MAPID: 14501215000C VERSION: 3

PROJECT: NCRDS87

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 20 QUARTERS/FOOTAGES: 1500' S line, 1200' W line

QUADRANGLE: TAMAROA LONGITUDE: -89.237221 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.159544 DATE COLLECTED: 9 / 16 / 1918

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 250.5 LOG TYPE: Drillers Log

SOURCE: VICTORY COLLIERIES CO. WELL TYPE: Coal Test

COMMENT: LOCATION ND ELEVATION IMPRECISE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
520.0			UNCONSOLIDATED	44.0	0.0
476.0			BLACK SHALE	4.0	44.0
472.0			COAL	0.5	48.0
471.5			UNDERCLAY	1.5	48.5
470.0			UNCLASSIFIED	70.0	50.0
400.0			SHALE	75.0	120.0
325.0			BLACK SHALE	3.0	195.0
322.0			UNDERCLAY	1.5	198.0
320.5			LIMESTONE	5.0	199.5
315.5			UNDERCLAY	6.5	204.5
309.0	CARBONDALE		LIMESTONE	5.5	211.0
303.5	CARBONDALE		UNDERCLAY	4.5	216.5
299.0	CARBONDALE		SHALE	3.0	221.0
296.0	CARBONDALE		SHALE	7.0	224.0
289.0	CARBONDALE	BRERETON	LIMESTONE	2.0	231.0
287.0	CARBONDALE	ANNA	BLACK SHALE	2.0	233.0
285.0	CARBONDALE		DARK SHALE	2.0	235.0
283.0	CARBONDALE	HERRIN	COAL	5.6	237.0
277.4	CARBONDALE		UNDERCLAY	6.4	242.6
271.0	CARBONDALE		LIMESTONE	1.5	249.0

MAPID: 14524002000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 20 QUARTERS/FOOTAGES: 990' S line, 330' W line of SE NE

QUADRANGLE: TAMAROA LONGITUDE: -89.226139 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.165434 DATE COLLECTED:

SURFACE ELEVATION (FT.): 519.0 LOGGED (FT.): 1180.0 LOG TYPE: Electric Log

SOURCE: DUNNILL JOHN E WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
249.0	CARBONDALE	SPRINGFIELD	COAL	-	270.0
151.0	CARBONDALE	COLCHESTER	COAL	-	368.0
-661.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1180.0

MAPID: 14502991000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 21 QUARTERS/FOOTAGES: 330' N line, 1980' W line

QUADRANGLE: TAMAROA LONGITUDE: -89.215582 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.169067 DATE COLLECTED:

SURFACE ELEVATION (FT.): 510.0 LOGGED (FT.): 274.1 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
323.0	MODESTO	PIASA	LIMESTONE	6.9	187.0	
316.1	MODESTO		GRAY SHALE	19.0	193.9	
297.1	CARBONDALE	DANVILLE	COAL	0.3	212.9	
296.8	CARBONDALE		CLAYSTONE	4.4	213.2	
292.4	CARBONDALE		SILTY SHALE	19.0	217.6	
273.4	CARBONDALE		MOTTLED SHALE	1.0	236.6	
272.4	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	237.6	UPPER BENCH
266.9	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	2.5	243.1	SHALE PARTING
264.4	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	245.6	LOWER BENCH
260.7	CARBONDALE	LAWSON	MOTTLED SHALE	1.3	249.3	
259.4	CARBONDALE	CONANT	CALCAREOUS SHALE	4.3	250.6	
255.2	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	13.8	254.8	
241.4	CARBONDALE	ANNA	BLACK SHALE	0.4	268.6	
241.0	CARBONDALE	HERRIN	COAL	5.1	269.0	

MAPID: 14502798000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 22 QUARTERS/FOOTAGES: 660' N line, 660' E line of SE

QUADRANGLE: TAMAROA LONGITUDE: -89.187992 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.160752 DATE COLLECTED:

SURFACE ELEVATION (FT.): 488.0 LOGGED (FT.): 2956.0 LOG TYPE: Electric Log

SOURCE: TEXACO, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-624.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1112.0	
-2444.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2932.0	TOP OF NEW ALBANY
-2444.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2932.0	
-2468.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2956.0	BASE OF NEW ALBANY

MAPID: 14502994000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 22 QUARTERS/FOOTAGES: 2640' N line, 2640' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.194845 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.162556 DATE COLLECTED:

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 235.7 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
309.9	MODESTO	PIASA	LIMESTONE	2.5	183.1	
307.4	MODESTO		GRAY SHALE	9.6	185.6	
297.8	CARBONDALE	DANVILLE	COAL	0.8	195.2	
297.0	CARBONDALE		CLAYSTONE	1.1	196.0	
295.9	CARBONDALE	GALUM	CALCAREOUS SHALE	1.0	197.1	
294.9	CARBONDALE		MOTTLED SHALE	2.3	198.1	
292.5	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	1.7	200.5	UPPER BENCH
290.9	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	3.2	202.1	SHALE PARTING
287.7	CARBONDALE	BANKSTON FORK	LIMESTONE	5.3	205.3	LOWER BENCH
282.4	CARBONDALE	LAWSON	MOTTLED SHALE	1.7	210.6	
280.7	CARBONDALE	LAWSON	GRAY SHALE	3.3	212.3	
277.5	CARBONDALE	LAWSON	SILTY SHALE	1.8	215.5	
275.7	CARBONDALE	CONANT	LIMESTONE	2.7	217.3	
273.0	CARBONDALE		GRAY SHALE	1.3	220.0	
271.7	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	6.5	221.3	
265.2	CARBONDALE	ANNA	BLACK SHALE	2.2	227.8	
263.0	CARBONDALE	HERRIN	COAL	5.7	230.0	

MAPID: 14502797000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 23 QUARTERS/FOOTAGES: 660' S line, 660' W line of SE NW

QUADRANGLE: TAMAROA LONGITUDE: -89.178644 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.164268 DATE COLLECTED:

SURFACE ELEVATION (FT.): 483.0 LOGGED (FT.): 2950.0 LOG TYPE: Electric Log

SOURCE: TEXACO, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-625.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1108.0	
-2449.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2932.0	TOP OF NEW ALBANY
-2449.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2932.0	
-2467.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2950.0	BASE OF NEW ALBANY

MAPID: 14502971000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 23 QUARTERS/FOOTAGES: 2473' S line, 2613' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.176407 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.161849 DATE COLLECTED:

SURFACE ELEVATION (FT.): 473.0 LOGGED (FT.): 196.5 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
333.0	MODESTO	PIASA	LIMESTONE	4.2	140.0
328.8	MODESTO		GRAY SHALE	6.5	144.2
322.3	CARBONDALE	DANVILLE	BONE COAL	0.5	150.7
321.8	CARBONDALE		CLAYSTONE	4.5	151.2
317.3	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	2.0	155.7
315.3	CARBONDALE	LAWSON	GRAY SHALE	29.5	157.7
285.8	CARBONDALE	BRERETON	LIMESTONE	0.5	187.2
285.3	CARBONDALE	ANNA	BLACK SHALE	0.6	187.7
284.0	CARBONDALE	HERRIN	COAL	7.5	189.0

MAPID: 14502982000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 24 QUARTERS/FOOTAGES: 110' N line, 563' W line

QUADRANGLE: TAMAROA LONGITUDE: -89.165033 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.169157 DATE COLLECTED:

SURFACE ELEVATION (FT.): 472.0 LOGGED (FT.): 342.7 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
175.7	MODESTO		DARK GRAY SHALE	2.5	296.3
173.2	CARBONDALE	DANVILLE	BONE COAL	3.8	298.8
169.3	CARBONDALE		CLAYSTONE	6.3	302.7
163.0	CARBONDALE	ANNA	BLACK SHALE	1.0	309.0
162.0	CARBONDALE	ENERGY	CALCAREOUS SHALE	2.0	310.0
160.0	CARBONDALE	ENERGY	SANDSTONE	30.0	312.0
130.0	CARBONDALE	HERRIN	COAL	0.7	342.0

MAPID: 14524304000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 24 QUARTERS/FOOTAGES: 990' S line, 840' E line of SE SW

QUADRANGLE: TAMAROA LONGITUDE: -89.161155 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.157294 DATE COLLECTED:

SURFACE ELEVATION (FT.): 525.0 LOGGED (FT.): 3424.0 LOG TYPE: Electric Log

SOURCE: TEXACO, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-981.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1506.0	
-2878.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3403.0	TOP OF NEW ALBANY
-2878.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3403.0	
-2899.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3424.0	BASE OF NEW ALBANY

MAPID: 14502044000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 26 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW SW

QUADRANGLE: TAMAROA LONGITUDE: -89.182789 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.141208 DATE COLLECTED:

SURFACE ELEVATION (FT.): 468.0 LOGGED (FT.): 1178.0 LOG TYPE: Electric Log

SOURCE: BIG CHIEF DRILLING WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
166.0	CARBONDALE	COLCHESTER	COAL	-	302.0	
-710.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1178.0	

MAPID: 14502996000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 26 QUARTERS/FOOTAGES: 660' S line, 660' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.17009 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.141782 DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 264.1 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
299.0	MODESTO	PIASA	LIMESTONE	2.2	209.0	
296.8	MODESTO		SILTY SHALE	5.2	211.2	
291.7	CARBONDALE	DANVILLE	COAL	0.8	216.3	
290.8	CARBONDALE		CLAYSTONE	4.2	217.2	
286.7	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	2.3	221.3	UPPER BENCH
284.3	CARBONDALE	BANKSTON FORK	GRAY SHALE	6.8	223.7	SHALE PARTING
277.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.3	230.5	LOWER BENCH
276.2	CARBONDALE	LAWSON	GRAY SHALE	2.5	231.8	
273.7	CARBONDALE	LAWSON	SILTY SHALE	5.3	234.3	
268.4	CARBONDALE	CONANT	LIMESTONE	5.8	239.6	
262.7	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	10.2	245.3	
252.5	CARBONDALE	ANNA	BLACK SHALE	3.5	255.5	
249.0	CARBONDALE	HERRIN	COAL	5.1	259.0	

MAPID: 14500002000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 27 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: TAMAROA LONGITUDE: -89.196436 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.146785 DATE COLLECTED:

SURFACE ELEVATION (FT.): 488.7 LOGGED (FT.): 0.0 LOG TYPE:

SOURCE: SOU GEM CC WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
276.7	CARBONDALE	HERRIN	COAL	-	212.0	

MAPID: 14502969000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 27 QUARTERS/FOOTAGES: 2607' N line, 2597' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.195166 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.147845 DATE COLLECTED:

SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 223.3 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
329.4	CARBONDALE	DANVILLE	BONE COAL	1.2	155.6
328.3	CARBONDALE		CLAYSTONE	1.5	156.7
326.8	CARBONDALE		MOTTLED SHALE	3.0	158.2
323.8	CARBONDALE		GRAY SHALE	5.8	161.2
318.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.1	167.0
310.9	CARBONDALE	LAWSON	SILTY SHALE	11.2	174.1
299.8	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	1.1	185.2
298.7	CARBONDALE	ENERGY	ARGILLACEOUS SANDSTONE	31.7	186.3
267.0	CARBONDALE	HERRIN	COAL	5.3	218.0

MAPID: 14502043000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 28 QUARTERS/FOOTAGES: 660' N line, 660' W line of SW

QUADRANGLE: TAMAROA LONGITUDE: -89.220634 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.146049 DATE COLLECTED:

SURFACE ELEVATION (FT.): 499.0 LOGGED (FT.): 1134.0 LOG TYPE: Electric Log

SOURCE: HARSH JAMES N WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
274.0	CARBONDALE	SPRINGFIELD	COAL	-	225.0
173.0	CARBONDALE	COLCHESTER	COAL	-	326.0
-635.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1134.0

MAPID: 14502966000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 28 QUARTERS/FOOTAGES: 2705' N line, 561' W line
 QUADRANGLE: TAMAROA LONGITUDE: -89.220957 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.147673 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 207.3 LOG TYPE: Drillers Log
 SOURCE: NO COMPANY WELL TYPE: Coal Test
 COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
363.7	MODESTO		SANDSTONE	9.5	126.3
354.2	CARBONDALE	DANVILLE	BONE COAL	2.5	135.8
351.7	CARBONDALE		CLAYSTONE	2.5	138.3
349.2	CARBONDALE	GALUM	MOTTLED SHALE	2.5	140.8
346.7	CARBONDALE		SANDSTONE	1.5	143.3
345.2	CARBONDALE		MOTTLED SHALE	1.0	144.8
344.2	CARBONDALE	BANKSTON FORK	LIMESTONE	6.5	145.8
337.7	CARBONDALE	LAWSON	MOTTLED SHALE	8.0	152.3
329.7	CARBONDALE	CONANT	LIMESTONE	4.0	160.3
325.7	CARBONDALE	ENERGY	CLAYSTONE	8.0	164.3
317.7	CARBONDALE	ENERGY	GRAY SHALE	28.7	172.3
289.0	CARBONDALE	HERRIN	COAL	6.3	201.0

MAPID: 14501216000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 29 QUARTERS/FOOTAGES: SE NW SE
 QUADRANGLE: TAMAROA LONGITUDE: -89.228653 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.145265 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 504.9 LOGGED (FT.): 0.0 LOG TYPE: Measured section
 SOURCE: MUD RIV CC00LM WELL TYPE: Underground mine
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
287.9	CARBONDALE	HERRIN	COAL	6.0	217.0

MAPID: 14502226000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 29 QUARTERS/FOOTAGES: 330' N line, 330' E line of SE SE
 QUADRANGLE: TAMAROA LONGITUDE: -89.22413 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.143379 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 503.0 LOGGED (FT.): 1132.0 LOG TYPE: Electric Log
 SOURCE: CANTER DRILLING CO. WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-629.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1132.0

MAPID: 14502235000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 29 QUARTERS/FOOTAGES: 2310' N line, 330' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.224057 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.148818 DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 209.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
336.0	MODESTO	PIASA	LIMESTONE	10.0	158.0	
326.0	CARBONDALE		SHALE	6.0	168.0	
320.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	174.0	
314.0	CARBONDALE	ENERGY	SHALE	25.0	180.0	
289.0	CARBONDALE	HERRIN	COAL	4.0	205.0	

MAPID: 14502041000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 31 QUARTERS/FOOTAGES: 1650' N line, 1650' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.254077 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.136363 DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 1080.0 LOG TYPE: Electric Log

SOURCE: TEXACO, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
284.0	CARBONDALE	SPRINGFIELD	COAL	-	210.0	
188.0	CARBONDALE	COLCHESTER	COAL	-	306.0	
-586.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1080.0	

MAPID: 14502041000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 31 QUARTERS/FOOTAGES: 1650' N line, 1650' W line
 QUADRANGLE: TODDS MILL LONGITUDE: -89.254077 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.136363 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 204.0 LOG TYPE: Electric Log
 SOURCE: WELL TYPE: Oil and Gas Test
 COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
342.0	MODESTO	PIASA	LIMESTONE	7.0	152.0
335.0	CARBONDALE		SHALE	12.0	159.0
323.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	171.0
319.0	CARBONDALE	LAWSON	SHALE	7.0	175.0
312.0	CARBONDALE	CONANT	LIMESTONE	5.0	182.0
307.0	CARBONDALE		SHALE	2.0	187.0
305.0	CARBONDALE	BRERETON	LIMESTONE	4.0	189.0
301.0	CARBONDALE	ANNA	BLACK SHALE	2.0	193.0
296.0	CARBONDALE	HERRIN	COAL	6.0	198.0

MAPID: 14501500000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 32 QUARTERS/FOOTAGES: NE SE NW
 QUADRANGLE: TAMAROA LONGITUDE: -89.233379 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.136165 DATE COLLECTED: 0 / 0 / 1960
 SURFACE ELEVATION (FT.): 505.0 LOGGED (FT.): 0.0 LOG TYPE: Measured section
 SOURCE: COX CO WELL TYPE: Underground mine
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
265.0	CARBONDALE	HERRIN	COAL	5.0	240.0

MAPID: 14501501000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 32 QUARTERS/FOOTAGES: SE NW SE
 QUADRANGLE: TAMAROA LONGITUDE: -89.229037 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.130587 DATE COLLECTED: 0 / 0 / 1970
 SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 0.0 LOG TYPE: Measured section
 SOURCE: BARBER WELL TYPE: Underground mine
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
292.0	CARBONDALE	HERRIN	COAL	5.0	210.0

MAPID: 14502172000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 32 QUARTERS/FOOTAGES: 330' S line, 330' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.224568 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.126866 DATE COLLECTED:

SURFACE ELEVATION (FT.): 501.0 LOGGED (FT.): 194.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
357.0	MODESTO	PIASA	LIMESTONE	6.0	144.0
351.0	CARBONDALE		SHALE	10.0	150.0
341.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	160.0
336.0	CARBONDALE	ENERGY	SHALE	22.0	165.0
314.0	CARBONDALE	HERRIN	COAL	7.0	187.0

MAPID: 14502182000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 33 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE SE

QUADRANGLE: TAMAROA LONGITUDE: -89.208408 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.126691 DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 1168.0 LOG TYPE: Electric Log

SOURCE: CANTER DRILLING CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
288.0	CARBONDALE	SPRINGFIELD	COAL	-	202.0
184.0	CARBONDALE	COLCHESTER	COAL	-	306.0
-678.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1168.0

MAPID: 14502957000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 33 QUARTERS/FOOTAGES: 1951' S line, 2599' E line

QUADRANGLE: TAMAROA LONGITUDE: -89.213891 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.131226 DATE COLLECTED:

SURFACE ELEVATION (FT.): 489.0 LOGGED (FT.): 195.7 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
356.6	MODESTO		SANDSTONE	3.7	132.4
353.0	CARBONDALE	DANVILLE	BONE COAL	1.3	136.0
351.7	CARBONDALE		CLAYSTONE	1.3	137.3
350.5	CARBONDALE		MOTTLED SHALE	3.0	138.5
347.5	CARBONDALE		CLAYSTONE	6.5	141.5
341.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	148.0
336.5	CARBONDALE	LAWSON	MOTTLED SHALE	8.1	152.5
328.3	CARBONDALE	CONANT	LIMESTONE	4.0	160.7
324.3	CARBONDALE	ENERGY	CLAYSTONE	7.3	164.7
317.0	CARBONDALE	ENERGY	DARK GRAY SHALE	7.0	172.0
310.0	CARBONDALE	ENERGY	GRAY SHALE	11.0	179.0
299.0	CARBONDALE	HERRIN	COAL	5.7	190.0

MAPID: 14502180000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 34 QUARTERS/FOOTAGES: 330' N line, 330' E line of SW NW

QUADRANGLE: TAMAROA LONGITUDE: -89.201247 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.135799 DATE COLLECTED:

SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 1161.0 LOG TYPE: Electric Log

SOURCE: CARTER JAMES E WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
271.0	CARBONDALE	SPRINGFIELD	COAL	-	231.0
177.0	CARBONDALE	COLCHESTER	COAL	-	325.0
-659.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1161.0

MAPID: 14502985000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 1W SECTION: 34 QUARTERS/FOOTAGES: 1232' N line, 2555' W line

QUADRANGLE: TAMAROA LONGITUDE: -89.195702 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.136986 DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 203.5 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
362.5	CARBONDALE		CLAYSTONE	4.7	127.5
357.8	CARBONDALE		MOTTLED SHALE	1.0	132.2
356.8	CARBONDALE		GRAY SHALE	14.0	133.2
342.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	147.2
339.3	CARBONDALE	LAWSON	MOTTLED SHALE	3.5	150.7
335.8	CARBONDALE	CONANT	ROCK	3.3	154.2
332.5	CARBONDALE		GRAY SHALE	1.5	157.5
331.0	CARBONDALE	BRERETON	LIMESTONE	1.7	159.0
329.3	CARBONDALE	ENERGY	SHALE & SANDSTONE	3.5	160.7
325.8	CARBONDALE	ENERGY	SANDSTONE	28.0	164.2
297.8	CARBONDALE	ENERGY	GRAY SHALE	5.8	192.2
292.0	CARBONDALE	HERRIN	COAL	5.5	198.0

MAPID: 14502466000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 2 QUARTERS/FOOTAGES: 1650' S line, 330' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.295147 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.205015 DATE COLLECTED:

SURFACE ELEVATION (FT.): 464.0 LOGGED (FT.): 194.0 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 6925 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
327.1	MODESTO	PIASA	NODULAR LIMESTONE	8.5	136.9
318.6	CARBONDALE		MOTTLED SHALE	9.5	145.4
309.1	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	7.5	154.9
301.6	CARBONDALE	LAWSON	MOTTLED SHALE	2.4	162.4
299.2	CARBONDALE	LAWSON	DARK GRAY SHALE	5.8	164.8
293.3	CARBONDALE	CONANT	LIMESTONE W/ SHALE	4.8	170.7
288.5	CARBONDALE	JAMESTOWN	BONE COAL	0.2	175.5
288.3	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	5.8	175.7
282.5	CARBONDALE	ANNA	BLACK SHALE	5.0	181.5
277.5	CARBONDALE	ENERGY	DARK GRAY SHALE	0.5	186.5
277.0	CARBONDALE	HERRIN	COAL	7.0	187.0

MAPID: 1450249000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 2 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE NE

QUADRANGLE: TODDS MILL LONGITUDE: -89.281499 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.208402 DATE COLLECTED: 12 / 0 / 1952

SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 477.0 LOG TYPE: Electric Log

SOURCE: TOWNES PAUL L WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
251.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	251.0	
226.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	276.0	APPROXIMATE POSITION - THIN OR ABSENT
172.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	330.0	
137.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	365.0	
93.0	SPOON	DAVIS	UNCLASSIFIED	-	409.0	
25.0	SPOON	MURPHYSBORO	UNCLASSIFIED	3.0	477.0	

MAPID: 14523346000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 2 QUARTERS/FOOTAGES: 450' N line, 380' E line of SW SW

QUADRANGLE: TODDS MILL LONGITUDE: -89.29304 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.202822 DATE COLLECTED:

SURFACE ELEVATION (FT.): 498.0 LOGGED (FT.): 2829.0 LOG TYPE: Electric Log

SOURCE: BREHM, C. E. DRLG.&PROD. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
258.0	CARBONDALE	SPRINGFIELD	COAL	-	240.0	
163.0	CARBONDALE	COLCHESTER	COAL	-	335.0	
-591.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1089.0	
-2306.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2804.0	TOP OF NEW ALBANY
-2306.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2804.0	
-2331.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2829.0	BASE OF NEW ALBANY

MAPID: 14528478000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 2 QUARTERS/FOOTAGES: 330' N line, 330' E line of NE SW

QUADRANGLE: TODDS MILL LONGITUDE: -89.288358 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.206709 DATE COLLECTED:

SURFACE ELEVATION (FT.): 501.0 LOGGED (FT.): 2842.0 LOG TYPE: Electric Log

SOURCE: FARRAR OIL CO., INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
251.0	CARBONDALE	SPRINGFIELD	COAL	-	250.0	
153.0	CARBONDALE	COLCHESTER	COAL	-	348.0	
-599.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1100.0	
-2315.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2816.0	TOP OF NEW ALBANY
-2316.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2817.0	
-2341.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2842.0	BASE OF NEW ALBANY

MAPID: 14502271000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 3 QUARTERS/FOOTAGES: 1650' S line, 330' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.313735 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.205202 DATE COLLECTED: 10 / 0 / 1957

SURFACE ELEVATION (FT.): 489.0 LOGGED (FT.): 436.0 LOG TYPE: Electric Log

SOURCE: INLAND OIL CO WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
279.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	210.0	
259.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	230.0	APPROXIMATE POSITION - THIN OR ABSENT
203.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	286.0	
164.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	325.0	
123.0	SPOON	DAVIS	UNCLASSIFIED	-	366.0	
53.0	SPOON	MURPHYSBORO	UNCLASSIFIED	-	436.0	

MAPID: 14502271000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 3 QUARTERS/FOOTAGES: 1650' S line, 330' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.313735 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.205202 DATE COLLECTED:

SURFACE ELEVATION (FT.): 489.0 LOGGED (FT.): 217.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
331.0	MODESTO	PIASA	LIMESTONE	12.0	158.0	
319.0	CARBONDALE		CLAYSTONE	10.0	170.0	
309.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	180.0	
305.0	CARBONDALE	LAWSON	SHALE	7.0	184.0	
298.0	CARBONDALE	CONANT	LIMESTONE	8.0	191.0	
290.0	CARBONDALE		DARK GRAY SHALE	3.0	199.0	
287.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	2.0	202.0	
285.0	CARBONDALE	ANNA	BLACK SHALE	5.0	204.0	
279.0	CARBONDALE	HERRIN	COAL	7.0	210.0	

MAPID: 14526481000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 3 QUARTERS/FOOTAGES: 330' S line, 330' E line of SE

QUADRANGLE: TODDS MILL LONGITUDE: -89.297393 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.201403 DATE COLLECTED:

SURFACE ELEVATION (FT.): 492.0 LOGGED (FT.): 2830.0 LOG TYPE: Electric Log

SOURCE: INTERSTATE EXPL. FUND WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
258.0	CARBONDALE	SPRINGFIELD	COAL	-	234.0	
163.0	CARBONDALE	COLCHESTER	COAL	-	329.0	
-596.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1088.0	
-2313.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2805.0	TOP OF NEW ALBANY
-2313.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2805.0	
-2338.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2830.0	BASE OF NEW ALBANY

MAPID: 14502040000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 5 QUARTERS/FOOTAGES: 2310' S line, 2310' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.344111 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.206892 DATE COLLECTED: 7 / 0 / 1944

SURFACE ELEVATION (FT.): 463.0 LOGGED (FT.): 396.0 LOG TYPE: Electric Log

SOURCE: SOHIO PETROLEUM CO. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
231.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	232.0	
198.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	265.0	APPROXIMATE POSITION - THIN OR ABSENT
143.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	320.0	
109.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	354.0	
67.0	SPOON	DAVIS	UNCLASSIFIED	-	396.0	

MAPID: 14502040000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 5 QUARTERS/FOOTAGES: 2310' S line, 2310' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.344111 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.206892 DATE COLLECTED:

SURFACE ELEVATION (FT.): 463.0 LOGGED (FT.): 228.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
289.0	MODESTO	PIASA	LIMESTONE	10.0	174.0	
279.0	CARBONDALE		CLAYSTONE	13.0	184.0	
266.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	197.0	
261.0	CARBONDALE	LAWSON	SHALE	9.0	202.0	
252.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	7.0	211.0	
245.0	CARBONDALE	ANNA	SHALE	4.0	218.0	
241.0	CARBONDALE	HERRIN	COAL	6.0	222.0	

MAPID: 14502040000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 5 QUARTERS/FOOTAGES: 2310' S line, 2310' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.344111 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.206892 DATE COLLECTED:

SURFACE ELEVATION (FT.): 463.0 LOGGED (FT.): 1206.0 LOG TYPE: Electric Log

SOURCE: SOHIO PETROLEUM CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
215.0	CARBONDALE	SPRINGFIELD	COAL	-	248.0	
111.0	CARBONDALE	COLCHESTER	COAL	-	352.0	
-743.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1206.0	

MAPID: 14502089000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 6 QUARTERS/FOOTAGES: 100' S line, 1400' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.357247 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.200786 DATE COLLECTED:

SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 206.0 LOG TYPE: Drillers Log

SOURCE: SOHIO PETROLEUM CO. 1 WELL TYPE: Coal Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
311.0	MODESTO	PIASA	LIMESTONE	11.0	140.0
300.0	CARBONDALE		CALCAREOUS SHALE	14.0	151.0
286.0	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	9.0	165.0
277.0	CARBONDALE	ENERGY	GRAY SHALE	25.0	174.0
252.0	CARBONDALE	HERRIN	COAL	7.0	199.0

MAPID: 14502090000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 8 QUARTERS/FOOTAGES: 10' S line, 2500' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.342079 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.185949 DATE COLLECTED:

SURFACE ELEVATION (FT.): 464.0 LOGGED (FT.): 247.0 LOG TYPE: Drillers Log

SOURCE: SOHIO PETROLEUM CO. 5 WELL TYPE: Coal Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
274.4	MODESTO	PIASA	LIMESTONE	5.2	189.6
269.2	MODESTO		DARK GRAY SHALE	4.3	194.8
264.9	CARBONDALE	DANVILLE	COAL	1.2	199.1
263.7	CARBONDALE		SHALE	9.0	200.3
254.7	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	209.3
249.7	CARBONDALE	LAWSON	MOTTLED SHALE	1.0	214.3
248.7	CARBONDALE	LAWSON	DARK GRAY SHALE	6.0	215.3
242.7	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	5.8	221.3
237.0	CARBONDALE	JAMESTOWN	BLACK SHALE	2.5	227.0
234.5	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	7.5	229.5
227.0	CARBONDALE	ANNA	BLACK SHALE	3.0	237.0
224.0	CARBONDALE	HERRIN	COAL	7.0	240.0

MAPID: 14502528000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 9 QUARTERS/FOOTAGES: 990' N line, 330' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.332219 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.19777 DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 257.0 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 6709 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
298.9	MODESTO	PIASA	LIMESTONE	7.7	196.1	
291.2	MODESTO		MOTTLED SHALE	1.8	203.8	
289.4	CARBONDALE		CLAYSTONE	9.0	205.6	
280.3	CARBONDALE	BANKSTON FORK	NODULAR LIMESTONE	4.9	214.7	UPPER BENCH
275.4	CARBONDALE	BANKSTON FORK	SHALE & SILTSTONE	7.8	219.6	SHALE PARTING
267.6	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	3.3	227.4	LOWER BENCH
264.3	CARBONDALE	LAWSON	CALCAREOUS SHALE	2.6	230.7	
261.7	CARBONDALE	LAWSON	DARK GRAY SHALE	7.1	233.3	
254.7	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	1.0	240.3	
253.7	CARBONDALE		DARK GRAY SHALE	4.4	241.3	
249.2	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	3.3	245.8	
246.0	CARBONDALE	HERRIN	COAL	8.0	249.0	

MAPID: 14502175000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 10 QUARTERS/FOOTAGES: 330' N line, 330' E line of NE

QUADRANGLE: TODDS MILL LONGITUDE: -89.29737 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.199581 DATE COLLECTED:

SURFACE ELEVATION (FT.): 498.0 LOGGED (FT.): 2834.0 LOG TYPE: Electric Log

SOURCE: OBERING ERNEST A WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
250.0	CARBONDALE	SPRINGFIELD	COAL	-	248.0	
163.0	CARBONDALE	COLCHESTER	COAL	-	335.0	
-597.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1095.0	
-2312.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2810.0	TOP OF NEW ALBANY
-2312.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2810.0	
-2336.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2834.0	BASE OF NEW ALBANY

MAPID: 1452316600C VERSION: 1

PROJECT: NCRDS87

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 10 QUARTERS/FOOTAGES: 2638' N line, 2638' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.305364 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.193283 DATE COLLECTED: 3 / 0 / 1949

SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 235.6 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Diamond Drill

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
502.0			UNCONSOLIDATED	72.0	0.0	
430.0			LIMESTONE	5.8	72.0	
424.2			SHALE	98.6	77.8	
325.6			LIMESTONE	9.4	176.4	
316.2			SHALE	6.1	185.8	
310.1			LIMESTONE	2.3	191.9	
307.8			GRAY SHALE	1.4	194.2	
306.4			LIMESTONE	3.0	195.6	
303.4			SHALE	9.0	198.6	
294.4	CARBONDALE		LIMESTONE	4.8	207.6	
289.7	CARBONDALE		SHALE	0.7	212.3	
289.0	CARBONDALE		BLACK SHALE	1.0	213.0	
288.0	CARBONDALE		COAL	0.1	214.0	
287.9	CARBONDALE		BLACK SHALE	8.0	214.1	
279.9	CARBONDALE	BRERETON	LIMESTONE	4.1	222.1	
275.8	CARBONDALE	ANNA	BLACK SHALE	1.3	226.2	
274.5	CARBONDALE	HERRIN	COAL	6.5	227.5	
268.0	CARBONDALE		UNDERCLAY	1.6	234.0	

MAPID: 14523166000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 10 QUARTERS/FOOTAGES: 2638' N line, 2638' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.305364 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.193283 DATE COLLECTED:

SURFACE ELEVATION (FT.): 501.0 LOGGED (FT.): 234.5 LOG TYPE:

SOURCE: WELL TYPE:

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
325.0	MODESTO	PIASA	LIMESTONE	9.4	176.0
315.6	CARBONDALE		CLAYSTONE & SHALE	6.1	185.4
309.5	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	6.7	191.5
302.8	CARBONDALE	LAWSON	GRAY SHALE	9.0	198.2
293.8	CARBONDALE	CONANT	LIMESTONE W/ SHALE	6.4	207.2
287.4	CARBONDALE	JAMESTOWN	COAL	0.2	213.6
287.2	CARBONDALE		BLACK SHALE	7.9	213.8
279.3	CARBONDALE	BRERETON	LIMESTONE	4.1	221.7
275.2	CARBONDALE	ANNA	BLACK SHALE	1.3	225.8
273.0	CARBONDALE	HERRIN	COAL	6.5	228.0

MAPID: 14502465000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 11 QUARTERS/FOOTAGES: 825' N line, 165' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.295618 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.198192 DATE COLLECTED:

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 220.4 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 6725 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
329.5	MODESTO	PIASA	LIMESTONE	5.8	163.5
323.8	CARBONDALE		MOTTLED SHALE	9.8	169.2
313.9	CARBONDALE	BANKSTON FORK	NODULAR LIMESTONE	8.4	179.1
305.5	CARBONDALE	LAWSON	MOTTLED SHALE	4.6	187.5
300.9	CARBONDALE	LAWSON	DARK GRAY SHALE	3.3	192.1
297.7	CARBONDALE	CONANT	LIMESTONE W/ SHALE	4.4	195.3
293.3	CARBONDALE	JAMESTOWN	COAL	0.2	199.7
293.1	CARBONDALE	BRERETON	LIMESTONE W/ SHALE	13.8	199.9
279.3	CARBONDALE	ANNA	CALCAREOUS SHALE	0.3	213.7
279.0	CARBONDALE	HERRIN	COAL	6.4	214.0

MAPID: 14523669000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 11 QUARTERS/FOOTAGES: 660' N line, 660' W line of SW NW

QUADRANGLE: TODDS MILL LONGITUDE: -89.293847 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.194914 DATE COLLECTED:

SURFACE ELEVATION (FT.): 506.0 LOGGED (FT.): 2830.0 LOG TYPE: Electric Log

SOURCE: POGO PETROLEUM, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-584.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1090.0	
-2299.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2805.0	TOP OF NEW ALBANY
-2299.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2805.0	
-2324.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2830.0	BASE OF NEW ALBANY

MAPID: 14502492000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 12 QUARTERS/FOOTAGES: 1650' S line, 2310' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.267418 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.189502 DATE COLLECTED:

SURFACE ELEVATION (FT.): 505.0 LOGGED (FT.): 1112.0 LOG TYPE: Electric Log

SOURCE: SANDERS & FYE DRILLING WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
255.0	CARBONDALE	SPRINGFIELD	COAL	-	250.0	
165.0	CARBONDALE	COLCHESTER	COAL	-	340.0	
-607.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1112.0	

MAPID: 14502492000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 12 QUARTERS/FOOTAGES: 1650' S line, 2310' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.267418

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.189502

DATE COLLECTED:

SURFACE ELEVATION (FT.): 505.0

LOGGED (FT.): 235.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
323.0	MODESTO	PIASA	LIMESTONE	7.0	182.0
316.0	CARBONDALE		CLAYSTONE	10.0	189.0
306.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	199.0
302.0	CARBONDALE	LAWSON	SHALE	7.0	203.0
295.0	CARBONDALE	CONANT	LIMESTONE	5.0	210.0
290.0	CARBONDALE		SHALE	7.0	215.0
283.0	CARBONDALE	BRERETON	LIMESTONE	6.0	222.0
277.0	CARBONDALE	ANNA	BLACK SHALE	2.0	228.0
275.0	CARBONDALE	HERRIN	COAL	5.0	230.0

MAPID: 14502493000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 13 QUARTERS/FOOTAGES: 1650' N line, 990' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.262775

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.18017

DATE COLLECTED:

SURFACE ELEVATION (FT.): 504.0

LOGGED (FT.): 228.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
327.0	MODESTO	PIASA	LIMESTONE	6.0	177.0
321.0	CARBONDALE		CLAYSTONE	9.0	183.0
312.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	192.0
308.0	CARBONDALE	LAWSON	SHALE	8.0	196.0
300.0	CARBONDALE	CONANT	LIMESTONE	5.0	204.0
295.0	CARBONDALE	JAMESTOWN	BONE COAL	1.0	209.0
294.0	CARBONDALE		SHALE	2.0	210.0
292.0	CARBONDALE	BRERETON	LIMESTONE	6.0	212.0
286.0	CARBONDALE	ANNA	BLACK SHALE	2.0	218.0
281.0	CARBONDALE	HERRIN	COAL	5.0	223.0

MAPID: 14527523000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 13 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW NE

QUADRANGLE: TODDS MILL LONGITUDE: -89.265135 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.178402 DATE COLLECTED:

SURFACE ELEVATION (FT.): 507.0 LOGGED (FT.): 2867.0 LOG TYPE: Electric Log

SOURCE: SHERMAN, ERNEST WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
289.0	CARBONDALE	SPRINGFIELD	COAL	-	218.0	
189.0	CARBONDALE	COLCHESTER	COAL	-	318.0	
-579.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1086.0	
-2331.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2838.0	TOP OF NEW ALBANY
-2331.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2838.0	
-2360.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2867.0	BASE OF NEW ALBANY

MAPID: 14502290000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 14 QUARTERS/FOOTAGES: 2310' N line, 2310' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.286041 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.179084 DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 215.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
326.0	MODESTO	PIASA	LIMESTONE	8.0	168.0	
318.0	CARBONDALE		CLAYSTONE	13.0	176.0	
305.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	189.0	
302.0	CARBONDALE	LAWSON	SHALE	8.0	192.0	
294.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	6.0	200.0	
288.0	CARBONDALE	ANNA	SHALE	5.0	206.0	
284.0	CARBONDALE	HERRIN	COAL	5.0	210.0	

MAPID: 14524403000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 330' W line of SW SW SE

QUADRANGLE: TODDS MILL LONGITUDE: -89.304272 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.171883 DATE COLLECTED:

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 2894.0 LOG TYPE: Electric Log

SOURCE: SHERMAN, ERNEST WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
259.0	CARBONDALE	SPRINGFIELD	COAL	-	206.0	
159.0	CARBONDALE	COLCHESTER	COAL	-	306.0	
-653.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1118.0	
-2405.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2870.0	TOP OF NEW ALBANY
-2405.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2870.0	
-2429.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2894.0	BASE OF NEW ALBANY

MAPID: 14502532000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 16 QUARTERS/FOOTAGES: 50' N line, 1170' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.319099 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.185769 DATE COLLECTED:

SURFACE ELEVATION (FT.): 482.0 LOGGED (FT.): 252.9 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 6415 WELL TYPE: Coal Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
293.0	MODESTO	PIASA	LIMESTONE	9.5	189.0	
283.5	CARBONDALE		MOTTLED SHALE	10.5	198.5	
273.0	CARBONDALE	BANKSTON FORK	LIMESTONE	8.0	209.0	UPPER BENCH
265.0	CARBONDALE	BANKSTON FORK	SHALE & SILTSTONE	7.5	217.0	SHALE PARTING
257.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	224.5	LOWER BENCH
255.0	CARBONDALE	LAWSON	BLACK SHALE	14.0	227.0	
241.0	CARBONDALE	BRERETON	LIMESTONE	5.2	241.0	
236.0	CARBONDALE	HERRIN	COAL	6.9	246.0	

MAPID: 14502266000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 20 QUARTERS/FOOTAGES: 2485' S line, 165' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.35165 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.163517 DATE COLLECTED:

SURFACE ELEVATION (FT.): 421.0 LOGGED (FT.): 178.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO 4 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
307.0	MODESTO	PIASA	LIMESTONE	10.0	114.0	
297.0	CARBONDALE		SHALE	9.5	124.0	
287.5	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	5.5	133.5	UPPER BENCH
282.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	139.0	LOWER BENCH
277.3	CARBONDALE	LAWSON	GRAY SHALE	7.8	143.7	
269.6	CARBONDALE	CONANT	CALCAREOUS SHALE	1.9	151.4	
267.7	CARBONDALE	BRERETON	LIMESTONE	3.5	153.3	
264.2	CARBONDALE	ANNA	BLACK SHALE	7.4	156.8	
256.7	CARBONDALE	ENERGY	SILTY SHALE	5.7	164.3	
251.0	CARBONDALE	HERRIN	COAL	8.0	170.0	

MAPID: 14502265000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 21 QUARTERS/FOOTAGES: 2485' N line, 1695' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.327424 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.164126 DATE COLLECTED:

SURFACE ELEVATION (FT.): 449.0 LOGGED (FT.): 192.8 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO 3 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
317.5	MODESTO	PIASA	LIMESTONE	9.5	131.5	
308.0	MODESTO		SHALE	1.5	141.0	
306.5	CARBONDALE	DANVILLE	DARK GRAY SHALE	1.0	142.5	
305.5	CARBONDALE		SHALE	7.5	143.5	
298.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	151.0	
292.0	CARBONDALE	LAWSON	GRAY SHALE	1.0	157.0	
291.0	CARBONDALE	LAWSON	DARK GRAY SHALE	3.5	158.0	
287.5	CARBONDALE	LAWSON	SILTY SHALE	4.0	161.5	
283.5	CARBONDALE	CONANT	LIMESTONE W/ SHALE	9.3	165.5	
274.2	CARBONDALE	JAMESTOWN	COAL	0.3	174.8	
274.0	CARBONDALE		CALCAREOUS SHALE	2.5	175.0	
271.5	CARBONDALE	BRERETON	LIMESTONE	4.5	177.5	
267.0	CARBONDALE	ANNA	BLACK SHALE	3.0	182.0	
264.0	CARBONDALE	HERRIN	COAL	7.8	185.0	

MAPID: 14502264000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 22 QUARTERS/FOOTAGES: 2475' S line, 165' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.296648

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.163115

DATE COLLECTED:

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 211.8

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO 2

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
343.1	MODESTO	PIASA	LIMESTONE	7.5	156.9	
335.6	CARBONDALE		CLAYSTONE & SHALE	10.0	164.4	
325.6	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	174.4	
319.6	CARBONDALE	LAWSON	GRAY SHALE	4.5	180.4	
315.1	CARBONDALE	LAWSON	SILTY SHALE	5.0	184.9	
310.1	CARBONDALE	CONANT	LIMESTONE W/ SHALE	7.5	189.9	
302.6	CARBONDALE	JAMESTOWN	BONE COAL	0.2	197.4	
302.4	CARBONDALE		CALCAREOUS SHALE	3.3	197.6	
299.1	CARBONDALE	BRERETON	LIMESTONE	3.0	200.9	
296.1	CARBONDALE	ANNA	BLACK SHALE	1.1	203.9	
295.0	CARBONDALE	HERRIN	COAL	6.8	205.0	

MAPID: 14502496000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 23 QUARTERS/FOOTAGES: 2310' N line, 1650' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.283893

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.164268

DATE COLLECTED:

SURFACE ELEVATION (FT.): 476.0 LOGGED (FT.): 2808.0

LOG TYPE: Electric Log

SOURCE: HARDIN, C. G.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
259.0	CARBONDALE	SPRINGFIELD	COAL	-	217.0	
165.0	CARBONDALE	COLCHESTER	COAL	-	311.0	
-594.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1070.0	
-2304.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2780.0	TOP OF NEW ALBANY
-2304.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2780.0	
-2332.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2808.0	BASE OF NEW ALBANY

MAPID: 14502496000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 23 QUARTERS/FOOTAGES: 2310' N line, 1650' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.283893

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.164268

DATE COLLECTED:

SURFACE ELEVATION (FT.): 476.0

LOGGED (FT.): 202.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
326.0	MODESTO	PIASA	LIMESTONE	4.0	150.0
322.0	CARBONDALE		CLAYSTONE & SHALE	15.0	154.0
307.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	169.0
303.0	CARBONDALE	LAWSON	CLAYSTONE	7.0	173.0
296.0	CARBONDALE	CONANT	LIMESTONE	2.0	180.0
294.0	CARBONDALE		SHALE	1.0	182.0
293.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	8.0	183.0
285.0	CARBONDALE	ANNA	BLACK SHALE	5.0	191.0
280.0	CARBONDALE	ENERGY	DARK GRAY SHALE	3.0	196.0
279.0	CARBONDALE	HERRIN	COAL	5.0	197.0

MAPID: 14502263000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 24 QUARTERS/FOOTAGES: 2475' N line, 2475' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.269681

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.163462

DATE COLLECTED:

SURFACE ELEVATION (FT.): 521.0

LOGGED (FT.): 238.1

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO 1

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
329.0	MODESTO	PIASA	LIMESTONE	4.4	192.0
324.6	MODESTO		CLAYSTONE	1.5	196.4
323.1	CARBONDALE	DANVILLE	BONE COAL	0.1	197.9
323.0	CARBONDALE		CLAYSTONE	2.9	198.0
320.1	CARBONDALE	BANKSTON FORK	LIMESTONE	6.5	200.9
313.6	CARBONDALE	LAWSON	CLAYSTONE	7.0	207.4
306.6	CARBONDALE	CONANT	LIMESTONE W/ SHALE	6.0	214.4
300.6	CARBONDALE	JAMESTOWN	COAL	0.3	220.4
300.3	CARBONDALE		CALCAREOUS SHALE	4.2	220.7
296.1	CARBONDALE	BRERETON	LIMESTONE	6.8	224.9
289.3	CARBONDALE	ANNA	BLACK SHALE	0.8	231.7
288.0	CARBONDALE	HERRIN	COAL	5.1	233.0

MAPID: 14502498000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 24 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW SE

QUADRANGLE: TODDS MILL LONGITUDE: -89.267788 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.15842 DATE COLLECTED:

SURFACE ELEVATION (FT.): 524.0 LOGGED (FT.): 2887.0 LOG TYPE: Electric Log

SOURCE: HORTON, LEO V., ETAL WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
269.0	CARBONDALE	SPRINGFIELD	COAL	-	255.0	
167.0	CARBONDALE	COLCHESTER	COAL	-	357.0	
-582.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1106.0	
-2335.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2859.0	TOP OF NEW ALBANY
-2336.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2860.0	
-2363.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2887.0	BASE OF NEW ALBANY

MAPID: 14502169000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 25 QUARTERS/FOOTAGES: 990' S line, 1650' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.265368 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.143634 DATE COLLECTED:

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 173.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
346.0	MODESTO	PIASA	LIMESTONE	10.0	124.0	
336.0	CARBONDALE		SHALE	6.0	134.0	
330.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	140.0	
326.0	CARBONDALE	LAWSON	SHALE	6.0	144.0	
320.0	CARBONDALE	BRERETON	LIMESTONE	10.0	150.0	
310.0	CARBONDALE	ANNA	SHALE	8.0	160.0	
302.0	CARBONDALE	HERRIN	COAL	5.0	168.0	

MAPID: 14502174000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 25 QUARTERS/FOOTAGES: 330' S line, 330' E line of NW

QUADRANGLE: TODDS MILL LONGITUDE: -89.270083 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.149284 DATE COLLECTED:

SURFACE ELEVATION (FT.): 503.0 LOGGED (FT.): 1080.0 LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
281.0	CARBONDALE	SPRINGFIELD	COAL	-	222.0
178.0	CARBONDALE	COLCHESTER	COAL	-	325.0
-577.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1080.0

MAPID: 14502269000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 26 QUARTERS/FOOTAGES: 1286' S line, 2605' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.287339 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.144872 DATE COLLECTED:

SURFACE ELEVATION (FT.): 504.0 LOGGED (FT.): 218.7 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 9 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
339.0	MODESTO	PIASA	LIMESTONE	10.0	165.0
329.0	CARBONDALE		SHALE	6.5	175.0
322.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	181.5
318.0	CARBONDALE	LAWSON	CLAYSTONE & SHALE	7.0	186.0
311.0	CARBONDALE	LAWSON	SILTY SHALE	1.5	193.0
309.5	CARBONDALE	LAWSON	CALCAREOUS SHALE	5.0	194.5
304.5	CARBONDALE	JAMESTOWN	BONE COAL	0.5	199.5
304.0	CARBONDALE		CALCAREOUS SHALE	4.5	200.0
299.5	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	8.0	204.5
291.5	CARBONDALE	ANNA	BLACK SHALE	0.5	212.5
291.0	CARBONDALE	HERRIN	COAL	5.7	213.0

MAPID: 14502035000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 27 QUARTERS/FOOTAGES: 660' N line, 1980' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.307892 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.154656 DATE COLLECTED:

SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 1250.0 LOG TYPE: Electric Log

SOURCE: IL EXPLORATION, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
237.0	CARBONDALE	SPRINGFIELD	COAL	-	265.0
132.0	CARBONDALE	COLCHESTER	COAL	-	370.0
-748.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1250.0

MAPID: 14502035000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 27 QUARTERS/FOOTAGES: 660' N line, 1980' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.307892 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.154656 DATE COLLECTED:

SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 254.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
304.0	MODESTO	PIASA	LIMESTONE	7.0	198.0
297.0	CARBONDALE		SHALE	10.0	205.0
287.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	215.0
282.0	CARBONDALE	LAWSON	SHALE	5.0	220.0
277.0	CARBONDALE	CONANT	LIMESTONE	8.0	225.0
269.0	CARBONDALE		CALCAREOUS SHALE	4.0	233.0
265.0	CARBONDALE	BRERETON	LIMESTONE	10.0	237.0
255.0	CARBONDALE	ANNA	BLACK SHALE	2.0	247.0
254.0	CARBONDALE	HERRIN	COAL	6.0	248.0

MAPID: 14502268000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 28 QUARTERS/FOOTAGES: 410' S line, 2270' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.325794

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.142877

DATE COLLECTED:

SURFACE ELEVATION (FT.): 503.0 LOGGED (FT.): 222.9

LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 8

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
333.2	MODESTO	PIASA	NODULAR LIMESTONE	5.0	169.8
328.2	CARBONDALE		SHALE	6.0	174.8
322.2	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	180.8
316.2	CARBONDALE	LAWSON	CLAYSTONE & SHALE	5.0	186.8
311.2	CARBONDALE	LAWSON	GRAY SHALE	4.0	191.8
307.2	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.5	195.8
301.7	CARBONDALE	JAMESTOWN	BONE COAL	1.2	201.3
300.5	CARBONDALE		CALCAREOUS SHALE	5.3	202.5
295.2	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	5.0	207.8
290.2	CARBONDALE	ANNA	BLACK SHALE	3.2	212.8
287.0	CARBONDALE	HERRIN	COAL	6.9	216.0

MAPID: 14525999000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 29 QUARTERS/FOOTAGES: 330' S line, 660' W line of NW SE

QUADRANGLE: TODDS MILL LONGITUDE: -89.340688

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.146372

DATE COLLECTED:

SURFACE ELEVATION (FT.): 446.0 LOGGED (FT.): 1205.0

LOG TYPE: Electric Log

SOURCE: OKJ INC

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-759.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1205.0

MAPID: 14502267000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 30 QUARTERS/FOOTAGES: 2475' S line, 2475' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.360914 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.148632 DATE COLLECTED:

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 114.4 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 7 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
361.2	CARBONDALE	BANKSTON FORK	LIMESTONE	12.0	68.8	
349.2	CARBONDALE	LAWSON	DARK GRAY SHALE	7.3	80.8	
341.8	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.5	88.2	
336.3	CARBONDALE	JAMESTOWN	COAL	0.3	93.7	
336.0	CARBONDALE		SILTY SHALE	3.8	94.0	
332.2	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	6.4	97.8	
325.7	CARBONDALE	ANNA	BLACK SHALE	2.8	104.3	
323.0	CARBONDALE	HERRIN	COAL	7.4	107.0	

MAPID: 14502283000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 31 QUARTERS/FOOTAGES: 19' S line, 1402' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.366121 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.127135 DATE COLLECTED: 11 / 26 / 1957

SURFACE ELEVATION (FT.): 411.0 LOGGED (FT.): 127.9 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 14 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
347.0	MODESTO	PIASA	LIMESTONE	7.2	64.0	
339.8	CARBONDALE		CLAYSTONE	11.0	71.2	
328.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.1	82.2	UPPER BENCH
326.7	CARBONDALE	BANKSTON FORK	CLAYSTONE	1.8	84.3	SHALE PARTING
324.9	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	86.1	LOWER BENCH
319.4	CARBONDALE	LAWSON	SHALE	6.9	91.6	
312.5	CARBONDALE		NO RECORD	3.9	98.5	
308.6	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.0	102.4	
303.6	CARBONDALE	JAMESTOWN	BONE COAL	0.4	107.4	
303.2	CARBONDALE		DARK GRAY SHALE	5.2	107.8	
298.0	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	5.1	113.0	
292.9	CARBONDALE		NO RECORD	0.2	118.1	
292.7	CARBONDALE	ANNA	BLACK SHALE	2.4	118.3	
290.3	CARBONDALE	HERRIN	COAL	7.2	120.7	

MAPID: 14503033000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 33 QUARTERS/FOOTAGES: 39' S line, 117' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.333451

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.127078

DATE COLLECTED:

SURFACE ELEVATION (FT.): 444.0 LOGGED (FT.): 140.6

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO C 69-31

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
363.0	MODESTO	PIASA	LIMESTONE	7.6	81.0	
355.4	CARBONDALE		GRAY SHALE	8.8	88.6	
346.6	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	97.4	UPPER BENCH
345.6	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.4	98.4	SHALE PARTING
344.2	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	99.8	LOWER BENCH
337.2	CARBONDALE	LAWSON	GRAY SHALE	2.3	106.8	
335.0	CARBONDALE	LAWSON	DARK GRAY SHALE	3.6	109.0	
331.4	CARBONDALE	LAWSON	GRAY SHALE	2.5	112.6	
329.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	3.3	115.0	
325.7	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.4	118.3	
325.3	CARBONDALE		LIMESTONE W/ SHALE	5.5	118.7	
319.8	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	6.7	124.2	
313.1	CARBONDALE	ANNA	BLACK SHALE	3.1	130.9	
310.0	CARBONDALE	HERRIN	COAL	6.6	134.0	

MAPID: 14502277000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 34 QUARTERS/FOOTAGES: 25' S line, 65' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.31497 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.127066 DATE COLLECTED:

SURFACE ELEVATION (FT.): 455.0 LOGGED (FT.): 144.0 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 12 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
374.7	MODESTO	PIASA	LIMESTONE	9.8	80.3	
364.9	CARBONDALE		CLAYSTONE & SHALE	14.3	90.1	
350.7	CARBONDALE	BANKSTON FORK	LIMESTONE	0.5	104.3	UPPER BENCH
350.2	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	0.6	104.8	SHALE PARTING
349.6	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	105.4	LOWER BENCH
343.6	CARBONDALE	LAWSON	CALCAREOUS SHALE	1.0	111.4	
342.6	CARBONDALE	LAWSON	DARK GRAY SHALE	8.5	112.4	
334.1	CARBONDALE	CONANT	LIMESTONE W/ SHALE	4.9	120.9	
329.2	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.5	125.8	
328.7	CARBONDALE		DARK GRAY SHALE	5.0	126.3	
323.7	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	4.3	131.3	
319.3	CARBONDALE	ANNA	BLACK SHALE	2.3	135.7	
317.0	CARBONDALE	HERRIN	COAL	6.0	138.0	

MAPID: 14502034000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 36 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW NE

QUADRANGLE: TODDS MILL LONGITUDE: -89.267706 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.136372 DATE COLLECTED:

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 2826.0 LOG TYPE: Electric Log

SOURCE: TEXAS COMPANY, THE WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
308.0	CARBONDALE	SPRINGFIELD	COAL	-	185.0	
217.0	CARBONDALE	COLCHESTER	COAL	-	276.0	
-569.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1062.0	
-2305.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2798.0	TOP OF NEW ALBANY
-2307.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2800.0	
-2333.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2826.0	BASE OF NEW ALBANY

MAPID: 14502270000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 2W SECTION: 36 QUARTERS/FOOTAGES: 2475' S line, 2475' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.268297 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.133138 DATE COLLECTED:

SURFACE ELEVATION (FT.): 503.0 LOGGED (FT.): 184.4 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 10 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
363.9	MODESTO	PIASA	LIMESTONE	8.0	139.1
355.9	CARBONDALE		CLAYSTONE	4.5	147.1
351.4	CARBONDALE	BANKSTON FORK	LIMESTONE	6.3	151.6
345.1	CARBONDALE	LAWSON	CLAYSTONE & SHALE	2.0	157.9
343.1	CARBONDALE	LAWSON	SILTY SHALE	3.5	159.9
339.6	CARBONDALE	LAWSON	GRAY SHALE	3.2	163.4
336.4	CARBONDALE	LAWSON	SILTY SHALE	1.5	166.6
334.9	CARBONDALE	BRERETON	LIMESTONE AND SANDSTONE	1.8	168.1
333.1	CARBONDALE	ANNA	BLACK SHALE	2.6	169.9
330.5	CARBONDALE	ENERGY	GRAY SHALE	6.5	172.5
324.0	CARBONDALE	HERRIN	COAL	5.4	179.0

MAPID: 14590712000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 1 QUARTERS/FOOTAGES: 800' S line, 60' E line of SE SE

QUADRANGLE: TODDS MILL LONGITUDE: -89.371102 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.20215 DATE COLLECTED: 1 / 26 / 1976

SURFACE ELEVATION (FT.): 501.5 LOGGED (FT.): 245.0 LOG TYPE: Drillers Log

SOURCE: AMAX L 49 MB WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
501.5	PLEISTOCENE		UNCONSOLIDATED	39.0	0.0
462.5			ROCK	186.0	39.0
276.5	CARBONDALE	HERRIN	COAL	7.0	225.0
269.5	CARBONDALE		ROCK	13.0	232.0

MAPID: 14590716000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 1 QUARTERS/FOOTAGES: 430' S line, 188' E line of NW
 QUADRANGLE: WINKLE LONGITUDE: -89.380722 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.208927 DATE COLLECTED: 8 / 11 / 1976
 SURFACE ELEVATION (FT.): 497.1 LOGGED (FT.): 283.0 LOG TYPE: Drillers Log
 SOURCE: AMAX L 120 IL WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
497.1	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
477.1			ROCK	235.0	20.0
242.1	CARBONDALE	HERRIN	COAL	7.0	255.0
235.1	CARBONDALE		ROCK	21.0	262.0

MAPID: 14590715000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 2 QUARTERS/FOOTAGES: 30' S line, 50' E line of SE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.398504 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.208695 DATE COLLECTED: 6 / 15 / 1976
 SURFACE ELEVATION (FT.): 505.9 LOGGED (FT.): 282.0 LOG TYPE: Drillers Log
 SOURCE: AMAX L 112 PB WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
505.9	PLEISTOCENE		UNCONSOLIDATED	43.0	0.0
462.9			ROCK	201.0	43.0
261.9	CARBONDALE	HERRIN	COAL	8.0	244.0
253.9	CARBONDALE		ROCK	30.0	252.0

MAPID: 14590718000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 2 QUARTERS/FOOTAGES: 10' N line, 10' W line
 QUADRANGLE: WINKLE LONGITUDE: -89.407499 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.214616 DATE COLLECTED: 9 / 24 / 1957
 SURFACE ELEVATION (FT.): 482.8 LOGGED (FT.): 226.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES L 209 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.8	PLEISTOCENE		UNCONSOLIDATED	31.0	0.0
451.8			ROCK	187.0	31.0
264.8	CARBONDALE	HERRIN	COAL	7.5	218.0
257.3	CARBONDALE		ROCK	0.5	225.5

MAPID: 14590719000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 2 QUARTERS/FOOTAGES: 10' N line, 10' E line of NW
 QUADRANGLE: WINKLE LONGITUDE: -89.398433 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.214581 DATE COLLECTED: 4 / 30 / 1958
 SURFACE ELEVATION (FT.): 511.1 LOGGED (FT.): 261.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES L 213 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
511.1	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
493.1			ROCK	234.0	18.0
259.1	CARBONDALE	HERRIN	COAL	6.7	252.0
252.4	CARBONDALE		ROCK	2.3	258.7

MAPID: 14590720000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 2 QUARTERS/FOOTAGES: 50' N line, 15' E line of NE
 QUADRANGLE: WINKLE LONGITUDE: -89.389311 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.214432 DATE COLLECTED: 8 / 5 / 1976
 SURFACE ELEVATION (FT.): 509.7 LOGGED (FT.): 274.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES L 217 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
509.7	PLEISTOCENE		UNCONSOLIDATED	63.0	0.0
446.7			ROCK	181.0	63.0
265.7	CARBONDALE	HERRIN	COAL	7.0	244.0
258.7	CARBONDALE		ROCK	23.0	251.0

MAPID: 14590707000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 3 QUARTERS/FOOTAGES: 10' S line, 10' W line
 QUADRANGLE: WINKLE LONGITUDE: -89.424491 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.201507 DATE COLLECTED: 9 / 26 / 1957
 SURFACE ELEVATION (FT.): 492.6 LOGGED (FT.): 238.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES L 1 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
492.6	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
474.6			ROCK	212.0	18.0
262.6	CARBONDALE	HERRIN	COAL	7.2	230.0
255.4	CARBONDALE		ROCK	0.8	237.2

MAPID: 14590710000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 3 QUARTERS/FOOTAGES: 10' S line, 10' E line of SE

QUADRANGLE: WINKLE LONGITUDE: -89.407463 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.201806 DATE COLLECTED: 9 / 25 / 1957

SURFACE ELEVATION (FT.): 510.7 LOGGED (FT.): 318.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES L 9 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
510.7	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0
504.7			ROCK	224.0	6.0
280.7	CARBONDALE	HERRIN	COAL	6.3	230.0
274.4	CARBONDALE		ROCK	77.7	236.3
196.7	CARBONDALE	HOUCHIN CREEK	COAL	2.3	314.0
194.4	CARBONDALE		ROCK	1.7	316.3

MAPID: 14590713000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 3 QUARTERS/FOOTAGES: 10' S line, 10' E line of NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.416727 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.205287 DATE COLLECTED: 1 / 15 / 1969

SURFACE ELEVATION (FT.): 468.1 LOGGED (FT.): 203.5 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES L-55 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
468.1	PLEISTOCENE		UNCONSOLIDATED	49.0	0.0
419.1	MODESTO		ROCK	73.5	49.0
345.6	CARBONDALE	DANVILLE	COAL	0.5	122.5
345.1	CARBONDALE		ROCK	61.7	123.0
283.4	CARBONDALE	HERRIN	COAL	8.9	184.7
274.5	CARBONDALE		ROCK	9.8	193.6

MAPID: 14590714000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 3 QUARTERS/FOOTAGES: 10' N line, 10' E line of SE
 QUADRANGLE: WINKLE LONGITUDE: -89.407524 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.209037 DATE COLLECTED: 4 / 24 / 1958
 SURFACE ELEVATION (FT.): 478.3 LOGGED (FT.): 218.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE L 109 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
478.3	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
454.3			ROCK	180.5	24.0
273.8	CARBONDALE	HERRIN	COAL	7.5	204.5
266.3	CARBONDALE		ROCK	6.0	212.0

MAPID: 14590717000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 3 QUARTERS/FOOTAGES: 10' N line, 10' W line of NW
 QUADRANGLE: WINKLE LONGITUDE: -89.424218 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.215054 DATE COLLECTED: 9 / 26 / 1957
 SURFACE ELEVATION (FT.): 509.9 LOGGED (FT.): 244.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES L 201 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
509.9	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
489.9			ROCK	215.0	20.0
274.9	CARBONDALE	HERRIN	COAL	7.0	235.0
267.9	CARBONDALE		ROCK	2.0	242.0

MAPID: 14502500000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 4 QUARTERS/FOOTAGES: 990' S line, 330' E line of NE
 QUADRANGLE: WINKLE LONGITUDE: -89.425481 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.211515 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 1092.0 LOG TYPE: Electric Log
 SOURCE: LEWIS & PICKENS WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
291.0	CARBONDALE	SPRINGFIELD	COAL	-	211.0
136.0	CARBONDALE	COLCHESTER	COAL	-	366.0
-590.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1092.0

MAPID: 14590698000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 4 QUARTERS/FOOTAGES: 46' S line, 44' W line of SW SW

QUADRANGLE: WINKLE LONGITUDE: -89.442641 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.201876 DATE COLLECTED: 7 / 29 / 1976

SURFACE ELEVATION (FT.): 482.6 LOGGED (FT.): 227.0 LOG TYPE: Drillers Log

SOURCE: AMAX K-17-X WELL TYPE: Coal Test

COMMENT: DENMARKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
482.6	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0	
454.6			ROCK	184.0	28.0	
270.6	CARBONDALE	HERRIN	COAL	2.0	212.0	
268.6	CARBONDALE		ROCK	13.0	214.0	

MAPID: 14590701000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 4 QUARTERS/FOOTAGES:

QUADRANGLE: WINKLE LONGITUDE: -89.43356 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.208434 DATE COLLECTED: 4 / 22 / 1958

SURFACE ELEVATION (FT.): 517.2 LOGGED (FT.): 268.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES K 121 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
517.2	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0	
493.2			ROCK	228.0	24.0	
265.2	CARBONDALE	HERRIN	COAL	7.7	252.0	
257.5	CARBONDALE		ROCK	8.3	259.7	

MAPID: 14590705000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 4 QUARTERS/FOOTAGES: 11' N line, 654' W line

QUADRANGLE: WINKLE LONGITUDE: -89.440373 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.215345 DATE COLLECTED: 9 / 8 / 1971

SURFACE ELEVATION (FT.): 500.4 LOGGED (FT.): 338.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES K 218 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.4	PLEISTOCENE		UNCONSOLIDATED	108.0	0.0
392.4			ROCK	128.1	108.0
264.3	CARBONDALE	HERRIN	COAL	6.9	236.1
257.4	CARBONDALE	HERRIN	CLAYSTONE	0.1	243.0
257.3	CARBONDALE	HERRIN	COAL	1.4	243.1
255.9	CARBONDALE		ROCK	88.2	244.5
167.7	CARBONDALE	HOUCHIN CREEK	COAL	3.0	332.7
164.7	CARBONDALE		ROCK	2.3	335.7

MAPID: 14590706000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 4 QUARTERS/FOOTAGES: 10' N line, 10' W line of NE

QUADRANGLE: WINKLE LONGITUDE: -89.43342 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.215222 DATE COLLECTED: 4 / 23 / 1958

SURFACE ELEVATION (FT.): 494.7 LOGGED (FT.): 245.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE K 221 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
494.7	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
474.7			ROCK	216.0	20.0
258.7	CARBONDALE	HERRIN	COAL	7.7	236.0
251.0	CARBONDALE		ROCK	1.3	243.7

MAPID: 14590708000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 4 QUARTERS/FOOTAGES: 31' S line, 15' E line of SE SE
 QUADRANGLE: WINKLE LONGITUDE: -89.42468 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.201593 DATE COLLECTED: 7 / 29 / 1981
 SURFACE ELEVATION (FT.): 497.7 LOGGED (FT.): 215.0 LOG TYPE: Drillers Log
 SOURCE: AMAX L1-1 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
497.7	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0	
476.7			ROCK	164.0	21.0	
312.7			COAL	0.7	185.0	
312.0			ROCK	29.3	185.7	

MAPID: 14590709000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 4 QUARTERS/FOOTAGES: 37' S line, 15' E line of SE SE
 QUADRANGLE: WINKLE LONGITUDE: -89.42468 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.201609 DATE COLLECTED: 8 / 10 / 1981
 SURFACE ELEVATION (FT.): 497.7 LOGGED (FT.): 500.0 LOG TYPE: Drillers Log
 SOURCE: AMAX L1-2 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
497.7	PLEISTOCENE		UNCONSOLIDATED	39.0	0.0	
458.7			ROCK	194.7	39.0	
264.0	CARBONDALE	HERRIN	COAL	9.0	233.7	
255.0	CARBONDALE		ROCK	84.1	242.7	
170.9	CARBONDALE	HOUCHIN CREEK	COAL	2.4	326.8	
168.5	CARBONDALE		ROCK	43.7	329.2	
124.8	CARBONDALE	COLCHESTER	COAL	1.2	372.9	
123.6	CARBONDALE		ROCK	31.9	374.1	
91.7	CARBONDALE	DAVIS	COAL	3.0	406.0	
88.7	CARBONDALE		ROCK	91.0	409.0	

MAPID: 14502298000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 5 QUARTERS/FOOTAGES: 1320' N line, 0' E line

QUADRANGLE: WINKLE LONGITUDE: -89.442696 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.211774 DATE COLLECTED:

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES K167 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE		GRAY SHALE	7.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	9.0	
-	CARBONDALE	LAWSON	GRAY SHALE	6.0	
-	CARBONDALE	BRERETON	LIMESTONE	4.0	
-	CARBONDALE	ENERGY	LIMESTONE	3.0	
-	CARBONDALE	ENERGY	GRAY SHALE	2.0	
-	CARBONDALE	ENERGY	COAL	1.0	
-	CARBONDALE	ENERGY	SANDSTONE	18.0	
-	CARBONDALE	ENERGY	GRAY SHALE	45.0	
-	CARBONDALE	HERRIN	COAL	6.7	

MAPID: 14590684000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 5 QUARTERS/FOOTAGES: 98' N line, 246' W line of NW NW SW

QUADRANGLE: WINKLE LONGITUDE: -89.459483 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.208526 DATE COLLECTED: 9 / 4 / 1975

SURFACE ELEVATION (FT.): 490.9 LOGGED (FT.): 281.7 LOG TYPE: Drillers Log

SOURCE: AMAX 16131-C WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
490.9	PLEISTOCENE		UNCONSOLIDATED	59.8	0.0
431.1			ROCK	198.6	59.8
232.5	CARBONDALE	HERRIN	COAL	10.3	258.4
222.2	CARBONDALE		ROCK	13.0	268.7

MAPID: 1459070000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 5 QUARTERS/FOOTAGES: 36' S line, 29' E line of SE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.452061 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.209166 DATE COLLECTED: 8 / 4 / 1976
 SURFACE ELEVATION (FT.): 485.4 LOGGED (FT.): 263.6 LOG TYPE: Drillers Log
 SOURCE: AMAX K-113 WELL TYPE: Coal Test
 COMMENT: DENMARKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.4	PLEISTOCENE		UNCONSOLIDATED	50.0	0.0
435.4			ROCK	186.0	50.0
249.4	CARBONDALE	HERRIN	COAL	8.6	236.0
240.8	CARBONDALE		ROCK	19.0	244.6

MAPID: 14590702000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 5 QUARTERS/FOOTAGES: 10' N line, 10' E line
 QUADRANGLE: WINKLE LONGITUDE: -89.442723 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.212654 DATE COLLECTED: 9 / 30 / 1957
 SURFACE ELEVATION (FT.): 496.2 LOGGED (FT.): 258.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES K 167 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
496.2	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0
490.2	MODESTO		ROCK	147.0	6.0
343.2	CARBONDALE	DANVILLE	COAL	1.0	153.0
342.2	CARBONDALE		ROCK	89.0	154.0
253.2	CARBONDALE	HERRIN	COAL	6.7	243.0
246.5	CARBONDALE		ROCK	8.3	249.7

MAPID: 14590704000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 5 QUARTERS/FOOTAGES: 40' N line, 86' W line
 QUADRANGLE: WINKLE LONGITUDE: -89.459941 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.215699 DATE COLLECTED: 7 / 29 / 1976
 SURFACE ELEVATION (FT.): 504.9 LOGGED (FT.): 300.0 LOG TYPE: Drillers Log
 SOURCE: AMAX K 209 Y WELL TYPE: Coal Test
 COMMENT: DENMARKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
504.9	PLEISTOCENE		UNCONSOLIDATED	42.0	0.0
462.9			ROCK	235.0	42.0
227.9	CARBONDALE	HERRIN	COAL	6.0	277.0
221.9	CARBONDALE		ROCK	17.0	283.0

MAPID: 14590699000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 6 QUARTERS/FOOTAGES: 24' N line, 36' W line
 QUADRANGLE: WINKLE LONGITUDE: -89.465025 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.209232 DATE COLLECTED: 8 / 3 / 1976
 SURFACE ELEVATION (FT.): 499.3 LOGGED (FT.): 302.0 LOG TYPE: Drillers Log
 SOURCE: AMAX K 107 WELL TYPE: Coal Test
 COMMENT: DENMARKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
499.3	PLEISTOCENE		UNCONSOLIDATED	109.0	0.0	
390.3			ROCK	166.0	109.0	
224.3	CARBONDALE	HERRIN	COAL	6.5	275.0	
217.8	CARBONDALE		ROCK	20.5	281.5	

MAPID: 14590703000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 6 QUARTERS/FOOTAGES: 12' N line, 207' W line
 QUADRANGLE: WINKLE LONGITUDE: -89.478735 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.21627 DATE COLLECTED: 9 / 8 / 1971
 SURFACE ELEVATION (FT.): 496.0 LOGGED (FT.): 388.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES K 201NB WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
496.0	PLEISTOCENE		UNCONSOLIDATED	95.5	0.0	
400.5	MODESTO		ROCK	144.5	95.5	
256.0	CARBONDALE	DANVILLE	COAL	0.8	240.0	
255.2	CARBONDALE		ROCK	40.2	240.8	
215.0	CARBONDALE	HERRIN	COAL	8.3	281.0	
206.7	CARBONDALE		ROCK	94.7	289.3	
112.0	CARBONDALE	HOUCHIN CREEK	COAL	3.3	384.0	
108.7	CARBONDALE		ROCK	0.7	387.3	

MAPID: 14502299000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 7 QUARTERS/FOOTAGES: 0' N line, 0' E line

QUADRANGLE: WINKLE LONGITUDE: -89.460442 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.201801 DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES 2B609 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION, DEPTHS CORRECTED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
282.0	CARBONDALE		LIMESTONE AND SANDSTONE	10.0	208.0
272.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	218.0
268.5	CARBONDALE	LAWSON	SILTY SHALE	5.5	221.5
263.0	CARBONDALE	LAWSON	SANDSTONE	4.0	227.0
259.0	CARBONDALE	BRERETON	LIMESTONE	3.0	231.0
256.0	CARBONDALE	ENERGY	SANDSTONE	6.0	234.0
250.0	CARBONDALE	ENERGY	SANDY SHALE	9.0	240.0
241.0	CARBONDALE	ENERGY	BLACK SHALE	2.0	249.0
239.0	CARBONDALE	HERRIN	COAL	7.8	251.0

MAPID: 14590562000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 7 QUARTERS/FOOTAGES: 44' S line, 45' E line of SE SW NE

QUADRANGLE: WINKLE LONGITUDE: -89.465637 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.194998 DATE COLLECTED: 8 / 11 / 1975

SURFACE ELEVATION (FT.): 498.1 LOGGED (FT.): 253.9 LOG TYPE: Drillers Log

SOURCE: AMAX 12640-C WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
498.1	PLEISTOCENE		UNCONSOLIDATED	78.2	0.0
419.9			ROCK	158.7	78.2
261.2	CARBONDALE	HERRIN	COAL	8.1	236.9
253.1	CARBONDALE		ROCK	8.9	245.0

MAPID: 14590681000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 7 QUARTERS/FOOTAGES: 88' S line, 77' E line

QUADRANGLE: WINKLE LONGITUDE: -89.461216 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.187824 DATE COLLECTED: 8 / 29 / 1975

SURFACE ELEVATION (FT.): 507.6 LOGGED (FT.): 253.3 LOG TYPE: Drillers Log

SOURCE: AMAX 16086 B WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
507.6	PLEISTOCENE		UNCONSOLIDATED	28.1	0.0
479.5			ROCK	202.5	28.1
277.0	CARBONDALE	HERRIN	COAL	8.2	230.6
268.8	CARBONDALE		ROCK	14.5	238.8

MAPID: 14590682000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 7 QUARTERS/FOOTAGES: 45' S line, 43' E line of SE SW SE

QUADRANGLE: WINKLE LONGITUDE: -89.465854 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.187858 DATE COLLECTED: 9 / 9 / 1975

SURFACE ELEVATION (FT.): 502.2 LOGGED (FT.): 262.5 LOG TYPE: Drillers Log

SOURCE: AMAX 16087-C WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
502.2	PLEISTOCENE		UNCONSOLIDATED	36.2	0.0
466.0			ROCK	211.0	36.2
255.0	CARBONDALE	HERRIN	COAL	5.9	247.2
249.1	CARBONDALE	HERRIN	ROCK	0.2	253.1
248.9	CARBONDALE	HERRIN	COAL	2.0	253.3
246.9	CARBONDALE		ROCK	7.2	255.3

MAPID: 14590683000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 7 QUARTERS/FOOTAGES: 5' N line, 2' E line of NE NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.46527 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.202001 DATE COLLECTED: 8 / 16 / 1975

SURFACE ELEVATION (FT.): 492.4 LOGGED (FT.): 276.6 LOG TYPE: Drillers Log

SOURCE: AMAX 16130-C WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
492.4	PLEISTOCENE		UNCONSOLIDATED	75.2	0.0
417.2			ROCK	177.4	75.2
239.8	CARBONDALE	HERRIN	COAL	7.0	252.6
232.8	CARBONDALE		ROCK	17.0	259.6

MAPID: 14590802000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 7 QUARTERS/FOOTAGES: 5' S line, 35' W line of SW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.479835 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.188207 DATE COLLECTED: 6 / 30 / 1976
 SURFACE ELEVATION (FT.): 498.3 LOGGED (FT.): 290.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B401 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
498.3	PLEISTOCENE		UNCONSOLIDATED	90.0	0.0	
408.3			ROCK	174.0	90.0	
234.3	CARBONDALE	HERRIN	COAL	7.0	264.0	
227.3	CARBONDALE		ROCK	19.0	271.0	

MAPID: 14590857000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 7 QUARTERS/FOOTAGES: 40' S line, 26' W line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.470178 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.195162 DATE COLLECTED: 6 / 28 / 1976
 SURFACE ELEVATION (FT.): 515.6 LOGGED (FT.): 298.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B505Z WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
515.6	PLEISTOCENE		UNCONSOLIDATED	130.0	0.0	
385.6			ROCK	144.0	130.0	
241.6	CARBONDALE	HERRIN	COAL	8.0	274.0	
233.6	CARBONDALE		ROCK	16.0	282.0	

MAPID: 14590859000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 7 QUARTERS/FOOTAGES: 344' N line, 1' W line of SW NW

QUADRANGLE: WINKLE LONGITUDE: -89.479797 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.19809 DATE COLLECTED: 2 / 24 / 1969

SURFACE ELEVATION (FT.): 470.4 LOGGED (FT.): 356.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B-526-C WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
470.4	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
442.4	MODESTO		ROCK	143.0	28.0
299.4	MODESTO	ROCK BRANCH	COAL	0.8	171.0
298.6	MODESTO		ROCK	19.7	171.8
278.9	MODESTO	DEGRAFF	COAL	0.8	191.5
278.1			ROCK	74.1	192.3
204.0	CARBONDALE	HERRIN	COAL	9.7	266.4
194.3	CARBONDALE		ROCK	67.3	276.1
127.0	CARBONDALE	HOUCHIN CREEK	COAL	2.1	343.4
124.9	CARBONDALE		ROCK	10.5	345.5

MAPID: 14590863000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 7 QUARTERS/FOOTAGES: 1' N line, 1' E line

QUADRANGLE: WINKLE LONGITUDE: -89.460445 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.201798 DATE COLLECTED: 6 / 19 / 1957

SURFACE ELEVATION (FT.): 499.8 LOGGED (FT.): 267.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES B609 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
499.8	PLEISTOCENE		UNCONSOLIDATED	94.0	0.0
405.8			ROCK	157.0	94.0
248.8	CARBONDALE	HERRIN	COAL	7.7	251.0
241.1	CARBONDALE		ROCK	8.3	258.7

MAPID: 14590864000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 7 QUARTERS/FOOTAGES: 15' N line, 20' E line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.460659 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.201724 DATE COLLECTED: 9 / 22 / 1981

SURFACE ELEVATION (FT.): 480.8 LOGGED (FT.): 251.5 LOG TYPE: Drillers Log

SOURCE: AMAX B609-1 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.8	PLEISTOCENE		UNCONSOLIDATED	78.0	0.0
402.8			ROCK	144.1	78.0
258.7	CARBONDALE	HERRIN	COAL	8.8	222.1
249.9	CARBONDALE		ROCK	20.6	230.9

MAPID: 14590563000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 8 QUARTERS/FOOTAGES: 43' N line, 340' W line of NW NW SW

QUADRANGLE: WINKLE LONGITUDE: -89.459516 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.194554 DATE COLLECTED: 8 / 19 / 1975

SURFACE ELEVATION (FT.): 496.9 LOGGED (FT.): 246.3 LOG TYPE: Drillers Log

SOURCE: AMAX 12641-C WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
496.9	PLEISTOCENE		UNCONSOLIDATED	105.9	0.0
391.0			ROCK	117.7	105.9
273.3	CARBONDALE	HERRIN	COAL	6.3	223.6
267.0	CARBONDALE	HERRIN	CLAYSTONE	0.1	229.9
266.9	CARBONDALE	HERRIN	COAL	1.4	230.0
265.5	CARBONDALE		ROCK	14.9	231.4

MAPID: 14590803000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 8 QUARTERS/FOOTAGES: 50' S line, 15' E line of SE SE

QUADRANGLE: WINKLE LONGITUDE: -89.443405 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.18733 DATE COLLECTED: 6 / 24 / 1957

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 167.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B417 WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0	PLEISTOCENE		UNCONSOLIDATED	44.0	0.0
406.0			ROCK	110.0	44.0
296.0	CARBONDALE	HERRIN	COAL	7.5	154.0
288.5	CARBONDALE		ROCK	5.5	161.5

MAPID: 14590804000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 8 QUARTERS/FOOTAGES: 53' S line, 18' E line of SE SE
 QUADRANGLE: WINKLE LONGITUDE: -89.443475 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.187347 DATE COLLECTED: 7 / 8 / 1981
 SURFACE ELEVATION (FT.): 449.0 LOGGED (FT.): 175.5 LOG TYPE: Drillers Log
 SOURCE: AMAX B417ZZ WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GR CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.0	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0
415.0			ROCK	123.9	34.0
291.1	CARBONDALE	HERRIN	COAL	7.3	157.9
283.8	CARBONDALE		ROCK	10.3	165.2

MAPID: 14590808000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 8 QUARTERS/FOOTAGES: 45' N line, 56' E line of NE SE
 QUADRANGLE: WINKLE LONGITUDE: -89.44327 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.194296 DATE COLLECTED: 9 / 16 / 1981
 SURFACE ELEVATION (FT.): 480.8 LOGGED (FT.): 227.8 LOG TYPE: Drillers Log
 SOURCE: AMAX B491GG WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.8	PLEISTOCENE		UNCONSOLIDATED	105.6	0.0
375.2	MODESTO		ROCK	45.6	105.6
329.6	CARBONDALE	DANVILLE	COAL	1.6	151.2
328.0	CARBONDALE		ROCK	50.5	152.8
277.5	CARBONDALE	HERRIN	COAL	8.4	203.3
269.1	CARBONDALE		ROCK	16.1	211.7

MAPID: 14590860000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 8 QUARTERS/FOOTAGES: 860' S line, 40' E line of NW
 QUADRANGLE: WINKLE LONGITUDE: -89.45194 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.196953 DATE COLLECTED: 7 / 26 / 1976
 SURFACE ELEVATION (FT.): 452.8 LOGGED (FT.): 211.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B-538J WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.8	PLEISTOCENE		UNCONSOLIDATED	74.0	0.0
378.8			ROCK	114.0	74.0
264.8	CARBONDALE	HERRIN	COAL	6.5	188.0
258.3	CARBONDALE		ROCK	16.5	194.5

MAPID: 14502501000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 9 QUARTERS/FOOTAGES: 2310' N line, 2310' E line

QUADRANGLE: WINKLE LONGITUDE: -89.432652 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.195253 DATE COLLECTED:

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 2795.0 LOG TYPE: Electric Log

SOURCE: SCHOCK W O WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
263.0	CARBONDALE	SPRINGFIELD	COAL	-	230.0	
148.0	CARBONDALE	COLCHESTER	COAL	-	345.0	
-629.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1122.0	
-2282.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2775.0	TOP OF NEW ALBANY
-2285.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2778.0	
-2302.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2795.0	BASE OF NEW ALBANY

MAPID: 14502501000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 9 QUARTERS/FOOTAGES: 2310' N line, 2310' E line

QUADRANGLE: WINKLE LONGITUDE: -89.432652 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.195253 DATE COLLECTED:

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 0.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE		SHALE		5.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE		4.0	
-	CARBONDALE	LAWSON	SHALE		4.0	
-	CARBONDALE	CONANT	LIMESTONE		3.0	
-	CARBONDALE		SHALE		2.0	
-	CARBONDALE	BRERETON	LIMESTONE & SHALE		11.0	
-	CARBONDALE	ANNA	BLACK SHALE		3.0	
-	CARBONDALE	ENERGY	LIMESTONE		22.0	
-	CARBONDALE	ENERGY	SHALE		12.0	
-	CARBONDALE	ENERGY	COAL		3.0	
-	CARBONDALE	ENERGY	GRAY SHALE		22.0	
-	CARBONDALE	HERRIN	COAL		7.0	

MAPID: 14590805000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 9 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.438676 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.187149 DATE COLLECTED: 5 / 1 / 1958
 SURFACE ELEVATION (FT.): 479.1 LOGGED (FT.): 194.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B419 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
479.1	PLEISTOCENE		UNCONSOLIDATED	80.0	0.0
399.1			ROCK	105.0	80.0
294.1	CARBONDALE	HERRIN	COAL	7.5	185.0
286.6	CARBONDALE		ROCK	1.5	192.5

MAPID: 14590806000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 9 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW
 QUADRANGLE: WINKLE LONGITUDE: -89.433993 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.187105 DATE COLLECTED: 4 / 18 / 1958
 SURFACE ELEVATION (FT.): 482.1 LOGGED (FT.): 214.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B421 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.1	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
457.1			ROCK	179.0	25.0
278.1	CARBONDALE	HERRIN	COAL	4.5	204.0
273.6	CARBONDALE	HERRIN	CLAYSTONE	0.5	208.5
273.1	CARBONDALE	HERRIN	COAL	1.7	209.0
271.4	CARBONDALE		ROCK	3.3	210.7

MAPID: 14590807000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 9 QUARTERS/FOOTAGES: 57' S line, 60' W line of SW SE
 QUADRANGLE: WINKLE LONGITUDE: -89.433783 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.187229 DATE COLLECTED: 7 / 7 / 1981
 SURFACE ELEVATION (FT.): 483.8 LOGGED (FT.): 228.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B421XX WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
483.8	PLEISTOCENE		UNCONSOLIDATED	118.0	0.0
365.8			ROCK	86.0	118.0
279.8	CARBONDALE	HERRIN	COAL	8.0	204.0
271.8	CARBONDALE		ROCK	16.0	212.0

MAPID: 14590858000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 9 QUARTERS/FOOTAGES: 193' S line, 30' W line
 QUADRANGLE: WINKLE LONGITUDE: -89.433709 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.19489 DATE COLLECTED: 7 / 8 / 1976
 SURFACE ELEVATION (FT.): 485.1 LOGGED (FT.): 241.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B-521J WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.1	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0
452.1	MODESTO		ROCK	112.0	33.0
340.1	MODESTO	DEGRAFF	COAL	1.0	145.0
339.1	MODESTO		ROCK	15.0	146.0
324.1	CARBONDALE	DANVILLE	COAL	1.0	161.0
323.1	CARBONDALE		ROCK	48.0	162.0
275.1	CARBONDALE	HERRIN	COAL	8.0	210.0
267.1	CARBONDALE		ROCK	23.0	218.0

MAPID: 14590861000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 9 QUARTERS/FOOTAGES: 1' S line, 82' W line of NE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.438054 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.198048 DATE COLLECTED: 2 / 21 / 1969
 SURFACE ELEVATION (FT.): 497.7 LOGGED (FT.): 318.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES B-569-Y WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
497.7	PLEISTOCENE		UNCONSOLIDATED	108.5	0.0
389.2	MODESTO		ROCK	61.3	108.5
327.9	CARBONDALE	DANVILLE	COAL	0.6	169.8
327.3	CARBONDALE		ROCK	50.1	170.4
277.2	CARBONDALE	HERRIN	COAL	6.6	220.5
270.6	CARBONDALE	HERRIN	ROCK	0.2	227.1
270.4	CARBONDALE	HERRIN	COAL	1.4	227.3
269.0	CARBONDALE		ROCK	84.5	228.7
184.5	CARBONDALE	HOUCHIN CREEK	COAL	2.3	313.2
182.2	CARBONDALE		ROCK	2.5	315.5

MAPID: 14590862000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 9 QUARTERS/FOOTAGES: 25' N line, 45' W line of SW NE

QUADRANGLE: WINKLE LONGITUDE: -89.433587 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.197915 DATE COLLECTED: 7 / 29 / 1976

SURFACE ELEVATION (FT.): 500.8 LOGGED (FT.): 246.0 LOG TYPE: Drillers Log

SOURCE: AMAX B-571Y WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
500.8	PLEISTOCENE		UNCONSOLIDATED	39.0	0.0	
461.8			ROCK	177.5	39.0	
284.3	CARBONDALE	HERRIN	COAL	7.5	216.5	
276.8	CARBONDALE		ROCK	22.0	224.0	

MAPID: 14590865000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 9 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW

QUADRANGLE: WINKLE LONGITUDE: -89.433668 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.201612 DATE COLLECTED: 4 / 19 / 1958

SURFACE ELEVATION (FT.): 503.9 LOGGED (FT.): 238.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B621 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
503.9	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0	
463.9			ROCK	185.5	40.0	
278.4	CARBONDALE	HERRIN	COAL	7.4	225.5	
271.1	CARBONDALE		ROCK	5.2	232.8	

MAPID: 14502301000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 10 QUARTERS/FOOTAGES: 2640' N line, 2640' E line

QUADRANGLE: WINKLE LONGITUDE: -89.416677 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.194329 DATE COLLECTED:

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES ZC505 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE		SHALE & SANDSTONE	8.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	
-	CARBONDALE	LAWSON	SANDSTONE	4.3	
-	CARBONDALE	BRERETON	LIMESTONE	9.3	
-	CARBONDALE	ANNA	BLACK SHALE	4.0	
-	CARBONDALE	ENERGY	LIMESTONE	10.0	
-	CARBONDALE	ENERGY	SILTY SHALE	17.4	
-	CARBONDALE	HERRIN	COAL	7.1	

MAPID: 14502502000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 10 QUARTERS/FOOTAGES: 330' S line, 330' W line of NE

QUADRANGLE: WINKLE LONGITUDE: -89.41485 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.195214 DATE COLLECTED:

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 2807.0 LOG TYPE: Electric Log

SOURCE: SCHAFER, GRANHOLM AND RUTHY WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
251.0	CARBONDALE	SPRINGFIELD	COAL	-	242.0
133.0	CARBONDALE	COLCHESTER	COAL	-	360.0
-615.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1108.0
-2293.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2786.0 TOP OF NEW ALBANY
-2295.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2788.0
-2314.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2807.0 BASE OF NEW ALBANY

MAPID: 14502502000C VERSION: 2

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 10 QUARTERS/FOOTAGES: 330' S line, 330' W line of NE

QUADRANGLE: WINKLE LONGITUDE: -89.41485 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.195214 DATE COLLECTED: 1 / 0 / 1949

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 456.0 LOG TYPE: Electric Log

SOURCE: SCHAFER GRANHALM & R WELL TYPE:

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
269.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	224.0	
233.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	260.0	THIN OR ABSENT
179.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	314.0	
133.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	360.0	
69.0	SPOON	DAVIS	UNCLASSIFIED	-	424.0	
37.0	SPOON	MURPHYSBORO	UNCLASSIFIED	-	456.0	

MAPID: 14590886000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 10 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW

QUADRANGLE: WINKLE LONGITUDE: -89.416042 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.186969 DATE COLLECTED: 5 / 1 / 1958

SURFACE ELEVATION (FT.): 459.0 LOGGED (FT.): 192.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE C405 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
459.0	PLEISTOCENE		UNCONSOLIDATED	94.0	0.0	
365.0			ROCK	89.0	94.0	
276.0	CARBONDALE	HERRIN	COAL	7.3	183.0	
268.7	CARBONDALE		ROCK	1.7	190.3	

MAPID: 14590888000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 10 QUARTERS/FOOTAGES: 1000' S line, 1' E line of SE SW

QUADRANGLE: WINKLE LONGITUDE: -89.416028 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.189726 DATE COLLECTED: 3 / 6 / 1969

SURFACE ELEVATION (FT.): 491.0 LOGGED (FT.): 438.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES C-428-D WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
491.0	PLEISTOCENE		UNCONSOLIDATED	116.0	0.0	
375.0			ROCK	108.2	116.0	
266.8	CARBONDALE	HERRIN	COAL	7.6	224.2	
259.2	CARBONDALE		ROCK	85.2	231.8	
174.0	CARBONDALE	HOUCHIN CREEK	COAL	2.2	317.0	
171.8	CARBONDALE		ROCK	46.8	319.2	
125.0	CARBONDALE	COLCHESTER	COAL	2.0	366.0	
123.0	CARBONDALE		ROCK	70.0	368.0	

MAPID: 14590891000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 10 QUARTERS/FOOTAGES:

QUADRANGLE: WINKLE LONGITUDE: -89.416009 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.194298 DATE COLLECTED: 11 / 18 / 1957

SURFACE ELEVATION (FT.): 492.1 LOGGED (FT.): 239.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES C505 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
492.1	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0	
464.1			ROCK	195.6	28.0	
268.5	CARBONDALE	HERRIN	COAL	7.1	223.6	
261.4	CARBONDALE		ROCK	8.3	230.7	

MAPID: 14502503000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 11 QUARTERS/FOOTAGES: 1650' N line, 990' E line

QUADRANGLE: WINKLE LONGITUDE: -89.392547 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.196471 DATE COLLECTED: 10 / 0 / 1948

SURFACE ELEVATION (FT.): LOGGED (FT.): 478.0 LOG TYPE: Electric Log

SOURCE: DORAN PAUL EST WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	266.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	310.0	THIN OR ABSENT
-	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	364.0	
-	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	416.0	
-	SPOON	DAVIS	UNCLASSIFIED	-	478.0	

MAPID: 14502503000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 11 QUARTERS/FOOTAGES: 1650' N line, 990' E line

QUADRANGLE: WINKLE LONGITUDE: -89.392547 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.196471 DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 0.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE		SILTY SHALE		9.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE		5.0	
-	CARBONDALE	LAWSON	SHALE		6.0	
-	CARBONDALE	CONANT	LIMESTONE		4.0	
-	CARBONDALE		SHALE		3.0	
-	CARBONDALE	BRERETON	LIMESTONE		6.0	
-	CARBONDALE	ANNA	BLACK SHALE		3.0	
-	CARBONDALE	ENERGY	LIMESTONE		10.0	
-	CARBONDALE	ENERGY	SHALE		5.0	
-	CARBONDALE	ENERGY	COAL		1.0	
-	CARBONDALE	ENERGY	GRAY SHALE		4.0	
-	CARBONDALE	HERRIN	COAL		8.0	

MAPID: 14590887000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 11 QUARTERS/FOOTAGES: 17' S line, 14' E line of SE SE

QUADRANGLE: WINKLE LONGITUDE: -89.389162 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.186181 DATE COLLECTED: 6 / 9 / 1976

SURFACE ELEVATION (FT.): 483.5 LOGGED (FT.): 269.0 LOG TYPE: Drillers Log

SOURCE: AMAX C417 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
483.5	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0
438.5			ROCK	194.0	45.0
244.5	CARBONDALE	HERRIN	COAL	8.0	239.0
236.5	CARBONDALE		ROCK	22.0	247.0

MAPID: 14590889000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 11 QUARTERS/FOOTAGES: 23' N line, 11' W line of SW SW

QUADRANGLE: WINKLE LONGITUDE: -89.407412 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.190567 DATE COLLECTED: 6 / 17 / 1976

SURFACE ELEVATION (FT.): 500.1 LOGGED (FT.): 232.0 LOG TYPE: Drillers Log

SOURCE: AMAX C459-1 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.1	PLEISTOCENE		UNCONSOLIDATED	60.0	0.0
440.1			ROCK	172.0	60.0

MAPID: 14590890000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 11 QUARTERS/FOOTAGES: 31' N line, 24' W line of SW SW

QUADRANGLE: WINKLE LONGITUDE: -89.407366 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.190545 DATE COLLECTED: 6 / 17 / 1976

SURFACE ELEVATION (FT.): 499.7 LOGGED (FT.): 285.0 LOG TYPE: Drillers Log

SOURCE: AMAX C459-2 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
499.7	PLEISTOCENE		UNCONSOLIDATED	60.0	0.0
439.7			ROCK	196.0	60.0
243.7	CARBONDALE	HERRIN	COAL	8.8	256.0
234.9	CARBONDALE		ROCK	20.2	264.8

MAPID: 14590892000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 11 QUARTERS/FOOTAGES:

QUADRANGLE: WINKLE LONGITUDE: -89.398266

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.193919

DATE COLLECTED: 1 / 14 / 1969

SURFACE ELEVATION (FT.): 494.4 LOGGED (FT.): 286.3

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES C-513

WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
494.4	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0
460.4			ROCK	234.0	34.0
226.4	CARBONDALE	HERRIN	COAL	8.3	268.0
218.1	CARBONDALE		ROCK	10.0	276.3

MAPID: 14590711000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 12 QUARTERS/FOOTAGES: 30' N line, 23' W line

QUADRANGLE: WINKLE LONGITUDE: -89.388989

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.200763

DATE COLLECTED: 6 / 11 / 1976

SURFACE ELEVATION (FT.): 499.0 LOGGED (FT.): 270.0

LOG TYPE: Drillers Log

SOURCE: AMAX L 17

WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
499.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
479.0	MODESTO		ROCK	162.0	20.0
317.0	CARBONDALE	DANVILLE	COAL	2.0	182.0
315.0	CARBONDALE		ROCK	62.5	184.0
252.5	CARBONDALE	HERRIN	COAL	7.5	246.5
245.0	CARBONDALE		ROCK	16.0	254.0

MAPID: 14590893000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 12 QUARTERS/FOOTAGES: 19' N line, 255' E line of NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.38084

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.193085

DATE COLLECTED: 8 / 9 / 1976

SURFACE ELEVATION (FT.): 494.8 LOGGED (FT.): 298.0

LOG TYPE: Drillers Log

SOURCE: AMAX C-520BB

WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
494.8	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
464.8			ROCK	238.0	30.0
226.8	CARBONDALE	HERRIN	COAL	7.0	268.0
219.8	CARBONDALE		ROCK	23.0	275.0

MAPID: 14502846000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 13 QUARTERS/FOOTAGES: 1370' S line, 50' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.370729 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.174638 DATE COLLECTED:

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 0.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE		SILTY SHALE	12.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	
-	CARBONDALE	LAWSON	SHALE	10.0	
-	CARBONDALE	BRERETON	LIMESTONE & SHALE	3.0	
-	CARBONDALE	ENERGY	LIMESTONE	10.0	
-	CARBONDALE	ENERGY	SILTY SHALE	13.0	
-	CARBONDALE	HERRIN	COAL	7.0	

MAPID: 14590882000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 13 QUARTERS/FOOTAGES: 20' N line, 194' E line of NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.38056 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.178395 DATE COLLECTED: 8 / 12 / 1976

SURFACE ELEVATION (FT.): 479.8 LOGGED (FT.): 253.0 LOG TYPE: Drillers Log

SOURCE: AMAX C-320P WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
479.8	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
439.8			ROCK	188.0	40.0
251.8	CARBONDALE	HERRIN	COAL	6.5	228.0
245.3	CARBONDALE		ROCK	18.5	234.5

MAPID: 1459088000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 14 QUARTERS/FOOTAGES: 165' N line, 165' W line of SW SE
 QUADRANGLE: WINKLE LONGITUDE: -89.397825 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.174989 DATE COLLECTED: 5 / 1 / 1958
 SURFACE ELEVATION (FT.): 477.1 LOGGED (FT.): 238.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES C238E WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
477.1	PLEISTOCENE		UNCONSOLIDATED	118.0	0.0
359.1	MODESTO		ROCK	66.0	118.0
293.1	CARBONDALE	DANVILLE	COAL	1.0	184.0
292.1	CARBONDALE		ROCK	41.5	185.0
250.6	CARBONDALE	HERRIN	COAL	7.5	226.5
243.1	CARBONDALE		ROCK	4.0	234.0

MAPID: 14590884000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 14 QUARTERS/FOOTAGES: 50' N line, 165' W line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.397747 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.182677 DATE COLLECTED: 1 / 22 / 1969
 SURFACE ELEVATION (FT.): 457.0 LOGGED (FT.): 246.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES C-363-N WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
457.0	PLEISTOCENE		UNCONSOLIDATED	58.0	0.0
399.0	MODESTO		ROCK	106.0	58.0
293.0	MODESTO	DEGRAFF	COAL	1.4	164.0
291.6	MODESTO		ROCK	15.6	165.4
276.0	CARBONDALE	DANVILLE	COAL	1.5	181.0
274.5	CARBONDALE		ROCK	43.9	182.5
230.6	CARBONDALE	HERRIN	COAL	8.6	226.4
222.0	CARBONDALE		ROCK	11.0	235.0

MAPID: 14502014000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 4S 3W **SECTION:** 15 **QUARTERS/FOOTAGES:** 333' S line, 261' E line of NW
QUADRANGLE: WINKLE **LONGITUDE:** -89.417025 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.180531 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 481.0 **LOGGED (FT.):** 1128.0 **LOG TYPE:** Electric Log
SOURCE: MAGNOLIA PETROLEUM **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
256.0	CARBONDALE	SPRINGFIELD	COAL	-	225.0
151.0	CARBONDALE	COLCHESTER	COAL	-	330.0
-647.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1128.0

MAPID: 14590881000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 4S 3W **SECTION:** 15 **QUARTERS/FOOTAGES:** 24' S line, 25' E line of NW
QUADRANGLE: WINKLE **LONGITUDE:** -89.416208 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 38.179675 **DATE COLLECTED:** 7 / 17 / 1973
SURFACE ELEVATION (FT.): 461.5 **LOGGED (FT.):** 215.0 **LOG TYPE:** Drillers Log
SOURCE: AMAX C305 **WELL TYPE:** Coal Test
COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
461.5	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
421.5	MODESTO		ROCK	83.0	40.0
338.5	MODESTO	DEGRAFF	COAL	1.0	123.0
337.5			ROCK	61.0	124.0
276.5	CARBONDALE	HERRIN	COAL	7.0	185.0
269.5	CARBONDALE		ROCK	23.0	192.0

MAPID: 14590883000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 4S 3W **SECTION:** 15 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of NE NE
QUADRANGLE: WINKLE **LONGITUDE:** -89.407516 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 38.183235 **DATE COLLECTED:** 4 / 28 / 1958
SURFACE ELEVATION (FT.): 486.7 **LOGGED (FT.):** 268.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE COLLIERIES C359 **WELL TYPE:** Coal Test
COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
486.7	PLEISTOCENE		UNCONSOLIDATED	44.0	0.0
442.7			ROCK	210.5	44.0
232.2	CARBONDALE	HERRIN	COAL	7.7	254.5
224.5	CARBONDALE		ROCK	5.8	262.2

MAPID: 14590885000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 15 QUARTERS/FOOTAGES: 1' N line, 1' W line of NE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.420327 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.18698 DATE COLLECTED: 4 / 28 / 1958
 SURFACE ELEVATION (FT.): 486.6 LOGGED (FT.): 215.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE C403 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
486.6	PLEISTOCENE		UNCONSOLIDATED	112.0	0.0	
374.6			ROCK	94.0	112.0	
280.6	CARBONDALE	HERRIN	COAL	7.0	206.0	
273.6	CARBONDALE		ROCK	2.0	213.0	

MAPID: 14502302000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 16 QUARTERS/FOOTAGES: 660' N line, 660' E line
 QUADRANGLE: WINKLE LONGITUDE: -89.426943 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.185209 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES 399-GC WELL TYPE: Coal Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	ENERGY	LIMESTONE	10.5		
-	CARBONDALE	ENERGY	SANDSTONE	30.5		
-	CARBONDALE	ENERGY	COAL	2.0		
-	CARBONDALE	ENERGY	GRAY SHALE	12.0		
-	CARBONDALE	HERRIN	COAL	2.5		

MAPID: 14502531000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 16 QUARTERS/FOOTAGES: 330' N line, 405' E line of NW SE
 QUADRANGLE: WINKLE LONGITUDE: -89.430783 GEOLOGIST: C TREWORYG
 CONFIDENTIAL: N LATITUDE: 38.178793 DATE COLLECTED: 1 / 0 / 1959
 SURFACE ELEVATION (FT.): 441.0 LOGGED (FT.): 385.0 LOG TYPE: Electric Log
 SOURCE: SHERMAN OIL WELL TYPE: Producer-Oil
 COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
299.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	142.0	
261.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	180.0	THIN OR ABSENT
203.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	238.0	
158.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	283.0	
110.0	SPOON	DAVIS	UNCLASSIFIED	-	331.0	
56.0	SPOON	MURPHYSBORO	UNCLASSIFIED	-	385.0	

MAPID: 14528931000C VERSION: 1

PROJECT: NCRDS 2013

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 16 QUARTERS/FOOTAGES: 1650' N line, 1650' W line

QUADRANGLE: WINKLE LONGITUDE: -89.43755 GEOLOGIST: LOUCHIOS

CONFIDENTIAL: N LATITUDE: 38.182546 DATE COLLECTED: 2 / 6 / 2008

SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 491.0 LOG TYPE: Other Core Study

SOURCE: BPI INDUSTRIES 1A WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
485.0			UNCLASSIFIED	132.0	0.0	
353.0	SHELBURN	PIASA	LIMESTONE	7.0	132.0	
346.0	SHELBURN		CLAYSTONE & SILTSTONE	0.5	139.0	
345.5	SHELBURN		UNCLASSIFIED	3.5	139.5	MISSING CORE
342.0	SHELBURN	DANVILLE	COAL	0.7	143.0	
341.3	SHELBURN		CORE LOSS	2.6	143.7	DEPTH ADJUSTMENT; CORE LOSS?
338.7	SHELBURN	BANKSTON FORK	LIMESTONE	5.2	146.3	
333.5	SHELBURN		DARK SHALE	2.5	151.5	
331.0	SHELBURN		CORE LOSS	5.1	154.0	
325.9	SHELBURN		SILTSTONE	2.4	159.1	
323.5	SHELBURN	BRERETON	LIMESTONE	9.1	161.5	
314.4	CARBONDALE	ANNA	BLACK SHALE	3.4	170.6	
311.0	CARBONDALE	ENERGY	GRAY SHALE	10.5	174.0	
300.5	CARBONDALE		UNCLASSIFIED	1.5	184.5	DEPTH ADJUSTMENT
299.0	CARBONDALE	HERRIN	COAL	8.4	186.0	COAL REMOVED
290.6	CARBONDALE		CLAYSTONE & SILTSTONE	1.2	194.4	
289.4	CARBONDALE		CALCAREOUS CLAYSTONE	4.9	195.6	
284.5	CARBONDALE		LIMESTONE	1.5	200.5	
283.0	CARBONDALE		CORE LOSS	14.0	202.0	LOST CORE
269.0	CARBONDALE		SILTSTONE & SHALE	9.0	216.0	
260.0	CARBONDALE		GRAY SHALE	9.0	225.0	
251.0	CARBONDALE		SILTY SHALE	7.0	234.0	
244.0	CARBONDALE		SILTY SHALE	21.0	241.0	BECOMING FINER DOWNWARD
223.0	CARBONDALE		GRAY SHALE	8.9	262.0	
214.1	CARBONDALE		DARK SHALE	0.5	270.9	
213.6	CARBONDALE	HANOVER	LIMESTONE	0.7	271.4	
212.9	CARBONDALE	EXCELLO	BLACK SHALE	4.1	272.1	
208.8	CARBONDALE	HOUCHIN CREEK	COAL	2.5	276.2	COAL REMOVED
206.3	CARBONDALE		MUDSTONE	6.0	278.7	
200.3	CARBONDALE		SILTSTONE	4.0	284.7	
196.3	CARBONDALE		GRAY SHALE	2.7	288.7	
193.6	CARBONDALE		SANDSTONE	1.0	291.4	
192.6	CARBONDALE		SILTSTONE	2.6	292.4	
190.0	CARBONDALE		DARK SHALE	5.5	295.0	
184.5	CARBONDALE		DARK SHALE	13.4	300.5	FISSILE CLAY SHALE
171.1	CARBONDALE	OAK GROVE	LIMESTONE	1.6	313.9	
169.5	CARBONDALE	MECCA QUARRY	BLACK SHALE	1.5	315.5	
168.0	CARBONDALE	COLCHESTER	COAL	1.1	317.0	

166.9	CARBONDALE		MUDSTONE	2.3	318.1	
164.6	CARBONDALE		SILTSTONE	16.8	320.4	
147.8	CARBONDALE		SANDSTONE	10.4	337.2	
137.4	CARBONDALE		DARK SHALE	11.5	347.6	
125.9	CARBONDALE		BLACK SHALE	1.6	359.1	
124.3	CARBONDALE	SEELYVILLE	COAL	3.4	360.7	COAL REMOVED
120.9	TRADEWATER		SILTSTONE	3.5	364.1	
117.4	TRADEWATER		DOLOMITE	0.5	367.6	
116.9	TRADEWATER		CLAYSTONE & SILTSTONE	1.3	368.1	
115.6	TRADEWATER		DOLOMITE	1.0	369.4	
114.6	TRADEWATER		CLAYSTONE & SILTSTONE	4.6	370.4	COMPANY DPTH 1.2' TOO MUCH CORE
110.0	TRADEWATER		GRAY SHALE	0.6	375.0	WEAKLY FISSILE
109.4	TRADEWATER	MT. RORAH	COAL	1.1	375.6	
108.3	TRADEWATER		MUDSTONE	1.2	376.7	
107.1	TRADEWATER		SILTSTONE	4.6	377.9	COARSENS DOWNWARD
102.5	TRADEWATER		SILTSTONE	5.1	382.5	
97.4	TRADEWATER		SILTSTONE & SHALE	5.6	387.6	
91.8	TRADEWATER		LIMESTONE	0.6	393.2	
91.2	TRADEWATER		COAL/SANDSTONE	0.6	393.8	
90.6	TRADEWATER	MURPHYSBORO	COAL	2.5	394.4	COAL REMOVED
88.1	TRADEWATER		SILTSTONE	1.1	396.9	
87.0	TRADEWATER		LIMESTONE	0.2	398.0	
86.8	TRADEWATER		CLAYSTONE & SILTSTONE	7.3	398.2	
79.5	TRADEWATER		MUDSTONE	4.0	405.5	
75.5	TRADEWATER		COAL	0.2	409.5	DULL
75.4	TRADEWATER		CLAYSTONE & SILTSTONE	4.4	409.6	
71.0	TRADEWATER		MUDSTONE	4.0	414.0	
67.0	TRADEWATER		GREEN SHALE	3.0	418.0	
64.0	TRADEWATER		COAL	0.5	421.0	
63.5	TRADEWATER		SANDSTONE	3.6	421.5	
59.9	TRADEWATER		UNCLASSIFIED	55.9	425.1	
4.0	TRADEWATER		GRAY SHALE	10.0	481.0	

MAPID: 14590792000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 16 QUARTERS/FOOTAGES: 53' N line, 124' E line of SE
 QUADRANGLE: WINKLE LONGITUDE: -89.425224 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.179601 DATE COLLECTED: 9 / 17 / 1981
 SURFACE ELEVATION (FT.): 478.4 LOGGED (FT.): 201.1 LOG TYPE: Drillers Log
 SOURCE: AMAX B299GE WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
478.4	PLEISTOCENE		UNCONSOLIDATED	89.7	0.0
388.7	MODESTO		ROCK	45.4	89.7
343.3	CARBONDALE	DANVILLE	COAL	0.5	135.1
342.8	CARBONDALE		ROCK	41.5	135.6
301.3	CARBONDALE	HERRIN	COAL	7.4	177.1
293.9	CARBONDALE		ROCK	16.6	184.5

MAPID: 14590795000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 16 QUARTERS/FOOTAGES: 5' N line, 34' E line of SW
 QUADRANGLE: WINKLE LONGITUDE: -89.434157 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.179722 DATE COLLECTED: 6 / 21 / 1976
 SURFACE ELEVATION (FT.): 444.5 LOGGED (FT.): 171.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B321 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.5	PLEISTOCENE		UNCONSOLIDATED	63.0	0.0
381.5			ROCK	83.0	63.0
298.5	CARBONDALE	HERRIN	COAL	7.0	146.0
291.5	CARBONDALE		ROCK	18.0	153.0

MAPID: 14590799000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 16 QUARTERS/FOOTAGES: NW

QUADRANGLE: WINKLE LONGITUDE: -89.438693 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.183463 DATE COLLECTED: 1 / 10 / 1966

SURFACE ELEVATION (FT.): 487.0 LOGGED (FT.): 294.7 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B369 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
487.0	PLEISTOCENE		UNCONSOLIDATED	103.0	0.0
384.0	MODESTO		ROCK	24.0	103.0
360.0	MODESTO		ROCK	1.5	127.0
358.5			ROCK	58.3	128.5
300.2	CARBONDALE	HERRIN	COAL	8.4	186.8
291.8	CARBONDALE		ROCK	86.8	195.2
205.0	CARBONDALE	HOUCHIN CREEK	COAL	2.7	282.0
202.3	CARBONDALE		ROCK	10.1	284.7

MAPID: 14590800000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 16 QUARTERS/FOOTAGES: 92' N line, 1192' W line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.425136 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.186759 DATE COLLECTED: 9 / 21 / 1971

SURFACE ELEVATION (FT.): 447.5 LOGGED (FT.): 256.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B399G WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.5	PLEISTOCENE		UNCONSOLIDATED	75.8	0.0
371.7	MODESTO		ROCK	10.2	75.8
361.5	MODESTO	DEGRAFF	COAL	0.7	86.0
360.8			ROCK	73.2	86.7
287.6	CARBONDALE	HERRIN	COAL	6.1	159.9
281.5	CARBONDALE	HERRIN	CLAYSTONE	0.2	166.0
281.3	CARBONDALE	HERRIN	COAL	1.4	166.2
279.9	CARBONDALE		ROCK	84.2	167.6
195.7	CARBONDALE	HOUCHIN CREEK	COAL	2.4	251.8
193.3	CARBONDALE		ROCK	1.8	254.2

MAPID: 14590801000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 16 QUARTERS/FOOTAGES: 83' N line, 165' E line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.425199 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.186784 DATE COLLECTED: 7 / 18 / 1971

SURFACE ELEVATION (FT.): 446.3 LOGGED (FT.): 261.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B399G-C WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
446.3	PLEISTOCENE		UNCONSOLIDATED	77.0	0.0	
369.3	MODESTO		ROCK	70.0	77.0	
299.3	MODESTO	ROCK BRANCH	COAL	2.0	147.0	
297.3	MODESTO		ROCK	12.0	149.0	
285.3	MODESTO	DEGRAFF	COAL	2.5	161.0	
282.8			ROCK	85.9	163.5	
196.9	CARBONDALE	HERRIN	COAL	1.4	249.4	
195.5	CARBONDALE	HERRIN	ROCK	1.0	250.8	
194.5	CARBONDALE	HERRIN	COAL	4.2	251.8	
190.3	CARBONDALE		ROCK	5.0	256.0	

MAPID: 14502505000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 17 QUARTERS/FOOTAGES: 2310' N line, 990' E line

QUADRANGLE: WINKLE LONGITUDE: -89.446684 GEOLOGIST: C TREWORYG

CONFIDENTIAL: N LATITUDE: 38.180808 DATE COLLECTED: 9 / 0 / 1954

SURFACE ELEVATION (FT.): 487.0 LOGGED (FT.): 407.0 LOG TYPE: Electric Log

SOURCE: JET OIL CO. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
307.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	180.0	
282.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0	205.0	THIN OR ABSENT
212.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	275.0	
159.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	328.0	
131.0	SPOON	DAVIS	UNCLASSIFIED	-	356.0	
80.0	SPOON	MURPHYSBORO	UNCLASSIFIED	-	407.0	

MAPID: 14502505000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 17 QUARTERS/FOOTAGES: 2310' N line, 990' E line

QUADRANGLE: WINKLE LONGITUDE: -89.446684 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.180808 DATE COLLECTED:

SURFACE ELEVATION (FT.): 487.0 LOGGED (FT.): 0.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE		LIMESTONE W/ SHALE	16.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	
-	CARBONDALE	LAWSON	GRAY SHALE	4.0	
-	CARBONDALE	BRERETON	LIMESTONE	6.0	
-	CARBONDALE	ANNA	BLACK SHALE	4.0	
-	CARBONDALE	ENERGY	LIMESTONE	9.0	
-	CARBONDALE	ENERGY	SHALE	6.0	
-	CARBONDALE	HERRIN	COAL	8.0	

MAPID: 14502505000C VERSION: 3

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 17 QUARTERS/FOOTAGES: 2310' N line, 990' E line

QUADRANGLE: WINKLE LONGITUDE: -89.446684 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.180808 DATE COLLECTED:

SURFACE ELEVATION (FT.): 487.0 LOGGED (FT.): 1092.0 LOG TYPE: Electric Log

SOURCE: JET OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
282.0	CARBONDALE	SPRINGFIELD	COAL	-	205.0
172.0	CARBONDALE	COLCHESTER	COAL	-	315.0
-605.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1092.0

MAPID: 14590784000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 17 QUARTERS/FOOTAGES: 165' S line, 83' W line of SE SE

QUADRANGLE: WINKLE LONGITUDE: -89.446687 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.17249 DATE COLLECTED: 6 / 12 / 1991

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 172.0 LOG TYPE: Drillers Log

SOURCE: AMAX B215KB WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX 75GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.0	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
429.0	MODESTO		ROCK	75.5	24.0
353.5	CARBONDALE	DANVILLE	COAL	0.7	99.5
352.8	CARBONDALE		ROCK	36.2	100.2
316.6	CARBONDALE	HERRIN	COAL	8.5	136.4
308.1	CARBONDALE		ROCK	27.1	144.9

MAPID: 14590785000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 17 QUARTERS/FOOTAGES: 260' S line, 55' E line of SE SE

QUADRANGLE: WINKLE LONGITUDE: -89.443598 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.173179 DATE COLLECTED: 6 / 13 / 1991

SURFACE ELEVATION (FT.): 469.6 LOGGED (FT.): 192.5 LOG TYPE: Drillers Log

SOURCE: AMAX B216MI WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEK BOX 75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
469.6	PLEISTOCENE		UNCONSOLIDATED	14.5	0.0
455.1	MODESTO		ROCK	112.0	14.5
343.1	CARBONDALE	DANVILLE	COAL	0.7	126.5
342.4	CARBONDALE		ROCK	37.2	127.2
305.2	CARBONDALE	HERRIN	COAL	7.8	164.4
297.4	CARBONDALE		ROCK	20.3	172.2

MAPID: 14590788000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 17 QUARTERS/FOOTAGES: 3' S line, 3' E line of NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.452468 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.176449 DATE COLLECTED: 9 / 21 / 1981

SURFACE ELEVATION (FT.): 493.9 LOGGED (FT.): 215.0 LOG TYPE: Drillers Log

SOURCE: AMAX B263 WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX 75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
493.9	PLEISTOCENE		UNCONSOLIDATED	99.0	0.0	
394.9			ROCK	87.8	99.0	
307.1	CARBONDALE	HERRIN	COAL	8.2	186.8	
298.9	CARBONDALE		ROCK	20.0	195.0	

MAPID: 14590790000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 17 QUARTERS/FOOTAGES: 65' N line, 108' E line of SE

QUADRANGLE: WINKLE LONGITUDE: -89.443772 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.179653 DATE COLLECTED: 5 / 27 / 1960

SURFACE ELEVATION (FT.): 445.5 LOGGED (FT.): 298.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B291GA WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
445.5	PLEISTOCENE		UNCONSOLIDATED	56.0	0.0	
389.5			ROCK	91.0	56.0	
298.5	CARBONDALE	HERRIN	COAL	6.5	147.0	
292.0	CARBONDALE		ROCK	86.2	153.5	
205.8	CARBONDALE	HOUCHIN CREEK	COAL	1.3	239.7	
204.5	CARBONDALE		ROCK	39.8	241.0	
164.7	CARBONDALE		COAL	0.9	280.8	
163.8	CARBONDALE		ROCK	16.3	281.7	

MAPID: 14590791000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 17 QUARTERS/FOOTAGES: 80' N line, 95' E line of SE
 QUADRANGLE: WINKLE LONGITUDE: -89.443925 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.179598 DATE COLLECTED: 7 / 28 / 1981
 SURFACE ELEVATION (FT.): 445.1 LOGGED (FT.): 210.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B291GA-1 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GR EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.1	PLEISTOCENE		UNCONSOLIDATED	56.0	0.0
389.1			ROCK	89.1	56.0
300.0	CARBONDALE	HERRIN	COAL	8.2	145.1
291.8	CARBONDALE		ROCK	56.7	153.3

MAPID: 14590796000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 17 QUARTERS/FOOTAGES: 813' S line, 230' W line of NE
 QUADRANGLE: WINKLE LONGITUDE: -89.451457 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.182249 DATE COLLECTED: 7 / 8 / 1976
 SURFACE ELEVATION (FT.): 457.5 LOGGED (FT.): 195.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B338KB WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
457.5	PLEISTOCENE		UNCONSOLIDATED	61.0	0.0
396.5			ROCK	94.0	61.0
302.5	CARBONDALE	HERRIN	COAL	5.0	155.0
297.5	CARBONDALE		ROCK	35.0	160.0

MAPID: 14590856000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 17 QUARTERS/FOOTAGES: 131' S line, 57' W line of SW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.461399 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.173349 DATE COLLECTED: 9 / 11 / 1981
 SURFACE ELEVATION (FT.): 476.2 LOGGED (FT.): 234.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B209ZA WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
476.2	PLEISTOCENE		UNCONSOLIDATED	52.0	0.0
424.2			ROCK	163.3	52.0
260.9	CARBONDALE	HERRIN	COAL	7.0	215.3
253.9	CARBONDALE		ROCK	11.7	222.3

MAPID: 14502303000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 18 QUARTERS/FOOTAGES: 1320' N line, 0' E line

QUADRANGLE: WINKLE LONGITUDE: -89.461089 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.183931 DATE COLLECTED:

SURFACE ELEVATION (FT.): 507.0 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES Z-B359 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE		SHALE & SANDSTONE	18.3	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	
-	CARBONDALE	LAWSON	GRAY SHALE	5.9	
-	CARBONDALE		BLACK SHALE	1.7	
-	CARBONDALE	BRERETON	LIMESTONE	7.3	
-	CARBONDALE	ANNA	BLACK SHALE	2.6	
-	CARBONDALE	ENERGY	LIMESTONE	8.0	
-	CARBONDALE	ENERGY	GRAY SHALE	1.5	
-	CARBONDALE	ENERGY	COAL	0.7	
-	CARBONDALE	HERRIN	COAL	7.7	

MAPID: 14502506000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 18 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE

QUADRANGLE: WINKLE LONGITUDE: -89.469506 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.179536 DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 1103.0 LOG TYPE: Electric Log

SOURCE: MAGNOLIA PETROLEUM WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
248.0	CARBONDALE	SPRINGFIELD	COAL	-	260.0
141.0	CARBONDALE	COLCHESTER	COAL	-	367.0
-595.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1103.0

MAPID: 14502506000C VERSION: 2

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 18 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE

QUADRANGLE: WINKLE LONGITUDE: -89.469506 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 38.179536 DATE COLLECTED: 6 / 0 / 1945

SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 411.0 LOG TYPE: Electric Log

SOURCE: MAGNOLIA PETROLEUM WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
268.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	240.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	0.0		THIN OR ABSENT
176.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	332.0	
140.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	368.0	
97.0	SPOON	DAVIS	UNCLASSIFIED	-	411.0	

MAPID: 14590789000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 18 QUARTERS/FOOTAGES: 165' N line, 1' W line of SW

QUADRANGLE: WINKLE LONGITUDE: -89.480054 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.180272 DATE COLLECTED: 2 / 19 / 1969

SURFACE ELEVATION (FT.): 513.5 LOGGED (FT.): 355.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B276-D WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
513.5	PLEISTOCENE		UNCONSOLIDATED	36.0	0.0	
477.5			ROCK	194.9	36.0	
282.6	CARBONDALE	JAMESTOWN	COAL	0.1	230.9	
282.5	CARBONDALE		ROCK	14.7	231.0	
267.8	CARBONDALE	HERRIN	COAL	8.0	245.7	
259.8	CARBONDALE		ROCK	95.0	253.7	
164.8	CARBONDALE	HOUCHIN CREEK	COAL	2.8	348.7	
162.0	CARBONDALE		ROCK	3.5	351.5	

MAPID: 14590793000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 18 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW
 QUADRANGLE: WINKLE LONGITUDE: -89.480047 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.180731 DATE COLLECTED: 4 / 17 / 1958
 SURFACE ELEVATION (FT.): 515.4 LOGGED (FT.): 255.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B301 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
515.4	PLEISTOCENE		UNCONSOLIDATED	48.0	0.0	
467.4			ROCK	198.3	48.0	
269.1	CARBONDALE	HERRIN	COAL	6.8	246.3	
262.3	CARBONDALE		ROCK	1.9	253.1	

MAPID: 14590794000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 18 QUARTERS/FOOTAGES: 13' N line, 13' W line of SE
 QUADRANGLE: WINKLE LONGITUDE: -89.470593 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.180439 DATE COLLECTED: 6 / 23 / 1976
 SURFACE ELEVATION (FT.): 510.5 LOGGED (FT.): 274.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B305 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
510.5	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0	
491.5	MODESTO		ROCK	186.0	19.0	
305.5	CARBONDALE	DANVILLE	COAL	1.0	205.0	
304.5	CARBONDALE		ROCK	41.0	206.0	
263.5	CARBONDALE	HERRIN	COAL	8.0	247.0	
255.5	CARBONDALE		ROCK	19.0	255.0	

MAPID: 14590797000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 18 QUARTERS/FOOTAGES: 1' S line, 82' W line of NE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.465534 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.184035 DATE COLLECTED: 3 / 5 / 1969
 SURFACE ELEVATION (FT.): 507.4 LOGGED (FT.): 350.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B357Y WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
507.4	PLEISTOCENE		UNCONSOLIDATED	36.0	0.0
471.4			ROCK	213.4	36.0
258.0	CARBONDALE	HERRIN	COAL	7.7	249.4
250.3	CARBONDALE	HERRIN	ROCK	0.4	257.1
249.9	CARBONDALE	HERRIN	COAL	0.2	257.5
249.7	CARBONDALE		ROCK	88.3	257.7
161.4	CARBONDALE	HOUCHIN CREEK	COAL	2.6	346.0
158.8	CARBONDALE		ROCK	1.4	348.6

MAPID: 14590798000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 18 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.461096 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.183895 DATE COLLECTED: 6 / 19 / 1957
 SURFACE ELEVATION (FT.): 506.6 LOGGED (FT.): 240.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B359 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
506.6	PLEISTOCENE		UNCONSOLIDATED	42.0	0.0
464.6	MODESTO		ROCK	26.0	42.0
438.6	MODESTO	CHAPEL	COAL	0.5	68.0
438.1	MODESTO		ROCK	20.5	68.5
417.6	MODESTO		COAL	1.7	89.0
415.9	MODESTO		ROCK	98.3	90.7
317.6	CARBONDALE	DANVILLE	COAL	0.7	189.0
316.9	CARBONDALE		ROCK	40.5	189.7
276.4	CARBONDALE	HERRIN	COAL	7.7	230.2
268.7	CARBONDALE		ROCK	2.1	237.9

MAPID: 14590852000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 18 QUARTERS/FOOTAGES: 500' S line, 70' E line of SE
 QUADRANGLE: WINKLE LONGITUDE: -89.461682 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.174263 DATE COLLECTED: 6 / 25 / 1957
 SURFACE ELEVATION (FT.): 458.7 LOGGED (FT.): 237.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES B183MB WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
458.7	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0
452.7	MODESTO		ROCK	36.0	6.0
416.7	MODESTO	CHAPEL	COAL	0.4	42.0
416.3	MODESTO		ROCK	81.6	42.4
334.7	MODESTO		COAL	0.5	124.0
334.2	MODESTO		ROCK	40.5	124.5
293.7	CARBONDALE	DANVILLE	COAL	1.0	165.0
292.7	CARBONDALE		ROCK	54.0	166.0
238.7	CARBONDALE	HERRIN	COAL	7.0	220.0
231.7	CARBONDALE		ROCK	10.0	227.0

MAPID: 14590855000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 18 QUARTERS/FOOTAGES: 25' S line, 35' W line of SW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.480021 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.173326 DATE COLLECTED: 6 / 28 / 1976
 SURFACE ELEVATION (FT.): 524.0 LOGGED (FT.): 270.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B201 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
524.0	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
499.0			ROCK	221.0	25.0
278.0	CARBONDALE	HERRIN	COAL	7.0	246.0
271.0	CARBONDALE		ROCK	17.0	253.0

MAPID: 14502401000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES: 500' N line, 70' E line
 QUADRANGLE: WINKLE LONGITUDE: -89.461781 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.171502 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 457.0 LOGGED (FT.): 227.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES ZB209 WELL TYPE: Coal Test
 COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
301.0	MODESTO	PIASA	LIMESTONE	7.5	156.0
293.5	MODESTO		DARK GRAY SHALE	1.5	163.5
292.0	CARBONDALE	DANVILLE	COAL	1.0	165.0
291.0	CARBONDALE		SHALE & SANDSTONE	7.0	166.0
284.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	173.0
279.0	CARBONDALE	LAWSON	SHALE & SANDSTONE	19.0	178.0
260.0	CARBONDALE	BRERETON	LIMESTONE	5.0	197.0
255.0	CARBONDALE	ENERGY	ARGILLACEOUS SANDSTONE	18.0	202.0
237.0	CARBONDALE	HERRIN	COAL	7.0	220.0

MAPID: 14559057000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES: 100' N line, 150' W line of SE SW
 QUADRANGLE: WINKLE LONGITUDE: -89.474518 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.161214 DATE COLLECTED: 10 / 24 / 1978
 SURFACE ELEVATION (FT.): 517.4 LOGGED (FT.): 257.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B28EC WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL CORE

MAPID: 14590850000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES: 30' N line, 300' W line of NE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.474485 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.173041 DATE COLLECTED: 6 / 4 / 1991
 SURFACE ELEVATION (FT.): 522.5 LOGGED (FT.): 271.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B178EG WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
522.5	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
504.5			ROCK	202.2	18.0
302.3	CARBONDALE	JAMESTOWN	COAL	0.3	220.2
302.0	CARBONDALE		ROCK	19.8	220.5
282.2	CARBONDALE	HERRIN	COAL	7.2	240.3
275.0	CARBONDALE		ROCK	23.5	247.5

MAPID: 14590851000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES:

QUADRANGLE: WINKLE LONGITUDE: -89.48498 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.17219 DATE COLLECTED: 6 / 24 / 1991

SURFACE ELEVATION (FT.): 511.9 LOGGED (FT.): 277.7 LOG TYPE: Drillers Log

SOURCE: AMAX B180C WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
511.9	PLEISTOCENE		UNCONSOLIDATED	36.0	0.0
475.9	MODESTO		ROCK	147.8	36.0
328.1	CARBONDALE	DANVILLE	COAL	0.3	183.8
327.8	CARBONDALE		ROCK	22.4	184.1
305.4	CARBONDALE	JAMESTOWN	COAL	0.1	206.5
305.3	CARBONDALE		ROCK	19.7	206.6
285.6	CARBONDALE	HERRIN	COAL	7.3	226.3
278.3	CARBONDALE		ROCK	44.1	233.6

MAPID: 14590899000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES:

QUADRANGLE: WINKLE LONGITUDE: -89.474407 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.165921 DATE COLLECTED: 7 / 9 / 1991

SURFACE ELEVATION (FT.): 515.2 LOGGED (FT.): 295.0 LOG TYPE: Drillers Log

SOURCE: AMAX B103N WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
515.2	PLEISTOCENE		UNCONSOLIDATED	61.0	0.0
454.2	MODESTO		ROCK	139.9	61.0
314.3	CARBONDALE	DANVILLE	COAL	0.9	200.9
313.4	CARBONDALE		ROCK	38.7	201.8
274.7	CARBONDALE	HERRIN	COAL	7.9	240.5
266.8	CARBONDALE		ROCK	46.6	248.4

MAPID: 14590906000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES: 800' S line, 5' W line of SW NE

QUADRANGLE: WINKLE LONGITUDE: -89.470931 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.167844 DATE COLLECTED: 7 / 6 / 1976

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 270.0 LOG TYPE: Drillers Log

SOURCE: AMAX B130J WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
520.0	PLEISTOCENE		UNCONSOLIDATED	80.0	0.0	
440.0			ROCK	162.0	80.0	
278.0	CARBONDALE	HERRIN	COAL	7.5	242.0	
270.5	CARBONDALE		ROCK	20.5	249.5	

MAPID: 14590907000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES: SE NE

QUADRANGLE: WINKLE LONGITUDE: -89.464119 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.167583 DATE COLLECTED: 6 / 11 / 1991

SURFACE ELEVATION (FT.): 467.0 LOGGED (FT.): 242.2 LOG TYPE: Drillers Log

SOURCE: AMAX B133 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
467.0	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0	
445.0	MODESTO		ROCK	149.6	22.0	
295.4	CARBONDALE	DANVILLE	COAL	0.3	171.6	
295.1	CARBONDALE		ROCK	42.5	171.9	
252.6	CARBONDALE	HERRIN	COAL	7.6	214.4	
245.0	CARBONDALE		ROCK	20.2	222.0	

MAPID: 1459091000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES: 10' N line, 330' E line of SW NW
 QUADRANGLE: WINKLE LONGITUDE: -89.476833 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.169486 DATE COLLECTED: 6 / 6 / 1991
 SURFACE ELEVATION (FT.): 529.6 LOGGED (FT.): 460.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B152B WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
529.6	PLEISTOCENE		UNCONSOLIDATED	36.0	0.0
493.6	MODESTO		ROCK	38.0	36.0
455.6	MODESTO	CHAPEL	COAL	0.5	74.0
455.1	MODESTO		ROCK	131.5	74.5
323.6	CARBONDALE	DANVILLE	COAL	1.0	206.0
322.6	CARBONDALE		ROCK	35.1	207.0
287.5	CARBONDALE	HERRIN	COAL	7.4	242.1
280.1	CARBONDALE		ROCK	91.5	249.5
188.6	CARBONDALE	HOUCHIN CREEK	COAL	3.0	341.0
185.6	CARBONDALE		ROCK	16.8	344.0
168.8	CARBONDALE	SURVANT	COAL	0.2	360.8
168.6			ROCK	99.0	361.0

MAPID: 14590911000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES: 320' S line, 510' E line of NE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.46331 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.1702 DATE COLLECTED: 6 / 10 / 1991
 SURFACE ELEVATION (FT.): 462.8 LOGGED (FT.): 245.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B158H WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.8	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0
429.8			ROCK	185.6	33.0
244.2	CARBONDALE	HERRIN	COAL	8.9	218.6
235.3	CARBONDALE		ROCK	17.5	227.5

MAPID: 14590951000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES: 371' S line, 618' W line of SW SE

QUADRANGLE: WINKLE LONGITUDE: -89.469141 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.159346 DATE COLLECTED: 8 / 24 / 1989

SURFACE ELEVATION (FT.): 480.4 LOGGED (FT.): 215.7 LOG TYPE: Drillers Log

SOURCE: AMAX B5IM WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.4	PLEISTOCENE		UNCONSOLIDATED	43.0	0.0
437.4	MODESTO		ROCK	106.0	43.0
331.4	CARBONDALE	DANVILLE	COAL	0.8	149.0
330.6	CARBONDALE		ROCK	35.6	149.8
295.0	CARBONDALE	HERRIN	COAL	7.6	185.4
287.4	CARBONDALE		ROCK	22.7	193.0

MAPID: 14590958000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES: 1196' S line, 289' E line of SE SE

QUADRANGLE: WINKLE LONGITUDE: -89.462657 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.161368 DATE COLLECTED: 8 / 23 / 1989

SURFACE ELEVATION (FT.): 500.7 LOGGED (FT.): 265.0 LOG TYPE: Drillers Log

SOURCE: AMAX B33FK WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.7	PLEISTOCENE		UNCONSOLIDATED	37.0	0.0
463.7	MODESTO		ROCK	153.8	37.0
309.9	CARBONDALE	DANVILLE	COAL	0.3	190.8
309.6	CARBONDALE		ROCK	40.7	191.1
268.9	CARBONDALE	HERRIN	COAL	7.1	231.8
261.8	CARBONDALE		ROCK	26.1	238.9

MAPID: 14590961000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES: 371' S line, 371' E line of NE SW
 QUADRANGLE: WINKLE LONGITUDE: -89.473251 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.162823 DATE COLLECTED: 9 / 19 / 1989
 SURFACE ELEVATION (FT.): 482.0 LOGGED (FT.): 244.5 LOG TYPE: Drillers Log
 SOURCE: AMAX B54HM WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.0	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0
469.0	MODESTO		ROCK	156.0	13.0
313.0	CARBONDALE	DANVILLE	COAL	1.0	169.0
312.0	CARBONDALE		ROCK	40.4	170.0
271.6	CARBONDALE	HERRIN	COAL	8.3	210.4
263.3	CARBONDALE		ROCK	25.8	218.7

MAPID: 14590962000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 19 QUARTERS/FOOTAGES: 371' S line, 82' E line of NW SE
 QUADRANGLE: WINKLE LONGITUDE: -89.466817 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.162805 DATE COLLECTED: 5 / 14 / 1979
 SURFACE ELEVATION (FT.): 473.2 LOGGED (FT.): 219.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B56MF WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
473.2	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
459.2			ROCK	183.6	14.0
275.6	CARBONDALE	HERRIN	COAL	7.6	197.6
268.0	CARBONDALE		ROCK	13.8	205.2

MAPID: 14502507000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 2310' S line, 2310' W line
 QUADRANGLE: WINKLE LONGITUDE: -89.453805 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.164421 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 1100.0 LOG TYPE: Electric Log
 SOURCE: FALCON SEABOARD DRLG WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
238.0	CARBONDALE	SPRINGFIELD	COAL	-	262.0
129.0	CARBONDALE	COLCHESTER	COAL	-	371.0
-600.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1100.0

MAPID: 14502507000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 2310' S line, 2310' W line

QUADRANGLE: WINKLE LONGITUDE: -89.453805

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.164421

DATE COLLECTED:

SURFACE ELEVATION (FT.): 500.0

LOGGED (FT.): 242.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
294.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	206.0
291.0	CARBONDALE	LAWSON	GRAY SHALE	5.0	209.0
286.0	CARBONDALE	CONANT	LIMESTONE	3.0	214.0
283.0	CARBONDALE		BLACK SHALE	2.0	217.0
281.0	CARBONDALE	BRERETON	LIMESTONE	4.0	219.0
277.0	CARBONDALE	ANNA	BLACK SHALE	3.0	223.0
274.0	CARBONDALE	ENERGY	GRAY SHALE	9.0	226.0
265.0	CARBONDALE	HERRIN	COAL	7.0	235.0

MAPID: 14523512000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 41' S line, 41' E line of NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.452859 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.161748 DATE COLLECTED: 5 / 21 / 1979

SURFACE ELEVATION (FT.): 514.2 LOGGED (FT.): 257.3 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B62PM-1 WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
514.2	PLEISTOCENE		CLAY	9.0	0.0	
505.2	PLEISTOCENE		UNCONSOLIDATED	21.0	9.0	
484.2	PLEISTOCENE		SANDY CLAY	4.0	30.0	
480.2	MODESTO		SANDSTONE	11.0	34.0	BROWN
469.2	MODESTO		SANDY SHALE	29.0	45.0	
440.2	MODESTO		SANDSTONE	6.0	74.0	
434.2	MODESTO		SANDY SHALE	91.0	80.0	
343.2	MODESTO		LIMESTONE	1.0	171.0	
342.2	MODESTO		CALCAREOUS SHALE	3.0	172.0	
339.2	MODESTO		LIMESTONE	2.0	175.0	
337.2	MODESTO		SHALE	9.0	177.0	
328.2	MODESTO	PIASA	SHALY LIMESTONE	5.0	186.0	
323.2			SHALE	11.0	191.0	
312.2			CALCAREOUS SHALE	6.0	202.0	
306.2			DARK SHALE	2.0	208.0	
304.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	210.0	
299.2	CARBONDALE		GRAY SHALE	3.8	215.0	START CORE
295.4	CARBONDALE	CONANT	SHALY LIMESTONE	5.1	218.8	
290.3	CARBONDALE		SHALE	3.0	223.9	
287.3	CARBONDALE	BRERETON	LIMESTONE	5.7	226.9	
281.6	CARBONDALE	ANNA	BLACK SHALE	2.4	232.6	
279.2	CARBONDALE	ENERGY	GRAY SHALE	2.0	235.0	
277.2	CARBONDALE	HERRIN	COAL	8.0	237.0	
269.2	CARBONDALE		UNDERCLAY	1.9	245.0	
267.3	CARBONDALE	HIGGINSVILLE	NODULAR LIMESTONE	9.4	246.9	
257.9	CARBONDALE		SHALE	1.0	256.3	

MAPID: 14524017000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 217' S line, 60' E line of SE SW

QUADRANGLE: WINKLE LONGITUDE: -89.452825 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.165942 DATE COLLECTED: 5 / 28 / 1981

SURFACE ELEVATION (FT.): 513.7 LOGGED (FT.): 260.4 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B112MM WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
513.7	PLEISTOCENE		CLAY	62.4	0.0	BROWN
451.3	MODESTO		SANDSTONE	2.6	62.4	GRAY
448.7	MODESTO		GRAY SHALE	2.8	65.0	
445.9	MODESTO		LIMESTONE	0.7	67.8	LIGHT GRAY
445.2	MODESTO		GRAY SHALE	4.5	68.5	
440.7	MODESTO		SANDSTONE	4.4	73.0	GRAY
436.3	MODESTO		GRAY SHALE	106.6	77.4	
329.7	MODESTO		LIMESTONE	2.4	184.0	LIGHT GRAY
327.3	MODESTO		GRAY SHALE	2.9	186.4	
324.4	MODESTO	PIASA	LIMESTONE	10.7	189.3	LIGHT GRAY
313.7			GRAY SHALE	3.5	200.0	
310.2	CARBONDALE	GALUM	LIMESTONE	1.5	203.5	GRAY
308.7	CARBONDALE		GRAY SHALE	2.8	205.0	
305.9	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	207.8	
302.2	CARBONDALE		GRAY SHALE	3.9	211.5	
298.3	CARBONDALE	CONANT	LIMESTONE	9.6	215.4	START CORE: GRAY
288.7	CARBONDALE		GRAY SHALE	4.5	225.0	
284.2	CARBONDALE	BRERETON	LIMESTONE	6.9	229.5	GRAY
277.3	CARBONDALE	ANNA	BLACK SHALE	2.6	236.4	
274.7	CARBONDALE	HERRIN	COAL	7.9	239.0	
266.8	CARBONDALE		UNDERCLAY	2.2	246.9	
264.6	CARBONDALE	HIGGINSVILLE	LIMESTONE	11.3	249.1	GRAY

MAPID: 14590848000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 330' S line, 660' W line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.450154 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.169825 DATE COLLECTED: 6 / 14 / 1991

SURFACE ELEVATION (FT.): 505.9 LOGGED (FT.): 249.7 LOG TYPE: Drillers Log

SOURCE: AMAX B164C WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEK BOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
505.9	PLEISTOCENE		UNCONSOLIDATED	24.5	0.0
481.4	MODESTO		ROCK	131.3	24.5
350.1	CARBONDALE	DANVILLE	COAL	1.7	155.8
348.4	CARBONDALE		ROCK	38.0	157.5
310.4	CARBONDALE	HERRIN	COAL	7.4	195.5
303.0	CARBONDALE		ROCK	46.8	202.9

MAPID: 14590853000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES:

QUADRANGLE: WINKLE LONGITUDE: -89.454436 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.172427 DATE COLLECTED: 6 / 12 / 1991

SURFACE ELEVATION (FT.): 454.8 LOGGED (FT.): 192.2 LOG TYPE: Drillers Log

SOURCE: AMAX B187DI WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
454.8	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
434.8			ROCK	146.1	20.0
288.7	CARBONDALE	HERRIN	COAL	7.1	166.1
281.6	CARBONDALE		ROCK	19.0	173.2

MAPID: 14590894000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 50' S line, 50' E line of NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.452891 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.161679 DATE COLLECTED: 10 / 9 / 1978

SURFACE ELEVATION (FT.): 514.2 LOGGED (FT.): 268.0 LOG TYPE: Drillers Log

SOURCE: AMAX B62PM WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
514.2	PLEISTOCENE		UNCONSOLIDATED	44.0	0.0
470.2	MODESTO		ROCK	153.1	44.0
317.1	CARBONDALE	DANVILLE	COAL	2.2	197.1
314.9	CARBONDALE		ROCK	36.2	199.3
278.7	CARBONDALE	HERRIN	COAL	8.9	235.5
269.8	CARBONDALE		ROCK	23.6	244.4

MAPID: 14590895000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 41' S line, 41' E line of NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.452887 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.161707 DATE COLLECTED: 5 / 21 / 1979

SURFACE ELEVATION (FT.): 514.2 LOGGED (FT.): 257.3 LOG TYPE: Drillers Log

SOURCE: AMAX B62PM-1 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
514.2	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0
480.2			ROCK	203.0	34.0
277.2	CARBONDALE	HERRIN	COAL	8.0	237.0
269.2	CARBONDALE		ROCK	12.3	245.0

MAPID: 14590896000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 701' N line, 206' E line of NW SE

QUADRANGLE: WINKLE LONGITUDE: -89.448659 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.163447 DATE COLLECTED: 8 / 31 / 1989

SURFACE ELEVATION (FT.): 515.8 LOGGED (FT.): 245.0 LOG TYPE: Drillers Log

SOURCE: AMAX B64FG WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
515.8	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
490.8	MODESTO		ROCK	149.2	25.0
341.6	CARBONDALE	DANVILLE	COAL	0.8	174.2
340.8	CARBONDALE		ROCK	37.2	175.0
303.6	CARBONDALE	HERRIN	COAL	8.2	212.2
295.4	CARBONDALE		ROCK	24.6	220.4

MAPID: 14590897000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 247' S line, 1' E line of NE SE

QUADRANGLE: WINKLE LONGITUDE: -89.443754 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.162136 DATE COLLECTED: 5 / 28 / 1991

SURFACE ELEVATION (FT.): 513.3 LOGGED (FT.): 240.7 LOG TYPE: Drillers Log

SOURCE: AMAX B67JC WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
513.3	PLEISTOCENE		UNCONSOLIDATED	76.0	0.0
437.3	MODESTO		ROCK	100.0	76.0
337.3	CARBONDALE	DANVILLE	COAL	0.5	176.0
336.8	CARBONDALE		ROCK	38.7	176.5
298.1	CARBONDALE	HERRIN	COAL	7.4	215.2
290.7	CARBONDALE		ROCK	18.1	222.6

MAPID: 14590898000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 82' N line, 82' W line of NW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.46147 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.165166 DATE COLLECTED: 6 / 4 / 1979
 SURFACE ELEVATION (FT.): 487.6 LOGGED (FT.): 246.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B84DA WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
487.6	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
457.6			ROCK	188.2	30.0
269.4	CARBONDALE	HERRIN	COAL	7.8	218.2
261.6	CARBONDALE		ROCK	20.0	226.0

MAPID: 14590900000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 217' S line, 60' E line of SE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.452829 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.165942 DATE COLLECTED: 5 / 28 / 1981
 SURFACE ELEVATION (FT.): 513.7 LOGGED (FT.): 260.4 LOG TYPE: Drillers Log
 SOURCE: AMAX B112MM WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
513.7	PLEISTOCENE		UNCONSOLIDATED	62.4	0.0
451.3			ROCK	176.6	62.4
274.7	CARBONDALE	HERRIN	COAL	7.9	239.0
266.8	CARBONDALE		ROCK	13.5	246.9

MAPID: 14590901000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES:
 QUADRANGLE: WINKLE LONGITUDE: -89.45263 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.165309 DATE COLLECTED: 5 / 31 / 1960
 SURFACE ELEVATION (FT.): 513.2 LOGGED (FT.): 243.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES B113 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
513.2	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0
480.2			ROCK	37.0	33.0
443.2			COAL	0.4	70.0
442.8			ROCK	163.4	70.4
279.4	CARBONDALE	HERRIN	COAL	6.3	233.8
273.1	CARBONDALE		ROCK	2.9	240.1

MAPID: 14590908000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 30' N line, 1020' W line of SW NW
 QUADRANGLE: WINKLE LONGITUDE: -89.458215 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.169005 DATE COLLECTED: 5 / 14 / 1991
 SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 277.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B135FF WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
508.0	PLEISTOCENE		UNCONSOLIDATED	92.0	0.0
416.0	MODESTO		ROCK	110.0	92.0
306.0	CARBONDALE	DANVILLE	COAL	1.0	202.0
305.0	CARBONDALE		ROCK	44.6	203.0
260.4	CARBONDALE	HERRIN	COAL	7.2	247.6
253.2	CARBONDALE		ROCK	22.2	254.8

MAPID: 14590909000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 660' S line, 660' W line of SE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.445757 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.16701 DATE COLLECTED: 5 / 31 / 1991
 SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 440.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B141 WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
515.0	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
493.0			ROCK	193.0	22.0
300.0	CARBONDALE	HERRIN	COAL	7.3	215.0
292.7	CARBONDALE		ROCK	88.7	222.3
204.0	CARBONDALE	HOUCHIN CREEK	COAL	2.5	311.0
201.5	CARBONDALE		ROCK	38.5	313.5
163.0	CARBONDALE	COLCHESTER	COAL	0.5	352.0
162.5	CARBONDALE		ROCK	43.5	352.5
119.0	CARBONDALE	DAVIS	COAL	2.5	396.0
116.5	CARBONDALE		ROCK	41.5	398.5

MAPID: 14590952000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 1' S line, 1320' W line of SW
 QUADRANGLE: WINKLE LONGITUDE: -89.457407 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.158009 DATE COLLECTED: 6 / 2 / 1960
 SURFACE ELEVATION (FT.): 512.8 LOGGED (FT.): 264.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES B-11 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
512.8	PLEISTOCENE		UNCONSOLIDATED	49.0	0.0
463.8	MODESTO		ROCK	151.2	49.0
312.6	CARBONDALE	DANVILLE	COAL	1.0	200.2
311.6	CARBONDALE		ROCK	55.6	201.2
256.0	CARBONDALE	HERRIN	COAL	6.3	256.8
249.7	CARBONDALE		ROCK	0.9	263.1

MAPID: 14590953000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 162' S line, 30' W line of SE SW
 QUADRANGLE: WINKLE LONGITUDE: -89.457309 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.158528 DATE COLLECTED: 5 / 13 / 1981
 SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 278.0 LOG TYPE: Drillers Log
 SOURCE: AMAX B11JN WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
515.0	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0
470.0	MODESTO		ROCK	158.0	45.0
312.0	CARBONDALE	DANVILLE	COAL	0.7	203.0
311.3	CARBONDALE		ROCK	47.8	203.7
263.5	CARBONDALE	HERRIN	COAL	6.5	251.5
257.0	CARBONDALE		ROCK	20.0	258.0

MAPID: 14590959000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 330' N line, 15' E line of SW SE

QUADRANGLE: WINKLE LONGITUDE: -89.448294 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.160722 DATE COLLECTED: 5 / 30 / 1991

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 263.0 LOG TYPE: Drillers Log

SOURCE: AMAX B40C WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
520.0	PLEISTOCENE		UNCONSOLIDATED	68.0	0.0	
452.0			ROCK	165.6	68.0	
286.4	CARBONDALE	HERRIN	COAL	7.5	233.6	
278.9	CARBONDALE		ROCK	21.9	241.1	

MAPID: 14590963000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 100' S line, 50' E line of NW SW

QUADRANGLE: WINKLE LONGITUDE: -89.457674 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.162062 DATE COLLECTED: 10 / 11 / 1978

SURFACE ELEVATION (FT.): 513.3 LOGGED (FT.): 272.0 LOG TYPE: Drillers Log

SOURCE: AMAX B60PI WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
513.3	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0	
487.3	MODESTO		ROCK	174.0	26.0	
313.3	CARBONDALE	DANVILLE	COAL	2.3	200.0	
311.0	CARBONDALE		ROCK	42.3	202.3	
268.7	CARBONDALE	HERRIN	COAL	10.2	244.6	
258.5	CARBONDALE		ROCK	17.2	254.8	

MAPID: 14590964000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 20 QUARTERS/FOOTAGES: 82' S line, 41' E line of NW SW

QUADRANGLE: WINKLE LONGITUDE: -89.457674 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.162103 DATE COLLECTED: 5 / 25 / 1979

SURFACE ELEVATION (FT.): 513.3 LOGGED (FT.): 274.0 LOG TYPE: Drillers Log

SOURCE: AMAX B60PI-1 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
513.3	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
485.3			ROCK	155.0	28.0
330.3			COAL	2.0	183.0
328.3			ROCK	62.6	185.0
265.7	CARBONDALE	HERRIN	COAL	9.2	247.6
256.5	CARBONDALE		ROCK	17.2	256.8

MAPID: 14502305000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 21 QUARTERS/FOOTAGES: 2640' N line, 2640' E line

QUADRANGLE: WINKLE LONGITUDE: -89.434153 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.165079 DATE COLLECTED:

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 230.7 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES ZB121 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
344.0	MODESTO	PIASA	LIMESTONE	9.0	171.0
335.0	MODESTO		DARK GRAY SHALE	1.5	180.0
333.5	CARBONDALE	DANVILLE	COAL	1.0	181.5
332.5	CARBONDALE		CLAYSTONE & SHALE	5.0	182.5
327.5	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	13.5	187.5
314.0	CARBONDALE	LAWSON	GRAY SHALE	1.0	201.0
313.0	CARBONDALE	CONANT	LIMESTONE	4.0	202.0
309.0	CARBONDALE		BLACK SHALE	3.0	206.0
306.0	CARBONDALE	BRERETON	LIMESTONE	7.0	209.0
299.0	CARBONDALE	ANNA	BLACK SHALE	6.0	216.0
293.0	CARBONDALE	ENERGY	GRAY SHALE	1.7	222.0
291.0	CARBONDALE	HERRIN	COAL	6.7	224.0

MAPID: 14523513000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 21 QUARTERS/FOOTAGES: 41' S line, 41' W line of SW SW

QUADRANGLE: WINKLE LONGITUDE: -89.443534 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.157945 DATE COLLECTED: 6 / 6 / 1979

SURFACE ELEVATION (FT.): 502.7 LOGGED (FT.): 230.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B17 WELL TYPE: Coal Test

COMMENT: PERMIT 239 DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
502.7	PLEISTOCENE		CLAY	20.0	0.0	
482.7	MODESTO		SANDSTONE	25.0	20.0	RED
457.7	MODESTO		GRAY SHALE	50.0	45.0	
407.7	MODESTO		SANDY SHALE	2.0	95.0	
405.7	MODESTO		GRAY SHALE	53.0	97.0	
352.7	MODESTO		BLACK SHALE	4.0	150.0	
348.7	MODESTO		SANDY SHALE	2.0	154.0	
346.7	MODESTO	PIASA	LIMESTONE	3.0	156.0	
343.7			SHALE	16.0	159.0	
327.7	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	175.0	
321.7	CARBONDALE		SHALE	5.0	181.0	
316.7	CARBONDALE		CALCAREOUS SHALE	4.3	186.0	START CORE
312.4	CARBONDALE		GRAY SHALE	6.7	190.3	
305.7	CARBONDALE	BRERETON	LIMESTONE	4.8	197.0	
300.9	CARBONDALE	ANNA	BLACK SHALE	2.5	201.8	
298.4	CARBONDALE	ENERGY	GRAY SHALE	1.7	204.3	
296.7	CARBONDALE	HERRIN	COAL	8.2	206.0	
288.5	CARBONDALE		UNDERCLAY	1.5	214.2	
287.0	CARBONDALE	HIGGINSVILLE	NODULAR LIMESTONE	3.7	215.7	
283.3	CARBONDALE	HIGGINSVILLE	LIMESTONE	9.1	219.4	
274.2	CARBONDALE		GRAY SHALE	1.5	228.5	

MAPID: 14590626000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 21 QUARTERS/FOOTAGES: 1' N line, 1' W line of NE

QUADRANGLE: DU QUOIN LONGITUDE: -89.43408 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.172365 DATE COLLECTED: 6 / 2 / 1958

SURFACE ELEVATION (FT.): 458.0 LOGGED (FT.): 135.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B221-A WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
458.0	PLEISTOCENE		UNCONSOLIDATED	41.0	0.0	
417.0			ROCK	88.0	41.0	
329.0	CARBONDALE	HERRIN	COAL	4.2	129.0	
324.8	CARBONDALE		ROCK	1.8	133.2	

MAPID: 14590787000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 21 QUARTERS/FOOTAGES: 1' N line, 1' E line

QUADRANGLE: WINKLE LONGITUDE: -89.42475 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.172276 DATE COLLECTED: 9 / 17 / 1957

SURFACE ELEVATION (FT.): 482.6 LOGGED (FT.): 188.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B225-A WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.6	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0
476.6	MODESTO		ROCK	129.0	6.0
347.6	CARBONDALE	DANVILLE	COAL	1.0	135.0
346.6	CARBONDALE		ROCK	40.5	136.0
306.1	CARBONDALE	HERRIN	COAL	6.8	176.5
299.3	CARBONDALE		ROCK	4.7	183.3

MAPID: 14590849000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 21 QUARTERS/FOOTAGES: 28' S line, 529' W line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.432412 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.168822 DATE COLLECTED: 10 / 8 / 1981

SURFACE ELEVATION (FT.): 505.2 LOGGED (FT.): 206.4 LOG TYPE: Drillers Log

SOURCE: AMAX B171PK WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
505.2	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0
488.2			ROCK	30.0	17.0
458.2			COAL	2.0	47.0
456.2			ROCK	148.2	49.0
308.0	CARBONDALE	HERRIN	COAL	7.5	197.2
300.5	CARBONDALE		ROCK	1.7	204.7

MAPID: 14590854000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 21 QUARTERS/FOOTAGES: 330' N line, 1' W line
 QUADRANGLE: WINKLE LONGITUDE: -89.443432 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.171547 DATE COLLECTED: 10 / 1 / 1957
 SURFACE ELEVATION (FT.): 494.1 LOGGED (FT.): 200.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES B192C WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
494.1	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
478.1	MODESTO		ROCK	12.0	16.0
466.1	MODESTO	CHAPEL	COAL	1.0	28.0
465.1	MODESTO		ROCK	123.0	29.0
342.1	CARBONDALE	DANVILLE	COAL	1.0	152.0
341.1	CARBONDALE		ROCK	38.4	153.0
302.7	CARBONDALE	HERRIN	COAL	7.5	191.4
295.2	CARBONDALE		ROCK	1.1	198.9

MAPID: 14590902000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 21 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW
 QUADRANGLE: WINKLE LONGITUDE: -89.443503 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.165156 DATE COLLECTED: 10 / 21 / 1957
 SURFACE ELEVATION (FT.): 514.0 LOGGED (FT.): 218.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES B117 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
514.0	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0
508.0	MODESTO		ROCK	144.0	6.0
364.0	MODESTO	DEGRAFF	COAL	1.0	150.0
363.0	MODESTO		ROCK	18.0	151.0
345.0	CARBONDALE	DANVILLE	COAL	1.0	169.0
344.0	CARBONDALE		ROCK	38.0	170.0
306.0	CARBONDALE	HERRIN	COAL	7.0	208.0
299.0	CARBONDALE		ROCK	3.0	215.0

MAPID: 14590903000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 21 QUARTERS/FOOTAGES: 1' S line, 1' E line of NW

QUADRANGLE: WINKLE LONGITUDE: -89.43422 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.165021 DATE COLLECTED: 10 / 26 / 1957

SURFACE ELEVATION (FT.): 506.5 LOGGED (FT.): 232.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES B121-A WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
506.5	PLEISTOCENE		UNCONSOLIDATED	49.0	0.0
457.5	MODESTO		ROCK	132.5	49.0
325.0	CARBONDALE	DANVILLE	COAL	1.0	181.5
324.0	CARBONDALE		ROCK	41.2	182.5
282.8	CARBONDALE	HERRIN	COAL	6.7	223.7
276.1	CARBONDALE		ROCK	1.6	230.4

MAPID: 14590904000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 21 QUARTERS/FOOTAGES: 165' S line, 1' E line of SE NW

QUADRANGLE: WINKLE LONGITUDE: -89.434212 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.165471 DATE COLLECTED: 3 / 28 / 1969

SURFACE ELEVATION (FT.): 509.7 LOGGED (FT.): 323.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES B-121-J WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
509.7	PLEISTOCENE		UNCONSOLIDATED	36.7	0.0
473.0	MODESTO		ROCK	109.8	36.7
363.2	MODESTO	ROCK BRANCH	COAL	0.5	146.5
362.7	MODESTO		ROCK	38.0	147.0
324.7	CARBONDALE	DANVILLE	COAL	0.9	185.0
323.8	CARBONDALE		ROCK	38.4	185.9
285.4	CARBONDALE	HERRIN	COAL	8.0	224.3
277.4	CARBONDALE		ROCK	87.1	232.3
190.3	CARBONDALE	HOUCHIN CREEK	COAL	1.4	319.4
188.9	CARBONDALE		ROCK	2.2	320.8

MAPID: 14590905000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 21 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE

QUADRANGLE: WINKLE LONGITUDE: -89.424932 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.164883 DATE COLLECTED: 10 / 22 / 1957

SURFACE ELEVATION (FT.): 489.7 LOGGED (FT.): 210.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES B-125 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
489.7	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
449.7	MODESTO		ROCK	132.5	40.0
317.2	CARBONDALE	DANVILLE	COAL	1.5	172.5
315.7	CARBONDALE		ROCK	27.5	174.0
288.2	CARBONDALE	HERRIN	COAL	6.2	201.5
282.0	CARBONDALE		ROCK	2.3	207.7

MAPID: 14590954000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 21 QUARTERS/FOOTAGES: 41' S line, 41' W line of SW SW

QUADRANGLE: WINKLE LONGITUDE: -89.443537 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.157945 DATE COLLECTED: 6 / 6 / 1979

SURFACE ELEVATION (FT.): 502.7 LOGGED (FT.): 230.0 LOG TYPE: Drillers Log

SOURCE: AMAX B17XX WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
502.7	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
482.7			ROCK	186.0	20.0
296.7	CARBONDALE	HERRIN	COAL	8.2	206.0
288.5	CARBONDALE		ROCK	15.8	214.2

MAPID: 14590956000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 21 QUARTERS/FOOTAGES: 1' S line, 1' E line
 QUADRANGLE: WINKLE LONGITUDE: -89.425115 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.157487 DATE COLLECTED: 9 / 18 / 1957
 SURFACE ELEVATION (FT.): 449.3 LOGGED (FT.): 168.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES B25 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.3	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
409.3	MODESTO		ROCK	54.0	40.0
355.3	MODESTO	ROCK BRANCH	COAL	1.0	94.0
354.3	MODESTO		ROCK	20.0	95.0
334.3	CARBONDALE	DANVILLE	COAL	1.0	115.0
333.3	CARBONDALE		ROCK	41.5	116.0
291.8	CARBONDALE	HERRIN	COAL	7.3	157.5
284.5	CARBONDALE		ROCK	3.2	164.8

MAPID: 14590868000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 22 QUARTERS/FOOTAGES: 30' S line, 110' E line of NW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.421069 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.161261 DATE COLLECTED: 9 / 19 / 1991
 SURFACE ELEVATION (FT.): 445.6 LOGGED (FT.): 177.0 LOG TYPE: Drillers Log
 SOURCE: AMAX C52PK WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.6	PLEISTOCENE		UNCONSOLIDATED	66.0	0.0
379.6			ROCK	82.4	66.0
297.2	CARBONDALE	HERRIN	COAL	7.4	148.4
289.8	CARBONDALE		ROCK	21.2	155.8

MAPID: 14590869000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 22 QUARTERS/FOOTAGES: 32' N line, 97' E line of SE SW
 QUADRANGLE: WINKLE LONGITUDE: -89.416667 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.16107 DATE COLLECTED: 8 / 9 / 1976
 SURFACE ELEVATION (FT.): 476.8 LOGGED (FT.): 206.0 LOG TYPE: Drillers Log
 SOURCE: AMAX C-54PB WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
476.8	PLEISTOCENE		UNCONSOLIDATED	110.0	0.0
366.8			ROCK	73.3	110.0
293.5	CARBONDALE	HERRIN	COAL	2.7	183.3
290.8	CARBONDALE		ROCK	20.0	186.0

MAPID: 14590872000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 22 QUARTERS/FOOTAGES: 140' S line, 640' E line of SE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.418152 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.165199 DATE COLLECTED: 9 / 18 / 1991
 SURFACE ELEVATION (FT.): 440.9 LOGGED (FT.): 181.0 LOG TYPE: Drillers Log
 SOURCE: AMAX C104ZC WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.9	PLEISTOCENE		UNCONSOLIDATED	65.0	0.0
375.9			ROCK	92.3	65.0
283.6	CARBONDALE	HERRIN	COAL	7.6	157.3
276.0	CARBONDALE		ROCK	16.1	164.9

MAPID: 14590876000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 22 QUARTERS/FOOTAGES: 23' N line, 122' W line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.415281 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.168347 DATE COLLECTED: 6 / 18 / 1981
 SURFACE ELEVATION (FT.): 445.7 LOGGED (FT.): 197.0 LOG TYPE: Drillers Log
 SOURCE: AMAX C130DG WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.7	PLEISTOCENE		UNCONSOLIDATED	63.0	0.0
382.7			ROCK	114.6	63.0
268.1	CARBONDALE	HERRIN	COAL	8.0	177.6
260.1	CARBONDALE		ROCK	11.4	185.6

MAPID: 1459096000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 22 QUARTERS/FOOTAGES: 780' S line, 1' W line of SW SW

QUADRANGLE: WINKLE LONGITUDE: -89.425053 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.159638 DATE COLLECTED: 3 / 26 / 1969

SURFACE ELEVATION (FT.): 448.9 LOGGED (FT.): 267.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B-50-J WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.9	PLEISTOCENE		UNCONSOLIDATED	54.0	0.0
394.9	MODESTO		ROCK	66.0	54.0
328.9	CARBONDALE	DANVILLE	COAL	1.0	120.0
327.9	CARBONDALE		ROCK	39.0	121.0
288.9	CARBONDALE	HERRIN	COAL	8.2	160.0
280.7	CARBONDALE		ROCK	86.8	168.2
193.9	CARBONDALE	HOUCHIN CREEK	COAL	2.5	255.0
191.4	CARBONDALE		ROCK	9.5	257.5

MAPID: 14502312000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 23 QUARTERS/FOOTAGES: 2640' N line, 0' W line

QUADRANGLE: WINKLE LONGITUDE: -89.407648 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.164959 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 184.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES ZC109 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
329.5	MODESTO	PIASA	LIMESTONE	10.0	120.5
319.5	MODESTO		GRAY SHALE	1.0	130.5
318.5	CARBONDALE	DANVILLE	COAL	1.0	131.5
317.5	CARBONDALE		SHALE & SANDSTONE	12.7	132.5
304.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	145.2
302.5	CARBONDALE	LAWSON	SANDSTONE	3.0	147.5
299.5	CARBONDALE	LAWSON	DARK GRAY SHALE	2.0	150.5
297.5	CARBONDALE	CONANT	LIMESTONE	2.5	152.5
295.0	CARBONDALE		BLACK SHALE	0.8	155.0
294.2	CARBONDALE	BRERETON	LIMESTONE	5.0	155.8
289.2	CARBONDALE	ANNA	BLACK SHALE	8.4	160.8
280.8	CARBONDALE	ENERGY	SHALE & SANDSTONE	7.3	169.2
273.5	CARBONDALE	ENERGY	BLACK SHALE	0.5	176.5
273.0	CARBONDALE	HERRIN	COAL	7.0	177.0

MAPID: 14502508000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 23 QUARTERS/FOOTAGES: 360' N line, 330' E line of NW SW

QUADRANGLE: WINKLE LONGITUDE: -89.40423 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.163694 DATE COLLECTED:

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 1204.0 LOG TYPE: Electric Log

SOURCE: SCHOONMAKER, GEORGE C. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
248.0	CARBONDALE	SPRINGFIELD	COAL	-	222.0
122.0	CARBONDALE	COLCHESTER	COAL	-	348.0
-734.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1204.0

MAPID: 14590866000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 23 QUARTERS/FOOTAGES: 1' S line, 660' W line of SE SW

QUADRANGLE: WINKLE LONGITUDE: -89.400784 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.157173 DATE COLLECTED: 4 / 2 / 1969

SURFACE ELEVATION (FT.): 483.9 LOGGED (FT.): 308.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES C-12 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
483.9	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
464.9	MODESTO		ROCK	145.0	19.0
319.9	CARBONDALE	DANVILLE	COAL	1.0	164.0
318.9	CARBONDALE		ROCK	41.4	165.0
277.5	CARBONDALE	HERRIN	COAL	7.8	206.4
269.7	CARBONDALE		ROCK	89.8	214.2
179.9	CARBONDALE	HOUCHIN CREEK	COAL	1.7	304.0
178.2	CARBONDALE		ROCK	2.3	305.7

MAPID: 1459087000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 23 QUARTERS/FOOTAGES: 711' N line, 650' W line of NW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.405451 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.162729 DATE COLLECTED: 6 / 4 / 1981
 SURFACE ELEVATION (FT.): 464.8 LOGGED (FT.): 218.0 LOG TYPE: Drillers Log
 SOURCE: AMAX C59GG WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
464.8	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
446.8	MODESTO		ROCK	125.0	18.0
321.8	CARBONDALE	DANVILLE	COAL	2.5	143.0
319.3	CARBONDALE		ROCK	43.5	145.5
275.8	CARBONDALE	HERRIN	COAL	7.0	189.0
268.8	CARBONDALE		ROCK	22.0	196.0

MAPID: 14590871000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 23 QUARTERS/FOOTAGES: 40' N line, 44' W line of NW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.407484 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.164545 DATE COLLECTED: 6 / 17 / 1981
 SURFACE ELEVATION (FT.): 449.5 LOGGED (FT.): 204.0 LOG TYPE: Drillers Log
 SOURCE: AMAX C84DE-1 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.5	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
425.5			ROCK	159.5	24.0
266.0	CARBONDALE	HERRIN	COAL	8.5	183.5
257.5	CARBONDALE		ROCK	12.0	192.0

MAPID: 14590873000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 23 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW
 QUADRANGLE: WINKLE LONGITUDE: -89.407641 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.16484 DATE COLLECTED: 11 / 4 / 1957
 SURFACE ELEVATION (FT.): 442.3 LOGGED (FT.): 185.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES C109 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.3	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
428.3	MODESTO		ROCK	117.0	14.0
311.3	CARBONDALE	DANVILLE	COAL	1.0	131.0
310.3	CARBONDALE		ROCK	44.5	132.0
265.8	CARBONDALE	HERRIN	COAL	7.0	176.5
258.8	CARBONDALE		ROCK	1.5	183.5

MAPID: 14590874000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 23 QUARTERS/FOOTAGES: 11' S line, 28' W line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.3984 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.164465 DATE COLLECTED: 6 / 15 / 1976
 SURFACE ELEVATION (FT.): 429.2 LOGGED (FT.): 175.0 LOG TYPE: Drillers Log
 SOURCE: AMAX C113 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
429.2	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
389.2			ROCK	109.0	40.0
280.2	CARBONDALE	HERRIN	COAL	7.0	149.0
273.2	CARBONDALE		ROCK	19.0	156.0

MAPID: 14590875000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 23 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE

QUADRANGLE: WINKLE LONGITUDE: -89.389351 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.164037 DATE COLLECTED: 11 / 15 / 1957

SURFACE ELEVATION (FT.): 454.4 LOGGED (FT.): 188.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE C117 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
454.4	PLEISTOCENE		UNCONSOLIDATED	78.0	0.0
376.4	MODESTO		ROCK	30.5	78.0
345.9	MODESTO	DEGRAFF	COAL	1.0	108.5
344.9			ROCK	67.8	109.5
277.1	CARBONDALE	HERRIN	COAL	6.7	177.3
270.4	CARBONDALE		ROCK	4.0	184.0

MAPID: 14590877000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 23 QUARTERS/FOOTAGES: 150' N line, 424' E line of SE NE

QUADRANGLE: WINKLE LONGITUDE: -89.390881 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.167404 DATE COLLECTED: 7 / 5 / 1981

SURFACE ELEVATION (FT.): 461.8 LOGGED (FT.): 215.0 LOG TYPE: Drillers Log

SOURCE: AMAX C141EB WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
461.8	PLEISTOCENE		UNCONSOLIDATED	105.0	0.0
356.8			ROCK	91.1	105.0
265.7	CARBONDALE	HERRIN	COAL	8.2	196.1
257.5	CARBONDALE		ROCK	10.7	204.3

MAPID: 14590879000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 23 QUARTERS/FOOTAGES: 1' N line, 300' E line

QUADRANGLE: WINKLE LONGITUDE: -89.390248 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.171373 DATE COLLECTED: 6 / 28 / 1957

SURFACE ELEVATION (FT.): 457.7 LOGGED (FT.): 205.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES C216 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
457.7	PLEISTOCENE		UNCONSOLIDATED	100.0	0.0	
357.7	MODESTO		ROCK	36.0	100.0	
321.7	MODESTO	DEGRAFF	COAL	2.5	136.0	
319.2	MODESTO		ROCK	13.8	138.5	
305.4	CARBONDALE	DANVILLE	COAL	2.7	152.3	
302.7	CARBONDALE		ROCK	41.8	155.0	
260.9	CARBONDALE	HERRIN	COAL	6.8	196.8	
254.1	CARBONDALE		ROCK	1.4	203.6	

MAPID: 14502261000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 24 QUARTERS/FOOTAGES: 2310' S line, 2310' W line

QUADRANGLE: WINKLE LONGITUDE: -89.381296 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.162839 DATE COLLECTED: 9 / 24 / 1957

SURFACE ELEVATION (FT.): 0.0 LOGGED (FT.): 180.7 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 5 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-119.5	MODESTO	PIASA	NODULAR LIMESTONE	3.8	119.5	
-123.3	MODESTO		CLAYSTONE & SHALE	4.3	123.3	
-127.5	CARBONDALE	DANVILLE	COAL	0.9	127.5	
-128.4	CARBONDALE		CLAYSTONE	7.2	128.4	
-135.6	CARBONDALE	BANKSTON FORK	NODULAR LIMESTONE	1.5	135.6	UPPER BENCH
-137.1	CARBONDALE	BANKSTON FORK	CLAYSTONE	3.3	137.1	SHALE PARTING
-140.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	140.3	LOWER BENCH
-145.0	CARBONDALE	LAWSON	DARK GRAY SHALE	6.3	145.0	
-151.3	CARBONDALE	CONANT	LIMESTONE W/ SHALE	3.4	151.3	
-154.7	CARBONDALE	JAMESTOWN	BONE COAL	0.2	154.7	
-154.9	CARBONDALE		SHALE & SILTSTONE	10.8	154.9	
-165.6	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	4.4	165.6	
-170.0	CARBONDALE	ANNA	BLACK SHALE	2.8	170.0	
-172.8	CARBONDALE	HERRIN	COAL	7.9	172.8	

MAPID: 14528772000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 24 QUARTERS/FOOTAGES: 100' N line, 15' W line of NW NW SE

QUADRANGLE: WINKLE LONGITUDE: -89.379903 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.163476 DATE COLLECTED: 9 / 19 / 1975

SURFACE ELEVATION (FT.): 483.1 LOGGED (FT.): 201.6 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E513 WELL TYPE: Coal Test

COMMENT: PERMIT 239; DEWMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
483.1	PLEISTOCENE		SILT	10.0	0.0	
473.1	PLEISTOCENE		SAND	20.0	10.0	
453.1	MODESTO		SHALE	107.0	30.0	
346.1	MODESTO	PIASA	LIMESTONE	11.0	137.0	
335.1			SHALE	6.0	148.0	
329.1	CARBONDALE	BANKSTON FORK	LIMESTONE	12.0	154.0	
317.1	CARBONDALE		SHALE	4.0	166.0	
313.1	CARBONDALE	CONANT	LIMESTONE	2.0	170.0	
311.1	CARBONDALE		SHALE	12.0	172.0	
299.1	CARBONDALE	ANNA	BLACK SHALE	1.1	184.0	
298.0	CARBONDALE	HERRIN	COAL	6.8	185.1	
291.2	CARBONDALE		UNDERCLAY	2.1	191.9	
289.1	CARBONDALE		GRAY SHALE	2.2	194.0	
286.9	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.8	196.2	
284.1	CARBONDALE		SHALE	2.6	199.0	GREEN-GRAY

MAPID: 14590867000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 24 QUARTERS/FOOTAGES: 155' S line, 10' W line of SW SW

QUADRANGLE: WINKLE LONGITUDE: -89.389452 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.15718 DATE COLLECTED: 6 / 10 / 1976

SURFACE ELEVATION (FT.): 427.0 LOGGED (FT.): 156.0 LOG TYPE: Drillers Log

SOURCE: AMAX C17J WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
427.0	PLEISTOCENE		UNCONSOLIDATED	54.0	0.0	
373.0			ROCK	72.0	54.0	
301.0	CARBONDALE	HERRIN	COAL	4.0	126.0	
297.0	CARBONDALE		ROCK	26.0	130.0	

MAPID: 14590939000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 24 QUARTERS/FOOTAGES: 41' N line, 289' E line of SE SE
 QUADRANGLE: WINKLE LONGITUDE: -89.481304 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.161737 DATE COLLECTED: 9 / 20 / 1989
 SURFACE ELEVATION (FT.): 526.6 LOGGED (FT.): 275.0 LOG TYPE: Drillers Log
 SOURCE: AMAX A49FE WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
526.6	PLEISTOCENE		UNCONSOLIDATED	31.0	0.0	
495.6	MODESTO		ROCK	171.1	31.0	
324.5	CARBONDALE	DANVILLE	COAL	0.6	202.1	
323.9	CARBONDALE		ROCK	37.1	202.7	
286.8	CARBONDALE	HERRIN	COAL	7.8	239.8	
279.0	CARBONDALE		ROCK	27.4	247.6	

MAPID: 14502259000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 25 QUARTERS/FOOTAGES: 1820' S line, 2160' W line
 QUADRANGLE: WINKLE LONGITUDE: -89.381764 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.146739 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 425.0 LOGGED (FT.): 157.4 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL CO 6 WELL TYPE: Coal Test
 COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
335.4	MODESTO	PIASA	LIMESTONE	12.5	89.6	
322.9	MODESTO		SHALE	1.3	102.1	
321.6	CARBONDALE	DANVILLE	COAL	2.0	103.4	
319.6	CARBONDALE		CLAYSTONE	1.0	105.4	
318.6	CARBONDALE	GALUM	LIMESTONE	0.5	106.4	
318.1	CARBONDALE		CLAYSTONE & SHALE	4.2	106.9	
313.9	CARBONDALE	BANKSTON FORK	LIMESTONE	1.4	111.1	UPPER BENCH
312.5	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	6.3	112.5	SHALE PARTING
306.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	118.8	LOWER BENCH
301.4	CARBONDALE	LAWSON	LIMESTONE	3.5	123.6	
297.9	CARBONDALE	LAWSON	LIMESTONE	0.5	127.1	
297.4	CARBONDALE	LAWSON	DARK GRAY SHALE	2.7	127.6	
294.7	CARBONDALE	CONANT	LIMESTONE W/ SHALE	3.3	130.3	
291.4	CARBONDALE	JAMESTOWN	BONE COAL	0.2	133.6	
291.2	CARBONDALE		SILTY SHALE	7.8	133.8	
283.4	CARBONDALE	BRERETON	LIMESTONE	5.8	141.6	
277.6	CARBONDALE	ANNA	BLACK SHALE	2.6	147.4	
275.0	CARBONDALE	HERRIN	COAL	7.4	150.0	

MAPID: 14502314000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 26 QUARTERS/FOOTAGES: 370' N line, 64' W line

QUADRANGLE: WINKLE LONGITUDE: -89.407428 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.156395 DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 197.5 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES YF584C WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
355.5	MODESTO	PIASA	LIMESTONE	11.5	139.5
344.0	MODESTO		GRAY SHALE	1.3	151.0
342.7	CARBONDALE	DANVILLE	COAL	1.0	152.3
341.7	CARBONDALE		DARK GRAY SHALE	1.7	153.3
340.0	CARBONDALE	BANKSTON FORK	LIMESTONE	10.5	155.0
329.5	CARBONDALE	LAWSON	DARK GRAY SHALE	2.0	165.5
327.5	CARBONDALE	LAWSON	SANDSTONE	4.0	167.5
323.5	CARBONDALE	CONANT	LIMESTONE	5.0	171.5
318.5	CARBONDALE		BLACK SHALE	3.3	176.5
315.2	CARBONDALE	BRERETON	LIMESTONE	2.0	179.8
313.2	CARBONDALE	ANNA	BLACK SHALE	8.2	181.8
305.0	CARBONDALE	HERRIN	COAL	7.5	190.0

MAPID: 14590992000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 26 QUARTERS/FOOTAGES: 33' N line, 47' W line of SE SW

QUADRANGLE: WINKLE LONGITUDE: -89.403118 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.145879 DATE COLLECTED: 6 / 2 / 1981

SURFACE ELEVATION (FT.): 491.4 LOGGED (FT.): 258.0 LOG TYPE: Drillers Log

SOURCE: AMAX F436DE WELL TYPE: Coal Test

COMMENT: DENMARK DEEP AMAX-DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
491.4	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
469.4	MODESTO		ROCK	158.3	22.0
311.1	CARBONDALE	DANVILLE	COAL	1.0	180.3
310.1	CARBONDALE		ROCK	45.2	181.3
264.9	CARBONDALE	HERRIN	COAL	7.1	226.5
257.8	CARBONDALE		ROCK	24.4	233.6

MAPID: 14590993000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 26 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW SE SW

QUADRANGLE: WINKLE LONGITUDE: -89.403278 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.14597 DATE COLLECTED: 5 / 7 / 1958

SURFACE ELEVATION (FT.): 492.1 LOGGED (FT.): 237.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE F461 WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
492.1	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
466.1	MODESTO		ROCK	154.0	26.0
312.1	CARBONDALE	DANVILLE	COAL	2.3	180.0
309.8	CARBONDALE		ROCK	44.9	182.3
264.9	CARBONDALE	HERRIN	COAL	7.3	227.2
257.6	CARBONDALE		ROCK	2.5	234.5

MAPID: 14590996000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 26 QUARTERS/FOOTAGES: 2' N line, 90' E line of NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.398914 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.149602 DATE COLLECTED: 6 / 7 / 1976

SURFACE ELEVATION (FT.): 482.5 LOGGED (FT.): 271.0 LOG TYPE: Drillers Log

SOURCE: AMAX F512PB WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.5	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0
465.5			ROCK	56.0	17.0
409.5			COAL	1.0	73.0
408.5			ROCK	168.0	74.0
240.5	CARBONDALE	HERRIN	COAL	8.0	242.0
232.5	CARBONDALE		ROCK	21.0	250.0

MAPID: 14590997000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 26 QUARTERS/FOOTAGES: 40' N line, 35' W line of NW NW
 QUADRANGLE: WINKLE LONGITUDE: -89.40757 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.15737 DATE COLLECTED: 6 / 9 / 1981
 SURFACE ELEVATION (FT.): 486.4 LOGGED (FT.): 203.0 LOG TYPE: Drillers Log
 SOURCE: AMAX F584DE WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
486.4	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
472.4	MODESTO		ROCK	131.0	14.0
341.4	CARBONDALE	DANVILLE	COAL	0.5	145.0
340.9	CARBONDALE		ROCK	39.8	145.5
301.1	CARBONDALE	HERRIN	COAL	7.3	185.3
293.8	CARBONDALE		ROCK	10.4	192.6

MAPID: 14590998000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 26 QUARTERS/FOOTAGES: 370' N line, 64' W line of NW
 QUADRANGLE: WINKLE LONGITUDE: -89.407428 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.156395 DATE COLLECTED: 7 / 23 / 1957
 SURFACE ELEVATION (FT.): 497.9 LOGGED (FT.): 297.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE F584JD WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
497.9	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
477.9	MODESTO		ROCK	131.8	20.0
346.1	CARBONDALE	DANVILLE	COAL	1.0	151.8
345.1	CARBONDALE		ROCK	36.7	152.8
308.4	CARBONDALE	HERRIN	COAL	7.5	189.5
300.9	CARBONDALE		ROCK	85.3	197.0
215.6	CARBONDALE	HOUCHIN CREEK	COAL	4.5	282.3
211.1	CARBONDALE		ROCK	10.2	286.8

MAPID: 14502315000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 27 QUARTERS/FOOTAGES: 2640' N line, 0' E line

QUADRANGLE: WINKLE LONGITUDE: -89.407831 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.150137 DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.0 LOGGED (FT.): 208.7 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES YF509 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
358.3	MODESTO	PIASA	LIMESTONE	9.8	149.7	
348.6	MODESTO		GRAY SHALE	2.3	159.4	
346.2	CARBONDALE	DANVILLE	COAL	1.3	161.8	
344.9	CARBONDALE		GRAY SHALE	3.8	163.1	
341.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	166.9	UPPER BENCH
339.1	CARBONDALE	BANKSTON FORK	SANDSTONE	4.5	168.9	SHALE PARTING
334.6	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	173.4	LOWER BENCH
330.7	CARBONDALE	LAWSON	SANDSTONE	4.2	177.3	
326.6	CARBONDALE	LAWSON	BLACK SHALE	3.0	181.4	
323.6	CARBONDALE	CONANT	LIMESTONE	3.0	184.4	
320.6	CARBONDALE		BLACK SHALE	4.5	187.4	
316.1	CARBONDALE	BRERETON	LIMESTONE	5.8	191.9	
310.2	CARBONDALE	ANNA	BLACK SHALE	4.3	197.8	
306.0	CARBONDALE	HERRIN	COAL	6.7	202.0	

MAPID: 14590994000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 27 QUARTERS/FOOTAGES: 32' N line, 35' E line of NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.416663 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.149898 DATE COLLECTED: 6 / 2 / 1976

SURFACE ELEVATION (FT.): 493.4 LOGGED (FT.): 192.0 LOG TYPE: Drillers Log

SOURCE: AMAX F505 WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
493.4	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
478.4	MODESTO		ROCK	113.0	15.0	
365.4	CARBONDALE	DANVILLE	COAL	2.0	128.0	
363.4	CARBONDALE		ROCK	38.0	130.0	
325.4	CARBONDALE	HERRIN	COAL	7.0	168.0	
318.4	CARBONDALE		ROCK	17.0	175.0	

MAPID: 14590995000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 27 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE SE
 QUADRANGLE: WINKLE LONGITUDE: -89.407842 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.149866 DATE COLLECTED: 10 / 30 / 1957
 SURFACE ELEVATION (FT.): 511.2 LOGGED (FT.): 210.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE F509 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
511.2	PLEISTOCENE		UNCONSOLIDATED	42.0	0.0
469.2	MODESTO		ROCK	121.4	42.0
347.8	CARBONDALE	DANVILLE	COAL	1.4	163.4
346.4	CARBONDALE		ROCK	36.8	164.8
309.6	CARBONDALE	HERRIN	COAL	6.7	201.6
302.9	CARBONDALE		ROCK	1.7	208.3

MAPID: 14590999000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 27 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.416364 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.157451 DATE COLLECTED: 11 / 4 / 1957
 SURFACE ELEVATION (FT.): 486.2 LOGGED (FT.): 178.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE F605 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
486.2	PLEISTOCENE		UNCONSOLIDATED	50.0	0.0
436.2	MODESTO		ROCK	63.5	50.0
372.7	MODESTO	DEGRAFF	COAL	1.0	113.5
371.7	MODESTO		ROCK	16.5	114.5
355.2	CARBONDALE	DANVILLE	COAL	1.0	131.0
354.2	CARBONDALE		ROCK	36.3	132.0
317.9	CARBONDALE	HERRIN	COAL	7.2	168.3
310.7	CARBONDALE		ROCK	2.5	175.5

MAPID: 14502147000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 28 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW NE

QUADRANGLE: WINKLE LONGITUDE: -89.433259 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.153031 DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 2756.0 LOG TYPE: Electric Log

SOURCE: MILLER, GENE, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
295.0	CARBONDALE	SPRINGFIELD	COAL	-	200.0	
170.0	CARBONDALE	COLCHESTER	COAL	-	325.0	
-574.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1069.0	
-2241.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2736.0	TOP OF NEW ALBANY
-2241.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2736.0	
-2261.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2756.0	BASE OF NEW ALBANY

MAPID: 14502318000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 28 QUARTERS/FOOTAGES: 2640' N line, 2640' E line

QUADRANGLE: WINKLE LONGITUDE: -89.434464 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.150379 DATE COLLECTED:

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 192.2 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES YF521 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
364.0	MODESTO	PIASA	LIMESTONE	9.5	136.0	
354.5	MODESTO		GRAY SHALE	1.2	145.5	
353.3	CARBONDALE	DANVILLE	COAL	1.5	146.7	
351.8	CARBONDALE		SHALE & SANDSTONE	8.8	148.2	
343.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	157.0	
338.8	CARBONDALE	LAWSON	SILTY SHALE	5.3	161.2	
333.5	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.8	166.5	
327.7	CARBONDALE		BLACK SHALE	3.5	172.3	
324.2	CARBONDALE	BRERETON	LIMESTONE	6.3	175.8	
318.0	CARBONDALE	ANNA	BLACK SHALE	3.0	182.0	
315.0	CARBONDALE	HERRIN	COAL	7.2	185.0	

MAPID: 14590955000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW

QUADRANGLE: WINKLE LONGITUDE: -89.434356 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.157664 DATE COLLECTED: 10 / 25 / 1957

SURFACE ELEVATION (FT.): 489.7 LOGGED (FT.): 208.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES B21 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
489.7	PLEISTOCENE		UNCONSOLIDATED	60.0	0.0
429.7	MODESTO		ROCK	72.0	60.0
357.7	MODESTO	ROCK BRANCH	COAL	1.0	132.0
356.7	MODESTO		ROCK	22.0	133.0
334.7	CARBONDALE	DANVILLE	COAL	1.0	155.0
333.7	CARBONDALE		ROCK	39.5	156.0
294.2	CARBONDALE	HERRIN	COAL	6.8	195.5
287.4	CARBONDALE		ROCK	5.7	202.3

MAPID: 14591006000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 28 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE SW

QUADRANGLE: WINKLE LONGITUDE: -89.434548 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.142859 DATE COLLECTED: 10 / 30 / 1957

SURFACE ELEVATION (FT.): 521.6 LOGGED (FT.): 228.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E421 WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX#75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
521.6	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0
515.6	MODESTO		ROCK	165.0	6.0
350.6	CARBONDALE	DANVILLE	COAL	1.0	171.0
349.6	CARBONDALE		ROCK	40.0	172.0
309.6	CARBONDALE	HERRIN	COAL	6.8	212.0
302.8	CARBONDALE		ROCK	9.2	218.8

MAPID: 14591008000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 28 QUARTERS/FOOTAGES: 32' S line, 660' W line of SE SE

QUADRANGLE: WINKLE LONGITUDE: -89.427791 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.14286 DATE COLLECTED: 10 / 5 / 1978

SURFACE ELEVATION (FT.): 528.3 LOGGED (FT.): 226.0 LOG TYPE: Drillers Log

SOURCE: AMAX E424ZZ WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX#75 GR CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
528.3	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0	
506.3			ROCK	181.7	22.0	
324.6	CARBONDALE	HERRIN	COAL	7.6	203.7	
317.0	CARBONDALE		ROCK	14.7	211.3	

MAPID: 14591021000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 28 QUARTERS/FOOTAGES: 680' S line, 310' E line of NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.434997 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.148499 DATE COLLECTED: 8 / 18 / 1978

SURFACE ELEVATION (FT.): 507.3 LOGGED (FT.): 225.0 LOG TYPE: Drillers Log

SOURCE: AMAX E495BN WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
507.3	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0	
479.3	MODESTO		ROCK	128.2	28.0	
351.1	CARBONDALE	DANVILLE	COAL	1.6	156.2	
349.5	CARBONDALE		ROCK	39.7	157.8	
309.8	CARBONDALE	HERRIN	COAL	7.1	197.5	
302.7	CARBONDALE		ROCK	20.4	204.6	

MAPID: 14591028000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 28 QUARTERS/FOOTAGES:

QUADRANGLE: WINKLE LONGITUDE: -89.434447

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.15026

DATE COLLECTED: 10 / 25 / 1957

SURFACE ELEVATION (FT.): 502.9 LOGGED (FT.): 194.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E521

WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75;CENTER OF SECT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
502.9	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
486.9	MODESTO		ROCK	18.0	16.0
468.9	MODESTO	CHAPEL	COAL	0.5	34.0
468.4	PLEISTOCENE		ROCK	112.2	34.5
356.2	CARBONDALE	DANVILLE	COAL	1.5	146.7
354.7	CARBONDALE		ROCK	36.3	148.2
318.4	CARBONDALE	HERRIN	COAL	7.2	184.5
311.2	CARBONDALE		ROCK	2.3	191.7

MAPID: 14591029000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE SE

QUADRANGLE: WINKLE LONGITUDE: -89.425242

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.150097

DATE COLLECTED: 11 / 7 / 1957

SURFACE ELEVATION (FT.): 499.2 LOGGED (FT.): 178.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E525

WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
499.2	PLEISTOCENE		UNCONSOLIDATED	56.0	0.0
443.2			ROCK	113.0	56.0
330.2	CARBONDALE	HERRIN	COAL	7.3	169.0
322.9	CARBONDALE		ROCK	1.7	176.3

MAPID: 14502830000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 2310' S line, 1650' E line

QUADRANGLE: WINKLE LONGITUDE: -89.449459 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.149602 DATE COLLECTED:

SURFACE ELEVATION (FT.): 499.0 LOGGED (FT.): 2728.0 LOG TYPE: Electric Log

SOURCE: SANTORO OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
290.0	CARBONDALE	SPRINGFIELD	COAL	-	209.0	
173.0	CARBONDALE	COLCHESTER	COAL	-	326.0	
-554.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1053.0	
-2214.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2713.0	TOP OF NEW ALBANY
-2214.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2713.0	
-2229.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2728.0	BASE OF NEW ALBANY

MAPID: 14502830000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 2310' S line, 1650' E line

QUADRANGLE: WINKLE LONGITUDE: -89.449459 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.149602 DATE COLLECTED:

SURFACE ELEVATION (FT.): 499.0 LOGGED (FT.): 201.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
353.0	MODESTO	PIASA	LIMESTONE	9.0	146.0	
344.0	CARBONDALE		SHALE	9.0	155.0	
335.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	164.0	
330.0	CARBONDALE	LAWSON	SHALE	6.0	169.0	
324.0	CARBONDALE	CONANT	LIMESTONE & SHALE	5.0	175.0	
319.0	CARBONDALE		BLACK SHALE	6.0	180.0	
313.0	CARBONDALE	BRERETON	LIMESTONE	4.0	186.0	
309.0	CARBONDALE	ANNA	BLACK SHALE	4.0	190.0	
305.0	CARBONDALE	HERRIN	COAL	7.0	194.0	

MAPID: 14528773000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.450528 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.156079 DATE COLLECTED: 9 / 6 / 1989

SURFACE ELEVATION (FT.): 512.3 LOGGED (FT.): 230.9 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E563CN WELL TYPE: Coal Test

COMMENT: PERMIT 239; PRAIRIE CREEK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
512.3	PLEISTOCENE		CLAY	7.0	0.0	BROWN
505.3	PLEISTOCENE		CLAY	4.0	7.0	GRAY
501.3	PLEISTOCENE		CLAY	19.0	11.0	BROWN
482.3	MODESTO		SANDY SHALE	25.0	30.0	
457.3	MODESTO		GREEN SHALE	10.0	55.0	
447.3	MODESTO		SANDY SHALE	55.0	65.0	
392.3	MODESTO		GRAY SHALE	30.0	120.0	
362.3	MODESTO		CALCAREOUS SHALE	21.0	150.0	
341.3	MODESTO	PIASA	LIMESTONE	9.0	171.0	
332.3	MODESTO		BLACK SHALE	1.0	180.0	
331.3	CARBONDALE	DANVILLE	COAL	0.7	181.0	
330.6	CARBONDALE		UNDERCLAY	1.0	181.7	
329.6	CARBONDALE		CALCAREOUS SHALE	4.3	182.7	
325.3	CARBONDALE	BANKSTON FORK	LIMESTONE	3.9	187.0	
321.4	CARBONDALE		CLAYSTONE	0.3	190.9	GREEN-GRAY
321.1	CARBONDALE		DARK GRAY SHALE	4.6	191.2	
316.5	CARBONDALE		LIMESTONE	0.6	195.8	GRAY
315.9	CARBONDALE		DARK GRAY SHALE	0.7	196.4	
315.2	CARBONDALE		LIMESTONE	1.0	197.1	GRAY
314.2	CARBONDALE		GRAY SHALE	0.5	198.1	LS BONE COAL CALC
313.7	CARBONDALE		LIMESTONE	1.0	198.6	GRAY-TAN
312.7	CARBONDALE		DARK GRAY SHALE	3.0	199.6	WITH LIMESTONE
309.7	CARBONDALE	CONANT	LIMESTONE	1.6	202.6	DARK GRAY
308.1	CARBONDALE		DARK GRAY SHALE	12.0	204.2	
296.1	CARBONDALE	BRERETON	LIMESTONE	4.6	216.2	GRAY
291.5	CARBONDALE	ANNA	BLACK SHALE	0.7	220.8	
290.8	CARBONDALE	HERRIN	COAL	7.0	221.5	
283.8	CARBONDALE		UNDERCLAY	2.4	228.5	

MAPID: 14591005000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 75' S line, 100' E line of SE SE SE

QUADRANGLE: WINKLE LONGITUDE: -89.444073 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.143209 DATE COLLECTED: 9 / 24 / 1975

SURFACE ELEVATION (FT.): 525.8 LOGGED (FT.): 436.4 LOG TYPE: Drillers Log

SOURCE: AMAX E417 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX#75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
525.8	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
495.8	MODESTO		ROCK	150.0	30.0
345.8	CARBONDALE	DANVILLE	COAL	0.2	180.0
345.6	CARBONDALE		ROCK	35.6	180.2
310.0	CARBONDALE	HERRIN	COAL	6.6	215.8
303.4	CARBONDALE		ROCK	90.6	222.4
212.8	CARBONDALE	HOUCHIN CREEK	COAL	2.0	313.0
210.8	CARBONDALE		ROCK	49.7	315.0
161.1	CARBONDALE	COLCHESTER	COAL	1.2	364.7
159.9	CARBONDALE		ROCK	37.5	365.9
122.4	CARBONDALE	DAVIS	COAL	4.4	403.4
117.9	TRADEWATER		ROCK	11.4	407.9
106.6	TRADEWATER		COAL	2.0	419.2
104.6	TRADEWATER		ROCK	7.9	421.2
96.7	TRADEWATER		COAL	1.4	429.1
95.3	TRADEWATER		ROCK	3.7	430.5
91.6	TRADEWATER		COAL	2.1	434.2
89.5	TRADEWATER		ROCK	0.1	436.3

MAPID: 14591009000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 772' S line, 1131' W line of SW SW

QUADRANGLE: WINKLE LONGITUDE: -89.458429 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.145479 DATE COLLECTED: 9 / 7 / 1989

SURFACE ELEVATION (FT.): 524.8 LOGGED (FT.): 260.7 LOG TYPE: Drillers Log

SOURCE: AMAX E435BG WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEK BOX#75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
524.8	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
499.8	MODESTO		ROCK	160.5	25.0
339.3	CARBONDALE	DANVILLE	COAL	0.5	185.5
338.8	CARBONDALE		ROCK	41.4	186.0
297.4	CARBONDALE	HERRIN	COAL	7.2	227.4
290.2	CARBONDALE		ROCK	26.1	234.6

MAPID: 14591011000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 41' N line, 908' W line of SW SE
 QUADRANGLE: WINKLE LONGITUDE: -89.44972 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.146668 DATE COLLECTED: 8 / 22 / 1989
 SURFACE ELEVATION (FT.): 509.2 LOGGED (FT.): 238.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E439EF WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX#75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
509.2	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
482.2	MODESTO		ROCK	141.0	27.0
341.2	CARBONDALE	DANVILLE	COAL	1.5	168.0
339.7	CARBONDALE		ROCK	35.8	169.5
303.9	CARBONDALE	HERRIN	COAL	8.4	205.3
295.5	CARBONDALE		ROCK	24.3	213.7

MAPID: 14591018000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 125' N line, 340' E line of NW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.459013 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.150487 DATE COLLECTED: 5 / 9 / 1991
 SURFACE ELEVATION (FT.): 502.6 LOGGED (FT.): 246.3 LOG TYPE: Drillers Log
 SOURCE: AMAX E485FJ WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
502.6	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
472.6	MODESTO		ROCK	142.0	30.0
330.6	CARBONDALE	DANVILLE	COAL	1.0	172.0
329.6	CARBONDALE		ROCK	39.5	173.0
290.1	CARBONDALE	HERRIN	COAL	7.6	212.5
282.5	CARBONDALE		ROCK	26.2	220.1

MAPID: 14591019000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES:

QUADRANGLE: WINKLE LONGITUDE: -89.452926

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.15057

DATE COLLECTED: 6 / 14 / 1991

SURFACE ELEVATION (FT.): LOGGED (FT.): 241.8

LOG TYPE: Drillers Log

SOURCE: AMAX E488KA

WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEK BOX75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	51.0	0.0	
-			ROCK	132.0	51.0	
-	CARBONDALE	HERRIN	COAL	7.7	183.0	
-	CARBONDALE		ROCK	51.1	190.7	

MAPID: 14591020000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 70' N line, 60' E line of NE SE

QUADRANGLE: WINKLE LONGITUDE: -89.443886

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.150276

DATE COLLECTED: 5 / 11 / 1981

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 238.0

LOG TYPE: Drillers Log

SOURCE: AMAX E491GI

WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 GR EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
493.0	PLEISTOCENE		UNCONSOLIDATED	37.0	0.0	
456.0			ROCK	13.0	37.0	
443.0			COAL	1.0	50.0	
442.0			ROCK	158.0	51.0	
284.0	CARBONDALE	HERRIN	COAL	8.0	209.0	
276.0	CARBONDALE		ROCK	21.0	217.0	

MAPID: 14591025000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 420' S line, 495' W line of SE NE

QUADRANGLE: WINKLE LONGITUDE: -89.446566 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.151669 DATE COLLECTED: 5 / 2 / 1991

SURFACE ELEVATION (FT.): 496.6 LOGGED (FT.): 237.2 LOG TYPE: Drillers Log

SOURCE: AMAX E515IC WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEK BOX75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
496.6	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
476.6	MODESTO		ROCK	146.0	20.0
330.6	CARBONDALE	DANVILLE	COAL	2.0	166.0
328.6	CARBONDALE		ROCK	39.7	168.0
288.9	CARBONDALE	HERRIN	COAL	7.3	207.7
281.6	CARBONDALE		ROCK	22.2	215.0

MAPID: 14591027000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 100' N line, 15' W line of NW NW SE

QUADRANGLE: WINKLE LONGITUDE: -89.452881 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.150294 DATE COLLECTED: 9 / 19 / 1975

SURFACE ELEVATION (FT.): 483.1 LOGGED (FT.): 201.7 LOG TYPE: Drillers Log

SOURCE: AMAX E513 WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
483.1	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
453.1			ROCK	155.1	30.0
298.0	CARBONDALE	HERRIN	COAL	6.8	185.1
291.2	CARBONDALE		ROCK	9.8	191.9

MAPID: 14591031000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 619' N line, 908' W line of SW NW
 QUADRANGLE: WINKLE LONGITUDE: -89.459225 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.152475 DATE COLLECTED: 8 / 25 / 1989
 SURFACE ELEVATION (FT.): 516.8 LOGGED (FT.): 252.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E535NL WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
516.8	PLEISTOCENE		UNCONSOLIDATED	70.0	0.0
446.8	MODESTO		ROCK	110.8	70.0
336.0	CARBONDALE	DANVILLE	COAL	0.6	180.8
335.4	CARBONDALE		ROCK	35.9	181.4
299.5	CARBONDALE	HERRIN	COAL	7.4	217.3
292.1	CARBONDALE		ROCK	27.3	224.7

MAPID: 14591032000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 304' S line, 41' W line of NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.452763 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.155095 DATE COLLECTED: 9 / 6 / 1989
 SURFACE ELEVATION (FT.): 512.3 LOGGED (FT.): 255.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E563CN1 WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
512.3	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
482.3	MODESTO		ROCK	151.0	30.0
331.3	CARBONDALE	DANVILLE	COAL	0.7	181.0
330.6	CARBONDALE		ROCK	39.8	181.7
290.8	CARBONDALE	HERRIN	COAL	7.0	221.5
283.8	CARBONDALE		ROCK	26.5	228.5

MAPID: 14591033000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 314' S line, 41' W line of NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.452763 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.15512 DATE COLLECTED: 9 / 7 / 1989
 SURFACE ELEVATION (FT.): 512.3 LOGGED (FT.): 217.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E563CN2 WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
512.3	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
482.3	MODESTO		ROCK	151.0	30.0
331.3	CARBONDALE	DANVILLE	COAL	0.7	181.0
330.6	CARBONDALE		ROCK	35.3	181.7

MAPID: 14591034000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 1320' N line, 1320' W line of NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.448316 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.154276 DATE COLLECTED: 5 / 7 / 1981
 SURFACE ELEVATION (FT.): 507.8 LOGGED (FT.): 248.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E565 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
507.8	PLEISTOCENE		UNCONSOLIDATED	84.0	0.0
423.8	MODESTO		ROCK	89.5	84.0
334.3	CARBONDALE	DANVILLE	COAL	1.0	173.5
333.3	CARBONDALE		ROCK	39.5	174.5
293.8	CARBONDALE	HERRIN	COAL	6.5	214.0
287.3	CARBONDALE		ROCK	27.5	220.5

MAPID: 14591035000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 1' S line, 247' E line of NE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.444617 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.154274 DATE COLLECTED: 5 / 3 / 1991
 SURFACE ELEVATION (FT.): 506.4 LOGGED (FT.): 241.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E566BB WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
506.4	PLEISTOCENE		UNCONSOLIDATED	87.0	0.0
419.4			ROCK	123.7	87.0
295.7	CARBONDALE	HERRIN	COAL	7.8	210.7
287.9	CARBONDALE		ROCK	22.5	218.5

MAPID: 14591042000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 330' N line, 1072' W line of NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.449775 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.156996 DATE COLLECTED: 9 / 1 / 1989
 SURFACE ELEVATION (FT.): 512.7 LOGGED (FT.): 261.2 LOG TYPE: Drillers Log
 SOURCE: AMAX E589HB WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
512.7	PLEISTOCENE		UNCONSOLIDATED	55.0	0.0
457.7	MODESTO		ROCK	134.5	55.0
323.2	CARBONDALE	DANVILLE	COAL	0.5	189.5
322.7	CARBONDALE		ROCK	39.7	190.0
283.0	CARBONDALE	HERRIN	COAL	7.3	229.7
275.7	CARBONDALE		ROCK	24.2	237.0

MAPID: 14591043000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 29 QUARTERS/FOOTAGES: 165' N line, 330' W line of NE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.456236 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.157548 DATE COLLECTED: 5 / 15 / 1991
 SURFACE ELEVATION (FT.): 523.5 LOGGED (FT.): 274.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E586F WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
523.5	PLEISTOCENE		UNCONSOLIDATED	69.0	0.0
454.5	MODESTO		ROCK	134.6	69.0
319.9	CARBONDALE	DANVILLE	COAL	0.2	203.6
319.7	CARBONDALE		ROCK	40.8	203.8
278.9	CARBONDALE	HERRIN	COAL	7.2	244.6
271.7	CARBONDALE		ROCK	22.2	251.8

MAPID: 1450224000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 990' N line, 330' W line of NE

QUADRANGLE: WINKLE LONGITUDE: -89.47009 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.155457 DATE COLLECTED:

SURFACE ELEVATION (FT.): 497.0 LOGGED (FT.): 2702.0 LOG TYPE: Electric Log

SOURCE: SKILES OIL CORP WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
267.0	CARBONDALE	SPRINGFIELD	COAL	-	230.0	
156.0	CARBONDALE	COLCHESTER	COAL	-	341.0	
-590.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1087.0	
-2189.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2686.0	TOP OF NEW ALBANY
-2189.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2686.0	
-2205.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2702.0	BASE OF NEW ALBANY

MAPID: 14502321000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 0' S line, 0' W line

QUADRANGLE: WINKLE LONGITUDE: -89.480568 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.143925 DATE COLLECTED:

SURFACE ELEVATION (FT.): 553.0 LOGGED (FT.): 246.8 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES YE401 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
365.0	MODESTO	PIASA	LIMESTONE	10.0	188.0	
355.0	CARBONDALE		GRAY SHALE	5.0	198.0	
350.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	203.0	UPPER BENCH
348.0	CARBONDALE	BANKSTON FORK	SILTY SHALE	5.0	205.0	SHALE PARTING
343.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	210.0	LOWER BENCH
339.0	CARBONDALE	LAWSON	DARK GRAY SHALE	5.0	214.0	
334.0	CARBONDALE	CONANT	LIMESTONE	5.0	219.0	
329.0	CARBONDALE		BLACK SHALE	4.5	224.0	
324.5	CARBONDALE	BRERETON	LIMESTONE	4.0	228.5	
320.5	CARBONDALE	ANNA	BLACK SHALE	2.5	232.5	
318.0	CARBONDALE	ENERGY	GRAY SHALE	5.0	235.0	
313.0	CARBONDALE	HERRIN	COAL	6.8	240.0	

MAPID: 14523409000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 660' N line, 150' E line of NW NW

QUADRANGLE: WINKLE LONGITUDE: -89.475858 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.157029 DATE COLLECTED: 10 / 24 / 1978

SURFACE ELEVATION (FT.): 518.9 LOGGED (FT.): 258.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E577PN WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
518.9	PLEISTOCENE		CLAY	33.0	0.0	
485.9	PLEISTOCENE		UNCONSOLIDATED	2.0	33.0	
483.9	PLEISTOCENE		SILT	40.0	35.0	
443.9	PLEISTOCENE		UNCONSOLIDATED	6.0	75.0	
437.9	MODESTO		GRAY SHALE	81.5	81.0	
356.4	MODESTO		LIMESTONE	0.5	162.5	LIGHT GRAY
355.9	MODESTO		GRAY SHALE	1.0	163.0	
354.9	MODESTO		LIMESTONE	1.0	164.0	LIGHT GRAY
353.9	MODESTO		GRAY SHALE	8.0	165.0	
345.9	MODESTO		CALCAREOUS SHALE	2.0	173.0	
343.9	MODESTO		GRAY SHALE	8.2	175.0	
335.7	MODESTO	PIASA	LIMESTONE	8.3	183.2	LIGHT GRAY
327.4	MODESTO		GRAY SHALE	0.3	191.5	
327.1	CARBONDALE	DANVILLE	SHALY COAL	0.5	191.8	
326.6	CARBONDALE	DANVILLE	GRAY SHALE	0.6	192.3	
326.0	CARBONDALE	DANVILLE	SHALY COAL	1.1	192.9	
324.9	CARBONDALE		UNDERCLAY	2.4	194.0	
322.5	CARBONDALE		CALCAREOUS SHALE	7.0	196.4	
315.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.6	203.4	LIGHT GRAY
311.9	CARBONDALE		GRAY SHALE	4.0	207.0	
307.9	CARBONDALE	CONANT	LIMESTONE	5.0	211.0	DARK GRAY
302.9	CARBONDALE		BLACK SHALE	10.0	216.0	
292.9	CARBONDALE		DARK GRAY SHALE	2.0	226.0	
290.9	CARBONDALE	BRERETON	LIMESTONE	3.8	228.0	DARK GRAY
287.1	CARBONDALE	ANNA	BLACK SHALE	3.6	231.8	
283.5	CARBONDALE	HERRIN	COAL	6.1	235.4	
277.4	CARBONDALE		UNDERCLAY	1.3	241.5	
276.1	CARBONDALE		CALCAREOUS SHALE	15.2	242.8	

MAPID: 14523410000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 100' N line, 318' E line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.462568 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.158389 DATE COLLECTED: 10 / 19 / 1978

SURFACE ELEVATION (FT.): 519.1 LOGGED (FT.): 262.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E583F WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
519.1	PLEISTOCENE		CLAY	25.0	0.0	
494.1	PLEISTOCENE		SANDY CLAY	7.0	25.0	
487.1	MODESTO	TRIVOLI	SANDSTONE	28.0	32.0	BROWN
459.1	MODESTO	TRIVOLI	SANDSTONE	23.0	60.0	GRAY
436.1	MODESTO		GRAY SHALE	104.5	83.0	
331.6	MODESTO	PIASA	LIMESTONE	8.0	187.5	LIGHT GRAY
323.6	MODESTO		GRAY SHALE	3.9	195.5	
319.7	CARBONDALE	DANVILLE	COAL	0.4	199.4	
319.3	CARBONDALE	BANKSTON FORK	LIMESTONE	11.3	199.8	GRAY
308.0	CARBONDALE		BLACK SHALE	4.2	211.1	
303.8	CARBONDALE	CONANT	LIMESTONE	6.2	215.3	DARK GRAY
297.6	CARBONDALE		BLACK SHALE	1.8	221.5	
295.8	CARBONDALE	BRERETON	LIMESTONE	3.2	223.3	DARK GRAY
292.6	CARBONDALE	ANNA	BLACK SHALE	3.7	226.5	
288.9	CARBONDALE	ENERGY	DARK GRAY SHALE	6.3	230.2	
282.6	CARBONDALE	HERRIN	COAL	7.3	236.5	
275.3	CARBONDALE		UNDERCLAY	2.0	243.8	
273.3	CARBONDALE	HIGGINSVILLE	LIMESTONE	10.6	245.8	GRAY
262.7	CARBONDALE		GRAY SHALE	1.2	256.4	
261.5	CARBONDALE		LIMESTONE	1.0	257.6	GRAY
260.5	CARBONDALE		SANDY SHALE	3.4	258.6	

MAPID: 14524025000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 115' N line, 248' W line of NW SW

QUADRANGLE: WINKLE LONGITUDE: -89.479556 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.150984 DATE COLLECTED: 5 / 8 / 1981

SURFACE ELEVATION (FT.): 531.1 LOGGED (FT.): 252.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E476EA-1 WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
531.1	PLEISTOCENE		CLAY	20.5	0.0	BROWN
510.6	PLEISTOCENE		UNCONSOLIDATED	23.5	20.5	
487.1	MODESTO		GRAY SHALE	7.0	44.0	
480.1	MODESTO		LIMESTONE	0.5	51.0	GRAY
479.6	MODESTO		GRAY SHALE	2.0	51.5	
477.6	MODESTO		SANDSTONE	6.5	53.5	GRAY
471.1	MODESTO		GRAY SHALE	95.3	60.0	
375.8	MODESTO		LIMESTONE	0.7	155.3	LIGHT GRAY
375.1	MODESTO		GRAY SHALE	2.6	156.0	
372.5	MODESTO		BLACK SHALE	1.4	158.6	
371.1	MODESTO		GRAY SHALE	6.8	160.0	
364.3	MODESTO		LIMESTONE	2.2	166.8	LIGHT GRAY
362.1	MODESTO		GRAY SHALE	10.8	169.0	
351.3	MODESTO	PIASA	LIMESTONE	8.6	179.8	LIGHT GRAY
342.7			GRAY SHALE	3.3	188.4	
339.4			DARK GRAY SHALE	2.1	191.7	
337.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.8	193.8	LIGHT GRAY
334.5	CARBONDALE	BANKSTON FORK	GRAY SHALE	2.4	196.6	
332.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	199.0	LIGHT GRAY
327.6	CARBONDALE		DARK GRAY SHALE	3.7	203.5	
323.9	CARBONDALE	CONANT	LIMESTONE	2.7	207.2	GRAY
321.2	CARBONDALE	CONANT	LIMESTONE	4.1	209.9	DARK GRAY
317.1	CARBONDALE		DARK GRAY SHALE	9.1	214.0	
308.0	CARBONDALE	BRERETON	LIMESTONE	5.3	223.1	DARK GRAY
302.7	CARBONDALE	ANNA	BLACK SHALE	1.6	228.4	
301.1	CARBONDALE	HERRIN	COAL	6.8	230.0	
294.3	CARBONDALE		UNDERCLAY	5.5	236.8	
288.8	CARBONDALE	HIGGINSVILLE	LIMESTONE	9.7	242.3	LIGHT GRAY

MAPID: 14528774000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 0' S line, 0' W line of SW SW SW

QUADRANGLE: WINKLE LONGITUDE: -89.480568 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.143925 DATE COLLECTED: 8 / 29 / 1957

SURFACE ELEVATION (FT.): 546.7 LOGGED (FT.): 338.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E401 WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
546.7	PLEISTOCENE		CLAY	8.0	0.0
538.7	MODESTO		SANDY SHALE	40.0	8.0
498.7	MODESTO	TRIVOLI	SANDSTONE	30.0	48.0
468.7	MODESTO		SANDY SHALE	80.0	78.0
388.7	MODESTO		SANDY SHALE	10.0	158.0
378.7	MODESTO		SANDY SHALE	6.0	168.0
372.7	MODESTO		LIMESTONE	2.0	174.0
370.7	MODESTO		SANDY SHALE	12.0	176.0
358.7	MODESTO	PIASA	LIMESTONE	10.0	188.0
348.7			BLUE SHALE	5.0	198.0
343.7	CARBONDALE	GALUM	LIMESTONE	2.0	203.0
341.7	CARBONDALE		SANDSTONE	5.0	205.0
336.7	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	210.0
332.7	CARBONDALE		DARK SHALE	5.0	214.0
327.7	CARBONDALE	CONANT	LIMESTONE	5.0	219.0
322.7	CARBONDALE		BLACK SHALE	4.5	224.0
318.2	CARBONDALE	BRERETON	LIMESTONE	4.0	228.5
314.2	CARBONDALE	ANNA	BLACK SHALE	2.5	232.5
311.7	CARBONDALE	ENERGY	BLUE SHALE	5.0	235.0
306.7	CARBONDALE	HERRIN	COAL	6.8	240.0
299.9	CARBONDALE		UNDERCLAY	1.2	246.8
298.7	CARBONDALE		SANDSTONE	4.0	248.0
294.7	CARBONDALE	HIGGINSVILLE	LIMESTONE	10.0	252.0
284.7	CARBONDALE		SANDY SHALE	10.0	262.0
274.7	CARBONDALE		SANDSTONE	22.0	272.0
252.7	CARBONDALE		SANDY SHALE	34.0	294.0
218.7	CARBONDALE	TURNER MINE	BLACK SHALE	5.7	328.0
213.0	CARBONDALE	SPRINGFIELD	COAL	2.8	333.7
210.2	CARBONDALE		UNDERCLAY	1.5	336.5

MAPID: 14528775000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 82' N line, 76' W line of NW NW

QUADRANGLE: WINKLE LONGITUDE: -89.480116 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.158673 DATE COLLECTED: 1 / 10 / 1979

SURFACE ELEVATION (FT.): 532.9 LOGGED (FT.): 283.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E576EA WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
532.9	PLEISTOCENE		SANDY CLAY	27.0	0.0	BROWN
505.9	MODESTO		SANDSTONE	10.0	27.0	BROWN
495.9	MODESTO		GRAY SHALE	5.0	37.0	
490.9	MODESTO	TRIVOLI	SANDSTONE	5.0	42.0	
485.9	MODESTO		SANDY SHALE	24.0	47.0	
461.9	MODESTO		LIMESTONE	5.0	71.0	GRAY
456.9	MODESTO		SANDSTONE	29.0	76.0	GRAY
427.9	MODESTO		SANDY SHALE	14.0	105.0	
413.9	MODESTO		SANDSTONE	21.0	119.0	GRAY
392.9	MODESTO		SANDY SHALE	54.0	140.0	
338.9	MODESTO		LIMESTONE	3.0	194.0	WHITE
335.9	MODESTO		SANDY SHALE	8.0	197.0	
327.9	MODESTO	PIASA	LIMESTONE	7.0	205.0	GRAY
320.9			GRAY SHALE	4.4	212.0	
316.5	CARBONDALE	BANKSTON FORK	LIMESTONE	10.9	216.4	GRAY
305.6	CARBONDALE		DARK GRAY SHALE	3.3	227.3	
302.3	CARBONDALE		LIMESTONE	5.1	230.6	GRAY
297.2	CARBONDALE		DARK GRAY SHALE	2.5	235.7	
294.7	CARBONDALE	CONANT	LIMESTONE	2.3	238.2	GRAY
292.4	CARBONDALE		GRAY SHALE	1.5	240.5	
290.9	CARBONDALE		BLACK SHALE	1.2	242.0	
289.7	CARBONDALE		DARK GRAY SHALE	6.3	243.2	
283.4	CARBONDALE	BRERETON	LIMESTONE	5.9	249.5	DARK GRAY
277.5	CARBONDALE	HERRIN	COAL	7.5	255.4	
270.0	CARBONDALE		UNDERCLAY	3.5	262.9	
266.5	CARBONDALE		GRAY SHALE	4.5	266.4	
262.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.5	270.9	GRAY
257.5	CARBONDALE		GRAY SHALE	7.6	275.4	

MAPID: 14591002000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 412' S line, 701' W line of SW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.477942 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.14512 DATE COLLECTED: 9 / 11 / 1989
 SURFACE ELEVATION (FT.): 544.1 LOGGED (FT.): 280.5 LOG TYPE: Drillers Log
 SOURCE: AMAX E402CH1 WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
544.1	PLEISTOCENE		UNCONSOLIDATED	78.0	0.0
466.1	MODESTO		ROCK	128.0	78.0
338.1	CARBONDALE	DANVILLE	COAL	1.5	206.0
336.6	CARBONDALE		ROCK	40.1	207.5
296.5	CARBONDALE	HERRIN	COAL	7.0	247.6
289.5	CARBONDALE		ROCK	25.9	254.6

MAPID: 14591003000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES:
 QUADRANGLE: WINKLE LONGITUDE: -89.477918 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.1451 DATE COLLECTED: 9 / 12 / 1989
 SURFACE ELEVATION (FT.): 544.1 LOGGED (FT.): 109.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E402CH2 WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX#75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
544.1	PLEISTOCENE		UNCONSOLIDATED	76.0	0.0
468.1			ROCK	33.0	76.0

MAPID: 14591012000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 45' S line, 310' E line of NW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.477026 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.14769 DATE COLLECTED: 4 / 29 / 1981
 SURFACE ELEVATION (FT.): 537.9 LOGGED (FT.): 268.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E452BJ WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX#75 GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
537.9	PLEISTOCENE		UNCONSOLIDATED	76.5	0.0
461.4	MODESTO		ROCK	124.5	76.5
336.9	CARBONDALE	DANVILLE	COAL	2.0	201.0
334.9	CARBONDALE		ROCK	40.0	203.0
294.9	CARBONDALE	HERRIN	COAL	6.7	243.0
288.2	CARBONDALE		ROCK	18.3	249.7

MAPID: 14591013000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 495' S line, 41' W line of NW SE
 QUADRANGLE: WINKLE LONGITUDE: -89.47169 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.148975 DATE COLLECTED: 8 / 29 / 1989
 SURFACE ELEVATION (FT.): 537.5 LOGGED (FT.): 256.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E455DN WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX#75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
537.5	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
507.5	MODESTO		ROCK	151.5	30.0
356.0	CARBONDALE	DANVILLE	COAL	0.8	181.5
355.2	CARBONDALE		ROCK	41.0	182.3
314.2	CARBONDALE	HERRIN	COAL	6.9	223.3
307.3	CARBONDALE		ROCK	25.8	230.2

MAPID: 14591014000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW SE
 QUADRANGLE: WINKLE LONGITUDE: -89.46716 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.147298 DATE COLLECTED: 5 / 10 / 1991
 SURFACE ELEVATION (FT.): 530.3 LOGGED (FT.): 482.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E457 WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GL CORE=

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
530.3	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
506.3	MODESTO		ROCK	159.0	24.0
347.3	CARBONDALE	DANVILLE	COAL	1.5	183.0
345.8	CARBONDALE		ROCK	39.5	184.5
306.3	CARBONDALE	HERRIN	COAL	7.1	224.0
299.2	CARBONDALE		ROCK	88.9	231.1
210.3	CARBONDALE	HOUCHIN CREEK	COAL	3.0	320.0
207.3	CARBONDALE		ROCK	38.0	323.0
169.3	CARBONDALE	COLCHESTER	COAL	1.0	361.0
168.3	CARBONDALE		ROCK	31.8	362.0
136.5	CARBONDALE	DAVIS	COAL	3.2	393.8
133.3	TRADEWATER		ROCK	85.0	397.0

MAPID: 14591015000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 84' N line, 205' W line of NW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.479752 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.150893 DATE COLLECTED: 5 / 18 / 1960
 SURFACE ELEVATION (FT.): 518.2 LOGGED (FT.): 225.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE E476EA WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
518.2	PLEISTOCENE		UNCONSOLIDATED	39.5	0.0
478.7			ROCK	175.7	39.5
303.0	CARBONDALE	HERRIN	COAL	7.8	215.2
295.2	CARBONDALE		ROCK	2.0	223.0

MAPID: 14591016000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 1205' S line, 248' W line of NW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.479556 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.150984 DATE COLLECTED: 5 / 8 / 1981
 SURFACE ELEVATION (FT.): 531.1 LOGGED (FT.): 252.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E476EA-1 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
531.1	PLEISTOCENE		UNCONSOLIDATED	44.0	0.0
487.1			ROCK	186.0	44.0
301.1	CARBONDALE	HERRIN	COAL	6.8	230.0
294.3	CARBONDALE		ROCK	15.2	236.8

MAPID: 14591017000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 330' N line, 536' E line of NE SE
 QUADRANGLE: WINKLE LONGITUDE: -89.464125 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.149964 DATE COLLECTED: 8 / 30 / 1989
 SURFACE ELEVATION (FT.): 501.2 LOGGED (FT.): 245.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E483CP WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
501.2	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
483.2	MODESTO		ROCK	159.5	18.0
323.7	CARBONDALE	DANVILLE	COAL	0.8	177.5
322.9	CARBONDALE		ROCK	36.0	178.3
286.9	CARBONDALE	HERRIN	COAL	7.2	214.3
279.7	CARBONDALE		ROCK	23.5	221.5

MAPID: 14591022000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 412' S line, 1' W line of SE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.475877 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.152173 DATE COLLECTED: 5 / 7 / 1991
 SURFACE ELEVATION (FT.): LOGGED (FT.): 259.5 LOG TYPE: Drillers Log
 SOURCE: AMAX E503CC WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	62.0	0.0	
-			ROCK	168.0	62.0	
-	CARBONDALE	HERRIN	COAL	7.4	230.0	
-	CARBONDALE		ROCK	22.1	237.4	

MAPID: 14591023000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 610' S line, 1130' W line of SE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.471885 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.152757 DATE COLLECTED: 5 / 7 / 1981
 SURFACE ELEVATION (FT.): 529.1 LOGGED (FT.): 252.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E504FG WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
529.1	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0	
501.1	MODESTO		ROCK	156.9	28.0	
344.2	CARBONDALE	DANVILLE	COAL	2.6	184.9	
341.6	CARBONDALE		ROCK	38.0	187.5	
303.6	CARBONDALE	HERRIN	COAL	7.3	225.5	
296.3	CARBONDALE		ROCK	19.2	232.8	

MAPID: 14591026000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 454' N line, 124' W line of SW NW
 QUADRANGLE: WINKLE LONGITUDE: -89.479681 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.153419 DATE COLLECTED: 9 / 13 / 1989
 SURFACE ELEVATION (FT.): 532.2 LOGGED (FT.): 270.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E526JM WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
532.2	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
504.2	MODESTO		ROCK	163.3	28.0
340.9	CARBONDALE	DANVILLE	COAL	3.0	191.3
337.9	CARBONDALE		ROCK	41.2	194.3
296.7	CARBONDALE	HERRIN	COAL	7.8	235.5
288.9	CARBONDALE		ROCK	26.7	243.3

MAPID: 14591030000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 82' N line, 82' W line of SE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.466685 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.153907 DATE COLLECTED: 8 / 28 / 1989
 SURFACE ELEVATION (FT.): 534.0 LOGGED (FT.): 278.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E532DA WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
534.0	PLEISTOCENE		UNCONSOLIDATED	52.0	0.0
482.0	MODESTO		ROCK	158.0	52.0
324.0	CARBONDALE	DANVILLE	COAL	0.5	210.0
323.5	CARBONDALE		ROCK	40.7	210.5
282.8	CARBONDALE	HERRIN	COAL	7.1	251.2
275.7	CARBONDALE		ROCK	19.7	258.3

MAPID: 14591036000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 82' N line, 76' W line of NW NW
 QUADRANGLE: WINKLE LONGITUDE: -89.480116 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.158673 DATE COLLECTED: 1 / 10 / 1979
 SURFACE ELEVATION (FT.): 532.9 LOGGED (FT.): 283.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E576DA WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
532.9	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
505.9			ROCK	228.4	27.0
277.5	CARBONDALE	HERRIN	COAL	7.5	255.4
270.0	CARBONDALE		ROCK	20.1	262.9

MAPID: 14591037000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 660' N line, 150' E line of NW NW
 QUADRANGLE: WINKLE LONGITUDE: -89.475858 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.157029 DATE COLLECTED: 10 / 24 / 1978
 SURFACE ELEVATION (FT.): 518.9 LOGGED (FT.): 258.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E577PN WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
518.9	PLEISTOCENE		UNCONSOLIDATED	81.0	0.0
437.9			ROCK	154.4	81.0
283.5	CARBONDALE	HERRIN	COAL	6.1	235.4
277.4	CARBONDALE		ROCK	16.5	241.5

MAPID: 14591038000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 660' N line, 2290' W line
 QUADRANGLE: WINKLE LONGITUDE: -89.472376 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.156506 DATE COLLECTED: 5 / 27 / 1981
 SURFACE ELEVATION (FT.): 517.8 LOGGED (FT.): 258.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E579B WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
517.8	PLEISTOCENE		UNCONSOLIDATED	46.0	0.0
471.8	MODESTO		ROCK	147.0	46.0
324.8	CARBONDALE	DANVILLE	COAL	1.5	193.0
323.3	CARBONDALE		ROCK	36.5	194.5
286.8	CARBONDALE	HERRIN	COAL	7.0	231.0
279.8	CARBONDALE		ROCK	20.0	238.0

MAPID: 14591039000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 660' S line, 280' E line of NE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.472205 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.15641 DATE COLLECTED: 6 / 9 / 1960
 SURFACE ELEVATION (FT.): 486.7 LOGGED (FT.): 211.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE E579BB WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
486.7	PLEISTOCENE		UNCONSOLIDATED	54.4	0.0
432.3			ROCK	149.5	54.4
282.8	CARBONDALE	HERRIN	COAL	6.0	203.9
276.8	CARBONDALE		ROCK	1.1	209.9

MAPID: 14591040000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 288' N line, 495' W line of NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.470114 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.156487 DATE COLLECTED: 5 / 8 / 1991
 SURFACE ELEVATION (FT.): 509.7 LOGGED (FT.): 240.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E580PJ WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEK BOX75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
509.7	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
491.7	MODESTO		ROCK	158.0	18.0
333.7	CARBONDALE	DANVILLE	COAL	1.0	176.0
332.7	CARBONDALE		ROCK	39.5	177.0
293.2	CARBONDALE	HERRIN	COAL	6.9	216.5
286.3	CARBONDALE		ROCK	16.6	223.4

MAPID: 14591041000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 30 QUARTERS/FOOTAGES: 100' N line, 318' E line of NE NE

QUADRANGLE: WINKLE

LONGITUDE: -89.462568

GEOLOGIST: LAWSON

CONFIDENTIAL: N

LATITUDE: 38.158389

DATE COLLECTED: 10 / 19 / 1978

SURFACE ELEVATION (FT.): 519.1

LOGGED (FT.): 262.0

LOG TYPE: Drillers Log

SOURCE: AMAX E583FC

WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
519.1	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0
487.1	MODESTO		ROCK	167.4	32.0
319.7	CARBONDALE	DANVILLE	COAL	0.4	199.4
319.3	CARBONDALE		ROCK	36.7	199.8
282.6	CARBONDALE	HERRIN	COAL	7.3	236.5
275.3	CARBONDALE		ROCK	18.2	243.8

MAPID: 14523483000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 31 QUARTERS/FOOTAGES: 30' N line, 172' W line of SW NE

QUADRANGLE: WINKLE LONGITUDE: -89.471205 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.139928 DATE COLLECTED: 2 / 23 / 1979

SURFACE ELEVATION (FT.): 556.4 LOGGED (FT.): 254.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E330ED WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMWARCK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
556.4	PLEISTOCENE		CLAY	15.0	0.0	BROWN
541.4	PLEISTOCENE		SANDY CLAY	10.0	15.0	BROWN
531.4	MODESTO		SANDSTONE	31.0	25.0	BROWN
500.4	MODESTO		SANDSTONE	39.0	56.0	LIGHT GRAY
461.4	MODESTO		SANDY SHALE	49.0	95.0	
412.4	MODESTO		GRAY SHALE	12.0	144.0	
400.4	MODESTO		SANDY SHALE	4.0	156.0	
396.4	MODESTO		SANDSTONE	6.0	160.0	
390.4	MODESTO		SANDY SHALE	7.0	166.0	
383.4	MODESTO	PIASA	LIMESTONE	16.0	173.0	GRAY
367.4	CARBONDALE	DANVILLE	COAL	2.0	189.0	
365.4	CARBONDALE		DARK GRAY SHALE	8.0	191.0	
357.4	CARBONDALE	BANKSTON FORK	LIMESTONE	3.3	199.0	WHITE
354.1	CARBONDALE		DARK GRAY SHALE	20.9	202.3	
333.2	CARBONDALE	BRERETON	LIMESTONE	5.7	223.2	GRAY
327.5	CARBONDALE	ANNA	BLACK SHALE	0.5	228.9	
327.0	CARBONDALE	HERRIN	COAL	6.9	229.4	
320.1	CARBONDALE		UNDERCLAY	3.4	236.3	GRAY
316.7	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.2	239.7	GRAY
315.5	CARBONDALE	HIGGINSVILLE	SHALE	0.4	240.9	GREEN
315.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	5.1	241.3	GRAY
310.0	CARBONDALE		GRAY SHALE	7.6	246.4	

MAPID: 14590748000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 31 QUARTERS/FOOTAGES: 10' S line, 46' W line of NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.476087 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.132646 DATE COLLECTED: 5 / 5 / 1981

SURFACE ELEVATION (FT.): 558.6 LOGGED (FT.): 258.0 LOG TYPE: Drillers Log

SOURCE: AMAX E253YY WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
558.6	PLEISTOCENE		UNCONSOLIDATED	9.0	0.0
549.6	MODESTO		ROCK	176.0	9.0
373.6	CARBONDALE	DANVILLE	COAL	2.0	185.0
371.6	CARBONDALE		ROCK	35.9	187.0
335.7	CARBONDALE	HERRIN	COAL	6.9	222.9
328.8	CARBONDALE		ROCK	28.2	229.8

MAPID: 14590749000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 31 QUARTERS/FOOTAGES: 165' S line, 330' E line of NE

QUADRANGLE: WINKLE LONGITUDE: -89.463747 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.136461 DATE COLLECTED: 1 / 30 / 1959

SURFACE ELEVATION (FT.): 566.5 LOGGED (FT.): 251.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES E258KB WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
566.5	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
536.5	MODESTO		ROCK	176.0	30.0
360.5	CARBONDALE	DANVILLE	COAL	1.0	206.0
359.5	CARBONDALE		ROCK	34.8	207.0
324.7	CARBONDALE	HERRIN	COAL	7.0	241.8
317.7	CARBONDALE		ROCK	2.2	248.8

MAPID: 14590753000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 31 QUARTERS/FOOTAGES: 15' S line, 403' W line of SW NE
 QUADRANGLE: FRENCH VILLAGE LONGITUDE: -89.470231 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.136201 DATE COLLECTED: 12 / 11 / 1974
 SURFACE ELEVATION (FT.): 574.8 LOGGED (FT.): 266.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E305BY WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP AMAX-DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
574.8	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
544.8	MODESTO		ROCK	179.5	30.0
365.3	CARBONDALE	DANVILLE	COAL	0.5	209.5
364.8	CARBONDALE		ROCK	38.5	210.0
326.3	CARBONDALE	HERRIN	COAL	7.1	248.5
319.2	CARBONDALE		ROCK	10.4	255.6

MAPID: 14590765000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 31 QUARTERS/FOOTAGES: 30' N line, 172' W line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.471205 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.139928 DATE COLLECTED: 2 / 23 / 1979
 SURFACE ELEVATION (FT.): 556.4 LOGGED (FT.): 254.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E330ED WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
556.4	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
531.4	MODESTO		ROCK	164.0	25.0
367.4	CARBONDALE	DANVILLE	COAL	2.0	189.0
365.4	CARBONDALE		ROCK	38.4	191.0
327.0	CARBONDALE	HERRIN	COAL	6.9	229.4
320.1	CARBONDALE		ROCK	17.7	236.3

MAPID: 14590766000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 31 QUARTERS/FOOTAGES: 82' N line, 454' W line of SE NE

QUADRANGLE: WINKLE LONGITUDE: -89.465465 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.139543 DATE COLLECTED: 8 / 21 / 1989

SURFACE ELEVATION (FT.): 541.0 LOGGED (FT.): 254.7 LOG TYPE: Drillers Log

SOURCE: AMAX E332FI WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
541.0	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
523.0	MODESTO		ROCK	171.3	18.0
351.7	CARBONDALE	DANVILLE	COAL	0.9	189.3
350.8	CARBONDALE		ROCK	34.6	190.2
316.2	CARBONDALE	HERRIN	COAL	7.6	224.8
308.6	CARBONDALE		ROCK	22.3	232.4

MAPID: 14590781000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 31 QUARTERS/FOOTAGES: 452' N line, 279' W line of NE NW

QUADRANGLE: WINKLE LONGITUDE: -89.475147 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.142701 DATE COLLECTED: 3 / 6 / 1979

SURFACE ELEVATION (FT.): 551.7 LOGGED (FT.): 265.0 LOG TYPE: Drillers Log

SOURCE: AMAX E378KM WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
551.7	PLEISTOCENE		UNCONSOLIDATED	31.0	0.0
520.7	MODESTO		ROCK	176.0	31.0
344.7	CARBONDALE	DANVILLE	COAL	3.5	207.0
341.2	CARBONDALE		ROCK	26.7	210.5
314.5	CARBONDALE	HERRIN	COAL	7.0	237.2
307.5	CARBONDALE		ROCK	20.8	244.2

MAPID: 14590782000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 31 QUARTERS/FOOTAGES: 41' N line, 619' W line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.469336 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.143594 DATE COLLECTED: 9 / 8 / 1989

SURFACE ELEVATION (FT.): 539.2 LOGGED (FT.): 249.7 LOG TYPE: Drillers Log

SOURCE: AMAX E380GG WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
539.2	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0	
514.2	MODESTO		ROCK	156.7	25.0	
357.5	CARBONDALE	DANVILLE	COAL	1.1	181.7	
356.4	CARBONDALE		ROCK	37.4	182.8	
319.0	CARBONDALE	HERRIN	COAL	7.2	220.2	
311.8	CARBONDALE		ROCK	22.3	227.4	

MAPID: 14502509000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 990' N line, 1650' W line

QUADRANGLE: WINKLE LONGITUDE: -89.456649 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.140473 DATE COLLECTED:

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 2727.0 LOG TYPE: Electric Log

SOURCE: PURE OIL CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
294.0	CARBONDALE	SPRINGFIELD	COAL	-	226.0	
179.0	CARBONDALE	COLCHESTER	COAL	-	341.0	
-573.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1093.0	
-2187.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2707.0	TOP OF NEW ALBANY
-2190.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2710.0	
-2207.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2727.0	BASE OF NEW ALBANY

MAPID: 14502509000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 990' N line, 1650' W line

QUADRANGLE: WINKLE LONGITUDE: -89.456649 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.140473 DATE COLLECTED:

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 219.0 LOG TYPE: Electric Log

SOURCE: PURE OIL COMPANY Loos 1 WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
355.0	MODESTO	PIASA	LIMESTONE	8.0	165.0
347.0	CARBONDALE		SILTY SHALE	10.0	173.0
337.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	183.0
332.0	CARBONDALE	LAWSON	SHALE	7.0	188.0
325.0	CARBONDALE	BRERETON	LIMESTONE	5.0	195.0
320.0	CARBONDALE	ANNA	BLACK SHALE	2.0	200.0
318.0	CARBONDALE	ENERGY	GRAY SHALE	8.0	202.0
308.0	CARBONDALE	HERRIN	COAL	7.0	212.0

MAPID: 14523518000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 165' N line, 165' E line of SW NE

QUADRANGLE: WINKLE LONGITUDE: -89.449208 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.138913 DATE COLLECTED: 6 / 13 / 1979

SURFACE ELEVATION (FT.): 530.8 LOGGED (FT.): 235.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E339G WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
530.8	PLEISTOCENE		CLAY	23.0	0.0	BROWN
507.8	PLEISTOCENE		SAND	12.0	23.0	BROWN
495.8	PLEISTOCENE		CLAY	10.0	35.0	GRAY
485.8	MODESTO		SANDSTONE	23.0	45.0	GRAY
462.8	MODESTO		SANDY SHALE	16.0	68.0	
446.8	MODESTO		GRAY SHALE	16.0	84.0	
430.8	MODESTO		SANDY SHALE	10.0	100.0	
420.8	MODESTO		GRAY SHALE	14.0	110.0	
406.8	MODESTO		SANDY SHALE	23.0	124.0	
383.8	MODESTO		CALCAREOUS SHALE	2.0	147.0	
381.8	MODESTO		SANDY SHALE	13.0	149.0	
368.8	MODESTO	PIASA	LIMESTONE	7.0	162.0	
361.8	MODESTO		GRAY SHALE	3.0	169.0	
358.8	MODESTO		BLACK SHALE	0.1	172.0	
358.7	CARBONDALE	DANVILLE	COAL	2.9	172.1	
355.8	CARBONDALE		SHALE	6.0	175.0	
349.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	181.0	GRAY
346.8	CARBONDALE		GRAY SHALE	5.0	184.0	
341.8	CARBONDALE	CONANT	LIMESTONE	7.8	189.0	GRAY
334.0	CARBONDALE		BLACK SHALE	1.0	196.8	
333.0	CARBONDALE	BRERETON	CALCAREOUS SHALE	2.1	197.8	
330.9	CARBONDALE	ANNA	BLACK SHALE	5.1	199.9	
325.8	CARBONDALE	ENERGY	GRAY SHALE	4.2	205.0	
321.6	CARBONDALE	HERRIN	COAL	7.9	209.2	
313.7	CARBONDALE		UNDERCLAY	1.5	217.1	
312.2	CARBONDALE	HIGGINSVILLE	LIMESTONE	9.7	218.6	
302.5	CARBONDALE		GRAY SHALE	6.7	228.3	

MAPID: 14528776000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 25' N line, 25' E line of NE SW

QUADRANGLE: WINKLE

LONGITUDE: -89.45238

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.136554

DATE COLLECTED: 5 / 11 / 1976

SURFACE ELEVATION (FT.): 543.7

LOGGED (FT.): 270.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E313

WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
543.7	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
503.7	MODESTO		SANDSTONE	60.0	40.0
443.7	MODESTO		LIMESTONE	8.0	100.0
435.7	MODESTO		SHALE	77.0	108.0
358.7	MODESTO	PIASA	LIMESTONE	10.0	185.0
348.7			SHALE	5.0	195.0
343.7	CARBONDALE	BANKSTON FORK	LIMESTONE	17.0	200.0
326.7	CARBONDALE		BLACK SHALE	2.0	217.0
324.7	CARBONDALE	CONANT	LIMESTONE	1.0	219.0
323.7	CARBONDALE		BLACK SHALE	8.0	220.0
315.7	CARBONDALE	BRERETON	LIMESTONE	3.0	228.0
312.7	CARBONDALE	ENERGY	SHALE	12.0	231.0
300.7	CARBONDALE	HERRIN	COAL	9.6	243.0
291.1	CARBONDALE		UNDERCLAY	2.4	252.6
288.7	CARBONDALE		SHALE	4.0	255.0
284.7	CARBONDALE		SANDSTONE	11.0	259.0

MAPID: 14528777000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 248' S line, 289' W line of SW NE

QUADRANGLE: WINKLE LONGITUDE: -89.452195 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.136534 DATE COLLECTED: 8 / 10 / 1989

SURFACE ELEVATION (FT.): 540.4 LOGGED (FT.): 258.7 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E313KI WELL TYPE: Coal Test

COMMENT: PERMIT 239; PRAIRIE CREEK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
540.4	PLEISTOCENE		CLAY	38.5	0.0	BROWN
501.9	MODESTO	TRIVOLI	SANDSTONE	15.3	38.5	BROWN
486.6	MODESTO	TRIVOLI	SANDSTONE	29.3	53.8	GRAY
457.3	MODESTO		SILTY SHALE	27.7	83.1	
429.6	MODESTO		DARK GRAY SHALE	26.8	110.8	
402.8	MODESTO		CLAYSTONE	1.7	137.6	GREEN-GRAY
401.1	MODESTO		GRAY SHALE	13.1	139.3	
388.0	MODESTO		BLACK SHALE	0.8	152.4	
387.2	MODESTO		CLAYSTONE	7.1	153.2	
380.1	MODESTO		LIMESTONE	2.8	160.3	GRAY
377.3	MODESTO		SHALE	4.9	163.1	GREEN-GRAY
372.4	MODESTO		SILTY SHALE	4.7	168.0	
367.7	MODESTO		CLAYSTONE	2.3	172.7	GREEN-GRAY
365.4	MODESTO	PIASA	LIMESTONE	11.1	175.0	VIOLET-TAN
354.3	MODESTO		DARK GRAY SHALE	0.7	186.1	
353.6	CARBONDALE	DANVILLE	COAL	0.8	186.8	
352.8	CARBONDALE		CLAYSTONE	1.0	187.6	GRAY
351.8	CARBONDALE	BANKSTON FORK	NODULAR LIMESTONE	4.7	188.6	WITH SHALE
347.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	193.3	TAN
343.3	CARBONDALE		DARK GRAY SHALE	8.7	197.1	
334.6	CARBONDALE	CONANT	LIMESTONE	1.3	205.8	GRAY
333.3	CARBONDALE		SILTY SHALE	14.9	207.1	
318.4	CARBONDALE	BRERETON	ARGILLACEOUS LIMESTONE	3.4	222.0	DARK GRAY
315.0	CARBONDALE	ANNA	BLACK SHALE	5.6	225.4	
309.4	CARBONDALE	HERRIN	COAL	8.8	231.0	
300.6	CARBONDALE		UNDERCLAY	0.9	239.8	
299.7	CARBONDALE		CALCAREOUS SHALE	9.5	240.7	
290.2	CARBONDALE		SANDSTONE	8.5	250.2	

MAPID: 14528778000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 70' N line, 80' W line of SE NW

QUADRANGLE: WINKLE LONGITUDE: -89.457625 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.139405 DATE COLLECTED: 2 / 15 / 1979

SURFACE ELEVATION (FT.): 533.5 LOGGED (FT.): 251.5 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E336DA WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
533.5	PLEISTOCENE		CLAY	19.0	0.0	BROWN
514.5	PLEISTOCENE		SANDY CLAY	2.0	19.0	BROWN
512.5	PLEISTOCENE		SAND	11.0	21.0	BROWN
501.5	MODESTO		SANDY SHALE	53.0	32.0	
448.5	MODESTO		SANDY SHALE	75.0	85.0	
373.5	MODESTO		GRAY SHALE	4.0	160.0	
369.5	MODESTO		GRAY SHALE	6.0	164.0	
363.5	MODESTO		LIMESTONE	7.0	170.0	GRAY
356.5	MODESTO		GRAY SHALE	3.0	177.0	
353.5	MODESTO	PIASA	LIMESTONE	3.0	180.0	
350.5	MODESTO		DARK GRAY SHALE	1.0	183.0	
349.5	CARBONDALE	DANVILLE	COAL	2.0	184.0	
347.5	CARBONDALE		GRAY SHALE	3.0	186.0	
344.5	CARBONDALE		SANDY SHALE	13.0	189.0	
331.5	CARBONDALE		CALCAREOUS SHALE	4.3	202.0	
327.2	CARBONDALE		GRAY SHALE	7.8	206.3	
319.4	CARBONDALE	BRERETON	LIMESTONE	9.0	214.1	
310.4	CARBONDALE	ANNA	BLACK SHALE	3.2	223.1	
307.2	CARBONDALE	HERRIN	COAL	8.1	226.3	
299.1	CARBONDALE		UNDERCLAY	1.6	234.4	
297.5	CARBONDALE		CALCAREOUS SHALE	5.6	236.0	
291.9	CARBONDALE		GRAY SHALE	4.2	241.6	
287.7	CARBONDALE	HIGGINSVILLE	SHALY LIMESTONE	5.7	245.8	

MAPID: 14528779000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 40' N line, 350' W line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.451795 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.143135 DATE COLLECTED: 5 / 21 / 1981

SURFACE ELEVATION (FT.): 520.7 LOGGED (FT.): 237.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E388FD WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
520.7	PLEISTOCENE		CLAY	6.0	0.0	
514.7	PLEISTOCENE		UNCONSOLIDATED	34.0	6.0	BROWN
480.7	PLEISTOCENE		UNCONSOLIDATED	25.0	40.0	GRAY
455.7	MODESTO		GRAY SHALE	67.0	65.0	
388.7	MODESTO		LIMESTONE	1.7	132.0	BROWN
387.0	MODESTO		GRAY SHALE	4.7	133.7	
382.3	MODESTO		LIMESTONE	2.0	138.4	GRAY
380.3	MODESTO		GRAY SHALE	7.6	140.4	
372.7	MODESTO		LIMESTONE	2.0	148.0	LIGHT GRAY
370.7	MODESTO		GRAY SHALE	8.8	150.0	
361.9	MODESTO	PIASA	LIMESTONE	8.7	158.8	LIGHT GRAY
353.2			GRAY SHALE	4.0	167.5	
349.2	CARBONDALE	BANKSTON FORK	LIMESTONE	9.0	171.5	GRAY
340.2	CARBONDALE		GRAY SHALE	6.3	180.5	
333.9	CARBONDALE	CONANT	LIMESTONE	3.2	186.8	DARK GRAY
330.7	CARBONDALE	CONANT	BLACK SHALE	0.3	190.0	
330.4	CARBONDALE	CONANT	LIMESTONE	1.5	190.3	GRAY
328.9	CARBONDALE		DARK GRAY SHALE	9.3	191.8	
319.6	CARBONDALE	BRERETON	LIMESTONE	7.1	201.1	DARK GRAY
312.5	CARBONDALE		DARK GRAY SHALE	2.4	208.2	
310.1	CARBONDALE	ANNA	BLACK SHALE	2.0	210.6	
308.1	CARBONDALE	HERRIN	COAL	8.6	212.6	
299.5	CARBONDALE		UNDERCLAY	1.8	221.2	
297.7	CARBONDALE		GRAY SHALE	2.1	223.0	
295.6	CARBONDALE		SILTSTONE	11.9	225.1	GRAY

MAPID: 14590747000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 40' N line, 287' E line of SW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.458888 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.132117 DATE COLLECTED: 12 / 15 / 1977
 SURFACE ELEVATION (FT.): 563.0 LOGGED (FT.): 270.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E235FE WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
563.0	PLEISTOCENE		UNCONSOLIDATED	36.7	0.0
526.3			ROCK	216.1	36.7
310.2	CARBONDALE	HERRIN	COAL	7.3	252.8
302.9	CARBONDALE		ROCK	9.9	260.1

MAPID: 14590750000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 150' N line, 138' E line of NE SW
 QUADRANGLE: WINKLE LONGITUDE: -89.453871 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.133473 DATE COLLECTED: 6 / 27 / 1991
 SURFACE ELEVATION (FT.): 550.2 LOGGED (FT.): 35.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E262GN WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
550.2	PLEISTOCENE		UNCONSOLIDATED	15.6	0.0
534.6			ROCK	19.4	15.6

MAPID: 14590751000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 280' S line, 600' E line of NE SW
 QUADRANGLE: WINKLE LONGITUDE: -89.455605 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.133043 DATE COLLECTED: 7 / 8 / 1991
 SURFACE ELEVATION (FT.): 547.2 LOGGED (FT.): 41.5 LOG TYPE: Drillers Log
 SOURCE: AMAX E262JE WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
547.2	PLEISTOCENE		UNCONSOLIDATED	21.1	0.0
526.1			ROCK	20.4	21.1

MAPID: 14590752000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 71' N line, 51' E line of NW SE
 QUADRANGLE: WINKLE LONGITUDE: -89.448875 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.135649 DATE COLLECTED: 8 / 15 / 1989
 SURFACE ELEVATION (FT.): 534.2 LOGGED (FT.): 251.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E289GI WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
534.2	PLEISTOCENE		UNCONSOLIDATED	20.5	0.0
513.7	MODESTO		ROCK	153.5	20.5
360.2	CARBONDALE	DANVILLE	COAL	1.0	174.0
359.2	CARBONDALE		ROCK	39.8	175.0
319.4	CARBONDALE	HERRIN	COAL	7.5	214.8
311.9	CARBONDALE		ROCK	28.7	222.3

MAPID: 14590755000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 72' S line, 70' W line of SE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.457809 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.136172 DATE COLLECTED: 3 / 30 / 1979
 SURFACE ELEVATION (FT.): 534.3 LOGGED (FT.): 256.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E311X WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
534.3	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0
501.3			ROCK	193.1	33.0
308.2	CARBONDALE	HERRIN	COAL	7.4	226.1
300.8	CARBONDALE		ROCK	22.5	233.5

MAPID: 14590756000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 530' S line, 130' E line of SE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.453718 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.13736 DATE COLLECTED: 7 / 30 / 1991
 SURFACE ELEVATION (FT.): 532.4 LOGGED (FT.): 45.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E312GK WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
532.4	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
513.4			ROCK	26.0	19.0

MAPID: 14590757000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 293' S line, 194' E line of SE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.454012 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.136701 DATE COLLECTED: 7 / 8 / 1991
 SURFACE ELEVATION (FT.): 553.3 LOGGED (FT.): 25.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E312LG WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
553.3	PLEISTOCENE		UNCONSOLIDATED	21.5	0.0
531.8			ROCK	3.5	21.5

MAPID: 14590758000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 25' N line, 25' E line of NE SW
 QUADRANGLE: WINKLE LONGITUDE: -89.45238 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.136554 DATE COLLECTED: 5 / 11 / 1976
 SURFACE ELEVATION (FT.): 543.7 LOGGED (FT.): 270.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E313 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
543.7	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
503.7			ROCK	203.0	40.0
300.7	CARBONDALE	HERRIN	COAL	9.6	243.0
291.1	CARBONDALE		ROCK	17.4	252.6

MAPID: 14590759000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 248' S line, 289' W line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.452191 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.136534 DATE COLLECTED: 8 / 10 / 1989
 SURFACE ELEVATION (FT.): 540.4 LOGGED (FT.): 258.7 LOG TYPE: Drillers Log
 SOURCE: AMAX E313KI WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
540.4	PLEISTOCENE		UNCONSOLIDATED	38.5	0.0
501.9	MODESTO		ROCK	148.3	38.5
353.6	CARBONDALE	DANVILLE	COAL	0.8	186.8
352.8	CARBONDALE		ROCK	43.4	187.6
309.4	CARBONDALE	HERRIN	COAL	8.8	231.0
300.6	CARBONDALE		ROCK	18.9	239.8

MAPID: 14590760000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: SW NE

QUADRANGLE: WINKLE LONGITUDE: -89.452167 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.136534 DATE COLLECTED: 8 / 14 / 1989

SURFACE ELEVATION (FT.): 540.6 LOGGED (FT.): 83.0 LOG TYPE: Drillers Log

SOURCE: AMAX E313KI1 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
540.6	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0
505.6			ROCK	48.0	35.0

MAPID: 14590761000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: SW NE

QUADRANGLE: WINKLE LONGITUDE: -89.452166 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.136504 DATE COLLECTED: 8 / 14 / 1989

SURFACE ELEVATION (FT.): 541.2 LOGGED (FT.): 175.0 LOG TYPE: Drillers Log

SOURCE: AMAX E313KI2 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
541.2	PLEISTOCENE		UNCONSOLIDATED	27.5	0.0
513.7			ROCK	147.5	27.5

MAPID: 14590762000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 545' S line, 630' E line of SW NE

QUADRANGLE: WINKLE LONGITUDE: -89.450768 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.137345 DATE COLLECTED: 7 / 31 / 1991

SURFACE ELEVATION (FT.): 535.4 LOGGED (FT.): 55.4 LOG TYPE: Drillers Log

SOURCE: AMAX E314DB WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
535.4	PLEISTOCENE		UNCONSOLIDATED	9.0	0.0
526.4			ROCK	46.4	9.0

MAPID: 14590763000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 8' N line, 36' E line of NE SE
 QUADRANGLE: WINKLE LONGITUDE: -89.444093 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.135586 DATE COLLECTED: 12 / 18 / 1974
 SURFACE ELEVATION (FT.): 544.6 LOGGED (FT.): 253.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E317 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
544.6	PLEISTOCENE		UNCONSOLIDATED	58.0	0.0	
486.6	MODESTO	CHAPEL	COAL	1.0	58.0	TOP ERODED
485.6	MODESTO		ROCK	129.0	59.0	
356.6	CARBONDALE	DANVILLE	COAL	1.0	188.0	
355.6	CARBONDALE		ROCK	46.0	189.0	
309.6	CARBONDALE	HERRIN	COAL	8.0	235.0	
301.6	CARBONDALE		ROCK	10.0	243.0	

MAPID: 14590767000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 70' N line, 80' W line of SE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.457621 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.139405 DATE COLLECTED: 2 / 15 / 1979
 SURFACE ELEVATION (FT.): 533.5 LOGGED (FT.): 251.5 LOG TYPE: Drillers Log
 SOURCE: AMAX E336DA WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
533.5	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0	
501.5	MODESTO		ROCK	152.0	32.0	
349.5	CARBONDALE	DANVILLE	COAL	2.0	184.0	
347.5	CARBONDALE		ROCK	40.3	186.0	
307.2	CARBONDALE	HERRIN	COAL	8.1	226.3	
299.1	CARBONDALE		ROCK	17.1	234.4	

MAPID: 14590768000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 510' N line, 445' W line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.451676 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.138088 DATE COLLECTED: 7 / 23 / 1991
 SURFACE ELEVATION (FT.): 531.5 LOGGED (FT.): 183.5 LOG TYPE: Drillers Log
 SOURCE: AMAX E338LP WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
531.5	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
509.5	MODESTO		ROCK	34.0	22.0
475.5	MODESTO	CHAPEL	COAL	1.0	56.0
474.5	MODESTO		ROCK	121.3	57.0
353.2	CARBONDALE	DANVILLE	COAL	0.3	178.3
352.9	CARBONDALE		ROCK	4.9	178.6

MAPID: 14590769000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 640' N line, 140' W line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.45275 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.137741 DATE COLLECTED: 7 / 30 / 1991
 SURFACE ELEVATION (FT.): 521.0 LOGGED (FT.): 116.9 LOG TYPE: Drillers Log
 SOURCE: AMAX E338YB WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
521.0	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
505.0			ROCK	100.9	16.0

MAPID: 14590770000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 660' S line, 660' W line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.451065 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.137771 DATE COLLECTED: 8 / 16 / 1989
 SURFACE ELEVATION (FT.): 535.1 LOGGED (FT.): 264.4 LOG TYPE: Drillers Log
 SOURCE: AMAX E339 WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
535.1	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
514.1	MODESTO		ROCK	162.0	21.0
352.1	CARBONDALE	DANVILLE	COAL	1.5	183.0
350.6	CARBONDALE		ROCK	45.7	184.5
304.9	CARBONDALE	HERRIN	COAL	10.0	230.2
294.9	CARBONDALE		ROCK	24.2	240.2

MAPID: 14590771000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 295' N line, 535' E line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.450432 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.138659 DATE COLLECTED: 7 / 17 / 1991
 SURFACE ELEVATION (FT.): 532.6 LOGGED (FT.): 242.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E339CM WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
532.6	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
505.6	MODESTO		ROCK	147.7	27.0
357.9	CARBONDALE	DANVILLE	COAL	1.5	174.7
356.4	CARBONDALE		ROCK	36.5	176.2
319.9	CARBONDALE	HERRIN	COAL	7.6	212.7
312.3	CARBONDALE		ROCK	21.7	220.3

MAPID: 14590772000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 300' N line, 530' E line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.450418 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.138643 DATE COLLECTED: 7 / 31 / 1991
 SURFACE ELEVATION (FT.): 533.0 LOGGED (FT.): 25.5 LOG TYPE: Drillers Log
 SOURCE: AMAX E339CM1 WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
533.0	PLEISTOCENE		UNCONSOLIDATED	20.7	0.0
512.3			ROCK	4.8	20.7

MAPID: 14590773000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 185' N line, 350' E line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.449774 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.138952 DATE COLLECTED: 7 / 31 / 1991
 SURFACE ELEVATION (FT.): 512.2 LOGGED (FT.): 11.2 LOG TYPE: Drillers Log
 SOURCE: AMAX E339F1 WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
512.2	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0
504.2			ROCK	3.2	8.0

MAPID: 14590774000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 165' N line, 165' E line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.449208 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.138913 DATE COLLECTED: 6 / 13 / 1979
 SURFACE ELEVATION (FT.): 530.8 LOGGED (FT.): 235.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E339G WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
530.8	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0
507.8	MODESTO		ROCK	149.1	23.0
358.7	CARBONDALE	DANVILLE	COAL	2.9	172.1
355.8	CARBONDALE		ROCK	34.2	175.0
321.6	CARBONDALE	HERRIN	COAL	7.9	209.2
313.7	CARBONDALE		ROCK	17.9	217.1

MAPID: 14590775000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 180' N line, 345' E line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.44976 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.138963 DATE COLLECTED: 7 / 24 / 1991
 SURFACE ELEVATION (FT.): 512.2 LOGGED (FT.): 222.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E339F WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
512.2	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
502.2	MODESTO		ROCK	144.9	10.0
357.3	CARBONDALE	DANVILLE	COAL	0.2	154.9
357.1	CARBONDALE		ROCK	35.4	155.1
321.7	CARBONDALE	HERRIN	COAL	7.4	190.5
314.3	CARBONDALE		ROCK	24.1	197.9

MAPID: 14590776000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 540' N line, 560' E line of SW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.450533 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.137988 DATE COLLECTED: 7 / 29 / 1991
 SURFACE ELEVATION (FT.): 534.6 LOGGED (FT.): 126.5 LOG TYPE: Drillers Log
 SOURCE: AMAX E339XC WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
534.6	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
520.6			ROCK	112.5	14.0

MAPID: 14590778000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 40' S line, 15' E line of NE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.453122 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.139674 DATE COLLECTED: 8 / 17 / 1989
 SURFACE ELEVATION (FT.): 531.9 LOGGED (FT.): 258.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E363 WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
531.9	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
491.9	MODESTO		ROCK	140.8	40.0
351.1	CARBONDALE	DANVILLE	COAL	0.3	180.8
350.8	CARBONDALE		ROCK	43.2	181.1
307.6	CARBONDALE	HERRIN	COAL	9.8	224.3
297.8	CARBONDALE		ROCK	23.9	234.1

MAPID: 14590783000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 41' N line, 1' W line of NE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.457818 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.143193 DATE COLLECTED: 4 / 30 / 1991
 SURFACE ELEVATION (FT.): 525.4 LOGGED (FT.): 260.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E386DD WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
525.4	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
505.4	MODESTO		ROCK	167.5	20.0
337.9	CARBONDALE	DANVILLE	COAL	1.0	187.5
336.9	CARBONDALE		ROCK	41.4	188.5
295.5	CARBONDALE	HERRIN	COAL	9.1	229.9
286.4	CARBONDALE		ROCK	21.0	239.0

MAPID: 14590878000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 34' S line, 15' W line of SW SW SW
 QUADRANGLE: WINKLE LONGITUDE: -89.46279 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.128673 DATE COLLECTED: 10 / 15 / 1975
 SURFACE ELEVATION (FT.): 555.7 LOGGED (FT.): 202.0 LOG TYPE: Drillers Log
 SOURCE: AMAX C209 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
555.7	PLEISTOCENE		UNCONSOLIDATED	85.0	0.0	
470.7			ROCK	109.0	85.0	
361.7	CARBONDALE	HERRIN	COAL	7.0	194.0	
354.7	CARBONDALE		ROCK	1.0	201.0	

MAPID: 14591000000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 40' N line, 350' W line of NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.451792 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.143135 DATE COLLECTED: 5 / 21 / 1981
 SURFACE ELEVATION (FT.): 520.7 LOGGED (FT.): 237.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E388FD WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX#75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
520.7	PLEISTOCENE		UNCONSOLIDATED	65.0	0.0	
455.7			ROCK	147.6	65.0	
308.1	CARBONDALE	HERRIN	COAL	8.6	212.6	
299.5	CARBONDALE		ROCK	15.8	221.2	

MAPID: 14591004000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 15' N line, 15' W line of NW NW

QUADRANGLE: WINKLE LONGITUDE: -89.462324 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.143338 DATE COLLECTED: 9 / 21 / 1975

SURFACE ELEVATION (FT.): 521.8 LOGGED (FT.): 240.8 LOG TYPE: Drillers Log

SOURCE: AMAX E409 WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
521.8	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
491.8	MODESTO		ROCK	153.2	30.0
338.6	CARBONDALE	DANVILLE	COAL	0.7	183.2
337.9	CARBONDALE		ROCK	20.2	183.9
317.7	CARBONDALE		COAL	0.3	204.1
317.4	CARBONDALE		ROCK	15.1	204.4
302.3	CARBONDALE	HERRIN	COAL	6.9	219.5
295.4	CARBONDALE		ROCK	14.3	226.4

MAPID: 14591010000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 32 QUARTERS/FOOTAGES: 300' N line, 400' E line of SE SW

QUADRANGLE: WINKLE LONGITUDE: -89.454338 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.14638 DATE COLLECTED: 5 / 1 / 1991

SURFACE ELEVATION (FT.): 517.8 LOGGED (FT.): 253.9 LOG TYPE: Drillers Log

SOURCE: AMAX E437HB WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEK BOX#75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
517.8	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0
483.8	MODESTO		ROCK	150.0	34.0
333.8	CARBONDALE	DANVILLE	COAL	2.0	184.0
331.8	CARBONDALE		ROCK	39.8	186.0
292.0	CARBONDALE	HERRIN	COAL	8.3	225.8
283.7	CARBONDALE		ROCK	19.8	234.1

MAPID: 14523252000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 33 QUARTERS/FOOTAGES: 330' N line, 330' W line of NW

QUADRANGLE: WINKLE LONGITUDE: -89.442602 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.142065 DATE COLLECTED:

SURFACE ELEVATION (FT.): 529.0 LOGGED (FT.): 2742.0 LOG TYPE: Electric Log

SOURCE: BUFAY OIL COMPANY WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-549.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1078.0	
-2193.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2722.0	TOP OF NEW ALBANY
-2193.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2722.0	
-2213.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2742.0	BASE OF NEW ALBANY

MAPID: 14590746000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 33 QUARTERS/FOOTAGES: 60' S line, 50' W line of SE SE

QUADRANGLE: WINKLE LONGITUDE: -89.439496 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.128989 DATE COLLECTED: 10 / 9 / 1978

SURFACE ELEVATION (FT.): 531.5 LOGGED (FT.): 238.0 LOG TYPE: Drillers Log

SOURCE: AMAX E219XX WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
531.5	PLEISTOCENE		UNCONSOLIDATED	37.0	0.0	
494.5	MODESTO		ROCK	138.0	37.0	
356.5	CARBONDALE	DANVILLE	COAL	1.8	175.0	
354.7	CARBONDALE		ROCK	38.0	176.8	
316.7	CARBONDALE	HERRIN	COAL	7.2	214.8	
309.5	CARBONDALE		ROCK	16.0	222.0	

MAPID: 14590764000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 33 QUARTERS/FOOTAGES:

QUADRANGLE: WINKLE LONGITUDE: -89.434726

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.135487

DATE COLLECTED: 10 / 30 / 1957

SURFACE ELEVATION (FT.): 533.6 LOGGED (FT.): 244.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES E321

WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
533.6	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
505.6	MODESTO		ROCK	168.0	28.0
337.6	CARBONDALE	DANVILLE	COAL	1.0	196.0
336.6	CARBONDALE		ROCK	38.5	197.0
298.1	CARBONDALE	HERRIN	COAL	6.9	235.5
291.2	CARBONDALE		ROCK	1.6	242.4

MAPID: 14590777000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 33 QUARTERS/FOOTAGES: 660' N line, 90' E line of SE NW

QUADRANGLE: WINKLE LONGITUDE: -89.434916

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.137459

DATE COLLECTED: 10 / 12 / 1978

SURFACE ELEVATION (FT.): 537.0 LOGGED (FT.): 268.0

LOG TYPE: Drillers Log

SOURCE: AMAX E345PB

WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
537.0	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
512.0	MODESTO		ROCK	174.4	25.0
337.6	CARBONDALE	DANVILLE	COAL	1.3	199.4
336.3	CARBONDALE		ROCK	42.4	200.7
293.9	CARBONDALE	HERRIN	COAL	7.9	243.1
286.0	CARBONDALE		ROCK	17.0	251.0

MAPID: 14590779000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 33 QUARTERS/FOOTAGES: 340' S line, 150' W line of NW NW
 QUADRANGLE: WINKLE LONGITUDE: -89.443506 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.140346 DATE COLLECTED: 7 / 15 / 1991
 SURFACE ELEVATION (FT.): 532.4 LOGGED (FT.): 246.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E367H WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
532.4	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0
503.4	MODESTO		ROCK	147.0	29.0
356.4	CARBONDALE	DANVILLE	COAL	0.5	176.0
355.9	CARBONDALE		ROCK	36.1	176.5
319.8	CARBONDALE	HERRIN	COAL	7.9	212.6
311.9	CARBONDALE		ROCK	25.5	220.5

MAPID: 14590780000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 33 QUARTERS/FOOTAGES: 14' N line, 11' W line of SE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.430042 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.139063 DATE COLLECTED: 6 / 18 / 1981
 SURFACE ELEVATION (FT.): 549.8 LOGGED (FT.): 258.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E373 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
549.8	PLEISTOCENE		UNCONSOLIDATED	48.0	0.0
501.8			ROCK	180.0	48.0
321.8	CARBONDALE	HERRIN	COAL	7.0	228.0
314.8	CARBONDALE		ROCK	23.0	235.0

MAPID: 14590984000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 33 QUARTERS/FOOTAGES: 1834' N line, 42' E line of NE
 QUADRANGLE: WINKLE LONGITUDE: -89.425657 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.13771 DATE COLLECTED: 9 / 24 / 1981
 SURFACE ELEVATION (FT.): 541.6 LOGGED (FT.): 260.0 LOG TYPE: Drillers Log
 SOURCE: AMAX F349MP WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
541.6	PLEISTOCENE		UNCONSOLIDATED	12.0	0.0
529.6	MODESTO		ROCK	178.0	12.0
351.6	CARBONDALE	DANVILLE	COAL	2.0	190.0
349.6	CARBONDALE		ROCK	36.0	192.0
313.6	CARBONDALE	HERRIN	COAL	7.0	228.0
306.6	CARBONDALE		ROCK	25.0	235.0

MAPID: 14591007000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 33 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW NE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.429951 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.142784 DATE COLLECTED: 5 / 7 / 1958
 SURFACE ELEVATION (FT.): 527.3 LOGGED (FT.): 208.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE E423 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX#75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
527.3	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
513.3	MODESTO		ROCK	145.0	14.0
368.3	CARBONDALE	DANVILLE	COAL	1.0	159.0
367.3	CARBONDALE		ROCK	37.5	160.0
329.8	CARBONDALE	HERRIN	COAL	7.5	197.5
322.3	CARBONDALE		ROCK	3.0	205.0

MAPID: 14502323000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 34 QUARTERS/FOOTAGES: 2640' N line, 2475' E line

QUADRANGLE: WINKLE LONGITUDE: -89.416827 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.135227 DATE COLLECTED:

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 182.8 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES YF305N WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
350.2	MODESTO	PIASA	LIMESTONE	12.8	124.8
337.4	MODESTO		GRAY SHALE	1.3	137.6
336.1	CARBONDALE	DANVILLE	COAL	1.2	138.9
334.9	CARBONDALE		ARGILLACEOUS SANDSTONE	6.7	140.1
328.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	146.8
324.7	CARBONDALE	LAWSON	DARK GRAY SHALE	9.5	150.3
315.2	CARBONDALE	LAWSON	SANDSTONE	4.7	159.8
310.6	CARBONDALE	BRERETON	LIMESTONE	6.3	164.4
304.2	CARBONDALE	ANNA	BLACK SHALE	5.3	170.8
299.0	CARBONDALE	HERRIN	COAL	6.8	176.0

MAPID: 14590977000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 34 QUARTERS/FOOTAGES: 41' N line, 82' W line of SW SW

QUADRANGLE: WINKLE LONGITUDE: -89.425499 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.131631 DATE COLLECTED: 6 / 15 / 1979

SURFACE ELEVATION (FT.): 518.2 LOGGED (FT.): 233.0 LOG TYPE: Drillers Log

SOURCE: AMAX F226DF WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
518.2	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
488.2			ROCK	185.5	30.0
302.7	CARBONDALE	HERRIN	COAL	7.4	215.5
295.3	CARBONDALE		ROCK	10.1	222.9

MAPID: 14590978000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 34 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW NE SW

QUADRANGLE: WINKLE LONGITUDE: -89.421217 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.131622 DATE COLLECTED: 5 / 13 / 1958

SURFACE ELEVATION (FT.): 507.4 LOGGED (FT.): 245.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE F253 WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
507.4	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
480.4	MODESTO		ROCK	167.5	27.0
312.9	CARBONDALE	DANVILLE	COAL	1.5	194.5
311.4	CARBONDALE		ROCK	40.4	196.0
271.0	CARBONDALE	HERRIN	COAL	7.0	236.4
264.0	CARBONDALE		ROCK	1.6	243.4

MAPID: 14590979000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 34 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE SE SW

QUADRANGLE: WINKLE LONGITUDE: -89.416897 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.131542 DATE COLLECTED: 5 / 7 / 1958

SURFACE ELEVATION (FT.): 541.6 LOGGED (FT.): 244.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE F255 WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
541.6	PLEISTOCENE		UNCONSOLIDATED	46.0	0.0
495.6			ROCK	189.0	46.0
306.6	CARBONDALE	HERRIN	COAL	2.0	235.0
304.6	CARBONDALE	HERRIN	CLAYSTONE	0.5	237.0
304.1	CARBONDALE	HERRIN	COAL	4.5	237.5
299.6	CARBONDALE		ROCK	2.0	242.0

MAPID: 1459098000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 34 QUARTERS/FOOTAGES: 41' N line, 52' E line of SE SW
 QUADRANGLE: WINKLE LONGITUDE: -89.416988 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.13147 DATE COLLECTED: 6 / 23 / 1981
 SURFACE ELEVATION (FT.): 541.8 LOGGED (FT.): 266.0 LOG TYPE: Drillers Log
 SOURCE: AMAX F229GG WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
541.8	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
515.8	MODESTO		ROCK	138.0	26.0
377.8	MODESTO	ROCK BRANCH	COAL	1.0	164.0
376.8	MODESTO		ROCK	28.0	165.0
348.8	CARBONDALE	DANVILLE	COAL	3.0	193.0
345.8	CARBONDALE		ROCK	42.0	196.0
303.8	CARBONDALE	HERRIN	COAL	8.0	238.0
295.8	CARBONDALE		ROCK	20.0	246.0

MAPID: 14590981000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 34 QUARTERS/FOOTAGES: 944' N line, 52' E line of SE NW
 QUADRANGLE: WINKLE LONGITUDE: -89.416955 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.136348 DATE COLLECTED: 7 / 1 / 1981
 SURFACE ELEVATION (FT.): 520.9 LOGGED (FT.): 229.0 LOG TYPE: Drillers Log
 SOURCE: AMAX F304IM WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
520.9	PLEISTOCENE		UNCONSOLIDATED	59.5	0.0
461.4	MODESTO		ROCK	112.3	59.5
349.1	CARBONDALE	DANVILLE	COAL	2.4	171.8
346.7	CARBONDALE		ROCK	33.2	174.2
313.5	CARBONDALE	HERRIN	COAL	7.8	207.4
305.7	CARBONDALE		ROCK	13.8	215.2

MAPID: 14590982000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 34 QUARTERS/FOOTAGES: 1' N line, 165' W line of NW SE
 QUADRANGLE: WINKLE LONGITUDE: -89.416253 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.135186 DATE COLLECTED: 11 / 7 / 1957
 SURFACE ELEVATION (FT.): 485.3 LOGGED (FT.): 185.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE F305N WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.3	PLEISTOCENE		UNCONSOLIDATED	5.0	0.0
480.3	MODESTO		ROCK	134.2	5.0
346.1	CARBONDALE	DANVILLE	COAL	1.2	139.2
344.9	CARBONDALE		ROCK	35.9	140.4
309.0	CARBONDALE	HERRIN	COAL	6.7	176.3
302.3	CARBONDALE		ROCK	2.0	183.0

MAPID: 14590985000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 34 QUARTERS/FOOTAGES: 82' N line, 82' W line of NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.416423 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.142281 DATE COLLECTED: 4 / 9 / 1969
 SURFACE ELEVATION (FT.): 525.5 LOGGED (FT.): 322.4 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE F380DA WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
525.5	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0
492.5	MODESTO		ROCK	110.0	33.0
382.5	MODESTO	ROCK BRANCH	COAL	0.7	143.0
381.8			ROCK	70.2	143.7
311.6	CARBONDALE	HERRIN	COAL	7.5	213.9
304.1	CARBONDALE		ROCK	89.3	221.4
214.8	CARBONDALE	HOUCHIN CREEK	COAL	1.7	310.7
213.1	CARBONDALE		ROCK	10.0	312.4

MAPID: 14590987000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 34 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW
 QUADRANGLE: WINKLE LONGITUDE: -89.425358 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.142712 DATE COLLECTED: 9 / 16 / 1957
 SURFACE ELEVATION (FT.): 506.7 LOGGED (FT.): 208.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE F401 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
506.7	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0
500.7	MODESTO		ROCK	155.0	6.0
345.7	CARBONDALE	DANVILLE	COAL	1.0	161.0
344.7	CARBONDALE		ROCK	30.8	162.0
313.9	CARBONDALE	HERRIN	COAL	6.7	192.8
307.2	CARBONDALE		ROCK	8.5	199.5

MAPID: 14590988000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 34 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.412382 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.14241 DATE COLLECTED: 9 / 16 / 1957
 SURFACE ELEVATION (FT.): 512.2 LOGGED (FT.): 217.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE F407 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
512.2	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0
480.2	MODESTO		ROCK	133.0	32.0
347.2	CARBONDALE	DANVILLE	COAL	0.5	165.0
346.7	CARBONDALE		ROCK	43.0	165.5
303.7	CARBONDALE	HERRIN	COAL	7.0	208.5
296.7	CARBONDALE		ROCK	1.5	215.5

MAPID: 14590989000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 34 QUARTERS/FOOTAGES: 10' N line, 15' E line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.408107 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.142285 DATE COLLECTED: 9 / 16 / 1957

SURFACE ELEVATION (FT.): 482.5 LOGGED (FT.): 223.0 LOG TYPE: Drillers Log

SOURCE: AMAX F409 WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.5	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
462.5			ROCK	176.0	20.0
286.5	CARBONDALE	HERRIN	COAL	8.0	196.0
278.5	CARBONDALE		ROCK	19.0	204.0

MAPID: 14502326000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 35 QUARTERS/FOOTAGES: 0' N line, 2640' E line

QUADRANGLE: WINKLE LONGITUDE: -89.398452 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.142106 DATE COLLECTED:

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 222.8 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES YF413 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
320.0	MODESTO	PIASA	LIMESTONE	13.0	160.0
307.0	CARBONDALE		SILTY SHALE	10.0	173.0
297.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	183.0
294.0	CARBONDALE	ENERGY	GRAY SHALE	12.0	186.0
282.0	CARBONDALE	ENERGY	BLACK SHALE	8.0	198.0
274.0	CARBONDALE	ENERGY	DARK GRAY SHALE	9.5	206.0
264.0	CARBONDALE	HERRIN	COAL	6.8	216.0

MAPID: 14590976000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 35 QUARTERS/FOOTAGES: 74' S line, 1050' E line of SW SW

QUADRANGLE: WINKLE LONGITUDE: -89.407186 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.127995 DATE COLLECTED: 6 / 25 / 1981

SURFACE ELEVATION (FT.): 504.5 LOGGED (FT.): 236.0 LOG TYPE: Drillers Log

SOURCE: AMAX F209NI WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
504.5	PLEISTOCENE		UNCONSOLIDATED	53.5	0.0
451.0	MODESTO		ROCK	121.0	53.5
330.0	CARBONDALE	DANVILLE	COAL	1.0	174.5
329.0	CARBONDALE		ROCK	43.6	175.5
285.4	CARBONDALE	HERRIN	COAL	6.5	219.1
278.9	CARBONDALE		ROCK	10.4	225.6

MAPID: 14590983000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 35 QUARTERS/FOOTAGES: 120' S line, 108' W line of SW NE

QUADRANGLE: WINKLE LONGITUDE: -89.398351 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.135135 DATE COLLECTED: 8 / 10 / 1976

SURFACE ELEVATION (FT.): 478.0 LOGGED (FT.): 239.0 LOG TYPE: Drillers Log

SOURCE: AMAX F313X WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
478.0	PLEISTOCENE		UNCONSOLIDATED	58.0	0.0
420.0	MODESTO		ROCK	107.0	58.0
313.0	CARBONDALE	DANVILLE	COAL	1.0	165.0
312.0	CARBONDALE		ROCK	46.0	166.0
266.0	CARBONDALE	HERRIN	COAL	7.0	212.0
259.0	CARBONDALE		ROCK	20.0	219.0

MAPID: 14590986000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 35 QUARTERS/FOOTAGES: 110' N line, 79' W line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.398509 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.142001 DATE COLLECTED: 6 / 2 / 1981

SURFACE ELEVATION (FT.): 482.1 LOGGED (FT.): 248.0 LOG TYPE: Drillers Log

SOURCE: AMAX F388DL WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.1	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
455.1	MODESTO		ROCK	153.8	27.0
301.3	CARBONDALE	DANVILLE	COAL	1.4	180.8
299.9	CARBONDALE		ROCK	44.0	182.2
255.9	CARBONDALE	HERRIN	COAL	7.7	226.2
248.2	CARBONDALE		ROCK	14.1	233.9

MAPID: 14590990000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 35 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE NW

QUADRANGLE: WINKLE LONGITUDE: -89.398645 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.142106 DATE COLLECTED: 9 / 10 / 1957

SURFACE ELEVATION (FT.): 482.8 LOGGED (FT.): 224.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE F413 WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.8	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
468.8			ROCK	57.0	14.0
411.8			COAL	0.5	71.0
411.3			ROCK	144.0	71.5
267.3	CARBONDALE	HERRIN	COAL	6.8	215.5
260.5	CARBONDALE		ROCK	1.7	222.3

MAPID: 14590991000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 35 QUARTERS/FOOTAGES: 34' N line, 34' E line of NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.394052 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.141917 DATE COLLECTED: 8 / 9 / 1976
 SURFACE ELEVATION (FT.): 500.7 LOGGED (FT.): 224.0 LOG TYPE: Drillers Log
 SOURCE: AMAX F415 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.7	PLEISTOCENE		UNCONSOLIDATED	43.0	0.0
457.7	MODESTO		ROCK	108.0	43.0
349.7	CARBONDALE	DANVILLE	COAL	1.0	151.0
348.7	CARBONDALE		ROCK	44.0	152.0
304.7	CARBONDALE	HERRIN	COAL	7.0	196.0
297.7	CARBONDALE		ROCK	21.0	203.0

MAPID: 14502851000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 3W SECTION: 36 QUARTERS/FOOTAGES: 1670' S line, 1295' E line
 QUADRANGLE: WINKLE LONGITUDE: -89.375434 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.131742 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 124.0 LOG TYPE: Electric Log
 SOURCE: WELL TYPE: Oil and Gas Test
 COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
363.0	MODESTO	PIASA	LIMESTONE	9.0	57.0
354.0	MODESTO		SHALE	2.0	66.0
352.0	CARBONDALE	DANVILLE	COAL	2.0	68.0
350.0	CARBONDALE		SHALE	6.0	70.0
344.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	76.0
342.0	CARBONDALE	LAWSON	SHALE	5.0	78.0
337.0	CARBONDALE	BRERETON	LIMESTONE	5.0	83.0
332.0	CARBONDALE	ENERGY	DARK GRAY SHALE	29.0	88.0
303.0	CARBONDALE	HERRIN	COAL	7.0	117.0

MAPID: 14502914000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 7 QUARTERS/FOOTAGES: 2515' S line, 1400' W line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.587748

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.197373

DATE COLLECTED:

SURFACE ELEVATION (FT.): 538.0

LOGGED (FT.): 258.0

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
343.0	MODESTO	PIASA	LIMESTONE	12.0	195.0
331.0	MODESTO		GRAY SHALE	4.0	207.0
327.0	CARBONDALE	DANVILLE	COAL	3.0	211.0
324.0	CARBONDALE		GRAY SHALE	4.0	214.0
320.0	CARBONDALE	GALUM	LIMESTONE & SHALE	7.0	218.0
313.0	CARBONDALE		GRAY SHALE	3.0	225.0
310.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	228.0
307.0	CARBONDALE	LAWSON	GRAY SHALE	4.0	231.0
303.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	6.0	235.0
297.0	CARBONDALE		DARK GRAY SHALE	4.0	241.0
293.0	CARBONDALE	BRERETON	LIMESTONE	4.0	245.0
289.0	CARBONDALE	ANNA	BLACK SHALE	2.0	249.0
286.0	CARBONDALE	HERRIN	COAL	6.0	252.0

MAPID: 14590010000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 8 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.571457

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.190557

DATE COLLECTED: 2 / 28 / 1975

SURFACE ELEVATION (FT.): 531.8

LOGGED (FT.): 281.3

LOG TYPE: Drillers Log

SOURCE: OLD BEN COAL CO. 16081

WELL TYPE: Coal Test

COMMENT: PERMIT 51; MINE #11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
531.8	PLEISTOCENE		UNCONSOLIDATED	15.5	0.0	
516.3	MODESTO		SANDSTONE	1.5	15.5	
514.8	MODESTO		GRAY SHALE	50.0	17.0	
464.8	MODESTO		COAL	1.3	67.0	
463.5	MODESTO		UNDERCLAY	7.7	68.3	
455.8	MODESTO		GRAY SHALE	26.0	76.0	
429.8	MODESTO		SANDY SHALE	45.0	102.0	
384.8	MODESTO		GRAY SHALE	38.0	147.0	
346.8	MODESTO		LIMESTONE	2.5	185.0	
344.3	MODESTO		GREEN SHALE	12.5	187.5	
331.8	MODESTO		SANDY SHALE	19.0	200.0	
312.8	MODESTO	PIASA	LIMESTONE	12.0	219.0	
300.8	MODESTO		GRAY SHALE	2.0	231.0	
298.8	CARBONDALE	DANVILLE	COAL	2.0	233.0	
296.8	CARBONDALE		CLAYSTONE	8.0	235.0	
288.8	CARBONDALE	GALUM	LIMESTONE	3.0	243.0	
285.8	CARBONDALE		GRAY SHALE	6.0	246.0	
279.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	252.0	
277.8	CARBONDALE		DARK GRAY SHALE	4.0	254.0	
273.8	CARBONDALE	CONANT	LIMESTONE	3.0	258.0	DARK
270.8	CARBONDALE		DARK SHALE	5.3	261.0	
265.5	CARBONDALE	BRERETON	LIMESTONE	5.8	266.3	
259.7	CARBONDALE	ANNA	BLACK SHALE	2.3	272.1	
257.4	CARBONDALE	HERRIN	COAL	6.9	274.4	

MAPID: 14528981000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 9 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.545224

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.197284

DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.0

LOGGED (FT.): 333.0

LOG TYPE: Drillers Log

SOURCE: ZEIGLER 272

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
495.0	PLEISTOCENE		CLAY	31.0	0.0	
464.0			SANDSTONE	2.0	31.0	
462.0			SHALE	3.0	33.0	SANDY
459.0			SHALE	2.0	36.0	
457.0			SANDSTONE	50.0	38.0	
407.0			LIMESTONE	1.0	88.0	
406.0			SHALE	11.0	89.0	
395.0			SHALE	5.0	100.0	SANDY
390.0			SHALE	52.0	105.0	
338.0			SHALE	12.0	157.0	SANDY
326.0			LIMESTONE	2.0	169.0	SANDY
324.0			SHALE	4.0	171.0	GREEN
320.0			SHALE	2.0	175.0	RED
318.0			SHALE	13.0	177.0	GRAY
305.0			SHALE	30.0	190.0	SANDY
275.0			SHALE	6.0	220.0	SHALEY
269.0			SHALE	17.0	226.0	SANDY
252.0			SANDSTONE	6.5	243.0	
245.5			LIMESTONE	5.0	249.5	SANDY
240.5			SANDSTONE	58.5	254.5	
182.0			LIMESTONE	0.5	313.0	
181.5	SHELburn	ANVIL ROCK	SANDSTONE	5.5	313.5	COAL STREAKS
176.0	SHELburn		SHALE	14.0	319.0	SANDY

MAPID: 14528982000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 9 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.545224 GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.197284 DATE COLLECTED:

SURFACE ELEVATION (FT.): 505.0 LOGGED (FT.): 289.0 LOG TYPE: Drillers Log

SOURCE: ZEIGLER 273 WELL TYPE: Coal Test

COMMENT: COORDINATE FROM CO MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
505.0	PLEISTOCENE		SOIL	1.0	0.0	
504.0	PLEISTOCENE		CLAY	14.0	1.0	
490.0	PLEISTOCENE		CLAY	10.0	15.0	SANDY
480.0			SHALE	27.0	25.0	GRAY
453.0			SHALE	18.0	52.0	SANDY
435.0			COAL WITH SHALE	1.0	70.0	
434.0			SHALE	3.0	71.0	GRAY
431.0			SHALE	2.0	74.0	GRAY SANDY
429.0			SANDSTONE	1.0	76.0	
428.0			SANDSTONE	21.0	77.0	SHALEY
407.0			LIMESTONE	2.0	98.0	
405.0			LIMESTONE	1.0	100.0	
404.0			SHALE	2.0	101.0	GRAY
402.0			SHALE	5.0	103.0	GRAY SANDY
397.0			SANDSTONE	6.0	108.0	
391.0			SANDSTONE	6.0	114.0	SHALEY
385.0			SHALE	52.5	120.0	SANDY
332.5			SHALE	0.5	172.5	LIMEY
332.0			SANDSTONE	1.0	173.0	
331.0			LIMESTONE	1.0	174.0	
330.0			SHALE	30.0	175.0	GRAY
300.0			SHALE	3.0	205.0	BLK
297.0			SHALE	9.0	208.0	GREEN SANDY
288.0			SANDSTONE	5.0	217.0	SHALEY
283.0	SHELBURN	PIASA	LIMESTONE	6.0	222.0	TAN
277.0	SHELBURN		SHALE	7.0	228.0	DK GRAY
270.0	SHELBURN		SHALE	11.0	235.0	SANDY GRAY
259.0	SHELBURN	BANKSTON FORK	LIMESTONE	2.5	246.0	TAN
256.5	SHELBURN	BANKSTON FORK	SHALE	5.5	248.5	GREEN SANDY
251.0	SHELBURN	BANKSTON FORK	LIMESTONE	2.5	254.0	TAN
247.5	SHELBURN		SHALE	6.0	257.5	DK GRAY
241.5	SHELBURN	BRERETON	LIMESTONE	4.5	263.5	
237.0	SHELBURN		SHALE	2.0	268.0	BLACK
235.0	CARBONDALE	ANNA	SHALE	0.4	270.0	BLACK
234.6	CARBONDALE	ANNA	SHALE	3.4	270.4	DK GRAY
231.2	CARBONDALE	HERRIN	COAL	7.4	273.8	
223.8	CARBONDALE		UNDERCLAY	2.6	281.2	
221.3	CARBONDALE		LIMESTONE	4.0	283.7	
217.3	CARBONDALE		SHALE	2.3	287.7	GRAY SANDY

MAPID: 14528983000C VERSION: 1

PROJECT:

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 9 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.545224

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.197284

DATE COLLECTED: 11 / 10 / 1970

SURFACE ELEVATION (FT.): 529.8 LOGGED (FT.): 361.0

LOG TYPE: Drillers Log

SOURCE: ZEIGLER 9750C

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
529.8	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0	
511.8			SANDSTONE	82.0	18.0	
429.8			SHALE	100.8	100.0	GRAY
329.0	SHELBURN	PIASA	LIMESTONE	10.9	200.8	
318.1			SHALE	23.5	211.7	GRAY
294.6			LIMESTONE	5.0	235.2	
289.6			SHALE	2.0	240.2	GRAY
287.6			LIMESTONE	4.8	242.2	
282.8			SHALE	45.5	247.0	GRAY
237.3			LIMESTONE	6.5	292.5	
230.8			SHALE	4.3	299.0	GRAY
226.5			LIMESTONE	1.0	303.3	
225.5			SHALE	3.7	304.3	GRAY
221.8			SANDSTONE	53.0	308.0	

MAPID: 14528984000C VERSION: 1

PROJECT: NSCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 9 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.545224

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.197284

DATE COLLECTED: 1 / 28 / 1975

SURFACE ELEVATION (FT.): 525.2 LOGGED (FT.): 285.2

LOG TYPE: Drillers Log

SOURCE: ZEIGLER 16106C

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
525.2	PLEISTOCENE		CLAY	16.1	0.0	SHALEY
509.1			SANDSTONE	46.4	16.1	BROWN
462.7			SANDSTONE	29.3	62.5	GRAY
433.4			SHALE	127.3	91.8	GRAY
306.1	SHELBURN	PIASA	LIMESTONE	8.5	219.1	
297.6	SHELBURN		SHALE	24.5	227.6	SANDY GRAY
273.1	SHELBURN		LIMESTONE	2.0	252.1	BLK
271.1	SHELBURN		SHALE	1.9	254.1	GRAY
269.2	SHELBURN		LIMESTONE	0.6	256.0	
268.6	SHELBURN		SHALE	1.4	256.6	GRAY
267.2	SHELBURN	BRERETON	LIMESTONE	7.2	258.0	SANDY
260.0	CARBONDALE	ANNA	SILTSTONE	2.7	265.2	
257.3	CARBONDALE	HERRIN	COAL	7.8	267.9	
249.5	CARBONDALE		UNDERCLAY	1.2	275.7	
248.3	CARBONDALE		LIMESTONE	0.7	276.9	
247.6	CARBONDALE		SHALE	1.6	277.6	SAND GRAY
246.0	CARBONDALE		LIMESTONE	6.0	279.2	

MAPID: 14590022000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 9 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.545226

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.197282

DATE COLLECTED: 1 / 28 / 1975

SURFACE ELEVATION (FT.): 525.2 LOGGED (FT.): 285.2

LOG TYPE: Drillers Log

SOURCE: OLD BEN COAL CO. 16186C

WELL TYPE: Coal Test

COMMENT: PERMIT 51; MINE #1

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
525.2	PLEISTOCENE		UNCONSOLIDATED	16.1	0.0	
509.1	MODESTO		SANDSTONE	46.4	16.1	BROWN
462.7	MODESTO		SANDSTONE	29.3	62.5	
433.4	MODESTO		GRAY SHALE	127.3	91.8	
306.1	MODESTO	PIASA	LIMESTONE	8.5	219.1	
297.6	MODESTO		SANDY SHALE	24.5	227.6	
273.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	252.1	BLACK
271.1	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.9	254.1	
269.2	CARBONDALE	BANKSTON FORK	LIMESTONE	0.6	256.0	
268.6	CARBONDALE		GRAY SHALE	1.4	256.6	
267.2	CARBONDALE	BRERETON	LIMESTONE	7.2	258.0	
260.0	CARBONDALE	ANNA	BLACK SHALE	2.7	265.2	
257.3	CARBONDALE	HERRIN	COAL	7.8	267.9	
249.5	CARBONDALE		UNDERCLAY	1.2	275.7	
248.3	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.7	276.9	
247.6	CARBONDALE	HIGGINSVILLE	SANDY SHALE	1.6	277.6	
246.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	6.0	279.2	

MAPID: 14528985000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 10 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.526327 GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.196743 DATE COLLECTED: 7 / 15 / 1975

SURFACE ELEVATION (FT.): 526.7 LOGGED (FT.): 340.0 LOG TYPE: Drillers Log

SOURCE: ZEIGLER 16263B WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
526.7	PLEISTOCENE		CLAY	25.0	0.0	
501.7			SANDSTONE	67.4	25.0	GRAY
434.3			SHALE	5.6	92.4	GRAY
428.7			SILTSTONE	32.0	98.0	GRAY
396.7			SHALE	26.4	130.0	GRAY
370.3			LIMESTONE	1.6	156.4	FRACTURED
368.7			SHALE	2.0	158.0	GRAY
366.7			SILTSTONE	70.0	160.0	GRAY
296.7	SHELBURN	ANVIL ROCK	SANDSTONE	30.2	230.0	GRAY
266.5	SHELBURN	ANVIL ROCK	SILTSTONE	9.8	260.2	GRAY
256.7	SHELBURN	ANVIL ROCK	SANDSTONE	10.4	270.0	GRAY
246.3			LIMESTONE	0.6	280.4	
245.7			SHALE	4.4	281.0	GRAY
241.3			LIMESTONE	0.6	285.4	
240.7			SHALE	29.0	286.0	GRAY
211.7			SILTSTONE	25.0	315.0	GRAY

MAPID: 14590949000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 11 QUARTERS/FOOTAGES: 60' S line, 25' E line of SE SE

QUADRANGLE: WINKLE LONGITUDE: -89.498416 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.188548 DATE COLLECTED: 6 / 30 / 1976

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 258.0 LOG TYPE: Drillers Log

SOURCE: AMAX A417Z WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
495.0	PLEISTOCENE		UNCONSOLIDATED	37.0	0.0	
458.0	MODESTO		ROCK	131.0	37.0	
327.0	MODESTO	DEGRAFF	COAL	1.0	168.0	
326.0			ROCK	68.3	169.0	
257.7	CARBONDALE	HERRIN	COAL	3.0	237.3	
254.7	CARBONDALE		ROCK	17.7	240.3	

MAPID: 14590950000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 11 QUARTERS/FOOTAGES: 588' S line, 466' W line of SE NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.510555 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.197774 DATE COLLECTED: 3 / 14 / 1961

SURFACE ELEVATION (FT.): 531.8 LOGGED (FT.): 274.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES A511GC WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
531.8	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0
496.8			ROCK	229.4	35.0
267.4	CARBONDALE	HERRIN	COAL	8.4	264.4
259.0	CARBONDALE		ROCK	1.2	272.8

MAPID: 14502515000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 13 QUARTERS/FOOTAGES: 2310' N line, 2310' W line

QUADRANGLE: WINKLE LONGITUDE: -89.490347 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.181538 DATE COLLECTED:

SURFACE ELEVATION (FT.): 514.0 LOGGED (FT.): 270.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
321.0	MODESTO	PIASA	LIMESTONE	8.0	193.0
313.0	CARBONDALE		CALCAREOUS SHALE	20.0	201.0
293.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	221.0
289.5	CARBONDALE	BANKSTON FORK	GRAY SHALE	3.5	224.5
286.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	228.0
281.0	CARBONDALE	LAWSON	GRAY SHALE	7.0	233.0
274.0	CARBONDALE	CONANT	LIMESTONE	4.0	240.0
270.0	CARBONDALE		DARK GRAY SHALE	2.0	244.0
268.0	CARBONDALE	BRERETON	LIMESTONE	6.0	246.0
262.0	CARBONDALE	ANNA	BLACK SHALE	2.0	252.0
260.0	CARBONDALE	ENERGY	GRAY SHALE	5.0	254.0
251.0	CARBONDALE	HERRIN	COAL	7.0	263.0

MAPID: 14590946000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 13 QUARTERS/FOOTAGES: 1' S line, 1' W line of SE SW
 QUADRANGLE: WINKLE LONGITUDE: -89.49394 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.173358 DATE COLLECTED: 3 / 6 / 1969
 SURFACE ELEVATION (FT.): 552.4 LOGGED (FT.): 357.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES A-219-A WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
552.4	PLEISTOCENE		UNCONSOLIDATED	55.0	0.0
497.4			ROCK	195.5	55.0
301.9	CARBONDALE	HERRIN	COAL	5.0	250.5
296.9	CARBONDALE		ROCK	90.5	255.5
206.4	CARBONDALE	HOUCHIN CREEK	COAL	2.8	346.0
203.6	CARBONDALE		ROCK	8.2	348.8

MAPID: 14590947000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 13 QUARTERS/FOOTAGES: 40' N line, 30' W line of SW SE
 QUADRANGLE: WINKLE LONGITUDE: -89.489197 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.176665 DATE COLLECTED: 7 / 8 / 1976
 SURFACE ELEVATION (FT.): 537.4 LOGGED (FT.): 295.0 LOG TYPE: Drillers Log
 SOURCE: AMAX A246DC WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
537.4	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
515.4	MODESTO		ROCK	206.0	22.0
309.4	MODESTO	DEGRAFF	COAL	1.0	228.0
308.4	MODESTO		ROCK	4.0	229.0
304.4	CARBONDALE	DANVILLE	COAL	1.0	233.0
303.4	CARBONDALE		ROCK	37.0	234.0
266.4	CARBONDALE	HERRIN	COAL	7.0	271.0
259.4	CARBONDALE		ROCK	17.0	278.0

MAPID: 14590948000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 14 QUARTERS/FOOTAGES: 2640' N line, 1320' W line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.51249 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.181599 DATE COLLECTED: 3 / 6 / 1961

SURFACE ELEVATION (FT.): 535.1 LOGGED (FT.): 278.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES A311 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
535.1	PLEISTOCENE		UNCONSOLIDATED	48.0	0.0
487.1			ROCK	220.8	48.0
266.3	CARBONDALE	HERRIN	COAL	6.2	268.8
260.1	CARBONDALE		ROCK	3.0	275.0

MAPID: 14528986000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 16 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.545438 GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.182648 DATE COLLECTED: 2 / 9 / 1992

SURFACE ELEVATION (FT.): 538.0 LOGGED (FT.): 278.0 LOG TYPE: Drillers Log

SOURCE: ZEIGLER 201 MINE11 WELL TYPE: Coal Test

COMMENT: COORDINATES FROM CO MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
538.0	PLEISTOCENE		SOIL	1.0	0.0	
537.0	PLEISTOCENE		CLAY	11.0	1.0	
526.0	PLEISTOCENE		CLAY	3.0	12.0	SANDY
523.0			SANDSTONE	27.0	15.0	
496.0			SHALE	25.0	42.0	
471.0			SANDSTONE	5.0	67.0	HD
466.0			SHALE	129.0	72.0	
337.0	SHELburn	PIASA	LIMESTONE	8.0	201.0	GRAY
329.0	SHELburn		SHALE	22.0	209.0	GRAY
307.0	SHELburn	BANKSTON FORK	LIMESTONE	3.0	231.0	LT GRAY
304.0	SHELburn	BANKSTON FORK	SHALE	3.0	234.0	GREEN
301.0	SHELburn	BANKSTON FORK	SHALE	0.5	237.0	GRAY/GREEN LIMEY
300.5	SHELburn	BANKSTON FORK	LIMESTONE	4.5	237.5	LT GRAY SH STREAKS
296.0	SHELburn		SHALE	1.4	242.0	DK GRAY LIMEY SOFT
294.6	SHELburn		LIMESTONE	0.6	243.4	GRAY
294.0	SHELburn		SHALE	0.5	244.0	DK GRAY NON- CALC
293.5	SHELburn		LIMESTONE	2.6	244.5	DK GRAY
290.9	SHELburn		SHALE	1.9	247.1	DK GRAY FOSSILS
289.0	SHELburn		LIMESTONE	1.0	249.0	DK GRAY FOSSILS
288.0	SHELburn		SHALE	7.0	250.0	DK GRAY SOME FOSSILS
281.0	SHELburn	BRERETON	LIMESTONE	6.6	257.0	DK GRAY FOSSILS
274.4	CARBONDALE	HERRIN	COAL	6.6	263.6	
267.8	CARBONDALE		UNDERCLAY	2.0	270.2	

MAPID: 14528987000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 16 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.545438

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.182648

DATE COLLECTED: 2 / 12 / 1992

SURFACE ELEVATION (FT.): 537.0 LOGGED (FT.): 304.0

LOG TYPE: Drillers Log

SOURCE: ZEIGLER 2H202 M11

WELL TYPE: Coal Test

COMMENT: NO SANDSTONE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
537.0	PLEISTOCENE		UNCONSOLIDATED	255.0	0.0	
282.0			SILTSTONE	3.6	255.0	GRAY
278.4			SHALE	10.9	258.6	GRAY
267.5			SHALE	1.1	269.5	GRAY
266.4			SHALE	4.4	270.6	GRAY
262.0			SHALE	8.3	275.0	GRAY
253.7	SHELBURN	BRERETON CYCLOTH	LIMESTONE	1.0	283.3	
252.7	CARBONDALE	ANNA	SHALE	4.7	284.3	
248.0	CARBONDALE	HERRIN	COAL	6.1	289.0	
242.0	CARBONDALE		UNDERCLAY	2.5	295.0	

MAPID: 14528988000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 16 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.545438 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 38.182648 DATE COLLECTED: 2 / 7 / 1992
 SURFACE ELEVATION (FT.): 525.0 LOGGED (FT.): 280.0 LOG TYPE: Drillers Log
 SOURCE: ZEIGLER 2H203 M11 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
525.0	PLEISTOCENE		SOIL	1.0	0.0	
524.0	PLEISTOCENE		CLAY	12.0	1.0	
512.0			SANDSTONE	34.0	13.0	
478.0			SHALE	7.0	47.0	
471.0			SANDSTONE	20.0	54.0	
451.0			COAL	9.0	74.0	
442.0			SANDSTONE	1.0	83.0	
441.0			SHALE	106.0	84.0	
335.0			SANDSTONE	4.0	190.0	
331.0			SHALE	2.0	194.0	BLACK
329.0			SHALE	10.0	196.0	GRAY
319.0	SHELBURN	PIASA	LIMESTONE	10.0	206.0	
309.0	SHELBURN		SHALE	31.6	216.0	
277.4	SHELBURN		SHALE	1.0	247.6	GREEN
276.4	SHELBURN		LIMESTONE	1.4	248.6	LT GRAY
275.0	SHELBURN		LIMESTONE	0.7	250.0	DARK GRAY
274.3	SHELBURN		SHALE	2.8	250.7	BLACK
271.5	SHELBURN	BRERETON	LIMESTONE	8.7	253.5	DK GRAY FOSSILS
262.8	CARBONDALE	ANNA	SHALE	1.8	262.2	BLACK
261.0	CARBONDALE	HERRIN	COAL	7.0	264.0	
254.0	CARBONDALE		UNDERCLAY	1.5	271.0	
252.5	CARBONDALE		LIMESTONE & SHALE	7.5	272.5	

MAPID: 14528989000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 16 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.545438

GEOLOGIST: STRAYER

CONFIDENTIAL: N LATITUDE: 38.182648

DATE COLLECTED: 11 / 3 / 1970

SURFACE ELEVATION (FT.): 616.6 LOGGED (FT.): 406.1

LOG TYPE: Drillers Log

SOURCE: PEABODY CC402C

WELL TYPE: Coal Test

COMMENT: MINE #10

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
616.6	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0	
587.6			SANDSTONE	64.5	29.0	
523.1			SHALE	119.3	93.5	GRAY
403.8			SANDSTONE	1.9	212.8	
401.9			SHALE	16.9	214.7	GRAY
385.0	SHELBURN	PIASA	LIMESTONE	6.4	231.6	
378.6	SHELBURN		SHALE	23.3	238.0	GRAY
355.3	SHELBURN		LIMESTONE	6.4	261.3	
348.9	SHELBURN		SHALE	1.5	267.7	GRAY
347.4	SHELBURN		LIMESTONE	1.2	269.2	
346.2	SHELBURN		SHALE	0.6	270.4	GRAY
345.6	SHELBURN		LIMESTONE	4.1	271.0	
341.5	SHELBURN		SHALE	2.5	275.1	DK
339.0	SHELBURN		LIMESTONE	3.7	277.6	
335.3	SHELBURN		SHALE	1.3	281.3	DK
334.0	SHELBURN		LIMESTONE	0.7	282.6	
333.3	SHELBURN		SHALE	0.3	283.3	DK
333.0	SHELBURN		LIMESTONE	1.3	283.6	
331.7	CARBONDALE	ENERGY	SHALE	7.9	284.9	DK
323.8	CARBONDALE	HERRIN	COAL	7.5	292.8	
316.3	CARBONDALE		UNDERCLAY	3.7	300.3	

MAPID: 14528990000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 17 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.564153

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.182986

DATE COLLECTED: 1 / 28 / 1992

SURFACE ELEVATION (FT.): 525.0

LOGGED (FT.): 284.0

LOG TYPE: Drillers Log

SOURCE: ZEIGLER 181 M11

WELL TYPE: Coal Test

COMMENT: COORDINATE FROM CO MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
525.0	PLEISTOCENE		SOIL	1.0	0.0	
524.0	PLEISTOCENE		CLAY	12.0	1.0	
512.0	PLEISTOCENE		CLAY	5.0	13.0	SANDY
507.0			SANDSTONE	1.0	18.0	HARD
506.0			SANDSTONE	3.0	19.0	
503.0			SANDSTONE	3.5	22.0	HARD
499.5			SHALE	33.5	25.5	
466.0			COAL	2.0	59.0	
464.0			SHALE	24.0	61.0	
440.0			SANDSTONE	1.5	85.0	HARD
438.5			SHALE	6.0	86.5	
432.5			SANDSTONE	1.5	92.5	HARD
431.0			SHALE	73.0	94.0	
358.0			SANDSTONE	8.0	167.0	
350.0			SHALE	29.0	175.0	
321.0	SHELBURN	PIASA	LIMESTONE	11.5	204.0	LT GRAY
309.5	SHELBURN		SHALE	12.5	215.5	
297.0	SHELBURN	BANKSTON FORK	LIMESTONE	4.0	228.0	GRAY
293.0	SHELBURN	BANKSTON FORK	SHALE	5.0	232.0	
288.0	SHELBURN	BANKSTON FORK	LIMESTONE	3.5	237.0	LT GRAY
284.5	SHELBURN		SHALE	5.0	240.5	DK GRAY
279.5	SHELBURN		LIMESTONE	3.0	245.5	DK GRAY
276.5	SHELBURN		SHALE	2.5	248.5	DK GRAY
274.0	SHELBURN	BRERETON	LIMESTONE	0.5	251.0	DK GRAY
273.5	SHELBURN	BRERETON	SHALE	2.8	251.5	DK GRAY
270.7	SHELBURN	BRERETON	LIMESTONE	0.8	254.3	DK GRAY
269.9	CARBONDALE	ANNA	SHALE	4.6	255.1	BLK
265.4	CARBONDALE	HERRIN	COAL	6.9	259.6	
258.5	CARBONDALE		UNDERCLAY	2.5	266.5	
256.0	CARBONDALE		LIMESTONE & SHALE	8.0	269.0	GRAY/GREEN
248.0	CARBONDALE		SHALE	1.3	277.0	GRAY
246.7	CARBONDALE		SHALE	4.2	278.3	GREEN
242.5	CARBONDALE		LIMESTONE	0.5	282.5	GRAY
242.0	CARBONDALE		SHALE	1.0	283.0	GRAY

MAPID: 14528991000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 17 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.564153 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 38.182986 DATE COLLECTED: 2 / 12 / 1992
 SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 304.0 LOG TYPE: Drillers Log
 SOURCE: ZEIGLER 198 M11 WELL TYPE: Coal Test
 COMMENT: COORDINATE FROM CO MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
520.0	PLEISTOCENE		SOIL	1.0	0.0	
519.0	PLEISTOCENE		CLAY	10.0	1.0	
509.0	PLEISTOCENE		CLAY	6.0	11.0	SANDY
503.0			SANDSTONE	2.0	17.0	
501.0			SHALE	59.0	19.0	GRAY
442.0			SANDSTONE	34.0	78.0	
408.0			SHALE	95.0	112.0	GRAY
313.0			SANDSTONE	11.0	207.0	
302.0			SHALE	5.0	218.0	GREEN
297.0			SANDSTONE	3.0	223.0	
294.0			SHALE	1.5	226.0	GRAY
292.5	SHELBURN	PIASA	LIMESTONE	10.5	227.5	GRAY
282.0	SHELBURN		SHALE	14.5	238.0	
267.5	SHELBURN	BANKSTON FORK	LIMESTONE	4.5	252.5	LT GRAY
263.0	SHELBURN	BANKSTON FORK	SHALE	3.0	257.0	GREEN
260.0	SHELBURN	BANKSTON FORK	SHALE	2.0	260.0	GRAY
258.0	SHELBURN	BANKSTON FORK	LIMESTONE	3.5	262.0	GRAY
254.5	SHELBURN		SHALE	2.0	265.5	GRAY
252.5	SHELBURN		LIMESTONE	4.7	267.5	DK GRAY
247.8	SHELBURN		SHALE	0.8	272.2	DK GRAY
247.0	SHELBURN	BRERETON	LIMESTONE & SHALE	7.0	273.0	GRAY
240.0	SHELBURN	BRERETON	LIMESTONE	6.5	280.0	DK GRAY
233.5	CARBONDALE	ANNA	SHALE	0.3	286.5	BLK
233.2	CARBONDALE	HERRIN	COAL	7.9	286.8	
225.3	CARBONDALE		UNDERCLAY	4.3	294.7	GREEN
221.0	CARBONDALE		LIMESTONE & SHALE	5.0	299.0	GRAY/GREEN

MAPID: 14528992000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 17 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.564153 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 38.182986 DATE COLLECTED: 2 / 11 / 1992
 SURFACE ELEVATION (FT.): 518.0 LOGGED (FT.): 379.0 LOG TYPE: Drillers Log
 SOURCE: ZEIGLER 199 M11 WELL TYPE: Coal Test
 COMMENT: COORDINATES FROM CO MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
518.0	PLEISTOCENE		SOIL	1.0	0.0	
517.0	PLEISTOCENE		CLAY	12.0	1.0	
505.0	PLEISTOCENE		CLAY	2.0	13.0	SANDY
503.0	PLEISTOCENE		SAND	25.0	15.0	
478.0			SHALE	27.0	40.0	GRAY
451.0			SANDSTONE	13.0	67.0	
438.0			SANDSTONE	4.5	80.0	HARD
433.5			SANDSTONE	6.5	84.5	
427.0			SHALE	3.0	91.0	GRAY
424.0			SANDSTONE	3.0	94.0	
421.0			SHALE	96.0	97.0	GRAY
325.0			SANDSTONE	4.0	193.0	
321.0			SHALE	13.0	197.0	GRAY
308.0	SHELBURN	PIASA	LIMESTONE	19.0	210.0	GRAY
289.0	SHELBURN		SHALE	9.5	229.0	GRAY
279.5	SHELBURN		LIMESTONE	1.5	238.5	LT GRAY
278.0	SHELBURN		SHALE	6.0	240.0	GRAY
272.0	SHELBURN		LIMESTONE	3.0	246.0	LT GRAY
269.0	SHELBURN		SHALE	1.5	249.0	GRAY
267.5	SHELBURN		LIMESTONE	0.5	250.5	LT GRAY
267.0	SHELBURN		SHALE	2.5	251.0	GRAY
264.5	SHELBURN		LIMESTONE	3.0	253.5	LT GRAY
261.5	SHELBURN		SHALE	2.1	256.5	DK GRAY
259.4	SHELBURN	BRERETON	LIMESTONE	1.7	258.6	DK GRAY
257.7	SHELBURN	BRERETON	LIMESTONE W/ SHALE	4.7	260.3	
253.0	SHELBURN	BRERETON	LIMESTONE	7.5	265.0	DK GRAY
245.5	CARBONDALE	ANNA	SHALE	4.3	272.5	BLK
241.2	CARBONDALE	HERRIN	COAL	6.7	276.8	
234.5	CARBONDALE		UNDERCLAY	3.5	283.5	
231.0	CARBONDALE		LIMESTONE & SHALE	10.0	287.0	GREEN
221.0	CARBONDALE		SHALE	3.0	297.0	GREEN
218.0	CARBONDALE		LIMESTONE & SHALE	6.0	300.0	GREEN
212.0	CARBONDALE		SANDSTONE	6.5	306.0	
205.5	CARBONDALE		SANDSTONE/LIMESTONE	1.5	312.5	
204.0	CARBONDALE		SANDSTONE	6.0	314.0	
198.0	CARBONDALE		SHALE	3.5	320.0	GRAY
194.5	CARBONDALE		LIMESTONE	1.5	323.5	GRAY
193.0	CARBONDALE		SHALE	33.0	325.0	GRAY
160.0	CARBONDALE	ST. DAVID	LIMESTONE	0.8	358.0	GRAY

159.2	CARBONDALE	TURNER MINE	SHALE	5.2	358.8	BLK
154.0	CARBONDALE	SPRINGFIELD	COAL	2.5	364.0	
151.5	CARBONDALE		UNDERCLAY	3.5	366.5	
148.0	CARBONDALE		SANDSTONE	7.5	370.0	
140.5	CARBONDALE		LIMESTONE	1.5	377.5	LT GRAY

MAPID: 14528993000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 17 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.564153 GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.182986 DATE COLLECTED: 2 / 8 / 1992

SURFACE ELEVATION (FT.): 525.0 LOGGED (FT.): 284.0 LOG TYPE: Drillers Log

SOURCE: ZEIGLER 200 M11 WELL TYPE: Coal Test

COMMENT: COORDINATES FROM CO MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
525.0	PLEISTOCENE		SOIL	1.0	0.0	
524.0	PLEISTOCENE		CLAY	11.0	1.0	
513.0	PLEISTOCENE		CLAY	8.0	12.0	SANDY
505.0			SANDSTONE	15.0	20.0	
490.0			SHALE	4.0	35.0	GRAY
486.0			SANDSTONE	12.0	39.0	
474.0			SANDSTONE	1.0	51.0	HD
473.0			SHALE	5.0	52.0	GREEN
468.0			SHALE	11.0	57.0	GRAY
457.0			SANDSTONE	2.0	68.0	HD
455.0			SHALE	17.0	70.0	GRAY
438.0			SHALE	14.0	87.0	SANDY
424.0			SHALE	88.0	101.0	GRAY
336.0			SANDSTONE	1.5	189.0	HD
334.5			SHALE	7.5	190.5	GRAY
327.0			SHALE	11.0	198.0	SANDY
316.0	SHELburn	PIASA	LIMESTONE	9.0	209.0	LT GRAY
307.0	SHELburn		SHALE	14.5	218.0	GRAY
292.5	SHELburn	BANKSTON FORK	LIMESTONE	3.5	232.5	GRAY
289.0	SHELburn	BANKSTON FORK	LIMESTONE & SHALE	5.0	236.0	GREEN
284.0	SHELburn	BANKSTON FORK	LIMESTONE	3.5	241.0	GRAY
280.5	SHELburn		SHALE	3.0	244.5	GRAY
277.5	SHELburn		LIMESTONE	2.9	247.5	GRAY
274.6	SHELburn		SHALE	2.0	250.4	GRAY
272.6	SHELburn		LIMESTONE	0.8	252.4	DK GRAY
271.8	SHELburn		SHALE	5.0	253.2	GRAY
266.8	SHELburn	BRERETON	LIMESTONE	6.8	258.2	DK GRAY
260.0	SHELburn		SHALE	0.2	265.0	GRAY
259.8	CARBONDALE	HERRIN	COAL	6.8	265.2	
253.0	CARBONDALE		UNDERCLAY	7.0	272.0	
246.0	CARBONDALE		LIMESTONE & SHALE	5.0	279.0	GREEN

MAPID: 14502516000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 18 QUARTERS/FOOTAGES: 340' S line, 330' W line of NW SW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.591445 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.180113 DATE COLLECTED: 5 / 0 / 1953

SURFACE ELEVATION (FT.): 527.0 LOGGED (FT.): 480.0 LOG TYPE: Electric Log

SOURCE: ARTNELL CO. WELL TYPE:

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
167.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	360.0
117.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	410.0
76.0	SPOON	DAVIS	UNCLASSIFIED	-	451.0
47.0	SPOON	MURPHYSBORO	UNCLASSIFIED	-	480.0

MAPID: 14502517000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 19 QUARTERS/FOOTAGES: 1650' S line, 330' E line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.574814 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.165573 DATE COLLECTED: 4 / 0 / 1953

SURFACE ELEVATION (FT.): 501.0 LOGGED (FT.): 440.0 LOG TYPE: Electric Log

SOURCE: KROHN, WM. H. WELL TYPE:

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
254.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	247.0
241.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	260.0
165.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	336.0
120.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	381.0
91.0	SPOON	DAVIS	UNCLASSIFIED	-	410.0
61.0	SPOON	MURPHYSBORO	UNCLASSIFIED	4.0	440.0

MAPID: 14502517000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 19 QUARTERS/FOOTAGES: 1650' S line, 330' E line

QUADRANGLE: COULTERVILLE

LONGITUDE: -89.574814

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.165573

DATE COLLECTED:

SURFACE ELEVATION (FT.): 501.0

LOGGED (FT.): 251.0

LOG TYPE: Electric Log

SOURCE:

WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
313.0	MODESTO	PIASA	LIMESTONE	11.0	188.0
302.0	CARBONDALE		GRAY SHALE	17.0	199.0
285.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	216.0
282.0	CARBONDALE	LAWSON	DARK GRAY SHALE	4.0	219.0
278.0	CARBONDALE	CONANT	LIMESTONE	2.0	223.0
276.0	CARBONDALE		DARK GRAY SHALE	5.0	225.0
271.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	4.0	230.0
267.0	CARBONDALE	ANNA	BLACK SHALE	1.0	234.0
266.0	CARBONDALE	ENERGY	GRAY SHALE	10.0	235.0
257.0	CARBONDALE	HERRIN	COAL	7.0	244.0

MAPID: 14590013000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 19 QUARTERS/FOOTAGES: 39' N line, 54' E line of NE NE NE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.573715

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.175601

DATE COLLECTED: 7 / 15 / 1983

SURFACE ELEVATION (FT.): 515.7

LOGGED (FT.): 263.3

LOG TYPE: Drillers Log

SOURCE: OLD BEN COAL CO. #96

WELL TYPE: Coal Test

COMMENT: PERMIT 51; MINE #11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
515.7	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0	
485.7	PLEISTOCENE		UNCONSOLIDATED	24.0	30.0	
461.7	MODESTO		SANDY SHALE	5.5	54.0	
456.2	MODESTO		SANDY SHALE	102.0	59.5	
354.2	MODESTO		COAL	0.2	161.5	
354.0	MODESTO		CALCAREOUS SHALE	6.3	161.7	
347.7	MODESTO		SANDY SHALE	4.0	168.0	
343.7	MODESTO		CALCAREOUS SANDSTONE	1.0	172.0	GRAY
342.7	MODESTO		GRAY SHALE	3.5	173.0	
339.2	MODESTO		DARK GRAY SHALE	2.0	176.5	
337.2	MODESTO		SILTY SHALE	14.9	178.5	
322.3	MODESTO	PIASA	LIMESTONE	9.7	193.4	GRAY
312.6	MODESTO		GRAY SHALE	2.4	203.1	
310.2	CARBONDALE	DANVILLE	COAL	1.5	205.5	
308.7	CARBONDALE		UNDERCLAY	2.5	207.0	
306.2	CARBONDALE		SILTY SHALE	2.8	209.5	
303.4	CARBONDALE		CALCAREOUS SHALE	7.2	212.3	
296.2	CARBONDALE		SANDY SHALE	2.4	219.5	
293.8	CARBONDALE		SANDY SHALE	4.1	221.9	WITH SANDSTONE LENS
289.7	CARBONDALE		DARK GRAY SHALE	0.8	226.0	
288.9	CARBONDALE		SANDY SHALE	2.9	226.8	
286.0	CARBONDALE		DARK GRAY SHALE	2.3	229.7	
283.7	CARBONDALE		SHALE	7.7	232.0	FISSILE
276.0	CARBONDALE		CALCAREOUS SHALE	2.1	239.7	
273.9	CARBONDALE		CALCAREOUS SHALE	3.2	241.8	
270.7	CARBONDALE	BRERETON	LIMESTONE	7.0	245.0	DARK GRAY
263.7	CARBONDALE	HERRIN	COAL	6.6	252.0	
257.1	CARBONDALE		PYRITE	0.2	258.6	
256.9	CARBONDALE		UNDERCLAY	2.4	258.8	
254.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.9	261.2	GRAY
252.6	CARBONDALE		UNKNOWN	0.2	263.1	CORE LOSS

MAPID: 14559023000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 20 QUARTERS/FOOTAGES: 220' N line, 15' W line of SW NE NE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.559497 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.173172 DATE COLLECTED: 4 / 29 / 1986

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 281.0 LOG TYPE: Drillers Log

SOURCE: OLD BEN COAL CO. #107 WELL TYPE: Coal Test

COMMENT: PERMIT 51; MINE #11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
520.0	PLEISTOCENE		CLAY	22.0	0.0	
498.0	PLEISTOCENE		SAND	4.0	22.0	GRAVEL
494.0	PLEISTOCENE		UNCONSOLIDATED	13.0	26.0	
481.0	MODESTO	CHAPEL	COAL	1.5	39.0	TOP ERODED INCOMP THICKNESS
479.5	MODESTO		UNDERCLAY	4.4	40.5	
475.1	MODESTO		SANDSTONE	3.1	44.9	
472.0	MODESTO		SANDY SHALE	101.0	48.0	
371.0	MODESTO		SILTY SHALE	20.5	149.0	
350.5	MODESTO		COAL	0.5	169.5	
350.0	MODESTO		UNDERCLAY	2.0	170.0	
348.0	MODESTO		SANDY SHALE	9.5	172.0	WITH LIMESTONE NODULES
338.5	MODESTO		SILTY SHALE	1.5	181.5	
337.0	MODESTO		SHALE	3.0	183.0	
334.0	MODESTO		SANDY SHALE	5.0	186.0	
329.0	MODESTO		SHALE	13.5	191.0	
315.5	MODESTO	PIASA	LIMESTONE	11.5	204.5	
304.0	MODESTO		SANDY SHALE	5.0	216.0	
299.0	MODESTO		SANDSTONE	2.0	221.0	
297.0	CARBONDALE		SANDY SHALE	2.0	223.0	
295.0	CARBONDALE		SHALE	3.0	225.0	
292.0	CARBONDALE		SILTY SHALE	2.0	228.0	
290.0	CARBONDALE	GALUM	LIMESTONE	3.0	230.0	
287.0	CARBONDALE		SHALE	4.5	233.0	GREEN-GRAY
282.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.3	237.5	
279.2	CARBONDALE		DARK GRAY SHALE	3.7	240.8	
275.5	CARBONDALE	CONANT	SHALY LIMESTONE	4.7	244.5	
270.8	CARBONDALE		BLACK SHALE	0.8	249.2	
270.0	CARBONDALE	BRERETON	SHALY LIMESTONE	6.1	250.0	
264.0	CARBONDALE	BRERETON	UNKNOWN	1.2	256.0	
262.8	CARBONDALE	BRERETON	SHALY LIMESTONE	1.7	257.2	
261.1	CARBONDALE	ANNA	BLACK SHALE	3.0	258.9	
258.1	CARBONDALE	HERRIN	COAL	6.8	261.9	
251.3	CARBONDALE		UNDERCLAY	2.8	268.7	
248.5	CARBONDALE		SHALE WITH LIMESTONE	8.5	271.5	
240.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.5	280.0	
239.5	CARBONDALE		UNKNOWN	0.5	280.5	CORE LOSS

MAPID: 14502149000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 21 QUARTERS/FOOTAGES: 330' N line, 330' E line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.537378 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.174192 DATE COLLECTED: 12 / 0 / 1955

SURFACE ELEVATION (FT.): 573.0 LOGGED (FT.): 527.0 LOG TYPE: Electric Log

SOURCE: LOWERY, ROBERT D. WELL TYPE: Producer-Oil

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
185.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	0.0	388.0
133.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	440.0
103.0	SPOON	DAVIS	UNCLASSIFIED	-	470.0
46.0	SPOON	MURPHYSBORO	UNCLASSIFIED	-	527.0

MAPID: 14526924000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 21 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.545905

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.164447

DATE COLLECTED: 4 / 23 / 1985

SURFACE ELEVATION (FT.): 552.0

LOGGED (FT.): 315.0

LOG TYPE: Drillers Log

SOURCE: ZEIGLER 106

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
552.0	PLEISTOCENE		CLAY	22.4	0.0	SURFACE
529.6			SANDSTONE	28.6	22.4	WEATHERED
501.0			SANDSTONE	10.0	51.0	
491.0			SANDSTONE	0.5	61.0	CALC
490.5			SANDSTONE	8.0	61.5	
482.5			SHALE & SANDSTONE	20.5	69.5	SANDY
462.0			SANDSTONE	16.5	90.0	
445.5			SHALE & SANDSTONE	22.0	106.5	SANDY
423.5			SANDSTONE	2.3	128.5	CALC
421.2			SANDSTONE	9.2	130.8	
412.0			SHALE	40.0	140.0	SANDY
372.0			SHALE	28.0	180.0	SANDY SILTY
344.0	SHELburn	DEGRAFF	COAL	1.0	208.0	
343.0	SHELburn		CLAYSTONE	2.5	209.0	SHALEY
340.5	SHELburn		SHALE	8.0	211.5	SILTY W/ LIME NOD
332.5	SHELburn	PIASA	LIMESTONE	1.0	219.5	
331.5	SHELburn		SHALE	5.5	220.5	SILTY
326.0	SHELburn	DANVILLE	COAL	0.5	226.0	
325.5	SHELburn		CLAYSTONE	1.5	226.5	SHALEY
324.0	SHELburn		SHALE	17.0	228.0	SILTY
307.0	SHELburn		SHALE	12.5	245.0	SILTY W/ SIDERITE
294.5	SHELburn		SHALE	3.5	257.5	GREEN GRAY
291.0	SHELburn	BANKSTON FORK	LIMESTONE W/ SHALE	2.0	261.0	GREEN GRAY
289.0	SHELburn	BANKSTON FORK	LIMESTONE	4.5	263.0	
284.5	SHELburn	BANKSTON FORK	LIMESTONE W/ SHALE	3.4	267.5	GREEN GRAY
281.2	SHELburn	BANKSTON FORK	LIMESTONE	3.5	270.8	
277.6	SHELburn		LIMESTONE W/ SHALE	0.4	274.4	DK
277.3	SHELburn		SHALE	2.6	274.7	DK
274.7	SHELburn		SHALE	7.0	277.3	DK LIMY
267.7	SHELburn		UNKNOWN	5.6	284.3	CORE LOSS
262.1	SHELburn	BRERETON	LIMESTONE	4.8	289.9	
257.3	CARBONDALE	ANNA	SHALE	3.8	294.7	BLK
253.5	CARBONDALE	HERRIN	COAL	7.6	298.5	
245.8	CARBONDALE		SHALE	1.7	306.2	
244.2	CARBONDALE		LIMESTONE	0.4	307.8	
243.8	CARBONDALE		SHALE	6.7	308.2	GREEN GRAY
237.2	CARBONDALE		UNKNOWN	0.1	314.8	CORE LOSS

MAPID: 14528994000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 22 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.526826

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.167403

DATE COLLECTED: 12 / 13 / 1974

SURFACE ELEVATION (FT.): 563.5 LOGGED (FT.): 315.0

LOG TYPE: Drillers Log

SOURCE: ZEIGLER 15958B

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
563.5	PLEISTOCENE		CLAY	20.5	0.0	
543.0			SANDSTONE	94.9	20.5	SHALE BAND
448.1			SHALE	3.3	115.4	DK SILTSTONE
444.8			SHALE	68.2	118.7	GRAY
376.6			LIMESTONE	3.5	186.9	
373.1			SHALE	52.9	190.4	GRAY
320.2	SHELBURN	ANVIL ROCK	SANDSTONE	71.7	243.3	
248.5			COAL	999.9	315.0	UNKNOWN

MAPID: 14528995000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 22 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.526826

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.167403

DATE COLLECTED: 5 / 4 / 1976

SURFACE ELEVATION (FT.): 572.5 LOGGED (FT.): 405.0

LOG TYPE: Drillers Log

SOURCE: ZEIGLER 16250B

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
572.5	PLEISTOCENE		UNCONSOLIDATED	34.8	0.0	
537.7			SANDSTONE	44.5	34.8	HD
493.2			SHALE	12.3	79.3	GRAY SANDY
480.9			SANDSTONE	26.4	91.6	GRAY HD
454.5			SHALE	67.7	118.0	GRAY SANDY
386.8			LIMESTONE	4.1	185.7	HD
382.7			SHALE	5.3	189.8	GRAY SANDY
377.4			LIMESTONE	1.3	195.1	HD
376.1			SHALE	54.2	196.4	GRAY SANDY
321.9	SHELBURN	ANVIL ROCK	SANDSTONE	136.4	250.6	GRAY HD
185.5			SHALE	3.5	387.0	GRAY SANDY
182.0			SHALE	4.0	390.5	HD
178.0	CARBONDALE	HOUCHIN CREEK	COAL	2.6	394.5	HD
175.4			SHALE	7.9	397.1	GRAY

MAPID: 14528996000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 22 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.526826

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.167403

DATE COLLECTED: 5 / 7 / 1976

SURFACE ELEVATION (FT.): 555.9 LOGGED (FT.): 400.0

LOG TYPE: Drillers Log

SOURCE: ZEIGLER 16501B

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
555.9	PLEISTOCENE		UNCONSOLIDATED	20.6	0.0	
535.3			SANDSTONE	96.2	20.6	HD
439.1			SHALE	74.0	116.8	GRAY SANDY
365.1			LIMESTONE	1.5	190.8	GRAY HD
363.6			SHALE	0.3	192.3	GRAY
363.3			SHALE	1.1	192.6	DK
362.2			LIMESTONE	2.8	193.7	HD GRAY
359.4			SHALE	66.6	196.5	SANDY GRAY
292.8	SHELBURN	ANVIL ROCK	SANDSTONE	67.6	263.1	GRAY
225.2			LIMESTONE	3.0	330.7	HD BLK
222.2			SHALE	0.6	333.7	DK
221.6	CARBONDALE	HOUCHIN CREEK	COAL	0.5	334.3	
221.1			LIMESTONE	4.4	334.8	HD GRAY
216.7			SHALE	41.1	339.2	GRAY
175.6			SHALE	6.5	380.3	SANDY GRAY
169.1			LIMESTONE	0.9	386.8	HD BLK
168.2			SHALE	7.5	387.7	SL DK
160.7			SHALE	3.3	395.2	GRAY
157.4			LIMESTONE	1.5	398.5	HD GRAY

MAPID: 14528997000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 22 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.526826

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.167403

DATE COLLECTED: 5 / 12 / 1976

SURFACE ELEVATION (FT.): 553.4 LOGGED (FT.): 400.0

LOG TYPE: Drillers Log

SOURCE: ZEIGLER 16502B

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
553.4	PLEISTOCENE		UNCONSOLIDATED	19.6	0.0	
533.8			SANDSTONE	18.3	19.6	BROWN HD
515.5			SHALE	8.3	37.9	GRAY SANDY
507.2			SANDSTONE	72.5	46.2	GRAY HD
434.7			SHALE	15.2	118.7	GRAY
419.5			SHALE	51.2	133.9	GRAY SANDY
368.3			LIMESTONE	1.9	185.1	HD
366.4			SHALE	71.6	187.0	GRAY SANDY
294.8	SHELburn	ANVIL ROCK	SANDSTONE	53.2	258.6	GRAY HD
241.6			SHALE	57.1	311.8	GRAY SOFT
184.5			SHALE	18.7	368.9	GRAY SANDY
165.8			SHALE	7.3	387.6	
158.5			SHALE	5.1	394.9	GRAY SOFT

MAPID: 14590938000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 22 QUARTERS/FOOTAGES: 190' N line, 100' W line of SE SE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.521865

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.162868

DATE COLLECTED: 10 / 20 / 1977

SURFACE ELEVATION (FT.): 543.7 LOGGED (FT.): 285.0

LOG TYPE: Drillers Log

SOURCE: AMAX A33DB

WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
543.7	PLEISTOCENE		UNCONSOLIDATED	42.0	0.0	
501.7			ROCK	225.0	42.0	
276.7	CARBONDALE	HERRIN	COAL	6.0	267.0	
270.7	CARBONDALE		ROCK	12.0	273.0	

MAPID: 14590940000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 22 QUARTERS/FOOTAGES: 1' S line, 224' W line of NW SE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.526089 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.163767 DATE COLLECTED: 11 / 1 / 1978

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 17.0 LOG TYPE: Drillers Log

SOURCE: AMAX A55NN WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0	

MAPID: 14502518000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 23 QUARTERS/FOOTAGES: 330' N line, 678' E line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.500927 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.172793 DATE COLLECTED: 12 / 0 / 1948

SURFACE ELEVATION (FT.): 549.0 LOGGED (FT.): 452.0 LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO. WELL TYPE:

COMMENT: ELEV. IS SURF, NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
302.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	247.0	
279.0	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-	270.0	COAL MAY BE THIN OR ABSENT
208.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	341.0	
169.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	380.0	
134.0	SPOON	DAVIS	UNCLASSIFIED	-	415.0	
97.0	SPOON	MURPHYSBORO	UNCLASSIFIED	6.0	452.0	

MAPID: 14502518000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 23 QUARTERS/FOOTAGES: 330' N line, 678' E line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.500927 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.172793 DATE COLLECTED:

SURFACE ELEVATION (FT.): 549.0 LOGGED (FT.): 253.0 LOG TYPE: Electric Log

SOURCE: COMMENT: POOR DESCRIPTION WELL TYPE: Oil and Gas Test

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
353.0	MODESTO	PIASA	LIMESTONE	7.0	196.0
346.0	CARBONDALE		CALCAREOUS SHALE	17.0	203.0
329.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	220.0
325.0	CARBONDALE	LAWSON	DARK GRAY SHALE	4.0	224.0
321.0	CARBONDALE	CONANT	LIMESTONE	6.0	228.0
315.0	CARBONDALE		DARK GRAY SHALE	5.0	234.0
310.0	CARBONDALE	BRERETON	LIMESTONE	6.0	239.0
304.0	CARBONDALE	ANNA	BLACK SHALE	2.0	245.0
302.0	CARBONDALE	HERRIN	COAL	6.0	247.0

MAPID: 14590941000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 23 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.50804 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.166669 DATE COLLECTED: 5 / 23 / 1960

SURFACE ELEVATION (FT.): 535.6 LOGGED (FT.): 255.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES A-113 WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
535.6	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
507.6			ROCK	218.7	28.0
288.9	CARBONDALE	HERRIN	COAL	7.1	246.7
281.8	CARBONDALE		ROCK	1.2	253.8

MAPID: 14502189000C VERSION: 1

PROJECT: IDMM-GWQX

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 24 QUARTERS/FOOTAGES: 330' S line, 330' E line of NW NW

QUADRANGLE: WINKLE LONGITUDE: -89.49515 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 38.170689 DATE COLLECTED: 4 / 0 / 1957

SURFACE ELEVATION (FT.): 556.0 LOGGED (FT.): 458.0 LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO. WELL TYPE:

COMMENT: ELEV. IS SURF,NOT LOG DATUM: DEPTHS OFF

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
309.0	CARBONDALE	HERRIN	UNCLASSIFIED	-	247.0	
215.0	CARBONDALE	HOUCHIN CREEK	UNCLASSIFIED	-	341.0	
170.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	386.0	
143.0	SPOON	DAVIS	UNCLASSIFIED	-	413.0	
98.0	SPOON	MURPHYSBORO	UNCLASSIFIED	-	458.0	CORRELATION AND LITHOLOGY UNCERTAIN

MAPID: 14528780000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 24 QUARTERS/FOOTAGES: 20' S line, 41' E line of SE NE

QUADRANGLE: WINKLE LONGITUDE: -89.480387 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.165406 DATE COLLECTED: 5 / 8 / 1979

SURFACE ELEVATION (FT.): 518.3 LOGGED (FT.): 263.8 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE A124PP WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
518.3	PLEISTOCENE		CLAY	21.0	0.0	BROWN
497.3	PLEISTOCENE		CLAY	7.0	21.0	RED
490.3	PLEISTOCENE		CLAY	9.0	28.0	BROWN
481.3	MODESTO		SANDSTONE	17.0	37.0	
464.3	MODESTO		SANDY SHALE	7.0	54.0	
457.3	MODESTO		SANDSTONE	19.0	61.0	
438.3	MODESTO		SANDY SHALE	92.0	80.0	
346.3	MODESTO		CALCAREOUS SHALE	1.0	172.0	
345.3	MODESTO		GRAY SHALE	3.0	173.0	
342.3	MODESTO		BLACK SHALE	5.0	176.0	
337.3	MODESTO	PIASA	LIMESTONE	4.0	181.0	GRAY
333.3	MODESTO	PIASA	GRAY SHALE	4.0	185.0	
329.3	MODESTO	PIASA	LIMESTONE	8.0	189.0	GRAY
321.3	MODESTO		GREEN SHALE	3.0	197.0	
318.3	CARBONDALE	DANVILLE	COAL	1.0	200.0	
317.3	CARBONDALE		GRAY SHALE	2.0	201.0	
315.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	203.0	GRAY
311.3	CARBONDALE		GRAY SHALE	3.0	207.0	
308.3	CARBONDALE	CONANT	LIMESTONE	9.0	210.0	
299.3	CARBONDALE		CALCAREOUS SHALE	5.0	219.0	
294.3	CARBONDALE	BRERETON	LIMESTONE	3.2	224.0	GRAY
291.1	CARBONDALE	ANNA	BLACK SHALE	4.0	227.2	
287.1	CARBONDALE	ENERGY	GRAY SHALE	6.1	231.2	
281.0	CARBONDALE	HERRIN	COAL	7.9	237.3	
273.1	CARBONDALE		UNDERCLAY	0.8	245.2	
272.3	CARBONDALE		GRAY SHALE	3.5	246.0	
268.8	CARBONDALE	HIGGINSVILLE	SHALY LIMESTONE	7.6	249.5	
261.2	CARBONDALE		GRAY SHALE	1.6	257.1	
259.6	CARBONDALE		GRAY SHALE	5.1	258.7	

MAPID: 14590942000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 24 QUARTERS/FOOTAGES: 2640' N line, 1320' W line
 QUADRANGLE: WINKLE LONGITUDE: -89.49408 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.166073 DATE COLLECTED: 6 / 13 / 1960
 SURFACE ELEVATION (FT.): 561.3 LOGGED (FT.): 275.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES A-119 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
561.3	PLEISTOCENE		UNCONSOLIDATED	61.0	0.0
500.3			ROCK	205.4	61.0
294.9	CARBONDALE	HERRIN	COAL	7.0	266.4
287.9	CARBONDALE		ROCK	1.6	273.4

MAPID: 14590943000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 24 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW SW NW
 QUADRANGLE: WINKLE LONGITUDE: -89.498686 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.16633 DATE COLLECTED: 9 / 17 / 1975
 SURFACE ELEVATION (FT.): 546.5 LOGGED (FT.): 269.3 LOG TYPE: Drillers Log
 SOURCE: AMAX A121 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
546.5	PLEISTOCENE		UNCONSOLIDATED	44.0	0.0
502.5			ROCK	206.7	44.0
295.8	CARBONDALE	HERRIN	COAL	7.1	250.7
288.7	CARBONDALE		ROCK	11.5	257.8

MAPID: 14590944000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 24 QUARTERS/FOOTAGES: 20' S line, 41' E line of SE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.480387 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.165406 DATE COLLECTED: 5 / 8 / 1979
 SURFACE ELEVATION (FT.): 518.3 LOGGED (FT.): 263.8 LOG TYPE: Drillers Log
 SOURCE: AMAX A124PP WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
518.3	PLEISTOCENE		UNCONSOLIDATED	37.0	0.0
481.3	MODESTO		ROCK	163.0	37.0
318.3	CARBONDALE	DANVILLE	COAL	1.0	200.0
317.3	CARBONDALE		ROCK	36.3	201.0
281.0	CARBONDALE	HERRIN	COAL	7.9	237.3
273.1	CARBONDALE		ROCK	18.6	245.2

MAPID: 14590945000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 24 QUARTERS/FOOTAGES: 300' S line, 510' E line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.482061 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.169821 DATE COLLECTED: 6 / 5 / 1991

SURFACE ELEVATION (FT.): 535.6 LOGGED (FT.): 284.0 LOG TYPE: Drillers Log

SOURCE: AMAX A174KD WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
535.6	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
510.6	MODESTO		ROCK	187.5	25.0
323.1	CARBONDALE	DANVILLE	COAL	0.2	212.5
322.9	CARBONDALE		ROCK	41.9	212.7
281.0	CARBONDALE	HERRIN	COAL	7.6	254.6
273.4	CARBONDALE		ROCK	21.8	262.2

MAPID: 14500004000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 1300' N line, 1400' W line

QUADRANGLE: WINKLE LONGITUDE: -89.494047 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.155187 DATE COLLECTED:

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 262.5 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
358.0	MODESTO	PIASA	LIMESTONE	12.0	200.0
346.0	MODESTO		BLACK SHALE	2.0	212.0
344.0	CARBONDALE	DANVILLE	COAL	2.0	214.0
342.0	CARBONDALE		CLAYSTONE & SHALE	15.0	216.0
327.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	231.0
322.0	CARBONDALE	BANKSTON FORK	DARK GRAY SHALE	2.0	236.0
320.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	238.0
318.0	CARBONDALE	LAWSON	BLACK SHALE	1.0	240.0
317.0	CARBONDALE	CONANT	LIMESTONE	2.0	241.0
315.0	CARBONDALE		BLACK SHALE	6.0	243.0
309.0	CARBONDALE	BRERETON	LIMESTONE	5.0	249.0
304.0	CARBONDALE	ANNA	BLACK SHALE	3.0	254.0
303.0	CARBONDALE	HERRIN	COAL	7.5	255.0

MAPID: 14528781000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 38' N line, 96' W line of NW NW

QUADRANGLE: WINKLE LONGITUDE: -89.498508 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.158914 DATE COLLECTED: 9 / 8 / 1975

SURFACE ELEVATION (FT.): 553.3 LOGGED (FT.): 264.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D617 WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
553.3	PLEISTOCENE		SILT	2.0	0.0
551.3	PLEISTOCENE		CLAY	15.0	2.0
536.3	PLEISTOCENE		UNCONSOLIDATED	58.0	17.0
478.3	MODESTO		LIMESTONE	3.0	75.0
475.3	MODESTO		GRAY SHALE	114.0	78.0
361.3	MODESTO	PIASA	LIMESTONE	5.0	192.0
356.3	MODESTO		GRAY SHALE	11.0	197.0
345.3	CARBONDALE		CALCAREOUS SHALE	6.5	208.0
338.8	CARBONDALE	CONANT	LIMESTONE	3.5	214.5
335.3	CARBONDALE		DARK GRAY SHALE	6.5	218.0
328.8	CARBONDALE		SANDY SHALE	2.4	224.5
326.4	CARBONDALE		GRAY SHALE	14.4	226.9
312.0	CARBONDALE	ANNA	BLACK SHALE	1.0	241.3
311.0	CARBONDALE	HERRIN	COAL	6.8	242.3
304.2	CARBONDALE		UNDERCLAY	3.2	249.1
301.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	6.4	252.3
294.6	CARBONDALE		GRAY SHALE	5.3	258.7

MAPID: 14528782000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 50' N line, 50' E line of NE NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.485162 GEOLOGIST: NORTH
 CONFIDENTIAL: N LATITUDE: 38.158152 DATE COLLECTED: 9 / 9 / 1975
 SURFACE ELEVATION (FT.): 535.3 LOGGED (FT.): 249.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE D623 WELL TYPE: Coal Test
 COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
535.3	PLEISTOCENE		CLAY	10.0	0.0
525.3	PLEISTOCENE		UNCONSOLIDATED	22.0	10.0
503.3	MODESTO		SANDSTONE	20.0	32.0
483.3	MODESTO		SANDY SHALE	18.0	52.0
465.3	MODESTO		SHALE	105.0	70.0
360.3	MODESTO	PIASA	LIMESTONE	7.0	175.0
353.3			SHALE	12.0	182.0
341.3	CARBONDALE		LIMESTONE	19.0	194.0
322.3	CARBONDALE		SHALE	7.0	213.0
315.3	CARBONDALE	BRERETON	LIMESTONE	4.0	220.0
311.3	CARBONDALE	ANNA	BLACK SHALE	3.1	224.0
308.2	CARBONDALE	HERRIN	COAL	6.9	227.1
301.3	CARBONDALE		UNDERCLAY	2.0	234.0
299.3	CARBONDALE		CALCAREOUS SHALE	7.0	236.0
292.3	CARBONDALE		SHALE	0.2	243.0
292.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.7	243.2
288.4	CARBONDALE		SHALE	2.1	246.9

MAPID: 14590809000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 490' N line, 560' W line of SE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.483062 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.153254 DATE COLLECTED: 8 / 23 / 1991
 SURFACE ELEVATION (FT.): 548.3 LOGGED (FT.): 265.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D548MA WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
548.3	PLEISTOCENE		UNCONSOLIDATED	44.0	0.0
504.3	MODESTO		ROCK	143.6	44.0
360.7	CARBONDALE	DANVILLE	COAL	2.1	187.6
358.6	CARBONDALE		ROCK	41.3	189.7
317.3	CARBONDALE	HERRIN	COAL	7.0	231.0
310.3	CARBONDALE		ROCK	27.0	238.0

MAPID: 1459081000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 495' N line, 564' W line of SE NE

QUADRANGLE: WINKLE LONGITUDE: -89.4831 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.153185 DATE COLLECTED: 9 / 26 / 1991

SURFACE ELEVATION (FT.): 548.3 LOGGED (FT.): 260.0 LOG TYPE: Drillers Log

SOURCE: AMAX D548MB1 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
548.3	PLEISTOCENE		UNCONSOLIDATED	48.0	0.0
500.3	MODESTO		ROCK	141.7	48.0
358.6	CARBONDALE	DANVILLE	COAL	1.8	189.7
356.8	CARBONDALE		ROCK	40.9	191.5
315.9	CARBONDALE	HERRIN	COAL	7.0	232.4
308.9	CARBONDALE		ROCK	20.6	239.4

MAPID: 14590811000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 475' N line, 380' E line of SE NE

QUADRANGLE: WINKLE LONGITUDE: -89.481765 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.153165 DATE COLLECTED: 9 / 25 / 1991

SURFACE ELEVATION (FT.): 547.4 LOGGED (FT.): 255.0 LOG TYPE: Drillers Log

SOURCE: AMAX D549KP WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
547.4	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
519.4			ROCK	210.5	28.0
308.9	CARBONDALE	HERRIN	COAL	7.3	238.5
301.6	CARBONDALE		ROCK	9.2	245.8

MAPID: 14590814000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 185' S line, 480' W line of NE NW

QUADRANGLE: WINKLE LONGITUDE: -89.492603 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.15585 DATE COLLECTED: 8 / 5 / 1982

SURFACE ELEVATION (FT.): 568.9 LOGGED (FT.): 279.0 LOG TYPE: Drillers Log

SOURCE: AMAX D569M WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
568.9	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
548.9			ROCK	44.0	20.0
504.9			COAL	1.0	64.0
503.9			ROCK	23.0	65.0
480.9			COAL	1.0	88.0
479.9			ROCK	97.0	89.0
382.9			COAL	2.0	186.0
380.9			ROCK	62.0	188.0
318.9	CARBONDALE	HERRIN	COAL	6.6	250.0
312.3	CARBONDALE		ROCK	22.4	256.6

MAPID: 14590815000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 700' N line, 550' W line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.482771 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.156826 DATE COLLECTED: 10 / 19 / 1978

SURFACE ELEVATION (FT.): 537.8 LOGGED (FT.): 251.0 LOG TYPE: Drillers Log

SOURCE: AMAX D573GF WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
537.8	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
513.8	MODESTO		ROCK	30.0	24.0
483.8	MODESTO	CHAPEL	COAL	2.0	54.0
481.8	MODESTO		ROCK	135.0	56.0
346.8	CARBONDALE	DANVILLE	COAL	2.0	191.0
344.8	CARBONDALE		ROCK	35.0	193.0
309.8	CARBONDALE	HERRIN	COAL	7.0	228.0
302.8	CARBONDALE		ROCK	16.0	235.0

MAPID: 14590816000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 480' S line, 410' E line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.486397 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.156051 DATE COLLECTED: 8 / 14 / 1991

SURFACE ELEVATION (FT.): LOGGED (FT.): 232.0 LOG TYPE: Drillers Log

SOURCE: AMAX D572AH WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
-	MODESTO		ROCK	41.0	27.0
-	MODESTO	CHAPEL	COAL	0.7	68.0
-	MODESTO		ROCK	122.8	68.7
-	CARBONDALE	DANVILLE	COAL	2.1	191.5
-	CARBONDALE		ROCK	38.4	193.6

MAPID: 14590817000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 489' S line, 404' E line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.486372 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.156076 DATE COLLECTED: 8 / 29 / 1991

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 274.1 LOG TYPE: Drillers Log

SOURCE: AMAX D572AH1 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
558.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
531.0	MODESTO		ROCK	41.0	27.0
490.0	MODESTO	CHAPEL	COAL	0.7	68.0
489.3	MODESTO		ROCK	122.8	68.7
366.5	CARBONDALE	DANVILLE	COAL	2.1	191.5
364.4	CARBONDALE		ROCK	76.0	193.6
288.4	CARBONDALE		MINE OPENING	4.5	269.6

MAPID: 14590818000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 475' S line, 405' E line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.486376 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.156037 DATE COLLECTED: 8 / 30 / 1991

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 238.0 LOG TYPE: Drillers Log

SOURCE: AMAX D572AH2 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
558.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0	
531.0	MODESTO		ROCK	41.0	27.0	
490.0	MODESTO	CHAPEL	COAL	0.7	68.0	
489.3	MODESTO		ROCK	122.8	68.7	
366.5	CARBONDALE	DANVILLE	COAL	2.1	191.5	
364.4	CARBONDALE		ROCK	34.4	193.6	
330.0	CARBONDALE	HERRIN	MINE OPENING	10.0	228.0	

MAPID: 14590819000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 487' S line, 418' E line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.486421 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.156067 DATE COLLECTED: 9 / 3 / 1991

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 231.0 LOG TYPE: Drillers Log

SOURCE: AMAX D572AH3 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
558.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0	
531.0	MODESTO		ROCK	41.0	27.0	
490.0	MODESTO	CHAPEL	COAL	0.7	68.0	
489.3	MODESTO		ROCK	122.8	68.7	
366.5	CARBONDALE	DANVILLE	COAL	2.1	191.5	
364.4	CARBONDALE		ROCK	34.4	193.6	
330.0	CARBONDALE	HERRIN	MINE OPENING	3.0	228.0	OLD WORKS

MAPID: 14590820000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 479' S line, 417' E line of NW NE

QUADRANGLE: WINKLE

LONGITUDE: -89.486417

GEOLOGIST: LAWSON

CONFIDENTIAL: N

LATITUDE: 38.156048

DATE COLLECTED: 9 / 4 / 1991

SURFACE ELEVATION (FT.): 558.0

LOGGED (FT.): 125.0

LOG TYPE: Drillers Log

SOURCE: AMAX D572AH4

WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
558.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
531.0	MODESTO		ROCK	41.0	27.0
490.0	MODESTO	CHAPEL	COAL	0.7	68.0
489.3			ROCK	56.3	68.7

MAPID: 14590821000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 464' S line, 403' E line of NW NE

QUADRANGLE: WINKLE

LONGITUDE: -89.486369

GEOLOGIST: LAWSON

CONFIDENTIAL: N

LATITUDE: 38.156007

DATE COLLECTED: 9 / 4 / 1991

SURFACE ELEVATION (FT.): 558.0

LOGGED (FT.): 238.0

LOG TYPE: Drillers Log

SOURCE: AMAX D572AH5

WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
558.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
531.0	MODESTO		ROCK	41.0	27.0
490.0	MODESTO	CHAPEL	COAL	0.7	68.0
489.3	MODESTO		ROCK	122.8	68.7
366.5	CARBONDALE	DANVILLE	COAL	2.1	191.5
364.4	CARBONDALE		ROCK	35.4	193.6
329.0	CARBONDALE	HERRIN	MINE OPENING	9.0	229.0 OLD WORKS

MAPID: 14590822000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 452' S line, 401' E line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.486365 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.155973 DATE COLLECTED: 9 / 5 / 1991

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 235.0 LOG TYPE: Drillers Log

SOURCE: AMAX D572AH6 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
558.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
531.0	MODESTO		ROCK	41.0	27.0
490.0	MODESTO	CHAPEL	COAL	0.7	68.0
489.3	MODESTO		ROCK	122.8	68.7
366.5	CARBONDALE	DANVILLE	COAL	2.1	191.5
364.4	CARBONDALE		ROCK	36.4	193.6
328.0	CARBONDALE	HERRIN	MINE OPENING	5.0	230.0

MAPID: 14590823000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 447' S line, 387' E line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.486316 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.155965 DATE COLLECTED: 9 / 6 / 1991

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 238.0 LOG TYPE: Drillers Log

SOURCE: AMAX D572AH7 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
558.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
531.0	MODESTO		ROCK	41.0	27.0
490.0	MODESTO	CHAPEL	COAL	0.7	68.0
489.3	MODESTO		ROCK	122.8	68.7
366.5	CARBONDALE	DANVILLE	COAL	2.1	191.5
364.4	CARBONDALE		ROCK	34.4	193.6
330.0	CARBONDALE	HERRIN	MINE OPENING	10.0	228.0

MAPID: 14590824000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 440' S line, 399' E line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.486358 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.155943 DATE COLLECTED: 9 / 6 / 1991

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 239.0 LOG TYPE: Drillers Log

SOURCE: AMAX D572AH8 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
558.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
531.0	MODESTO		ROCK	41.0	27.0
490.0	MODESTO	CHAPEL	COAL	0.7	68.0
489.3	MODESTO		ROCK	122.8	68.7
366.5	CARBONDALE	DANVILLE	COAL	2.1	191.5
364.4	CARBONDALE		ROCK	39.4	193.6
325.0	CARBONDALE	HERRIN	COAL	6.0	233.0

MAPID: 14590825000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 10' S line, 255' E line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.485865 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.154739 DATE COLLECTED: 9 / 11 / 1991

SURFACE ELEVATION (FT.): LOGGED (FT.): 246.0 LOG TYPE: Drillers Log

SOURCE: AMAX D572BB WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0
-	MODESTO		ROCK	166.5	29.0
-	CARBONDALE	DANVILLE	COAL	2.0	195.5
-	CARBONDALE		ROCK	41.0	197.5
-	CARBONDALE	HERRIN	COAL	7.5	238.5

MAPID: 14590826000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.485816 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.154739 DATE COLLECTED: 9 / 12 / 1991

SURFACE ELEVATION (FT.): LOGGED (FT.): 247.0 LOG TYPE: Drillers Log

SOURCE: AMAX D572BB1 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
-	MODESTO		ROCK	169.0	28.0
-	CARBONDALE	DANVILLE	COAL	1.7	197.0
-	CARBONDALE		ROCK	38.8	198.7
-	CARBONDALE	HERRIN	MINE OPENING	9.5	237.5

MAPID: 14590827000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 10' S line, 233' E line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.485792 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.154739 DATE COLLECTED: 9 / 16 / 1991

SURFACE ELEVATION (FT.): LOGGED (FT.): 244.0 LOG TYPE: Drillers Log

SOURCE: AMAX D572BB3 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0
-	MODESTO		ROCK	162.1	32.0
-	CARBONDALE	DANVILLE	COAL	3.0	194.1
-	CARBONDALE		ROCK	40.4	197.1
-	CARBONDALE	HERRIN	MINE OPENING	6.5	237.5

MAPID: 14590828000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 80' S line, 390' E line of NE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.481663 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.154769 DATE COLLECTED: 9 / 24 / 1991
 SURFACE ELEVATION (FT.): 546.8 LOGGED (FT.): 275.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D574BC WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
546.8	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
516.8	MODESTO		ROCK	167.0	30.0
349.8	CARBONDALE	DANVILLE	COAL	2.7	197.0
347.1	CARBONDALE		ROCK	41.8	199.7
305.3	CARBONDALE	HERRIN	COAL	7.3	241.5
298.0	CARBONDALE		ROCK	26.5	248.8

MAPID: 14590829000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 435' S line, 405' E line of NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.486376 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.155932 DATE COLLECTED: 9 / 9 / 1991
 SURFACE ELEVATION (FT.): 556.5 LOGGED (FT.): 238.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D572HF WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
556.5	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
529.5	MODESTO		ROCK	41.0	27.0
488.5	MODESTO	CHAPEL	COAL	0.7	68.0
487.8	MODESTO		ROCK	122.8	68.7
365.0	CARBONDALE	DANVILLE	COAL	2.1	191.5
362.9	CARBONDALE		ROCK	39.4	193.6
323.5	CARBONDALE	HERRIN	COAL	5.0	233.0

MAPID: 14590830000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 50' S line, 450' W line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.483425 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.154747 DATE COLLECTED: 8 / 22 / 1991

SURFACE ELEVATION (FT.): 547.2 LOGGED (FT.): 245.0 LOG TYPE: Drillers Log

SOURCE: AMAX D573BM WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
547.2	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
526.2	MODESTO		ROCK	162.0	21.0
364.2	CARBONDALE	DANVILLE	COAL	1.5	183.0
362.7	CARBONDALE		ROCK	39.7	184.5
323.0	CARBONDALE	HERRIN	COAL	7.2	224.2
315.8	CARBONDALE		ROCK	13.6	231.4

MAPID: 14590831000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 340' S line, 65' W line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.48475 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.155603 DATE COLLECTED: 8 / 28 / 1991

SURFACE ELEVATION (FT.): 548.9 LOGGED (FT.): 265.0 LOG TYPE: Drillers Log

SOURCE: AMAX D573CN WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX #75 GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
548.9	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0
519.9	MODESTO		ROCK	167.5	29.0
352.4	CARBONDALE	DANVILLE	COAL	0.7	196.5
351.7	CARBONDALE		ROCK	35.9	197.2
315.8	CARBONDALE	HERRIN	COAL	6.9	233.1
308.9	CARBONDALE		ROCK	25.0	240.0

MAPID: 14590834000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 90' N line, 80' W line of NE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.484679 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.158041 DATE COLLECTED: 8 / 20 / 1991
 SURFACE ELEVATION (FT.): 530.6 LOGGED (FT.): 260.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D598DA WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
530.6	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
515.6	MODESTO		ROCK	165.8	15.0
349.8	CARBONDALE	DANVILLE	COAL	0.5	180.8
349.3	CARBONDALE		ROCK	38.7	181.3
310.6	CARBONDALE	HERRIN	COAL	7.2	220.0
303.4	CARBONDALE		ROCK	32.8	227.2

MAPID: 14590835000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 494' N line, 55' W line of NE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.484771 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.156934 DATE COLLECTED: 8 / 1 / 1991
 SURFACE ELEVATION (FT.): 538.3 LOGGED (FT.): 246.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D598JN WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
538.3	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
520.3	MODESTO		ROCK	36.0	18.0
484.3	MODESTO	CHAPEL	COAL	0.5	54.0
483.8			ROCK	171.5	54.5
312.3	CARBONDALE	HERRIN	COAL	8.0	226.0
304.3	CARBONDALE		ROCK	12.0	234.0

MAPID: 14590837000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 39' N line, 96' W line of NW NW
 QUADRANGLE: WINKLE LONGITUDE: -89.498508 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.158912 DATE COLLECTED: 9 / 8 / 1975
 SURFACE ELEVATION (FT.): 553.3 LOGGED (FT.): 264.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D617 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
553.3	PLEISTOCENE		UNCONSOLIDATED	75.0	0.0
478.3			ROCK	167.3	75.0
311.0	CARBONDALE	HERRIN	COAL	6.8	242.3
304.2	CARBONDALE		ROCK	14.9	249.1

MAPID: 14590838000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 50' N line, 50' E line of NE NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.485162 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.158152 DATE COLLECTED: 9 / 9 / 1975
 SURFACE ELEVATION (FT.): 535.3 LOGGED (FT.): 249.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D623 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
535.3	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0
503.3			ROCK	195.1	32.0
308.2	CARBONDALE	HERRIN	COAL	6.9	227.1
301.3	CARBONDALE		ROCK	15.0	234.0

MAPID: 14590839000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 10' N line, 415' E line of NE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.481798 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.158145 DATE COLLECTED: 9 / 10 / 1991
 SURFACE ELEVATION (FT.): 535.4 LOGGED (FT.): 280.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D624NB WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX #75 GL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
535.4	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0
506.4			ROCK	210.2	29.0
296.2	CARBONDALE	HERRIN	COAL	8.3	239.2
287.9	CARBONDALE		ROCK	32.5	247.5

MAPID: 14590918000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 380' S line, 500' W line of SW SE

QUADRANGLE: WINKLE LONGITUDE: -89.488077 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.145215 DATE COLLECTED: 9 / 11 / 1981

SURFACE ELEVATION (FT.): 557.5 LOGGED (FT.): 246.3 LOG TYPE: Drillers Log

SOURCE: AMAX D4211J WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
557.5	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
541.5	MODESTO		ROCK	138.9	16.0
402.6	MODESTO	DEGRAFF	COAL	1.4	154.9
401.2	MODESTO		ROCK	28.2	156.3
373.0	CARBONDALE	DANVILLE	COAL	2.9	184.5
370.1	CARBONDALE		ROCK	37.9	187.4
332.2	CARBONDALE	HERRIN	COAL	7.5	225.3
324.7	CARBONDALE		ROCK	13.5	232.8

MAPID: 14590919000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 470' S line, 100' E line of SW SE

QUADRANGLE: WINKLE LONGITUDE: -89.485378 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.144362 DATE COLLECTED: 8 / 28 / 1980

SURFACE ELEVATION (FT.): 553.3 LOGGED (FT.): 241.0 LOG TYPE: Drillers Log

SOURCE: AMAX D4221F WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
553.3	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
528.3	MODESTO		ROCK	189.8	25.0
338.5	CARBONDALE	HERRIN	COAL	7.8	214.8
330.7	CARBONDALE		ROCK	18.4	222.6

MAPID: 14590922000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 930' S line, 197' E line of SW SW

QUADRANGLE: WINKLE LONGITUDE: -89.495107 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.14674 DATE COLLECTED: 8 / 20 / 1980

SURFACE ELEVATION (FT.): 519.5 LOGGED (FT.): 216.0 LOG TYPE: Drillers Log

SOURCE: AMAX D443LG-1 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
519.5	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
493.5	MODESTO		ROCK	125.5	26.0
368.0	CARBONDALE	DANVILLE	COAL	4.0	151.5
364.0	CARBONDALE		ROCK	35.0	155.5
329.0	CARBONDALE	HERRIN	COAL	6.9	190.5
322.1	CARBONDALE		ROCK	18.6	197.4

MAPID: 14590925000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 1' N line, 1' W line of SE SE

QUADRANGLE: WINKLE LONGITUDE: -89.485171 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.147404 DATE COLLECTED: 6 / 8 / 1960

SURFACE ELEVATION (FT.): 564.5 LOGGED (FT.): 243.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D473 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
564.5	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
536.5	MODESTO		ROCK	168.2	28.0
368.3	CARBONDALE	DANVILLE	COAL	0.4	196.2
367.9	CARBONDALE		ROCK	38.9	196.6
329.0	CARBONDALE	HERRIN	COAL	6.4	235.5
322.6	CARBONDALE		ROCK	1.1	241.9

MAPID: 14590926000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 1' S line, 1' E line of NW SE

QUADRANGLE: WINKLE LONGITUDE: -89.485381 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.147625 DATE COLLECTED:

SURFACE ELEVATION (FT.): 565.3 LOGGED (FT.): 268.0 LOG TYPE: Drillers Log

SOURCE: AMAX D473-1 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75GR EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
565.3	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
540.3	MODESTO		ROCK	173.0	25.0
367.3	CARBONDALE	DANVILLE	COAL	2.1	198.0
365.2	CARBONDALE		ROCK	36.9	200.1
328.3	CARBONDALE	HERRIN	COAL	7.0	237.0
321.3	CARBONDALE		ROCK	24.0	244.0

MAPID: 14590927000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 540' S line, 630' W line of NE SE

QUADRANGLE: WINKLE LONGITUDE: -89.482923 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.148828 DATE COLLECTED: 8 / 16 / 1991

SURFACE ELEVATION (FT.): 547.4 LOGGED (FT.): 256.0 LOG TYPE: Drillers Log

SOURCE: AMAX D473GM WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
547.4	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0
524.4	MODESTO		ROCK	158.5	23.0
365.9	CARBONDALE	DANVILLE	COAL	2.4	181.5
363.5	CARBONDALE		ROCK	42.3	183.9
321.2	CARBONDALE	HERRIN	COAL	7.7	226.2
313.5	CARBONDALE		ROCK	22.1	233.9

MAPID: 14590929000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 250' N line, 450' W line of NE SE

QUADRANGLE: WINKLE LONGITUDE: -89.483517 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.150311 DATE COLLECTED: 8 / 15 / 1991

SURFACE ELEVATION (FT.): 555.2 LOGGED (FT.): 248.0 LOG TYPE: Drillers Log

SOURCE: AMAX D498AI WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
555.2	PLEISTOCENE		UNCONSOLIDATED	37.0	0.0
518.2	MODESTO		ROCK	151.2	37.0
367.0	CARBONDALE	DANVILLE	COAL	1.4	188.2
365.6	CARBONDALE		ROCK	42.0	189.6
323.6	CARBONDALE	HERRIN	COAL	6.6	231.6
317.0	CARBONDALE		ROCK	9.8	238.2

MAPID: 14590930000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.485764 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.154739 DATE COLLECTED: 9 / 13 / 1991

SURFACE ELEVATION (FT.): LOGGED (FT.): 245.0 LOG TYPE: Drillers Log

SOURCE: AMAX D572BB2 WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0
-	MODESTO		ROCK	164.7	32.0
-	CARBONDALE	DANVILLE	COAL	2.3	196.7
-	CARBONDALE		ROCK	39.0	199.0
-	CARBONDALE	HERRIN	MINE OPENING	7.0	238.0

MAPID: 14590932000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 1' S line, 1' W line of SE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.485076 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.151051 DATE COLLECTED: 8 / 27 / 1991
 SURFACE ELEVATION (FT.): 562.8 LOGGED (FT.): 272.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D523 WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX 75GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
562.8	PLEISTOCENE		UNCONSOLIDATED	36.0	0.0
526.8	MODESTO		ROCK	163.8	36.0
363.0	CARBONDALE	DANVILLE	COAL	1.2	199.8
361.8	CARBONDALE		ROCK	38.6	201.0
323.2	CARBONDALE	HERRIN	COAL	6.8	239.6
316.4	CARBONDALE		ROCK	25.6	246.4

MAPID: 14590933000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 395' S line, 65' W line of SE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.484814 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.152122 DATE COLLECTED: 8 / 5 / 1991
 SURFACE ELEVATION (FT.): 552.1 LOGGED (FT.): 235.5 LOG TYPE: Drillers Log
 SOURCE: AMAX D523HI WELL TYPE: Coal Test
 COMMENT: PRAIRIE CREEKBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
552.1	PLEISTOCENE		UNCONSOLIDATED	51.0	0.0
501.1	MODESTO		ROCK	136.5	51.0
364.6	CARBONDALE	DANVILLE	COAL	0.5	187.5
364.1	CARBONDALE		ROCK	40.0	188.0
324.1	CARBONDALE	HERRIN	MINE OPENING	7.5	228.0

MAPID: 14590934000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 290' S line, 480' W line of SE NE

QUADRANGLE: WINKLE LONGITUDE: -89.483363 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.151782 DATE COLLECTED: 6 / 21 / 1991

SURFACE ELEVATION (FT.): 555.7 LOGGED (FT.): 252.0 LOG TYPE: Drillers Log

SOURCE: AMAX D523MD WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
555.7	PLEISTOCENE		UNCONSOLIDATED	59.0	0.0
496.7	MODESTO		ROCK	133.0	59.0
363.7	CARBONDALE	DANVILLE	COAL	2.6	192.0
361.1	CARBONDALE		ROCK	40.1	194.6
321.0	CARBONDALE	HERRIN	COAL	7.6	234.7
313.4	CARBONDALE		ROCK	9.7	242.3

MAPID: 14590935000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 25 QUARTERS/FOOTAGES: 300' S line, 590' E line of SE NE

QUADRANGLE: WINKLE LONGITUDE: -89.482492 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.151777 DATE COLLECTED: 9 / 25 / 1991

SURFACE ELEVATION (FT.): 547.8 LOGGED (FT.): 270.0 LOG TYPE: Drillers Log

SOURCE: AMAX D524JF WELL TYPE: Coal Test

COMMENT: PRAIRIE CREEKBOX 75 GL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
547.8	PLEISTOCENE		UNCONSOLIDATED	60.0	0.0
487.8	MODESTO		ROCK	138.0	60.0
349.8	CARBONDALE	DANVILLE	COAL	1.7	198.0
348.1	CARBONDALE		ROCK	39.0	199.7
309.1	CARBONDALE	HERRIN	COAL	7.8	238.7
301.3	CARBONDALE		ROCK	23.5	246.5

MAPID: 14590813000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 26 QUARTERS/FOOTAGES: 305' S line, 104' E line of NE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.499025 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.156065 DATE COLLECTED: 10 / 26 / 1978
 SURFACE ELEVATION (FT.): 550.5 LOGGED (FT.): 257.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D566MF WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
550.5	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0
533.5	MODESTO		ROCK	173.4	17.0
360.1	CARBONDALE	DANVILLE	COAL	0.4	190.4
359.7	CARBONDALE		ROCK	42.8	190.8
316.9	CARBONDALE	HERRIN	COAL	6.7	233.6
310.2	CARBONDALE		ROCK	16.7	240.3

MAPID: 14590832000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 26 QUARTERS/FOOTAGES: 180' N line, 100' W line of NW NW
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.517172 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.15912 DATE COLLECTED: 10 / 19 / 1977
 SURFACE ELEVATION (FT.): 538.4 LOGGED (FT.): 264.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D584DB WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
538.4	PLEISTOCENE		UNCONSOLIDATED	52.0	0.0
486.4			ROCK	191.0	52.0
295.4	CARBONDALE	HERRIN	COAL	7.0	243.0
288.4	CARBONDALE		ROCK	14.0	250.0

MAPID: 14590833000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 26 QUARTERS/FOOTAGES: 65' N line, 14' E line of NE NW
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.508029 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.159185 DATE COLLECTED: 12 / 12 / 1977
 SURFACE ELEVATION (FT.): 542.1 LOGGED (FT.): 270.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D588DC WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
542.1	PLEISTOCENE		UNCONSOLIDATED	35.5	0.0
506.6			ROCK	210.4	35.5
296.2	CARBONDALE	HERRIN	COAL	7.2	245.9
289.0	CARBONDALE		ROCK	16.9	253.1

MAPID: 14590923000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 26 QUARTERS/FOOTAGES: 82' S line, 82' W line of NE SW
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.512723 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.148721 DATE COLLECTED: 6 / 8 / 1979
 SURFACE ELEVATION (FT.): 511.6 LOGGED (FT.): 220.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D461X WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
511.6	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
496.6			ROCK	180.6	15.0
316.0	CARBONDALE	HERRIN	COAL	7.8	195.6
308.2	CARBONDALE		ROCK	16.6	203.4

MAPID: 14590924000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 26 QUARTERS/FOOTAGES: 77' S line, 82' W line of NE SW
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.512723 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.148707 DATE COLLECTED: 6 / 8 / 1979
 SURFACE ELEVATION (FT.): 511.6 LOGGED (FT.): 205.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D461X-1 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GR

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
511.6	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
496.6			ROCK	180.6	15.0
316.0	CARBONDALE	HERRIN	COAL	7.8	195.6
308.2	CARBONDALE		ROCK	1.6	203.4

MAPID: 14590928000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 26 QUARTERS/FOOTAGES: 350' N line, 105' W line of NW SE
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.507919 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.151129 DATE COLLECTED: 11 / 20 / 1978
 SURFACE ELEVATION (FT.): 540.3 LOGGED (FT.): 267.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D488CB WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
540.3	PLEISTOCENE		UNCONSOLIDATED	67.5	0.0
472.8			ROCK	172.7	67.5
300.1	CARBONDALE	HERRIN	COAL	6.8	240.2
293.3	CARBONDALE		ROCK	20.0	247.0

MAPID: 14590937000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 26 QUARTERS/FOOTAGES: 200' N line, 85' W line of SE NW
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.51257 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.155264 DATE COLLECTED: 10 / 27 / 1978
 SURFACE ELEVATION (FT.): 529.3 LOGGED (FT.): 240.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D536CF WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
529.3	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
503.3	MODESTO		ROCK	23.5	26.0
479.8	MODESTO		ROCK	1.0	49.5
478.8	MODESTO		ROCK	0.4	50.5
478.4	MODESTO		COAL	1.5	50.9
476.9	MODESTO		ROCK	129.6	52.4
347.3	CARBONDALE	DANVILLE	COAL	1.0	182.0
346.3	CARBONDALE		ROCK	34.7	183.0
311.6	CARBONDALE	HERRIN	COAL	6.9	217.7
304.7	CARBONDALE		ROCK	15.4	224.6

MAPID: 14590812000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 27 QUARTERS/FOOTAGES: 37' S line, 690' W line of NW NE
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.524531 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.15643 DATE COLLECTED: 10 / 31 / 1978
 SURFACE ELEVATION (FT.): 555.7 LOGGED (FT.): 287.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D556XX WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
555.7	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0
532.7	MODESTO		ROCK	169.5	23.0
363.2	MODESTO	DEGRAFF	COAL	0.9	192.5
362.3			ROCK	72.9	193.4
289.4	CARBONDALE	HERRIN	COAL	6.9	266.3
282.5	CARBONDALE		ROCK	13.8	273.2

MAPID: 14590836000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 27 QUARTERS/FOOTAGES: 10' N line, 660' W line of NW NE
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.52471 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.159917 DATE COLLECTED: 11 / 1 / 1978
 SURFACE ELEVATION (FT.): 547.4 LOGGED (FT.): 299.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D606 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
547.4	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
531.4	MODESTO		ROCK	71.4	16.0
460.0	MODESTO		COAL	1.1	87.4
458.9	MODESTO		ROCK	1.5	88.5
457.4	MODESTO		COAL	1.5	90.0
455.9	MODESTO		ROCK	98.5	91.5
357.4	MODESTO	DEGRAFF	COAL	0.4	190.0
357.0			ROCK	87.6	190.4
269.4	CARBONDALE	HERRIN	COAL	5.3	278.0
264.1	CARBONDALE		ROCK	15.7	283.3

MAPID: 14590920000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 27 QUARTERS/FOOTAGES: 44' N line, 65' W line of SE SE
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.52212 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.148648 DATE COLLECTED: 10 / 18 / 1977
 SURFACE ELEVATION (FT.): 560.6 LOGGED (FT.): 315.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D432DF WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GR EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
560.6	PLEISTOCENE		UNCONSOLIDATED	145.0	0.0
415.6			ROCK	101.0	145.0
314.6	CARBONDALE	HERRIN	COAL	7.0	246.0
307.6	CARBONDALE		ROCK	62.0	253.0

MAPID: 14590921000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 27 QUARTERS/FOOTAGES: 70' N line, 365' W line of SE SE
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.52106 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.148571 DATE COLLECTED: 10 / 17 / 1977
 SURFACE ELEVATION (FT.): 561.8 LOGGED (FT.): 272.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D432FC WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
561.8	PLEISTOCENE		UNCONSOLIDATED	44.0	0.0
517.8			ROCK	210.6	44.0
307.2	CARBONDALE	HERRIN	COAL	6.6	254.6
300.6	CARBONDALE		ROCK	10.8	261.2

MAPID: 14590931000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 27 QUARTERS/FOOTAGES: 1' S line, 430' E line of SW NE
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.52383 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.152582 DATE COLLECTED: 11 / 16 / 1978
 SURFACE ELEVATION (FT.): 548.4 LOGGED (FT.): 267.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D506NB WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
548.4	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
532.4			ROCK	227.3	16.0
305.1	CARBONDALE	HERRIN	COAL	7.1	243.3
298.0	CARBONDALE		ROCK	16.6	250.4

MAPID: 14590936000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 27 QUARTERS/FOOTAGES: 150' N line, 300' W line of SE NE
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.521314 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.156138 DATE COLLECTED: 11 / 13 / 1978
 SURFACE ELEVATION (FT.): 540.5 LOGGED (FT.): 277.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D532EP WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
540.5	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
513.5	MODESTO		ROCK	220.0	27.0
293.5	CARBONDALE	HERRIN	COAL	6.8	247.0
286.7	CARBONDALE		ROCK	23.2	253.8

MAPID: 14526925000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 28 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.536647 GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.155072 DATE COLLECTED: 4 / 30 / 1985

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 311.6 LOG TYPE: Drillers Log

SOURCE: ZEIGLER 108 WELL TYPE: Coal Test

COMMENT: CORE PT @270 #6 COAL SEAM MISSING

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
560.0	PLEISTOCENE		CLAY	26.9	0.0	SURFACE
533.1			SANDSTONE	62.1	26.9	WEATHERED
471.0			SHALE & SANDSTONE	54.5	89.0	SANDY
416.5			SANDSTONE	1.0	143.5	COAL TRACES
415.5			SANDSTONE	3.0	144.5	
412.5			SHALE	4.5	147.5	SILTY SANDY
408.0			SHALE	23.0	152.0	SILTY W/ SIDERITE
385.0			SHALE	2.0	175.0	CLAY
383.0			SHALE	6.0	177.0	SANDY W/ LS NOD
377.0			SANDSTONE	2.0	183.0	CALC
375.0			SHALE	3.0	185.0	GRAY
372.0			SHALE	1.0	188.0	DK
371.0			SHALE	3.5	189.0	GREEN GRAY W/ LS NOD
367.5	SHELburn	PIASA	LIMESTONE	7.0	192.5	
360.5	SHELburn		SHALE	11.5	199.5	GRAY W/ LS NOD
349.0	SHELburn		SHALE	26.5	211.0	GRAY
322.5	SHELburn		SHALE	14.5	237.5	W/ SS SEAMS
308.0	SHELburn	ANVIL ROCK	SANDSTONE	27.2	252.0	
280.8	SHELburn	ANVIL ROCK	SANDSTONE	0.7	279.2	W/ BLK SH
280.1	SHELburn	ANVIL ROCK	SANDSTONE	3.1	279.9	
277.0	SHELburn	ANVIL ROCK	SHALE & SANDSTONE	0.6	283.0	
276.4	SHELburn	ANVIL ROCK	SANDSTONE	2.0	283.6	CALC
274.4	SHELburn	ANVIL ROCK	SHALE	10.6	285.6	GRAY
263.8	SHELburn	ANVIL ROCK	SANDSTONE	1.6	296.2	CALC/ COAL SEAMS
262.2			UNDERCLAY	1.3	297.8	
260.9			SHALE	1.3	299.1	GREEN
259.6			UNKNOWN	2.6	300.4	CORE LOSS
257.0			LIMESTONE	5.6	303.0	W/SH PARTINGS
251.4			UNKNOWN	2.7	308.6	CORE LOSS

MAPID: 14526926000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 28 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.541015 GEOLOGIST: STRAAYER
 CONFIDENTIAL: N LATITUDE: 38.160591 DATE COLLECTED: 5 / 23 / 1985
 SURFACE ELEVATION (FT.): 551.0 LOGGED (FT.): 310.0 LOG TYPE: Drillers Log
 SOURCE: ZEIGLER 112 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
551.0	PLEISTOCENE		CLAY	13.0	0.0	SURFACE
538.0			SANDSTONE	32.0	13.0	BROWN WEATHERED
506.0			SHALE & SANDSTONE	6.0	45.0	SANDY
500.0			SANDSTONE	20.0	51.0	
480.0			SHALE & SANDSTONE	5.5	71.0	
474.5			SANDSTONE	2.5	76.5	CALC
472.0			SHALE & SANDSTONE	99.0	79.0	SANDY
373.0			SHALE	23.0	178.0	SILTY W/ SIDERITE
350.0			SHALE	9.0	201.0	GREEN-GRAY W/ LS NOD
341.0			SANDSTONE	5.5	210.0	CALC
335.5			SHALE	3.0	215.5	SILTY
332.5			SHALE	3.5	218.5	BLK
329.0	SHELburn	DANVILLE	COAL	2.0	222.0	
327.0	SHELburn		CLAYSTONE	6.0	224.0	SHALEY
321.0	SHELburn		SHALE	14.0	230.0	GREEN-GRAY W/LS NOD
307.0	SHELburn		SANDSTONE	1.0	244.0	CALC
306.0	SHELburn		SHALE	3.5	245.0	SILTY SANDY W/ SID
302.5	SHELburn		SANDSTONE	0.5	248.5	CALC
302.0	SHELburn		SHALE	11.0	249.0	SANDY W/ CALC SEAMS
291.0	SHELburn		SHALE	5.0	260.0	GREEN/GRAY
286.0	SHELburn	BANKSTON FORK	LIMESTONE	2.0	265.0	
284.0	SHELburn	BANKSTON FORK	SHALE	6.0	267.0	GREEN GRAY W/LS
278.0	SHELburn	BANKSTON FORK	LIMESTONE	3.5	273.0	
274.5	SHELburn		SHALE	3.5	276.5	SILTY
271.0	SHELburn		SHALE	6.0	280.0	DK GRAY W/ LS
265.0	SHELburn	CONANT	LIMESTONE	1.0	286.0	
264.0	SHELburn		SHALE	10.0	287.0	DK GRAY FOSSIL
254.0	CARBONDALE	ANNA	SHALE	3.5	297.0	BLK
250.5	CARBONDALE	HERRIN	COAL	6.5	300.5	
244.0	CARBONDALE		CLAYSTONE	3.0	307.0	SHALEY

MAPID: 14526927000C VERSION: 1

PROJECT: NCRDS17

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 28 QUARTERS/FOOTAGES:

QUADRANGLE: COULTERVILLE LONGITUDE: -89.539227

GEOLOGIST: STRAAYER

CONFIDENTIAL: N LATITUDE: 38.15511

DATE COLLECTED: 5 / 28 / 1985

SURFACE ELEVATION (FT.): 555.0 LOGGED (FT.): 293.6

LOG TYPE: Drillers Log

SOURCE: ZEIGLER 113

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
555.0	PLEISTOCENE		CLAY	13.5	0.0	SURFACE
541.5			SANDSTONE	21.5	13.5	BROWN WEATHERED
520.0			SHALE & SANDSTONE	4.0	35.0	SANDY
516.0			SANDSTONE	40.0	39.0	BROWN WEATHERED
476.0			SANDSTONE	23.5	79.0	
452.5			SHALE & SANDSTONE	27.5	102.5	SANDY
425.0			SANDSTONE	2.0	130.0	W/ COAL SHINES
423.0			SANDSTONE	19.0	132.0	SHALEY
404.0			SHALE	7.0	151.0	SILTY
397.0			SHALE	29.0	158.0	SILTY W/ SIDERITE
368.0			SHALE	8.0	187.0	GREEN GRAY W/ LS NOD
360.0			SANDSTONE	2.0	195.0	CALC
358.0			SHALE	3.0	197.0	SILTY
355.0			SHALE	1.0	200.0	DK GRAY
354.0			SHALE	6.0	201.0	GREEN GRAY W/ LS NOD
348.0	SHELburn	PIASA	LIMESTONE	5.0	207.0	
343.0	SHELburn		SHALE	11.0	212.0	SILTY SANDY
332.0	SHELburn		SHALE	2.0	223.0	SILTY W/ SIDERITE
330.0	SHELburn		SHALE & SANDSTONE	16.0	225.0	SANDY
314.0	SHELburn		SHALE	5.0	241.0	SANDY W/ CALC SS
309.0	SHELburn		SHALE	4.0	246.0	GREEN-GRAY SANDY
305.0	SHELburn	BANKSTON FORK	LIMESTONE	3.5	250.0	W/ SILT SEAMS
301.5	SHELburn	BANKSTON FORK	SHALE	4.5	253.5	GREEN-GRAY W/ LS NOD
297.0	SHELburn	BANKSTON FORK	LIMESTONE	4.0	258.0	
293.0	SHELburn		SHALE	3.0	262.0	SILTY
290.0	SHELburn		SHALE	1.9	265.0	DK GRAY FOSSIL
288.1	SHELburn	CONANT	LIMESTONE	1.6	266.9	SHALEY
286.5	SHELburn		SHALE	3.2	268.5	DK GRAY FOSSIL
283.3	SHELburn		SHALE	3.4	271.7	DK GRAY
279.9	SHELburn	BRERETON	LIMESTONE	4.9	275.1	SHALEY
275.1	CARBONDALE	ANNA	SHALE	1.9	279.9	BLK W/ COAL SEAMS
273.2	CARBONDALE	HERRIN	COAL	5.8	281.8	
267.3	CARBONDALE	HERRIN	CLAYSTONE	0.1	287.7	
265.9	CARBONDALE	HERRIN	COAL	1.3	289.1	
264.5	CARBONDALE		CLAYSTONE	0.5	290.5	
264.1	CARBONDALE		SHALE	1.0	290.9	W/ LS NOD
263.1	CARBONDALE		LIMESTONE	0.6	291.9	W/ SH BANDS
262.5	CARBONDALE		UNKNOWN	1.1	292.5	CORE LOSS



MAPID: 14528563000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 29 QUARTERS/FOOTAGES: 633' S line, 119' E line of SW NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.569503 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.155439 DATE COLLECTED: 4 / 30 / 1987

SURFACE ELEVATION (FT.): 511.4 LOGGED (FT.): 245.0 LOG TYPE: Drillers Log

SOURCE: ZEIGLER COAL CO. 135 WELL TYPE: Coal Test

COMMENT: PERMIT 205; #11 MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
511.4	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0	LOESS & CKAY
495.4	PLEISTOCENE		SAND & GRAVEL	38.0	16.0	
457.4	PLEISTOCENE		UNCONSOLIDATED	9.0	54.0	
448.4	MODESTO		GRAY SHALE	53.5	63.0	
394.9	MODESTO		GRAY SHALE	10.5	116.5	W/ SIDERITE
384.4	MODESTO		SANDY SHALE	3.0	127.0	W/ SAND LENSES
381.4	MODESTO		SILTY SHALE	8.0	130.0	
373.4	MODESTO		SHALE	4.0	138.0	MULTICOLORED
369.4	MODESTO		SILTY SHALE	8.0	142.0	GREEN GRAY
361.4	MODESTO		SILTY SHALE	20.5	150.0	GRAY
340.9	MODESTO	PIASA	LIMESTONE	11.5	170.5	
329.4	MODESTO		GRAY SHALE	0.5	182.0	
328.9	CARBONDALE	DANVILLE	COAL	2.5	182.5	
326.4	CARBONDALE		GRAY SHALE	5.0	185.0	
321.4	CARBONDALE		SANDSTONE	2.0	190.0	
319.4	CARBONDALE		GRAY SHALE	1.5	192.0	
317.9	CARBONDALE		CALCAREOUS SHALE	4.5	193.5	
313.4	CARBONDALE		GRAY SHALE	1.0	198.0	WITH LIMESTONE NODULES
312.4	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	199.0	CORRELATION UNCERTAIN
308.9	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	3.5	202.5	
305.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	206.0	
300.9	CARBONDALE		SHALE	2.8	210.5	MED DARK; CORING BEGAN
298.1	CARBONDALE		SILTY SHALE	1.2	213.3	GRAY
296.9	CARBONDALE		FOSSILIFEROUS SHALE	1.5	214.5	
295.4	CARBONDALE		LIMESTONE	2.0	216.0	GRAY
293.4	CARBONDALE		FOSSILIFEROUS SHALE	2.0	218.0	
291.4	CARBONDALE		LIMESTONE	1.7	220.0	GRAY
289.7	CARBONDALE		FOSSILIFEROUS SHALE	3.7	221.7	MED DARK
286.0	CARBONDALE	BRERETON	LIMESTONE	3.9	225.4	GRAY
282.1	CARBONDALE	ANNA	SHALE	1.9	229.3	DARK
280.2	CARBONDALE	HERRIN	COAL	7.9	231.2	
272.3	CARBONDALE		UNDERCLAY	0.7	239.1	
271.6	CARBONDALE		GRAY SHALE	2.1	239.8	
269.5	CARBONDALE		SHALE	2.0	241.9	WITH LIMESTONE NODULES
267.5	CARBONDALE		GRAY SHALE	0.3	243.9	
267.2	CARBONDALE		CORE LOSS	0.8	244.2	CORE LOSS

MAPID: 14590014000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 29 QUARTERS/FOOTAGES: 38' S line, 312' W line of SE NW NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.57032 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.15746 DATE COLLECTED: 7 / 13 / 1983

SURFACE ELEVATION (FT.): 509.1 LOGGED (FT.): 266.1 LOG TYPE: Drillers Log

SOURCE: OLD BEN COAL CO. #95 WELL TYPE: Coal Test

COMMENT: PERMIT 51; MINE #11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
509.1	PLEISTOCENE		UNCONSOLIDATED	54.8	0.0	
454.3	MODESTO		SANDY SHALE	59.5	54.8	
394.8	MODESTO		GRAY SHALE	21.1	114.3	SIDERITE
373.7	MODESTO		CALCAREOUS SHALE	9.3	135.4	
364.4	MODESTO		SHALE	5.9	144.7	
358.5	MODESTO		CALCAREOUS SHALE	16.1	150.6	
342.4	MODESTO		DARK GRAY SHALE	7.2	166.7	
335.2	MODESTO		GRAY SHALE	2.2	173.9	
333.0	MODESTO		CALCAREOUS SHALE	3.1	176.1	
329.9	MODESTO	PIASA	LIMESTONE	6.7	179.2	GRAY
323.2	MODESTO		DARK SHALE	1.2	185.9	
322.0	CARBONDALE	DANVILLE	COAL	2.3	187.1	
319.7	CARBONDALE		UNDERCLAY	3.4	189.4	
316.3	CARBONDALE		CALCAREOUS SHALE	9.7	192.8	
306.6	CARBONDALE	GALUM	LIMESTONE	3.6	202.5	
303.0	CARBONDALE		CALCAREOUS SHALE	3.3	206.1	
299.7	CARBONDALE	BANKSTON FORK	LIMESTONE	3.2	209.4	
296.5	CARBONDALE		DARK GRAY SHALE	1.8	212.6	
294.7	CARBONDALE	BRERETON	LIMESTONE & SHALE	0.9	214.4	DARK GRAY
293.8	CARBONDALE	BRERETON	LIMESTONE	8.0	215.3	DARK GRAY
285.9	CARBONDALE	BRERETON	LIMESTONE & SHALE	1.7	223.2	DARK GRAY
284.2	CARBONDALE	BRERETON	LIMESTONE	2.9	224.9	DARK GRAY
281.3	CARBONDALE		CALCAREOUS SHALE	2.8	227.8	
278.5	CARBONDALE	HERRIN	COAL	5.9	230.6	
272.6	CARBONDALE		UNDERCLAY	2.4	236.5	
270.2	CARBONDALE	HIGGINSVILLE	LIMESTONE & SHALE	6.1	238.9	
264.1	CARBONDALE		CLAYSTONE & LIMESTONE	4.4	245.0	
259.7	CARBONDALE	ST. DAVID	LIMESTONE	4.8	249.4	
254.9	CARBONDALE		CLAYSTONE & LIMESTONE	5.8	254.2	
249.2	CARBONDALE		CALCAREOUS SHALE	6.2	259.9	WITH LIMESTONE NODULES

MAPID: 14590021000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 29 QUARTERS/FOOTAGES: 83' N line, 113' E line of NE NE SE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.55544 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.153443 DATE COLLECTED: 4 / 12 / 1971

SURFACE ELEVATION (FT.): 518.1 LOGGED (FT.): 246.7 LOG TYPE: Drillers Log

SOURCE: OLD BEN COAL CO. #60 WELL TYPE: Coal Test

COMMENT: PERMIT 51; MINE #11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
518.1	PLEISTOCENE		UNCONSOLIDATED	6.6	0.0	
511.5	MODESTO		SANDSTONE	22.5	6.6	
489.0	MODESTO		SANDY SHALE	2.9	29.1	
486.1	MODESTO		SANDSTONE	7.6	32.0	
478.5	MODESTO		SANDY SHALE	4.0	39.6	
474.5	MODESTO		SILTY SHALE	0.5	43.6	
474.0	MODESTO	CHAPEL	COAL	1.3	44.1	
472.7	MODESTO		SANDY SHALE	3.2	45.4	
469.5	MODESTO		SANDSTONE	9.0	48.6	
460.5	MODESTO		CALCAREOUS SANDSTONE	0.8	57.6	
459.7	MODESTO		SHALY SANDSTONE	7.6	58.4	
452.1	MODESTO		SANDY SHALE	19.0	66.0	
433.1	MODESTO		SILTY SHALE	34.0	85.0	
399.1	MODESTO		SILTY SHALE	23.0	119.0	
376.1	MODESTO	POND CREEK	COAL	0.3	142.0	
375.8	MODESTO		UNDERCLAY	1.6	142.3	
374.2	MODESTO		SHALE	15.7	143.9	GREEN-GRAY
358.5	MODESTO		SHALE	2.0	159.6	
356.5	MODESTO		SANDY SHALE	1.4	161.6	
355.1	MODESTO		SANDY SHALE	7.0	163.0	
348.1	MODESTO		SANDY SHALE	7.1	170.0	
341.0	MODESTO	PIASA	LIMESTONE	10.2	177.1	
330.8	MODESTO		BLACK SHALE	2.7	187.3	
328.1	MODESTO		SILTY SHALE	3.9	190.0	
324.2	CARBONDALE		SANDSTONE	7.5	193.9	
316.7	CARBONDALE		BLACK SHALE	1.6	201.4	
315.1	CARBONDALE		SHALE WITH LIMESTONE	2.4	203.0	
312.7	CARBONDALE	GALUM	LIMESTONE	3.6	205.4	
309.1	CARBONDALE		SHALE WITH LIMESTONE	4.0	209.0	
305.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	213.0	GRAY
301.6	CARBONDALE		BLACK SHALE	3.5	216.5	
298.1	CARBONDALE	CONANT	LIMESTONE	2.7	220.0	
295.4	CARBONDALE	CONANT	LIMESTONE	1.9	222.7	DARK
293.5	CARBONDALE		SHALE WITH LIMESTONE	0.5	224.6	
293.0	CARBONDALE		BLACK SHALE	1.7	225.1	
291.3	CARBONDALE		BLACK SHALE	4.4	226.8	
286.9	CARBONDALE	BRERETON	LIMESTONE	5.6	231.2	DARK
281.3	CARBONDALE	ANNA	BLACK SHALE	1.0	236.8	

280.3	CARBONDALE	HERRIN	COAL	6.7	237.8
273.6	CARBONDALE		UNDERCLAY	1.6	244.5
272.0	CARBONDALE	HIGGINSVILLE	LIMESTONE & CONGLOMERATE	0.6	246.1

MAPID: 14502178000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 4S 4W **SECTION:** 30 **QUARTERS/FOOTAGES:** 1000' S line, 255' W line
QUADRANGLE: COULTERVILLE **LONGITUDE:** -89.591497 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.149121 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 534.0 **LOGGED (FT.):** 239.3 **LOG TYPE:** Survey Core Study
SOURCE: MOFFAT COAL CO. 4 **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
360.0	MODESTO	PIASA	LIMESTONE	11.3	174.0
348.7	MODESTO		BLACK SHALE	2.9	185.3
345.8	CARBONDALE	DANVILLE	COAL	2.6	188.2
343.3	CARBONDALE		GRAY SHALE	10.3	190.7
333.0	CARBONDALE	GALUM	LIMESTONE/UNDERCLAY	3.9	201.0
329.1	CARBONDALE		MOTTLED SHALE	1.8	204.9
327.2	CARBONDALE	BANKSTON FORK	NODULAR LIMESTONE	5.1	206.8
322.2	CARBONDALE	LAWSON	DARK GRAY SHALE	5.1	211.8
317.1	CARBONDALE	CONANT	LIMESTONE	1.3	216.9
315.8	CARBONDALE		DARK GRAY SHALE	3.7	218.2
312.1	CARBONDALE	BRERETON	LIMESTONE	6.8	221.9
305.4	CARBONDALE	ANNA	BLACK SHALE	3.4	228.6
302.0	CARBONDALE	HERRIN	COAL	7.3	232.0

MAPID: 14502179000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 30 QUARTERS/FOOTAGES: 680' N line, 1880' E line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.580311 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.159123 DATE COLLECTED:

SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 245.4 LOG TYPE: Survey Core Study

SOURCE: MOFFAT COAL CO. 5 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
317.0	MODESTO	PIASA	LIMESTONE	6.1	185.0
310.9	MODESTO		DARK GRAY SHALE	1.1	191.1
309.8	CARBONDALE	DANVILLE	COAL	2.5	192.2
307.4	CARBONDALE		SANDSTONE/SILTSTONE	13.1	194.6
294.3	CARBONDALE	GALUM	LIMESTONE/UNDERCLAY	2.6	207.7
291.7	CARBONDALE		MOTTLED SHALE	6.0	210.3
285.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	216.3
283.0	CARBONDALE	LAWSON	BLACK SHALE	3.5	219.0
279.5	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	3.8	222.5
275.8	CARBONDALE		DARK GRAY SHALE	5.8	226.2
269.9	CARBONDALE	BRERETON	LIMESTONE	5.0	232.1
264.9	CARBONDALE	ANNA	BLACK SHALE	2.4	237.1
263.0	CARBONDALE	HERRIN	COAL	6.4	239.0

MAPID: 14528564000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 30 QUARTERS/FOOTAGES: 29' S line, 43' W line of NE NE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.578263 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.157427 DATE COLLECTED: 5 / 6 / 1987

SURFACE ELEVATION (FT.): 517.2 LOGGED (FT.): 255.0 LOG TYPE: Drillers Log

SOURCE: ZEIGLER COAL CO. 136 WELL TYPE: Coal Test

COMMENT: PERMIT 205; #11 MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
517.2	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0	LOESS & CLAY
496.2	MODESTO		SANDSTONE	13.0	21.0	
483.2	MODESTO		SMUT	2.0	34.0	
481.2	MODESTO		GRAY SHALE	1.0	36.0	
480.2	MODESTO		SANDSTONE	5.0	37.0	WEATHERED
475.2	MODESTO		SANDY SHALE	21.0	42.0	W/ SS SEAMS
454.2	MODESTO		GRAY SHALE	23.0	63.0	
431.2	MODESTO		GRAY SHALE	9.5	86.0	W/ SIDERITE
421.7	MODESTO		SILTY SHALE	32.5	95.5	GRAY
389.2	MODESTO		GRAY SHALE	18.0	128.0	W/ SIDERITE
371.2	MODESTO		GRAY SHALE	7.0	146.0	
364.2	MODESTO		SANDSTONE	3.0	153.0	
361.2	MODESTO		GRAY SHALE	26.5	156.0	
334.7	MODESTO	DEGRAFF	COAL	0.5	182.5	
334.2	MODESTO		CALCAREOUS SHALE	2.0	183.0	
332.2	MODESTO	PIASA	LIMESTONE	9.0	185.0	GRAY
323.2	MODESTO		GRAY SHALE	1.0	194.0	
322.2	MODESTO		SHALE	0.5	195.0	DARK
321.7	CARBONDALE	DANVILLE	COAL	2.5	195.5	
319.2	CARBONDALE		GRAY SHALE	5.0	198.0	
314.2	CARBONDALE		CALCAREOUS SANDSTONE	1.0	203.0	
313.2	CARBONDALE		GRAY SHALE	7.0	204.0	
306.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	211.0	GRAY
301.2	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.0	216.0	
300.2	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	2.0	217.0	
298.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	219.0	
295.2	CARBONDALE		GRAY SHALE	1.5	222.0	
293.7	CARBONDALE		SHALE	2.1	223.5	MED. DARK; CORING BEGAN
291.6	CARBONDALE		FOSSILIFEROUS LIMESTONE	2.4	225.6	
289.2	CARBONDALE		FOSSILIFEROUS SHALE	2.3	228.0	DARK
286.9	CARBONDALE		LIMESTONE	0.8	230.3	GRAY
286.1	CARBONDALE		FOSSILIFEROUS SHALE	5.9	231.1	DARK
280.2	CARBONDALE		LIMESTONE	1.2	237.0	GRAY
279.0	CARBONDALE		FOSSILIFEROUS SHALE	2.0	238.2	DARK
277.1	CARBONDALE	BRERETON	LIMESTONE	3.2	240.1	GRAY
273.9	CARBONDALE	ANNA	FOSSILIFEROUS SHALE	0.4	243.3	DARK
273.5	CARBONDALE	HERRIN	COAL	6.2	243.7	
267.3	CARBONDALE		UNDERCLAY	2.3	249.9	

265.0	CARBONDALE	SHALE	1.0	252.2	WITH LIMESTONE NODULES
264.0	CARBONDALE	LIMESTONE	1.3	253.2	
262.7	CARBONDALE	CORE LOSS	0.5	254.5	

MAPID: 14590015000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 30 QUARTERS/FOOTAGES: 13' S line, 87' E line of SW SE SW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.58574 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.146403 DATE COLLECTED: 7 / 11 / 1983

SURFACE ELEVATION (FT.): 522.8 LOGGED (FT.): 247.5 LOG TYPE: Drillers Log

SOURCE: OLD BEN COAL CO. #94 WELL TYPE: Coal Test

COMMENT: PERMIT 51; MINE #11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
522.8	PLEISTOCENE		UNCONSOLIDATED	20.5	0.0	
502.3	MODESTO		SANDY SHALE	12.6	20.5	
489.7	MODESTO		SANDSTONE	6.8	33.1	GRAY
482.9	MODESTO		SANDY SHALE	12.4	39.9	
470.5	MODESTO		SANDSTONE	9.3	52.3	GRAY
461.2	MODESTO		SANDY SHALE	16.7	61.6	
444.5	MODESTO		SILTY SHALE	36.2	78.3	
408.3	MODESTO		GRAY SHALE	20.2	114.5	
388.1	MODESTO		SHALE	10.5	134.7	
377.6	MODESTO		CALCAREOUS SHALE	13.9	145.2	
363.7	MODESTO		DARK GRAY SHALE	7.3	159.1	
356.4	MODESTO	DEGRAFF	COAL	0.3	166.4	
356.1	MODESTO		UNDERCLAY	2.8	166.7	
353.3	MODESTO	PIASA	LIMESTONE & SHALE	1.7	169.5	
351.6	MODESTO	PIASA	LIMESTONE	10.4	171.2	LIGHT GRAY
341.2	CARBONDALE	DANVILLE	COAL	3.5	181.6	
337.7	CARBONDALE		UNDERCLAY	2.4	185.1	
335.3	CARBONDALE		CALCAREOUS SHALE	7.3	187.5	
328.0	CARBONDALE		CALCAREOUS SHALE	7.4	194.8	
320.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	202.2	
316.4	CARBONDALE		CLAYSTONE	0.1	206.4	
316.3	CARBONDALE		DARK GRAY SHALE	2.5	206.5	
313.8	CARBONDALE		CALCAREOUS SHALE	1.5	209.0	
312.4	CARBONDALE	CONANT	LIMESTONE	4.2	210.4	GRAY
308.2	CARBONDALE		BLACK SHALE	0.6	214.6	
307.6	CARBONDALE	BRERETON	LIMESTONE	8.2	215.2	GRAY
299.5	CARBONDALE	ANNA	BLACK SHALE	1.9	223.3	
297.6	CARBONDALE	HERRIN	COAL	6.6	225.2	
291.0	CARBONDALE		UNDERCLAY	0.8	231.8	
290.3	CARBONDALE	HIGGINSVILLE	LIMESTONE	9.6	232.5	UNCERTAIN
280.7	CARBONDALE		CARBONACEOUS SHALE	0.3	242.1	
280.4	CARBONDALE	SPRINGFIELD	COAL	2.3	242.4	
278.1	CARBONDALE		UNDERCLAY	2.3	244.7	
275.8	CARBONDALE		UNKNOWN	0.5	247.0	CORE LOSS

MAPID: 14590017000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 30 QUARTERS/FOOTAGES: 161' N line, 93' W line of NW NW SW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.592069 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.153217 DATE COLLECTED: 3 / 13 / 1972

SURFACE ELEVATION (FT.): 520.3 LOGGED (FT.): 234.2 LOG TYPE: Drillers Log

SOURCE: OLD BEN COAL CO. #75 WELL TYPE: Coal Test

COMMENT: PERMIT 51; MINE #11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
520.3	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
505.3	PLEISTOCENE		UNCONSOLIDATED	6.5	15.0	
498.8	MODESTO		SHALE	1.5	21.5	
497.3	MODESTO	TRIVOLI	SANDSTONE	13.0	23.0	
484.3	MODESTO	TRIVOLI	SANDY SHALE	8.5	36.0	
475.8	MODESTO	TRIVOLI	SANDSTONE	27.5	44.5	
448.3	MODESTO		SANDY SHALE	32.8	72.0	
415.5	MODESTO		SILTY SHALE	23.1	104.8	
392.4	MODESTO		CALCAREOUS SANDSTONE	1.1	127.9	
391.3	MODESTO		SANDSTONE	1.0	129.0	
390.3	MODESTO		GRAY SHALE	13.0	130.0	
377.3	MODESTO		SHALE	4.5	143.0	GREEN-GRAY
372.8	MODESTO		SANDY SHALE	2.5	147.5	
370.3	MODESTO		SANDY SHALE	10.5	150.0	
359.8	MODESTO		SILTY SHALE	11.1	160.5	
348.7	MODESTO	DEGRAFF	COAL	0.4	171.6	
348.3	MODESTO		SHALE	2.0	172.0	GRAY-GREEN
346.3	MODESTO	PIASA	LIMESTONE	8.7	174.0	
337.6	MODESTO		BLACK SHALE	7.3	182.7	
330.3	CARBONDALE	DANVILLE	COAL	1.8	190.0	
328.5	CARBONDALE		SILTY SHALE	6.0	191.8	
322.5	CARBONDALE	GALUM	LIMESTONE	0.2	197.8	
322.3	CARBONDALE		SHALE WITH LIMESTONE	4.8	198.0	
317.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	202.8	
313.8	CARBONDALE		DARK SHALE	3.7	206.5	
310.1	CARBONDALE	CONANT	LIMESTONE	2.8	210.2	DARK
307.3	CARBONDALE		DARK SHALE	9.3	213.0	
298.0	CARBONDALE	BRERETON	LIMESTONE	2.5	222.3	DARK
295.5	CARBONDALE	HERRIN	COAL	6.7	224.8	
288.8	CARBONDALE		UNDERCLAY	1.5	231.5	
287.3	CARBONDALE	HIGGINSVILLE	LIMESTONE & CONGLOMERATE	1.2	233.0	

MAPID: 14590020000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 30 QUARTERS/FOOTAGES: 59' S line, 84' W line of SW SW NE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.582798 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.153843 DATE COLLECTED: 3 / 28 / 1972

SURFACE ELEVATION (FT.): 524.1 LOGGED (FT.): 245.5 LOG TYPE: Drillers Log

SOURCE: OLD BEN COAL CO. #61 WELL TYPE: Coal Test

COMMENT: PERMIT 51; MINE #11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
524.1	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0	
503.1	PLEISTOCENE		SAND & GRAVEL	6.6	21.0	
496.5	MODESTO		SHALE	4.4	27.6	
492.1	MODESTO		SANDY SHALE	7.0	32.0	
485.1	MODESTO		SANDSTONE	11.0	39.0	
474.1	MODESTO		SILTY SHALE	7.0	50.0	
467.1	MODESTO	TRIVOLI	SANDSTONE	49.0	57.0	
418.1	MODESTO		SANDY SHALE	19.6	106.0	
398.5	MODESTO		SANDY SHALE	10.4	125.6	WITH SIDERITE
388.1	MODESTO		SANDSTONE	2.6	136.0	
385.5	MODESTO		SILTY SHALE	6.4	138.6	
379.1	MODESTO		SANDSTONE	2.6	145.0	
376.5	MODESTO		SILTY SHALE	8.0	147.6	
368.5	MODESTO		SANDY SHALE	23.6	155.6	
344.9	MODESTO	PIASA	LIMESTONE	9.5	179.2	
335.4	MODESTO	PIASA	BLACK SHALE	2.6	188.7	
332.8	MODESTO	PIASA	LIMESTONE	0.6	191.3	
332.2	CARBONDALE	DANVILLE	COAL	2.2	191.9	
330.0	CARBONDALE		UNDERCLAY	1.5	194.1	
328.5	CARBONDALE		SILTY SHALE	4.8	195.6	
323.7	CARBONDALE		SHALE WITH LIMESTONE	4.6	200.4	
319.1	CARBONDALE	GALUM	LIMESTONE	1.1	205.0	
318.0	CARBONDALE		SHALE WITH LIMESTONE	6.7	206.1	
311.3	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	212.8	
307.5	CARBONDALE		DARK SHALE	3.6	216.6	
303.9	CARBONDALE	CONANT	LIMESTONE	1.9	220.2	
302.0	CARBONDALE		SHALE WITH LIMESTONE	7.9	222.1	
294.1	CARBONDALE	BRERETON	LIMESTONE	4.3	230.0	DARK
289.8	CARBONDALE	ANNA	BLACK SHALE	2.3	234.3	
287.5	CARBONDALE	HERRIN	COAL	6.7	236.6	
280.8	CARBONDALE		UNDERCLAY	1.1	243.3	
279.7	CARBONDALE	HIGGINSVILLE	LIMESTONE & CONGLOMERATE	1.1	244.4	

MAPID: 14502176000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 31 QUARTERS/FOOTAGES: 180' N line, 1300' E line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.578408 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.145876 DATE COLLECTED:

SURFACE ELEVATION (FT.): 517.0 LOGGED (FT.): 215.3 LOG TYPE: Survey Core Study

SOURCE: MOFFAT COAL CO. 3 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
364.5	MODESTO	PIASA	LIMESTONE	9.8	152.5
354.7	MODESTO		BLACK SHALE	2.7	162.3
352.0	CARBONDALE	DANVILLE	COAL	2.8	165.0
349.3	CARBONDALE		GRAY SHALE	10.3	167.7
339.0	CARBONDALE	GALUM	LIMESTONE/UNDERCLAY	1.8	178.0
337.2	CARBONDALE		MOTTLED SHALE	4.2	179.8
333.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	184.0
329.4	CARBONDALE	LAWSON	MOTTLED SHALE	0.5	187.6
328.9	CARBONDALE	LAWSON	DARK GRAY SHALE	1.9	188.1
327.0	CARBONDALE	LAWSON	SILTY SHALE	0.3	190.0
326.6	CARBONDALE	LAWSON	GRAY SHALE	1.5	190.4
325.1	CARBONDALE	CONANT	LIMESTONE	1.7	191.9
323.5	CARBONDALE		DARK GRAY SHALE	12.4	193.5
311.0	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	2.9	206.0
308.1	CARBONDALE	ANNA	CARBONACEOUS LIMESTONE	0.1	208.9
308.0	CARBONDALE	HERRIN	COAL	6.3	209.0

MAPID: 14502144000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 32 QUARTERS/FOOTAGES: 1650' S line, 2310' W line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.566031 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.136301 DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 190.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
369.0	MODESTO	PIASA	LIMESTONE	9.0	125.0
360.0	CARBONDALE		CALCAREOUS SHALE	26.0	134.0
334.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	160.0
330.0	CARBONDALE	LAWSON	DARK GRAY SHALE	4.0	164.0
326.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.0	168.0
321.0	CARBONDALE		DARK GRAY SHALE	3.0	173.0
318.0	CARBONDALE	BRERETON	LIMESTONE	6.0	176.0
312.0	CARBONDALE	ANNA	BLACK SHALE	2.0	182.0
310.0	CARBONDALE	HERRIN	COAL	6.0	184.0

MAPID: 14590019000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 32 QUARTERS/FOOTAGES: 75' S line, 76' E line of NE SW NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.569524 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.141106 DATE COLLECTED: 3 / 29 / 1972

SURFACE ELEVATION (FT.): 502.9 LOGGED (FT.): 203.1 LOG TYPE: Drillers Log

SOURCE: OLD BEN COAL CO. #63 WELL TYPE: Coal Test

COMMENT: PERMIT #51 MINE #11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
502.9	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0	
470.9	PLEISTOCENE		UNCONSOLIDATED	43.6	32.0	
427.3	MODESTO		GRAY SHALE	12.3	75.6	SIDERITE
415.0	MODESTO		SANDSTONE	2.4	87.9	
412.6	MODESTO		SILTY SHALE	1.1	90.3	
411.5	MODESTO		SILTY SHALE	9.2	91.4	
402.3	MODESTO		SANDY SHALE	4.8	100.6	
397.5	MODESTO		CALCAREOUS SANDSTONE	1.6	105.4	
395.9	MODESTO		SHALY SANDSTONE	14.8	107.0	
381.1	MODESTO		GRAY SHALE	11.8	121.8	
369.3	MODESTO	PIASA	LIMESTONE	9.5	133.6	GRAY
359.8	MODESTO		BLACK SHALE	1.7	143.1	
358.1	CARBONDALE	DANVILLE	COAL	0.8	144.8	
357.3	CARBONDALE		UNDERCLAY	2.2	145.6	
355.1	CARBONDALE		SANDY SHALE	5.0	147.8	
350.1	CARBONDALE		SHALE WITH LIMESTONE	10.0	152.8	
340.1	CARBONDALE	GALUM	LIMESTONE	1.4	162.8	GRAY
338.7	CARBONDALE	GALUM	SHALE WITH LIMESTONE	0.5	164.2	
338.2	CARBONDALE	GALUM	LIMESTONE	0.5	164.7	GRAY
337.7	CARBONDALE		SHALE WITH LIMESTONE	4.3	165.2	
333.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	169.5	GRAY
329.4	CARBONDALE		BLACK SHALE	2.6	173.5	
326.8	CARBONDALE	CONANT	LIMESTONE	2.6	176.1	DARK
324.2	CARBONDALE		SHALE WITH LIMESTONE	8.1	178.7	
316.1	CARBONDALE	BRERETON	LIMESTONE	6.5	186.8	DARK
309.6	CARBONDALE	HERRIN	COAL	6.4	193.3	
303.2	CARBONDALE		UNDERCLAY	0.3	199.7	
302.9	CARBONDALE	HIGGINSVILLE	LIMESTONE & SHALE	2.3	200.0	
300.6	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.8	202.3	

MAPID: 14590728000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 34 QUARTERS/FOOTAGES: 40' S line, 40' E line of SE SE
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.518109 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.130602 DATE COLLECTED: 11 / 8 / 1978
 SURFACE ELEVATION (FT.): 513.1 LOGGED (FT.): 222.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D208PM WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
513.1	PLEISTOCENE		UNCONSOLIDATED	80.0	0.0
433.1			ROCK	118.7	80.0
314.4	CARBONDALE	SPRINGFIELD	COAL	7.0	198.7
307.4	CARBONDALE		ROCK	13.6	205.7
293.8	CARBONDALE	SPRINGFIELD	COAL	1.4	219.3
292.4	CARBONDALE		ROCK	1.3	220.7

MAPID: 14590731000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 34 QUARTERS/FOOTAGES: 290' S line, 290' E line of NW SE
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.523793 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.135222 DATE COLLECTED: 10 / 0 / 1977
 SURFACE ELEVATION (FT.): 512.0 LOGGED (FT.): 250.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D256LE WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
512.0	PLEISTOCENE		UNCONSOLIDATED	60.0	0.0
452.0			ROCK	136.0	60.0
316.0	CARBONDALE	HERRIN	COAL	7.0	196.0
309.0	CARBONDALE		ROCK	47.0	203.0

MAPID: 14590732000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 34 QUARTERS/FOOTAGES: 42' S line, 70' W line of NE SE
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.522762 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.134499 DATE COLLECTED: 10 / 18 / 1977
 SURFACE ELEVATION (FT.): 504.1 LOGGED (FT.): 197.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D257YC WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
504.1	PLEISTOCENE		UNCONSOLIDATED	59.0	0.0
445.1			ROCK	121.0	59.0
324.1	CARBONDALE	HERRIN	COAL	7.0	180.0
317.1	CARBONDALE		ROCK	10.0	187.0

MAPID: 14590738000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 34 QUARTERS/FOOTAGES: 40' N line, 383' W line of SE NE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.521583 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.141564 DATE COLLECTED: 10 / 24 / 1977

SURFACE ELEVATION (FT.): 539.1 LOGGED (FT.): 245.0 LOG TYPE: Drillers Log

SOURCE: AMAX D332FE WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
539.1	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0	
494.1			ROCK	184.0	45.0	
310.1	CARBONDALE	HERRIN	COAL	6.0	229.0	
304.1	CARBONDALE		ROCK	10.0	235.0	

MAPID: 14528783000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 35 QUARTERS/FOOTAGES: 40' N line, 538' E line of SE SE

QUADRANGLE: COULTERVILLE LONGITUDE: -89.500815 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.132988 DATE COLLECTED: 9 / 25 / 1980

SURFACE ELEVATION (FT.): 506.0 LOGGED (FT.): 199.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D241DG WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
506.0	PLEISTOCENE		CLAY	6.0	0.0	
500.0	MODESTO		SANDSTONE	12.0	6.0	
488.0	MODESTO		GRAY SHALE	101.0	18.0	
387.0	MODESTO	PIASA	LIMESTONE	6.0	119.0	
381.0	MODESTO		DARK GRAY SHALE	4.0	125.0	
377.0	CARBONDALE	DANVILLE	COAL	3.0	129.0	APPROXIMATE THICKNESS
374.0	CARBONDALE		UNDERCLAY	2.0	132.0	
372.0	CARBONDALE		GRAY SHALE	4.0	134.0	
368.0	CARBONDALE	GALUM	LIMESTONE	2.0	138.0	
366.0	CARBONDALE		GRAY SHALE	4.0	140.0	
362.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	144.0	
358.5	CARBONDALE		GRAY SHALE	4.5	147.5	
354.0	CARBONDALE	CONANT	LIMESTONE	5.5	152.0	
348.5	CARBONDALE		GRAY SHALE	2.5	157.5	
346.0	CARBONDALE	BRERETON	LIMESTONE	11.8	160.0	
334.2	CARBONDALE	ANNA	BLACK SHALE	0.2	171.8	
334.0	CARBONDALE	HERRIN	COAL	7.2	172.0	
326.8	CARBONDALE		UNDERCLAY	5.4	179.2	
321.4	CARBONDALE		CALCAREOUS SHALE	14.4	184.6	

MAPID: 14528784000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 35 QUARTERS/FOOTAGES: 69' N line, 145' E line of SE NE

QUADRANGLE: WINKLE LONGITUDE: -89.499679 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.140349 DATE COLLECTED: 8 / 21 / 1980

SURFACE ELEVATION (FT.): 532.0 LOGGED (FT.): 235.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D341GC WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
532.0	PLEISTOCENE		CLAY	21.0	0.0	
511.0	PLEISTOCENE		UNCONSOLIDATED	45.0	21.0	
466.0	MODESTO		GRAY SHALE	72.0	66.0	
394.0	MODESTO		COAL	3.0	138.0	
391.0	MODESTO		UNDERCLAY	2.0	141.0	
389.0	MODESTO		LIMESTONE	3.0	143.0	BROWN
386.0	MODESTO		GRAY SHALE	13.0	146.0	
373.0	MODESTO	PIASA	LIMESTONE	8.0	159.0	BROWN
365.0			GRAY SHALE	12.0	167.0	
353.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	179.0	BROWN
350.0	CARBONDALE	BANKSTON FORK	SHALY LIMESTONE	4.0	182.0	
346.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.2	186.0	LIGHT GRAY
342.8	CARBONDALE		BLACK SHALE	4.3	189.2	
338.5	CARBONDALE	CONANT	LIMESTONE	1.0	193.5	
337.5	CARBONDALE	CONANT	BLACK SHALE	0.9	194.5	
336.6	CARBONDALE	CONANT	LIMESTONE	2.3	195.4	
334.3	CARBONDALE		BLACK SHALE	12.3	197.7	
322.0	CARBONDALE	ANNA	BLACK SHALE	3.3	210.0	
318.7	CARBONDALE	ANNA	BLACK SHALE	0.2	213.3	
318.5	CARBONDALE	HERRIN	COAL	6.5	213.5	
312.0	CARBONDALE		UNDERCLAY	1.8	220.0	
310.2	CARBONDALE		SHALE WITH LIMESTONE	1.8	221.8	
308.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.7	223.6	
305.7	CARBONDALE	HIGGINSVILLE	SHALE	0.5	226.3	
305.2	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.3	226.8	
304.9	CARBONDALE	HIGGINSVILLE	SHALE	0.5	227.1	
304.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.8	227.6	
303.6	CARBONDALE	HIGGINSVILLE	SHALE	0.2	228.4	
303.4	CARBONDALE	HIGGINSVILLE	LIMESTONE & SHALE	0.8	228.6	
302.6	CARBONDALE	HIGGINSVILLE	LIMESTONE	5.6	229.4	

MAPID: 14528785000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 35 QUARTERS/FOOTAGES: 110' N line, 75' E line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.499218 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.14396 DATE COLLECTED: 12 / 16 / 1978

SURFACE ELEVATION (FT.): 509.7 LOGGED (FT.): 206.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D391GL WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
509.7	PLEISTOCENE		SAND	6.0	0.0	BROWN
503.7	MODESTO		GRAY SHALE	20.0	6.0	
483.7	MODESTO		SANDY SHALE	47.0	26.0	
436.7	MODESTO		GRAY SHALE	9.0	73.0	
427.7	MODESTO		LIMESTONE	3.0	82.0	
424.7	MODESTO		GRAY SHALE	49.0	85.0	
375.7	MODESTO	PIASA	LIMESTONE	7.0	134.0	
368.7	MODESTO		GRAY SHALE	4.0	141.0	
364.7	MODESTO		BLACK SHALE	1.0	145.0	
363.7	CARBONDALE	DANVILLE	COAL	1.0	146.0	
362.7	CARBONDALE		BLACK SHALE	2.0	147.0	
360.7	CARBONDALE		GRAY SHALE	5.0	149.0	
355.7	CARBONDALE	GALUM	LIMESTONE	1.0	154.0	
354.7	CARBONDALE		GRAY SHALE	4.0	155.0	
350.7	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	159.0	
346.7	CARBONDALE		SHALE	4.3	163.0	
342.4	CARBONDALE		LIMESTONE	1.5	167.3	
340.9	CARBONDALE		SHALE	1.4	168.8	
339.5	CARBONDALE	CONANT	LIMESTONE	1.8	170.2	
337.7	CARBONDALE		SHALE	4.8	172.0	
332.9	CARBONDALE	BRERETON	LIMESTONE	5.7	176.8	
327.2	CARBONDALE	ANNA	BLACK SHALE	3.0	182.5	
324.2	CARBONDALE	HERRIN	COAL	6.5	185.5	
317.7	CARBONDALE		UNDERCLAY	3.0	192.0	
314.7	CARBONDALE	HIGGINSVILLE	LIMESTONE	11.0	195.0	

MAPID: 14590730000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 35 QUARTERS/FOOTAGES: 40' N line, 538' E line of SE SE
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.500815 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.132988 DATE COLLECTED: 8 / 26 / 1980
 SURFACE ELEVATION (FT.): 506.0 LOGGED (FT.): 199.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D241DG WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
506.0	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0
500.0	MODESTO		ROCK	123.0	6.0
377.0	CARBONDALE	DANVILLE	COAL	3.0	129.0
374.0	CARBONDALE		ROCK	40.0	132.0
334.0	CARBONDALE	HERRIN	COAL	7.2	172.0
326.8	CARBONDALE		ROCK	19.8	179.2

MAPID: 14590735000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 35 QUARTERS/FOOTAGES: 50' S line, 50' W line of SW NE
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.508547 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.137554 DATE COLLECTED: 11 / 6 / 1978
 SURFACE ELEVATION (FT.): 516.0 LOGGED (FT.): 228.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D313XX WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
516.0	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
486.0	MODESTO		ROCK	108.4	30.0
377.6	MODESTO	DEGRAFF	COAL	1.6	138.4
376.0	MODESTO		ROCK	23.0	140.0
353.0	CARBONDALE	DANVILLE	COAL	0.2	163.0
352.8	CARBONDALE		ROCK	38.4	163.2
314.4	CARBONDALE	HERRIN	COAL	8.5	201.6
305.9	CARBONDALE		ROCK	17.9	210.1

MAPID: 14590739000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 35 QUARTERS/FOOTAGES: 69' N line, 145' E line of SE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.499679 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.140349 DATE COLLECTED: 8 / 21 / 1980
 SURFACE ELEVATION (FT.): 532.8 LOGGED (FT.): 235.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D341GC WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
532.8	PLEISTOCENE		UNCONSOLIDATED	66.0	0.0
466.8			ROCK	72.0	66.0
394.8			COAL	3.0	138.0
391.8			ROCK	72.5	141.0
319.3	CARBONDALE	HERRIN	COAL	6.5	213.5
312.8	CARBONDALE		ROCK	15.0	220.0

MAPID: 14590915000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 35 QUARTERS/FOOTAGES: 136' N line, 162' W line of NW NW
 QUADRANGLE: COULTERVILLE LONGITUDE: -89.517186 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.144723 DATE COLLECTED: 1 / 9 / 1979
 SURFACE ELEVATION (FT.): 544.3 LOGGED (FT.): 266.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D384EJ WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
544.3	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0
527.3			ROCK	222.6	17.0
304.7	CARBONDALE	HERRIN	COAL	6.4	239.6
298.3	CARBONDALE		ROCK	20.0	246.0

MAPID: 14590916000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 35 QUARTERS/FOOTAGES: 110' N line, 75' E line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.499218 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.14396 DATE COLLECTED: 12 / 16 / 1978

SURFACE ELEVATION (FT.): 509.7 LOGGED (FT.): 206.0 LOG TYPE: Drillers Log

SOURCE: AMAX D391GL WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
509.7	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0
503.7	MODESTO		ROCK	140.0	6.0
363.7	CARBONDALE	DANVILLE	COAL	1.0	146.0
362.7	CARBONDALE		ROCK	38.5	147.0
324.2	CARBONDALE	HERRIN	COAL	6.5	185.5
317.7	CARBONDALE		ROCK	14.0	192.0

MAPID: 14502327000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 165' N line, 1153' W line

QUADRANGLE: WINKLE LONGITUDE: -89.495184 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.143852 DATE COLLECTED:

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 211.8 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XD393G WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
398.0	MODESTO	PIASA	LIMESTONE	7.0	152.0
391.0	MODESTO		DARK GRAY SHALE	6.0	159.0
385.0	CARBONDALE	DANVILLE	COAL	1.3	165.0
383.7	CARBONDALE		GRAY SHALE	6.8	166.3
377.0	CARBONDALE	GALUM	LIMESTONE	2.0	173.0
375.0	CARBONDALE		SILTY SHALE	3.5	175.0
371.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	178.5
367.0	CARBONDALE	LAWSON	DARK GRAY SHALE	5.0	183.0
362.0	CARBONDALE	CONANT	LIMESTONE	4.8	188.0
357.2	CARBONDALE		SILTY SHALE	4.9	192.8
352.3	CARBONDALE	BRERETON	LIMESTONE	6.0	197.7
346.3	CARBONDALE	ANNA	BLACK SHALE	1.3	203.7
345.0	CARBONDALE	HERRIN	COAL	6.8	205.0

MAPID: 14528786000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 300' S line, 375' W line of NE SE

QUADRANGLE: WINKLE

LONGITUDE: -89.483741

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.147095

DATE COLLECTED: 9 / 2 / 1980

SURFACE ELEVATION (FT.): 537.6

LOGGED (FT.): 245.1

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D273LE

WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
537.6	PLEISTOCENE		CLAY	16.0	0.0	
521.6	PLEISTOCENE		UNCONSOLIDATED	24.0	16.0	
497.6	MODESTO		SANDSTONE	20.0	40.0	
477.6	MODESTO		GRAY SHALE	4.0	60.0	
473.6	MODESTO		SANDSTONE	31.0	64.0	
442.6	MODESTO		GRAY SHALE	53.0	95.0	
389.6	MODESTO		COAL	2.5	148.0	
387.1	MODESTO		UNDERCLAY	1.5	150.5	
385.6	MODESTO		LIMESTONE	4.0	152.0	
381.6	MODESTO		GRAY SHALE	12.5	156.0	
369.1	MODESTO	PIASA	LIMESTONE	6.0	168.5	
363.1			BLACK SHALE	5.5	174.5	
357.6	CARBONDALE		GRAY SHALE	9.5	180.0	
348.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	189.5	
346.1	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	3.5	191.5	
342.6	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	195.0	
338.8	CARBONDALE		GREEN SHALE	0.2	198.8	
338.6	CARBONDALE		BLACK SHALE	4.4	199.0	
334.2	CARBONDALE		LIMESTONE	0.9	203.4	
333.3	CARBONDALE		CALCAREOUS BLACK SHALES	1.4	204.3	
331.8	CARBONDALE	CONANT	LIMESTONE	2.2	205.8	
329.6	CARBONDALE		CALCAREOUS BLACK SHALES	13.2	208.0	
316.4	CARBONDALE	BRERETON	LIMESTONE	5.5	221.2	
310.9	CARBONDALE	HERRIN	COAL	7.1	226.7	
303.8	CARBONDALE		UNDERCLAY	1.2	233.8	
302.6	CARBONDALE		CALCAREOUS SHALE	2.1	235.0	
300.5	CARBONDALE		CALCAREOUS SHALE	2.9	237.1	NODULAR
297.6	CARBONDALE		GREEN SHALE	2.3	240.0	
295.3	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.8	242.3	TAN

MAPID: 14528787000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 0' N line, 110' W line of SE NW

QUADRANGLE: WINKLE LONGITUDE: -89.4941 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.140365 DATE COLLECTED: 9 / 27 / 1980

SURFACE ELEVATION (FT.): 544.7 LOGGED (FT.): 216.8 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D369YB WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
544.7	PLEISTOCENE		CLAY	21.0	0.0	
523.7	PLEISTOCENE		SANDSTONE	16.0	21.0	BROWN
507.7	MODESTO		GRAY SHALE	96.0	37.0	
411.7	MODESTO		COAL	2.0	133.0	
409.7	MODESTO		UNDERCLAY	2.0	135.0	
407.7	MODESTO		GRAY SHALE	13.0	137.0	
394.7	MODESTO	PIASA	LIMESTONE	6.0	150.0	BROWN
388.7			GRAY SHALE	12.0	156.0	
376.7	CARBONDALE	BANKSTON FORK	SHALY LIMESTONE	7.0	168.0	
369.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	175.0	BROWN
367.7	CARBONDALE		BLACK SHALE	5.0	177.0	
362.7	CARBONDALE	CONANT	LIMESTONE	2.0	182.0	BLACK
360.7	CARBONDALE		GRAY SHALE	3.0	184.0	
357.7	CARBONDALE		LIMESTONE	5.0	187.0	GRAY
352.7	CARBONDALE		CALCAREOUS BLACK SHALES	7.9	192.0	
344.8	CARBONDALE	ANNA	BLACK SHALE	0.2	199.9	
344.6	CARBONDALE	HERRIN	COAL	7.7	200.1	
336.9	CARBONDALE		UNDERCLAY	1.7	207.8	
335.2	CARBONDALE		GRAY SHALE	3.9	209.5	
331.3	CARBONDALE		LIMESTONE	3.4	213.4	GRAY

MAPID: 14528788000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 100' S line, 370' W line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.483792 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.140284 DATE COLLECTED: 9 / 27 / 1980

SURFACE ELEVATION (FT.): 528.4 LOGGED (FT.): 221.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D373BH WELL TYPE: Coal Test

COMMENT: PERMIT 239;

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
528.4	PLEISTOCENE		CLAY	16.0	0.0	
512.4	PLEISTOCENE		SAND	4.0	16.0	BROWN
508.4	MODESTO		SANDSTONE	6.0	20.0	GRAY
502.4	MODESTO		SANDSTONE	11.0	26.0	BROWN
491.4	MODESTO		GRAY SHALE	96.0	37.0	
395.4	MODESTO		CALCAREOUS SHALE	2.0	133.0	
393.4	MODESTO		GRAY SHALE	14.0	135.0	
379.4	MODESTO	PIASA	LIMESTONE	8.0	149.0	BROWN
371.4	CARBONDALE	DANVILLE	COAL	4.0	157.0	
367.4	CARBONDALE		UNDERCLAY	2.0	161.0	
365.4	CARBONDALE	BANKSTON FORK	LIMESTONE	12.0	163.0	BROWN
353.4	CARBONDALE		GRAY SHALE	4.0	175.0	
349.4	CARBONDALE	CONANT	LIMESTONE	1.0	179.0	BLACK
348.4	CARBONDALE		CALCAREOUS BLACK SHALES	19.2	180.0	
329.2	CARBONDALE	BRERETON	LIMESTONE	2.0	199.2	GRAY
327.2	CARBONDALE	ANNA	BLACK SHALE	0.4	201.2	
326.8	CARBONDALE	HERRIN	COAL	7.0	201.6	
319.8	CARBONDALE		UNDERCLAY	2.3	208.6	
317.5	CARBONDALE		CALCAREOUS SHALE	6.6	210.9	
310.9	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.5	217.5	

MAPID: 14528789000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 0' S line, 0' E line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.480629 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.139869 DATE COLLECTED: 2 / 10 / 1969

SURFACE ELEVATION (FT.): 540.1 LOGGED (FT.): 320.5 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D375 WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
540.1	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0	
523.1	PLEISTOCENE		SAND	9.0	17.0	BROWN
514.1	PLEISTOCENE		GRAVEL	1.0	26.0	
513.1	PLEISTOCENE		SAND & GRAVEL	10.0	27.0	
503.1	MODESTO		SANDSTONE	29.0	37.0	GRAY
474.1	MODESTO		GRAY SHALE	58.0	66.0	
416.1	MODESTO		SANDY SHALE	16.0	124.0	
400.1	MODESTO		LIMESTONE	1.7	140.0	
398.4	MODESTO		GRAY SHALE	7.8	141.7	
390.6	MODESTO		SANDSTONE	3.5	149.5	
387.1	MODESTO		SANDY SHALE	12.5	153.0	
374.6	MODESTO	PIASA	LIMESTONE	9.8	165.5	
364.8	MODESTO		GRAY SHALE	1.7	175.3	
363.1	CARBONDALE	DANVILLE	COAL	1.3	177.0	
361.8	CARBONDALE		GRAY SHALE	2.7	178.3	
359.1	CARBONDALE		SANDSTONE	6.0	181.0	GRAY
353.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	187.0	START CORE
348.9	CARBONDALE		SANDY DARK SHALE	6.5	191.2	
342.4	CARBONDALE	CONANT	LIMESTONE	2.8	197.7	
339.7	CARBONDALE		DARK SHALE	11.5	200.4	
328.2	CARBONDALE	BRERETON	LIMESTONE	4.1	211.9	
324.1	CARBONDALE	ANNA	BLACK SHALE	0.9	216.0	
323.2	CARBONDALE	HERRIN	COAL	7.3	216.9	
315.8	CARBONDALE		UNDERCLAY	5.8	224.3	
310.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	7.9	230.1	
302.1	CARBONDALE		SANDY SHALE	5.0	238.0	
297.1	CARBONDALE		SANDSTONE	11.0	243.0	GRAY
286.1	CARBONDALE		LIMESTONE	2.0	254.0	
284.1	CARBONDALE		SANDSTONE	7.0	256.0	GRAY
277.1	CARBONDALE		SANDY SHALE	9.2	263.0	START CORE
267.9	CARBONDALE		SANDY SHALE	25.1	272.2	
242.8	CARBONDALE		SANDY SHALE	5.5	297.3	
237.3	CARBONDALE	TURNER MINE	BLACK SHALE	4.4	302.8	
232.9	CARBONDALE	SPRINGFIELD	COAL	2.8	307.2	
230.2	CARBONDALE		UNDERCLAY	7.5	309.9	
222.7	CARBONDALE		LIMESTONE	0.6	317.4	
222.1	CARBONDALE		SANDY SHALE	2.0	318.0	

MAPID: 14590733000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 58' S line, 191' W line of NE SW
 QUADRANGLE: WINKLE LONGITUDE: -89.493766 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.133055 DATE COLLECTED: 8 / 26 / 1980
 SURFACE ELEVATION (FT.): 526.7 LOGGED (FT.): 214.8 LOG TYPE: Drillers Log
 SOURCE: AMAX D269NK WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
526.7	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
500.7	MODESTO		ROCK	131.0	26.0
369.7	CARBONDALE	DANVILLE	COAL	4.0	157.0
365.7	CARBONDALE		ROCK	37.2	161.0
328.5	CARBONDALE	HERRIN	COAL	7.0	198.2
321.5	CARBONDALE		ROCK	9.6	205.2

MAPID: 14590734000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 300' S line, 375' W line of NE SE
 QUADRANGLE: WINKLE LONGITUDE: -89.483871 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.133366 DATE COLLECTED: 9 / 2 / 1980
 SURFACE ELEVATION (FT.): 537.6 LOGGED (FT.): 244.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D273LE WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
537.6	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
497.6			ROCK	108.0	40.0
389.6			COAL	2.5	148.0
387.1			ROCK	75.1	150.5
312.0	CARBONDALE	HERRIN	COAL	7.1	225.6
304.9	CARBONDALE		ROCK	11.3	232.7

MAPID: 14590736000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 50' S line, 100' W line of SW NE

QUADRANGLE: WINKLE LONGITUDE: -89.489557 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.13672 DATE COLLECTED: 10 / 8 / 1975

SURFACE ELEVATION (FT.): 543.2 LOGGED (FT.): 316.0 LOG TYPE: Drillers Log

SOURCE: AMAX D321 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
543.2	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
513.2			ROCK	175.8	30.0
337.4	CARBONDALE	HERRIN	COAL	7.1	205.8
330.3	CARBONDALE		ROCK	86.1	212.9
244.2	CARBONDALE	HOUCHIN CREEK	COAL	2.5	299.0
241.7	CARBONDALE		ROCK	14.5	301.5

MAPID: 14590737000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE

QUADRANGLE: WINKLE LONGITUDE: -89.480682 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.136203 DATE COLLECTED: 4 / 17 / 1958

SURFACE ELEVATION (FT.): 536.1 LOGGED (FT.): 228.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D325 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
536.1	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
521.1	MODESTO		ROCK	158.0	15.0
363.1	CARBONDALE	DANVILLE	COAL	2.0	173.0
361.1	CARBONDALE		ROCK	38.5	175.0
322.6	CARBONDALE	HERRIN	COAL	6.8	213.5
315.8	CARBONDALE		ROCK	7.7	220.3

MAPID: 14590912000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 1' N line, 110' W line of SE NW

QUADRANGLE: WINKLE LONGITUDE: -89.4941 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.140365 DATE COLLECTED: 8 / 27 / 1980

SURFACE ELEVATION (FT.): 544.7 LOGGED (FT.): 216.8 LOG TYPE: Drillers Log

SOURCE: AMAX D3694B WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
544.7	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
523.7	MODESTO		ROCK	112.0	21.0
411.7	MODESTO	DEGRAFF	COAL	2.0	133.0
409.7			ROCK	65.1	135.0
344.6	CARBONDALE	HERRIN	COAL	7.7	200.1
336.9	CARBONDALE		ROCK	9.0	207.8

MAPID: 14590913000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 100' S line, 370' W line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.483796 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.140284 DATE COLLECTED: 8 / 27 / 1980

SURFACE ELEVATION (FT.): 528.4 LOGGED (FT.): 221.0 LOG TYPE: Drillers Log

SOURCE: AMAX D373BH WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
528.4	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
508.4	MODESTO		ROCK	137.0	20.0
371.4	CARBONDALE	DANVILLE	COAL	4.0	157.0
367.4	CARBONDALE		ROCK	40.6	161.0
326.8	CARBONDALE	HERRIN	COAL	7.0	201.6
319.8	CARBONDALE		ROCK	12.4	208.6

MAPID: 14590914000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE NE
 QUADRANGLE: WINKLE LONGITUDE: -89.480632 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.139872 DATE COLLECTED: 2 / 10 / 1969
 SURFACE ELEVATION (FT.): 540.1 LOGGED (FT.): 320.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D375 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
540.1	PLEISTOCENE		UNCONSOLIDATED	37.0	0.0
503.1	MODESTO		ROCK	140.0	37.0
363.1	CARBONDALE	DANVILLE	COAL	1.3	177.0
361.7	CARBONDALE		ROCK	38.5	178.4
323.2	CARBONDALE	HERRIN	COAL	7.3	216.9
315.9	CARBONDALE		ROCK	83.0	224.2
232.9	CARBONDALE	HOUCHIN CREEK	COAL	2.7	307.2
230.2	CARBONDALE		ROCK	10.1	309.9

MAPID: 14590917000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 4S 4W SECTION: 36 QUARTERS/FOOTAGES: 165' N line, 1155' W line of NW
 QUADRANGLE: WINKLE LONGITUDE: -89.495177 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.143852 DATE COLLECTED: 9 / 9 / 1957
 SURFACE ELEVATION (FT.): 538.3 LOGGED (FT.): 216.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE D393G WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
538.3	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0
532.3	MODESTO		ROCK	159.0	6.0
373.3	CARBONDALE	DANVILLE	COAL	1.3	165.0
372.0	CARBONDALE		ROCK	38.7	166.3
333.3	CARBONDALE	HERRIN	COAL	6.8	205.0
326.5	CARBONDALE		ROCK	4.2	211.8

MAPID: 14501227000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1E SECTION: 6 QUARTERS/FOOTAGES: 0' S line, 2640' E line
 QUADRANGLE: DU QUOIN LONGITUDE: -89.142778 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.112472 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 448.7 LOGGED (FT.): 592.0 LOG TYPE:
 SOURCE: SOU GEM CC0003 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-133.3	CARBONDALE	HERRIN	COAL	9.0	582.0

MAPID: 14501227000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1E SECTION: 6 QUARTERS/FOOTAGES: 0' S line, 2640' E line

QUADRANGLE: DU QUOIN LONGITUDE: -89.142778

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.112472

DATE COLLECTED:

SURFACE ELEVATION (FT.): 449.0

LOGGED (FT.): 591.0

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-51.0	MODESTO	PIASA	LIMESTONE	8.0	500.0
-59.0	MODESTO		DARK GRAY SHALE	5.7	508.0
-64.7	CARBONDALE	DANVILLE	COAL	2.4	513.7
-67.1	CARBONDALE		GRAY SHALE	11.9	516.1
-79.0	CARBONDALE	BANKSTON FORK	LIMESTONE	9.0	528.0
-88.0	CARBONDALE	LAWSON	SHALE	14.0	537.0
-102.0	CARBONDALE	BRERETON	LIMESTONE	12.0	551.0
-114.0	CARBONDALE	ANNA	BLACK SHALE	4.0	563.0
-118.0	CARBONDALE	ENERGY	SILTY SHALE	6.0	567.0
-124.0	CARBONDALE	ENERGY	GRAY SHALE	9.0	573.0
-133.0	CARBONDALE	HERRIN	COAL	9.0	582.0

MAPID: 14501230000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1E SECTION: 6 QUARTERS/FOOTAGES: NW SE NW

QUADRANGLE: DU QUOIN LONGITUDE: -89.146663

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.122528

DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.3

LOGGED (FT.): 578.0

LOG TYPE:

SOURCE: SOU GEM CC0015

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-127.7	CARBONDALE	HERRIN	COAL	8.0	568.0

MAPID: 14501228000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1E SECTION: 7 QUARTERS/FOOTAGES: 330' S line, 1650' E line

QUADRANGLE: DU QUOIN LONGITUDE: -89.139232

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.098321

DATE COLLECTED:

SURFACE ELEVATION (FT.): 482.8

LOGGED (FT.): 634.0

LOG TYPE:

SOURCE: SOU GEM CC0005

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-139.2	CARBONDALE	HERRIN	COAL	9.5	622.0

MAPID: 14501228000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1E SECTION: 7 QUARTERS/FOOTAGES: 330' S line, 1650' E line

QUADRANGLE: DU QUOIN LONGITUDE: -89.139232 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.098321 DATE COLLECTED:

SURFACE ELEVATION (FT.): 483.0 LOGGED (FT.): 631.5 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-73.5	CARBONDALE	GALUM	LIMESTONE	0.5	556.5
-74.0	CARBONDALE		SHALE	12.0	557.0
-86.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.5	569.0
-93.5	CARBONDALE	LAWSON	SILTY SHALE	6.5	576.5
-100.0	CARBONDALE	LAWSON	SHALE	7.0	583.0
-107.0	CARBONDALE	BRERETON	LIMESTONE	7.0	590.0
-114.0	CARBONDALE	ANNA	BLACK SHALE	4.0	597.0
-118.0	CARBONDALE	ENERGY	DARK GRAY SHALE	21.0	601.0
-139.0	CARBONDALE	HERRIN	COAL	9.5	622.0

MAPID: 14501229000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1E SECTION: 17 QUARTERS/FOOTAGES: 2640' N line, 0' W line

QUADRANGLE: DU QUOIN LONGITUDE: -89.133154 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.090036 DATE COLLECTED:

SURFACE ELEVATION (FT.): 434.4 LOGGED (FT.): 588.0 LOG TYPE:

SOURCE: SOU GEM CC0010 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-144.6	CARBONDALE	HERRIN	COAL	7.9	579.0

MAPID: 14501229000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1E SECTION: 17 QUARTERS/FOOTAGES: 2640' N line, 0' W line

QUADRANGLE: DU QUOIN LONGITUDE: -89.133154 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.090036 DATE COLLECTED:

SURFACE ELEVATION (FT.): 434.0 LOGGED (FT.): 586.9 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-58.3	MODESTO		DARK GRAY SHALE	4.0	492.3
-62.3	CARBONDALE	DANVILLE	COAL	1.2	496.3
-63.4	CARBONDALE	LAWSON	GRAY SHALE	32.8	497.4
-96.3	CARBONDALE	JAMESTOWN	COAL	0.7	530.3
-96.9	CARBONDALE		MOTTLED SHALE	9.3	530.9
-106.3	CARBONDALE	BRERETON	LIMESTONE	9.0	540.3
-115.3	CARBONDALE	ENERGY	CLAYSTONE & SHALE	5.0	549.3
-120.3	CARBONDALE	ENERGY	LIMESTONE W/ SHALE	8.0	554.3
-128.3	CARBONDALE	ENERGY	GRAY SHALE	16.8	562.3
-145.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	7.9	579.0

MAPID: 145254D0001F VERSION: 1

PROJECT: BLM

COUNTY: PERRY TWP/RNG: 5S 1E SECTION: 17 QUARTERS/FOOTAGES: SW SW SW SE

QUADRANGLE: SESSER LONGITUDE: -89.123188 GEOLOGIST: BARGH,M

CONFIDENTIAL: N LATITUDE: 38.082795 DATE COLLECTED: 0 / 0 / 1932

SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 0.0 LOG TYPE: Measured section

SOURCE: FLD NOTES-WANLESS WELL TYPE: Outcrop

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			COAL/SANDSTONE	1.3	

MAPID: 14500049000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1E SECTION: 18 QUARTERS/FOOTAGES: 2640' N line, 2640' E line

QUADRANGLE: DU QUOIN LONGITUDE: -89.142382 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.090164 DATE COLLECTED:

SURFACE ELEVATION (FT.): 454.6 LOGGED (FT.): 623.0 LOG TYPE:

SOURCE: SOU GEM CC0016 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-159.4	CARBONDALE	HERRIN	COAL	7.8	614.0

MAPID: 14500049000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1E SECTION: 18 QUARTERS/FOOTAGES: 2640' N line, 2640' E line

QUADRANGLE: DU QUOIN LONGITUDE: -89.142382

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.090164

DATE COLLECTED:

SURFACE ELEVATION (FT.): 455.0

LOGGED (FT.): 621.8

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-64.8	MODESTO		BLACK SHALE	2.5	519.8
-67.3	CARBONDALE	DANVILLE	COAL	1.5	522.3
-68.8	CARBONDALE		GRAY SHALE	29.5	523.8
-98.3	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	553.3
-99.8	CARBONDALE	LAWSON	GRAY SHALE	19.0	554.8
-118.8	CARBONDALE	LAWSON	DARK GRAY SHALE	2.0	573.8
-120.8	CARBONDALE	BRERETON	LIMESTONE	3.5	575.8
-124.3	CARBONDALE	ENERGY	SILTY SHALE	20.5	579.3
-144.8	CARBONDALE	ENERGY	GRAY SHALE	14.2	599.8
-159.0	CARBONDALE	HERRIN	COAL	7.8	614.0

MAPID: 14502173000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 1E SECTION: 20 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE SW

QUADRANGLE: DU QUOIN LONGITUDE: -89.126707

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.06836

DATE COLLECTED:

SURFACE ELEVATION (FT.): 406.0

LOGGED (FT.): 2359.0

LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-362.0	CARBONDALE	COLCHESTER	COAL	-	768.0
-1953.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	2359.0

MAPID: 14500062000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 1 QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: DU QUOIN LONGITUDE: -89.157831

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.124199

DATE COLLECTED:

SURFACE ELEVATION (FT.): 468.7

LOGGED (FT.): 468.0

LOG TYPE:

SOURCE: SOU GEM CC0001

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
7.7	CARBONDALE	HERRIN	COAL	6.7	461.0

MAPID: 14501231000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 1 QUARTERS/FOOTAGES: NW NW NW

QUADRANGLE: DU QUOIN LONGITUDE: -89.167091 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.12437 DATE COLLECTED:

SURFACE ELEVATION (FT.): 484.1 LOGGED (FT.): 549.0 LOG TYPE:

SOURCE: SOU GEM CC0013 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
254.1	CARBONDALE	HERRIN	COAL	4.8	230.0	

MAPID: 14501232000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 1 QUARTERS/FOOTAGES: 0' N line, 1320' W line

QUADRANGLE: TAMAROA LONGITUDE: -89.163652 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.12516 DATE COLLECTED:

SURFACE ELEVATION (FT.): 499.8 LOGGED (FT.): 327.0 LOG TYPE:

SOURCE: SOU GEM CC0014 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
178.8	CARBONDALE	HERRIN	COAL	4.5	321.0	

MAPID: 14501232000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 1 QUARTERS/FOOTAGES: 0' N line, 1320' W line

QUADRANGLE: TAMAROA LONGITUDE: -89.163652 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.12516 DATE COLLECTED:

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 325.5 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
230.0	MODESTO	PIASA	LIMESTONE	6.0	270.0	
224.0	CARBONDALE		CALCAREOUS SHALE	7.0	276.0	
217.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	283.0	
211.0	CARBONDALE	LAWSON	GRAY SHALE	4.0	289.0	
207.0	CARBONDALE	BRERETON	LIMESTONE	22.5	293.0	
184.5	CARBONDALE	ANNA	BLACK SHALE	3.5	315.5	
181.0	CARBONDALE	ENERGY	DARK GRAY SHALE	1.7	319.0	
179.0	CARBONDALE	HERRIN	COAL	4.5	321.0	

MAPID: 14502811000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 2 QUARTERS/FOOTAGES: 990' S line, 330' W line of SE NW

QUADRANGLE: DU QUOIN LONGITUDE: -89.180731 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.122089 DATE COLLECTED:

SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 1223.0 LOG TYPE: Electric Log

SOURCE: NATIONAL ASSOC. PETROLEUM CO. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
267.0	CARBONDALE	SPRINGFIELD	COAL	-	218.0
168.0	CARBONDALE	COLCHESTER	COAL	-	317.0
-738.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1223.0

MAPID: 14502986000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 2 QUARTERS/FOOTAGES: 1860' S line, 2405' E line

QUADRANGLE: DU QUOIN LONGITUDE: -89.176528 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.117141 DATE COLLECTED:

SURFACE ELEVATION (FT.): 478.0 LOGGED (FT.): 188.6 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
334.0	MODESTO	PIASA	LIMESTONE	4.8	144.0
329.2	MODESTO		GRAY SHALE	1.0	148.8
328.2	CARBONDALE	DANVILLE	CARBONACEOUS SHALE	0.3	149.8
327.8	CARBONDALE		GRAY SHALE	6.0	150.2
321.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.3	156.2
318.5	CARBONDALE	LAWSON	GRAY SHALE	7.7	159.5
310.8	CARBONDALE		DARK GRAY SHALE	2.3	167.2
308.5	CARBONDALE	BRERETON	LIMESTONE	3.5	169.5
305.0	CARBONDALE	ANNA	BLACK SHALE	0.8	173.0
304.2	CARBONDALE	ENERGY	GRAY SHALE	9.3	173.8
295.0	CARBONDALE	HERRIN	COAL	5.6	183.0

MAPID: 14502629000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 3 **QUARTERS/FOOTAGES:** 330' N line, 330' W line of SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.194494 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.118629 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 475.0 **LOGGED (FT.):** 1188.0 **LOG TYPE:** Electric Log
SOURCE: LINDSAY, THEODORE R. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
270.0	CARBONDALE	SPRINGFIELD	COAL	-	205.0
174.0	CARBONDALE	COLCHESTER	COAL	-	301.0
-713.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1188.0

MAPID: 14502989000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 3 **QUARTERS/FOOTAGES:** 686' S line, 912' W line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.201735 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.114236 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 472.0 **LOGGED (FT.):** 173.4 **LOG TYPE:** Drillers Log
SOURCE: NO COMPANY **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
343.0	MODESTO	PIASA	LIMESTONE	5.5	129.0
337.5	MODESTO		GRAY SHALE	1.8	134.5
335.7	CARBONDALE	DANVILLE	COAL	2.0	136.3
333.7	CARBONDALE		CLAYSTONE & SHALE	2.5	138.3
331.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	140.8
326.9	CARBONDALE	LAWSON	GRAY SHALE	7.8	145.1
319.2	CARBONDALE	BRERETON	LIMESTONE	9.0	152.8
310.2	CARBONDALE	ANNA	BLACK SHALE	1.2	161.8
309.0	CARBONDALE	ENERGY	GRAY SHALE	4.8	163.0
304.0	CARBONDALE	HERRIN	COAL	5.4	168.0

MAPID: 14500064000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.210645 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.118784 **DATE COLLECTED:** 0 / 0 / 1911
SURFACE ELEVATION (FT.): 488.1 **LOGGED (FT.):** 199.0 **LOG TYPE:**
SOURCE: SOU GEM CC0002 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
301.1	CARBONDALE	HERRIN	COAL	5.1	187.0

MAPID: 14502033000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** 1650' S line, 386' W line of SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.212787 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.116973 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 485.0 **LOGGED (FT.):** 3002.0 **LOG TYPE:** Electric Log
SOURCE: THOR PETROLEUM, INC. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
197.0	CARBONDALE	COLCHESTER	COAL	-	288.0	
-652.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1137.0	
-2505.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2990.0	TOP OF NEW ALBANY
-2506.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2991.0	
-2517.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3002.0	BASE OF NEW ALBANY

MAPID: 14502993000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** 2578' S line, 2460' W line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.214797 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.119542 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 472.0 **LOGGED (FT.):** 171.1 **LOG TYPE:** Drillers Log
SOURCE: NO COMPANY **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
353.4	MODESTO	PIASA	LIMESTONE	8.2	118.6	
345.2	CARBONDALE		GRAY SHALE	5.3	126.8	
340.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	132.0	
335.5	CARBONDALE	LAWSON	GRAY SHALE	10.0	136.5	
325.5	CARBONDALE	LAWSON	DARK GRAY SHALE	9.7	146.5	
315.8	CARBONDALE	BRERETON	LIMESTONE	4.5	156.2	
311.3	CARBONDALE	ANNA	BLACK SHALE	1.3	160.7	
310.0	CARBONDALE	ENERGY	GRAY SHALE	4.0	162.0	
306.0	CARBONDALE	HERRIN	COAL	5.1	166.0	

MAPID: 14500063000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.224546 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.118846 **DATE COLLECTED:** 0 / 0 / 1911
SURFACE ELEVATION (FT.): 490.0 **LOGGED (FT.):** 193.0 **LOG TYPE:**
SOURCE: SOU GEM CC 3 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
316.0	CARBONDALE	HERRIN	COAL	4.8	174.0	

MAPID: 14500065000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** 1320' S line, 1320' E line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.228005 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.116124 **DATE COLLECTED:** 0 / 0 / 1911
SURFACE ELEVATION (FT.): 498.1 **LOGGED (FT.):** 241.0 **LOG TYPE:**
SOURCE: SOU GEM CC0001 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
324.1	CARBONDALE	HERRIN	COAL	4.6	174.0

MAPID: 14500065000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** 1320' S line, 1320' E line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.228005 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.116124 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 498.0 **LOGGED (FT.):** 178.6 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
366.0	MODESTO	PIASA	LIMESTONE	8.0	132.0
358.0	MODESTO		CLAYSTONE	1.5	140.0
356.5	CARBONDALE	DANVILLE	BONE COAL	0.3	141.5
356.2	CARBONDALE		CALCAREOUS SHALE	6.3	141.8
350.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	148.0
344.5	CARBONDALE	LAWSON	SHALE	11.0	153.5
333.5	CARBONDALE	BRERETON	LIMESTONE	6.5	164.5
327.0	CARBONDALE	ANNA	BLACK SHALE	2.8	171.0
324.0	CARBONDALE	HERRIN	COAL	4.6	174.0

MAPID: 14501997000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 6 **QUARTERS/FOOTAGES:** 320' N line, 920' E line of SE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.245155 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.115326 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 500.0 **LOGGED (FT.):** 1133.0 **LOG TYPE:** Electric Log
SOURCE: SIMMEL L C ETAL **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
304.0	CARBONDALE	SPRINGFIELD	COAL	-	196.0
191.0	CARBONDALE	COLCHESTER	COAL	-	309.0
-633.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1133.0

MAPID: 14502468000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 6 QUARTERS/FOOTAGES: 990' N line, 990' W line

QUADRANGLE: PYATTS LONGITUDE: -89.256198 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.123428 DATE COLLECTED:

SURFACE ELEVATION (FT.): 519.0 LOGGED (FT.): 220.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
351.0	MODESTO	PIASA	LIMESTONE	11.0	168.0
340.0	CARBONDALE		SHALE	8.0	179.0
332.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	187.0
325.0	CARBONDALE	LAWSON	SHALE	10.0	194.0
315.0	CARBONDALE	BRERETON	LIMESTONE	10.0	204.0
305.0	CARBONDALE	HERRIN	COAL	6.0	214.0

MAPID: 14502140000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 7 QUARTERS/FOOTAGES: 2310' N line, 2310' W line

QUADRANGLE: PYATTS LONGITUDE: -89.25241 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.106152 DATE COLLECTED:

SURFACE ELEVATION (FT.): 484.0 LOGGED (FT.): 1084.0 LOG TYPE: Electric Log

SOURCE: BEADLESTON, JOHN WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
326.0	CARBONDALE	SPRINGFIELD	COAL	-	158.0
247.0	CARBONDALE	COLCHESTER	COAL	-	237.0
-600.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1084.0

MAPID: 1450214000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 7 QUARTERS/FOOTAGES: 2310' N line, 2310' W line
 QUADRANGLE: PYATTS LONGITUDE: -89.25241 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.106152 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 484.0 LOGGED (FT.): 130.0 LOG TYPE: Electric Log
 SOURCE: WELL TYPE: Oil and Gas Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
416.0	MODESTO	PIASA	LIMESTONE	12.0	68.0
404.0	CARBONDALE		SILTY SHALE	16.0	80.0
388.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	96.0
384.0	CARBONDALE	LAWSON	GRAY SHALE	16.0	100.0
368.0	CARBONDALE	BRERETON	CALCAREOUS SHALE	4.0	116.0
364.0	CARBONDALE	ANNA	SHALE	4.0	120.0
360.0	CARBONDALE	HERRIN	COAL	6.0	124.0

MAPID: 14501504000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 8 QUARTERS/FOOTAGES: 2640' N line, 0' W line
 QUADRANGLE: DU QUOIN LONGITUDE: -89.242036 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.105237 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 0.0 LOG TYPE: Measured section
 SOURCE: SQUAREDEAL WELL TYPE: Underground mine
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
360.0	CARBONDALE	HERRIN	COAL	5.0	130.0

MAPID: 14501504000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 8 QUARTERS/FOOTAGES: 2640' N line, 0' W line
 QUADRANGLE: DU QUOIN LONGITUDE: -89.242036 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.105237 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 135.3 LOG TYPE: Drillers Log
 SOURCE: WELL TYPE: Coal Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	MODESTO	PIASA	LIMESTONE	5.6	90.0
394.4	CARBONDALE	DANVILLE	BONE COAL	0.7	95.6
393.7	CARBONDALE		CLAYSTONE	0.5	96.3
393.2	CARBONDALE	LAWSON	SHALE	25.0	96.8
368.2	CARBONDALE	BRERETON	LIMESTONE	6.5	121.8
361.7	CARBONDALE	ANNA	BLACK SHALE	1.5	128.3
360.0	CARBONDALE	HERRIN	COAL	5.3	130.0

MAPID: 14523207000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 8 QUARTERS/FOOTAGES: 330' S line, 330' E line of NE

QUADRANGLE: DU QUOIN LONGITUDE: -89.22455 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.105986 DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 2980.0 LOG TYPE: Electric Log

SOURCE: JUNIPER PETROLEUM CORP. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
290.0	CARBONDALE	SPRINGFIELD	COAL	-	204.0	
205.0	CARBONDALE	COLCHESTER	COAL	-	289.0	
-654.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1148.0	
-2464.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2958.0	TOP OF NEW ALBANY
-2465.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2959.0	
-2486.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2980.0	BASE OF NEW ALBANY

MAPID: 14502843000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 9 QUARTERS/FOOTAGES: 330' N line, 330' E line of SW NE

QUADRANGLE: DU QUOIN LONGITUDE: -89.210731 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.107794 DATE COLLECTED:

SURFACE ELEVATION (FT.): 492.0 LOGGED (FT.): 1128.0 LOG TYPE: Electric Log

SOURCE: EVANS, CHARLES T. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
303.0	CARBONDALE	SPRINGFIELD	COAL	-	189.0	
211.0	CARBONDALE	COLCHESTER	COAL	-	281.0	
-636.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1128.0	

MAPID: 14502970000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 9 QUARTERS/FOOTAGES: 2585' N line, 1268' E line

QUADRANGLE: DU QUOIN LONGITUDE: -89.209414 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.105264 DATE COLLECTED:

SURFACE ELEVATION (FT.): 484.0 LOGGED (FT.): 158.5 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
366.7	MODESTO	PIASA	LIMESTONE	7.0	117.3
359.7	MODESTO		MOTTLED SHALE	1.0	124.3
358.7	CARBONDALE	DANVILLE	BLACK SHALE	0.3	125.3
358.4	CARBONDALE		MOTTLED SHALE	2.7	125.6
355.7	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	128.3
351.4	CARBONDALE	LAWSON	GRAY SHALE	6.7	132.6
344.7	CARBONDALE	LAWSON	DARK GRAY SHALE	7.5	139.3
337.2	CARBONDALE	BRERETON	LIMESTONE	4.5	146.8
332.7	CARBONDALE	ANNA	BLACK SHALE	0.8	151.3
332.0	CARBONDALE	ENERGY	GRAY SHALE	1.0	152.0
331.0	CARBONDALE	HERRIN	COAL	5.5	153.0

MAPID: 14590623000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 9 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW SE

QUADRANGLE: DU QUOIN LONGITUDE: -89.214203 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.097626 DATE COLLECTED: 5 / 6 / 1972

SURFACE ELEVATION (FT.): 466.9 LOGGED (FT.): 131.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B213 WELL TYPE: Coal Test

COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
466.9	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0
432.9			ROCK	89.3	34.0
343.6	CARBONDALE	HERRIN	COAL	5.0	123.3
338.6	CARBONDALE		ROCK	2.7	128.3

MAPID: 14590624000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 9 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.205019 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.097567 DATE COLLECTED: 5 / 4 / 1972
 SURFACE ELEVATION (FT.): 473.0 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B217 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
473.0	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0
438.0			ROCK	88.9	35.0
349.1	CARBONDALE	HERRIN	COAL	4.6	123.9
344.5	CARBONDALE		ROCK	1.5	128.5

MAPID: 14502959000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 10 QUARTERS/FOOTAGES: 2339' N line, 126' E line
 QUADRANGLE: DU QUOIN LONGITUDE: -89.186929 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.105699 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 156.5 LOG TYPE: Drillers Log
 SOURCE: NO COMPANY WELL TYPE: Coal Test
 COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
350.3	MODESTO	PIASA	LIMESTONE	6.7	109.7
343.7	CARBONDALE		GRAY SHALE	8.0	116.3
335.7	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	124.3
331.0	CARBONDALE	LAWSON	GRAY SHALE	6.0	129.0
325.0	CARBONDALE	LAWSON	DARK GRAY SHALE	11.6	135.0
313.4	CARBONDALE	BRERETON	LIMESTONE	1.7	146.6
311.7	CARBONDALE	ANNA	BLACK SHALE	2.8	148.3
309.0	CARBONDALE	HERRIN	COAL	5.5	151.0

MAPID: 14501233000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 11 QUARTERS/FOOTAGES: NE NE SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.169252 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.103687 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 458.6 LOGGED (FT.): 625.0 LOG TYPE:
 SOURCE: SOU GEM CC0006 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
279.6	CARBONDALE	HERRIN	COAL	4.8	179.0

MAPID: 14502807000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 11 QUARTERS/FOOTAGES: 660' S line, 660' W line of SW

QUADRANGLE: DU QUOIN LONGITUDE: -89.184222 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.099235 DATE COLLECTED:

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 3154.0 LOG TYPE: Electric Log

SOURCE: MCBRIDE, W. C., INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
310.0	CARBONDALE	SPRINGFIELD	COAL	-	155.0	
188.0	CARBONDALE	COLCHESTER	COAL	-	277.0	
-765.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1230.0	
-2678.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3143.0	TOP OF NEW ALBANY
-2678.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3143.0	
-2689.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3154.0	BASE OF NEW ALBANY

MAPID: 14502958000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 11 QUARTERS/FOOTAGES: 1320' S line, 2340' E line

QUADRANGLE: DU QUOIN LONGITUDE: -89.176301 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.100999 DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 189.9 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
324.0	MODESTO	PIASA	LIMESTONE	6.2	132.0	
317.9	MODESTO		LIMESTONE/UNDERCLAY	3.7	138.1	
314.2	CARBONDALE	DANVILLE	CARBONACEOUS SHALE	0.3	141.8	
313.9	CARBONDALE		GRAY SHALE	9.3	142.1	
304.5	CARBONDALE	BANKSTON FORK	LIMESTONE	5.2	151.5	
299.4	CARBONDALE	LAWSON	GRAY SHALE	3.5	156.6	
295.9	CARBONDALE	LAWSON	DARK GRAY SHALE	8.2	160.1	
287.7	CARBONDALE	CONANT	LIMESTONE	1.8	168.3	
285.9	CARBONDALE		BLACK SHALE	1.0	170.1	
284.9	CARBONDALE	BRERETON	LIMESTONE	5.8	171.1	
279.0	CARBONDALE	ANNA	BLACK SHALE	3.2	177.0	
275.9	CARBONDALE	ENERGY	GRAY SHALE	2.9	180.1	
273.0	CARBONDALE	HERRIN	COAL	6.9	183.0	

MAPID: 14500066000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 12 **QUARTERS/FOOTAGES:** 1980' N line, 1980' E line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.156945 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.105512 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 479.4 **LOGGED (FT.):** 476.0 **LOG TYPE:**
SOURCE: SOU GEM CC0004 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
14.4	CARBONDALE	HERRIN	COAL	10.0	465.0	

MAPID: 14500066000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 12 **QUARTERS/FOOTAGES:** 1980' N line, 1980' E line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.156945 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.105512 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 479.0 **LOGGED (FT.):** 475.0 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
59.0	MODESTO	PIASA	LIMESTONE	6.0	420.0	
53.0	CARBONDALE	LAWSON	SHALE	24.0	426.0	
29.0	CARBONDALE	BRERETON	LIMESTONE	2.0	450.0	
27.0	CARBONDALE	ENERGY	DARK GRAY SHALE	13.0	452.0	
14.0	CARBONDALE	HERRIN	COAL	10.0	465.0	

MAPID: 14500067000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 12 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.162447 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.105028 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 445.1 **LOGGED (FT.):** 403.0 **LOG TYPE:**
SOURCE: SOU GEM CC0007 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
58.1	CARBONDALE	HERRIN	COAL	14.7	387.0	

MAPID: 14500068000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 13 **QUARTERS/FOOTAGES:** 990' N line, 330' E line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.151248 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.093107 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 469.2 **LOGGED (FT.):** 566.0 **LOG TYPE:**
SOURCE: SOU GEM CC0011 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-86.8	CARBONDALE	HERRIN	COAL	8.8	556.0	

MAPID: 14500068000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 13 **QUARTERS/FOOTAGES:** 990' N line, 330' E line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.151248 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.093107 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 469.0 **LOGGED (FT.):** 564.8 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-34.0	MODESTO	PIASA	LIMESTONE	9.0	503.0	
-43.0	CARBONDALE	LAWSON	GRAY SHALE	19.0	512.0	
-62.0	CARBONDALE	BRERETON	LIMESTONE	4.0	531.0	
-66.0	CARBONDALE	ENERGY	GRAY SHALE	20.7	535.0	
-87.0	CARBONDALE	HERRIN	COAL	8.8	556.0	

MAPID: 14501234000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 13 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.16254 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.083114 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 417.5 **LOGGED (FT.):** 462.0 **LOG TYPE:**
SOURCE: SOU GEM CC0012 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-38.5	CARBONDALE	HERRIN	COAL	4.8	456.0	

MAPID: 14502988000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 15 QUARTERS/FOOTAGES: 1753' N line, 1320' E line

QUADRANGLE: DU QUOIN LONGITUDE: -89.191147 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.092622 DATE COLLECTED:

SURFACE ELEVATION (FT.): 448.0 LOGGED (FT.): 129.3 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
365.0	MODESTO	PIASA	LIMESTONE	6.2	83.0
358.8	MODESTO		GRAY SHALE	1.8	89.2
357.1	CARBONDALE	DANVILLE	CARBONACEOUS SHALE	1.3	90.9
355.8	CARBONDALE		CLAYSTONE & SHALE	4.7	92.2
351.2	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	96.8
344.2	CARBONDALE	LAWSON	SHALE	11.3	103.8
332.8	CARBONDALE	BRERETON	LIMESTONE	4.5	115.2
328.3	CARBONDALE	ANNA	BLACK SHALE	1.5	119.7
326.8	CARBONDALE	ENERGY	GRAY SHALE	2.8	121.2
324.0	CARBONDALE	HERRIN	COAL	5.3	124.0

MAPID: 14590625000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 15 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE NE

QUADRANGLE: DU QUOIN LONGITUDE: -89.186539 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.097424 DATE COLLECTED: 12 / 6 / 1963

SURFACE ELEVATION (FT.): 458.8 LOGGED (FT.): 147.5 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE B225 WELL TYPE: Coal Test

COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
458.8	PLEISTOCENE		UNCONSOLIDATED	50.0	0.0
408.8	MODESTO		ROCK	57.5	50.0
351.3	CARBONDALE	DANVILLE	COAL	0.5	107.5
350.8	CARBONDALE		ROCK	31.5	108.0
319.3	CARBONDALE	HERRIN	COAL	4.5	139.5
314.8	CARBONDALE		ROCK	3.5	144.0

MAPID: 14590627000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 15 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.195779 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.090128 DATE COLLECTED: 11 / 20 / 1963
 SURFACE ELEVATION (FT.): 447.0 LOGGED (FT.): 114.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B121 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.0	PLEISTOCENE		UNCONSOLIDATED	38.0	0.0
409.0			ROCK	69.2	38.0
339.8	CARBONDALE	HERRIN	COAL	5.0	107.2
334.8	CARBONDALE		ROCK	1.8	112.2

MAPID: 14590628000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 15 QUARTERS/FOOTAGES: 225' N line, 1' W line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.200396 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.089541 DATE COLLECTED: 11 / 26 / 1963
 SURFACE ELEVATION (FT.): 455.9 LOGGED (FT.): 107.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B94CC WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.9	PLEISTOCENE		UNCONSOLIDATED	34.7	0.0
421.2			ROCK	66.4	34.7
354.8	CARBONDALE	HERRIN	COAL	4.4	101.1
350.4	CARBONDALE		ROCK	1.5	105.5

MAPID: 14590629000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 15 QUARTERS/FOOTAGES: 660' S line, 660' W line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.198092 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.088284 DATE COLLECTED: 11 / 25 / 1963
 SURFACE ELEVATION (FT.): 450.3 LOGGED (FT.): 108.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B95 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.3	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
425.3			ROCK	75.7	25.0
349.6	CARBONDALE	HERRIN	COAL	4.7	100.7
344.9	CARBONDALE		ROCK	2.6	105.4

MAPID: 14590630000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 15 QUARTERS/FOOTAGES: 1' S line, 1' W line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.200394 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.086482 DATE COLLECTED: 6 / 20 / 1959
 SURFACE ELEVATION (FT.): 455.6 LOGGED (FT.): 100.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B69 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.6	PLEISTOCENE		UNCONSOLIDATED	28.2	0.0
427.4			ROCK	64.6	28.2
362.8	CARBONDALE	HERRIN	COAL	4.8	92.8
358.0	CARBONDALE		ROCK	2.4	97.6

MAPID: 14590631000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 15 QUARTERS/FOOTAGES: 1' S line, 1' W line of NE SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.191152 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.086416 DATE COLLECTED: 5 / 25 / 1960
 SURFACE ELEVATION (FT.): 451.9 LOGGED (FT.): 108.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B71 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.9	PLEISTOCENE		UNCONSOLIDATED	39.0	0.0
412.9			ROCK	63.5	39.0
349.4	CARBONDALE	HERRIN	COAL	4.7	102.5
344.7	CARBONDALE		ROCK	0.8	107.2

MAPID: 14590632000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 1' W line of NE SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.191152 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.087324 DATE COLLECTED: 11 / 19 / 1963
 SURFACE ELEVATION (FT.): 443.0 LOGGED (FT.): 112.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B73C WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.0	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
415.0	MODESTO		ROCK	41.5	28.0
373.5	CARBONDALE	DANVILLE	COAL	0.5	69.5
373.0	CARBONDALE		ROCK	34.8	70.0
338.2	CARBONDALE	HERRIN	COAL	5.1	104.8
333.1	CARBONDALE		ROCK	2.1	109.9

MAPID: 14590786000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 15 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.195772 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.097493 DATE COLLECTED: 6 / 6 / 1958
 SURFACE ELEVATION (FT.): 460.2 LOGGED (FT.): 154.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B221 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.2	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
450.2			ROCK	135.0	10.0
315.2	CARBONDALE	HERRIN	COAL	6.7	145.0
308.5	CARBONDALE		ROCK	2.3	151.7

MAPID: 14502241000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 16 QUARTERS/FOOTAGES: 990' N line, 330' W line
 QUADRANGLE: DU QUOIN LONGITUDE: -89.222259 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.094891 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 1120.0 LOG TYPE: Electric Log
 SOURCE: ESTATE OF N.A. BALDRIDGE WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
312.0	CARBONDALE	SPRINGFIELD	COAL	-	158.0
222.0	CARBONDALE	COLCHESTER	COAL	-	248.0
-650.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1120.0

MAPID: 14502241000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 16 QUARTERS/FOOTAGES: 990' N line, 330' W line
 QUADRANGLE: DU QUOIN LONGITUDE: -89.222259 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.094891 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 133.0 LOG TYPE: Electric Log
 SOURCE: WELL TYPE: Oil and Gas Test
 COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
366.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	104.0
359.0	CARBONDALE	LAWSON	SHALE	10.0	111.0
349.0	CARBONDALE	BRERETON	LIMESTONE	3.0	121.0
346.0	CARBONDALE	ANNA	BLACK SHALE	3.0	124.0
343.0	CARBONDALE	HERRIN	COAL	6.0	127.0

MAPID: 14590633000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 16 QUARTERS/FOOTAGES: 1' N line, 1' W line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.218822 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.090261 DATE COLLECTED: 5 / 27 / 1972
 SURFACE ELEVATION (FT.): 463.7 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B111 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.7	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0
418.7			ROCK	67.5	45.0
351.2	CARBONDALE	HERRIN	COAL	4.8	112.5
346.4	CARBONDALE		ROCK	0.7	117.3

MAPID: 14590634000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 16 QUARTERS/FOOTAGES: 1' N line, 660' W line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.216521 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.090247 DATE COLLECTED: 11 / 27 / 1964
 SURFACE ELEVATION (FT.): 454.6 LOGGED (FT.): 115.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B112 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
454.6	PLEISTOCENE		UNCONSOLIDATED	9.0	0.0
445.6			ROCK	97.4	9.0
348.2	CARBONDALE	HERRIN	COAL	5.8	106.4
342.4	CARBONDALE		ROCK	2.8	112.2

MAPID: 14590635000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 16 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.214229 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.090236 DATE COLLECTED: 11 / 19 / 1963
 SURFACE ELEVATION (FT.): 442.1 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B113-A WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.1	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
424.1			ROCK	70.5	18.0
353.6	CARBONDALE	HERRIN	COAL	2.8	88.5
350.8	CARBONDALE		ROCK	26.7	91.3

MAPID: 14590636000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 16 QUARTERS/FOOTAGES: 1' S line, 660' W line of SW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.21192 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.090227 DATE COLLECTED: 11 / 26 / 1963
 SURFACE ELEVATION (FT.): 464.8 LOGGED (FT.): 106.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B114 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
464.8	PLEISTOCENE		UNCONSOLIDATED	36.0	0.0
428.8	MODESTO		ROCK	29.0	36.0
399.8	CARBONDALE	DANVILLE	COAL	1.0	65.0
398.8	CARBONDALE		ROCK	33.3	66.0
365.5	CARBONDALE	HERRIN	COAL	4.6	99.3
360.9	CARBONDALE		ROCK	2.1	103.9

MAPID: 14590637000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 16 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.209625 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.090208 DATE COLLECTED: 11 / 18 / 1963
 SURFACE ELEVATION (FT.): 462.7 LOGGED (FT.): 107.7 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B115 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.7	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
434.7			ROCK	72.3	28.0
362.4	CARBONDALE	HERRIN	COAL	5.0	100.3
357.4	CARBONDALE		ROCK	2.7	105.3

MAPID: 14590638000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 16 QUARTERS/FOOTAGES: 660' N line, 1' W line of NW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.214226 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.088414 DATE COLLECTED: 11 / 27 / 1963
 SURFACE ELEVATION (FT.): 439.9 LOGGED (FT.): 92.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B88 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.9	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
421.9			ROCK	67.7	18.0
354.2	CARBONDALE	HERRIN	COAL	4.4	85.7
349.8	CARBONDALE		ROCK	1.9	90.1

MAPID: 14590639000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 16 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.214237 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.086542 DATE COLLECTED: 1 / 18 / 1962
 SURFACE ELEVATION (FT.): 458.1 LOGGED (FT.): 109.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B63 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
458.1	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0
424.1			ROCK	67.4	34.0
356.7	CARBONDALE	HERRIN	COAL	5.0	101.4
351.7	CARBONDALE		ROCK	2.6	106.4

MAPID: 14590640000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 16 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.20963 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.086517 DATE COLLECTED: 1 / 19 / 1962
 SURFACE ELEVATION (FT.): 454.3 LOGGED (FT.): 98.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B65 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
454.3	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0
425.3			ROCK	63.7	29.0
361.6	CARBONDALE	HERRIN	COAL	4.5	92.7
357.1	CARBONDALE		ROCK	0.8	97.2

MAPID: 14590641000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 17 QUARTERS/FOOTAGES: 660' N line, 1' E line of SW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.2281 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.092191 DATE COLLECTED: 12 / 5 / 1963
 SURFACE ELEVATION (FT.): 471.0 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B132 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
471.0	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0
426.0			ROCK	67.3	45.0
358.7	CARBONDALE	HERRIN	COAL	4.5	112.3
354.2	CARBONDALE		ROCK	1.2	116.8

MAPID: 14590642000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 17 QUARTERS/FOOTAGES: 1' N line, 1' W line of NE NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.228062 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.097693 DATE COLLECTED: 12 / 5 / 1963
 SURFACE ELEVATION (FT.): 477.1 LOGGED (FT.): 133.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE B207 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
477.1	PLEISTOCENE		UNCONSOLIDATED	41.0	0.0	
436.1	MODESTO		ROCK	54.3	41.0	
381.8	CARBONDALE	DANVILLE	COAL	0.7	95.3	
381.1	CARBONDALE		ROCK	30.2	96.0	
350.9	CARBONDALE	HERRIN	COAL	4.6	126.2	
346.3	CARBONDALE		ROCK	2.2	130.8	

MAPID: 14502237000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 18 QUARTERS/FOOTAGES: 330' S line, 330' E line of NE SW
 QUADRANGLE: PYATTS LONGITUDE: -89.252323 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.087776 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 479.0 LOGGED (FT.): 2931.0 LOG TYPE: Electric Log
 SOURCE: HOPKINS, DALE GULF WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
294.0	CARBONDALE	COLCHESTER	COAL	-	185.0	
-618.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1097.0	
-2419.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2898.0	TOP OF NEW ALBANY
-2421.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2900.0	
-2452.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2931.0	BASE OF NEW ALBANY

MAPID: 14503034000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 18 QUARTERS/FOOTAGES: 1287' S line, 30' W line

QUADRANGLE: PYATTS LONGITUDE: -89.259875 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.086809 DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 78.4 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO RC 70-05 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
383.0	CARBONDALE	HERRIN	COAL	5.4	73.0
429.2	MODESTO	PIASA	LIMESTONE	5.6	26.8
423.6	CARBONDALE		GRAY SHALE	14.5	32.4
409.1	CARBONDALE	BANKSTON FORK	LIMESTONE	6.1	46.9
403.0	CARBONDALE	LAWSON	CALCAREOUS SHALE	7.3	53.0
395.7	CARBONDALE	LAWSON	DARK GRAY SHALE	3.4	60.3
392.3	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	6.7	63.7
385.6	CARBONDALE	ANNA	BLACK SHALE	2.6	70.4

MAPID: 14590643000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 18 QUARTERS/FOOTAGES: 1' S line, 1' W line of SE NW

QUADRANGLE: PYATTS LONGITUDE: -89.255733 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.090544 DATE COLLECTED: 12 / 3 / 1963

SURFACE ELEVATION (FT.): 462.0 LOGGED (FT.): 69.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE C119 WELL TYPE: Coal Test

COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.0	PLEISTOCENE		UNCONSOLIDATED	48.0	0.0
414.0			ROCK	14.8	48.0
399.2	CARBONDALE	HERRIN	COAL	4.6	62.8
394.6	CARBONDALE		ROCK	1.6	67.4

MAPID: 14590644000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 18 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE NW
 QUADRANGLE: PYATTS LONGITUDE: -89.251206 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.090512 DATE COLLECTED: 12 / 2 / 1963
 SURFACE ELEVATION (FT.): 475.8 LOGGED (FT.): 67.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE C121 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
475.8	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
445.8			ROCK	30.2	30.0
415.6	CARBONDALE	HERRIN	COAL	4.5	60.2
411.1	CARBONDALE		ROCK	2.3	64.7

MAPID: 14590645000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 18 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.246672 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.09048 DATE COLLECTED: 12 / 3 / 1963
 SURFACE ELEVATION (FT.): 480.5 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE C123 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.5	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
462.5			ROCK	41.5	18.0
421.0	CARBONDALE	HERRIN	COAL	4.3	59.5
416.7	CARBONDALE		ROCK	4.2	63.8

MAPID: 14590646000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 18 QUARTERS/FOOTAGES: 1' N line, 1' W line of SW NW
 QUADRANGLE: PYATTS LONGITUDE: -89.259871 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.094225 DATE COLLECTED: 12 / 3 / 1963
 SURFACE ELEVATION (FT.): 475.2 LOGGED (FT.): 115.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE C167 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
475.2	PLEISTOCENE		UNCONSOLIDATED	75.0	0.0
400.2			ROCK	33.2	75.0
367.0	CARBONDALE	HERRIN	COAL	4.8	108.2
362.2	CARBONDALE		ROCK	2.0	113.0

MAPID: 14590647000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 18 QUARTERS/FOOTAGES: 1' N line, 1' W line of SE NW
 QUADRANGLE: PYATTS LONGITUDE: -89.255812 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.094194 DATE COLLECTED: 12 / 3 / 1963
 SURFACE ELEVATION (FT.): 474.3 LOGGED (FT.): 78.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE C169 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
474.3	PLEISTOCENE		UNCONSOLIDATED	56.7	0.0
417.6			ROCK	14.2	56.7
403.4	CARBONDALE	HERRIN	COAL	4.7	70.9
398.7	CARBONDALE		ROCK	2.4	75.6

MAPID: 14590648000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 18 QUARTERS/FOOTAGES: 1' N line, 1' W line of SW NE
 QUADRANGLE: PYATTS LONGITUDE: -89.251239 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.094159 DATE COLLECTED: 12 / 3 / 1963
 SURFACE ELEVATION (FT.): 476.8 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE C171 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX44

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
476.8	PLEISTOCENE		UNCONSOLIDATED	31.0	0.0
445.8			ROCK	30.0	31.0
415.8	CARBONDALE	HERRIN	COAL	4.3	61.0
411.5	CARBONDALE		ROCK	2.7	65.3

MAPID: 14500069000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 19 QUARTERS/FOOTAGES: SW SW SW
 QUADRANGLE: PYATTS LONGITUDE: -89.259186 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.069473 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: MISSISSIPPI COAL CORP. WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	15.0	0.0
445.0			SANDSTONE/SHALE	25.0	15.0
420.0			UNCLASSIFIED	5.0	40.0
415.0			SHALE	8.5	45.0
406.5			UNCLASSIFIED	6.5	53.5

MAPID: 14503039000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 19 QUARTERS/FOOTAGES: 1420' N line, 660' W line

QUADRANGLE: PYATTS LONGITUDE: -89.257808 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.079323 DATE COLLECTED:

SURFACE ELEVATION (FT.): 469.0 LOGGED (FT.): 89.2 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO RC 70-06 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.3	MODESTO	PIASA	LIMESTONE	6.5	33.7
428.8	CARBONDALE		GRAY SHALE	14.7	40.2
414.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	54.9
410.4	CARBONDALE	LAWSON	GRAY SHALE	6.3	58.6
404.1	CARBONDALE	LAWSON	DARK GRAY SHALE	2.2	64.9
401.9	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	14.8	67.1
387.2	CARBONDALE	ANNA	DARK GRAY SHALE	2.2	81.8
385.0	CARBONDALE	HERRIN	COAL	5.2	84.0

MAPID: 14528350000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 19 QUARTERS/FOOTAGES: 1376' N line, 776' E line of NE SW

QUADRANGLE: PYATTS LONGITUDE: -89.25397 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.072068 DATE COLLECTED: 10 / 9 / 1970

SURFACE ELEVATION (FT.): 461.1 LOGGED (FT.): 85.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
461.1			UNCONSOLIDATED	5.0	0.0
456.1			CLAYSTONE	15.2	5.0
440.9			UNCLASSIFIED	26.9	20.2
414.0			SHALE	0.6	47.1
413.5	CARBONDALE		LIMESTONE	4.5	47.6
408.9	CARBONDALE		SHALE	9.2	52.2
399.8	CARBONDALE		LIMESTONE	7.3	61.3
392.5	CARBONDALE		SHALE	0.5	68.6
391.9	CARBONDALE	BRERETON	LIMESTONE	7.7	69.2
384.4	CARBONDALE	ANNA	SHALE	1.2	76.7
383.0	CARBONDALE	HERRIN	COAL	5.5	78.1
377.6	CARBONDALE		CLAYSTONE	1.4	83.5

MAPID: 14528351000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 19 QUARTERS/FOOTAGES: 1509' N line, 108' E line of NE SW

QUADRANGLE: PYATTS LONGITUDE: -89.251642 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.071682 DATE COLLECTED: 1 / 12 / 1971

SURFACE ELEVATION (FT.): 459.7 LOGGED (FT.): 79.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
459.7			UNCONSOLIDATED	5.0	0.0
454.7			CLAYSTONE	15.9	5.0
439.0			UNCLASSIFIED	14.9	20.7
424.0			SHALE	5.9	35.7
418.0			SHALE	1.9	41.7
416.1	CARBONDALE		LIMESTONE	3.7	43.6
412.4	CARBONDALE		SHALE	8.0	47.3
404.4	CARBONDALE		SANDSTONE	1.7	55.3
402.7	CARBONDALE		LIMESTONE	6.6	57.0
396.1	CARBONDALE	BRERETON	LIMESTONE	6.1	63.6
390.0	CARBONDALE	ENERGY	SHALE	0.3	69.7
389.7	CARBONDALE	ENERGY	SHALE	1.1	70.0
388.6	CARBONDALE	ENERGY	SHALE	1.9	71.1
386.7	CARBONDALE	HERRIN	COAL	5.0	73.0
381.7	CARBONDALE		CLAYSTONE	1.0	78.0

MAPID: 14528352000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 19 QUARTERS/FOOTAGES: 1377' N line, 147' E line of NE SW

QUADRANGLE: PYATTS LONGITUDE: -89.251774 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.072047 DATE COLLECTED:

SURFACE ELEVATION (FT.): 460.4 LOGGED (FT.): 82.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.4			UNCONSOLIDATED	5.0	0.0
455.4			CLAYSTONE	20.5	5.0
435.0			UNCLASSIFIED	16.2	25.4
418.8			SHALE	4.8	41.6
414.0	CARBONDALE		LIMESTONE	3.8	46.4
410.2	CARBONDALE		SHALE	8.4	50.2
401.8	CARBONDALE		SANDSTONE	2.2	58.6
399.6	CARBONDALE		LIMESTONE	6.3	60.8
393.2	CARBONDALE		LIMESTONE	5.2	67.2
388.0	CARBONDALE	ENERGY	SHALE	0.2	72.4
387.8	CARBONDALE	ENERGY	SHALE	0.6	72.6
387.2	CARBONDALE	ENERGY	SHALE	1.3	73.2
385.9	CARBONDALE	ENERGY	SHALE	0.7	74.5
385.2	CARBONDALE	HERRIN	COAL	5.0	75.2
380.2	CARBONDALE		CLAYSTONE	1.8	80.2

MAPID: 14501217000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: SW NW SW

QUADRANGLE: DU QUOIN LONGITUDE: -89.241087 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.073001 DATE COLLECTED:

SURFACE ELEVATION (FT.): 468.6 LOGGED (FT.): 0.0 LOG TYPE: Measured section

SOURCE: BAIL BROS 0003 WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
388.6	CARBONDALE	HERRIN	COAL	5.0	80.0

MAPID: 14502414000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 330' S line, 330' E line of NW

QUADRANGLE: DU QUOIN LONGITUDE: -89.234016 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.07659 DATE COLLECTED:

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 2917.0 LOG TYPE: Electric Log

SOURCE: NATIONAL PETROLEUM CORP. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
272.0	CARBONDALE	COLCHESTER	COAL	-	193.0	
-617.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1082.0	
-2437.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2902.0	TOP OF NEW ALBANY
-2437.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2902.0	
-2452.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2917.0	BASE OF NEW ALBANY

MAPID: 14590565000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW NE

QUADRANGLE: DU QUOIN LONGITUDE: -89.232863 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.075668 DATE COLLECTED: 8 / 15 / 1963

SURFACE ELEVATION (FT.): 457.1 LOGGED (FT.): 73.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE A505 WELL TYPE: Coal Test

COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
457.1	PLEISTOCENE		UNCONSOLIDATED	21.3	0.0	
435.8			ROCK	44.8	21.3	
391.0	CARBONDALE	HERRIN	COAL	4.3	66.1	
386.7	CARBONDALE		ROCK	2.6	70.4	

MAPID: 14590566000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW SE

QUADRANGLE: DU QUOIN LONGITUDE: -89.22818 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.075605 DATE COLLECTED: 8 / 15 / 1963

SURFACE ELEVATION (FT.): 452.6 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE A507 WELL TYPE: Coal Test

COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
452.6	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0	
431.6			ROCK	41.0	21.0	
390.6	CARBONDALE	HERRIN	COAL	4.8	62.0	
385.8	CARBONDALE		ROCK	1.2	66.8	

MAPID: 14590567000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' N line, 660' W line of NE SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.225872 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.075577 DATE COLLECTED: 8 / 29 / 1963
 SURFACE ELEVATION (FT.): 451.7 LOGGED (FT.): 78.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A508 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.7	PLEISTOCENE		UNCONSOLIDATED	30.2	0.0
421.5			ROCK	41.2	30.2
380.3	CARBONDALE	HERRIN	COAL	4.8	71.4
375.5	CARBONDALE		ROCK	1.8	76.2

MAPID: 14590568000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.232888 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.071983 DATE COLLECTED: 6 / 15 / 1960
 SURFACE ELEVATION (FT.): 456.1 LOGGED (FT.): 66.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A455 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
456.1	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
441.1	MODESTO		ROCK	8.5	15.0
432.6	CARBONDALE	DANVILLE	COAL	0.5	23.5
432.1	CARBONDALE		ROCK	34.0	24.0
398.1	CARBONDALE	HERRIN	COAL	4.8	58.0
393.3	CARBONDALE		ROCK	3.2	62.8

MAPID: 14590569000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.228198 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.071928 DATE COLLECTED: 1 / 15 / 1949
 SURFACE ELEVATION (FT.): 445.7 LOGGED (FT.): 48.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A457 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.7	PLEISTOCENE		UNCONSOLIDATED	12.3	0.0
433.4			ROCK	29.3	12.3
404.2	CARBONDALE	HERRIN	COAL	4.4	41.5
399.8	CARBONDALE		ROCK	2.1	45.9

MAPID: 1459057000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' N line, 660' W line of SE SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.22589 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.0719 DATE COLLECTED: 8 / 29 / 1963
 SURFACE ELEVATION (FT.): 441.2 LOGGED (FT.): 52.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A458 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
441.2	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0	
430.2	CARBONDALE	DANVILLE	COAL	0.5	11.0	TOP ERODED
429.7	CARBONDALE		ROCK	33.3	11.5	
396.4	CARBONDALE	HERRIN	COAL	4.6	44.8	
391.8	CARBONDALE		ROCK	2.6	49.4	

MAPID: 14590571000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.232894 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.068305 DATE COLLECTED: 5 / 15 / 1956
 SURFACE ELEVATION (FT.): 449.5 LOGGED (FT.): 56.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A405 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
449.5	PLEISTOCENE		UNCONSOLIDATED	14.8	0.0	
434.7			ROCK	34.6	14.8	
400.1	CARBONDALE	HERRIN	COAL	5.0	49.4	
395.1	CARBONDALE		ROCK	1.6	54.4	

MAPID: 14590649000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' N line, 660' E line of SW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.239845 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.079433 DATE COLLECTED: 11 / 22 / 1963
 SURFACE ELEVATION (FT.): 467.4 LOGGED (FT.): 77.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A552 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
467.4	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0	
441.4	MODESTO		ROCK	6.4	26.0	
435.0	CARBONDALE	DANVILLE	COAL	1.6	32.4	
433.4	CARBONDALE		ROCK	36.0	34.0	
397.4	CARBONDALE	HERRIN	COAL	4.8	70.0	
392.6	CARBONDALE		ROCK	2.2	74.8	

MAPID: 1459065000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' N line, 1' W line of SE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.237537 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.079403 DATE COLLECTED: 11 / 21 / 1963
 SURFACE ELEVATION (FT.): 466.6 LOGGED (FT.): 75.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A553 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
466.6	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
442.6	MODESTO		ROCK	10.5	24.0
432.1	CARBONDALE	DANVILLE	COAL	2.0	34.5
430.1	CARBONDALE		ROCK	31.7	36.5
398.4	CARBONDALE	HERRIN	COAL	4.8	68.2
393.6	CARBONDALE		ROCK	2.0	73.0

MAPID: 14590651000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.232853 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.079343 DATE COLLECTED: 11 / 21 / 1963
 SURFACE ELEVATION (FT.): 462.0 LOGGED (FT.): 78.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A555 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.0	PLEISTOCENE		UNCONSOLIDATED	29.1	0.0
432.9			ROCK	42.9	29.1
390.0	CARBONDALE	HERRIN	COAL	4.1	72.0
385.9	CARBONDALE		ROCK	1.9	76.1

MAPID: 14590652000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.228166 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.079282 DATE COLLECTED: 11 / 20 / 1963
 SURFACE ELEVATION (FT.): 456.8 LOGGED (FT.): 88.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A557 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
456.8	PLEISTOCENE		UNCONSOLIDATED	31.0	0.0
425.8			ROCK	50.0	31.0
375.8	CARBONDALE	HERRIN	COAL	4.8	81.0
371.0	CARBONDALE		ROCK	2.2	85.8

MAPID: 14590653000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' N line, 1' W line of SE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.237537 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.079403 DATE COLLECTED: 9 / 22 / 1965
 SURFACE ELEVATION (FT.): 463.6 LOGGED (FT.): 81.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A503 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.6	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0
434.6			ROCK	45.2	29.0
389.4	CARBONDALE	HERRIN	COAL	4.8	74.2
384.6	CARBONDALE		ROCK	2.0	79.0

MAPID: 14590654000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 20 QUARTERS/FOOTAGES: 1' S line, 1' W line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.237571 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.07204 DATE COLLECTED: 11 / 21 / 1963
 SURFACE ELEVATION (FT.): 461.9 LOGGED (FT.): 78.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A453 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
461.9	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
440.9	MODESTO		ROCK	13.3	21.0
427.6	CARBONDALE	DANVILLE	COAL	1.8	34.3
425.8	CARBONDALE		ROCK	35.0	36.1
390.8	CARBONDALE	HERRIN	COAL	5.1	71.1
385.7	CARBONDALE		ROCK	1.8	76.2

MAPID: 14523385000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 990' S line, 330' W line of SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.213207 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.070809 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 452.0 LOGGED (FT.): 2959.0 LOG TYPE: Electric Log
 SOURCE: OELZE, ELMER JR. OIL WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
264.0	CARBONDALE	SPRINGFIELD	COAL	-	188.0	
140.0	CARBONDALE	COLCHESTER	COAL	-	312.0	
-588.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1040.0	
-2482.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2934.0	TOP OF NEW ALBANY
-2484.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2936.0	
-2507.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2959.0	BASE OF NEW ALBANY

MAPID: 14590572000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 1' N line, 825' E line of SW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.221758 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.079211 DATE COLLECTED: 8 / 27 / 1963
 SURFACE ELEVATION (FT.): 453.4 LOGGED (FT.): 78.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A559P WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
453.4	PLEISTOCENE		UNCONSOLIDATED	40.5	0.0	
412.9			ROCK	30.7	40.5	
382.2	CARBONDALE	HERRIN	COAL	4.5	71.2	
377.7	CARBONDALE		ROCK	2.3	75.7	

MAPID: 14590573000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 1' S line, 1' W line of NE NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.209674 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.079132 DATE COLLECTED: 1 / 14 / 1958
 SURFACE ELEVATION (FT.): 450.7 LOGGED (FT.): 76.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A565 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.7	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0	
418.7			ROCK	37.0	32.0	
381.7	CARBONDALE	HERRIN	COAL	4.5	69.0	
377.2	CARBONDALE		ROCK	2.5	73.5	

MAPID: 14590574000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 660' S line, 660' W line of SE NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.207397 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.077232 DATE COLLECTED: 11 / 14 / 1963
 SURFACE ELEVATION (FT.): 455.4 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A541 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.4	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
428.4			ROCK	34.5	27.0
393.9	CARBONDALE	HERRIN	COAL	4.5	61.5
389.4	CARBONDALE		ROCK	2.0	66.0

MAPID: 14590575000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 1' S line, 380' E line of SW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.211051 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.075444 DATE COLLECTED: 8 / 27 / 1963
 SURFACE ELEVATION (FT.): 449.3 LOGGED (FT.): 76.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A514B WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.3	PLEISTOCENE		UNCONSOLIDATED	36.7	0.0
412.6			ROCK	33.1	36.7
379.5	CARBONDALE	HERRIN	COAL	5.0	69.8
374.5	CARBONDALE		ROCK	1.2	74.8

MAPID: 14590576000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 1' S line, 660' W line of SE NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.207422 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.075413 DATE COLLECTED: 11 / 14 / 1963
 SURFACE ELEVATION (FT.): 456.5 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A516 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
456.5	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
416.5			ROCK	11.6	40.0
404.9	CARBONDALE	HERRIN	COAL	5.4	51.6
399.5	CARBONDALE		ROCK	3.0	57.0

MAPID: 14590655000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 1' N line, 1' W line of NE NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.209627 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.082823 DATE COLLECTED: 12 / 5 / 1963
 SURFACE ELEVATION (FT.): 455.8 LOGGED (FT.): 91.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A615 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.8	PLEISTOCENE		UNCONSOLIDATED	41.3	0.0
414.5			ROCK	42.2	41.3
372.3	CARBONDALE	HERRIN	COAL	5.5	83.5
366.8	CARBONDALE		ROCK	2.0	89.0

MAPID: 14590656000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 165' N line, 165' W line of SW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.213706 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.078703 DATE COLLECTED: 12 / 13 / 1963
 SURFACE ELEVATION (FT.): 447.9 LOGGED (FT.): 87.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A538E WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.9	PLEISTOCENE		UNCONSOLIDATED	44.5	0.0
403.4	CARBONDALE	DANVILLE	COAL	0.5	44.5 TOP ERODED
402.9	CARBONDALE		ROCK	35.6	45.0
367.3	CARBONDALE	HERRIN	COAL	4.5	80.6
362.8	CARBONDALE		ROCK	1.9	85.1

MAPID: 14590657000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.218905 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.075508 DATE COLLECTED: 11 / 13 / 1960
 SURFACE ELEVATION (FT.): 444.0 LOGGED (FT.): 71.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A511 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.0	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0
399.0			ROCK	18.0	45.0
381.0	CARBONDALE	HERRIN	COAL	5.2	63.0
375.8	CARBONDALE		ROCK	2.8	68.2

MAPID: 14590658000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.205256 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.067981 DATE COLLECTED: 4 / 9 / 1952
 SURFACE ELEVATION (FT.): 449.2 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A417 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.2	PLEISTOCENE		UNCONSOLIDATED	41.2	0.0
408.0			ROCK	12.1	41.2
395.9	CARBONDALE	HERRIN	COAL	4.2	53.3
391.7	CARBONDALE		ROCK	2.5	57.5

MAPID: 14590659000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 660' S line, 660' W line of SE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.216636 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.069939 DATE COLLECTED: 12 / 12 / 1963
 SURFACE ELEVATION (FT.): 443.9 LOGGED (FT.): 47.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A437 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.9	PLEISTOCENE		UNCONSOLIDATED	37.3	0.0
406.6			ROCK	3.1	37.3
403.5	CARBONDALE	HERRIN	COAL	4.8	40.4
398.6	CARBONDALE		ROCK	1.7	45.3

MAPID: 14590660000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 660' S line, 165' E line of SE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.214942 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.069919 DATE COLLECTED: 12 / 13 / 1963
 SURFACE ELEVATION (FT.): 446.8 LOGGED (FT.): 59.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A437P WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.8	PLEISTOCENE		UNCONSOLIDATED	59.0	0.0

MAPID: 14590661000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 660' S line, 1' E line of SE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.21437 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.069912 DATE COLLECTED: 12 / 12 / 1963
 SURFACE ELEVATION (FT.): 447.4 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A438 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.4	PLEISTOCENE		UNCONSOLIDATED	59.0	0.0
388.4			ROCK	9.0	59.0

MAPID: 14590662000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.2121 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.069884 DATE COLLECTED: 12 / 12 / 1963
 SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 67.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A439 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.0	PLEISTOCENE		UNCONSOLIDATED	63.0	0.0
388.0			ROCK	4.0	63.0

MAPID: 14590663000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 660' S line, 330' E line of SW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.210947 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.06987 DATE COLLECTED: 12 / 13 / 1963
 SURFACE ELEVATION (FT.): 451.4 LOGGED (FT.): 58.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A439B WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.4	PLEISTOCENE		UNCONSOLIDATED	57.0	0.0
394.4			ROCK	1.0	57.0

MAPID: 14590664000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 660' S line, 1' W line of SW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.214363 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.069912 DATE COLLECTED: 12 / 12 / 1963
 SURFACE ELEVATION (FT.): 451.2 LOGGED (FT.): 54.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A440 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.2	PLEISTOCENE		UNCONSOLIDATED	42.7	0.0
408.5			ROCK	4.1	42.7
404.4	CARBONDALE	HERRIN	COAL	4.6	46.8
399.8	CARBONDALE		ROCK	2.6	51.4

MAPID: 14590685000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 21 QUARTERS/FOOTAGES: 1' N line, 825' E line of NW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.221733 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.082889 DATE COLLECTED: 8 / 27 / 1963
 SURFACE ELEVATION (FT.): 454.9 LOGGED (FT.): 93.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A609P WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
454.9	PLEISTOCENE		UNCONSOLIDATED	38.0	0.0
416.9			ROCK	48.5	38.0
368.4	CARBONDALE	HERRIN	COAL	4.8	86.5
363.6	CARBONDALE		ROCK	1.7	91.3

MAPID: 14590577000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.195782 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.082748 DATE COLLECTED: 8 / 13 / 1963
 SURFACE ELEVATION (FT.): 451.5 LOGGED (FT.): 98.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A621 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.5	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
411.5			ROCK	51.0	40.0
360.5	CARBONDALE	HERRIN	COAL	5.0	91.0
355.5	CARBONDALE		ROCK	2.0	96.0

MAPID: 14590578000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 660' S line, 660' W line of NW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.202747 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.080909 DATE COLLECTED: 11 / 13 / 1963
 SURFACE ELEVATION (FT.): 455.3 LOGGED (FT.): 83.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A593 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.3	PLEISTOCENE		UNCONSOLIDATED	34.3	0.0
421.0	CARBONDALE		ROCK	41.0	34.3
380.0	CARBONDALE	HERRIN	COAL	5.0	75.3
375.0	CARBONDALE		ROCK	2.7	80.3

MAPID: 14590579000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 1' S line, 660' W line of NW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.202776 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.079089 DATE COLLECTED: 11 / 12 / 1963
 SURFACE ELEVATION (FT.): 454.9 LOGGED (FT.): 84.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A568 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
454.9	PLEISTOCENE		UNCONSOLIDATED	26.5	0.0
428.4			ROCK	49.8	26.5
378.6	CARBONDALE	HERRIN	COAL	4.7	76.3
373.9	CARBONDALE		ROCK	3.0	81.0

MAPID: 14590580000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 1' S line, 1' E line of NW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.20046 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.079081 DATE COLLECTED: 8 / 14 / 1963
 SURFACE ELEVATION (FT.): 452.8 LOGGED (FT.): 88.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A569 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.8	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
431.8			ROCK	58.5	21.0
373.3	CARBONDALE	HERRIN	COAL	4.6	79.5
368.7	CARBONDALE		ROCK	3.9	84.1

MAPID: 14590581000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 660' S line, 660' W line of SE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.198184 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.0772 DATE COLLECTED: 11 / 13 / 1963
 SURFACE ELEVATION (FT.): 447.8 LOGGED (FT.): 86.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A545 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.8	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
420.8			ROCK	51.0	27.0
369.8	CARBONDALE	HERRIN	COAL	5.4	78.0
364.4	CARBONDALE		ROCK	2.6	83.4

MAPID: 14590582000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.19589 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.075375 DATE COLLECTED: 10 / 11 / 1969
 SURFACE ELEVATION (FT.): 448.7 LOGGED (FT.): 111.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A521 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.7	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0
425.7			ROCK	82.0	23.0
343.7	CARBONDALE	HERRIN	COAL	3.5	105.0
340.2	CARBONDALE		ROCK	2.5	108.5

MAPID: 14590583000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.205135 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.075388 DATE COLLECTED: 7 / 12 / 1958
 SURFACE ELEVATION (FT.): 454.6 LOGGED (FT.): 66.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A517 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
454.6	PLEISTOCENE		UNCONSOLIDATED	27.9	0.0
426.7			ROCK	30.8	27.9
395.9	CARBONDALE	HERRIN	COAL	4.6	58.7
391.3	CARBONDALE		ROCK	2.7	63.3

MAPID: 14590584000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.205135 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.075388 DATE COLLECTED: 11 / 11 / 1963
 SURFACE ELEVATION (FT.): 452.2 LOGGED (FT.): 79.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A519 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.2	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
430.2			ROCK	50.5	22.0
379.7	CARBONDALE	HERRIN	COAL	5.2	72.5
374.5	CARBONDALE		ROCK	1.3	77.7

MAPID: 14590665000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.20502 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.0828 DATE COLLECTED: 8 / 14 / 1963
 SURFACE ELEVATION (FT.): 457.7 LOGGED (FT.): 188.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A617 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
457.7	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
437.7			ROCK	56.0	20.0
381.7	CARBONDALE	HERRIN	COAL	3.9	76.0
377.8	CARBONDALE		ROCK	108.1	79.9

MAPID: 14590666000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 1' N line, 1' W line of NE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.200396 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.082774 DATE COLLECTED: 12 / 5 / 1963
 SURFACE ELEVATION (FT.): 457.2 LOGGED (FT.): 96.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A619 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
457.2	PLEISTOCENE		UNCONSOLIDATED	42.6	0.0
414.6			ROCK	44.7	42.6
369.9	CARBONDALE	HERRIN	COAL	4.8	87.3
365.1	CARBONDALE		ROCK	3.9	92.1

MAPID: 14590667000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.19584 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.07906 DATE COLLECTED: 8 / 14 / 1963
 SURFACE ELEVATION (FT.): 447.0 LOGGED (FT.): 104.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A571 WELL TYPE: Coal Test
 COMMENT: PARADISE AMAX-DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.0	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
421.0			ROCK	70.5	26.0
350.5	CARBONDALE	HERRIN	COAL	4.8	96.5
345.7	CARBONDALE		ROCK	2.7	101.3

MAPID: 14590668000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.205077 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.079098 DATE COLLECTED: 8 / 14 / 1963
 SURFACE ELEVATION (FT.): 457.3 LOGGED (FT.): 187.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A567 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
457.3	PLEISTOCENE		UNCONSOLIDATED	31.8	0.0
425.5			ROCK	40.5	31.8
385.0	CARBONDALE	HERRIN	COAL	5.7	72.3
379.3	CARBONDALE		ROCK	109.0	78.0

MAPID: 14590669000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 660' S line, 660' W line of SW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.202805 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.077207 DATE COLLECTED: 11 / 12 / 1963
 SURFACE ELEVATION (FT.): 452.9 LOGGED (FT.): 84.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A543 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.9	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
431.9	MODESTO		ROCK	18.8	21.0
413.1	CARBONDALE	DANVILLE	COAL	0.8	39.8
412.3	CARBONDALE		ROCK	36.9	40.6
375.4	CARBONDALE	HERRIN	COAL	5.2	77.5
370.2	CARBONDALE		ROCK	1.3	82.7

MAPID: 14590670000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 22 QUARTERS/FOOTAGES: 1' N line, 660' W line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.198213 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.075375 DATE COLLECTED: 11 / 12 / 1963
 SURFACE ELEVATION (FT.): 451.3 LOGGED (FT.): 88.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A520 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.3	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
421.3	MODESTO		ROCK	23.0	30.0
398.3	CARBONDALE	DANVILLE	COAL	0.5	53.0
397.8	CARBONDALE		ROCK	28.5	53.5
369.3	CARBONDALE	HERRIN	COAL	4.6	82.0
364.7	CARBONDALE		ROCK	1.4	86.6

MAPID: 14503125000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 24 QUARTERS/FOOTAGES: 330' S line, 2310' W line
 QUADRANGLE: DU QUOIN LONGITUDE: -89.160347 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.068213 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 492.8 LOG TYPE: Survey Core Study
 SOURCE: BELL & ZOLLER WELL TYPE: Coal Test
 COMMENT: GOOD DESCRIPTION, DEPTHS CORRECTED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
70.7	MODESTO	PIASA	LIMESTONE	5.8	349.3
64.9	MODESTO		DARK GRAY SHALE	3.4	355.1
61.5	CARBONDALE	DANVILLE	COAL	1.9	358.5
59.6	CARBONDALE		GRAY SHALE	11.6	360.4
48.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	372.0
45.5	CARBONDALE	LAWSON	CALCAREOUS SHALE	7.5	374.5
38.0	CARBONDALE	LAWSON	SILTY SHALE	2.0	382.0
36.0	CARBONDALE	JAMESTOWN	COAL	0.5	384.0
35.5	CARBONDALE	ENERGY	CALCAREOUS SHALE	5.8	384.5
29.7	CARBONDALE	ENERGY	SILTY SHALE	93.2	390.3

MAPID: 14501998000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 27 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE SE

QUADRANGLE: DU QUOIN LONGITUDE: -89.190468 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.054111 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 2110.0 LOG TYPE: Electric Log

SOURCE: FIELDS, BERT, ETAL WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
0.0	CARBONDALE	SPRINGFIELD	COAL	-	450.0
-150.0	CARBONDALE	COLCHESTER	COAL	-	600.0
-1660.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	2110.0

MAPID: 14590675000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 27 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW SW

QUADRANGLE: DU QUOIN LONGITUDE: -89.200751 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.06059 DATE COLLECTED: 1 / 13 / 1950

SURFACE ELEVATION (FT.): 436.9 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE A319 WELL TYPE: Coal Test

COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.9	PLEISTOCENE		UNCONSOLIDATED	36.0	0.0
400.9			ROCK	97.5	36.0
303.4	CARBONDALE	HERRIN	COAL	2.4	133.5
301.0	CARBONDALE		ROCK	0.4	135.9
300.6	CARBONDALE	HERRIN	COAL	1.6	136.3
299.0	CARBONDALE	HERRIN	ROCK	0.4	137.9
298.6	CARBONDALE	HERRIN	COAL	1.5	138.3
297.1	CARBONDALE		ROCK	8.2	139.8

MAPID: 14590585000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 660' W line of NE NW

QUADRANGLE: DU QUOIN LONGITUDE: -89.216647 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.068112 DATE COLLECTED: 5 / 28 / 1956

SURFACE ELEVATION (FT.): 446.8 LOGGED (FT.): 53.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE A412 WELL TYPE: Coal Test

COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.8	PLEISTOCENE		UNCONSOLIDATED	25.5	0.0
421.3			ROCK	20.4	25.5
400.9	CARBONDALE	HERRIN	COAL	4.7	45.9
396.2	CARBONDALE		ROCK	2.4	50.6

MAPID: 14590586000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.214391 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.068087 DATE COLLECTED: 11 / 20 / 1960
 SURFACE ELEVATION (FT.): 448.3 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A413 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.3	PLEISTOCENE		UNCONSOLIDATED	58.0	0.0
390.3			ROCK	60.0	58.0

MAPID: 14590587000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.209823 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.068031 DATE COLLECTED: 11 / 20 / 1960
 SURFACE ELEVATION (FT.): 448.5 LOGGED (FT.): 117.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A415 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.5	PLEISTOCENE		UNCONSOLIDATED	52.0	0.0
396.5			ROCK	65.0	52.0

MAPID: 14590588000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.219004 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.064451 DATE COLLECTED: 8 / 26 / 1963
 SURFACE ELEVATION (FT.): 443.0 LOGGED (FT.): 63.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A361 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.0	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
415.0			ROCK	28.7	28.0
386.3	CARBONDALE	HERRIN	COAL	4.7	56.7
381.6	CARBONDALE		ROCK	1.6	61.4

MAPID: 14590589000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.21444 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.064393 DATE COLLECTED: 8 / 23 / 1963
 SURFACE ELEVATION (FT.): 440.9 LOGGED (FT.): 49.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A363 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.9	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0
407.9			ROCK	9.1	33.0
398.8	CARBONDALE	HERRIN	COAL	5.2	42.1
393.6	CARBONDALE		ROCK	1.7	47.3

MAPID: 14590590000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 660' W line of SW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.212132 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.064365 DATE COLLECTED: 8 / 26 / 1963
 SURFACE ELEVATION (FT.): 446.3 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A364 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.3	PLEISTOCENE		UNCONSOLIDATED	68.0	0.0

MAPID: 14590591000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.209877 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.064338 DATE COLLECTED: 8 / 24 / 1963
 SURFACE ELEVATION (FT.): 447.0 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A365 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.0	PLEISTOCENE		UNCONSOLIDATED	62.0	0.0
385.0			ROCK	56.0	62.0

MAPID: 14590592000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 1' E line of NE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.214416 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.066218 DATE COLLECTED: 8 / 26 / 1963
 SURFACE ELEVATION (FT.): 446.9 LOGGED (FT.): 50.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A388 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.9	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0
411.9			ROCK	7.6	35.0
404.3	CARBONDALE	HERRIN	COAL	4.8	42.6
399.5	CARBONDALE		ROCK	2.6	47.4

MAPID: 14590593000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' W line of NW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.212108 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.06619 DATE COLLECTED: 8 / 26 / 1963
 SURFACE ELEVATION (FT.): 446.3 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A389 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.3	PLEISTOCENE		UNCONSOLIDATED	68.0	0.0

MAPID: 14590594000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 1' E line of SE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.214465 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.062527 DATE COLLECTED: 6 / 14 / 1960
 SURFACE ELEVATION (FT.): 446.3 LOGGED (FT.): 52.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A338 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.3	PLEISTOCENE		UNCONSOLIDATED	31.0	0.0
415.3			ROCK	14.7	31.0
400.6	CARBONDALE	HERRIN	COAL	5.1	45.7
395.5	CARBONDALE		ROCK	1.2	50.8

MAPID: 14590595000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' W line of SW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.212157 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.062496 DATE COLLECTED: 6 / 14 / 1960
 SURFACE ELEVATION (FT.): 442.5 LOGGED (FT.): 83.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A339 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.5	PLEISTOCENE		UNCONSOLIDATED	68.7	0.0
373.8			ROCK	14.3	68.7

MAPID: 14590596000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.223606 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.060818 DATE COLLECTED: 8 / 29 / 1963
 SURFACE ELEVATION (FT.): 443.9 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A309 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.9	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0
411.9			ROCK	32.0	32.0
379.9	CARBONDALE	HERRIN	COAL	5.0	64.0
374.9	CARBONDALE		ROCK	1.0	69.0

MAPID: 14590597000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.21905 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.06076 DATE COLLECTED: 8 / 23 / 1963
 SURFACE ELEVATION (FT.): 441.0 LOGGED (FT.): 61.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A311-A WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
441.0	PLEISTOCENE		UNCONSOLIDATED	39.0	0.0
402.0			ROCK	14.8	39.0
387.2	CARBONDALE	HERRIN	COAL	4.7	53.8
382.5	CARBONDALE		ROCK	2.5	58.5

MAPID: 14590598000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 660' W line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.216742 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.06073 DATE COLLECTED: 8 / 29 / 1963
 SURFACE ELEVATION (FT.): 439.6 LOGGED (FT.): 56.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A312 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.6	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0
404.6			ROCK	14.0	35.0
390.6	CARBONDALE	HERRIN	COAL	4.8	49.0
385.8	CARBONDALE		ROCK	2.2	53.8

MAPID: 14590599000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.21449 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.060702 DATE COLLECTED: 8 / 22 / 1963
 SURFACE ELEVATION (FT.): 439.5 LOGGED (FT.): 56.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A313 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.5	PLEISTOCENE		UNCONSOLIDATED	30.2	0.0
409.3			ROCK	19.7	30.2
389.6	CARBONDALE	HERRIN	COAL	4.9	49.9
384.7	CARBONDALE		ROCK	1.2	54.8

MAPID: 14590600000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 660' W line of NW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.212182 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.060672 DATE COLLECTED: 8 / 26 / 1963
 SURFACE ELEVATION (FT.): 441.3 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A314 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
441.3	PLEISTOCENE		UNCONSOLIDATED	68.0	0.0

MAPID: 14590601000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.20993 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.060644 DATE COLLECTED: 8 / 26 / 1963
 SURFACE ELEVATION (FT.): 447.0 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A315 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.0	PLEISTOCENE		UNCONSOLIDATED	68.0	0.0

MAPID: 14590602000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 660' W line of NE SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.207622 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.060613 DATE COLLECTED: 11 / 14 / 1963
 SURFACE ELEVATION (FT.): 449.2 LOGGED (FT.): 64.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A316 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.2	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0
420.2			ROCK	28.4	29.0
391.8	CARBONDALE	HERRIN	COAL	4.0	57.4
387.8	CARBONDALE	HERRIN	CLAYSTONE	0.2	61.4
387.6	CARBONDALE	HERRIN	COAL	1.4	61.6
386.2	CARBONDALE		ROCK	1.0	63.0

MAPID: 14590603000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 165' S line, 1' W line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.219087 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.057528 DATE COLLECTED: 8 / 28 / 1963
 SURFACE ELEVATION (FT.): 426.2 LOGGED (FT.): 38.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A261J WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
426.2	PLEISTOCENE		UNCONSOLIDATED	12.0	0.0
414.2			ROCK	17.7	12.0
396.5	CARBONDALE	HERRIN	COAL	5.0	29.7
391.5	CARBONDALE		ROCK	3.3	34.7

MAPID: 14590604000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 330' S line, 660' W line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.216781 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.057953 DATE COLLECTED: 11 / 15 / 1963
 SURFACE ELEVATION (FT.): 441.5 LOGGED (FT.): 54.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A262C WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
441.5	PLEISTOCENE		UNCONSOLIDATED	47.7	0.0	
393.8	CARBONDALE	HERRIN	COAL	4.0	47.7	TOP ERODED
389.8			ROCK	2.3	51.7	

MAPID: 14590605000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.214543 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.057009 DATE COLLECTED: 8 / 22 / 1963
 SURFACE ELEVATION (FT.): 441.8 LOGGED (FT.): 95.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A263 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
441.8	PLEISTOCENE		UNCONSOLIDATED	62.0	0.0	
379.8			ROCK	33.0	62.0	

MAPID: 14590606000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' W line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.216767 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.058864 DATE COLLECTED: 8 / 28 / 1963
 SURFACE ELEVATION (FT.): 442.2 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A287 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
442.2	PLEISTOCENE		UNCONSOLIDATED	58.0	0.0	
384.2			ROCK	12.0	58.0	

MAPID: 14590607000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 330' E line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.215664 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.05885 DATE COLLECTED: 11 / 15 / 1963
 SURFACE ELEVATION (FT.): 436.3 LOGGED (FT.): 88.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A287B WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.3	PLEISTOCENE		UNCONSOLIDATED	56.0	0.0
380.3			ROCK	32.0	56.0

MAPID: 14590608000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 1' E line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.214515 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.058833 DATE COLLECTED: 8 / 28 / 1963
 SURFACE ELEVATION (FT.): 436.5 LOGGED (FT.): 54.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A288 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.5	PLEISTOCENE		UNCONSOLIDATED	34.6	0.0
401.9			ROCK	12.0	34.6
389.9	CARBONDALE	HERRIN	COAL	4.9	46.6
385.0	CARBONDALE		ROCK	2.5	51.5

MAPID: 14590609000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 28 QUARTERS/FOOTAGES: 100' N line, 660' W line
 QUADRANGLE: DU QUOIN LONGITUDE: -89.216796 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.056766 DATE COLLECTED: 8 / 29 / 1963
 SURFACE ELEVATION (FT.): 439.5 LOGGED (FT.): 38.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A2370C WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.5	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
421.5			ROCK	14.0	18.0
407.5	CARBONDALE	HERRIN	COAL	4.8	32.0
402.7	CARBONDALE		ROCK	1.2	36.8

MAPID: 14501506000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: DU QUOIN LONGITUDE: -89.241298

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.06192

DATE COLLECTED:

SURFACE ELEVATION (FT.): 452.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: BLACK DIAMOND

WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
374.0	CARBONDALE	HERRIN	COAL	5.0	78.0

MAPID: 14590610000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW NE

QUADRANGLE: DU QUOIN LONGITUDE: -89.228215

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.068248

DATE COLLECTED: 8 / 20 / 1963

SURFACE ELEVATION (FT.): 448.1 LOGGED (FT.): 59.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE A407

WELL TYPE: Coal Test

COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.1	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0
425.1			ROCK	30.0	23.0
395.1	CARBONDALE	HERRIN	COAL	4.6	53.0
390.5	CARBONDALE		ROCK	1.4	57.6

MAPID: 14590611000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE NW

QUADRANGLE: DU QUOIN LONGITUDE: -89.232982

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.064606

DATE COLLECTED: 8 / 19 / 1963

SURFACE ELEVATION (FT.): 447.1 LOGGED (FT.): 78.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE A355

WELL TYPE: Coal Test

COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.1	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0
424.1			ROCK	47.0	23.0
377.1	CARBONDALE	HERRIN	COAL	5.5	70.0
371.6	CARBONDALE		ROCK	2.5	75.5

MAPID: 14590612000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' S line, 100' W line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.237527 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.057262 DATE COLLECTED: 8 / 22 / 1963
 SURFACE ELEVATION (FT.): 432.9 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A253N WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.9	PLEISTOCENE		UNCONSOLIDATED	18.2	0.0
414.7			ROCK	46.4	18.2
368.3	CARBONDALE	HERRIN	COAL	4.0	64.6
364.3	CARBONDALE		ROCK	1.4	68.6

MAPID: 14590613000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.233138 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.057216 DATE COLLECTED: 8 / 23 / 1963
 SURFACE ELEVATION (FT.): 444.5 LOGGED (FT.): 87.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A255 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.5	PLEISTOCENE		UNCONSOLIDATED	38.7	0.0
405.8			ROCK	40.4	38.7
365.4	CARBONDALE	HERRIN	COAL	5.4	79.1
360.0	CARBONDALE		ROCK	2.5	84.5

MAPID: 14590614000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.228397 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.057172 DATE COLLECTED: 8 / 21 / 1963
 SURFACE ELEVATION (FT.): 433.6 LOGGED (FT.): 62.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A257 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.6	PLEISTOCENE		UNCONSOLIDATED	24.5	0.0
409.1			ROCK	29.7	24.5
379.4	CARBONDALE	HERRIN	COAL	5.0	54.2
374.4	CARBONDALE		ROCK	2.8	59.2

MAPID: 14590615000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' N line, 75' E line of SE SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.223914 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.057131 DATE COLLECTED: 8 / 28 / 1963
 SURFACE ELEVATION (FT.): 425.2 LOGGED (FT.): 47.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A258PB WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.2	PLEISTOCENE		UNCONSOLIDATED	12.2	0.0
413.0			ROCK	27.8	12.2
385.2	CARBONDALE	HERRIN	COAL	4.7	40.0
380.5	CARBONDALE		ROCK	2.3	44.7

MAPID: 14590616000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.237973 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.053567 DATE COLLECTED: 3 / 21 / 1966
 SURFACE ELEVATION (FT.): 445.9 LOGGED (FT.): 82.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A203 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.9	PLEISTOCENE		UNCONSOLIDATED	27.6	0.0
418.3			ROCK	47.2	27.6
371.1	CARBONDALE	HERRIN	COAL	4.9	74.8
366.2	CARBONDALE		ROCK	2.3	79.7

MAPID: 14590617000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.233215 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.053528 DATE COLLECTED: 1 / 21 / 1964
 SURFACE ELEVATION (FT.): 433.0 LOGGED (FT.): 56.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A205 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.0	PLEISTOCENE		UNCONSOLIDATED	24.5	0.0
408.5			ROCK	24.9	24.5
383.6	CARBONDALE	HERRIN	COAL	4.7	49.4
378.9	CARBONDALE		ROCK	1.9	54.1

MAPID: 14590618000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.22846 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.053487 DATE COLLECTED: 1 / 15 / 1947
 SURFACE ELEVATION (FT.): 444.4 LOGGED (FT.): 58.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A207 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.4	PLEISTOCENE		UNCONSOLIDATED	50.0	0.0
394.4			ROCK	1.8	50.0
392.6	CARBONDALE	HERRIN	COAL	4.0	51.8
388.6	CARBONDALE		ROCK	2.2	55.8

MAPID: 14590671000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.233062 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.06091 DATE COLLECTED: 2 / 16 / 1947
 SURFACE ELEVATION (FT.): 448.8 LOGGED (FT.): 85.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A305 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.8	PLEISTOCENE		UNCONSOLIDATED	32.2	0.0
416.6	MODESTO		ROCK	10.4	32.2
406.2	CARBONDALE	DANVILLE	COAL	0.5	42.6
405.7	CARBONDALE		ROCK	35.3	43.1
370.4	CARBONDALE	HERRIN	COAL	4.4	78.4
366.0	CARBONDALE		ROCK	2.2	82.8

MAPID: 14590672000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.228338 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.060866 DATE COLLECTED: 8 / 16 / 1963
 SURFACE ELEVATION (FT.): 425.9 LOGGED (FT.): 58.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A307 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.9	PLEISTOCENE		UNCONSOLIDATED	5.0	0.0
420.9	MODESTO		ROCK	10.6	5.0
410.3	CARBONDALE	DANVILLE	COAL	1.6	15.6
408.7	CARBONDALE		ROCK	33.8	17.2
374.9	CARBONDALE	HERRIN	COAL	4.6	51.0
370.3	CARBONDALE		ROCK	2.4	55.6

MAPID: 14590673000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.223701 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.053445 DATE COLLECTED: 10 / 22 / 1969
 SURFACE ELEVATION (FT.): 421.2 LOGGED (FT.): 188.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A209 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
421.2	PLEISTOCENE		UNCONSOLIDATED	42.6	0.0
378.6			ROCK	92.4	42.6
286.2	CARBONDALE	COLCHESTER	COAL	0.6	135.0
285.6	CARBONDALE		ROCK	30.8	135.6
254.8	CARBONDALE	DAVIS	COAL	0.8	166.4
254.0	TRADEWATER		ROCK	20.8	167.2

MAPID: 14590674000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 29 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.242388 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.064711 DATE COLLECTED: 5 / 15 / 1956
 SURFACE ELEVATION (FT.): 442.7 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A357 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
442.7	PLEISTOCENE		UNCONSOLIDATED	22.4	0.0	
420.3	CARBONDALE	DANVILLE	COAL	1.6	22.4	TOP ERODED
418.7	CARBONDALE		ROCK	33.2	24.0	
385.5	CARBONDALE	HERRIN	COAL	4.6	57.2	
380.9	CARBONDALE		ROCK	3.2	61.8	

MAPID: 14500071000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 30 QUARTERS/FOOTAGES: SW SW SW
 QUADRANGLE: PYATTS LONGITUDE: -89.259455 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.054928 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 468.0 LOGGED (FT.): 64.6 LOG TYPE: Drillers Log
 SOURCE: MISSISSIPPI COAL CORP. WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
468.0			UNCONSOLIDATED	20.0	0.0	
448.0			SANDSTONE/SHALE	5.0	20.0	
443.0			UNCLASSIFIED	4.0	25.0	
439.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	29.0	
435.0	CARBONDALE		SHALE	8.0	33.0	
427.0	CARBONDALE	BRERETON	LIMESTONE	14.0	41.0	
413.0	CARBONDALE		SHALE	4.0	55.0	
409.0	CARBONDALE	HERRIN	COAL	5.6	59.0	

MAPID: 14500071000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 30 QUARTERS/FOOTAGES: SW SW SW
 QUADRANGLE: PYATTS LONGITUDE: -89.259455 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.054928 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 64.0 LOG TYPE:
 SOURCE: MISSISSIPPI COAL CORP. 2841 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
397.0	CARBONDALE	HERRIN	COAL	5.6	59.0	

MAPID: 14500072000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 30 QUARTERS/FOOTAGES: SW SW NW
 QUADRANGLE: PYATTS LONGITUDE: -89.259322 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.062196 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 53.7 LOG TYPE: Drillers Log
 SOURCE: MISSISSIPPI COAL CORP. WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.0			UNCONSOLIDATED	6.0	0.0	
454.0			SANDSTONE/SHALE	14.0	6.0	
440.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	20.0	
436.0	CARBONDALE		SHALE	8.0	24.0	
428.0	CARBONDALE		UNCLASSIFIED	14.0	32.0	
414.0	CARBONDALE		SHALE	2.8	46.0	
411.2	CARBONDALE	HERRIN	COAL	4.9	48.8	

MAPID: 14500072000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 30 QUARTERS/FOOTAGES: SW SW NW
 QUADRANGLE: PYATTS LONGITUDE: -89.259322 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.062196 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 449.6 LOGGED (FT.): 53.0 LOG TYPE:
 SOURCE: MISSISSIPPI COAL CORP. 3041 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.6	CARBONDALE	HERRIN	COAL	4.9	49.0	

MAPID: 14500691000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 30 QUARTERS/FOOTAGES: SW NW NW
 QUADRANGLE: PYATTS LONGITUDE: -89.259254 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.065829 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 461.1 LOGGED (FT.): 60.0 LOG TYPE:
 SOURCE: UN ELEC CC3142 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14500692000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW NE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.254749 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.065776 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 458.2 **LOGGED (FT.):** 60.0 **LOG TYPE:**
SOURCE: UN ELEC CC3143 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14500693000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.245744 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.06567 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.0 **LOGGED (FT.):** 68.0 **LOG TYPE:**
SOURCE: UN ELEC CC3147 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
393.0	CARBONDALE	HERRIN	COAL	6.0	62.0	

MAPID: 14500694000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.254828 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.062126 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 459.1 **LOGGED (FT.):** 62.0 **LOG TYPE:**
SOURCE: UN ELEC CC3043 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
402.1	CARBONDALE	HERRIN	COAL	5.6	57.0	

MAPID: 14500695000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.250338 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.062056 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 461.1 **LOGGED (FT.):** 57.0 **LOG TYPE:**
SOURCE: UN ELEC CC3045 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.1	CARBONDALE	HERRIN	COAL	4.8	53.0	

MAPID: 14500696000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.245848 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.061985 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.0 **LOGGED (FT.):** 63.0 **LOG TYPE:**
SOURCE: UN ELEC CC3047 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
397.0	CARBONDALE	HERRIN	COAL	5.5	58.0	

MAPID: 14500697000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.25939 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.058561 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 458.3 **LOGGED (FT.):** 67.0 **LOG TYPE:**
SOURCE: UN ELEC CC2941 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.3	CARBONDALE	HERRIN	COAL	5.1	62.0	

MAPID: 14500698000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.254907 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.058474 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 460.4 **LOGGED (FT.):** 61.0 **LOG TYPE:**
SOURCE: UN ELEC CC2943 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
404.4	CARBONDALE	HERRIN	COAL	5.8	56.0	

MAPID: 14500699000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.250428 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.058387 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 461.3 **LOGGED (FT.):** 63.0 **LOG TYPE:**
SOURCE: UN ELEC CC2945 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.3	CARBONDALE	HERRIN	COAL	5.0	58.0	

MAPID: 14500700000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.245948 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.058297 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 450.0 **LOGGED (FT.):** 70.0 **LOG TYPE:**
SOURCE: UN ELEC CC2947 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
385.0	CARBONDALE	HERRIN	COAL	5.8	65.0	

MAPID: 14500701000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.254986 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.054822 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 460.5 **LOGGED (FT.):** 55.0 **LOG TYPE:**
SOURCE: UN ELEC CC2843 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
410.5	CARBONDALE	HERRIN	COAL	5.5	50.0	

MAPID: 14500702000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** SW SW SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.250521 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.054715 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 463.7 **LOGGED (FT.):** 61.0 **LOG TYPE:**
SOURCE: UN ELEC CC2845 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.7	CARBONDALE	HERRIN	COAL	6.6	54.0	

MAPID: 14501218000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 30 **QUARTERS/FOOTAGES:** NE NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.243436 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.067493 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 463.1 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: BAIL BROS 0DMD **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
393.1	CARBONDALE	HERRIN	COAL	5.0	70.0	

MAPID: 14502030000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 30 QUARTERS/FOOTAGES: 330' N line, 330' E line of NE NW SW
 QUADRANGLE: PYATTS LONGITUDE: -89.257142 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.060339 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 1106.0 LOG TYPE: Electric Log
 SOURCE: MCBRIDE, W. C., INC. WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
275.0	CARBONDALE	COLCHESTER	COAL	-	178.0
-653.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1106.0

MAPID: 14502030000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 30 QUARTERS/FOOTAGES: 330' N line, 330' E line of NE NW SW
 QUADRANGLE: PYATTS LONGITUDE: -89.257142 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.060339 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 1620.0 LOG TYPE: Drillers Log
 SOURCE: W. C. MCBRIDE, INC. WELL TYPE: Plugged and/or Abandoned
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.0			UNCONSOLIDATED	50.0	0.0
403.0			SHALE & SANDSTONE	270.0	50.0
133.0			SAND	130.0	320.0
3.0			SHALE	30.0	450.0
-229.0			UNCLASSIFIED	202.0	682.0

MAPID: 14502274000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 30 QUARTERS/FOOTAGES: 1350' S line, 60' W line
 QUADRANGLE: PYATTS LONGITUDE: -89.260315 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.057768 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 67.2 LOG TYPE: Drillers Log
 SOURCE: TRUAX-TRAEER COAL CO 769 WELL TYPE: Coal Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.1	CARBONDALE		GRAY SHALE	17.0	12.9
423.1	CARBONDALE	BANKSTON FORK	LIMESTONE	5.4	29.9
417.7	CARBONDALE	LAWSON	GRAY SHALE	10.0	35.3
407.7	CARBONDALE	LAWSON	CALCAREOUS SHALE	5.9	45.3
401.7	CARBONDALE	BRERETON	LIMESTONE	7.6	51.3
394.2	CARBONDALE	ANNA	BLACK SHALE	3.2	58.8
391.0	CARBONDALE	HERRIN	COAL	5.2	62.0

MAPID: 14528349000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 30 QUARTERS/FOOTAGES: 1882' S line, 233' E line of SE NW

QUADRANGLE: PYATTS LONGITUDE: -89.25217 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.066364 DATE COLLECTED: 10 / 7 / 1968

SURFACE ELEVATION (FT.): 456.8 LOGGED (FT.): 75.1 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL BS#2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.8			CLAYSTONE	11.0	5.0
440.8			CLAYSTONE	2.0	16.0
438.8			CLAYSTONE	4.0	18.0
434.8			UNCLASSIFIED	7.0	22.0
427.8			SHALE	7.3	29.0
420.6	CARBONDALE		LIMESTONE	0.4	36.2
420.2	CARBONDALE		LIMESTONE	4.3	36.6
415.8	CARBONDALE		SHALE	7.9	41.0
407.9	CARBONDALE		LIMESTONE	0.7	48.9
407.2	CARBONDALE		SHALE	0.6	49.6
406.6	CARBONDALE		LIMESTONE	1.1	50.2
405.5	CARBONDALE		SHALE	0.5	51.3
404.9	CARBONDALE		LIMESTONE	0.4	51.9
404.5	CARBONDALE		LIMESTONE	1.4	52.3
403.1	CARBONDALE		LIMESTONE	2.3	53.7
400.8	CARBONDALE		SHALE	0.6	56.0
400.2	CARBONDALE		SHALE	0.3	56.6
399.9	CARBONDALE	BRERETON	LIMESTONE	2.1	56.9
397.8	CARBONDALE	ANNA	SHALE	1.7	59.0
396.1	CARBONDALE	ENERGY	SHALE	4.8	60.7
391.3	CARBONDALE	ENERGY	SHALE	0.3	65.5
391.0	CARBONDALE	HERRIN	COAL	5.7	65.8
385.3	CARBONDALE		CLAYSTONE	3.6	71.5

MAPID: 14500073000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 31 QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: PYATTS LONGITUDE: -89.251124 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.039975 DATE COLLECTED:

SURFACE ELEVATION (FT.): 459.3 LOGGED (FT.): 69.0 LOG TYPE:

SOURCE: MISSISSIPPI COAL CORP. 1071 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
396.3	CARBONDALE	HERRIN	COAL	5.8	63.0

MAPID: 14500703000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW NW NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.259506 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.051226 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.7 **LOGGED (FT.):** 55.0 **LOG TYPE:**
SOURCE: UN ELEC CC2741 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
406.7	CARBONDALE	HERRIN	COAL	5.9	49.0	

MAPID: 14500704000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW NE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.255152 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.051131 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 459.8 **LOGGED (FT.):** 62.0 **LOG TYPE:**
SOURCE: UN ELEC CC2743 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
405.8	CARBONDALE	HERRIN	COAL	7.8	54.0	

MAPID: 14500705000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.250968 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.043663 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 463.0 **LOGGED (FT.):** 63.0 **LOG TYPE:**
SOURCE: UN ELEC CC2745 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
406.0	CARBONDALE	HERRIN	COAL	6.3	57.0	

MAPID: 14500706000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.246167 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.050938 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 458.6 **LOGGED (FT.):** 76.0 **LOG TYPE:**
SOURCE: UN ELEC CC2747 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
387.6	CARBONDALE	HERRIN	COAL	5.2	71.0	

MAPID: 14500707000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW SW NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.259553 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047504 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 457.7 **LOGGED (FT.):** 62.0 **LOG TYPE:**
SOURCE: UN ELEC CC2641 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.7	CARBONDALE	HERRIN	COAL	4.5	57.0	

MAPID: 14500708000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.255343 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047426 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 458.8 **LOGGED (FT.):** 75.0 **LOG TYPE:**
SOURCE: UN ELEC CC2643 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
389.8	CARBONDALE	HERRIN	COAL	6.3	69.0	

MAPID: 14500709000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.250815 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047348 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 458.1 **LOGGED (FT.):** 62.0 **LOG TYPE:**
SOURCE: UN ELEC CC2645 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
401.1	CARBONDALE	HERRIN	COAL	5.3	57.0	

MAPID: 14500710000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.246288 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047269 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 457.3 **LOGGED (FT.):** 71.0 **LOG TYPE:**
SOURCE: UN ELEC CC2647 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14500711000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.259597 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.04378 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 457.5 **LOGGED (FT.):** 68.0 **LOG TYPE:**
SOURCE: UN ELEC CC2541 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
395.5	CARBONDALE	HERRIN	COAL	5.4	62.0	

MAPID: 14500712000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.255534 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.043722 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 457.3 **LOGGED (FT.):** 68.0 **LOG TYPE:**
SOURCE: UN ELEC CC2543 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
394.3	CARBONDALE	HERRIN	COAL	5.0	63.0	

MAPID: 14500713000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.250968 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.043663 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 458.3 **LOGGED (FT.):** 70.0 **LOG TYPE:**
SOURCE: UN ELEC CC2545 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
394.3	CARBONDALE	HERRIN	COAL	5.5	64.0	

MAPID: 14500714000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.246405 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.0436 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 457.4 **LOGGED (FT.):** 67.0 **LOG TYPE:**
SOURCE: UN ELEC CC2547 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.4	CARBONDALE	HERRIN	COAL	6.0	61.0	

MAPID: 14500715000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.259641 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.040056 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 453.3 **LOGGED (FT.):** 77.0 **LOG TYPE:**
SOURCE: UN ELEC CC2441 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
382.3	CARBONDALE	HERRIN	COAL	5.7	71.0	

MAPID: 14500716000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.255724 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.040018 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 458.0 **LOGGED (FT.):** 66.0 **LOG TYPE:**
SOURCE: UN ELEC CC2443 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
398.0	CARBONDALE	HERRIN	COAL	6.3	60.0	

MAPID: 14500717000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 31 **QUARTERS/FOOTAGES:** SW SE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.246527 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039931 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 457.4 **LOGGED (FT.):** 62.0 **LOG TYPE:**
SOURCE: UN ELEC CC2447 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.4	CARBONDALE	HERRIN	COAL	5.2	57.0	

MAPID: 1450225000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 31 QUARTERS/FOOTAGES: 1045' N line, 2605' W line

QUADRANGLE: PYATTS LONGITUDE: -89.251529 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.050938 DATE COLLECTED:

SURFACE ELEVATION (FT.): 461.0 LOGGED (FT.): 61.4 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 764 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.8	CARBONDALE		GRAY SHALE	4.5	30.2
426.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	34.7
423.8	CARBONDALE	LAWSON	GRAY SHALE	3.0	37.2
420.8	CARBONDALE	LAWSON	DARK GRAY SHALE	1.8	40.2
419.0	CARBONDALE	BRERETON	LIMESTONE	8.2	42.0
410.8	CARBONDALE	ANNA	BLACK SHALE	3.2	50.2
407.7	CARBONDALE	ENERGY	SILTSTONE	1.8	53.3
405.8	CARBONDALE	ENERGY	GRAY SHALE	0.2	55.2
405.7	CARBONDALE	ENERGY	CARBONACEOUS SHALE	0.3	55.3
405.3	CARBONDALE	ENERGY	BONE COAL	0.3	55.7
405.0	CARBONDALE	HERRIN	COAL	5.4	56.0

MAPID: 14500074000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 32 QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: DU QUOIN LONGITUDE: -89.232442 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.039742 DATE COLLECTED:

SURFACE ELEVATION (FT.): 428.5 LOGGED (FT.): 21.0 LOG TYPE:

SOURCE: GAYLE CC WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
414.5	CARBONDALE	HERRIN	COAL	6.7	14.0

MAPID: 14500075000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 32 QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: DU QUOIN LONGITUDE: -89.232442 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.039742 DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 43.0 LOG TYPE:

SOURCE: GAYLE CC 0002 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.0	CARBONDALE	HERRIN	COAL	6.5	35.0

MAPID: 14500076000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** 1300' S line, 2600' E line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.233155 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.042424 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.5 **LOGGED (FT.):** 39.0 **LOG TYPE:**
SOURCE: GAYLE CC 0003 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
422.5	CARBONDALE	HERRIN	COAL	5.7	33.0	

MAPID: 14500076000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** 1300' S line, 2600' E line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.233155 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.042424 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 456.0 **LOGGED (FT.):** 38.7 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
432.0	CARBONDALE	ENERGY	GRAY SHALE	9.0	24.0	
423.0	CARBONDALE	HERRIN	COAL	5.7	33.0	

MAPID: 14500077000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232275 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.045252 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 450.9 **LOGGED (FT.):** 41.0 **LOG TYPE:**
SOURCE: GAYLE CC 0004 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.9	CARBONDALE	HERRIN	COAL	5.8	35.0	

MAPID: 14500093000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227716 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039673 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 417.9 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC 1292 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.9	CARBONDALE	HERRIN	COAL	0.5	14.0	

MAPID: 14500718000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.241895 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039882 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 460.9 **LOGGED (FT.):** 50.0 **LOG TYPE:**
SOURCE: UN ELEC CC2449 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.9	CARBONDALE	HERRIN	COAL	5.8	44.0	

MAPID: 14501219000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.241562 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.05268 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 445.2 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: PERRY COCM0002 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
369.2	CARBONDALE	HERRIN	COAL	6.0	76.0	

MAPID: 14501235000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229964 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.043383 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 442.0 **LOGGED (FT.):** 46.0 **LOG TYPE:**
SOURCE: GAYLE CC 006H **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
401.0	CARBONDALE	HERRIN	COAL	5.3	41.0	

MAPID: 14501236000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232331 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.043416 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 46.0 **LOG TYPE:**
SOURCE: GAYLE CC 003H **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.0	CARBONDALE	HERRIN	COAL	5.8	40.0	

MAPID: 14501237000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NE SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22979 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048899 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 442.0 **LOGGED (FT.):** 40.0 **LOG TYPE:**
SOURCE: GAYLE CC 004H **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.0	CARBONDALE	HERRIN	COAL	6.1	34.0	

MAPID: 14501238000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232164 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048924 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 424.0 **LOGGED (FT.):** 23.0 **LOG TYPE:**
SOURCE: GAYLE CC 0066 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
404.0	CARBONDALE	HERRIN	COAL	3.5	20.0	

MAPID: 14501239000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NE SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22979 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048899 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 435.4 **LOGGED (FT.):** 30.0 **LOG TYPE:**
SOURCE: GAYLE CC 0063 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.4	CARBONDALE	HERRIN	COAL	5.5	24.0	

MAPID: 1450124000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232164 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048924 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.9 **LOGGED (FT.):** 21.0 **LOG TYPE:**
SOURCE: GAYLE CC 0065 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.9	CARBONDALE	HERRIN	COAL	1.0	20.0	

MAPID: 14501241000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232164 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048924 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 424.2 **LOGGED (FT.):** 21.0 **LOG TYPE:**
SOURCE: GAYLE CC 0068 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
407.2	CARBONDALE	HERRIN	COAL	3.5	17.0	

MAPID: 14501242000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232164 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048924 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.2 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC 0067 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
407.2	CARBONDALE	HERRIN	COAL	6.0	18.0	

MAPID: 14501243000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232164 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048924 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.2 **LOGGED (FT.):** 22.0 **LOG TYPE:**
SOURCE: GAYLE CC 0061 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.2	CARBONDALE	HERRIN	COAL	5.5	16.0	

MAPID: 14501244000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232164 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048924 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.7 **LOGGED (FT.):** 17.0 **LOG TYPE:**
SOURCE: GAYLE CC 0070 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
407.7	CARBONDALE	HERRIN	COAL	1.0	16.0	

MAPID: 14501245000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NE SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22979 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048899 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 441.0 **LOGGED (FT.):** 33.0 **LOG TYPE:**
SOURCE: GAYLE CC 005H **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.0	CARBONDALE	HERRIN	COAL	6.2	27.0	

MAPID: 14501246000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NE SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22979 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048899 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 431.1 **LOGGED (FT.):** 19.0 **LOG TYPE:**
SOURCE: GAYLE CC 0058 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
419.1	CARBONDALE	HERRIN	COAL	5.5	12.0	

MAPID: 14501247000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232164 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048924 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 438.0 **LOGGED (FT.):** 40.0 **LOG TYPE:**
SOURCE: GAYLE CC 002H **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
404.0	CARBONDALE	HERRIN	COAL	7.0	34.0	

MAPID: 14501248000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232164 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048924 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.9 **LOGGED (FT.):** 20.0 **LOG TYPE:**
SOURCE: GAYLE CC 0071 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.9	CARBONDALE	HERRIN	COAL	5.0	15.0	

MAPID: 14501249000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232164 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048924 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.4 **LOGGED (FT.):** 22.0 **LOG TYPE:**
SOURCE: GAYLE CC 0049 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
401.4	CARBONDALE	HERRIN	COAL	0.2	22.0	

MAPID: 14501250000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232164 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.048924 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 419.7 **LOGGED (FT.):** 22.0 **LOG TYPE:**
SOURCE: GAYLE CC 0046 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.7	CARBONDALE	HERRIN	COAL	6.0	16.0	

MAPID: 14501251000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227475 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047032 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 429.4 **LOGGED (FT.):** 19.0 **LOG TYPE:**
SOURCE: GAYLE CC 0073 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.4	CARBONDALE	HERRIN	COAL	1.0	18.0	

MAPID: 14501252000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229849 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.04706 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 428.7 **LOGGED (FT.):** 11.0 **LOG TYPE:**
SOURCE: GAYLE CC 0072 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
418.7	CARBONDALE	HERRIN	COAL	1.0	10.0	

MAPID: 14501254000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229849 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.04706 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 424.4 **LOGGED (FT.):** 12.0 **LOG TYPE:**
SOURCE: GAYLE CC 0057 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
413.4	CARBONDALE	HERRIN	COAL	1.0	11.0	

MAPID: 14501255000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229849 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.04706 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 426.2 **LOGGED (FT.):** 11.0 **LOG TYPE:**
SOURCE: GAYLE CC 0056 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.2	CARBONDALE	HERRIN	COAL	1.5	9.0	

MAPID: 14501256000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229849 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.04706 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 426.0 **LOGGED (FT.):** 17.0 **LOG TYPE:**
SOURCE: GAYLE CC 0054 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.0	CARBONDALE	HERRIN	COAL	5.5	11.0	

MAPID: 14501257000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232219 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047088 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.0 **LOGGED (FT.):** 20.0 **LOG TYPE:**
SOURCE: GAYLE CC 0052 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.0	CARBONDALE	HERRIN	COAL	-	20.0	

MAPID: 14501258000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232219 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047088 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 414.9 **LOGGED (FT.):** 14.0 **LOG TYPE:**
SOURCE: GAYLE CC 0047 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.9	CARBONDALE	HERRIN	COAL	3.0	11.0	

MAPID: 14501259000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232219 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047088 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 424.7 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC 0105 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
406.7	CARBONDALE	HERRIN	COAL	6.0	18.0	

MAPID: 14501260000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232219 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047088 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.5 **LOGGED (FT.):** 21.0 **LOG TYPE:**
SOURCE: GAYLE CC 0104 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.5	CARBONDALE	HERRIN	COAL	1.0	20.0	

MAPID: 14501261000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232219 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047088 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.3 **LOGGED (FT.):** 19.0 **LOG TYPE:**
SOURCE: GAYLE CC 0102 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.3	CARBONDALE	HERRIN	COAL	5.0	14.0	

MAPID: 14501262000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232219 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047088 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.4 **LOGGED (FT.):** 20.0 **LOG TYPE:**
SOURCE: GAYLE CC 0011 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501263000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232219 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047088 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 422.5 **LOGGED (FT.):** 17.0 **LOG TYPE:**
SOURCE: GAYLE CC 0010 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.5	CARBONDALE	HERRIN	COAL	6.0	11.0	

MAPID: 14501264000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232219 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047088 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.7 **LOGGED (FT.):** 9.0 **LOG TYPE:**
SOURCE: GAYLE CC 0007 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501265000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232219 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047088 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 426.2 **LOGGED (FT.):** 16.0 **LOG TYPE:**
SOURCE: GAYLE CC 0006 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
413.2	CARBONDALE	HERRIN	COAL	2.5	13.0	

MAPID: 14501266000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232219 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047088 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.7 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC 0005 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501267000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229905 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.045222 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 434.4 **LOGGED (FT.):** 19.0 **LOG TYPE:**
SOURCE: GAYLE CC 0017 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.4	CARBONDALE	HERRIN	COAL	5.0	14.0	

MAPID: 14501268000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229849 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.04706 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.0 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC 0014 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.0	CARBONDALE	HERRIN	COAL	1.0	12.0	

MAPID: 14501269000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229905 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.045222 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 424.8 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC 0050 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
412.8	CARBONDALE	HERRIN	COAL	0.3	12.0	

MAPID: 14501270000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229905 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.045222 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.1 **LOGGED (FT.):** 19.0 **LOG TYPE:**
SOURCE: GAYLE CC 0019 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.1	CARBONDALE	HERRIN	COAL	3.3	16.0	

MAPID: 14501271000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232275 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.045252 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 453.2 **LOGGED (FT.):** 43.0 **LOG TYPE:**
SOURCE: GAYLE CC 0202 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.2	CARBONDALE	HERRIN	COAL	5.4	37.0	

MAPID: 14501272000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229905 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.045222 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 433.7 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC 0023 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.7	CARBONDALE	HERRIN	COAL	6.0	18.0	

MAPID: 14501273000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229905 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.045222 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 428.3 **LOGGED (FT.):** 21.0 **LOG TYPE:**
SOURCE: GAYLE CC 0021 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	

MAPID: 14501274000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229905 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.045222 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.7 **LOGGED (FT.):** 15.0 **LOG TYPE:**
SOURCE: GAYLE CC 0027 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
411.7	CARBONDALE	HERRIN	COAL	0.5 14.0	

MAPID: 14501275000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229964 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.043383 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 434.1 **LOGGED (FT.):** 22.0 **LOG TYPE:**
SOURCE: GAYLE CC 0029 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
418.1	CARBONDALE	HERRIN	COAL	6.0 16.0	

MAPID: 14501276000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232275 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.045252 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 453.2 **LOGGED (FT.):** 39.0 **LOG TYPE:**
SOURCE: GAYLE CC 0203 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
420.2	CARBONDALE	HERRIN	COAL	5.7 33.0	

MAPID: 14501277000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229964 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.043383 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 432.6 **LOGGED (FT.):** 18.0 **LOG TYPE:**
SOURCE: GAYLE CC 0030 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
419.6	CARBONDALE	HERRIN	COAL	5.0	13.0	

MAPID: 14501278000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229964 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.043383 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.2 **LOGGED (FT.):** 17.0 **LOG TYPE:**
SOURCE: GAYLE CC 0033 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.2	CARBONDALE	HERRIN	COAL	1.0	16.0	

MAPID: 14501279000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229964 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.043383 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.0 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC 0109 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.0	CARBONDALE	HERRIN	COAL	0.2	9.0	

MAPID: 14501280000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229964 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.043383 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 429.7 **LOGGED (FT.):** 14.0 **LOG TYPE:**
SOURCE: GAYLE CC 0035 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.7	CARBONDALE	HERRIN	COAL	5.0	9.0	

MAPID: 14501281000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227598 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.043353 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 420.7 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC 0039 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.7	CARBONDALE	HERRIN	COAL	0.3	9.0	

MAPID: 14501282000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.229964 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.043383 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 426.3 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC 0037 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
419.3	CARBONDALE	HERRIN	COAL	3.0	7.0	

MAPID: 14501283000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232387 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.041578 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 443.0 **LOGGED (FT.):** 40.0 **LOG TYPE:**
SOURCE: GAYLE CC 004H **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.0	CARBONDALE	HERRIN	COAL	5.8	34.0	

MAPID: 14501284000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NE SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230024 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.041547 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.0 **LOGGED (FT.):** 18.0 **LOG TYPE:**
SOURCE: GAYLE CC 0040 **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.0	CARBONDALE	HERRIN	COAL	5.0	13.0	

MAPID: 14501285000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232387 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.041578 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 438.1 **LOGGED (FT.):** 27.0 **LOG TYPE:**
SOURCE: GAYLE CC 0080 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.1	CARBONDALE	HERRIN	COAL	6.0	21.0	

MAPID: 14501286000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232387 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.041578 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 452.6 **LOGGED (FT.):** 41.0 **LOG TYPE:**
SOURCE: GAYLE CC 0204 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
418.6	CARBONDALE	HERRIN	COAL	6.0	34.0	

MAPID: 14501287000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232442 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039742 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 450.0 **LOGGED (FT.):** 39.0 **LOG TYPE:**
SOURCE: GAYLE CC 0311 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.0	CARBONDALE	HERRIN	COAL	3.5	35.0	

MAPID: 14501288000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232442 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039742 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 434.2 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC 0079 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.2	CARBONDALE	HERRIN	COAL	6.0	18.0	

MAPID: 14501289000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230079 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039709 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.1 **LOGGED (FT.):** 21.0 **LOG TYPE:**
SOURCE: GAYLE CC 0078 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.1	CARBONDALE	HERRIN	COAL	6.0	15.0	

MAPID: 14501290000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230079 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039709 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 426.2 **LOGGED (FT.):** 18.0 **LOG TYPE:**
SOURCE: GAYLE CC 0076 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.2	CARBONDALE	HERRIN	COAL	6.0	12.0	

MAPID: 14501291000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230079 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039709 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 428.6 **LOGGED (FT.):** 20.0 **LOG TYPE:**
SOURCE: GAYLE CC 0044 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.6	CARBONDALE	HERRIN	COAL	5.5	14.0	

MAPID: 14501292000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227716 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039673 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 417.9 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC 0041 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.9	CARBONDALE	HERRIN	COAL	0.5	14.0	

MAPID: 14501293000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230079 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039709 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.8 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC 0043 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.8	CARBONDALE	HERRIN	COAL	1.0	13.0	

MAPID: 14501294000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SE SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230079 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039709 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.8 **LOGGED (FT.):** 18.0 **LOG TYPE:**
SOURCE: GAYLE CC 0084 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
412.8	CARBONDALE	HERRIN	COAL	6.0	13.0	

MAPID: 14501295000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232442 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039742 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 450.0 **LOGGED (FT.):** 46.0 **LOG TYPE:**
SOURCE: GAYLE CC 002H **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
410.0	CARBONDALE	HERRIN	COAL	5.8	40.0	

MAPID: 14501296000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232442 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039742 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 434.7 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC 0081 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.7	CARBONDALE	HERRIN	COAL	6.0	18.0	

MAPID: 14501297000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232442 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039742 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 433.7 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC 0082 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.7	CARBONDALE	HERRIN	COAL	6.0	18.0	

MAPID: 14501298000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.237116 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.041644 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 456.7 **LOGGED (FT.):** 52.0 **LOG TYPE:**
SOURCE: GAYLE CC 0364 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.7	CARBONDALE	HERRIN	COAL	4.0	48.0	

MAPID: 14501299000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.237116 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.041644 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 461.3 **LOGGED (FT.):** 49.0 **LOG TYPE:**
SOURCE: GAYLE CC 0365 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.3	CARBONDALE	HERRIN	COAL	4.5	44.0	

MAPID: 14501300000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.237169 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039811 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 461.5 **LOGGED (FT.):** 51.0 **LOG TYPE:**
SOURCE: GAYLE CC 0363 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.5	CARBONDALE	HERRIN	COAL	6.0	45.0	

MAPID: 14501507000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** NW SW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.241659 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.049025 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 447.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: PERRY COCM0001 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
382.0	CARBONDALE	HERRIN	COAL	6.0	65.0	

MAPID: 14590619000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 32 **QUARTERS/FOOTAGES:** 1' N line, 1' E line of NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223957 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 38.046069 **DATE COLLECTED:** 8 / 20 / 1963
SURFACE ELEVATION (FT.): 429.4 **LOGGED (FT.):** 88.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE A109 **WELL TYPE:** Coal Test
COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
429.4	PLEISTOCENE		UNCONSOLIDATED	38.0	0.0	
391.4			ROCK	50.0	38.0	

MAPID: 14590620000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 5S 1W **SECTION:** 33 **QUARTERS/FOOTAGES:** 1' S line, 1' E line of NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.219264 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 38.049707 **DATE COLLECTED:** 8 / 23 / 1963
SURFACE ELEVATION (FT.): 436.2 **LOGGED (FT.):** 98.0 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE A161 **WELL TYPE:** Coal Test
COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
436.2	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0	
409.2			ROCK	71.0	27.0	

MAPID: 14590621000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 33 QUARTERS/FOOTAGES: 1' N line, 1' E line of NW SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.21938 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.046025 DATE COLLECTED: 11 / 20 / 1969
 SURFACE ELEVATION (FT.): 433.6 LOGGED (FT.): 108.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A111 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.6	PLEISTOCENE		UNCONSOLIDATED	44.0	0.0
389.6			ROCK	64.0	44.0

MAPID: 14590622000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 33 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.22382 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.04976 DATE COLLECTED: 11 / 21 / 1960
 SURFACE ELEVATION (FT.): 418.8 LOGGED (FT.): 75.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A159 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.8	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
402.8			ROCK	59.0	16.0

MAPID: 14590676000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 33 QUARTERS/FOOTAGES: 1' S line, 1' E line of SE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.214807 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.045986 DATE COLLECTED: 12 / 14 / 1960
 SURFACE ELEVATION (FT.): LOGGED (FT.): 91.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A113 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	58.0	0.0
-			ROCK	33.0	58.0

MAPID: 14590677000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 1W SECTION: 33 QUARTERS/FOOTAGES: 1' S line, 1' E line of SW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.210234 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.045941 DATE COLLECTED: 11 / 15 / 1963
 SURFACE ELEVATION (FT.): LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE A115 WELL TYPE: Coal Test
 COMMENT: SUNFIELD AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	70.0	0.0	
-			ROCK	68.0	70.0	

MAPID: 14502032000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 1 QUARTERS/FOOTAGES: 330' S line, 330' E line of SE
 QUADRANGLE: PYATTS LONGITUDE: -89.260856 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.113033 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 525.0 LOGGED (FT.): 2891.0 LOG TYPE: Electric Log
 SOURCE: TEXAS COMPANY, THE WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-587.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1112.0	
-2336.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2861.0	TOP OF NEW ALBANY
-2337.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2862.0	
-2366.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2891.0	BASE OF NEW ALBANY

MAPID: 1450226000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 2 QUARTERS/FOOTAGES: 2573' N line, 1270' W line

QUADRANGLE: PYATTS LONGITUDE: -89.292631 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.119671 DATE COLLECTED:

SURFACE ELEVATION (FT.): 487.0 LOGGED (FT.): 167.8 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 11 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
375.9	MODESTO	PIASA	LIMESTONE	8.0	111.1
367.9	CARBONDALE		CLAYSTONE & SHALE	6.5	119.1
361.4	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	7.3	125.6
354.1	CARBONDALE	LAWSON	CLAYSTONE & SHALE	3.2	132.9
350.9	CARBONDALE	LAWSON	DARK GRAY SHALE	5.5	136.1
345.4	CARBONDALE	CONANT	LIMESTONE W/ SHALE	6.0	141.6
339.4	CARBONDALE	JAMESTOWN	BONE COAL	0.5	147.6
338.9	CARBONDALE		DARK GRAY SHALE	8.1	148.1
330.8	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	4.1	156.2
326.7	CARBONDALE	ANNA	BLACK SHALE	1.8	160.3
325.0	CARBONDALE	HERRIN	COAL	5.8	162.0

MAPID: 14523208000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 2 QUARTERS/FOOTAGES: 67' S line, 70' E line of SE SE SE

QUADRANGLE: PYATTS LONGITUDE: -89.278955 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.112321 DATE COLLECTED: 12 / 19 / 1974

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 37.0 LOG TYPE: Drillers Log

SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0				2.0	0.0
-				17.0	
-				2.0	
-				7.0	
-				9.0	

MAPID: 14523345000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 2 QUARTERS/FOOTAGES: 98' N line, 115' E line of NE NE SW
 QUADRANGLE: PYATTS LONGITUDE: -89.288289 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.119204 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 14.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Plugged and/or Abandoned
 COMMENT: DRY HOLE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-				10.0	0.0
-				2.0	

MAPID: 14523460000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 2 QUARTERS/FOOTAGES: 104' S line, 107' W line of SE SE NE
 QUADRANGLE: PYATTS LONGITUDE: -89.280627 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.119612 DATE COLLECTED: 8 / 14 / 1978
 SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 26.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT: DRY HOLE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0				0.0	0.0
-				1.0	
-				2.0	
-				21.0	

MAPID: 14503041000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 3 QUARTERS/FOOTAGES: 22' N line, 1258' W line

QUADRANGLE: TODDS MILL LONGITUDE: -89.310801

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.12691

DATE COLLECTED:

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 140.4

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO C 69-30

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
382.6	MODESTO	PIASA	LIMESTONE	7.8	87.4
374.8	MODESTO		GRAY SHALE	1.4	95.2
373.4	CARBONDALE	DANVILLE	DARK GRAY SHALE	1.3	96.6
372.2	CARBONDALE		GRAY SHALE	5.4	97.8
366.8	CARBONDALE	GALUM	LIMESTONE	0.3	103.2
366.4	CARBONDALE		GRAY SHALE	1.3	103.6
365.2	CARBONDALE	BANKSTON FORK	LIMESTONE	6.3	104.8
358.8	CARBONDALE	LAWSON	GRAY SHALE	2.0	111.2
356.8	CARBONDALE	LAWSON	SILTY SHALE	7.6	113.2
349.2	CARBONDALE	CONANT	LIMESTONE W/ SHALE	6.1	120.8
343.2	CARBONDALE	JAMESTOWN	BONE COAL	0.2	126.8
343.0	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	6.6	127.0
336.4	CARBONDALE	ANNA	BLACK SHALE	0.4	133.6
336.0	CARBONDALE	HERRIN	COAL	6.4	134.0

MAPID: 14528293000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 3

QUARTERS/FOOTAGES: SW SW SW SE

QUADRANGLE: PYATTS

LONGITUDE: -89.3056

GEOLOGIST: GRAETENGER

CONFIDENTIAL: N

LATITUDE: 38.112913

DATE COLLECTED: 9 / 23 / 1980

SURFACE ELEVATION (FT.): 474.3

LOGGED (FT.): 60.3

LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL

WELL TYPE: Observation Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
474.3			CLAYSTONE	1.4	0.0
472.9			CLAYSTONE	8.7	1.4
464.2			CLAYSTONE	1.5	10.1
462.7			CLAYSTONE	6.7	11.6
456.0			CLAYSTONE	3.5	18.3
452.5			CLAYSTONE	6.1	21.8
446.4			CLAYSTONE	3.3	27.9
443.1			CLAYSTONE	16.5	31.2
426.6			CLAYSTONE	4.7	47.7
421.9			CLAYSTONE	2.5	52.4
419.4			ARGILLACEOUS SILTSTONE	5.4	54.9
414.0			SHALE	0.0	60.3

MAPID: 14528298000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 3

QUARTERS/FOOTAGES: NW SE NE

QUADRANGLE: PYATTS

LONGITUDE: -89.30049

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.122382

DATE COLLECTED:

SURFACE ELEVATION (FT.): 459.0

LOGGED (FT.): 21.2

LOG TYPE:

SOURCE: CONSOLIDATION COAL N-509,889 E-764,867

WELL TYPE: Observation Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
459.0			UNCONSOLIDATED	1.0	0.0
458.0			CLAYSTONE	20.2	1.0
437.8			LIMESTONE	0.0	21.2

MAPID: 14528565000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 3 QUARTERS/FOOTAGES: 1056' N line, 1650' W line
 QUADRANGLE: PYATTS LONGITUDE: -89.309456 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 38.124048 DATE COLLECTED: 6 / 23 / 1982
 SURFACE ELEVATION (FT.): LOGGED (FT.): 104.0 LOG TYPE: Other Core Study
 SOURCE: CONSOLIDATION COAL R-7274 WELL TYPE: Coal Test
 COMMENT: PERMIT 68; X-SECT. B.S. 2 N-S

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	63.0	0.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	63.0	
-	CARBONDALE		SHALE	15.0	68.0	
-	CARBONDALE		SHALE	5.0	83.0	WITH LIMESTONE
-	CARBONDALE	BRERETON	LIMESTONE	6.0	88.0	
-	CARBONDALE	ANNA	SHALE	2.0	94.0	
-	CARBONDALE	HERRIN	COAL	7.0	96.0	
-	CARBONDALE		UNDERCLAY	1.0	103.0	

MAPID: 14502906000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 4 QUARTERS/FOOTAGES: 100' N line, 200' E line of NW NE NE
 QUADRANGLE: TODDS MILL LONGITUDE: -89.318221 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.126718 DATE COLLECTED: 7 / 16 / 1968
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 85.0 LOG TYPE: Drillers Log
 SOURCE: HENRY O. KINMAN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0				1.0	0.0	
-				49.0		
-				2.0		
-				13.0		
-				7.0		
-				13.0		

MAPID: 14503042000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 4 QUARTERS/FOOTAGES: 2540' S line, 2588' E line

QUADRANGLE: PYATTS LONGITUDE: -89.324302 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.119652 DATE COLLECTED:

SURFACE ELEVATION (FT.): 438.0 LOGGED (FT.): 121.4 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO C 69-35 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
374.6	MODESTO	PIASA	LIMESTONE	3.7	63.4
371.0	MODESTO		GRAY SHALE	1.7	67.0
369.3	CARBONDALE	DANVILLE	DARK GRAY SHALE	1.3	68.7
368.0	CARBONDALE		GRAY SHALE	9.6	70.0
358.4	CARBONDALE	GALUM	LIMESTONE	0.3	79.6
358.1	CARBONDALE		GRAY SHALE	1.1	79.9
357.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.3	81.0
349.6	CARBONDALE	LAWSON	GRAY SHALE	2.1	88.4
347.6	CARBONDALE	LAWSON	DARK GRAY SHALE	7.2	90.4
340.4	CARBONDALE	CONANT	LIMESTONE W/ SHALE	3.4	97.6
337.0	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.4	101.0
336.6	CARBONDALE		LIMESTONE W/ SHALE	3.2	101.4
333.5	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	8.0	104.5
325.5	CARBONDALE	ANNA	CARBONACEOUS SHALE	2.5	112.5
323.0	CARBONDALE	HERRIN	COAL	6.4	115.0

MAPID: 14528288000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 4 QUARTERS/FOOTAGES: 0' N line, 0' E line of NE NE NW NE

QUADRANGLE: PYATTS LONGITUDE: -89.319839 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.126991 DATE COLLECTED: 7 / 6 / 1979

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 85.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO WELL TYPE: Observation Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
457.0			CLAYSTONE	49.0	3.0
410.0			CLAYSTONE	2.0	50.0
408.0			CLAYSTONE	13.0	52.0
395.0			SHALE	7.0	65.0
388.0			CLAYSTONE	13.0	72.0

MAPID: 14503043000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 5 QUARTERS/FOOTAGES: 20' S line, 1305' E line

QUADRANGLE: PYATTS LONGITUDE: -89.338443 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.112834 DATE COLLECTED:

SURFACE ELEVATION (FT.): 418.0 LOGGED (FT.): 87.1 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO C 69-39 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
376.7	CARBONDALE		SILTY SHALE	9.7	41.3
367.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.4	51.0
362.6	CARBONDALE	LAWSON	GRAY SHALE	9.5	55.4
353.1	CARBONDALE	LAWSON	DARK GRAY SHALE	2.3	64.9
350.8	CARBONDALE	CONANT	CARBONACEOUS LIMESTONE	1.3	67.2
349.5	CARBONDALE		SILTY SHALE	5.3	68.5
344.3	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	6.0	73.7
338.3	CARBONDALE	ANNA	DARK GRAY SHALE	1.3	79.7
337.0	CARBONDALE	HERRIN	COAL	6.1	81.0

MAPID: 14502396000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 6 QUARTERS/FOOTAGES: 2640' N line, 2040' E line

QUADRANGLE: PYATTS LONGITUDE: -89.359691 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.119761 DATE COLLECTED: 2 / 21 / 1958

SURFACE ELEVATION (FT.): 411.1 LOGGED (FT.): 97.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO 16 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
411.1	PLEISTOCENE		UNCONSOLIDATED	53.0	0.0
358.1	CARBONDALE		GRAY SHALE	3.0	53.0
355.1	CARBONDALE	BANKSTON FORK	LIMESTONE	8.0	56.0
347.1	CARBONDALE		GRAY SHALE	1.0	64.0
346.1	CARBONDALE		DARK SHALE	17.0	65.0
329.1	CARBONDALE	BRERETON	FOSSILIFEROUS LIMESTONE	4.0	82.0
325.1	CARBONDALE	ANNA	BLACK SHALE	2.0	86.0
323.1	CARBONDALE	HERRIN	COAL	7.5	88.0
315.6	CARBONDALE		UNDERCLAY	1.5	95.5

MAPID: 14528368000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 6 QUARTERS/FOOTAGES: 1274' S line, 205' W line of SW NE
 QUADRANGLE: PYATTS LONGITUDE: -89.361051 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.123415 DATE COLLECTED: 8 / 6 / 1984
 SURFACE ELEVATION (FT.): 416.0 LOGGED (FT.): 125.5 LOG TYPE: Drillers Log
 SOURCE: CONSOLIDATION COAL CO. WELL TYPE: Coal Test
 COMMENT: N-531,388 E-731,774

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.0			SILTSTONE	20.0	0.0	
396.0				15.0	20.0	
381.0			SAND	10.0	35.0	
371.0			SILTSTONE	10.0	45.0	
361.0			UNCLASSIFIED	3.0	55.0	
358.0			CLAYSTONE	2.5	58.0	
355.5			CLAYSTONE & LIMESTONE	10.5	60.5	
345.0			LIMESTONE	4.0	71.0	
341.0			UNCLASSIFIED	15.0	75.0	
326.0	CARBONDALE		LIMESTONE	10.0	90.0	
316.0	CARBONDALE		LIMESTONE	14.0	100.0	
302.0	CARBONDALE		CLAYSTONE	5.0	114.0	
297.0	CARBONDALE	HERRIN	COAL	6.5	119.0	

MAPID: 14502469000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 7 QUARTERS/FOOTAGES: 660' S line, 660' W line of SW NW
 QUADRANGLE: PYATTS LONGITUDE: -89.368674 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.107332 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 425.0 LOGGED (FT.): 2864.0 LOG TYPE: Electric Log
 SOURCE: KINGWOOD OIL CO. WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
240.0	CARBONDALE	COLCHESTER	COAL	-	185.0	
-644.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1069.0	
-2415.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2840.0	TOP OF NEW ALBANY
-2418.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2843.0	
-2439.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2864.0	BASE OF NEW ALBANY

MAPID: 14502469000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 7 QUARTERS/FOOTAGES: 660' S line, 660' W line of SW NW

QUADRANGLE: PYATTS LONGITUDE: -89.368674 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.107332 DATE COLLECTED: 5 / 0 / 1952

SURFACE ELEVATION (FT.): 425.0 LOGGED (FT.): 2965.0 LOG TYPE: Electric Log

SOURCE: KINGWOOD OIL WELL TYPE: Plugged and/or Abandoned

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
425.0				0.0	0.0	
-				50.0		
-				10.0		
-				95.0		
-				75.0		
-				50.0		
-				0.0		

MAPID: 14502660000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 7 QUARTERS/FOOTAGES: 330' S line, 330' W line of SW SW SW

QUADRANGLE: PYATTS LONGITUDE: -89.369891 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.099256 DATE COLLECTED: 6 / 25 / 1963

SURFACE ELEVATION (FT.): 408.0 LOGGED (FT.): 700.0 LOG TYPE: Drillers Log

SOURCE: CENTRAL OIL WELL TYPE: Plugged and/or Abandoned

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
408.0			UNCONSOLIDATED	0.0	0.0
-			SHALE	12.0	
389.5			SHALE & SANDSTONE	6.3	18.5
383.2			UNCLASSIFIED	33.9	24.8
349.3	CARBONDALE		SHALE	8.1	58.7
341.2	CARBONDALE		UNCLASSIFIED	2.7	66.8
338.5			SHALE	49.1	69.5
289.4	CARBONDALE	HOUCHIN CREEK	COAL	2.4	118.6
287.0	CARBONDALE		CLAYSTONE	2.2	121.0
284.8	CARBONDALE		SHALE	4.4	123.2
280.4	CARBONDALE		SHALE	16.7	127.6
263.7	CARBONDALE		SHALE	12.7	144.3
251.0	CARBONDALE		SHALE	1.8	157.0
249.2	CARBONDALE	COLCHESTER	COAL	2.1	158.8
247.1	SPOON		UNDERCLAY	1.1	160.9
246.0	SPOON		UNCLASSIFIED	3.1	162.0
242.9	SPOON		SHALE	1.1	165.1
241.8	SPOON		SHALE	19.2	166.2
222.6	SPOON		SHALE	13.1	185.4
209.5	SPOON		SHALE	7.0	198.5
208.8	SPOON		SHALE	4.5	199.2
204.3	SPOON	DEKOVEN	COAL	1.1	203.7
203.2	SPOON		UNDERCLAY	1.4	204.8
201.8	SPOON		SHALE	2.5	206.2
199.3	SPOON		UNCLASSIFIED	3.3	208.7
196.0	SPOON		SHALE	2.3	212.0
193.7	SPOON		SHALE	16.4	214.3
177.3	SPOON		SHALE	18.2	230.7
159.1	SPOON	MURPHYSBORO	COAL	3.6	248.9
155.5	SPOON		UNDERCLAY	2.4	252.5
153.1	SPOON		SANDSTONE	0.0	254.9

MAPID: 14528292000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 7 QUARTERS/FOOTAGES: 53' N line, 409' E line of NW SW SE

QUADRANGLE: PYATTS LONGITUDE: -89.36089 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.10168 DATE COLLECTED: 9 / 3 / 1980

SURFACE ELEVATION (FT.): 413.1 LOGGED (FT.): 83.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO #MW-2-7 WELL TYPE: Observation Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
413.1			CLAYSTONE	30.0	0.0
383.1			SILTSTONE	11.0	30.0
372.1			SAND	41.0	41.0
331.1			SHALE	1.0	82.0

MAPID: 14528361000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 7 QUARTERS/FOOTAGES: 1280' N line, 333' W line of NW

QUADRANGLE: PYATTS LONGITUDE: -89.369803 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.109153 DATE COLLECTED: 6 / 8 / 1982

SURFACE ELEVATION (FT.): 424.1 LOGGED (FT.): 75.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL R-9864 WELL TYPE: Structure Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.1			CLAYSTONE	18.4	0.0
405.7			CLAYSTONE	1.2	18.4
404.5			CLAYSTONE	0.5	19.6
404.0			CONCRETION	2.6	20.1
401.4			CLAYSTONE	5.7	22.7
395.7			CONCRETION	1.7	28.4
394.0			CLAYSTONE	0.8	30.1
393.2	CARBONDALE	BANKSTON FORK	LIMESTONE	1.7	30.9
391.5	CARBONDALE		SHALE	20.6	32.6
370.9	CARBONDALE	BRERETON	LIMESTONE	6.6	53.2
364.3	CARBONDALE		SHALE	4.4	59.8
359.9	CARBONDALE		COAL WITH SHALE	4.0	64.2
355.9	CARBONDALE	HERRIN	COAL	1.9	68.2
354.0	CARBONDALE		CLAYSTONE	2.2	70.1
351.6	CARBONDALE		LIMESTONE	2.4	72.5

MAPID: 14528566000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 7 QUARTERS/FOOTAGES:

QUADRANGLE: PYATTS LONGITUDE: -89.367592

GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.108761

DATE COLLECTED: 6 / 22 / 1972

SURFACE ELEVATION (FT.): 409.5 LOGGED (FT.): 54.0

LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL R-7963-P

WELL TYPE: Coal Test

COMMENT: PERMIT 69

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.5	PLEISTOCENE		SOIL	5.0	0.0	
404.5	PLEISTOCENE		SAND	5.8	5.0	
398.7	PLEISTOCENE		SAND & GRAVEL	4.1	10.8	SAND & GRAVEL
394.6	PLEISTOCENE		UNCONSOLIDATED	6.8	14.9	
387.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.6	21.7	
385.2	CARBONDALE		GRAY SHALE	5.3	24.3	
379.9	CARBONDALE		DARK SHALE	2.0	29.6	WITH LIMESTONE STREAKS
377.9	CARBONDALE	JAMESTOWN	COAL	0.5	31.6	
377.4	CARBONDALE		DARK SHALE	7.7	32.1	WITH LIMESTONE STREAKS
369.7	CARBONDALE	BRERETON	LIMESTONE	6.1	39.8	
363.6	CARBONDALE	ANNA	BLACK SHALE	0.4	45.9	BLACK SHALE?
363.2	CARBONDALE	HERRIN	COAL	6.3	46.3	
356.9	CARBONDALE		UNDERCLAY	1.4	52.6	

MAPID: 14590028000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 7

QUARTERS/FOOTAGES: SW NW NW

QUADRANGLE: PYATTS

LONGITUDE: -89.369799

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.109164

DATE COLLECTED: 6 / 8 / 1982

SURFACE ELEVATION (FT.): 424.1

LOGGED (FT.): 75.0

LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO R9864

WELL TYPE: Coal Test

COMMENT: PERMIT 121; BURNING STAR #2

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
424.1	PLEISTOCENE		CLAY	18.4	0.0	BROWN
405.7	PLEISTOCENE		CLAY	1.2	18.4	BROWN
404.5	PLEISTOCENE		CLAY	0.5	19.6	GRAY
404.0	PLEISTOCENE		SAND & GRAVEL	2.6	20.1	
401.4	PLEISTOCENE		CLAY	5.7	22.7	GRAY
395.7	PLEISTOCENE		SAND & GRAVEL	1.7	28.4	
394.0	PLEISTOCENE		CLAY	0.8	30.1	GRAY
393.2	CARBONDALE	BANKSTON FORK	LIMESTONE	1.7	30.9	BROWN
391.5	CARBONDALE		DARK SHALE	20.6	32.6	
370.9	CARBONDALE	BRERETON	LIMESTONE	6.6	53.2	DARK
364.3	CARBONDALE	ANNA	DARK SHALE	4.4	59.8	
359.9	CARBONDALE	HERRIN	SHALY COAL	4.0	64.2	
355.9	CARBONDALE	HERRIN	COAL	1.9	68.2	
354.0	CARBONDALE		UNDERCLAY	2.2	70.1	
351.8	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.7	72.3	

MAPID: 14503045000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 8

QUARTERS/FOOTAGES: 2605' N line, 2310' E line

QUADRANGLE: PYATTS

LONGITUDE: -89.341967

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.105592

DATE COLLECTED:

SURFACE ELEVATION (FT.): 437.0

LOGGED (FT.): 101.2

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO C 69-32

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
356.1	CARBONDALE	CONANT	LIMESTONE	4.3	80.9	
351.9	CARBONDALE		GRAY SHALE	3.2	85.1	
348.7	CARBONDALE	BRERETON	LIMESTONE	5.4	88.3	
343.3	CARBONDALE	ANNA	CARBONACEOUS SHALE	1.3	93.7	
342.0	CARBONDALE	HERRIN	COAL	6.2	95.0	

MAPID: 14523461000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 8 QUARTERS/FOOTAGES: 103' S line, 105' E line of SE SE SW

QUADRANGLE: PYATTS LONGITUDE: -89.343573 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.098245 DATE COLLECTED: 1 / 4 / 1978

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log

SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0				1.0	0.0
-				2.0	
-				3.0	
-				14.0	
-				21.0	
-				24.0	

MAPID: 14528289000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 8 QUARTERS/FOOTAGES: SE SW

QUADRANGLE: PYATTS LONGITUDE: -89.345536 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.09983 DATE COLLECTED: 8 / 26 / 1980

SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log

SOURCE: MR. GEORGE COWLEY WELL TYPE: Observation Well

COMMENT: PRIVATE WATER SUPPLY

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.0			CLAYSTONE	2.0	1.0
432.0			CLAYSTONE	3.0	3.0
429.0			CLAYSTONE	14.0	6.0
415.0			CLAYSTONE	21.0	20.0
394.0			CLAYSTONE	24.0	41.0

MAPID: 14502262000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 9 QUARTERS/FOOTAGES: 165' N line, 165' E line

QUADRANGLE: PYATTS LONGITUDE: -89.315893

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.112063

DATE COLLECTED:

SURFACE ELEVATION (FT.): 448.0 LOGGED (FT.): 116.6

LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 17

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
386.5	MODESTO	PIASA	LIMESTONE	10.7	61.5	
375.8	CARBONDALE		CLAYSTONE & SHALE	8.1	72.2	
367.7	CARBONDALE	BANKSTON FORK	LIMESTONE	8.0	80.3	
359.7	CARBONDALE	LAWSON	ROCK	1.0	88.3	
358.7	CARBONDALE	LAWSON	SILTY SHALE	3.5	89.3	
355.2	CARBONDALE	LAWSON	DARK GRAY SHALE	4.4	92.8	
350.8	CARBONDALE	CONANT	LIMESTONE/UNDERCLAY	0.3	97.2	
350.5	CARBONDALE		CALCAREOUS SHALE	7.7	97.5	
342.8	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	4.8	105.2	
338.0	CARBONDALE	ANNA	BLACK SHALE	1.0	110.0	
337.0	CARBONDALE	HERRIN	COAL	5.6	111.0	

MAPID: 14502470000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 9 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE NE SW

QUADRANGLE: PYATTS LONGITUDE: -89.328103

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.104336

DATE COLLECTED:

SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 1101.0

LOG TYPE: Electric Log

SOURCE: INLAND OIL CO

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
329.0	CARBONDALE	SPRINGFIELD	COAL	-	122.0	
232.0	CARBONDALE	COLCHESTER	COAL	-	219.0	
-650.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1101.0	

MAPID: 14502470000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 9 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE NE SW
 QUADRANGLE: PYATTS LONGITUDE: -89.328103 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.104336 DATE COLLECTED: 7 / 14 / 1952
 SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 1413.0 LOG TYPE: Drillers Log
 SOURCE: INLAND OIL CO WELL TYPE: Plugged and/or Abandoned
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.0				145.0	0.0
-				200.0	
-				290.0	
-				100.0	
-				183.0	
-				74.0	
-				0.0	

MAPID: 14528290000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 9 QUARTERS/FOOTAGES: NW NW SE
 QUADRANGLE: PYATTS LONGITUDE: -89.323456 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.104254 DATE COLLECTED: 9 / 3 / 1980
 SURFACE ELEVATION (FT.): 477.6 LOGGED (FT.): 36.2 LOG TYPE: Drillers Log
 SOURCE: CONSOLIDATION COAL N-520,449 E-742,380 WELL TYPE: Observation Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
477.6			CLAYSTONE	11.9	0.0
465.7			SAND	2.3	11.9
463.4			SANDSTONE	5.2	14.2
458.2			SANDSTONE	4.9	19.4
453.3			SANDSTONE	7.2	24.3
446.1			CLAYSTONE	4.7	31.5
441.4			SANDSTONE	0.0	36.2

MAPID: 14528356000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 9 QUARTERS/FOOTAGES: 2072' N line, 1304' E line of NE

QUADRANGLE: PYATTS LONGITUDE: -89.319882 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.106854 DATE COLLECTED: 10 / 14 / 1975

SURFACE ELEVATION (FT.): 448.6 LOGGED (FT.): 113.4 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL C-9319 WELL TYPE: Structure Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.6			UNCONSOLIDATED	3.3	0.0
445.3			UNCLASSIFIED	13.6	3.3
431.6			UNCLASSIFIED	43.0	17.0
388.6	MODESTO	PIASA	LIMESTONE	4.2	60.0
384.4	MODESTO		SHALE	7.8	64.2
376.6	CARBONDALE		SHALE	3.0	72.0
373.6	CARBONDALE	BANKSTON FORK	LIMESTONE	6.9	75.0
366.7	CARBONDALE		SHALE	2.1	81.9
364.6	CARBONDALE		SHALE	6.2	84.0
358.4	CARBONDALE		SHALE	1.8	90.2
356.6	CARBONDALE	CONANT	LIMESTONE	2.6	92.0
354.0	CARBONDALE		SHALE	5.2	94.6
348.8	CARBONDALE	BRERETON	LIMESTONE	6.9	99.8
341.9	CARBONDALE	ANNA	SHALE	0.5	106.7
341.4	CARBONDALE	HERRIN	COAL	6.1	107.2
335.3	CARBONDALE		CLAYSTONE	0.1	113.3

MAPID: 14528567000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 9 QUARTERS/FOOTAGES: 990' N line, 1980' E line

QUADRANGLE: PYATTS LONGITUDE: -89.32224 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.109876 DATE COLLECTED: 6 / 23 / 1982

SURFACE ELEVATION (FT.): LOGGED (FT.): 116.0 LOG TYPE: Other Core Study

SOURCE: CONSOLIDATION COAL C-7194 WELL TYPE: Coal Test

COMMENT: PERMIT 68; X-SECT. B.S. 2 N-S

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	72.0	0.0
-	CARBONDALE		SHALE	5.0	72.0
-	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	77.0
-	CARBONDALE		SHALE	16.0	84.0
-	CARBONDALE		SHALE	3.0	100.0
-	CARBONDALE	BRERETON	LIMESTONE	4.0	103.0
-	CARBONDALE	ANNA	SHALE	3.0	107.0
-	CARBONDALE	HERRIN	COAL	5.0	110.0
-	CARBONDALE		UNDERCLAY	1.0	115.0

WITH
LIMESTONE

MAPID: 14502031000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 10 QUARTERS/FOOTAGES: 330' S line, 330' W line of SW SW
 QUADRANGLE: PYATTS LONGITUDE: -89.314188 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.098538 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 477.0 LOGGED (FT.): 1128.0 LOG TYPE: Electric Log
 SOURCE: TEXAS COMPANY, THE WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
331.0	CARBONDALE	SPRINGFIELD	COAL	-	146.0
242.0	CARBONDALE	COLCHESTER	COAL	-	235.0
-651.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1128.0

MAPID: 14502031000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 10 QUARTERS/FOOTAGES: 330' S line, 330' W line of SW SW
 QUADRANGLE: PYATTS LONGITUDE: -89.314188 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.098538 DATE COLLECTED: 10 / 9 / 1944
 SURFACE ELEVATION (FT.): 447.0 LOGGED (FT.): 1688.0 LOG TYPE: Drillers Log
 SOURCE: TEXAS COMPANY, THE WELL TYPE: Plugged and/or Abandoned
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.0				60.0	0.0
-				10.0	
-				20.0	
-				24.0	
-				18.0	
-				10.0	
-				60.0	
-				0.0	

MAPID: 14502239000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 10 QUARTERS/FOOTAGES: 330' S line, 330' W line of NE NE

QUADRANGLE: PYATTS LONGITUDE: -89.300417 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.109619 DATE COLLECTED: 8 / 0 / 1957

SURFACE ELEVATION (FT.): 479.0 LOGGED (FT.): 1605.0 LOG TYPE: Drillers Log

SOURCE: SKELLY WELL TYPE: Plugged and/or Abandoned

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
479.0				115.0	0.0
-				170.0	
-				10.0	
-				105.0	
-				185.0	
-				0.0	

MAPID: 14503048000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 10 QUARTERS/FOOTAGES: 50' S line, 1004' E line

QUADRANGLE: PYATTS LONGITUDE: -89.300314 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.097665 DATE COLLECTED:

SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 132.8 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAEER COAL CO RC 69-22 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
406.8	MODESTO	PIASA	LIMESTONE	7.1	78.2
399.7	CARBONDALE		CALCAREOUS SHALE	9.2	85.3
390.6	CARBONDALE	BANKSTON FORK	LIMESTONE	6.6	94.4
384.0	CARBONDALE	LAWSON	GRAY SHALE	8.0	101.0
376.0	CARBONDALE	LAWSON	CARBONACEOUS SHALE	0.4	109.0
375.7	CARBONDALE	LAWSON	SILTY SHALE	0.5	109.3
375.2	CARBONDALE	CONANT	LIMESTONE W/ SHALE	3.3	109.8
372.0	CARBONDALE	JAMESTOWN	COAL	0.2	113.0
371.8	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	12.6	113.2
359.3	CARBONDALE	ANNA	BLACK SHALE	1.3	125.7
358.0	CARBONDALE	HERRIN	COAL	5.8	127.0

MAPID: 14503051000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 11 QUARTERS/FOOTAGES: 5' N line, 1290' W line

QUADRANGLE: PYATTS LONGITUDE: -89.292519 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.112332 DATE COLLECTED:

SURFACE ELEVATION (FT.): 479.0 LOGGED (FT.): 149.3 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO C 69-33 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
386.5	MODESTO	PIASA	LIMESTONE	9.1	92.5
377.4	CARBONDALE		GRAY SHALE	10.6	101.6
366.8	CARBONDALE	BANKSTON FORK	LIMESTONE	6.3	112.2
360.5	CARBONDALE	LAWSON	GRAY SHALE	4.4	118.5
356.0	CARBONDALE	LAWSON	DARK GRAY SHALE	4.8	123.0
351.3	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.0	127.7
346.3	CARBONDALE	JAMESTOWN	BONE COAL	0.5	132.7
345.8	CARBONDALE		GRAY SHALE	3.0	133.2
342.8	CARBONDALE	BRERETON	LIMESTONE	4.2	136.2
338.6	CARBONDALE	ANNA	DARK GRAY SHALE	1.0	140.4
337.6	CARBONDALE	ENERGY	GRAY SHALE	1.7	141.4
336.0	CARBONDALE	HERRIN	COAL	6.3	143.0

MAPID: 14502289000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 12 QUARTERS/FOOTAGES: 940' S line, 1340' W line

QUADRANGLE: PYATTS LONGITUDE: -89.273812 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.099926 DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 153.8 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 20 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
395.6	MODESTO	PIASA	LIMESTONE	9.7	99.4
386.0	CARBONDALE		MOTTLED SHALE	10.3	109.0
375.6	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	119.4
368.6	CARBONDALE	LAWSON	CLAYSTONE & SHALE	3.0	126.4
365.6	CARBONDALE	LAWSON	DARK GRAY SHALE	4.0	129.4
361.6	CARBONDALE	CONANT	LIMESTONE W/ SHALE	3.2	133.4
358.5	CARBONDALE	BRERETON	LIMESTONE AND SANDSTONE	0.8	136.5
357.6	CARBONDALE	ANNA	BLACK SHALE	2.7	137.4
355.0	CARBONDALE	ENERGY	DARK GRAY SHALE	5.4	140.0
349.5	CARBONDALE	ENERGY	GRAY SHALE	2.5	145.5
347.0	CARBONDALE	HERRIN	COAL	5.8	148.0

MAPID: 14503054000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 13 QUARTERS/FOOTAGES: 1962' S line, 2077' E line

QUADRANGLE: PYATTS LONGITUDE: -89.26722 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.087981 DATE COLLECTED:

SURFACE ELEVATION (FT.): 458.0 LOGGED (FT.): 107.8 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO RC 70-04 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
414.6	MODESTO	PIASA	LIMESTONE	5.2	43.4
409.4	MODESTO		GRAY SHALE	3.5	48.6
405.9	CARBONDALE	DANVILLE	COAL	0.2	52.1
405.7	CARBONDALE		GRAY SHALE	9.3	52.3
396.4	CARBONDALE	BANKSTON FORK	LIMESTONE	5.7	61.6
390.7	CARBONDALE	LAWSON	GRAY SHALE	6.1	67.3
384.7	CARBONDALE	LAWSON	DARK GRAY SHALE	3.8	73.3
380.9	CARBONDALE	CONANT	LIMESTONE	11.0	77.1
369.9	CARBONDALE		LIMESTONE W/ SHALE	1.4	88.1
368.5	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	9.5	89.5
359.0	CARBONDALE	ANNA	BLACK SHALE	3.0	99.0
356.0	CARBONDALE	HERRIN	COAL	5.8	102.0

MAPID: 14500012000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 14 QUARTERS/FOOTAGES: 1320' N line, 1320' W line

QUADRANGLE: PYATTS LONGITUDE: -89.292203 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.093821 DATE COLLECTED:

SURFACE ELEVATION (FT.): 483.0 LOGGED (FT.): 101.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
421.0	CARBONDALE	BANKSTON FORK	LIMESTONE	10.0	62.0
411.0	CARBONDALE	LAWSON	SHALE	13.0	72.0
398.0	CARBONDALE	BRERETON	LIMESTONE	5.0	85.0
393.0	CARBONDALE	ANNA	BLACK SHALE	5.0	90.0
388.0	CARBONDALE	HERRIN	COAL	6.0	95.0

MAPID: 14502029000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 15 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of SW NW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.314088 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.087426 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 464.0 **LOGGED (FT.):** 1116.0 **LOG TYPE:** Electric Log
SOURCE: KINGWOOD OIL CO. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
341.0	CARBONDALE	SPRINGFIELD	COAL	-	123.0
247.0	CARBONDALE	COLCHESTER	COAL	-	217.0
-652.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1116.0

MAPID: 14502029000C **VERSION:** 2 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 15 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of SW NW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.314088 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.087426 **DATE COLLECTED:** 7 / 0 / 1941
SURFACE ELEVATION (FT.): 464.0 **LOGGED (FT.):** 1607.5 **LOG TYPE:** Drillers Log
SOURCE: KINGWOOD OIL **WELL TYPE:** Plugged and/or Abandoned
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
464.0				30.0	0.0
-				30.0	
-				7.0	
-				13.0	
-				285.0	
-				155.0	
-				0.0	

MAPID: 14502653000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 15 **QUARTERS/FOOTAGES:** 200' S line, 1059' W line of SE SW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.309205 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.083302 **DATE COLLECTED:** 7 / 10 / 1962
SURFACE ELEVATION (FT.): 460.0 **LOGGED (FT.):** 75.0 **LOG TYPE:** Drillers Log
SOURCE: OTHO KINMAN **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0				1.0	0.0
-				49.0	
-				6.0	
-				13.0	
-				6.0	

MAPID: 14502825000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 15

QUARTERS/FOOTAGES: NW NW SW SW

QUADRANGLE: PYATTS

LONGITUDE: -89.31465

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.086061

DATE COLLECTED: 3 / 7 / 1962

SURFACE ELEVATION (FT.):

LOGGED (FT.): 100.0

LOG TYPE: Drillers Log

SOURCE: GWIN DRILLING CO.

WELL TYPE: Plugged and/or Abandoned

COMMENT: INFO MAY CONTAIN INACCURACIES

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-				15.0	0.0
-				10.0	
-				15.0	
-				6.0	
-				5.0	
-				10.0	
-				4.0	
-				3.0	
-				6.0	
-				10.0	
-				5.0	

MAPID: 14503055000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 15

QUARTERS/FOOTAGES: 2195' S line, 1411' E line

QUADRANGLE: PYATTS

LONGITUDE: -89.30175

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.088717

DATE COLLECTED:

SURFACE ELEVATION (FT.): 469.0

LOGGED (FT.): 115.8

LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO RC 69-21

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
403.5	MODESTO	PIASA	LIMESTONE	3.0	65.5
400.5	CARBONDALE		GRAY SHALE	6.7	68.5
393.8	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	10.5	75.2
383.3	CARBONDALE	LAWSON	GRAY SHALE	4.7	85.7
378.6	CARBONDALE	LAWSON	DARK GRAY SHALE	2.4	90.4
376.2	CARBONDALE	LAWSON	SILTY SHALE	2.8	92.8
373.4	CARBONDALE	CONANT	LIMESTONE AND SANDSTONE	2.9	95.6
370.5	CARBONDALE	JAMESTOWN	COAL	0.5	98.5
370.0	CARBONDALE		CALCAREOUS SHALE	0.3	99.0
369.7	CARBONDALE	BRERETON	LIMESTONE	8.0	99.3
361.8	CARBONDALE	ANNA	BLACK SHALE	2.8	107.2
359.0	CARBONDALE	HERRIN	COAL	5.8	110.0

MAPID: 14502633000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 16 QUARTERS/FOOTAGES: 330' N line, 330' E line of NE SW NW
 QUADRANGLE: PYATTS LONGITUDE: -89.330372 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.093216 DATE COLLECTED: 9 / 9 / 1960
 SURFACE ELEVATION (FT.): 459.0 LOGGED (FT.): 1370.0 LOG TYPE: Drillers Log
 SOURCE: ROE HEIRS WELL TYPE: Plugged and/or Abandoned
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
459.0				105.0	0.0
-				240.0	
-				385.0	
-				30.0	
-				0.0	

MAPID: 14503056000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 16 QUARTERS/FOOTAGES: 1980' N line, 1295' W line
 QUADRANGLE: PYATTS LONGITUDE: -89.329323 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.09235 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 466.0 LOGGED (FT.): 119.2 LOG TYPE: Survey Core Study
 SOURCE: TRUAX-TRAER COAL CO RC 69-20 WELL TYPE: Coal Test
 COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
401.7	MODESTO	PIASA	LIMESTONE	7.7	64.3
394.0	CARBONDALE		GRAY SHALE	6.3	72.0
387.7	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	9.7	78.3
378.0	CARBONDALE	LAWSON	CALCAREOUS SHALE	0.2	88.0
377.8	CARBONDALE	LAWSON	MOTTLED SHALE	1.2	88.2
376.6	CARBONDALE	LAWSON	SILTY SHALE	8.5	89.4
368.1	CARBONDALE	CONANT	LIMESTONE W/ SHALE	2.4	97.9
365.7	CARBONDALE	JAMESTOWN	BONE COAL	0.4	100.3
365.3	CARBONDALE		CARBONACEOUS SHALE	5.4	100.7
360.0	CARBONDALE	BRERETON	LIMESTONE	5.4	106.0
354.6	CARBONDALE	ANNA	BLACK SHALE	1.6	111.4
353.0	CARBONDALE	HERRIN	COAL	6.2	113.0

MAPID: 14528568000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 16 QUARTERS/FOOTAGES: 641' N line, 1924' W line
 QUADRANGLE: PYATTS LONGITUDE: -89.327169 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 38.096019 DATE COLLECTED: 6 / 23 / 1982
 SURFACE ELEVATION (FT.): LOGGED (FT.): 118.0 LOG TYPE: Other Core Study
 SOURCE: CONSOLIDATION COAL R-7180 WELL TYPE: Coal Test
 COMMENT: PERMIT 68; GEOL X-SECT. B.S. 2 N-S

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	43.0	0.0	
-			SHALE	20.0	43.0	
-			LIMESTONE	4.0	63.0	
-			SHALE	9.0	67.0	
-			LIMESTONE & SHALE	2.0	76.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	78.0	
-	CARBONDALE		SHALE	11.5	85.0	
-	CARBONDALE	JAMESTOWN	COAL	1.5	96.5	
-	CARBONDALE		SHALE	4.0	98.0	
-	CARBONDALE		SHALE	2.0	102.0	WITH LIMESTONE
-	CARBONDALE	BRERETON	LIMESTONE	6.0	104.0	
-	CARBONDALE	HERRIN	COAL	6.0	110.0	
-	CARBONDALE		UNDERCLAY	2.0	116.0	

MAPID: 14503059000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 17 QUARTERS/FOOTAGES: 1407' N line, 1338' E line
 QUADRANGLE: PYATTS LONGITUDE: -89.338541 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.094031 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 441.0 LOGGED (FT.): 95.4 LOG TYPE: Survey Core Study
 SOURCE: TRUAX-TRAER COAL CO C 69-26 WELL TYPE: Coal Test
 COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
384.7	CARBONDALE		ARGILLACEOUS SANDSTONE	3.5	56.3	
381.2	CARBONDALE	BANKSTON FORK	LIMESTONE	7.9	59.8	
373.3	CARBONDALE	LAWSON	GRAY SHALE	10.3	67.7	
363.0	CARBONDALE	CONANT	CALCAREOUS SHALE	2.1	78.0	
360.9	CARBONDALE	JAMESTOWN	COAL	0.2	80.1	
360.7	CARBONDALE		LIMESTONE W/ SHALE	1.0	80.3	
359.8	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	5.4	81.2	
354.4	CARBONDALE	ANNA	BLACK SHALE	1.9	86.6	
352.5	CARBONDALE	ENERGY	GRAY SHALE	0.5	88.5	
352.0	CARBONDALE	HERRIN	COAL	6.4	89.0	

MAPID: 14528569000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 17 **QUARTERS/FOOTAGES:** 1452' N line, 839' W line
QUADRANGLE: PYATTS **LONGITUDE:** -89.3495 **GEOLOGIST:** J. MCBETH
CONFIDENTIAL: N **LATITUDE:** 38.094002 **DATE COLLECTED:** 6 / 23 / 1982
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 77.0 **LOG TYPE:** Other Core Study
SOURCE: CONSOLIDATION COAL R-7275 **WELL TYPE:** Coal Test
COMMENT: PERMIT 68; GEOL X-SCET. B.S. 2 N-S

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	68.0	0.0	
-	CARBONDALE	ANNA	SHALE	2.0	68.0	
-	CARBONDALE	HERRIN	COAL	6.0	70.0	
-	CARBONDALE		UNDERCLAY	1.0	76.0	

MAPID: 14500611000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 18 **QUARTERS/FOOTAGES:** SE NE SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.362908 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.087959 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 418.8 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: MISSISSIPPI COAL CORP. **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
352.8	CARBONDALE	HERRIN	COAL	-	66.0	

MAPID: 14500612000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 18 **QUARTERS/FOOTAGES:** NE SE SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.362905 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.086093 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.1 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: MISSISSIPPI COAL CORP. **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
357.1	CARBONDALE	HERRIN	COAL	-	64.0	

MAPID: 14502026000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 18 QUARTERS/FOOTAGES: 220' S line, 990' E line of NW

QUADRANGLE: PYATTS LONGITUDE: -89.365203 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.09139 DATE COLLECTED:

SURFACE ELEVATION (FT.): 433.0 LOGGED (FT.): 1033.0 LOG TYPE: Electric Log

SOURCE: PRODUCERS PIPELINE WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
336.0	CARBONDALE	SPRINGFIELD	COAL	-	97.0	
251.0	CARBONDALE	COLCHESTER	COAL	-	182.0	
-600.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1033.0	

MAPID: 14523706000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 18 QUARTERS/FOOTAGES: 330' N line, 990' E line of NW NW SE

QUADRANGLE: PYATTS LONGITUDE: -89.362856 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.089844 DATE COLLECTED: 6 / 24 / 1980

SURFACE ELEVATION (FT.): 411.5 LOGGED (FT.): 2875.0 LOG TYPE: Drillers Log

SOURCE: ELMER OELZE, JR WELL TYPE: Plugged and/or Abandoned

COMMENT: NO CORES TAKEN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.5				0.0	0.0	

MAPID: 14523167000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 19 QUARTERS/FOOTAGES: 1320' S line, 1320' E line

QUADRANGLE: TODDS MILL LONGITUDE: -89.356956 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.072246 DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 108.9 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO RC 69-19 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
399.8	MODESTO	PIASA	LIMESTONE	8.0	53.2	
391.8	CARBONDALE		GRAY SHALE	9.2	61.2	
382.6	CARBONDALE	BANKSTON FORK	LIMESTONE	7.2	70.4	
375.5	CARBONDALE	LAWSON	MOTTLED SHALE	2.8	77.5	
372.7	CARBONDALE	LAWSON	SILTY SHALE	5.0	80.3	
367.7	CARBONDALE	LAWSON	BONE COAL	0.1	85.3	
367.6	CARBONDALE	LAWSON	SILTY SHALE	1.6	85.4	
366.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	2.7	87.0	
363.3	CARBONDALE	JAMESTOWN	COAL	0.3	89.7	
363.0	CARBONDALE		CALCAREOUS SHALE	6.7	90.0	
356.3	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	6.3	96.7	
350.0	CARBONDALE	HERRIN	COAL	5.9	103.0	

MAPID: 14523255000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 19 QUARTERS/FOOTAGES: 330' S line, 380' E line of NE

QUADRANGLE: PYATTS LONGITUDE: -89.353636 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.076822 DATE COLLECTED:

SURFACE ELEVATION (FT.): 408.0 LOGGED (FT.): 2842.0 LOG TYPE: Electric Log

SOURCE: TOTAL LEONARD, INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
231.0	CARBONDALE	COLCHESTER	COAL	-	177.0	
-653.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1061.0	
-2406.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2814.0	TOP OF NEW ALBANY
-2408.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2816.0	
-2434.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2842.0	BASE OF NEW ALBANY

MAPID: 14502543000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 20 QUARTERS/FOOTAGES: 186' N line, 139' W line of NW NW NE
 QUADRANGLE: PYATTS LONGITUDE: -89.342521 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.082635 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: OTHO KINMAN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
430.0				1.0	0.0	
-				43.0		
-				9.0		
-				2.0		
-				5.0		

MAPID: 14502752000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 20 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW NW
 QUADRANGLE: PYATTS LONGITUDE: -89.349935 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.081375 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 428.0 LOGGED (FT.): 205.0 LOG TYPE: Electric Log
 SOURCE: MAGNOLIA PETROLEUM WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
303.0	CARBONDALE	SPRINGFIELD	COAL	-	125.0	
223.0	CARBONDALE	COLCHESTER	COAL	-	205.0	

MAPID: 14523525000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 20 QUARTERS/FOOTAGES: 122' N line, 135' W line of NW NW SW
 QUADRANGLE: PYATTS LONGITUDE: -89.351847 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.075563 DATE COLLECTED: 5 / 29 / 1979
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 30.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0			UNCONSOLIDATED	1.0	0.0	
419.0			CLAYSTONE	19.0	1.0	
400.0			CLAYSTONE	1.0	20.0	
399.0			CLAYSTONE	9.0	21.0	

MAPID: 14500613000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 21 **QUARTERS/FOOTAGES:** NW NW SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.323431 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.074728 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: MISSISSIPPI COAL CORP. **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
360.0	CARBONDALE	HERRIN	COAL	-	80.0	

MAPID: 14502139000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 21 **QUARTERS/FOOTAGES:** 330' N line, 330' E line of NE NE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.325631 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.082047 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.0 **LOGGED (FT.):** 1144.0 **LOG TYPE:** Electric Log
SOURCE: BRAINS & WHEELOCK **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
330.0	CARBONDALE	SPRINGFIELD	COAL	-	125.0	
245.0	CARBONDALE	COLCHESTER	COAL	-	210.0	
-689.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1144.0	

MAPID: 14502139000C **VERSION:** 2 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 21 **QUARTERS/FOOTAGES:** 330' N line, 330' E line of NE NE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.325631 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.082047 **DATE COLLECTED:** 5 / 0 / 1955
SURFACE ELEVATION (FT.): 455.0 **LOGGED (FT.):** 1587.0 **LOG TYPE:** Electric Log
SOURCE: ROBIN BRIANS & R. L. WHEELOCK **WELL TYPE:** Plugged and/or Abandoned
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
455.0			UNCONSOLIDATED	588.0	0.0	
-133.0			UNCLASSIFIED	0.0	588.0	

MAPID: 14502141000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 21 QUARTERS/FOOTAGES: 330' N line, 330' E line of NE NW SE

QUADRANGLE: PYATTS LONGITUDE: -89.321105 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.074691 DATE COLLECTED: 8 / 0 / 1955

SURFACE ELEVATION (FT.): 449.0 LOGGED (FT.): 1426.0 LOG TYPE: Electric Log

SOURCE: ROBIN H. BRIANS WELL TYPE: Dry Hole

COMMENT: AUX VASES SAND TO 1394

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.0			UNKNOWN	0.0	0.0

MAPID: 14502537000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 21 QUARTERS/FOOTAGES: 242' N line, 183' E line of NE NE NE

QUADRANGLE: PYATTS LONGITUDE: -89.315844 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.082164 DATE COLLECTED: 5 / 27 / 1959

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log

SOURCE: OTHO KINMAN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
465.0			UNCONSOLIDATED	1.0	0.0
464.0			CLAYSTONE	30.0	1.0
434.0			CLAYSTONE	5.0	31.0
429.0			CLAYSTONE	16.0	36.0
413.0			CLAYSTONE	1.0	52.0
412.0			CLAYSTONE	9.0	53.0
403.0			SIDERITE	2.0	62.0
401.0			LIMESTONE	1.0	64.0

MAPID: 14502544000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 21 QUARTERS/FOOTAGES: 1933' N line, 573' E line of SW NE NE
 QUADRANGLE: PYATTS LONGITUDE: -89.319622 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.075719 DATE COLLECTED: 8 / 0 / 1959
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log
 SOURCE: OTHO KINMAN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			UNCONSOLIDATED	1.0	0.0	
449.0			CLAYSTONE	19.0	1.0	
430.0			CONCRETION	6.0	20.0	
424.0			CLAYSTONE	17.0	26.0	
407.0			CLAYSTONE	11.0	43.0	
396.0			LIMESTONE	4.0	54.0	
392.0			SHALE	7.0	58.0	

MAPID: 14528570000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 21 QUARTERS/FOOTAGES: 3306' S line, 660' E line
 QUADRANGLE: PYATTS LONGITUDE: -89.317582 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 38.077369 DATE COLLECTED: 6 / 23 / 1982
 SURFACE ELEVATION (FT.): LOGGED (FT.): 97.0 LOG TYPE: Other Core Study
 SOURCE: CONSOLIDATION COAL RC-9537 WELL TYPE: Coal Test
 COMMENT: PERMIT 68; GEOL X-SECT. B.S. 2 E-W

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	46.0	0.0	
-	CARBONDALE		SHALE	12.0	46.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	58.0	
-	CARBONDALE		SHALE	15.0	64.0	WITH LIMESTONE
-	CARBONDALE	BRERETON	LIMESTONE	9.0	79.0	
-	CARBONDALE	HERRIN	COAL	7.0	88.0	
-	CARBONDALE		UNDERCLAY	2.0	95.0	

MAPID: 14528571000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 21 QUARTERS/FOOTAGES: 2615' S line, 2574' W line

QUADRANGLE: PYATTS LONGITUDE: -89.324858 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.075594 DATE COLLECTED: 6 / 23 / 1982

SURFACE ELEVATION (FT.): LOGGED (FT.): 97.0 LOG TYPE: Other Core Study

SOURCE: CONSOLIDATION COAL 1135 WELL TYPE: Coal Test

COMMENT: PERMIT 68; GEOL X-SECT. B.S. 2 N-S

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	67.5	0.0	
-	CARBONDALE		SHALE	16.0	67.5	
-	CARBONDALE	BRERETON	LIMESTONE	6.5	83.5	
-	CARBONDALE	ANNA	SHALE	1.0	90.0	
-	CARBONDALE	HERRIN	COAL	5.5	91.0	
-	CARBONDALE		UNDERCLAY	0.5	96.5	

MAPID: 14590030000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 21 QUARTERS/FOOTAGES: SW SE SE

QUADRANGLE: PYATTS LONGITUDE: -89.319228 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.069921 DATE COLLECTED: 2 / 14 / 1977

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 99.2 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION C.C. RC-9531 WELL TYPE: Coal Test

COMMENT: PERMIT 67; BURNING STAR #2

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0	PLEISTOCENE		UNCONSOLIDATED	5.0	0.0	
445.0	PLEISTOCENE		CLAY	24.8	5.0	
420.2	PLEISTOCENE		UNCONSOLIDATED	17.1	29.8	
403.1	CARBONDALE		SHALE	9.9	46.9	
393.2	CARBONDALE	BANKSTON FORK	LIMESTONE	7.2	56.8	
386.0	CARBONDALE		SHALE	3.7	64.0	
382.3	CARBONDALE		DARK SHALE & LIMESTONE	17.5	67.7	
364.8	CARBONDALE	BRERETON	LIMESTONE	6.5	85.2	START CORE: DARK
358.3	CARBONDALE	ANNA	DARK GRAY SHALE	0.5	91.7	
357.8	CARBONDALE	HERRIN	COAL	6.0	92.2	
351.8	CARBONDALE		UNDERCLAY	1.0	98.2	

MAPID: 14500013000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 22

QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: PYATTS

LONGITUDE: -89.309607

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.072677

DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0

LOGGED (FT.): 44.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	8.0	0.0
432.0			SANDSTONE/SHALE	13.0	8.0
419.0			UNCLASSIFIED	8.0	21.0
411.0			SANDSTONE/SHALE	3.0	29.0
408.0			SHALE	12.0	32.0
396.0			LIMESTONE	0.0	44.0

MAPID: 14500015000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 24

QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: PYATTS

LONGITUDE: -89.268312

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.068951

DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.1

LOGGED (FT.): 52.2

LOG TYPE: Drillers Log

SOURCE: MISSISSIPPI COAL CORP.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.1			UNCONSOLIDATED	14.0	0.0
426.1	CARBONDALE		SANDSTONE/SHALE	6.0	14.0
420.1	CARBONDALE		SAND	8.0	20.0
412.1	CARBONDALE		UNCLASSIFIED	4.0	28.0
408.1	CARBONDALE	BRERETON	LIMESTONE	12.0	32.0
393.1	CARBONDALE		SHALE	15.0	47.0
387.9	CARBONDALE	HERRIN	COAL	5.2	52.2

MAPID: 14500015000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 24

QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: PYATTS

LONGITUDE: -89.268312

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.068951

DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.1

LOGGED (FT.): 52.0

LOG TYPE:

SOURCE: MISSISSIPPI COAL CORP. 1467

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
393.1	CARBONDALE	HERRIN	COAL	5.3	47.0

MAPID: 14500016000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.26817 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.076206 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 460.0 **LOGGED (FT.):** 50.0 **LOG TYPE:** Drillers Log
SOURCE: MISSISSIPPI COAL CORP. **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.0			UNCONSOLIDATED	8.0	0.0	
452.0			SAND	3.0	8.0	
449.0			UNCLASSIFIED	39.0	11.0	

MAPID: 14503060000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 24 **QUARTERS/FOOTAGES:** 2620' S line, 415' E line
QUADRANGLE: PYATTS **LONGITUDE:** -89.261642 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.075353 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 462.0 **LOGGED (FT.):** 85.3 **LOG TYPE:** Survey Core Study
SOURCE: TRUAX-TRAER COAL CO RC 69-87 **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
392.9	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	10.5	69.1	
382.4	CARBONDALE	ANNA	DARK GRAY SHALE	0.4	79.6	
382.0	CARBONDALE	HERRIN	COAL	5.3	80.0	

MAPID: 14524438000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 24 **QUARTERS/FOOTAGES:** 330' S line, 330' E line of NW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.275104 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.072501 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 469.0 **LOGGED (FT.):** 1130.0 **LOG TYPE:** Electric Log
SOURCE: MONJEB MINERALS, INC. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-661.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1130.0	

MAPID: 14528348000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 24 QUARTERS/FOOTAGES: 605' N line, 562' W line of NW

QUADRANGLE: PYATTS LONGITUDE: -89.276405 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.080786 DATE COLLECTED: 8 / 8 / 1980

SURFACE ELEVATION (FT.): 461.1 LOGGED (FT.): 89.3 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
461.1			UNCONSOLIDATED	5.0	0.0
456.1			CLAYSTONE	24.5	5.0
431.7			UNCLASSIFIED	24.8	29.4
406.9	CARBONDALE		LIMESTONE	1.3	54.2
405.6	CARBONDALE		SHALE	4.4	55.5
401.1	CARBONDALE		LIMESTONE	0.5	60.0
400.6	CARBONDALE		SHALE	3.4	60.5
397.2	CARBONDALE	CONANT	LIMESTONE	2.3	63.9
394.9	CARBONDALE		SHALE	0.3	66.2
394.6	CARBONDALE	BRERETON	LIMESTONE	12.1	66.5
382.5	CARBONDALE	ANNA	SHALE	0.4	78.6
382.1	CARBONDALE	ANNA	SHALE	2.0	79.0
380.1	CARBONDALE	HERRIN	COAL	5.2	81.0
374.9	CARBONDALE		CLAYSTONE	3.1	86.2

MAPID: 14500017000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 25 QUARTERS/FOOTAGES: 2640' N line, 1320' W line

QUADRANGLE: PYATTS LONGITUDE: -89.274177 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.060686 DATE COLLECTED:

SURFACE ELEVATION (FT.): 432.0 LOGGED (FT.): 28.3 LOG TYPE: Drillers Log

SOURCE: G W TRAIR 7 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
423.8	CARBONDALE	BRERETON	LIMESTONE	12.4	8.2
411.4	CARBONDALE	ANNA	BLACK SHALE	2.4	20.6
409.0	CARBONDALE	HERRIN	COAL	5.3	23.0

MAPID: 14500019000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 25

QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: PYATTS

LONGITUDE: -89.277797

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.054333

DATE COLLECTED:

SURFACE ELEVATION (FT.): 434.6

LOGGED (FT.): 48.0

LOG TYPE: Drillers Log

SOURCE: MISSISSIPPI COAL CORP.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.6			UNCONSOLIDATED	9.0	0.0
425.6	CARBONDALE		SANDSTONE/SHALE	12.0	9.0
413.6	CARBONDALE		SHALE	11.0	21.0
402.6	CARBONDALE	BRERETON	LIMESTONE	2.5	32.0
400.1	CARBONDALE	ANNA	SHALE	7.5	34.5
392.6	CARBONDALE	HERRIN	COAL	6.0	42.0

MAPID: 14500019000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 25

QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: PYATTS

LONGITUDE: -89.277797

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.054333

DATE COLLECTED:

SURFACE ELEVATION (FT.): 434.7

LOGGED (FT.): 48.0

LOG TYPE:

SOURCE: MISSISSIPPI COAL CORP. 2833

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
392.7	CARBONDALE	HERRIN	COAL	6.0	42.0

MAPID: 14500020000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 25

QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: PYATTS

LONGITUDE: -89.268625

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.054494

DATE COLLECTED:

SURFACE ELEVATION (FT.): 455.6

LOGGED (FT.): 55.4

LOG TYPE: Drillers Log

SOURCE: MISSISSIPPI COAL CORP.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.6			UNCONSOLIDATED	10.0	0.0
445.6	CARBONDALE		SANDSTONE/SHALE	21.0	10.0
424.6	CARBONDALE		SHALE	5.0	31.0
419.6	CARBONDALE	BRERETON	LIMESTONE	6.5	36.0
413.1	CARBONDALE		SHALE	4.5	42.5
408.6	CARBONDALE		UNCLASSIFIED	3.0	47.0
405.6	CARBONDALE	HERRIN	COAL	5.4	50.0

MAPID: 14500020000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SW SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.268625 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.054494 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.7 **LOGGED (FT.):** 55.0 **LOG TYPE:**
SOURCE: MISSISSIPPI COAL CORP. 2837 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.7	CARBONDALE	HERRIN	COAL	5.4	46.0	

MAPID: 14500021000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.273212 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.054415 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.2 **LOGGED (FT.):** 26.5 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELEC COAL **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
455.2			UNCONSOLIDATED	6.0	0.0	
449.2	CARBONDALE		LIMESTONE	12.5	6.0	
436.7	CARBONDALE		LIMESTONE	1.0	18.5	
435.7	CARBONDALE	HERRIN	COAL	7.0	19.5	

MAPID: 14502017000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.273128 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.058034 **DATE COLLECTED:** 0 / 0 / 1939
SURFACE ELEVATION (FT.): 430.0 **LOGGED (FT.):** 1610.0 **LOG TYPE:**
SOURCE: ADKINS E S **WELL TYPE:** Oil and Gas Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
405.0	CARBONDALE	HERRIN	COAL	6.5	25.0	

MAPID: 14502017000C **VERSION:** 2 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.273128 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.058034 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.0 **LOGGED (FT.):** 1100.0 **LOG TYPE:** Electric Log
SOURCE: ADKINS, E. S. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
236.0	CARBONDALE	COLCHESTER	COAL	-	194.0
-670.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1100.0

MAPID: 14528296000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 25 **QUARTERS/FOOTAGES:** 816' N line, 1057' E line of NE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.273215 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.065734 **DATE COLLECTED:** 8 / 27 / 1980
SURFACE ELEVATION (FT.): 458.2 **LOGGED (FT.):** 70.5 **LOG TYPE:**
SOURCE: CONSOLIDATION COAL N-510,634 E-757,255 **WELL TYPE:** Observation Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
458.2			UNCONSOLIDATED	1.0	0.0
457.2			CLAYSTONE	69.5	1.0

MAPID: 14500023000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 26 **QUARTERS/FOOTAGES:** 100' S line, 1400' W line
QUADRANGLE: PYATTS **LONGITUDE:** -89.292502 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.053479 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 418.0 **LOGGED (FT.):** 26.9 **LOG TYPE:** Drillers Log
SOURCE: G W TRAIR 4 **WELL TYPE:** Coal Test
COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
402.7	CARBONDALE	BRERETON	LIMESTONE	5.0	15.3
397.7	CARBONDALE	ANNA	BLACK SHALE	0.7	20.3
397.0	CARBONDALE	HERRIN	COAL	5.9	21.0

MAPID: 14500031000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 26 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.296222 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.054066 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 414.2 **LOGGED (FT.):** 22.5 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELEC. COAL **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.2			UNCONSOLIDATED	15.0	0.0	
399.2			CONCRETION	2.0	15.0	
397.2	CARBONDALE	HERRIN	COAL	5.5	17.0	

MAPID: 14500031000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 26 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.296222 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.054066 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 414.2 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: MISSISSIPPI COAL CORP. 1261 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
397.2	CARBONDALE	HERRIN	COAL	5.5	17.0	

MAPID: 14501502000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 26 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.291573 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.055965 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: SHAKERAGCC **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
387.0	CARBONDALE	HERRIN	COAL	5.7	38.0	

MAPID: 14524420000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 26 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE
 QUADRANGLE: PYATTS LONGITUDE: -89.287008 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.054198 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 459.0 LOGGED (FT.): 2991.0 LOG TYPE: Electric Log
 SOURCE: GALLAGHER, VICTOR R. WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-702.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1161.0	
-2495.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2954.0	TOP OF NEW ALBANY
-2508.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2967.0	
-2532.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2991.0	BASE OF NEW ALBANY

MAPID: 14500032000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 27 QUARTERS/FOOTAGES: 100' S line, 1300' E line
 QUADRANGLE: PYATTS LONGITUDE: -89.301928 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.05346 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 415.0 LOGGED (FT.): 11.5 LOG TYPE: Drillers Log
 SOURCE: G W TRAIR 2 WELL TYPE: Coal Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.0	CARBONDALE	ANNA	BLACK SHALE	1.5	0.0	
408.5	CARBONDALE	HERRIN	COAL	5.0	6.5	

MAPID: 14500038000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 27 QUARTERS/FOOTAGES: SW SE SW
 QUADRANGLE: PYATTS LONGITUDE: -89.310047 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.054206 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 455.4 LOGGED (FT.): 50.7 LOG TYPE: Drillers Log
 SOURCE: UNITED ELEC. COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
455.4			UNCONSOLIDATED	41.0	0.0	
414.4	CARBONDALE		SHALE	5.0	41.0	
409.4	CARBONDALE	HERRIN	COAL	4.7	46.0	

MAPID: 14500038000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.310047 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.054206 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 435.5 **LOGGED (FT.):** 51.0 **LOG TYPE:**
SOURCE: MISSISSIPPI COAL CORP. 1258 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
389.5	CARBONDALE	HERRIN	COAL	4.8	46.0	

MAPID: 14500039000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** SW NE NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.300558 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.065158 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELEC. COAL **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
390.0			UNCLASSIFIED	10.0	50.0	

MAPID: 14500039000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** SW NE NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.300558 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.065158 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 60.0 **LOG TYPE:**
SOURCE: MISSISSIPPI COAL CORP. 1410 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501927000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 27 **QUARTERS/FOOTAGES:** SW SW SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.305439 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.054148 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 435.0 **LOGGED (FT.):** 64.0 **LOG TYPE:**
SOURCE: TRUAX-TRAER 0S54 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14502816000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 27 QUARTERS/FOOTAGES: 330' S line, 330' W line of SW SW
 QUADRANGLE: PYATTS LONGITUDE: -89.314652 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.054243 DATE COLLECTED: 12 / 28 / 1965
 SURFACE ELEVATION (FT.): 431.0 LOGGED (FT.): 1400.0 LOG TYPE: Drillers Log
 SOURCE: NAUMER-HENDERSON WELL TYPE: Dry Hole
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-474.0			UNCLASSIFIED	0.0	905.0	

MAPID: 14528572000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 27 QUARTERS/FOOTAGES: 660' N line, 330' E line
 QUADRANGLE: PYATTS LONGITUDE: -89.298237 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 38.066062 DATE COLLECTED: 6 / 23 / 1982
 SURFACE ELEVATION (FT.): LOGGED (FT.): 79.0 LOG TYPE: Other Core Study
 SOURCE: CONSOLIDATION COAL R-9100 WELL TYPE: Coal Test
 COMMENT: PERMIT 68; GEOL X-SECT. B.S. 2 E-W

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	55.0	0.0	
-	CARBONDALE		SHALE	13.0	55.0	
-	CARBONDALE	HERRIN	COAL	7.0	68.0	
-	CARBONDALE		UNDERCLAY	4.0	75.0	

MAPID: 14502547000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 28 QUARTERS/FOOTAGES: 330' S line, 990' W line of SE SW
 QUADRANGLE: PYATTS LONGITUDE: -89.326243 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.054458 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 1092.0 LOG TYPE: Electric Log
 SOURCE: BIBY, DALE WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-662.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1092.0	

MAPID: 14502547000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 28 QUARTERS/FOOTAGES: 330' S line, 990' W line of SE SW
 QUADRANGLE: PYATTS LONGITUDE: -89.326243 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.054458 DATE COLLECTED: 7 / 0 / 1959
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 1358.0 LOG TYPE: Drillers Log
 SOURCE: DALE BIBY WELL TYPE: Plugged and/or Abandoned
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-365.0			UNCLASSIFIED	0.0	795.0	

MAPID: 14523242000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 28 QUARTERS/FOOTAGES: 96' N line, 84' E line of NE NW NW
 QUADRANGLE: PYATTS LONGITUDE: -89.329618 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.068197 DATE COLLECTED: 5 / 29 / 1975
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 32.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0			UNCONSOLIDATED	1.0	0.0	
439.0			CLAYSTONE	9.0	1.0	
430.0			CLAYSTONE	12.0	10.0	
418.0			CLAYSTONE	10.0	22.0	

MAPID: 14528357000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 28 QUARTERS/FOOTAGES: 70' N line, 1308' W line of NW

QUADRANGLE: PYATTS LONGITUDE: -89.329391 GEOLOGIST: L. SMITH

CONFIDENTIAL: N LATITUDE: 38.068266 DATE COLLECTED: 6 / 3 / 1982

SURFACE ELEVATION (FT.): 436.7 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO WELL TYPE: Coal Test

COMMENT: N 511,413, E 741,063

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.7			CLAYSTONE	24.3	0.0
412.4			CLAYSTONE	16.9	24.3
395.5			SHALE	16.9	41.2
378.6	CARBONDALE	GALUM	LIMESTONE	2.8	58.1
375.8	CARBONDALE		SHALE	9.2	60.9
366.6	CARBONDALE	BANKSTON FORK	LIMESTONE	7.5	70.1
359.1	CARBONDALE		SHALE	15.8	77.6
343.3	CARBONDALE		CALCAREOUS SHALE	6.0	93.4
337.3	CARBONDALE		SHALE	5.1	99.4
332.2	CARBONDALE	HERRIN	COAL	2.6	104.5
329.6	CARBONDALE	HERRIN	CLAYSTONE	0.8	107.1
328.8	CARBONDALE	HERRIN	SHALE	1.0	107.9
327.8	CARBONDALE	HERRIN	COAL	5.2	108.9
322.6	CARBONDALE		CLAYSTONE	2.1	114.1
320.5	CARBONDALE		SHALE	1.8	116.2

MAPID: 14528358000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 28 QUARTERS/FOOTAGES: 92' N line, 1870' E line of NE

QUADRANGLE: PYATTS LONGITUDE: -89.321953 GEOLOGIST: L. SMITH

CONFIDENTIAL: N LATITUDE: 38.068067 DATE COLLECTED: 6 / 2 / 1982

SURFACE ELEVATION (FT.): 443.3 LOGGED (FT.): 105.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO WELL TYPE: Coal Test

COMMENT: N-511,294, E-743,205

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.3			CLAYSTONE	27.6	0.0
415.7			CLAYSTONE	29.8	27.6
385.9	CARBONDALE		SHALE	5.8	57.4
380.1	CARBONDALE	BANKSTON FORK	LIMESTONE	6.9	63.2
373.2	CARBONDALE		SHALE	23.6	70.1
349.6	CARBONDALE	HERRIN	COAL	6.4	93.7
343.2	CARBONDALE		CLAYSTONE	2.2	100.1
341.0	CARBONDALE		SHALE	2.7	102.3

MAPID: 14528573000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 28 QUARTERS/FOOTAGES: 3207' N line, 1382' W line

QUADRANGLE: PYATTS LONGITUDE: -89.32937 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.059603 DATE COLLECTED: 6 / 23 / 1982

SURFACE ELEVATION (FT.): LOGGED (FT.): 92.0 LOG TYPE: Other Core Study

SOURCE: CONSOLIDATION COAL 1189 WELL TYPE: Coal Test

COMMENT: PERMIT 68; GEOL X-SECT. B.S. 2 N-S

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	43.0	0.0
-			SHALE	4.0	43.0
-			LIMESTONE	3.0	47.0
-			SHALE	15.0	50.0
-	CARBONDALE		LIMESTONE	1.0	65.0
-	CARBONDALE		SHALE	2.5	66.0
-	CARBONDALE		LIMESTONE	3.0	68.5
-	CARBONDALE		SHALE	2.5	71.5
-	CARBONDALE	BRERETON	LIMESTONE	10.0	74.0
-	CARBONDALE	ANNA	SHALE	2.0	84.0
-	CARBONDALE	HERRIN	COAL	5.0	86.0
-	CARBONDALE		UNDERCLAY	1.0	91.0

MAPID: 14590024000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 28

QUARTERS/FOOTAGES: NE NE NW

QUADRANGLE: PYATTS

LONGITUDE: -89.329408

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.068357

DATE COLLECTED: 6 / 3 / 1982

SURFACE ELEVATION (FT.): 436.7

LOGGED (FT.): 118.0

LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO R9860

WELL TYPE: Coal Test

COMMENT: PERMIT 67; BURNING STAR #2

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
436.7	PLEISTOCENE		CLAY	24.3	0.0	BROWN
412.4	PLEISTOCENE		CLAY	16.9	24.3	GRAY
395.5			GRAY SHALE	16.9	41.2	
378.6	CARBONDALE	GALUM	LIMESTONE	2.8	58.1	BROWN
375.8	CARBONDALE		GRAY SHALE	9.2	60.9	
366.6	CARBONDALE	BANKSTON FORK	LIMESTONE	7.5	70.1	DARK
359.1	CARBONDALE		DARK SHALE	15.8	77.6	
343.3	CARBONDALE	BRERETON	DARK SHALE & LIMESTONE	6.0	93.4	
337.3	CARBONDALE	ANNA	DARK SHALE	5.1	99.4	
332.2	CARBONDALE	HERRIN	COAL	2.6	104.5	
329.6	CARBONDALE	HERRIN	CLAYSTONE & SILTSTONE	0.8	107.1	
328.8	CARBONDALE	HERRIN	BLACK SHALE	1.0	107.9	
327.8	CARBONDALE	HERRIN	COAL	5.2	108.9	
322.6	CARBONDALE		UNDERCLAY	2.1	114.1	
320.5	CARBONDALE		CALCAREOUS SHALE	1.8	116.2	

MAPID: 14590029000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 28

QUARTERS/FOOTAGES: NE NW NE

QUADRANGLE: PYATTS

LONGITUDE: -89.321971

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.067979

DATE COLLECTED: 6 / 2 / 1982

SURFACE ELEVATION (FT.): 443.3

LOGGED (FT.): 105.0

LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO R9859

WELL TYPE: Coal Test

COMMENT: PERMIT 67; BURNING STAR #2

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
443.3	PLEISTOCENE		CLAY	27.6	0.0	BROWN
415.7	PLEISTOCENE		CLAY	29.8	27.6	GRAY
385.9	CARBONDALE		GRAY SHALE	5.8	57.4	
380.1	CARBONDALE	BANKSTON FORK	LIMESTONE	6.9	63.2	
373.2	CARBONDALE		DARK SHALE & LIMESTONE	23.6	70.1	
349.6	CARBONDALE	HERRIN	COAL	6.4	93.7	
343.2	CARBONDALE		UNDERCLAY	2.2	100.1	
341.0	CARBONDALE		GRAY SHALE	2.7	102.3	

MAPID: 14500041000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 29 **QUARTERS/FOOTAGES:** 1320' S line, 1320' W line
QUADRANGLE: PYATTS **LONGITUDE:** -89.347964 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.057478 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.0 **LOGGED (FT.):** 1660.0 **LOG TYPE:** Drillers Log
SOURCE: MID VALLEY OIL **WELL TYPE:** Dry Hole
COMMENT: NOT SUITABLE FOR RESOURCE CALCULATIONS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
421.0			UNCONSOLIDATED	20.0	0.0
401.0			SHALE	65.0	20.0
336.0			CONCRETION	10.0	85.0
326.0			SHALE	5.0	95.0
321.0			UNCLASSIFIED	5.0	100.0
316.0			SHALE	235.0	105.0
81.0			SAND	20.0	340.0
61.0			SANDSTONE/SHALE	55.0	360.0
6.0			SAND	55.0	415.0

MAPID: 14500041000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 29 **QUARTERS/FOOTAGES:** 1320' S line, 1320' W line
QUADRANGLE: PYATTS **LONGITUDE:** -89.347964 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.057478 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: NOT SUITABLE FOR RESOURCE CALCULATIONS

MAPID: 14503074000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 29 **QUARTERS/FOOTAGES:** 199' N line, 187' E line of NE SW NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.348508 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.064328 **DATE COLLECTED:** 2 / 17 / 1972
SURFACE ELEVATION (FT.): 430.0 **LOGGED (FT.):** 46.0 **LOG TYPE:** Drillers Log
SOURCE: CLARENCE KOHNEN **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0			CLAYSTONE & SANDSTONE	10.0	30.0
390.0			CLAYSTONE	6.0	40.0

MAPID: 14502753000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 30 **QUARTERS/FOOTAGES:** 500' S line, 700' W line
QUADRANGLE: PYATTS **LONGITUDE:** -89.369136 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.055511 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	BRERETON	LIMESTONE	12.0	
-	CARBONDALE	ANNA	BLACK SHALE	2.6	
-	CARBONDALE	HERRIN	COAL	5.9	

MAPID: 14500043000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** SE SE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.326376 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.047167 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 428.3 **LOGGED (FT.):** 1364.0 **LOG TYPE:** Drillers Log
SOURCE: MIDVALLEY OIL CO. **WELL TYPE:** Plugged and/or Abandoned
COMMENT: UNIT 5 DEPTH & THICKNESS CORRECTED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.3			UNCONSOLIDATED	20.0	0.0
408.3			CONCRETION	10.0	20.0
398.3			SANDSTONE	10.0	30.0
388.3			SHALE	10.0	40.0
378.3			LIMESTONE	5.0	50.0
373.3			SHALE	65.0	55.0
308.3			COAL	2.0	120.0
306.3			SHALE	43.0	122.0
263.3			UNCLASSIFIED	5.0	165.0

MAPID: 14500043000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** SE SE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.326376 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047167 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 428.4 **LOGGED (FT.):** 1364.0 **LOG TYPE:**
SOURCE: MIDVALL OC0001 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	

MAPID: 14500641000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.317172 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.045237 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 414.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: PANTH CKCC **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
369.0	CARBONDALE	HERRIN	COAL	5.7	45.0	

MAPID: 14501929000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.324065 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047136 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 428.9 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: MIDVALL OC0003 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501946000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** SW SE NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.319443 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.047073 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 51.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL CO. **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNCONSOLIDATED	13.0	0.0	
-			SHALE	12.0	13.0	
-			UNCLASSIFIED	5.0	25.0	
-			SHALE	2.5	30.0	
-			LIMESTONE	9.5	32.5	
-			SHALE	1.5	42.0	
-			UNCLASSIFIED	1.0	43.5	
-			COAL	1.0	44.5	

MAPID: 14501946000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 33 QUARTERS/FOOTAGES: SW SE NE

QUADRANGLE: PYATTS LONGITUDE: -89.319443 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.047073 DATE COLLECTED:

SURFACE ELEVATION (FT.): 417.3 LOGGED (FT.): 0.0 LOG TYPE:

SOURCE: UN ELEC CC2615 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
376.3	CARBONDALE	HERRIN	COAL	5.4	41.0	

MAPID: 14502018000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 33 QUARTERS/FOOTAGES: SE NE NW

QUADRANGLE: PYATTS LONGITUDE: -89.326304 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.050811 DATE COLLECTED:

SURFACE ELEVATION (FT.): 427.4 LOGGED (FT.): 1361.0 LOG TYPE: Drillers Log

SOURCE: DUQUOIN OIL CO. WELL TYPE:

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
427.4				40.0	0.0	
-				84.0		
-				2.0		
-				14.0		
-				10.0		
-				5.0		
-				0.0		

MAPID: 14502027000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 33

QUARTERS/FOOTAGES: SE SE NW

QUADRANGLE: PYATTS

LONGITUDE: -89.326376

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.047167

DATE COLLECTED:

SURFACE ELEVATION (FT.): 428.7

LOGGED (FT.): 1580.0

LOG TYPE: Drillers Log

SOURCE: MIDVALLEY OIL CO

WELL TYPE: Plugged and/or Abandoned

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.7			UNCONSOLIDATED	10.0	0.0
418.7			CONCRETION	80.0	10.0
338.7	CARBONDALE		SHALE	22.0	90.0
316.7	CARBONDALE	HERRIN	COAL	4.0	112.0
312.7	CARBONDALE		SHALE	34.0	116.0
278.7	CARBONDALE		SAND	15.0	150.0
263.7	CARBONDALE		SHALE	40.0	165.0
223.7	CARBONDALE		UNCLASSIFIED	10.0	205.0

MAPID: 14502145000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 33

QUARTERS/FOOTAGES: 330' S line, 330' W line of NE NE

QUADRANGLE: PYATTS

LONGITUDE: -89.319368

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.050701

DATE COLLECTED: 11 / 9 / 1955

SURFACE ELEVATION (FT.): 413.0

LOGGED (FT.): 1585.0

LOG TYPE: Drillers Log

SOURCE: TRUAX-NAUMER

WELL TYPE: Dry Hole

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
413.0			UNCONSOLIDATED	133.0	0.0
280.0			SHALE & SANDSTONE	307.0	133.0
-27.0			SAND	58.0	440.0
-85.0			SHALE	82.0	498.0
-167.0			SHALE	92.0	580.0

MAPID: 14502472000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 33

QUARTERS/FOOTAGES: 330' S line, 330' E line of SE NE NW

QUADRANGLE: PYATTS

LONGITUDE: -89.326297

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N

LATITUDE: 38.050811

DATE COLLECTED:

SURFACE ELEVATION (FT.): 428.0

LOGGED (FT.): 1086.0

LOG TYPE: Electric Log

SOURCE: EASTERN PETROLEUM CO.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-658.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1086.0

MAPID: 14502472000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 33 QUARTERS/FOOTAGES: 330' S line, 330' E line of SE NE NW
 QUADRANGLE: PYATTS LONGITUDE: -89.326297 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.050811 DATE COLLECTED: 12 / 18 / 1951
 SURFACE ELEVATION (FT.): 428.0 LOGGED (FT.): 1340.0 LOG TYPE: Drillers Log
 SOURCE: EASTERN PETROLEUM CO. WELL TYPE: Plugged and/or Abandoned
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.0			UNCONSOLIDATED	70.0	0.0
358.0			UNCLASSIFIED	350.0	70.0
8.0			SAND	139.0	420.0
-131.0			SANDSTONE/SHALE	235.0	559.0

MAPID: 14502754000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 33 QUARTERS/FOOTAGES: NE SE
 QUADRANGLE: PYATTS LONGITUDE: -89.318347 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.044347 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 421.2 LOGGED (FT.): 1440.0 LOG TYPE: Drillers Log
 SOURCE: MIDVALLEY OIL CO. WELL TYPE: Oil and Gas Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
196.2	CARBONDALE		UNCLASSIFIED	5.0	225.0
191.2	CARBONDALE		SHALE	20.0	230.0
181.2	CARBONDALE		SANDSTONE	5.0	240.0
421.2			UNCONSOLIDATED	30.0	0.0
391.2			CLAYSTONE	5.0	30.0
386.2	CARBONDALE		LIMESTONE	30.0	35.0
356.2	CARBONDALE	HERRIN	COAL	5.0	65.0
351.2	CARBONDALE		UNCLASSIFIED	10.0	70.0
341.2	CARBONDALE		SHALE	45.0	80.0

MAPID: 14502817000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 33 QUARTERS/FOOTAGES: 330' N line, 330' W line of NW NE
 QUADRANGLE: PYATTS LONGITUDE: -89.323961 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.052591 DATE COLLECTED: 5 / 13 / 1966
 SURFACE ELEVATION (FT.): 433.0 LOGGED (FT.): 1345.0 LOG TYPE: Drillers Log
 SOURCE: FRANK M. MCHALE WELL TYPE: Producer-Oil
 COMMENT: NO STRAT DATA UPPER ELEVATIONS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.0			UNKNOWN	0.0	0.0

MAPID: 14503130000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 33 QUARTERS/FOOTAGES: 90' S line, 96' E line of NW NE NW
 QUADRANGLE: PYATTS LONGITUDE: -89.327775 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.051997 DATE COLLECTED: 7 / 12 / 1973
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 40.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	2.0	0.0
418.0			CLAYSTONE	24.0	2.0
394.0			CONCRETION	1.0	26.0
393.0			CLAYSTONE	13.0	27.0

MAPID: 14500040000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 34 QUARTERS/FOOTAGES: 2600' N line, 1400' W line
 QUADRANGLE: PYATTS LONGITUDE: -89.311109 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.046113 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 51.7 LOG TYPE: Drillers Log
 SOURCE: WELL TYPE: Coal Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
407.8	CARBONDALE	BANKSTON FORK	LIMESTONE	5.2	27.2
402.7	CARBONDALE	LAWSON	SILTY SHALE	3.3	32.3
399.4	CARBONDALE	BRERETON	LIMESTONE	4.0	35.6
395.4	CARBONDALE	ANNA	BLACK SHALE	3.5	39.6
391.9	CARBONDALE	ENERGY	GRAY SHALE	2.9	43.1
389.0	CARBONDALE	HERRIN	COAL	5.7	46.0

MAPID: 14500050000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 35 QUARTERS/FOOTAGES: SE SE SE
 QUADRANGLE: PYATTS LONGITUDE: -89.280523 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.039634 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 421.5 LOGGED (FT.): 58.0 LOG TYPE: Drillers Log
 SOURCE: HALLIDAY ESTATE WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
421.5			UNCONSOLIDATED	35.0	0.0
386.5	CARBONDALE	BRERETON	LIMESTONE	15.5	35.0
371.0	CARBONDALE		SHALE	1.5	50.5
369.5	CARBONDALE	HERRIN	COAL	5.5	52.0
364.0	CARBONDALE		CLAYSTONE	0.5	57.5

MAPID: 14500050000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 35 **QUARTERS/FOOTAGES:** SE SE SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.280523 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039634 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.6 **LOGGED (FT.):** 58.0 **LOG TYPE:**
SOURCE: HALLIDAY 0031 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
369.6	CARBONDALE	HERRIN	COAL	5.5	52.0	

MAPID: 14500055000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 35 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.296808 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.039554 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 442.0 **LOGGED (FT.):** 53.0 **LOG TYPE:** Drillers Log
SOURCE: MISSISSIPPI COAL CORP. **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
442.0			UNCONSOLIDATED	10.0	0.0	
432.0			SHALE	19.0	10.0	
413.0			SAND	4.0	29.0	
409.0			LIMESTONE	8.0	33.0	
401.0			SHALE	7.0	41.0	
394.0			LIMESTONE	5.0	48.0	

MAPID: 14500055000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 35 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.296808 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.039554 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 442.0 **LOGGED (FT.):** 53.0 **LOG TYPE:**
SOURCE: MISSISSIPPI COAL CORP. 2425 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14500056000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 35

QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: PYATTS

LONGITUDE: -89.287501

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.039601

DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0

LOGGED (FT.): 60.0

LOG TYPE: Drillers Log

SOURCE: MISSISSIPPI COAL CORP.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	10.0	0.0
430.0			CONCRETION	15.0	10.0
415.0			UNCLASSIFIED	17.0	25.0
398.0			CONCRETION	3.0	42.0
395.0			LIMESTONE	1.0	45.0
394.0			UNCLASSIFIED	14.0	46.0

MAPID: 14500056000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 35

QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: PYATTS

LONGITUDE: -89.287501

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.039601

DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0

LOGGED (FT.): 60.0

LOG TYPE:

SOURCE: MISSISSIPPI COAL CORP. 2429

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	

MAPID: 14500057000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 2W

SECTION: 35

QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: PYATTS

LONGITUDE: -89.296508

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.046803

DATE COLLECTED:

SURFACE ELEVATION (FT.): 438.4

LOGGED (FT.): 60.0

LOG TYPE: Drillers Log

SOURCE: MISSISSIPPI COAL CORP.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
438.4			UNCONSOLIDATED	12.0	0.0
426.4			SHALE	24.0	12.0
402.4			LIMESTONE	8.0	36.0
394.4			SHALE	7.5	44.0
386.9			LIMESTONE	2.5	51.5
384.4			LIMESTONE	2.0	54.0
382.4			LIMESTONE	4.0	56.0

MAPID: 14500058000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 35 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.287249 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.046899 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 445.5 **LOGGED (FT.):** 64.5 **LOG TYPE:** Drillers Log
SOURCE: MISSISSIPPI COAL CORP. **WELL TYPE:** Coal Test
COMMENT: COAL AT 59 FEET/NO OTHER DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
445.5			UNKNOWN	0.0	0.0	

MAPID: 14503068000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 35 **QUARTERS/FOOTAGES:** 990' S line, 1650' W line
QUADRANGLE: PYATTS **LONGITUDE:** -89.292132 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.041401 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 441.0 **LOGGED (FT.):** 90.1 **LOG TYPE:** Survey Core Study
SOURCE: CONSOLIDATION COAL CO. BS#2C-7756 **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
388.9	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	3.4	52.1	
385.6	CARBONDALE	LAWSON	GRAY SHALE	1.5	55.4	
384.1	CARBONDALE	LAWSON	SILTY SHALE	10.3	56.9	
373.9	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.1	67.1	
368.8	CARBONDALE	JAMESTOWN	BONE COAL	0.6	72.2	
368.3	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	9.0	72.7	
359.3	CARBONDALE	ANNA	BLACK SHALE	2.3	81.7	
357.0	CARBONDALE	HERRIN	COAL	6.1	84.0	

MAPID: 14528297000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 35 **QUARTERS/FOOTAGES:** 993' S line, 118' E line of SW NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.284133 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.048757 **DATE COLLECTED:** 1 / 23 / 1982
SURFACE ELEVATION (FT.): 459.6 **LOGGED (FT.):** 71.4 **LOG TYPE:** Drillers Log
SOURCE: CONSOLIDATION COAL **WELL TYPE:** Observation Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
389.6			UNCLASSIFIED	1.5	70.0	

MAPID: 14500059000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 36 **QUARTERS/FOOTAGES:** SE SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.263062 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.040908 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 452.4 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: HALLIDAY 0032 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
392.4	CARBONDALE	HERRIN	COAL	6.8	60.0	

MAPID: 14500060000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 36 **QUARTERS/FOOTAGES:** NW NW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.278045 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.04517 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 448.5 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: HALLIDAY 0028 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
398.5	CARBONDALE	HERRIN	COAL	5.8	50.0	

MAPID: 14501503000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 2W **SECTION:** 36 **QUARTERS/FOOTAGES:** SE SW NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.266449 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.047234 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 456.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: ORION CC 00J5 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
401.0	CARBONDALE	HERRIN	COAL	5.8	55.0	

MAPID: 14502249000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 36 QUARTERS/FOOTAGES: 1180' N line, 70' E line

QUADRANGLE: PYATTS LONGITUDE: -89.260891 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.050472 DATE COLLECTED:

SURFACE ELEVATION (FT.): 452.0 LOGGED (FT.): 56.8 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO 768 WELL TYPE: Coal Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.9	CARBONDALE		GRAY SHALE	5.0	15.1
431.9	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	20.1
428.9	CARBONDALE	LAWSON	GRAY SHALE	8.0	23.1
420.9	CARBONDALE	BRERETON	LIMESTONE	3.5	31.1
417.4	CARBONDALE	ANNA	BLACK SHALE	4.8	34.6
412.6	CARBONDALE	ENERGY	GRAY SHALE	11.6	39.4
401.0	CARBONDALE	HERRIN	COAL	5.8	51.0

MAPID: 14528353000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 36 QUARTERS/FOOTAGES: 877' S line, 185' W line of SW

QUADRANGLE: PYATTS LONGITUDE: -89.278672 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.04116 DATE COLLECTED:

SURFACE ELEVATION (FT.): 439.3 LOGGED (FT.): 67.3 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.3			UNCONSOLIDATED	10.0	0.0
429.3			CLAYSTONE	10.0	10.0
419.3			CLAYSTONE	6.0	20.0
413.3			CONCRETION	2.0	26.0
411.3			CLAYSTONE	6.0	28.0
405.3			CLAYSTONE	6.0	34.0
399.3			CLAYSTONE	7.0	40.0
392.3			CLAYSTONE	1.0	47.0
391.3			CLAYSTONE	1.0	48.0
390.3			CLAYSTONE	0.5	49.0
389.8	CARBONDALE	ENERGY	SHALE	4.5	49.5
385.3	CARBONDALE	ENERGY	SHALE	6.8	54.0
378.5	CARBONDALE	HERRIN	COAL	5.9	60.8
372.6	CARBONDALE		CLAYSTONE	0.7	66.7

MAPID: 14528354000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 2W SECTION: 36 QUARTERS/FOOTAGES: 756' S line, 329' W line of SW

QUADRANGLE: PYATTS LONGITUDE: -89.278177 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.040836 DATE COLLECTED: 8 / 8 / 1958

SURFACE ELEVATION (FT.): 444.5 LOGGED (FT.): 68.5 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL 842 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.5			UNCONSOLIDATED	8.0	0.0
436.5			CLAYSTONE	6.0	8.0
430.5			CLAYSTONE	10.0	14.0
420.5			CLAYSTONE	10.0	24.0
410.5			SANDSTONE	1.0	34.0
409.5			CLAYSTONE	2.0	35.0
407.5			CLAYSTONE	5.0	37.0
402.5			CLAYSTONE	8.0	42.0
394.5			CLAYSTONE	10.0	50.0
384.5			SHALE	0.8	60.0
383.7			SHALE	0.5	60.8
383.2			SHALE	0.8	61.3
382.4	CARBONDALE	HERRIN	COAL	6.1	62.1
376.3			CLAYSTONE	0.4	68.2

MAPID: 14502284000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 1 QUARTERS/FOOTAGES: 1612' S line, 1070' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.385663 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.117651 DATE COLLECTED:

SURFACE ELEVATION (FT.): 512.0 LOGGED (FT.): 220.5 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 2284 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
360.0	MODESTO	PIASA	LIMESTONE	13.2	152.0	
346.8	MODESTO		CLAYSTONE & SHALE	1.0	165.2	
345.8	CARBONDALE	DANVILLE	COAL	0.7	166.2	
345.2	CARBONDALE		CLAYSTONE	2.5	166.8	
342.7	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	8.2	169.3	UPPER BENCH
334.5	CARBONDALE	BANKSTON FORK	CLAYSTONE	3.3	177.5	SHALE PARTING
331.2	CARBONDALE	BANKSTON FORK	LIMESTONE	6.3	180.8	LOWER BENCH
324.8	CARBONDALE	LAWSON	DARK GRAY SHALE	9.2	187.2	
315.7	CARBONDALE	JAMESTOWN	BONE COAL	0.3	196.3	
315.3	CARBONDALE		DARK GRAY SHALE	9.8	196.7	
305.6	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	5.3	206.4	
300.3	CARBONDALE	ANNA	BLACK SHALE	1.8	211.7	
298.0	CARBONDALE	HERRIN	COAL	6.5	214.0	

MAPID: 14502935000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 1 QUARTERS/FOOTAGES: 47' S line, 92' W line of NW SW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.389055 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.122518 DATE COLLECTED: 5 / 16 / 1970

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 30.0 LOG TYPE: Drillers Log

SOURCE: C. KOHNEN WELL TYPE: Dry Hole

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
430.0			UNCONSOLIDATED	0.5	0.0	
429.5			CLAY	9.5	0.5	
420.0			SANDSTONE	16.0	10.0	
404.0			SHALE	4.0	26.0	

MAPID: 14528367000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 1 QUARTERS/FOOTAGES: 1721' S line, 602' W line of SW NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.378081

GEOLOGIST: L. SMITH

CONFIDENTIAL: N LATITUDE: 38.124953

DATE COLLECTED: 4 / 6 / 1984

SURFACE ELEVATION (FT.): 471.0

LOGGED (FT.): 195.0

LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO.

WELL TYPE: Coal Test

COMMENT: N-531,962 E-726-862

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
471.0			SILTSTONE	20.0	0.0
451.0	MODESTO		SILTSTONE	10.0	20.0
441.0	MODESTO		LIMESTONE	5.0	30.0
436.0	MODESTO		SHALE	67.0	35.0
369.0	MODESTO		SANDSTONE	6.0	102.0
363.0	MODESTO		SHALE	2.0	108.0
361.0	MODESTO		LIMESTONE W/ SHALE	5.0	110.0
356.0	MODESTO		SHALE	10.0	115.0
346.0	MODESTO		LIMESTONE	15.0	125.0
331.0	CARBONDALE	DANVILLE	COAL	1.0	140.0
330.0	CARBONDALE		SHALE	5.0	141.0
325.0	CARBONDALE		LIMESTONE W/ SHALE	12.0	146.0
313.0	CARBONDALE		SHALE	27.0	158.0
286.0	CARBONDALE	HERRIN	COAL	7.0	185.0
279.0	CARBONDALE		LIMESTONE	3.0	192.0

MAPID: 14502328000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY

TWP/RNG: 5S 3W

SECTION: 2

QUARTERS/FOOTAGES: 1' N line, 1' W line

QUADRANGLE: WINKLE

LONGITUDE: -89.407773

GEOLOGIST: CHENOWETH

CONFIDENTIAL: N

LATITUDE: 38.127736

DATE COLLECTED: 9 / 11 / 1957

SURFACE ELEVATION (FT.): 510.0

LOGGED (FT.): 228.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YF209

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
510.0	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0
502.0	MODESTO		SOFT SHALE	12.0	8.0
490.0	MODESTO		SANDSTONE/SHALE	30.0	20.0
460.0	MODESTO		SANDSTONE	27.0	50.0
433.0	MODESTO		LIMESTONE	4.0	77.0
429.0	MODESTO		SHALE	5.0	81.0
424.0	MODESTO		LIMESTONE	1.0	86.0
423.0	MODESTO		SANDSTONE	33.0	87.0
390.0	MODESTO		LIMESTONE	6.0	120.0
384.0	MODESTO		SANDY SHALE	16.0	126.0
368.0	MODESTO		LIMESTONE	4.0	142.0
364.0	MODESTO		SANDSTONE	12.0	146.0
352.0	MODESTO	PIASA	LIMESTONE	13.0	158.0
339.0	MODESTO		SHALE	2.0	171.0
337.0	CARBONDALE	DANVILLE	COAL	1.5	173.0
335.5	CARBONDALE		SANDY SHALE	7.5	174.5
328.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	182.0
326.0	CARBONDALE		DARK SHALE	3.0	184.0
323.0	CARBONDALE		DARK SHALE	22.5	187.0
300.5	CARBONDALE	BRERETON	LIMESTONE	3.5	209.5
297.0	CARBONDALE	ANNA	BLACK SHALE	1.0	213.0
296.0	CARBONDALE	HERRIN	COAL	7.2	214.0
288.8	CARBONDALE		SANDSTONE	7.8	221.2

MAPID: 14502328000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 1' N line, 1' W line

QUADRANGLE: WINKLE LONGITUDE: -89.407773 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.127736 DATE COLLECTED:

SURFACE ELEVATION (FT.): 510.0 LOGGED (FT.): 221.2 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YF209 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
352.0	MODESTO	PIASA	LIMESTONE	13.0	158.0
339.0	MODESTO		SHALE	2.0	171.0
337.0	CARBONDALE	DANVILLE	COAL	1.5	173.0
335.5	CARBONDALE		SILTY SHALE	7.5	174.5
328.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	182.0
322.5	CARBONDALE	LAWSON	DARK GRAY SHALE	22.5	187.5
300.0	CARBONDALE	BRERETON	LIMESTONE	3.5	210.0
296.5	CARBONDALE	ANNA	BLACK SHALE	1.0	213.5
296.0	CARBONDALE	HERRIN	COAL	7.2	214.0

MAPID: 14502329000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 1' S line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.407635 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.113336 DATE COLLECTED: 9 / 11 / 1957

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 211.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YJ609 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
470.0	MODESTO		DARK SHALE	40.0	30.0
430.0	MODESTO		GRAY SHALE	65.5	70.0
364.5	MODESTO	PIASA	LIMESTONE	10.0	135.5
354.5	MODESTO		DARK SHALE	4.5	145.5
350.0	CARBONDALE	DANVILLE	COAL	3.3	150.0
346.7	CARBONDALE		UNDERCLAY	2.0	153.3
344.7	CARBONDALE		SANDY SHALE	8.0	155.3
336.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	163.3
334.0	CARBONDALE		SANDY SHALE	8.0	166.0
326.0	CARBONDALE	CONANT	LIMESTONE	2.0	174.0
324.0	CARBONDALE		DARK SHALE	15.0	176.0
309.0	CARBONDALE		SANDY SHALE	4.0	191.0
305.0	CARBONDALE		DARK SHALE	8.0	195.0
297.0	CARBONDALE	HERRIN	COAL	6.3	203.0
290.7	CARBONDALE		UNDERCLAY	1.8	209.3

MAPID: 14502329000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 1' S line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.407635 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.113336 DATE COLLECTED:

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 209.3 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YJ609 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
364.0	MODESTO	PIASA	LIMESTONE	10.0	136.0
354.0	MODESTO		DARK GRAY SHALE	4.5	146.0
349.5	CARBONDALE	DANVILLE	COAL	3.3	150.5
346.2	CARBONDALE		SILTY SHALE	10.0	153.8
336.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	163.8
333.5	CARBONDALE	LAWSON	SILTY SHALE	8.0	166.5
325.5	CARBONDALE	BRERETON	LIMESTONE	2.0	174.5
323.5	CARBONDALE	ENERGY	DARK GRAY SHALE	15.0	176.5
308.5	CARBONDALE	ENERGY	SILTY SHALE	4.0	191.5
304.5	CARBONDALE	ENERGY	DARK GRAY SHALE	8.0	195.5
297.0	CARBONDALE	HERRIN	COAL	6.3	203.0

MAPID: 14503080000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 87' S line, 96' E line of SE SE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.389758 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.11353 DATE COLLECTED: 6 / 15 / 1972

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 30.0 LOG TYPE: Drillers Log

SOURCE: C. KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	1.0	0.0
439.0			CLAY	14.0	1.0
425.0			SANDSTONE	15.0	15.0
410.0			SANDSTONE	30.0	30.0

MAPID: 14503134000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 0' N line, 0' E line of SE SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.398551 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.12237 DATE COLLECTED: 7 / 5 / 1973
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 25.0 LOG TYPE: Drillers Log
 SOURCE: FRANK HEPP JR WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	1.0	0.0
429.0			CLAY	14.0	1.0
415.0			CLAY	10.0	15.0

MAPID: 14503138000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 102' N line, 108' E line of NE SE SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.398915 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.116653 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 26.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	1.0	0.0
439.0			CLAY	14.0	1.0
425.0			CLAY	5.0	15.0
420.0			SANDSTONE	6.0	20.0
414.0			SAND	0.0	26.0

MAPID: 14503139000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 71' N line, 83' W line of SW SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.407434 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.122143 DATE COLLECTED: 9 / 4 / 1973
 SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 39.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0			UNCONSOLIDATED	1.0	0.0
499.0			CLAY	24.0	1.0
475.0			SAND	3.0	25.0
472.0			CLAY	6.0	28.0
466.0			SHALE	5.0	34.0

MAPID: 1452315000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 2 **QUARTERS/FOOTAGES:** 660' S line, 660' E line of NE SE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.391703 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.118758 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 536.0 **LOGGED (FT.):** 3050.0 **LOG TYPE:** Electric Log
SOURCE: ADOBE INVESTMENTS CORP. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
294.0	CARBONDALE	SPRINGFIELD	COAL	-	242.0	
171.0	CARBONDALE	COLCHESTER	COAL	-	365.0	
-746.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1282.0	
-2490.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	3026.0	TOP OF NEW ALBANY
-2490.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	3026.0	
-2514.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	3050.0	BASE OF NEW ALBANY

MAPID: 14590965000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 2 **QUARTERS/FOOTAGES:** 486' S line, 647' E line of SW SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.405452 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 38.114588 **DATE COLLECTED:** 9 / 28 / 1977
SURFACE ELEVATION (FT.): 483.0 **LOGGED (FT.):** 206.0 **LOG TYPE:** Drillers Log
SOURCE: AMAX F9GP **WELL TYPE:** Coal Test
COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
483.0	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0	
448.0			ROCK	150.5	35.0	
297.5	CARBONDALE	HERRIN	COAL	5.5	185.5	
292.0	CARBONDALE		ROCK	15.0	191.0	

MAPID: 14590966000C **VERSION:** 1 **PROJECT:** AVAIL
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 2 **QUARTERS/FOOTAGES:** 42' S line, 42' E line of SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.398675 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.113431 **DATE COLLECTED:** 9 / 27 / 1977
SURFACE ELEVATION (FT.): 496.6 **LOGGED (FT.):** 212.0 **LOG TYPE:** Drillers Log
SOURCE: AMAX F12PM **WELL TYPE:** Coal Test
COMMENT: DENMARK DEEP AMAX-DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
496.6	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0	
483.6			ROCK	180.0	13.0	
303.6	CARBONDALE	HERRIN	COAL	7.0	193.0	
296.6			ROCK	12.0	200.0	

MAPID: 14590967000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 335' N line, 390' W line of SE SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.392686 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.115907 DATE COLLECTED: 9 / 28 / 1977
 SURFACE ELEVATION (FT.): 512.9 LOGGED (FT.): 214.0 LOG TYPE: Drillers Log
 SOURCE: AMAX F40AB WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
512.9	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
485.9			ROCK	171.0	27.0
314.9	CARBONDALE	HERRIN	COAL	6.0	198.0
308.9	CARBONDALE		ROCK	10.0	204.0

MAPID: 14590968000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 83' S line, 92' E line of NW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.421663 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.117328 DATE COLLECTED: 10 / 4 / 1977
 SURFACE ELEVATION (FT.): 456.4 LOGGED (FT.): 182.0 LOG TYPE: Drillers Log
 SOURCE: AMAX F52PA WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
456.4	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
428.4			ROCK	134.0	28.0
294.4	CARBONDALE	HERRIN	COAL	7.0	162.0
287.4	CARBONDALE		ROCK	13.0	169.0

MAPID: 14590970000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 15' S line, 10' W line of SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.4076 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.120685 DATE COLLECTED: 7 / 9 / 1981
 SURFACE ELEVATION (FT.): 507.5 LOGGED (FT.): 220.0 LOG TYPE: Drillers Log
 SOURCE: AMAX F109 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
507.5	PLEISTOCENE		UNCONSOLIDATED	57.0	0.0
450.5			ROCK	148.0	57.0
302.5	CARBONDALE	HERRIN	COAL	7.0	205.0
295.5	CARBONDALE		ROCK	8.0	212.0

MAPID: 14590971000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 80' S line, 40' E line of SE NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.398689 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.120777 DATE COLLECTED: 5 / 14 / 1976

SURFACE ELEVATION (FT.): 507.5 LOGGED (FT.): 233.0 LOG TYPE: Drillers Log

SOURCE: AMAX F112PI WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
507.5	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0
475.5	MODESTO		ROCK	109.0	32.0
366.5	CARBONDALE	DANVILLE	COAL	2.0	141.0
364.5	CARBONDALE		ROCK	66.0	143.0
298.5	CARBONDALE	HERRIN	COAL	6.0	209.0
292.5	CARBONDALE		ROCK	18.0	215.0

MAPID: 14590973000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 330' N line, 1' E line of NW NW

QUADRANGLE: WINKLE LONGITUDE: -89.403172 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.126714 DATE COLLECTED: 4 / 15 / 1969

SURFACE ELEVATION (FT.): 498.5 LOGGED (FT.): 318.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE F186C WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
498.5	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
483.5	MODESTO		ROCK	159.5	15.0
324.0	CARBONDALE	DANVILLE	COAL	0.3	174.5
323.7	CARBONDALE		ROCK	40.3	174.8
283.4	CARBONDALE	HERRIN	COAL	8.0	215.1
275.4	CARBONDALE		ROCK	90.9	223.1
184.5	CARBONDALE	HOUCHIN CREEK	COAL	2.3	314.0
182.2	CARBONDALE		ROCK	1.7	316.3

MAPID: 14590974000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 112' N line, 213' E line of NE
 QUADRANGLE: WINKLE LONGITUDE: -89.3901 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.126992 DATE COLLECTED: 8 / 12 / 1976
 SURFACE ELEVATION (FT.): 498.8 LOGGED (FT.): 232.0 LOG TYPE: Drillers Log
 SOURCE: AMAX F191FA WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
498.8	PLEISTOCENE		UNCONSOLIDATED	39.0	0.0
459.8			ROCK	163.0	39.0
296.8	CARBONDALE	HERRIN	COAL	7.8	202.0
289.0	CARBONDALE		ROCK	22.2	209.8

MAPID: 14590975000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 2 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW
 QUADRANGLE: WINKLE LONGITUDE: -89.407773 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.127736 DATE COLLECTED: 9 / 11 / 1957
 SURFACE ELEVATION (FT.): 511.4 LOGGED (FT.): 229.0 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE F209 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
511.4	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0
503.4	MODESTO		ROCK	165.0	8.0
338.4	CARBONDALE	DANVILLE	COAL	1.5	173.0
336.9	CARBONDALE		ROCK	38.5	174.5
298.4	CARBONDALE		ROCK	1.0	213.0
297.4	CARBONDALE	HERRIN	COAL	7.2	214.0
290.2	CARBONDALE		ROCK	7.8	221.2

MAPID: 14523257000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 3 QUARTERS/FOOTAGES: 78' N line, 60' E line of NW NW NE
 QUADRANGLE: WINKLE LONGITUDE: -89.414829 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 38.127637 DATE COLLECTED: 8 / 29 / 1975
 SURFACE ELEVATION (FT.): LOGGED (FT.): 32.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT: WATER FROM SANDSTONE LAYER 24'-25'

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	11.0	1.0
-			CLAYSTONE	12.0	12.0
-			SANDSTONE	8.0	24.0

MAPID: 14590721000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 3 QUARTERS/FOOTAGES: 6' N line, 20' E line of SE SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.407742 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.11692 DATE COLLECTED: 2 / 14 / 1956
 SURFACE ELEVATION (FT.): 504.9 LOGGED (FT.): 207.0 LOG TYPE: Drillers Log
 SOURCE: NORTHERN ILLINOIS COAL CORP. 2274-S WELL TYPE: Coal Test
 COMMENT: BOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
504.9	PLEISTOCENE		UNCONSOLIDATED	58.9	0.0
446.0	MODESTO		ROCK	94.0	58.9
352.0	CARBONDALE	DANVILLE	COAL	2.1	152.9
349.9	CARBONDALE		ROCK	43.0	155.0
306.9	CARBONDALE	HERRIN	COAL	7.0	198.0
299.9	CARBONDALE		ROCK	2.0	205.0

MAPID: 14590969000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 3 QUARTERS/FOOTAGES: 95' N line, 55' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.416606 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.12041 DATE COLLECTED: 5 / 18 / 1976
 SURFACE ELEVATION (FT.): 516.8 LOGGED (FT.): 224.0 LOG TYPE: Drillers Log
 SOURCE: AMAX F80DC WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
516.8	PLEISTOCENE		UNCONSOLIDATED	60.0	0.0
456.8			ROCK	143.0	60.0
313.8	CARBONDALE	HERRIN	COAL	6.0	203.0
307.8	CARBONDALE		ROCK	15.0	209.0

MAPID: 14590972000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 3 QUARTERS/FOOTAGES: 188' N line, 225' W line of NW NW
 QUADRANGLE: WINKLE LONGITUDE: -89.425234 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.127498 DATE COLLECTED: 5 / 20 / 1976
 SURFACE ELEVATION (FT.): 514.6 LOGGED (FT.): 264.0 LOG TYPE: Drillers Log
 SOURCE: AMAX F176EB WELL TYPE: Coal Test
 COMMENT: DENMARK DEEP BOX75 GR EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
514.6	PLEISTOCENE		UNCONSOLIDATED	82.0	0.0
432.6			ROCK	155.0	82.0
277.6	CARBONDALE	HERRIN	COAL	5.0	237.0
272.6	CARBONDALE		ROCK	22.0	242.0

MAPID: 14591063000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 3 QUARTERS/FOOTAGES: 6' N line, 20' E line of SE SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.407742 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.11692 DATE COLLECTED: 2 / 14 / 1956
 SURFACE ELEVATION (FT.): 504.9 LOGGED (FT.): 207.0 LOG TYPE: Drillers Log
 SOURCE: NORTHERN ILLINOIS COAL CORP. 3046 WELL TYPE: Coal Test
 COMMENT: BOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
504.9	PLEISTOCENE		UNCONSOLIDATED	58.9	0.0
446.0	MODESTO		ROCK	94.0	58.9
352.0	CARBONDALE	DANVILLE	COAL	2.1	152.9
349.9	CARBONDALE		ROCK	43.0	155.0
306.9	CARBONDALE	HERRIN	COAL	7.0	198.0
299.9	CARBONDALE		ROCK	2.0	205.0

MAPID: 14590842000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 4 QUARTERS/FOOTAGES: 660' S line, 660' W line of SW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.406891 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.115574 DATE COLLECTED: 1 / 6 / 1977
 SURFACE ELEVATION (FT.): 544.6 LOGGED (FT.): 238.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E43 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
544.6	PLEISTOCENE		UNCONSOLIDATED	43.0	0.0
501.6	MODESTO		ROCK	17.0	43.0
484.6	MODESTO	CHAPEL	COAL	1.0	60.0
483.6	MODESTO		ROCK	83.0	61.0
400.6	MODESTO		COAL	2.0	144.0
398.6	MODESTO		ROCK	33.0	146.0
365.6	CARBONDALE	DANVILLE	COAL	1.0	179.0
364.6	CARBONDALE		ROCK	38.0	180.0
326.6	CARBONDALE	HERRIN	COAL	7.0	218.0
319.6	CARBONDALE		ROCK	13.0	225.0

MAPID: 14590845000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 4 QUARTERS/FOOTAGES: 30' S line, 50' E line of SE SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.43511 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.120988 DATE COLLECTED: 10 / 10 / 1975
 SURFACE ELEVATION (FT.): 529.0 LOGGED (FT.): 336.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E121 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
529.0	PLEISTOCENE		UNCONSOLIDATED	38.0	0.0	
491.0			ROCK	187.6	38.0	
303.4	CARBONDALE	HERRIN	COAL	6.9	225.6	
296.5	CARBONDALE		ROCK	88.1	232.5	
208.4	CARBONDALE	HOUCHIN CREEK	COAL	2.8	320.6	
205.6	CARBONDALE		ROCK	12.6	323.4	

MAPID: 14502912000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 5 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.460089 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 38.126762 DATE COLLECTED: 9 / 12 / 1968
 SURFACE ELEVATION (FT.): LOGGED (FT.): 30.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT: WATER AT SANDY CLAY 20'-25'

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			CLAYSTONE	8.5	0.5	
-			CLAYSTONE	11.0	9.0	
-			CLAYSTONE	5.0	20.0	
-			SANDSTONE	5.0	25.0	

MAPID: 14528790000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 5 QUARTERS/FOOTAGES: 50' S line, 100' W line of NW NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.452818 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.125 DATE COLLECTED: 10 / 16 / 1978

SURFACE ELEVATION (FT.): 549.6 LOGGED (FT.): 238.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE E163YC WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
549.6	PLEISTOCENE		CLAY	26.0	0.0	
523.6	PLEISTOCENE		UNCONSOLIDATED	30.0	26.0	
493.6	MODESTO		SANDSTONE	7.6	56.0	
486.0	MODESTO		COAL	1.0	63.6	
485.0	MODESTO		UNDERCLAY	1.4	64.6	
483.6	MODESTO		COAL	2.0	66.0	
481.6	MODESTO		GRAY SHALE	79.5	68.0	
402.1	MODESTO		LIMESTONE	4.5	147.5	
397.6	MODESTO		GRAY SHALE	13.0	152.0	
384.6	MODESTO	PIASA	LIMESTONE	8.0	165.0	
376.6	MODESTO		GRAY SHALE	2.6	173.0	
374.0	CARBONDALE	DANVILLE	COAL	2.4	175.6	
371.6	CARBONDALE		GRAY SHALE	6.0	178.0	
365.6	CARBONDALE		LIMESTONE	16.7	184.0	BLACK
348.9	CARBONDALE		LIMESTONE	5.6	200.7	GRAY
343.3	CARBONDALE		LIMESTONE	2.6	206.3	BLACK
340.7	CARBONDALE	BRERETON	LIMESTONE	3.5	208.9	GRAY
337.2	CARBONDALE	ANNA	BLACK SHALE	0.2	212.4	
337.0	CARBONDALE	HERRIN	COAL	7.4	212.6	
329.6	CARBONDALE		GRAY SHALE	5.1	220.0	
324.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.6	225.1	
320.9	CARBONDALE	HIGGINSVILLE	GRAY SHALE	0.6	228.7	
320.3	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.4	229.3	
316.9	CARBONDALE		CALCAREOUS SHALE	5.3	232.7	

MAPID: 14590740000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 5 QUARTERS/FOOTAGES: 50' S line, 100' W line of NW NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.452821 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.125 DATE COLLECTED: 10 / 16 / 1978

SURFACE ELEVATION (FT.): 549.6 LOGGED (FT.): 238.0 LOG TYPE: Drillers Log

SOURCE: AMAX E163YC WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
549.6	PLEISTOCENE		UNCONSOLIDATED	56.0	0.0
493.6			ROCK	7.6	56.0
486.0			COAL	1.0	63.6
485.0			ROCK	1.4	64.6
483.6			COAL	2.0	66.0
481.6			ROCK	107.6	68.0
374.0	CARBONDALE	DANVILLE	COAL	2.4	175.6
371.6	CARBONDALE		ROCK	34.6	178.0
337.0	CARBONDALE	HERRIN	COAL	7.4	212.6
329.6	CARBONDALE		ROCK	18.0	220.0

MAPID: 14590741000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 5 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.45318 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.121207 DATE COLLECTED: 1 / 27 / 1959

SURFACE ELEVATION (FT.): 553.5 LOGGED (FT.): 240.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES E165 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
553.5	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
535.5	MODESTO		ROCK	174.2	18.0
361.3	CARBONDALE	DANVILLE	COAL	2.4	192.2
358.9	CARBONDALE		ROCK	36.2	194.6
322.7	CARBONDALE	HERRIN	COAL	6.8	230.8
315.9	CARBONDALE		ROCK	2.4	237.6

MAPID: 14590744000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 5 QUARTERS/FOOTAGES: 44' N line, 781' E line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.451313 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.128235 DATE COLLECTED: 12 / 13 / 1974

SURFACE ELEVATION (FT.): 551.4 LOGGED (FT.): 245.0 LOG TYPE: Drillers Log

SOURCE: AMAX E213P WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
551.4	PLEISTOCENE		UNCONSOLIDATED	50.0	0.0
501.4	MODESTO		ROCK	138.5	50.0
362.9	CARBONDALE	DANVILLE	COAL	1.6	188.5
361.3	CARBONDALE		ROCK	38.4	190.1
322.9	CARBONDALE	HERRIN	COAL	6.5	228.5
316.4	CARBONDALE		ROCK	10.0	235.0

MAPID: 14590745000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 5 QUARTERS/FOOTAGES: 28' N line, 40' E line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.44412 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.128141 DATE COLLECTED: 12 / 18 / 1974

SURFACE ELEVATION (FT.): 552.9 LOGGED (FT.): 246.0 LOG TYPE: Drillers Log

SOURCE: AMAX E217 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
552.9	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0
507.9	MODESTO		ROCK	145.5	45.0
362.4	CARBONDALE	DANVILLE	COAL	1.0	190.5
361.4	CARBONDALE		ROCK	37.5	191.5
323.9	CARBONDALE	HERRIN	COAL	7.6	229.0
316.3	CARBONDALE		ROCK	9.4	236.6

MAPID: 14590841000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 5 QUARTERS/FOOTAGES: 30' N line, 113' W line of SW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.452718 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.117657 DATE COLLECTED: 1 / 26 / 1977

SURFACE ELEVATION (FT.): 530.9 LOGGED (FT.): 239.0 LOG TYPE: Drillers Log

SOURCE: AMAX E38DG WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
530.9	PLEISTOCENE		UNCONSOLIDATED	80.0	0.0
450.9			ROCK	69.0	80.0
381.9			COAL	3.0	149.0
378.9			ROCK	65.0	152.0
313.9	CARBONDALE	HERRIN	COAL	7.0	217.0
306.9	CARBONDALE		ROCK	15.0	224.0

MAPID: 14590844000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 5 QUARTERS/FOOTAGES: 330' S line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.462325 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.115153 DATE COLLECTED: 1 / 29 / 1959

SURFACE ELEVATION (FT.): 542.1 LOGGED (FT.): 218.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES E113-C WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
542.1	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0
497.1	MODESTO		ROCK	126.0	45.0
371.1	CARBONDALE	DANVILLE	COAL	1.0	171.0
370.1	CARBONDALE		ROCK	36.0	172.0
334.1	CARBONDALE	HERRIN	COAL	6.5	208.0
327.6	CARBONDALE		ROCK	3.5	214.5

MAPID: 14590847000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 5 QUARTERS/FOOTAGES: 6' S line, 90' W line of NW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.462096 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.125111 DATE COLLECTED: 10 / 6 / 1981
 SURFACE ELEVATION (FT.): 530.5 LOGGED (FT.): 222.1 LOG TYPE: Drillers Log
 SOURCE: AMAX E159Y WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
530.5	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
509.5	MODESTO		ROCK	142.0	21.0
367.5	CARBONDALE	DANVILLE	COAL	1.5	163.0
366.0	CARBONDALE		ROCK	38.3	164.5
327.7	CARBONDALE	HERRIN	COAL	7.5	202.8
320.2	CARBONDALE		ROCK	11.8	210.3

MAPID: 14503006000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 6 QUARTERS/FOOTAGES: NE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.477369 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 38.124329 DATE COLLECTED: 7 / 8 / 1971
 SURFACE ELEVATION (FT.): LOGGED (FT.): 53.0 LOG TYPE: Drillers Log
 SOURCE: FRANK HEPP JR. WELL TYPE: Water Well
 COMMENT: WATER FROM SANDSTONE LAYER

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	20.0	0.0
-			SANDSTONE	33.0	20.0

MAPID: 14590742000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 6 QUARTERS/FOOTAGES: 57' N line, 97' E line of NW NW
 QUADRANGLE: WINKLE LONGITUDE: -89.476385 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.128688 DATE COLLECTED: 12 / 12 / 1978
 SURFACE ELEVATION (FT.): 562.8 LOGGED (FT.): 262.0 LOG TYPE: Drillers Log
 SOURCE: AMAX E177GG WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
562.8	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
548.8			ROCK	223.0	14.0
325.8	CARBONDALE	HERRIN	COAL	7.5	237.0
318.3	CARBONDALE		ROCK	17.5	244.5

MAPID: 1459084000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 6 QUARTERS/FOOTAGES: 446' N line, 252' E line of SE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.463275 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.116645 DATE COLLECTED: 10 / 17 / 1977

SURFACE ELEVATION (FT.): 534.7 LOGGED (FT.): 227.0 LOG TYPE: Drillers Log

SOURCE: AMAX E33LL WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
534.7	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0
502.7			ROCK	7.0	32.0
495.7			COAL	0.5	39.0
495.2			ROCK	3.5	39.5
491.7			COAL	1.0	43.0
490.7			ROCK	165.0	44.0
325.7	CARBONDALE	HERRIN	COAL	7.0	209.0
318.7	CARBONDALE		ROCK	11.0	216.0

MAPID: 14590843000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 6 QUARTERS/FOOTAGES: 20' S line, 30' E line of SE NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471712 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.121602 DATE COLLECTED: 10 / 2 / 1975

SURFACE ELEVATION (FT.): 538.9 LOGGED (FT.): 314.2 LOG TYPE: Drillers Log

SOURCE: AMAX E105 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
538.9	PLEISTOCENE		UNCONSOLIDATED	50.0	0.0
488.9			ROCK	141.1	50.0
347.8	CARBONDALE	JAMESTOWN	COAL	0.1	191.1
347.6	CARBONDALE		ROCK	16.3	191.3
331.4	CARBONDALE	HERRIN	COAL	6.4	207.5
325.0	CARBONDALE		ROCK	92.2	213.9
232.8	CARBONDALE	SPRINGFIELD	COAL	2.2	306.1
230.6	CARBONDALE		ROCK	6.0	308.3

MAPID: 14590846000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 6 QUARTERS/FOOTAGES: 980' N line, 15' E line of NE NW

QUADRANGLE: WINKLE LONGITUDE: -89.471794 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.126094 DATE COLLECTED: 9 / 29 / 1981

SURFACE ELEVATION (FT.): 532.8 LOGGED (FT.): 239.7 LOG TYPE: Drillers Log

SOURCE: AMAX E155C WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75 GL EL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
532.8	PLEISTOCENE		UNCONSOLIDATED	41.0	0.0
491.8	MODESTO		ROCK	135.3	41.0
356.5	CARBONDALE	DANVILLE	COAL	5.4	176.3
351.1	CARBONDALE		ROCK	36.4	181.7
314.7	CARBONDALE	HERRIN	COAL	6.6	218.1
308.1	CARBONDALE		ROCK	15.0	224.7

MAPID: 14502330000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 8 QUARTERS/FOOTAGES: 1' N line, 1' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.444037 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.113799 DATE COLLECTED: 9 / 3 / 1957

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 300.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YH617 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
515.0	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
475.0	MODESTO		GRAY SHALE	72.0	40.0
403.0	MODESTO		SANDSTONE	2.0	112.0
401.0	MODESTO		SANDY SHALE	21.0	114.0
380.0	MODESTO		GRAY SANDSTONE	5.0	135.0
375.0	MODESTO		GRAY SHALE	3.0	140.0
372.0	MODESTO		SANDSTONE	8.0	143.0
364.0	MODESTO		SANDY SHALE	3.0	151.0
361.0	MODESTO	PIASA	LIMESTONE	9.0	154.0
352.0	MODESTO		BLACK SHALE	1.0	163.0
351.0	CARBONDALE	DANVILLE	COAL	1.0	164.0
350.0	CARBONDALE		SANDSTONE	2.0	165.0
348.0	CARBONDALE		DARK SHALE	10.0	167.0
338.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	177.0
334.0	CARBONDALE		GRAY SHALE	5.0	181.0
329.0	CARBONDALE		LIMESTONE	2.0	186.0
327.0	CARBONDALE		DARK SHALE	3.0	188.0
324.0	CARBONDALE	CONANT	LIMESTONE	4.0	191.0
320.0	CARBONDALE		BLACK SHALE	7.0	195.0
313.0	CARBONDALE	BRERETON	LIMESTONE	5.5	202.0
307.5	CARBONDALE	ANNA	BLACK SHALE	2.0	207.5
305.5	CARBONDALE	HERRIN	COAL	7.3	209.5
298.2	CARBONDALE		UNDERCLAY	4.0	216.8
294.2	CARBONDALE		LIMESTONE	3.0	220.8
291.2	CARBONDALE		SHALE	1.2	223.8
290.0	CARBONDALE		GRAY SANDSTONE	5.0	225.0
285.0	CARBONDALE		SANDY SHALE	7.0	230.0
278.0	CARBONDALE		SANDSTONE	4.0	237.0
274.0	CARBONDALE		GRAY SHALE	16.0	241.0
258.0	CARBONDALE		SANDSTONE	5.0	257.0
253.0	CARBONDALE		SHALE	6.0	262.0
247.0	CARBONDALE		SANDSTONE	8.0	268.0
239.0	CARBONDALE		SANDY SHALE	14.0	276.0
225.0	CARBONDALE	EXCELLO	BLACK SHALE	4.0	290.0
221.0	CARBONDALE	HOUCHIN CREEK	COAL	3.0	294.0
218.0	CARBONDALE		UNDERCLAY	3.0	297.0

MAPID: 14502330000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 8 QUARTERS/FOOTAGES: 1' N line, 1' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.444037

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.113799

DATE COLLECTED:

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 217.3

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YH617

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
361.0	MODESTO	PIASA	LIMESTONE	9.0	154.0	
352.0	MODESTO		BLACK SHALE	1.0	163.0	
351.0	CARBONDALE	DANVILLE	COAL	1.0	164.0	
350.0	CARBONDALE		DARK GRAY SHALE	12.0	165.0	
338.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	177.0	UPPER BENCH
334.0	CARBONDALE	BANKSTON FORK	GRAY SHALE	5.0	181.0	SHALE PARTING
329.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	186.0	LOWER BENCH
327.0	CARBONDALE	LAWSON	DARK GRAY SHALE	3.0	188.0	
324.0	CARBONDALE	CONANT	LIMESTONE	4.0	191.0	
320.0	CARBONDALE		BLACK SHALE	7.0	195.0	
313.0	CARBONDALE	BRERETON	LIMESTONE	5.5	202.0	
307.5	CARBONDALE	ANNA	BLACK SHALE	2.0	207.5	
305.0	CARBONDALE	HERRIN	COAL	7.3	210.0	

MAPID: 14502331000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 8 QUARTERS/FOOTAGES: 1' S line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.462676 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.099616 DATE COLLECTED: 8 / 21 / 1957

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 231.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. 1H409 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
520.0	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0	
475.0			GRAY SHALE	93.0	45.0	
382.0			SANDY SHALE	14.7	138.0	
367.3			LIMESTONE	1.0	152.7	
366.3			BLACK SHALE	5.3	153.7	
361.0			COAL	0.8	159.0	
360.2			SANDY SHALE	10.2	159.8	
350.0			GRAY SANDSTONE	4.5	170.0	
345.5			LIMESTONE	2.3	174.5	
343.2	CARBONDALE		SANDY SHALE	4.9	176.8	
338.2	CARBONDALE	GALUM	LIMESTONE	1.8	181.8	
336.4	CARBONDALE		GRAY SANDSTONE	5.8	183.6	DISCREPANCY IN THICKNESS&UNDLYING
331.3	CARBONDALE	BANKSTON FORK	LIMESTONE	5.3	188.7	
326.0	CARBONDALE		SHALE	11.0	194.0	
315.0	CARBONDALE	CONANT	LIMESTONE	1.2	205.0	
313.8	CARBONDALE		BLACK SHALE	8.5	206.2	
305.3	CARBONDALE	BRERETON	LIMESTONE	5.0	214.7	
300.3	CARBONDALE	ANNA	BLACK SHALE	2.5	219.7	
297.8	CARBONDALE	HERRIN	COAL	6.8	222.2	
291.0	CARBONDALE		UNDERCLAY	1.0	229.0	
290.0	CARBONDALE		SANDSTONE	1.0	230.0	

MAPID: 14502331000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 8 QUARTERS/FOOTAGES: 1' S line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.462676 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.099616 DATE COLLECTED:

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 228.8 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. 1H409 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
367.0	MODESTO	PIASA	LIMESTONE	1.0	153.0	
366.0	MODESTO		BLACK SHALE	5.3	154.0	
360.7	CARBONDALE	DANVILLE	COAL	0.8	159.3	
359.8	CARBONDALE		SILTY SHALE	14.7	160.2	
345.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	174.8	UPPER BENCH
342.8	CARBONDALE	BANKSTON FORK	ROCK	12.5	177.2	SHALE PARTING
330.3	CARBONDALE	BANKSTON FORK	LIMESTONE	5.4	189.7	LOWER BENCH
324.9	CARBONDALE	LAWSON	GRAY SHALE	11.0	195.1	
313.9	CARBONDALE	CONANT	LIMESTONE	1.2	206.1	
312.8	CARBONDALE		BLACK SHALE	8.5	207.2	
304.3	CARBONDALE	BRERETON	LIMESTONE	5.0	215.7	
299.3	CARBONDALE	ANNA	BLACK SHALE	1.3	220.7	
298.0	CARBONDALE	HERRIN	COAL	6.8	222.0	

MAPID: 14502756000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 8 QUARTERS/FOOTAGES: 605' N line, 165' W line of NW NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.452677 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.105037 DATE COLLECTED:

SURFACE ELEVATION (FT.): 491.0 LOGGED (FT.): 1229.0 LOG TYPE: Electric Log

SOURCE: MAGNOLIA PETROLEUM WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
279.0	CARBONDALE	SPRINGFIELD	COAL	-	212.0	
141.0	CARBONDALE	COLCHESTER	COAL	-	350.0	
-738.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1229.0	

MAPID: 14523361000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 8 QUARTERS/FOOTAGES: 1300' N line, 2450' W line of NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.453855 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 38.110449 DATE COLLECTED: 1 / 7 / 1977
 SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 143.0 LOG TYPE: Drillers Log
 SOURCE: HEPP DRILLING CO. WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
515.0			CLAY	37.0	0.0
478.0			UNCONSOLIDATED	53.0	37.0
425.0			GRAY SHALE & SANDSTONE	29.0	90.0
396.0			LIMESTONE W/ SHALE	4.0	119.0
392.0			SANDSTONE/SHALE	16.0	123.0
376.0			LIMESTONE	4.0	139.0

MAPID: 14523703000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 8 QUARTERS/FOOTAGES: 330' N line, 330' W line of SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.452093 GEOLOGIST: J JOHNSON
 CONFIDENTIAL: N LATITUDE: 38.105785 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 481.0 LOGGED (FT.): 352.0 LOG TYPE: Electric Log
 SOURCE: EVANS, CHARLES T. WELL TYPE: Oil and Gas Test
 COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
263.0	CARBONDALE	SPRINGFIELD	COAL	-	218.0
129.0	CARBONDALE	COLCHESTER	COAL	-	352.0

MAPID: 14500008000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 9 QUARTERS/FOOTAGES: 830' N line, 1860' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.437515 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.111438 DATE COLLECTED: 5 / 25 / 1919

SURFACE ELEVATION (FT.): 524.4 LOGGED (FT.): 600.0 LOG TYPE: Drillers Log

SOURCE: ATLAS POWDER CO. WELL TYPE: Water Well

COMMENT: LITHOLOGIES & THICKNESS - QUESTIONABLE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
524.4			CLAYSTONE	5.5	0.0	
518.9			SHALE	50.0	5.5	
468.9			SHALE	6.0	55.5	
462.9			COAL	1.5	61.5	
461.4			SHALE	36.0	63.0	
425.4			SHALE	30.0	99.0	
395.4			LIMESTONE	32.5	129.0	
362.9			SHALE	15.5	161.5	
347.4			SHALE	4.0	177.0	
343.4	CARBONDALE		SHALE	11.0	181.0	
332.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	192.0	
328.4	CARBONDALE		SHALE	20.0	196.0	
308.4	CARBONDALE	BRERETON	LIMESTONE	2.0	216.0	
306.4	CARBONDALE	ANNA	SHALE	2.0	218.0	
304.4	CARBONDALE	HERRIN	COAL	7.5	220.0	
296.9	CARBONDALE		SHALE	2.0	227.5	
294.9	CARBONDALE		LIMESTONE	2.0	229.5	
292.9	CARBONDALE		SHALE	6.0	231.5	
286.9	CARBONDALE		LIMESTONE	4.0	237.5	
282.9	CARBONDALE		SHALE	9.0	241.5	
273.9	CARBONDALE		SHALE	0.5	250.5	
273.4	CARBONDALE		SHALE	4.0	251.0	
269.4	CARBONDALE		SANDSTONE	0.5	255.0	
268.9	CARBONDALE		SHALE	2.0	255.5	
266.9	CARBONDALE		CLAYSTONE	7.0	257.5	
259.9	CARBONDALE		SHALE	14.0	264.5	
245.9	CARBONDALE		LIMESTONE	13.0	278.5	
232.9	CARBONDALE		LIMESTONE	9.0	291.5	
223.9	CARBONDALE		SHALE	10.0	300.5	
213.9	CARBONDALE	HANOVER	LIMESTONE	3.0	310.5	
210.9	CARBONDALE	HOUCHIN CREEK	COAL	6.0	313.5	
204.9			SHALE	2.0	319.5	
202.9			LIMESTONE	39.0	321.5	
163.9			LIMESTONE	2.0	360.5	
161.9			SHALE	48.0	362.5	
113.9			LIMESTONE	1.0	410.5	
112.9	SPOON	DAVIS	COAL	2.0	411.5	UNCERTAIN CORRELATION

MAPID: 14500008000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 9 QUARTERS/FOOTAGES: 830' N line, 1860' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.437515

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.111438

DATE COLLECTED:

SURFACE ELEVATION (FT.): 524.0

LOGGED (FT.): 227.5

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
396.0	MODESTO	PIASA	LIMESTONE	32.5	128.0
363.5	MODESTO		GRAY SHALE	15.5	160.5
348.0	CARBONDALE	DANVILLE	COAL	4.0	176.0
344.0	CARBONDALE		GRAY SHALE	11.0	180.0
333.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	191.0
329.0	CARBONDALE	LAWSON	BLACK SHALE	20.0	195.0
309.0	CARBONDALE	BRERETON	LIMESTONE	2.5	215.0
306.5	CARBONDALE	ANNA	BLACK SHALE	2.0	217.5
304.0	CARBONDALE	HERRIN	COAL	7.5	220.0

MAPID: 14590695000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 9 QUARTERS/FOOTAGES: 9' N line, 22' E line of NW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.439544

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.113727

DATE COLLECTED: 2 / 9 / 1956

SURFACE ELEVATION (FT.): 547.1

LOGGED (FT.): 254.5

LOG TYPE: Drillers Log

SOURCE: NORTHERN ILLINOIS COAL CORP. 5309ES

WELL TYPE: Coal Test

COMMENT: BOX #75; CORE CHEMICAL DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
547.1	PLEISTOCENE		UNCONSOLIDATED	17.6	0.0
529.5			ROCK	227.6	17.6
301.9	CARBONDALE	HERRIN	COAL	5.8	245.2
296.1	CARBONDALE	HERRIN	CLAYSTONE	0.1	251.0 BLUE BAND
296.0	CARBONDALE	HERRIN	COAL	2.6	251.1
293.4			ROCK	0.8	253.7

MAPID: 14591060000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 9 QUARTERS/FOOTAGES: 9' N line, 22' E line of NW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.439544 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.113727 DATE COLLECTED: 2 / 9 / 1956

SURFACE ELEVATION (FT.): 547.1 LOGGED (FT.): 254.5 LOG TYPE: Drillers Log

SOURCE: NORTHERN ILLINOIS COAL CORP. 3043 WELL TYPE: Coal Test

COMMENT: BOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
547.1	PLEISTOCENE		UNCONSOLIDATED	17.6	0.0	
529.5	MODESTO		ROCK	175.4	17.6	
354.2	CARBONDALE	DANVILLE	COAL	2.8	192.9	
351.4	CARBONDALE		ROCK	49.5	195.7	
301.9	CARBONDALE	HERRIN	COAL	5.8	245.2	
296.1	CARBONDALE	HERRIN	ROCK	0.1	251.0	BLUE BAND
296.0	CARBONDALE	HERRIN	COAL	2.6	251.1	
293.4	CARBONDALE		ROCK	0.8	253.7	

MAPID: 14500009000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 10 QUARTERS/FOOTAGES: 2310' N line, 2310' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.415703 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.107075 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 0.0 LOG TYPE:

SOURCE: ATLAS POWD0002 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
312.0	CARBONDALE	HERRIN	COAL	5.5	138.0	

MAPID: 14500009000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 10 QUARTERS/FOOTAGES: 2310' N line, 2310' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.415703

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.107075

DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 142.5

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
365.0	MODESTO	PIASA	LIMESTONE	2.0	85.0
363.0	MODESTO		BLACK SHALE	0.5	87.0
362.5	CARBONDALE	DANVILLE	COAL	7.0	87.5
355.5	CARBONDALE		GRAY SHALE	3.5	94.5
352.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	98.0
347.0	CARBONDALE	LAWSON	GRAY SHALE	17.0	103.0
330.0	CARBONDALE	CONANT	LIMESTONE	3.0	120.0
327.0	CARBONDALE		GRAY SHALE	12.0	123.0
315.0	CARBONDALE	BRERETON	LIMESTONE	2.0	135.0
313.0	CARBONDALE	HERRIN	COAL	5.5	137.0

MAPID: 14500009000C VERSION: 3

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 10 QUARTERS/FOOTAGES: 2310' N line, 2310' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.415703 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.107075 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 482.0 LOG TYPE: Drillers Log

SOURCE: ATLAS POWDER CO. WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			CLAYSTONE	23.0	0.0
427.0			CLAYSTONE	0.5	23.0
426.5	MODESTO		SHALE	48.5	23.5
378.0	MODESTO	PIASA	LIMESTONE	6.0	72.0
372.0	MODESTO		SHALE	7.0	78.0
365.0	MODESTO		LIMESTONE	2.0	85.0
363.0	MODESTO		SHALE	0.5	87.0
362.5	CARBONDALE	DANVILLE	COAL	7.0	87.5
355.5	CARBONDALE		SHALE	3.5	94.5
352.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	98.0
347.0	CARBONDALE		SHALE	17.0	103.0
330.0	CARBONDALE		UNCLASSIFIED	3.0	120.0
327.0	CARBONDALE		SHALE	10.0	123.0
317.0	CARBONDALE		SHALE	2.0	133.0
315.0	CARBONDALE	BRERETON	LIMESTONE	2.0	135.0
313.0	CARBONDALE	HERRIN	COAL	5.5	137.0
307.5	CARBONDALE		SHALE	9.0	142.5
298.5	CARBONDALE		LIMESTONE	0.5	151.5
298.0	CARBONDALE	SPRINGFIELD	COAL	4.5	152.0
293.5	CARBONDALE		SHALE	2.0	156.5
291.5	CARBONDALE		LIMESTONE	8.0	158.5
283.5	CARBONDALE		SHALE	25.0	166.5
258.5	CARBONDALE		LIMESTONE	1.0	191.5
257.5	CARBONDALE		CLAYSTONE	7.0	192.5
250.5	CARBONDALE		SHALE	12.0	199.5
238.5	CARBONDALE		SHALE	16.0	211.5
222.5	CARBONDALE		SHALE	9.0	227.5
213.5	CARBONDALE	HANOVER	LIMESTONE	3.0	236.5
210.5	CARBONDALE	EXCELLO	SHALE	4.0	239.5
206.5	CARBONDALE	HOUCHIN CREEK	COAL	2.0	243.5
204.5	CARBONDALE		LIMESTONE	14.0	245.5
190.5			LIMESTONE	29.0	259.5
161.5			SANDSTONE	9.0	288.5
152.5			SANDSTONE	45.0	297.5
107.5	SPOON	DAVIS	COAL	2.0	342.5

MAPID: 14590696000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 10 QUARTERS/FOOTAGES: 592' S line, 60' E line of NW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.421513 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.104228 DATE COLLECTED: 2 / 17 / 1956
 SURFACE ELEVATION (FT.): 510.5 LOGGED (FT.): 223.8 LOG TYPE: Drillers Log
 SOURCE: NORTHERN ILLINOIS COAL CORP. 5310EG WELL TYPE: Coal Test
 COMMENT: BOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
510.5	PLEISTOCENE		UNCONSOLIDATED	18.2	0.0	
492.3	MODESTO		ROCK	147.0	18.2	
345.3	CARBONDALE	DANVILLE	COAL	2.1	165.2	
343.2	CARBONDALE		ROCK	48.4	167.3	
294.7	CARBONDALE	HERRIN	COAL	7.1	215.8	
287.6	CARBONDALE		ROCK	0.9	222.9	

MAPID: 14590697000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 10 QUARTERS/FOOTAGES: 150' N line, 16' E line of SE SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.407684 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.10194 DATE COLLECTED: 2 / 15 / 1956
 SURFACE ELEVATION (FT.): 489.5 LOGGED (FT.): 309.7 LOG TYPE: Drillers Log
 SOURCE: NORTHERN ILLINOIS COAL CORP. 5310SE WELL TYPE: Coal Test
 COMMENT: BOX #75; CORE CHEMICAL DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
489.5	PLEISTOCENE		UNCONSOLIDATED	61.9	0.0	
427.6	MODESTO		ROCK	75.9	61.9	
351.7	CARBONDALE	DANVILLE	COAL	1.4	137.8	
350.3	CARBONDALE		ROCK	48.7	139.2	
301.6	CARBONDALE	HERRIN	COAL	5.4	187.9	
296.2	CARBONDALE	HERRIN	CLAYSTONE	0.1	193.3	BLUE BAND
296.1	CARBONDALE	HERRIN	COAL	1.7	193.4	
294.5	CARBONDALE		ROCK	85.9	195.0	
208.5	CARBONDALE	HOUCHIN CREEK	COAL	2.6	281.0	
206.0	CARBONDALE		ROCK	26.1	283.5	

MAPID: 14591061000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 10 QUARTERS/FOOTAGES: 592' S line, 60' E line of NW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.421513 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.104228 DATE COLLECTED: 2 / 17 / 1956
 SURFACE ELEVATION (FT.): 510.5 LOGGED (FT.): 223.8 LOG TYPE: Drillers Log
 SOURCE: NORTHERN ILLINOIS COAL CORP. 3044 WELL TYPE: Coal Test
 COMMENT: BOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
510.5	PLEISTOCENE		UNCONSOLIDATED	18.2	0.0	
492.3	MODESTO		ROCK	118.0	18.2	
374.2	MODESTO	ROCK BRANCH	COAL	0.3	136.3	
373.9	MODESTO		ROCK	28.7	136.6	
345.3	CARBONDALE	DANVILLE	COAL	2.1	165.2	
343.2	CARBONDALE		ROCK	48.4	167.3	
294.7	CARBONDALE	HERRIN	COAL	7.1	215.8	
287.6	CARBONDALE		ROCK	0.9	222.9	

MAPID: 14591062000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 10 QUARTERS/FOOTAGES: 150' N line, 16' E line of SE SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.407684 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.10194 DATE COLLECTED: 2 / 15 / 1956
 SURFACE ELEVATION (FT.): 489.5 LOGGED (FT.): 309.7 LOG TYPE: Drillers Log
 SOURCE: NORTHERN ILLINOIS COAL CORP. 3045 WELL TYPE: Coal Test
 COMMENT: BOX #75 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
489.5	PLEISTOCENE		UNCONSOLIDATED	61.9	0.0	
427.6	MODESTO		ROCK	75.9	61.9	
351.7	CARBONDALE	DANVILLE	COAL	1.4	137.8	
350.3	CARBONDALE		ROCK	48.7	139.2	
301.6	CARBONDALE	HERRIN	COAL	5.4	187.9	
296.2	CARBONDALE	HERRIN	ROCK	0.1	193.3	BLUE BAND
296.1	CARBONDALE	HERRIN	COAL	1.7	193.4	
294.5	CARBONDALE		ROCK	85.9	195.0	
208.5	CARBONDALE	HOUCHIN CREEK	COAL	2.6	281.0	
205.9	CARBONDALE		ROCK	26.1	283.6	

MAPID: 14502332000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY

TWP/RNG: 5S 3W

SECTION: 11

QUARTERS/FOOTAGES: 1' S line, 1' E line

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.389183

GEOLOGIST: CHENOWETH

CONFIDENTIAL: N

LATITUDE: 38.09866

DATE COLLECTED: 9 / 5 / 1957

SURFACE ELEVATION (FT.): 460.0

LOGGED (FT.): 248.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YJ417

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	70.0	0.0
390.0	MODESTO		GRAY SHALE	18.0	70.0
372.0	MODESTO	PIASA	LIMESTONE	7.5	88.0
364.5	MODESTO		SANDY SHALE	5.5	95.5
359.0	CARBONDALE	DANVILLE	COAL	1.5	101.0
357.5	CARBONDALE		GRAY SHALE	6.0	102.5
351.5	CARBONDALE		GRAY SANDSTONE	3.5	108.5
348.0	CARBONDALE		DARK GRAY SHALE	3.5	112.0
344.5	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	115.5
337.5	CARBONDALE		SHALE	11.7	122.5
325.8	CARBONDALE	BRERETON	LIMESTONE	2.3	134.2
323.5	CARBONDALE	ANNA	BLACK SHALE	11.3	136.5
312.2	CARBONDALE	ANNA	BLACK SHALE	2.0	147.8
310.2	CARBONDALE	HERRIN	COAL	7.2	149.8
303.0	CARBONDALE		UNDERCLAY	3.0	157.0
300.0	CARBONDALE		GRAY SANDSTONE	25.0	160.0
275.0	CARBONDALE		SANDY SHALE	45.0	185.0
230.0	CARBONDALE		GRAY SANDSTONE	5.0	230.0
225.0	CARBONDALE		SANDY SHALE	5.0	235.0
220.0	CARBONDALE	EXCELLO	BLACK SHALE	4.3	240.0
215.7	CARBONDALE	HOUCHIN CREEK	COAL	2.7	244.3
213.0	CARBONDALE		UNDERCLAY	1.0	247.0

MAPID: 14502332000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 11 QUARTERS/FOOTAGES: 1' S line, 1' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.389183 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.09866 DATE COLLECTED:

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 157.2 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YJ417 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
372.0	MODESTO	PIASA	LIMESTONE	7.5	88.0
364.5	MODESTO		SILTY SHALE	5.5	95.5
359.0	CARBONDALE	DANVILLE	COAL	1.5	101.0
357.5	CARBONDALE		SHALE & SANDSTONE	13.0	102.5
344.5	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	115.5
337.5	CARBONDALE	LAWSON	GRAY SHALE	11.7	122.5
325.8	CARBONDALE	BRERETON	LIMESTONE	2.3	134.2
323.5	CARBONDALE	ANNA	BLACK SHALE	13.3	136.5
310.0	CARBONDALE	HERRIN	COAL	7.2	150.0

MAPID: 14502635000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 11 QUARTERS/FOOTAGES: 69' N line, 194' E line of SW SW NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.39797 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.103058 DATE COLLECTED: 8 / 16 / 1960

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log

SOURCE: OTHO KINMAN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	1.0	0.0
429.0			CLAYSTONE	26.0	1.0
403.0			CLAYSTONE	11.0	27.0
392.0			CLAYSTONE	27.0	38.0
365.0			SIDERITE	1.0	65.0
364.0			SHALE	4.0	66.0

MAPID: 14502920000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 11 QUARTERS/FOOTAGES: 101' S line, 170' W line of SW SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.397875 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.106271 DATE COLLECTED: 4 / 23 / 1969
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 72.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	1.0	0.0
449.0			CLAY	7.0	1.0
442.0			CLAY	11.0	8.0
431.0			CLAY	9.0	19.0
422.0			CLAY	18.0	28.0
404.0			CLAY	14.0	46.0
390.0			SAND	6.0	60.0
384.0			CLAY	6.0	66.0

MAPID: 14523374000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 11 QUARTERS/FOOTAGES: 100' N line, 103' E line of NE NE SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.389658 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.105698 DATE COLLECTED: 4 / 21 / 1977
 SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 24.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0			UNCONSOLIDATED	1.0	0.0
499.0			SANDY CLAY	15.0	1.0
484.0			CLAY	8.0	16.0

MAPID: 14523723000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 11 QUARTERS/FOOTAGES: 125' S line, 131' E line of SW SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.396638 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.106334 DATE COLLECTED: 8 / 15 / 1979
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	1.0	0.0
449.0			CLAY	11.0	1.0
438.0			CLAY	48.0	12.0

MAPID: 14523724000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 11 QUARTERS/FOOTAGES: 136' S line, 101' E line of NE SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.394266 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.10819 DATE COLLECTED: 8 / 10 / 1979
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 45.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	1.0	0.0
429.0			CLAY	9.0	1.0
420.0			CLAY	15.0	10.0
405.0			CLAY	5.0	25.0
400.0			SHALE	15.0	30.0

MAPID: 14500010000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 12 QUARTERS/FOOTAGES: NW NE NE
 QUADRANGLE: PYATTS LONGITUDE: -89.37441 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.112007 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 429.4 LOGGED (FT.): 1491.0 LOG TYPE: Drillers Log
 SOURCE: OHIO OIL WELL TYPE: Plugged and/or Abandoned
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
429.4			UNCONSOLIDATED	34.0	0.0
395.4	MODESTO	PIASA	UNCLASSIFIED	4.0	34.0
391.4	CARBONDALE		SHALE	26.0	38.0
365.4	CARBONDALE	BRERETON	UNCLASSIFIED	8.0	64.0
357.4	CARBONDALE	HERRIN	COAL	8.0	72.0
349.4	CARBONDALE		SHALE	10.0	80.0
339.4	CARBONDALE		UNCLASSIFIED	6.0	90.0
333.4			SHALE	204.0	96.0
129.4			SAND	0.0	300.0
-				34.0	

MAPID: 14500010000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 12 **QUARTERS/FOOTAGES:** NW NE NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.37441 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.112007 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 431.5 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: OHIO OIL 0001 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
359.5	CARBONDALE	HERRIN	COAL	8.0	72.0

MAPID: 14528291000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 12 **QUARTERS/FOOTAGES:** 10' S line, 174' W line of SW NE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.379543 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 38.105735 **DATE COLLECTED:** 6 / 18 / 1980
SURFACE ELEVATION (FT.): 443.0 **LOGGED (FT.):** 21.0 **LOG TYPE:** Drillers Log
SOURCE: CONSOLIDATION COAL CO. #MW-2-6 **WELL TYPE:** Observation Well
COMMENT:

MAPID: 14528294000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 12 **QUARTERS/FOOTAGES:** 43' N line, 67' W line of NW NE NW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.384569 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 38.113056 **DATE COLLECTED:** 9 / 3 / 1980
SURFACE ELEVATION (FT.): 485.4 **LOGGED (FT.):** 18.7 **LOG TYPE:** Drillers Log
SOURCE: CONSOLIDATION COAL CO. #MW-2-11 **WELL TYPE:** Observation Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.4			CLAYSTONE	18.7	0.0
466.7			SHALE	0.0	18.7
466.8			SHALE	0.0	18.6

MAPID: 14528295000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 12 **QUARTERS/FOOTAGES:** 39' N line, 371' W line of NW NW NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.378885 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 38.112928 **DATE COLLECTED:** 9 / 3 / 1980
SURFACE ELEVATION (FT.): 432.3 **LOGGED (FT.):** 20.8 **LOG TYPE:** Drillers Log
SOURCE: CONSOLIDATION COAL CO. #MW-2-12 **WELL TYPE:** Observation Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.3			CLAYSTONE	17.6	0.0
414.7			SAND	1.3	17.6
413.4			CLAYSTONE	1.9	18.9
411.5			SHALE	0.0	20.8

MAPID: 14528359000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 12 QUARTERS/FOOTAGES: 585' N line, 2500' E line of NE

QUADRANGLE: PYATTS LONGITUDE: -89.379687 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.111441 DATE COLLECTED: 11 / 22 / 1977

SURFACE ELEVATION (FT.): 439.2 LOGGED (FT.): 132.6 LOG TYPE: Other Core Study

SOURCE: K. TERRY, JR. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.2			CLAYSTONE	18.5	3.0
417.8			SHALE	38.8	21.4
379.0			LIMESTONE	15.8	60.2
363.1			SHALE	7.0	76.1
356.1			LIMESTONE	2.4	83.1
353.8			SHALE	5.1	85.4
348.7			LIMESTONE	6.0	90.5
342.7			SHALE	19.5	96.5
323.1	CARBONDALE	BRERETON	LIMESTONE	5.1	116.1
318.0	CARBONDALE	ANNA	SHALE	2.2	121.2
315.6	CARBONDALE	HERRIN	COAL	6.9	123.6
309.0	CARBONDALE		CLAYSTONE	2.4	130.2

MAPID: 14528360000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 12 QUARTERS/FOOTAGES: 1484' N line, 966' E line of NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.374346 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.108829 DATE COLLECTED: 6 / 22 / 1972

SURFACE ELEVATION (FT.): 423.5 LOGGED (FT.): 54.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL WELL TYPE: Coal Test

COMMENT: QUESTIONABLE ELEVATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.5			CLAYSTONE	5.8	5.0
412.7			CONCRETION	4.1	10.8
408.6			UNCLASSIFIED	6.8	14.9
401.8	CARBONDALE		LIMESTONE	2.6	21.7
399.2	CARBONDALE		SHALE	5.3	24.3
393.9	CARBONDALE		SHALE	2.0	29.6
391.9	CARBONDALE	JAMESTOWN	COAL	0.5	31.6
391.4	CARBONDALE		SHALE	7.7	32.1
383.7	CARBONDALE	BRERETON	LIMESTONE	6.1	39.8
377.6	CARBONDALE	ANNA	SHALE	0.4	45.9
377.2	CARBONDALE	HERRIN	COAL	6.3	46.3
370.9	CARBONDALE		CLAYSTONE	1.4	52.6

MAPID: 14528362000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 12 QUARTERS/FOOTAGES: 160' S line, 360' W line of SW NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.378893 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.106131 DATE COLLECTED: 6 / 3 / 1982

SURFACE ELEVATION (FT.): 439.1 LOGGED (FT.): 116.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL R-9861 WELL TYPE: Structure Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.1			CLAYSTONE	38.6	0.0
400.5			SHALE	5.0	38.6
395.5			LIMESTONE	11.6	43.6
383.9			SHALE	9.9	55.2
374.0			LIMESTONE	1.7	65.1
372.3			SHALE	6.4	66.8
365.9			LIMESTONE	4.9	73.2
361.0			SHALE	17.1	78.1
343.9			SHALE	5.0	95.2
338.9	CARBONDALE	BRERETON	LIMESTONE	2.9	100.2
336.0	CARBONDALE	HERRIN	COAL	6.3	103.1
329.7	CARBONDALE		CLAYSTONE	3.1	109.4
326.6	CARBONDALE		SHALE	3.5	112.5

MAPID: 14528574000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 12 QUARTERS/FOOTAGES: 1452' S line, 132' E line

QUADRANGLE: PYATTS LONGITUDE: -89.371486 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.102126 DATE COLLECTED: 6 / 23 / 1982

SURFACE ELEVATION (FT.): LOGGED (FT.): 71.0 LOG TYPE: Other Core Study

SOURCE: CONSOLIDATION COAL C-9373 WELL TYPE: Coal Test

COMMENT: PERMIT 68; GEOL X-SECT. B.S. 2 E-W

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
-	CARBONDALE	BANKSTON FORK	LIMESTONE	11.0	28.0
-	CARBONDALE		SHALE	17.0	39.0
-	CARBONDALE	BRERETON	LIMESTONE	6.0	56.0
-	CARBONDALE	ANNA	SHALE	2.0	62.0
-	CARBONDALE	HERRIN	COAL	6.0	64.0
-	CARBONDALE		UNDERCLAY	1.0	70.0

MAPID: 14528575000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 12 QUARTERS/FOOTAGES: 132' N line, 2614' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.380279 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.112706 DATE COLLECTED: 6 / 23 / 1982

SURFACE ELEVATION (FT.): LOGGED (FT.): 142.0 LOG TYPE: Other Core Study

SOURCE: CONSOLIDATION COAL R-9036 WELL TYPE: Coal Test

COMMENT: PERMIT 68; GEOL. X-SECT. B.S. 2 E-W

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
-			SHALE	38.0	15.0	
-			SANDY SHALE	21.0	53.0	
-			LIMESTONE	13.0	74.0	
-			SHALE	7.0	87.0	
-	CARBONDALE		LIMESTONE	2.0	94.0	
-	CARBONDALE		SHALE	5.0	96.0	WITH LIMESTONE
-	CARBONDALE		LIMESTONE	6.0	101.0	
-	CARBONDALE		SHALE	12.0	107.0	
-	CARBONDALE		SHALE	6.0	119.0	WITH LIMESTONE
-	CARBONDALE	BRERETON	LIMESTONE	5.0	125.0	
-	CARBONDALE	ANNA	SHALE	3.0	130.0	
-	CARBONDALE	HERRIN	COAL	6.0	133.0	
-	CARBONDALE		UNDERCLAY	3.0	139.0	

MAPID: 14528576000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 12 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.379705

GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.111256

DATE COLLECTED: 11 / 21 / 1977

SURFACE ELEVATION (FT.): 439.3

LOGGED (FT.): 132.7

LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL RC-9679

WELL TYPE: Coal Test

COMMENT: PERMIT 69

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.3	PLEISTOCENE		SOIL	3.0	0.0
436.3	PLEISTOCENE		CLAY	18.5	3.0
417.8			GRAY SHALE	38.8	21.5
379.0			LIMESTONE	15.8	60.3
363.2			GRAY SHALE	7.0	76.1
356.2			LIMESTONE	2.4	83.1
353.8			GRAY SHALE	5.1	85.5
348.7	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	90.6
342.7	CARBONDALE		GRAY SHALE	1.2	96.6
341.5	CARBONDALE		DARK SHALE	18.3	97.8
323.2	CARBONDALE	BRERETON	LIMESTONE	5.1	116.1
318.1	CARBONDALE	ANNA	BLACK SHALE	2.2	121.2
315.9	CARBONDALE	HERRIN	COAL	6.9	123.4
309.0	CARBONDALE		UNDERCLAY	2.4	130.3

MAPID: 14590026000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 12 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.378903 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.106181 DATE COLLECTED: 6 / 3 / 1982

SURFACE ELEVATION (FT.): 439.1 LOGGED (FT.): 116.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO R9861 WELL TYPE: Coal Test

COMMENT: PERMIT 121; BURNING STAR #2

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
439.1	PLEISTOCENE		CLAY	38.6	0.0	BROWN
400.5	MODESTO		GRAY SHALE	5.0	38.6	
395.5	MODESTO	PIASA	LIMESTONE	11.6	43.6	GRAY
383.9			GRAY SHALE	9.9	55.2	
374.0	CARBONDALE	GALUM	LIMESTONE	1.7	65.1	DARK
372.3	CARBONDALE		CALCAREOUS SHALE	6.4	66.8	
365.9	CARBONDALE	BANKSTON FORK	LIMESTONE	4.9	73.2	DARK
361.0	CARBONDALE		DARK SHALE	17.1	78.1	
343.9	CARBONDALE	BRERETON	DARK SHALE & LIMESTONE	5.0	95.2	
338.9	CARBONDALE	BRERETON	LIMESTONE	2.9	100.2	DARK
336.0	CARBONDALE	HERRIN	COAL	6.3	103.1	
329.7	CARBONDALE		UNDERCLAY	3.1	109.4	
326.6	CARBONDALE		GRAY SHALE	3.5	112.5	

MAPID: 14501184000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 13 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.383613 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.084691 DATE COLLECTED:

SURFACE ELEVATION (FT.): 422.0 LOGGED (FT.): 0.0 LOG TYPE: Measured section

SOURCE: BIBY CC WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
338.0	CARBONDALE	HERRIN	COAL	6.0	84.0	

MAPID: 14501185000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 13 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.37907 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.088165 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 427.8 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: ILL 6 VEIN **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
353.8	CARBONDALE	HERRIN	COAL	6.0	74.0	

MAPID: 14501186000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 13 **QUARTERS/FOOTAGES:** SW SW SE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.379101 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.084463 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 420.6 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: BECK CC **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
365.6	CARBONDALE	HERRIN	COAL	6.0	55.0	

MAPID: 14501201000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 13 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.383589 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.088368 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.9 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: LANGWORTH **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
320.9	CARBONDALE	HERRIN	COAL	6.0	90.0	

MAPID: 14502286000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 13 QUARTERS/FOOTAGES: 630' N line, 2250' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.37893 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.096604 DATE COLLECTED:

SURFACE ELEVATION (FT.): 404.0 LOGGED (FT.): 65.2 LOG TYPE: Survey Core Study

SOURCE: UNITED ELECTRIC COAL CO 19 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
377.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.3	26.8	
371.8	CARBONDALE	LAWSON	CLAYSTONE & SHALE	5.7	32.2	
366.2	CARBONDALE	LAWSON	LIMESTONE/UNDERCLAY	0.5	37.8	
365.7	CARBONDALE	LAWSON	CALCAREOUS SHALE	6.8	38.3	
358.9	CARBONDALE	JAMESTOWN	BONE COAL	0.2	45.1	
358.7	CARBONDALE		CALCAREOUS SHALE	3.0	45.3	
355.7	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	6.4	48.3	
349.3	CARBONDALE	ANNA	BLACK SHALE	2.1	54.7	
347.2	CARBONDALE	ENERGY	GRAY SHALE	1.2	56.8	
346.1	CARBONDALE	ENERGY	CARBONACEOUS SHALE	0.1	57.9	
346.0	CARBONDALE	HERRIN	COAL	7.2	58.0	

MAPID: 14502523000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 13 QUARTERS/FOOTAGES: 330' N line, 330' E line of NE SE

QUADRANGLE: PYATTS LONGITUDE: -89.372294 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.08975 DATE COLLECTED:

SURFACE ELEVATION (FT.): 422.0 LOGGED (FT.): 2850.0 LOG TYPE: Electric Log

SOURCE: BLANKENSHIP, G. A. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-627.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1049.0	
-2401.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2823.0	TOP OF NEW ALBANY
-2403.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2825.0	
-2428.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2850.0	BASE OF NEW ALBANY

MAPID: 14502523000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 13 QUARTERS/FOOTAGES: 330' N line, 330' E line of NE SE

QUADRANGLE: PYATTS LONGITUDE: -89.372294 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.08975 DATE COLLECTED:

SURFACE ELEVATION (FT.): 422.0 LOGGED (FT.): 2933.0 LOG TYPE: Drillers Log

SOURCE: BLANKENSHIP, G. H. WELL TYPE: Coal Test

COMMENT: NOT SUITABLE FOR RESOURCE CALCULATIONS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
422.0			UNCONSOLIDATED	70.0	0.0
352.0			SHALE	230.0	70.0
122.0			SAND	100.0	300.0
22.0			SHALE	120.0	400.0
-98.0			SAND	140.0	520.0
-238.0			SHALE	10.0	660.0
-248.0			SHALE	20.0	670.0
-268.0			SAND	45.0	690.0

MAPID: 14502901000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 13 QUARTERS/FOOTAGES: 180' S line, 198' W line of NW NE NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.383966 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.097156 DATE COLLECTED: 5 / 17 / 1968

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 53.0 LOG TYPE: Drillers Log

SOURCE: C. KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	20.0	0.0
400.0			CLAYSTONE	10.0	20.0
390.0			CONCRETION	5.0	30.0
385.0			CLAYSTONE	16.0	35.0
369.0			CLAYSTONE	2.0	51.0

MAPID: 14502916000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 13 QUARTERS/FOOTAGES: 190' N line, 187' E line of SE NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.376262 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.095878 DATE COLLECTED: 11 / 5 / 1968
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 40.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	2.0	0.0
428.0			CLAYSTONE	7.0	2.0
421.0			CLAYSTONE	15.0	9.0
406.0			CLAYSTONE	6.0	24.0
400.0			CLAYSTONE	10.0	30.0

MAPID: 14502923000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 13 QUARTERS/FOOTAGES: 105' N line, 80' W line of SW SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.379883 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.092536 DATE COLLECTED: 7 / 1 / 1969
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 22.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	1.0	0.0
449.0			CLAYSTONE	16.0	1.0
433.0			SAND	1.0	17.0
432.0			SANDSTONE	4.0	18.0

MAPID: 14502936000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 13 QUARTERS/FOOTAGES: 189' S line, 72' E line of SE SE NE
 QUADRANGLE: PYATTS LONGITUDE: -89.371376 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.091146 DATE COLLECTED: 4 / 28 / 1970
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 20.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	0.5	0.0
429.5			CLAY	14.5	0.5
415.0			SAND	3.0	15.0
412.0			SANDSTONE	2.0	18.0

MAPID: 14502942000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 13 QUARTERS/FOOTAGES: 117' S line, 142' W line of SE NE SE
 QUADRANGLE: PYATTS LONGITUDE: -89.372931 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.087278 DATE COLLECTED: 8 / 21 / 1970
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 50.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	2.0	0.0
428.0			UNCLASSIFIED	1.0	2.0
427.0			CLAY	9.0	3.0
418.0			CLAY	18.0	12.0
400.0			CLAY	10.0	30.0
390.0			SAND	4.0	40.0
386.0			CLAY	6.0	44.0

MAPID: 14502945000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 13 QUARTERS/FOOTAGES: 123' S line, 78' E line of SE SE NE
 QUADRANGLE: PYATTS LONGITUDE: -89.371401 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.090964 DATE COLLECTED: 8 / 21 / 1970
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 48.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	1.0	0.0
429.0			CLAY	13.0	1.0
416.0			CLAY	6.0	14.0
410.0			CLAY	8.0	20.0
402.0			CLAY	6.0	28.0
396.0			CLAY	8.0	34.0
388.0			CLAY	6.0	42.0

MAPID: 14523375000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 13 QUARTERS/FOOTAGES: 95' S line, 116' E line of SE NW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.385077 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.095123 DATE COLLECTED: 4 / 21 / 1977

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 37.0 LOG TYPE: Drillers Log

SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	1.0	0.0
429.0			CLAYSTONE	10.0	1.0
419.0			SAND	1.0	11.0
418.0			CLAYSTONE	25.0	12.0

MAPID: 14502333000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 15 QUARTERS/FOOTAGES: 1' N line, 1' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.407629 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.09869 DATE COLLECTED: 8 / 28 / 1957

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 178.3 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YJ409 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
475.0	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
447.0	MODESTO		SHALE	8.0	28.0
439.0	MODESTO		SANDSTONE	2.5	36.0
436.5	MODESTO		SANDY SHALE	68.0	38.5
368.5	MODESTO	PIASA	LIMESTONE	12.0	106.5
356.5	CARBONDALE	DANVILLE	COAL	3.5	118.5
353.0	CARBONDALE		UNDERCLAY	1.5	122.0
351.5	CARBONDALE	GALUM	LIMESTONE	1.0	123.5
350.5	CARBONDALE		SANDY SHALE	9.5	124.5
341.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	134.0
334.0	CARBONDALE		DARK SHALE	20.0	141.0
314.0	CARBONDALE	BRERETON	LIMESTONE	5.0	161.0
309.0	CARBONDALE	ANNA	BLACK SHALE	2.5	166.0
306.5	CARBONDALE	HERRIN	COAL	6.8	168.5
299.7	CARBONDALE		UNDERCLAY	1.5	175.3
298.2	CARBONDALE		GRAY SANDSTONE	1.5	176.8

MAPID: 14502333000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 15 QUARTERS/FOOTAGES: 1' N line, 1' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.407629

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.09869

DATE COLLECTED:

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 174.8

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YJ409

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
368.0	MODESTO	PIASA	LIMESTONE	12.0	107.0
356.0	CARBONDALE	DANVILLE	COAL	3.5	119.0
352.5	CARBONDALE		CLAYSTONE	1.5	122.5
351.0	CARBONDALE	GALUM	LIMESTONE	1.0	124.0
350.0	CARBONDALE		SILTY SHALE	9.5	125.0
340.5	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	134.5
333.5	CARBONDALE	LAWSON	DARK GRAY SHALE	20.0	141.5
313.5	CARBONDALE	BRERETON	LIMESTONE	5.0	161.5
308.5	CARBONDALE	ANNA	BLACK SHALE	1.5	166.5
307.0	CARBONDALE	HERRIN	COAL	6.8	168.0

MAPID: 14502334000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 16 QUARTERS/FOOTAGES: 1' N line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.444126 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.099233 DATE COLLECTED: 9 / 3 / 1957

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 288.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YH417 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
475.0	PLEISTOCENE		UNCONSOLIDATED	70.0	0.0	
405.0	MODESTO		SANDY SHALE	20.0	70.0	
385.0	MODESTO		SANDY SHALE	12.0	90.0	
373.0	MODESTO		BLACK SHALE	8.0	102.0	
365.0			SANDSTONE/SHALE	25.0	110.0	#7 HORIZON
340.0	CARBONDALE	BANKSTON FORK	LIMESTONE	11.0	135.0	
329.0	CARBONDALE		SANDY SHALE	9.0	146.0	
320.0	CARBONDALE		COAL	1.0	155.0	
319.0	CARBONDALE	CONANT	LIMESTONE	3.0	156.0	
316.0	CARBONDALE		BLACK SHALE	11.0	159.0	
305.0	CARBONDALE	BRERETON	LIMESTONE	4.0	170.0	
301.0	CARBONDALE	ANNA	BLACK SHALE	3.0	174.0	
298.0	CARBONDALE	HERRIN	COAL	6.8	177.0	
291.2	CARBONDALE		UNDERCLAY	1.2	183.8	
290.0	CARBONDALE		SANDSTONE	5.0	185.0	
285.0	CARBONDALE		SANDY SHALE	38.0	190.0	
247.0	CARBONDALE		SANDY SHALE	33.0	228.0	
214.0	CARBONDALE	HANOVER	LIMESTONE	1.0	261.0	
213.0	CARBONDALE	EXCELLO	BLACK SHALE	5.0	262.0	
208.0	CARBONDALE	HOUCHIN CREEK	COAL	2.5	267.0	
205.5	CARBONDALE		SANDSTONE/SHALE	18.5	269.5	

MAPID: 14502334000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 16 QUARTERS/FOOTAGES: 1' N line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.444126 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.099233 DATE COLLECTED:

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 183.8 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YH417 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
340.0	MODESTO	PIASA	LIMESTONE	11.0	135.0
329.0	MODESTO		SILTY SHALE	9.0	146.0
320.0	CARBONDALE	DANVILLE	COAL	1.0	155.0
319.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	156.0
316.0	CARBONDALE	LAWSON	BLACK SHALE	11.0	159.0
305.0	CARBONDALE	BRERETON	LIMESTONE	4.0	170.0
301.0	CARBONDALE	ANNA	BLACK SHALE	3.0	174.0
298.0	CARBONDALE	HERRIN	COAL	6.8	177.0

MAPID: 14502335000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 18 QUARTERS/FOOTAGES: 165' N line, 165' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.480679 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.099433 DATE COLLECTED:

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 200.5 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YH584E WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
376.0	MODESTO	PIASA	LIMESTONE	10.5	144.0
365.5	MODESTO		GRAY SHALE	1.5	154.5
364.0	CARBONDALE	DANVILLE	COAL	1.5	156.0
362.5	CARBONDALE		SHALE & SANDSTONE	8.0	157.5
354.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	165.5
350.0	CARBONDALE	LAWSON	GRAY SHALE	5.5	170.0
344.5	CARBONDALE	CONANT	LIMESTONE	1.5	175.5
343.0	CARBONDALE		BLACK SHALE	8.8	177.0
334.2	CARBONDALE	BRERETON	LIMESTONE	5.3	185.8
329.0	CARBONDALE	ANNA	BLACK SHALE	2.5	191.0
326.0	CARBONDALE	HERRIN	COAL	6.5	194.0

MAPID: 14500361000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 19 QUARTERS/FOOTAGES: 2300' N line, 180' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.4811 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.07891 DATE COLLECTED: 5 / 11 / 1920

SURFACE ELEVATION (FT.): 487.1 LOGGED (FT.): 137.0 LOG TYPE: Drillers Log

SOURCE: SOUTHERN GEM COAL CORP. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
487.1			CLAYSTONE	5.0	0.0
482.1			SAND	15.0	5.0
467.1			SAND	20.0	20.0
447.1	MODESTO		SHALE	7.0	40.0
440.1	MODESTO		SHALE	22.0	47.0
418.1	MODESTO	PIASA	LIMESTONE	9.0	69.0
409.1	MODESTO		SHALE	2.0	78.0
407.1	CARBONDALE	DANVILLE	COAL	1.0	80.0
406.1	CARBONDALE		CLAYSTONE	1.0	81.0
405.1	CARBONDALE		SHALE	6.0	82.0
399.1	CARBONDALE	BANKSTON FORK	LIMESTONE	12.0	88.0
387.1	CARBONDALE		SHALE	12.0	100.0
375.1	CARBONDALE	JAMESTOWN	COAL	0.2	112.0
374.9	CARBONDALE		SHALE	10.0	112.2
364.9	CARBONDALE	BRERETON	LIMESTONE	5.0	122.2
359.9	CARBONDALE	HERRIN	COAL	4.0	127.2
355.9	CARBONDALE	HERRIN	SHALE	0.1	131.2
355.8	CARBONDALE	HERRIN	COAL	0.2	131.3
355.6	CARBONDALE	HERRIN	SHALE	0.2	131.5
355.4	CARBONDALE	HERRIN	COAL	0.9	131.7
354.5	CARBONDALE		CLAYSTONE	1.1	132.6

MAPID: 14528577000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 19 QUARTERS/FOOTAGES: 1300' S line, 250' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.463926 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.073995 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 199.5 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING DEEP WELL6 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNKNOWN	20.0	0.0	LOG DOES NOT DESCRIBE
-	MODESTO		CALCAREOUS SILTSTONE	34.4	20.0	CARBONACEOUS
-	MODESTO		SHALE	15.2	54.4	DARK GRAY
-	MODESTO		CALCAREOUS SHALE	0.7	69.6	BLACK, CARBONACEOUS
-	MODESTO		CORE LOSS	1.3	70.3	
-	MODESTO		CALCAREOUS CLAYSTONE	4.0	71.6	WITH LIMESTONE NODULES
-	MODESTO		SILTSTONE	8.0	75.6	
-	MODESTO		CALCAREOUS CLAYSTONE	1.3	83.6	WITH SOME LIMESTONE NODULES
-	MODESTO		LIMESTONE	2.4	84.9	FE STAINED
-	MODESTO		SHALE	2.2	87.3	
-	MODESTO		MUDSTONE	1.6	89.5	VARIEGATED COLORS; LIMESTONE NODULES
-	MODESTO		LIMESTONE	1.4	91.1	
-	MODESTO		SHALE	0.8	92.5	LIGHT GRAY; FISSILE
-	MODESTO		MUDSTONE	9.2	93.3	
-	MODESTO		SHALE	7.5	102.5	
-	MODESTO	PIASA	LIMESTONE	3.7	110.0	NODULAR
-	MODESTO	PIASA	LIMESTONE	5.7	113.7	
-	MODESTO		SHALE	4.3	119.4	V. DK GRAY TO BLACK
-	CARBONDALE	DANVILLE	COAL	2.4	123.7	
-	CARBONDALE		MUDSTONE	6.1	126.1	
-	CARBONDALE	GALUM	LIMESTONE	2.3	132.2	
-	CARBONDALE		MUDSTONE	1.0	134.5	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	135.5	GREEN GRAY SH PARTINGS
-	CARBONDALE		LIMESTONE	1.5	139.5	BLACK GRAY
-	CARBONDALE		LIMESTONE	2.5	141.0	FOSSILIFEROUS MED. TAN
-	CARBONDALE		SHALE	0.5	143.5	
-	CARBONDALE	CONANT	LIMESTONE	1.5	144.0	
-	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	7.0	145.5	GRAYISH BLACK TO BLACK
-	CARBONDALE	BRERETON	LIMESTONE	21.2	152.5	COAL AT 157.5
-	CARBONDALE	HERRIN	COAL	6.6	173.7	
-	CARBONDALE		SILTSTONE	1.0	180.3	
-	CARBONDALE		SANDSTONE	3.9	181.3	
-	CARBONDALE		MUDSTONE	2.7	185.2	
-	CARBONDALE	ST. DAVID	LIMESTONE	2.1	187.9	
-	CARBONDALE	DYKERSBURG	SILTSTONE	3.3	190.0	LIGHT GRAY WITH LIMESTONE NODULES
-	CARBONDALE	DYKERSBURG	MUDSTONE	3.2	193.3	OLIVE GRAY
-	CARBONDALE	SPRINGFIELD	COAL	3.0	196.5	

MAPID: 14590001000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 19 QUARTERS/FOOTAGES: 20' N line, 270' E line of NE SE SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.463996

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.074011

DATE COLLECTED:

SURFACE ELEVATION (FT.): 535.0

LOGGED (FT.): 180.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL CW19

WELL TYPE: Water Well

COMMENT: PERMIT 188; MONITORING WELL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
535.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0	
515.0	MODESTO		SILTSTONE	34.0	20.0	
481.0	MODESTO		SHALE	16.0	54.0	
465.0	MODESTO		SILTSTONE	15.0	70.0	
450.0	MODESTO		LIMESTONE	2.0	85.0	
448.0	MODESTO		SHALE WITH LIMESTONE	23.0	87.0	
425.0	MODESTO	PIASA	LIMESTONE	9.0	110.0	
416.0	MODESTO		SHALE	5.0	119.0	
411.0	CARBONDALE	DANVILLE	COAL	2.0	124.0	APPROXIMATE THICKNESS
409.0	CARBONDALE		LIMESTONE & SHALE	19.0	126.0	
390.0	CARBONDALE		SHALE	8.0	145.0	
382.0	CARBONDALE		LIMESTONE	21.0	153.0	
361.0	CARBONDALE	HERRIN	COAL	6.0	174.0	APPROXIMATE THICKNESS

MAPID: 14591091000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 19 QUARTERS/FOOTAGES: 2640' S line, 1' W line of SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.48175

GEOLOGIST: LAWSON

CONFIDENTIAL: N

LATITUDE: 38.077919

DATE COLLECTED: 7 / 0 / 1973

SURFACE ELEVATION (FT.): 487.0

LOGGED (FT.): 77.3

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE 10

WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
487.0	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0	
452.0			ROCK	37.0	35.0	
415.0	CARBONDALE	HERRIN	COAL	5.4	72.0	

MAPID: 14523464000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 20 QUARTERS/FOOTAGES: 112' N line, 120' W line of SW SE NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.457892

GEOLOGIST: PLOETZ

CONFIDENTIAL: N

LATITUDE: 38.079141

DATE COLLECTED: 11 / 21 / 1978

SURFACE ELEVATION (FT.):

LOGGED (FT.): 37.0

LOG TYPE: Drillers Log

SOURCE: C. KOHNEN

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	15.0	1.0
-			CLAYSTONE	11.0	16.0
-			SAND	2.0	27.0
-			CLAYSTONE	5.0	29.0
-			SHALE	3.0	34.0

MAPID: 14502336000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 21 QUARTERS/FOOTAGES: 1' N line, 1' W line

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.444162

GEOLOGIST: CHENOWETH

CONFIDENTIAL: N

LATITUDE: 38.08472

DATE COLLECTED: 8 / 23 / 1957

SURFACE ELEVATION (FT.): 522.0

LOGGED (FT.): 207.3

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YH217

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
522.0	PLEISTOCENE		UNCONSOLIDATED	6.0	0.0
516.0	MODESTO		SANDY SHALE	94.0	6.0
422.0	MODESTO		GRAY SANDSTONE	34.0	100.0
388.0	MODESTO	PIASA	LIMESTONE	12.0	134.0
376.0	CARBONDALE		SHALE	1.0	146.0
375.0	CARBONDALE	DANVILLE	COAL	2.0	147.0
373.0	CARBONDALE		SHALE	13.0	149.0
360.0	CARBONDALE	BANKSTON FORK	LIMESTONE	8.0	162.0
352.0	CARBONDALE		DARK SHALE	7.5	170.0
344.5	CARBONDALE		BLACK SHALE	7.0	177.5
337.5	CARBONDALE	CONANT	LIMESTONE	1.5	184.5
336.0	CARBONDALE		BLACK SHALE	5.5	186.0
330.5	CARBONDALE	BRERETON	LIMESTONE	4.5	191.5
326.0	CARBONDALE	ANNA	BLACK SHALE	1.5	196.0
324.5	CARBONDALE	HERRIN	COAL	7.3	197.5
317.2	CARBONDALE		UNDERCLAY	0.5	204.8
316.7	CARBONDALE		LIMESTONE	0.3	205.3
316.4	CARBONDALE		SANDSTONE	1.3	205.6

MAPID: 14502336000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 21 QUARTERS/FOOTAGES: 1' N line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.444162 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.08472 DATE COLLECTED:

SURFACE ELEVATION (FT.): 522.0 LOGGED (FT.): 205.3 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. YH217 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
387.0	MODESTO	PIASA	LIMESTONE	12.0	135.0
375.0	MODESTO		SHALE	1.0	147.0
374.0	CARBONDALE	DANVILLE	COAL	2.0	148.0
372.0	CARBONDALE		GRAY SHALE	13.0	150.0
359.0	CARBONDALE	BANKSTON FORK	LIMESTONE	8.0	163.0
351.0	CARBONDALE	LAWSON	DARK GRAY SHALE	7.5	171.0
343.5	CARBONDALE	LAWSON	BLACK SHALE	7.0	178.5
336.5	CARBONDALE	CONANT	LIMESTONE	1.5	185.5
335.0	CARBONDALE		BLACK SHALE	5.0	187.0
330.0	CARBONDALE	BRERETON	LIMESTONE	4.5	192.0
325.5	CARBONDALE	ANNA	BLACK SHALE	1.5	196.5
324.0	CARBONDALE	HERRIN	COAL	7.3	198.0

MAPID: 14523466000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 21 QUARTERS/FOOTAGES: 104' S line, 106' W line of NW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.443902 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.081327 DATE COLLECTED: 8 / 30 / 1977

SURFACE ELEVATION (FT.): LOGGED (FT.): 51.0 LOG TYPE: Drillers Log

SOURCE: C. KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	11.0	1.0
-			CLAYSTONE	16.0	12.0
-			CLAYSTONE	12.0	28.0
-			CLAYSTONE	2.0	40.0
-			SIDERITE	1.0	42.0
-			CLAYSTONE	2.0	43.0
-			SHALE	6.0	45.0

MAPID: 14528506000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 21 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.443102 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.081934 DATE COLLECTED:

SURFACE ELEVATION (FT.): 515.0 LOGGED (FT.): 2962.0 LOG TYPE: Electric Log

SOURCE: PERRY OIL CO., INC. WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
314.0	CARBONDALE	SPRINGFIELD	COAL	-	201.0	
183.0	CARBONDALE	COLCHESTER	COAL	-	332.0	
-746.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1261.0	
-2427.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2942.0	TOP OF NEW ALBANY
-2428.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2943.0	
-2447.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2962.0	BASE OF NEW ALBANY

MAPID: 14528578000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 21 QUARTERS/FOOTAGES: 50' S line, 1300' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.430942 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.069932 DATE COLLECTED:

SURFACE ELEVATION (FT.): 454.4 LOGGED (FT.): 124.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 8191 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
454.4	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0	
446.4	PLEISTOCENE		UNCONSOLIDATED	11.0	8.0	SAND & GRAVEL
435.4	MODESTO		SHALE	18.4	19.0	WEATHERED
417.0	MODESTO	PIASA	LIMESTONE	8.7	37.4	
408.3	MODESTO		SHALE	3.8	46.1	DARK GRAY
404.5	CARBONDALE	DANVILLE	COAL	2.4	49.9	
402.1	CARBONDALE		UNDERCLAY	1.5	52.3	
400.6	CARBONDALE		GRAY SHALE	4.8	53.8	
395.8	CARBONDALE		CALCAREOUS SHALE	8.8	58.6	
387.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	67.4	
382.7	CARBONDALE		SHALE	8.2	71.7	DARK GRAY
374.5	CARBONDALE	CONANT	LIMESTONE	1.6	79.9	
372.9	CARBONDALE	JAMESTOWN	SHALE	9.5	81.5	DARK GRAY
363.4	CARBONDALE	BRERETON	LIMESTONE	4.4	91.0	DARK GRAY
359.0	CARBONDALE	ANNA	BLACK SHALE	2.5	95.4	DARK GRAY
356.5	CARBONDALE	HERRIN	COAL	6.4	97.9	
350.1	CARBONDALE		UNDERCLAY	2.4	104.3	
347.7	CARBONDALE		SHALE & SANDSTONE	11.3	106.7	INTERBEDDED SDYSH & SS
336.4	CARBONDALE		SHALE	0.3	118.0	DARK GRAY
336.1	CARBONDALE	SPRINGFIELD	COAL	3.0	118.3	
333.1	CARBONDALE		UNDERCLAY	2.7	121.3	

MAPID: 14503019000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 22 QUARTERS/FOOTAGES: 124' S line, 107' W line of NE SW NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.414304 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.079075 DATE COLLECTED: 10 / 14 / 1971

SURFACE ELEVATION (FT.): LOGGED (FT.): 32.0 LOG TYPE: Drillers Log

SOURCE: C. KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			CLAYSTONE	10.0	10.0	
-			CLAYSTONE	10.0	20.0	
-			CLAYSTONE	2.0	30.0	

MAPID: 14590104000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 22 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.412303

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.076299

DATE COLLECTED: 7 / 12 / 1984

SURFACE ELEVATION (FT.): 475.1 LOGGED (FT.): 170.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 7646

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
475.1	PLEISTOCENE		UNCONSOLIDATED	19.5	0.0	
455.6	PLEISTOCENE		CLAY	9.5	19.5	
446.1	PLEISTOCENE		UNCONSOLIDATED	50.8	29.0	
395.3	MODESTO	PIASA	LIMESTONE	5.3	79.8	WEATHERED
390.0	MODESTO		GRAY SHALE	2.4	85.1	
387.6	CARBONDALE	DANVILLE	COAL	1.4	87.5	
386.2	CARBONDALE		UNDERCLAY	0.9	88.9	
385.3	CARBONDALE		GRAY SHALE	5.7	89.8	
379.6	CARBONDALE		GRAY SHALE & LIMESTONE	8.5	95.5	
371.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.9	104.0	
366.2	CARBONDALE		GRAY SHALE	8.1	108.9	
358.1	CARBONDALE	CONANT	LIMESTONE	1.8	117.0	
356.3	CARBONDALE		GRAY SHALE	2.3	118.8	
354.0	CARBONDALE		BLACK SHALE	0.4	121.1	
353.6	CARBONDALE		GRAY SHALE	7.8	121.5	
345.8	CARBONDALE	BRERETON	LIMESTONE	7.2	129.3	
338.6	CARBONDALE	ANNA	BLACK SHALE	2.9	136.5	
335.7	CARBONDALE	HERRIN	COAL	6.6	139.4	
329.1	CARBONDALE		UNDERCLAY	6.3	146.0	
322.8	CARBONDALE		SHALY SANDSTONE	3.4	152.3	
319.4	CARBONDALE		SHALE	3.2	155.7	
316.2	CARBONDALE		GRAY SHALE & LIMESTONE	1.4	158.9	
314.8	CARBONDALE		GRAY SHALE	0.2	160.3	
314.6	CARBONDALE	SPRINGFIELD	COAL	0.2	160.5	
314.4	CARBONDALE		UNDERCLAY	0.6	160.7	
313.8	CARBONDALE		GRAY SHALE	3.7	161.3	
310.1	CARBONDALE		SHALY SANDSTONE	5.0	165.0	

MAPID: 14501189000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 23 **QUARTERS/FOOTAGES:** SE NW NW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.404267 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.081384 **DATE COLLECTED:** 0 / 0 / 1919
SURFACE ELEVATION (FT.): 467.1 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: BEAUCCO CC 6 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
326.1	CARBONDALE	HERRIN	COAL	7.0	141.0	

MAPID: 14501190000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 23 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.395208 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.073919 **DATE COLLECTED:** 0 / 0 / 1909
SURFACE ELEVATION (FT.): 454.4 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: BRIAR HILL0045 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
319.4	CARBONDALE	HERRIN	COAL	7.5	135.0	

MAPID: 14501202000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 24 **QUARTERS/FOOTAGES:** SE SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.381608 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.069867 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 445.7 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: BROWN CC **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
360.7	CARBONDALE	HERRIN	COAL	6.5	85.0	

MAPID: 14501203000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 24 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.372453 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.075022 **DATE COLLECTED:** 0 / 0 / 1930
SURFACE ELEVATION (FT.): 428.7 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PINCKNEYV **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
406.7	CARBONDALE	HERRIN	COAL	6.5	22.0	

MAPID: 14501953000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 3W

SECTION: 24

QUARTERS/FOOTAGES: SE SW NE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.376951

GEOLOGIST: PLOETZ

CONFIDENTIAL: N

LATITUDE: 38.077029

DATE COLLECTED: 5 / 0 / 1931

SURFACE ELEVATION (FT.): 440.8

LOGGED (FT.): 1433.0

LOG TYPE: Drillers Log

SOURCE: OHIO OIL CO.

WELL TYPE: Producer-Oil

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.8			CLAYSTONE	24.0	0.0
416.8			SHALE	8.0	24.0
408.8			LIMESTONE	6.0	32.0
402.8			LIMESTONE	10.0	38.0
392.8			SHALE	52.0	48.0
340.8			SHALE	5.0	100.0
335.8			COAL	3.0	105.0
332.8			SHALE	12.0	108.0

MAPID: 14501953000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY

TWP/RNG: 5S 3W

SECTION: 24

QUARTERS/FOOTAGES: SE SW NE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.376951

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.077029

DATE COLLECTED: 0 / 0 / 1931

SURFACE ELEVATION (FT.): 440.8

LOGGED (FT.): 1433.0

LOG TYPE:

SOURCE: OHIO OIL 0001

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
335.8	CARBONDALE	SPRINGFIELD	COAL	3.0	105.0

MAPID: 14502524000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY

TWP/RNG: 5S 3W

SECTION: 24

QUARTERS/FOOTAGES: 330' S line, 330' E line of NE SE

QUADRANGLE: PYATTS

LONGITUDE: -89.372495

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N

LATITUDE: 38.073211

DATE COLLECTED:

SURFACE ELEVATION (FT.): 403.0

LOGGED (FT.): 1040.0

LOG TYPE: Electric Log

SOURCE: RUDY, J. W., ESTATE OF

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-637.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1040.0

MAPID: 14501191000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 25 **QUARTERS/FOOTAGES:** 1650' N line, 330' E line
QUADRANGLE: PYATTS **LONGITUDE:** -89.372619 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.064118 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.2 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: OWEN CC **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
388.2	CARBONDALE	HERRIN	COAL	-	37.0	

MAPID: 14501191000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 25 **QUARTERS/FOOTAGES:** 1650' N line, 330' E line
QUADRANGLE: PYATTS **LONGITUDE:** -89.372619 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.064118 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.0 **LOGGED (FT.):** 45.0 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
407.8	CARBONDALE	CONANT	LIMESTONE	0.9	17.2	
406.9	CARBONDALE	JAMESTOWN	BONE COAL	0.1	18.1	
406.8	CARBONDALE		SHALE	14.0	18.2	
392.8	CARBONDALE	BRERETON	LIMESTONE	6.0	32.2	
386.8	CARBONDALE	ANNA	BLACK SHALE	0.8	38.2	
386.0	CARBONDALE	HERRIN	COAL	6.0	39.0	

MAPID: 14501193000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 25 **QUARTERS/FOOTAGES:** SE NW NW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.386234 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.066332 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 438.1 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: W WALNUT **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
346.1	CARBONDALE	HERRIN	COAL	6.0	92.0	

MAPID: 14501985000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 25 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.380637 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.061592 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 47.5 LOG TYPE: Drillers Log

SOURCE: H. E. WILSON WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	10.0	0.0
-			CLAYSTONE	5.0	10.0
-	CARBONDALE		SHALE	10.0	15.0
-	CARBONDALE		ROCK	3.0	25.0
-	CARBONDALE	BRERETON	LIMESTONE	11.0	28.0
-	CARBONDALE	ANNA	SHALE	1.0	39.0
-	CARBONDALE	HERRIN	COAL	6.0	40.0

MAPID: 14502917000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 27 QUARTERS/FOOTAGES: 200' S line, 180' E line of SE SW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.413516 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.055537 DATE COLLECTED: 11 / 5 / 1968

SURFACE ELEVATION (FT.): LOGGED (FT.): 50.0 LOG TYPE: Drillers Log

SOURCE: C. KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	9.5	0.5
-			CLAYSTONE	10.0	10.0
-			SAND	10.0	20.0
-			CLAYSTONE	20.0	30.0

MAPID: 14590102000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 27 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.423822

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.062366

DATE COLLECTED: 7 / 26 / 1984

SURFACE ELEVATION (FT.): 464.9

LOGGED (FT.): 143.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 7974

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.9	PLEISTOCENE		UNCONSOLIDATED	19.5	0.0	
445.4	PLEISTOCENE		UNCONSOLIDATED	16.5	19.5	
428.9	MODESTO		SHALE	9.4	36.0	WEATHERED
419.5	MODESTO		GRAY SHALE	5.4	45.4	
414.1	MODESTO	PIASA	LIMESTONE	13.4	50.8	
400.7	MODESTO		GRAY SHALE	1.2	64.2	
399.5	CARBONDALE	DANVILLE	COAL	2.3	65.4	
397.2	CARBONDALE		UNDERCLAY	2.3	67.7	
394.9	CARBONDALE		GRAY SHALE	4.3	70.0	
390.6	CARBONDALE	GALUM	LIMESTONE	2.1	74.3	
388.5	CARBONDALE		GRAY SHALE & LIMESTONE	7.2	76.4	
381.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.4	83.6	
376.9	CARBONDALE		GRAY SHALE	8.0	88.0	
368.9	CARBONDALE	CONANT	LIMESTONE	2.2	96.0	
366.7	CARBONDALE		GRAY SHALE	13.4	98.2	
353.3	CARBONDALE	BRERETON	LIMESTONE	4.7	111.6	
348.6	CARBONDALE		GRAY SHALE	0.7	116.3	
347.9	CARBONDALE	HERRIN	COAL	5.6	117.0	
342.3	CARBONDALE		UNDERCLAY	2.0	122.6	
340.3	CARBONDALE		SANDSTONE/LIMESTONE	1.9	124.6	
338.4	CARBONDALE		SHALE	8.5	126.5	
329.9	CARBONDALE		GRAY SHALE & LIMESTONE	2.5	135.0	
327.4	CARBONDALE		GRAY SHALE	0.4	137.5	
327.0	CARBONDALE	SPRINGFIELD	COAL	2.4	137.9	
324.6	CARBONDALE		UNDERCLAY	2.7	140.3	

MAPID: 14590103000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 27 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.424792 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.069511 DATE COLLECTED: 10 / 8 / 1984

SURFACE ELEVATION (FT.): 481.9 LOGGED (FT.): 141.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 7855 WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
481.9	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0	
464.9	PLEISTOCENE		CLAY	4.5	17.0	
460.4	PLEISTOCENE		GRAVEL	5.5	21.5	
454.9	PLEISTOCENE		CLAY	7.7	27.0	
447.2	PLEISTOCENE		UNCONSOLIDATED	10.3	34.7	
436.9	MODESTO		SHALE	8.0	45.0	WEATHERED
428.9	MODESTO	PIASA	LIMESTONE	12.3	53.0	
416.6	MODESTO		GRAY SHALE	1.4	65.3	
415.2	CARBONDALE	DANVILLE	COAL	2.3	66.7	
412.9	CARBONDALE		UNDERCLAY	0.9	69.0	
412.0	CARBONDALE		GRAY SHALE	6.2	69.9	
405.8	CARBONDALE		GRAY SHALE & LIMESTONE	8.2	76.1	
397.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	84.3	
393.4	CARBONDALE		GRAY SHALE	8.3	88.5	
385.1	CARBONDALE	CONANT	LIMESTONE	1.5	96.8	
383.6	CARBONDALE		GRAY SHALE	9.7	98.3	
373.9	CARBONDALE	BRERETON	LIMESTONE	4.1	108.0	
369.8	CARBONDALE	ANNA	BLACK SHALE	2.4	112.1	
367.4	CARBONDALE	HERRIN	COAL	6.2	114.5	
361.2	CARBONDALE		UNDERCLAY	1.8	120.7	
359.4	CARBONDALE		SHALE	8.5	122.5	
350.9	CARBONDALE		GRAY SHALE & LIMESTONE	2.9	131.0	
348.0	CARBONDALE	ST. DAVID	LIMESTONE	0.8	133.9	
347.2	CARBONDALE		GRAY SHALE	0.8	134.7	
346.4	CARBONDALE	SPRINGFIELD	COAL	2.2	135.5	
344.2	CARBONDALE		UNDERCLAY	3.3	137.7	

MAPID: 14590106000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 27 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.424242

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.055092

DATE COLLECTED: 10 / 2 / 1984

SURFACE ELEVATION (FT.): 474.2

LOGGED (FT.): 152.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 8184

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
474.2	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0	
456.2	PLEISTOCENE		UNCONSOLIDATED	24.1	18.0	
432.1	MODESTO		SHALE	4.3	42.1	WEATHERED
427.8	MODESTO		GRAY SHALE	10.3	46.4	
417.5	MODESTO	PIASA	LIMESTONE	17.7	56.7	
399.8	MODESTO		GRAY SHALE	1.2	74.4	
398.6	CARBONDALE	DANVILLE	COAL	2.6	75.6	
396.0	CARBONDALE		UNDERCLAY	1.8	78.2	
394.2	CARBONDALE		GRAY SHALE	4.8	80.0	
389.4	CARBONDALE	GALUM	GRAY SHALE	1.4	84.8	
388.0	CARBONDALE		GRAY SHALE & LIMESTONE	7.5	86.2	
380.5	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	93.7	
375.5	CARBONDALE		GRAY SHALE	8.5	98.7	
367.0	CARBONDALE	CONANT	LIMESTONE	1.2	107.2	
365.8	CARBONDALE		GRAY SHALE	9.2	108.4	
356.6	CARBONDALE		GRAY SHALE & LIMESTONE	2.8	117.6	
353.8	CARBONDALE	BRERETON	LIMESTONE	5.8	120.4	DARK
348.0	CARBONDALE		GRAY SHALE	1.8	126.2	DARK
346.2	CARBONDALE	HERRIN	COAL	6.8	128.0	
339.4	CARBONDALE		UNDERCLAY	2.0	134.8	
337.4	CARBONDALE		SHALE	9.1	136.8	
328.3	CARBONDALE	SPRINGFIELD	COAL	3.4	145.9	
324.9	CARBONDALE		UNDERCLAY	2.7	149.3	

MAPID: 14590107000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 27 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.412708

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.062295

DATE COLLECTED: 8 / 1 / 1984

SURFACE ELEVATION (FT.): 434.3 LOGGED (FT.): 125.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 7984

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.3	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
420.3	PLEISTOCENE		UNCONSOLIDATED	30.8	14.0
389.5	MODESTO	PIASA	LIMESTONE	8.9	44.8
380.6			GRAY SHALE	13.9	53.7
366.7	CARBONDALE	BANKSTON FORK	LIMESTONE	7.4	67.6
359.3	CARBONDALE		GRAY SHALE	9.2	75.0
350.1	CARBONDALE	CONANT	LIMESTONE	1.9	84.2
348.2	CARBONDALE		GRAY SHALE	6.4	86.1
341.8	CARBONDALE	BRERETON	LIMESTONE	4.6	92.5
337.2	CARBONDALE		GRAY SHALE	3.9	97.1
333.3	CARBONDALE	HERRIN	COAL	6.9	101.0
326.4	CARBONDALE		UNDERCLAY	3.5	107.9
322.9	CARBONDALE		SANDSTONE/LIMESTONE	1.4	111.4
321.5	CARBONDALE		SHALE	5.1	112.8
316.4	CARBONDALE		GRAY SHALE & LIMESTONE	2.8	117.9
313.6	CARBONDALE		GRAY SHALE	0.5	120.7
313.1	CARBONDALE	SPRINGFIELD	COAL	1.2	121.2
311.9	CARBONDALE		UNDERCLAY	2.6	122.4

MAPID: 14590124000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 27 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.412633

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.069436

DATE COLLECTED:

SURFACE ELEVATION (FT.): 463.3 LOGGED (FT.): 178.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 7689

WELL TYPE: Coal Test

COMMENT: PERMIT #233 FROM STRAT-COL CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
463.3	PLEISTOCENE		UNCONSOLIDATED	67.0	0.0	
396.3	MODESTO		SHALE	8.0	67.0	WEATHERED
388.3	MODESTO		SHALE	7.0	75.0	
381.3	MODESTO	DEGRAFF	COAL	1.0	82.0	
380.3	MODESTO		UNDERCLAY	1.0	83.0	
379.3	MODESTO		SHALE	3.0	84.0	
376.3	MODESTO	PIASA	LIMESTONE	9.0	87.0	
367.3	MODESTO		SHALE	4.0	96.0	
363.3	CARBONDALE	DANVILLE	COAL	1.0	100.0	
362.3	CARBONDALE		UNDERCLAY	1.0	101.0	
361.3	CARBONDALE		SHALE	14.0	102.0	
347.3	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	116.0	
342.3	CARBONDALE		SHALE	8.0	121.0	
334.3	CARBONDALE	CONANT	LIMESTONE	2.0	129.0	
332.3	CARBONDALE		SHALE	10.0	131.0	
322.3	CARBONDALE	BRERETON	LIMESTONE	8.0	141.0	
314.3	CARBONDALE		SHALE	1.5	149.0	
312.8	CARBONDALE	HERRIN	COAL	6.5	150.5	
306.3	CARBONDALE		UNDERCLAY	2.0	157.0	
304.3	CARBONDALE		SHALE	8.0	159.0	
296.3	CARBONDALE		SHALE	4.0	167.0	
292.3	CARBONDALE	ST. DAVID	LIMESTONE AND BLACK SHALE	1.0	171.0	
291.3	CARBONDALE		COAL	2.0	172.0	
289.3	CARBONDALE		UNDERCLAY/SHALE	4.0	174.0	

MAPID: 14500362000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 28 QUARTERS/FOOTAGES: 65' S line, 325' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.443958 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.05557 DATE COLLECTED:

SURFACE ELEVATION (FT.): 481.6 LOGGED (FT.): 112.0 LOG TYPE: Drillers Log

SOURCE: SOUTHERN GEM COAL CORP. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
481.6			CLAYSTONE	12.0	0.0
469.6			SHALE	4.0	12.0
465.6			SIDERITE	1.0	16.0
464.6			UNCLASSIFIED	0.2	17.0
464.4	MODESTO		SHALE	26.8	17.2
437.6	MODESTO	PIASA	LIMESTONE	7.5	44.0
430.1	MODESTO		SHALE	0.7	51.5
429.4	CARBONDALE	DANVILLE	COAL	2.7	52.2
426.7	CARBONDALE		CLAYSTONE	1.2	54.9
425.5	CARBONDALE		SHALE	6.0	56.1
419.5	CARBONDALE		LIMESTONE	2.0	62.1
417.5	CARBONDALE		SHALE	2.0	64.1
415.5	CARBONDALE	BANKSTON FORK	LIMESTONE	9.0	66.1
406.5	CARBONDALE		SHALE	15.0	75.1
391.5	CARBONDALE	JAMESTOWN	COAL	0.2	90.1
391.3	CARBONDALE		SHALE	7.7	90.3
383.6	CARBONDALE	CONANT	LIMESTONE	1.0	98.0
382.6	CARBONDALE		SHALE	1.0	99.0
381.6	CARBONDALE	BRERETON	LIMESTONE	3.5	100.0
378.1	CARBONDALE		SHALE	0.5	103.5
377.6	CARBONDALE	HERRIN	COAL	4.4	104.0
373.2	CARBONDALE	HERRIN	UNCLASSIFIED	0.2	108.4
373.0	CARBONDALE	HERRIN	COAL	1.5	108.6
371.5	CARBONDALE		CLAYSTONE	1.9	110.1

MAPID: 14500362000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 28 QUARTERS/FOOTAGES: 65' S line, 325' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.443958

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.05557

DATE COLLECTED:

SURFACE ELEVATION (FT.): 482.0 LOGGED (FT.): 116.1

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
432.0	MODESTO	PIASA	LIMESTONE	7.5	50.0	
424.5	MODESTO		BLACK SHALE	0.7	57.5	
423.8	CARBONDALE	DANVILLE	COAL	2.7	58.2	
421.2	CARBONDALE		CLAYSTONE & SHALE	7.2	60.8	
414.0	CARBONDALE	GALUM	LIMESTONE	2.0	68.0	
412.0	CARBONDALE		SHALE	2.0	70.0	
410.0	CARBONDALE	BANKSTON FORK	LIMESTONE	9.0	72.0	
401.0	CARBONDALE	LAWSON	DARK GRAY SHALE	15.0	81.0	
386.0	CARBONDALE	JAMESTOWN	COAL	0.3	96.0	
385.7	CARBONDALE		DARK GRAY SHALE	7.8	96.3	
378.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	5.5	104.0	
372.5	CARBONDALE	ANNA	DARK GRAY SHALE	0.5	109.5	
372.0	CARBONDALE	HERRIN	COAL	6.1	110.0	

MAPID: 14523234000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 28 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.443747

GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.061787

DATE COLLECTED:

SURFACE ELEVATION (FT.): 486.0 LOGGED (FT.): 2950.0

LOG TYPE: Electric Log

SOURCE: BEESON, RICHARD W.

WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-786.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1272.0	
-2442.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2928.0	TOP OF NEW ALBANY
-2444.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2930.0	
-2464.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2950.0	BASE OF NEW ALBANY

MAPID: 14528579000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 28 QUARTERS/FOOTAGES: 530' N line, 725' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.442159 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.068514 DATE COLLECTED:

SURFACE ELEVATION (FT.): 470.8 LOGGED (FT.): 166.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 7960 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
470.8	PLEISTOCENE		UNCONSOLIDATED	31.0	0.0	
439.8	MODESTO		GRAY SHALE	10.3	31.0	WITH LIMESTONE STREAKS
429.5	MODESTO		SANDY SHALE	14.3	41.3	
415.2	MODESTO		GRAY SHALE	4.3	55.6	
410.9	MODESTO		CALCAREOUS SHALE	3.6	59.9	
407.3	MODESTO		GRAY SHALE	1.5	63.5	
405.8	MODESTO		SANDY SHALE	6.2	65.0	
399.6	MODESTO		GRAY SHALE	7.6	71.2	
392.0	MODESTO	PIASA	LIMESTONE	8.1	78.8	
383.9	MODESTO		SHALE	0.9	86.9	DARK GRAY
383.0	CARBONDALE	DANVILLE	COAL	2.7	87.8	
380.3	CARBONDALE		UNDERCLAY	1.5	90.5	
378.8	CARBONDALE		GRAY SHALE	5.4	92.0	
373.4	CARBONDALE	GALUM	LIMESTONE	1.8	97.4	
371.6	CARBONDALE		CALCAREOUS SHALE	6.3	99.2	
365.3	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	105.5	
360.3	CARBONDALE		SHALE	7.4	110.5	DARK GRAY
352.9	CARBONDALE	CONANT	LIMESTONE	1.5	117.9	DARK GRAY
351.4	CARBONDALE	JAMESTOWN	SHALE	2.6	119.4	DARK GRAY
348.8	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	5.6	122.0	DARK GRAY
343.2	CARBONDALE	BRERETON	LIMESTONE	8.1	127.6	DARK GRAY
335.1	CARBONDALE	ANNA	BLACK SHALE	2.7	135.7	
332.4	CARBONDALE	HERRIN	COAL	6.2	138.4	
326.2	CARBONDALE		UNDERCLAY	4.9	144.6	
321.3	CARBONDALE		CALCAREOUS SANDSTONE	2.4	149.5	
318.9	CARBONDALE		SHALE & SANDSTONE	8.8	151.9	INTERBEDDED SDYSH & SS
310.1	CARBONDALE		SHALE	0.9	160.7	DARK GRAY
309.2	CARBONDALE	SPRINGFIELD	COAL	2.0	161.6	
307.2	CARBONDALE		UNDERCLAY	2.4	163.6	

MAPID: 1452858000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 28 QUARTERS/FOOTAGES: 600' S line, 3300' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.433531 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.056876 DATE COLLECTED:

SURFACE ELEVATION (FT.): 445.5 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log

SOURCE: P9NCKNEYVILLE MINING 7968 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
445.5	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0	
428.5	MODESTO		GRAY SHALE	7.8	17.0	
420.7	MODESTO	PIASA	LIMESTONE	11.5	24.8	GRAY
409.2	MODESTO		SHALE	3.3	36.3	DARK GRAY
405.9	MODESTO		LIMESTONE	0.3	39.6	DK GRAY
405.6	MODESTO		SHALE	0.3	39.9	DARK GRAY
405.3	CARBONDALE	DANVILLE	COAL	2.1	40.2	
403.2	CARBONDALE		UNDERCLAY	2.7	42.3	
400.5	CARBONDALE		GRAY SHALE	4.5	45.0	
396.0	CARBONDALE		CALCAREOUS SHALE	2.5	49.5	
393.5	CARBONDALE		GRAY SHALE	7.0	52.0	WITH LIMESTONE STREAKS
386.5	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	59.0	
381.5	CARBONDALE		GRAY SHALE	8.8	64.0	
372.7	CARBONDALE	CONANT	LIMESTONE	1.2	72.8	DARK GRAY
371.5	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	3.0	74.0	DARK GRAY
368.5	CARBONDALE	JAMESTOWN	SHALE	9.0	77.0	DARK GRAY
359.5	CARBONDALE	BRERETON	CALCAREOUS SHALE	5.2	86.0	DARK GRAY
354.3	CARBONDALE	ANNA	BLACK SHALE	2.4	91.2	
351.9	CARBONDALE	HERRIN	COAL	6.8	93.6	
345.1	CARBONDALE		UNDERCLAY	3.1	100.4	
342.0	CARBONDALE		SHALE & SANDSTONE	7.5	103.5	INTERBEDDED SDYSH & SS
334.5	CARBONDALE		GRAY SHALE	4.2	111.0	
330.3	CARBONDALE	SPRINGFIELD	COAL	1.8	115.2	
328.5	CARBONDALE		UNDERCLAY	3.0	117.0	

MAPID: 14528581000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 28 QUARTERS/FOOTAGES: 700' S line, 50' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.444864 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.05734 DATE COLLECTED:

SURFACE ELEVATION (FT.): 484.7 LOGGED (FT.): 143.6 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 8328 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
484.7	PLEISTOCENE		UNCONSOLIDATED	14.3	0.0	
470.4	PLEISTOCENE		SANDY CLAY	9.7	14.3	
460.7	MODESTO		SHALE	2.3	24.0	WEATHERED
458.4	MODESTO		SHALE & SANDSTONE	3.2	26.3	INTERBEDDED SDY & SS
455.2	MODESTO		GRAY SHALE	7.9	29.5	
447.3	MODESTO		LIMESTONE	2.0	37.4	
445.3	MODESTO		GRAY SHALE	4.3	39.4	
441.0	MODESTO		SHALE & SANDSTONE	5.3	43.7	INTERBEDDED SDYSH & SS
435.7	MODESTO		GRAY SHALE	8.8	49.0	
426.9	MODESTO	PIASA	LIMESTONE	13.2	57.8	
413.7	MODESTO		SHALE	1.0	71.0	DARK GRAY
412.7	CARBONDALE	DANVILLE	COAL	1.3	72.0	
411.4	CARBONDALE		UNDERCLAY	0.7	73.3	
410.7	CARBONDALE		GRAY SHALE	5.3	74.0	
405.4	CARBONDALE	GALUM	LIMESTONE	2.5	79.3	
402.9	CARBONDALE		CALCAREOUS SHALE	5.4	81.8	
397.5	CARBONDALE	BANKSTON FORK	LIMESTONE	5.1	87.2	
392.4	CARBONDALE		GRAY SHALE	1.7	92.3	
390.7	CARBONDALE		SHALE	6.3	94.0	DARK GRAY
384.4	CARBONDALE	CONANT	LIMESTONE	2.5	100.3	DARK GRAY
381.9	CARBONDALE	JAMESTOWN	SHALE	2.2	102.8	DARK GRAY
379.7	CARBONDALE	JAMESTOWN	SHALE	0.5	105.0	SLATEY, BLACK
379.2	CARBONDALE	JAMESTOWN	SHALE	2.3	105.5	DARK GRAY
376.9	CARBONDALE	BRERETON	LIMESTONE	4.5	107.8	DARK GRAY
372.4	CARBONDALE	ANNA	BLACK SHALE	2.3	112.3	SHALEY, BLACK
370.1	CARBONDALE	HERRIN	COAL	7.0	114.6	
363.1	CARBONDALE		UNDERCLAY	3.3	121.6	
359.8	CARBONDALE		SHALE & SANDSTONE	3.7	124.9	INTERBEDDED
356.1	CARBONDALE		SHALE & SANDSTONE	7.0	128.6	INTERBEDDED SDYSH & SS
349.1	CARBONDALE		GRAY SHALE	1.5	135.6	
347.6	CARBONDALE	ST. DAVID	LIMESTONE	0.3	137.1	DARK GRAY
347.3	CARBONDALE	TURNER MINE	SHALE	0.6	137.4	SLATEY, BLACK
346.7	CARBONDALE	SPRINGFIELD	COAL	2.2	138.0	
344.5	CARBONDALE		UNDERCLAY	3.4	140.2	

MAPID: 14590118000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 28 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.44217 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.068384 DATE COLLECTED:

SURFACE ELEVATION (FT.): 470.8 LOGGED (FT.): 166.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 7960 WELL TYPE: Coal Test

COMMENT: PERMIT #233 FROM STRATCOL CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
470.8	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0	
438.8	MODESTO		SHALE	47.0	32.0	
391.8	MODESTO	PIASA	LIMESTONE	8.5	79.0	
383.3	MODESTO		SHALE	1.0	87.5	
382.3	CARBONDALE	DANVILLE	COAL	2.5	88.5	
379.8	CARBONDALE		UNDERCLAY	1.5	91.0	
378.3	CARBONDALE		SHALE	5.5	92.5	
372.8	CARBONDALE	GALUM	LIMESTONE	2.0	98.0	
370.8	CARBONDALE		SHALE	6.0	100.0	
364.8	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	106.0	
359.8	CARBONDALE		SHALE	7.0	111.0	
352.8	CARBONDALE	CONANT	LIMESTONE	2.0	118.0	
350.8	CARBONDALE		SHALE	8.0	120.0	
342.8	CARBONDALE	BRERETON	LIMESTONE	8.0	128.0	
334.8	CARBONDALE		SHALE	3.0	136.0	
331.8	CARBONDALE	HERRIN	COAL	6.0	139.0	
325.8	CARBONDALE		UNDERCLAY	5.0	145.0	
320.8	CARBONDALE		SANDSTONE	2.0	150.0	
318.8	CARBONDALE		SHALE	9.0	152.0	
309.8	CARBONDALE		SHALE	1.0	161.0	
308.8	CARBONDALE	SPRINGFIELD	COAL	2.0	162.0	
306.8	CARBONDALE		UNDERCLAY	2.0	164.0	

MAPID: 14590119000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 28 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.438252

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.060809

DATE COLLECTED:

SURFACE ELEVATION (FT.): 471.0

LOGGED (FT.): 137.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 7969

WELL TYPE: Coal Test

COMMENT: PERMIT #233 FROM STRAT COL CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
471.0	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0
438.0	MODESTO		SHALE	17.5	33.0
420.5	MODESTO	PIASA	LIMESTONE	6.0	50.5
414.5	MODESTO		SHALE	2.5	56.5
412.0	CARBONDALE	DANVILLE	COAL	2.5	59.0
409.5	CARBONDALE		UNDERCLAY	1.5	61.5
408.0	CARBONDALE		SHALE	4.0	63.0
404.0	CARBONDALE	GALUM	LIMESTONE	2.5	67.0
401.5	CARBONDALE		SHALE	7.0	69.5
394.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	76.5
390.0	CARBONDALE		SHALE	8.0	81.0
382.0	CARBONDALE	CONANT	LIMESTONE	2.0	89.0
380.0	CARBONDALE		SHALE	12.5	91.0
367.5	CARBONDALE	BRERETON	LIMESTONE	5.0	103.5
362.5	CARBONDALE		SHALE	0.5	108.5
362.0	CARBONDALE	HERRIN	COAL	6.0	109.0
356.0	CARBONDALE		UNDERCLAY	2.0	115.0
354.0	CARBONDALE		SANDSTONE	2.0	117.0
352.0	CARBONDALE		SHALE	10.0	119.0
342.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	129.0
341.0	CARBONDALE		SHALE	2.0	130.0
339.0	CARBONDALE	SPRINGFIELD	COAL	2.0	132.0
337.0	CARBONDALE		UNDERCLAY	3.0	134.0

MAPID: 14590691000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 28 QUARTERS/FOOTAGES: 1320' S line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.444981

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.059052

DATE COLLECTED: 0 / 0 / 1921

SURFACE ELEVATION (FT.):

LOGGED (FT.): 286.5

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES 6

WELL TYPE: Coal Test

COMMENT: BOX #75; COAL DEPTH/THICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	48.0	0.0
-			ROCK	232.0	48.0
-			COAL	6.5	280.0

MAPID: 14500011000C VERSION: 1

PROJECT: NCRDS87

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 29 QUARTERS/FOOTAGES: 1450' N line, 200' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.462509 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.06638 DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.5 LOGGED (FT.): 495.0 LOG TYPE: Drillers Log

SOURCE: T.O. ROTRAMEL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
495.5			UNCONSOLIDATED	28.0	0.0
467.5	MODESTO		SHALE	18.2	28.0
449.3	MODESTO		COAL	1.3	46.2
448.1	MODESTO		SHALE	26.6	47.4
421.5	MODESTO	PIASA	LIMESTONE	10.0	74.0
411.5	MODESTO		BLACK SHALE	2.3	84.0
409.2	CARBONDALE	DANVILLE	COAL	3.3	86.3
405.9	CARBONDALE		UNDERCLAY	0.4	89.6
405.5	CARBONDALE		SHALE	6.0	90.0
399.5	CARBONDALE		LIMESTONE	12.2	96.0
387.3	CARBONDALE		SHALE	13.8	108.2
373.5	CARBONDALE	JAMESTOWN	COAL	0.5	122.0
373.0	CARBONDALE		SHALE	12.5	122.5
360.5	CARBONDALE		BLACK SHALE	1.3	135.0
359.2	CARBONDALE	HERRIN	COAL	6.7	136.3
352.6	CARBONDALE		UNDERCLAY	1.1	142.9
351.5	CARBONDALE		SHALE	5.0	144.0
346.5	CARBONDALE		LIMESTONE	3.0	149.0
343.5	CARBONDALE		SHALE	7.0	152.0
336.5	CARBONDALE		DARK SHALE	1.4	159.0
335.1	CARBONDALE		COAL	1.5	160.4
333.6	CARBONDALE		UNDERCLAY	1.1	161.9
332.5	CARBONDALE		SHALE	17.0	163.0
315.5	CARBONDALE		SANDSTONE	9.0	180.0
306.5	CARBONDALE		SHALE	41.5	189.0
265.0	CARBONDALE		BLACK SHALE	6.0	230.5
259.0	CARBONDALE		COAL	2.0	236.5
257.0	CARBONDALE		UNDERCLAY	0.5	238.5
256.5	CARBONDALE		SHALE	49.0	239.0
207.5	CARBONDALE		LIMESTONE	2.0	288.0
205.5	CARBONDALE		SHALE	2.0	290.0
203.5	CARBONDALE		COAL	1.3	292.0
202.2	CARBONDALE		UNDERCLAY	0.7	293.3
201.5	CARBONDALE		SHALE	2.0	294.0
199.5	CARBONDALE		SANDSTONE	10.0	296.0
189.5	CARBONDALE		SHALE	20.0	306.0
169.5	CARBONDALE	MECCA QUARRY	BLACK SHALE	10.0	326.0
159.5	CARBONDALE	COLCHESTER	COAL	1.4	336.0
158.1			UNDERCLAY	0.4	337.4

157.7			COAL	3.2	337.8
154.5			UNDERCLAY	1.0	341.0
153.5			SHALE	4.0	342.0
149.5			LIMESTONE	0.5	346.0
149.0			SHALE	0.5	346.5
148.5			UNCLASSIFIED	0.5	347.0
148.0			BLACK SHALE	2.5	347.5
145.5	SPOON	MURPHYSBORO	COAL	2.0	350.0
143.5			SHALE	18.0	352.0
125.5			BONE COAL	3.0	370.0
122.5			SHALE	3.0	373.0
119.5			UNCLASSIFIED	26.0	376.0
93.5			SANDSTONE	29.0	402.0
64.5			SHALE	2.0	431.0
62.5			SANDSTONE	16.0	433.0
46.5			SHALE	46.0	449.0

MAPID: 14500011000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 29 **QUARTERS/FOOTAGES:** 1450' N line, 200' W line
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.462509 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.06638 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 496.0 **LOGGED (FT.):** 142.7 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
422.0	MODESTO	PIASA	LIMESTONE	10.0	74.0
412.0	MODESTO		BLACK SHALE	2.3	84.0
409.7	CARBONDALE	DANVILLE	COAL	2.3	86.3
407.4	CARBONDALE		CLAYSTONE & SHALE	7.4	88.6
400.0	CARBONDALE	BANKSTON FORK	LIMESTONE	12.2	96.0
387.8	CARBONDALE	LAWSON	GRAY SHALE	13.8	108.2
374.0	CARBONDALE	JAMESTOWN	COAL	0.5	122.0
373.5	CARBONDALE		GRAY SHALE	12.5	122.5
361.0	CARBONDALE	ANNA	BLACK SHALE	1.3	135.0
360.0	CARBONDALE	HERRIN	COAL	6.7	136.0

MAPID: 14500011000C VERSION: 3

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 29 QUARTERS/FOOTAGES: 1450' N line, 200' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.462509 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.06638 DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.5 LOGGED (FT.): 495.0 LOG TYPE: Drillers Log

SOURCE: T. O. ROTRAMMEL WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
495.5			UNCONSOLIDATED	1.0	0.0
494.5			CLAYSTONE	18.0	1.0
476.5			CONCRETION	9.0	19.0
467.5	MODESTO		SHALE	4.0	28.0
463.5	MODESTO		SHALE	1.0	32.0
462.5	MODESTO		SHALE	6.0	33.0
456.5	MODESTO		SHALE	7.2	39.0
449.3	MODESTO		COAL	0.2	46.2
449.1	MODESTO		SHALE	5.6	46.4
443.5	MODESTO		SHALE	1.2	52.0
442.3	MODESTO		SHALE	11.8	53.2
430.5	MODESTO		SHALE	8.0	65.0
422.5	MODESTO	PIASA	LIMESTONE	10.0	73.0
412.5	MODESTO		SHALE	2.3	83.0
410.2	CARBONDALE	DANVILLE	COAL	2.2	85.3
408.0	CARBONDALE		CLAYSTONE	1.4	87.5
406.6	CARBONDALE		SHALE	6.0	88.9
406.0	CARBONDALE	BANKSTON FORK	LIMESTONE	12.2	89.5
403.8	CARBONDALE		SHALE	2.8	91.7
401.0	CARBONDALE		SHALE	11.0	94.5
390.0	CARBONDALE	JAMESTOWN	COAL	0.5	105.5
389.5	CARBONDALE		SHALE	12.5	106.0
377.0	CARBONDALE		SHALE	1.2	118.5
375.8	CARBONDALE	HERRIN	COAL	6.7	119.7
369.1	CARBONDALE		CLAYSTONE	1.1	126.4
368.0	CARBONDALE		SHALE	5.0	127.5
367.5	CARBONDALE		LIMESTONE	3.0	128.0
364.5	CARBONDALE		SHALE	1.0	131.0
363.5	CARBONDALE		SHALE	6.0	132.0
357.5	CARBONDALE		SHALE	1.5	138.0
356.0	CARBONDALE	SPRINGFIELD	COAL	1.1	139.5
354.9	CARBONDALE		CLAYSTONE	1.1	140.6
353.8	CARBONDALE		SHALE	7.0	141.7
346.8	CARBONDALE		SHALE	10.0	148.7
336.8	CARBONDALE		SANDSTONE	9.0	158.7
327.8	CARBONDALE		SHALE	21.0	167.7
306.8	CARBONDALE		SHALE	20.0	188.7
286.8	CARBONDALE		SHALE	0.5	208.7
286.3	CARBONDALE	EXCELLO	SHALE	6.0	209.2

280.3	CARBONDALE	HOUCHIN CREEK	COAL	2.5	215.2
277.8	CARBONDALE		CLAYSTONE	0.5	217.7
277.2	CARBONDALE		SHALE	5.0	218.3
272.2	CARBONDALE		SHALE	29.0	223.3
243.2	CARBONDALE		SHALE	15.0	252.3
228.2	CARBONDALE	OAK GROVE	LIMESTONE	2.0	267.3
227.2	CARBONDALE		SHALE	2.0	268.3
225.2	CARBONDALE	COLCHESTER	COAL	1.3	270.3
223.9	SPOON		CLAYSTONE	0.7	271.6
223.2	SPOON		SHALE	2.0	272.3
221.2	SPOON		SAND	10.0	274.3
211.2	SPOON		SHALE	11.0	284.3
200.2	SPOON		SHALE	9.0	295.3
191.2	SPOON		SHALE	10.0	304.3
181.2	SPOON	DEKOVEN	COAL	1.4	314.3
179.8	SPOON		CLAYSTONE	0.4	315.7
179.4	SPOON	DAVIS	COAL	3.2	316.1
176.2	SPOON		CLAYSTONE	1.0	319.3
175.2	SPOON		SHALE	2.0	320.3
173.2	SPOON		SHALE	2.0	322.3
171.2	SPOON		LIMESTONE	0.5	324.3
170.7	SPOON		SHALE	0.5	324.8
170.2	SPOON		UNCLASSIFIED	0.5	325.3
169.7	SPOON		SHALE	2.5	325.8
167.2	SPOON		COAL	2.0	328.3
165.2	SPOON		SHALE	2.0	330.3
163.2	SPOON		SHALE	1.0	332.3
162.2	SPOON		SHALE	14.0	333.3
148.2	SPOON		SHALE	1.0	347.3
147.2	SPOON	MURPHYSBORO	COAL	2.0	348.3
145.2	SPOON	MURPHYSBORO	COAL	1.0	350.3

MAPID: 14528582000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 29 QUARTERS/FOOTAGES: 3250' S line, 1250' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.458882 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.064684 DATE COLLECTED:

SURFACE ELEVATION (FT.): 501.9 LOGGED (FT.): 176.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 7864 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
501.9	PLEISTOCENE		UNCONSOLIDATED	14.5	0.0	
487.4	PLEISTOCENE		SANDY CLAY	3.0	14.5	
484.4	MODESTO		SHALE	4.5	17.5	WEATHERED
479.9	MODESTO		GRAY SHALE	31.7	22.0	
448.2	MODESTO		SHALE & SANDSTONE	6.6	53.7	INTERBEDDED SDYSH & SS
441.6	MODESTO		SHALE	0.7	60.3	DARK GRAY
440.9	MODESTO		GRAY SHALE	7.5	61.0	
433.4	MODESTO		LIMESTONE	1.8	68.5	GRAY
431.6	MODESTO		CALCAREOUS SHALE	4.7	70.3	
426.9	MODESTO		SANDY SHALE	6.0	75.0	GRAY
420.9	MODESTO		GRAY SHALE	10.3	81.0	
410.6	MODESTO	PIASA	LIMESTONE	8.2	91.3	GRAY
402.4	MODESTO		SHALE	1.5	99.5	DARK GRAY
400.9	CARBONDALE	DANVILLE	COAL	1.3	101.0	
399.6	CARBONDALE		UNDERCLAY	7.2	102.3	
392.4	CARBONDALE	GALUM	LIMESTONE	0.5	109.5	GRAY
391.9	CARBONDALE		CALCAREOUS SHALE	7.9	110.0	
384.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	117.9	GRAY
379.7	CARBONDALE		GRAY SHALE	1.8	122.2	
377.9	CARBONDALE		SHALE	6.5	124.0	DARK GRAY
371.4	CARBONDALE	CONANT	LIMESTONE	2.0	130.5	DARK GRAY
369.4	CARBONDALE	JAMESTOWN	SHALE	3.2	132.5	DARK GRAY
366.2	CARBONDALE	JAMESTOWN	SHALE	0.6	135.7	SLATEY, BLACK
365.6	CARBONDALE	JAMESTOWN	SHALE	5.5	136.3	DARK GRAY
360.1	CARBONDALE	BRERETON	LIMESTONE	6.5	141.8	DARK GRAY
353.6	CARBONDALE	ANNA	BLACK SHALE	1.2	148.3	SHALEY, BLACK
352.4	CARBONDALE	HERRIN	COAL	6.4	149.5	
346.0	CARBONDALE		UNDERCLAY	3.3	155.9	
342.7	CARBONDALE		CALCAREOUS SANDSTONE	2.9	159.2	
339.8	CARBONDALE		SHALE & SANDSTONE	3.9	162.1	INTERBEDDED SDYSH & SS
335.9	CARBONDALE		CALCAREOUS SHALE	5.8	166.0	
330.1	CARBONDALE	SPRINGFIELD	COAL	1.5	171.8	
328.6	CARBONDALE		UNDERCLAY	2.7	173.3	

MAPID: 14528583000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 29 QUARTERS/FOOTAGES: 3425' S line, 2425' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.454768 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.065077 DATE COLLECTED:

SURFACE ELEVATION (FT.): 505.4 LOGGED (FT.): 180.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 7945 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
505.4	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
490.4	MODESTO		SHALE	40.0	15.0	WITH LIMESTONE STREAKS
450.4	MODESTO		SHALE & SANDSTONE	13.3	55.0	INTERBEDDED SDYS & SS
437.1	MODESTO		GRAY SHALE	5.6	68.3	
431.5	MODESTO		LIMESTONE	5.5	73.9	GRAY
426.0	MODESTO		CALCAREOUS SHALE	2.1	79.4	
423.9	MODESTO		SANDY SHALE	4.5	81.5	
419.4	MODESTO		GRAY SHALE	7.7	86.0	
411.7	MODESTO	PIASA	LIMESTONE	10.4	93.7	GRAY
401.3	MODESTO		SHALE	1.3	104.1	DARK GRAY
400.0	CARBONDALE	DANVILLE	COAL	2.3	105.4	
397.7	CARBONDALE		UNDERCLAY	0.8	107.7	
396.9	CARBONDALE		GRAY SHALE	5.4	108.5	
391.5	CARBONDALE		CALCAREOUS SHALE	7.9	113.9	
383.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	121.8	GRAY
379.1	CARBONDALE		GRAY SHALE	7.9	126.3	
371.2	CARBONDALE	CONANT	LIMESTONE	2.6	134.2	
368.6	CARBONDALE	JAMESTOWN	SHALE	4.2	136.8	DARK GRAY
364.4	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	7.5	141.0	DARK GRAY
356.9	CARBONDALE	BRERETON	LIMESTONE	5.4	148.5	DK GRAY
351.5	CARBONDALE	ANNA	BLACK SHALE	1.8	153.9	
349.7	CARBONDALE	HERRIN	COAL	6.3	155.7	
343.4	CARBONDALE		UNDERCLAY	2.2	162.0	
341.2	CARBONDALE		CALCAREOUS SANDSTONE	2.1	164.2	
339.1	CARBONDALE		SHALE & SANDSTONE	2.7	166.3	INTERBEDDED SDYSH & SS
336.4	CARBONDALE	ST. DAVID	LIMESTONE	2.0	169.0	GRAY
334.4	CARBONDALE		CALCAREOUS SHALE	3.5	171.0	
330.9	CARBONDALE		SHALE	0.5	174.5	DARK GRAY
330.4	CARBONDALE	SPRINGFIELD	COAL	3.3	175.0	
327.1	CARBONDALE		UNDERCLAY	1.7	178.3	

MAPID: 14528584000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 29 QUARTERS/FOOTAGES: 1280' N line, 1300' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.449288 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.066582 DATE COLLECTED:

SURFACE ELEVATION (FT.): 473.0 LOGGED (FT.): 196.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING EX 278R WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
473.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
458.0	PLEISTOCENE		CLAY	8.0	15.0	
450.0			SANDY SHALE	23.0	23.0	
427.0			LIMESTONE	30.0	46.0	W/ SH STREAKS
397.0	MODESTO		SANDSTONE	3.0	76.0	
394.0	MODESTO		SHALE	2.0	79.0	BLACK
392.0	MODESTO		GRAY SHALE	2.0	81.0	
390.0	MODESTO		LIMESTONE	3.0	83.0	GRAY
387.0	MODESTO		GRAY SHALE	4.0	86.0	
383.0	MODESTO		SANDY SHALE	13.0	90.0	
370.0	MODESTO	PIASA	LIMESTONE	10.0	103.0	
360.0	MODESTO		SHALE	3.0	113.0	DARK GRAY
357.0	CARBONDALE	DANVILLE	COAL	1.6	116.0	
355.4	CARBONDALE		UNDERCLAY	2.4	117.6	
353.0	CARBONDALE		SHALE	2.0	120.0	DARK GRAY
351.0	CARBONDALE	GALUM	LIMESTONE	4.0	122.0	
347.0	CARBONDALE		GRAY SHALE	3.0	126.0	
344.0	CARBONDALE	BANKSTON FORK	ARGILLACEOUS LIMESTONE	3.0	129.0	
341.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	132.0	
336.0	CARBONDALE		GRAY SHALE	8.0	137.0	
328.0	CARBONDALE	CONANT	LIMESTONE	5.0	145.0	BLACK
323.0	CARBONDALE	JAMESTOWN	SHALE	8.0	150.0	BLACK
315.0	CARBONDALE	BRERETON	LIMESTONE	5.0	158.0	DARK
310.0	CARBONDALE	ANNA	BLACK SHALE	5.0	163.0	
305.0	CARBONDALE	HERRIN	COAL	6.4	168.0	
298.6	CARBONDALE		UNDERCLAY	1.6	174.4	
297.0	CARBONDALE		LIMESTONE	3.0	176.0	
294.0	CARBONDALE		SANDSTONE	7.0	179.0	
287.0	CARBONDALE		GRAY SHALE	1.7	186.0	
285.3	CARBONDALE	SPRINGFIELD	COAL	2.3	187.7	
283.0	CARBONDALE		UNDERCLAY	3.0	190.0	
280.0	CARBONDALE		SANDSTONE	3.0	193.0	

MAPID: 14528585000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 29 QUARTERS/FOOTAGES: 2650' S line, 650' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.44714 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.062771 DATE COLLECTED:

SURFACE ELEVATION (FT.): 481.8 LOGGED (FT.): 174.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 8168 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
481.8	PLEISTOCENE		UNCONSOLIDATED	14.8	0.0	
467.0	MODESTO		SANDY CLAY	7.0	14.8	
460.0	MODESTO		SHALE	2.5	21.8	WEATHERED
457.5	MODESTO		GRAY SHALE	21.5	24.3	
436.0	MODESTO		SANDY SHALE	11.2	45.8	
424.8	MODESTO		GRAY SHALE	11.5	57.0	
413.3	MODESTO		SHALE & SANDSTONE	6.5	68.5	INTERBEDDED SDYSH & SS
406.8	MODESTO		GRAY SHALE	7.9	75.0	
398.9	MODESTO	PIASA	LIMESTONE	11.5	82.9	
387.4	MODESTO		SHALE	0.2	94.4	DARK GRAY
387.2	CARBONDALE	DANVILLE	COAL	2.0	94.6	
385.2	CARBONDALE		UNDERCLAY	0.9	96.6	
384.3	CARBONDALE		GRAY SHALE	5.9	97.5	
378.4	CARBONDALE		CALCAREOUS SHALE	7.9	103.4	
370.5	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	111.3	
365.5	CARBONDALE		GRAY SHALE	1.7	116.3	
363.8	CARBONDALE		SHALE	6.1	118.0	DARK GRAY
357.7	CARBONDALE	CONANT	LIMESTONE	1.9	124.1	DARK GRAY
355.8	CARBONDALE	JAMESTOWN	SHALE	3.3	126.0	DARK GRAY
352.5	CARBONDALE		SHALE	0.5	129.3	SLATEY, BLACK
352.0	CARBONDALE		SHALE	7.9	129.8	DARK GRAY
344.1	CARBONDALE	BRERETON	LIMESTONE	6.1	137.7	DARK GRAY
338.0	CARBONDALE	ANNA	BLACK SHALE	0.2	143.8	SHALEY, BLACK
337.8	CARBONDALE	HERRIN	COAL	6.2	144.0	
331.6	CARBONDALE		UNDERCLAY	2.7	150.2	
328.9	CARBONDALE		SHALE & SANDSTONE	4.9	152.9	INTERBEDDED
324.0	CARBONDALE		SHALE & SANDSTONE	8.8	157.8	INTERBEDDED SDYSH & SS
315.2	CARBONDALE		LIMESTONE	0.9	166.6	
314.3	CARBONDALE		CALCAREOUS SHALE	0.9	167.5	
313.4	CARBONDALE	TURNER MINE	SHALE	0.3	168.4	SLATEY, BLACK
313.1	CARBONDALE	SPRINGFIELD	COAL	2.7	168.7	
310.4	CARBONDALE		UNDERCLAY	2.6	171.4	

MAPID: 14500363000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 30 QUARTERS/FOOTAGES: 1285' N line, 90' W line of SW NW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.481785 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 38.065258 DATE COLLECTED: 5 / 6 / 1920
 SURFACE ELEVATION (FT.): 485.5 LOGGED (FT.): 90.0 LOG TYPE: Drillers Log
 SOURCE: SOUTHERN GEM COAL CORP. WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.5			CLAYSTONE	30.0	0.0
455.5	MODESTO		SHALE	4.0	30.0
451.5	CARBONDALE	DANVILLE	COAL	1.5	34.0
450.0	CARBONDALE		SHALE	7.5	35.5
442.5	CARBONDALE	GALUM	LIMESTONE	2.0	43.0
440.5	CARBONDALE		SHALE	6.0	45.0
434.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	51.0
430.5	CARBONDALE		SHALE	9.0	55.0
421.5	CARBONDALE	CONANT	LIMESTONE	1.0	64.0
420.5	CARBONDALE		SHALE	3.0	65.0
417.5	CARBONDALE	JAMESTOWN	COAL	0.2	68.0
417.3	CARBONDALE		SHALE	5.7	68.2
411.6	CARBONDALE	BRERETON	LIMESTONE	7.5	73.9
404.1	CARBONDALE	ANNA	SHALE	1.5	81.4
402.6	CARBONDALE	HERRIN	COAL	5.2	82.9
397.4	CARBONDALE	HERRIN	COAL	0.1	88.1
397.3	CARBONDALE	HERRIN	COAL	0.9	88.2
396.4	CARBONDALE		CLAYSTONE	0.8	89.1

MAPID: 14500364000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 30 QUARTERS/FOOTAGES: 1285' N line, 2390' E line
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471539 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.066954 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 388.9 LOGGED (FT.): 0.0 LOG TYPE: Measured section
 SOURCE: OUTCROP LS WELL TYPE: Outcrop
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
363.9	CARBONDALE	HERRIN	COAL	-	25.0

MAPID: 14500364000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 30 QUARTERS/FOOTAGES: 1285' N line, 2390' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471539

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.066954

DATE COLLECTED:

SURFACE ELEVATION (FT.): 487.0

LOGGED (FT.): 121.1

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.7	MODESTO	PIASA	LIMESTONE	13.0	53.3
420.7	MODESTO		BLACK SHALE	1.3	66.3
419.4	CARBONDALE	DANVILLE	COAL	2.2	67.6
417.2	CARBONDALE		CLAYSTONE & SHALE	14.5	69.8
402.7	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	84.3
396.7	CARBONDALE	LAWSON	BLACK SHALE	2.0	90.3
394.7	CARBONDALE	LAWSON	DARK GRAY SHALE	9.3	92.3
385.4	CARBONDALE	JAMESTOWN	COAL	0.3	101.6
385.1	CARBONDALE		BLACK SHALE	5.9	101.9
379.2	CARBONDALE	BRERETON	LIMESTONE	5.0	107.8
374.2	CARBONDALE	ANNA	BLACK SHALE	2.2	112.8
372.0	CARBONDALE	HERRIN	COAL	6.1	115.0

MAPID: 14500364000C VERSION: 3

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 30 QUARTERS/FOOTAGES: 1285' N line, 2390' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471539 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.066954 DATE COLLECTED: 5 / 8 / 1920

SURFACE ELEVATION (FT.): 486.6 LOGGED (FT.): 122.0 LOG TYPE: Drillers Log

SOURCE: SOUTHERN GEM COAL CORP. #9 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
486.6			UNCONSOLIDATED	28.0	0.0
458.6	MODESTO		SHALE	4.0	28.0
454.6	MODESTO		SHALE	3.0	32.0
451.6	MODESTO		LIMESTONE	1.0	35.0
450.6	MODESTO		SHALE	17.0	36.0
433.6	MODESTO	PIASA	LIMESTONE	13.0	53.0
420.6	MODESTO		SHALE	1.3	66.0
419.3	CARBONDALE	DANVILLE	COAL	2.2	67.3
417.1	CARBONDALE		SHALE	14.5	69.5
402.6	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	84.0
396.6	CARBONDALE		SHALE	2.0	90.0
394.6	CARBONDALE		SHALE	9.3	92.0
385.3	CARBONDALE	JAMESTOWN	COAL	0.3	101.3
385.0	CARBONDALE		SHALE	5.9	101.6
379.1	CARBONDALE	BRERETON	LIMESTONE	5.0	107.5
374.1	CARBONDALE	ANNA	SHALE	2.2	112.5
371.9	CARBONDALE	HERRIN	COAL	6.1	114.7
365.8	CARBONDALE		CLAYSTONE	1.2	120.8

MAPID: 14502639000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 30 QUARTERS/FOOTAGES: 1650' N line, 330' W line of NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.480925 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.066064 DATE COLLECTED:

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 2788.0 LOG TYPE: Electric Log

SOURCE: KEWANEE OIL & GAS WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN COMMENT	
305.0	CARBONDALE	SPRINGFIELD	COAL	-	175.0	
199.0	CARBONDALE	COLCHESTER	COAL	-	281.0	
-647.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1127.0	
-2294.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2774.0	TOP OF NEW ALBANY
-2295.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2775.0	
-2308.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2788.0	BASE OF NEW ALBANY

MAPID: 14528586000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 30 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.48194 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.059629 DATE COLLECTED:

SURFACE ELEVATION (FT.): 470.8 LOGGED (FT.): 112.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 484C WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
470.8	PLEISTOCENE		UNCONSOLIDATED	23.9	0.0	
446.9	PLEISTOCENE		UNCONSOLIDATED	26.5	23.9	
420.4	CARBONDALE		LIMESTONE	0.9	50.4	WEATHERED
419.5	CARBONDALE		LIMESTONE	3.6	51.3	GRAY
415.9	CARBONDALE		GRAY SHALE	7.7	54.9	
408.2	CARBONDALE		LIMESTONE & SHALE	12.9	62.6	INTERBEDDED
395.3	CARBONDALE	BRERETON	LIMESTONE	6.9	75.5	DARK GRAY
388.4	CARBONDALE	ANNA	BLACK SHALE	1.0	82.4	
387.4	CARBONDALE	HERRIN	COAL	4.8	83.4	
382.6	CARBONDALE		UNDERCLAY	5.3	88.2	
377.3	CARBONDALE	HIGGINSVILLE	LIMESTONE	5.1	93.5	GRAY
372.2	CARBONDALE		SANDY SHALE	4.1	98.6	GRAY
368.1	CARBONDALE	ST. DAVID	LIMESTONE	4.8	102.7	GRAY
363.3	CARBONDALE	TURNER MINE	SHALE	0.4	107.5	DARK GRAY
362.9	CARBONDALE	SPRINGFIELD	COAL	2.4	107.9	
360.5	CARBONDALE		UNDERCLAY	1.7	110.3	

MAPID: 14528587000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 30 QUARTERS/FOOTAGES: 1325' S line, 800' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.479461 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.059657 DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.9 LOGGED (FT.): 129.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 584C WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
456.9	PLEISTOCENE		UNCONSOLIDATED	10.5	0.0	
446.4	PLEISTOCENE		UNCONSOLIDATED	32.5	10.5	
413.9	MODESTO	PIASA	LIMESTONE	6.8	43.0	GRAY
407.1	MODESTO		SHALE	2.1	49.8	DARK GRAY
405.0	CARBONDALE	DANVILLE	COAL	0.6	51.9	
404.4	CARBONDALE		UNDERCLAY	1.5	52.5	
402.9	CARBONDALE		GRAY SHALE	7.2	54.0	
395.7	CARBONDALE		LIMESTONE & SHALE	7.7	61.2	INTERBEDDED
388.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.9	68.9	
383.1	CARBONDALE		GRAY SHALE	8.3	73.8	
374.8	CARBONDALE	CONANT	LIMESTONE	1.8	82.1	DARK GRAY
373.0	CARBONDALE	JAMESTOWN	SHALE	8.6	83.9	DARK GRAY
364.4	CARBONDALE	BRERETON	LIMESTONE	5.7	92.5	DARK GRAY
358.7	CARBONDALE	ANNA	BLACK SHALE	2.1	98.2	
356.6	CARBONDALE	HERRIN	COAL	6.3	100.3	
350.3	CARBONDALE		UNDERCLAY	2.3	106.6	
348.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	7.5	108.9	GRAY
340.5	CARBONDALE		SANDSTONE/SHALE	7.3	116.4	INTERBEDDED
333.2	CARBONDALE		SHALE	1.2	123.7	DARK GRAY
332.0	CARBONDALE	SPRINGFIELD	COAL	2.0	124.9	
330.0	CARBONDALE		UNDERCLAY	2.1	126.9	

MAPID: 14528588000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 30 QUARTERS/FOOTAGES: 1875' S line, 2750' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.47261 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.061093 DATE COLLECTED:

SURFACE ELEVATION (FT.): 475.0 LOGGED (FT.): 155.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 5050 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
475.0	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0	
451.0	PLEISTOCENE		UNCONSOLIDATED	11.0	24.0	
440.0	MODESTO		SHALE	7.5	35.0	MULTI-COLORED
432.5	MODESTO		GRAY SHALE	5.0	42.5	WITH LIMESTONE STREAKS
427.5	MODESTO		GRAY SHALE	4.5	47.5	
423.0	MODESTO		SANDY SHALE	11.8	52.0	W. SS STREAKS
411.2	MODESTO	PIASA	LIMESTONE	11.9	63.8	
399.3	MODESTO		SHALE	5.0	75.7	
394.3	CARBONDALE	DANVILLE	COAL	2.4	80.7	
391.9	CARBONDALE		GRAY SHALE	8.1	83.1	
383.8	CARBONDALE	GALUM	LIMESTONE	2.5	91.2	
381.3	CARBONDALE		GRAY SHALE	4.7	93.7	WITH LIMESTONE STREAKS
376.6	CARBONDALE	BANKSTON FORK	LIMESTONE	5.7	98.4	
370.9	CARBONDALE		GRAY SHALE	7.4	104.1	
363.5	CARBONDALE	BRERETON	LIMESTONE	5.8	111.5	DARK, W/ SH STREAKS
357.7	CARBONDALE	BRERETON	LIMESTONE	4.3	117.3	DARK
353.4	CARBONDALE	ANNA	BLACK SHALE	2.1	121.6	
351.3	CARBONDALE	ENERGY	SHALE	4.8	123.7	INTERBEDDED SH & SLATE
346.5	CARBONDALE	HERRIN	COAL	5.9	128.5	
340.6	CARBONDALE		UNDERCLAY	0.6	134.4	
340.0	CARBONDALE		SANDSTONE	3.4	135.0	WITH LIMESTONE STREAKS
336.6	CARBONDALE		GRAY SHALE	10.6	138.4	W/ SS STREAKS
326.0	CARBONDALE		SMUT	1.0	149.0	
325.0	CARBONDALE	SPRINGFIELD	COAL	3.2	150.0	
321.8	CARBONDALE		UNDERCLAY	1.8	153.2	

MAPID: 14528589000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 30 QUARTERS/FOOTAGES: 2625' S line, 575' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.46529 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.063079 DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.2 LOGGED (FT.): 160.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 7863 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
490.2	PLEISTOCENE		UNCONSOLIDATED	18.3	0.0	
471.9	PLEISTOCENE		SANDY CLAY	16.7	18.3	
455.2	MODESTO		SHALE	13.0	35.0	WEATHERED
442.2	MODESTO		LIMESTONE	4.0	48.0	WEATHERED
438.2	MODESTO		GRAY SHALE	19.0	52.0	
419.2	MODESTO	PIASA	LIMESTONE	10.0	71.0	
409.2	MODESTO		SHALE	1.1	81.0	DARK GRAY
408.1	CARBONDALE	DANVILLE	COAL	1.5	82.1	
406.6	CARBONDALE		UNDERCLAY	0.9	83.6	
405.7	CARBONDALE		GRAY SHALE	6.1	84.5	
399.6	CARBONDALE	GALUM	LIMESTONE	1.7	90.6	GRAY
397.9	CARBONDALE		CALCAREOUS SHALE	6.7	92.3	
391.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.4	99.0	GRAY
385.8	CARBONDALE		GRAY SHALE	1.4	104.4	
384.4	CARBONDALE		SHALE	6.7	105.8	DARK GRAY
377.7	CARBONDALE	CONANT	LIMESTONE	2.0	112.5	DARK GRAY
375.7	CARBONDALE	JAMESTOWN	SHALE	2.8	114.5	DARK GRAY
372.9	CARBONDALE	JAMESTOWN	SHALE	0.5	117.3	SLATEY, BLACK
372.4	CARBONDALE	JAMESTOWN	SHALE	8.2	117.8	DARK GRAY
364.2	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	2.6	126.0	DARK GRAY
361.6	CARBONDALE	BRERETON	LIMESTONE	4.5	128.6	DARK GFRAY
357.1	CARBONDALE	ANNA	BLACK SHALE	0.9	133.1	SHALEY, BLACK
356.2	CARBONDALE	HERRIN	COAL	6.4	134.0	
349.8	CARBONDALE		UNDERCLAY	2.1	140.4	
347.7	CARBONDALE		SHALE & SANDSTONE	3.5	142.5	INTERBEDDED SS & CALC. SH
344.2	CARBONDALE		SHALE & SANDSTONE	6.8	146.0	INTERBEDDED SS & SDYSH
337.4	CARBONDALE	ST. DAVID	LIMESTONE	0.7	152.8	DARK GRAY
336.7	CARBONDALE	TURNER MINE	SHALE	0.6	153.5	DARK GRAY
336.1	CARBONDALE	SPRINGFIELD	COAL	2.2	154.1	
333.9	CARBONDALE		UNDERCLAY	3.7	156.3	

MAPID: 14590693000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 30 QUARTERS/FOOTAGES: 1320' S line, 1' W line
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.482247 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.059674 DATE COLLECTED: 0 / 0 / 1921
 SURFACE ELEVATION (FT.): 471.0 LOGGED (FT.): 83.8 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES 8 WELL TYPE: Coal Test
 COMMENT: BOX #75; COAL DEPTH/THICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
471.0	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
431.0			ROCK	38.0	40.0
393.0	CARBONDALE	HERRIN	COAL	5.8	78.0

MAPID: 14590694000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 30 QUARTERS/FOOTAGES: 1320' N line, 990' E line
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.466654 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.066798 DATE COLLECTED: 0 / 0 / 1921
 SURFACE ELEVATION (FT.): 488.0 LOGGED (FT.): 126.2 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES 9 WELL TYPE: Coal Test
 COMMENT: BOX #75; COAL DEPTH/THICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
488.0	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0
448.0			ROCK	80.0	40.0
368.0	CARBONDALE	HERRIN	COAL	6.2	120.0

MAPID: 14502836000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 31 QUARTERS/FOOTAGES: 300' N line, 0' E line of NE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.472926 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 38.055095 DATE COLLECTED: 8 / 19 / 1967
 SURFACE ELEVATION (FT.): LOGGED (FT.): 40.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	28.0	0.0
-			SAND	2.0	28.0
-			CLAYSTONE	10.0	30.0

MAPID: 14528590000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 31 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.482365 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.049487 DATE COLLECTED:

SURFACE ELEVATION (FT.): 459.2 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5813 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
459.2	PLEISTOCENE		UNCONSOLIDATED	15.4	0.0	
443.8	PLEISTOCENE		CLAY	13.1	15.4	
430.7	PLEISTOCENE		UNCONSOLIDATED	9.7	28.5	
421.0	PLEISTOCENE		CLAY	14.8	38.2	
406.2	CARBONDALE		SHALE	5.5	53.0	MULTICOLORED
400.7	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	58.5	GRAY
396.4	CARBONDALE		GRAY SHALE	4.2	62.8	
392.2	CARBONDALE		SHALE	9.8	67.0	DARK WITH LIMETONW STREAKS
382.4	CARBONDALE		SHALE	2.1	76.8	INTERBEDDED SH & SLATE
380.3	CARBONDALE	BRERETON	LIMESTONE	6.0	78.9	DARK
374.3	CARBONDALE	ANNA	SHALE	2.9	84.9	INTERBEDDED SH & SLATE
371.4	CARBONDALE	HERRIN	COAL	6.0	87.8	
365.4	CARBONDALE		UNDERCLAY	4.9	93.8	
360.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.9	98.7	GRAY
355.6	CARBONDALE		SANDY SHALE	9.1	103.6	
346.5	CARBONDALE	ST. DAVID	LIMESTONE	0.6	112.7	GRAY
345.9	CARBONDALE	SPRINGFIELD	COAL	2.0	113.3	
343.9	CARBONDALE		UNDERCLAY	2.7	115.3	

MAPID: 14528591000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 31 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.480281

GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.049445

DATE COLLECTED:

SURFACE ELEVATION (FT.): 452.9 LOGGED (FT.): 105.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5902

WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
452.9	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0	
434.9	PLEISTOCENE		UNCONSOLIDATED	28.0	18.0	
406.9	CARBONDALE	BANKSTON FORK	LIMESTONE	3.4	46.0	GRAY
403.5	CARBONDALE		SHALE	8.6	49.4	
394.9	CARBONDALE	CONANT	LIMESTONE	1.0	58.0	DARK
393.9	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	9.1	59.0	DARK
384.8	CARBONDALE	BRERETON	LIMESTONE	6.6	68.1	DARK
378.2	CARBONDALE	ANNA	SHALE	1.8	74.7	DARK
376.4	CARBONDALE	HERRIN	COAL	5.9	76.5	
370.5	CARBONDALE		UNDERCLAY	1.6	82.4	
368.9	CARBONDALE		CALCAREOUS SANDSTONE	2.5	84.0	
366.4	CARBONDALE		SANDY SHALE	6.5	86.5	W/ SS INTERBEDS
359.9	CARBONDALE		LIMESTONE	7.4	93.0	GRAY
352.5	CARBONDALE	SPRINGFIELD	COAL	3.6	100.4	
348.9	CARBONDALE		UNDERCLAY	1.0	104.0	

MAPID: 14528592000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 31 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.4816 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.049536 DATE COLLECTED:

SURFACE ELEVATION (FT.): 458.7 LOGGED (FT.): 114.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5922 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
458.7	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0	
429.7	PLEISTOCENE		UNCONSOLIDATED	25.9	29.0	
403.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	54.9	GRAY, WEATHERED
400.3	CARBONDALE		SHALE	8.0	58.4	
392.3	CARBONDALE		CALCAREOUS SHALE	4.6	66.4	
387.7	CARBONDALE		SLATY SHALE	4.4	71.0	
383.3	CARBONDALE	BRERETON	LIMESTONE	7.1	75.4	
376.2	CARBONDALE	ANNA	SLATY SHALE	2.3	82.5	
373.9	CARBONDALE	HERRIN	COAL	6.1	84.8	
367.8	CARBONDALE		UNDERCLAY	2.6	90.9	
365.2	CARBONDALE		GRAY SHALE	1.6	93.5	
363.6	CARBONDALE		CALCAREOUS SANDSTONE	2.4	95.1	
361.2	CARBONDALE		SANDY SHALE	6.5	97.5	W/ SS INTERBEDS
354.7	CARBONDALE		CALCAREOUS SHALE	5.0	104.0	GRAY
349.7	CARBONDALE	ST. DAVID	LIMESTONE	1.1	109.0	DARK
348.6	CARBONDALE	SPRINGFIELD	COAL	2.6	110.1	
346.0	CARBONDALE		UNDERCLAY	1.3	112.7	

MAPID: 14500365000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 2030' N line, 50' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.463478 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.050208 DATE COLLECTED:

SURFACE ELEVATION (FT.): 452.5 LOGGED (FT.): 98.9 LOG TYPE: Drillers Log

SOURCE: SOUTHERN GEM COAL CORP. #5 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.5			UNCLASSIFIED	9.0	7.0
436.5	MODESTO		SHALE	13.0	16.0
423.5	MODESTO	PIASA	LIMESTONE	11.0	29.0
412.5	MODESTO		SHALE	1.0	40.0
411.5	CARBONDALE	DANVILLE	COAL	2.0	41.0
409.5	CARBONDALE		SHALE	7.0	43.0
402.5	CARBONDALE		SHALE	1.0	50.0
401.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	51.0
397.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	55.0
396.5	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	56.0
389.5	CARBONDALE		SHALE	14.0	63.0
375.5	CARBONDALE	JAMESTOWN	COAL	0.3	77.0
375.2	CARBONDALE		SHALE	9.3	77.3
365.9	CARBONDALE	BRERETON	LIMESTONE	4.5	86.6
361.4	CARBONDALE	HERRIN	COAL	5.8	91.1
355.6	CARBONDALE		CLAYSTONE	2.0	96.9

MAPID: 14500365000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 2030' N line, 50' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.463478 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.050208 DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 96.8 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.0	MODESTO	PIASA	LIMESTONE	11.0	29.0
413.0	MODESTO		DARK GRAY SHALE	1.0	40.0
412.0	CARBONDALE	DANVILLE	COAL	2.0	41.0
410.0	CARBONDALE		GRAY SHALE	8.0	43.0
402.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	12.0	51.0
390.0	CARBONDALE	LAWSON	DARK GRAY SHALE	14.0	63.0
376.0	CARBONDALE	JAMESTOWN	COAL	0.3	77.0
375.7	CARBONDALE		BLACK SHALE	9.3	77.3
366.3	CARBONDALE	BRERETON	LIMESTONE	4.5	86.7
362.0	CARBONDALE	HERRIN	COAL	5.8	91.0

MAPID: 14500366000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 2705' S line, 1830' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.451742 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.048313 DATE COLLECTED: 4 / 30 / 1920

SURFACE ELEVATION (FT.): 490.7 LOGGED (FT.): 141.0 LOG TYPE: Drillers Log

SOURCE: SOUTHERN GEM COAL CORP. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
490.7			CLAYSTONE	38.0	0.0
452.7	MODESTO		SHALE	2.0	38.0
450.7	MODESTO		SHALE	2.0	40.0
448.7	MODESTO		SHALE	28.5	42.0
420.2	MODESTO	PIASA	LIMESTONE	12.5	70.5
407.7	MODESTO		SHALE	10.0	83.0
397.7	CARBONDALE	GALUM	LIMESTONE	2.0	93.0
395.7	CARBONDALE		SHALE	1.5	95.0
394.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	96.5
388.7	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	102.0
382.7	CARBONDALE		SHALE	20.0	108.0
362.7	CARBONDALE	JAMESTOWN	COAL	0.2	128.0
362.5	CARBONDALE		SHALE	3.7	128.2
358.8	CARBONDALE	BRERETON	LIMESTONE	1.0	131.9
357.8	CARBONDALE	ANNA	SHALE	0.8	132.9
357.0	CARBONDALE	HERRIN	COAL	5.4	133.7
351.6	CARBONDALE	HERRIN	UNCLASSIFIED	0.1	139.1
351.5	CARBONDALE	HERRIN	COAL	0.7	139.2
350.8	CARBONDALE		CLAYSTONE	1.0	139.9

MAPID: 14528121000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 260' S line, 120' E line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.446021 GEOLOGIST: L. SMITH

CONFIDENTIAL: N LATITUDE: 38.041483 DATE COLLECTED:

SURFACE ELEVATION (FT.): 464.9 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: PERFORATED 118-148/REF. SE CO.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
464.9			CLAYSTONE	17.0	0.0
447.9	MODESTO		SANDSTONE	3.0	17.0
444.9	MODESTO		SHALE	9.0	20.0
435.9	MODESTO		SHALE	3.0	29.0
432.9	MODESTO		SHALE	25.0	32.0
407.9	MODESTO		COAL/CLAYSTONE	2.0	57.0
405.9	MODESTO	PIASA	LIMESTONE	11.0	59.0
394.9			SHALE	23.0	70.0
371.9	CARBONDALE		SHALE	9.0	93.0
362.9	CARBONDALE		LIMESTONE W/ SHALE	7.0	102.0
345.9	CARBONDALE	HERRIN	COAL/CLAYSTONE	7.0	119.0
338.9	CARBONDALE		LIMESTONE W/ SHALE	19.0	126.0
319.9	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	3.0	145.0

MAPID: 14528122000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 260' S line, 220' E line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.44637 GEOLOGIST: L. SMITH

CONFIDENTIAL: N LATITUDE: 38.041489 DATE COLLECTED:

SURFACE ELEVATION (FT.): 462.6 LOGGED (FT.): 111.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: FOOTAGE SE CORNER / PERFORATED 91-111

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.6			CLAYSTONE	17.0	0.0
445.6			SANDSTONE	3.0	17.0
442.6			SHALE	9.0	20.0
433.6			SHALE	3.0	29.0
430.6			SHALE	25.0	32.0
405.6	CARBONDALE	DANVILLE	COAL/CLAYSTONE	2.0	57.0
403.6	CARBONDALE		LIMESTONE	11.0	59.0
392.6	CARBONDALE		CALCAREOUS SHALE	23.0	70.0
369.6	CARBONDALE		SHALE	14.0	93.0
355.6	CARBONDALE		LIMESTONE W/ SHALE	4.0	107.0

MAPID: 14528593000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 1250' N line, 3275' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.452147 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.052112 DATE COLLECTED:

SURFACE ELEVATION (FT.): 496.6 LOGGED (FT.): 162.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 6328 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
496.6	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0	
473.6	MODESTO		SHALE	14.0	23.0	MULTI-COLORED
459.6	MODESTO		GRAY SHALE	2.5	37.0	
457.1	MODESTO		SHALE & SANDSTONE	6.5	39.5	INTERBEDDED SDYSH & SS
450.6	MODESTO		SHALE	1.0	46.0	DARK
449.6	MODESTO		GRAY SHALE	6.5	47.0	
443.1	MODESTO		CALCAREOUS SHALE	2.5	53.5	
440.6	MODESTO		SHALE & SANDSTONE	16.0	56.0	INTERBEDDED SILTY SHALE & SANDSTONE
424.6	MODESTO	PIASA	LIMESTONE	11.8	72.0	GRAY
412.8	MODESTO		SHALE	3.0	83.8	DARK
409.8	CARBONDALE	DANVILLE	COAL	1.9	86.8	
407.9	CARBONDALE		UNDERCLAY	0.8	88.7	
407.1	CARBONDALE		GRAY SHALE	5.0	89.5	
402.1	CARBONDALE		CALCAREOUS SHALE	8.5	94.5	
393.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	103.0	GRAY
388.8	CARBONDALE		GRAY SHALE	7.6	107.8	
381.2	CARBONDALE		LIMESTONE	1.1	115.4	DARK
380.1	CARBONDALE		SHALE	10.3	116.5	DARK WITH LIMESTONE STREAKS
369.8	CARBONDALE	BRERETON	LIMESTONE	5.6	126.8	DARK
364.2	CARBONDALE	ANNA	BLACK SHALE	1.7	132.4	
362.5	CARBONDALE	HERRIN	COAL	6.0	134.1	
356.5	CARBONDALE		UNDERCLAY	1.3	140.1	
355.2	CARBONDALE		CALCAREOUS SHALE	1.6	141.4	
353.6	CARBONDALE		SHALE & SANDSTONE	8.5	143.0	INTERBEDDED SDY & SS
345.1	CARBONDALE		CALCAREOUS SHALE	3.3	151.5	
341.8	CARBONDALE	ST. DAVID	LIMESTONE	0.3	154.8	DARK
341.5	CARBONDALE	TURNER MINE	SHALE	1.0	155.1	DARK
340.5	CARBONDALE	SPRINGFIELD	COAL	4.2	156.1	
336.3	CARBONDALE		UNDERCLAY	1.7	160.3	

MAPID: 14528594000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 1300' N line, 2625' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.45442 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.052024 DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.1 LOGGED (FT.): 147.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 6332 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
490.1	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0	
462.1	MODESTO		CALCAREOUS SHALE	15.0	28.0	INTERBEDDED
447.1	MODESTO		SHALE & SANDSTONE	7.5	43.0	INTERBEDDED SDY & SS
439.6	MODESTO		GRAY SHALE	9.4	50.5	
430.2	MODESTO	PIASA	LIMESTONE	11.9	59.9	GRAY
418.3	MODESTO		SHALE	1.2	71.8	DARK
417.1	CARBONDALE	DANVILLE	COAL	1.2	73.0	
415.9	CARBONDALE		UNDERCLAY	1.0	74.2	
414.9	CARBONDALE		GRAY SHALE	4.8	75.2	
410.1	CARBONDALE	GALUM	LIMESTONE	2.9	80.0	GRAY
407.2	CARBONDALE		GRAY SHALE	3.1	82.9	WITH LIMESTONE STREAKS
404.1	CARBONDALE		CALCAREOUS SHALE	3.0	86.0	
401.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	89.0	GRAY
397.1	CARBONDALE		GRAY SHALE	8.0	93.0	
389.1	CARBONDALE		CALCAREOUS SHALE	1.5	101.0	
387.6	CARBONDALE		SHALE	8.5	102.5	DARK
379.1	CARBONDALE	BRERETON	LIMESTONE	5.1	111.0	DARK
374.0	CARBONDALE	ANNA	BLACK SHALE	1.8	116.1	
372.2	CARBONDALE	HERRIN	COAL	5.5	117.9	
366.7	CARBONDALE		UNDERCLAY	2.6	123.4	
364.1	CARBONDALE		CALCAREOUS SHALE	3.1	126.0	
361.0	CARBONDALE		SHALE & SANDSTONE	10.9	129.1	INTERBEDDED SDYSH & SS
350.1	CARBONDALE		SHALE	1.8	140.0	DARK
348.3	CARBONDALE	SPRINGFIELD	COAL	3.6	141.8	
344.7	CARBONDALE		UNDERCLAY	1.6	145.4	

MAPID: 14528595000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 1900' N line, 2625' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.454481 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.050371 DATE COLLECTED:

SURFACE ELEVATION (FT.): 481.1 LOGGED (FT.): 140.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 6333 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
481.1	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0	
459.1	MODESTO		SHALE	18.2	22.0	MULTI-COLORED
440.9	MODESTO		SHALE & SANDSTONE	2.8	40.2	INTERBEDDED SDYSH & SS
438.1	MODESTO		GRAY SHALE	8.5	43.0	
429.6	MODESTO	PIASA	LIMESTONE	12.3	51.5	
417.3	CARBONDALE	DANVILLE	COAL	1.3	63.8	
416.0	CARBONDALE		UNDERCLAY	2.4	65.1	
413.6	CARBONDALE		GRAY SHALE	3.5	67.5	
410.1	CARBONDALE		CALCAREOUS SHALE	1.5	71.0	
408.6	CARBONDALE	GALUM	LIMESTONE	1.7	72.5	GRAY
406.9	CARBONDALE		CALCAREOUS SHALE	5.8	74.2	
401.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.4	80.0	GRAY
396.7	CARBONDALE		GRAY SHALE	8.0	84.4	
388.7	CARBONDALE		CALCAREOUS SHALE	12.3	92.4	DARK
376.4	CARBONDALE	BRERETON	LIMESTONE	5.4	104.7	DARK
371.0	CARBONDALE	ANNA	BLACK SHALE	1.8	110.1	
369.2	CARBONDALE	HERRIN	COAL	6.0	111.9	
363.2	CARBONDALE		UNDERCLAY	1.1	117.9	
362.1	CARBONDALE		CALCAREOUS SHALE	2.5	119.0	
359.6	CARBONDALE		SHALE & SANDSTONE	13.5	121.5	INTERBEDDED SANDY SH & SS
346.1	CARBONDALE	SPRINGFIELD	COAL	2.8	135.0	
343.3	CARBONDALE		UNDERCLAY	2.2	137.8	

MAPID: 14528596000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 3225' S line, 725' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.461132 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.049873 DATE COLLECTED:

SURFACE ELEVATION (FT.): 459.9 LOGGED (FT.): 122.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 7959 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
459.9	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0	
451.9	MODESTO		SHALE	12.0	8.0	WITH WEATHERED LIMESTONE STREAKS
439.9	MODESTO		GRAY SHALE	9.2	20.0	
430.7	MODESTO	PIASA	LIMESTONE	8.4	29.2	GRAY
422.3	MODESTO		SHALE	4.4	37.6	DARK GRAY
417.9	CARBONDALE	DANVILLE	COAL	2.6	42.0	
415.3	CARBONDALE		UNDERCLAY	1.7	44.6	
413.6	CARBONDALE		GRAY SHALE	5.5	46.3	
408.1	CARBONDALE	GALUM	LIMESTONE	2.3	51.8	
405.8	CARBONDALE		CALCAREOUS SHALE	5.9	54.1	
399.9	CARBONDALE	BANKSTON FORK	LIMESTONE	4.9	60.0	
395.0	CARBONDALE		SHALE	7.9	64.9	DARK GRAY
387.1	CARBONDALE	CONANT	LIMESTONE	2.2	72.8	DARK GRAY
384.9	CARBONDALE	JAMESTOWN	SHALE	3.6	75.0	DARK GRAY
381.3	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	5.0	78.6	DARK GRAY
376.3	CARBONDALE	BRERETON	LIMESTONE	5.1	83.6	DARK GRAY
371.2	CARBONDALE	ANNA	BLACK SHALE	1.9	88.7	
369.3	CARBONDALE	HERRIN	COAL	6.3	90.6	
363.0	CARBONDALE		UNDERCLAY	2.5	96.9	
360.5	CARBONDALE		SHALE & SANDSTONE	13.7	99.4	INTERBEDDED SDYSH & SS
346.8	CARBONDALE	ST. DAVID	LIMESTONE	2.0	113.1	
344.8	CARBONDALE	TURNER MINE	SHALE	0.9	115.1	DARK GRAY
343.9	CARBONDALE	SPRINGFIELD	COAL	3.5	116.0	
340.4	CARBONDALE		UNDERCLAY	2.5	119.5	

MAPID: 14528597000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 1300' S line, 3225' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.452603 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.044445 DATE COLLECTED:

SURFACE ELEVATION (FT.): 480.2 LOGGED (FT.): 143.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 8143 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
480.2	PLEISTOCENE		UNCONSOLIDATED	19.7	0.0	
460.5	MODESTO		SANDY CLAY	22.8	19.7	
437.7	MODESTO		SHALE	2.5	42.5	WEATHERED
435.2	MODESTO		GRAY SHALE	3.7	45.0	
431.5	CARBONDALE	DANVILLE	COAL	0.9	48.7	
430.6	CARBONDALE		GRAY SHALE	2.7	49.6	
427.9	CARBONDALE		LIMESTONE	9.7	52.3	GRAY
418.2	CARBONDALE		GRAY SHALE	9.0	62.0	
409.2	CARBONDALE		LIMESTONE	2.3	71.0	GRAY
406.9	CARBONDALE		CALCAREOUS SHALE	5.8	73.3	
401.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	79.1	
396.6	CARBONDALE		GRAY SHALE	2.0	83.6	
394.6	CARBONDALE		SHALE	6.1	85.6	DARK GRAY
388.5	CARBONDALE	CONANT	LIMESTONE	2.3	91.7	DARK GRAY
386.2	CARBONDALE	JAMESTOWN	SHALE	2.7	94.0	DARK GRAY
383.5	CARBONDALE	JAMESTOWN	SHALE	0.6	96.7	SLATEY, BLACK
382.9	CARBONDALE		SHALE	4.2	97.3	DARK GRAY
378.7	CARBONDALE		CALCAREOUS SHALE	4.8	101.5	DARK GRAY
373.9	CARBONDALE	BRERETON	LIMESTONE	4.0	106.3	DARK GRAY
369.9	CARBONDALE	ANNA	BLACK SHALE	0.8	110.3	
369.1	CARBONDALE	HERRIN	COAL	5.6	111.1	
363.5	CARBONDALE		UNDERCLAY	2.1	116.7	
361.4	CARBONDALE		CALCAREOUS SANDSTONE	4.2	118.8	
357.2	CARBONDALE		SHALE & SANDSTONE	7.0	123.0	INTERBEDDED SDYSH & SS
350.2	CARBONDALE		LIMESTONE & SHALE	3.2	130.0	INTERBEDDED
347.0	CARBONDALE		SHALE	1.1	133.2	DARK GRAY
345.9	CARBONDALE	ST. DAVID	LIMESTONE	1.5	134.3	DARK GRAY
344.4	CARBONDALE	TURNER MINE	SHALE	0.2	135.8	SLATEY, BLACK
344.2	CARBONDALE	SPRINGFIELD	COAL	3.2	136.0	
341.0	CARBONDALE		UNDERCLAY	3.8	139.2	

MAPID: 14528598000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 750' N line, 325' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.446306 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.053365 DATE COLLECTED:

SURFACE ELEVATION (FT.): 517.4 LOGGED (FT.): 188.0 LOG TYPE: Drillers Log

SOURCE: PICKNEYVILLE MINING 8302 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
517.4	PLEISTOCENE		UNCONSOLIDATED	17.5	0.0	
499.9	MODESTO		SHALE	7.5	17.5	WEATHERED WITH LIMESTONE STREAKS WITH LIMESTONE STREAKS
492.4	MODESTO		GRAY SHALE	32.2	25.0	
460.2	MODESTO		SANDY SHALE	13.8	57.2	
446.4	MODESTO		GRAY SHALE	4.7	71.0	
441.7	MODESTO		LIMESTONE	1.2	75.7	
440.5	MODESTO		CALCAREOUS SHALE	13.0	76.9	
427.5	MODESTO		GRAY SHALE	4.5	89.9	
423.0	MODESTO	PIASA	LIMESTONE	12.5	94.4	
410.5	MODESTO		SHALE	0.7	106.9	DARK GRAY
409.8	CARBONDALE	DANVILLE	COAL	2.8	107.6	
407.0	CARBONDALE		UNDERCLAY	1.9	110.4	
405.1	CARBONDALE		GRAY SHALE	4.8	112.3	
400.3	CARBONDALE	GALUM	LIMESTONE	2.3	117.1	
398.0	CARBONDALE		CALCAREOUS SHALE	6.6	119.4	
391.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	126.0	
386.9	CARBONDALE		SHALE	7.9	130.5	DARK GRAY
379.0	CARBONDALE	CONANT	LIMESTONE	2.0	138.4	DARK GRAY
377.0	CARBONDALE	JAMESTOWN	SHALE	7.2	140.4	DARK GRAY
369.8	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	5.2	147.6	DARK GRAY
364.6	CARBONDALE	BRERETON	LIMESTONE	5.2	152.8	DARK GRAY
359.4	CARBONDALE	ANNA	BLACK SHALE	2.3	158.0	
357.1	CARBONDALE	HERRIN	COAL	5.9	160.3	
351.2	CARBONDALE		UNDERCLAY	2.5	166.2	
348.7	CARBONDALE		CALCAREOUS SANDSTONE	3.3	168.7	
345.4	CARBONDALE		SHALE & SANDSTONE	8.8	172.0	INTERBEDDED SDYSH & SS
336.6	CARBONDALE		CALCAREOUS SHALE	1.8	180.8	
334.8	CARBONDALE		SHALE	0.4	182.6	DARK GRAY
334.4	CARBONDALE	SPRINGFIELD	COAL	2.4	183.0	
332.0	CARBONDALE		UNDERCLAY	2.6	185.4	

MAPID: 14528599000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 2050' S line, 2150' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.452926 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.046519 DATE COLLECTED:

SURFACE ELEVATION (FT.): 472.5 LOGGED (FT.): 142.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 8933 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
472.5	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0	
451.5	PLEISTOCENE		UNCONSOLIDATED	26.0	21.0	
425.5	MODESTO		GRAY SHALE	9.0	47.0	
416.5	MODESTO		LIMESTONE	1.3	56.0	
415.2	MODESTO		GRAY SHALE	2.7	57.3	
412.5	MODESTO	PIASA	LIMESTONE	10.8	60.0	
401.7	MODESTO		SHALE	1.4	70.8	
400.3	CARBONDALE	DANVILLE	COAL	0.2	72.2	
400.1	CARBONDALE		GRAY SHALE	8.3	72.4	
391.8	CARBONDALE	GALUM	LIMESTONE	2.3	80.7	
389.5	CARBONDALE		CALCAREOUS SHALE	6.5	83.0	
383.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	89.5	
378.5	CARBONDALE		GRAY SHALE	1.3	94.0	
377.2	CARBONDALE		SHALE	6.9	95.3	DARK
370.3	CARBONDALE	CONANT	LIMESTONE	1.8	102.2	DARK
368.5	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	10.4	104.0	DARK
358.1	CARBONDALE	BRERETON	LIMESTONE	4.9	114.4	DARK
353.2	CARBONDALE	ANNA	SHALE	1.1	119.3	DARK
352.1	CARBONDALE	HERRIN	COAL	5.4	120.4	
346.7	CARBONDALE		UNDERCLAY	4.1	125.8	
342.6	CARBONDALE		CALCAREOUS SANDSTONE	12.1	129.9	W/ GRAYSH STREAKS

MAPID: 14590003000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 260' S line, 120' E line of SE SE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.446021 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.041483 DATE COLLECTED:

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL CW9 WELL TYPE: Water Well

COMMENT: PERMIT 188; MONITORING WELL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
465.0	PLEISTOCENE		CLAY	17.0	0.0	
448.0	MODESTO		SANDSTONE	3.0	17.0	GRAY
445.0	MODESTO		GRAY SHALE	9.0	20.0	
436.0	MODESTO		SHALE	3.0	29.0	RED-GRAY
433.0	MODESTO		GRAY SHALE	25.0	32.0	
408.0	CARBONDALE	DANVILLE	COAL/CLAYSTONE	2.0	57.0	APPROXIMATE THICKNESS
406.0	CARBONDALE	BANKSTON FORK	LIMESTONE	11.0	59.0	
395.0	CARBONDALE		CALCAREOUS SHALE	23.0	70.0	
372.0	CARBONDALE		GRAY SHALE	9.0	93.0	
363.0	CARBONDALE		LIMESTONE & SHALE	17.0	102.0	
346.0	CARBONDALE	HERRIN	COAL/CLAYSTONE	7.0	119.0	APPROXIMATE THICKNESS
339.0	CARBONDALE		LIMESTONE & SHALE	19.0	126.0	
320.0	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	3.0	145.0	APPROXIMATE THICKNESS

MAPID: 14590208000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 260' S line, 120' E line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.446021 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.041483 DATE COLLECTED: 12 / 1 / 1983

SURFACE ELEVATION (FT.): 464.9 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: WATER SURFACE ELEV. 458.8

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.9			CLAYSTONE	17.0	0.0	
447.9	MODESTO		SANDSTONE	3.0	17.0	
444.9	MODESTO		SHALE	9.0	20.0	
435.9	MODESTO		SHALE	3.0	29.0	
432.9	MODESTO		SHALE	25.0	32.0	
407.9	CARBONDALE	DANVILLE	COAL/CLAYSTONE	2.0	57.0	
405.9	CARBONDALE		LIMESTONE	11.0	59.0	
394.9	CARBONDALE		CALCAREOUS SHALE	23.0	70.0	
371.9	CARBONDALE		SHALE	9.0	93.0	
362.9	CARBONDALE		LIMESTONE W/ SHALE	17.0	102.0	
345.9	CARBONDALE	HERRIN	COAL/CLAYSTONE	7.0	119.0	
338.9	CARBONDALE		LIMESTONE/SILTSTONE	19.0	126.0	
319.9	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	3.0	145.0	

MAPID: 14590209000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 260' S line, 220' E line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.44637 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.041489 DATE COLLECTED: 12 / 1 / 1983

SURFACE ELEVATION (FT.): 462.6 LOGGED (FT.): 111.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: WATER SURFACE ELEVATION 423.1

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.6			CLAYSTONE	17.0	0.0
445.6	MODESTO		SANDSTONE	0.0	17.0
442.6	MODESTO		SHALE	0.0	20.0
433.6	MODESTO		SHALE	0.0	29.0
430.6	MODESTO		SHALE	0.0	32.0
405.6	CARBONDALE	DANVILLE	COAL/CLAYSTONE	0.0	57.0
403.6	CARBONDALE		LIMESTONE	0.0	59.0
392.6	CARBONDALE		CALCAREOUS SHALE	0.0	70.0
369.6	CARBONDALE		SHALE	0.0	93.0
355.6	CARBONDALE		LIMESTONE W/ SHALE	0.0	107.0

MAPID: 14590692000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 32 QUARTERS/FOOTAGES: 1320' S line, 1' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.445499 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.044404 DATE COLLECTED: 0 / 0 / 1921

SURFACE ELEVATION (FT.): 477.0 LOGGED (FT.): 134.4 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES 7 WELL TYPE: Coal Test

COMMENT: BOX #75; COAL DEPTH/THICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
477.0	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0
432.0			ROCK	83.0	45.0
349.0	CARBONDALE	HERRIN	COAL	6.4	128.0

MAPID: 14528132000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 33 QUARTERS/FOOTAGES: 75' S line, 52' W line of SW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.445439 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.040964 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 463.9 LOGGED (FT.): 150.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT: PERFORATED 143-163

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.9			UNCONSOLIDATED	17.0	0.0
446.9			SHALE	30.0	17.0
416.9			LIMESTONE	20.0	47.0
396.9			LIMESTONE W/ SHALE	55.0	67.0
341.9			COAL	1.0	122.0
340.9			LIMESTONE W/ SHALE	18.0	123.0
322.9			COAL	2.0	141.0
320.9			LIMESTONE W/ SHALE	7.0	143.0

MAPID: 14528471000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 33 QUARTERS/FOOTAGES: SW NW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.444047 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 38.052643 DATE COLLECTED: 10 / 0 / 1940
 SURFACE ELEVATION (FT.): LOGGED (FT.): 128.0 LOG TYPE: Drillers Log
 SOURCE: KILLINGSWORTH & BLAIN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	20.0	0.0
-			SHALE	23.0	20.0
-			LIMESTONE	20.0	43.0
-			SHALE	20.0	63.0
-			LIMESTONE	10.0	83.0
-			SHALE	9.0	93.0
-			LIMESTONE	4.0	102.0
-			SHALE	10.0	106.0
-			LIMESTONE	6.0	116.0
-			SHALE	5.0	122.0
-			LIMESTONE	2.0	127.0

MAPID: 1452860000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 33 QUARTERS/FOOTAGES: 75' S line, 52' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.445439 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.040964 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 104.4 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL DEEPCORE 5 WELL TYPE: Coal Test

COMMENT: PERMIT 216; CAPT. MINE; NO ELEV. OR DATE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNKNOWN	63.0	0.0	
-	CARBONDALE		CALCAREOUS SHALE	1.5	63.0	DARK; CARBONACEOUS; FOSSILIFEROUS
-	CARBONDALE	BRERETON	CARBONACEOUS LIMESTONE	3.5	64.5	
-	CARBONDALE	ANNA	BLACK SHALE	0.1	68.0	
-	CARBONDALE	HERRIN	COAL	6.8	68.1	
-	CARBONDALE		CARBONACEOUS SHALE	2.0	74.9	COAL PARTING AT 75.2'
-	CARBONDALE		CLAYSTONE	1.6	76.9	WITH LIMESTONE CLASTS
-	CARBONDALE		LIMESTONE	5.0	78.5	
-	CARBONDALE		SHALE	1.0	83.5	W/ PYRITE NODS.
-	CARBONDALE		SHALE	0.6	84.5	
-	CARBONDALE		SILTY SHALE	3.1	85.1	FE STAINED; LIMESTONE NODULES; PYRITE
-	CARBONDALE		CALCAREOUS SILTY SHALE	4.2	88.2	LIMESTONE NODULES
-	CARBONDALE		CALCAREOUS SHALE	0.8	92.4	GREENISH GRAY
-	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	0.8	93.2	GREENISH GRAY; SL. CARBONACEOUS
-	CARBONDALE	SPRINGFIELD	COAL	2.7	94.0	
-	CARBONDALE		LIMESTONE AND SANDSTONE	2.9	96.7	CORELOSS
-	CARBONDALE		CALCAREOUS CLAYSTONE	3.0	99.6	PLANT FOSSILS
-	CARBONDALE		SHALE	1.8	102.6	

MAPID: 14528601000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 33 QUARTERS/FOOTAGES: 625' S line, 2000' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.438589 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.042346 DATE COLLECTED:

SURFACE ELEVATION (FT.): 473.6 LOGGED (FT.): 146.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 7619 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
473.6	PLEISTOCENE		UNCONSOLIDATED	19.5	0.0	
454.1	MODESTO		SHALE	11.5	19.5	WEATHERED
442.6	MODESTO		GRAY SHALE	2.7	31.0	
439.9	MODESTO		SHALE & SANDSTONE	6.3	33.7	INTERBEDDED SDYSH & SS
433.6	MODESTO		GRAY SHALE	7.3	40.0	
426.3	MODESTO		SHALE	3.2	47.3	
423.1	MODESTO		GRAY SHALE	3.8	50.5	
419.3	MODESTO	DEGRAFF	BLACK SHALE	0.4	54.3	COAL STREAKS
418.9	MODESTO		GRAY SHALE	1.1	54.7	
417.8	MODESTO	PIASA	LIMESTONE	9.9	55.8	GRAY
407.9			CALCAREOUS SHALE	8.3	65.7	
399.6			GRAY SHALE	2.8	74.0	
396.8	CARBONDALE	GALUM	LIMESTONE	1.7	76.8	
395.1	CARBONDALE		CALCAREOUS SHALE	6.4	78.5	
388.7	CARBONDALE	BANKSTON FORK	LIMESTONE	4.4	84.9	GRAY
384.3	CARBONDALE		GRAY SHALE	1.7	89.3	
382.6	CARBONDALE		SHALE	2.3	91.0	DARK GRAY
380.3	CARBONDALE	CONANT	LIMESTONE	0.5	93.3	DARK GRAY
379.8	CARBONDALE	CONANT	CALCAREOUS SHALE	7.7	93.8	INTERBEDDED
372.1	CARBONDALE	JAMESTOWN	BLACK SHALE	0.7	101.5	COAL STREAKS
371.4	CARBONDALE		SHALE	8.8	102.2	DARK GRAY
362.6	CARBONDALE	BRERETON	LIMESTONE	4.0	111.0	DARK GRAY
358.6	CARBONDALE	ANNA	BLACK SHALE	1.8	115.0	
356.8	CARBONDALE	HERRIN	COAL	6.0	116.8	
350.8	CARBONDALE		UNDERCLAY	2.6	122.8	
348.2	CARBONDALE		SHALE & SANDSTONE	4.1	125.4	INTERBEDDED SS & CALC. SH
344.1	CARBONDALE		SHALE & SANDSTONE	5.0	129.5	INTERBEDDED SDYSH & SS
339.1	CARBONDALE		LIMESTONE	3.3	134.5	GRAY
335.8	CARBONDALE		CALCAREOUS SHALE	1.9	137.8	
333.9	CARBONDALE	ST. DAVID	LIMESTONE	0.5	139.7	DARK GRAY
333.4	CARBONDALE	TURNER MINE	BLACK SHALE	0.2	140.2	
333.2	CARBONDALE	SPRINGFIELD	COAL	3.2	140.4	
330.0	CARBONDALE		UNDERCLAY	2.4	143.6	

MAPID: 14528602000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 33 QUARTERS/FOOTAGES: 650' N line, 675' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.442807 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.053579 DATE COLLECTED:

SURFACE ELEVATION (FT.): 511.3 LOGGED (FT.): 175.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 7951 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
511.3	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0	
500.3	MODESTO		SHALE	22.5	11.0	WITH LIMESTONE STREAKS
477.8	MODESTO		GRAY SHALE	11.7	33.5	WITH LIMESTONE STREAKS
466.1	MODESTO		SANDY SHALE	12.2	45.2	
453.9	MODESTO		GRAY SHALE	5.3	57.4	
448.6	MODESTO		LIMESTONE	0.6	62.7	GRAY
448.0	MODESTO		SANDY SHALE	7.7	63.3	
440.3	MODESTO		GRAY SHALE	9.9	71.0	
430.4	MODESTO	PIASA	LIMESTONE	12.0	80.9	
418.4	MODESTO		SHALE	2.4	92.9	DARK GRAY
416.0	CARBONDALE	DANVILLE	COAL	2.6	95.3	
413.4	CARBONDALE		UNDERCLAY	1.5	97.9	
411.9	CARBONDALE		GRAY SHALE	4.4	99.4	
407.5	CARBONDALE	GALUM	LIMESTONE	2.6	103.8	
404.9	CARBONDALE		CALCAREOUS SHALE	6.6	106.4	
398.3	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	113.0	
393.3	CARBONDALE		SHALE	7.8	118.0	DARK GRAY
385.5	CARBONDALE	CONANT	LIMESTONE	1.7	125.8	DARK GRAY
383.8	CARBONDALE	JAMESTOWN	SHALE	9.3	127.5	DARK GRAY
374.5	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	4.8	136.8	DARK GRAY
369.7	CARBONDALE	BRERETON	LIMESTONE	5.2	141.6	DARK GRAY
364.5	CARBONDALE	ANNA	BLACK SHALE	0.6	146.8	
363.9	CARBONDALE	HERRIN	COAL	6.2	147.4	
357.7	CARBONDALE		UNDERCLAY	3.9	153.6	
353.8	CARBONDALE		CALCAREOUS SANDSTONE	2.6	157.5	
351.2	CARBONDALE		SHALE & SANDSTONE	8.8	160.1	INTERBEDDED
342.4	CARBONDALE		SHALE	1.0	168.9	DARK GRAY
341.4	CARBONDALE	SPRINGFIELD	COAL	2.3	169.9	
339.1	CARBONDALE		UNDERCLAY	2.8	172.2	

MAPID: 14528603000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 33 QUARTERS/FOOTAGES: 125' S line, 25' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.445529 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.041105 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 104.4 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING DEEPCORE 5 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNKNOWN	63.0	0.0	LOG DOES NOT DESCRIBE
-	CARBONDALE		CALCAREOUS SHALE	1.5	63.0	CARBONACEOUS, FOSSILIF.; DARK GRAY
-	CARBONDALE	BRERETON	LIMESTONE	3.5	64.5	CARBONACEOUS, GREENISH BLK. W/SH PARTING
-	CARBONDALE	ANNA	CARBONACEOUS SHALE	0.1	68.0	
-	CARBONDALE	HERRIN	COAL	6.8	68.1	
-	CARBONDALE		SHALE	2.0	74.9	
-	CARBONDALE		CLAYSTONE	1.6	76.9	
-	CARBONDALE	HIGGINSVILLE	LIMESTONE	5.0	78.5	GREENISH GRAY
-	CARBONDALE		SHALE	1.6	83.5	
-	CARBONDALE		SILTY SHALE	7.3	85.1	
-	CARBONDALE		SHALE	0.8	92.4	
-	CARBONDALE		LIMESTONE	0.8	93.2	
-	CARBONDALE	SPRINGFIELD	COAL	2.7	94.0	
-	CARBONDALE		CORE LOSS	2.9	96.7	
-	CARBONDALE		CLAYSTONE	3.0	99.6	
-	CARBONDALE		SHALE	1.8	102.6	

MAPID: 14528604000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 33 QUARTERS/FOOTAGES: 2700' S line, 1250' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.440996 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.048123 DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 169.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 8321 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
494.0	PLEISTOCENE		UNCONSOLIDATED	12.0	0.0	
482.0	PLEISTOCENE		SANDY CLAY	15.0	12.0	
467.0	MODESTO		SHALE	1.9	27.0	WEATHERED
465.1	MODESTO		GRAY SHALE	18.1	28.9	
447.0	MODESTO		SANDY SHALE	4.5	47.0	
442.5	MODESTO		GRAY SHALE	4.6	51.5	
437.9	MODESTO		CALCAREOUS SHALE	2.9	56.1	
435.0	MODESTO		SANDY SHALE	6.5	59.0	
428.5	MODESTO		GRAY SHALE	12.4	65.5	
416.1	MODESTO	PIASA	LIMESTONE	9.6	77.9	GRAY
406.5	MODESTO		SHALE	3.0	87.5	DARK
403.5	CARBONDALE	DANVILLE	COAL	2.4	90.5	
401.1	CARBONDALE		UNDERCLAY	1.2	92.9	
399.9	CARBONDALE		GRAY SHALE	5.4	94.1	
394.5	CARBONDALE	GALUM	LIMESTONE	2.0	99.5	
392.5	CARBONDALE		CALCAREOUS SHALE	6.1	101.5	
386.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	107.6	
381.6	CARBONDALE		GRAY SHALE	1.6	112.4	
380.0	CARBONDALE		SHALE	6.8	114.0	DK GRAY
373.2	CARBONDALE	CONANT	LIMESTONE	2.0	120.8	DARK
371.2	CARBONDALE	JAMESTOWN	SHALE	2.9	122.8	DARK GRAY
368.3	CARBONDALE	JAMESTOWN	SHALE	0.5	125.7	SLATEY, BLACK
367.8	CARBONDALE	JAMESTOWN	SHALE	9.1	126.2	DARK GRAY
358.7	CARBONDALE	BRERETON	LIMESTONE	5.2	135.3	DARK
353.5	CARBONDALE	ANNA	BLACK SHALE	0.8	140.5	SHALEY, BLACK
352.7	CARBONDALE	HERRIN	COAL	6.3	141.3	
346.4	CARBONDALE		UNDERCLAY	1.3	147.6	
345.1	CARBONDALE		CALCAREOUS SANDSTONE	2.6	148.9	W/ GRAY SH STREAKS
342.5	CARBONDALE		SANDY SHALE	4.0	151.5	W/ SS STREAKS
338.5	CARBONDALE	ST. DAVID	LIMESTONE	3.9	155.5	
334.6	CARBONDALE		CALCAREOUS SHALE	2.2	159.4	
332.4	CARBONDALE	TURNER MINE	SHALE	1.7	161.6	DARK
330.7	CARBONDALE	SPRINGFIELD	COAL	2.8	163.3	
327.9	CARBONDALE		UNDERCLAY	2.9	166.1	

MAPID: 14528605000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 33 QUARTERS/FOOTAGES: 50' N line, 1900' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.438473 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.055161 DATE COLLECTED:

SURFACE ELEVATION (FT.): 479.7 LOGGED (FT.): 150.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 6048 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
479.7	PLEISTOCENE		UNCONSOLIDATED	17.3	0.0	
462.4	MODESTO		SHALE	7.5	17.3	MULTI-COLORED GRAY
454.9	MODESTO		SANDY SHALE	8.7	24.8	
446.2	MODESTO		SANDSTONE	2.6	33.5	
443.6	MODESTO		SHALE	0.7	36.1	SLATEY, DARK
442.9	MODESTO		GRAY SHALE	4.5	36.8	
438.4	MODESTO		LIMESTONE	4.7	41.3	GRAY
433.7	MODESTO		GRAY SHALE	17.3	46.0	
416.4	MODESTO	PIASA	LIMESTONE	7.6	63.3	GRAY
408.8	MODESTO		SHALE	1.2	70.9	SLATEY, DARK
407.6	CARBONDALE	DANVILLE	COAL	2.6	72.1	
405.0	CARBONDALE		UNDERCLAY	5.7	74.7	
399.3	CARBONDALE	GALUM	LIMESTONE	2.9	80.4	GRAY
396.4	CARBONDALE		CALCAREOUS SHALE	6.5	83.3	
389.9	CARBONDALE	BANKSTON FORK	LIMESTONE	5.3	89.8	
384.6	CARBONDALE		GRAY SHALE	1.6	95.1	
383.1	CARBONDALE		SHALE	7.2	96.6	DARK GRAY
375.9	CARBONDALE	CONANT	LIMESTONE	0.9	103.8	DARK
375.0	CARBONDALE	JAMESTOWN	SHALE	3.2	104.7	DARK GRAY
371.8	CARBONDALE	JAMESTOWN	SHALE	0.9	107.9	SLATEY, DARK
370.9	CARBONDALE	JAMESTOWN	SHALE	5.9	108.8	DARK GRAY
365.0	CARBONDALE	BRERETON	LIMESTONE	4.7	114.7	DARK
360.3	CARBONDALE	ANNA	SHALE	2.6	119.4	SLATEY, DARK
357.7	CARBONDALE	HERRIN	COAL	6.4	122.0	
351.3	CARBONDALE		UNDERCLAY	5.1	128.4	
346.2	CARBONDALE		CALCAREOUS SANDSTONE	0.9	133.5	GRAY
345.3	CARBONDALE		SHALE & SANDSTONE	6.6	134.4	INTERBEDDED SDYSH & SS
338.7	CARBONDALE		LIMESTONE	1.3	141.0	
337.4	CARBONDALE		CALCAREOUS SHALE	1.8	142.3	
335.6	CARBONDALE	ST. DAVID	LIMESTONE	0.8	144.1	DARK
334.8	CARBONDALE	TURNER MINE	SHALE	0.9	144.9	SLATEY, DARK
333.9	CARBONDALE	SPRINGFIELD	COAL	1.9	145.8	
332.0	CARBONDALE		UNDERCLAY	2.3	147.7	

MAPID: 14590110000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 33 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.434267 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.042385 DATE COLLECTED:

SURFACE ELEVATION (FT.): 463.2 LOGGED (FT.): 133.1 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 7620 WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.2	PLEISTOCENE		UNCONSOLIDATED	19.5	0.0
443.7	MODESTO		SHALE WITH LIMESTONE	7.4	19.5
436.3	MODESTO		SHALE	8.6	26.9
427.7	MODESTO		GRAY SHALE	11.3	35.5
416.4	MODESTO	PIASA	LIMESTONE	9.2	46.8
407.2	MODESTO		GRAY SHALE	1.0	56.0
406.2	MODESTO		BLACK SHALE	0.2	57.0
406.0	CARBONDALE	DANVILLE	COAL	2.7	57.2
403.3	CARBONDALE		UNDERCLAY	2.1	59.9
401.2	CARBONDALE		GRAY SHALE	7.0	62.0
394.2	CARBONDALE		CALCAREOUS SHALE	6.2	69.0
388.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.6	75.2
383.4	CARBONDALE		GRAY SHALE	8.5	79.8
374.9	CARBONDALE	CONANT	LIMESTONE	1.9	88.3
373.0	CARBONDALE		GRAY SHALE	3.1	90.2
369.9	CARBONDALE		BLACK SHALE	0.4	93.3
369.5	CARBONDALE		GRAY SHALE	4.4	93.7
365.1	CARBONDALE	BRERETON	LIMESTONE	3.4	98.1
361.7	CARBONDALE	ANNA	BLACK SHALE	3.1	101.5
358.6	CARBONDALE	HERRIN	COAL	6.6	104.6
352.0	CARBONDALE		UNDERCLAY	1.9	111.2
350.2	CARBONDALE		GRAY SHALE	0.7	113.0
349.5	CARBONDALE		SANDSTONE	2.3	113.7
347.2	CARBONDALE		SHALE	10.5	116.0
336.7	CARBONDALE	ST. DAVID	LIMESTONE	0.5	126.5
336.2	CARBONDALE	ST. DAVID	CALCAREOUS SHALE	1.7	127.0
334.5	CARBONDALE	ST. DAVID	LIMESTONE	0.3	128.7
334.2	CARBONDALE	TURNER MINE	BLACK SHALE	0.3	129.0
333.9	CARBONDALE	SPRINGFIELD	COAL	2.4	129.3
331.5	CARBONDALE		UNDERCLAY	1.5	131.7

MAPID: 14590120000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 33 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.43848 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.05518 DATE COLLECTED:

SURFACE ELEVATION (FT.): 479.7 LOGGED (FT.): 150.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 6048 WELL TYPE: Coal Test

COMMENT: PERMIT #233 FROM STRAT COL CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
479.7	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
461.7	MODESTO		SHALE	16.5	18.0
445.2	MODESTO		SANDSTONE	2.5	34.5
442.7	MODESTO		SHALE	5.0	37.0
437.7	MODESTO		LIMESTONE	5.0	42.0
432.7	MODESTO		SHALE	17.0	47.0
415.7	MODESTO	PIASA	LIMESTONE	8.0	64.0
407.7	MODESTO		SHALE	1.0	72.0
406.7	CARBONDALE	DANVILLE	COAL	2.5	73.0
404.2	CARBONDALE		UNDERCLAY	5.5	75.5
398.7	CARBONDALE	GALUM	LIMESTONE	3.0	81.0
395.7	CARBONDALE		SHALE	6.5	84.0
389.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	90.5
383.7	CARBONDALE		SHALE	8.0	96.0
375.7	CARBONDALE	CONANT	LIMESTONE	1.0	104.0
374.7	CARBONDALE		SHALE	10.0	105.0
364.7	CARBONDALE	BRERETON	LIMESTONE	5.0	115.0
359.7	CARBONDALE		SHALE	2.0	120.0
357.7	CARBONDALE	HERRIN	COAL	7.0	122.0
350.7	CARBONDALE		UNDERCLAY	5.0	129.0
345.7	CARBONDALE		SANDSTONE	1.0	134.0
344.7	CARBONDALE		SHALE	6.0	135.0
338.7	CARBONDALE	ST. DAVID	LIMESTONE	1.0	141.0
337.7	CARBONDALE	ST. DAVID	SHALE	2.0	142.0
335.7	CARBONDALE	ST. DAVID	LIMESTONE	1.0	144.0
334.7	CARBONDALE		SHALE	1.0	145.0
333.7	CARBONDALE	SPRINGFIELD	COAL	2.0	146.0
331.7	CARBONDALE		UNDERCLAY	2.0	148.0

MAPID: 14590121000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 33 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.436423

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.04391

DATE COLLECTED:

SURFACE ELEVATION (FT.): 471.3 LOGGED (FT.): 138.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 8311

WELL TYPE: Coal Test

COMMENT: PERMIT #233 FROM STRACT COL CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
471.3	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0
460.3	MODESTO		SHALE	14.0	11.0
446.3	MODESTO		SHALE	5.0	25.0
441.3	MODESTO		SHALE	14.0	30.0
427.3	MODESTO	PIASA	LIMESTONE	10.0	44.0
417.3	MODESTO		SHALE	3.0	54.0
414.3	CARBONDALE	DANVILLE	COAL	2.5	57.0
411.8	CARBONDALE		UNDERCLAY	1.5	59.5
410.3	CARBONDALE		SHALE	4.0	61.0
406.3	CARBONDALE	GALUM	LIMESTONE	2.5	65.0
403.8	CARBONDALE		SHALE	7.5	67.5
396.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	75.0
392.3	CARBONDALE		SHALE	9.0	79.0
383.3	CARBONDALE	CONANT	LIMESTONE	2.0	88.0
381.3	CARBONDALE		SHALE	9.0	90.0
372.3	CARBONDALE	BRERETON	LIMESTONE	6.0	99.0
366.3	CARBONDALE		SHALE	1.5	105.0
364.8	CARBONDALE	HERRIN	COAL	6.0	106.5
358.8	CARBONDALE		UNDERCLAY	4.5	112.5
354.3	CARBONDALE		SANDSTONE	1.0	117.0
353.3	CARBONDALE		SHALE	10.0	118.0
343.3	CARBONDALE		SHALE	3.5	128.0
339.8	CARBONDALE	ST. DAVID	LIMESTONE	0.5	131.5
339.3	CARBONDALE	SPRINGFIELD	COAL	3.0	132.0
336.3	CARBONDALE		UNDERCLAY	3.0	135.0

MAPID: 14590219000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 33 QUARTERS/FOOTAGES: 75' S line, 52' W line of SW SW SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.445439 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.040964 DATE COLLECTED: 12 / 1 / 1983

SURFACE ELEVATION (FT.): 463.9 LOGGED (FT.): 163.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: WATER SURFACE ELEV. 415.5

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.9			SHALE	0.0	17.0
416.9			LIMESTONE	0.0	47.0
396.9			LIMESTONE W/ SHALE	0.0	67.0
341.9	CARBONDALE		COAL	0.0	122.0
340.9	CARBONDALE		LIMESTONE W/ SHALE	0.0	123.0
322.9	CARBONDALE		COAL	0.0	141.0
320.9	CARBONDALE		LIMESTONE W/ SHALE	0.0	143.0

MAPID: 14590100000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 34 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.415483

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.045561

DATE COLLECTED: 6 / 27 / 1984

SURFACE ELEVATION (FT.): 458.4 LOGGED (FT.): 91.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 7637

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
458.4	PLEISTOCENE		UNCONSOLIDATED	17.3	0.0	
441.1	PLEISTOCENE		CLAY	3.7	17.3	
437.4	PLEISTOCENE		UNCONSOLIDATED	10.0	21.0	
427.4	CARBONDALE		SHALE	1.2	31.0	WEATHERED
426.2	CARBONDALE	BANKSTON FORK	LIMESTONE	7.6	32.2	
418.6	CARBONDALE		GRAY SHALE	1.3	39.8	
417.3	CARBONDALE		DARK SHALE	7.7	41.1	
409.6	CARBONDALE	CONANT	LIMESTONE	1.0	48.8	
408.6	CARBONDALE		GRAY SHALE	1.7	49.8	
406.9	CARBONDALE	JAMESTOWN	COAL	0.4	51.5	BKSH
406.5	CARBONDALE		GRAY SHALE	5.8	51.9	
400.7	CARBONDALE	BRERETON	SHALY LIMESTONE	5.3	57.7	
395.4	CARBONDALE	BRERETON	LIMESTONE	3.0	63.0	
392.4	CARBONDALE	ANNA	BLACK SHALE	0.8	66.0	
391.6	CARBONDALE	HERRIN	COAL	5.7	66.8	
385.9	CARBONDALE		UNDERCLAY	1.7	72.5	
384.2	CARBONDALE		SHALY SANDSTONE	1.8	74.2	
382.4	CARBONDALE		SHALE	5.5	76.0	
376.9	CARBONDALE		GRAY SHALE & LIMESTONE	4.3	81.5	
372.6	CARBONDALE	ST. DAVID	LIMESTONE	0.5	85.8	
372.1	CARBONDALE		GRAY SHALE	0.3	86.3	
371.8	CARBONDALE	SPRINGFIELD	COAL	1.4	86.6	
370.4			UNDERCLAY	3.0	88.0	

MAPID: 14590101000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 34 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.424685

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.04562

DATE COLLECTED: 8 / 21 / 1984

SURFACE ELEVATION (FT.): 454.1 LOGGED (FT.): 130.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 8126

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
454.1	PLEISTOCENE		UNCONSOLIDATED	16.7	0.0	
437.4	MODESTO		SHALE	6.3	16.7	WEATHERED
431.1	MODESTO		GRAY SHALE	13.4	23.0	
417.7	MODESTO		COAL	0.4	36.4	SHALE
417.3	MODESTO		UNDERCLAY	0.7	36.8	
416.6	MODESTO	PIASA	LIMESTONE	17.3	37.5	
399.3	MODESTO		GRAY SHALE	4.4	54.8	
394.9	CARBONDALE	GALUM	LIMESTONE	2.4	59.2	
392.5	CARBONDALE		CALCAREOUS SHALE	6.9	61.6	
385.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.6	68.5	
381.0	CARBONDALE		GRAY SHALE	9.2	73.1	
371.8	CARBONDALE	CONANT	LIMESTONE	1.7	82.3	
370.1	CARBONDALE		GRAY SHALE	9.7	84.0	
360.4	CARBONDALE	BRERETON	LIMESTONE	5.4	93.7	
355.0	CARBONDALE		GRAY SHALE	2.6	99.1	
352.4	CARBONDALE	HERRIN	COAL	5.0	101.7	
347.4	CARBONDALE		UNDERCLAY	2.2	106.7	
345.2	CARBONDALE	HIGGINSVILLE	SHALY LIMESTONE	2.7	108.9	
342.5	CARBONDALE		SHALY SANDSTONE	6.5	111.6	
336.0	CARBONDALE	ST. DAVID	SHALY LIMESTONE	4.7	118.1	
331.3	CARBONDALE		GRAY SHALE	0.3	122.8	
331.0	CARBONDALE	SPRINGFIELD	COAL	3.5	123.1	
327.5	CARBONDALE		UNDERCLAY	3.4	126.6	

MAPID: 14590105000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 34 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.412978

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.053099

DATE COLLECTED: 8 / 9 / 1984

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 100.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 7690

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
453.0	PLEISTOCENE		UNCONSOLIDATED	15.5	0.0	
437.5	PLEISTOCENE		GRAVEL	14.0	15.5	
423.5	MODESTO	PIASA	SHALY LIMESTONE	7.1	29.5	WEATHERED
416.4			GRAY SHALE & LIMESTONE	5.9	36.6	
410.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	42.5	
405.8	CARBONDALE		GRAY SHALE	8.4	47.2	
397.4	CARBONDALE	CONANT	LIMESTONE	1.4	55.6	
396.0	CARBONDALE		GRAY SHALE	2.7	57.0	
393.3	CARBONDALE		BLACK SHALE	0.5	59.7	
392.8	CARBONDALE		GRAY SHALE	6.3	60.2	
386.5	CARBONDALE	BRERETON	SHALY LIMESTONE	2.6	66.5	
383.9	CARBONDALE	BRERETON	LIMESTONE	5.1	69.1	
378.8	CARBONDALE	ANNA	BLACK SHALE	1.6	74.2	
377.2	CARBONDALE	HERRIN	COAL	6.5	75.8	
370.7	CARBONDALE		UNDERCLAY	4.7	82.3	
366.0	CARBONDALE		SHALE	5.5	87.0	
360.5	CARBONDALE		GRAY SHALE	2.3	92.5	
358.2	CARBONDALE	TURNER MINE	BLACK SHALE	0.3	94.8	
357.9	CARBONDALE	SPRINGFIELD	COAL	0.6	95.1	
357.3	CARBONDALE		UNDERCLAY	4.3	95.7	

MAPID: 14500367000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 35 QUARTERS/FOOTAGES: NW SW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.407496 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.042891 DATE COLLECTED: 0 / 0 / 1928
 SURFACE ELEVATION (FT.): 442.0 LOGGED (FT.): 39.3 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.0			UNCONSOLIDATED	20.0	0.0
422.0			CONCRETION	5.0	20.0
417.0			UNCLASSIFIED	0.3	25.0
416.7	CARBONDALE		SHALE	1.7	25.3
415.0	CARBONDALE	BRERETON	LIMESTONE	6.5	27.0
408.5	CARBONDALE	HERRIN	COAL	5.8	33.5

MAPID: 14500367000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 35 QUARTERS/FOOTAGES: NW SW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.407496 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.042891 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 442.0 LOGGED (FT.): 0.0 LOG TYPE:
 SOURCE: PYRAMID CC00PB WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
408.0	CARBONDALE	HERRIN	COAL	5.8	34.0

MAPID: 14500368000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 35 QUARTERS/FOOTAGES: NE SE SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.391431 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.042631 DATE COLLECTED: 0 / 0 / 1928
 SURFACE ELEVATION (FT.): 422.0 LOGGED (FT.): 18.9 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
422.0			UNCONSOLIDATED	15.5	0.0
406.5	CARBONDALE	HERRIN	COAL	1.7	15.5
404.8	CARBONDALE	HERRIN	COAL	1.7	17.2

MAPID: 14500368000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** NE SE SE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.391431 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.042631 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 422.0 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC00DC **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
406.0	CARBONDALE	HERRIN	COAL	3.4	16.0	

MAPID: 14500369000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** NE SE SE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.391431 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.042631 **DATE COLLECTED:** 0 / 0 / 1928
SURFACE ELEVATION (FT.): 426.0 **LOGGED (FT.):** 29.7 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
426.0			UNCONSOLIDATED	17.5	0.0	
408.5			SHALE	1.0	17.5	
407.5			LIMESTONE	0.7	18.5	
406.8			UNCLASSIFIED	4.0	19.2	
402.8	CARBONDALE	HERRIN	COAL	1.1	23.2	
401.7	CARBONDALE	HERRIN	COAL	5.4	24.3	

MAPID: 14500369000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** NE SE SE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.391431 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.042631 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 426.0 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC00PD **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.0	CARBONDALE	HERRIN	COAL	6.6	23.0	

MAPID: 14500370000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 0' W line of NW SE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.404079 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.041914 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 448.0 LOGGED (FT.): 81.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.0			UNCONSOLIDATED	20.0	0.0
428.0			SHALE	6.0	20.0
422.0			CONCRETION	4.0	26.0
418.0			SHALE	5.5	30.0
410.7			UNCLASSIFIED	1.8	37.3
409.5			SHALE	1.2	38.5
407.5			UNCLASSIFIED	0.5	40.5
407.0			SHALE	0.5	41.0
406.5			UNCLASSIFIED	2.5	41.5
404.0			SHALE	0.7	44.0
403.3			COAL	0.1	44.7
403.2			SHALE	12.4	44.8

MAPID: 14500371000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 35 QUARTERS/FOOTAGES: NE SE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.400612 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.04278 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 446.2 LOGGED (FT.): 37.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.2			UNCONSOLIDATED	24.0	0.0
422.2			CONCRETION	3.0	24.0
419.2	CARBONDALE		SHALE	4.5	27.0
414.7	CARBONDALE	HERRIN	COAL	5.7	31.5

MAPID: 14500371000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** NE SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.400612 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.04278 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 446.2 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0083 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.2	CARBONDALE	HERRIN	COAL	5.7	32.0	

MAPID: 14500595000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** NE SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.400612 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.04278 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 447.8 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W66 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14500596000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.402905 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.042815 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 450.3 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W67 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.3	CARBONDALE	HERRIN	COAL	2.3	36.0	

MAPID: 14500597000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** SE SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.400663 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.040939 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 451.6 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W68 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
419.6	CARBONDALE	HERRIN	COAL	1.1	32.0	

MAPID: 14500598000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** SE SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.400663 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.040939 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.2 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W69 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
419.2	CARBONDALE	HERRIN	COAL	5.8	36.0	

MAPID: 14500599000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** SE SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.400663 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.040939 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 452.0 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W70 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.0	CARBONDALE	HERRIN	COAL	5.7	37.0	

MAPID: 14500600000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.402905 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.042815 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 450.3 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W71 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14500601000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.402905 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.042815 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 448.3 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W72 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.3	CARBONDALE	HERRIN	COAL	5.9	31.0	

MAPID: 14500602000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.402957 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.040974 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 453.3 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W73 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.3	CARBONDALE	HERRIN	COAL	6.0	37.0	

MAPID: 14500603000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.402957 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.040974 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 451.4 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W76 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
419.4	CARBONDALE	HERRIN	COAL	5.8	32.0	

MAPID: 14500604000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.402957 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.040974 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 451.4 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W75 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.4	CARBONDALE	HERRIN	COAL	3.4	34.0	

MAPID: 14500605000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.402905 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.042815 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 446.0 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W76 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.0	CARBONDALE	HERRIN	COAL	5.7	29.0	

MAPID: 14500606000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.402957 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.040974 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 451.2 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W77 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.2	CARBONDALE	HERRIN	COAL	4.4	36.0	

MAPID: 14500607000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** NE SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.400612 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.04278 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 449.2 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W78 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
419.2	CARBONDALE	HERRIN	COAL	5.7	30.0	

MAPID: 14500608000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** NE SE SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.400612 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.04278 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 446.7 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC0W79 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.7	CARBONDALE	HERRIN	COAL	5.8	29.0	

MAPID: 14502525000C **VERSION:** 1 **PROJECT:** J JOHNSON
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** NE NW SE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.395922 **GEOLOGIST:** J JOHNSON
CONFIDENTIAL: N **LATITUDE:** 38.046373 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 434.0 **LOGGED (FT.):** 1170.0 **LOG TYPE:** Electric Log
SOURCE: COCHRANE PRES. **WELL TYPE:** Oil and Gas Test
COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-736.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1170.0	

MAPID: 14502526000C VERSION: 1

PROJECT: J JOHNSON

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 35 QUARTERS/FOOTAGES: 330' N line, 280' W line of NE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.393796 GEOLOGIST: J JOHNSON

CONFIDENTIAL: N LATITUDE: 38.046338 DATE COLLECTED:

SURFACE ELEVATION (FT.): 427.0 LOGGED (FT.): 2934.0 LOG TYPE: Electric Log

SOURCE: HOWELL J V ETAL WELL TYPE: Oil and Gas Test

COMMENT: COLLECTED FOR JOEL JOHNSONS MS THESIS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
337.0	CARBONDALE	SPRINGFIELD	COAL	-	90.0	
237.0	CARBONDALE	COLCHESTER	COAL	-	190.0	
-738.0	MISSISSIPPIAN	BEECH CREEK	UNCLASSIFIED	-	1165.0	
-2481.0	DEVONIAN	UPPER DEVONIAN S	UNCLASSIFIED	-	2908.0	TOP OF NEW ALBANY
-2483.0	DEVONIAN	GRASSY CREEK	UNCLASSIFIED	-	2910.0	
-2507.0	DEVONIAN	BASE UPPER DEVON	UNCLASSIFIED	-	2934.0	BASE OF NEW ALBANY

MAPID: 14502841000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 35 QUARTERS/FOOTAGES: 270' S line, 35' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.40858 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.040877 DATE COLLECTED:

SURFACE ELEVATION (FT.): 447.0 LOGGED (FT.): 58.3 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 67-1 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.0	CARBONDALE	LAWSON	DARK GRAY SHALE	7.5	31.0	
408.5	CARBONDALE	JAMESTOWN	COAL	0.8	38.5	
407.7	CARBONDALE		CLAYSTONE	1.3	39.3	
406.5	CARBONDALE	BRERETON	LIMESTONE	2.5	40.5	
404.0	CARBONDALE	ANNA	BLACK SHALE	4.5	43.0	
399.5	CARBONDALE	ENERGY	GRAY SHALE	4.5	47.5	
395.0	CARBONDALE	HERRIN	COAL	6.3	52.0	

MAPID: 14503026000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 35 QUARTERS/FOOTAGES: 123' N line, 47' E line of NE SE NE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.399359 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.052538 DATE COLLECTED: 11 / 17 / 1971
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 42.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	10.0	0.0
440.0			CLAY	10.0	10.0
430.0			CLAY	10.0	20.0
420.0			CLAY	12.0	30.0

MAPID: 14523154000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 35 QUARTERS/FOOTAGES: 113' N line, 107' W line of NW NW SE NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.394285 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.050612 DATE COLLECTED: 5 / 14 / 1974
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 30.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	1.0	0.0
459.0			CLAY	15.0	1.0
444.0			CLAY	8.0	16.0
436.0			CLAY	6.0	24.0

MAPID: 14523275000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 35 QUARTERS/FOOTAGES: 100' S line, 85' E line of SE NE SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.39055 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.043806 DATE COLLECTED: 1 / 26 / 1976
 SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 24.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			UNCONSOLIDATED	1.0	0.0
409.0			CLAY	13.0	1.0
396.0			CLAY	6.0	14.0
390.0			SAND & GRAVEL	4.0	20.0
386.0	CARBONDALE	HERRIN	COAL	0.0	24.0

MAPID: 14500082000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: SW SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.388983 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.048067 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 426.5 LOGGED (FT.): 40.3 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
406.5			SAND	7.0	20.0	
399.5			UNCLASSIFIED	1.5	27.0	
398.0			CLAYSTONE	7.2	28.5	
390.8	CARBONDALE	HERRIN	COAL	0.5	35.7	
390.3	CARBONDALE	HERRIN	COAL	4.1	36.2	

MAPID: 14500082000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: SW SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.388983 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.048067 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 426.5 LOGGED (FT.): 0.0 LOG TYPE:
 SOURCE: PYRAMID CC014H WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
390.5	CARBONDALE	HERRIN	COAL	4.8	36.0	

MAPID: 14500372000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: 2640' N line, 0' W line
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.390161 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.047202 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 0.0 LOG TYPE:
 SOURCE: PYRAMID CC00PE WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	5.8	31.0	

MAPID: 14500372000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: 2640' N line, 0' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.390161 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.047202 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 36.8 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
397.0	CARBONDALE	LAWSON	GRAY SHALE	1.0	23.0	
396.0	CARBONDALE		BLACK SHALE	3.0	24.0	
393.0	CARBONDALE	BRERETON	LIMESTONE	3.0	27.0	
390.0	CARBONDALE	ANNA	DARK GRAY SHALE	1.0	30.0	
389.0	CARBONDALE	HERRIN	COAL	5.8	31.0	

MAPID: 14500372000C VERSION: 3

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: 2640' N line, 0' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.390161 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.047202 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 36.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CORP. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			UNCONSOLIDATED	5.0	0.0	
445.0			CLAYSTONE	9.0	5.0	
436.0			SAND	7.0	14.0	
429.0	CARBONDALE		SHALE	3.0	21.0	
426.0	CARBONDALE		UNCLASSIFIED	3.0	24.0	
423.0	CARBONDALE	BRERETON	LIMESTONE	3.0	27.0	
420.0	CARBONDALE		SHALE	1.0	30.0	
419.0	CARBONDALE	HERRIN	COAL	5.8	31.0	

MAPID: 14500373000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 3W

SECTION: 36

QUARTERS/FOOTAGES: NW SW NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.388938

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.049892

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 411.5

LOGGED (FT.): 60.0

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.5			UNCONSOLIDATED	14.0	0.0	
397.5			SAND	4.0	14.0	
393.5			CLAY	1.0	18.0	
392.5			MUD	9.5	19.0	
383.0			MUD	4.0	28.5	
379.0			MUD	5.5	32.5	
373.5			SAND	1.0	38.0	
372.5			BOULDER	0.7	39.0	
371.8			SHALE	3.3	39.7	
368.5			SHALE	1.0	43.0	
367.5			SHALE	16.0	44.0	

MAPID: 14500373000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY

TWP/RNG: 5S 3W

SECTION: 36

QUARTERS/FOOTAGES: NW SW NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.388938

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 38.049892

DATE COLLECTED:

SURFACE ELEVATION (FT.): 411.4

LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: PYRAMID CC001H

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14500374000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: 300' S line, 660' E line of NE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.387786 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.049781 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 416.5 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CORP. WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.5			UNCONSOLIDATED	28.3	0.0	
388.2			SHALE	23.7	28.3	
364.5			SAND	1.0	52.0	
362.8			SHALE	6.3	53.7	

MAPID: 14500375000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: NW SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.388938 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.049892 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 409.3 LOGGED (FT.): 27.4 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CORP. WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.3			UNCONSOLIDATED	14.0	0.0	
395.3			CONCRETION	6.0	14.0	
389.3			CLAYSTONE	2.0	20.0	
387.3	CARBONDALE	HERRIN	COAL	1.5	22.0	
385.8	CARBONDALE	HERRIN	COAL	3.9	23.5	

MAPID: 14500375000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: NW SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.388938 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.049892 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 409.2 LOGGED (FT.): 0.0 LOG TYPE:
 SOURCE: PYRAMID CC003H WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
387.2	CARBONDALE	HERRIN	COAL	2.0	22.0	

MAPID: 14500376000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: NE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.386634 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.04984 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 409.8 LOGGED (FT.): 35.4 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CORP. WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
390.8			SHALE	8.0	19.0	
382.8			SAND	1.2	27.0	
381.6	CARBONDALE		SHALE	5.6	28.2	
376.0	CARBONDALE	HERRIN	COAL	1.6	33.8	

MAPID: 14500376000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: NE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.386634 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.04984 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 409.8 LOGGED (FT.): 0.0 LOG TYPE:
 SOURCE: PYRAMID CC004H WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
375.8	CARBONDALE	HERRIN	COAL	1.7	34.0	

MAPID: 14500377000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: 0' N line, 300' W line of SE SE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.385631 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.04799 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 405.3 LOGGED (FT.): 50.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.3			CONCRETION	3.0	9.0	
393.3			SHALE	6.0	12.0	
387.3			SHALE	2.0	18.0	
385.3			UNCLASSIFIED	1.0	20.0	
384.3			UNCLASSIFIED	6.0	21.0	
378.3			SHALE	2.0	27.0	
376.3			SHALE	21.0	29.0	

MAPID: 14500378000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: 638' S line, 0' E line of NW NW SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.38889 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.051653 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 408.3 LOGGED (FT.): 50.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
388.3			SHALE	6.0	20.0
382.3			UNCLASSIFIED	1.0	26.0
381.3			CONCRETION	1.0	27.0
380.3			UNCLASSIFIED	2.0	28.0
378.3			SHALE	3.0	30.0
375.3			UNCLASSIFIED	1.0	33.0
374.3			SHALE	3.5	34.0
370.8			UNCLASSIFIED	0.5	37.5
370.3			SHALE	3.5	38.0
366.8			UNCLASSIFIED	1.0	41.5
365.8			SHALE	7.5	42.5

MAPID: 14500379000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: SE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.386679 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.048013 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 408.7 LOGGED (FT.): 26.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
391.0			SAND	4.0	17.7
387.0	CARBONDALE	HERRIN	COAL	1.6	21.7
385.4	CARBONDALE	HERRIN	COAL	3.4	23.3

MAPID: 14500379000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: SE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.386679 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.048013 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 408.6 LOGGED (FT.): 0.0 LOG TYPE:
 SOURCE: PYRAMID CC007H WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
386.6	CARBONDALE	HERRIN	COAL	3.4	22.0

MAPID: 14500380000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: SW SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.388983 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.048067 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 39.3 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
403.0			CLAYSTONE & SANDSTONE	4.2	17.0
398.8	CARBONDALE		SHALE	5.3	21.2
393.5	CARBONDALE		SAND	5.1	26.5
388.4	CARBONDALE	HERRIN	COAL	4.7	31.6

MAPID: 14500380000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: SW SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.388983 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.048067 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 0.0 LOG TYPE:
 SOURCE: PYRAMID CC008H WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
378.0	CARBONDALE	HERRIN	COAL	4.8	32.0

MAPID: 14500381000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: 660' N line, 330' W line of SE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.386701 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.047104 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 413.2 LOGGED (FT.): 49.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.2			SAND	6.0	13.0
394.2			SHALE	23.0	19.0
371.2			SHALE	4.0	42.0
367.2			CONCRETION	3.0	46.0

MAPID: 14500382000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 36 **QUARTERS/FOOTAGES:** NE SW NW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.386634 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.04984 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
394.0			SHALE	19.2	26.0	
374.8			CLAYSTONE	4.7	45.2	
370.2			SHALE	10.2	49.8	

MAPID: 14500382000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 36 **QUARTERS/FOOTAGES:** NE SW NW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.386634 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.04984 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: PYRAMID CC010H **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14500383000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 3W **SECTION:** 36 **QUARTERS/FOOTAGES:** SW SW NW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.388983 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.048067 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 409.2 **LOGGED (FT.):** 27.0 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
394.2			SAND	7.0	15.0	
387.2	CARBONDALE	HERRIN	COAL	3.0	22.0	
384.2	CARBONDALE	HERRIN	COAL	2.0	25.0	

MAPID: 14500383000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.388983 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.048067 DATE COLLECTED:

SURFACE ELEVATION (FT.): 409.2 LOGGED (FT.): 0.0 LOG TYPE:

SOURCE: PYRAMID CC011H WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
387.2	CARBONDALE	HERRIN	COAL	2.0	22.0	

MAPID: 14500384000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: 1086' S line, 0' W line of NW NW SW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.390009 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.052916 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 422.4 LOGGED (FT.): 54.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
407.4			CLAYSTONE & SANDSTONE	6.5	15.0	
400.9			CONCRETION	5.5	21.5	
395.4			SHALE	10.0	27.0	
385.4			SHALE	3.0	37.0	
382.4			UNCLASSIFIED	1.3	40.0	
381.1			UNCLASSIFIED	1.7	41.3	
379.4			UNCLASSIFIED	3.0	43.0	
376.4			SHALE	8.0	46.0	

MAPID: 14500385000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.388983 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.048067 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 427.2 LOGGED (FT.): 41.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
407.2			CLAYSTONE & SANDSTONE	7.0	20.0	
400.2			SAND	9.0	27.0	
391.2			CLAYSTONE & SHALE	3.7	36.0	
387.5			COAL	0.8	39.7	
386.7			COAL	0.7	40.5	

MAPID: 14500385000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.388983

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.048067

DATE COLLECTED:

SURFACE ELEVATION (FT.): 427.2 LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: PYRAMID CC013H

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
387.2	CARBONDALE	HERRIN	COAL	0.7	40.0

MAPID: 14502541000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: 56' N line, 540' W line of NE SW NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.376673

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.050368

DATE COLLECTED: 0 / 0 / 1959

SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 70.0

LOG TYPE: Drillers Log

SOURCE: OTHO KINMAN

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			SOIL	1.0	0.0
409.0			CLAY	19.0	1.0
390.0			SANDY CLAY	10.0	20.0
380.0			GRAVEL	5.0	30.0
375.0			CLAY	35.0	35.0
340.0			UNCLASSIFIED	0.0	70.0

MAPID: 14502554000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: 479' N line, 174' W line of SE SE SE NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.381483

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.046572

DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 73.0

LOG TYPE: Drillers Log

SOURCE: OTHO KINMAN

WELL TYPE: Observation Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	1.0	0.0
419.0			CLAYSTONE	20.0	1.0
399.0			CONCRETION	2.0	21.0
397.0			CLAYSTONE	37.0	23.0
360.0			SAND	1.0	60.0
359.0			CLAYSTONE	11.0	61.0
348.0			SAND	1.0	72.0

MAPID: 14502758000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: 0' N line, 1700' E line of SE SE NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.386824 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.048929 DATE COLLECTED:

SURFACE ELEVATION (FT.): 424.4 LOGGED (FT.): 240.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.4			UNCONSOLIDATED	18.0	0.0
406.4	CARBONDALE		LIMESTONE	4.0	18.0
402.4	CARBONDALE		SHALE	8.0	22.0
394.4	CARBONDALE		CLAYSTONE	10.0	30.0
384.4			SHALE	80.0	40.0
304.4	SPOON		SANDSTONE	12.0	120.0
292.4	SPOON		SHALE	6.0	132.0
286.4	SPOON	DEKOVEN	COAL	0.7	138.0
285.7	SPOON		LIMESTONE	2.0	138.7
283.7	SPOON		SHALE	1.0	140.7
282.7	SPOON	DAVIS	COAL	4.0	141.7
278.7	SPOON		CLAYSTONE	10.0	145.7
268.7	SPOON		SANDSTONE	15.0	155.7
253.7	SPOON		SHALE	30.0	170.7
223.7	SPOON	SEAHORNE LS	LIMESTONE	2.0	200.7
221.7	SPOON		SHALE	1.0	202.7
220.7	SPOON	MURPHYSBORO	COAL	6.0	203.7
214.7	SPOON		CLAYSTONE	31.0	209.7

MAPID: 14523339000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 3W SECTION: 36 QUARTERS/FOOTAGES: 113' N line, 105' W line of SE NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.378292 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.044769 DATE COLLECTED: 10 / 26 / 1976

SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log

SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0			UNCONSOLIDATED	1.0	0.0
399.0			CLAY	18.0	1.0
381.0			SAND	1.0	19.0
380.0			CLAY	20.0	20.0
360.0			CLAY	12.0	40.0
348.0			SAND	1.0	52.0
347.0			CLAY	5.0	53.0
342.0			SHALE	2.0	58.0
340.0			SHALE	0.0	60.0

MAPID: 14502337000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 1 QUARTERS/FOOTAGES: 1' S line, 1' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.480943 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.114382 DATE COLLECTED: 8 / 19 / 1957

SURFACE ELEVATION (FT.): 535.0 LOGGED (FT.): 212.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XG625 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
535.0	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
525.0	MODESTO		BROWN SANDSTONE	23.0	10.0
502.0	MODESTO		GRAY SANDSTONE	18.0	33.0
484.0	MODESTO		GRAY SHALE	73.0	51.0
411.0	MODESTO		SANDY SHALE	12.0	124.0
399.0	MODESTO		GRAY SANDSTONE	15.0	136.0
384.0	MODESTO	PIASA	LIMESTONE	6.8	151.0
377.2	MODESTO		DARK SHALE	6.3	157.8
371.0	CARBONDALE	DANVILLE	COAL	0.7	164.0
370.3	CARBONDALE		SANDY SHALE	2.3	164.7
368.0	CARBONDALE		GRAY SANDSTONE	5.7	167.0
362.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	172.7
358.0	CARBONDALE		SANDY SHALE	6.7	177.0
351.3	CARBONDALE	CONANT	LIMESTONE	11.3	183.7
340.0	CARBONDALE		BLUE SHALE	2.5	195.0
337.5	CARBONDALE	BRERETON	LIMESTONE	5.5	197.5
332.0	CARBONDALE	ANNA	BLACK SHALE	0.6	203.0
331.4	CARBONDALE	HERRIN	COAL	6.0	203.6
325.4	CARBONDALE		UNDERCLAY	1.0	209.6
324.4	CARBONDALE		SANDSTONE	1.4	210.6

MAPID: 14502337000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 1 QUARTERS/FOOTAGES: 1' S line, 1' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.480943

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.114382

DATE COLLECTED:

SURFACE ELEVATION (FT.): 535.0 LOGGED (FT.): 210.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XG625

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
384.0	MODESTO	PIASA	LIMESTONE	6.8	151.0
377.2	MODESTO		DARK GRAY SHALE	6.3	157.8
371.0	CARBONDALE	DANVILLE	COAL	0.7	164.0
370.3	CARBONDALE		SHALE & SANDSTONE	8.0	164.7
362.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	172.7
358.0	CARBONDALE	LAWSON	SILTY SHALE	6.7	177.0
351.3	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	19.3	183.7
332.0	CARBONDALE	ANNA	BLACK SHALE	0.6	203.0
331.0	CARBONDALE	HERRIN	COAL	6.0	204.0

MAPID: 14502338000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY

TWP/RNG: 5S 4W

SECTION: 1

QUARTERS/FOOTAGES: 1' N line, 1' E line

QUADRANGLE: WINKLE

LONGITUDE: -89.480789

GEOLOGIST: CHENOWETH

CONFIDENTIAL: N

LATITUDE: 38.128873

DATE COLLECTED: 8 / 20 / 1957

SURFACE ELEVATION (FT.): 566.0

LOGGED (FT.): 258.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XD225

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
566.0	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
552.0	MODESTO		SANDSTONE	46.0	14.0
506.0	MODESTO		SANDSTONE/SHALE	15.0	60.0
491.0	MODESTO		SANDY SHALE	30.0	75.0
461.0	MODESTO		LIMESTONE	9.0	105.0
452.0	MODESTO		SANDSTONE	9.0	114.0
443.0	MODESTO		LIMESTONE	2.0	123.0
441.0	MODESTO		SANDY SHALE	43.0	125.0
398.0	MODESTO		SANDSTONE/SHALE	12.0	168.0
386.0	MODESTO		LIMESTONE	4.0	180.0
382.0	MODESTO		SHALE	14.0	184.0
368.0	MODESTO	PIASA	LIMESTONE	9.0	198.0
359.0	MODESTO		SHALE	3.0	207.0
356.0	CARBONDALE	DANVILLE	COAL	2.0	210.0
354.0	CARBONDALE		SANDY SHALE	8.0	212.0
346.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	220.0
343.0	CARBONDALE		DARK SHALE	5.3	223.0
337.7	CARBONDALE	CONANT	LIMESTONE	5.5	228.3
332.2	CARBONDALE		BLACK SHALE	7.7	233.8
324.5	CARBONDALE	BRERETON	LIMESTONE	4.5	241.5
320.0	CARBONDALE	ANNA	BLACK SHALE	1.5	246.0
318.5	CARBONDALE	HERRIN	COAL	6.8	247.5
311.7	CARBONDALE		UNDERCLAY	0.7	254.3
311.0	CARBONDALE		SANDSTONE	3.0	255.0

MAPID: 14502338000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 1 QUARTERS/FOOTAGES: 1' N line, 1' E line

QUADRANGLE: WINKLE LONGITUDE: -89.480789 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.128873 DATE COLLECTED:

SURFACE ELEVATION (FT.): 566.0 LOGGED (FT.): 254.8 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XD225 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
368.0	MODESTO	PIASA	LIMESTONE	9.0	198.0
359.0	MODESTO		SHALE	3.0	207.0
356.0	CARBONDALE	DANVILLE	COAL	2.0	210.0
354.0	CARBONDALE		SILTY SHALE	8.0	212.0
346.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	220.0
343.0	CARBONDALE	LAWSON	DARK GRAY SHALE	5.3	223.0
337.7	CARBONDALE	CONANT	LIMESTONE	5.5	228.3
332.2	CARBONDALE		BLACK SHALE	7.7	233.8
324.5	CARBONDALE	BRERETON	LIMESTONE	4.5	241.5
320.0	CARBONDALE	ANNA	BLACK SHALE	1.5	246.0
318.0	CARBONDALE	HERRIN	COAL	6.8	248.0

MAPID: 14590722000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 1 QUARTERS/FOOTAGES: 235' S line, 545' E line of SW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.487383 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.115344 DATE COLLECTED: 10 / 11 / 1977

SURFACE ELEVATION (FT.): 531.3 LOGGED (FT.): 233.0 LOG TYPE: Drillers Log

SOURCE: AMAX D22JI WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
531.3	PLEISTOCENE		UNCONSOLIDATED	71.0	0.0
460.3			ROCK	136.0	71.0
324.3	CARBONDALE	HERRIN	COAL	6.5	207.0
317.8	CARBONDALE		ROCK	19.5	213.5

MAPID: 14590723000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 1 QUARTERS/FOOTAGES: 20' N line, 15' E line of SW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.494634 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.1185 DATE COLLECTED: 5 / 3 / 1977
 SURFACE ELEVATION (FT.): 526.3 LOGGED (FT.): 233.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D-69-1 WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
526.3	PLEISTOCENE		UNCONSOLIDATED	53.0	0.0
473.3	MODESTO		ROCK	107.0	53.0
366.3	CARBONDALE	DANVILLE	COAL	2.0	160.0
364.3	CARBONDALE		ROCK	55.7	162.0
308.6	CARBONDALE	HERRIN	COAL	7.3	217.7
301.3	CARBONDALE		ROCK	8.0	225.0

MAPID: 14590724000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 1 QUARTERS/FOOTAGES: 25' N line, 60' E line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.485911 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.122019 DATE COLLECTED: 5 / 7 / 1976
 SURFACE ELEVATION (FT.): 531.2 LOGGED (FT.): 261.0 LOG TYPE: Drillers Log
 SOURCE: AMAX D122PB WELL TYPE: Coal Test
 COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
531.2	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
501.2			ROCK	204.0	30.0
297.2	CARBONDALE	HERRIN	COAL	6.0	234.0
291.2	CARBONDALE		ROCK	21.0	240.0

MAPID: 14590725000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 1 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.480865 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.121624 DATE COLLECTED: 4 / 7 / 1958

SURFACE ELEVATION (FT.): 542.6 LOGGED (FT.): 248.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D124-N WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
542.6	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0
534.6	MODESTO		ROCK	187.0	8.0
347.6	CARBONDALE	DANVILLE	COAL	1.5	195.0
346.1	CARBONDALE		ROCK	41.5	196.5
304.6	CARBONDALE	HERRIN	COAL	6.8	238.0
297.8	CARBONDALE		ROCK	3.2	244.8

MAPID: 14590726000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 1 QUARTERS/FOOTAGES: 77' S line, 37' W line of NW NE

QUADRANGLE: WINKLE LONGITUDE: -89.489936 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.125794 DATE COLLECTED: 2 / 8 / 1979

SURFACE ELEVATION (FT.): 541.1 LOGGED (FT.): 273.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D171ZB WELL TYPE: Coal Test

COMMENT: DENMARK DEEP BOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
541.1	PLEISTOCENE		UNCONSOLIDATED	76.0	0.0
465.1	MODESTO		ROCK	126.0	76.0
339.1	CARBONDALE	DANVILLE	COAL	3.0	202.0
336.1	CARBONDALE		ROCK	40.5	205.0
295.6	CARBONDALE	HERRIN	COAL	7.0	245.5
288.6	CARBONDALE		ROCK	20.5	252.5

MAPID: 14590729000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 1 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE

QUADRANGLE: WINKLE LONGITUDE: -89.480789 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.128873 DATE COLLECTED: 8 / 20 / 1957

SURFACE ELEVATION (FT.): 565.6 LOGGED (FT.): 258.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D225 WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
565.6	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
551.6	MODESTO		ROCK	196.0	14.0
355.6	CARBONDALE	DANVILLE	COAL	2.0	210.0
353.6	CARBONDALE		ROCK	35.5	212.0
318.1	CARBONDALE	HERRIN	COAL	6.8	247.5
311.3	CARBONDALE		ROCK	3.7	254.3

MAPID: 14523342000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 2 QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: PERCY LONGITUDE: -89.507378 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.121758 DATE COLLECTED: 11 / 16 / 1976

SURFACE ELEVATION (FT.): LOGGED (FT.): 23.0 LOG TYPE: Drillers Log

SOURCE: HEPP DRILLING CO. WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	8.0	0.0
-			SANDSTONE	7.0	8.0
-			SANDSTONE/LIMESTONE	7.0	15.0
-			SHALE	1.0	22.0

MAPID: 14528791000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 2 QUARTERS/FOOTAGES: 100' N line, 70' E line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.498337 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.129753 DATE COLLECTED: 5 / 6 / 1976

SURFACE ELEVATION (FT.): 529.4 LOGGED (FT.): 233.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE D191GA WELL TYPE: Coal Test

COMMENT: PERMIT 239; DENMARK DEEP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
529.4	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0	
496.4	MODESTO		SANDSTONE	9.0	33.0	
487.4	MODESTO		GRAY SHALE	103.0	42.0	
384.4	MODESTO		LIMESTONE	3.0	145.0	
381.4	MODESTO		SHALE	14.0	148.0	
367.4	MODESTO	PIASA	LIMESTONE	10.0	162.0	
357.4	CARBONDALE	DANVILLE	COAL	1.0	172.0	
356.4	CARBONDALE		SHALE	14.0	173.0	
342.4	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	187.0	
341.4	CARBONDALE		DARK SHALE	5.0	188.0	
336.4	CARBONDALE	CONANT	LIMESTONE	1.0	193.0	BLACK
335.4	CARBONDALE		SHALE	2.0	194.0	
333.4	CARBONDALE		DARK SHALE & LIMESTONE	16.5	196.0	
316.9	CARBONDALE	HERRIN	COAL	5.0	212.5	
311.9	CARBONDALE		SHALE	15.5	217.5	

MAPID: 14590727000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 2 QUARTERS/FOOTAGES: 100' N line, 70' E line of NE NE

QUADRANGLE: WINKLE LONGITUDE: -89.498337 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.129753 DATE COLLECTED: 5 / 6 / 1976

SURFACE ELEVATION (FT.): 529.4 LOGGED (FT.): 233.0 LOG TYPE: Drillers Log

SOURCE: AMAX D191GA WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX 75GL EL CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
529.4	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0	
496.4	MODESTO		ROCK	139.0	33.0	
357.4	CARBONDALE	DANVILLE	COAL	1.0	172.0	
356.4	CARBONDALE		ROCK	39.5	173.0	
316.9	CARBONDALE	HERRIN	COAL	5.0	212.5	
311.9	CARBONDALE		ROCK	15.5	217.5	

MAPID: 14528282000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 4W

SECTION: 3

QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: PERCY

LONGITUDE: -89.531217

GEOLOGIST: GRAETENGER

CONFIDENTIAL: N

LATITUDE: 38.116903

DATE COLLECTED: 8 / 27 / 1980

SURFACE ELEVATION (FT.): 476.7

LOGGED (FT.): 21.0

LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL

WELL TYPE: Observation Well

COMMENT: N-496,463 E-682,591

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
476.7			CLAYSTONE	13.8	0.0
462.9			CLAYSTONE	7.2	13.8

MAPID: 14528470000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 4W

SECTION: 3

QUARTERS/FOOTAGES: 330' S line, 330' E line of SE NW NW

QUADRANGLE: COULTERVILLE

LONGITUDE: -89.533546

GEOLOGIST: PLOETZ

CONFIDENTIAL: N

LATITUDE: 38.128332

DATE COLLECTED: 10 / 0 / 1940

SURFACE ELEVATION (FT.):

LOGGED (FT.): 80.0

LOG TYPE: Drillers Log

SOURCE: C. D. KILLINGSWORTH & BLAIR

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	13.0	0.0
-			SANDSTONE	63.0	13.0
-			CARBONACEOUS LIMESTONE	4.0	76.0

MAPID: 14523281000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 4W

SECTION: 4

QUARTERS/FOOTAGES: 100' N line, 92' W line of NW SE SW

QUADRANGLE: PERCY

LONGITUDE: -89.55055

GEOLOGIST: PLOETZ

CONFIDENTIAL: N

LATITUDE: 38.119828

DATE COLLECTED: 4 / 23 / 1976

SURFACE ELEVATION (FT.):

LOGGED (FT.): 40.0

LOG TYPE: Drillers Log

SOURCE: C. KOHNEN

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	11.0	1.0
-			CLAYSTONE	12.0	12.0
-			SANDSTONE	8.0	24.0
-			UNCLASSIFIED	8.0	32.0

MAPID: 14502181000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 6 QUARTERS/FOOTAGES: 50' N line, 1320' E line

QUADRANGLE: COULTERVILLE LONGITUDE: -89.578833 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.131721 DATE COLLECTED:

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 169.3 LOG TYPE: Survey Core Study

SOURCE: MOFFAT COAL CO. 6 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
365.2	MODESTO	PIASA	LIMESTONE/UNDERCLAY	11.2	104.8	
354.0	MODESTO		CARBONACEOUS SHALE	0.2	116.0	
353.8	CARBONDALE	DANVILLE	COAL	2.9	116.2	
350.9	CARBONDALE		SHALE & SANDSTONE	13.7	119.1	
337.3	CARBONDALE	GALUM	LIMESTONE/UNDERCLAY	1.0	132.7	
336.3	CARBONDALE		CLAYSTONE & SHALE	0.8	133.7	
335.5	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	1.4	134.5	UPPER BENCH
334.1	CARBONDALE	BANKSTON FORK	MOTTLED SHALE	4.2	135.9	SHALE PARTING
329.9	CARBONDALE	BANKSTON FORK	LIMESTONE/UNDERCLAY	3.4	140.1	LOWER BENCH
326.5	CARBONDALE	LAWSON	MOTTLED SHALE	0.4	143.5	
326.1	CARBONDALE	LAWSON	DARK GRAY SHALE	2.4	143.9	
323.7	CARBONDALE	LAWSON	CALCAREOUS SHALE	0.5	146.3	
323.2	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.1	146.8	
318.1	CARBONDALE		BLACK SHALE	2.5	151.9	
315.6	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	6.3	154.4	
309.2	CARBONDALE	ANNA	BLACK SHALE	2.3	160.8	
307.0	CARBONDALE	HERRIN	COAL	6.3	163.0	

MAPID: 14523165000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 6 QUARTERS/FOOTAGES: 110' S line, 103' W line of SW NW NW

QUADRANGLE: COULTERVILLE LONGITUDE: -89.592006 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.12857 DATE COLLECTED: 6 / 16 / 1974

SURFACE ELEVATION (FT.): LOGGED (FT.): 24.0 LOG TYPE: Drillers Log

SOURCE: C. KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			CLAYSTONE	12.0	1.0	
-			SANDSTONE	5.0	13.0	
-			SHALE	6.0	18.0	

MAPID: 14528652000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 8 **QUARTERS/FOOTAGES:** 1' S line, 660' E line
QUADRANGLE: PERCY **LONGITUDE:** -89.557871 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 38.10188 **DATE COLLECTED:** 7 / 2 / 1937
SURFACE ELEVATION (FT.): 472.2 **LOGGED (FT.):** 77.3 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY E-5 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
472.2	PLEISTOCENE		CLAY	34.5	0.0	
437.7	CARBONDALE	BANKSTON FORK	LIMESTONE	3.9	34.5	
433.8	CARBONDALE		SHALE	4.3	38.4	
429.4	CARBONDALE	CONANT	LIMESTONE	4.3	42.8	
425.2	CARBONDALE	JAMESTOWN	BLACK SHALE	11.5	47.0	
413.7	CARBONDALE	BRERETON	LIMESTONE	7.5	58.5	
406.2	CARBONDALE	ANNA	BLACK SHALE	3.8	66.0	
402.4	CARBONDALE		GRAY SHALE	0.3	69.8	SOFT
402.1	CARBONDALE	HERRIN	COAL	6.3	70.1	
395.8	CARBONDALE		UNDERCLAY	0.9	76.4	

MAPID: 14523467000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 10 **QUARTERS/FOOTAGES:** 98' S line, 104' W line of SE NW SW
QUADRANGLE: PERCY **LONGITUDE:** -89.534566 **GEOLOGIST:** PLOETZ
CONFIDENTIAL: N **LATITUDE:** 38.105354 **DATE COLLECTED:** 8 / 15 / 1977
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 50.0 **LOG TYPE:** Drillers Log
SOURCE: C. KOHNEN **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			CLAYSTONE	29.0	1.0	
-			CLAYSTONE	5.0	30.0	
-			SAND	3.0	35.0	
-			CLAYSTONE	12.0	38.0	

MAPID: 14528284000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 10 **QUARTERS/FOOTAGES:** NE NE NE
QUADRANGLE: PERCY **LONGITUDE:** -89.519251 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 38.114843 **DATE COLLECTED:** 1 / 31 / 1980
SURFACE ELEVATION (FT.): 458.0 **LOGGED (FT.):** 30.8 **LOG TYPE:** Drillers Log
SOURCE: CONSOLIDATION COAL N-495 **WELL TYPE:** Observation Well
COMMENT: GROUNDWATER MONITORING WELL

MAPID: 14502339000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 11 QUARTERS/FOOTAGES: 1' N line, 1' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.499177 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.115157 DATE COLLECTED: 8 / 13 / 1957

SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 222.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XG617 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
502.0	PLEISTOCENE		UNCONSOLIDATED	50.0	0.0
452.0	MODESTO		SANDSTONE	6.0	50.0
446.0	MODESTO		GRAY SHALE	53.0	56.0
393.0	MODESTO		SANDSTONE	1.0	109.0
392.0	MODESTO		SANDY SHALE	3.0	110.0
389.0	MODESTO		LIMESTONE	1.0	113.0
388.0	MODESTO		SANDY SHALE	26.0	114.0
362.0	MODESTO		BLACK SHALE	3.0	140.0
359.0	MODESTO		LIMESTONE	0.8	143.0
358.2	MODESTO		GRAY SHALE	13.2	143.8
345.0	MODESTO	PIASA	LIMESTONE	10.0	157.0
335.0	MODESTO		BLACK SHALE	1.5	167.0
333.5	CARBONDALE	DANVILLE	COAL	3.0	168.5
330.5	CARBONDALE		UNDERCLAY	3.0	171.5
327.5	CARBONDALE		GRAY SHALE	9.5	174.5
318.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	184.0
315.0	CARBONDALE		DARK SHALE	5.0	187.0
310.0	CARBONDALE	CONANT	LIMESTONE	5.5	192.0
304.5	CARBONDALE		BLACK SHALE	10.0	197.5
294.5	CARBONDALE		DARK SHALE	1.5	207.5
293.0	CARBONDALE	BRERETON	LIMESTONE	4.5	209.0
288.5	CARBONDALE	HERRIN	COAL	6.3	213.5
282.2	CARBONDALE		UNDERCLAY	2.3	219.8

MAPID: 14502339000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 11 QUARTERS/FOOTAGES: 1' N line, 1' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.499177 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.115157 DATE COLLECTED:

SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 220.3 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XG617 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
345.0	MODESTO	PIASA	LIMESTONE	10.0	157.0
335.0	MODESTO		BLACK SHALE	1.5	167.0
333.5	CARBONDALE	DANVILLE	COAL	3.0	168.5
330.5	CARBONDALE		CLAYSTONE & SHALE	12.5	171.5
318.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	184.0
315.0	CARBONDALE	LAWSON	DARK GRAY SHALE	5.0	187.0
310.0	CARBONDALE	CONANT	LIMESTONE	5.5	192.0
304.5	CARBONDALE		DARK GRAY SHALE	11.5	197.5
293.0	CARBONDALE	BRERETON	LIMESTONE	4.5	209.0
288.0	CARBONDALE	HERRIN	COAL	6.3	214.0

MAPID: 14500327000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 12 QUARTERS/FOOTAGES: 50' S line, 50' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.481423 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.099853 DATE COLLECTED: 5 / 18 / 1920

SURFACE ELEVATION (FT.): 555.1 LOGGED (FT.): 249.0 LOG TYPE: Drillers Log

SOURCE: SOUTHERN GEM COAL CORP. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
555.1			UNCONSOLIDATED	12.0	0.0
543.1	CARBONDALE		SHALE	64.0	12.0
479.1	CARBONDALE		SHALE	26.0	76.0
453.1	CARBONDALE		SHALE	40.0	102.0
413.1	CARBONDALE		SHALE	32.0	142.0
381.1			LIMESTONE	10.0	174.0
371.1	CARBONDALE		SHALE	6.0	184.0
365.1	CARBONDALE	DANVILLE	COAL	2.0	190.0
363.1	CARBONDALE		SHALE	11.0	192.0
352.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	203.0
348.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	207.0
345.1	CARBONDALE		SHALE	7.5	210.0
337.6	CARBONDALE	CONANT	LIMESTONE	1.0	217.5
336.6	CARBONDALE		SHALE	14.5	218.5
322.1	CARBONDALE	BRERETON	LIMESTONE	4.0	233.0
318.1	CARBONDALE	ANNA	SHALE	4.0	237.0
314.1	CARBONDALE	HERRIN	COAL	6.0	241.0
308.1	CARBONDALE		CLAYSTONE	1.0	247.0

MAPID: 14500327000C VERSION: 2

PROJECT: NCRDS87

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 12 QUARTERS/FOOTAGES: 50' S line, 50' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.481423 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.099853 DATE COLLECTED: 5 / 18 / 1920

SURFACE ELEVATION (FT.): 555.1 LOGGED (FT.): 249.0 LOG TYPE: Drillers Log

SOURCE: SOUTHERN GEM COAL CORP. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
555.1			UNCONSOLIDATED	12.0	0.0	
543.1	CARBONDALE		SHALE	162.0	12.0	
381.1			LIMESTONE	10.0	174.0	
371.1	CARBONDALE		SHALE	6.5	184.0	UNCERTAIN CORRELATION
364.6	CARBONDALE	DANVILLE	COAL	2.0	190.5	UNCERTAIN CORRELATION
362.6	CARBONDALE		SHALE	11.5	192.5	
351.1	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	204.0	
344.1	CARBONDALE		SHALE	7.5	211.0	
336.6	CARBONDALE	CONANT	LIMESTONE	1.0	218.5	
335.6	CARBONDALE		SHALE	14.5	219.5	
321.1	CARBONDALE	BRERETON	LIMESTONE	4.0	234.0	
317.1	CARBONDALE	ANNA	SHALE	4.0	238.0	UNCERTAIN CORRELATION
313.1	CARBONDALE	HERRIN	COAL	6.0	242.0	UNCERTAIN CORRELATION
307.1	CARBONDALE		CLAYSTONE	1.0	248.0	

MAPID: 14502340000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 12 QUARTERS/FOOTAGES: 1' S line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.499271 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.100614 DATE COLLECTED: 8 / 13 / 1957

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 188.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XG417 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
490.0	PLEISTOCENE		UNCONSOLIDATED	75.0	0.0
415.0	MODESTO		SANDY SHALE	36.0	75.0
379.0	MODESTO	PIASA	LIMESTONE	10.0	111.0
369.0	MODESTO		SHALE	3.0	121.0
366.0	CARBONDALE	DANVILLE	COAL	1.0	124.0
365.0	CARBONDALE		SHALE	3.0	125.0
362.0	CARBONDALE		SANDSTONE	10.0	128.0
352.0	CARBONDALE	BANKSTON FORK	LIMESTONE	8.7	138.0
343.3	CARBONDALE		BLUE SHALE	3.3	146.7
340.0	CARBONDALE	CONANT	BLUE LIMESTONE	2.5	150.0
337.5	CARBONDALE		BLUE SHALE	1.5	152.5
336.0	CARBONDALE		BLACK LIMESTONE	2.5	154.0
333.5	CARBONDALE		BLACK SHALE	7.5	156.5
326.0	CARBONDALE	BRERETON	LIMESTONE	4.5	164.0
321.5	CARBONDALE	ANNA	BLACK SHALE	2.5	168.5
319.0	CARBONDALE	HERRIN	COAL	6.3	171.0
312.7	CARBONDALE		UNDERCLAY	0.7	177.3
312.0	CARBONDALE		SANDY SHALE	10.0	178.0

MAPID: 14502340000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 12 QUARTERS/FOOTAGES: 1' S line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.499271

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.100614

DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 177.3

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XG417

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
379.0	MODESTO	PIASA	LIMESTONE	10.0	111.0	
369.0	MODESTO		SHALE	3.0	121.0	
366.0	CARBONDALE	DANVILLE	COAL	1.0	124.0	
365.0	CARBONDALE		SHALE & SANDSTONE	13.0	125.0	
352.0	CARBONDALE	BANKSTON FORK	LIMESTONE	8.7	138.0	UPPER BENCH
343.3	CARBONDALE	BANKSTON FORK	GRAY SHALE	3.3	146.7	SHALE PARTING
340.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	150.0	LOWER BENCH
337.5	CARBONDALE	LAWSON	GRAY SHALE	1.5	152.5	
336.0	CARBONDALE	CONANT	LIMESTONE	2.5	154.0	
333.5	CARBONDALE		BLACK SHALE	7.5	156.5	
326.0	CARBONDALE	BRERETON	LIMESTONE	4.5	164.0	
321.5	CARBONDALE	ANNA	BLACK SHALE	2.5	168.5	
319.0	CARBONDALE	HERRIN	COAL	6.3	171.0	

MAPID: 14502341000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY

TWP/RNG: 5S 4W

SECTION: 12

QUARTERS/FOOTAGES: 1' S line, 1' E line

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.481251

GEOLOGIST: CHENOWETH

CONFIDENTIAL: N

LATITUDE: 38.099709

DATE COLLECTED: 8 / 14 / 1957

SURFACE ELEVATION (FT.): 556.0

LOGGED (FT.): 248.0

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XG425

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
556.0	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
542.0	MODESTO		BROWN SANDSTONE	23.0	14.0
519.0	MODESTO		GRAY SHALE	4.0	37.0
515.0	MODESTO		GRAY SANDSTONE	6.0	41.0
509.0	MODESTO		GRAY SHALE	3.0	47.0
506.0	MODESTO		GRAY SANDSTONE	23.0	50.0
483.0	MODESTO		GRAY SHALE	73.0	73.0
410.0	MODESTO		SANDY SHALE	28.0	146.0
382.0	MODESTO	PIASA	LIMESTONE	8.0	174.0
374.0	MODESTO		BLACK SHALE	6.7	182.0
367.3	CARBONDALE	DANVILLE	COAL	2.0	188.7
365.3	CARBONDALE		SANDY SHALE	4.0	190.7
361.3	CARBONDALE		GRAY SANDSTONE	9.3	194.7
352.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.1	204.0
345.9	CARBONDALE		DARK SHALE	6.9	210.1
339.0	CARBONDALE	CONANT	LIMESTONE	1.6	217.0
337.4	CARBONDALE		BLACK SHALE	11.9	218.6
325.5	CARBONDALE	BRERETON	LIMESTONE	4.5	230.5
321.0	CARBONDALE	ANNA	BLACK SHALE	6.0	235.0
315.0	CARBONDALE	HERRIN	COAL	5.8	241.0
309.2	CARBONDALE		UNDERCLAY	1.2	246.8

MAPID: 14502341000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 12 QUARTERS/FOOTAGES: 1' S line, 1' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.481251

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.099709

DATE COLLECTED:

SURFACE ELEVATION (FT.): 556.0 LOGGED (FT.): 246.8

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XG425

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
382.0	MODESTO	PIASA	LIMESTONE	8.0	174.0
374.0	MODESTO		BLACK SHALE	6.7	182.0
367.3	CARBONDALE	DANVILLE	COAL	2.0	188.7
365.3	CARBONDALE		SHALE & SANDSTONE	13.3	190.7
352.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.1	204.0
345.9	CARBONDALE	LAWSON	DARK GRAY SHALE	6.9	210.1
339.0	CARBONDALE	CONANT	LIMESTONE	1.6	217.0
337.4	CARBONDALE		BLACK SHALE	11.9	218.6
325.5	CARBONDALE	BRERETON	LIMESTONE	4.5	230.5
321.0	CARBONDALE	ANNA	BLACK SHALE	6.0	235.0
315.0	CARBONDALE	HERRIN	COAL	5.8	241.0

MAPID: 14591092000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 12 QUARTERS/FOOTAGES: 1' S line, 300' E line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.482296

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.099762

DATE COLLECTED: 7 / 0 / 1973

SURFACE ELEVATION (FT.): 555.0 LOGGED (FT.): 226.8

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES 11

WELL TYPE: Coal Test

COMMENT: DENMARK DEEPBOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
555.0	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
527.0			ROCK	192.0	28.0
335.0	CARBONDALE	HERRIN	COAL	6.7	220.0

MAPID: 14502342000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY

TWP/RNG: 5S 4W

SECTION: 13

QUARTERS/FOOTAGES: 1' S line, 1' E line

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.481559

GEOLOGIST: CHENOWETH

CONFIDENTIAL: N

LATITUDE: 38.085149

DATE COLLECTED: 8 / 22 / 1957

SURFACE ELEVATION (FT.): 522.0

LOGGED (FT.): 176.3

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XG225

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
522.0	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0
493.0	MODESTO		GRAY SHALE	68.0	29.0
425.0	MODESTO		SANDSTONE	4.0	97.0
421.0	MODESTO		SANDY SHALE	6.0	101.0
415.0	MODESTO	PIASA	LIMESTONE	10.0	107.0
405.0	MODESTO		DARK SHALE	2.5	117.0
402.5	CARBONDALE	DANVILLE	COAL	3.0	119.5
399.5	CARBONDALE		UNDERCLAY	2.5	122.5
397.0	CARBONDALE		SANDY SHALE	4.0	125.0
393.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	129.0
389.0	CARBONDALE		SHALE	1.5	133.0
387.5	CARBONDALE		GRAY SANDSTONE	2.0	134.5
385.5	CARBONDALE	CONANT	LIMESTONE	6.0	136.5
379.5	CARBONDALE		DARK SHALE	7.5	142.5
372.0	CARBONDALE		BLACK SHALE	11.0	150.0
361.0	CARBONDALE	BRERETON	LIMESTONE	3.5	161.0
357.5	CARBONDALE	ANNA	BLACK SHALE	4.0	164.5
353.5	CARBONDALE	ENERGY	GRAY SHALE	1.0	168.5
352.5	CARBONDALE	HERRIN	COAL	5.8	169.5
346.7	CARBONDALE		UNDERCLAY	1.0	175.3

MAPID: 14502342000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 13 QUARTERS/FOOTAGES: 1' S line, 1' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.481559

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.085149

DATE COLLECTED:

SURFACE ELEVATION (FT.): 522.0 LOGGED (FT.): 175.8

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XG225

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.0	MODESTO	PIASA	LIMESTONE	10.0	107.0	
405.0	MODESTO		DARK GRAY SHALE	2.5	117.0	
402.5	CARBONDALE	DANVILLE	COAL	3.0	119.5	
399.5	CARBONDALE		SILTY SHALE	6.5	122.5	
393.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	129.0	UPPER BENCH
389.0	CARBONDALE	BANKSTON FORK	SHALE & SANDSTONE	3.5	133.0	SHALE PARTING
385.5	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	136.5	LOWER BENCH
379.5	CARBONDALE	LAWSON	DARK GRAY SHALE	7.5	142.5	
372.0	CARBONDALE		BLACK SHALE	11.0	150.0	
361.0	CARBONDALE	BRERETON	LIMESTONE	3.5	161.0	
357.5	CARBONDALE	ANNA	BLACK SHALE	4.0	164.5	
353.5	CARBONDALE	ENERGY	GRAY SHALE	1.0	168.5	
352.0	CARBONDALE	HERRIN	COAL	5.8	170.0	

MAPID: 14502343000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 13 QUARTERS/FOOTAGES: 1' S line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.499576 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.085998 DATE COLLECTED: 9 / 3 / 1957

SURFACE ELEVATION (FT.): 476.0 LOGGED (FT.): 223.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XG217 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
476.0	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0	
436.0	MODESTO		GRAY SHALE	16.5	40.0	
419.5	MODESTO	PIASA	LIMESTONE	10.5	56.5	
409.0	MODESTO		GRAY SANDSTONE	1.7	67.0	
407.3	CARBONDALE	DANVILLE	COAL	1.5	68.7	
405.8	CARBONDALE		SANDY SHALE	9.8	70.2	
396.0	CARBONDALE		GRAY SANDSTONE	7.0	80.0	
389.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	87.0	
384.8	CARBONDALE		BLACK SHALE	5.8	91.2	
379.0	CARBONDALE		LIMESTONE	2.5	97.0	
376.5	CARBONDALE		BLACK SHALE	3.5	99.5	JAMESTOWN C. HORIZON
373.0	CARBONDALE	CONANT	LIMESTONE	1.3	103.0	
371.7	CARBONDALE		BLACK SHALE	6.1	104.3	
365.6	CARBONDALE	BRERETON	LIMESTONE	6.0	110.4	
359.6	CARBONDALE		SHALE	0.3	116.4	
359.3	CARBONDALE	HERRIN	COAL	6.8	116.7	
352.5	CARBONDALE		UNDERCLAY	0.7	123.5	
351.8	CARBONDALE		GRAY SANDSTONE	2.8	124.2	
349.0	CARBONDALE		LIMESTONE	3.0	127.0	
346.0	CARBONDALE		GRAY SANDSTONE	10.0	130.0	
336.0	CARBONDALE		SANDY SHALE	4.5	140.0	
331.5	CARBONDALE	SPRINGFIELD	COAL	2.0	144.5	
329.5	CARBONDALE		SANDY SHALE	36.5	146.5	
293.0	CARBONDALE		COAL	0.5	183.0	
292.5	CARBONDALE		SANDY SHALE	26.0	183.5	
266.5	CARBONDALE	HANOVER	LIMESTONE	2.0	209.5	
264.5	CARBONDALE		SANDY SHALE	1.0	211.5	
263.5	CARBONDALE	EXCELLO	BLACK SHALE	4.5	212.5	
259.0	CARBONDALE	HOUCHIN CREEK	COAL	2.5	217.0	
256.5	CARBONDALE		UNDERCLAY	3.5	219.5	

MAPID: 14502343000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 13 QUARTERS/FOOTAGES: 1' S line, 1' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.499576 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.085998 DATE COLLECTED:

SURFACE ELEVATION (FT.): 476.0 LOGGED (FT.): 123.8 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES CORP. XG217 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.0	MODESTO	PIASA	LIMESTONE	10.5	67.0	
398.5	MODESTO		SANDSTONE	1.7	77.5	
396.8	CARBONDALE	DANVILLE	COAL	1.5	79.2	
395.3	CARBONDALE		SHALE & SANDSTONE	16.8	80.7	
378.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	97.5	UPPER BENCH
374.3	CARBONDALE	BANKSTON FORK	BLACK SHALE	5.8	101.7	SHALE PARTING
368.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	107.5	LOWER BENCH
366.0	CARBONDALE	LAWSON	BLACK SHALE	3.5	110.0	
362.5	CARBONDALE	CONANT	LIMESTONE	1.3	113.5	
361.2	CARBONDALE		BLACK SHALE	6.1	114.8	
355.1	CARBONDALE	BRERETON	LIMESTONE	6.0	120.9	
349.1	CARBONDALE	ANNA	SHALE	0.3	126.9	
359.0	CARBONDALE	HERRIN	COAL	6.8	117.0	

MAPID: 14523469000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 13 QUARTERS/FOOTAGES: 330' S line, 330' E line of NE NE NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.482422 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.098851 DATE COLLECTED: 10 / 12 / 1978

SURFACE ELEVATION (FT.): LOGGED (FT.): 38.0 LOG TYPE: Drillers Log

SOURCE: HEPP DRILLING CO. WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			CLAYSTONE	17.0	0.0	
-			SANDSTONE/SHALE	15.0	17.0	
-			SIDERITE	6.0	32.0	

MAPID: 14502644000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 15 QUARTERS/FOOTAGES: 364' S line, 244' W line of SW NE
 QUADRANGLE: PERCY LONGITUDE: -89.52705 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 38.094887 DATE COLLECTED: 9 / 13 / 1961
 SURFACE ELEVATION (FT.): LOGGED (FT.): 71.0 LOG TYPE: Drillers Log
 SOURCE: OTHO KINMAN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	1.0	0.0
-			CLAYSTONE	23.0	1.0
-			SAND	2.0	24.0
-			CLAYSTONE	10.0	26.0
-			CLAYSTONE	31.0	36.0
-			LIMESTONE	4.0	67.0

MAPID: 14523727000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 16 QUARTERS/FOOTAGES: 330' S line, 330' E line of SW SW SE
 QUADRANGLE: PERCY LONGITUDE: -89.545466 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 38.087789 DATE COLLECTED: 6 / 14 / 1979
 SURFACE ELEVATION (FT.): LOGGED (FT.): 425.0 LOG TYPE: Drillers Log
 SOURCE: FRANK HEPP, JR. WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	56.0	0.0
-			LIMESTONE	9.0	56.0
-			LIMESTONE W/ SHALE	20.0	65.0
-			LIMESTONE W/ SHALE	31.0	85.0
-			COAL/CLAYSTONE	8.0	116.0
-			SHALE	6.0	124.0
-			LIMESTONE W/ SHALE	16.0	130.0
-			SHALE	62.0	146.0
-			LIMESTONE W/ SHALE	12.0	208.0
-			COAL/CLAYSTONE	3.0	220.0
-			SHALE	29.0	223.0
-			SHALE	7.0	252.0
-			COAL/CLAYSTONE	2.0	259.0
-			SHALE	74.0	261.0
-			SHALE	5.0	335.0
-			COAL/CLAYSTONE	1.0	340.0
-			SHALE	10.0	341.0
-			SANDSTONE/SHALE	33.0	351.0

MAPID: 14503147000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 4W

SECTION: 17

QUARTERS/FOOTAGES: 330' S line, 330' E line of SW SE SW

QUADRANGLE: PERCY

LONGITUDE: -89.568671

GEOLOGIST: PLOETZ

CONFIDENTIAL: N

LATITUDE: 38.088219

DATE COLLECTED: 10 / 24 / 1973

SURFACE ELEVATION (FT.):

LOGGED (FT.): 530.0

LOG TYPE: Drillers Log

SOURCE: FRANK HEPP, JR.

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	23.0	0.0
-			SHALE	26.5	23.0
-			LIMESTONE	14.5	49.5
-			SANDSTONE/SHALE	21.0	64.0
-			LIMESTONE	3.0	85.0
-			CALCAREOUS SHALE	21.0	88.0
-			SHALE	7.0	109.0
-			COAL WITH SHALE	6.0	116.0
-			LIMESTONE	10.0	122.0
-			CALCAREOUS SHALE	38.0	132.0
-				40.0	170.0
-			SHALE	37.0	210.0
-			LIMESTONE	4.0	247.0
-			SHALE	142.0	251.0
-			SHALE & SANDSTONE	137.0	393.0

MAPID: 14523349000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 4W

SECTION: 18

QUARTERS/FOOTAGES: 330' S line, 330' E line of SW SE SW

QUADRANGLE: PERCY

LONGITUDE: -89.5871

GEOLOGIST: PLOETZ

CONFIDENTIAL: N

LATITUDE: 38.088549

DATE COLLECTED: 11 / 23 / 1976

SURFACE ELEVATION (FT.):

LOGGED (FT.): 471.0

LOG TYPE: Drillers Log

SOURCE: FRANK HEPP, JR.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	24.0	0.0
-			UNCONSOLIDATED	12.0	24.0
-			LIMESTONE	8.0	36.0
-			CARBONACEOUS SHALE	9.0	44.0
-			SANDSTONE	17.0	53.0
-			LIMESTONE	1.0	70.0
-			SHALE	6.0	71.0
-			LIMESTONE	6.0	77.0
-			CALCAREOUS SHALE	20.0	83.0
-			CLAY & COAL	7.0	103.0
-			CALCAREOUS SHALE	17.0	110.0
-			COAL/CLAYSTONE	4.0	127.0
-				58.0	131.0
-			COAL/CLAYSTONE	3.0	189.0
-				52.0	192.0
-			LIMESTONE	12.0	244.0
-				77.0	256.0
-			COAL/CLAYSTONE	3.0	333.0
-			SANDSTONE/SHALE	52.0	336.0

MAPID: 14503083000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 20 QUARTERS/FOOTAGES: 2150' N line, 300' E line

QUADRANGLE: PERCY LONGITUDE: -89.557145 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.081153 DATE COLLECTED: 8 / 1 / 1961

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 472.0 LOG TYPE: Drillers Log

SOURCE: GWIN DRILLING CO. WELL TYPE: Gas Storage Operational Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0			CLAYSTONE	15.0	0.0
465.0			SHALE	25.0	15.0
440.0			SHALE	22.0	40.0
418.0			LIMESTONE	8.0	62.0
410.0	CARBONDALE		SHALE	8.0	70.0
402.0	CARBONDALE	BANKSTON FORK	LIMESTONE	12.0	78.0
390.0	CARBONDALE		SHALE	4.0	90.0
386.0	CARBONDALE	CONANT	LIMESTONE	4.0	94.0
382.0	CARBONDALE		SHALE	6.0	98.0
376.0	CARBONDALE	BRERETON	LIMESTONE	6.0	104.0
370.0	CARBONDALE		SHALE	4.0	110.0
366.0	CARBONDALE	HERRIN	COAL	5.5	114.0
360.5	CARBONDALE		CLAYSTONE	0.5	119.5
360.0	CARBONDALE		LIMESTONE	13.0	120.0
347.0	CARBONDALE		SHALE	11.0	133.0
336.0	CARBONDALE		LIMESTONE	21.0	144.0
315.0	CARBONDALE		SHALE	36.0	165.0
279.0	CARBONDALE		SHALE	5.0	201.0
274.0	CARBONDALE	HOUCHIN CREEK	COAL	4.0	206.0
270.0	CARBONDALE		SHALE	2.0	210.0
268.0	CARBONDALE		LIMESTONE	5.0	212.0
263.0	CARBONDALE		SHALE	8.0	217.0
255.0	CARBONDALE		LIMESTONE	2.0	225.0
253.0			SHALE	21.0	227.0
232.0			LIMESTONE	2.0	248.0
230.0			SHALE	80.0	250.0
150.0			LIMESTONE	10.0	330.0
140.0			SHALE	25.0	340.0
115.0			SANDSTONE	25.0	365.0
90.0			SHALE	5.0	390.0
85.0			LIMESTONE	5.0	395.0
80.0			SHALE	35.0	400.0
45.0			SANDSTONE	37.0	435.0

MAPID: 14503083000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 20 QUARTERS/FOOTAGES: 2150' N line, 300' E line

QUADRANGLE: PERCY LONGITUDE: -89.557145 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.081153 DATE COLLECTED:

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 119.5 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.0	MODESTO	PIASA	LIMESTONE	8.0	62.0
410.0	CARBONDALE		GRAY SHALE	8.0	70.0
402.0	CARBONDALE	GALUM	LIMESTONE	2.0	78.0
400.0	CARBONDALE		CALCAREOUS SHALE	6.0	80.0
394.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	86.0
390.0	CARBONDALE	LAWSON	GRAY SHALE	4.0	90.0
386.0	CARBONDALE	CONANT	LIMESTONE	4.0	94.0
382.0	CARBONDALE		DARK GRAY SHALE	6.0	98.0
376.0	CARBONDALE	BRERETON	LIMESTONE	6.0	104.0
370.0	CARBONDALE	ANNA	BLACK SHALE	4.0	110.0
366.0	CARBONDALE	HERRIN	COAL	5.5	114.0

MAPID: 14503112000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 20 QUARTERS/FOOTAGES: 0' N line, 0' W line of NW SW NW

QUADRANGLE: PERCY LONGITUDE: -89.574482 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.083749 DATE COLLECTED: 1 / 30 / 1973

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 490.0 LOG TYPE: Drillers Log

SOURCE: FRANK HEPP, JR. WELL TYPE:

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
470.0			CLAYSTONE	20.0	0.0
450.0			SHALE	24.0	20.0
426.0			LIMESTONE	13.0	44.0
413.0			SHALE	25.0	57.0
388.0			LIMESTONE	4.0	82.0
384.0			LIMESTONE W/ SHALE	29.0	86.0
355.0			COAL	3.0	115.0
352.0			LIMESTONE W/ SHALE	87.0	118.0
265.0			COAL	7.0	205.0
258.0			CALCAREOUS SHALE	108.0	212.0
150.0			SANDSTONE	8.0	320.0
142.0			SHALE	12.0	328.0
130.0			LIMESTONE W/ SHALE	64.0	340.0
66.0			SANDSTONE	8.0	404.0
58.0			CALCAREOUS SHALE	24.0	412.0
34.0			SHALE	25.0	436.0
9.0			SANDSTONE	29.0	461.0

MAPID: 14500328000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 21 QUARTERS/FOOTAGES: 26' S line, 8' E line of SE SW SE

QUADRANGLE: PERCY LONGITUDE: -89.542471 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.07227 DATE COLLECTED:

SURFACE ELEVATION (FT.): 459.2 LOGGED (FT.): 74.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
459.2			UNCONSOLIDATED	27.7	0.0
431.5			SHALE	5.8	27.7
425.7			UNCLASSIFIED	2.7	33.5
423.0	CARBONDALE		SHALE	3.9	36.2
419.1	CARBONDALE		UNCLASSIFIED	4.5	40.1
414.6	CARBONDALE		SHALE	4.8	44.6
409.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	49.4
407.3	CARBONDALE		SHALE	3.4	51.9
403.9	CARBONDALE	JAMESTOWN	COAL	0.2	55.3
403.7	CARBONDALE		SHALE	7.7	55.5
396.0	CARBONDALE	BRERETON	LIMESTONE	4.9	63.2
391.1	CARBONDALE	HERRIN	COAL	6.2	68.1

MAPID: 14500329000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 21 QUARTERS/FOOTAGES: 660' N line, 300' E line of NE NE SW

QUADRANGLE: PERCY LONGITUDE: -89.54794 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.077783 DATE COLLECTED:

SURFACE ELEVATION (FT.): 471.0 LOGGED (FT.): 20.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
471.0			UNCONSOLIDATED	11.7	0.0
459.3			COAL	1.3	11.7
457.9			CLAYSTONE	1.8	13.1
456.1			LIMESTONE	5.8	14.9

MAPID: 14502112000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 21 QUARTERS/FOOTAGES: 41' S line, 27' W line

QUADRANGLE: PERCY LONGITUDE: -89.556101 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.072543 DATE COLLECTED:

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 94.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO T4 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
417.0	CARBONDALE		SHALE	6.0	43.0
411.0	CARBONDALE	GALUM	LIMESTONE	2.0	49.0
409.0	CARBONDALE		SHALE	6.0	51.0
403.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	57.0
398.0	CARBONDALE	LAWSON	SHALE	5.0	62.0
393.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.5	67.0
387.5	CARBONDALE	JAMESTOWN	COAL	0.5	72.5
387.0	CARBONDALE		GRAY SHALE	3.0	73.0
384.0	CARBONDALE	BRERETON	LIMESTONE	5.0	76.0
379.0	CARBONDALE	ANNA	BLACK SHALE	6.0	81.0
373.0	CARBONDALE	HERRIN	COAL	7.0	87.0

MAPID: 14502878000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 21 QUARTERS/FOOTAGES: 230' N line, 30' E line of NW

QUADRANGLE: PERCY LONGITUDE: -89.546786 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.086265 DATE COLLECTED: 3 / 22 / 1956

SURFACE ELEVATION (FT.): 466.0 LOGGED (FT.): 405.0 LOG TYPE: Plugging affidavit

SOURCE: PHILLIPS PETROLEUM CO. WELL TYPE: Plugged and/or Abandoned

COMMENT: NO ENVELOPE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
466.0			UNKNOWN	0.0	0.0

MAPID: 14502879000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 21 QUARTERS/FOOTAGES: 100' S line, 210' E line of NW SE NE

QUADRANGLE: PERCY LONGITUDE: -89.540555 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.081582 DATE COLLECTED: 3 / 25 / 1956

SURFACE ELEVATION (FT.): 464.0 LOGGED (FT.): 410.0 LOG TYPE: Plugging affidavit

SOURCE: PHILLIPS PETROLEUM CO. WELL TYPE: Plugged and/or Abandoned

COMMENT: NO ENVELOPE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
464.0			UNKNOWN	0.0	0.0

MAPID: 1450288000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 21 QUARTERS/FOOTAGES: 90' S line, 50' W line of SW

QUADRANGLE: PERCY LONGITUDE: -89.556021 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.072675 DATE COLLECTED: 3 / 23 / 1956

SURFACE ELEVATION (FT.): 461.0 LOGGED (FT.): 395.0 LOG TYPE: Plugging affidavit

SOURCE: PHILLIPS PETROLEUM CO. WELL TYPE: Plugged and/or Abandoned

COMMENT: NO ENVELOPE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
461.0			UNKNOWN	0.0	0.0

MAPID: 14503097000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 21 QUARTERS/FOOTAGES: 0' N line, 0' W line of NW NW NW

QUADRANGLE: PERCY LONGITUDE: -89.556029 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.087067 DATE COLLECTED: 10 / 27 / 1972

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 21.0 LOG TYPE: Drillers Log

SOURCE: FRANK HEPP, JR. WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.0			CLAYSTONE	7.0	2.0
421.0			SAND	4.0	9.0
417.0			SHALE	8.0	13.0

MAPID: 14528285000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 21 QUARTERS/FOOTAGES: 99' N line, 10' E line of NW SW NE

QUADRANGLE: PERCY LONGITUDE: -89.544468 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.082928 DATE COLLECTED: 9 / 2 / 1980

SURFACE ELEVATION (FT.): 469.9 LOGGED (FT.): 27.4 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO. WELL TYPE: Observation Well

COMMENT: N-516,293 E-678,509

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
469.9			CLAYSTONE	6.7	0.0
463.2			CLAYSTONE	6.9	6.7
456.3			CLAYSTONE	9.6	13.6
446.7			CLAYSTONE	3.7	23.2
443.0			CLAYSTONE	0.5	26.9

MAPID: 14528335000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 21 QUARTERS/FOOTAGES: 642' N line, 389' E line of SE NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.55277 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.083405 DATE COLLECTED: 2 / 3 / 1981
 SURFACE ELEVATION (FT.): 445.8 LOGGED (FT.): 20.0 LOG TYPE: Drillers Log
 SOURCE: CONSOLIDATION COAL CO WELL TYPE: Engineering Test Holes
 COMMENT: N-516,297.52 E-676,801.28

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.8			CLAYSTONE	6.8	0.0
439.0			CLAYSTONE	7.2	6.8
431.8			SAND	6.0	14.0

MAPID: 14528336000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 21 QUARTERS/FOOTAGES: 642' N line, 524' E line of NE SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.553276 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.081585 DATE COLLECTED: 2 / 3 / 1981
 SURFACE ELEVATION (FT.): 474.5 LOGGED (FT.): 35.0 LOG TYPE: Drillers Log
 SOURCE: CONSOLIDATION COAL CO WELL TYPE: Engineering Test Holes
 COMMENT: N-515,632.80 E-676,670.79

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
474.5			CLAYSTONE	18.5	0.0
456.0			CLAYSTONE	9.7	18.5
446.3			SILTSTONE	6.8	28.2

MAPID: 14528337000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 21 QUARTERS/FOOTAGES: 87' N line, 324' E line of SE NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.552517 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.084934 DATE COLLECTED: 2 / 2 / 1981
 SURFACE ELEVATION (FT.): 445.8 LOGGED (FT.): 20.0 LOG TYPE: Drillers Log
 SOURCE: CONSOLIDATION COAL CO WELL TYPE: Engineering Test Holes
 COMMENT: N-516855.91 E-676863.14

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.8			CLAYSTONE	8.0	0.0
437.8			CLAYSTONE	6.3	8.0
431.5			SAND	5.7	14.3

MAPID: 14528342000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 21 QUARTERS/FOOTAGES: 700' S line, 1350' W line of SW

QUADRANGLE: PERCY LONGITUDE: -89.551461 GEOLOGIST: L. SMITH

CONFIDENTIAL: N LATITUDE: 38.074284 DATE COLLECTED: 9 / 8 / 1975

SURFACE ELEVATION (FT.): 466.7 LOGGED (FT.): 197.7 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO. WELL TYPE: Structure Test

COMMENT: SW CORNER

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
466.7			UNCONSOLIDATED	34.5	0.0
432.2	MODESTO		SHALE	3.6	34.5
428.6	MODESTO	DEGRAFF	COAL	1.0	38.1
427.6	MODESTO		SHALE	2.7	39.1
424.9	MODESTO	PIASA	LIMESTONE	8.8	41.8
416.1	MODESTO		SHALE	4.5	50.6
411.6	CARBONDALE		SHALE	8.2	55.1
403.4	CARBONDALE		LIMESTONE	1.2	63.3
402.2	CARBONDALE		LIMESTONE W/ SHALE	4.8	64.5
397.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	69.3
392.7	CARBONDALE		SHALE	3.7	74.0
389.0	CARBONDALE	CONANT	LIMESTONE	2.4	77.7
386.6	CARBONDALE		SHALE/COAL	13.7	80.1
372.9	CARBONDALE	BRERETON	LIMESTONE	4.1	93.8
368.8	CARBONDALE	ANNA	SHALE	1.8	97.9
367.0	CARBONDALE	HERRIN	COAL	6.8	99.7
360.2	CARBONDALE		UNDERCLAY	1.2	106.5
359.0	CARBONDALE		CONGLOMERATE	3.1	107.7
355.9	CARBONDALE		SHALE	1.1	110.8
354.8	CARBONDALE		LIMESTONE	3.3	111.9
351.5	CARBONDALE		SHALE	3.2	115.2
348.3	CARBONDALE		SANDSTONE	0.6	118.4
347.7	CARBONDALE	ST. DAVID	LIMESTONE	0.7	119.0
347.0	CARBONDALE	SPRINGFIELD	SHALE/COAL	2.4	119.7
344.6	CARBONDALE		CALCAREOUS SHALE	6.6	122.1

MAPID: 14528365000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 21 **QUARTERS/FOOTAGES:** 1085' S line, 801' W line of SW
QUADRANGLE: PERCY **LONGITUDE:** -89.553365 **GEOLOGIST:** L. SMITH
CONFIDENTIAL: N **LATITUDE:** 38.075379 **DATE COLLECTED:** 12 / 4 / 1981
SURFACE ELEVATION (FT.): 467.0 **LOGGED (FT.):** 25.0 **LOG TYPE:** Drillers Log
SOURCE: CONSOLIDATION COAL **WELL TYPE:** Engineering Test Holes
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
459.5			UNCLASSIFIED	6.5	7.5
453.0			UNCLASSIFIED	11.0	14.0

MAPID: 14528366000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 21 **QUARTERS/FOOTAGES:** 1648' S line, 962' W line of SW
QUADRANGLE: PERCY **LONGITUDE:** -89.552787 **GEOLOGIST:** L. SMITH
CONFIDENTIAL: N **LATITUDE:** 38.076923 **DATE COLLECTED:** 2 / 3 / 1981
SURFACE ELEVATION (FT.): 469.8 **LOGGED (FT.):** 35.0 **LOG TYPE:** Drillers Log
SOURCE: CONSOLIDATION COAL **WELL TYPE:** Engineering Test Holes
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
456.6			UNCLASSIFIED	5.8	13.2
450.8			UNCLASSIFIED	3.2	19.0
447.6			UNCLASSIFIED	6.3	22.2
441.3			UNCLASSIFIED	6.5	28.5

MAPID: 14502881000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 22 **QUARTERS/FOOTAGES:** 60' N line, 70' W line of NW NE NW
QUADRANGLE: PERCY **LONGITUDE:** -89.532346 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 38.08646 **DATE COLLECTED:** 3 / 12 / 1956
SURFACE ELEVATION (FT.): 468.0 **LOGGED (FT.):** 230.0 **LOG TYPE:** Plugging affidavit
SOURCE: PHILLIPS PETROLEUM CO. **WELL TYPE:** Plugged and/or Abandoned
COMMENT: PLUGGED & ABANDONED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
468.0			UNKNOWN	0.0	0.0

MAPID: 14502882000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 22 QUARTERS/FOOTAGES: 240' N line, 80' E line of NE NE SW
 QUADRANGLE: PERCY LONGITUDE: -89.528539 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.078588 DATE COLLECTED: 3 / 13 / 1956
 SURFACE ELEVATION (FT.): 459.0 LOGGED (FT.): 195.0 LOG TYPE: Plugging affidavit
 SOURCE: PHILLIPS PETROLEUM CO. WELL TYPE: Plugged and/or Abandoned
 COMMENT: PLUGGED & ABANDONED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
459.0			UNKNOWN	0.0	0.0

MAPID: 14502883000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 22 QUARTERS/FOOTAGES: 50' S line, 50' E line of SE SE SE
 QUADRANGLE: PERCY LONGITUDE: -89.519478 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.071928 DATE COLLECTED: 3 / 16 / 1956
 SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 405.0 LOG TYPE: Plugging affidavit
 SOURCE: PHILLIPS PETROLEUM CO. WELL TYPE: Plugged and/or Abandoned
 COMMENT: PLUGGED & ABANDONED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
456.0			UNKNOWN	0.0	0.0

MAPID: 14528287000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 22 QUARTERS/FOOTAGES: 122' N line, 8' E line of NE NE NW
 QUADRANGLE: PERCY LONGITUDE: -89.527913 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.086196 DATE COLLECTED: 9 / 26 / 1980
 SURFACE ELEVATION (FT.): 468.7 LOGGED (FT.): 78.4 LOG TYPE: Drillers Log
 SOURCE: CONSOLIDATION COAL CO WELL TYPE: Observation Well
 COMMENT: N-517,530 E-683,163

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
468.7			CLAYSTONE	3.3	0.0
465.4			CLAYSTONE	14.5	3.3
450.9			CLAYSTONE	6.3	17.8
444.6			CLAYSTONE	10.7	24.1
433.9			CLAYSTONE	41.5	34.8
392.5			CLAYSTONE	2.2	76.2
390.3			SHALE	0.0	78.4

MAPID: 14528340000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 22 QUARTERS/FOOTAGES: 84' S line, 559' E line of SE NE NW SE
 QUADRANGLE: PERCY LONGITUDE: -89.525588 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.0776 DATE COLLECTED: 3 / 6 / 1978
 SURFACE ELEVATION (FT.): 448.8 LOGGED (FT.): 61.5 LOG TYPE: Drillers Log
 SOURCE: CONSOLIDATION COAL CO WELL TYPE: Structure Test
 COMMENT: N-514,292.75 E-684,474.59

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.8			CLAYSTONE	0.0	5.0
433.8				5.0	15.0
428.8				5.0	20.0
418.8			SILTSTONE	5.0	30.0
413.8			CLAYSTONE	5.0	35.0
408.8			CLAYSTONE	5.0	40.0
403.8			CLAYSTONE	5.0	45.0
398.8			CLAYSTONE	5.0	50.0
393.8			CLAYSTONE	5.0	55.0
388.8			SHALE	1.2	60.0

MAPID: 14528341000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 22 QUARTERS/FOOTAGES: 333' S line, 340' E line of NE SW
 QUADRANGLE: PERCY LONGITUDE: -89.529548 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.076539 DATE COLLECTED: 9 / 30 / 1966
 SURFACE ELEVATION (FT.): 459.7 LOGGED (FT.): 108.0 LOG TYPE: Drillers Log
 SOURCE: CONSOLIDATION COAL CO WELL TYPE: Structure Test
 COMMENT: SE CORNER 0-85 ROTARY 85-108 CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
459.7			UNCONSOLIDATED	65.0	0.0
394.7	CARBONDALE		LIMESTONE	7.0	65.0
387.7	CARBONDALE		LIMESTONE	5.0	72.0
382.7	CARBONDALE		SHALE	4.5	77.0
378.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	81.5
375.7	CARBONDALE		SHALE	2.2	84.0
373.5	CARBONDALE	CONANT	UNCLASSIFIED	1.2	86.2
372.3	CARBONDALE	JAMESTOWN	COAL	0.3	87.4
372.0	CARBONDALE	JAMESTOWN	LIMESTONE	0.3	87.7
371.7			COAL	0.2	88.0
371.5			LIMESTONE	0.5	88.2
371.0			SHALE	2.3	88.7
368.7			UNCLASSIFIED	6.5	91.0
362.3			SHALE	2.4	97.4
359.9			COAL	5.9	99.8
354.0			UNDERCLAY	2.3	105.7

MAPID: 14528606000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 22 QUARTERS/FOOTAGES: 1564' S line, 2249' W line

QUADRANGLE: PERCY LONGITUDE: -89.529845 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.076293 DATE COLLECTED: 7 / 14 / 1982

SURFACE ELEVATION (FT.): LOGGED (FT.): 107.5 LOG TYPE: Other Core Study

SOURCE: CONSOLIDATION COAL JC66-4 WELL TYPE: Coal Test

COMMENT: PERMIT 74; BURNING STAR #4; N-S X-SECT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	65.0	0.0
-	CARBONDALE	BANKSTON FORK	LIMESTONE	12.0	65.0
-	CARBONDALE		SHALE	4.5	77.0
-	CARBONDALE		LIMESTONE	3.0	81.5
-	CARBONDALE		SHALE	3.0	84.5
-	CARBONDALE		LIMESTONE	1.0	87.5
-	CARBONDALE		SHALE	3.0	88.5
-	CARBONDALE	BRERETON	LIMESTONE	5.0	91.5
-	CARBONDALE	ANNA	SHALE	3.0	96.5
-	CARBONDALE	HERRIN	COAL	6.0	99.5
-	CARBONDALE		UNDERCLAY	2.0	105.5

MAPID: 14528607000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 22 QUARTERS/FOOTAGES: 978' N line, 2249' W line

QUADRANGLE: PERCY LONGITUDE: -89.529551 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.083869 DATE COLLECTED: 7 / 14 / 1982

SURFACE ELEVATION (FT.): LOGGED (FT.): 105.0 LOG TYPE: Other Core Study

SOURCE: CONSOLIDATION COAL JC 66-57 WELL TYPE: Coal Test

COMMENT: PERMIT 74; BURNING STAR #4; N-S X-SECT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	80.0	0.0
-	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	80.0
-	CARBONDALE		SHALE	3.0	87.0
-	CARBONDALE	BRERETON	LIMESTONE	4.0	90.0
-	CARBONDALE	ANNA	SHALE	4.0	94.0
-	CARBONDALE	HERRIN	COAL	6.0	98.0
-	CARBONDALE		UNDERCLAY	1.0	104.0

MAPID: 14502548000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 23 QUARTERS/FOOTAGES: 165' N line, 96' W line of NW NE
 QUADRANGLE: PERCY LONGITUDE: -89.508695 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.085703 DATE COLLECTED: 9 / 12 / 1959
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 76.0 LOG TYPE: Drillers Log
 SOURCE: OTHO KINMAN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			SOIL	1.0	0.0
459.0			SANDY CLAY	31.0	1.0
428.0			CLAY	13.0	32.0
415.0			SAND	11.0	45.0
404.0			CLAY	18.0	56.0
386.0			GRAVEL	1.0	74.0
385.0			SHALE	1.0	75.0

MAPID: 14502831000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 23 QUARTERS/FOOTAGES: 1375' N line, 1273' W line
 QUADRANGLE: PERCY LONGITUDE: -89.514224 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.082464 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 449.0 LOGGED (FT.): 74.3 LOG TYPE: Drillers Log
 SOURCE: TRUAX-TRAER COAL CO JR6686 WELL TYPE: Coal Test
 COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
396.0	CARBONDALE	LAWSON	DARK GRAY SHALE	2.0	53.0
394.0	CARBONDALE	JAMESTOWN	BONE COAL	1.0	55.0
393.0	CARBONDALE		DARK GRAY SHALE	7.0	56.0
386.0	CARBONDALE	BRERETON	LIMESTONE	4.8	63.0
381.2	CARBONDALE	ANNA	BLACK SHALE	0.3	67.8
381.0	CARBONDALE	HERRIN	COAL	6.3	68.0

MAPID: 14502884000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 23 QUARTERS/FOOTAGES: 50' N line, 50' W line of SE SE
 QUADRANGLE: PERCY LONGITUDE: -89.504563 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.074646 DATE COLLECTED: 4 / 13 / 1956
 SURFACE ELEVATION (FT.): 466.0 LOGGED (FT.): 400.0 LOG TYPE: Plugging affidavit
 SOURCE: PHILLIPS PETROLEUM CO. WELL TYPE: Plugged and/or Abandoned
 COMMENT: NO ENVELOPE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
466.0			UNKNOWN	0.0	0.0

MAPID: 14502522000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES: 330' N line, 330' W line of NW NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.489967 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.062612 DATE COLLECTED: 8 / 2 / 1952
 SURFACE ELEVATION (FT.): 471.0 LOGGED (FT.): 2835.0 LOG TYPE: Drillers Log
 SOURCE: THE JET OIL CO. WELL TYPE: Structure Test
 COMMENT: DRY AND ABANDONED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
422.0	CARBONDALE	HERRIN	COAL	6.0	49.0

MAPID: 14502687000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES: SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.497816 GEOLOGIST: CHENOWETH
 CONFIDENTIAL: N LATITUDE: 38.065699 DATE COLLECTED: 11 / 4 / 1960
 SURFACE ELEVATION (FT.): 460.6 LOGGED (FT.): 78.5 LOG TYPE: Drillers Log
 SOURCE: TRUAX-TRAEER COAL CO C1207 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.6	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0
426.6	PLEISTOCENE		SAND & GRAVEL	2.0	34.0
424.6	PLEISTOCENE		UNCONSOLIDATED	15.0	36.0
409.6	PLEISTOCENE		GLACIAL DRIFT	3.0	51.0
406.6	PLEISTOCENE		UNCONSOLIDATED	10.0	54.0
396.6	PLEISTOCENE		GRAVEL	2.5	64.0
394.1	PLEISTOCENE		GRAY SHALE	0.7	66.5
393.4	CARBONDALE	BRERETON	LIMESTONE	2.8	67.2
390.6	CARBONDALE	ANNA	DARK SHALE	1.2	70.0
389.4	CARBONDALE	ANNA	BLACK SHALE	0.3	71.2
389.1	CARBONDALE	HERRIN	COAL	6.3	71.5
382.8	CARBONDALE		UNDERCLAY	0.7	77.8

MAPID: 14502688000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES: 486' N line, 1296' W line of NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.495536 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.069757 DATE COLLECTED: 12 / 28 / 1960

SURFACE ELEVATION (FT.): 467.3 LOGGED (FT.): 79.5 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1215 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
467.3	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0
450.3	PLEISTOCENE		SAND & GRAVEL	1.0	17.0
449.3	PLEISTOCENE		UNCONSOLIDATED	20.7	18.0
428.6	PLEISTOCENE		BOULDER	0.2	38.7
428.5	PLEISTOCENE		UNCONSOLIDATED	0.3	38.8
428.2	PLEISTOCENE		BOULDER	4.7	39.1
423.5	CARBONDALE		SHALE	9.2	43.8
414.4	CARBONDALE	CONANT	LIMESTONE	2.8	52.9
411.6	CARBONDALE		DARK SHALE	3.8	55.7
407.8	CARBONDALE		BLACK SHALE	0.2	59.5
407.6	CARBONDALE		LIMESTONE	0.3	59.7
407.4	CARBONDALE		BLACK SHALE	0.1	59.9
407.3	CARBONDALE	JAMESTOWN	COAL	0.1	60.0
407.2	CARBONDALE		BLACK SHALE	0.1	60.1
407.1	CARBONDALE		LIMESTONE	0.4	60.2
406.7	CARBONDALE		DARK SHALE	7.6	60.6
399.1	CARBONDALE	BRERETON	LIMESTONE	2.6	68.2
396.5	CARBONDALE	ANNA	BLACK SHALE	1.0	70.8
395.5	CARBONDALE	HERRIN	COAL	6.9	71.8
388.6	CARBONDALE		UNDERCLAY	0.8	78.7

MAPID: 14502696000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES: SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.495606 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.0601 DATE COLLECTED: 12 / 8 / 1960

SURFACE ELEVATION (FT.): 458.5 LOGGED (FT.): 74.5 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1213 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
458.5	PLEISTOCENE		UNCONSOLIDATED	61.0	0.0
397.5	PLEISTOCENE		BOULDER	0.2	61.0
397.3	PLEISTOCENE		SAND	0.8	61.2
396.5	CARBONDALE	BRERETON	LIMESTONE	3.5	62.0
393.0	CARBONDALE	ANNA	DARK SHALE	1.3	65.5
391.7	CARBONDALE	ANNA	BLACK SHALE	0.7	66.8
391.0	CARBONDALE	HERRIN	COAL	6.2	67.5
384.8	CARBONDALE		UNDERCLAY	0.8	73.7

MAPID: 14502839000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES: 2594' S line, 40' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.482299 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.063094 DATE COLLECTED:

SURFACE ELEVATION (FT.): 473.0 LOGGED (FT.): 85.9 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO JR-67-52 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
438.8	CARBONDALE	DANVILLE	BONE COAL	0.5	34.2
438.3	CARBONDALE		GRAY SHALE	5.3	34.7
433.1	CARBONDALE	GALUM	LIMESTONE	1.0	39.9
432.1	CARBONDALE		CALCAREOUS SHALE	7.3	40.9
424.8	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	48.2
419.8	CARBONDALE	LAWSON	DARK GRAY SHALE	7.5	53.2
412.3	CARBONDALE	CONANT	LIMESTONE W/ SHALE	4.0	60.7
408.3	CARBONDALE	JAMESTOWN	BONE COAL	0.5	64.7
407.8	CARBONDALE		DARK GRAY SHALE	7.5	65.2
400.3	CARBONDALE	BRERETON	LIMESTONE	6.8	72.7
393.5	CARBONDALE	ANNA	BLACK SHALE	0.5	79.5
393.0	CARBONDALE	HERRIN	COAL	5.9	80.0

MAPID: 14528120000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES: 120' N line, 2360' E line of NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.490199 GEOLOGIST: KRUMM

CONFIDENTIAL: N LATITUDE: 38.070508 DATE COLLECTED: 12 / 1 / 1983

SURFACE ELEVATION (FT.): 465.5 LOGGED (FT.): 98.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: REF. NE CORNER

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
465.5			UNCONSOLIDATED	20.0	0.0
445.5			UNCONSOLIDATED	41.0	20.0
404.5	CARBONDALE		CALCAREOUS SHALE	7.0	61.0
397.5	CARBONDALE	HERRIN	COAL/CLAYSTONE	8.0	68.0
389.5	CARBONDALE		SHALE	2.0	76.0
387.5	CARBONDALE		LIMESTONE	4.0	78.0
383.5	CARBONDALE			11.0	82.0
372.5	CARBONDALE	SPRINGFIELD	COAL	5.0	93.0

MAPID: 14528130000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES: 26' N line, 316' W line of NW NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.48991 GEOLOGIST: L. SMITH

CONFIDENTIAL: N LATITUDE: 38.070751 DATE COLLECTED:

SURFACE ELEVATION (FT.): 466.9 LOGGED (FT.): 101.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: PERFORATED 44-64

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
466.9			UNCONSOLIDATED	10.0	0.0
456.9			SIDERITE	46.0	10.0
410.9	CARBONDALE		SHALE	5.0	56.0
405.9	CARBONDALE		LIMESTONE	2.0	61.0
403.9	CARBONDALE		SHALE	5.0	63.0
398.9	CARBONDALE	HERRIN	COAL	5.0	68.0
393.9	CARBONDALE		CLAYSTONE	2.0	73.0
391.9	CARBONDALE		LIMESTONE	7.0	75.0
384.9	CARBONDALE		SHALE	10.0	82.0
374.9	CARBONDALE		LIMESTONE	1.0	92.0
373.9	CARBONDALE	SPRINGFIELD	COAL	1.0	93.0
372.9	CARBONDALE		CLAYSTONE	2.0	94.0
370.9	CARBONDALE		SHALE	5.0	96.0

MAPID: 14528131000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES: 39' N line, 289' W line of NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.490004 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.07072 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 467.2 LOGGED (FT.): 105.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT: PERFORATED 81-101

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
467.2			UNCONSOLIDATED	105.0	0.0	

MAPID: 14528345000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES: 975' S line, 90' E line of SE SE SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.482597 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.058636 DATE COLLECTED: 8 / 0 / 1985
 SURFACE ELEVATION (FT.): 475.4 LOGGED (FT.): 50.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL CW-18 WELL TYPE: Observation Well
 COMMENT: WATER SURFACE ELEV. 470.94

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
475.4			CLAYSTONE	50.0	0.0	

MAPID: 14528608000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES: 145' N line, 2360' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.490199 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.070439 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 153.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL DEEPCORE 4 WELL TYPE: Coal Test

COMMENT: PERMIT 216; CAPT. MINE, NO ELEV. OR DATE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNKNOWN	30.0	0.0	NOTHING LISTED ON LOG FOR 0-30'
-	PLEISTOCENE		CLAY	1.5	30.0	
-			LIMESTONE	3.5	31.5	CLAY PARTINGS
-			CARBONACEOUS SHALE	2.0	35.0	CALCAREOUS
-			CALCAREOUS SILTSTONE	4.0	37.0	SH PARTING; FE-STAINED NODULES
-			CALCAREOUS SHALE	6.0	41.0	FE-STAINED NODS.
-			CALCAREOUS SHALE	2.0	47.0	
-			CARBONACEOUS SHALE	7.5	49.0	DK. GRAY; FISSILE
-			LIMESTONE	3.5	56.5	
-			FOSSILIFEROUS SHALE	0.3	60.0	WITH LIMESTONE NODULES
-			FOSSILIFEROUS LIMESTONE	0.7	60.3	DARK GRAY
-			LIMESTONE	8.2	61.0	GRAY TO BLUISH GRAY; SH PARTINGS
-			CALCAREOUS SHALE	0.3	69.2	DARK
-			LIMESTONE	2.0	69.5	
-			GRAY SHALE	0.8	71.5	WITH SOME LIMESTONE NODULES
-			LIMESTONE	0.2	72.3	W/ SH LENSES
-			SHALE	4.5	72.5	
-			LIMESTONE	2.1	77.0	
-			CALCAREOUS SHALE	3.5	79.1	
-			CALCAREOUS SHALE	3.4	82.6	VERY HARD
-	CARBONDALE		FOSSILIFEROUS LIMESTONE	4.0	86.0	W/ SOME SH PARTINGS
-	CARBONDALE		FOSSILIFEROUS SHALE	1.6	90.0	CALCAREOUS
-	CARBONDALE		CARBONACEOUS SHALE	6.8	91.6	CALCAREOUS
-	CARBONDALE	CONANT	CARBONACEOUS LIMESTONE	1.6	98.4	VERY FOSSILIFEROUS; GRAYISH BLACK
-	CARBONDALE		CARBONACEOUS SHALE	2.9	100.0	CALCAREOUS; GRAYISH BLACK
-	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.7	102.9	DK. GRAY; CALC.; COAL AT BASE
-	CARBONDALE		CARBONACEOUS SHALE	2.0	103.6	DK GRAY; CALACAREOUS
-	CARBONDALE		CARBONACEOUS SHALE	4.5	105.6	CALCAREOUS; FOSSILIFEROUS; HARD
-	CARBONDALE	BRERETON	CARBONACEOUS LIMESTONE	5.5	110.1	CALCAREOUS; FOSSILIFEROUS
-	CARBONDALE	ANNA	CALCAREOUS BLACK SHALE	1.4	115.6	WITH LIMESTONE NODULES; FISSILE
-	CARBONDALE	HERRIN	COAL	5.8	117.0	
-	CARBONDALE		UNDERCLAY	1.2	122.8	
-	CARBONDALE		LIMESTONE	1.0	124.0	BLUISH GRAY; HARD
-	CARBONDALE		SILTY SHALE	2.0	125.0	
-	CARBONDALE		SILTY SHALE	8.5	127.0	SLIGHTLY CALC.

-	CARBONDALE		LIMESTONE	1.5	135.5	VCERY FOSSILIFEROUS
-	CARBONDALE		CARBONACEOUS SHALE	0.5	137.0	CALCAREOUS
-	CARBONDALE		LIMESTONE	1.4	137.5	VERY FOSSILIFEROUS
-	CARBONDALE		CALCAREOUS SHALE	0.4	138.9	SOFT; GRAYISH BLACK
-	CARBONDALE	ST. DAVID	LIMESTONE	0.8	139.3	OLIVE BLACK; FOSSILIFEROUS
-	CARBONDALE	TURNER MINE	CALCAREOUS BLACK SHALE	0.9	140.1	CALCAREOUS
-	CARBONDALE	SPRINGFIELD	COAL	4.0	141.0	
-	CARBONDALE		UNDERCLAY	4.0	145.0	
-	CARBONDALE		SILTY SHALE	2.0	149.0	FE-STAINING
-	CARBONDALE		SILTY SHALE	2.0	151.0	GREENISH GRAY; CALCAREOUS

MAPID: 14528609000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 25 **QUARTERS/FOOTAGES:**
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.4929 **GEOLOGIST:** J. MCBETH
CONFIDENTIAL: N **LATITUDE:** 38.059487 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 461.4 **LOGGED (FT.):** 58.0 **LOG TYPE:** Drillers Log
SOURCE: APOGEE COAL COMPANY 5691 **WELL TYPE:** Coal Test
COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
461.4	PLEISTOCENE		UNCONSOLIDATED	18.5	0.0	
442.9	PLEISTOCENE		UNCONSOLIDATED	31.5	18.5	
411.4	CARBONDALE	HERRIN	COAL	1.0	50.0	SOFT, TOP ERODED
410.4	CARBONDALE	HERRIN	COAL	4.8	51.0	
405.6	CARBONDALE		UNDERCLAY	2.2	55.8	

MAPID: 14528610000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 25 **QUARTERS/FOOTAGES:**
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.493047 **GEOLOGIST:** J. MCBETH
CONFIDENTIAL: N **LATITUDE:** 38.058664 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 463.2 **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: APOGEE COAL COMPANY 5687 **WELL TYPE:** Coal Test
COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
463.2	PLEISTOCENE		UNCONSOLIDATED	21.5	0.0	
441.7	PLEISTOCENE		UNCONSOLIDATED	26.5	21.5	
415.2	CARBONDALE		SHALE	2.0	48.0	MULTI-COLORED
413.2	CARBONDALE		SHALE	0.8	50.0	DARK
412.4	CARBONDALE	HERRIN	COAL	0.3	50.8	SMUTTY
412.1	CARBONDALE	HERRIN	COAL	5.9	51.1	
406.2	CARBONDALE		UNDERCLAY	3.0	57.0	

MAPID: 14528611000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492914 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.057894 DATE COLLECTED:

SURFACE ELEVATION (FT.): 464.6 LOGGED (FT.): 61.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5676 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.6	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0	
441.6	PLEISTOCENE		SAND & GRAVEL	23.0	23.0	
418.6	CARBONDALE	BRERETON	LIMESTONE	0.5	46.0	
418.1	CARBONDALE	ENERGY	SHALE	1.5	46.5	DARK
416.6	CARBONDALE	ENERGY	SHALE	5.0	48.0	MULTI-COLORED
411.6	CARBONDALE	ENERGY	GRAY SHALE	1.5	53.0	
410.1	CARBONDALE	HERRIN	COAL	5.3	54.5	
404.8	CARBONDALE		UNDERCLAY	1.2	59.8	

MAPID: 14528612000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492851 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.057182 DATE COLLECTED:

SURFACE ELEVATION (FT.): 464.5 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5671 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.5	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0	
441.5	PLEISTOCENE		UNCONSOLIDATED	32.0	23.0	
409.5	CARBONDALE	BRERETON	LIMESTONE	1.5	55.0	DARK, W/ DARK SH BANDS
408.0	CARBONDALE		SHALE	2.5	56.5	DARK
405.5	CARBONDALE	HERRIN	SMUT	1.0	59.0	
404.5	CARBONDALE	HERRIN	COAL	4.0	60.0	SOFT
400.5	CARBONDALE		UNDERCLAY	1.0	64.0	

MAPID: 14528613000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492296 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.057176 DATE COLLECTED:

SURFACE ELEVATION (FT.): 464.8 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5669 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.8	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0	
438.8	PLEISTOCENE		UNCONSOLIDATED	26.0	26.0	SANDY
412.8	CARBONDALE		GRAY SHALE	1.0	52.0	
411.8	CARBONDALE		CALCAREOUS SHALE	6.0	53.0	DARK, BROKEN
405.8	CARBONDALE	HERRIN	COAL	5.0	59.0	
400.8	CARBONDALE		UNDERCLAY	1.0	64.0	

MAPID: 14528614000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.488473 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.057513 DATE COLLECTED:

SURFACE ELEVATION (FT.): 472.0 LOGGED (FT.): 104.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 555 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
472.0	PLEISTOCENE		CLAY	27.0	0.0	
445.0	PLEISTOCENE		UNCONSOLIDATED	34.2	27.0	GRAY, SOFT
410.8	CARBONDALE		COAL	0.5	61.2	SMUTTY, BLACK
410.3	CARBONDALE		CALCAREOUS SHALE	8.3	61.7	DARK
402.0	CARBONDALE	ANNA	BLACK SHALE	2.8	70.0	
399.2	CARBONDALE	HERRIN	COAL	5.8	72.8	
393.4	CARBONDALE		UNDERCLAY	3.1	78.6	
390.3	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.3	81.7	LIGHT, HARD
386.0	CARBONDALE		SANDSTONE	13.0	86.0	INTERBEDDED
373.0	CARBONDALE	SPRINGFIELD	COAL	2.8	99.0	
370.2	CARBONDALE		UNDERCLAY	2.2	101.8	

MAPID: 14528615000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.491668 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.057367 DATE COLLECTED:

SURFACE ELEVATION (FT.): 465.7 LOGGED (FT.): 90.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 7744 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
465.7	PLEISTOCENE		UNCONSOLIDATED	22.5	0.0	
443.2	PLEISTOCENE		UNCONSOLIDATED	24.0	22.5	SAND & GRAVEL
419.2	CARBONDALE		SHALE	8.1	46.5	WITH DARK GRAY LIMESTONE STREAKS
411.1	CARBONDALE	BRERETON	LIMESTONE	5.2	54.6	DARK GRAY
405.9	CARBONDALE	ANNA	SHALE	1.0	59.8	DARK GRAY
404.9	CARBONDALE	HERRIN	COAL	5.7	60.8	
399.2	CARBONDALE		UNDERCLAY	3.0	66.5	
396.2	CARBONDALE		CALCAREOUS SANDSTONE	4.3	69.5	
391.9	CARBONDALE		SHALE & SANDSTONE	8.2	73.8	INTERBEDDED SDYSH & SS
383.7	CARBONDALE		CALCAREOUS SHALE	2.5	82.0	
381.2	CARBONDALE	ST. DAVID	LIMESTONE	0.5	84.5	DARK GRAY
380.7	CARBONDALE	TURNER MINE	SHALE	0.3	85.0	DARK GRAY
380.4	CARBONDALE	SPRINGFIELD	COAL	3.0	85.3	
377.4	CARBONDALE		UNDERCLAY	1.7	88.3	

MAPID: 14528616000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.490212 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.057303 DATE COLLECTED:

SURFACE ELEVATION (FT.): 466.8 LOGGED (FT.): 100.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 7745 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
466.8	PLEISTOCENE		UNCONSOLIDATED	23.5	0.0	
443.3	PLEISTOCENE		UNCONSOLIDATED	15.7	23.5	
427.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	39.2	WEATHERED
423.3	CARBONDALE		SHALE	1.5	43.5	
421.8	CARBONDALE		SHALE	6.5	45.0	DARK GRAY
415.3	CARBONDALE	CONANT	LIMESTONE	1.5	51.5	DARK GRAY
413.8	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	11.0	53.0	DARK GRAY
402.8	CARBONDALE	BRERETON	LIMESTONE	5.4	64.0	DARK GRAY
397.4	CARBONDALE	ANNA	SHALE	0.9	69.4	DARK GRAY
396.5	CARBONDALE	HERRIN	COAL	6.0	70.3	
390.5	CARBONDALE		UNDERCLAY	3.0	76.3	
387.5	CARBONDALE		CALCAREOUS SANDSTONE	2.2	79.3	
385.3	CARBONDALE		SANDY SHALE	7.0	81.5	W/ GRAY SS STREAKS
378.3	CARBONDALE		CALCAREOUS SHALE	3.5	88.5	
374.8	CARBONDALE	ST. DAVID	LIMESTONE	1.4	92.0	GRAY
373.4	CARBONDALE	TURNER MINE	SHALE	0.2	93.4	DARK GRAY
373.2	CARBONDALE	SPRINGFIELD	COAL	3.5	93.6	
369.7	CARBONDALE		UNDERCLAY	2.9	97.1	

MAPID: 14528617000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.488058 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.057262 DATE COLLECTED:

SURFACE ELEVATION (FT.): 471.4 LOGGED (FT.): 102.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 7747 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
471.4	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0	
445.4	PLEISTOCENE		UNCONSOLIDATED	36.0	26.0	
409.4	CARBONDALE		SHALE	2.0	62.0	
407.4	CARBONDALE	BRERETON	LIMESTONE	7.3	64.0	DARK GRAY
400.1	CARBONDALE	ANNA	SHALE	1.8	71.3	DARK GRAY
398.3	CARBONDALE	HERRIN	COAL	6.0	73.1	
392.3	CARBONDALE		UNDERCLAY	1.3	79.1	
391.0	CARBONDALE		CALCAREOUS SANDSTONE	2.6	80.4	GRAY
388.4	CARBONDALE		SANDY SHALE	6.5	83.0	W/ SS STREAKS
381.9	CARBONDALE		LIMESTONE	3.5	89.5	W/ GRAY SH STREAKS
378.4	CARBONDALE		CALCAREOUS SHALE	2.0	93.0	
376.4	CARBONDALE		LIMESTONE	0.4	95.0	DARK GRAY
376.0	CARBONDALE		SHALE	1.1	95.4	DARK GRAY
374.9	CARBONDALE	SPRINGFIELD	COAL	2.9	96.5	
372.0	CARBONDALE		UNDERCLAY	2.6	99.4	

MAPID: 14528618000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.489203 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.057215 DATE COLLECTED:

SURFACE ELEVATION (FT.): 473.2 LOGGED (FT.): 106.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 7748 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
473.2	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0	
443.2	PLEISTOCENE		UNCONSOLIDATED	16.0	30.0	
427.2	CARBONDALE		SHALE	2.1	46.0	
425.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	48.1	WEATHERED
420.8	CARBONDALE		SHALE	2.1	52.4	
418.7	CARBONDALE		GRAY SHALE	6.5	54.5	
412.2	CARBONDALE	CONANT	LIMESTONE	1.5	61.0	DARK GRAY
410.7	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	7.0	62.5	DARK GRAY
403.7	CARBONDALE	BRERETON	LIMESTONE	2.3	69.5	DARK GRAY
401.4	CARBONDALE	ANNA	SHALE	4.6	71.8	DARK GRAY
396.8	CARBONDALE	HERRIN	COAL	6.1	76.4	
390.7	CARBONDALE		UNDERCLAY	1.6	82.5	
389.1	CARBONDALE		CALCAREOUS SANDSTONE	3.9	84.1	
385.2	CARBONDALE		SHALE & SANDSTONE	7.0	88.0	INTERBEDDED SS & SDYSH
378.2	CARBONDALE		CALCAREOUS SHALE	4.0	95.0	
374.2	CARBONDALE		GRAY SHALE	0.8	99.0	
373.4	CARBONDALE	ST. DAVID	LIMESTONE	0.7	99.8	DARK GRAY
372.7	CARBONDALE	SPRINGFIELD	COAL	3.0	100.5	
369.7	CARBONDALE		UNDERCLAY	2.5	103.5	

MAPID: 14590002000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES: 39' N line, 300' E line of NW NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.489798 GEOLOGIST: NORTH
 CONFIDENTIAL: N LATITUDE: 38.070709 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 101.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL CW15 WELL TYPE: Water Well
 COMMENT: PERMIT 188; MONITORING WELL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.0	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0	
450.0	PLEISTOCENE		GRAVEL	46.0	10.0	
404.0	CARBONDALE		SMUT	5.0	56.0	
399.0	CARBONDALE	BRERETON	LIMESTONE	2.0	61.0	
397.0	CARBONDALE	ANNA	DARK SHALE	5.0	63.0	
392.0	CARBONDALE	HERRIN	COAL	5.0	68.0	APPROXIMATE THICKNESS
387.0	CARBONDALE		UNDERCLAY	2.0	73.0	
385.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	7.0	75.0	
378.0	CARBONDALE		SHALE	10.0	82.0	
368.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	92.0	
367.0	CARBONDALE	SPRINGFIELD	COAL	1.0	93.0	APPROXIMATE THICKNESS
366.0	CARBONDALE		UNDERCLAY	2.0	94.0	
364.0	CARBONDALE		SANDY SHALE	5.0	96.0	

MAPID: 14590004000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 25 QUARTERS/FOOTAGES: 120' N line, 280' W line of NW NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.490039 GEOLOGIST: NORTH
 CONFIDENTIAL: N LATITUDE: 38.070499 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 462.0 LOGGED (FT.): 98.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL CW8 WELL TYPE: Water Well
 COMMENT: PERMIT 188; MONITORING WELL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
462.0	PLEISTOCENE		CLAY	20.0	0.0	
442.0	PLEISTOCENE		UNCONSOLIDATED	41.0	20.0	
401.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	7.0	61.0	
394.0	CARBONDALE	HERRIN	COAL/CLAYSTONE	8.0	68.0	APPROXIMATE
386.0	CARBONDALE		GRAY SHALE	2.0	76.0	
384.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.0	78.0	
380.0	CARBONDALE		SANDSTONE/LIMESTONE	11.0	82.0	
369.0	CARBONDALE	SPRINGFIELD	COAL	5.0	93.0	APPROXIMATE THICKNESS

MAPID: 14500330000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: PERCY **LONGITUDE:** -89.513365 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 38.0614 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 437.4 **LOGGED (FT.):** 0.0 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL COMPANY **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
437.4			UNCONSOLIDATED	24.3	0.0	
413.1			SHALE	14.9	24.3	
398.2			SHALE	10.0	39.2	
388.2			SHALE	6.2	49.2	
382.0			SHALE	5.1	55.4	
376.9			UNCLASSIFIED	1.0	60.5	

MAPID: 14500330000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: PERCY **LONGITUDE:** -89.513365 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.0614 **DATE COLLECTED:** 0 / 0 / 1929
SURFACE ELEVATION (FT.): 437.4 **LOGGED (FT.):** 62.0 **LOG TYPE:**
SOURCE: PYRAMID CC 12 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14500331000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** 0' S line, 0' W line of SW SE SW
QUADRANGLE: PERCY **LONGITUDE:** -89.514607 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 38.056861 **DATE COLLECTED:** 0 / 0 / 1901
SURFACE ELEVATION (FT.): 452.3 **LOGGED (FT.):** 57.8 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL **WELL TYPE:** Coal Test
COMMENT: STOPPED ON ACCOUNT OF BOULDERS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
452.3			UNCONSOLIDATED	35.3	0.0	
417.0			SHALE	16.4	35.3	
400.6			SHALE	5.6	51.7	
395.0			UNCLASSIFIED	0.5	57.3	

MAPID: 14500332000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: PERCY **LONGITUDE:** -89.508525 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 38.061207 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 453.5 **LOGGED (FT.):** 76.8 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL CO. **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
453.5			UNCONSOLIDATED	33.2	0.0	
420.3			CLAYSTONE	5.6	33.2	
414.8			SHALE	6.5	38.7	
408.3			SHALE	8.8	45.2	
399.4			SHALE	12.8	54.1	
386.6			COAL	0.2	66.9	
386.3			SHALE	7.4	67.2	
378.9			UNCLASSIFIED	2.2	74.6	

MAPID: 14500332000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: PERCY **LONGITUDE:** -89.508525 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.061207 **DATE COLLECTED:** 0 / 0 / 1929
SURFACE ELEVATION (FT.): 453.5 **LOGGED (FT.):** 77.0 **LOG TYPE:**
SOURCE: PYRAMID CC 13 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14502678000C **VERSION:** 1 **PROJECT:** AVAIL
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** NE SE
QUADRANGLE: PERCY **LONGITUDE:** -89.502474 **GEOLOGIST:** CHENOWETH
CONFIDENTIAL: N **LATITUDE:** 38.061873 **DATE COLLECTED:** 10 / 24 / 1960
SURFACE ELEVATION (FT.): 454.8 **LOGGED (FT.):** 91.0 **LOG TYPE:** Drillers Log
SOURCE: TRUAX-TRAER COAL CO C1204 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
454.8	PLEISTOCENE		UNCONSOLIDATED	53.0	0.0	
401.8	PLEISTOCENE		GRAVEL	0.5	53.0	
401.3	PLEISTOCENE		UNCONSOLIDATED	35.0	53.5	
366.3	PLEISTOCENE		SAND	0.4	88.5	
365.9	CARBONDALE	HERRIN	COAL	1.1	88.9	TOP ERODED
364.8	CARBONDALE		UNDERCLAY	1.0	90.0	

MAPID: 14502679000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 1' S line, 1' W line of NE SE

QUADRANGLE: PERCY LONGITUDE: -89.504894 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.060161 DATE COLLECTED: 10 / 24 / 1960

SURFACE ELEVATION (FT.): 450.8 LOGGED (FT.): 90.5 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1203 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.8	PLEISTOCENE		UNCONSOLIDATED	45.0	0.0
405.8	PLEISTOCENE		GRAVEL	0.5	45.0
405.3	PLEISTOCENE		UNCONSOLIDATED	33.0	45.5
372.3	PLEISTOCENE		SAND & GRAVEL	1.0	78.5
371.3	CARBONDALE		GRAY SHALE	4.2	79.5
367.1	CARBONDALE	ANNA	BLACK SHALE	0.1	83.7
367.0	CARBONDALE	HERRIN	COAL	6.3	83.8
360.8	CARBONDALE		UNDERCLAY	0.5	90.0

MAPID: 14502680000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.500061 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.063576 DATE COLLECTED: 11 / 11 / 1960

SURFACE ELEVATION (FT.): 455.7 LOGGED (FT.): 85.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 455.66 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.7	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0
438.7	PLEISTOCENE		CLAY	7.0	17.0
431.7	PLEISTOCENE		UNCONSOLIDATED	40.0	24.0
391.7	CARBONDALE		BLACK SHALE	0.6	64.0
391.1	CARBONDALE		DARK SHALE	1.4	64.6
389.7	CARBONDALE		GRAY SHALE	7.3	66.0
382.4	CARBONDALE	BRERETON	LIMESTONE	5.3	73.3
377.1	CARBONDALE		GRAY SHALE	0.3	78.6
376.8	CARBONDALE	HERRIN	COAL	5.7	78.9
371.1	CARBONDALE		CLAYSTONE	0.4	84.6

MAPID: 14502683000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: SE NE

QUADRANGLE: PERCY LONGITUDE: -89.502474 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.065484 DATE COLLECTED: 10 / 20 / 1960

SURFACE ELEVATION (FT.): 458.3 LOGGED (FT.): 111.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1202 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
458.3	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0	
418.3	PLEISTOCENE		SANDY CLAY	2.5	40.0	
415.8	PLEISTOCENE		BOULDER	0.5	42.5	
415.3	PLEISTOCENE		UNCONSOLIDATED	5.3	43.0	
410.0	PLEISTOCENE		BOULDER	4.5	48.3	
405.5	PLEISTOCENE		UNCONSOLIDATED	2.2	52.8	
403.3	CARBONDALE		GRAY SHALE	5.2	55.0	
398.1	CARBONDALE	CONANT	LIMESTONE	1.7	60.2	
396.5	CARBONDALE		DARK SHALE	2.8	61.8	
393.6	CARBONDALE		LIMESTONE	0.5	64.7	
393.1	CARBONDALE		BLACK SHALE	0.2	65.2	
393.0	CARBONDALE	JAMESTOWN	COAL	0.1	65.3	
392.9	CARBONDALE		BLACK SHALE	0.1	65.4	
392.8	CARBONDALE		LIMESTONE	0.5	65.5	
392.3	CARBONDALE		DARK SHALE	8.2	66.0	
384.1	CARBONDALE		LIMESTONE	1.6	74.2	
382.5	CARBONDALE		DARK SHALE	1.6	75.8	
381.0	CARBONDALE	BRERETON	LIMESTONE	2.6	77.3	
378.4	CARBONDALE	HERRIN	COAL	6.4	79.9	
372.0	CARBONDALE		UNDERCLAY	3.7	86.3	
368.3	CARBONDALE		LIMESTONE W/ SHALE	3.8	90.0	
364.5	CARBONDALE		LIGHT SHALE	3.3	93.8	
361.3	CARBONDALE		SANDY SHALE	1.8	97.0	
359.5	CARBONDALE		LIGHT SHALE	0.2	98.8	
359.3	CARBONDALE		LIMESTONE	0.3	99.0	
359.0	CARBONDALE		LIGHT SHALE	1.5	99.3	
357.5	CARBONDALE	ST. DAVID	ROCK	3.0	100.8	BROWN FLINT ROCK
354.5	CARBONDALE		LIGHT SHALE	2.3	103.8	
352.3	CARBONDALE		SANDSTONE	0.8	106.0	
351.5	CARBONDALE		LIGHT SHALE	0.3	106.8	
351.2	CARBONDALE	SPRINGFIELD	COAL	2.1	107.1	
349.1	CARBONDALE		UNDERCLAY	1.8	109.2	

MAPID: 14502689000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 117' S line, 12' E line of NE NE

QUADRANGLE: PERCY LONGITUDE: -89.500103 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.067499 DATE COLLECTED: 12 / 15 / 1960

SURFACE ELEVATION (FT.): 461.0 LOGGED (FT.): 76.8 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1214 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
461.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0	
434.0	PLEISTOCENE		SAND & GRAVEL	1.5	27.0	
432.5	PLEISTOCENE		UNCONSOLIDATED	3.3	28.5	
429.2	PLEISTOCENE		BOULDER	1.1	31.8	
428.2	PLEISTOCENE		SAND	1.2	32.8	
427.0	PLEISTOCENE		UNCONSOLIDATED	1.0	34.0	
426.0	CARBONDALE		GRAY SHALE	5.8	35.0	
420.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.6	40.8	
415.7	CARBONDALE		CLAYSTONE	0.3	45.3	
415.3	CARBONDALE		GRAY SHALE	7.3	45.7	
408.0	CARBONDALE	CONANT	LIMESTONE	1.8	53.0	
406.2	CARBONDALE		DARK SHALE	3.6	54.8	
402.7	CARBONDALE		BLACK SHALE	0.6	58.3	DISCREPANCY IN THICKNESS&UNDLYING
402.2	CARBONDALE		LIMESTONE	0.3	58.8	
402.0	CARBONDALE		GRAY SHALE	7.3	59.0	
394.7	CARBONDALE	BRERETON	LIMESTONE	1.4	66.3	
393.3	CARBONDALE	ANNA	DARK SHALE	0.3	67.7	
393.1	CARBONDALE	ANNA	BLACK SHALE	1.5	67.9	
391.6	CARBONDALE	HERRIN	COAL	6.8	69.4	
384.8	CARBONDALE		UNDERCLAY	0.7	76.2	

MAPID: 14502694000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.500061 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.059976 DATE COLLECTED: 11 / 30 / 1960

SURFACE ELEVATION (FT.): 444.5 LOGGED (FT.): 83.1 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1212 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.5	PLEISTOCENE		UNCONSOLIDATED	12.0	0.0
432.5	PLEISTOCENE		SAND & GRAVEL	1.0	12.0
431.5	PLEISTOCENE		SAND	1.0	13.0
430.5	PLEISTOCENE		UNCONSOLIDATED	58.0	14.0
372.5	PLEISTOCENE		SAND & GRAVEL	2.0	72.0
370.5	PLEISTOCENE		UNCONSOLIDATED	7.5	74.0
363.0	PLEISTOCENE		SAND	0.5	81.5
362.5	CARBONDALE		SHALE	1.0	82.0
361.5	CARBONDALE		LIMESTONE	0.1	83.0

MAPID: 14502838000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 2297' N line, 1020' W line

QUADRANGLE: PERCY LONGITUDE: -89.515817 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.065262 DATE COLLECTED:

SURFACE ELEVATION (FT.): 439.0 LOGGED (FT.): 64.5 LOG TYPE: Survey Core Study

SOURCE: TRUAX-TRAER COAL CO JR-67-6 WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
388.2	CARBONDALE	BRERETON	LIMESTONE/UNDERCLAY	3.8	50.8
384.3	CARBONDALE	ANNA	BLACK SHALE	3.3	54.7
381.0	CARBONDALE	HERRIN	COAL	6.5	58.0

MAPID: 14502893000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 55' N line, 581' E line of SW SE

QUADRANGLE: PERCY LONGITUDE: -89.506926 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.060083 DATE COLLECTED: 3 / 15 / 1967

SURFACE ELEVATION (FT.): 454.3 LOGGED (FT.): 369.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO JR-67-38 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
454.3	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0	
422.3	PLEISTOCENE		UNCONSOLIDATED	42.0	32.0	
380.3	CARBONDALE		DARK SHALE	5.0	74.0	
375.3	CARBONDALE	BRERETON	LIMESTONE	7.7	79.0	
367.6	CARBONDALE	HERRIN	COAL	6.1	86.7	
361.5	CARBONDALE		UNDERCLAY	1.3	92.8	
360.3	CARBONDALE		LIMESTONE	15.0	94.0	
345.3	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	109.0	
344.3	CARBONDALE	SPRINGFIELD	COAL	3.7	110.0	
340.6	CARBONDALE		UNDERCLAY	1.3	113.7	
339.3	CARBONDALE		SANDY SHALE	10.0	115.0	
329.3	CARBONDALE		SANDSTONE	9.0	125.0	
320.3	CARBONDALE		SILTY SHALE	14.0	134.0	
306.3	CARBONDALE		SILTY SHALE	35.0	148.0	
271.3	CARBONDALE	HANOVER	LIMESTONE	1.5	183.0	
269.8	CARBONDALE	EXCELLO	BLACK SHALE	4.0	184.5	
265.8	CARBONDALE	EXCELLO	LIMESTONE	2.0	188.5	
263.8	CARBONDALE	HOUCHIN CREEK	COAL	3.0	190.5	
260.8	CARBONDALE		UNDERCLAY	1.5	193.5	
259.3	CARBONDALE		LIMESTONE	0.5	195.0	
258.8	CARBONDALE		GRAY SHALE	2.5	195.5	
256.3	CARBONDALE		SANDSTONE	7.0	198.0	W/ SHALE SEAMS
249.3	CARBONDALE		SANDY SHALE	7.0	205.0	W/ SANDSTONE SEAMS
242.3	CARBONDALE		SANDY SHALE	15.5	212.0	
226.8	CARBONDALE		SHALE	5.5	227.5	
221.3	CARBONDALE		SHALE	2.5	233.0	
218.8	CARBONDALE	OAK GROVE	LIMESTONE	1.5	235.5	
217.3	CARBONDALE	MECCA QUARRY	BLACK SHALE	3.8	237.0	
213.5	CARBONDALE	COLCHESTER	SHALY COAL	1.5	240.8	
212.0	CARBONDALE		UNDERCLAY	1.2	242.3	
210.8	CARBONDALE		SHALE	29.4	243.5	
181.4	CARBONDALE	DEKOVEN	COAL	1.3	272.9	
180.1	CARBONDALE		SHALE	0.8	274.2	
179.3	CARBONDALE	DAVIS	COAL WITH SHALE	1.8	275.0	
177.5	TRADEWATER		UNDERCLAY	0.2	276.8	
177.3	TRADEWATER		SILTY SHALE	2.0	277.0	
175.3	TRADEWATER		LIMESTONE	1.3	279.0	
174.0	TRADEWATER		SHALE	7.2	280.3	
166.9	TRADEWATER		DARK SHALE	1.8	287.4	

165.1	TRADEWATER		GRAY SHALE	5.8	289.2
159.3	TRADEWATER		DARK SHALE	0.2	295.0
159.1	TRADEWATER		GRAY SHALE	1.8	295.2
157.3	TRADEWATER		SANDY SHALE	6.1	297.0
151.2	TRADEWATER		BLACK SHALE	0.2	303.1
151.0	TRADEWATER		SANDY SHALE	1.9	303.3
149.1	TRADEWATER		SANDSTONE	6.5	305.2
142.6	TRADEWATER		DARK SHALE	3.9	311.7
138.7	TRADEWATER		BLACK SHALE	1.3	315.6
137.4	TRADEWATER	CREAL SPRING	LIMESTONE	3.6	316.9
133.8	TRADEWATER	MURPHYSBORO	COAL	4.0	320.5
129.8	TRADEWATER		UNDERCLAY	0.8	324.5
129.0	TRADEWATER		SANDSTONE	7.7	325.3
121.3	TRADEWATER		SHALE	8.5	333.0
112.8	TRADEWATER		SANDSTONE	12.9	341.5
99.9	TRADEWATER		SILTY SHALE	9.3	354.4
90.6	TRADEWATER		DARK SHALE	5.3	363.7

MAPID: 14528157000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** 360' N line, 560' E line of SW SW
QUADRANGLE: PERCY **LONGITUDE:** -89.516542 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 38.05961 **DATE COLLECTED:** 0 / 0 / 1947
SURFACE ELEVATION (FT.): 430.0 **LOGGED (FT.):** 70.8 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL CO. **WELL TYPE:** Coal Test
COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	12.0	0.0
418.0			CLAYSTONE	8.0	12.0
410.0			SAND	0.5	20.0
409.5			SHALE	9.5	20.5
400.0	CARBONDALE		SHALE	4.0	30.0
396.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.8	34.0
390.2	CARBONDALE		SHALE	7.2	39.8
383.0	CARBONDALE	CONANT	LIMESTONE	1.5	47.0
381.5	CARBONDALE		SHALE	7.5	48.5
374.0	CARBONDALE	BRERETON	LIMESTONE	6.5	56.0
367.5	CARBONDALE		SHALE	2.3	62.5
365.2	CARBONDALE	HERRIN	COAL	6.0	64.8

MAPID: 14528158000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE SW

QUADRANGLE: PERCY LONGITUDE: -89.512051 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.058598 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 87.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.0			UNCONSOLIDATED	19.0	0.0
426.0			CLAYSTONE	15.0	19.0
411.0			SHALE	16.0	34.0
395.0	CARBONDALE		SAND	6.0	50.0
389.0	CARBONDALE		SHALE	15.0	56.0
374.0	CARBONDALE		SAND	5.0	71.0
369.0	CARBONDALE		SHALE	5.0	76.0
364.0	CARBONDALE	HERRIN	COAL	6.0	81.0
-			UNCLASSIFIED	87.0	

MAPID: 14528159000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 660' N line, 660' E line of NE SW

QUADRANGLE: PERCY LONGITUDE: -89.512035 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.062267 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	14.0	0.0
416.0			CLAYSTONE	10.0	14.0
406.0			SHALE	23.5	24.0
382.5			SAND	11.5	47.5
371.0			SHALE	12.5	59.0
358.5			LIMESTONE	5.5	71.5
353.0			UNCLASSIFIED	1.0	77.0
352.0			SANDSTONE	7.0	78.0
345.0			LIMESTONE	1.5	85.0
343.5			SHALE	2.5	86.5
341.0			LIMESTONE	3.0	89.0
338.0			SHALE	5.0	92.0
333.0			LIMESTONE	2.0	97.0
331.0			SHALE	2.0	99.0
329.0			COAL	0.0	101.0

MAPID: 1452816000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 50' N line, 50' W line of NE SW

QUADRANGLE: PERCY LONGITUDE: -89.514381 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.064053 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 84.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	15.0	0.0
435.0			CLAYSTONE	20.0	15.0
415.0			SHALE	33.0	35.0
382.0	CARBONDALE	BRERETON	LIMESTONE	4.5	68.0
377.5	CARBONDALE		SHALE	6.0	72.5
371.5	CARBONDALE	HERRIN	COAL	6.0	78.5

MAPID: 14528161000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 660' N line, 660' W line of NW SW

QUADRANGLE: PERCY LONGITUDE: -89.517101 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.062484 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 74.0 LOG TYPE: Drillers Log

SOURCE: PYRAMIC COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	16.0	0.0
414.0			CLAYSTONE	6.0	16.0
408.0			UNCLASSIFIED	2.0	22.0
406.0			SHALE	17.0	24.0
389.0			UNCLASSIFIED	19.5	41.0
369.5	CARBONDALE		SHALE	6.0	60.5
363.5	CARBONDALE		SHALE	1.5	66.5
362.0	CARBONDALE	HERRIN	COAL	6.0	68.0

MAPID: 14528162000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 25' S line, 25' W line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.51926 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.06816 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test
 COMMENT: YEAR LISTED AS 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	8.0	0.0
422.0			CLAYSTONE	11.0	8.0
411.0			SHALE	7.0	19.0
404.0	CARBONDALE	GALUM	LIMESTONE	2.0	26.0
402.0	CARBONDALE		SHALE	4.0	28.0
398.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	32.0
392.0	CARBONDALE		SHALE	6.0	38.0
386.0	CARBONDALE	CONANT	LIMESTONE	1.5	44.0
384.5	CARBONDALE		SHALE	10.5	45.5
374.0	CARBONDALE	BRERETON	LIMESTONE	3.5	56.0
370.5	CARBONDALE		SHALE	2.5	59.5
368.0	CARBONDALE	HERRIN	COAL	6.0	62.0

MAPID: 14528163000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 660' S line, 660' W line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.517064 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.066128 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 67.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test
 COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	6.0	0.0
424.0			CLAYSTONE	14.0	6.0
410.0			UNCLASSIFIED	8.0	20.0
402.0	CARBONDALE		SHALE	5.0	28.0
397.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.3	33.0
393.7	CARBONDALE		SHALE	6.7	36.3
387.0	CARBONDALE	CONANT	LIMESTONE	1.0	43.0
386.0	CARBONDALE		SHALE	10.0	44.0
376.0	CARBONDALE	BRERETON	LIMESTONE	4.5	54.0
371.5	CARBONDALE		SHALE	3.0	58.5
368.5	CARBONDALE	HERRIN	COAL	6.0	61.5

MAPID: 14528619000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 1382' N line, 1308' E line
 QUADRANGLE: PERCY LONGITUDE: -89.504629 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 38.067201 DATE COLLECTED: 7 / 12 / 1982
 SURFACE ELEVATION (FT.): LOGGED (FT.): 102.0 LOG TYPE: Other Core Study
 SOURCE: CONSOLIDATION COAL JC 1201 WELL TYPE: Coal Test
 COMMENT: PERMIT 74; BURNING STAR #4; E-W X-SECT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	78.0	0.0	
-	CARBONDALE	HERRIN	COAL	2.0	78.0	TOP ERODED
-	CARBONDALE		UNDERCLAY	2.0	80.0	
-	CARBONDALE		SHALE	8.0	82.0	
-	CARBONDALE		SANDSTONE	1.0	90.0	
-	CARBONDALE	ST. DAVID	LIMESTONE	4.0	91.0	NODULAR
-	CARBONDALE		SANDSTONE	2.0	95.0	
-	CARBONDALE	SPRINGFIELD	COAL	5.0	97.0	

MAPID: 14528620000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 1086' N line, 444' W line
 QUADRANGLE: PERCY LONGITUDE: -89.51779 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 38.068709 DATE COLLECTED: 7 / 12 / 1982
 SURFACE ELEVATION (FT.): LOGGED (FT.): 99.0 LOG TYPE: Other Core Study
 SOURCE: CONSOLIDATION COAL JC 67+25 WELL TYPE: Coal Test
 COMMENT: PERMIT 74; BURNING STAR #4; E-W X-SECT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	36.5	0.0	
-			LIMESTONE	3.5	36.5	
-			SHALE	6.0	40.0	
-	CARBONDALE		LIMESTONE	5.5	46.0	
-	CARBONDALE		SHALE	8.5	51.5	
-	CARBONDALE	BRERETON	LIMESTONE	5.0	60.0	
-	CARBONDALE	ANNA	SHALE	2.0	65.0	
-	CARBONDALE	HERRIN	COAL	5.0	67.0	
-	CARBONDALE		UNDERCLAY	0.5	72.0	
-	CARBONDALE		LIMESTONE	21.0	72.5	
-	CARBONDALE	SPRINGFIELD	COAL	4.5	93.5	
-	CARBONDALE		UNDERCLAY	1.0	98.0	

MAPID: 14590426000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 360' N line, 560' E line of SW SW
 QUADRANGLE: PERCY LONGITUDE: -89.516542 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.05961 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 70.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G148 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
420.0			ROCK	44.7	20.0
375.3	CARBONDALE	HERRIN	COAL	6.0	64.7

MAPID: 14590427000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE SW
 QUADRANGLE: PERCY LONGITUDE: -89.512051 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.058598 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 87.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G149 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0
406.0			ROCK	47.0	34.0
359.0	CARBONDALE	HERRIN	COAL	6.0	81.0

MAPID: 14590428000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE SW
 QUADRANGLE: PERCY LONGITUDE: -89.512035 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.062253 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 101.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G150 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
416.0			ROCK	77.0	24.0

MAPID: 14590429000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 50' N line, 50' W line of NE SW
 QUADRANGLE: PERCY LONGITUDE: -89.514381 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.064053 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 84.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G151 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0
405.0			ROCK	43.5	35.0
361.5	CARBONDALE	HERRIN	COAL	6.0	78.5

MAPID: 14590430000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.516871 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.06244 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 74.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G152 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
416.0			ROCK	44.0	24.0
372.0	CARBONDALE	HERRIN	COAL	6.0	68.0

MAPID: 14590433000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 25' S line, 25' W line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.51926 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.06816 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G155 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
421.0			ROCK	43.0	19.0
378.0	CARBONDALE	HERRIN	COAL	6.0	62.0

MAPID: 14590434000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.516844 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.066117 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 67.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G156 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
412.0			ROCK	33.5	28.0
378.5	CARBONDALE	HERRIN	COAL	6.0	61.5

MAPID: 14590435000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 50' S line, 50' W line of NE NW
 QUADRANGLE: PERCY LONGITUDE: -89.514351 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.067995 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 79.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G157 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
424.0			ROCK	57.0	16.0
367.0	CARBONDALE	HERRIN	COAL	6.0	73.0

MAPID: 14590436000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.516816 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.069797 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 74.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G158 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0
411.0			ROCK	45.0	29.0

MAPID: 14590437000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 26 QUARTERS/FOOTAGES: 25' N line, 25' E line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.514589 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.071468 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 96.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G159 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
420.0			ROCK	70.0	20.0
350.0	CARBONDALE	HERRIN	COAL	6.0	90.0

MAPID: 14500333000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 60' S line, 40' E line of SE SW NE
 QUADRANGLE: PERCY LONGITUDE: -89.52418 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.064664 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 452.8 LOGGED (FT.): 65.4 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.8			UNCONSOLIDATED	22.7	0.0
430.1			UNCLASSIFIED	4.4	22.7
425.8			CLAYSTONE	4.7	27.0
421.0	CARBONDALE		SHALE	11.2	31.8
409.9	CARBONDALE		SANDSTONE	0.5	42.9
409.4	CARBONDALE		SHALE	4.4	43.4
405.1	CARBONDALE	JAMESTOWN	COAL	0.7	47.7
404.3	CARBONDALE		SHALE	12.0	48.5
392.3	CARBONDALE	HERRIN	COAL	4.9	60.5

MAPID: 14500334000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 10' N line, 30' E line of NE NE SW

QUADRANGLE: PERCY LONGITUDE: -89.528803 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.064558 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.4 LOGGED (FT.): 62.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.4			UNCONSOLIDATED	18.0	0.0
432.4			CLAYSTONE	9.6	18.0
422.8			SHALE	17.6	27.6
405.3			CLAYSTONE	9.7	45.1
395.5			SHALE	6.0	54.9
389.5			UNCLASSIFIED	1.3	60.9

MAPID: 14500335000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 0' S line, 30' E line of SE NE SW

QUADRANGLE: PERCY LONGITUDE: -89.528861 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.0609 DATE COLLECTED: 0 / 0 / 1901

SURFACE ELEVATION (FT.): 446.8 LOGGED (FT.): 60.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.8			UNCONSOLIDATED	23.6	0.0
423.2			CLAYSTONE	3.8	23.6
419.4			UNCLASSIFIED	0.3	27.4
419.0			CLAYSTONE	1.5	27.8
417.6			UNCLASSIFIED	0.8	29.2
416.7			SHALE	10.0	30.1
406.7			UNCLASSIFIED	1.2	40.1
405.5			SHALE	2.4	41.3
392.4			SILTSTONE	0.8	54.4
389.9			COAL	0.8	56.9
389.1			CLAYSTONE	2.8	57.7

MAPID: 14500336000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 40' S line, 14' E line of SE NE SE
 QUADRANGLE: PERCY LONGITUDE: -89.519468 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.060827 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 54.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test
 COMMENT: APPROX. ELEVATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	15.9	0.0
414.1			UNCLASSIFIED	5.7	15.9
408.5			SHALE	2.7	21.5
405.9			UNCLASSIFIED	2.0	24.1
403.9	CARBONDALE		SHALE	5.2	26.1
398.5	CARBONDALE		SHALE	3.6	31.5
395.0	CARBONDALE	JAMESTOWN	COAL	0.2	35.0
394.7	CARBONDALE		SHALE	7.7	35.3
387.0	CARBONDALE	BRERETON	LIMESTONE	5.1	43.0
381.9	CARBONDALE		SHALE	0.2	48.1
381.7	CARBONDALE	HERRIN	COAL	5.9	48.3
-			UNCLASSIFIED	54.2	

MAPID: 14500337000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 340' S line, 300' E line of SE NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.534319 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.069313 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 455.5 LOGGED (FT.): 33.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.5			UNCONSOLIDATED	11.0	0.0
444.5			SAND	9.0	11.0
435.5	CARBONDALE		SHALE	7.5	20.0
428.0	CARBONDALE	JAMESTOWN	COAL	0.5	27.5
427.5	CARBONDALE		SHALE	3.0	28.0
424.5	CARBONDALE	BRERETON	LIMESTONE	2.5	31.0

MAPID: 14501895000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 2640' N line, 0' E line of NE NE SW
 QUADRANGLE: PERCY LONGITUDE: -89.52881 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.057297 DATE COLLECTED: 0 / 0 / 1937
 SURFACE ELEVATION (FT.): 431.2 LOGGED (FT.): 40.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			SHALE	16.0	
409.2	CARBONDALE		SHALE	0.0	22.0
406.2	CARBONDALE		UNCLASSIFIED	1.0	25.0
405.2	CARBONDALE	ANNA	SHALE	4.5	26.0
400.7	CARBONDALE	HERRIN	COAL	5.8	30.5
394.9	CARBONDALE		CLAYSTONE	0.0	36.3
392.2	CARBONDALE		LIMESTONE	0.0	39.0

MAPID: 14501896000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 1320' N line, 0' W line of NW NW SE
 QUADRANGLE: PERCY LONGITUDE: -89.528756 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.060941 DATE COLLECTED: 0 / 0 / 1937
 SURFACE ELEVATION (FT.): 448.5 LOGGED (FT.): 59.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.5			CLAYSTONE	20.0	0.0
428.5			SILTSTONE	6.0	20.0
422.5			SHALE	4.0	26.0
418.5			SANDSTONE	3.0	30.0
415.5			SHALE	8.0	33.0
407.5			LIMESTONE	1.0	41.0
406.5			SHALE	10.0	42.0
396.5			COAL	1.0	52.0
395.5			SHALE	6.0	53.0

MAPID: 14501897000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 0' N line, 0' E line of NE SW SW
 QUADRANGLE: PERCY LONGITUDE: -89.533421 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.06099 DATE COLLECTED: 0 / 0 / 1937
 SURFACE ELEVATION (FT.): 435.1 LOGGED (FT.): 47.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.1			SAND	10.0	15.0
410.1	CARBONDALE		SHALE	9.0	25.0
401.1	CARBONDALE	BRERETON	LIMESTONE	5.0	34.0
396.1	CARBONDALE	ANNA	SILTSTONE	1.0	39.0
394.6	CARBONDALE	HERRIN	COAL	5.0	40.5
388.8	CARBONDALE		CLAYSTONE	0.7	46.3

MAPID: 14501898000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 0' S line, 0' E line of NW SE
 QUADRANGLE: PERCY LONGITUDE: -89.524088 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.060807 DATE COLLECTED: 0 / 0 / 1937
 SURFACE ELEVATION (FT.): 452.3 LOGGED (FT.): 59.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.3			CLAYSTONE	20.0	0.0
432.3			SAND	6.0	20.0
426.3			SHALE	33.0	26.0

MAPID: 14501899000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 330' N line, 330' E line of NE SW SE

QUADRANGLE: PERCY LONGITUDE: -89.525254 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.059918 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 433.7 LOGGED (FT.): 47.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
423.7			SAND	7.0	10.0
416.7	CARBONDALE		SHALE	4.0	17.0
412.7	CARBONDALE		SHALE	3.0	21.0
409.7	CARBONDALE		SHALE	4.0	24.0
405.7	CARBONDALE		UNCLASSIFIED	1.0	28.0
404.7	CARBONDALE		SHALE	1.0	29.0
403.7	CARBONDALE	BRERETON	LIMESTONE	7.0	30.0
396.7	CARBONDALE		SHALE	3.0	37.0
393.7	CARBONDALE	HERRIN	COAL	6.3	40.0
387.4	CARBONDALE		CLAYSTONE	0.7	46.3

MAPID: 14501900000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 0' S line, 1320' E line of SE SE NW

QUADRANGLE: PERCY LONGITUDE: -89.533307 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.064672 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 435.3 LOGGED (FT.): 54.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
405.3			SANDSTONE	1.0	30.0
404.3			SHALE	9.5	31.0
394.8			COAL	0.5	40.5
394.3			SANDSTONE	3.0	41.0
391.3			CLAYSTONE	1.0	44.0
390.3			LIMESTONE	6.0	45.0
384.3			CLAYSTONE	2.0	51.0
382.3			LIMESTONE	1.0	53.0

MAPID: 14501901000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' N line, 1320' W line of NW NW SE

QUADRANGLE: PERCY LONGITUDE: -89.52412 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.062673 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 434.2 LOGGED (FT.): 58.5 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
419.2			SAND	3.0	15.0
416.2			SHALE	27.0	18.0
389.2			LIMESTONE	10.0	45.0
379.2			SHALE	3.0	55.0
376.2			LIMESTONE	0.5	58.0

MAPID: 14501902000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 0' S line, 2640' E line of SE SE NW

QUADRANGLE: PERCY LONGITUDE: -89.537913 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.064759 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 438.3 LOGGED (FT.): 62.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.3			SAND	10.0	20.0
408.3			SHALE	9.0	30.0
399.3			SHALE	1.0	39.0
398.3			SHALE	6.0	40.0
392.3			COAL	1.3	46.0
391.0			CLAYSTONE	1.8	47.3
382.8			UNCLASSIFIED	0.5	55.5
382.3			SHALE	5.0	56.0
377.3			LIMESTONE	1.0	61.0

MAPID: 14501903000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 1320' N line, 0' W line of NW NW NW

QUADRANGLE: PERCY LONGITUDE: -89.537936 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.068478 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 439.1 LOGGED (FT.): 46.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
419.1			SAND	6.0	20.0
413.1			SILTSTONE	2.0	26.0
411.1	CARBONDALE	BRERETON	LIMESTONE	6.0	28.0
405.1	CARBONDALE	BRERETON	SHALE	1.0	34.0
404.1	CARBONDALE	BRERETON	LIMESTONE	3.0	35.0
401.1	CARBONDALE	ANNA	SHALE	1.0	38.0
400.1	CARBONDALE	HERRIN	COAL	6.0	39.0
394.1	CARBONDALE		CLAYSTONE	1.0	45.0

MAPID: 14501904000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 0' S line, 1320' W line of SW

QUADRANGLE: PERCY LONGITUDE: -89.533559 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.05731 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 448.0 LOGGED (FT.): 67.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY COAL MNG. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.0	CARBONDALE	GALUM	LIMESTONE	2.0	24.0
422.0	CARBONDALE		SHALE	6.0	26.0
416.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	32.0
410.0	CARBONDALE		SHALE	4.0	38.0
406.0	CARBONDALE	CONANT	LIMESTONE	3.0	42.0
403.0	CARBONDALE		SHALE	3.0	45.0
400.0	CARBONDALE	JAMESTOWN	COAL	0.3	48.0
399.7	CARBONDALE		SHALE	5.7	48.3
394.0	CARBONDALE	BRERETON	LIMESTONE	5.0	54.0
389.0	CARBONDALE	ANNA	SHALE	1.0	59.0
388.0	CARBONDALE	HERRIN	COAL	6.0	60.0
382.0	CARBONDALE		CLAYSTONE	1.0	66.0

MAPID: 14502127000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 1347' N line, 1328' E line

QUADRANGLE: PERCY LONGITUDE: -89.523985 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.068153 DATE COLLECTED:

SURFACE ELEVATION (FT.): 454.0 LOGGED (FT.): 77.9 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO T20 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
417.1	CARBONDALE		SHALE	6.0	36.9
411.1	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	42.9
406.1	CARBONDALE	LAWSON	GRAY SHALE	6.0	47.9
400.1	CARBONDALE	CONANT	LIMESTONE	3.5	53.9
396.6	CARBONDALE	JAMESTOWN	BONE COAL	0.1	57.4
396.5	CARBONDALE		DARK GRAY SHALE	10.5	57.5
386.0	CARBONDALE	BRERETON	LIMESTONE	2.0	68.0
384.0	CARBONDALE	ANNA	BLACK SHALE	2.0	70.0
382.0	CARBONDALE	HERRIN	COAL	5.9	72.0

MAPID: 14502886000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 300' S line, 50' E line of SE NW

QUADRANGLE: PERCY LONGITUDE: -89.528859 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.065414 DATE COLLECTED: 3 / 24 / 1956

SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 365.0 LOG TYPE: Plugging affidavit

SOURCE: PHILLIPS PETROLEUM CO. WELL TYPE: Plugged and/or Abandoned

COMMENT: PLUGGED & ABANDONED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.0			UNKNOWN	0.0	0.0

MAPID: 14528167000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 30' N line, 75' E line of SE SW

QUADRANGLE: PERCY LONGITUDE: -89.529018 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.06082 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 73.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	15.0	0.0
425.0			CLAYSTONE	6.0	15.0
419.0			SHALE	31.0	21.0
388.0			SMUT	1.0	52.0
387.0			SHALE	4.0	53.0
383.0	CARBONDALE		LIMESTONE	2.0	57.0
381.0	CARBONDALE		SHALE	3.0	59.0
378.0	CARBONDALE	BRERETON	LIMESTONE	7.6	62.0
370.4	CARBONDALE	HERRIN	COAL	4.3	69.6

MAPID: 14528169000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE SE

QUADRANGLE: PERCY LONGITUDE: -89.521744 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.058892 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 58.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G106 WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	10.0	0.0
420.0			SAND	8.0	10.0
412.0			SHALE	5.0	18.0
407.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	23.0
402.2	CARBONDALE		SHALE	13.5	27.8
388.7	CARBONDALE		UNCLASSIFIED	0.3	41.3
388.5	CARBONDALE		SHALE	3.8	41.5
384.7	CARBONDALE	BRERETON	LIMESTONE	5.0	45.3
379.7	CARBONDALE		SHALE	1.5	50.3
378.0	CARBONDALE	HERRIN	COAL	6.8	52.0

MAPID: 1452817000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 30' N line, 650' E line of SE SE

QUADRANGLE: PERCY LONGITUDE: -89.521692 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.060678 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 67.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	6.0	0.0
424.0			SAND	27.0	6.0
397.0			SHALE	9.0	33.0
388.0	CARBONDALE		SHALE	6.3	42.0
381.7	CARBONDALE		UNCLASSIFIED	0.3	48.3
381.4	CARBONDALE		SHALE	4.2	48.6
377.2	CARBONDALE	BRERETON	LIMESTONE	4.8	52.8
372.4	CARBONDALE		SHALE	3.8	57.6
368.6	CARBONDALE	HERRIN	COAL	6.0	61.4

MAPID: 14528171000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW SE

QUADRANGLE: PERCY LONGITUDE: -89.526416 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.058987 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 63.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	15.0	0.0
435.0			CLAYSTONE	9.0	15.0
426.0	CARBONDALE		SHALE	8.5	24.0
417.5	CARBONDALE		LIMESTONE	0.7	32.5
416.8	CARBONDALE		SHALE	7.3	33.2
409.5	CARBONDALE	CONANT	LIMESTONE	1.3	40.5
408.2	CARBONDALE		SHALE	8.7	41.8
399.5	CARBONDALE	BRERETON	LIMESTONE	5.5	50.5
394.0	CARBONDALE		SHALE	0.2	56.0
393.8	CARBONDALE	HERRIN	COAL	6.8	56.2

MAPID: 14528172000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' N line, 660' E line of NE SW

QUADRANGLE: PERCY LONGITUDE: -89.53103 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.062807 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 83.3 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	12.0	0.0
428.0			CLAYSTONE	8.0	12.0
420.0			SHALE	8.0	20.0
412.0			SHALE	34.0	28.0
378.0	CARBONDALE	CONANT	LIMESTONE	3.0	62.0
375.0	CARBONDALE		SHALE	3.7	65.0
371.3	CARBONDALE	BRERETON	LIMESTONE	9.7	68.7
361.6	CARBONDALE		SHALE	0.5	78.4
361.0	CARBONDALE	HERRIN	COAL	4.3	79.0

MAPID: 14528173000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 200' W line of SW NW

QUADRANGLE: PERCY LONGITUDE: -89.537275 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.066568 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 42.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	15.0	0.0
415.0			CLAYSTONE	8.0	15.0
407.0	CARBONDALE		SHALE	11.0	23.0
396.0	CARBONDALE		SHALE	2.5	34.0
393.5	CARBONDALE	HERRIN	COAL	6.0	36.5

MAPID: 14528174000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 30' N line, 650' W line of SW SE

QUADRANGLE: PERCY LONGITUDE: -89.526486 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.060771 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 44.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	12.0	0.0
438.0			CLAYSTONE	10.0	12.0
428.0	CARBONDALE	ENERGY	SHALE	12.5	22.0
415.5	CARBONDALE	ENERGY	SHALE	1.0	34.5
414.5	CARBONDALE	ENERGY	UNCLASSIFIED	3.0	35.5
411.5	CARBONDALE	HERRIN	COAL	6.3	38.5

MAPID: 14528175000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' W line of SW SW

QUADRANGLE: PERCY LONGITUDE: -89.535826 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.059175 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 81.3 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	15.0	0.0
435.0			CLAYSTONE	10.0	15.0
425.0	MODESTO		SHALE	5.0	25.0
420.0	MODESTO	PIASA	LIMESTONE	1.5	30.0
418.5	MODESTO		SHALE	8.5	31.5
410.0	CARBONDALE	GALUM	LIMESTONE	1.0	40.0
409.0	CARBONDALE		SHALE	5.5	41.0
403.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	46.5
399.0	CARBONDALE		SHALE	15.0	51.0
384.0	CARBONDALE	BRERETON	LIMESTONE	7.0	66.0
377.0	CARBONDALE		SHALE	2.5	73.0
374.5	CARBONDALE	HERRIN	COAL	5.8	75.5

MAPID: 14528176000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 25' N line, 50' E line of SW NW

QUADRANGLE: PERCY LONGITUDE: -89.533466 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.068289 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 72.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	15.0	0.0
435.0			CLAYSTONE	10.0	15.0
425.0			SHALE	7.5	25.0
417.5	CARBONDALE	GALUM	LIMESTONE	2.8	32.5
414.8	CARBONDALE		SHALE	5.7	35.2
409.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	40.9
405.1	CARBONDALE		SHALE	6.0	44.9
399.1	CARBONDALE	CONANT	LIMESTONE	3.0	50.9
396.1	CARBONDALE		SHALE	5.0	53.9
391.1	CARBONDALE	BRERETON	LIMESTONE	4.0	58.9
387.1	CARBONDALE		SHALE	3.5	62.9
383.6	CARBONDALE	HERRIN	COAL	5.8	66.4

MAPID: 14528177000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 650' N line, 20' E line of SW NW

QUADRANGLE: PERCY LONGITUDE: -89.533392 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.066564 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 62.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	9.0	0.0
441.0			CLAYSTONE	11.0	9.0
430.0			SHALE	2.0	20.0
428.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	22.0
425.0	CARBONDALE		SHALE	22.0	25.0
403.0	CARBONDALE	BRERETON	LIMESTONE	3.0	47.0
400.0	CARBONDALE		SHALE	2.5	50.0
397.5	CARBONDALE	ENERGY	UNCLASSIFIED	3.5	52.5
394.0	CARBONDALE	HERRIN	COAL	6.0	56.0

MAPID: 14528178000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' N line, 660' E line of NE SE
 QUADRANGLE: PERCY LONGITUDE: -89.521707 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.062627 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 65.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test
 COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	12.0	0.0
418.0			CLAYSTONE	7.0	12.0
411.0			SHALE	13.0	19.0
398.0			SHALE	5.0	32.0
393.0	CARBONDALE		LIMESTONE	1.5	37.0
391.5	CARBONDALE		SHALE	17.5	38.5
374.0	CARBONDALE		SHALE	2.5	56.0
371.5	CARBONDALE		SHALE	1.0	58.5
370.5	CARBONDALE	HERRIN	COAL	6.0	59.5

MAPID: 14528179000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.521673 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.066271 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 72.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test
 COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	7.0	0.0
433.0			CLAYSTONE	12.0	7.0
421.0			SHALE	10.0	19.0
411.0			SHALE	8.0	29.0
403.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	37.0
397.0	CARBONDALE		SHALE	7.0	43.0
390.0	CARBONDALE	CONANT	LIMESTONE	1.5	50.0
388.5	CARBONDALE		SHALE	6.5	51.5
382.0	CARBONDALE	BRERETON	LIMESTONE	5.5	58.0
376.5	CARBONDALE		SHALE	2.5	63.5
374.0	CARBONDALE	HERRIN	COAL	6.0	66.0

MAPID: 14528180000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 50' N line, 50' E line of SE NW

QUADRANGLE: PERCY LONGITUDE: -89.528818 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.068133 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 76.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	15.0	0.0
435.0			CLAYSTONE	5.0	15.0
430.0			SHALE	7.0	20.0
423.0			SAND	2.0	27.0
421.0	CARBONDALE	GALUM	LIMESTONE	1.3	29.0
419.7	CARBONDALE		SHALE	12.5	30.3
407.2	CARBONDALE	BANKSTON FORK	LIMESTONE	6.3	42.8
400.9	CARBONDALE		SHALE	4.0	49.1
396.9	CARBONDALE	CONANT	LIMESTONE	1.8	53.1
395.1	CARBONDALE		SHALE	8.0	54.9
387.1	CARBONDALE	BRERETON	LIMESTONE	4.3	62.9
382.8	CARBONDALE		SHALE	5.2	67.2
377.6	CARBONDALE	HERRIN	COAL	4.5	72.4

MAPID: 14528181000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' N line, 660' E line of NE NW

QUADRANGLE: PERCY LONGITUDE: -89.530918 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.070172 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 82.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	12.0	0.0
438.0			CLAYSTONE	8.0	12.0
430.0			SHALE	10.0	20.0
420.0			SAND	0.7	30.0
419.3			SHALE	9.8	30.7
409.5	CARBONDALE	GALUM	LIMESTONE	3.5	40.5
406.0	CARBONDALE		SHALE	6.0	44.0
400.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	50.0
398.0	CARBONDALE		SHALE	4.5	52.0
393.5	CARBONDALE	CONANT	LIMESTONE	2.3	56.5
391.2	CARBONDALE		SHALE	3.0	58.8
388.2	CARBONDALE	JAMESTOWN	UNCLASSIFIED	0.3	61.8
387.9	CARBONDALE		SHALE	2.2	62.1
385.7	CARBONDALE	BRERETON	LIMESTONE	2.7	64.3
383.0	CARBONDALE		SHALE	5.0	67.0
378.0	CARBONDALE	ENERGY	UNCLASSIFIED	4.0	72.0
374.0	CARBONDALE	HERRIN	COAL	6.0	76.0

MAPID: 14528182000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 75' N line, 50' E line of NW NW

QUADRANGLE: PERCY LONGITUDE: -89.533401 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.071834 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 86.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	13.0	0.0
447.0			CLAYSTONE	6.0	13.0
441.0	MODESTO		SHALE	6.0	19.0
435.0	MODESTO		SHALE	0.3	25.0
434.7	MODESTO		SHALE	3.0	25.3
431.7	CARBONDALE	DANVILLE	COAL	2.0	28.3
429.7	CARBONDALE		SHALE	14.2	30.3
415.5	CARBONDALE	GALUM	LIMESTONE	1.6	44.5
413.9	CARBONDALE		SHALE	6.5	46.1
407.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	52.6
403.4	CARBONDALE		SHALE	6.0	56.6
397.4	CARBONDALE	CONANT	LIMESTONE	1.0	62.6
396.4	CARBONDALE		SHALE	4.3	63.6
392.1	CARBONDALE	JAMESTOWN	SHALE	0.3	67.9
391.8	CARBONDALE		SHALE	5.7	68.2
386.1	CARBONDALE	BRERETON	LIMESTONE	3.7	73.9
382.4	CARBONDALE		SHALE	2.4	77.6
380.0	CARBONDALE	HERRIN	COAL	6.0	80.0

MAPID: 14528183000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NW

QUADRANGLE: PERCY LONGITUDE: -89.530976 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.066448 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 77.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT: YEAR LISTED 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	12.0	0.0
438.0			CLAYSTONE	8.0	12.0
430.0			SHALE	10.0	20.0
420.0	CARBONDALE		SHALE	14.0	30.0
406.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	44.0
401.7	CARBONDALE		SHALE	5.7	48.3
396.0	CARBONDALE	CONANT	LIMESTONE	1.5	54.0
394.5	CARBONDALE		SHALE	6.5	55.5
388.0	CARBONDALE	BRERETON	LIMESTONE	6.0	62.0
382.0	CARBONDALE		SHALE	3.0	68.0
379.0	CARBONDALE	HERRIN	COAL	6.0	71.0

MAPID: 14528621000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 978' S line, 2298' E line

QUADRANGLE: PERCY LONGITUDE: -89.527453 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.059884 DATE COLLECTED: 7 / 14 / 1982

SURFACE ELEVATION (FT.): LOGGED (FT.): 76.0 LOG TYPE: Other Core Study

SOURCE: CONSOLIDATION COAL JC 67-207 WELL TYPE: Coal Test

COMMENT: PERMIT 74; BURNING STAR #4; N-S X-SECT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0
-	CARBONDALE		SHALE	2.0	35.0
-	CARBONDALE	BRERETON	LIMESTONE	5.0	37.0
-	CARBONDALE	ANNA	SHALE	3.5	42.0
-	CARBONDALE	HERRIN	COAL	5.0	45.5
-	CARBONDALE		UNDERCLAY	3.5	50.5
-	CARBONDALE		LIMESTONE	3.0	54.0
-	CARBONDALE		SANDY SHALE	8.0	57.0
-	CARBONDALE	ST. DAVID	LIMESTONE	4.5	65.0
-	CARBONDALE	SPRINGFIELD	COAL	4.5	69.5
-	CARBONDALE		UNDERCLAY	2.0	74.0

WITH SOME
LIMESTONE

MAPID: 14590375000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 30' N line, 75' E line of SE SW
 QUADRANGLE: PERCY LONGITUDE: -89.529018 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.06082 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 74.1 LOG TYPE: Drillers Log
 SOURCE: OTHER G96 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
480.0	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0	
459.0			ROCK	31.0	21.0	
428.0	CARBONDALE	JAMESTOWN	COAL	1.0	52.0	SMUTT
427.0	CARBONDALE		ROCK	16.7	53.0	
410.3	CARBONDALE	HERRIN	COAL	4.3	69.7	

MAPID: 14590376000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE SW
 QUADRANGLE: PERCY LONGITUDE: -89.531088 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.05908 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 38.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G97 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
480.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0	
453.0			ROCK	5.0	27.0	
448.0	CARBONDALE	HERRIN	COAL	6.0	32.0	

MAPID: 14590385000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE SE
 QUADRANGLE: PERCY LONGITUDE: -89.521744 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.058892 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 58.7 LOG TYPE: Drillers Log
 SOURCE: OTHER G106 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.0	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0	
442.0			ROCK	23.4	18.0	
418.6	CARBONDALE	JAMESTOWN	COAL	0.3	41.4	
418.3	CARBONDALE		ROCK	10.3	41.7	
408.0	CARBONDALE	HERRIN	COAL	6.7	52.0	

MAPID: 14590386000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 30' N line, 650' E line of SE SE
 QUADRANGLE: PERCY LONGITUDE: -89.521692 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.060678 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 67.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G107 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	33.0	0.0
427.0			ROCK	15.4	33.0
411.6	CARBONDALE	JAMESTOWN	COAL	0.4	48.4
411.2	CARBONDALE		ROCK	12.7	48.8
398.5	CARBONDALE	HERRIN	COAL	6.0	61.5

MAPID: 14590387000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW SE
 QUADRANGLE: PERCY LONGITUDE: -89.526416 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.058987 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 64.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G108 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
436.0			ROCK	34.0	24.0
402.0	CARBONDALE	HERRIN	COAL	6.8	58.0

MAPID: 14590388000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE SW
 QUADRANGLE: PERCY LONGITUDE: -89.53103 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.062765 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 83.3 LOG TYPE: Drillers Log
 SOURCE: OTHER G109 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
460.0			ROCK	59.0	20.0
401.0	CARBONDALE	HERRIN	COAL	4.4	79.0

MAPID: 14590389000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 460' W line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.536371 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.066552 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 42.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G110 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0
437.0			ROCK	13.5	23.0
423.5	CARBONDALE	HERRIN	COAL	6.0	36.5

MAPID: 14590390000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 30' N line, 650' W line of SW SE
 QUADRANGLE: PERCY LONGITUDE: -89.526486 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.060771 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 44.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G111 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
438.0			ROCK	16.5	22.0
421.5	CARBONDALE	HERRIN	COAL	6.4	38.5

MAPID: 14590404000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW SW
 QUADRANGLE: PERCY LONGITUDE: -89.535759 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.059175 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 81.3 LOG TYPE: Drillers Log
 SOURCE: OTHER G125 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
415.0			ROCK	50.5	25.0
364.5	CARBONDALE	HERRIN	COAL	5.8	75.5

MAPID: 14590405000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 375' W line of NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.536742 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.062877 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 65.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G126 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
412.0			ROCK	31.5	28.0
380.5	CARBONDALE	HERRIN	COAL	6.0	59.5

MAPID: 14590407000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 25' N line, 50' E line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.533466 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.068289 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 72.3 LOG TYPE: Drillers Log
 SOURCE: OTHER G128 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
415.0			ROCK	41.5	25.0
373.5	CARBONDALE	HERRIN	COAL	5.8	66.5

MAPID: 14590408000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 650' N line, 20' E line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.533392 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.066564 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 64.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G129 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
420.0			ROCK	38.0	20.0
382.0	CARBONDALE	HERRIN	COAL	6.0	58.0

MAPID: 14590431000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE SE
 QUADRANGLE: PERCY LONGITUDE: -89.521707 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.062583 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 65.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G153 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
421.0			ROCK	40.5	19.0
380.5	CARBONDALE	HERRIN	COAL	6.0	59.5

MAPID: 14590432000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.521673 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.066271 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 72.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G154 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
421.0			ROCK	47.0	19.0
374.0	CARBONDALE	HERRIN	COAL	6.0	66.0

MAPID: 14590438000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 50' N line, 50' E line of SE NW
 QUADRANGLE: PERCY LONGITUDE: -89.528818 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.068133 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 77.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G160 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
420.0			ROCK	52.5	20.0
367.5	CARBONDALE	HERRIN	COAL	4.5	72.5

MAPID: 14590439000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE NW

QUADRANGLE: PERCY LONGITUDE: -89.530918 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.070134 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 82.0 LOG TYPE: Drillers Log

SOURCE: OTHER G161 WELL TYPE: Coal Test

COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
420.0			ROCK	41.9	20.0
378.1	CARBONDALE	JAMESTOWN	COAL	0.4	61.9
377.7	CARBONDALE		ROCK	13.7	62.3
364.0	CARBONDALE	HERRIN	COAL	6.0	76.0

MAPID: 14590443000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 75' N line, 50' E line of NW NW

QUADRANGLE: PERCY LONGITUDE: -89.533401 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.071834 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 86.0 LOG TYPE: Drillers Log

SOURCE: OTHER G165 WELL TYPE: Coal Test

COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
421.0			ROCK	6.0	19.0
415.0			COAL	0.4	25.0
414.6			ROCK	3.0	25.4
411.6			COAL	2.0	28.4
409.6			ROCK	37.7	30.4
371.9	CARBONDALE	JAMESTOWN	COAL	0.3	68.1
371.6	CARBONDALE		ROCK	11.6	68.4
360.0	CARBONDALE	HERRIN	COAL	6.0	80.0

MAPID: 14590444000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NW

QUADRANGLE: PERCY LONGITUDE: -89.530976 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.066448 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 77.0 LOG TYPE: Drillers Log

SOURCE: OTHER G166 WELL TYPE: Coal Test

COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
400.0			ROCK	51.0	20.0
349.0	CARBONDALE	HERRIN	COAL	6.0	71.0

MAPID: 14500338000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 0' N line, 465' E line of NE SE NE

QUADRANGLE: PERCY LONGITUDE: -89.53956 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.068469 DATE COLLECTED: 0 / 0 / 1900

SURFACE ELEVATION (FT.): 438.3 LOGGED (FT.): 44.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
438.3			UNCONSOLIDATED	11.5	0.0
426.8	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	11.5
422.7	CARBONDALE		SHALE	5.5	15.6
417.3	CARBONDALE		UNCLASSIFIED	3.5	21.0
413.8	CARBONDALE		SHALE	3.3	24.5
410.5	CARBONDALE	JAMESTOWN	COAL	0.2	27.8
410.2	CARBONDALE		SHALE	1.4	28.1
408.8	CARBONDALE		UNCLASSIFIED	1.5	29.5
407.3	CARBONDALE		SHALE	1.0	31.0
406.3	CARBONDALE		SILTSTONE	4.0	32.0
402.3	CARBONDALE		SHALE	2.0	36.0
400.3	CARBONDALE	HERRIN	COAL	6.0	38.0

MAPID: 14500339000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 10' S line, 8' W line of SW NW NE

QUADRANGLE: PERCY LONGITUDE: -89.547092 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.068626 DATE COLLECTED:

SURFACE ELEVATION (FT.): 458.9 LOGGED (FT.): 68.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
458.9			UNCONSOLIDATED	16.0	0.0
442.9			UNCLASSIFIED	10.0	16.0
432.9			SHALE	6.0	26.0
426.9			SHALE	1.0	32.0
425.9			CLAYSTONE	6.0	33.0
419.9	CARBONDALE	GALUM	UNCLASSIFIED	1.0	39.0
418.4	CARBONDALE		SHALE	5.0	40.5
412.7	CARBONDALE	BANKSTON FORK	UNCLASSIFIED	4.0	46.2
407.9	CARBONDALE		SHALE	5.0	51.0
402.9	CARBONDALE	CONANT	UNCLASSIFIED	4.0	56.0
398.4	CARBONDALE		SHALE	2.0	60.5
396.4	CARBONDALE	JAMESTOWN	COAL	0.7	62.5
395.7	CARBONDALE		UNCLASSIFIED	0.4	63.2
395.2	CARBONDALE		SHALE	5.2	63.7

MAPID: 14500340000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 21' N line, 8' W line of NW NE NW

QUADRANGLE: PERCY LONGITUDE: -89.551586 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.072296 DATE COLLECTED:

SURFACE ELEVATION (FT.): 463.9 LOGGED (FT.): 64.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.9			UNCONSOLIDATED	21.8	0.0
442.1			SHALE	28.0	21.8
414.1			SHALE	2.2	49.8
411.9			SHALE	2.6	52.0
409.3			SANDSTONE	1.2	54.6
408.2			SILTSTONE	5.6	55.7
402.6			LIMESTONE	3.5	61.3

MAPID: 14500341000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE SW

QUADRANGLE: PERCY LONGITUDE: -89.549653 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.059432 DATE COLLECTED:

SURFACE ELEVATION (FT.): 455.8 LOGGED (FT.): 70.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.8			UNCONSOLIDATED	22.4	0.0
433.4	CARBONDALE		SHALE	10.1	22.4
423.3	CARBONDALE		UNCLASSIFIED	2.2	32.5
421.1	CARBONDALE		SHALE	12.9	34.7
408.1	CARBONDALE	BRERETON	LIMESTONE	4.7	47.7
403.5	CARBONDALE		SHALE	0.6	52.3
402.9	CARBONDALE	HERRIN	COAL	8.2	52.9

MAPID: 14500342000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 525' S line, 1010' W line of SW SW SE

QUADRANGLE: PERCY LONGITUDE: -89.543832 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.058954 DATE COLLECTED:

SURFACE ELEVATION (FT.): 437.8 LOGGED (FT.): 54.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.8			UNCONSOLIDATED	14.7	0.0
423.1	CARBONDALE	GALUM	LIMESTONE	2.5	14.7
420.6	CARBONDALE		SHALE	4.7	17.2
415.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	22.0
412.1	CARBONDALE		SHALE	1.2	25.7
410.8	CARBONDALE		SHALE	3.4	27.0
407.4	CARBONDALE	CONANT	LIMESTONE	2.2	30.4
405.2	CARBONDALE		SHALE	3.7	32.6
401.5	CARBONDALE	JAMESTOWN	COAL	0.4	36.3
401.1	CARBONDALE		SHALE	4.7	36.7
396.3	CARBONDALE	BRERETON	LIMESTONE	6.4	41.5
389.9	CARBONDALE		SHALE	0.3	47.9
389.6	CARBONDALE	HERRIN	COAL	6.6	48.2

MAPID: 14500344000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 96' S line, 750' W line of SW SW SW
 QUADRANGLE: PERCY LONGITUDE: -89.553999 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.057956 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 445.4 LOGGED (FT.): 57.4 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.4			UNCONSOLIDATED	17.3	0.0
428.1			SHALE	14.9	17.3
413.1	CARBONDALE	BANKSTON FORK	UNCLASSIFIED	3.5	32.3
409.7	CARBONDALE		SHALE	1.7	35.7
408.0	CARBONDALE		SHALE	3.2	37.4
404.8	CARBONDALE	CONANT	UNCLASSIFIED	3.4	40.6
401.4	CARBONDALE		SHALE	2.0	44.0
399.4	CARBONDALE		SHALE	1.0	46.0
398.4	CARBONDALE	JAMESTOWN	COAL	0.5	47.0
397.9	CARBONDALE		SHALE	5.2	47.5
392.7	CARBONDALE	BRERETON	UNCLASSIFIED	4.7	52.7

MAPID: 14501905000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 0' S line, 0' E line of SE SE SE
 QUADRANGLE: PERCY LONGITUDE: -89.538164 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.057402 DATE COLLECTED: 8 / 11 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 57.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 28-D WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	10.0	0.0
-			LIMESTONE	2.0	10.0
-			SHALE	1.0	12.0 SOFT
-			LIMESTONE & SHALE	35.0	13.0 GRAY
-			BLACK SHALE	3.0	48.0
-	CARBONDALE	JAMESTOWN	COAL	0.5	51.0
-			BLACK SHALE	5.0	51.5
-			LIMESTONE	0.5	56.5

MAPID: 14501905000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 0' S line, 0' E line of SE SE SE

QUADRANGLE: PERCY LONGITUDE: -89.538164 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.057402 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 57.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			CLAYSTONE	10.0	0.0
430.0	MODESTO		LIMESTONE	2.0	10.0
428.0	MODESTO		SHALE	1.0	12.0
427.0	MODESTO	PIASA	LIMESTONE	6.0	13.0
421.0	MODESTO		SHALE	9.0	19.0
412.0	CARBONDALE	GALUM	LIMESTONE	3.0	28.0
409.0	CARBONDALE		SHALE	5.0	31.0
404.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	36.0
400.0	CARBONDALE		SHALE	5.0	40.0
395.0	CARBONDALE	CONANT	LIMESTONE	3.0	45.0
392.0	CARBONDALE		SHALE	3.0	48.0
389.0	CARBONDALE	JAMESTOWN	COAL	0.5	51.0
388.5	CARBONDALE		SHALE	5.0	51.5
383.5	CARBONDALE		LIMESTONE	0.5	56.5

MAPID: 14501906000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 1320' S line, 0' E line of SE SE SE

QUADRANGLE: PERCY LONGITUDE: -89.538089 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.061043 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 458.0 LOGGED (FT.): 72.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
458.0			CLAYSTONE	25.0	0.0
433.0			LIMESTONE	6.0	25.0
427.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	31.0
423.0	CARBONDALE		SHALE	3.0	35.0
420.0	CARBONDALE	CONANT	LIMESTONE	5.5	38.0
414.5	CARBONDALE		SHALE	10.5	43.5
404.0	CARBONDALE	JAMESTOWN	COAL	0.5	54.0
403.5	CARBONDALE		SHALE	2.5	54.5
401.0	CARBONDALE	BRERETON	LIMESTONE	6.0	57.0
395.0	CARBONDALE	ANNA	SHALE	2.0	63.0
393.0	CARBONDALE	HERRIN	COAL	6.3	65.0
386.7	CARBONDALE		CLAYSTONE	0.7	71.3

MAPID: 14501907000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 0' S line, 1320' E line of SE SE NE

QUADRANGLE: PERCY LONGITUDE: -89.54262 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.064843 DATE COLLECTED: 8 / 18 / 1937

SURFACE ELEVATION (FT.): 454.3 LOGGED (FT.): 61.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 31-D WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
454.3	PLEISTOCENE		CLAY	36.0	0.0
418.3	CARBONDALE	CONANT	LIMESTONE	2.0	36.0
416.3	CARBONDALE	JAMESTOWN	BLACK SHALE	8.0	38.0
408.3	CARBONDALE	BRERETON	LIMESTONE	6.0	46.0
402.3	CARBONDALE	ANNA	BLACK SHALE	2.5	52.0
399.8	CARBONDALE	HERRIN	COAL	6.0	54.5
393.8	CARBONDALE		UNDERCLAY	0.5	60.5

MAPID: 14501907000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 0' S line, 1320' E line of SE SE NE

QUADRANGLE: PERCY LONGITUDE: -89.54262 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.064843 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 61.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 31 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.0			CLAYSTONE	36.0	0.0
409.0	CARBONDALE	CONANT	LIMESTONE	2.0	36.0
407.0	CARBONDALE		SHALE	8.0	38.0
399.0	CARBONDALE	BRERETON	LIMESTONE	6.0	46.0
393.0	CARBONDALE	ANNA	SHALE	2.5	52.0
390.5	CARBONDALE	HERRIN	COAL	6.0	54.5
384.5	CARBONDALE		CLAYSTONE	0.5	60.5

MAPID: 14501908000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 1320' S line, 1320' E line of SE SE SE
 QUADRANGLE: PERCY LONGITUDE: -89.542698 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.061127 DATE COLLECTED: 0 / 0 / 1937
 SURFACE ELEVATION (FT.): 442.3 LOGGED (FT.): 58.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 32 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.3			CLAYSTONE	26.0	0.0
416.3	CARBONDALE		SHALE	16.0	26.0
400.3	CARBONDALE	BRERETON	LIMESTONE	6.0	42.0
394.3	CARBONDALE	ANNA	SHALE	2.5	48.0
391.8	CARBONDALE	HERRIN	COAL	6.0	50.5
385.8	CARBONDALE		CLAYSTONE	1.5	56.5

MAPID: 14501909000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 1320' S line, 0' W line of SW SW SE
 QUADRANGLE: PERCY LONGITUDE: -89.547304 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.061211 DATE COLLECTED: 8 / 14 / 1937
 SURFACE ELEVATION (FT.): 448.6 LOGGED (FT.): 52.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY R-33 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.6	PLEISTOCENE		CLAY	26.0	0.0
422.6	CARBONDALE		SANDY SHALE	10.0	26.0
412.6	CARBONDALE	BRERETON	LIMESTONE	8.0	36.0
404.6	CARBONDALE	ANNA	BLACK SHALE	1.0	44.0
403.6	CARBONDALE	HERRIN	COAL	6.2	45.0
397.4	CARBONDALE		UNDERCLAY	0.8	51.2

MAPID: 14501909000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 1320' S line, 0' W line of SW SW SE
 QUADRANGLE: PERCY LONGITUDE: -89.547304 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.061211 DATE COLLECTED: 0 / 0 / 1937
 SURFACE ELEVATION (FT.): 461.9 LOGGED (FT.): 52.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY WELL TYPE: Coal Test
 COMMENT: QUESTIONABLE LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
461.9			CLAYSTONE	26.0	0.0
435.9	CARBONDALE		SHALE	10.0	26.0
425.9	CARBONDALE	BRERETON	LIMESTONE	8.0	36.0
417.9	CARBONDALE	ANNA	SHALE	1.0	44.0
416.9	CARBONDALE	HERRIN	COAL	6.2	45.0
410.7	CARBONDALE		CLAYSTONE	0.8	51.2

MAPID: 14501910000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 1320' S line, 0' W line of SW SE SW
 QUADRANGLE: PERCY LONGITUDE: -89.55191 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.061297 DATE COLLECTED: 0 / 0 / 1937
 SURFACE ELEVATION (FT.): 461.9 LOGGED (FT.): 69.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
461.9			CLAYSTONE	20.0	0.0
441.9			SILTSTONE	16.0	20.0
425.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	36.0
423.9	CARBONDALE		SHALE	4.0	38.0
419.9	CARBONDALE	CONANT	LIMESTONE	3.0	42.0
416.9	CARBONDALE		SHALE	1.0	45.0
415.9	CARBONDALE	JAMESTOWN	COAL	0.3	46.0
415.6	CARBONDALE		SHALE	1.7	46.3
413.9	CARBONDALE		SHALE	9.0	48.0
404.9	CARBONDALE	BRERETON	LIMESTONE	3.0	57.0
401.9	CARBONDALE	ANNA	SHALE	2.5	60.0
399.4	CARBONDALE	HERRIN	COAL	6.0	62.5
393.4	CARBONDALE		CLAYSTONE	0.5	68.5

MAPID: 14501911000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 0' N line, 1320' E line of NE NE SW

QUADRANGLE: PERCY LONGITUDE: -89.551818 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.065005 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 446.2 LOGGED (FT.): 61.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.2			CLAYSTONE	10.0	0.0
428.2	CARBONDALE	GALUM	LIMESTONE	3.0	18.0
425.2	CARBONDALE		SHALE	4.0	21.0
421.2	CARBONDALE	BANKSTON FORK	LIMESTONE	6.5	25.0
414.7	CARBONDALE		SHALE	3.5	31.5
411.2	CARBONDALE	CONANT	LIMESTONE	3.0	35.0
408.2	CARBONDALE		SHALE	7.0	38.0
401.2	CARBONDALE	BRERETON	LIMESTONE	4.0	45.0
397.2	CARBONDALE	ANNA	SHALE	2.0	49.0
395.2	CARBONDALE	ENERGY	SHALE	3.0	51.0
392.2	CARBONDALE	HERRIN	COAL	6.3	54.0
385.8	CARBONDALE		CLAYSTONE	0.7	60.4

MAPID: 14502113000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 2609' S line, 31' W line

QUADRANGLE: PERCY LONGITUDE: -89.556305 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.064934 DATE COLLECTED:

SURFACE ELEVATION (FT.): 461.0 LOGGED (FT.): 108.6 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO T5 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	MODESTO	PIASA	LIMESTONE	7.5	41.0
412.5	CARBONDALE		GRAY SHALE	12.5	48.5
400.0	CARBONDALE	GALUM	LIMESTONE	4.0	61.0
396.0	CARBONDALE		GRAY SHALE	4.5	65.0
391.5	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	69.5
386.0	CARBONDALE	LAWSON	GRAY SHALE	5.0	75.0
381.0	CARBONDALE	CONANT	LIMESTONE	2.5	80.0
378.5	CARBONDALE		BLACK SHALE	5.0	82.5
373.5	CARBONDALE	BRERETON	LIMESTONE	9.5	87.5
364.0	CARBONDALE	ANNA	BLACK SHALE	4.0	97.0
360.0	CARBONDALE	HERRIN	COAL	7.6	101.0

MAPID: 14502887000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 50' N line, 80' E line of NW NE

QUADRANGLE: PERCY LONGITUDE: -89.542726 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.072065 DATE COLLECTED: 4 / 17 / 1956

SURFACE ELEVATION (FT.): 463.0 LOGGED (FT.): 400.0 LOG TYPE: Plugging affidavit

SOURCE: PHILLIPS PETROLEUM CO. WELL TYPE: Plugged and/or Abandoned

COMMENT: PLUGGED & ABANDONED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.0			UNKNOWN	0.0	0.0

MAPID: 14502888000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 40' S line, 80' W line of SW NW

QUADRANGLE: PERCY LONGITUDE: -89.556127 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.065191 DATE COLLECTED: 4 / 24 / 1956

SURFACE ELEVATION (FT.): 463.0 LOGGED (FT.): 400.0 LOG TYPE: Plugging affidavit

SOURCE: PHILLIPS PETROLEUM CO. WELL TYPE: Plugged and/or Abandoned

COMMENT: PLUGGED & ABANDONED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.0			UNKNOWN	0.0	0.0

MAPID: 14528218000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' N line, 660' E line of NE NE

QUADRANGLE: PERCY LONGITUDE: -89.5402 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.070338 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 60.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	6.0	0.0
414.0			CLAYSTONE	12.0	6.0
402.0			SHALE	8.5	18.0
393.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	26.5
389.0	CARBONDALE		SHALE	5.8	31.0
383.2	CARBONDALE	CONANT	LIMESTONE	4.0	36.8
379.2	CARBONDALE		SHALE	4.2	40.8
375.0	CARBONDALE	JAMESTOWN	COAL	0.2	45.0
374.8	CARBONDALE		SHALE	3.2	45.2
371.6	CARBONDALE	BRERETON	LIMESTONE	2.0	48.4
369.6	CARBONDALE		SHALE	3.0	50.4
366.5	CARBONDALE	HERRIN	COAL	7.0	53.5

MAPID: 14528219000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NE

QUADRANGLE: PERCY LONGITUDE: -89.540278 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.066622 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 69.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	15.0	0.0
415.0			CLAYSTONE	10.0	15.0
405.0			SHALE	9.0	25.0
396.0			SHALE	2.0	34.0
394.0	CARBONDALE		SHALE	19.0	36.0
375.0	CARBONDALE	BRERETON	LIMESTONE	5.0	55.0
370.0	CARBONDALE		SHALE	3.5	60.0
366.5	CARBONDALE	HERRIN	COAL	6.0	63.5

MAPID: 14528220000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 375' N line, 400' E line of NE SE

QUADRANGLE: PERCY LONGITUDE: -89.539432 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.063751 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 43.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	8.0	0.0
422.0			CLAYSTONE	6.0	8.0
416.0	CARBONDALE		SHALE	18.0	14.0
398.0	CARBONDALE		SHALE	2.5	32.0
395.5	CARBONDALE		SHALE	3.0	34.5
392.5	CARBONDALE	HERRIN	COAL	6.0	37.5

MAPID: 14528221000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' N line, 560' W line of NW SE

QUADRANGLE: PERCY LONGITUDE: -89.545301 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.063067 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 52.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	12.0	0.0
428.0			CLAYSTONE	6.0	12.0
422.0			SHALE	5.0	18.0
417.0	CARBONDALE		SHALE	18.0	23.0
399.0	CARBONDALE	ENERGY	SHALE	1.5	41.0
397.5	CARBONDALE	ENERGY	UNCLASSIFIED	3.5	42.5
394.0	CARBONDALE	HERRIN	COAL	6.0	46.0

MAPID: 14528222000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' N line, 660' E line of NE SW

QUADRANGLE: PERCY LONGITUDE: -89.549561 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.063143 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 63.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	16.0	0.0
434.0			CLAYSTONE	8.0	16.0
426.0	CARBONDALE		SHALE	4.0	24.0
422.0	CARBONDALE		SHALE	5.0	28.0
417.0	CARBONDALE	CONANT	LIMESTONE	3.8	33.0
413.2	CARBONDALE		SHALE	10.2	36.8
403.0	CARBONDALE	JAMESTOWN	COAL	0.2	47.0
402.8	CARBONDALE		SHALE	1.5	47.2
401.3	CARBONDALE	BRERETON	LIMESTONE	3.0	48.7
398.3	CARBONDALE		SHALE	3.3	51.7
395.0	CARBONDALE	ENERGY	UNCLASSIFIED	2.4	55.0
392.5	CARBONDALE	HERRIN	COAL	5.5	57.5

MAPID: 14528223000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' W line of SW SE

QUADRANGLE: PERCY LONGITUDE: -89.545044 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.059349 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 65.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	12.0	0.0
428.0			CLAYSTONE	15.0	12.0
413.0	CARBONDALE		SHALE	8.0	27.0
405.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	35.0
401.2	CARBONDALE		SHALE	4.0	38.8
397.2	CARBONDALE	CONANT	LIMESTONE	1.5	42.8
395.7	CARBONDALE		SHALE	6.2	44.3
389.5	CARBONDALE	BRERETON	LIMESTONE	5.5	50.5
384.0	CARBONDALE		SHALE	2.5	56.0
381.5	CARBONDALE	ENERGY	UNCLASSIFIED	1.0	58.5
380.5	CARBONDALE	HERRIN	COAL	6.0	59.5

MAPID: 14528224000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 10' N line, 660' W line of SE SE

QUADRANGLE: PERCY LONGITUDE: -89.540394 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.061095 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 66.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	15.0	0.0
415.0			CLAYSTONE	8.0	15.0
407.0			SHALE	3.0	23.0
404.0	CARBONDALE	GALUM	LIMESTONE	1.0	26.0
403.0	CARBONDALE		SHALE	8.0	27.0
395.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	35.0
391.0	CARBONDALE		SHALE	5.0	39.0
386.0	CARBONDALE	CONANT	LIMESTONE	2.0	44.0
384.0	CARBONDALE		SHALE	7.0	46.0
377.0	CARBONDALE	BRERETON	LIMESTONE	3.0	53.0
374.0	CARBONDALE		SHALE	2.5	56.0
371.5	CARBONDALE	ENERGY	UNCLASSIFIED	2.0	58.5
369.5	CARBONDALE	HERRIN	COAL	6.3	60.5

MAPID: 14528225000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 25' N line, 25' E line of SE NE

QUADRANGLE: PERCY LONGITUDE: -89.538023 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.068373 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 49.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	12.0	0.0
418.0			SAND	15.5	12.0
402.5	CARBONDALE		SHALE	5.5	27.5
397.0	CARBONDALE	BRERETON	LIMESTONE	6.5	33.0
390.5	CARBONDALE		SHALE	3.5	39.5
387.0	CARBONDALE	HERRIN	COAL	6.0	43.0

MAPID: 14528226000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 400' E line of SE SE

QUADRANGLE: PERCY LONGITUDE: -89.539523 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.059248 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	8.0	0.0
422.0			CLAYSTONE	3.0	8.0
419.0	MODESTO	PIASA	LIMESTONE	9.0	11.0
410.0	MODESTO		SHALE	10.0	20.0
400.0	CARBONDALE	GALUM	LIMESTONE	1.0	30.0
399.0	CARBONDALE		SHALE	7.0	31.0
392.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	38.0
389.5	CARBONDALE		SHALE	6.5	40.5
383.0	CARBONDALE	CONANT	LIMESTONE	2.0	47.0
381.0	CARBONDALE		SHALE	3.0	49.0
378.0	CARBONDALE	JAMESTOWN	COAL	0.3	52.0
377.7	CARBONDALE		SHALE	4.7	52.3
373.0	CARBONDALE	BRERETON	LIMESTONE	6.0	57.0
367.0	CARBONDALE		SHALE	1.5	63.0
365.5	CARBONDALE	HERRIN	COAL	5.5	64.5

MAPID: 14528227000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 650' N line, 20' E line of NE NE

QUADRANGLE: PERCY LONGITUDE: -89.537965 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.070328 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 55.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G130 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	8.0	0.0
452.0			SAND	8.0	8.0
444.0			UNCLASSIFIED	10.0	16.0
434.0			SHALE	1.5	26.0
432.5	CARBONDALE	GALUM	LIMESTONE	2.5	27.5
430.0	CARBONDALE		SHALE	5.0	30.0
425.0	CARBONDALE	BANKSTON FORK	LIMESTONE	0.7	35.0
424.3	CARBONDALE		SHALE	7.3	35.7
417.0	CARBONDALE	CONANT	LIMESTONE	2.0	43.0
415.0	CARBONDALE		SHALE	4.0	45.0
411.0	CARBONDALE	HERRIN	COAL	6.0	49.0

MAPID: 14528228000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' N line, 660' W line of NW NE

QUADRANGLE: PERCY LONGITUDE: -89.544771 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.070416 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 80.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO G143 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	14.0	0.0
436.0			CLAYSTONE	15.0	14.0
421.0			SHALE	18.4	29.0
402.6	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	47.4
397.1	CARBONDALE		SHALE	5.0	52.9
392.1	CARBONDALE	CONANT	LIMESTONE	1.0	57.9
391.1	CARBONDALE		SHALE	5.0	58.9
386.1	CARBONDALE	BRERETON	LIMESTONE	5.0	63.9
381.1	CARBONDALE		SHALE	4.0	68.9
377.1	CARBONDALE	ENERGY	UNCLASSIFIED	2.0	72.9
375.1	CARBONDALE	HERRIN	COAL	6.0	74.9

MAPID: 14528229000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 50' N line, 50' W line of NW NE NW
 QUADRANGLE: PERCY LONGITUDE: -89.551442 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.072213 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 97.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G164 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.0			UNCONSOLIDATED	16.0	0.0	
444.0			CLAYSTONE	6.0	16.0	
438.0			SHALE	32.5	22.0	
405.5	CARBONDALE	GALUM	LIMESTONE	2.5	54.5	
403.0	CARBONDALE		SHALE	4.0	57.0	
399.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	61.0	
394.0	CARBONDALE		SHALE	5.0	66.0	
389.0	CARBONDALE	CONANT	LIMESTONE	2.0	71.0	
387.0	CARBONDALE		SHALE	8.0	73.0	
379.0	CARBONDALE	BRERETON	LIMESTONE	7.5	81.0	
371.5	CARBONDALE		SHALE	3.0	88.5	
368.5	CARBONDALE	HERRIN	COAL	6.2	91.5	

MAPID: 14528230000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NE NW
 QUADRANGLE: PERCY LONGITUDE: -89.549377 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.070461 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 87.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO G162 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			UNCONSOLIDATED	14.0	0.0	
436.0			CLAYSTONE	10.0	14.0	
426.0			SHALE	15.5	24.0	
410.5	MODESTO	PIASA	LIMESTONE	7.5	39.5	UNCERTAIN CORRELATION
403.0			SHALE	5.5	47.0	
397.5	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	52.5	
392.5	CARBONDALE		SHALE	4.5	57.5	
388.0	CARBONDALE	CONANT	LIMESTONE	2.0	62.0	
386.0	CARBONDALE		SHALE	8.5	64.0	
377.5	CARBONDALE	BRERETON	LIMESTONE	7.0	72.5	
370.5	CARBONDALE		SHALE	1.5	79.5	
369.0	CARBONDALE	HERRIN	COAL	6.0	81.0	

MAPID: 14528231000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 50' S line, 50' W line of SW NE NW

QUADRANGLE: PERCY LONGITUDE: -89.551534 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.068812 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 96.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G163 WELL TYPE: Coal Test

COMMENT: ENTERED AS 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	12.0	0.0
448.0			CLAYSTONE	8.0	12.0
440.0	MODESTO		SHALE	8.0	20.0
432.0	MODESTO		COAL	0.8	28.0
431.2	MODESTO		SHALE	3.2	28.8
428.0	MODESTO		LIMESTONE	0.6	32.0
427.4	MODESTO		SHALE	5.1	32.6
422.3	MODESTO	PIASA	LIMESTONE	7.1	37.7
415.2	MODESTO		SHALE	11.3	44.8
403.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	56.1
401.6	CARBONDALE		SHALE	5.7	58.4
395.9	CARBONDALE	CONANT	LIMESTONE	4.0	64.1
391.9	CARBONDALE		SHALE	2.3	68.1
389.6	CARBONDALE		UNCLASSIFIED	0.5	70.4
389.1	CARBONDALE		SHALE	3.0	70.9
386.1	CARBONDALE	JAMESTOWN	COAL	0.3	73.9
385.8	CARBONDALE		SHALE	7.3	74.2
378.5	CARBONDALE	BRERETON	LIMESTONE	7.0	81.5
371.5	CARBONDALE		SHALE	1.0	88.5
370.5	CARBONDALE	HERRIN	COAL	7.0	89.5

MAPID: 14528622000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 1594' N line, 698' W line

QUADRANGLE: PERCY LONGITUDE: -89.553887 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.067991 DATE COLLECTED: 7 / 12 / 1982

SURFACE ELEVATION (FT.): LOGGED (FT.): 108.5 LOG TYPE: Other Core Study

SOURCE: CONSOLIDATION COAL JC 66-69 WELL TYPE: Coal Test

COMMENT: PERMIT 74; BURNING STAR #4; E-W X-SECT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	19.5	0.0	
-			SHALE	3.5	19.5	
-	CARBONDALE	DANVILLE	COAL	1.0	23.0	
-	CARBONDALE		SHALE	4.5	24.0	WITH SOME LIMESTONE
-	CARBONDALE		LIMESTONE	7.5	28.5	
-	CARBONDALE		SHALE	13.5	36.0	
-	CARBONDALE		LIMESTONE	2.0	49.5	
-	CARBONDALE		SHALE	18.0	51.5	WITH SOME LIMESTONE
-	CARBONDALE	BRERETON	LIMESTONE	6.0	69.5	
-	CARBONDALE	ANNA	SHALE	5.0	75.5	
-	CARBONDALE	HERRIN	COAL	6.5	80.5	
-	CARBONDALE		SHALE	6.0	87.0	
-	CARBONDALE	ST. DAVID	LIMESTONE	4.5	93.0	
-	CARBONDALE	TURNER MINE	SHALE	7.5	97.5	
-	CARBONDALE	SPRINGFIELD	COAL	2.0	105.0	
-	CARBONDALE		UNDERCLAY	1.5	107.0	

MAPID: 14528623000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 1644' N line, 1046' E line
 QUADRANGLE: PERCY LONGITUDE: -89.541606 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 38.067646 DATE COLLECTED: 7 / 12 / 1982
 SURFACE ELEVATION (FT.): LOGGED (FT.): 79.5 LOG TYPE: Other Core Study
 SOURCE: CONSOLIDATION COAL JC 67-276 WELL TYPE: Coal Test
 COMMENT: PERMIT 74; BURNING STAR #4; E-W X-SECT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	50.5	0.0
-	CARBONDALE	BRERETON	LIMESTONE	1.5	50.5
-	CARBONDALE	ANNA	SHALE	3.0	52.0
-	CARBONDALE	HERRIN	COAL	6.0	55.0
-	CARBONDALE		UNDERCLAY	3.0	61.0
-	CARBONDALE		LIMESTONE	2.0	64.0
-	CARBONDALE		SANDY SHALE	3.5	66.0
-	CARBONDALE	ST. DAVID	LIMESTONE	1.0	69.5
-	CARBONDALE	TURNER MINE	SHALE	5.5	70.5
-	CARBONDALE	SPRINGFIELD	COAL	3.0	76.0
-	CARBONDALE		UNDERCLAY	0.5	79.0

MAPID: 14590391000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' W line of NE NE
 QUADRANGLE: PERCY LONGITUDE: -89.540182 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.070302 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 60.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G112 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
422.0			ROCK	27.1	18.0
394.9	CARBONDALE	JAMESTOWN	COAL	0.3	45.1
394.6	CARBONDALE		ROCK	8.1	45.4
386.5	CARBONDALE	HERRIN	COAL	7.0	53.5

MAPID: 14590392000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' W line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.540268 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.066622 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 69.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G113 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
415.0			ROCK	38.5	25.0
376.5	CARBONDALE	HERRIN	COAL	6.0	63.5

MAPID: 14590393000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 375' N line, 400' E line of NE SE
 QUADRANGLE: PERCY LONGITUDE: -89.539432 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.063751 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 43.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G114 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
426.0			ROCK	23.5	14.0
402.5	CARBONDALE	HERRIN	COAL	6.0	37.5

MAPID: 14590394000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 560' W line of NW SE
 QUADRANGLE: PERCY LONGITUDE: -89.545304 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.063031 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 52.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G115 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
422.0			ROCK	28.0	18.0
394.0	CARBONDALE	HERRIN	COAL	6.0	46.0

MAPID: 14590395000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE SW
 QUADRANGLE: PERCY LONGITUDE: -89.549561 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.063109 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 63.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G116 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
416.0			ROCK	23.0	24.0
393.0	CARBONDALE	JAMESTOWN	COAL	0.3	47.0
392.7	CARBONDALE		ROCK	10.2	47.3
382.5	CARBONDALE	HERRIN	COAL	5.5	57.5

MAPID: 14590396000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW SE
 QUADRANGLE: PERCY LONGITUDE: -89.54504 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.059349 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 65.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G117 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
413.0			ROCK	32.5	27.0
380.5	CARBONDALE	HERRIN	COAL	6.0	59.5

MAPID: 14590397000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 300' N line, 660' E line of NE
 QUADRANGLE: PERCY LONGITUDE: -89.540179 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.071332 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 49.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G118 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
421.0			ROCK	24.8	19.0
396.2	CARBONDALE	HERRIN	COAL	6.0	43.8

MAPID: 14590402000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 10' N line, 660' W line of SE SE
 QUADRANGLE: PERCY LONGITUDE: -89.540394 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.061095 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 66.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G123 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0
417.0			ROCK	37.5	23.0
379.5	CARBONDALE	HERRIN	COAL	6.4	60.5

MAPID: 14590403000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' N line, 400' E line of SE SE
 QUADRANGLE: PERCY LONGITUDE: -89.539523 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.059284 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G124 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0
429.0			ROCK	41.0	11.0
388.0	CARBONDALE	JAMESTOWN	COAL	0.4	52.0
387.6	CARBONDALE		ROCK	12.1	52.4
375.5	CARBONDALE	HERRIN	COAL	5.5	64.5

MAPID: 14590406000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 25' N line, 25' E line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.538023 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.068373 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 49.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G127 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	27.5	0.0
412.5			ROCK	15.5	27.5
397.0	CARBONDALE	HERRIN	COAL	6.0	43.0

MAPID: 14590409000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 650' N line, 20' E line of NE NE
 QUADRANGLE: PERCY LONGITUDE: -89.537965 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.070328 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 55.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G130 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
414.0			ROCK	23.0	26.0
391.0	CARBONDALE	HERRIN	COAL	6.0	49.0

MAPID: 14590422000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW NE
 QUADRANGLE: PERCY LONGITUDE: -89.544789 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.07038 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 81.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G143 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0
431.0			ROCK	46.0	29.0
385.0	CARBONDALE	HERRIN	COAL	6.0	75.0

MAPID: 14590440000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE NW
 QUADRANGLE: PERCY LONGITUDE: -89.549377 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.070461 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 87.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G162 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
436.0			ROCK	57.0	24.0
379.0	CARBONDALE	HERRIN	COAL	6.0	81.0

MAPID: 14590441000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 50' S line, 50' W line of NE NW
 QUADRANGLE: PERCY LONGITUDE: -89.551534 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.068812 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 96.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G163 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
440.0			ROCK	8.0	20.0
432.0			COAL	0.8	28.0
431.2			ROCK	45.4	28.8
385.8	CARBONDALE	JAMESTOWN	COAL	0.4	74.2
385.4	CARBONDALE		ROCK	14.9	74.6
370.5	CARBONDALE	HERRIN	COAL	7.0	89.5

MAPID: 14590442000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 28 QUARTERS/FOOTAGES: 50' N line, 50' W line of NE NW
 QUADRANGLE: PERCY LONGITUDE: -89.551442 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.072213 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 97.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G164 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
444.0			ROCK	75.5	16.0
368.5	CARBONDALE	HERRIN	COAL	6.3	91.5

MAPID: 14501205000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 29 QUARTERS/FOOTAGES: 190' S line, 3290' E line of SE
 QUADRANGLE: PERCY LONGITUDE: -89.568091 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.058409 DATE COLLECTED: 7 / 11 / 1934
 SURFACE ELEVATION (FT.): 463.9 LOGGED (FT.): 1090.0 LOG TYPE: Drillers Log
 SOURCE: W. J. ERVIN WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
346.9			COAL	-	117.0
303.9			COAL	-	160.0

MAPID: 14502534000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 29 QUARTERS/FOOTAGES: 833' S line, 168' W line of SE SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.558049 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.067409 DATE COLLECTED: 0 / 0 / 1959
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 80.0 LOG TYPE: Drillers Log
 SOURCE: OTHO KINMAN WELL TYPE: Water Well
 COMMENT: NO ENVELOPE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	1.0	0.0
459.0			CLAYSTONE	20.0	1.0
439.0			SHALE	12.0	21.0
427.0			LIMESTONE	10.0	33.0
417.0			SHALE	12.0	43.0
405.0			LIMESTONE	4.0	55.0
401.0			SHALE	4.0	59.0
397.0			LIMESTONE	7.0	63.0
390.0			SILTSTONE & SHALE	10.0	70.0

MAPID: 14502889000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 29 QUARTERS/FOOTAGES: 10' N line, 70' W line
 QUADRANGLE: PERCY LONGITUDE: -89.574324 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.0727 DATE COLLECTED: 4 / 19 / 1956
 SURFACE ELEVATION (FT.): 477.0 LOGGED (FT.): 405.0 LOG TYPE: Plugging affidavit
 SOURCE: PHILLIPS PETROLEUM CO. WELL TYPE: Plugged and/or Abandoned
 COMMENT: PLUGGED & ABANDONED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
477.0			UNKNOWN	0.0	0.0

MAPID: 14502889000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 29 QUARTERS/FOOTAGES: 10' N line, 70' W line

QUADRANGLE: PERCY LONGITUDE: -89.574324 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.0727 DATE COLLECTED:

SURFACE ELEVATION (FT.): 477.0 LOGGED (FT.): 105.0 LOG TYPE: Electric Log

SOURCE: WELL TYPE: Oil and Gas Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.0	MODESTO	PIASA	LIMESTONE	7.0	33.0
437.0	CARBONDALE		GRAY SHALE	9.0	40.0
428.0	CARBONDALE	GALUM	LIMESTONE & SHALE	2.0	49.0
426.0	CARBONDALE		GRAY SHALE	10.0	51.0
416.0	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	4.0	61.0
412.0	CARBONDALE	LAWSON	GRAY SHALE	4.0	65.0
408.0	CARBONDALE	CONANT	LIMESTONE	5.0	69.0
403.0	CARBONDALE		LIMESTONE W/ SHALE	8.0	74.0
395.0	CARBONDALE	BRERETON	LIMESTONE	8.0	82.0
387.0	CARBONDALE	ANNA	BLACK SHALE	5.0	90.0
380.0	CARBONDALE	HERRIN	COAL	8.0	97.0

MAPID: 14502762000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 30 QUARTERS/FOOTAGES: 15' N line, 155' W line of NW SW SW

QUADRANGLE: PERCY LONGITUDE: -89.592602 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.06181 DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 488.0 LOGGED (FT.): 1200.0 LOG TYPE: Plugging affidavit

SOURCE: MAGNOLIA PETROLEUM WELL TYPE: Plugged and/or Abandoned

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
488.0			UNKNOWN	0.0	0.0

MAPID: 14528624000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 30 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.477435

GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.061302

DATE COLLECTED: 11 / 26 / 1991

SURFACE ELEVATION (FT.): 471.6 LOGGED (FT.): 145.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 884C

WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
471.6	PLEISTOCENE		UNCONSOLIDATED	30.5	0.0	
441.1	PLEISTOCENE		UNCONSOLIDATED	9.3	30.5	
431.8	MODESTO		SHALE	11.5	39.8	WEATHERED
420.3	MODESTO		LIMESTONE	2.7	51.3	WEATHERED
417.6	MODESTO	PIASA	LIMESTONE	7.8	54.0	GRAY
409.8	MODESTO		SHALE	5.3	61.8	DARK GRAY
404.5	CARBONDALE	DANVILLE	COAL	2.3	67.1	
402.2	CARBONDALE		UNDERCLAY	2.9	69.4	
399.3	CARBONDALE		GRAY SHALE	1.3	72.3	
398.0	CARBONDALE		LIMESTONE & SHALE	11.5	73.6	INTERBEDDED
386.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	85.1	GRAY
382.3	CARBONDALE		GRAY SHALE	7.8	89.3	
374.5	CARBONDALE	CONANT	LIMESTONE	2.1	97.1	DARK GRAY
372.4	CARBONDALE	JAMESTOWN	SHALE	13.8	99.2	DARK GRAY
358.6	CARBONDALE	BRERETON	LIMESTONE	3.1	113.0	DARK GRAY
355.5	CARBONDALE	ANNA	BLACK SHALE	0.9	116.1	
354.6	CARBONDALE	HERRIN	COAL	5.7	117.0	
348.9	CARBONDALE		UNDERCLAY	1.1	122.7	
347.8	CARBONDALE	HIGGINSVILLE	LIMESTONE	6.1	123.8	GRAY
341.7	CARBONDALE		SANDY SHALE	7.5	129.9	
334.2	CARBONDALE		SHALE	0.7	137.4	DARK GRAY
333.5	CARBONDALE	SPRINGFIELD	COAL	4.2	138.1	
329.3	CARBONDALE		UNDERCLAY	2.7	142.3	

MAPID: 14500005000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 870' N line, 700' W line of NW SW

QUADRANGLE: PERCY LONGITUDE: -89.590885 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.04845 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 471.5 LOGGED (FT.): 92.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING 27 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
471.5			UNCONSOLIDATED	35.0	0.0
436.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	35.0
431.8	CARBONDALE		CLAYSTONE	1.2	39.7
430.5	CARBONDALE		SHALE	3.0	41.0
427.5	CARBONDALE	CONANT	LIMESTONE	4.0	44.0
423.5	CARBONDALE		SHALE	16.0	48.0
407.5	CARBONDALE	BRERETON	LIMESTONE	2.0	64.0
405.5	CARBONDALE	HERRIN	COAL	6.5	66.0
399.0	CARBONDALE		CLAYSTONE	2.0	72.5
397.0	CARBONDALE		CLAYSTONE	2.5	74.5
394.5	CARBONDALE		LIMESTONE	6.0	77.0
388.5	CARBONDALE		CLAYSTONE	1.5	83.0
387.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	84.5
385.0	CARBONDALE		CLAYSTONE	0.5	86.5
384.5	CARBONDALE		SHALE	0.5	87.0
384.0	CARBONDALE	SPRINGFIELD	COAL	2.0	87.5
382.0	CARBONDALE		CLAYSTONE	2.5	89.5

MAPID: 14501576000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 1000' S line, 950' E line of SE NW NW

QUADRANGLE: PERCY LONGITUDE: -89.591937 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.057242 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 472.6 LOGGED (FT.): 53.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING 144-A WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
472.6			UNCONSOLIDATED	21.0	0.0
451.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	21.0
449.1	CARBONDALE		SHALE	3.5	23.5
445.6	CARBONDALE	CONANT	LIMESTONE	3.9	27.0
441.7	CARBONDALE		SHALE	3.6	30.9
438.1	CARBONDALE		LIMESTONE	0.3	34.5
437.8	CARBONDALE		SHALE	5.7	34.8
432.0	CARBONDALE	BRERETON	LIMESTONE	6.4	40.6
425.6	CARBONDALE	ANNA	SILTSTONE	0.7	47.0
424.9	CARBONDALE	HERRIN	COAL	5.2	47.7

MAPID: 14501577000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 1000' S line, 310' E line of SE NW NW

QUADRANGLE: PERCY LONGITUDE: -89.589702 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.05723 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 478.2 LOGGED (FT.): 55.9 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING 144-C WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
478.2			UNCONSOLIDATED	17.0	0.0
461.2	CARBONDALE		LIMESTONE	1.0	17.0
460.2	CARBONDALE		CLAYSTONE	0.5	18.0
459.7	CARBONDALE		LIMESTONE	0.7	18.5
459.0	CARBONDALE		SHALE	5.6	19.2
453.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	24.7
449.8	CARBONDALE		SHALE	2.7	28.4
447.0	CARBONDALE	CONANT	LIMESTONE	2.7	31.2
444.3	CARBONDALE		SHALE	3.7	33.9
440.5	CARBONDALE		UNCLASSIFIED	0.4	37.7
440.1	CARBONDALE	JAMESTOWN	COAL	0.2	38.1
439.9	CARBONDALE		SHALE	2.6	38.3
437.4	CARBONDALE	BRERETON	LIMESTONE	5.2	40.8
432.1	CARBONDALE		SHALE	1.2	46.1
430.9	CARBONDALE		SHALE	3.0	47.3
427.9	CARBONDALE	HERRIN	COAL	5.6	50.3

MAPID: 14501578000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 330' S line, 960' E line of SE NW NW

QUADRANGLE: PERCY LONGITUDE: -89.592004 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.055395 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 462.4 LOGGED (FT.): 41.8 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING 144-I WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.4			UNCONSOLIDATED	10.3	0.0
452.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	10.3
448.2	CARBONDALE		SHALE	3.6	14.2
444.7	CARBONDALE	CONANT	LIMESTONE	2.5	17.7
442.2	CARBONDALE		SHALE	4.1	20.2
438.1	CARBONDALE	JAMESTOWN	COAL	0.2	24.3
437.9	CARBONDALE		SHALE	3.6	24.5
434.3	CARBONDALE	BRERETON	LIMESTONE	5.7	28.1
428.6	CARBONDALE		SHALE	2.0	33.8
426.6	CARBONDALE	HERRIN	COAL	6.0	35.8

MAPID: 14501579000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 340' S line, 320' E line of SE NW NW

QUADRANGLE: PERCY LONGITUDE: -89.589766 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.055407 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 474.6 LOGGED (FT.): 56.9 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
474.6			UNCONSOLIDATED	26.0	0.0
448.6	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	26.0
447.1	CARBONDALE		SHALE	4.1	27.5
443.0	CARBONDALE	CONANT	LIMESTONE	3.8	31.6
439.2	CARBONDALE		SHALE	3.6	35.4
435.6	CARBONDALE	JAMESTOWN	COAL	0.2	39.0
435.4	CARBONDALE		SHALE	3.0	39.2
432.4	CARBONDALE	BRERETON	LIMESTONE	5.7	42.2
426.8	CARBONDALE		SHALE	3.1	47.8
423.7	CARBONDALE	HERRIN	COAL	6.0	50.9

MAPID: 14501584000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 1650' N line, 360' W line
 QUADRANGLE: PERCY LONGITUDE: -89.591988 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.053553 DATE COLLECTED: 0 / 0 / 1928
 SURFACE ELEVATION (FT.): 460.4 LOGGED (FT.): 39.0 LOG TYPE: Drillers Log
 SOURCE: WILLIS COAL & MINING 129-A WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.4			UNCONSOLIDATED	13.5	0.0
446.9	CARBONDALE		SHALE	1.0	13.5
445.9	CARBONDALE		SHALE	0.8	14.5
445.1	CARBONDALE	CONANT	LIMESTONE	2.3	15.3
442.7	CARBONDALE		SHALE	3.7	17.7
439.0	CARBONDALE	JAMESTOWN	COAL	0.2	21.4
438.7	CARBONDALE		LIMESTONE	0.4	21.7
438.3	CARBONDALE		SHALE	3.3	22.1
435.0	CARBONDALE	BRERETON	LIMESTONE	6.0	25.4
429.0	CARBONDALE		SHALE	2.5	31.4
426.5	CARBONDALE	HERRIN	COAL	5.9	33.9

MAPID: 14501584000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 1650' N line, 360' W line
 QUADRANGLE: PERCY LONGITUDE: -89.591988 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.053553 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 39.9 LOG TYPE: Drillers Log
 SOURCE: WELL TYPE: Coal Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.4	CARBONDALE	LAWSON	SHALE	1.8	13.6
444.6	CARBONDALE	CONANT	LIMESTONE W/ SHALE	6.1	15.4
438.5	CARBONDALE	JAMESTOWN	COAL	0.3	21.5
438.2	CARBONDALE		LIMESTONE W/ SHALE	3.8	21.8
434.5	CARBONDALE	BRERETON	LIMESTONE	6.0	25.5
428.5	CARBONDALE	ANNA	SHALE	2.5	31.5
426.0	CARBONDALE	HERRIN	COAL	5.9	34.0

MAPID: 14501585000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 990' S line, 310' E line of SE SW NW

QUADRANGLE: PERCY LONGITUDE: -89.589764 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.05358 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 461.3 LOGGED (FT.): 50.2 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING 129-C WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
461.3			UNCONSOLIDATED	18.0	0.0
443.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	18.0
439.3	CARBONDALE		SHALE	4.0	22.0
435.3	CARBONDALE	CONANT	LIMESTONE	2.7	26.0
432.6	CARBONDALE	JAMESTOWN	COAL	0.1	28.7
432.5	CARBONDALE		SHALE	4.2	28.8
428.2	CARBONDALE		LIMESTONE	0.6	33.1
427.6	CARBONDALE		SHALE	6.3	33.7
421.3	CARBONDALE	BRERETON	LIMESTONE	3.7	40.0
417.5	CARBONDALE		SHALE	0.3	43.8
417.3	CARBONDALE	HERRIN	COAL	6.2	44.0

MAPID: 14501586000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 610' S line, 640' E line of SE SW NW

QUADRANGLE: PERCY LONGITUDE: -89.590932 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.052535 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 459.5 LOGGED (FT.): 47.3 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING 129-F WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
459.5			UNCONSOLIDATED	15.5	0.0
444.0	CARBONDALE		SHALE	2.0	15.5
442.0	CARBONDALE		SHALE	5.7	17.5
436.3	CARBONDALE	CONANT	LIMESTONE	3.1	23.2
433.3	CARBONDALE		SHALE	4.5	26.2
428.6	CARBONDALE	JAMESTOWN	COAL	0.2	30.9
428.5	CARBONDALE		LIMESTONE	0.5	31.0
428.0	CARBONDALE		SHALE	5.4	31.5
422.6	CARBONDALE	BRERETON	LIMESTONE	4.2	36.9
418.4	CARBONDALE	HERRIN	COAL	6.2	41.1

MAPID: 14501587000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 140' S line, 1070' E line of SE SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.592456 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.051245 DATE COLLECTED: 0 / 0 / 1928
 SURFACE ELEVATION (FT.): 465.8 LOGGED (FT.): 55.5 LOG TYPE: Drillers Log
 SOURCE: WILLIS COAL & MINING 129-I WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
465.8			UNCONSOLIDATED	27.0	0.0
438.8			SIDERITE	1.4	27.0
437.4			UNCLASSIFIED	5.0	28.4
432.4	CARBONDALE		SHALE	0.2	33.4
429.1	CARBONDALE		SHALE	5.7	36.7
424.5	CARBONDALE	BRERETON	LIMESTONE	5.8	41.3
418.6	CARBONDALE		SHALE	2.3	47.2
416.3	CARBONDALE	HERRIN	COAL	6.0	49.5

MAPID: 14501588000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 330' S line, 310' E line of SE SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.589793 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.051758 DATE COLLECTED: 0 / 0 / 1928
 SURFACE ELEVATION (FT.): 467.7 LOGGED (FT.): 61.2 LOG TYPE: Drillers Log
 SOURCE: WILLIS COAL & MINING 129-K WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
467.7			UNCONSOLIDATED	21.5	0.0
446.2	CARBONDALE	GALUM	LIMESTONE	1.1	21.5
445.1	CARBONDALE		CLAYSTONE	5.9	22.6
439.2	CARBONDALE	BANKSTON FORK	LIMESTONE	6.2	28.5
433.0	CARBONDALE		SHALE	2.2	34.7
430.9	CARBONDALE	CONANT	LIMESTONE	2.3	36.8
428.5	CARBONDALE		SILTSTONE	1.3	39.2
427.2	CARBONDALE	JAMESTOWN	COAL	0.2	40.5
427.0	CARBONDALE		SHALE	2.3	40.7
424.6	CARBONDALE		UNCLASSIFIED	0.5	43.1
424.1	CARBONDALE		SHALE	2.2	43.6
421.9	CARBONDALE	BRERETON	LIMESTONE	5.9	45.8
416.0	CARBONDALE		SHALE	4.5	51.7
412.5	CARBONDALE	HERRIN	COAL	6.0	55.2

MAPID: 14501592000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 345' N line, 300' W line of SW

QUADRANGLE: PERCY LONGITUDE: -89.592259 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.049906 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 465.1 LOGGED (FT.): 51.7 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING 114-A WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
465.1			UNCONSOLIDATED	30.0	0.0
435.1	CARBONDALE	CONANT	LIMESTONE	2.0	30.0
433.1	CARBONDALE		SHALE	1.5	32.0
431.6	CARBONDALE		SHALE	2.1	33.5
429.5	CARBONDALE		SHALE	1.7	35.6
427.8	CARBONDALE	BRERETON	LIMESTONE	3.7	37.3
424.2	CARBONDALE		SHALE	3.7	40.9
420.5	CARBONDALE	HERRIN	COAL	7.2	44.6

MAPID: 14501593000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 980' S line, 340' E line of SE NE SW

QUADRANGLE: PERCY LONGITUDE: -89.585364 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.049917 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 467.6 LOGGED (FT.): 61.5 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING 114-C WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
467.6			UNCONSOLIDATED	24.7	0.0
442.9			SIDERITE	3.0	24.7
439.9	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	27.7
435.1	CARBONDALE		CLAYSTONE	3.7	32.5
431.4	CARBONDALE	CONANT	LIMESTONE	2.1	36.2
429.3	CARBONDALE		SHALE	4.3	38.3
425.0	CARBONDALE		LIMESTONE	0.4	42.6
424.6	CARBONDALE		SHALE	7.0	43.0
417.6	CARBONDALE		LIMESTONE	1.8	50.0
415.8	CARBONDALE		SHALE	0.7	51.8
415.1	CARBONDALE	BRERETON	LIMESTONE	2.7	52.5
412.4	CARBONDALE		UNCLASSIFIED	0.4	55.2
411.9	CARBONDALE	HERRIN	COAL	5.8	55.7

MAPID: 14501594000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 650' S line, 660' E line of SE NE SW

QUADRANGLE: PERCY LONGITUDE: -89.586498 GEOLOGIST: DGD

CONFIDENTIAL: N LATITUDE: 38.049008 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 470.6 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING 114-F WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
470.6			UNCONSOLIDATED	25.0	0.0
445.6	CARBONDALE	GALUM	LIMESTONE	1.8	25.0
443.8	CARBONDALE		SHALE	5.6	26.8
438.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.8	32.4
432.3	CARBONDALE		SHALE	3.4	38.3
428.9	CARBONDALE		CALCAREOUS SHALE	2.8	41.7
426.1	CARBONDALE		SHALE	3.3	44.5
422.8	CARBONDALE		LIMESTONE	0.7	47.8
422.0	CARBONDALE		CLAYSTONE	8.5	48.6
413.5	CARBONDALE	BRERETON	LIMESTONE	3.7	57.1
409.9	CARBONDALE		SHALE	1.2	60.7
408.6	CARBONDALE	HERRIN	COAL	6.0	62.0

MAPID: 14501595000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 320' S line, 980' E line of SE NE SW

QUADRANGLE: PERCY LONGITUDE: -89.587631 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.048102 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 465.5 LOGGED (FT.): 64.6 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING 114-I WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
465.5			UNCONSOLIDATED	15.0	0.0
450.5			LIMESTONE	1.5	15.0
449.0			CONCRETION	11.0	16.5
438.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.9	27.5
434.0	CARBONDALE		SHALE	3.9	31.5
430.2	CARBONDALE	CONANT	LIMESTONE	3.1	35.3
427.1	CARBONDALE		SHALE	2.2	38.4
424.9	CARBONDALE		UNCLASSIFIED	1.0	40.6
423.9	CARBONDALE		CLAYSTONE	4.0	41.6
419.9	CARBONDALE		SILTSTONE	4.5	45.6
415.4	CARBONDALE	BRERETON	LIMESTONE	8.4	50.1
407.0	CARBONDALE		SILTSTONE	0.2	58.5
406.8	CARBONDALE	HERRIN	COAL	5.8	58.7

MAPID: 14501597000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 330' N line, 330' W line of NW SW SW
 QUADRANGLE: PERCY LONGITUDE: -89.592213 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.046323 DATE COLLECTED: 0 / 0 / 1928
 SURFACE ELEVATION (FT.): 464.9 LOGGED (FT.): 66.6 LOG TYPE: Drillers Log
 SOURCE: WILLIS COAL & MINING 100-4 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.9			UNCONSOLIDATED	27.0	0.0	
437.9	CARBONDALE	GALUM	LIMESTONE	3.2	27.0	
434.7	CARBONDALE		SHALE	4.7	30.2	
430.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.6	34.9	
423.4	CARBONDALE		SHALE	2.2	41.5	
421.2	CARBONDALE	CONANT	LIMESTONE	2.7	43.7	
418.5	CARBONDALE		SHALE	2.3	46.4	
416.2	CARBONDALE	BRERETON	LIMESTONE	2.6	48.7	
413.5	CARBONDALE		SHALE	8.6	51.4	
404.9	CARBONDALE		SHALE	0.9	60.0	
404.0	CARBONDALE	HERRIN	COAL	5.7	60.9	

MAPID: 14502890000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 180' N line, 30' E line of NE NE
 QUADRANGLE: PERCY LONGITUDE: -89.575021 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.057478 DATE COLLECTED: 3 / 20 / 1956
 SURFACE ELEVATION (FT.): 473.0 LOGGED (FT.): 345.0 LOG TYPE: Plugging affidavit
 SOURCE: PHILLIPS PETROLEUM CO. 1207-29 WELL TYPE: Plugged and/or Abandoned
 COMMENT: PLUGGED & ABANDONED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
473.0			UNKNOWN	0.0	0.0	

MAPID: 14528232000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.584164 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.050821 DATE COLLECTED: 0 / 0 / 1916

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 42.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
490.0			CLAYSTONE	16.0	0.0
474.0			UNCLASSIFIED	20.0	16.0
454.0			COAL	0.5	36.0
453.5			CLAYSTONE	1.5	36.5
452.0			LIMESTONE	4.0	38.0

MAPID: 14590034000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 295' N line, 130' W line of NE SW SW

QUADRANGLE: PERCY LONGITUDE: -89.590628 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.046412 DATE COLLECTED: 11 / 21 / 1980

SURFACE ELEVATION (FT.): 484.8 LOGGED (FT.): 90.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5142 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
484.8	PLEISTOCENE		UNCONSOLIDATED	18.5	0.0
466.3			SHALE	6.4	18.5
459.9			SANDY SHALE	10.6	24.9
449.3	CARBONDALE	GALUM	LIMESTONE	1.7	35.5 GRAY
447.6	CARBONDALE		CALCAREOUS SHALE	6.3	37.2
441.3	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	43.5 GRAY
436.3	CARBONDALE		DARK GRAY SHALE	3.6	48.5
432.7	CARBONDALE	CONANT	LIMESTONE	3.4	52.1 DARK
429.3	CARBONDALE		DARK SHALE & LIMESTONE	9.9	55.5
419.4	CARBONDALE	BRERETON	LIMESTONE	5.7	65.4 DARK
413.7	CARBONDALE	ANNA	BLACK SHALE	2.1	71.1
411.6	CARBONDALE	HERRIN	COAL	6.2	73.2
405.4	CARBONDALE		UNDERCLAY	2.5	79.4
402.9	CARBONDALE		CALCAREOUS SHALE	4.1	81.9
398.8	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.4	86.0 GRAY
395.4	CARBONDALE		SANDY SHALE	0.6	89.4 LIMY

MAPID: 14590035000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 320' N line, 15' E line of NE SE SW

QUADRANGLE: PERCY LONGITUDE: -89.584292 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.046323 DATE COLLECTED: 11 / 19 / 1980

SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 127.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5136 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
494.0	PLEISTOCENE		UNCONSOLIDATED	12.5	0.0	
481.5	MODESTO		SHALE	10.5	12.5	
471.0	MODESTO		GRAY SHALE	6.3	23.0	
464.7	MODESTO	DEGRAFF	COAL	0.4	29.3	
464.3	MODESTO		GRAY SHALE	0.8	29.7	
463.5	MODESTO	PIASA	LIMESTONE	10.8	30.5	GRAY
452.7			GRAY SHALE	23.4	41.3	
429.3	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	64.7	GRAY
423.8	CARBONDALE		DARK GRAY SHALE	4.0	70.2	
419.8	CARBONDALE	CONANT	LIMESTONE	3.0	74.2	DARK
416.8	CARBONDALE		DARK SHALE & LIMESTONE	10.4	77.2	
406.4	CARBONDALE	BRERETON	LIMESTONE	6.7	87.6	DARK
399.7	CARBONDALE	ANNA	SHALE	3.4	94.3	
396.3	CARBONDALE	ANNA	LIMESTONE	0.8	97.7	DARK
395.5	CARBONDALE	ANNA	BLACK SHALE	1.1	98.5	
394.4	CARBONDALE	HERRIN	COAL	7.5	99.6	
386.9	CARBONDALE		UNDERCLAY	1.9	107.1	
385.0	CARBONDALE		GRAY SHALE	10.0	109.0	
375.0	CARBONDALE		SANDSTONE	4.0	119.0	GRAY
371.0	CARBONDALE		SANDY SHALE	4.0	123.0	

MAPID: 14590036000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 50' S line, 130' W line of SE SW SE

QUADRANGLE: PERCY LONGITUDE: -89.581552 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.043728 DATE COLLECTED: 11 / 18 / 1980

SURFACE ELEVATION (FT.): 518.9 LOGGED (FT.): 155.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5133 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
518.9	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0	
496.9	MODESTO		SHALE	3.0	22.0	
493.9	MODESTO		GRAY SHALE	15.0	25.0	
478.9	MODESTO		CALCAREOUS SHALE	25.0	40.0	
453.9	MODESTO	DEGRAFF	COAL	0.3	65.0	
453.6	MODESTO		GRAY SHALE	1.4	65.3	
452.2	MODESTO	PIASA	LIMESTONE	8.1	66.7	GRAY
444.1			CALCAREOUS SHALE	19.6	74.8	
424.5	CARBONDALE	GALUM	LIMESTONE	1.7	94.4	GRAY
422.8	CARBONDALE		CALCAREOUS SHALE	5.9	96.1	
416.9	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	102.0	GRAY
411.9	CARBONDALE		DARK GRAY SHALE	3.6	107.0	
408.3	CARBONDALE	CONANT	LIMESTONE	3.8	110.6	GRAY
404.5	CARBONDALE		DARK SHALE & LIMESTONE	4.9	114.4	
399.6	CARBONDALE	BRERETON	LIMESTONE & SHALE	5.4	119.3	DARK
394.2	CARBONDALE	BRERETON	LIMESTONE	2.1	124.7	DARK
392.1	CARBONDALE	ANNA	SHALE	1.7	126.8	
390.4	CARBONDALE	ANNA	BLACK SHALE	1.8	128.5	
388.6	CARBONDALE	HERRIN	COAL	6.2	130.3	
382.4	CARBONDALE		UNDERCLAY	1.5	136.5	
380.9	CARBONDALE	HIGGINSVILLE	LIMESTONE & SHALE	12.8	138.0	GRAY
368.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.8	150.8	GRAY
367.3	CARBONDALE	SPRINGFIELD	COAL	0.9	151.6	
366.4	CARBONDALE		UNDERCLAY	2.5	152.5	

MAPID: 14590038000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 31 QUARTERS/FOOTAGES: 270' N line, 45' W line of NW SE SE

QUADRANGLE: PERCY

LONGITUDE: -89.57952

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.046446

DATE COLLECTED: 10 / 7 / 1980

SURFACE ELEVATION (FT.): 498.5

LOGGED (FT.): 110.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 4934-B

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
498.5	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0	
487.5	MODESTO		SILTY SHALE	4.0	11.0	
483.5	MODESTO	DEGRAFF	COAL	0.5	15.0	
483.0	MODESTO		SHALE	2.5	15.5	
480.5	MODESTO	PIASA	LIMESTONE & SHALE	9.5	18.0	
471.0			GRAY SHALE	12.8	27.5	
458.2	CARBONDALE	GALUM	LIMESTONE & SHALE	3.0	40.3	GRAY
455.2	CARBONDALE		CALCAREOUS SHALE	5.7	43.3	
449.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	49.0	GRAY
446.0	CARBONDALE		DARK SHALE	5.9	52.5	
440.1	CARBONDALE	BRERETON	LIMESTONE	1.5	58.4	DARK
438.6	CARBONDALE	ANNA	SHALE	15.1	59.9	
423.5	CARBONDALE	ANNA	BLACK SHALE	2.4	75.0	
421.1	CARBONDALE	ANNA	LIMESTONE	1.1	77.4	DARK
420.0	CARBONDALE	HERRIN	COAL	6.3	78.5	
413.7	CARBONDALE		UNDERCLAY	1.2	84.8	
412.5	CARBONDALE	HIGGINSVILLE	LIMESTONE & SHALE	4.5	86.0	GRAY
408.0	CARBONDALE		SANDSTONE	3.5	90.5	GRAY
404.5	CARBONDALE		CALCAREOUS SHALE	7.5	94.0	
397.0	CARBONDALE	SPRINGFIELD	COAL	0.2	101.5	
396.8	CARBONDALE		UNDERCLAY	1.3	101.7	
395.5	CARBONDALE		SANDY SHALE	7.0	103.0	

MAPID: 14502667000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 32 QUARTERS/FOOTAGES: 2615' S line, 1295' E line

QUADRANGLE: PERCY LONGITUDE: -89.56129 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.050413 DATE COLLECTED:

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 78.3 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1228 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.5	MODESTO	PIASA	LIMESTONE	6.1	21.5
442.4	CARBONDALE		GRAY SHALE	10.8	27.6
431.7	CARBONDALE	GALUM	LIMESTONE	2.8	38.3
428.9	CARBONDALE		GRAY SHALE	5.6	41.1
423.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.6	46.7
418.7	CARBONDALE	LAWSON	GRAY SHALE	1.2	51.3
417.6	CARBONDALE	LAWSON	DARK GRAY SHALE	3.2	52.4
414.4	CARBONDALE	CONANT	LIMESTONE W/ SHALE	6.0	55.6
408.4	CARBONDALE	JAMESTOWN	COAL	0.3	61.6
408.2	CARBONDALE		LIMESTONE W/ SHALE	3.9	61.8
404.2	CARBONDALE	BRERETON	LIMESTONE	4.3	65.8
399.9	CARBONDALE	ANNA	BLACK SHALE	1.6	70.1
398.3	CARBONDALE	ENERGY	GRAY SHALE	0.3	71.7
398.0	CARBONDALE	HERRIN	COAL	6.3	72.0

MAPID: 14502891000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 32 QUARTERS/FOOTAGES: 40' N line, 60' E line of SE NE

QUADRANGLE: PERCY LONGITUDE: -89.556907 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.053965 DATE COLLECTED: 3 / 19 / 1956

SURFACE ELEVATION (FT.): 458.0 LOGGED (FT.): 405.0 LOG TYPE: Plugging affidavit

SOURCE: PHILLIPS PETROLEUM CO. 1207-28 WELL TYPE: Plugged and/or Abandoned

COMMENT: PLUGGED & ABANDONED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
458.0			UNKNOWN	0.0	0.0

MAPID: 14590064000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 32 QUARTERS/FOOTAGES: 250' S line, 45' E line of SW SE SE

QUADRANGLE: PERCY LONGITUDE: -89.559343 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.04383 DATE COLLECTED: 7 / 18 / 1968

SURFACE ELEVATION (FT.): 481.5 LOGGED (FT.): 95.9 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C72K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
481.5	PLEISTOCENE		CLAY	16.0	0.0	
465.5	MODESTO	PIASA	LIMESTONE	8.0	16.0	
457.5			SHALE WITH LIMESTONE	8.8	24.0	
448.7	CARBONDALE	GALUM	LIMESTONE	3.8	32.8	TAN
444.9	CARBONDALE		SHALE WITH LIMESTONE	5.3	36.6	
439.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	41.9	TAN
435.3	CARBONDALE		GRAY SHALE	5.3	46.2	
430.0	CARBONDALE		SHALE WITH LIMESTONE	3.0	51.5	
427.0	CARBONDALE		GRAY SHALE	1.5	54.5	
425.5	CARBONDALE	JAMESTOWN	COAL	0.2	56.0	
425.3	CARBONDALE	BRERETON	LIMESTONE	6.4	56.2	DARK
418.9	CARBONDALE	ANNA	BLACK SHALE	3.5	62.6	
415.4	CARBONDALE	HERRIN	COAL	6.0	66.1	
409.4	CARBONDALE		UNDERCLAY	2.0	72.1	
407.4	CARBONDALE		GRAY SHALE	4.3	74.1	
403.1	CARBONDALE	ST. DAVID	LIMESTONE	3.5	78.4	TAN
399.6	CARBONDALE	ST. DAVID	SANDY LIMESTONE	8.9	81.9	
390.7	CARBONDALE	SPRINGFIELD	COAL	2.7	90.8	
388.0	CARBONDALE		UNDERCLAY	2.4	93.5	

MAPID: 14590065000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 32 QUARTERS/FOOTAGES: 50' S line, 75' E line of SE SE SE

QUADRANGLE: PERCY LONGITUDE: -89.557178 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.043218 DATE COLLECTED: 5 / 15 / 1968

SURFACE ELEVATION (FT.): 483.1 LOGGED (FT.): 110.1 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C69K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
483.1	PLEISTOCENE		CLAY	19.3	0.0	
463.8	MODESTO	DEGRAFF	COAL	0.5	19.3	
463.3	MODESTO		SHALE	7.4	19.8	GREEN
455.9	MODESTO	PIASA	LIMESTONE	11.3	27.2	GRAY
444.6	MODESTO		DARK GRAY SHALE	8.1	38.5	
436.5	CARBONDALE	GALUM	LIMESTONE	2.5	46.6	TAN
434.0	CARBONDALE		CALCAREOUS SHALE	6.0	49.1	
428.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	55.1	TAN
424.2	CARBONDALE		DARK SHALE	4.7	58.9	
419.5	CARBONDALE	CONANT	LIMESTONE	1.3	63.6	DARK
418.2	CARBONDALE		DARK SHALE	2.9	64.9	
415.3	CARBONDALE	JAMESTOWN	COAL	0.3	67.8	
415.0	CARBONDALE	BRERETON	SHALY LIMESTONE	5.5	68.1	DARK
409.5	CARBONDALE	BRERETON	LIMESTONE	4.5	73.6	DARK
405.0	CARBONDALE	ANNA	BLACK SHALE	2.5	78.1	
402.5	CARBONDALE	HERRIN	COAL	5.9	80.6	
396.6	CARBONDALE		UNDERCLAY	1.0	86.5	
395.6	CARBONDALE		SHALE WITH LIMESTONE	16.8	87.5	
378.8	CARBONDALE	SPRINGFIELD	COAL	3.5	104.3	
375.3	CARBONDALE		UNDERCLAY	2.3	107.8	

MAPID: 14590068000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 32 QUARTERS/FOOTAGES: 25' S line, 20' E line of SE SW SW

QUADRANGLE: PERCY LONGITUDE: -89.570671 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.043522 DATE COLLECTED: 5 / 14 / 1962

SURFACE ELEVATION (FT.): 527.7 LOGGED (FT.): 154.3 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C29K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
527.7	PLEISTOCENE		CLAY	8.0	0.0	
519.7	MODESTO		SHALE	10.0	8.0	BROWN-GRAY
509.7	MODESTO		GRAY SHALE	11.5	18.0	
498.2	MODESTO		SANDY SHALE	12.0	29.5	
486.2	MODESTO		SANDSTONE/LIMESTONE	4.5	41.5	GRAY
481.7	MODESTO		SANDSTONE/SHALE	3.3	46.0	GREEN-GRAY
478.4	MODESTO		GRAY SHALE	21.3	49.3	
457.1	MODESTO	DEGRAFF	COAL	0.3	70.6	
456.8	MODESTO		GRAY SHALE	4.3	70.9	
452.5	MODESTO	PIASA	LIMESTONE	0.5	75.2	GREEN-GRAY
452.0	MODESTO	PIASA	LIMESTONE	6.6	75.7	LIGHT GRAY
445.4			GRAY SHALE	8.5	82.3	
436.9	CARBONDALE	GALUM	LIMESTONE	3.8	90.8	GRAY
433.1	CARBONDALE		SHALE WITH LIMESTONE	4.9	94.6	
428.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.1	99.5	LIGHT GRAY
424.1	CARBONDALE		DARK GRAY SHALE	4.9	103.6	
419.2	CARBONDALE	CONANT	LIMESTONE	1.2	108.5	DARK
418.0	CARBONDALE		BLACK SHALE	4.0	109.7	
414.0	CARBONDALE	JAMESTOWN	COAL	0.2	113.7	
413.8	CARBONDALE		BLACK SHALE	6.1	113.9	
407.7	CARBONDALE	BRERETON	LIMESTONE	3.6	120.0	DARK
404.1	CARBONDALE	ANNA	BLACK SHALE	3.0	123.6	
401.1	CARBONDALE	HERRIN	COAL	5.9	126.6	
395.2	CARBONDALE		UNDERCLAY	2.4	132.5	
392.8	CARBONDALE		CALCAREOUS SHALE	5.3	134.9	
387.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.3	140.2	LIGHT GRAY
383.2	CARBONDALE		CALCAREOUS SHALE	3.0	144.5	
380.2	CARBONDALE	ST. DAVID	LIMESTONE	1.3	147.5	DARK
378.9	CARBONDALE	TURNER MINE	CALCAREOUS BLACK SHALE	0.6	148.8	
378.3	CARBONDALE	SPRINGFIELD	COAL	3.5	149.4	
374.8	CARBONDALE		UNDERCLAY	1.4	152.9	

MAPID: 14590689000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 32 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.574902 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.057972 DATE COLLECTED: 0 / 0 / 1921
 SURFACE ELEVATION (FT.): 477.0 LOGGED (FT.): 83.9 LOG TYPE: Drillers Log
 SOURCE: AYRSHIRE COLLIERIES 5 WELL TYPE: Coal Test
 COMMENT: CUTLER AMAX-DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
477.0	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
459.0			ROCK	60.0	18.0
399.0	CARBONDALE	HERRIN	COAL	5.9	78.0

MAPID: 14500345000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 28' S line, 300' E line of SE NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.55313 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.054083 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 446.8 LOGGED (FT.): 52.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. 27 WELL TYPE: Coal Test
 COMMENT: APPROX. ELEVATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.8			UNCONSOLIDATED	15.0	0.0
431.8			UNCLASSIFIED	1.7	15.0
430.1			SHALE	1.2	16.7
428.8	CARBONDALE	GALUM	UNCLASSIFIED	1.0	18.0
427.8	CARBONDALE		SHALE	4.0	19.0
423.8	CARBONDALE	BANKSTON FORK	UNCLASSIFIED	4.5	23.0
419.3	CARBONDALE		SHALE	5.0	27.5
414.3	CARBONDALE	CONANT	UNCLASSIFIED	2.0	32.5
412.3	CARBONDALE		SHALE	5.0	34.5
407.3	CARBONDALE	BRERETON	UNCLASSIFIED	6.3	39.5
401.0	CARBONDALE		SHALE	1.7	45.8
399.3	CARBONDALE	HERRIN	COAL	5.5	47.5

MAPID: 14500346000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 45' S line, 270' E line of SE NE NW

QUADRANGLE: PERCY LONGITUDE: -89.548417 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.054044 DATE COLLECTED:

SURFACE ELEVATION (FT.): 442.7 LOGGED (FT.): 48.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO 28 WELL TYPE: Coal Test

COMMENT: APPROX. ELEVATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.7			UNCONSOLIDATED	10.0	0.0
432.7	CARBONDALE		SHALE	4.0	10.0
428.7	CARBONDALE		SANDSTONE	4.5	14.0
424.2	CARBONDALE		SHALE	5.0	18.5
419.2	CARBONDALE	CONANT	LIMESTONE	2.5	23.5
416.7	CARBONDALE		SHALE	3.5	26.0
413.2	CARBONDALE	JAMESTOWN	COAL	0.3	29.5
412.9	CARBONDALE		LIMESTONE	0.7	29.8
412.2	CARBONDALE		SHALE	3.5	30.5
408.7	CARBONDALE		SHALE	3.0	34.0
405.7	CARBONDALE		UNCLASSIFIED	5.7	37.0
400.0	CARBONDALE	HERRIN	COAL	6.2	42.7

MAPID: 14500347000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 480' S line, 600' W line of SW SW NW

QUADRANGLE: PERCY LONGITUDE: -89.55465 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.051692 DATE COLLECTED:

SURFACE ELEVATION (FT.): 451.6 LOGGED (FT.): 59.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL 31 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.6			UNCONSOLIDATED	13.4	0.0
438.2			SHALE	6.1	13.4
432.1			UNCLASSIFIED	2.7	19.5
429.4			SHALE	5.7	22.2
423.7	CARBONDALE		LIMESTONE	4.2	27.9
419.5	CARBONDALE		SHALE	0.7	32.1
418.8	CARBONDALE		SHALE	3.2	32.8
415.6	CARBONDALE		UNCLASSIFIED	2.2	36.0
413.4	CARBONDALE		SHALE	1.8	38.2
411.6	CARBONDALE	JAMESTOWN	COAL	0.7	40.0
410.9	CARBONDALE		SHALE	2.7	40.7
408.2	CARBONDALE		UNCLASSIFIED	0.5	43.4
407.7	CARBONDALE	BRERETON	UNCLASSIFIED	6.6	43.9
401.1	CARBONDALE		SHALE	0.7	50.5
400.4	CARBONDALE	HERRIN	COAL	7.7	51.2

MAPID: 14500348000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 5S 4W

SECTION: 33

QUARTERS/FOOTAGES: 0' N line, 135' W line of NW SW SW

QUADRANGLE: PERCY

LONGITUDE: -89.556375

GEOLOGIST: GRAETENGER

CONFIDENTIAL: N

LATITUDE: 38.04673

DATE COLLECTED:

SURFACE ELEVATION (FT.): 469.0

LOGGED (FT.): 68.7

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
469.0			UNCONSOLIDATED	11.4	0.0
457.6			CLAYSTONE	3.1	11.4
454.5			SANDSTONE	2.5	14.5
452.0			SHALE	4.7	17.0
447.3			SHALE	1.3	21.7
446.0			SHALE	6.7	23.0
439.3	CARBONDALE	GALUM	LIMESTONE	2.9	29.7
436.4	CARBONDALE		SHALE	5.5	32.6
430.9	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	38.1
426.8	CARBONDALE		SHALE	4.2	42.2
422.5	CARBONDALE	CONANT	LIMESTONE	3.1	46.5
419.4	CARBONDALE		SHALE	2.7	49.6
416.8	CARBONDALE	JAMESTOWN	COAL	0.2	52.2
416.4	CARBONDALE		UNCLASSIFIED	0.4	52.6
416.1	CARBONDALE		SHALE	1.6	52.9
414.5	CARBONDALE		SANDSTONE	6.2	54.5
408.3	CARBONDALE		SHALE	2.4	60.7
405.9	CARBONDALE	HERRIN	COAL	5.6	63.1

MAPID: 14501912000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 0' N line, 0' W line of NW NW SE

QUADRANGLE: PERCY LONGITUDE: -89.547559 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.050237 DATE COLLECTED: 8 / 3 / 1937

SURFACE ELEVATION (FT.): LOGGED (FT.): 68.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-29 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	20.0	0.0	
-	CARBONDALE		SANDSTONE	2.0	20.0	BROWN
-	CARBONDALE		SHALE	5.0	22.0	
-	CARBONDALE		LIMESTONE	2.0	27.0	
-	CARBONDALE		BLUE SHALE	10.0	29.0	
-	CARBONDALE		LIMESTONE	3.0	39.0	
-	CARBONDALE		SANDY SHALE	5.0	42.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	47.0	
-	CARBONDALE		SHALE	1.0	52.0	
-	CARBONDALE		SHALE	3.0	53.0	BLUE
-	CARBONDALE	CONANT	LIMESTONE	3.5	56.0	
-	CARBONDALE		BLACK SHALE	2.5	59.5	
-	CARBONDALE	JAMESTOWN	COAL	0.5	62.0	
-	CARBONDALE		BLUE SHALE	3.0	62.5	
-	CARBONDALE		SHALE	2.5	65.5	

MAPID: 14501912000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 0' N line, 0' W line of NW NW SE

QUADRANGLE: PERCY LONGITUDE: -89.547559 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.050237 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY COAL 29 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			CLAYSTONE	20.0	0.0
440.0	MODESTO		SANDSTONE	2.0	20.0
438.0	MODESTO		SANDSTONE	5.0	22.0
433.0	MODESTO	PIASA	LIMESTONE	2.0	27.0
431.0	MODESTO		SHALE	10.0	29.0
421.0	CARBONDALE	GALUM	LIMESTONE	3.0	39.0
418.0	CARBONDALE		SHALE	5.0	42.0
413.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	47.0
408.0	CARBONDALE		SHALE	1.0	52.0
407.0	CARBONDALE		SHALE	3.0	53.0
404.0	CARBONDALE	CONANT	LIMESTONE	3.5	56.0
400.5	CARBONDALE		SHALE	2.5	59.5
398.0	CARBONDALE	JAMESTOWN	COAL	0.5	62.0
397.5	CARBONDALE		SHALE	3.0	62.5
394.5	CARBONDALE		SHALE	2.5	65.5

MAPID: 14501913000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 0' S line, 0' E line of SE NW NE

QUADRANGLE: PERCY LONGITUDE: -89.542865 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.05382 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): LOGGED (FT.): 67.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-30 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	19.0	0.0
-			LIMESTONE	2.0	19.0
-			GRAY SHALE	3.0	21.0
-			LIMESTONE	6.0	24.0
-			BLUE SHALE	10.0	30.0
-			LIMESTONE & SHALE	15.0	40.0 GRAY
-			BLUE SHALE	3.0	55.0
-			LIMESTONE	2.0	58.0 HARD
-			SHALE	3.0	60.0
-			CALCAREOUS SHALE	4.0	63.0

MAPID: 14501913000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 0' S line, 0' E line of SE NW NE

QUADRANGLE: PERCY LONGITUDE: -89.542865 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.05382 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 67.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY COAL 30 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			CLAYSTONE	19.0	0.0
441.0	MODESTO		LIMESTONE	2.0	19.0
439.0	MODESTO		SHALE	3.0	21.0
436.0	MODESTO	PIASA	LIMESTONE	6.0	24.0
430.0	MODESTO		SHALE	10.0	30.0
420.0	CARBONDALE	GALUM	LIMESTONE	3.0	40.0
417.0	CARBONDALE		SHALE	6.0	43.0
411.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	49.0
406.0	CARBONDALE		SHALE	1.0	54.0
405.0	CARBONDALE		SHALE	3.0	55.0
402.0	CARBONDALE	CONANT	LIMESTONE	2.0	58.0
400.0	CARBONDALE		SHALE	3.0	60.0
397.0	CARBONDALE		SHALE	3.0	63.0
394.0	CARBONDALE	BRERETON	LIMESTONE	1.0	66.0

MAPID: 14501914000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 0' N line, 1320' W line of NW NE

QUADRANGLE: PERCY LONGITUDE: -89.542787 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.057486 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): LOGGED (FT.): 63.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-31 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	20.0	0.0
-	CARBONDALE		LIMESTONE	2.0	20.0
-	CARBONDALE		SHALE	2.0	22.0
-	CARBONDALE		LIMESTONE	5.0	24.0
-	CARBONDALE		SANDY SHALE	7.0	29.0
-	CARBONDALE		LIMESTONE	3.0	36.0
-	CARBONDALE		BLUE SHALE	6.0	39.0
-	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	45.0
-	CARBONDALE		BLUE SHALE	4.0	50.0
-	CARBONDALE	CONANT	LIMESTONE	3.0	54.0
-	CARBONDALE		BLACK SHALE	2.5	57.0
-	CARBONDALE	JAMESTOWN	COAL	0.5	59.5
-	CARBONDALE		BLUE SHALE	3.0	60.0

MAPID: 14501914000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 0' N line, 1320' W line of NW NE

QUADRANGLE: PERCY LONGITUDE: -89.542787 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.057486 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 63.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY COAL 31 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			CLAYSTONE	20.0	0.0
430.0	MODESTO		LIMESTONE	2.0	20.0
428.0	MODESTO		SHALE	2.0	22.0
426.0	MODESTO	PIASA	LIMESTONE	5.0	24.0
421.0	MODESTO		SHALE	7.0	29.0
414.0	CARBONDALE	GALUM	LIMESTONE	3.0	36.0
411.0	CARBONDALE		SHALE	6.0	39.0
405.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	45.0
400.0	CARBONDALE		SHALE	4.0	50.0
396.0	CARBONDALE	CONANT	LIMESTONE	3.0	54.0
393.0	CARBONDALE		SHALE	2.5	57.0
390.5	CARBONDALE	JAMESTOWN	COAL	0.5	59.5
390.0	CARBONDALE		SHALE	3.0	60.0

MAPID: 14502663000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 30' S line, 30' W line

QUADRANGLE: PERCY LONGITUDE: -89.556812 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.043155 DATE COLLECTED:

SURFACE ELEVATION (FT.): 483.0 LOGGED (FT.): 84.1 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1225 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	MODESTO	PIASA	LIMESTONE	8.8	23.0
451.2	CARBONDALE		GRAY SHALE	9.5	31.8
441.7	CARBONDALE	GALUM	LIMESTONE	2.8	41.3
438.8	CARBONDALE		GRAY SHALE	5.8	44.2
433.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	49.9
428.8	CARBONDALE	LAWSON	GRAY SHALE	0.9	54.2
427.9	CARBONDALE	LAWSON	DARK GRAY SHALE	3.8	55.1
424.1	CARBONDALE	CONANT	LIMESTONE W/ SHALE	6.5	58.9
417.6	CARBONDALE	JAMESTOWN	COAL	0.2	65.4
417.4	CARBONDALE		DARK GRAY SHALE	6.1	65.6
411.3	CARBONDALE	BRERETON	LIMESTONE	5.3	71.7
406.1	CARBONDALE	ANNA	BLACK SHALE	1.1	76.9
405.0	CARBONDALE	HERRIN	COAL	6.1	78.0

MAPID: 14502764000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 650' S line, 2600' E line of SE

QUADRANGLE: PERCY LONGITUDE: -89.547552 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.044697 DATE COLLECTED:

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log

SOURCE: SINGER & SCHROEDER WELL TYPE: Water Injection

COMMENT: HOLE DRILLED TO PUMP OUT DEEP MINE WORKS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
470.0			UNCONSOLIDATED	14.0	0.0
456.0			UNCLASSIFIED	2.0	14.0
454.0			CLAYSTONE	13.0	16.0
441.0	MODESTO		SHALE	2.0	29.0
439.0	MODESTO	PIASA	LIMESTONE	9.0	31.0
430.0	MODESTO		CLAYSTONE	4.0	40.0
426.0	CARBONDALE	GALUM	LIMESTONE	1.5	44.0
424.5	CARBONDALE		CLAYSTONE	10.5	45.5
414.0	CARBONDALE		SHALE	5.0	56.0
409.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	61.0
404.0	CARBONDALE		SHALE	19.0	66.0
385.0	CARBONDALE	BRERETON	LIMESTONE	2.0	85.0
383.0	CARBONDALE	ANNA	SHALE	3.5	87.0
379.5	CARBONDALE	HERRIN	COAL	5.5	90.5
374.0	CARBONDALE		CLAYSTONE	6.0	96.0
368.0	CARBONDALE		SANDSTONE	8.0	102.0
360.0	CARBONDALE	ST. DAVID	LIMESTONE	4.0	110.0
356.0	CARBONDALE		UNCLASSIFIED	1.0	114.0
355.0	CARBONDALE	SPRINGFIELD	COAL	3.0	115.0
352.0			CLAYSTONE	0.0	118.0

MAPID: 14523384000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 450' S line, 430' E line of NE SE

QUADRANGLE: PERCY LONGITUDE: -89.539905 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.04767 DATE COLLECTED: 4 / 26 / 1978

SURFACE ELEVATION (FT.): 474.0 LOGGED (FT.): 82.2 LOG TYPE:

SOURCE: CONSOLIDATION COAL B. S. #4 WELL TYPE: Waste Disposal

COMMENT: DISPOSING INTO NO. 6 COAL OLD WORKS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
474.0			UNKNOWN	0.0	0.0

MAPID: 14528233000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 550' N line, 330' E line of NW NW

QUADRANGLE: PERCY LONGITUDE: -89.553191 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.056156 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 59.1 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL G119 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	8.0	0.0
432.0			CLAYSTONE	8.0	8.0
424.0			SHALE	4.5	16.0
419.5	CARBONDALE	GALUM	LIMESTONE	3.5	20.5
416.0	CARBONDALE		SHALE	5.0	24.0
411.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	29.0
407.5	CARBONDALE		SHALE	4.0	32.5
403.5	CARBONDALE	CONANT	LIMESTONE	1.7	36.5
401.8	CARBONDALE		SHALE	4.3	38.2
397.5	CARBONDALE	JAMESTOWN	COAL	0.2	42.5
397.3	CARBONDALE		SHALE	2.2	42.7
395.1	CARBONDALE	BRERETON	LIMESTONE	5.7	44.9
389.4	CARBONDALE	ENERGY	UNCLASSIFIED	1.5	50.6
387.9	CARBONDALE	ENERGY	SHALE	1.5	52.1
386.4	CARBONDALE	HERRIN	COAL	5.5	53.6

MAPID: 14528234000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 660' S line, 360' E line of SE SE NW
 QUADRANGLE: PERCY LONGITUDE: -89.548775 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.052081 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 51.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL G120 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	10.0	0.0
430.0			SHALE	3.0	10.0
427.0	CARBONDALE	GALUM	LIMESTONE	2.5	13.0
424.5	CARBONDALE		SHALE	4.5	15.5
420.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	20.0
415.5	CARBONDALE		SHALE	3.5	24.5
412.0	CARBONDALE	CONANT	LIMESTONE	0.8	28.0
411.2	CARBONDALE		SHALE	6.2	28.8
405.0	CARBONDALE	JAMESTOWN	COAL	0.3	35.0
404.7	CARBONDALE		SHALE	3.7	35.3
401.0	CARBONDALE		SHALE	4.0	39.0
397.0	CARBONDALE		SHALE	2.5	43.0
394.5	CARBONDALE	HERRIN	COAL	6.0	45.5

MAPID: 14528235000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NW NE
 QUADRANGLE: PERCY LONGITUDE: -89.545125 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.055682 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 76.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL G145 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	12.0	0.0
438.0			CLAYSTONE	6.0	12.0
432.0	MODESTO	PIASA	LIMESTONE	7.5	18.0
424.5	MODESTO		SHALE	9.0	25.5
415.5	CARBONDALE	GALUM	LIMESTONE	3.0	34.5
412.5	CARBONDALE		SHALE	6.5	37.5
406.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	44.0
402.5	CARBONDALE		SHALE	5.5	47.5
397.0	CARBONDALE	CONANT	LIMESTONE	2.0	53.0
395.0	CARBONDALE		SHALE	7.0	55.0
388.0	CARBONDALE	BRERETON	LIMESTONE	6.0	62.0
382.0	CARBONDALE		SHALE	2.5	68.0
379.5	CARBONDALE	HERRIN	COAL	6.0	70.5

MAPID: 14528236000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 660' N line, 660' E line of NE NE

QUADRANGLE: PERCY LONGITUDE: -89.540513 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.055621 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 64.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL G146 WELL TYPE: Coal Test

COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	4.0	0.0
436.0	MODESTO	PIASA	LIMESTONE	6.5	4.0
429.5	MODESTO		SHALE	2.5	10.5
427.0	CARBONDALE	DANVILLE	COAL	0.5	13.0
426.5	CARBONDALE		SHALE	7.5	13.5
419.0	CARBONDALE	GALUM	LIMESTONE	2.0	21.0
417.0	CARBONDALE		SHALE	6.0	23.0
411.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	29.0
406.5	CARBONDALE		SHALE	5.5	33.5
401.0	CARBONDALE	CONANT	LIMESTONE	1.3	39.0
399.7	CARBONDALE		SHALE	8.7	40.3
391.0	CARBONDALE	BRERETON	LIMESTONE	6.0	49.0
385.0	CARBONDALE		SHALE	3.5	55.0
381.5	CARBONDALE	HERRIN	COAL	5.7	58.5

MAPID: 14528237000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NE

QUADRANGLE: PERCY LONGITUDE: -89.540605 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.051932 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 84.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL G147 WELL TYPE: Coal Test

COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	15.0	0.0
445.0			CLAYSTONE	6.0	15.0
439.0	MODESTO	DEGRAFF	COAL	0.3	21.0
438.7	MODESTO		SHALE	6.7	21.3
432.0	MODESTO	PIASA	LIMESTONE	8.0	28.0
424.0	MODESTO		SHALE	7.5	36.0
416.5	CARBONDALE	GALUM	LIMESTONE	2.5	43.5
414.0	CARBONDALE		SHALE	5.5	46.0
408.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	51.5
404.0	CARBONDALE		SHALE	5.5	56.0
398.5	CARBONDALE	CONANT	LIMESTONE	2.5	61.5
396.0	CARBONDALE		SHALE	9.0	64.0
387.0	CARBONDALE	BRERETON	LIMESTONE	4.0	73.0
383.0	CARBONDALE		SHALE	2.0	77.0
381.0	CARBONDALE	HERRIN	COAL	5.7	79.0

MAPID: 14528343000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 650' S line, 315' E line of NE SW SE

QUADRANGLE: PERCY LONGITUDE: -89.544139 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.046468 DATE COLLECTED: 3 / 19 / 1976

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO WELL TYPE: Observation Well

COMMENT: SOIL BORING

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0			UNCONSOLIDATED	5.0	0.0
495.0			CLAYSTONE	5.0	5.0
490.0			SILTSTONE	5.0	10.0
485.0			CLAYSTONE	5.0	15.0
480.0			CLAYSTONE	5.0	20.0
475.0			CLAYSTONE	5.0	25.0
470.0			CLAYSTONE	5.0	30.0
465.0			CLAYSTONE	5.0	35.0
460.0			CLAYSTONE	0.0	40.0

MAPID: 14590398000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 55' N line, 330' E line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.553164 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.057523 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 59.2 LOG TYPE: Drillers Log
 SOURCE: OTHER G119 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
444.0			ROCK	26.6	16.0
417.4	CARBONDALE	JAMESTOWN	COAL	0.3	42.6
417.1	CARBONDALE		ROCK	10.7	42.9
406.4	CARBONDALE	HERRIN	COAL	5.5	53.6

MAPID: 14590399000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 660' S line, 360' E line of SE NW
 QUADRANGLE: PERCY LONGITUDE: -89.548775 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.052081 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 51.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G120 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
450.0			ROCK	24.3	10.0
425.7	CARBONDALE	JAMESTOWN	COAL	0.4	34.3
425.3	CARBONDALE		ROCK	10.9	34.7
414.4	CARBONDALE	HERRIN	COAL	6.0	45.6

MAPID: 14590423000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW NE
 QUADRANGLE: PERCY LONGITUDE: -89.545125 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.055682 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 85.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G145 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
442.0			ROCK	61.5	18.0
380.5	CARBONDALE	HERRIN	COAL	6.0	79.5

MAPID: 14590424000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE NE
 QUADRANGLE: PERCY LONGITUDE: -89.540513 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.055598 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 64.2 LOG TYPE: Drillers Log
 SOURCE: OTHER G146 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0	PLEISTOCENE		UNCONSOLIDATED	4.0	0.0	
436.0			ROCK	9.0	4.0	
427.0			COAL	0.5	13.0	
426.5			ROCK	45.0	13.5	
381.5	CARBONDALE	HERRIN	COAL	5.7	58.5	

MAPID: 14590425000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 33 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.540605 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.051932 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 84.7 LOG TYPE: Drillers Log
 SOURCE: OTHER G147 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.0	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0	
439.0			COAL	0.4	21.0	TOP ERODED
438.6			ROCK	57.6	21.4	
381.0	CARBONDALE	HERRIN	COAL	5.7	79.0	

MAPID: 14500006000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 0' N line, 0' E line of NW NE SE

QUADRANGLE: PERCY LONGITUDE: -89.522119 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.049759 DATE COLLECTED: 7 / 1 / 1887

SURFACE ELEVATION (FT.): 425.0 LOGGED (FT.): 344.0 LOG TYPE: Drillers Log

SOURCE: C. B. COLE WELL TYPE: Coal Test

COMMENT: LOCATION ALONG WESTSIDE GALUM CREEK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.0			UNCONSOLIDATED	17.5	0.0
407.5	CARBONDALE		SHALE	1.8	17.5
405.7	CARBONDALE	BRERETON	LIMESTONE	8.7	19.3
397.0	CARBONDALE	ANNA	SHALE	2.5	28.0
394.5	CARBONDALE	HERRIN	COAL	5.8	30.5
388.7	CARBONDALE		CLAYSTONE	1.5	36.3
387.2	CARBONDALE		LIMESTONE	1.2	37.8
385.9	CARBONDALE		SHALE	2.2	39.1
383.7	CARBONDALE		LIMESTONE	2.0	41.3
381.7	CARBONDALE		SHALE	7.8	43.3
373.8	CARBONDALE		LIMESTONE	6.6	51.2
367.3	CARBONDALE		SHALE	2.0	57.7
365.3	CARBONDALE		LIMESTONE	0.5	59.7
364.8	CARBONDALE	SPRINGFIELD	COAL	4.7	60.2
360.1	CARBONDALE		CLAYSTONE	11.1	64.9
349.0	CARBONDALE		LIMESTONE	0.7	76.0
348.3	CARBONDALE		SHALE	2.0	76.7
346.3	CARBONDALE		SHALE	40.1	78.7
306.2	CARBONDALE		SHALE	12.5	118.8
293.7	CARBONDALE		SHALE	5.2	131.3
288.4	CARBONDALE		LIMESTONE	1.3	136.6
287.1	CARBONDALE		SHALE	8.2	137.9
278.9	CARBONDALE	HOUCHIN CREEK	COAL	3.1	146.1
275.8	CARBONDALE		SILTSTONE	1.7	149.2
274.1	CARBONDALE	HOUCHIN CREEK	COAL	0.2	150.9
273.9	CARBONDALE		SHALE	2.3	151.1
271.6	CARBONDALE		SHALE	0.7	153.4
270.9	CARBONDALE		SHALE	0.8	154.1
270.1	CARBONDALE		SHALE	6.2	154.9
263.9	CARBONDALE		LIMESTONE	0.1	161.1
263.8	CARBONDALE		SHALE	13.8	161.2
250.0	CARBONDALE	MECCA QUARRY	SHALE	2.7	175.0
247.3	CARBONDALE	COLCHESTER	COAL	2.2	177.7
245.1	SPOON		SHALE	1.9	179.9
243.2	SPOON		SHALE	6.6	181.8
236.6	SPOON		LIMESTONE	0.6	188.4
236.0	SPOON		UNCLASSIFIED	0.2	189.0
235.8	SPOON		SHALE	0.7	189.2
235.1	SPOON		SHALE	3.0	189.9

232.1	SPOON			15.3	192.9
216.8	SPOON		LIMESTONE	0.2	208.2
216.6	SPOON		SHALE	9.7	208.4
206.9	SPOON	DEKOVEN	COAL	1.5	218.1
205.4	SPOON		CLAYSTONE & SHALE	0.5	219.6
204.9	SPOON		LIMESTONE	0.9	220.1
204.0	SPOON	DAVIS	COAL	2.5	221.0
201.5	SPOON		CLAYSTONE	1.6	223.5
199.9	SPOON		SHALE	0.7	225.1
199.2	SPOON		LIMESTONE	0.7	225.8
198.5	SPOON		CALCAREOUS SHALE	0.7	226.5
197.8	SPOON		SHALE	0.4	227.2
197.4	SPOON		COAL	0.7	227.6
196.7	SPOON		LIMESTONE	7.5	228.3
189.2	SPOON		SHALE	12.7	235.8
176.5	SPOON		SANDSTONE	4.5	248.5
172.0	SPOON		SHALE	1.6	253.0
170.4	SPOON		SHALE	0.3	254.6
170.1	SPOON	MURPHYSBORO	COAL	3.4	254.9
166.7	SPOON		SHALE	0.4	258.3
166.3	SPOON		SHALE	8.6	258.7
157.7	SPOON		SHALE	1.7	267.3
156.0			SHALE	5.9	269.0
150.1			UNCLASSIFIED	0.1	274.9
150.0			SHALE	0.8	275.0
149.2			UNCLASSIFIED	0.2	275.8
149.0			SHALE	6.2	276.0
142.8			COAL	1.6	282.2
141.2			SHALE	2.2	283.8
139.0			SHALE	6.7	286.0
132.3			SHALE/COAL	0.1	292.7
132.2			SHALE	5.0	292.8
127.2			COAL WITH SHALE	0.3	297.8
126.9			SHALE	28.7	298.1
98.2			SANDSTONE	1.0	326.8
97.2			UNCLASSIFIED	14.7	327.8
82.5			SANDSTONE	1.0	342.5

MAPID: 14500349000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 10' N line, 0' E line of NE NW NE

QUADRANGLE: PERCY LONGITUDE: -89.524135 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.057091 DATE COLLECTED:

SURFACE ELEVATION (FT.): 431.1 LOGGED (FT.): 45.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.1			UNCONSOLIDATED	20.6	0.0
410.5			UNCLASSIFIED	1.7	20.6
408.8	CARBONDALE		SHALE	3.7	22.3
405.1	CARBONDALE	JAMESTOWN	COAL	0.2	26.0
404.9	CARBONDALE		UNCLASSIFIED	0.3	26.2
404.6	CARBONDALE		SHALE	3.6	26.5
401.0	CARBONDALE	BRERETON	LIMESTONE	8.2	30.1
392.7	CARBONDALE	ANNA	SHALE	0.7	38.4
392.1	CARBONDALE	ANNA	SHALE	0.7	39.0
391.4	CARBONDALE	HERRIN	COAL	5.7	39.7

MAPID: 14500350000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 10' N line, 36' E line of NE NE NE

QUADRANGLE: PERCY LONGITUDE: -89.519586 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.056998 DATE COLLECTED:

SURFACE ELEVATION (FT.): 432.6 LOGGED (FT.): 57.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL 5 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.6			UNCONSOLIDATED	19.6	0.0
413.0			SAND	2.6	19.6
410.4	CARBONDALE		SHALE	1.2	22.2
409.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	23.5
404.4	CARBONDALE		SHALE	1.0	28.2
403.4	CARBONDALE		SHALE	5.2	29.2
398.3	CARBONDALE		UNCLASSIFIED	0.7	34.3
397.6	CARBONDALE		SHALE	5.2	35.0
392.4	CARBONDALE	JAMESTOWN	COAL	0.2	40.2
392.2	CARBONDALE		UNCLASSIFIED	1.7	40.4
390.4	CARBONDALE		SHALE	2.7	42.2
387.8	CARBONDALE	BRERETON	LIMESTONE	5.4	44.8
382.4	CARBONDALE	ANNA	SHALE	1.8	50.2
380.5	CARBONDALE	HERRIN	COAL	5.7	52.1

MAPID: 14500351000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 0' S line, 80' W line of SW NW NE
 QUADRANGLE: PERCY LONGITUDE: -89.528662 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.053545 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 439.1 LOGGED (FT.): 38.9 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL 6 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.1			UNCONSOLIDATED	10.2	0.0
428.9			CLAYSTONE	2.0	10.2
426.9	CARBONDALE		SHALE	4.0	12.2
422.9	CARBONDALE		UNCLASSIFIED	2.5	16.2
420.4	CARBONDALE		SHALE	3.2	18.7
417.2	CARBONDALE	JAMESTOWN	COAL	2.5	21.9
414.7	CARBONDALE	BRERETON	LIMESTONE	6.7	24.4
407.9	CARBONDALE	HERRIN	COAL	7.7	31.2

MAPID: 14500352000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 0' N line, 350' E line of NE SW NE
 QUADRANGLE: PERCY LONGITUDE: -89.525506 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.053485 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 431.6 LOGGED (FT.): 28.9 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. 7 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.6			UNCONSOLIDATED	12.6	0.0
419.0	CARBONDALE		SHALE	5.3	12.6
413.7	CARBONDALE	BRERETON	LIMESTONE	3.3	17.9
410.4	CARBONDALE	HERRIN	COAL	7.7	21.2

MAPID: 14500353000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 0' S line, 685' W line of SE SW NE

QUADRANGLE: PERCY LONGITUDE: -89.524367 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.0498 DATE COLLECTED:

SURFACE ELEVATION (FT.): 430.1 LOGGED (FT.): 33.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL 8 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.1			UNCONSOLIDATED	13.0	0.0
417.1	CARBONDALE		SHALE	3.5	13.0
413.5	CARBONDALE	JAMESTOWN	COAL WITH SHALE	3.5	16.6
410.1	CARBONDALE	BRERETON	LIMESTONE	4.8	20.0
405.3	CARBONDALE		SHALE	1.1	24.8
404.2	CARBONDALE	HERRIN	COAL	8.0	25.9

MAPID: 14500354000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 15' S line, 0' E line of SE SE NE

QUADRANGLE: PERCY LONGITUDE: -89.5198 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.049754 DATE COLLECTED:

SURFACE ELEVATION (FT.): 432.9 LOGGED (FT.): 36.3 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL 10 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.9			UNCONSOLIDATED	13.1	0.0
419.8	CARBONDALE		SHALE	6.0	13.1
413.8	CARBONDALE		LIMESTONE	3.8	19.1
410.0	CARBONDALE		SHALE	2.2	22.9
407.7	CARBONDALE	JAMESTOWN	COAL	2.2	25.2
405.5	CARBONDALE		SHALE	2.6	27.4
402.9	CARBONDALE		SHALE	0.6	30.0
402.3	CARBONDALE	HERRIN	COAL	5.7	30.6

MAPID: 14500355000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 10' N line, 65' W line of NW SE NW

QUADRANGLE: PERCY LONGITUDE: -89.533372 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.05361 DATE COLLECTED:

SURFACE ELEVATION (FT.): 432.2 LOGGED (FT.): 43.1 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL 14 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.2			UNCONSOLIDATED	12.8	0.0
419.4	CARBONDALE		SHALE	3.5	12.8
415.9	CARBONDALE		SHALE	3.2	16.3
412.7	CARBONDALE		SHALE	9.2	19.5
403.5	CARBONDALE	BRERETON	LIMESTONE	4.3	28.7
399.1	CARBONDALE	ANNA	SHALE	4.2	33.1
394.9	CARBONDALE	HERRIN	COAL	5.8	37.3

MAPID: 14501915000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 0' S line, 1320' E line of NW NW

QUADRANGLE: PERCY LONGITUDE: -89.538204 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.053733 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 462.0 LOGGED (FT.): 64.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY COAL 27 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.0			UNCONSOLIDATED	19.0	0.0
443.0	MODESTO	PIASA	LIMESTONE	9.0	19.0
434.0			SHALE	10.0	28.0
424.0	CARBONDALE	GALUM	LIMESTONE	2.0	38.0
422.0	CARBONDALE		SHALE	6.0	40.0
416.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	46.0
411.0	CARBONDALE		SHALE	5.0	51.0
406.0	CARBONDALE	CONANT	LIMESTONE	2.0	56.0
404.0	CARBONDALE		SHALE	3.5	58.0
400.5	CARBONDALE	JAMESTOWN	COAL	0.5	61.5
400.0	CARBONDALE		SHALE	2.0	62.0

MAPID: 14501916000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 0' S line, 0' E line of SE SE NE

QUADRANGLE: PERCY LONGITUDE: -89.5198 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.049713 DATE COLLECTED: 8 / 12 / 1937

SURFACE ELEVATION (FT.): 434.0 LOGGED (FT.): 40.5 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY E-24 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.0	PLEISTOCENE		CLAY	15.0	0.0
419.0	CARBONDALE	CONANT	LIMESTONE	1.0	15.0
418.0	CARBONDALE	JAMESTOWN	BLACK SHALE	6.0	16.0
412.0	CARBONDALE	BRERETON	LIMESTONE	7.5	22.0
404.5	CARBONDALE	ANNA	BLACK SHALE	2.0	29.5
402.5	CARBONDALE	ANNA	LIMESTONE	1.0	31.5
401.5	CARBONDALE	ANNA	BLACK SHALE	0.5	32.5
401.0	CARBONDALE	HERRIN	COAL	6.5	33.0
394.5	CARBONDALE		UNDERCLAY	1.0	39.5

MAPID: 14501916000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 0' S line, 0' E line of SE SE NE

QUADRANGLE: PERCY LONGITUDE: -89.5198 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.049713 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 434.0 LOGGED (FT.): 40.5 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 24 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.0			CLAYSTONE	15.0	0.0
419.0	CARBONDALE	CONANT	LIMESTONE	1.0	15.0
418.0	CARBONDALE		SHALE	6.0	16.0
412.0	CARBONDALE	BRERETON	LIMESTONE	7.5	22.0
404.5	CARBONDALE	ANNA	SHALE	2.0	29.5
402.5	CARBONDALE	ANNA	LIMESTONE	1.0	31.5
401.5	CARBONDALE	ANNA	SHALE	0.5	32.5
401.0	CARBONDALE	HERRIN	COAL	6.5	33.0
394.5	CARBONDALE		CLAYSTONE	1.0	39.5

MAPID: 14502892000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 40' S line, 30' W line of NW NW

QUADRANGLE: PERCY LONGITUDE: -89.538148 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.053843 DATE COLLECTED: 4 / 20 / 1956

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 400.0 LOG TYPE: Plugging affidavit

SOURCE: PHILLIPS PETROLEUM CO. 1207-34 WELL TYPE: Plugged and/or Abandoned

COMMENT: PLUGGED & ABANDONED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNKNOWN	0.0	0.0

MAPID: 14502894000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 36' S line, 2552' E line

QUADRANGLE: PERCY LONGITUDE: -89.529042 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.042663 DATE COLLECTED:

SURFACE ELEVATION (FT.): 481.0 LOGGED (FT.): 79.2 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAEER COAL CO JR-67-32 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
465.0	MODESTO	PIASA	LIMESTONE	6.5	16.0
458.5	MODESTO		BLACK SHALE	4.0	22.5
454.5	CARBONDALE	DANVILLE	LIMESTONE	2.5	26.5
452.0	CARBONDALE		GRAY SHALE	5.5	29.0
446.5	CARBONDALE	GALUM	LIMESTONE	2.5	34.5
444.0	CARBONDALE		GRAY SHALE	5.0	37.0
439.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.5	42.0
431.5	CARBONDALE	LAWSON	DARK GRAY SHALE	4.0	49.5
427.5	CARBONDALE	CONANT	LIMESTONE	1.5	53.5
426.0	CARBONDALE		DARK GRAY SHALE	11.5	55.0
414.5	CARBONDALE	BRERETON	LIMESTONE	5.0	66.5
409.5	CARBONDALE	ANNA	BLACK SHALE	1.0	71.5
408.0	CARBONDALE	HERRIN	COAL	6.2	73.0

MAPID: 14528238000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 200' S line, 660' E line of NE SE
 QUADRANGLE: PERCY LONGITUDE: -89.52225 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.046653 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 38.3 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL 34 WELL TYPE: Coal Test
 COMMENT: 45 - 47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
470.0			UNCONSOLIDATED	21.3	0.0
448.7	CARBONDALE		SHALE	1.8	21.3
446.9	CARBONDALE	BRERETON	LIMESTONE	8.2	23.1
438.7	CARBONDALE	ANNA	SHALE	1.5	31.3
437.2	CARBONDALE	HERRIN	COAL	5.5	32.8

MAPID: 14528239000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 150' S line, 20' W line of NE SE
 QUADRANGLE: PERCY LONGITUDE: -89.524502 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.046556 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 57.9 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL 38 WELL TYPE: Coal Test
 COMMENT: 45 - 47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			CLAYSTONE	15.3	0.0
444.7	CARBONDALE		SHALE	8.2	15.3
436.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	23.5
432.3	CARBONDALE		SHALE	6.2	27.7
426.1	CARBONDALE	CONANT	LIMESTONE	0.6	33.9
425.5	CARBONDALE		SHALE	4.0	34.5
421.5	CARBONDALE	JAMESTOWN	COAL	0.2	38.5
421.3	CARBONDALE		SHALE	10.2	38.7
411.1	CARBONDALE	BRERETON	LIMESTONE	3.2	48.9
407.9	CARBONDALE	HERRIN	COAL	5.8	52.1

MAPID: 14528240000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE SE
 QUADRANGLE: PERCY LONGITUDE: -89.522361 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.044265 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 58.8 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL 39 WELL TYPE: Coal Test
 COMMENT: 45 - 47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			CLAYSTONE	19.2	0.0
430.8	CARBONDALE	GALUM	LIMESTONE	0.5	19.2
430.3	CARBONDALE		SHALE	6.8	19.7
423.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	26.5
419.2	CARBONDALE		SHALE	6.2	30.8
413.0	CARBONDALE	CONANT	LIMESTONE	1.7	37.0
411.3	CARBONDALE		SHALE	4.0	38.7
407.3	CARBONDALE	JAMESTOWN	COAL	0.2	42.7
407.1	CARBONDALE		SHALE	2.1	42.9
405.0	CARBONDALE	BRERETON	LIMESTONE	5.7	45.0
399.3	CARBONDALE	ANNA	SHALE	2.4	50.7
396.9	CARBONDALE	HERRIN	COAL	5.7	53.1

MAPID: 14528241000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW SE
 QUADRANGLE: PERCY LONGITUDE: -89.526966 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.04435 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 60.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL 41 WELL TYPE: Coal Test
 COMMENT: 45 - 47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			CLAYSTONE	19.3	0.0
440.7	CARBONDALE	GALUM	LIMESTONE	2.1	19.3
438.6	CARBONDALE		SHALE	5.2	21.4
433.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	26.6
429.2	CARBONDALE		SHALE	7.1	30.8
422.1	CARBONDALE	CONANT	LIMESTONE	1.8	37.9
420.3	CARBONDALE		SHALE	4.1	39.7
416.2	CARBONDALE	JAMESTOWN	COAL	0.2	43.8
416.0	CARBONDALE		SHALE	4.3	44.0
411.7	CARBONDALE	BRERETON	LIMESTONE	5.6	48.3
406.1	CARBONDALE	ANNA	SHALE	1.7	53.9
404.4	CARBONDALE	HERRIN	COAL	5.0	55.6

MAPID: 14528242000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' N line, 660' E line of NE NE
 QUADRANGLE: PERCY LONGITUDE: -89.521848 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.05525 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 58.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL G99 WELL TYPE: Coal Test
 COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	11.0	0.0
429.0			CLAYSTONE	10.0	11.0
419.0	CARBONDALE		SHALE	11.0	21.0
408.0	CARBONDALE		SHALE	0.5	32.0
407.5	CARBONDALE	CONANT	LIMESTONE	1.5	32.5
406.0	CARBONDALE		SHALE	8.5	34.0
397.5	CARBONDALE		SHALE	4.0	42.5
393.5	CARBONDALE	BRERETON	LIMESTONE	6.0	46.5
387.5	CARBONDALE	HERRIN	COAL	6.0	52.5

MAPID: 14528243000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.522018 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.051578 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 39.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL G100 WELL TYPE: Coal Test
 COMMENT: 45 - 47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	16.0	0.0
424.0			CLAYSTONE	4.0	16.0
420.0	CARBONDALE		LIMESTONE	0.5	20.0
419.5	CARBONDALE		SHALE	1.5	20.5
418.0	CARBONDALE	BRERETON	LIMESTONE	8.0	22.0
410.0	CARBONDALE	ANNA	SHALE	1.0	30.0
409.0	CARBONDALE	ENERGY	UNCLASSIFIED	2.3	31.0
406.7	CARBONDALE	HERRIN	COAL	5.7	33.3

MAPID: 14528244000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 460' N line, 660' E line of SE NW

QUADRANGLE: PERCY LONGITUDE: -89.531291 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.052327 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 58.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL G102 WELL TYPE: Coal Test

COMMENT: 45 - 47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	15.0	0.0
435.0			CLAYSTONE	4.0	15.0
431.0	CARBONDALE		SHALE	4.7	19.0
426.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	23.7
422.1	CARBONDALE		SHALE	5.8	27.9
416.3	CARBONDALE	CONANT	LIMESTONE	1.7	33.7
414.6	CARBONDALE		SHALE	4.7	35.4
409.9	CARBONDALE		LIMESTONE	1.0	40.1
408.9	CARBONDALE	JAMESTOWN	COAL	0.3	41.1
408.6	CARBONDALE		SHALE	1.0	41.4
407.6	CARBONDALE	BRERETON	LIMESTONE	7.0	42.4
400.6	CARBONDALE		SHALE	1.8	49.4
398.8	CARBONDALE	HERRIN	COAL	6.7	51.2

MAPID: 14528245000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 650' S line, 475' W line of NW NE

QUADRANGLE: PERCY LONGITUDE: -89.527221 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.055313 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 39.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL G103 WELL TYPE: Coal Test

COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	8.0	0.0
452.0			UNCLASSIFIED	19.0	8.0
433.0	CARBONDALE	BRERETON	LIMESTONE	4.0	27.0
429.0	CARBONDALE		SHALE	2.0	31.0
427.0	CARBONDALE	HERRIN	COAL	6.0	33.0

MAPID: 14528246000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE NW
 QUADRANGLE: PERCY LONGITUDE: -89.53118 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.055419 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 39.9 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL G104 WELL TYPE: Coal Test
 COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	10.0	0.0
420.0			CLAYSTONE	9.0	10.0
411.0	CARBONDALE		SHALE	5.0	19.0
406.0	CARBONDALE		SHALE	3.7	24.0
402.3	CARBONDALE	BRERETON	LIMESTONE	5.7	27.7
396.6	CARBONDALE	HERRIN	COAL	6.4	33.4

MAPID: 14528247000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 650' S line, 350' E line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.534766 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.05546 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 49.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL G105 WELL TYPE: Coal Test
 COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	14.0	0.0
436.0	CARBONDALE		SHALE	2.5	14.0
433.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	16.5
429.5	CARBONDALE		SHALE	5.3	20.5
424.2	CARBONDALE	CONANT	LIMESTONE	2.2	25.8
422.0	CARBONDALE		SHALE	3.7	28.0
418.3	CARBONDALE	JAMESTOWN	COAL	0.2	31.7
418.1	CARBONDALE		SHALE	3.6	31.9
414.5	CARBONDALE	BRERETON	LIMESTONE	5.5	35.5
409.0	CARBONDALE		SHALE	2.5	41.0
406.5	CARBONDALE	HERRIN	COAL	6.0	43.5

MAPID: 14528248000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' N line, 300' W line of NW NW

QUADRANGLE: PERCY LONGITUDE: -89.537165 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.055558 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 62.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL G121 WELL TYPE: Coal Test

COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	8.0	0.0
432.0	MODESTO	PIASA	LIMESTONE	2.0	8.0
430.0	MODESTO		SHALE	9.0	10.0
421.0	MODESTO		SHALE	2.0	19.0
419.0	CARBONDALE	GALUM	LIMESTONE	2.7	21.0
416.3	CARBONDALE		SHALE	4.3	23.7
412.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	28.0
407.0	CARBONDALE		SHALE	5.0	33.0
402.0	CARBONDALE	CONANT	LIMESTONE	2.5	38.0
399.5	CARBONDALE		SHALE	7.5	40.5
392.0	CARBONDALE	BRERETON	LIMESTONE	5.5	48.0
386.5	CARBONDALE		SHALE	2.5	53.5
384.0	CARBONDALE	HERRIN	COAL	6.2	56.0

MAPID: 14528249000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' N line, 560' E line of SW NW

QUADRANGLE: PERCY LONGITUDE: -89.535609 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.051859 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 63.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL G122 WELL TYPE: Coal Test

COMMENT: 45 - 47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	15.0	0.0
415.0			CLAYSTONE	6.0	15.0
409.0	CARBONDALE		SHALE	8.0	21.0
401.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	29.0
397.0	CARBONDALE		SHALE	6.0	33.0
391.0	CARBONDALE	CONANT	LIMESTONE	1.0	39.0
390.0	CARBONDALE		SHALE	10.0	40.0
380.0	CARBONDALE	BRERETON	LIMESTONE	5.5	50.0
374.5	CARBONDALE		SHALE	1.5	55.5
373.0	CARBONDALE	HERRIN	COAL	6.8	57.0

MAPID: 1452825000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 100' S line, 150' W line of SE NE

QUADRANGLE: PERCY LONGITUDE: -89.523903 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.050068 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 45.3 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL G211 WELL TYPE: Coal Test

COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0			UNCONSOLIDATED	12.8	0.0	
407.2			LIMESTONE	1.0	12.8	
406.2			SHALE	0.3	13.8	
405.9	CARBONDALE		COAL	4.3	14.1	UNCERTAIN CORRELATION
401.6	CARBONDALE		SHALE	2.2	18.4	
399.4	CARBONDALE	CONANT	LIMESTONE	1.7	20.6	
397.7	CARBONDALE		SHALE	3.0	22.3	
394.7	CARBONDALE		SHALE	6.3	25.3	
388.4	CARBONDALE	BRERETON	LIMESTONE	4.6	31.6	
383.8	CARBONDALE		SHALE	1.6	36.2	
382.2	CARBONDALE		SHALE	1.7	37.8	
380.5	CARBONDALE		LIMESTONE	0.8	39.5	
379.7	CARBONDALE	HERRIN	COAL	4.5	40.3	
375.2	CARBONDALE		CLAYSTONE	0.5	44.8	

MAPID: 14528251000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 65' S line, 45' E line of SW NW

QUADRANGLE: PERCY LONGITUDE: -89.533863 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.050162 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 60.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL G212 WELL TYPE: Coal Test

COMMENT: 45 - 47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0			UNCONSOLIDATED	26.7	0.0	
413.3	CARBONDALE	BANKSTON FORK	LIMESTONE	3.9	26.7	
409.4	CARBONDALE		SHALE	6.1	30.6	
403.3	CARBONDALE	CONANT	LIMESTONE	1.8	36.7	
401.5	CARBONDALE		SHALE	1.9	38.5	
399.6	CARBONDALE		SHALE	6.6	40.4	
393.0	CARBONDALE	BRERETON	LIMESTONE	4.0	47.0	
389.0	CARBONDALE		SHALE	2.4	51.0	
386.6	CARBONDALE		SHALE	1.2	53.4	
385.4	CARBONDALE	HERRIN	COAL	5.7	54.6	
379.7	CARBONDALE		CLAYSTONE	0.5	60.3	

MAPID: 14528252000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 925' S line, 685' W line of SW SW NE

QUADRANGLE: PERCY LONGITUDE: -89.526592 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.052397 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 48.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	10.7	0.0
419.3			LIMESTONE	5.6	10.7
413.7			SHALE	0.6	16.3
413.1			SILTSTONE	2.8	16.9
410.3	CARBONDALE		COAL	3.3	19.7
407.0	CARBONDALE		SHALE	2.7	23.0
404.3	CARBONDALE		SHALE	1.9	25.7
402.4	CARBONDALE		SHALE	3.5	27.6
398.9	CARBONDALE		SANDSTONE	4.0	31.1
394.9	CARBONDALE		SHALE	0.6	35.1
394.3	CARBONDALE		SHALE	0.3	35.7
394.0	CARBONDALE	BRERETON	LIMESTONE	4.0	36.0
390.0	CARBONDALE	ANNA	SHALE	0.7	40.0
389.3	CARBONDALE	ANNA	SILTSTONE	1.6	40.7
387.7	CARBONDALE	HERRIN	COAL	4.9	42.3
382.8	CARBONDALE		CLAYSTONE	1.1	47.2

MAPID: 14528286000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 545' N line, 61' E line of SE SW NE

QUADRANGLE: PERCY LONGITUDE: -89.524636 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.050131 DATE COLLECTED: 3 / 19 / 1980

SURFACE ELEVATION (FT.): 435.6 LOGGED (FT.): 13.8 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL WELL TYPE: Observation Well

COMMENT: N-504,408 E-685,003

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.6			UNCONSOLIDATED	13.6	0.0
422.0			LIMESTONE	0.1	13.6

MAPID: 14528338000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 140' S line, 219' W line of SW SE SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.535252 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.050396 DATE COLLECTED: 2 / 14 / 1980
 SURFACE ELEVATION (FT.): 456.3 LOGGED (FT.): 22.0 LOG TYPE: Drillers Log
 SOURCE: CONSOLIDATION COAL CO WELL TYPE: Engineering Test Holes
 COMMENT: N-504,415.58 E-681,782.24

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
456.3			CLAYSTONE	12.8	0.0	
443.5			CLAYSTONE	5.4	12.8	
438.1			CLAYSTONE	3.8	18.2	

MAPID: 14528339000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 50' N line, 169' W line of NW NE NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.535441 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.049874 DATE COLLECTED: 2 / 14 / 1980
 SURFACE ELEVATION (FT.): 456.2 LOGGED (FT.): 23.8 LOG TYPE: Drillers Log
 SOURCE: CONSOLIDATION COAL CO WELL TYPE: Engineering Test Holes
 COMMENT: N-504261.88 E-681839.04

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
456.2			CLAYSTONE	13.5	0.0	
442.7			CLAYSTONE	4.2	13.5	
438.5			CLAYSTONE	6.1	17.7	

MAPID: 14528625000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 34 **QUARTERS/FOOTAGES:** 1556' N line, 2263' E line
QUADRANGLE: PERCY **LONGITUDE:** -89.527552 **GEOLOGIST:** J. MCBETH
CONFIDENTIAL: N **LATITUDE:** 38.052891 **DATE COLLECTED:** 7 / 14 / 1982
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 73.0 **LOG TYPE:** Other Core Study
SOURCE: CONSOLIDATION COAL JC 67-210 **WELL TYPE:** Coal Test
COMMENT: PERMIT 74; BURNING STAR #4; N-S X-SECT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0	
-	MODESTO		SHALE	6.5	17.0	
-	MODESTO	PIASA	LIMESTONE	4.0	23.5	
-	MODESTO		SHALE	1.0	27.5	
-	CARBONDALE	DANVILLE	COAL	1.5	28.5	
-	CARBONDALE		SHALE	3.0	30.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	33.0	
-	CARBONDALE		SHALE	2.5	36.5	
-	CARBONDALE	BRERETON	LIMESTONE	1.0	39.0	
-	CARBONDALE	HERRIN	COAL	6.0	40.0	
-	CARBONDALE		UNDERCLAY	3.0	46.0	
-	CARBONDALE		LIMESTONE	5.0	49.0	
-	CARBONDALE		SANDY SHALE	6.0	54.0	
-	CARBONDALE	ST. DAVID	LIMESTONE	3.0	60.0	
-	CARBONDALE	TURNER MINE	SHALE	5.0	63.0	WITH SOME LIMESTONE
-	CARBONDALE	SPRINGFIELD	COAL	4.0	68.0	
-	CARBONDALE		UNDERCLAY	1.0	72.0	

MAPID: 14590313000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 34 **QUARTERS/FOOTAGES:** 1' N line, 200' E line of NE SE
QUADRANGLE: PERCY **LONGITUDE:** -89.520499 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 38.049724 **DATE COLLECTED:** 0 / 0 / 1945
SURFACE ELEVATION (FT.): 500.0 **LOGGED (FT.):** 38.4 **LOG TYPE:** Drillers Log
SOURCE: OTHER 34 **WELL TYPE:** Coal Test
COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
500.0	PLEISTOCENE		UNCONSOLIDATED	21.4	0.0	
478.6			ROCK	11.5	21.4	
467.1	CARBONDALE	HERRIN	COAL	5.5	32.9	

MAPID: 14590318000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE SE
 QUADRANGLE: PERCY LONGITUDE: -89.522361 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.044265 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 58.8 LOG TYPE: Drillers Log
 SOURCE: OTHER 39 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	19.2	0.0
420.8			ROCK	23.6	19.2
397.2	CARBONDALE	JAMESTOWN	COAL	0.2	42.8
397.0	CARBONDALE		ROCK	10.1	43.0
386.9	CARBONDALE	HERRIN	COAL	5.8	53.1

MAPID: 14590320000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW SE
 QUADRANGLE: PERCY LONGITUDE: -89.526966 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.04435 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 85.2 LOG TYPE: Drillers Log
 SOURCE: OTHER 41 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	19.3	0.0
440.7			ROCK	49.0	19.3
391.7	CARBONDALE	JAMESTOWN	COAL	0.2	68.3
391.5	CARBONDALE		ROCK	11.7	68.5
379.8	CARBONDALE	HERRIN	COAL	5.0	80.2

MAPID: 14590378000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE NE
 QUADRANGLE: PERCY LONGITUDE: -89.521848 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.055234 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 58.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G99 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
419.0			ROCK	31.5	21.0
387.5	CARBONDALE	HERRIN	COAL	6.0	52.5

MAPID: 14590379000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.522018 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.051578 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 39.2 LOG TYPE: Drillers Log
 SOURCE: OTHER G100 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
440.0			ROCK	13.4	20.0
426.6	CARBONDALE	HERRIN	COAL	5.7	33.4

MAPID: 14590381000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 460' N line, 660' E line of SE NW
 QUADRANGLE: PERCY LONGITUDE: -89.531291 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.052327 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 58.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G102 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
421.0			ROCK	22.2	19.0
398.8	CARBONDALE	JAMESTOWN	COAL	0.2	41.2
398.6	CARBONDALE		ROCK	9.9	41.4
388.7	CARBONDALE	HERRIN	COAL	6.8	51.3

MAPID: 14590382000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 650' S line, 475' W line of NW NE
 QUADRANGLE: PERCY LONGITUDE: -89.527221 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.055313 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 39.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G103 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
413.0			ROCK	6.0	27.0
407.0	CARBONDALE	HERRIN	COAL	6.0	33.0

MAPID: 14590383000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE NW
 QUADRANGLE: PERCY LONGITUDE: -89.53118 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.055419 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 39.9 LOG TYPE: Drillers Log
 SOURCE: OTHER G104 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
441.0			ROCK	14.5	19.0
426.5	CARBONDALE	HERRIN	COAL	6.4	33.5

MAPID: 14590384000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 650' S line, 350' E line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.534766 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.05546 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 49.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G105 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0	PLEISTOCENE		UNCONSOLIDATED	14.0	0.0
466.0			ROCK	17.8	14.0
448.2	CARBONDALE	JAMESTOWN	COAL	0.3	31.8
447.9	CARBONDALE		ROCK	11.4	32.1
436.5	CARBONDALE	HERRIN	COAL	6.0	43.5

MAPID: 14590400000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' N line, 300' W line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.537165 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.055558 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 62.3 LOG TYPE: Drillers Log
 SOURCE: OTHER G121 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0
432.0			ROCK	48.0	8.0
384.0	CARBONDALE	HERRIN	COAL	6.3	56.0

MAPID: 14590401000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 660' N line, 560' E line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.535609 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.051859 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 63.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G122 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
439.0			ROCK	36.0	21.0
403.0	CARBONDALE	HERRIN	COAL	6.8	57.0

MAPID: 14590489000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 100' S line, 150' W line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.523903 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.050068 DATE COLLECTED: 11 / 23 / 1948
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 45.3 LOG TYPE: Drillers Log
 SOURCE: OTHER G211 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	12.8	0.0
427.2	MODESTO		ROCK	1.4	12.8
425.8	MODESTO		COAL	4.4	14.2
421.4	MODESTO		ROCK	21.8	18.6
399.6	CARBONDALE	DANVILLE	COAL	4.5	40.4
395.1	CARBONDALE		ROCK	0.5	44.9

MAPID: 14590490000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 65' S line, 45' E line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.533863 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.050162 DATE COLLECTED: 11 / 24 / 1948
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 60.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G212 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	26.8	0.0
433.2			ROCK	27.9	26.8
405.3	CARBONDALE	HERRIN	COAL	5.7	54.7
399.6	CARBONDALE		ROCK	0.5	60.4

MAPID: 14590491000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 34 QUARTERS/FOOTAGES: 925' S line, 685' W line of SW NE

QUADRANGLE: PERCY LONGITUDE: -89.526592 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.052397 DATE COLLECTED: 11 / 26 / 1948

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 48.3 LOG TYPE: Drillers Log

SOURCE: OTHER G213 WELL TYPE: Coal Test

COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	10.7	0.0
409.3	MODESTO		ROCK	9.0	10.7
400.3	CARBONDALE	DANVILLE	COAL	3.4	19.7
396.9	CARBONDALE		ROCK	19.2	23.1
377.7	CARBONDALE	HERRIN	COAL	4.9	42.3
372.8	CARBONDALE		ROCK	1.1	47.2

MAPID: 14500356000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 7' N line, 12' E line of NE SW NW

QUADRANGLE: PERCY LONGITUDE: -89.514805 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.053206 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 452.1 LOGGED (FT.): 66.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL #11 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.1			UNCONSOLIDATED	26.7	0.0
425.4			CLAYSTONE	6.0	26.7
419.4			SHALE	6.2	32.7
413.2			CLAYSTONE	2.6	38.9
410.6			CONCRETION	2.6	41.5
408.0			UNCLASSIFIED	3.2	44.1
404.8	CARBONDALE		SHALE	7.0	47.3
397.8	CARBONDALE	BRERETON	LIMESTONE	5.7	54.3
392.1	CARBONDALE	HERRIN	COAL	6.5	60.0

MAPID: 14500357000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 12' S line, 10' E line of SE SW NE

QUADRANGLE: PERCY LONGITUDE: -89.505187 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.049361 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 452.1 LOGGED (FT.): 82.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO #16 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.1			UNCONSOLIDATED	24.3	0.0
427.8			SHALE	17.0	24.3
410.8			SHALE	4.9	41.3
405.9			SAND	12.2	46.2
393.7			SHALE	13.2	58.4
380.5			SHALE	5.7	71.6
374.9			SHALE	1.7	77.2
373.2			SHALE	3.0	78.9
370.2			COAL	0.6	81.9

MAPID: 14500358000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 0' E line of SE SE SE

QUADRANGLE: PERCY LONGITUDE: -89.500481 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.042023 DATE COLLECTED: 4 / 13 / 1920

SURFACE ELEVATION (FT.): 454.7 LOGGED (FT.): 106.0 LOG TYPE: Drillers Log

SOURCE: SOUTHERN GEM COAL CORP. 2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
454.7			CLAYSTONE	16.0	0.0
438.7			CLAYSTONE	20.0	16.0
418.7			SAND	59.3	36.0
359.4	CARBONDALE	BRERETON	LIMESTONE	2.7	95.3
356.7	CARBONDALE	ANNA	SHALE	0.7	98.0
356.0	CARBONDALE	HERRIN	COAL	5.5	98.7
350.5	CARBONDALE	HERRIN	UNCLASSIFIED	0.1	104.2
350.4	CARBONDALE	HERRIN	COAL	0.7	104.3
349.7	CARBONDALE		CLAYSTONE	1.0	105.0

MAPID: 14500359000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 400' S line, 45' E line of SE SE
 QUADRANGLE: PERCY LONGITUDE: -89.500606 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.04313 DATE COLLECTED: 4 / 15 / 1920
 SURFACE ELEVATION (FT.): 454.1 LOGGED (FT.): 100.0 LOG TYPE: Drillers Log
 SOURCE: SOUTHERN GEM COAL CORP. 3 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
454.1			CLAY	47.0	0.0	
407.1			SAND	45.3	47.0	
361.8			SAND & GRAVEL	0.5	92.3	
361.3			SAND	2.9	92.8	
358.4			CLAY	1.7	95.7	
356.6			COAL	1.5	97.5	TOP OF COAL ERODED
355.1			CLAYSTONE	1.0	99.0	

MAPID: 14501917000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 0' E line of SE SW SW
 QUADRANGLE: PERCY LONGITUDE: -89.515229 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.042309 DATE COLLECTED: 0 / 0 / 1937
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 59.6 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 20 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
430.0			CLAYSTONE	34.0	0.0	
396.0	CARBONDALE		SHALE	3.5	34.0	
392.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	37.5	
388.0	CARBONDALE		SHALE	12.2	42.0	
375.8	CARBONDALE		SHALE	1.0	54.2	
374.8	CARBONDALE		SHALE	1.0	55.2	
373.8	CARBONDALE	JAMESTOWN	COAL	1.4	56.2	
372.4	CARBONDALE		CLAYSTONE	2.0	57.6	

MAPID: 14501918000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 0' E line of SE NE

QUADRANGLE: PERCY LONGITUDE: -89.500268 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.049198 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 453.7 LOGGED (FT.): 69.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 21 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.7			CLAYSTONE	35.0	0.0
418.7			SAND	10.0	35.0
408.7			SHALE	2.0	45.0
406.7			LIMESTONE	7.0	47.0
399.7			SHALE	4.5	54.0
395.2			LIMESTONE	1.5	58.5
393.7			SHALE	8.0	60.0
385.7			UNCLASSIFIED	1.0	68.0

MAPID: 14501919000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 0' E line of SE NW

QUADRANGLE: PERCY LONGITUDE: -89.510036 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.049457 DATE COLLECTED: 8 / 8 / 1937

SURFACE ELEVATION (FT.): 453.5 LOGGED (FT.): 69.5 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 22-E WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.5	PLEISTOCENE		CLAY	25.0	0.0
428.5			SHALE	17.0	25.0
411.5			LIMESTONE	2.0	42.0
409.5			BLUE SHALE	5.0	44.0
404.5			LIMESTONE	9.0	49.0
395.5			BLACK SHALE	1.5	58.0
394.0			CONCRETION	2.0	59.5
392.0			BLACK SHALE	7.5	61.5
384.5			CONCRETION	0.5	69.0

MAPID: 14501919000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 0' E line of SE NW

QUADRANGLE: PERCY LONGITUDE: -89.510036 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.049457 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 453.4 LOGGED (FT.): 69.5 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 22 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.4			CLAYSTONE	25.0	0.0
428.4			SILTSTONE	17.0	25.0
411.4			LIMESTONE	2.0	42.0
409.4			SHALE	5.0	44.0
404.4			LIMESTONE	9.0	49.0
395.4			SHALE	1.5	58.0
393.9			UNCLASSIFIED	2.0	59.5
391.9			SHALE	7.5	61.5
384.4			UNCLASSIFIED	0.5	69.0

MAPID: 14501920000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 660' E line of SE NW

QUADRANGLE: PERCY LONGITUDE: -89.512336 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.049518 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 431.1 LOGGED (FT.): 59.2 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 23 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.1			CLAYSTONE	14.0	0.0
417.1	CARBONDALE	GALUM	LIMESTONE	1.5	14.0
415.6	CARBONDALE		SHALE	5.5	15.5
410.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	21.0
405.6	CARBONDALE		SHALE	5.5	25.5
400.1	CARBONDALE	CONANT	LIMESTONE	1.0	31.0
399.1	CARBONDALE		SHALE	5.5	32.0
393.6	CARBONDALE	JAMESTOWN	COAL	0.5	37.5
393.1	CARBONDALE		SHALE	7.0	38.0
386.1	CARBONDALE		UNCLASSIFIED	2.0	45.0
384.1	CARBONDALE	BRERETON	LIMESTONE	5.0	47.0
379.1	CARBONDALE	ANNA	SHALE	0.5	52.0
378.6	CARBONDALE	HERRIN	COAL	5.7	52.5
372.9	CARBONDALE		CLAYSTONE	1.0	58.2

MAPID: 14501921000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 1320' E line of NW SW

QUADRANGLE: PERCY LONGITUDE: -89.519677 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.046052 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 428.2 LOGGED (FT.): 42.5 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 25 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.2			CLAYSTONE	20.5	0.0
407.7	CARBONDALE		LIMESTONE	5.0	20.5
402.7	CARBONDALE		SHALE	2.0	25.5
400.7	CARBONDALE	BRERETON	LIMESTONE	6.5	27.5
394.2	CARBONDALE		SHALE	3.0	34.0
391.2	CARBONDALE	ANNA	SHALE	1.0	37.0
390.2	CARBONDALE	HERRIN	COAL	3.5	38.0
386.7	CARBONDALE		CLAYSTONE	1.0	41.5

MAPID: 14501922000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 0' E line of NW SW

QUADRANGLE: PERCY LONGITUDE: -89.515073 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.045948 DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.): 453.6 LOGGED (FT.): 57.7 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 26 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.6			CLAYSTONE	24.0	0.0
429.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	24.0
427.1	CARBONDALE		SHALE	3.5	26.5
423.6	CARBONDALE	CONANT	LIMESTONE	2.0	30.0
421.6	CARBONDALE		SHALE	4.0	32.0
417.6	CARBONDALE	JAMESTOWN	COAL	0.5	36.0
417.1	CARBONDALE		SHALE	6.5	36.5
410.6	CARBONDALE	BRERETON	LIMESTONE	7.0	43.0
403.6	CARBONDALE	ANNA	SHALE	0.5	50.0
403.1	CARBONDALE	HERRIN	COAL	6.2	50.5
396.9	CARBONDALE		CLAYSTONE	1.0	56.7

MAPID: 14501965000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 0' E line of NW NW

QUADRANGLE: PERCY LONGITUDE: -89.514763 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.053222 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 30.5 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL CO. 8 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
419.5			COAL	0.0	30.5

MAPID: 14502210000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 0' W line of SW

QUADRANGLE: PERCY LONGITUDE: -89.520144 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.042402 DATE COLLECTED: 0 / 0 / 1900

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 337.5 LOG TYPE: Drillers Log

SOURCE: DONK BROTHERS COAL & COKE WELL TYPE: Coal Test

COMMENT: QUESTIONABLE LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
422.5	CARBONDALE		SHALE	1.8	17.5
420.7	CARBONDALE	BRERETON	LIMESTONE	8.7	19.3
412.0	CARBONDALE	ANNA	SHALE	2.5	28.0
409.5	CARBONDALE	HERRIN	COAL	5.8	30.5
403.7	CARBONDALE		CLAYSTONE	1.5	36.3
402.2	CARBONDALE		LIMESTONE	1.2	37.8
401.0	CARBONDALE		SHALE	2.2	39.0
398.8	CARBONDALE		LIMESTONE	2.0	41.2
396.8	CARBONDALE		SHALE	7.8	43.2
389.0	CARBONDALE	ST. DAVID	LIMESTONE	6.6	51.0
382.4	CARBONDALE		SHALE	5.0	57.6
377.4	CARBONDALE		LIMESTONE	0.5	62.6
376.9	CARBONDALE	SPRINGFIELD	COAL	4.7	63.1
372.2	CARBONDALE		CLAYSTONE	11.1	67.8
361.1	CARBONDALE		LIMESTONE	0.7	78.9
360.4	CARBONDALE		SHALE	2.0	79.6
358.4	CARBONDALE		SHALE	52.5	81.6
305.9	CARBONDALE		SHALE	5.3	134.1
300.6	CARBONDALE	HANOVER	LIMESTONE	1.4	139.4
299.2	CARBONDALE	EXCELLO	SHALE	8.2	140.8
291.0	CARBONDALE	HOUCHIN CREEK	COAL	3.1	149.0
287.9	CARBONDALE		SHALE	1.7	152.1
286.2	CARBONDALE		COAL	0.2	153.8
286.0	CARBONDALE		SHALE	2.3	154.0
283.7	CARBONDALE		SHALE	0.7	156.3
283.0	CARBONDALE		SHALE	0.8	157.0
282.2	CARBONDALE		SHALE	6.2	157.8
282.2	CARBONDALE		LIMESTONE	164.0	157.8
275.9	CARBONDALE		SHALE	13.8	164.1
262.1	CARBONDALE	MECCA QUARRY	SHALE	2.7	177.9
259.9	CARBONDALE	COLCHESTER	COAL	2.2	180.1
257.7	SPOON		SHALE	8.5	182.3
249.2	SPOON		LIMESTONE	0.7	190.8
248.5	SPOON		SHALE & SANDSTONE	3.7	191.5
244.8	SPOON		SHALE	15.3	195.2
229.5	SPOON		SHALE	9.7	210.5
219.8	SPOON	DEKOVEN	COAL	1.5	220.2
218.3	SPOON		SHALE	0.5	221.7
217.8	SPOON		LIMESTONE	0.9	222.2

216.9	SPOON	DAVIS	COAL	2.5	223.1
214.4	SPOON		CLAYSTONE	1.6	225.6
212.8	SPOON		SHALE	0.7	227.2
212.1	SPOON		LIMESTONE	0.7	227.9
211.4	SPOON		SHALE	0.7	228.6
210.7	SPOON		SHALE	0.4	229.3
210.3	SPOON		COAL	0.7	229.7
209.6	SPOON		SHALE	7.5	230.4
202.1	SPOON		SHALE	12.7	237.9
189.4	SPOON		SANDSTONE	4.5	250.6
184.9	SPOON		SHALE	1.9	255.1
183.0	SPOON	MURPHYSBORO	COAL	3.4	257.0
179.6	SPOON		SHALE	0.4	260.4
179.2	SPOON		SHALE	8.6	260.8
170.6	SPOON		SHALE	2.2	269.4
168.4	SPOON		SHALE	13.4	271.6
155.0	SPOON		COAL	1.6	285.0
153.4	SPOON		SHALE	2.2	286.6
151.2	SPOON		SHALE	6.8	288.8
144.4	SPOON		SHALE	5.4	295.6
139.0			SHALE	28.7	301.0
110.3			SANDSTONE	15.7	329.7
94.6			CONGLOMERATE	1.0	345.4

MAPID: 14502630000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 330' N line, 330' E line of NE NE

QUADRANGLE: PERCY

LONGITUDE: -89.501235

GEOLOGIST: GRAETENGER

CONFIDENTIAL: N

LATITUDE: 38.055501

DATE COLLECTED: 6 / 10 / 1960

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 1484.0

LOG TYPE: Drillers Log

SOURCE: E. F. MORAN, INC. 1

WELL TYPE: Plugged and/or Abandoned

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			CLAYSTONE	15.0	0.0
435.0			SAND	76.0	15.0
359.0			SHALE	8.0	91.0
351.0			SHALE	21.0	99.0
330.0			COAL	4.0	120.0
326.0			SAND	56.0	124.0
270.0			COAL	4.0	180.0
266.0			SAND	61.0	184.0
205.0			COAL	5.0	245.0

MAPID: 14502668000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 20' N line, 0' E line of NW SE

QUADRANGLE: PERCY LONGITUDE: -89.505155 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.049273 DATE COLLECTED: 4 / 28 / 1961

SURFACE ELEVATION (FT.): 451.4 LOGGED (FT.): 82.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1233 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.4	PLEISTOCENE		UNCONSOLIDATED	40.5	0.0
410.9	PLEISTOCENE		SAND & GRAVEL	2.0	40.5
408.9	PLEISTOCENE		UNCONSOLIDATED	2.3	42.5
406.6	CARBONDALE		GRAY SHALE	3.5	44.8
403.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	48.3
399.0	CARBONDALE		GRAY SHALE	1.2	52.4
397.8	CARBONDALE		DARK SHALE	5.8	53.6
392.0	CARBONDALE	CONANT	LIMESTONE	1.8	59.4
390.1	CARBONDALE		DARK SHALE	3.2	61.3
387.0	CARBONDALE		BLACK SHALE	0.3	64.4
386.7	CARBONDALE	JAMESTOWN	COAL	0.3	64.7
386.5	CARBONDALE		LIMESTONE	0.9	64.9
385.6	CARBONDALE		DARK SHALE	2.8	65.8
382.7	CARBONDALE	BRERETON	LIMESTONE	2.8	68.7
380.0	CARBONDALE	ANNA	BLACK SHALE	2.1	71.4
377.9	CARBONDALE	ANNA	DARK SHALE	1.3	73.5
376.6	CARBONDALE	HERRIN	COAL	6.3	74.8
370.3	CARBONDALE		UNDERCLAY	0.8	81.1

MAPID: 14502669000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 35' N line, 10' W line of NW SE

QUADRANGLE: PERCY LONGITUDE: -89.510004 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.049358 DATE COLLECTED: 0 / 0 / 1961

SURFACE ELEVATION (FT.): 451.3 LOGGED (FT.): 84.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1232 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.3	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
423.3	PLEISTOCENE		SAND & GRAVEL	4.5	28.0
418.8	PLEISTOCENE		UNCONSOLIDATED	4.3	32.5
414.5	CARBONDALE		GRAY SHALE	4.1	36.8
410.4	CARBONDALE	GALUM	LIMESTONE	2.5	40.9
407.9	CARBONDALE		GRAY SHALE	5.6	43.4
402.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	49.0
397.5	CARBONDALE		GRAY SHALE	1.1	53.8
396.4	CARBONDALE		DARK SHALE	5.3	54.9
391.1	CARBONDALE	CONANT	LIMESTONE	1.4	60.2
389.7	CARBONDALE		DARK SHALE	3.7	61.6
386.0	CARBONDALE		BLACK SHALE	0.3	65.3
385.8	CARBONDALE	JAMESTOWN	COAL	0.3	65.5
385.5	CARBONDALE		LIMESTONE	0.8	65.8
384.7	CARBONDALE		DARK SHALE	1.7	66.6
383.0	CARBONDALE	BRERETON	LIMESTONE	6.5	68.3
376.5	CARBONDALE	ANNA	GRAY SHALE	0.3	74.8
376.2	CARBONDALE	ANNA	BLACK SHALE	1.9	75.1
374.3	CARBONDALE	HERRIN	COAL	6.0	77.0
368.3	CARBONDALE		UNDERCLAY	1.0	83.0

MAPID: 14502671000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 1' N line, 653' E line of SE

QUADRANGLE: PERCY LONGITUDE: -89.502547 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.049256 DATE COLLECTED: 9 / 1 / 1961

SURFACE ELEVATION (FT.): 449.2 LOGGED (FT.): 94.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1248 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.2	PLEISTOCENE		UNCONSOLIDATED	42.9	0.0
406.3	PLEISTOCENE		GRAVEL	1.4	42.9
404.9	PLEISTOCENE		UNCONSOLIDATED	2.2	44.3
402.7	PLEISTOCENE		GRAVEL	1.8	46.5
400.9	CARBONDALE		GRAY SHALE	3.0	48.3
397.9	CARBONDALE	GALUM	LIMESTONE	2.4	51.3
395.4	CARBONDALE		GRAY SHALE	4.8	53.8
390.7	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	58.5
386.0	CARBONDALE		GRAY SHALE	1.7	63.2
384.4	CARBONDALE		DARK GRAY SHALE	4.8	64.8
379.5	CARBONDALE	CONANT	LIMESTONE	1.5	69.7
378.0	CARBONDALE		BLACK SHALE	4.0	71.2
374.0	CARBONDALE	JAMESTOWN	COAL	0.2	75.2
373.9	CARBONDALE		LIMESTONE	0.4	75.3
373.4	CARBONDALE		DARK SHALE	4.4	75.8
369.0	CARBONDALE	BRERETON	LIMESTONE	5.3	80.2
363.7	CARBONDALE	ANNA	BLACK SHALE	1.4	85.5
362.3	CARBONDALE	ENERGY	GRAY SHALE	0.3	86.9
362.0	CARBONDALE	HERRIN	COAL	6.2	87.2
355.9	CARBONDALE		UNDERCLAY	0.7	93.3

MAPID: 14502677000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 1' N line, 660' W line of SE SE

QUADRANGLE: PERCY LONGITUDE: -89.502973 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.045667 DATE COLLECTED: 5 / 4 / 1961

SURFACE ELEVATION (FT.): 450.4 LOGGED (FT.): 101.5 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1234 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.4	PLEISTOCENE		UNCONSOLIDATED	30.5	0.0	
419.9	PLEISTOCENE		SAND & GRAVEL	0.5	30.5	
419.4	PLEISTOCENE		UNCONSOLIDATED	13.3	31.0	
406.1	PLEISTOCENE		GRAVEL	1.3	44.3	
404.9	PLEISTOCENE		UNCONSOLIDATED	2.4	45.5	
402.5	PLEISTOCENE		BOULDER	5.6	47.9	
396.9	PLEISTOCENE		UNCONSOLIDATED	9.3	53.5	
387.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	62.8	DISCREPANCY IN THICKNESS&UNDLYING
384.1	CARBONDALE		GRAY SHALE	7.6	66.3	
376.5	CARBONDALE	CONANT	LIMESTONE	1.6	73.9	
374.9	CARBONDALE		DARK SHALE	3.6	75.5	
371.3	CARBONDALE		BLACK SHALE	0.2	79.1	
371.1	CARBONDALE	JAMESTOWN	COAL	0.3	79.3	
370.9	CARBONDALE		LIMESTONE	0.6	79.5	
370.3	CARBONDALE		DARK SHALE	7.3	80.1	
363.1	CARBONDALE	BRERETON	LIMESTONE	7.3	87.3	
355.7	CARBONDALE	ENERGY	GRAY SHALE	0.3	94.7	
355.5	CARBONDALE	HERRIN	COAL	6.0	94.9	
349.5	CARBONDALE		UNDERCLAY	0.6	100.9	

MAPID: 14502833000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 97' S line, 227' E line

QUADRANGLE: PERCY LONGITUDE: -89.501266 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.042308 DATE COLLECTED:

SURFACE ELEVATION (FT.): 458.0 LOGGED (FT.): 93.5 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO JR-67-9 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
376.8	CARBONDALE	BRERETON	LIMESTONE	5.0	81.2	
371.8	CARBONDALE	ANNA	BLACK SHALE	1.5	86.2	
370.3	CARBONDALE	ENERGY	DARK GRAY SHALE	0.3	87.7	
370.0	CARBONDALE	HERRIN	COAL	5.5	88.0	

MAPID: 14528253000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 0' W line of SW NW SW

QUADRANGLE: PERCY LONGITUDE: -89.519974 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.046057 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 43.1 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL 35 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	8.0	0.0
412.0			CLAYSTONE	5.0	8.0
407.0			SHALE	3.0	13.0
404.0	CARBONDALE	DANVILLE	COAL	4.0	16.0
400.0	CARBONDALE		CLAYSTONE	1.5	20.0
398.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.1	21.5
394.4	CARBONDALE		SHALE	10.9	25.6
383.5	CARBONDALE	BRERETON	LIMESTONE	1.7	36.5
381.8	CARBONDALE	ANNA	SHALE	0.4	38.2
381.4	CARBONDALE	HERRIN	COAL	4.5	38.6

MAPID: 14528254000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 0' S line, 0' E line of SE NW SW

QUADRANGLE: PERCY LONGITUDE: -89.515073 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.045948 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 48.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL 36 WELL TYPE: Coal Test

COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	21.0	0.0
419.0			UNCLASSIFIED	1.1	21.0
417.9			CLAYSTONE	3.2	22.1
414.7			UNCLASSIFIED	1.9	25.3
412.8			CLAYSTONE	3.0	27.2
409.8			UNCLASSIFIED	1.3	30.2
408.5	CARBONDALE		SHALE	5.7	31.5
402.8	CARBONDALE		SHALE	5.7	37.2
397.1	CARBONDALE	BRERETON	LIMESTONE	4.4	42.9
392.7	CARBONDALE	HERRIN	COAL	-	47.3 HIT OLD WORKS

MAPID: 14528255000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 660' S line, 0' E line of SE NE SW
 QUADRANGLE: PERCY LONGITUDE: -89.510105 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.047655 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 64.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL 37 WELL TYPE: Coal Test
 COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			CLAYSTONE	27.8	0.0
422.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	27.8
418.0	CARBONDALE		SHALE	7.7	32.0
410.3	CARBONDALE		SHALE	5.6	39.7
404.7	CARBONDALE	JAMESTOWN	COAL	0.3	45.3
404.4	CARBONDALE		SHALE	5.8	45.6
399.0	CARBONDALE	BRERETON	LIMESTONE	5.7	51.0
393.3	CARBONDALE	ENERGY	UNCLASSIFIED	1.6	56.7
391.7	CARBONDALE	HERRIN	COAL	5.7	58.3

MAPID: 14528256000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW SW
 QUADRANGLE: PERCY LONGITUDE: -89.517453 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.044172 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 44.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL 60 WELL TYPE: Coal Test
 COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	12.2	0.0
427.8	CARBONDALE		SHALE	5.0	12.2
422.8	CARBONDALE	BRERETON	LIMESTONE	5.4	17.2
417.4	CARBONDALE	ANNA	SHALE	1.9	22.6
415.5	CARBONDALE	HERRIN	COAL	7.0	24.5
408.5	CARBONDALE		CLAYSTONE	1.6	31.5
406.9	CARBONDALE		SHALE	3.4	33.1
403.5	CARBONDALE		SHALE	7.5	36.5

MAPID: 14528257000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE SW

QUADRANGLE: PERCY LONGITUDE: -89.512545 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.044079 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 55.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL 59 WELL TYPE: Coal Test

COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	14.5	0.0
405.5			CLAYSTONE	6.2	14.5
399.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.1	20.7
397.2	CARBONDALE		SHALE	6.1	22.8
391.1	CARBONDALE	CONANT	LIMESTONE	1.1	28.9
390.0	CARBONDALE		SHALE	4.7	30.0
385.3	CARBONDALE	JAMESTOWN	COAL	0.2	34.7
385.1	CARBONDALE		SHALE	1.4	34.9
383.7	CARBONDALE	BRERETON	LIMESTONE	5.1	36.3
378.6			SHALE	2.4	41.4
376.2			UNCLASSIFIED	5.0	43.8
371.2			COAL	6.7	48.8

MAPID: 14528258000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW SW

QUADRANGLE: PERCY LONGITUDE: -89.517297 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.047819 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 33.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL 61 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	19.0	0.0
431.0	CARBONDALE	BRERETON	LIMESTONE	4.1	19.0
426.9	CARBONDALE		UNCLASSIFIED	1.0	23.1
425.9	CARBONDALE	ANNA	SHALE	2.9	24.1
423.0	CARBONDALE	HERRIN	COAL	6.7	27.0

MAPID: 14528259000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 25' N line, 50' W line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.519459 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.053296 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 63.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL G98 WELL TYPE: Coal Test
 COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	10.0	0.0
430.0			CLAYSTONE	5.0	10.0
425.0			SAND	6.0	15.0
419.0	CARBONDALE		SHALE	14.0	21.0
405.0	CARBONDALE		SHALE	3.5	35.0
401.5	CARBONDALE	CONANT	LIMESTONE	1.0	38.5
400.5	CARBONDALE		SHALE	5.3	39.5
395.2	CARBONDALE	JAMESTOWN	COAL	0.2	44.8
395.0	CARBONDALE		SHALE	2.0	45.0
393.0	CARBONDALE	BRERETON	LIMESTONE	7.0	47.0
386.0	CARBONDALE		SHALE	3.0	54.0
383.0	CARBONDALE	HERRIN	COAL	6.0	57.0

MAPID: 14528260000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 650' S line, 500' W line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.517975 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.051461 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 48.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL G101 WELL TYPE: Coal Test
 COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	17.0	0.0
423.0			CLAYSTONE	12.0	17.0
411.0	CARBONDALE		SHALE	4.0	29.0
407.0	CARBONDALE	BRERETON	LIMESTONE	5.5	33.0
401.5	CARBONDALE		SHALE	2.0	38.5
399.5	CARBONDALE	ENERGY	UNCLASSIFIED	2.0	40.5
397.5	CARBONDALE	HERRIN	COAL	5.7	42.5

MAPID: 14528261000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 675' S line, 600' W line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.517452 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.055168 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 87.3 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL 214 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	40.0	0.0
410.0			CLAYSTONE	13.5	40.0
396.5	CARBONDALE		SHALE	5.1	53.5
391.4	CARBONDALE		SHALE	5.2	58.6
386.2	CARBONDALE	JAMESTOWN	COAL	0.2	63.8
386.0	CARBONDALE		SHALE	7.1	64.0
378.9	CARBONDALE	BRERETON	LIMESTONE	3.2	71.1
375.7	CARBONDALE	ENERGY	SHALE	3.0	74.3
372.7	CARBONDALE	ENERGY	SHALE	4.0	77.3
368.7	CARBONDALE	HERRIN	COAL	5.5	81.3
363.2	CARBONDALE		CLAYSTONE	0.7	86.8

MAPID: 14590314000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.519971 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.04606 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 43.1 LOG TYPE: Drillers Log
 SOURCE: OTHER 35 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0
407.0			ROCK	3.0	13.0
404.0			COAL	4.0	16.0
400.0			ROCK	18.6	20.0
381.4	CARBONDALE	HERRIN	COAL	4.5	38.6

MAPID: 14590315000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 1' S line, 1' E line of NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.515076 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.049454 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 48.4 LOG TYPE: Drillers Log
 SOURCE: OTHER 36 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	31.5	0.0
408.5			ROCK	16.9	31.5

MAPID: 14590316000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE SW
 QUADRANGLE: PERCY LONGITUDE: -89.510039 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.049454 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 64.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 37 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	27.8	0.0
412.2			ROCK	17.5	27.8
394.7	CARBONDALE	JAMESTOWN	COAL	0.4	45.3
394.3	CARBONDALE		ROCK	13.0	45.7
381.3	CARBONDALE	HERRIN	COAL	5.8	58.7

MAPID: 14590317000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 150' S line, 20' W line of NE SE
 QUADRANGLE: PERCY LONGITUDE: -89.50519 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.046136 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 58.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 38 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	15.3	0.0
444.7			ROCK	23.4	15.3
421.3	CARBONDALE	JAMESTOWN	COAL	0.2	38.7
421.1	CARBONDALE		ROCK	13.3	38.9
407.8	CARBONDALE	HERRIN	COAL	5.8	52.2

MAPID: 14590338000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE SW
 QUADRANGLE: PERCY LONGITUDE: -89.512545 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.044079 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 56.4 LOG TYPE: Drillers Log
 SOURCE: OTHER 59 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	20.7	0.0
399.3			ROCK	14.2	20.7
385.1	CARBONDALE	JAMESTOWN	COAL	0.2	34.9
384.9	CARBONDALE		ROCK	14.7	35.1
370.2	CARBONDALE	HERRIN	COAL	6.7	49.8

MAPID: 14590339000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW SW
 QUADRANGLE: PERCY LONGITUDE: -89.517453 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.044172 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 44.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 60 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	12.2	0.0
407.8			ROCK	12.3	12.2
395.5	CARBONDALE	HERRIN	COAL	7.0	24.5
388.5	CARBONDALE		ROCK	12.5	31.5

MAPID: 14590340000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.517297 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.047819 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 33.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 61 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
421.0			ROCK	8.0	19.0
413.0	CARBONDALE	HERRIN	COAL	6.5	27.0

MAPID: 14590377000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 25' N line, 50' W line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.519459 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.053296 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 63.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G98 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
439.0			ROCK	23.9	21.0
415.1	CARBONDALE	JAMESTOWN	COAL	0.2	44.9
414.9	CARBONDALE		ROCK	11.9	45.1
403.0	CARBONDALE	HERRIN	COAL	6.0	57.0

MAPID: 14590380000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 650' S line, 500' W line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.517975 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.051461 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 48.2 LOG TYPE: Drillers Log
 SOURCE: OTHER G101 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0
411.0			ROCK	13.5	29.0
397.5	CARBONDALE	HERRIN	COAL	5.7	42.5

MAPID: 14590492000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 675' S line, 600' W line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.517452 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.055168 DATE COLLECTED: 11 / 29 / 1948
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 87.3 LOG TYPE: Drillers Log
 SOURCE: OTHER G214 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	53.5	0.0
406.5			ROCK	10.3	53.5
396.2	CARBONDALE	JAMESTOWN	COAL	0.2	63.8
396.0	CARBONDALE		ROCK	17.2	64.0
378.8	CARBONDALE	HERRIN	COAL	5.5	81.2
373.3	CARBONDALE		ROCK	0.7	86.7

MAPID: 14590687000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.510036

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.049457

DATE COLLECTED: 0 / 0 / 1921

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 96.7

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE COLLIERIES 2

WELL TYPE: Coal Test

COMMENT: BOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			ROCK	90.5	0.0	
359.5	CARBONDALE	HERRIN	COAL	6.2	90.5	

MAPID: 14590688000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 35 QUARTERS/FOOTAGES: 2540' S line, 2640' E line

QUADRANGLE: PERCY LONGITUDE: -89.509484

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.049209

DATE COLLECTED: 2 / 0 / 1937

SURFACE ELEVATION (FT.): 451.0

LOGGED (FT.): 96.5

LOG TYPE: Drillers Log

SOURCE: AYRSHIRE 3

WELL TYPE: Coal Test

COMMENT: BOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
451.0			ROCK	90.0	0.0	
361.0	CARBONDALE	HERRIN	COAL	6.5	90.0	

MAPID: 14500360000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES: 10' S line, 930' E line of SE NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.485776 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.048855 DATE COLLECTED: 2 / 23 / 1920

SURFACE ELEVATION (FT.): 439.8 LOGGED (FT.): 335.0 LOG TYPE: Drillers Log

SOURCE: SOUTHERN GEM COAL CORP. 1 WELL TYPE: Coal Test

COMMENT: APPROX. LOCATION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.8			CLAYSTONE	21.0	0.0
418.8			SHALE	17.0	21.0
401.8	CARBONDALE		LIMESTONE	2.0	38.0
399.8	CARBONDALE		LIMESTONE W/ SHALE	18.0	40.0
381.8	CARBONDALE		SHALE	10.0	58.0
371.8	CARBONDALE	BRERETON	LIMESTONE	5.0	68.0
366.8	CARBONDALE	ANNA	SHALE	1.5	73.0
365.3	CARBONDALE	ENERGY	SHALE	3.0	74.5
362.3	CARBONDALE	HERRIN	COAL	5.3	77.5
357.0	CARBONDALE	HERRIN	SHALE	0.2	82.8
356.8	CARBONDALE	HERRIN	COAL	1.0	83.0
355.8	CARBONDALE		CLAYSTONE	5.0	84.0
350.8	CARBONDALE		LIMESTONE	3.0	89.0
347.8	CARBONDALE		SHALE	8.0	92.0
339.8	CARBONDALE	SPRINGFIELD	COAL	2.8	100.0
337.0	CARBONDALE		CLAYSTONE	7.2	102.8
329.8	CARBONDALE		LIMESTONE	0.5	110.0
329.3	CARBONDALE		SHALE	31.5	110.5
297.8	CARBONDALE		SHALE	28.0	142.0
269.8	CARBONDALE	EXCELLO	SHALE	3.0	170.0
266.8	CARBONDALE	HOUCHIN CREEK	COAL	0.2	173.0
266.6	CARBONDALE		SHALE	21.7	173.2
244.8	CARBONDALE		SHALE	8.0	195.0
236.8	CARBONDALE		SHALE	17.0	203.0
219.8	CARBONDALE	MECCA QUARRY	SHALE	3.2	220.0
216.6	CARBONDALE	COLCHESTER	COAL	1.3	223.2
215.3	SPOON		SHALE	4.5	224.5
210.8	SPOON		SHALE	32.0	229.0
178.8	SPOON		SHALE	4.0	261.0
174.8	SPOON		SHALE	2.5	265.0
172.3	SPOON	DAVIS	COAL	1.3	267.5
171.0	SPOON		SHALE	34.2	268.8
136.8	SPOON		SHALE	7.0	303.0
129.8	SPOON		SHALE	11.5	310.0
118.3	SPOON	MURPHYSBORO	COAL	4.5	321.5
113.8	SPOON		CLAYSTONE	4.0	326.0
109.8	SPOON		SHALE	5.0	330.0

MAPID: 14500590000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES: 1190' S line, 110' E line of NE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.491795 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.048684 DATE COLLECTED: 2 / 19 / 1920

SURFACE ELEVATION (FT.): 457.0 LOGGED (FT.): 112.0 LOG TYPE: Drillers Log

SOURCE: SOUTHERN GEM COAL CORP. 4 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
457.0			CLAYSTONE	30.0	0.0
427.0			SHALE	3.5	30.0
423.5			UNCLASSIFIED	0.2	33.5
423.3			SAND	55.8	33.7
367.5	CARBONDALE	CONANT	LIMESTONE	1.4	89.5
366.1	CARBONDALE		SHALE	1.0	90.9
365.1	CARBONDALE		SHALE	2.0	91.9
363.1	CARBONDALE	BRERETON	LIMESTONE	7.5	93.9
355.6	CARBONDALE	ANNA	SHALE	3.4	101.4
352.2	CARBONDALE	HERRIN	COAL	5.3	104.8
346.9	CARBONDALE	HERRIN	UNCLASSIFIED	0.2	110.1
346.7	CARBONDALE	HERRIN	COAL	0.8	110.3
345.9	CARBONDALE		CLAYSTONE	0.8	111.1

MAPID: 14502672000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES: 670' N line, 162' E line of NW SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.496452 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.047335 DATE COLLECTED: 8 / 28 / 1961

SURFACE ELEVATION (FT.): 454.9 LOGGED (FT.): 110.5 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1247 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
454.9	PLEISTOCENE		UNCONSOLIDATED	38.3	0.0
416.6	PLEISTOCENE		GRAVEL	4.2	38.3
412.4	PLEISTOCENE		UNCONSOLIDATED	13.2	42.5
399.2	PLEISTOCENE		GLACIAL DRIFT	20.3	55.7
379.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.8	75.9
377.1	CARBONDALE		GRAY SHALE	2.1	77.8
375.1	CARBONDALE		DARK SHALE	5.8	79.8
369.2	CARBONDALE	CONANT	LIMESTONE	1.8	85.7
367.4	CARBONDALE		DARK SHALE	3.8	87.5
363.6	CARBONDALE		BLACK SHALE	0.2	91.3
363.4	CARBONDALE	JAMESTOWN	COAL	0.1	91.5
363.3	CARBONDALE		LIMESTONE	0.8	91.6
362.6	CARBONDALE		DARK SHALE	4.6	92.3
358.0	CARBONDALE	BRERETON	LIMESTONE	2.8	96.9
355.2	CARBONDALE		GRAY SHALE	0.5	99.7
354.7	CARBONDALE	ANNA	BLACK SHALE	1.8	100.2
352.9	CARBONDALE		GRAY SHALE	2.1	102.0
350.8	CARBONDALE	HERRIN	COAL	5.8	104.1
345.1	CARBONDALE		UNDERCLAY	0.7	109.8

MAPID: 14502674000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES: 15' S line, 822' E line of NW SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.498801 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.045659 DATE COLLECTED: 8 / 22 / 1961

SURFACE ELEVATION (FT.): 451.7 LOGGED (FT.): 104.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1246 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.7	PLEISTOCENE		UNCONSOLIDATED	35.4	0.0
416.3	PLEISTOCENE		GRAVEL	1.5	35.4
414.8	PLEISTOCENE		UNCONSOLIDATED	1.6	36.9
413.2	PLEISTOCENE		GRAVEL	1.2	38.5
412.0	PLEISTOCENE		UNCONSOLIDATED	32.8	39.7
379.3	PLEISTOCENE		GLACIAL DRIFT	3.6	72.4
375.7	PLEISTOCENE		UNCONSOLIDATED	10.8	76.0
364.9	PLEISTOCENE		BOULDER	0.3	86.8
364.6	PLEISTOCENE		UNCONSOLIDATED	2.0	87.1
362.6	PLEISTOCENE		SAND & GRAVEL	0.3	89.1 SANDSTONE & BOULDER
362.3	PLEISTOCENE		UNCONSOLIDATED	1.1	89.4
361.2	PLEISTOCENE		GRAVEL	3.9	90.5
357.3	CARBONDALE	BRERETON	LIMESTONE	0.8	94.4
356.5	CARBONDALE	ANNA	BLACK SHALE	0.8	95.2
355.8	CARBONDALE	ENERGY	GRAY SHALE	1.5	95.9
354.3	CARBONDALE	HERRIN	COAL	5.9	97.4
348.4	CARBONDALE		UNDERCLAY	0.7	103.3

MAPID: 14502675000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES: 35' N line, 162' E line of NW SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.496403 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.049085 DATE COLLECTED: 0 / 0 / 1961

SURFACE ELEVATION (FT.): 460.4 LOGGED (FT.): 115.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1236 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.4	PLEISTOCENE		UNCONSOLIDATED	42.5	0.0
417.9	PLEISTOCENE		GRAVEL	2.0	42.5
415.9	PLEISTOCENE		UNCONSOLIDATED	2.5	44.5
413.4	PLEISTOCENE		GRAVEL	2.0	47.0
411.4	PLEISTOCENE		UNCONSOLIDATED	33.5	49.0
377.9	CARBONDALE		GRAY SHALE	1.8	82.5
376.1	CARBONDALE		DARK SHALE	6.4	84.3
369.6	CARBONDALE	CONANT	LIMESTONE	1.3	90.8
368.4	CARBONDALE		DARK SHALE	3.9	92.0
364.5	CARBONDALE		BLUE SHALE	0.2	95.9
364.3	CARBONDALE	JAMESTOWN	COAL	0.2	96.1
364.1	CARBONDALE		LIMESTONE	0.9	96.3
363.2	CARBONDALE		DARK SHALE	2.4	97.2
360.8	CARBONDALE	BRERETON	LIMESTONE	4.0	99.6
356.8	CARBONDALE	ANNA	BLACK SHALE	1.8	103.6
355.0	CARBONDALE	ENERGY	GRAY SHALE	2.8	105.4
352.2	CARBONDALE	HERRIN	COAL	5.9	108.2
346.3	CARBONDALE		UNDERCLAY	0.9	114.1

MAPID: 14502676000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES: 10' S line, 192' E line of NW SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.496606 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.045576 DATE COLLECTED: 0 / 0 / 1961

SURFACE ELEVATION (FT.): 453.6 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1235 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
453.6	PLEISTOCENE		UNCONSOLIDATED	37.0	0.0	
416.6	PLEISTOCENE		GRAVEL	2.5	37.0	
414.1	PLEISTOCENE		UNCONSOLIDATED	52.2	39.5	
361.9	PLEISTOCENE		BOULDER	1.3	91.7	
360.6	PLEISTOCENE		GRAVEL	7.7	93.0	
352.9	CARBONDALE	CONANT	LIMESTONE	2.4	100.7	DISCREPANCY IN THICKNESS&UNDLYING
350.2	CARBONDALE	JAMESTOWN	COAL	0.4	103.4	
349.8	CARBONDALE		GRAY SHALE	2.4	103.8	
347.3	CARBONDALE		LIMESTONE	3.1	106.3	
344.3	CARBONDALE		GRAY SHALE	9.2	109.3	
335.1	CARBONDALE	BRERETON	LIMESTONE	1.5	118.5	

MAPID: 14502690000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES: 20' N line, 720' E line of NW SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.498347 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.049193 DATE COLLECTED: 9 / 0 / 1961

SURFACE ELEVATION (FT.): 455.0 LOGGED (FT.): 109.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1251 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.0	PLEISTOCENE		UNCONSOLIDATED	40.7	0.0
414.3	PLEISTOCENE		BOULDER	0.8	40.7
413.6	PLEISTOCENE		UNCONSOLIDATED	3.2	41.4
410.4	PLEISTOCENE		GRAVEL	1.3	44.6
409.2	PLEISTOCENE		GLACIAL DRIFT	14.3	45.8
394.9	PLEISTOCENE		UNCONSOLIDATED	21.3	60.1
373.7	PLEISTOCENE		DARK SHALE	4.1	81.3
369.6	CARBONDALE	CONANT	LIMESTONE	1.4	85.4
368.2	CARBONDALE		DARK SHALE	3.8	86.8
364.3	CARBONDALE		BLACK SHALE	0.2	90.7
364.2	CARBONDALE	JAMESTOWN	COAL	0.2	90.8
364.0	CARBONDALE		LIMESTONE	0.7	91.0
363.3	CARBONDALE		DARK SHALE	1.9	91.7
361.4	CARBONDALE	BRERETON	LIMESTONE	6.1	93.6
355.3	CARBONDALE		DARK SHALE	0.4	99.7
354.9	CARBONDALE	ANNA	BLACK SHALE	2.3	100.1
352.6	CARBONDALE	HERRIN	COAL	5.9	102.4
346.6	CARBONDALE		UNDERCLAY	0.7	108.4

MAPID: 14502691000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES: 520' N line, 30' E line of SE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.491642 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.043958 DATE COLLECTED: 0 / 0 / 1961

SURFACE ELEVATION (FT.): 455.5 LOGGED (FT.): 106.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1252 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
455.5	PLEISTOCENE		UNCONSOLIDATED	40.3	0.0	
415.2	PLEISTOCENE		GRAVEL	4.3	40.3	
410.9	PLEISTOCENE		UNCONSOLIDATED	46.7	44.6	
364.2	PLEISTOCENE		GRAVEL	2.2	91.3	
362.1	PLEISTOCENE		UNCONSOLIDATED	4.0	93.4	
358.1	CARBONDALE	HERRIN	COAL	0.5	97.4	ERODED
357.6	CARBONDALE		GRAY SHALE	3.3	97.9	
354.2	CARBONDALE		LIMESTONE	2.2	101.3	
352.1	CARBONDALE		GRAY SHALE	0.3	103.4	
351.7	CARBONDALE		LIMESTONE	1.4	103.8	DISCREPANCY IN THICKNESS&UNDLYING
350.2	CARBONDALE		DARK SHALE	0.3	105.3	DISCREPANCY IN THICKNESS&UNDLYING
349.5	CARBONDALE		LIMESTONE	0.0	106.0	

MAPID: 14502692000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES: 20' S line, 20' W line of SE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.495967 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.041946 DATE COLLECTED: 9 / 0 / 1961

SURFACE ELEVATION (FT.): 452.4 LOGGED (FT.): 106.0 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1249 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
452.4	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0	
436.4	PLEISTOCENE		SAND & GRAVEL	1.5	16.0	
434.9	PLEISTOCENE		UNCONSOLIDATED	19.0	17.5	
415.9	PLEISTOCENE		SAND & GRAVEL	1.5	36.5	
414.4	PLEISTOCENE		GLACIAL DRIFT	20.5	38.0	
393.9	PLEISTOCENE		UNCONSOLIDATED	24.4	58.5	
369.5	CARBONDALE		GRAY SHALE	1.2	82.9	
368.3	CARBONDALE	CONANT	LIMESTONE	3.3	84.1	
365.0	CARBONDALE		GRAY SHALE	12.9	87.4	
352.1	CARBONDALE		LIMESTONE	0.5	100.3	
351.6	CARBONDALE		GRAY SHALE	0.5	100.8	
351.1	CARBONDALE	ANNA	BLACK SHALE	0.4	101.3	
350.6	CARBONDALE	HERRIN	COAL	2.4	101.8	
348.2	CARBONDALE		UNDERCLAY	1.8	104.2	

MAPID: 14502693000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES: 670' N line, 720' E line of NW SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.498396 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.047401 DATE COLLECTED: 0 / 0 / 1961

SURFACE ELEVATION (FT.): 453.8 LOGGED (FT.): 110.5 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO C1250 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.8	PLEISTOCENE		UNCONSOLIDATED	38.2	0.0
415.6	PLEISTOCENE		SAND & GRAVEL	1.1	38.2
414.5	PLEISTOCENE		UNCONSOLIDATED	3.1	39.3
411.5	PLEISTOCENE		BOULDER	0.9	42.3
410.5	PLEISTOCENE		UNCONSOLIDATED	1.3	43.3
409.3	PLEISTOCENE		GRAVEL	3.8	44.5
405.5	PLEISTOCENE		SANDY CLAY	10.2	48.3
395.3	PLEISTOCENE		UNCONSOLIDATED	19.2	58.5
376.1	CARBONDALE		DARK SHALE	7.8	77.7
368.4	CARBONDALE	CONANT	LIMESTONE	1.6	85.4
366.8	CARBONDALE		DARK SHALE	3.8	87.0
363.0	CARBONDALE		BLACK SHALE	0.3	90.8
362.8	CARBONDALE	JAMESTOWN	COAL	0.2	91.0
362.6	CARBONDALE		LIMESTONE	0.8	91.2
361.9	CARBONDALE		DARK SHALE	3.8	91.9
358.1	CARBONDALE	BRERETON	LIMESTONE	5.6	95.7
352.5	CARBONDALE		GRAY SHALE	0.3	101.3
352.2	CARBONDALE	ANNA	BLACK SHALE	2.0	101.6
350.2	CARBONDALE	HERRIN	COAL	6.3	103.6
344.0	CARBONDALE		UNDERCLAY	0.7	109.8

MAPID: 14502842000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES: 2605' S line, 164' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.483105 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.048705 DATE COLLECTED:

SURFACE ELEVATION (FT.): 459.0 LOGGED (FT.): 93.5 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO JR-67-48 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
398.8	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	60.2
396.8	CARBONDALE	LAWSON	DARK GRAY SHALE	11.5	62.2
385.3	CARBONDALE		DARK GRAY SHALE	5.0	73.7
380.3	CARBONDALE	BRERETON	LIMESTONE	5.0	78.7
375.3	CARBONDALE	ANNA	BLACK SHALE	3.3	83.7
372.0	CARBONDALE	HERRIN	COAL	6.5	87.0

MAPID: 14502895000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES: 100' N line, 321' E line of NE NW NE NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.485694 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.055784 DATE COLLECTED: 12 / 7 / 1967
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 32.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Service Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.0			CLAYSTONE	26.0	0.0	
434.0			SAND	1.0	26.0	
433.0			CLAYSTONE	5.0	27.0	
-			UNCLASSIFIED	32.0		

MAPID: 14528626000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492614 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 38.056329 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 464.2 LOGGED (FT.): 125.0 LOG TYPE: Drillers Log
 SOURCE: APOGEE COAL COMPANY 5156 WELL TYPE: Coal Test
 COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.2	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0	SANDY, SOFT
451.2	PLEISTOCENE		UNCONSOLIDATED	14.5	13.0	MED. HARD
436.7	PLEISTOCENE		UNCONSOLIDATED	4.3	27.5	
432.4	PLEISTOCENE		BOULDER	0.7	31.8	GRAY BOULDER SIZE LIMESTONE
431.7	PLEISTOCENE		UNCONSOLIDATED	51.6	32.5	SANDY, GRAY
380.1			GRAY SHALE	7.7	84.1	SOFT W/ HARD COAL STREAKS
372.4			COAL	2.2	91.8	
370.2			UNDERCLAY	2.8	94.0	
367.4			LIMESTONE & SHALE	0.2	96.8	INTERBEDDED
367.2			GRAY SHALE	9.5	97.0	
357.7			SHALE & SANDSTONE	18.5	106.5	INTERBEDDED

MAPID: 14528627000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.48726

GEOLOGIST: J. MCBETH

CONFIDENTIAL: N

LATITUDE: 38.049705

DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.8

LOGGED (FT.): 122.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5801

WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
453.8	PLEISTOCENE		UNCONSOLIDATED	14.5	0.0	
439.3	PLEISTOCENE		SANDY CLAY	13.8	14.5	& GRAVEL
425.5	PLEISTOCENE		UNCONSOLIDATED	50.4	28.3	
375.1	CARBONDALE		SHALE	2.5	78.7	DARK
372.6	CARBONDALE	BRERETON	LIMESTONE	1.7	81.2	DARK
370.9	CARBONDALE	ANNA	SHALE	4.1	82.9	DARK
366.8	CARBONDALE	ENERGY	GRAY SHALE	5.8	87.0	
361.0	CARBONDALE	HERRIN	COAL	6.4	92.8	
354.6	CARBONDALE		UNDERCLAY	1.8	99.2	
352.8	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.4	101.0	GRAY
348.4	CARBONDALE		SANDY SHALE	8.6	105.4	
339.8	CARBONDALE	ST. DAVID	LIMESTONE	2.1	114.0	GRAY
337.7	CARBONDALE	TURNER MINE	SHALE	0.9	116.1	DARK
336.8	CARBONDALE	SPRINGFIELD	COAL	2.8	117.0	
334.0	CARBONDALE		UNDERCLAY	1.1	119.8	
332.9	CARBONDALE		GRAY SHALE	1.1	120.9	

MAPID: 14528628000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.486045 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.049783 DATE COLLECTED:

SURFACE ELEVATION (FT.): 441.6 LOGGED (FT.): 112.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5809 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
441.6	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0	
433.6	PLEISTOCENE		SANDY CLAY	7.9	8.0	& GRAVEL
425.7	PLEISTOCENE		UNCONSOLIDATED	29.1	15.9	
396.6	CARBONDALE	GALUM	LIMESTONE	1.5	45.0	WEATHERED
395.1	CARBONDALE		GRAY SHALE	4.0	46.5	
391.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	50.5	
386.6	CARBONDALE		GRAY SHALE	2.2	55.0	
384.4	CARBONDALE		SHALE	5.6	57.2	
378.8	CARBONDALE		LIMESTONE & SHALE	3.2	62.8	INTERBEDDED LIMESTONE AND SHALE
375.6	CARBONDALE	JAMESTOWN	SHALE	2.1	66.0	DARK W/ COAL STREAKS
373.5	CARBONDALE	JAMESTOWN	SHALE	2.1	68.1	DARK
371.4	CARBONDALE	BRERETON	LIMESTONE	8.0	70.2	DARK
363.4	CARBONDALE	ANNA	BLACK SHALE	2.6	78.2	
360.8	CARBONDALE	HERRIN	COAL	6.2	80.8	
354.6	CARBONDALE		UNDERCLAY	2.8	87.0	
351.8	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.4	89.8	GRAY
348.4	CARBONDALE		SANDY SHALE	8.8	93.2	W/ SS STREAKS
339.6	CARBONDALE		LIMESTONE & SHALE	3.0	102.0	INTERBEDDED LIMESTONE AND SHALE
336.6	CARBONDALE	SPRINGFIELD	COAL	3.4	105.0	
333.2	CARBONDALE		UNDERCLAY	3.6	108.4	

MAPID: 14528629000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.484865 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.049556 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.4 LOGGED (FT.): 105.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5919 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.4	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0	
427.4	PLEISTOCENE		UNCONSOLIDATED	17.5	13.0	SANDY
409.9	CARBONDALE		GRAY SHALE	6.5	30.5	
403.4	CARBONDALE	GALUM	LIMESTONE	4.0	37.0	
399.4	CARBONDALE		CALCAREOUS SHALE	3.8	41.0	
395.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.1	44.8	
391.5	CARBONDALE		SHALE	7.8	48.9	
383.7	CARBONDALE	CONANT	LIMESTONE	1.3	56.7	DARK
382.4	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	4.0	58.0	DARK
378.4	CARBONDALE	JAMESTOWN	SHALE	4.6	62.0	
373.8	CARBONDALE	BRERETON	LIMESTONE	7.4	66.6	DARK
366.4	CARBONDALE	ANNA	SHALE	1.8	74.0	SLATEY, DARK
364.6	CARBONDALE	HERRIN	COAL	5.7	75.8	
358.9	CARBONDALE		UNDERCLAY	2.0	81.5	
356.9	CARBONDALE		GRAY SHALE	3.0	83.5	
353.9	CARBONDALE		CALCAREOUS SANDSTONE	3.7	86.5	
350.2	CARBONDALE		SANDY SHALE	5.8	90.2	
344.4	CARBONDALE		CALCAREOUS SHALE	4.4	96.0	
340.0	CARBONDALE	ST. DAVID	LIMESTONE	1.6	100.4	
338.4	CARBONDALE	SPRINGFIELD	COAL	1.6	102.0	
336.8	CARBONDALE		UNDERCLAY	1.4	103.6	

MAPID: 14528630000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.483615 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.049548 DATE COLLECTED:

SURFACE ELEVATION (FT.): 444.6 LOGGED (FT.): 106.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5920 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
444.6	PLEISTOCENE		UNCONSOLIDATED	17.5	0.0	
427.1	PLEISTOCENE		UNCONSOLIDATED	10.7	17.5	
416.4			LIMESTONE	0.8	28.2	GRAY
415.6	CARBONDALE	DANVILLE	COAL	1.0	29.0	
414.6	CARBONDALE		GRAY SHALE	8.0	30.0	
406.6	CARBONDALE	GALUM	LIMESTONE	2.2	38.0	
404.4	CARBONDALE		CALCAREOUS SHALE	6.3	40.2	
398.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	46.5	GRAY
394.1	CARBONDALE		SHALE	8.4	50.5	
385.7	CARBONDALE	CONANT	LIMESTONE	0.6	58.9	DARK
385.1	CARBONDALE	JAMESTOWN	CALCAREOUS SHALE	9.4	59.5	
375.7	CARBONDALE	BRERETON	LIMESTONE	6.6	68.9	
369.1	CARBONDALE	ANNA	SHALE	2.6	75.5	SLATEY, DARK
366.5	CARBONDALE	HERRIN	COAL	5.7	78.1	
360.8	CARBONDALE		UNDERCLAY	1.3	83.8	
359.5	CARBONDALE		GRAY SHALE	2.2	85.1	
357.3	CARBONDALE		CALCAREOUS SANDSTONE	2.5	87.3	
354.8	CARBONDALE		SANDY SHALE	11.2	89.8	W/ SS INTERBEDS
343.6	CARBONDALE	ST. DAVID	LIMESTONE	1.4	101.0	
342.2	CARBONDALE	SPRINGFIELD	COAL	2.4	102.4	
339.8	CARBONDALE		UNDERCLAY	1.2	104.8	

MAPID: 14528631000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492014

GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.049872

DATE COLLECTED:

SURFACE ELEVATION (FT.): 457.2 LOGGED (FT.): 140.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6152

WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
457.2	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0	
429.2	PLEISTOCENE		UNCONSOLIDATED	71.0	28.0	
358.2	CARBONDALE	BRERETON	LIMESTONE	5.9	99.0	DARK
352.3	CARBONDALE	ANNA	SHALE	2.8	104.9	DARK
349.5	CARBONDALE	HERRIN	COAL	0.5	107.7	SLATEY
349.0	CARBONDALE	HERRIN	COAL	5.3	108.2	
343.7	CARBONDALE		UNDERCLAY	3.5	113.5	
340.2	CARBONDALE		CALCAREOUS SANDSTONE	5.8	117.0	
334.4	CARBONDALE		SANDY SHALE	8.9	122.8	
325.5	CARBONDALE		CALCAREOUS SHALE	1.1	131.7	
324.4	CARBONDALE	SPRINGFIELD	COAL	3.1	132.8	
321.3	CARBONDALE		UNDERCLAY	3.1	135.9	
318.2	CARBONDALE		GRAY SHALE	1.0	139.0	

MAPID: 14528632000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.490904 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.049811 DATE COLLECTED:

SURFACE ELEVATION (FT.): 459.4 LOGGED (FT.): 137.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6153 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
459.4	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0	
431.4	PLEISTOCENE		UNCONSOLIDATED	47.0	28.0	
384.4	CARBONDALE		GRAY SHALE	1.0	75.0	
383.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	76.0	W/ GRAY SH BANDS
378.9	CARBONDALE		SHALE	8.0	80.5	
370.9	CARBONDALE		CALCAREOUS SHALE	5.3	88.5	DARK
365.6	CARBONDALE		SHALE	2.2	93.8	DARK
363.4	CARBONDALE	BRERETON	LIMESTONE	6.0	96.0	DARK
357.4	CARBONDALE	ANNA	SHALE	2.8	102.0	DARK
354.6	CARBONDALE	HERRIN	COAL	5.8	104.8	
348.8	CARBONDALE		UNDERCLAY	3.9	110.6	
344.9	CARBONDALE		CALCAREOUS SANDSTONE	3.8	114.5	
341.1	CARBONDALE		SANDY SHALE	6.8	118.3	
334.3	CARBONDALE		CALCAREOUS SHALE	2.9	125.1	
331.4	CARBONDALE	ST. DAVID	LIMESTONE	2.8	128.0	
328.6	CARBONDALE	SPRINGFIELD	COAL	3.3	130.8	
325.3	CARBONDALE		UNDERCLAY	2.9	134.1	

MAPID: 14528633000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492004 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.050998 DATE COLLECTED:

SURFACE ELEVATION (FT.): 458.3 LOGGED (FT.): 140.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6154 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
458.3	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0	
431.3	PLEISTOCENE		UNCONSOLIDATED	42.0	27.0	
389.3	CARBONDALE		GRAY SHALE	1.5	69.0	
387.8	CARBONDALE	GALUM	LIMESTONE	1.0	70.5	GRAY
386.8	CARBONDALE		CALCAREOUS SHALE	6.5	71.5	
380.3	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	78.0	
376.5	CARBONDALE		GRAY SHALE	7.9	81.8	
368.6	CARBONDALE		CALCAREOUS SHALE	11.3	89.7	DARK
357.3	CARBONDALE	BRERETON	LIMESTONE	4.5	101.0	DARK
352.8	CARBONDALE	ANNA	SHALE	1.0	105.5	DARK
351.8	CARBONDALE	ANNA	SHALE	1.0	106.5	DARK. SLATEY
350.8	CARBONDALE	HERRIN	COAL	0.5	107.5	SLATEY
350.3	CARBONDALE	HERRIN	COAL	5.9	108.0	
344.4	CARBONDALE		UNDERCLAY	3.5	113.9	
340.9	CARBONDALE		CALCAREOUS SANDSTONE	4.0	117.4	
336.9	CARBONDALE		SHALE & SANDSTONE	7.6	121.4	INTERBEDDED SDYSH & SS
329.3	CARBONDALE		CALCAREOUS SHALE	5.9	129.0	
323.4	CARBONDALE	SPRINGFIELD	COAL	2.9	134.9	
320.5	CARBONDALE		UNDERCLAY	2.2	137.8	

MAPID: 14528634000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.491997 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.051738 DATE COLLECTED:

SURFACE ELEVATION (FT.): 460.6 LOGGED (FT.): 140.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6155 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.6	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0	
433.6	PLEISTOCENE		UNCONSOLIDATED	34.5	27.0	
399.1	CARBONDALE		GRAY SHALE	6.0	61.5	
393.1	CARBONDALE	GALUM	LIMESTONE	2.3	67.5	GRAY
390.8	CARBONDALE		CALCAREOUS SHALE	5.7	69.8	
385.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.6	75.5	
380.5	CARBONDALE		GRAY SHALE	7.9	80.1	
372.6	CARBONDALE	CONANT	LIMESTONE	2.0	88.0	DARK
370.6	CARBONDALE	JAMESTOWN	SHALE	10.9	90.0	DARK
359.7	CARBONDALE	BRERETON	LIMESTONE	2.5	100.9	DARK
357.2	CARBONDALE	ANNA	SHALE	2.6	103.4	DARK
354.6	CARBONDALE	HERRIN	COAL	5.7	106.0	
348.9	CARBONDALE		UNDERCLAY	3.3	111.7	
345.6	CARBONDALE		CALCAREOUS SANDSTONE	4.9	115.0	
340.7	CARBONDALE		SHALE & SANDSTONE	7.1	119.9	INTERBEDDED SDYSH & SS
333.6	CARBONDALE		CALCAREOUS SHALE	1.0	127.0	
332.6	CARBONDALE		LIMESTONE	1.0	128.0	
331.6	CARBONDALE		GRAY SHALE	4.0	129.0	
327.6	CARBONDALE	SPRINGFIELD	COAL	2.8	133.0	
324.8	CARBONDALE		UNDERCLAY	4.2	135.8	

MAPID: 14528635000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492025 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.052646 DATE COLLECTED:

SURFACE ELEVATION (FT.): 463.4 LOGGED (FT.): 131.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6156 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
463.4	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0	
434.4	PLEISTOCENE		UNCONSOLIDATED	29.5	29.0	
404.9	CARBONDALE		SHALE	4.5	58.5	WITH LIMESTONE STREAKS
400.4	CARBONDALE		CALCAREOUS SHALE	4.0	63.0	
396.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	67.0	GRAY, WEATHERED
392.4	CARBONDALE		GRAY SHALE	20.9	71.0	
371.5	CARBONDALE	BRERETON	LIMESTONE	4.9	91.9	DARK
366.6	CARBONDALE	ANNA	SHALE	0.6	96.8	DARK
366.0	CARBONDALE	HERRIN	COAL	6.0	97.4	
360.0	CARBONDALE		UNDERCLAY	3.6	103.4	
356.4	CARBONDALE		CALCAREOUS SANDSTONE	4.2	107.0	
352.2	CARBONDALE		SANDSTONE/SHALE	7.2	111.2	INTERBEDDED SDYSH & SS
345.0	CARBONDALE		CALCAREOUS SHALE	5.5	118.4	
339.5	CARBONDALE		CALCAREOUS SHALE	1.2	123.9	MED. DARK
338.3	CARBONDALE	SPRINGFIELD	COAL	3.8	125.1	
334.5	CARBONDALE		UNDERCLAY	2.1	128.9	

MAPID: 14528636000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492052 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.053469 DATE COLLECTED:

SURFACE ELEVATION (FT.): 464.2 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6157 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.2	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0	
441.2	PLEISTOCENE		UNCONSOLIDATED	37.0	23.0	
404.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	60.0	GRAY, WEATHERED
399.7	CARBONDALE		GRAY SHALE	8.1	64.5	
391.6	CARBONDALE		CALCAREOUS SHALE	2.4	72.6	DARK
389.2	CARBONDALE		SHALE	7.3	75.0	WITH DARK LIMESTONE STREAKS
381.9	CARBONDALE	BRERETON	LIMESTONE	1.8	82.3	DARK
380.1	CARBONDALE	ANNA	SHALE	2.9	84.1	DARK
377.2	CARBONDALE	ENERGY	SHALE	2.7	87.0	MED. DARK
374.5	CARBONDALE	HERRIN	COAL	5.5	89.7	
369.0	CARBONDALE		UNDERCLAY	3.4	95.2	
365.6	CARBONDALE		CALCAREOUS SANDSTONE	3.6	98.6	
362.0	CARBONDALE		SHALE & SANDSTONE	7.3	102.2	INTERBEDDED SDYSH & SS
354.7	CARBONDALE		CALCAREOUS SHALE	5.8	109.5	
348.9	CARBONDALE	SPRINGFIELD	COAL	0.6	115.3	SMUTTY
348.3	CARBONDALE	SPRINGFIELD	COAL	1.6	115.9	
346.7	CARBONDALE		UNDERCLAY	2.5	117.5	

MAPID: 14528637000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.0552 DATE COLLECTED:

SURFACE ELEVATION (FT.): 463.7 LOGGED (FT.): 90.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6159 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
463.7	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0	
440.7	PLEISTOCENE		UNCONSOLIDATED	22.5	23.0	
418.2	CARBONDALE	CONANT	LIMESTONE	1.5	45.5	DARK
416.7	CARBONDALE	JAMESTOWN	SHALE	7.6	47.0	DARK
409.1	CARBONDALE	BRERETON	LIMESTONE	3.8	54.6	DARK
405.3	CARBONDALE	ANNA	SHALE	0.6	58.4	DARK
404.7	CARBONDALE	ENERGY	GRAY SHALE	2.4	59.0	
402.3	CARBONDALE	HERRIN	COAL	5.7	61.4	
396.6	CARBONDALE		UNDERCLAY	2.8	67.1	
393.8	CARBONDALE		CALCAREOUS SANDSTONE	4.2	69.9	
389.6	CARBONDALE		SHALE & SANDSTONE	4.4	74.1	INTERBEDDED SDYSH & SS
385.2	CARBONDALE		CALCAREOUS SHALE	3.6	78.5	
381.6	CARBONDALE		LIMESTONE	3.9	82.1	
377.7	CARBONDALE		LIMESTONE & SHALE	1.1	86.0	INTERBEDDED
376.6	CARBONDALE	SPRINGFIELD	COAL	1.7	87.1	
374.9	CARBONDALE		UNDERCLAY	1.2	88.8	

MAPID: 14528638000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492181 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.054485 DATE COLLECTED:

SURFACE ELEVATION (FT.): 464.3 LOGGED (FT.): 80.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6186 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.3	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0	
445.3	PLEISTOCENE		UNCONSOLIDATED	56.8	19.0	
388.5			COAL	2.2	75.8	
386.3			UNDERCLAY	2.0	78.0	

MAPID: 14528639000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.489794 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.049747 DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.5 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6323 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
456.5	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0	
424.5	PLEISTOCENE		UNCONSOLIDATED	47.5	32.0	
377.0	CARBONDALE		CALCAREOUS SHALE	12.5	79.5	DARK
364.5	CARBONDALE	BRERETON	LIMESTONE	5.0	92.0	DARK
359.5	CARBONDALE	ANNA	SHALE	2.4	97.0	DARK
357.1	CARBONDALE	HERRIN	COAL	6.5	99.4	
350.6	CARBONDALE		UNDERCLAY	2.6	105.9	
348.0	CARBONDALE		CALCAREOUS SANDSTONE	3.0	108.5	
345.0	CARBONDALE		SANDY SHALE	7.9	111.5	
337.1	CARBONDALE		CALCAREOUS SHALE	5.9	119.4	
331.2	CARBONDALE	SPRINGFIELD	COAL	2.6	125.3	
328.6	CARBONDALE		UNDERCLAY	2.1	127.9	

MAPID: 14528640000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 5S 4W SECTION: 36 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.488614 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.049686 DATE COLLECTED:

SURFACE ELEVATION (FT.): 460.3 LOGGED (FT.): 125.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6324 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.3	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0	
426.3	PLEISTOCENE		UNCONSOLIDATED	55.5	34.0	
370.8	CARBONDALE	BRERETON	LIMESTONE	7.0	89.5	W/DK SHALE STREAKS
363.8	CARBONDALE	HERRIN	COAL	5.1	96.5	
358.7	CARBONDALE		UNDERCLAY	2.8	101.6	
355.9	CARBONDALE		CALCAREOUS SANDSTONE	3.1	104.4	
352.8	CARBONDALE		SANDY SHALE	7.5	107.5	
345.3	CARBONDALE		CALCAREOUS SHALE	6.3	115.0	
339.0	CARBONDALE	SPRINGFIELD	COAL	2.7	121.3	
336.3	CARBONDALE		UNDERCLAY	1.0	124.0	

MAPID: 14590686000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 36 **QUARTERS/FOOTAGES:** 1' S line, 1' W line
QUADRANGLE: PERCY **LONGITUDE:** -89.500477 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 38.042026 **DATE COLLECTED:** 4 / 0 / 1967
SURFACE ELEVATION (FT.): 457.0 **LOGGED (FT.):** 244.5 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE COLLIERIES 1 **WELL TYPE:** Coal Test
COMMENT: BOX #75; #6 AND #5 DEPTHS/THICKS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
457.0			ROCK	78.0	0.0	
379.0	CARBONDALE	HERRIN	COAL	6.0	78.0	
373.0	CARBONDALE		ROCK	156.0	84.0	
217.0	CARBONDALE	DAVIS	COAL	4.5	240.0	CORRELATION UNCERTAIN- MAY BE MURPHYSBORO

MAPID: 14590690000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 5S 4W **SECTION:** 36 **QUARTERS/FOOTAGES:** 1320' S line, 1' E line
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.482624 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.045144 **DATE COLLECTED:** 0 / 0 / 1921
SURFACE ELEVATION (FT.): 451.0 **LOGGED (FT.):** 83.8 **LOG TYPE:** Drillers Log
SOURCE: AYRSHIRE COLLIERIES 4 **WELL TYPE:** Coal Test
COMMENT: BOX #75

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
451.0	PLEISTOCENE		UNCONSOLIDATED	56.0	0.0	
395.0			ROCK	22.0	56.0	
373.0	CARBONDALE	HERRIN	COAL	5.8	78.0	

MAPID: 14503007000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 1E **SECTION:** 6 **QUARTERS/FOOTAGES:** 106' S line, 109' W line of NW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.136548 **GEOLOGIST:** PLOETZ
CONFIDENTIAL: N **LATITUDE:** 38.033085 **DATE COLLECTED:** 12 / 4 / 1978
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 32.0 **LOG TYPE:** Drillers Log
SOURCE: GWIN DRILLING CO. **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNCLASSIFIED	2.0	1.0	
-			CLAYSTONE	15.0	3.0	
-			SAND	1.0	18.0	
-			CLAYSTONE	13.0	19.0	

MAPID: 14500083000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 2 QUARTERS/FOOTAGES: NE SW

QUADRANGLE: DU QUOIN LONGITUDE: -89.180492 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.029337 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 480.0 LOG TYPE: Drillers Log

SOURCE: DIAMOND DRILL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
388.0	MODESTO		COAL	0.7	32.0	
387.3	MODESTO		SHALE	0.3	32.7	
387.0	MODESTO		SHALE	10.0	33.0	
377.0	MODESTO		COAL	0.2	43.0	
376.8	MODESTO		SHALE	2.7	43.2	
374.1	MODESTO		SHALE	2.0	45.9	
372.1	MODESTO		LIMESTONE	21.0	47.9	
351.1	MODESTO		SANDSTONE	5.0	68.9	
346.1	MODESTO		LIMESTONE	2.0	73.9	
344.1	MODESTO		SANDSTONE	6.0	75.9	
338.1	MODESTO		COAL	1.0	81.9	
337.1	MODESTO		SANDSTONE	2.0	82.9	
335.1	MODESTO		SANDSTONE/SHALE	39.0	84.9	
296.1	MODESTO		SHALE	12.0	123.9	
284.1	MODESTO		SHALE	4.5	135.9	
279.6	MODESTO		SHALE	0.5	140.4	
279.1	MODESTO		CONGLOMERATE	4.0	140.9	
275.1	MODESTO		COAL	1.2	144.9	
273.9	MODESTO		CLAYSTONE	1.7	146.1	
272.2	MODESTO		LIMESTONE	1.0	147.8	
271.2	MODESTO		SANDSTONE/SHALE	16.0	148.8	
255.1	MODESTO		SHALE	38.0	164.9	
217.2	MODESTO		SHALE	61.0	202.8	
156.2	MODESTO		SHALE	35.0	263.8	
121.2	MODESTO		COAL	1.0	298.8	
120.2	MODESTO		SHALE	3.0	299.8	
117.2	MODESTO		COAL	0.5	302.8	
116.7	MODESTO		SHALE	7.0	303.3	
109.7	CARBONDALE	DANVILLE	COAL	0.5	310.3	CORRELATION UNCERTAIN
109.2	CARBONDALE		CLAYSTONE	3.0	310.8	
106.2	CARBONDALE		SHALE	6.0	313.8	
100.2	CARBONDALE		CLAYSTONE	2.0	319.8	
98.2	CARBONDALE		LIMESTONE	2.0	321.8	
96.2	CARBONDALE		SHALE	4.0	323.8	
92.2	CARBONDALE		SHALE	2.0	327.8	
90.2	CARBONDALE	ENERGY	SHALE	7.0	329.8	
83.2	CARBONDALE	ENERGY	UNCLASSIFIED	2.0	336.8	
81.2	CARBONDALE	ENERGY	SHALE	2.0	338.8	
79.2	CARBONDALE	ENERGY	UNCLASSIFIED	2.0	340.8	

77.2	CARBONDALE	ENERGY	SHALE	8.0	342.8
69.2	CARBONDALE	ENERGY	SANDSTONE	27.0	350.8
42.2	CARBONDALE	ENERGY	SHALE	10.0	377.8
32.2	CARBONDALE	ENERGY	SANDSTONE	23.0	387.8
9.2	CARBONDALE	ENERGY	SANDSTONE	28.0	410.8
-18.8	CARBONDALE	ENERGY	SANDSTONE	12.0	438.8
-30.8	CARBONDALE	ENERGY	SHALE	11.0	450.8
-41.8	CARBONDALE	ENERGY	SHALE	4.8	461.8
-46.6	CARBONDALE	HERRIN	COAL	8.0	466.6
-54.6	CARBONDALE		CLAYSTONE	0.6	474.6
-55.2	CARBONDALE		LIMESTONE	4.5	475.2

MAPID: 14500083000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 2 **QUARTERS/FOOTAGES:** NE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.180492 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.029337 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 422.0 **LOGGED (FT.):** 480.0 **LOG TYPE:**
SOURCE: HALLIDAY 0002 **WELL TYPE:** Coal Test
COMMENT: LOCATION AND SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN COMMENT
-45.0	CARBONDALE	HERRIN	COAL	5.8	467.0

MAPID: 14500084000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 3 QUARTERS/FOOTAGES: NE SE

QUADRANGLE: DU QUOIN LONGITUDE: -89.189639 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.029475 DATE COLLECTED: 4 / 11 / 1986

SURFACE ELEVATION (FT.): 406.8 LOGGED (FT.): 447.2 LOG TYPE: Drillers Log

SOURCE: DIAMOND DRILL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
372.8	MODESTO		SHALE	10.0	34.0
362.8	MODESTO		SANDSTONE/SHALE	27.5	44.0
335.3	MODESTO		LIMESTONE	2.5	71.5
332.8	MODESTO		SANDSTONE/SHALE	30.0	74.0
302.8	MODESTO		SHALE	23.0	104.0
279.8	MODESTO		SANDSTONE/SHALE	4.0	127.0
275.8	MODESTO		SHALE	2.0	131.0
273.8	MODESTO		SHALE	3.0	133.0
270.8	MODESTO		COAL	1.0	136.0
269.8	MODESTO		CLAYSTONE	2.0	137.0
267.8	MODESTO		LIMESTONE	4.0	139.0
263.8	MODESTO		SHALE	21.0	143.0
242.8	MODESTO		SHALE	11.0	164.0
231.8	MODESTO		LIMESTONE	2.0	175.0
229.8	MODESTO		SANDSTONE	14.0	177.0
215.8	MODESTO		SAND	38.0	191.0
177.8	MODESTO		SANDSTONE/SHALE	10.0	229.0
167.8	MODESTO		SHALE	44.0	239.0
123.8	MODESTO		LIMESTONE	1.0	283.0
122.8	MODESTO		ARGILLACEOUS SILTSTONE	6.0	284.0
116.8	CARBONDALE	DANVILLE	COAL	2.2	290.0
114.6	CARBONDALE		ARGILLACEOUS SILTSTONE	1.8	292.2
112.8	CARBONDALE		LIMESTONE	2.0	294.0
110.8	CARBONDALE	ENERGY	SAND	52.0	296.0
58.8	CARBONDALE	ENERGY	SAND	21.0	348.0
37.8	CARBONDALE	ENERGY	SAND	20.0	369.0
17.8	CARBONDALE	ENERGY	SAND	11.0	389.0
6.8	CARBONDALE	ENERGY	SHALE	10.0	400.0
-3.2	CARBONDALE	ENERGY	SHALE	4.3	410.0
-7.5	CARBONDALE	HERRIN	COAL	2.7	414.3
-10.2	CARBONDALE		SHALE	0.7	417.0
-10.9	CARBONDALE		SHALE	3.0	417.7
-13.9	CARBONDALE		SHALE	4.5	420.7
-18.4	CARBONDALE	HERRIN	COAL	3.0	425.2
-21.4	CARBONDALE		SHALE	2.0	428.2
-23.4	CARBONDALE		SHALE	3.0	430.2
-26.4	CARBONDALE		SHALE	2.4	433.2
-28.8	CARBONDALE	HERRIN	COAL	0.6	435.6

-29.4	CARBONDALE		SHALE	1.5	436.2
-30.9	CARBONDALE		SHALE	1.0	437.7
-31.9	CARBONDALE	HERRIN	COAL	4.0	438.7
-35.9	CARBONDALE	HERRIN	SHALE	0.2	442.7
-36.1	CARBONDALE	HERRIN	COAL	1.7	442.9
-37.8	CARBONDALE		CLAYSTONE	0.5	444.6
-38.3	CARBONDALE		LIMESTONE	2.0	445.1

MAPID: 14500084000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 3 **QUARTERS/FOOTAGES:** NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.189639 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.029475 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 406.8 **LOGGED (FT.):** 447.0 **LOG TYPE:**
SOURCE: HALLIDAY 0001 **WELL TYPE:** Coal Test
COMMENT: EXACT LOCATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
-18.2	CARBONDALE	HERRIN	COAL	9.3	425.0

MAPID: 14590503000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 3 **QUARTERS/FOOTAGES:** 1' S line, 1' W line of NW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.196561 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 38.034949 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 50.0 **LOG TYPE:** Drillers Log
SOURCE: OTHER 371 **WELL TYPE:** Coal Test
COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
405.0			ROCK	35.0	15.0

MAPID: 14590508000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 3 **QUARTERS/FOOTAGES:** 1' S line, 1' W line of NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.20591 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 38.027831 **DATE COLLECTED:** 7 / 0 / 1927
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 70.0 **LOG TYPE:** Drillers Log
SOURCE: OTHER 267 **WELL TYPE:** Coal Test
COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	12.0	0.0
408.0			ROCK	58.0	12.0

MAPID: 14590509000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 3 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.205859 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.035006 DATE COLLECTED: 8 / 0 / 1927
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 367 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
410.0			ROCK	60.0	10.0

MAPID: 14590510000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 3 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.196619 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.027738 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 271 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
385.0			ROCK	55.0	15.0

MAPID: 14500085000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 4 QUARTERS/FOOTAGES: NW NW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.223228 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 38.03779 DATE COLLECTED: 5 / 11 / 1917
 SURFACE ELEVATION (FT.): 418.0 LOGGED (FT.): 1626.0 LOG TYPE: Drillers Log
 SOURCE: H. A. WHEELER WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.0			CLAYSTONE	20.0	0.0
398.0	CARBONDALE	ENERGY	SHALE	45.0	20.0
353.0	CARBONDALE	HERRIN	COAL	6.0	65.0
347.0	CARBONDALE		SHALE	9.0	71.0
338.0	CARBONDALE		LIMESTONE	17.0	80.0

MAPID: 14500085000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NW NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223228 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.03779 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 418.0 **LOGGED (FT.):** 1626.0 **LOG TYPE:**
SOURCE: WHEELER 0001 **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
353.0	CARBONDALE	SPRINGFIELD	COAL	6.0	65.0	

MAPID: 14501301000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NE NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22091 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.037779 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.5 **LOGGED (FT.):** 76.0 **LOG TYPE:**
SOURCE: GAYLE CC 0310 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501302000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE NE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.216285 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.035951 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 431.1 **LOGGED (FT.):** 49.0 **LOG TYPE:**
SOURCE: GAYLE CC 307 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501303000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW NE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218603 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.035963 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 432.4 **LOGGED (FT.):** 50.0 **LOG TYPE:**
SOURCE: GAYLE CC 0308 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501304000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW NE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218603 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.035963 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 432.4 **LOGGED (FT.):** 53.0 **LOG TYPE:**
SOURCE: GAYLE CC 0309 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501305000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE SE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.21631 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.032346 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 428.0 **LOGGED (FT.):** 24.0 **LOG TYPE:** Measured section
SOURCE: GAYLE CC 00A5 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.0	CARBONDALE	HERRIN	COAL	4.0	20.0	

MAPID: 14501306000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE SE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.21631 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.032346 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 428.7 **LOGGED (FT.):** 61.0 **LOG TYPE:**
SOURCE: GAYLE CC 0306 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501307000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NW NE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218638 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030552 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 429.7 **LOGGED (FT.):** 52.0 **LOG TYPE:**
SOURCE: GAYLE CC 0305 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501308000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218627 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.032354 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 434.5 **LOGGED (FT.):** 52.0 **LOG TYPE:**
SOURCE: GAYLE CC 0304 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501309000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NE NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220955 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030557 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 433.5 **LOGGED (FT.):** 78.0 **LOG TYPE:**
SOURCE: GAYLE CC 0303 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501310000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NE NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220955 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030557 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 413.3 **LOGGED (FT.):** 30.0 **LOG TYPE:**
SOURCE: GAYLE CC 0302 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501311000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220969 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028752 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 413.2 **LOGGED (FT.):** 17.0 **LOG TYPE:**
SOURCE: GAYLE CC 0301 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
400.2	CARBONDALE	HERRIN	COAL	4.0	13.0	

MAPID: 14501312000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218652 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028746 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 412.1 **LOGGED (FT.):** 16.0 **LOG TYPE:**
SOURCE: GAYLE CC 0300 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
401.1	CARBONDALE	HERRIN	COAL	4.4	11.0	

MAPID: 14501313000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220969 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028752 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 412.3 **LOGGED (FT.):** 29.0 **LOG TYPE:**
SOURCE: GAYLE CC 0250 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501314000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223287 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028755 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 412.1 **LOGGED (FT.):** 20.0 **LOG TYPE:**
SOURCE: GAYLE CC 0248 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501315000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223287 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028755 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 414.9 **LOGGED (FT.):** 21.0 **LOG TYPE:**
SOURCE: GAYLE CC 0244 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501316000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223287 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028755 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 416.5 **LOGGED (FT.):** 23.0 **LOG TYPE:**
SOURCE: GAYLE CC 0R11 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
399.5	CARBONDALE	HERRIN	COAL	6.0	17.0	

MAPID: 14501317000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223287 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028755 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 414.1 **LOGGED (FT.):** 22.0 **LOG TYPE:**
SOURCE: GAYLE CC 0R12 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
398.1	CARBONDALE	HERRIN	COAL	6.0	16.0	

MAPID: 14501318000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220969 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028752 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 411.9 **LOGGED (FT.):** 23.0 **LOG TYPE:**
SOURCE: GAYLE CC 0249 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
392.9	CARBONDALE	HERRIN	COAL	4.0	19.0	

MAPID: 14501319000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218652 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028746 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.3 **LOGGED (FT.):** 22.0 **LOG TYPE:**
SOURCE: GAYLE CC 0297 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
394.3	CARBONDALE	HERRIN	COAL	6.0	16.0	

MAPID: 1450132000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218663 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026944 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 412.7 **LOGGED (FT.):** 278.0 **LOG TYPE:**
SOURCE: GAYLE CC 0295 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
389.7	CARBONDALE	HERRIN	COAL	5.2	23.0	

MAPID: 14501321000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218663 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026944 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 411.5 **LOGGED (FT.):** 36.0 **LOG TYPE:**
SOURCE: GAYLE CC 0296 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501322000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22098 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026944 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 411.6 **LOGGED (FT.):** 750.0 **LOG TYPE:**
SOURCE: GAYLE CC 0254 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501323000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22098 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026944 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 411.3 **LOGGED (FT.):** 31.0 **LOG TYPE:**
SOURCE: GAYLE CC 0331 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
386.3	CARBONDALE	HERRIN	COAL	6.5	25.0	

MAPID: 14501324000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22098 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026944 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 411.5 **LOGGED (FT.):** 29.0 **LOG TYPE:**
SOURCE: GAYLE CC 0R14 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
388.5	CARBONDALE	HERRIN	COAL	6.0	23.0	

MAPID: 14501325000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NW SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223297 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026947 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 414.0 **LOGGED (FT.):** 28.0 **LOG TYPE:**
SOURCE: GAYLE CC 0282 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
392.0	CARBONDALE	HERRIN	COAL	6.5	22.0	

MAPID: 14501326000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NW SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223297 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026947 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 417.2 **LOGGED (FT.):** 31.0 **LOG TYPE:**
SOURCE: GAYLE CC 0283 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
393.2	CARBONDALE	HERRIN	COAL	6.8	24.0	

MAPID: 14501327000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NW SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223297 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026947 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 424.5 **LOGGED (FT.):** 452.0 **LOG TYPE:**
SOURCE: GAYLE CC 0281 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
385.5	CARBONDALE	HERRIN	COAL	6.5	39.0	

MAPID: 14501328000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NW SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223297 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026947 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 419.5 **LOGGED (FT.):** 39.0 **LOG TYPE:**
SOURCE: GAYLE CC 0280 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
386.5	CARBONDALE	HERRIN	COAL	5.7	33.0	

MAPID: 14501329000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22098 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026944 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 411.5 **LOGGED (FT.):** 39.0 **LOG TYPE:**
SOURCE: GAYLE CC 0284 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
379.5	CARBONDALE	HERRIN	COAL	6.9	32.0	

MAPID: 14501330000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22098 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026944 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 411.1 **LOGGED (FT.):** 39.0 **LOG TYPE:**
SOURCE: GAYLE CC 0253 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
378.1	CARBONDALE	HERRIN	COAL	5.5	33.0	

MAPID: 14501331000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22098 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026944 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 415.8 **LOGGED (FT.):** 55.0 **LOG TYPE:**
SOURCE: GAYLE CC 0255 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501332000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NW SE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218663 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026944 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 411.5 **LOGGED (FT.):** 56.0 **LOG TYPE:**
SOURCE: GAYLE CC 0293 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501333000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NE SE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.216345 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026941 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.0 **LOGGED (FT.):** 35.0 **LOG TYPE:**
SOURCE: GAYLE CC 0294 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501334000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220994 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.8 **LOGGED (FT.):** 39.0 **LOG TYPE:**
SOURCE: GAYLE CC 0256 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501335000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220994 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.8 **LOGGED (FT.):** 45.0 **LOG TYPE:**
SOURCE: GAYLE CC 0260 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
370.8	CARBONDALE	HERRIN	COAL	5.0	40.0	

MAPID: 14501337000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223311 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 426.6 **LOGGED (FT.):** 55.0 **LOG TYPE:**
SOURCE: GAYLE CC 0279 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
378.6	CARBONDALE	HERRIN	COAL	6.5	48.0	

MAPID: 14501338000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223311 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 426.8 **LOGGED (FT.):** 51.0 **LOG TYPE:**
SOURCE: GAYLE CC 0276 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
381.8	CARBONDALE	HERRIN	COAL	5.8	45.0	

MAPID: 14501339000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223311 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 414.3 **LOGGED (FT.):** 44.0 **LOG TYPE:**
SOURCE: GAYLE CC 0277 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
376.3	CARBONDALE	HERRIN	COAL	6.2	38.0	

MAPID: 14501340000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220994 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 412.5 **LOGGED (FT.):** 42.0 **LOG TYPE:**
SOURCE: GAYLE CC 0272 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
375.5	CARBONDALE	HERRIN	COAL	5.0	37.0	

MAPID: 14501341000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220994 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.2 **LOGGED (FT.):** 38.0 **LOG TYPE:**
SOURCE: GAYLE CC 0257 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501342000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220994 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 411.2 **LOGGED (FT.):** 45.0 **LOG TYPE:**
SOURCE: GAYLE CC 0264 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501343000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218677 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.2 **LOGGED (FT.):** 45.0 **LOG TYPE:**
SOURCE: GAYLE CC 0269 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
366.2	CARBONDALE	HERRIN	COAL	1.0	44.0	

MAPID: 14501344000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220994 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.6 **LOGGED (FT.):** 43.0 **LOG TYPE:**
SOURCE: GAYLE CC 0263 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
373.6	CARBONDALE	HERRIN	COAL	5.5	37.0	

MAPID: 14501345000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220994 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 411.9 **LOGGED (FT.):** 37.0 **LOG TYPE:**
SOURCE: GAYLE CC 0265 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501346000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SE SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220994 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 412.3 **LOGGED (FT.):** 45.0 **LOG TYPE:**
SOURCE: GAYLE CC 0262 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
374.3	CARBONDALE	HERRIN	COAL	6.5	38.0	

MAPID: 14501347000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223311 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 413.6 **LOGGED (FT.):** 40.0 **LOG TYPE:**
SOURCE: GAYLE CC 0273 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
379.6	CARBONDALE	HERRIN	COAL	6.0	34.0	

MAPID: 14501348000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223311 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 413.0 **LOGGED (FT.):** 36.0 **LOG TYPE:**
SOURCE: GAYLE CC 0274 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
383.0	CARBONDALE	HERRIN	COAL	6.3	30.0	

MAPID: 14501349000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223311 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025138 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 416.9 **LOGGED (FT.):** 32.0 **LOG TYPE:**
SOURCE: GAYLE CC 0275 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
390.9	CARBONDALE	HERRIN	COAL	6.5	26.0	

MAPID: 14501508000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218652 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028746 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: O PARADISE0002 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
395.0	CARBONDALE	HERRIN	COAL	6.0	15.0	

MAPID: 14501509000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 4 **QUARTERS/FOOTAGES:** NE SE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.216345 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026941 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: O PARADISE 2AS **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
377.0	CARBONDALE	HERRIN	COAL	6.0	44.0	

MAPID: 14590498000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 4 QUARTERS/FOOTAGES: 1' S line, 1' W line of SE SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.210566 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.024243 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 75.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 215 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
402.0			ROCK	57.0	18.0

MAPID: 14590499000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 4 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.215201 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.024241 DATE COLLECTED: 7 / 0 / 1927
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 54.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 213 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0
385.0			ROCK	19.0	35.0

MAPID: 14590500000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 4 QUARTERS/FOOTAGES: 1' S line, 1' W line of NE SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.210545 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.027837 DATE COLLECTED: 7 / 0 / 1927
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 42.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 265 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0
412.0			ROCK	34.0	8.0

MAPID: 14590501000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 4 QUARTERS/FOOTAGES: 1' S line, 1' W line of SE NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.21052 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.031432 DATE COLLECTED: 8 / 0 / 1927
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 80.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 315 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
410.0			ROCK	70.0	10.0

MAPID: 14590506000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 4 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.215179 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.027843 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 63.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 263 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
405.0			ROCK	42.0	15.0
363.0	CARBONDALE	HERRIN	COAL	6.5	57.0

MAPID: 14590507000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 4 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.21513 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.035049 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 363 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
405.0			ROCK	55.0	15.0

MAPID: 14500079000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232689 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028819 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.1 **LOGGED (FT.):** 43.0 **LOG TYPE:**
SOURCE: GAYLE CC 0001 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.1	CARBONDALE	HERRIN	COAL	5.3	38.0	

MAPID: 14500086000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NW NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.242107 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.038053 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 459.0 **LOGGED (FT.):** 53.0 **LOG TYPE:**
SOURCE: HALLIDAY 0027 **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.0	CARBONDALE	HERRIN	COAL	5.8	44.0	

MAPID: 14500194000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225611 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030574 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.0 **LOGGED (FT.):** 28.0 **LOG TYPE:**
SOURCE: GAYLE CC 0289 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.0	CARBONDALE	HERRIN	COAL	5.8	22.0	

MAPID: 14500719000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.242107 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.036219 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 465.2 **LOGGED (FT.):** 56.0 **LOG TYPE:**
SOURCE: UN ELEC CC2349 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.2	CARBONDALE	HERRIN	COAL	5.5	50.0	

MAPID: 14500720000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 5 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: DU QUOIN LONGITUDE: -89.242106 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.032553 DATE COLLECTED:

SURFACE ELEVATION (FT.): 462.6 LOGGED (FT.): 60.0 LOG TYPE:

SOURCE: UN ELEC CC2249 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	

MAPID: 14501221000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 5 QUARTERS/FOOTAGES: SE SW SW

QUADRANGLE: DU QUOIN LONGITUDE: -89.239756 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.025213 DATE COLLECTED:

SURFACE ELEVATION (FT.): 468.0 LOGGED (FT.): 62.7 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
468.0			CLAYSTONE	22.2	0.0
445.8			UNCLASSIFIED	7.2	22.2
438.6	CARBONDALE		SHALE	5.2	29.4
433.4	CARBONDALE		UNCLASSIFIED	0.9	34.6
432.5	CARBONDALE		CLAYSTONE	0.5	35.5
432.0	CARBONDALE	BRERETON	UNCLASSIFIED	4.2	36.0
427.8	CARBONDALE	ANNA	SHALE	4.0	40.2
423.8	CARBONDALE	ENERGY	SHALE	7.5	44.2
416.3	CARBONDALE	HERRIN	COAL	6.0	51.7
410.3	CARBONDALE		CLAYSTONE	1.8	57.7
408.5			UNCLASSIFIED	3.2	59.5

MAPID: 14501221000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 5 QUARTERS/FOOTAGES: SE SW SW

QUADRANGLE: DU QUOIN LONGITUDE: -89.239756 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.025213 DATE COLLECTED:

SURFACE ELEVATION (FT.): 467.8 LOGGED (FT.): 63.0 LOG TYPE: Measured section

SOURCE: ORION CC 00J1 WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN COMMENT
413.8	CARBONDALE	HERRIN	COAL	6.0	54.0

MAPID: 1450135000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230292 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.037885 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 420.6 **LOGGED (FT.):** 10.0 **LOG TYPE:**
SOURCE: GAYLE CC 0087 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
413.6	CARBONDALE	HERRIN	COAL	3.0	7.0	

MAPID: 14501351000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227929 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.037849 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC 0212 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501352000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227929 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.037849 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 437.8 **LOGGED (FT.):** 30.0 **LOG TYPE:**
SOURCE: GAYLE CC 0210 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501353000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227929 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.037849 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 429.0 **LOGGED (FT.):** 16.0 **LOG TYPE:**
SOURCE: GAYLE CC 0207 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501354000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227929 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.037849 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 437.0 **LOGGED (FT.):** 28.0 **LOG TYPE:**
SOURCE: GAYLE CC 0213 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	

MAPID: 14501355000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230292 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.037885 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 448.8 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC WELL **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
412.8	CARBONDALE	HERRIN	COAL	5.0 36.0	

MAPID: 14501356000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227929 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.037849 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 448.3 **LOGGED (FT.):** 40.0 **LOG TYPE:**
SOURCE: GAYLE CC 0215 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
411.3	CARBONDALE	HERRIN	COAL	3.0 37.0	

MAPID: 14501357000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230292 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.037885 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.1 **LOGGED (FT.):** 17.0 **LOG TYPE:**
SOURCE: GAYLE CC 0091 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
419.1	CARBONDALE	HERRIN	COAL	5.5 11.0	

MAPID: 14501358000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230333 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028802 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.5 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC 0092 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
412.5	CARBONDALE	HERRIN	COAL	5.5	18.0	

MAPID: 14501359000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230333 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028802 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.8 **LOGGED (FT.):** 13.0 **LOG TYPE:**
SOURCE: GAYLE CC 0094 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501360000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22794 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.036035 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 428.9 **LOGGED (FT.):** 25.0 **LOG TYPE:**
SOURCE: GAYLE CC 0090 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501361000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230333 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028802 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 424.6 **LOGGED (FT.):** 9.0 **LOG TYPE:**
SOURCE: GAYLE CC 0237 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
418.6	CARBONDALE	HERRIN	COAL	3.0	6.0	

MAPID: 14501362000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230333 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028802 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 429.3 **LOGGED (FT.):** 19.0 **LOG TYPE:**
SOURCE: GAYLE CC 0098 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.3	CARBONDALE	HERRIN	COAL	4.5	14.0	

MAPID: 14501363000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232689 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028819 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 444.1 **LOGGED (FT.):** 32.0 **LOG TYPE:**
SOURCE: GAYLE CC 0224 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.1	CARBONDALE	HERRIN	COAL	4.0	28.0	

MAPID: 14501364000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232689 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028819 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 441.9 **LOGGED (FT.):** 30.0 **LOG TYPE:**
SOURCE: GAYLE CC 0223 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.9	CARBONDALE	HERRIN	COAL	4.0	26.0	

MAPID: 14501365000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230333 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028802 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 432.6 **LOGGED (FT.):** 20.0 **LOG TYPE:**
SOURCE: GAYLE CC 0231 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.6	CARBONDALE	HERRIN	COAL	4.5	15.0	

MAPID: 14501366000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230333 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028802 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 450.8 **LOGGED (FT.):** 37.0 **LOG TYPE:**
SOURCE: GAYLE CC 0222 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501367000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230333 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028802 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 449.4 **LOGGED (FT.):** 32.0 **LOG TYPE:**
SOURCE: GAYLE CC 0221 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
420.4	CARBONDALE	HERRIN	COAL	3.0	29.0	

MAPID: 14501368000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22794 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.036035 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 442.2 **LOGGED (FT.):** 29.0 **LOG TYPE:**
SOURCE: GAYLE CC 0220 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
417.2	CARBONDALE	HERRIN	COAL	4.0	25.0	

MAPID: 14501369000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22794 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.036035 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 442.3 **LOGGED (FT.):** 43.0 **LOG TYPE:**
SOURCE: GAYLE CC 0219 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 1450137000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225577 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.036004 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 440.6 **LOGGED (FT.):** 63.0 **LOG TYPE:**
SOURCE: GAYLE CC 0218 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501371000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22795 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.034224 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 413.3 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC 0232 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501372000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22795 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.034224 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 446.6 **LOGGED (FT.):** 33.0 **LOG TYPE:**
SOURCE: GAYLE CC 0233 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
418.6	CARBONDALE	HERRIN	COAL	4.5	28.0	

MAPID: 14501373000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE SW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.230309 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.034252 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 435.5 **LOGGED (FT.):** 22.0 **LOG TYPE:**
SOURCE: GAYLE CC 00R7 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
418.5	CARBONDALE	HERRIN	COAL	5.0	17.0	

MAPID: 14501374000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22795 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.034224 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 434.3 **LOGGED (FT.):** 22.0 **LOG TYPE:**
SOURCE: GAYLE CC 0089 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.3	CARBONDALE	HERRIN	COAL	4.5	17.0	

MAPID: 14501375000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22795 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.034224 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 450.6 **LOGGED (FT.):** 37.0 **LOG TYPE:**
SOURCE: GAYLE CC 0234 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.6	CARBONDALE	HERRIN	COAL	2.5	35.0	

MAPID: 14501376000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.22795 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.034224 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 439.4 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC 0236 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
418.4	CARBONDALE	HERRIN	COAL	3.3	21.0	

MAPID: 14501377000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227957 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.03241 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 422.1 **LOGGED (FT.):** 16.0 **LOG TYPE:**
SOURCE: GAYLE CC 00R5 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501378000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227957 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.03241 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.9 **LOGGED (FT.):** 14.0 **LOG TYPE:**
SOURCE: GAYLE CC 0241 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.9	CARBONDALE	HERRIN	COAL	4.4	9.0	

MAPID: 14501379000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227957 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.03241 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.6 **LOGGED (FT.):** 21.0 **LOG TYPE:**
SOURCE: GAYLE CC 00R9 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.6	CARBONDALE	HERRIN	COAL	5.5	15.0	

MAPID: 14501380000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227957 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.03241 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.5 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC 0239 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.5	CARBONDALE	HERRIN	COAL	0.3	12.0	

MAPID: 14501381000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225601 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.032385 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.8 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GAYLE CC 0242 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
427.8	CARBONDALE	HERRIN	COAL	3.3	3.0	

MAPID: 14501382000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225601 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.032385 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.8 **LOGGED (FT.):** 11.0 **LOG TYPE:**
SOURCE: GAYLE CC 0243 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
419.8	CARBONDALE	HERRIN	COAL	4.8	6.0	

MAPID: 14501383000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225611 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030574 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 457.1 **LOGGED (FT.):** 41.0 **LOG TYPE:**
SOURCE: GAYLE CC 0006 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
422.1	CARBONDALE	HERRIN	COAL	6.0	35.0	

MAPID: 14501384000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225611 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030574 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 418.8 **LOGGED (FT.):** 12.0 **LOG TYPE:**
SOURCE: GAYLE CC 0312 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.8	CARBONDALE	HERRIN	COAL	4.7	7.0	

MAPID: 14501385000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225611 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030574 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 415.9 **LOGGED (FT.):** 10.0 **LOG TYPE:**
SOURCE: GAYLE CC 0314 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501386000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225611 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030574 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 426.4 **LOGGED (FT.):** 18.0 **LOG TYPE:**
SOURCE: GAYLE CC 0315 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
412.4	CARBONDALE	HERRIN	COAL	4.0	14.0	

MAPID: 14501387000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225611 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030574 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 415.7 **LOGGED (FT.):** 9.0 **LOG TYPE:**
SOURCE: GAYLE CC 0316 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501388000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225611 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030574 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 419.3 **LOGGED (FT.):** 20.0 **LOG TYPE:**
SOURCE: GAYLE CC 0287 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501390000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225611 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030574 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 449.3 **LOGGED (FT.):** 48.0 **LOG TYPE:**
SOURCE: GAYLE CC 0005 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.3	CARBONDALE	HERRIN	COAL	7.1	41.0	

MAPID: 14501391000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225611 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030574 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 427.6 **LOGGED (FT.):** 29.0 **LOG TYPE:**
SOURCE: GAYLE CC 0291 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
404.6	CARBONDALE	HERRIN	COAL	5.5	23.0	

MAPID: 14501392000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225611 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030574 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.4 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC 0292 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
406.4	CARBONDALE	HERRIN	COAL	6.8	17.0	

MAPID: 14501393000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225622 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028766 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.6 **LOGGED (FT.):** 21.0 **LOG TYPE:**
SOURCE: GAYLE CC 0322 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
406.6	CARBONDALE	HERRIN	COAL	6.0	15.0	

MAPID: 14501394000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225622 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028766 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.7 **LOGGED (FT.):** 16.0 **LOG TYPE:**
SOURCE: GAYLE CC 0286 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501395000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225622 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028766 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.7 **LOGGED (FT.):** 23.0 **LOG TYPE:**
SOURCE: GAYLE CC 0327 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
404.7	CARBONDALE	HERRIN	COAL	4.0	19.0	

MAPID: 14501396000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225622 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028766 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 438.3 **LOGGED (FT.):** 48.0 **LOG TYPE:**
SOURCE: GAYLE CC **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
397.3	CARBONDALE	HERRIN	COAL	6.9	41.0	

MAPID: 14501397000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SE SE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225646 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025147 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 433.7 **LOGGED (FT.):** 50.0 **LOG TYPE:**
SOURCE: GAYLE CC 0008 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
390.7	CARBONDALE	HERRIN	COAL	7.2	43.0	

MAPID: 14501398000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW SE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227998 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025158 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 439.2 **LOGGED (FT.):** 56.0 **LOG TYPE:**
SOURCE: GAYLE CC 0009 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
390.2	CARBONDALE	HERRIN	COAL	6.7	49.0	

MAPID: 14501399000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NW SW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.232696 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.026999 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 443.7 **LOGGED (FT.):** 64.0 **LOG TYPE:**
SOURCE: GAYLE CC 0002 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
385.7	CARBONDALE	HERRIN	COAL	5.8	58.0	

MAPID: 14501400000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** NE SE SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.235048 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.027013 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 457.3 **LOGGED (FT.):** 78.0 **LOG TYPE:**
SOURCE: GAYLE CC 0001 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
385.3	CARBONDALE	HERRIN	COAL	5.7	72.0	

MAPID: 14501510000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.237391 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.032507 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 465.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: O PARADISE0001 **WELL TYPE:** Underground mine
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
405.0	CARBONDALE	SPRINGFIELD	COAL	5.5	60.0	

MAPID: 14501950000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 1W

SECTION: 5

QUARTERS/FOOTAGES: SW NW NW

QUADRANGLE: DU QUOIN

LONGITUDE: -89.242107

GEOLOGIST: PLOETZ

CONFIDENTIAL: N

LATITUDE: 38.036219

DATE COLLECTED: 4 / 25 / 1989

SURFACE ELEVATION (FT.):

LOGGED (FT.): 1001.0

LOG TYPE: Drillers Log

SOURCE: J.H. FORRESTER

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE		LIMESTONE	1.5	19.5	
-	CARBONDALE	ENERGY	SHALE	2.0	21.5	
-	CARBONDALE	ENERGY	SHALE	2.0	23.5	
-	CARBONDALE	ENERGY	SHALE	14.0	25.5	
-	CARBONDALE	ENERGY	CLAYSTONE	4.0	39.5	
-	CARBONDALE	HERRIN	COAL	6.5	43.5	
-	CARBONDALE		CLAYSTONE	8.5	50.0	
-	CARBONDALE		SHALE	21.0	58.5	
-	CARBONDALE		CLAYSTONE	30.0	79.5	
-	CARBONDALE	HANOVER	LIMESTONE	0.5	109.5	
-	CARBONDALE	EXCELLO	SHALE	3.7	110.0	
-	CARBONDALE	HOUCHIN CREEK	COAL	1.0	113.7	
-	CARBONDALE		CLAYSTONE	3.7	114.7	
-	CARBONDALE		LIMESTONE	0.5	118.4	
-	CARBONDALE		SHALE	36.5	118.9	
-	CARBONDALE	OAK GROVE	LIMESTONE	2.5	155.4	
-	CARBONDALE	MECCA QUARRY	SHALE	1.5	157.9	
-	CARBONDALE	COLCHESTER	COAL	0.5	159.4	
-	SPOON		CLAYSTONE	1.0	159.9	
-	SPOON		SHALE	15.5	160.9	
-	SPOON		SANDSTONE	18.0	176.4	
-	SPOON		SHALE	3.2	194.4	
-	SPOON	DAVIS	COAL	1.0	197.6	
-	SPOON		CLAYSTONE	0.7	198.6	
-	SPOON		SHALE	15.5	199.3	
-	SPOON		SANDSTONE	18.0	214.8	
-	SPOON		SHALE	3.2	232.8	
-	SPOON	MURPHYSBORO	COAL	1.0	236.0	UNCERTAIN CORRELATION
-	SPOON		CLAYSTONE	0.7	237.0	
-	SPOON		SHALE	5.0	237.7	

MAPID: 1450195000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.242107 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.036219 **DATE COLLECTED:** 0 / 0 / 1992
SURFACE ELEVATION (FT.): 465.0 **LOGGED (FT.):** 1001.0 **LOG TYPE:**
SOURCE: FORESTER 0009 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
422.0	CARBONDALE	HERRIN	COAL	6.5	43.0	

MAPID: 14501951000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** SW SW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.242106 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.032553 **DATE COLLECTED:** 0 / 0 / 1937
SURFACE ELEVATION (FT.): 465.0 **LOGGED (FT.):** 5257.0 **LOG TYPE:**
SOURCE: FORESTER 001B **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
404.0	CARBONDALE	HERRIN	COAL	6.0	61.0	

MAPID: 14501952000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 5 **QUARTERS/FOOTAGES:** 1650' N line, 330' W line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.242134 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.034414 **DATE COLLECTED:** 0 / 0 / 1936
SURFACE ELEVATION (FT.): 465.0 **LOGGED (FT.):** 1486.0 **LOG TYPE:**
SOURCE: FORESTER 001A **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
404.0	CARBONDALE	HERRIN	COAL	6.5	61.0	
-	CARBONDALE	SPRINGFIELD	UNCLASSIFIED	-		

MAPID: 14501952000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 5 QUARTERS/FOOTAGES: 1650' N line, 330' W line
 QUADRANGLE: DU QUOIN LONGITUDE: -89.242134 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.034414 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 60.6 LOG TYPE: Survey Core Study
 SOURCE: WELL TYPE: Coal Test
 COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.7	CARBONDALE	BRERETON	LIMESTONE & SHALE	12.0	29.3
423.7	CARBONDALE	ANNA	BLACK SHALE	2.8	41.3
420.9	CARBONDALE	ENERGY	DARK GRAY SHALE	3.1	44.1
417.8	CARBONDALE	ENERGY	CLAYSTONE & SHALE	2.4	47.2
415.4	CARBONDALE	ENERGY	GRAY SHALE	5.4	49.6
410.0	CARBONDALE	HERRIN	COAL	5.6	55.0

MAPID: 14590495000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 5 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW SE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.231454 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.029721 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 33.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 281 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
410.0			ROCK	23.0	10.0

MAPID: 14590496000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 5 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.236165 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.029754 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 48.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 279 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
415.0			ROCK	23.0	25.0

MAPID: 14590497000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 5 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.236155 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.033404 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 30.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 329 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0	
430.0			ROCK	20.0	10.0	

MAPID: 14500078000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 6 QUARTERS/FOOTAGES: SW SW NE
 QUADRANGLE: PYATTS LONGITUDE: -89.251348 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.032618 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 466.0 LOGGED (FT.): 3600.0 LOG TYPE:
 SOURCE: IC C SALT WELL TYPE: Coal Test
 COMMENT: LOCATION AND SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
400.0	CARBONDALE	HERRIN	COAL	5.0	66.0	

MAPID: 14500087000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 6 QUARTERS/FOOTAGES: NE NW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.249046 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.038118 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 455.0 LOGGED (FT.): 67.0 LOG TYPE:
 SOURCE: HALLIDAY 0025 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
395.0	CARBONDALE	HERRIN	COAL	6.3	60.0	

MAPID: 14500088000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 6 **QUARTERS/FOOTAGES:** NW NW SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.251348 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.030779 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 457.0 **LOGGED (FT.):** 81.0 **LOG TYPE:**
SOURCE: HALLIDAY 0024 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
383.0	CARBONDALE	HERRIN	COAL	6.7	74.0	

MAPID: 14500090000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 6 **QUARTERS/FOOTAGES:** NW NE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.255958 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.038174 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.5 **LOGGED (FT.):** 65.0 **LOG TYPE:**
SOURCE: HALLIDAY 0026 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.5	CARBONDALE	HERRIN	COAL	6.0	59.0	

MAPID: 14500107000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 6 **QUARTERS/FOOTAGES:** NE NE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.253654 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.038155 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 456.0 **LOGGED (FT.):** 61.0 **LOG TYPE:**
SOURCE: HALLIDAY **WELL TYPE:** Coal Test
COMMENT: EXACT LOCATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
401.0	CARBONDALE	HERRIN	COAL	5.8	55.0	

MAPID: 14500721000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 6 **QUARTERS/FOOTAGES:** SW NW NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.259713 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.03636 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 454.4 **LOGGED (FT.):** 75.0 **LOG TYPE:**
SOURCE: UN ELEC CC2341 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14500722000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 6 **QUARTERS/FOOTAGES:** SW NE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.255957 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.03633 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 456.9 **LOGGED (FT.):** 78.0 **LOG TYPE:**
SOURCE: UN ELEC CC2343 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
385.9	CARBONDALE	HERRIN	COAL	6.5	71.0	

MAPID: 14500724000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 6 **QUARTERS/FOOTAGES:** SW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.246742 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.03626 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 461.1 **LOGGED (FT.):** 60.0 **LOG TYPE:**
SOURCE: UN ELEC CC2347 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
406.1	CARBONDALE	HERRIN	COAL	5.3	55.0	

MAPID: 14500725000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 6 **QUARTERS/FOOTAGES:** SW SW NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.259777 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.032669 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 442.0 **LOGGED (FT.):** 57.0 **LOG TYPE:**
SOURCE: UN ELEC CC2241 **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
391.0	CARBONDALE	HERRIN	COAL	5.8	51.0	

MAPID: 14500728000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 6 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.259903 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025293 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 449.1 **LOGGED (FT.):** 61.0 **LOG TYPE:**
SOURCE: UN ELEC CC2041 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
395.1	CARBONDALE	HERRIN	COAL	6.8	54.0	

MAPID: 14500729000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 6 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.255953 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.025279 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 458.6 **LOGGED (FT.):** 63.0 **LOG TYPE:**
SOURCE: UN ELEC CC2043 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
401.6	CARBONDALE	HERRIN	COAL	6.2	57.0	

MAPID: 14500730000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 6 **QUARTERS/FOOTAGES:** SW SW SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.251346 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.02526 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 461.4 **LOGGED (FT.):** 51.0 **LOG TYPE:**
SOURCE: UN ELEC CC2045 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.4	CARBONDALE	HERRIN	COAL	5.4	45.0	

MAPID: 14501511000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 6 **QUARTERS/FOOTAGES:** SE NW SW
QUADRANGLE: PYATTS **LONGITUDE:** -89.258257 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.028975 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 454.3 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: MILLERHORN00J3 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
389.3	CARBONDALE	HERRIN	COAL	6.0	65.0	

MAPID: 14502248000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 6 QUARTERS/FOOTAGES: 1330' N line, 2607' E line

QUADRANGLE: PYATTS LONGITUDE: -89.252386 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.035392 DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 84.9 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO 767 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.0	MODESTO	PIASA	LIMESTONE	4.0	24.0
428.0	CARBONDALE		GRAY SHALE	16.2	28.0
411.8	CARBONDALE	BANKSTON FORK	LIMESTONE	5.8	44.2
406.1	CARBONDALE	LAWSON	SHALE	9.0	49.9
397.1	CARBONDALE	BRERETON	LIMESTONE	1.8	58.9
395.2	CARBONDALE	ANNA	BLACK SHALE	7.3	60.8
388.0	CARBONDALE	ENERGY	GRAY SHALE	11.3	68.0
377.0	CARBONDALE	HERRIN	COAL	5.9	79.0

MAPID: 14500091000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 7 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: PYATTS LONGITUDE: -89.251187 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.01787 DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 184.0 LOG TYPE: Drillers Log

SOURCE: WATER COMPANY WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
456.0			CLAYSTONE	40.0	0.0
416.0	CARBONDALE		SANDSTONE	6.0	40.0
410.0	CARBONDALE		SANDSTONE/SHALE	4.0	46.0
406.0	CARBONDALE		CLAYSTONE & SHALE	38.0	50.0
368.0	CARBONDALE		LIMESTONE	0.5	88.0
367.5	CARBONDALE	TURNER MINE	SHALE	6.5	88.5
361.0	CARBONDALE	SPRINGFIELD	COAL	2.0	95.0
359.0	CARBONDALE		CLAYSTONE	1.0	97.0
358.0	CARBONDALE		SANDSTONE/SHALE	10.0	98.0
348.0	CARBONDALE		SANDSTONE	6.0	108.0
342.0	CARBONDALE		SANDSTONE/SHALE	30.0	114.0
312.0	CARBONDALE	HANOVER	LIMESTONE	2.0	144.0
310.0	CARBONDALE	EXCELLO	SHALE	1.0	146.0
309.0	CARBONDALE	HOUCHIN CREEK	COAL	1.0	147.0
308.0	CARBONDALE		CLAYSTONE	3.0	148.0
305.0	CARBONDALE		SANDSTONE/SHALE	10.0	151.0
295.0	CARBONDALE		SANDSTONE	12.0	161.0
283.0	CARBONDALE		SANDSTONE/SHALE	1.0	173.0

MAPID: 14500091000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 7 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: PYATTS LONGITUDE: -89.251187

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.01787

DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 174.0

LOG TYPE:

SOURCE: NO COMPANY 0003

WELL TYPE: Coal Test

COMMENT: EXACT LOCATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	

MAPID: 14500092000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 1W

SECTION: 7

QUARTERS/FOOTAGES: NE NE NW

QUADRANGLE: PYATTS

LONGITUDE: -89.253624

GEOLOGIST: PLOETZ

CONFIDENTIAL: N

LATITUDE: 38.023424

DATE COLLECTED:

SURFACE ELEVATION (FT.): 455.0

LOGGED (FT.): 388.0

LOG TYPE: Drillers Log

SOURCE: WATER COMPANY HOLE

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.0			CLAYSTONE	20.0	0.0
435.0			SAND	13.0	20.0
422.0			UNCLASSIFIED	5.0	33.0
417.0			CLAYSTONE	5.0	38.0
412.0	CARBONDALE		SANDSTONE/SHALE	16.0	43.0
396.0	CARBONDALE		CLAYSTONE & SHALE	36.0	59.0
360.0	CARBONDALE		SHALE	5.0	95.0
355.0	CARBONDALE	SPRINGFIELD	COAL	1.0	100.0
354.0	CARBONDALE		CLAYSTONE	2.0	101.0
352.0	CARBONDALE		SANDSTONE/SHALE	8.0	103.0
344.0	CARBONDALE		SANDSTONE	7.0	111.0
337.0	CARBONDALE		SANDSTONE/SHALE	30.0	118.0
307.0	CARBONDALE	HANOVER	LIMESTONE	1.0	148.0
306.0	CARBONDALE	EXCELLO	SHALE	1.5	149.0
304.5	CARBONDALE	HOUCHIN CREEK	COAL	0.5	150.5
304.0	CARBONDALE		CLAYSTONE	5.0	151.0
299.0	CARBONDALE		SANDSTONE/SHALE	11.0	156.0
288.0	CARBONDALE		SANDSTONE	7.0	167.0
281.0	CARBONDALE		SANDSTONE/SHALE	9.0	174.0
272.0	CARBONDALE	MECCA QUARRY	SHALE	5.0	183.0
267.0	CARBONDALE	COLCHESTER	COAL	1.5	188.0
265.5	SPOON		CLAYSTONE	3.5	189.5
262.0	SPOON		SANDSTONE/SHALE	7.0	193.0
255.0	SPOON		CLAYSTONE	3.0	200.0
252.0	SPOON		CLAYSTONE & SHALE	10.0	203.0
242.0	SPOON		CLAYSTONE	3.0	213.0
239.0	SPOON		SANDSTONE	10.0	216.0
229.0	SPOON		SANDSTONE/SHALE	61.0	226.0
168.0	SPOON		SANDSTONE	73.0	287.0
95.0	SPOON		SANDSTONE/SHALE	20.0	360.0
75.0	SPOON		SANDSTONE	8.0	380.0

MAPID: 14500092000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 7 **QUARTERS/FOOTAGES:** NE NE NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.253624 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023424 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 458.0 **LOGGED (FT.):** 388.0 **LOG TYPE:**
SOURCE: NO COMPANY 0005 **WELL TYPE:** Coal Test
COMMENT: LOCATION AND SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14500731000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 7 **QUARTERS/FOOTAGES:** SW NW NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.25995 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.021604 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 456.0 **LOGGED (FT.):** 62.0 **LOG TYPE:**
SOURCE: UN ELEC CC1941 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
399.0	CARBONDALE	HERRIN	COAL	5.1	57.0	

MAPID: 14500733000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 7 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: PYATTS **LONGITUDE:** -89.251098 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.014173 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 458.4 **LOGGED (FT.):** 60.0 **LOG TYPE:**
SOURCE: UN ELEC CC1945 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
405.4	CARBONDALE	HERRIN	COAL	6.5	53.0	

MAPID: 14501401000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 7 **QUARTERS/FOOTAGES:** NE SW NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.258118 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.019751 **DATE COLLECTED:** 0 / 0 / 1929
SURFACE ELEVATION (FT.): 455.8 **LOGGED (FT.):** 67.0 **LOG TYPE:**
SOURCE: TRUAX-TRAER 0D39 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
394.8	CARBONDALE	HERRIN	COAL	5.5	61.0	

MAPID: 14501402000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 7 QUARTERS/FOOTAGES: 2600' S line, 1400' W line

QUADRANGLE: PYATTS LONGITUDE: -89.256243 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.016763 DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 76.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
423.5	CARBONDALE		GRAY SHALE	8.0	29.5
415.5	CARBONDALE	BANKSTON FORK	LIMESTONE	6.5	37.5
409.0	CARBONDALE	LAWSON	GRAY SHALE	4.0	44.0
405.0	CARBONDALE	CONANT	LIMESTONE	5.5	48.0
399.5	CARBONDALE		CALCAREOUS SHALE	3.0	53.5
396.5	CARBONDALE	BRERETON	LIMESTONE	8.5	56.5
388.0	CARBONDALE	ANNA	BLACK SHALE	6.0	65.0
382.0	CARBONDALE	HERRIN	COAL	5.0	71.0

MAPID: 14501512000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 7 QUARTERS/FOOTAGES: NE SE SW

QUADRANGLE: PYATTS LONGITUDE: -89.253334 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.012336 DATE COLLECTED:

SURFACE ELEVATION (FT.): 455.0 LOGGED (FT.): 0.0 LOG TYPE: Measured section

SOURCE: WESTPARKCC WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
387.0	CARBONDALE	HERRIN	COAL	7.0	68.0

MAPID: 14501944000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 7 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: PYATTS LONGITUDE: -89.255563 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.010503 DATE COLLECTED: 0 / 0 / 1929

SURFACE ELEVATION (FT.): 451.3 LOGGED (FT.): 85.0 LOG TYPE:

SOURCE: TRUAX-TRAER 0D40 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
373.3	CARBONDALE	HERRIN	COAL	7.1	78.0

MAPID: 14501222000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** SE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225584 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.014068 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: HOWELL **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.0	CARBONDALE	HERRIN	COAL	7.0	9.0	

MAPID: 14501405000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** NE NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225646 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023316 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 429.4 **LOGGED (FT.):** 37.0 **LOG TYPE:**
SOURCE: GAYLE CC 0366 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
393.4	CARBONDALE	HERRIN	COAL	1.3	36.0	

MAPID: 14501406000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** NE NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.239742 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023371 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 417.0 **LOGGED (FT.):** 23.0 **LOG TYPE:**
SOURCE: GAYLE CC 0367 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.0	CARBONDALE	HERRIN	COAL	2.0	21.0	

MAPID: 14501407000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** NE NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225646 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023316 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.0 **LOGGED (FT.):** 74.0 **LOG TYPE:**
SOURCE: GAYLE CC 0338 **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501408000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** NE NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225646 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023316 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 422.0 **LOGGED (FT.):** 29.0 **LOG TYPE:**
SOURCE: GAYLE CC 0368 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
399.0	CARBONDALE	HERRIN	COAL	5.4	23.0	

MAPID: 14501409000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** NW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227995 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023325 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 423.3 **LOGGED (FT.):** 29.0 **LOG TYPE:**
SOURCE: GAYLE CC 0369 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.3	CARBONDALE	HERRIN	COAL	5.8	23.0	

MAPID: 14501410000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** NW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227995 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023325 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.0 **LOGGED (FT.):** 25.0 **LOG TYPE:**
SOURCE: GAYLE CC 0373 **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.0	CARBONDALE	HERRIN	COAL	3.3	21.0	

MAPID: 14501411000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** NW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227995 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023325 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 425.0 **LOGGED (FT.):** 31.0 **LOG TYPE:**
SOURCE: GAYLE CC 0372 **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501412000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** NW NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227995 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023325 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.0 **LOGGED (FT.):** 38.0 **LOG TYPE:**
SOURCE: GAYLE CC 0376 **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
398.0	CARBONDALE	HERRIN	COAL	6.3	32.0	

MAPID: 14501514000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 8 **QUARTERS/FOOTAGES:** NE SE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.225573 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.012218 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: ROGERS CO 00PH **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.0	CARBONDALE	HERRIN	COAL	5.0	40.0	

MAPID: 14500094000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** 1980' N line, 660' E line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.208257 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.018774 **DATE COLLECTED:** 0 / 0 / 1987
SURFACE ELEVATION (FT.): 414.0 **LOGGED (FT.):** 96.0 **LOG TYPE:**
SOURCE: HALLIDAY 0006 **WELL TYPE:** Coal Test
COMMENT: EXACT LOCATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
328.0	CARBONDALE	HERRIN	COAL	6.8	86.0	

MAPID: 14500094000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 9 QUARTERS/FOOTAGES: 1980' N line, 660' E line

QUADRANGLE: DU QUOIN LONGITUDE: -89.208257 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.018774 DATE COLLECTED:

SURFACE ELEVATION (FT.): 414.0 LOGGED (FT.): 92.8 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
396.0	MODESTO	PIASA	LIMESTONE	9.0	18.0
387.0	MODESTO		CLAYSTONE	2.0	27.0
385.0	CARBONDALE	DANVILLE	COAL	1.5	29.0
383.5	CARBONDALE		BLACK SHALE	5.5	30.5
378.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	36.0
376.0	CARBONDALE	ENERGY	SANDSTONE	9.0	38.0
367.0	CARBONDALE	ENERGY	SHALE	36.0	47.0
331.0	CARBONDALE	ENERGY	BLACK SHALE	3.3	83.0
328.0	CARBONDALE	HERRIN	COAL	6.8	86.0

MAPID: 14500095000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 9 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: DU QUOIN LONGITUDE: -89.207133 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.010378 DATE COLLECTED:

SURFACE ELEVATION (FT.): 421.0 LOGGED (FT.): 202.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
396.0	MODESTO		SHALE	36.0	25.0
360.0	MODESTO		CLAYSTONE & SHALE	27.0	61.0
333.0	MODESTO		SANDSTONE	3.0	88.0
330.0	MODESTO		SHALE	6.0	91.0
324.0	MODESTO		CLAYSTONE	3.0	97.0
321.0	MODESTO		SANDSTONE	7.0	100.0
314.0	MODESTO		SANDSTONE/SHALE	8.0	107.0
306.0	MODESTO		SHALE	8.7	115.0
297.3	MODESTO		SHALE	0.3	123.7
297.0	CARBONDALE	DANVILLE	COAL	1.4	124.0
295.6	CARBONDALE		CLAYSTONE	1.6	125.4
294.0	CARBONDALE		SHALE	3.0	127.0
291.0	CARBONDALE		LIMESTONE	6.0	130.0
285.0	CARBONDALE	ENERGY	SANDSTONE	14.0	136.0
271.0	CARBONDALE	ENERGY	SANDSTONE	30.0	150.0
241.0	CARBONDALE	ENERGY	SANDSTONE	12.0	180.0
229.0	CARBONDALE	ENERGY	SHALE	1.2	192.0
227.8	CARBONDALE	HERRIN	COAL	8.9	193.2

MAPID: 14500095000C VERSION: 2

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 9 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: DU QUOIN LONGITUDE: -89.207133 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.010378 DATE COLLECTED:

SURFACE ELEVATION (FT.): 421.0 LOGGED (FT.): 202.0 LOG TYPE:

SOURCE: HALLIDAY 0007 WELL TYPE: Coal Test

COMMENT: EXACT LOCATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
228.0	CARBONDALE	HERRIN	COAL	6.7	193.0

MAPID: 14500732000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.214041 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.01407 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 456.5 **LOGGED (FT.):** 66.0 **LOG TYPE:**
SOURCE: UN ELEC CC1943 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.5	CARBONDALE	HERRIN	COAL	5.6	60.0	

MAPID: 14501223000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SE NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220957 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.014065 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 450.4 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: N MOON MGC0009 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
406.4	CARBONDALE	HERRIN	COAL	6.5	44.0	

MAPID: 14501226000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NW NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223274 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.015915 **DATE COLLECTED:** 0 / 0 / 1931
SURFACE ELEVATION (FT.): 440.1 **LOGGED (FT.):** 32.0 **LOG TYPE:**
SOURCE: HOWELL 0006 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.1	CARBONDALE	HERRIN	COAL	6.0	26.0	

MAPID: 14501336000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223246 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.010366 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 415.0 **LOGGED (FT.):** 44.0 **LOG TYPE:**
SOURCE: GAYLE CC 0278 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
378.0	CARBONDALE	HERRIN	COAL	6.5	37.0	

MAPID: 14501413000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NW NE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.21868 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023313 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.2 **LOGGED (FT.):** 35.0 **LOG TYPE:**
SOURCE: GAYLE CC 0347 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501414000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NW NE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.21868 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023313 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.5 **LOGGED (FT.):** 36.0 **LOG TYPE:**
SOURCE: GAYLE CC 348 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
380.5	CARBONDALE	HERRIN	COAL	6.0	30.0	

MAPID: 14501415000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NE NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220994 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023313 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 413.2 **LOGGED (FT.):** 40.0 **LOG TYPE:**
SOURCE: GAYLE CC 0352 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
379.2	CARBONDALE	HERRIN	COAL	6.3	34.0	

MAPID: 14501416000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NW NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223311 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023311 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 416.0 **LOGGED (FT.):** 25.0 **LOG TYPE:**
SOURCE: GAYLE CC 0345 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
394.0	CARBONDALE	HERRIN	COAL	3.0	22.0	

MAPID: 14501417000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NW NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223311 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023311 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 429.5 **LOGGED (FT.):** 44.0 **LOG TYPE:**
SOURCE: GAYLE CC 0354 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
388.5	CARBONDALE	HERRIN	COAL	2.5	41.0	

MAPID: 14501418000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NW NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223311 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023311 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 415.0 **LOGGED (FT.):** 36.0 **LOG TYPE:**
SOURCE: GAYLE CC 0340 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
386.0	CARBONDALE	HERRIN	COAL	6.8	29.0	

MAPID: 14501419000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NE NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220994 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023313 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 431.8 **LOGGED (FT.):** 55.0 **LOG TYPE:**
SOURCE: GAYLE CC 0351 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
382.8	CARBONDALE	HERRIN	COAL	6.3	49.0	

MAPID: 14501420000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NE NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220994 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023313 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 411.5 **LOGGED (FT.):** 32.0 **LOG TYPE:**
SOURCE: GAYLE CC 0343 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
386.5	CARBONDALE	HERRIN	COAL	6.5	25.0	

MAPID: 14501421000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NW NE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.21868 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023313 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.5 **LOGGED (FT.):** 32.0 **LOG TYPE:**
SOURCE: GAYLE CC 0360 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
385.5	CARBONDALE	HERRIN	COAL	6.4	25.0	

MAPID: 14501422000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NW NE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.21868 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023313 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.4 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC 0361 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
389.4	CARBONDALE	HERRIN	COAL	3.0	21.0	

MAPID: 14501423000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SE NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220987 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.021464 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 414.8 **LOGGED (FT.):** 22.0 **LOG TYPE:**
SOURCE: GAYLE CC 0342 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.8	CARBONDALE	HERRIN	COAL	4.2	18.0	

MAPID: 14501424000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SE NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220987 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.021464 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 419.0 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC M358 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.0	CARBONDALE	HERRIN	COAL	5.5	19.0	

MAPID: 14501425000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SW NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223301 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.021461 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 433.5 **LOGGED (FT.):** 45.0 **LOG TYPE:**
SOURCE: GAYLE CC M341 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
394.5	CARBONDALE	HERRIN	COAL	6.3	39.0	

MAPID: 14501426000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SW NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223301 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.021461 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 418.0 **LOGGED (FT.):** 30.0 **LOG TYPE:**
SOURCE: GAYLE CC 0346 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
390.0	CARBONDALE	HERRIN	COAL	2.0	28.0	

MAPID: 14501427000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SW NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223301 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.021461 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 421.1 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC M359 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
402.1	CARBONDALE	HERRIN	COAL	5.8	19.0	

MAPID: 14501428000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SE NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220987 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.021464 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 419.4 **LOGGED (FT.):** 24.0 **LOG TYPE:**
SOURCE: GAYLE CC 0356 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-		

MAPID: 14501429000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SE NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220987 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.021464 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 415.2 **LOGGED (FT.):** 20.0 **LOG TYPE:**
SOURCE: GAYLE CC 0357 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	UNCLASSIFIED	-	-	

MAPID: 14501430000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SE NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220987 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.021464 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 413.6 **LOGGED (FT.):** 15.0 **LOG TYPE:**
SOURCE: GAYLE CC 0355 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
401.6	CARBONDALE	HERRIN	COAL	3.7	12.0	

MAPID: 14501515000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223263 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.014065 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 445.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: MOON MGC 0008 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
395.0	CARBONDALE	HERRIN	COAL	6.0	50.0	

MAPID: 14501516000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223263 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.014065 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 445.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: HOWELL 0007 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
393.0	CARBONDALE	HERRIN	COAL	6.0	52.0	

MAPID: 14501518000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NE SW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220981 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.019614 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 429.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.0	CARBONDALE	HERRIN	COAL	7.0	21.0	

MAPID: 14501519000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NW SE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218667 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.019614 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: GREENWD ST **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
410.0	CARBONDALE	HERRIN	COAL	7.0	10.0	

MAPID: 14501520000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NE SE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.216357 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.019617 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 422.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: GREENWDDAV0005 **WELL TYPE:** Underground mine
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
375.0	CARBONDALE	HERRIN	COAL	7.4	47.0	

MAPID: 14501521000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SW NE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218674 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.021464 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 415.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: NO COMPANY 0011 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
390.0	CARBONDALE	HERRIN	COAL	5.0	25.0	

MAPID: 14501522000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** NW NE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.21868 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023313 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: NO COMPANY 0010 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
375.0	CARBONDALE	HERRIN	COAL	6.0	35.0	

MAPID: 14501523000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SE NE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.21636 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.021463 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 418.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: BAILEY 0002 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
368.0	CARBONDALE	HERRIN	COAL	6.0	50.0	

MAPID: 14501524000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.214041 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.01407 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 402.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: BAILEY 0001 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
370.0	CARBONDALE	HERRIN	COAL	6.0	32.0	

MAPID: 14501525000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 9 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.218664 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.017767 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 435.0 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: GREENWOOD 0004 **WELL TYPE:** Strip Mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
390.0	CARBONDALE	HERRIN	COAL	6.0	45.0	

MAPID: 14590493000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 9 QUARTERS/FOOTAGES: 1' S line, 1' W line of NE NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.210571 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.020546 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 165 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0
368.0			ROCK	28.0	32.0

MAPID: 14590502000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 9 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.215198 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.020544 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): LOGGED (FT.): 51.7 LOG TYPE: Drillers Log
 SOURCE: OTHER 163 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	9.0	0.0
-			ROCK	42.7	9.0

MAPID: 14500096000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 10 QUARTERS/FOOTAGES: NE NE NE

QUADRANGLE: DU QUOIN LONGITUDE: -89.188543 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.023106 DATE COLLECTED:

SURFACE ELEVATION (FT.): 405.0 LOGGED (FT.): 410.3 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
386.0			UNCLASSIFIED	13.0	19.0
373.0			CLAYSTONE	22.0	32.0
351.0			UNCLASSIFIED	2.0	54.0
349.0			SANDSTONE/SHALE	2.0	56.0
347.0			SANDSTONE/SHALE	24.0	58.0
323.0			SHALE	14.0	82.0
309.0			LIMESTONE	2.0	96.0
307.0			SHALE	7.0	98.0
300.0			COAL	1.0	105.0
299.0			CLAYSTONE	2.0	106.0
297.0			LIMESTONE	4.0	108.0
293.0			CLAYSTONE	1.0	112.0
292.0			LIMESTONE	3.0	113.0
289.0			SHALE	22.0	116.0
267.0			SHALE	8.0	138.0
259.0			SHALE	63.0	146.0
196.0			CLAYSTONE & SHALE	21.0	209.0
175.0			SHALE	11.0	230.0
164.0			SHALE	11.0	241.0
153.0			SANDSTONE/SHALE	21.0	252.0
132.0			SHALE	3.0	273.0
129.0			LIMESTONE	1.0	276.0
128.0			SHALE	12.0	277.0
116.0			LIMESTONE	3.0	289.0
113.0			SHALE	8.0	292.0
105.0			LIMESTONE	2.0	300.0
103.0			SHALE	27.0	302.0
76.0			SANDSTONE	8.0	329.0
68.0			SHALE	1.5	337.0
66.5			SANDSTONE	8.5	338.5
58.0			LIMESTONE	4.0	347.0
54.0	CARBONDALE	ENERGY	SHALE	3.0	351.0
51.0	CARBONDALE	ENERGY	CONGLOMERATE	1.5	354.0
49.5	CARBONDALE	ENERGY	SHALE	30.5	355.5
19.0	CARBONDALE	ENERGY	CLAYSTONE & SHALE	12.0	386.0
7.0	CARBONDALE	ENERGY	SHALE	1.0	398.0
6.0	CARBONDALE	HERRIN	COAL	8.8	399.0
-2.8	CARBONDALE		CLAYSTONE	2.5	407.8

MAPID: 14500096000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** NE NE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.188543 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.023106 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 405.0 **LOGGED (FT.):** 413.0 **LOG TYPE:**
SOURCE: HALLIDAY 0003 **WELL TYPE:** Coal Test
COMMENT: LOCATION AND SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
6.0	CARBONDALE	HERRIN	COAL	11.5	399.0	

MAPID: 14500097000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** NE SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.1886 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.019418 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 398.0 **LOGGED (FT.):** 400.0 **LOG TYPE:**
SOURCE: HALLIDAY 0004 **WELL TYPE:** Coal Test
COMMENT: EXACT LOCATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
10.0	CARBONDALE	HERRIN	COAL	9.7	388.0	

MAPID: 14500098000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 10 **QUARTERS/FOOTAGES:** 1980' N line, 660' W line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.203651 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.018745 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 403.0 **LOGGED (FT.):** 310.0 **LOG TYPE:**
SOURCE: HALLIDAY 0005 **WELL TYPE:** Coal Test
COMMENT: EXACT LOCATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
105.0	CARBONDALE	HERRIN	COAL	8.8	298.0	

MAPID: 14500098000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 10 QUARTERS/FOOTAGES: 1980' N line, 660' W line

QUADRANGLE: DU QUOIN LONGITUDE: -89.203651

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.018745

DATE COLLECTED:

SURFACE ELEVATION (FT.): 403.0

LOGGED (FT.): 306.8

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
197.0	MODESTO	PIASA	LIMESTONE	8.0	206.0
189.0	MODESTO		BLACK SHALE	2.0	214.0
187.0	CARBONDALE	DANVILLE	COAL	0.8	216.0
186.2	CARBONDALE		BLACK SHALE	6.3	216.8
180.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	223.0
173.0	CARBONDALE	ENERGY	SHALE & SANDSTONE	25.0	230.0
148.0	CARBONDALE	ENERGY	SANDSTONE	6.0	255.0
142.0	CARBONDALE	ENERGY	SILTY SHALE	10.0	261.0
132.0	CARBONDALE	ENERGY	ARGILLACEOUS SANDSTONE	19.0	271.0
113.0	CARBONDALE	ENERGY	BLACK SHALE	7.8	290.0
105.0	CARBONDALE	HERRIN	COAL	8.8	298.0

MAPID: 14590504000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 10 QUARTERS/FOOTAGES: 1' S line, 1' W line of NW NW

QUADRANGLE: DU QUOIN LONGITUDE: -89.205943

GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.020546

DATE COLLECTED: 7 / 0 / 1927

SURFACE ELEVATION (FT.): 400.0

LOGGED (FT.): 78.0

LOG TYPE: Drillers Log

SOURCE: OTHER 167

WELL TYPE: Coal Test

COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
390.0			ROCK	68.0	10.0

MAPID: 14590505000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 10 QUARTERS/FOOTAGES: 1' S line, 1' W line of SE SW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.201387 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.009411 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 219 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
405.0			ROCK	55.0	15.0	

MAPID: 14501560000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 11 QUARTERS/FOOTAGES: NE SW NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.184019 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.019361 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 405.0 LOGGED (FT.): 493.0 LOG TYPE:
 SOURCE: PARADISE 0001 WELL TYPE: Coal Test
 COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-30.0	CARBONDALE	HERRIN	COAL	12.3	435.0	
-81.0	CARBONDALE	SPRINGFIELD	COAL	4.3	486.0	

MAPID: 14502767000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 11 QUARTERS/FOOTAGES: 1980' N line, 1320' W line

QUADRANGLE: DU QUOIN LONGITUDE: -89.182854 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.01848 DATE COLLECTED:

SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 493.0 LOG TYPE: Drillers Log

SOURCE: PARADISE COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
410.0			UNCONSOLIDATED	46.0	0.0	
364.0			SANDSTONE	30.0	46.0	
334.0			SHALE	34.0	76.0	
300.0			CLAYSTONE & SHALE	18.0	110.0	
282.0			LIMESTONE	1.0	128.0	
281.0			SHALE	3.0	129.0	
278.0			CLAYSTONE & SHALE	5.0	132.0	
273.0			COAL	0.7	137.0	
272.3			CLAYSTONE	7.2	137.7	
265.1			LIMESTONE	0.5	144.9	
264.6			CLAYSTONE	1.5	145.4	
263.1			SHALE	88.0	146.9	
175.1			CLAYSTONE & SHALE	20.0	234.9	
155.1			CLAYSTONE & SHALE	13.0	254.9	
142.1			CLAYSTONE & SHALE	2.0	267.9	
140.1			CLAYSTONE	3.0	269.9	
137.1			SHALE	10.0	272.9	
127.1			SHALE	4.0	282.9	
123.1			SANDSTONE	4.0	286.9	
119.1			SHALE	2.0	290.9	
117.1			COAL	0.5	292.9	
116.6			CLAYSTONE	1.5	293.4	
115.1			SHALE	15.0	294.9	
100.1			CLAYSTONE	5.0	309.9	
95.1			LIMESTONE	7.0	314.9	
88.1			SHALE	2.0	321.9	
86.1			CLAYSTONE & SHALE	3.5	323.9	
82.6			COAL	2.2	327.4	
80.4			SHALE	4.0	329.6	
76.4			CLAYSTONE	1.2	333.6	
75.2			LIMESTONE	5.0	334.8	
70.2			SHALE	2.5	339.8	
67.7			LIMESTONE	2.5	342.3	
65.2			SHALE	2.0	344.8	
63.2			SANDSTONE	14.0	346.8	
49.2			SHALE	20.0	360.8	
29.2			SHALE	52.2	380.8	
-23.0			SHALE	1.5	433.0	
-24.5			COAL WITH SHALE	12.2	434.5	

-36.7	CLAYSTONE	2.0	446.7
-38.7	CLAYSTONE	2.0	448.7
-40.7	LIMESTONE	10.0	450.7
-50.7	SHALE	4.0	460.7
-54.7	SANDSTONE	5.0	464.7
-59.7	SANDSTONE	3.0	469.7
-62.7	SHALE	4.2	472.7
-66.9	LIMESTONE	0.7	476.9
-67.6	SHALE	4.0	477.6
-71.6	SHALE	4.2	481.6
-75.8	COAL	4.2	485.8
-80.0	SANDSTONE	2.5	490.0

MAPID: 14502767000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 11 **QUARTERS/FOOTAGES:** 1980' N line, 1320' W line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.182854 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.01848 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 400.0 **LOGGED (FT.):** 447.3 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
60.0	CARBONDALE	BANKSTON FORK	SILTY SHALE	2.5	340.0
57.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	342.5
55.0	CARBONDALE	ENERGY	SILTY SHALE	2.0	345.0
53.0	CARBONDALE	ENERGY	SANDSTONE	14.0	347.0
39.0	CARBONDALE	ENERGY	SILTY SHALE	20.0	361.0
19.0	CARBONDALE	ENERGY	CALCAREOUS SHALE	52.3	381.0
-33.3	CARBONDALE	ENERGY	CARBONACEOUS SHALE	1.5	433.3
-35.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	12.3	435.0
85.0	MODESTO	PIASA	LIMESTONE	7.0	315.0
78.0	MODESTO		CLAYSTONE & SHALE	5.5	322.0
72.5	CARBONDALE	DANVILLE	COAL	2.3	327.5
70.2	CARBONDALE		CLAYSTONE & SHALE	5.3	329.8
65.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	335.0

MAPID: 14523728000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 11 QUARTERS/FOOTAGES: 90' S line, 115' E line of NE SE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.178721 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 38.01862 DATE COLLECTED: 7 / 30 / 1979
 SURFACE ELEVATION (FT.): LOGGED (FT.): 69.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	11.0	1.0
-			CLAYSTONE	30.0	12.0
-			CLAYSTONE	13.0	42.0
-			SHALE	14.0	55.0

MAPID: 14523471000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 12 QUARTERS/FOOTAGES: 109' N line, 107' E line of SE SW NE
 QUADRANGLE: DU QUOIN LONGITUDE: -89.155708 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 38.017695 DATE COLLECTED: 8 / 25 / 1978
 SURFACE ELEVATION (FT.): LOGGED (FT.): 30.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	11.0	1.0
-			CLAYSTONE	16.0	12.0
-			SAND	1.0	28.0
-			UNCLASSIFIED	1.0	29.0

MAPID: 14500099000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 13 QUARTERS/FOOTAGES: 330' N line, 990' W line
 QUADRANGLE: DU QUOIN LONGITUDE: -89.165771 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.008131 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 398.0 LOGGED (FT.): 516.0 LOG TYPE:
 SOURCE: JEWELL CC 0002 WELL TYPE: Coal Test
 COMMENT: LOCATION AND SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-58.0	CARBONDALE	HERRIN	COAL	14.4	456.0
-112.0	CARBONDALE	SPRINGFIELD	COAL	4.7	510.0

MAPID: 14500099000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 13 QUARTERS/FOOTAGES: 330' N line, 990' W line

QUADRANGLE: DU QUOIN LONGITUDE: -89.165771 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.008131 DATE COLLECTED:

SURFACE ELEVATION (FT.): 398.0 LOGGED (FT.): 470.8 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
82.0	MODESTO	PIASA	LIMESTONE	6.0	316.0
76.0	MODESTO		SHALE	2.5	322.0
73.5	CARBONDALE	DANVILLE	COAL	2.5	324.5
71.0	CARBONDALE		SILTY SHALE	8.0	327.0
63.0	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	10.0	335.0
53.0	CARBONDALE	ENERGY	SILTY SHALE	72.0	345.0
-19.0	CARBONDALE	ENERGY	LIMESTONE	1.0	417.0
-20.0	CARBONDALE	ENERGY	SILTY SHALE	38.0	418.0
-58.0	CARBONDALE	ENERGY	CARBONACEOUS SANDSTONE	5.0	456.0
-63.0	CARBONDALE	ENERGY	GRAY SHALE	6.7	461.0
-70.0	CARBONDALE	HERRIN	COAL	2.8	468.0

MAPID: 14500099000C VERSION: 3

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 13 QUARTERS/FOOTAGES: 330' N line, 990' W line

QUADRANGLE: DU QUOIN LONGITUDE: -89.165771 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.008131 DATE COLLECTED: 7 / 0 / 1920

SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 516.0 LOG TYPE: Drillers Log

SOURCE: JEWEL COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0			CLAYSTONE	36.0	0.0
364.0			SAND	26.0	36.0
338.0			CONCRETION	7.0	62.0
331.0	MODESTO		SANDSTONE/SHALE	41.0	69.0
290.0	MODESTO		SHALE	22.0	110.0
268.0	MODESTO		SHALE	14.0	132.0
254.0	MODESTO		COAL	0.5	146.0
253.5	MODESTO		SANDSTONE/SHALE	11.5	146.5
242.0	MODESTO		SANDSTONE/SHALE	4.0	158.0
238.0	MODESTO		SHALE	25.0	162.0
210.0	MODESTO		SHALE	22.0	190.0
188.0	MODESTO		SANDSTONE/SHALE	23.0	212.0
165.0	MODESTO		SHALE	13.0	235.0
152.0	MODESTO		SHALE	14.0	248.0
138.0	MODESTO		SHALE	4.0	262.0
134.0	MODESTO		SHALE	23.0	266.0
111.0	MODESTO		SHALE	23.0	289.0
88.0	MODESTO		SHALE	4.0	312.0
84.0	MODESTO		LIMESTONE	6.0	316.0
78.0	MODESTO		SHALE	2.5	322.0
75.5	CARBONDALE	DANVILLE	COAL	2.5	324.5
73.0			SHALE	2.0	327.0
71.0	CARBONDALE		SANDSTONE/SHALE	6.0	329.0
65.0	CARBONDALE		LIMESTONE	1.0	335.0
64.0	CARBONDALE		LIMESTONE W/ SHALE	9.0	336.0
55.0	CARBONDALE	ENERGY	SANDSTONE/SHALE	26.0	345.0
29.0	CARBONDALE	ENERGY	SANDSTONE/SHALE	12.0	371.0
17.0	CARBONDALE	ENERGY	SANDSTONE/SHALE	19.0	383.0
-2.0	CARBONDALE	ENERGY	SANDSTONE/SHALE	8.0	402.0
-10.0	CARBONDALE	ENERGY	SHALE	7.0	410.0
-17.0	CARBONDALE	ENERGY	LIMESTONE	1.0	417.0
-18.0	CARBONDALE	ENERGY	SANDSTONE/SHALE	13.0	418.0
-31.0	CARBONDALE	ENERGY	SHALE	9.0	431.0
-40.0	CARBONDALE	ENERGY	SANDSTONE/SHALE	12.0	440.0
-52.0	CARBONDALE	ENERGY	SANDSTONE/SHALE	4.0	452.0
-56.0	CARBONDALE	ENERGY	SANDSTONE	5.0	456.0
-61.0	CARBONDALE	ENERGY	SHALE	6.7	461.0
-67.7	CARBONDALE	HERRIN	COAL	2.7	467.7
-70.4	CARBONDALE		SHALE	2.6	470.4

-73.0	CARBONDALE		SHALE	2.0	473.0
-75.0	CARBONDALE		LIMESTONE	3.0	475.0
-78.0	CARBONDALE		LIMESTONE W/ SHALE	5.0	478.0
-83.0	CARBONDALE		LIMESTONE	4.5	483.0
-87.5	CARBONDALE		SANDSTONE	7.5	487.5
-95.0	CARBONDALE		SANDSTONE	4.0	495.0
-99.0	CARBONDALE		SANDSTONE/SHALE	6.0	499.0
-105.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	505.0
-106.0	CARBONDALE	TURNER MINE	SHALE	3.8	506.0
-109.8	CARBONDALE	SPRINGFIELD	COAL	4.7	509.8
-114.5	CARBONDALE		SHALE	1.5	514.5

MAPID: 14500099000C **VERSION:** 5 **PROJECT:** CONTROL
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 13 **QUARTERS/FOOTAGES:** 330' N line, 990' W line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.165771 **GEOLOGIST:** HINES
CONFIDENTIAL: N **LATITUDE:** 38.008131 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 516.0 **LOG TYPE:** Survey Sample Study
SOURCE: JEWELL COAL **WELL TYPE:** Coal Test
COMMENT: OILWELLS LOGGED BY COAL SECT-LOGS IN GRU

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN	COMMENT
-			NO RECORD	0.0	0.0	

MAPID: 14500081000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 1W

SECTION: 14

QUARTERS/FOOTAGES: NW NE NW

QUADRANGLE: DU QUOIN

LONGITUDE: -89.181862

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.008282

DATE COLLECTED:

SURFACE ELEVATION (FT.): 400.0

LOGGED (FT.): 464.0

LOG TYPE: Drillers Log

SOURCE: JEWELL COAL CO.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0			UNCONSOLIDATED	21.0	0.0
379.0			SAND	11.0	21.0
368.0			CONCRETION	2.0	32.0
366.0			SAND	3.0	34.0
363.0			CLAYSTONE	42.5	37.0
320.5	MODESTO		SHALE	7.5	79.5
313.0	MODESTO		SHALE	37.0	87.0
276.0	MODESTO		SHALE	11.0	124.0
265.0	MODESTO		SHALE	11.5	135.0
253.5	MODESTO		COAL	0.8	146.5
252.7	MODESTO		SHALE	4.7	147.3
248.0	MODESTO		SHALE	17.0	152.0
231.0	MODESTO		SANDSTONE/SHALE	21.0	169.0
210.0	MODESTO		SANDSTONE/SHALE	16.0	190.0
194.0	MODESTO		SHALE	64.0	206.0
130.0	MODESTO		SANDSTONE/SHALE	28.0	270.0
102.0	MODESTO		COAL	0.6	298.0
101.4	MODESTO		SHALE	3.4	298.6
98.0	MODESTO		CLAYSTONE & SHALE	0.5	302.0
97.5	MODESTO		SHALE	2.5	302.5
95.0	MODESTO		LIMESTONE	1.5	305.0
93.0	MODESTO		SANDSTONE/SHALE	9.0	307.0
84.0	MODESTO		SHALE	9.0	316.0
75.0	MODESTO	PIASA	LIMESTONE	5.5	325.0
69.5	MODESTO		SHALE	4.1	330.5
65.4	CARBONDALE	DANVILLE	COAL	2.4	334.6
63.0	CARBONDALE		SHALE	3.0	337.0
60.0	CARBONDALE		SANDSTONE	0.0	340.0

MAPID: 14500081000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 14 **QUARTERS/FOOTAGES:** NW NE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.181862 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.008282 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 403.0 **LOGGED (FT.):** 464.0 **LOG TYPE:**
SOURCE: JEWELL CC 0001 **WELL TYPE:** Coal Test
COMMENT: LOCATION AND SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-47.0	CARBONDALE	HERRIN	COAL	12.8	450.0

MAPID: 14500100000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 14 **QUARTERS/FOOTAGES:** 2640' N line, 0' W line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.187553 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.001975 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 401.0 **LOGGED (FT.):** 414.0 **LOG TYPE:**
SOURCE: HALLIDAY 0011 **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-3.0	CARBONDALE	HERRIN	COAL	9.2	404.0

MAPID: 14500100000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 14 **QUARTERS/FOOTAGES:** 2640' N line, 0' W line
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.187553 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.001975 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 401.0 **LOGGED (FT.):** 412.2 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
125.0	MODESTO	PIASA	LIMESTONE	7.0	276.0
118.0	MODESTO		CLAYSTONE & SHALE	3.5	283.0
114.5	CARBONDALE	DANVILLE	COAL	2.0	286.5
112.5	CARBONDALE		SILTY SHALE	8.0	288.5
104.5	CARBONDALE		CLAYSTONE	0.4	296.5
104.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	296.9
101.1	CARBONDALE	BANKSTON FORK	CLAYSTONE & SHALE	2.0	299.9
99.1	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	301.9
93.6	CARBONDALE	ENERGY	SILTY SHALE	95.5	307.4
-2.0	CARBONDALE	HERRIN	COAL	9.2	403.0

MAPID: 14500100000C VERSION: 3

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 14 QUARTERS/FOOTAGES: 2640' N line, 0' W line

QUADRANGLE: DU QUOIN LONGITUDE: -89.187553 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.001975 DATE COLLECTED:

SURFACE ELEVATION (FT.): 408.0 LOGGED (FT.): 414.0 LOG TYPE: Other Core Study

SOURCE: HALLIDAY ESTATE WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
408.0			UNCONSOLIDATED	40.0	0.0
368.0	MODESTO		SAND	6.0	40.0
362.0	MODESTO		CLAYSTONE	5.0	46.0
357.0	MODESTO		SANDSTONE/SHALE	10.0	51.0
347.0	MODESTO		CLAYSTONE	30.0	61.0
317.0	MODESTO		SHALE	4.0	91.0
313.0	MODESTO		COAL	1.0	95.0
312.0	MODESTO		CLAYSTONE	2.0	96.0
310.0	MODESTO		SANDSTONE	55.0	98.0
255.0	MODESTO		SANDSTONE/SHALE	25.0	153.0
230.0	MODESTO		CLAYSTONE & SHALE	55.0	178.0
175.0	MODESTO		SHALE	1.0	233.0
174.0	MODESTO		CLAYSTONE	4.0	234.0
170.0	MODESTO		SANDSTONE/SHALE	21.0	238.0
149.0	MODESTO		SHALE	4.0	259.0
145.0	MODESTO		COAL	1.2	263.0
143.8	MODESTO		CLAYSTONE	11.8	264.2
132.0	MODESTO	PIASA	LIMESTONE	7.0	276.0
125.0	MODESTO		CLAYSTONE	2.0	283.0
123.0	MODESTO		CLAYSTONE & SHALE	1.5	285.0
121.5	CARBONDALE	DANVILLE	COAL	2.0	286.5
119.5	CARBONDALE		SANDSTONE/SHALE	8.0	288.5
111.5	CARBONDALE		COAL	0.1	296.5
111.4	CARBONDALE		CLAYSTONE	0.4	296.6
108.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	300.0
108.0	CARBONDALE	BANKSTON FORK	CLAYSTONE & SHALE	2.0	300.0
106.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	302.0
100.5	CARBONDALE		CLAYSTONE	0.5	307.5
100.0	CARBONDALE	ENERGY	SHALE	95.5	308.0
4.5	CARBONDALE	HERRIN	COAL	9.5	403.5
-4.0	CARBONDALE		CLAYSTONE	1.5	412.0
-5.0	CARBONDALE		LIMESTONE	0.5	413.0

MAPID: 14501561000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 1W

SECTION: 14

QUARTERS/FOOTAGES: NW SE NW

QUADRANGLE: DU QUOIN

LONGITUDE: -89.181844

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.004552

DATE COLLECTED: 3 / 9 / 1923

SURFACE ELEVATION (FT.): 410.0

LOGGED (FT.): 492.0

LOG TYPE: Other Core Study

SOURCE: PARADISE COAL CO.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
410.0			UNCONSOLIDATED	67.0	0.0	
343.0			SAND	12.0	67.0	
331.0	MODESTO		SHALE	37.0	79.0	
294.0	MODESTO		SHALE	5.0	116.0	
289.0	MODESTO		SHALE	2.0	121.0	
287.0	MODESTO		LIMESTONE	0.7	123.0	
286.3	MODESTO		CLAYSTONE & SHALE	5.3	123.7	
281.0	MODESTO	CHAPEL	COAL	1.5	129.0	UNCERTAIN CORRELATION
279.5	MODESTO		CLAYSTONE	1.5	130.5	
278.0	MODESTO		CLAYSTONE	3.0	132.0	
275.0	MODESTO		SHALE	18.0	135.0	
257.0	MODESTO		SANDSTONE	28.0	153.0	
229.0	MODESTO		SHALE	49.0	181.0	
180.0	MODESTO		CLAYSTONE & SHALE	20.0	230.0	
160.0	MODESTO		CLAYSTONE & SHALE	8.0	250.0	
152.0	MODESTO		SHALE	21.2	258.0	
130.8	CARBONDALE	DANVILLE	COAL	0.8	279.2	
130.0	CARBONDALE		CLAYSTONE	2.0	280.0	
128.0	CARBONDALE		SANDSTONE	8.0	282.0	
120.0	CARBONDALE		SHALE	12.0	290.0	
108.0	CARBONDALE		SHALE	15.0	302.0	
93.0	CARBONDALE	ENERGY	SHALE	10.0	317.0	
83.0	CARBONDALE	ENERGY	SHALE	42.0	327.0	
41.0	CARBONDALE	ENERGY	SANDSTONE	18.0	369.0	
23.0	CARBONDALE	ENERGY	LIMESTONE	4.0	387.0	
19.0	CARBONDALE	ENERGY	SHALE	10.0	391.0	
9.0	CARBONDALE	ENERGY	SANDSTONE	37.0	401.0	
-28.0	CARBONDALE	ENERGY	SHALE	2.0	438.0	
-30.0	CARBONDALE	HERRIN	COAL WITH SHALE	11.0	440.0	
-41.0	CARBONDALE		CLAYSTONE	2.0	451.0	
-43.0	CARBONDALE		LIMESTONE	13.0	453.0	
-56.0	CARBONDALE		SHALE	2.0	466.0	
-58.0	CARBONDALE		SANDSTONE	4.0	468.0	
-62.0	CARBONDALE		SHALE	8.0	472.0	
-70.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	480.0	
-71.0	CARBONDALE	TURNER MINE	SHALE	4.0	481.0	
-75.0	CARBONDALE	SPRINGFIELD	COAL	4.0	485.0	
-79.0	CARBONDALE		CLAYSTONE	3.0	489.0	

MAPID: 14501561000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 14 **QUARTERS/FOOTAGES:** NW SE NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.181844 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.004552 **DATE COLLECTED:** 0 / 0 / 1923
SURFACE ELEVATION (FT.): 405.0 **LOGGED (FT.):** 492.0 **LOG TYPE:**
SOURCE: PARADISE 0002 **WELL TYPE:** Coal Test
COMMENT: LOCATION AND SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-35.0	CARBONDALE	HERRIN	COAL	11.5	440.0
-80.0	CARBONDALE	SPRINGFIELD	COAL	4.8	485.0

MAPID: 14500101000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** NE SW SW
QUADRANGLE: ELKVILLE **LONGITUDE:** -89.202599 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.997314 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 416.0 **LOGGED (FT.):** 1465.0 **LOG TYPE:** Other Core Study
SOURCE: D. T. FINLEY **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
416.0			UNCONSOLIDATED	35.0	0.0
381.0			CONCRETION	12.0	35.0
369.0			SHALE	5.0	47.0
364.0			SHALE	168.0	52.0
196.0			LIMESTONE	25.0	220.0
171.0			SHALE	67.0	245.0
104.0	CARBONDALE	HERRIN	COAL	13.0	312.0
91.0			SHALE	100.0	325.0
-19.0			SAND	5.0	435.0

MAPID: 14500101000C **VERSION:** 2 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** NE SW SW
QUADRANGLE: ELKVILLE **LONGITUDE:** -89.202599 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.997314 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 416.0 **LOGGED (FT.):** 1465.0 **LOG TYPE:**
SOURCE: DUQUOIN LF M **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
104.0	CARBONDALE	HERRIN	COAL	13.0	312.0

MAPID: 14501224000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** SE NW SE
QUADRANGLE: ELKVILLE **LONGITUDE:** -89.193318 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.999067 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 408.6 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: PARADISE **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
37.6	CARBONDALE	HERRIN	COAL	9.0	371.0	

MAPID: 14501225000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 15 **QUARTERS/FOOTAGES:** SE SW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.202572 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.002901 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 410.7 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: DAVIS CCC **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
104.7	CARBONDALE	HERRIN	COAL	6.0	306.0	

MAPID: 14500102000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 16 **QUARTERS/FOOTAGES:** SE NW SW
QUADRANGLE: ELKVILLE **LONGITUDE:** -89.220997 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.999188 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 436.0 **LOGGED (FT.):** 59.0 **LOG TYPE:**
SOURCE: HALLIDAY 0013 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
385.0	CARBONDALE	HERRIN	COAL	7.5	51.0	

MAPID: 14500103000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 16 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: ELKVILLE **LONGITUDE:** -89.223296 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.999185 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 437.0 **LOGGED (FT.):** 43.0 **LOG TYPE:**
SOURCE: HALLIDAY 0011 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.0	CARBONDALE	HERRIN	COAL	2.5	26.0	

MAPID: 14500104000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 16 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: ELKVILLE **LONGITUDE:** -89.223296 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.999185 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 426.0 **LOGGED (FT.):** 43.0 **LOG TYPE:**
SOURCE: HALLIDAY 0012 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.0	CARBONDALE	HERRIN	COAL	1.9	18.0	

MAPID: 14500105000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 16 **QUARTERS/FOOTAGES:** 0' S line, 1320' W line
QUADRANGLE: ELKVILLE **LONGITUDE:** -89.219864 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.99453 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 432.0 **LOGGED (FT.):** 86.0 **LOG TYPE:**
SOURCE: HALLIDAY 0008 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
360.0	CARBONDALE	HERRIN	COAL	12.3	72.0	

MAPID: 14500105000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 16 **QUARTERS/FOOTAGES:** 0' S line, 1320' W line
QUADRANGLE: ELKVILLE **LONGITUDE:** -89.219864 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.99453 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 432.0 **LOGGED (FT.):** 84.3 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
407.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	25.0	
406.0	CARBONDALE	ENERGY	SANDSTONE	4.0	26.0	
402.0	CARBONDALE	ENERGY	SILTY SHALE	42.0	30.0	
360.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	12.3	72.0	

MAPID: 14500105000C VERSION: 3

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 16 QUARTERS/FOOTAGES: 0' S line, 1320' W line
 QUADRANGLE: ELKVILLE LONGITUDE: -89.219864 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 37.99453 DATE COLLECTED: 9 / 0 / 1887
 SURFACE ELEVATION (FT.): 432.0 LOGGED (FT.): 86.1 LOG TYPE: Drillers Log
 SOURCE: HALLIDAY ESTATE WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
407.0	CARBONDALE		LIMESTONE	1.0	25.0
406.0	CARBONDALE	ENERGY	SANDSTONE	4.0	26.0
402.0	CARBONDALE	ENERGY	CLAYSTONE & SHALE	42.0	30.0
360.0	CARBONDALE	HERRIN	COAL	2.7	72.0
357.3	CARBONDALE	HERRIN	CLAYSTONE	0.5	74.7
356.8	CARBONDALE	HERRIN	CLAYSTONE & SHALE	2.2	75.2
354.6	CARBONDALE	HERRIN	COAL	3.7	77.4
350.9	CARBONDALE	HERRIN	CLAYSTONE	0.2	81.1
350.7	CARBONDALE	HERRIN	COAL	3.0	81.3
347.7	CARBONDALE		CLAYSTONE	0.8	84.3
346.9	CARBONDALE		LIMESTONE	1.0	85.1

MAPID: 14500106000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 16 QUARTERS/FOOTAGES: SE SE SE
 QUADRANGLE: ELKVILLE LONGITUDE: -89.207242 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 37.99549 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 418.0 LOGGED (FT.): 336.0 LOG TYPE:
 SOURCE: HALLIDAY 0012 WELL TYPE: Coal Test
 COMMENT: LOCATION AND SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
91.0	CARBONDALE	HERRIN	COAL	7.8	327.0

MAPID: 14501526000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 16 QUARTERS/FOOTAGES: NE SE NW
 QUADRANGLE: DU QUOIN LONGITUDE: -89.216367 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.004789 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 0.0 LOG TYPE: Measured section
 SOURCE: DUQUONIONCC000B WELL TYPE: Underground mine
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
395.0	CARBONDALE	HERRIN	COAL	6.0	45.0

MAPID: 14501527000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 16 **QUARTERS/FOOTAGES:** SE NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.220954 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.006647 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: JUPITERMGC **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
405.0	CARBONDALE	HERRIN	COAL	6.5	35.0	

MAPID: 14501528000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 16 **QUARTERS/FOOTAGES:** SW NW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223257 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.006644 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 445.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: NJUPITERCC **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
413.0	CARBONDALE	HERRIN	COAL	6.5	32.0	

MAPID: 14501529000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 16 **QUARTERS/FOOTAGES:** NW SW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.223264 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.004778 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 450.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: SUPERIORCC **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
412.0	CARBONDALE	HERRIN	COAL	7.0	38.0	

MAPID: 14500108000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 17 **QUARTERS/FOOTAGES:** 0' S line, 0' E line
QUADRANGLE: ELKVILLE **LONGITUDE:** -89.224469 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.99452 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 441.0 **LOGGED (FT.):** 56.0 **LOG TYPE:**
SOURCE: HALLIDAY 0009 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
392.0	CARBONDALE	HERRIN	COAL	6.3	49.0	

MAPID: 14500108000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 17 QUARTERS/FOOTAGES: 0' S line, 0' E line
 QUADRANGLE: ELKVILLE LONGITUDE: -89.224469 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 37.99452 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 441.0 LOGGED (FT.): 55.3 LOG TYPE: Drillers Log
 SOURCE: WELL TYPE: Coal Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.5	CARBONDALE	ENERGY	SILTY SHALE	14.0	26.5	
400.5	CARBONDALE	ENERGY	CLAYSTONE & SHALE	8.5	40.5	
392.0	CARBONDALE	HERRIN	COAL	6.3	49.0	

MAPID: 14500109000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 17 QUARTERS/FOOTAGES: SE NE SE
 QUADRANGLE: ELKVILLE LONGITUDE: -89.225606 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 37.999191 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 447.0 LOGGED (FT.): 60.0 LOG TYPE:
 SOURCE: HALLIDAY 0010 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
423.0	CARBONDALE	HERRIN	COAL	4.8	24.0	

MAPID: 14500110000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 17 QUARTERS/FOOTAGES: SE SW SE
 QUADRANGLE: ELKVILLE LONGITUDE: -89.230256 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 37.995494 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 442.0 LOGGED (FT.): 51.0 LOG TYPE:
 SOURCE: HALLIDAY 0021 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.0	CARBONDALE	HERRIN	COAL	5.8	42.0	

MAPID: 14500111000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 17 **QUARTERS/FOOTAGES:** NW SW SE
QUADRANGLE: ELKVILLE **LONGITUDE:** -89.232569 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.997371 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 443.0 **LOGGED (FT.):** 46.0 **LOG TYPE:**
SOURCE: HALLIDAY 0022 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
404.0	CARBONDALE	HERRIN	COAL	6.5	39.0	

MAPID: 14501531000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 17 **QUARTERS/FOOTAGES:** NE SW NW
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.239526 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.004844 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: WALL CC 0002 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
390.0	CARBONDALE	HERRIN	COAL	7.0	65.0	

MAPID: 14501996000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 17 **QUARTERS/FOOTAGES:** 990' N line, 978' E line of SE NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.227838 **GEOLOGIST:** PLOETZ
CONFIDENTIAL: N **LATITUDE:** 38.002992 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 1828.0 **LOG TYPE:** Drillers Log
SOURCE: PERFECTION COAL CO. **WELL TYPE:** Coal Test
COMMENT: DRY AND ABANDONED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			CONCRETION	37.0	0.0	
-			SHALE	59.0	37.0	
-			SHALE	198.0	96.0	
-			SANDSTONE/SHALE	9.0	294.0	
-			COAL	10.0	303.0	
-			SANDSTONE/SHALE	45.0	313.0	
-			SAND	50.0	358.0	

MAPID: 14500734000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 18 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.2603 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.999406 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: UN ELEC CC1341 **WELL TYPE:** Coal Test
COMMENT: SURFACE ELEVATION UNCERTAIN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
388.0	CARBONDALE	HERRIN	COAL	6.6	52.0	

MAPID: 14500735000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 18 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.260379 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.995696 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 439.3 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: UN ELEC CC1241 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
389.3	CARBONDALE	HERRIN	COAL	6.8	50.0	

MAPID: 14501532000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 18 **QUARTERS/FOOTAGES:** NE NW NE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.248717 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.008608 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 458.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: DUQUONIONCC000E **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
393.0	CARBONDALE	HERRIN	COAL	6.5	65.0	

MAPID: 14501533000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 18 **QUARTERS/FOOTAGES:** NE NE SE
QUADRANGLE: DU QUOIN **LONGITUDE:** -89.244159 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.001158 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: JEWEL CMC 0001 **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
380.0	CARBONDALE	HERRIN	COAL	6.9	75.0	

MAPID: 14501534000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 18 **QUARTERS/FOOTAGES:** NE SW NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.257895 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.004956 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 455.0 **LOGGED (FT.):** 0.0 **LOG TYPE:** Measured section
SOURCE: EGYPTIANMC **WELL TYPE:** Underground mine
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
380.0	CARBONDALE	HERRIN	COAL	6.5	75.0	

MAPID: 14523340000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 18 **QUARTERS/FOOTAGES:** 95' N line, 102' E line of NW SW NW
QUADRANGLE: PYATTS **LONGITUDE:** -89.259383 **GEOLOGIST:** PLOETZ
CONFIDENTIAL: N **LATITUDE:** 38.005633 **DATE COLLECTED:** 8 / 25 / 1976
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 44.0 **LOG TYPE:** Drillers Log
SOURCE: CLARENCE KOHNEN **WELL TYPE:** Coal Test
COMMENT: DRY HOLE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			CLAYSTONE	19.0	1.0	
-			CLAYSTONE	10.0	20.0	
-			SAND	10.0	30.0	
-			CLAYSTONE	4.0	40.0	

MAPID: 14500738000C **VERSION:** 1 **PROJECT:** CIRC 24
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 19 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.260643 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.984671 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 433.2 **LOGGED (FT.):** 0.0 **LOG TYPE:**
SOURCE: UN ELEC CC0941 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
385.2	CARBONDALE	HERRIN	COAL	3.0	48.0	

MAPID: 14500739000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 19 QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: VERGENNES LONGITUDE: -89.260732

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.980999

DATE COLLECTED:

SURFACE ELEVATION (FT.): 428.3 LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: UN ELEC CC0841

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
393.3	CARBONDALE	HERRIN	COAL	7.2	35.0	

MAPID: 14501536000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 19 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: VERGENNES LONGITUDE: -89.255988

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.980956

DATE COLLECTED:

SURFACE ELEVATION (FT.): 425.0 LOGGED (FT.): 0.0

LOG TYPE: Measured section

SOURCE: PATRICK CC

WELL TYPE: Underground mine

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
367.0	CARBONDALE	HERRIN	COAL	7.5	58.0	

MAPID: 14501562000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 20 QUARTERS/FOOTAGES: 1320' S line, 1320' E line

QUADRANGLE: ELKVILLE LONGITUDE: -89.229039 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 37.983501 DATE COLLECTED: 0 / 0 / 1919

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 140.0 LOG TYPE: Drillers Log

SOURCE: H. C. MILLER WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	26.0	0.0
404.0	CARBONDALE		SHALE	8.0	26.0
396.0	CARBONDALE		SHALE	10.0	34.0
386.0	CARBONDALE		CLAYSTONE & SHALE	16.0	44.0
370.0	CARBONDALE	HERRIN	COAL	6.2	60.0
363.8			CLAYSTONE	1.5	66.2
362.3			LIMESTONE	2.0	67.7
360.3			CLAYSTONE & SHALE	3.2	69.7
357.1			CLAYSTONE	3.0	72.9
354.1			SHALE	5.0	75.9
349.1			SANDSTONE	18.0	80.9
331.1			SHALE	10.0	98.9
321.1			CLAYSTONE	23.0	108.9
298.1			LIMESTONE	0.5	131.9
297.6			SHALE	4.5	132.4
293.1			COAL	1.9	136.9
291.2			CLAYSTONE	1.2	138.8

MAPID: 14501562000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 20 QUARTERS/FOOTAGES: 1320' S line, 1320' E line

QUADRANGLE: ELKVILLE LONGITUDE: -89.229039 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.983501 DATE COLLECTED:

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 66.3 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
404.0	CARBONDALE	ENERGY	GRAY SHALE	8.0	26.0
396.0	CARBONDALE	ENERGY	SILTY SHALE	10.0	34.0
386.0	CARBONDALE	ENERGY	CLAYSTONE & SHALE	16.0	44.0
370.0	CARBONDALE	HERRIN	COAL	6.3	60.0

MAPID: 14500113000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 1W

SECTION: 21

QUARTERS/FOOTAGES: SE SW NE

QUADRANGLE: ELKVILLE

LONGITUDE: -89.211828

GEOLOGIST: PLOETZ

CONFIDENTIAL: N

LATITUDE: 37.988086

DATE COLLECTED:

SURFACE ELEVATION (FT.): 413.0

LOGGED (FT.): 300.9

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
378.0	MODESTO		SANDSTONE	8.0	35.0
370.0	MODESTO		SANDSTONE/SHALE	95.0	43.0
275.0	MODESTO		CLAYSTONE & SHALE	32.0	138.0
243.0	MODESTO		COAL	0.2	170.0
242.8	MODESTO		CLAYSTONE & SHALE	7.7	170.2
235.1	MODESTO		CLAYSTONE	2.5	177.9
232.6	MODESTO		SANDSTONE	5.5	180.4
227.1	MODESTO		SANDSTONE/SHALE	10.0	185.9
217.1	MODESTO		SHALE	4.0	195.9
213.1	MODESTO		CLAYSTONE	2.0	199.9
211.1	MODESTO	PIASA	LIMESTONE	11.0	201.9
200.1	MODESTO		CLAYSTONE	1.5	212.9
198.6	CARBONDALE	DANVILLE	COAL	2.2	214.4
196.4	CARBONDALE		SHALE	7.3	216.6
189.1	CARBONDALE		CLAYSTONE	2.5	223.9
186.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	226.4
182.1	CARBONDALE	BANKSTON FORK	SANDSTONE/SHALE	4.0	230.9
178.1	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	234.9
173.1	CARBONDALE	ENERGY	SANDSTONE/SHALE	58.0	239.9
120.1	CARBONDALE	HERRIN	COAL	7.0	292.9
113.1	CARBONDALE		CLAYSTONE	0.3	299.9
112.8	CARBONDALE		LIMESTONE	0.7	300.2

MAPID: 14500118000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 21 QUARTERS/FOOTAGES: 0' N line, 2640' E line

QUADRANGLE: ELKVILLE LONGITUDE: -89.215312 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.994541 DATE COLLECTED:

SURFACE ELEVATION (FT.): 422.0 LOGGED (FT.): 149.9 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
362.0	MODESTO	PIASA	LIMESTONE	8.5	60.0
353.5	MODESTO		CLAYSTONE & SHALE	2.5	68.5
351.0	CARBONDALE	DANVILLE	COAL	2.0	71.0
349.0	CARBONDALE		CLAYSTONE & SHALE	6.5	73.0
342.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	79.5
338.0	CARBONDALE	LAWSON	SILTY SHALE	3.5	84.0
334.5	CARBONDALE	BRERETON	LIMESTONE	4.0	87.5
330.5	CARBONDALE	ENERGY	CLAYSTONE & SHALE	0.5	91.5
330.0	CARBONDALE	ENERGY	SANDSTONE	1.5	92.0
328.5	CARBONDALE	ENERGY	CLAYSTONE & SHALE	40.5	93.5
288.0	CARBONDALE	ENERGY	SILTY SHALE	2.0	134.0
286.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	13.9	136.0

MAPID: 14500119000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 23 QUARTERS/FOOTAGES: 2600' S line, 1400' W line

QUADRANGLE: ELKVILLE LONGITUDE: -89.182683 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.986828 DATE COLLECTED:

SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 460.0 LOG TYPE: Other Core Study

SOURCE: EQUITABLE COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.0			UNCONSOLIDATED	66.0	0.0	
334.0	MODESTO		SHALE	26.0	66.0	
308.0	MODESTO	CHAPEL	COAL	1.0	92.0	
307.0	MODESTO		CLAYSTONE	2.0	93.0	
305.0	MODESTO		SHALE	4.0	95.0	
301.0	MODESTO		SANDSTONE	36.0	99.0	
265.0	MODESTO		SHALE	9.0	135.0	
256.0	MODESTO		LIMESTONE	6.0	144.0	
250.0	MODESTO		SHALE	41.0	150.0	
209.0	MODESTO		CLAYSTONE & SHALE	36.0	191.0	
173.0	MODESTO		CLAYSTONE & LIMESTONE	3.0	227.0	
170.0	MODESTO		SANDSTONE	20.0	230.0	
150.0	MODESTO		SHALE	1.2	250.0	
148.8	MODESTO		CLAYSTONE & SHALE	2.5	251.2	
146.3	MODESTO	ROCK BRANCH	COAL	1.3	253.7	
145.0	MODESTO		CLAYSTONE	10.0	255.0	
135.0	MODESTO		SHALE	4.5	265.0	
130.5	MODESTO		CLAYSTONE & SHALE	4.5	269.5	
126.0	MODESTO	PIASA	LIMESTONE	7.0	274.0	
119.0	MODESTO		CLAYSTONE & SHALE	1.0	281.0	
118.0	MODESTO		SHALE	0.7	282.0	
117.3	CARBONDALE	DANVILLE	COAL	1.0	282.7	
116.3	CARBONDALE		CLAYSTONE	1.3	283.7	
115.0	CARBONDALE		SHALE	9.0	285.0	
106.0	CARBONDALE		CLAYSTONE & SHALE	1.5	294.0	
104.5	CARBONDALE		COAL	0.1	295.5	
104.4	CARBONDALE		CLAYSTONE	2.4	295.6	
102.0	CARBONDALE		LIMESTONE	1.5	298.0	
100.5	CARBONDALE		CALCAREOUS SHALE	2.0	299.5	
98.5	CARBONDALE		LIMESTONE	6.5	301.5	
92.0	CARBONDALE	ENERGY	SANDSTONE	7.0	308.0	
85.0	CARBONDALE	ENERGY	SHALE	14.0	315.0	
71.0	CARBONDALE	ENERGY	SANDSTONE	10.7	329.0	
60.3	CARBONDALE	HERRIN	COAL	1.3	339.7	
59.0	CARBONDALE	HERRIN	CLAYSTONE	0.2	341.0	
58.8	CARBONDALE	HERRIN	COAL	2.5	341.2	
56.3	CARBONDALE		SHALE	72.8	343.7	INTERVAL #6 TO #5 IS 60FT TOO THICK
-16.5	CARBONDALE		CLAYSTONE	2.5	416.5	MAY BE FAULTED OR MIS- CORRELATION OF #5

-19.0	CARBONDALE		LIMESTONE	10.0	419.0
-29.0	CARBONDALE		LIMESTONE	5.5	429.0
-34.5	CARBONDALE		CLAYSTONE & SHALE	6.7	434.5
-41.2	CARBONDALE	ST. DAVID	LIMESTONE	2.8	441.2
-44.0	CARBONDALE	TURNER MINE	SHALE	3.5	444.0
-47.5	CARBONDALE	SPRINGFIELD	COAL	4.2	447.5
-51.7	CARBONDALE		CLAYSTONE & LIMESTONE	3.3	451.7
-55.0	CARBONDALE		LIMESTONE	5.0	455.0

MAPID: 14500119000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 6S 1W **SECTION:** 23 **QUARTERS/FOOTAGES:** 2600' S line, 1400' W line
QUADRANGLE: ELKVILLE **LONGITUDE:** -89.182683 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.986828 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 400.0 **LOGGED (FT.):** 344.0 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN COMMENT
126.0	MODESTO	PIASA	LIMESTONE	7.0	274.0
119.0	MODESTO		DARK GRAY SHALE	1.8	281.0
117.2	CARBONDALE	DANVILLE	COAL	1.0	282.8
116.2	CARBONDALE		GRAY SHALE	11.8	283.8
104.5	CARBONDALE		CLAYSTONE	2.5	295.5
102.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	298.0
100.5	CARBONDALE	BANKSTON FORK	LIMESTONE W/ SHALE	2.0	299.5
98.5	CARBONDALE	BANKSTON FORK	LIMESTONE AND SANDSTONE	4.5	301.5
94.0	CARBONDALE	ENERGY	SANDSTONE	7.0	306.0
87.0	CARBONDALE	ENERGY	SILTY SHALE	14.0	313.0
73.0	CARBONDALE	ENERGY	ARGILLACEOUS SANDSTONE	10.8	327.0
60.0	CARBONDALE	HERRIN	COAL WITH SHALE PARTINGS	4.0	340.0

MAPID: 14500120000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 1W

SECTION: 23

QUARTERS/FOOTAGES: SE SW NW

QUADRANGLE: ELKVILLE

LONGITUDE: -89.184119

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.987906

DATE COLLECTED:

SURFACE ELEVATION (FT.): 397.6

LOGGED (FT.): 855.0

LOG TYPE: Other Core Study

SOURCE: MAJESTIC COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
397.6			UNCONSOLIDATED	56.0	0.0
341.6			CLAYSTONE	7.0	56.0
334.6	MODESTO		SHALE	17.0	63.0
317.6	MODESTO		COAL	1.0	80.0
316.6	MODESTO		CLAYSTONE	2.0	81.0
314.6	MODESTO		SHALE	106.0	83.0
208.6	MODESTO		CLAYSTONE & SHALE	37.0	189.0
171.6	MODESTO		SHALE	3.0	226.0
168.6	MODESTO		COAL	0.1	229.0
168.5	MODESTO		SANDSTONE/SHALE	2.9	229.1
165.6	MODESTO		SHALE	1.5	232.0
164.1	MODESTO		CLAYSTONE	4.5	233.5
159.6	MODESTO		SANDSTONE/SHALE	14.0	238.0
145.6	MODESTO		SHALE	8.0	252.0
137.6	MODESTO	PIASA	LIMESTONE	7.0	260.0
130.6	MODESTO		SHALE	2.0	267.0
128.6	CARBONDALE	DANVILLE	COAL	2.0	269.0
126.6	CARBONDALE		SANDSTONE/SHALE	11.0	271.0
115.6	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	282.0
113.6	CARBONDALE	BANKSTON FORK	SANDSTONE/SHALE	1.0	284.0
112.6	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	285.0
105.6	CARBONDALE	ENERGY	SANDSTONE/SHALE	96.0	292.0
9.6	CARBONDALE	HERRIN	COAL	8.5	388.0

MAPID: 14500121000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 24 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: ELKVILLE LONGITUDE: -89.168074 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 37.987764 DATE COLLECTED:

SURFACE ELEVATION (FT.): 404.2 LOGGED (FT.): 387.7 LOG TYPE: Drillers Log

SOURCE: MAJESTIC COAL & COKE CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
372.2			CLAYSTONE	14.0	32.0
358.2			SAND	27.0	46.0
331.2			CLAYSTONE & SHALE	15.0	73.0
316.2			COAL	1.0	88.0
315.2			CLAYSTONE	6.0	89.0
309.2			SHALE	13.0	95.0
296.2			SANDSTONE	10.0	108.0
286.2			SANDSTONE/SHALE	65.0	118.0
221.2			CLAYSTONE & SHALE	65.0	183.0
156.2			SHALE	1.0	248.0
155.2			CLAYSTONE & SHALE	6.0	249.0
149.2			COAL	1.0	255.0
148.2			CLAYSTONE	4.0	256.0
144.2			SHALE	58.0	260.0
86.2	CARBONDALE	BANKSTON FORK	LIMESTONE	12.0	318.0
74.2	CARBONDALE		CLAYSTONE	0.5	330.0
73.7	CARBONDALE	ENERGY	SANDSTONE/SHALE	43.5	330.5
30.2	CARBONDALE	HERRIN	COAL	13.7	374.0

MAPID: 14523472000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 25 QUARTERS/FOOTAGES: 105' N line, 109' E line of NE NW

QUADRANGLE: ELKVILLE LONGITUDE: -89.160329 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 37.979166 DATE COLLECTED: 8 / 2 / 1978

SURFACE ELEVATION (FT.): LOGGED (FT.): 33.0 LOG TYPE: Drillers Log

SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	12.0	1.0
-			CLAYSTONE	12.0	13.0
-			SAND	8.0	25.0

MAPID: 14523473000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 26 QUARTERS/FOOTAGES: 107' N line, 110' E line of NE NE

QUADRANGLE: ELKVILLE LONGITUDE: -89.169582 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 37.979216 DATE COLLECTED: 8 / 16 / 1978

SURFACE ELEVATION (FT.): LOGGED (FT.): 44.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	9.0	1.0
-			CLAYSTONE	15.0	10.0
-			CLAYSTONE	19.0	25.0

MAPID: 14500122000C VERSION: 1

PROJECT: NCRDS87

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 28 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE

QUADRANGLE: ELKVILLE LONGITUDE: -89.206067 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 37.97235 DATE COLLECTED:

SURFACE ELEVATION (FT.): 409.0 LOGGED (FT.): 341.0 LOG TYPE: Drillers Log

SOURCE: HALLIDAY ESTATE WELL TYPE: Diamond Drill

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.0			UNCONSOLIDATED	43.0	0.0	
366.0			SHALE	121.0	43.0	
245.0			BLACK SHALE	2.0	164.0	
243.0			SHALE	10.0	166.0	
233.0			SANDSTONE	6.0	176.0	
227.0			UNDERCLAY	0.5	182.0	
226.5			SHALE	8.5	182.5	
218.0			SANDSTONE	4.0	191.0	
214.0			SHALE	18.0	195.0	
196.0	CARBONDALE		LIMESTONE	7.0	213.0	
189.0	CARBONDALE		UNDERCLAY	0.5	220.0	
188.5	CARBONDALE	ANNA	BLACK SHALE	3.5	220.5	UNCERTAIN CORRELATION
185.0	CARBONDALE	HERRIN	COAL	2.0	224.0	UNCERTAIN CORRELATION
183.0	CARBONDALE		UNDERCLAY	3.0	226.0	
180.0	CARBONDALE		SHALE	3.0	229.0	
177.0	CARBONDALE		BLACK SHALE	1.0	232.0	
176.0	CARBONDALE		UNDERCLAY	1.0	233.0	
175.0	CARBONDALE		LIMESTONE	6.0	234.0	
169.0	CARBONDALE		SHALE	4.0	240.0	
165.0	CARBONDALE		LIMESTONE	3.0	244.0	
162.0	CARBONDALE		SANDSTONE	3.0	247.0	
159.0	CARBONDALE		SHALE	81.0	250.0	
78.0	CARBONDALE		COAL	8.0	331.0	
70.0	CARBONDALE		UNDERCLAY	2.0	339.0	

MAPID: 14501455000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 28 QUARTERS/FOOTAGES: 1869' S line, 648' W line

QUADRANGLE: ELKVILLE LONGITUDE: -89.222202 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.970121 DATE COLLECTED:

SURFACE ELEVATION (FT.): 412.0 LOGGED (FT.): 124.6 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
380.0	MODESTO	PIASA	LIMESTONE	10.0	32.0
370.0	MODESTO		SHALE	1.0	42.0
369.0	CARBONDALE	DANVILLE	COAL	2.0	43.0
367.0	CARBONDALE		SHALE	11.0	45.0
356.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	56.0
350.0	CARBONDALE	LAWSON	SHALE	4.0	62.0
346.0	CARBONDALE	BRERETON	LIMESTONE	4.0	66.0
342.0	CARBONDALE	ENERGY	SHALE	46.0	70.0
296.0	CARBONDALE	HERRIN	COAL	8.6	116.0

MAPID: 14501456000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 28 QUARTERS/FOOTAGES: 775' N line, 18' E line of NW SW

QUADRANGLE: ELKVILLE LONGITUDE: -89.219924 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 37.970248 DATE COLLECTED:

SURFACE ELEVATION (FT.): 416.2 LOGGED (FT.): 109.8 LOG TYPE: Drillers Log

SOURCE: UNION COLLIERY CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
375.2	CARBONDALE	BANKSTON FORK	LIMESTONE	6.6	41.0
368.6	CARBONDALE		SHALE	4.7	47.6
363.9	CARBONDALE	ENERGY	SHALE	23.6	52.3
340.3	CARBONDALE	ENERGY	SHALE	23.3	75.9
317.0	CARBONDALE	ENERGY	SHALE	2.0	99.2
315.0	CARBONDALE	HERRIN	COAL	7.6	101.2
307.4	CARBONDALE		CLAYSTONE	1.0	108.8

MAPID: 14500127000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 29 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: ELKVILLE LONGITUDE: -89.225622 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 37.965897 DATE COLLECTED:

SURFACE ELEVATION (FT.): 415.9 LOGGED (FT.): 290.0 LOG TYPE: Drillers Log

SOURCE: HALLIDAY ESTATE WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
356.9			CLAYSTONE	1.0	59.0
355.9			LIMESTONE	2.0	60.0
353.9			SANDSTONE	48.5	62.0
305.4			LIMESTONE	1.0	110.5
304.4			SHALE	4.0	111.5
300.4			COAL	1.2	115.5
299.2			CLAYSTONE	2.3	116.7
296.9			LIMESTONE	1.0	119.0
295.9			SANDSTONE	8.0	120.0
287.9			SANDSTONE/SHALE	22.0	128.0
265.9			CLAYSTONE & SHALE	24.5	150.0
241.4			COAL	0.5	174.5
240.9			CLAYSTONE	2.0	175.0
238.9			LIMESTONE	1.0	177.0
237.9			SANDSTONE/SHALE	14.5	178.0
223.4			COAL	1.0	192.5
222.4			CLAYSTONE	2.5	193.5
219.9			SANDSTONE/SHALE	13.0	196.0
206.9			SANDSTONE	21.5	209.0
185.4			SHALE	8.5	230.5
176.9			SANDSTONE/SHALE	10.0	239.0
166.9			SANDSTONE	4.0	249.0
162.9			SANDSTONE/SHALE	15.0	253.0
147.9			LIMESTONE	3.0	268.0
144.9			SANDSTONE/SHALE	13.0	271.0
131.9			SHALE	3.0	284.0
128.9			SHALE	1.0	287.0
127.9			COAL	0.5	288.0
127.4			CLAYSTONE	1.5	288.5

MAPID: 14523288000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 31 QUARTERS/FOOTAGES: 103' N line, 121' E line of SW NE SE
 QUADRANGLE: ELKVILLE LONGITUDE: -89.245653 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 37.955579 DATE COLLECTED: 6 / 8 / 1976
 SURFACE ELEVATION (FT.): LOGGED (FT.): 37.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE	21.0	22.0
-			CLAYSTONE	15.0	37.0

MAPID: 14500128000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 32 QUARTERS/FOOTAGES: 1320' S line, 2640' E line
 QUADRANGLE: ELKVILLE LONGITUDE: -89.233787 GEOLOGIST: PLOETZ
 CONFIDENTIAL: N LATITUDE: 37.953926 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 413.2 LOGGED (FT.): 188.0 LOG TYPE: Drillers Log
 SOURCE: HALLIDAY ESTATE WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
366.7	MODESTO		SANDSTONE/SHALE	20.5	46.5
346.2	MODESTO	PIASA	LIMESTONE	12.0	67.0
324.2	MODESTO		SANDSTONE	1.0	89.0
323.2	MODESTO		SHALE	2.5	90.0
320.7	CARBONDALE	DANVILLE	COAL	2.5	92.5
318.2	CARBONDALE		CLAYSTONE	6.0	95.0
312.2	CARBONDALE	BANKSTON FORK	LIMESTONE	12.0	101.0
300.2	CARBONDALE		SANDSTONE	2.0	113.0
298.2	CARBONDALE		CLAYSTONE & SHALE	6.0	115.0
292.2	CARBONDALE	BRERETON	LIMESTONE	4.0	121.0
288.2	CARBONDALE		SHALE	4.0	125.0
284.2	CARBONDALE	ENERGY	SANDSTONE	42.0	129.0
242.2	CARBONDALE	ENERGY	CLAYSTONE & SHALE	6.5	171.0
235.7	CARBONDALE	HERRIN	COAL	10.0	177.5
225.7	CARBONDALE		CLAYSTONE	0.5	187.5

UNCERTAIN
CORRELATION

MAPID: 14500128000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 32 QUARTERS/FOOTAGES: 1320' S line, 2640' E line

QUADRANGLE: ELKVILLE LONGITUDE: -89.233787 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.953926 DATE COLLECTED:

SURFACE ELEVATION (FT.): 413.0 LOGGED (FT.): 178.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
346.0	MODESTO	PIASA	LIMESTONE	12.0	67.0
334.0	MODESTO		SILTY SHALE	3.5	79.0
330.5	CARBONDALE	DANVILLE	COAL	2.5	82.5
328.0	CARBONDALE		CLAYSTONE	6.0	85.0
322.0	CARBONDALE	BANKSTON FORK	LIMESTONE	12.0	91.0
310.0	CARBONDALE	LAWSON	SHALE	8.0	103.0
302.0	CARBONDALE	BRERETON	LIMESTONE	4.0	111.0
298.0	CARBONDALE	ANNA	BLACK SHALE	4.0	115.0
294.0	CARBONDALE	ENERGY	SILTY SHALE	42.0	119.0
252.0	CARBONDALE	ENERGY	CLAYSTONE & SHALE	6.5	161.0
245.0	CARBONDALE	HERRIN	COAL	10.0	168.0

MAPID: 14500131000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 33 QUARTERS/FOOTAGES: 660' N line, 660' E line

QUADRANGLE: ELKVILLE LONGITUDE: -89.208372 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.963124 DATE COLLECTED:

SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 333.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
210.0	MODESTO	PIASA	LIMESTONE	8.0	200.0
202.0	MODESTO		DARK GRAY SHALE	2.6	208.0
199.4	CARBONDALE	DANVILLE	COAL	3.0	210.6
196.4	CARBONDALE		SHALE & SANDSTONE	15.0	213.6
181.4	CARBONDALE	BANKSTON FORK	LIMESTONE	9.4	228.6
172.0	CARBONDALE	LAWSON	SILTY SHALE	1.0	238.0
171.0	CARBONDALE	BRERETON	LIMESTONE	9.0	239.0
162.0	CARBONDALE	ANNA	BLACK SHALE	1.0	248.0
161.0	CARBONDALE	ENERGY	SILTY SHALE	8.0	249.0
153.0	CARBONDALE	ENERGY	GRAY SHALE	62.0	257.0
91.0	CARBONDALE	ENERGY	SILTY SHALE	5.0	319.0
86.0	CARBONDALE	HERRIN	COAL	9.0	324.0

MAPID: 14501488000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 33 QUARTERS/FOOTAGES: SW NW NE

QUADRANGLE: ELKVILLE LONGITUDE: -89.214143 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 37.962183 DATE COLLECTED: 0 / 0 / 1930

SURFACE ELEVATION (FT.): 404.6 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log

SOURCE: MURPHYSBORO DIAMIND DRILL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
354.6			SHALE	17.0	50.0
347.6			SHALE	20.0	57.0
327.6			SHALE	20.0	77.0
307.6			SHALE	13.0	97.0
294.6			SHALE	5.0	110.0
289.6			SHALE	80.0	115.0
209.6			SHALE	21.0	195.0
188.6			SHALE	1.0	216.0
187.6			SHALE	9.0	217.0
178.6			LIMESTONE	10.0	226.0
168.6			SHALE	3.0	236.0
165.6	CARBONDALE		LIMESTONE	2.0	239.0
163.6	CARBONDALE	ENERGY	SHALE	9.0	241.0
154.6	CARBONDALE	ENERGY	SHALE	2.0	250.0
152.6	CARBONDALE	ENERGY	SHALE	53.0	252.0
99.6	CARBONDALE	HERRIN	COAL	8.7	305.0
90.9	CARBONDALE		CLAYSTONE	0.5	313.7
90.4	CARBONDALE		LIMESTONE	0.7	314.2

MAPID: 14502701000C VERSION: 1

PROJECT: CUSMAP

COUNTY: PERRY TWP/RNG: 6S 1W SECTION: 34 QUARTERS/FOOTAGES: 330' S line, 330' W line of SW

QUADRANGLE: ELKVILLE LONGITUDE: -89.205039 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.951065 DATE COLLECTED: 11 / 0 / 1963

SURFACE ELEVATION (FT.): 394.0 LOGGED (FT.): 1358.0 LOG TYPE: Electric Log

SOURCE: NAT'L. ASSOC. PETRO. CO. WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-112.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	506.0
-181.0	SPOON	DAVIS	UNCLASSIFIED	-	575.0
-964.0	BASE OF PENN.		UNCLASSIFIED	-	1358.0

MAPID: 14500142000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 1 **QUARTERS/FOOTAGES:** 1980' N line, 1980' W line
QUADRANGLE: PYATTS **LONGITUDE:** -89.272392 **GEOLOGIST:** PLOETZ
CONFIDENTIAL: N **LATITUDE:** 38.033412 **DATE COLLECTED:** 0 / 0 / 1888
SURFACE ELEVATION (FT.): 452.0 **LOGGED (FT.):** 53.0 **LOG TYPE:** Drillers Log
SOURCE: HALLIDAY ESTATE **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
425.5	CARBONDALE	CONANT	LIMESTONE	3.5	26.5	
422.0	CARBONDALE		SHALE	4.0	30.0	
418.0	CARBONDALE	BRERETON	LIMESTONE	8.0	34.0	
410.0	CARBONDALE	ANNA	SHALE	4.0	42.0	
406.0	CARBONDALE	HERRIN	COAL	6.5	46.0	
399.5	CARBONDALE		CLAYSTONE	0.5	52.5	

MAPID: 14500142000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 1 **QUARTERS/FOOTAGES:** 1980' N line, 1980' W line
QUADRANGLE: PYATTS **LONGITUDE:** -89.272392 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.033412 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 452.0 **LOGGED (FT.):** 52.5 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
425.5	CARBONDALE	CONANT	LIMESTONE	3.5	26.5	
422.0	CARBONDALE		BLACK SHALE	4.0	30.0	
418.0	CARBONDALE	BRERETON	LIMESTONE	8.0	34.0	
410.0	CARBONDALE	ANNA	BLACK SHALE	4.0	42.0	
406.0	CARBONDALE	HERRIN	COAL	6.5	46.0	

MAPID: 14500135000C **VERSION:** 1 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 2 **QUARTERS/FOOTAGES:** 330' S line, 2310' E line
QUADRANGLE: PYATTS **LONGITUDE:** -89.28764 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.024552 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.0 **LOGGED (FT.):** 35.2 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
406.2	CARBONDALE	BRERETON	LIMESTONE	5.5	23.8	
400.7	CARBONDALE	ANNA	BLACK SHALE	0.7	29.3	
400.0	CARBONDALE	HERRIN	COAL	5.2	30.0	

MAPID: 14501822000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 2 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW

QUADRANGLE: PYATTS LONGITUDE: -89.288563 GEOLOGIST: PLOETZ

CONFIDENTIAL: N LATITUDE: 38.031169 DATE COLLECTED: 10 / 23 / 1929

SURFACE ELEVATION (FT.): 432.8 LOGGED (FT.): 116.2 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.8			CLAYSTONE	21.0	0.0
411.8			CLAYSTONE	10.0	21.0
401.8			CONCRETION	11.0	31.0
390.8	CARBONDALE	ANNA	SHALE	2.5	42.0
388.3	CARBONDALE	HERRIN	COAL	5.0	44.5
383.3	CARBONDALE		CLAYSTONE	1.2	49.5
382.1	CARBONDALE		SHALE	5.0	50.7
377.1	CARBONDALE		SHALE	60.0	55.7
317.1	CARBONDALE		LIMESTONE	0.5	115.7

MAPID: 14501822000C VERSION: 2

PROJECT: NCRDS87

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 2 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW

QUADRANGLE: PYATTS LONGITUDE: -89.288563 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.031169 DATE COLLECTED: 10 / 23 / 1929

SURFACE ELEVATION (FT.): 432.8 LOGGED (FT.): 116.8 LOG TYPE: Drillers Log

SOURCE: TRUAX-TRAER COAL CO WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.8			UNCONSOLIDATED	42.0	0.0
390.8	CARBONDALE	ANNA	BLACK SHALE	2.5	42.0
388.3	CARBONDALE	HERRIN	COAL	5.0	44.5
383.3			UNDERCLAY	1.3	49.5
382.0			GRAY SHALE	62.3	50.8
319.8			COAL	0.3	113.0
319.5			GRAY SHALE	3.0	113.3
316.5			LIMESTONE	0.5	116.3

MAPID: 14502795000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 3 QUARTERS/FOOTAGES: 1320' N line, 1320' E line

QUADRANGLE: PYATTS LONGITUDE: -89.302286 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.035061 DATE COLLECTED:

SURFACE ELEVATION (FT.): 431.0 LOGGED (FT.): 97.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
361.0	CARBONDALE	LAWSON	UNDERCLAY	5.0	70.0	
356.0	CARBONDALE	CONANT	LIMESTONE	3.0	75.0	
353.0	CARBONDALE		BLACK SHALE	2.0	78.0	
351.0	CARBONDALE	BRERETON	LIMESTONE	12.0	80.0	
339.0	CARBONDALE	HERRIN	COAL	5.0	92.0	

MAPID: 14500156000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 9 QUARTERS/FOOTAGES: 2300' N line, 2300' E line

QUADRANGLE: PYATTS LONGITUDE: -89.324493 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.017898 DATE COLLECTED:

SURFACE ELEVATION (FT.): 415.0 LOGGED (FT.): 41.8 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.0	CARBONDALE	BRERETON	LIMESTONE	14.0	19.0	
382.0	CARBONDALE	ANNA	BLACK SHALE	3.0	33.0	
379.0	CARBONDALE	HERRIN	COAL	5.8	36.0	

MAPID: 14500165000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 10 QUARTERS/FOOTAGES: 500' S line, 1200' E line

QUADRANGLE: PYATTS LONGITUDE: -89.302361 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.010554 DATE COLLECTED:

SURFACE ELEVATION (FT.): 421.0 LOGGED (FT.): 55.8 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.0	CARBONDALE	LAWSON	SHALE	19.0	25.0	
377.0	CARBONDALE	BRERETON	LIMESTONE	4.0	44.0	
373.0	CARBONDALE	ANNA	BLACK SHALE	2.0	48.0	
371.0	CARBONDALE	HERRIN	COAL	5.8	50.0	

MAPID: 14500175000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 11 QUARTERS/FOOTAGES: 300' S line, 500' W line

QUADRANGLE: PYATTS LONGITUDE: -89.296445 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.009931 DATE COLLECTED:

SURFACE ELEVATION (FT.): 418.0 LOGGED (FT.): 52.1 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
398.0	CARBONDALE	LAWSON	SHALE	9.0	20.0	
389.0	CARBONDALE	BRERETON	LIMESTONE	4.0	29.0	
385.0	CARBONDALE	ANNA	BLACK SHALE	4.0	33.0	
381.0	CARBONDALE	ENERGY	GRAY SHALE	9.0	37.0	
372.0	CARBONDALE	HERRIN	COAL	6.1	46.0	

MAPID: 14501403000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 12 QUARTERS/FOOTAGES: 1500' S line, 100' E line

QUADRANGLE: PYATTS LONGITUDE: -89.261523 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.013557 DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.0 LOGGED (FT.): 67.5 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.5	CARBONDALE	LAWSON	GRAY SHALE	3.5	43.5	
406.0	CARBONDALE	JAMESTOWN	COAL	0.3	47.0	
405.7	CARBONDALE	BRERETON	LIMESTONE	6.8	47.3	
399.0	CARBONDALE	ANNA	BLACK SHALE	2.0	54.0	
397.0	CARBONDALE	ENERGY	GRAY SHALE	4.0	56.0	
393.0	CARBONDALE	HERRIN	COAL	7.5	60.0	

MAPID: 14500179000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 14 QUARTERS/FOOTAGES: 2300' N line, 500' W line

QUADRANGLE: PYATTS LONGITUDE: -89.296605

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.002756

DATE COLLECTED:

SURFACE ELEVATION (FT.): 441.0

LOGGED (FT.): 69.3

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
398.0	CARBONDALE	LAWSON	GRAY SHALE	1.0	43.0
397.0	CARBONDALE	BRERETON	LIMESTONE	8.0	44.0
389.0	CARBONDALE	ANNA	BLACK SHALE	3.0	52.0
386.0	CARBONDALE	ENERGY	GRAY SHALE	8.0	55.0
378.0	CARBONDALE	HERRIN	COAL	6.3	63.0

MAPID: 14500180000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: VERGENNES LONGITUDE: -89.315673

GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.995688

DATE COLLECTED:

SURFACE ELEVATION (FT.): 435.5

LOGGED (FT.): 71.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1217

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.5			UNCONSOLIDATED	14.0	0.0
421.5			SAND	15.0	14.0
406.5	CARBONDALE		SHALE	23.0	29.0
383.5	CARBONDALE	BRERETON	LIMESTONE	9.0	52.0
374.5	CARBONDALE	ANNA	SHALE	4.0	61.0
370.5	CARBONDALE	ENERGY	SHALE	3.0	65.0
367.5	CARBONDALE	HERRIN	COAL	3.5	68.0

MAPID: 14500181000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: 300' S line, 1600' W line

QUADRANGLE: VERGENNES LONGITUDE: -89.311239 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.99557 DATE COLLECTED:

SURFACE ELEVATION (FT.): 441.9 LOGGED (FT.): 60.1 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1219 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
441.9			UNCONSOLIDATED	17.0	0.0
424.9	CARBONDALE		SANDSTONE	9.0	17.0
415.9	CARBONDALE		SHALE	9.0	26.0
406.9	CARBONDALE	BRERETON	LIMESTONE	11.0	35.0
395.9	CARBONDALE	ANNA	SHALE	4.0	46.0
391.9	CARBONDALE	ENERGY	SHALE	3.0	50.0
388.9	CARBONDALE	HERRIN	COAL	7.1	53.0

MAPID: 14500181000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: 300' S line, 1600' W line

QUADRANGLE: VERGENNES LONGITUDE: -89.311239 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.99557 DATE COLLECTED:

SURFACE ELEVATION (FT.): 442.0 LOGGED (FT.): 60.1 LOG TYPE: Drillers Log

SOURCE: FAIR DESCRIPTION WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.0	CARBONDALE	LAWSON	SANDSTONE	9.0	17.0
416.0	CARBONDALE	LAWSON	SHALE	9.0	26.0
407.0	CARBONDALE	BRERETON	LIMESTONE	11.0	35.0
396.0	CARBONDALE	ANNA	BLACK SHALE	4.0	46.0
392.0	CARBONDALE	ENERGY	GRAY SHALE	3.0	50.0
389.0	CARBONDALE	HERRIN	COAL	7.1	53.0

MAPID: 14500182000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: 400' S line, 660' W line of SW SE

QUADRANGLE: VERGENNES LONGITUDE: -89.30536 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.995795 DATE COLLECTED:

SURFACE ELEVATION (FT.): 436.2 LOGGED (FT.): 56.2 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1221 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.2			UNCONSOLIDATED	22.0	0.0
414.2			SAND	5.0	22.0
409.2	CARBONDALE		SHALE	5.0	27.0
404.2	CARBONDALE	BRERETON	LIMESTONE	16.0	32.0
388.2	CARBONDALE	ANNA	SHALE	3.0	48.0
385.2	CARBONDALE	HERRIN	COAL	5.2	51.0

MAPID: 14500183000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 660' W line of NE SW

QUADRANGLE: VERGENNES LONGITUDE: -89.309876 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.999273 DATE COLLECTED:

SURFACE ELEVATION (FT.): 436.0 LOGGED (FT.): 71.7 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1317A WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.0			UNCONSOLIDATED	18.0	0.0
418.0			SAND	18.0	18.0
400.0	CARBONDALE		SHALE	13.0	36.0
387.0	CARBONDALE	BRERETON	LIMESTONE	13.0	49.0
374.0	CARBONDALE	ANNA	SHALE	3.0	62.0
371.0	CARBONDALE	HERRIN	COAL	6.7	65.0

MAPID: 14500184000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: SW SW NE SW

QUADRANGLE: VERGENNES LONGITUDE: -89.311614 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.998831 DATE COLLECTED:

SURFACE ELEVATION (FT.): 431.7 LOGGED (FT.): 58.2 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1319 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.7			UNCONSOLIDATED	28.0	0.0
403.7	CARBONDALE		SHALE	4.0	28.0
399.7	CARBONDALE	BRERETON	LIMESTONE	8.0	32.0
391.7	CARBONDALE	ANNA	SHALE	4.0	40.0
387.7	CARBONDALE	ENERGY	SHALE	8.0	44.0
379.7	CARBONDALE	HERRIN	COAL	6.2	52.0

MAPID: 14500185000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: NW SE

QUADRANGLE: VERGENNES LONGITUDE: -89.305289 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.000127 DATE COLLECTED:

SURFACE ELEVATION (FT.): 428.0 LOGGED (FT.): 59.7 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1321 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.0			UNCONSOLIDATED	10.0	0.0
418.0			SAND	28.0	10.0
390.0	CARBONDALE	BRERETON	LIMESTONE	9.0	38.0
381.0	CARBONDALE	ANNA	SHALE	2.0	47.0
379.0	CARBONDALE	ENERGY	SHALE	4.0	49.0
375.0	CARBONDALE	HERRIN	COAL	6.7	53.0

MAPID: 14500186000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 330' W line of NE SE

QUADRANGLE: VERGENNES LONGITUDE: -89.301862 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.999193 DATE COLLECTED:

SURFACE ELEVATION (FT.): 431.8 LOGGED (FT.): 57.8 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1323 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.8			UNCONSOLIDATED	15.0	0.0
416.8			SAND	5.0	15.0
411.8	CARBONDALE		SHALE	14.0	20.0
397.8	CARBONDALE	BRERETON	LIMESTONE	8.0	34.0
389.8	CARBONDALE	ANNA	SHALE	4.0	42.0
385.8	CARBONDALE	ENERGY	SHALE	5.0	46.0
380.8	CARBONDALE	HERRIN	COAL	6.8	51.0

MAPID: 14500187000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 660' W line of SE NW

QUADRANGLE: VERGENNES LONGITUDE: -89.309814 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.0029 DATE COLLECTED:

SURFACE ELEVATION (FT.): 432.0 LOGGED (FT.): 68.9 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1419 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.0			UNCONSOLIDATED	21.0	0.0
411.0			SHALE	3.0	21.0
408.0	CARBONDALE	BANKSTON FORK	LIMESTONE	0.0	24.0
399.0	CARBONDALE		SHALE	11.0	33.0
388.0	CARBONDALE	BRERETON	LIMESTONE	15.0	44.0
373.0	CARBONDALE	ANNA	SHALE	3.0	59.0
370.0	CARBONDALE	HERRIN	COAL	6.9	62.0

MAPID: 14500188000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: VERGENNES LONGITUDE: -89.306381 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.002859 DATE COLLECTED:

SURFACE ELEVATION (FT.): 418.3 LOGGED (FT.): 53.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1421 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.3			UNCONSOLIDATED	10.0	0.0
408.3			SAND	3.0	10.0
405.3	CARBONDALE		SHALE	17.0	13.0
388.3	CARBONDALE	BRERETON	LIMESTONE	14.0	30.0
374.3	CARBONDALE	ANNA	SHALE	3.0	44.0
371.3	CARBONDALE	HERRIN	COAL	6.0	47.0

MAPID: 14500189000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: NE SW SE NE

QUADRANGLE: VERGENNES LONGITUDE: -89.301209 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.003253 DATE COLLECTED:

SURFACE ELEVATION (FT.): 424.8 LOGGED (FT.): 56.8 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COMPANY #1423 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.8			UNCONSOLIDATED	16.0	0.0
408.8	CARBONDALE		SHALE	10.0	16.0
398.8	CARBONDALE		SHALE	5.0	26.0
392.8	CARBONDALE	BRERETON	LIMESTONE	7.0	32.0
385.8	CARBONDALE	ANNA	SHALE	6.0	39.0
380.8	CARBONDALE	ENERGY	SHALE	6.0	44.0
374.8	CARBONDALE	HERRIN	COAL	6.8	50.0

MAPID: 14500199000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: SW NW NW

QUADRANGLE: VERGENNES LONGITUDE: -89.315501 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.006601 DATE COLLECTED:

SURFACE ELEVATION (FT.): 422.0 LOGGED (FT.): 52.7 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COMPANY #1517 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
422.0			UNCONSOLIDATED	15.0	0.0
407.0	CARBONDALE		SHALE	14.0	15.0
393.0	CARBONDALE	BRERETON	LIMESTONE	9.0	29.0
384.0	CARBONDALE	ANNA	SHALE	4.0	38.0
380.0	CARBONDALE	ENERGY	SHALE	4.0	42.0
376.0	CARBONDALE	HERRIN	COAL	6.7	46.0

MAPID: 14500200000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: SW NE NW

QUADRANGLE: VERGENNES LONGITUDE: -89.310906 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.006544 DATE COLLECTED:

SURFACE ELEVATION (FT.): 412.0 LOGGED (FT.): 56.5 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1519 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
412.0			UNCONSOLIDATED	12.0	0.0
400.0	CARBONDALE		SHALE	10.0	12.0
390.0	CARBONDALE		LIMESTONE	1.0	22.0
389.0	CARBONDALE		SHALE	3.0	23.0
386.0	CARBONDALE		SHALE	3.0	26.0
383.0	CARBONDALE	BRERETON	LIMESTONE	16.0	29.0
367.0	CARBONDALE	ANNA	SHALE	7.0	45.0
360.0	CARBONDALE	HERRIN	COAL	4.5	52.0

MAPID: 14500201000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: SW NW NE

QUADRANGLE: VERGENNES LONGITUDE: -89.306311 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.006483 DATE COLLECTED:

SURFACE ELEVATION (FT.): 425.8 LOGGED (FT.): 69.3 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1521 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
425.8			UNCONSOLIDATED	15.0	0.0	
410.8			SAND	33.0	15.0	
377.8	CARBONDALE	BRERETON	LIMESTONE	13.0	48.0	
364.8	CARBONDALE	ANNA	SHALE	2.0	61.0	
362.8	CARBONDALE	HERRIN	COAL	6.3	63.0	

MAPID: 14500202000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: NE SW NE NE

QUADRANGLE: VERGENNES LONGITUDE: -89.301133 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.006872 DATE COLLECTED: 3 / 7 / 1950

SURFACE ELEVATION (FT.): 421.8 LOGGED (FT.): 57.7 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO #1523A WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
421.8			UNCONSOLIDATED	14.0	0.0	
407.8			SAND	3.0	14.0	
404.8	CARBONDALE		SHALE	18.0	17.0	
386.8	CARBONDALE	BRERETON	LIMESTONE	7.0	35.0	
379.8	CARBONDALE	ANNA	SHALE	2.0	42.0	
377.8	CARBONDALE	ENERGY	SHALE	8.0	44.0	
369.8	CARBONDALE	HERRIN	COAL	5.7	52.0	

MAPID: 14500203000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 15 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: VERGENNES LONGITUDE: -89.31556 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.002962 DATE COLLECTED:

SURFACE ELEVATION (FT.): 432.0 LOGGED (FT.): 73.6 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1417 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.0			UNCONSOLIDATED	25.0	0.0
407.0			SAND	7.0	25.0
400.0	CARBONDALE		SHALE	13.0	32.0
387.0	CARBONDALE	BRERETON	LIMESTONE	18.0	45.0
369.0	CARBONDALE	ANNA	SHALE	2.0	63.0
367.0	CARBONDALE	ENERGY	SHALE	2.0	65.0
365.0	CARBONDALE	HERRIN	COAL	6.6	67.0

MAPID: 14500205000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 16 QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: VERGENNES LONGITUDE: -89.334311 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.996009 DATE COLLECTED:

SURFACE ELEVATION (FT.): 392.1 LOGGED (FT.): 45.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1209 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
392.1			UNCONSOLIDATED	12.0	0.0
380.1			SHALE	16.0	12.0
364.1			SHALE	17.0	28.0

MAPID: 14500206000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 16 QUARTERS/FOOTAGES: SW SE SE

QUADRANGLE: VERGENNES LONGITUDE: -89.320316 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.995762 DATE COLLECTED:

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1215 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.0			SAND	21.0	12.0
397.0	CARBONDALE		SHALE	2.0	33.0
395.0	CARBONDALE	BRERETON	LIMESTONE	15.0	35.0
380.0	CARBONDALE	ANNA	SHALE	3.0	50.0
377.0	CARBONDALE	HERRIN	COAL	7.0	53.0

MAPID: 14500207000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 16 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: VERGENNES LONGITUDE: -89.329647 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.995925 DATE COLLECTED:

SURFACE ELEVATION (FT.): 413.2 LOGGED (FT.): 60.5 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1211 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
413.2			UNCONSOLIDATED	15.0	0.0	
398.2	CARBONDALE		SAND	37.0	15.0	
361.2	CARBONDALE		SHALE	2.0	52.0	
359.2	CARBONDALE	HERRIN	COAL	6.5	54.0	

MAPID: 14500208000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 16 QUARTERS/FOOTAGES: 200' S line, 2000' E line

QUADRANGLE: VERGENNES LONGITUDE: -89.323798 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.995463 DATE COLLECTED:

SURFACE ELEVATION (FT.): 409.8 LOGGED (FT.): 52.2 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1213 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.8			UNCONSOLIDATED	10.0	0.0	
399.8	CARBONDALE		SHALE	18.0	10.0	
381.8	CARBONDALE	BRERETON	LIMESTONE	15.0	28.0	
366.8	CARBONDALE	ANNA	SHALE	3.0	43.0	
363.8	CARBONDALE	HERRIN	COAL	6.2	46.0	

MAPID: 14500208000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 16 QUARTERS/FOOTAGES: 200' S line, 2000' E line

QUADRANGLE: VERGENNES LONGITUDE: -89.323798 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.995463 DATE COLLECTED:

SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 52.2 LOG TYPE: Drillers Log

SOURCE: FAIR DESCRIPTION WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.0	CARBONDALE	LAWSON	SILTY SHALE	18.0	10.0	
382.0	CARBONDALE	BRERETON	LIMESTONE	15.0	28.0	
367.0	CARBONDALE	ANNA	BLACK SHALE	3.0	43.0	
364.0	CARBONDALE	HERRIN	COAL	6.2	46.0	

MAPID: 14500209000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 16

QUARTERS/FOOTAGES: SE SW NE SW

QUADRANGLE: VERGENNES

LONGITUDE: -89.328991

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.999107

DATE COLLECTED:

SURFACE ELEVATION (FT.): 399.1

LOGGED (FT.): 37.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1311

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
399.1			UNCONSOLIDATED	20.0	0.0
379.1			SAND	4.0	20.0
375.1	CARBONDALE		SHALE	7.0	24.0
368.1	CARBONDALE	HERRIN	COAL	6.7	31.0

MAPID: 14500210000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 16

QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: VERGENNES

LONGITUDE: -89.324908

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.999487

DATE COLLECTED:

SURFACE ELEVATION (FT.): 417.8

LOGGED (FT.): 54.2

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1313

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
417.8			UNCONSOLIDATED	19.0	0.0
398.8			SAND	5.0	19.0
393.8	CARBONDALE		SHALE	3.0	24.0
390.8	CARBONDALE	BRERETON	LIMESTONE	18.0	27.0
372.8	CARBONDALE	ANNA	SHALE	3.0	45.0
369.8	CARBONDALE	HERRIN	COAL	6.2	48.0

MAPID: 14500211000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 16

QUARTERS/FOOTAGES: SE NE SE

QUADRANGLE: VERGENNES

LONGITUDE: -89.317927

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.999358

DATE COLLECTED:

SURFACE ELEVATION (FT.): 415.2

LOGGED (FT.): 48.2

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1315

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
415.2			UNCONSOLIDATED	26.0	0.0
389.2	CARBONDALE	BRERETON	LIMESTONE	7.0	26.0
382.2	CARBONDALE	ANNA	SHALE	4.0	33.0
378.2	CARBONDALE	ENERGY	SHALE	5.0	37.0
373.2	CARBONDALE	HERRIN	COAL	6.2	42.0

MAPID: 14500212000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 16 QUARTERS/FOOTAGES: SW SE NW

QUADRANGLE: VERGENNES LONGITUDE: -89.32948 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.003224 DATE COLLECTED:

SURFACE ELEVATION (FT.): 423.1 LOGGED (FT.): 51.5 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1411 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
423.1			UNCONSOLIDATED	25.0	0.0	
398.1			SAND	2.0	25.0	
396.1	CARBONDALE	BRERETON	LIMESTONE	16.0	27.0	
380.1	CARBONDALE	ANNA	SHALE	2.0	43.0	
378.1	CARBONDALE	HERRIN	COAL	6.5	45.0	

MAPID: 14500213000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 16 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: VERGENNES LONGITUDE: -89.324833 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.003134 DATE COLLECTED:

SURFACE ELEVATION (FT.): 417.3 LOGGED (FT.): 48.7 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1413 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.3			UNCONSOLIDATED	23.0	0.0	
394.3	CARBONDALE		SHALE	2.0	23.0	
392.3	CARBONDALE	BRERETON	LIMESTONE	10.0	25.0	
382.3	CARBONDALE	ANNA	SHALE	7.0	35.0	
375.3	CARBONDALE	HERRIN	COAL	6.7	42.0	

MAPID: 14500214000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 16 QUARTERS/FOOTAGES: SW SE NE

QUADRANGLE: VERGENNES LONGITUDE: -89.320189 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.003044 DATE COLLECTED:

SURFACE ELEVATION (FT.): 425.5 LOGGED (FT.): 55.2 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1415 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.5			UNCONSOLIDATED	15.0	0.0
410.5			SAND	13.0	15.0
397.5	CARBONDALE	BRERETON	LIMESTONE	10.0	28.0
387.5	CARBONDALE	ANNA	SHALE	4.0	38.0
383.5	CARBONDALE	ENERGY	SHALE	6.0	42.0
377.5	CARBONDALE	HERRIN	COAL	7.2	48.0

MAPID: 14500215000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 16 QUARTERS/FOOTAGES: 0' S line, 330' W line of NW NE

QUADRANGLE: VERGENNES LONGITUDE: -89.324788 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.005867 DATE COLLECTED:

SURFACE ELEVATION (FT.): 391.3 LOGGED (FT.): 50.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1513 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
391.3			UNCONSOLIDATED	17.0	0.0
374.3			SHALE	26.0	17.0
348.3			SAND	7.0	43.0

MAPID: 14500216000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 16 QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: VERGENNES LONGITUDE: -89.320128 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 38.006685 DATE COLLECTED:

SURFACE ELEVATION (FT.): 428.2 LOGGED (FT.): 51.5 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1515 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.2			UNCONSOLIDATED	19.0	0.0
409.2			SAND	5.0	19.0
404.2	CARBONDALE	BANKSTON FORK	LIMESTONE	11.0	24.0
393.2	CARBONDALE		SHALE	3.0	35.0
390.2	CARBONDALE	BRERETON	LIMESTONE	8.0	38.0
382.2	CARBONDALE	HERRIN	COAL	5.5	46.0

MAPID: 1450217000C **VERSION:** 1 **PROJECT:** CUSMAP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 18 **QUARTERS/FOOTAGES:** 330' S line, 330' W line of NE
QUADRANGLE: PYATTS **LONGITUDE:** -89.362138 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 38.003853 **DATE COLLECTED:** 10 / 0 / 1956
SURFACE ELEVATION (FT.): 442.0 **LOGGED (FT.):** 664.0 **LOG TYPE:** Electric Log
SOURCE: NAT'L. ASSOC. PETRO. CO. **WELL TYPE:** Structure Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
192.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	250.0
132.0	SPOON	DAVIS	UNCLASSIFIED	-	310.0
-222.0	BASE OF PENN.		UNCLASSIFIED	-	664.0

MAPID: 14500217000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 20 **QUARTERS/FOOTAGES:** 330' S line, 660' W line of SW SE
QUADRANGLE: VERGENNES **LONGITUDE:** -89.342963 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.981613 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 386.7 **LOGGED (FT.):** 30.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #805 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
386.7			UNCONSOLIDATED	0.0	0.0

MAPID: 14500218000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 20 **QUARTERS/FOOTAGES:** 200' S line, 700' E line
QUADRANGLE: VERGENNES **LONGITUDE:** -89.338308 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.981154 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 412.4 **LOGGED (FT.):** 61.4 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #807 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
412.4			UNCONSOLIDATED	10.0	0.0
402.4	CARBONDALE		SHALE	23.0	10.0
379.4	CARBONDALE	BANKSTON FORK	LIMESTONE	8.0	33.0
371.4	CARBONDALE		SHALE	6.0	41.0
365.4	CARBONDALE	BRERETON	LIMESTONE	7.0	47.0
358.4	CARBONDALE	HERRIN	COAL	7.4	54.0

MAPID: 14500218000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 20 QUARTERS/FOOTAGES: 200' S line, 700' E line

QUADRANGLE: VERGENNES LONGITUDE: -89.338308

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.981154

DATE COLLECTED:

SURFACE ELEVATION (FT.): 412.0

LOGGED (FT.): 61.4

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
402.0	CARBONDALE	LAWSON	GRAY SHALE	23.0	10.0	
379.0	CARBONDALE	BRERETON	LIMESTONE	8.0	33.0	
371.0	CARBONDALE	ANNA	BLACK SHALE	6.0	41.0	
365.0	CARBONDALE	ENERGY	CALCAREOUS SHALE	7.0	47.0	
358.0	CARBONDALE	HERRIN	COAL	7.4	54.0	

MAPID: 14500219000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 20 QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: VERGENNES LONGITUDE: -89.348678

GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.985362

DATE COLLECTED:

SURFACE ELEVATION (FT.): 417.4

LOGGED (FT.): 56.1

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #907

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.4			UNCONSOLIDATED	15.0	0.0	
402.4	CARBONDALE		SHALE	15.0	15.0	
387.4	CARBONDALE		LIMESTONE	14.0	30.0	
373.4	CARBONDALE		SHALE	3.0	44.0	
370.4	CARBONDALE		LIMESTONE	2.0	47.0	
368.4	CARBONDALE	HERRIN	COAL	7.1	49.0	

MAPID: 14501936000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 20 QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: VERGENNES LONGITUDE: -89.343875 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.9889 DATE COLLECTED:

SURFACE ELEVATION (FT.): 412.6 LOGGED (FT.): 52.8 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1013 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
412.6			UNCONSOLIDATED	15.0	0.0
397.6			SAND	5.0	15.0
392.6	CARBONDALE		SHALE	6.0	20.0
386.6	CARBONDALE		LIMESTONE	2.0	26.0
384.6	CARBONDALE		SHALE	17.0	28.0
367.6	CARBONDALE	HERRIN	COAL	7.8	45.0

MAPID: 14528305000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 20 QUARTERS/FOOTAGES: 650' S line, 565' E line of SE NE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.337615 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.989664 DATE COLLECTED: 11 / 0 / 1948

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 58.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CORP. #7 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0			UNCONSOLIDATED	14.5	0.0
465.5	CARBONDALE		SHALE	3.1	14.5
462.4	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	17.6
457.4	CARBONDALE		SHALE	7.2	22.6
450.2	CARBONDALE		SHALE	10.2	29.8
440.0	CARBONDALE		SHALE	0.4	40.0
439.6	CARBONDALE	BRERETON	LIMESTONE	5.2	40.4
434.4	CARBONDALE	ANNA	SHALE	3.2	45.6
431.2	CARBONDALE	HERRIN	COAL	6.3	48.8
424.9	CARBONDALE		CLAYSTONE	3.3	55.1

MAPID: 14500220000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: VERGENNES LONGITUDE: -89.334697 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.981439 DATE COLLECTED:

SURFACE ELEVATION (FT.): 417.8 LOGGED (FT.): 47.5 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #809 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
417.8			UNCONSOLIDATED	11.0	0.0	
406.8			SAND	16.0	11.0	
390.8	CARBONDALE	BRERETON	LIMESTONE	11.0	27.0	
379.8	CARBONDALE	ANNA	SHALE	2.0	38.0	
377.8	CARBONDALE	HERRIN	COAL	7.5	40.0	

MAPID: 14500221000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: SW SW SE SW

QUADRANGLE: VERGENNES LONGITUDE: -89.330645 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.980911 DATE COLLECTED:

SURFACE ELEVATION (FT.): 416.3 LOGGED (FT.): 59.5 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #811 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.3			UNCONSOLIDATED	12.0	0.0	
404.3			SHALE	15.0	12.0	
389.3			SAND	3.0	27.0	
386.3	CARBONDALE		SHALE	5.0	30.0	
381.3	CARBONDALE	BRERETON	LIMESTONE	14.0	35.0	
367.3	CARBONDALE	ANNA	SHALE	4.0	49.0	
363.3	CARBONDALE	HERRIN	COAL	6.5	53.0	

MAPID: 14500222000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 21 **QUARTERS/FOOTAGES:** 300' S line, 2000' E line
QUADRANGLE: VERGENNES **LONGITUDE:** -89.324248 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.981167 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 418.7 **LOGGED (FT.):** 45.3 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #813 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.7			UNCONSOLIDATED	19.0	0.0
399.7	CARBONDALE	BRERETON	LIMESTONE	15.0	19.0
384.7	CARBONDALE	ANNA	SHALE	4.0	34.0
380.7	CARBONDALE	HERRIN	COAL	7.3	38.0

MAPID: 14500222000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 21 **QUARTERS/FOOTAGES:** 300' S line, 2000' E line
QUADRANGLE: VERGENNES **LONGITUDE:** -89.324248 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.981167 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 419.0 **LOGGED (FT.):** 45.3 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	CARBONDALE	BRERETON	LIMESTONE	15.0	19.0
385.0	CARBONDALE	ANNA	BLACK SHALE	4.0	34.0
381.0	CARBONDALE	HERRIN	COAL	7.3	38.0

MAPID: 14500224000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 21 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.334601 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.985083 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 406.7 **LOGGED (FT.):** 53.8 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #909 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
406.7			UNCONSOLIDATED	15.0	0.0
391.7	CARBONDALE		SHALE	20.0	15.0
371.7	CARBONDALE		SHALE	3.0	35.0
368.7	CARBONDALE	BRERETON	LIMESTONE	9.0	38.0
359.7	CARBONDALE	HERRIN	COAL	6.8	47.0

MAPID: 14500225000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: VERGENNES LONGITUDE: -89.329949 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.984999 DATE COLLECTED:

SURFACE ELEVATION (FT.): 415.6 LOGGED (FT.): 63.2 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #911 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
415.6			UNCONSOLIDATED	20.0	0.0
395.6			SAND	5.0	20.0
390.6	CARBONDALE		SHALE	17.0	25.0
373.6	CARBONDALE		SHALE	4.0	42.0
369.6	CARBONDALE	BRERETON	LIMESTONE	10.0	46.0
359.6	CARBONDALE	HERRIN	COAL	7.2	56.0

MAPID: 14500226000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: SE SW NW SE

QUADRANGLE: VERGENNES LONGITUDE: -89.324728 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.984447 DATE COLLECTED:

SURFACE ELEVATION (FT.): 404.1 LOGGED (FT.): 42.7 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #913 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
404.1			UNCONSOLIDATED	17.0	0.0
387.1	CARBONDALE		SHALE	3.0	17.0
384.1	CARBONDALE		SANDSTONE	7.0	20.0
377.1	CARBONDALE	BRERETON	LIMESTONE	6.0	27.0
371.1	CARBONDALE	ANNA	SHALE	4.0	33.0
367.1	CARBONDALE	HERRIN	COAL	5.7	37.0

MAPID: 14500227000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: SW NE SE

QUADRANGLE: VERGENNES LONGITUDE: -89.320646 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.98483 DATE COLLECTED:

SURFACE ELEVATION (FT.): 409.1 LOGGED (FT.): 37.7 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #915 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
409.1			UNCONSOLIDATED	28.0	0.0
381.1	CARBONDALE		SHALE	3.0	28.0
378.1	CARBONDALE	HERRIN	COAL	6.7	31.0

MAPID: 14500228000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: VERGENNES LONGITUDE: -89.334502 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.988724 DATE COLLECTED:

SURFACE ELEVATION (FT.): 408.5 LOGGED (FT.): 50.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1009 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.5			UNCONSOLIDATED	7.0	0.0	
401.5			SHALE	7.0	7.0	
394.5			SAND	23.0	14.0	
371.5			SHALE	13.0	37.0	

MAPID: 14500229000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: SW SE NW

QUADRANGLE: VERGENNES LONGITUDE: -89.329846 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.98864 DATE COLLECTED:

SURFACE ELEVATION (FT.): 408.5 LOGGED (FT.): 59.4 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1011A WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.5			UNCONSOLIDATED	30.0	0.0	
378.5	CARBONDALE		SANDSTONE	4.0	30.0	
374.5	CARBONDALE		SHALE	4.0	34.0	
370.5	CARBONDALE	BRERETON	LIMESTONE	10.0	38.0	
360.5	CARBONDALE	ANNA	SHALE	4.0	48.0	
356.5	CARBONDALE	HERRIN	COAL	7.4	52.0	

MAPID: 14500230000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: 330' S line, 660' E line of SE NE
 QUADRANGLE: VERGENNES LONGITUDE: -89.31934 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.988453 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 418.0 LOGGED (FT.): 44.5 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #1015 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.0			UNCONSOLIDATED	19.0	0.0
399.0			SANDSTONE	5.0	19.0
394.0			SAND	1.0	24.0
393.0	CARBONDALE	BRERETON	LIMESTONE	11.0	25.0
382.0	CARBONDALE	BRERETON	SHALE	2.0	36.0
380.0	CARBONDALE	HERRIN	COAL	6.5	38.0

MAPID: 14500231000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: NW NW
 QUADRANGLE: VERGENNES LONGITUDE: -89.333215 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.993255 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 409.2 LOGGED (FT.): 64.0 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #1109 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
409.2			UNCONSOLIDATED	20.0	0.0
389.2			SHALE	44.0	20.0

MAPID: 14500232000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: SE NE NW
 QUADRANGLE: VERGENNES LONGITUDE: -89.327413 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.992242 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 417.4 LOGGED (FT.): 62.8 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #1111 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
417.4			UNCONSOLIDATED	36.0	0.0
381.4	CARBONDALE	BRERETON	LIMESTONE	18.0	36.0
363.4	CARBONDALE	ANNA	SHALE	1.0	54.0
362.4	CARBONDALE	HERRIN	COAL	7.8	55.0

MAPID: 14500233000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: 330' S line, 660' W line of NW NE
 QUADRANGLE: VERGENNES LONGITUDE: -89.323945 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.992178 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 413.3 LOGGED (FT.): 49.9 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #1113 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
413.3			UNCONSOLIDATED	23.0	0.0
390.3	CARBONDALE		SANDSTONE	1.0	23.0
389.3	CARBONDALE		SHALE	2.0	24.0
387.3	CARBONDALE		LIMESTONE	17.0	26.0
370.3	CARBONDALE	HERRIN	COAL	6.9	43.0

MAPID: 14500234000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: 330' S line, 660' E line of NE NE
 QUADRANGLE: VERGENNES LONGITUDE: -89.319222 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.992097 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 422.7 LOGGED (FT.): 44.0 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #1115 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
422.7			UNCONSOLIDATED	20.0	0.0
402.7	CARBONDALE		LIMESTONE	16.0	20.0
386.7	CARBONDALE		SHALE	4.0	36.0
382.7	CARBONDALE	HERRIN	COAL	4.0	40.0

MAPID: 14523391000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 21 QUARTERS/FOOTAGES: 80' N line, 450' W line of NW SW SW

QUADRANGLE: VERGENNES LONGITUDE: -89.334224 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.983942 DATE COLLECTED: 6 / 16 / 1977

SURFACE ELEVATION (FT.): 411.0 LOGGED (FT.): 321.0 LOG TYPE: Drillers Log

SOURCE: FREEMAN UNITED COAL CO. #1 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
411.0			CLAYSTONE	29.0	0.0
382.0			UNCLASSIFIED	7.7	29.0
374.3	CARBONDALE		SHALE	25.3	36.7
349.0	CARBONDALE	HERRIN	COAL	6.0	62.0
343.0	CARBONDALE		CLAYSTONE	5.2	68.0
337.8	CARBONDALE		SHALE	41.3	73.2
296.5	CARBONDALE		SANDSTONE	23.5	114.5
273.0	CARBONDALE		SHALE	4.3	138.0
268.7	CARBONDALE	HOUCHIN CREEK	COAL	2.4	142.3
266.3	CARBONDALE		CLAYSTONE	5.1	144.7
261.2	CARBONDALE		SHALE	46.8	149.8
214.4	CARBONDALE	COLCHESTER	COAL	2.0	196.6
212.4	SPOON		SHALE	11.4	198.6
201.0	SPOON		SANDSTONE	25.7	210.0
175.3	SPOON		SHALE	5.3	235.7
170.0	SPOON		SANDSTONE	14.5	241.0
155.5	SPOON	DEKOVEN	COAL	3.0	255.5
152.5	SPOON		CLAYSTONE	3.0	258.5
149.5	SPOON	DAVIS	COAL	6.5	261.5
143.0	SPOON		CLAYSTONE	6.3	268.0
136.7	SPOON		COAL	1.0	274.3
135.7	SPOON		CLAYSTONE	2.1	275.3
133.6	SPOON		SHALE	10.6	277.4
123.0	SPOON		COAL	1.8	288.0
121.2	SPOON		SANDSTONE	2.0	289.8
119.2	SPOON		SANDSTONE/SHALE	14.2	291.8
105.0	SPOON		SHALE	0.0	306.0

MAPID: 14500235000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 22

QUARTERS/FOOTAGES: SW NW NW SW

QUADRANGLE: VERGENNES

LONGITUDE: -89.316541

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.986129

DATE COLLECTED: 0 / 0 / 1923

SURFACE ELEVATION (FT.): 420.0

LOGGED (FT.): 58.5

LOG TYPE: Drillers Log

SOURCE: FRANK J. DEAN, JR. #16-B

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0			UNCONSOLIDATED	34.5	0.0	
385.5	CARBONDALE		LIMESTONE	4.5	34.5	
381.0	CARBONDALE		SHALE	17.0	39.0	
364.0	CARBONDALE	HERRIN	COAL	2.5	56.0	

MAPID: 14500236000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 22

QUARTERS/FOOTAGES: NW NW NW

QUADRANGLE: VERGENNES

LONGITUDE: -89.315716

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.993869

DATE COLLECTED: 0 / 0 / 1923

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 71.2

LOG TYPE: Drillers Log

SOURCE: FRANK J. DEAN, JR. #17-B

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			UNCONSOLIDATED	35.0	0.0	
415.0	CARBONDALE		SANDSTONE	10.0	35.0	
405.0	CARBONDALE		SHALE	9.0	45.0	
396.0	CARBONDALE	BRERETON	LIMESTONE	9.5	54.0	
386.5	CARBONDALE		SHALE	1.5	63.5	
385.0	CARBONDALE	HERRIN	COAL	6.2	65.0	

MAPID: 14500237000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 22 **QUARTERS/FOOTAGES:** NE NE NE SE
QUADRANGLE: VERGENNES **LONGITUDE:** -89.299336 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.986912 **DATE COLLECTED:** 0 / 0 / 1923
SURFACE ELEVATION (FT.): 450.0 **LOGGED (FT.):** 63.7 **LOG TYPE:** Drillers Log
SOURCE: FRANK J. DEAN, JR. #18-B **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	19.0	0.0
431.0	CARBONDALE	BANKSTON FORK	LIMESTONE	9.5	19.0
421.5	CARBONDALE		SHALE	9.5	28.5
412.0	CARBONDALE	BRERETON	LIMESTONE	16.0	38.0
396.0	CARBONDALE		SHALE	3.0	54.0
393.0	CARBONDALE	HERRIN	COAL	6.7	57.0

MAPID: 14500238000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 22 **QUARTERS/FOOTAGES:** 200' S line, 600' W line
QUADRANGLE: VERGENNES **LONGITUDE:** -89.315195 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.980749 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.8 **LOGGED (FT.):** 64.6 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #817 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.8			UNCONSOLIDATED	39.0	0.0
391.8	CARBONDALE	BRERETON	LIMESTONE	15.0	39.0
376.8	CARBONDALE	ANNA	SHALE	3.0	54.0
373.8	CARBONDALE	HERRIN	COAL	7.6	57.0

MAPID: 14500238000C **VERSION:** 2 **PROJECT:** ROOF STUDY
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 22 **QUARTERS/FOOTAGES:** 200' S line, 600' W line
QUADRANGLE: VERGENNES **LONGITUDE:** -89.315195 **GEOLOGIST:**
CONFIDENTIAL: N **LATITUDE:** 37.980749 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 431.0 **LOGGED (FT.):** 64.6 **LOG TYPE:** Drillers Log
SOURCE: **WELL TYPE:** Coal Test
COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
392.0	CARBONDALE	BRERETON	LIMESTONE	15.0	39.0
377.0	CARBONDALE	ANNA	BLACK SHALE	3.0	54.0
374.0	CARBONDALE	HERRIN	COAL	7.6	57.0

MAPID: 14500239000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 22 QUARTERS/FOOTAGES: SW NW SW

QUADRANGLE: VERGENNES LONGITUDE: -89.316011 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.984759 DATE COLLECTED:

SURFACE ELEVATION (FT.): 413.2 LOGGED (FT.): 43.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
413.2			UNCONSOLIDATED	12.0	0.0	
401.2	CARBONDALE		SHALE	14.0	12.0	
387.2	CARBONDALE		SANDSTONE	5.0	26.0	
382.2	CARBONDALE	ANNA	SHALE	4.0	31.0	
378.2	CARBONDALE	HERRIN	COAL	8.0	35.0	

MAPID: 14500240000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 22 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: VERGENNES LONGITUDE: -89.315894 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.988403 DATE COLLECTED:

SURFACE ELEVATION (FT.): 427.3 LOGGED (FT.): 51.5 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1017 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
427.3			UNCONSOLIDATED	12.0	0.0	
415.3			SAND	13.0	12.0	
402.3	CARBONDALE	BRERETON	LIMESTONE	18.0	25.0	
384.3	CARBONDALE	ANNA	SHALE	2.0	43.0	
382.3	CARBONDALE	HERRIN	COAL	6.5	45.0	

MAPID: 14500241000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 22 QUARTERS/FOOTAGES: SW SE NW

QUADRANGLE: VERGENNES LONGITUDE: -89.311314 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.988368 DATE COLLECTED:

SURFACE ELEVATION (FT.): 435.6 LOGGED (FT.): 54.2 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1019 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
435.6			UNCONSOLIDATED	43.0	0.0	
392.6			SANDSTONE	1.0	43.0	
391.6	CARBONDALE	ANNA	SHALE	4.0	44.0	
387.6	CARBONDALE	HERRIN	COAL	6.2	48.0	

MAPID: 14500242000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 22 QUARTERS/FOOTAGES: SW SW SW NE

QUADRANGLE: VERGENNES LONGITUDE: -89.307321 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.987881 DATE COLLECTED:

SURFACE ELEVATION (FT.): 442.8 LOGGED (FT.): 66.2 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1021A WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.8			UNCONSOLIDATED	34.0	0.0
408.8	CARBONDALE		SANDSTONE	1.0	34.0
407.8	CARBONDALE		SHALE	5.0	35.0
402.8	CARBONDALE	BRERETON	LIMESTONE	16.0	40.0
386.8	CARBONDALE	ANNA	SHALE	4.0	56.0
382.8	CARBONDALE	HERRIN	COAL	6.2	60.0

MAPID: 14500243000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 22 QUARTERS/FOOTAGES: SW NW NW

QUADRANGLE: VERGENNES LONGITUDE: -89.315776 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.992047 DATE COLLECTED:

SURFACE ELEVATION (FT.): 413.3 LOGGED (FT.): 32.3 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1117 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
413.3			UNCONSOLIDATED	12.0	0.0
401.3	CARBONDALE		SANDSTONE	3.0	12.0
398.3	CARBONDALE		SHALE	2.0	15.0
396.3	CARBONDALE	BRERETON	LIMESTONE	11.0	17.0
385.3	CARBONDALE	ANNA	SHALE	1.0	28.0
384.3	CARBONDALE	HERRIN	COAL	3.3	29.0

MAPID: 14500244000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 22

QUARTERS/FOOTAGES: SE SW NE NW

QUADRANGLE: VERGENNES

LONGITUDE: -89.310643

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.99155

DATE COLLECTED: 11 / 13 / 1940

SURFACE ELEVATION (FT.): 427.7

LOGGED (FT.): 49.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1119A

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
427.7			UNCONSOLIDATED	6.0	0.0	
421.7	CARBONDALE	BANKSTON FORK	LIMESTONE	14.0	6.0	
407.7	CARBONDALE		SHALE	8.0	20.0	
399.7	CARBONDALE	BRERETON	LIMESTONE	11.0	28.0	
388.7	CARBONDALE	ANNA	SHALE	6.0	39.0	
382.7	CARBONDALE	HERRIN	COAL	4.5	45.0	

MAPID: 14502025000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 22

QUARTERS/FOOTAGES: SE SE NE NE

QUADRANGLE: VERGENNES

LONGITUDE: -89.299198

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.991456

DATE COLLECTED: 0 / 0 / 1938

SURFACE ELEVATION (FT.): 444.0

LOGGED (FT.): 1769.0

LOG TYPE: Drillers Log

SOURCE: AMERADA PETRO. CORP #1

WELL TYPE: Dry Hole

COMMENT: SS #2799

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
444.0			CLAYSTONE	14.0	0.0	
430.0	CARBONDALE		COAL WITH SHALE	81.0	14.0	
349.0	CARBONDALE		SHALE	21.0	95.0	
328.0	CARBONDALE		SANDSTONE	5.0	116.0	
323.0	CARBONDALE	COLCHESTER	COAL	2.0	121.0	UNCERTAIN CORRELATION
321.0	SPOON		SHALE	105.0	123.0	
216.0	SPOON	MURPHYSBORO	COAL	3.0	228.0	
213.0			SHALE	114.0	231.0	
77.0			SANDSTONE	22.0	367.0	

MAPID: 14528355000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 22 QUARTERS/FOOTAGES: 701' S line, 60' E line of NE SE
 QUADRANGLE: VERGENNES LONGITUDE: -89.299008 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 37.985664 DATE COLLECTED: 6 / 0 / 1981
 SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 75.0 LOG TYPE: Drillers Log
 SOURCE: FREEMAN UNITED COAL CO. WELL TYPE: Observation Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
465.0			UNCONSOLIDATED	2.0	0.0
463.0				73.0	2.0

MAPID: 14500245000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 23 QUARTERS/FOOTAGES: NE NE NE NW
 QUADRANGLE: VERGENNES LONGITUDE: -89.289908 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.994043 DATE COLLECTED: 0 / 0 / 1923
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 75.0 LOG TYPE: Other Core Study
 SOURCE: FRANK J. DEAN, JR. #19-B WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	40.0	0.0
400.0	CARBONDALE		SHALE	5.0	40.0
395.0	CARBONDALE	BRERETON	LIMESTONE	19.0	45.0
376.0	CARBONDALE		SHALE	4.5	64.0
371.5	CARBONDALE	HERRIN	COAL	6.5	68.5

MAPID: 14502939000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 23 QUARTERS/FOOTAGES: NW NE SW
 QUADRANGLE: VERGENNES LONGITUDE: -89.293006 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.986373 DATE COLLECTED: 5 / 13 / 1970
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 40.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	1.0	0.0
459.0			CLAYSTONE	5.0	1.0
454.0			CLAYSTONE	9.0	6.0
445.0			CLAYSTONE	5.0	15.0
440.0			CLAYSTONE	10.0	20.0
430.0			CLAYSTONE	10.0	30.0

MAPID: 14503093000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 23 QUARTERS/FOOTAGES: 88' S line, 90' E line of SW SE SW
 QUADRANGLE: VERGENNES LONGITUDE: -89.292337 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.980255 DATE COLLECTED: 8 / 18 / 1972
 SURFACE ELEVATION (FT.): 459.0 LOGGED (FT.): 36.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
457.0			CLAYSTONE	16.0	2.0
441.0			CONCRETION	3.0	18.0
438.0			CLAYSTONE	15.0	21.0

MAPID: 14523475000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 23 QUARTERS/FOOTAGES: 108' N line, 104' E line of SW SE
 QUADRANGLE: VERGENNES LONGITUDE: -89.28537 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.983251 DATE COLLECTED: 7 / 11 / 1978
 SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 36.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
465.0			UNCONSOLIDATED	1.0	0.0
464.0			CLAYSTONE	25.0	1.0
439.0			CLAYSTONE	10.0	26.0

MAPID: 14523476000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 23 QUARTERS/FOOTAGES: 106' S line, 107' E line of SW SE
 QUADRANGLE: VERGENNES LONGITUDE: -89.285463 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.98022 DATE COLLECTED: 7 / 11 / 1978
 SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 37.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
465.0			UNCONSOLIDATED	1.0	0.0
464.0			CLAYSTONE	18.0	1.0
446.0			CLAYSTONE	7.0	19.0
439.0			CLAYSTONE	11.0	26.0

MAPID: 14502056000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 25 QUARTERS/FOOTAGES: 2600' S line, 1300' E line

QUADRANGLE: VERGENNES LONGITUDE: -89.266581 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.972243 DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 459.3 LOGGED (FT.): 75.0 LOG TYPE: Survey Core Study

SOURCE: UNION COLLIERY CO. WELL TYPE: Coal Test

COMMENT: CORE STURY BY JN PAYNE (P117-143)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
459.3			UNCONSOLIDATED	33.5	0.0
425.8	CARBONDALE	BANKSTON FORK	LIMESTONE	10.8	33.5
415.0	CARBONDALE		SILTSTONE	0.5	44.3
414.5	CARBONDALE		SHALE	11.1	44.8
403.4	CARBONDALE	JAMESTOWN	COAL	0.1	55.9
403.3	CARBONDALE	BRERETON	LIMESTONE	8.4	56.0
394.9	CARBONDALE	ANNA	SHALE	3.3	64.4
391.6	CARBONDALE	HERRIN	COAL	6.0	67.7
385.6	CARBONDALE	HERRIN	SHALE	0.2	73.7
385.4	CARBONDALE	HERRIN	COAL	1.1	73.9
384.3	CARBONDALE		CLAYSTONE	0.0	75.0

MAPID: 14502056000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 25 QUARTERS/FOOTAGES: 2600' S line, 1300' E line

QUADRANGLE: VERGENNES LONGITUDE: -89.266581 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.972243 DATE COLLECTED:

SURFACE ELEVATION (FT.): 459.0 LOGGED (FT.): 75.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.7	CARBONDALE	BANKSTON FORK	LIMESTONE	10.4	34.3
414.3	CARBONDALE	LAWSON	SILTSTONE	0.5	44.7
413.8	CARBONDALE	LAWSON	GRAY SHALE	1.1	45.2
412.7	CARBONDALE	LAWSON	BLACK SHALE	9.9	46.3
402.8	CARBONDALE	JAMESTOWN	COAL	0.1	56.2
402.7	CARBONDALE	BRERETON	LIMESTONE & SHALE	8.4	56.3
394.3	CARBONDALE	ANNA	BLACK SHALE	3.3	64.7
391.0	CARBONDALE	HERRIN	COAL	7.0	68.0

MAPID: 14502057000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 25

QUARTERS/FOOTAGES: NE NE SW SW

QUADRANGLE: VERGENNES

LONGITUDE: -89.276606

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.968404

DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 453.0

LOGGED (FT.): 77.0

LOG TYPE: Survey Core Study

SOURCE: UNION COLLIERY CO.

WELL TYPE: Coal Test

COMMENT: CORE STUDY BY J N PAYNE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
453.0			UNCONSOLIDATED	49.5	0.0	
403.5	CARBONDALE		SHALE	20.5	49.5	
383.0	CARBONDALE	HERRIN	COAL	6.0	70.0	
377.0	CARBONDALE		SHALE	0.1	76.0	
376.9			UNCLASSIFIED	0.9	76.1	

MAPID: 14502058000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 25

QUARTERS/FOOTAGES: 0' N line, 0' E line of SW SW NW SW

QUADRANGLE: VERGENNES

LONGITUDE: -89.279482

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.969803

DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 446.0

LOGGED (FT.): 72.4

LOG TYPE: Survey Core Study

SOURCE: UNION COLLIERY CO.

WELL TYPE: Coal Test

COMMENT: CORE STUDY BY J. N. PAYNE, (P117,P143)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.5	CARBONDALE	CONANT	LIMESTONE	1.6	49.5	
394.9	CARBONDALE	JAMESTOWN	COAL	0.3	51.1	
394.6	CARBONDALE	BRERETON	LIMESTONE	11.9	51.4	
382.7	CARBONDALE	ANNA	SHALE	2.2	63.3	
380.5	CARBONDALE	HERRIN	COAL	5.5	65.5	
375.0	CARBONDALE	HERRIN	SHALE	0.1	71.0	
374.9	CARBONDALE	HERRIN	COAL	0.7	71.1	
374.2	CARBONDALE		CLAYSTONE	0.6	71.8	

MAPID: 14502059000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 25

QUARTERS/FOOTAGES: NE NE SE SW

QUADRANGLE: VERGENNES

LONGITUDE: -89.271964

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.968364

DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 463.1

LOGGED (FT.): 97.5

LOG TYPE: Survey Core Study

SOURCE: UNION COLLIERY CO.

WELL TYPE: Coal Test

COMMENT: CORE STUDY BY JN PAYNE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.1			UNCONSOLIDATED	28.0	0.0
435.1			LIMESTONE	17.0	28.0
418.1	CARBONDALE		CLAYSTONE & LIMESTONE	11.0	45.0
407.1	CARBONDALE	BANKSTON FORK	LIMESTONE	6.5	56.0
400.6	CARBONDALE		SILTSTONE	0.5	62.5
400.1	CARBONDALE		SHALE	12.7	63.0
387.4	CARBONDALE	BRERETON	LIMESTONE	11.8	75.7
375.6	CARBONDALE		SHALE	3.0	87.5
372.6	CARBONDALE	HERRIN	COAL	6.0	90.5
366.6	CARBONDALE	HERRIN	SHALE	2.0	96.5
366.4	CARBONDALE	HERRIN	COAL	0.8	96.7

MAPID: 14528347000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 25

QUARTERS/FOOTAGES: NE NW SW SW

QUADRANGLE: VERGENNES

LONGITUDE: -89.278925

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.968425

DATE COLLECTED: 12 / 7 / 1981

SURFACE ELEVATION (FT.): 460.0

LOGGED (FT.): 35.0

LOG TYPE: Drillers Log

SOURCE: JOHN HOSKINS #2

WELL TYPE: Observation Well

COMMENT: GROUNDWATER MONITORING P117 & P143

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			CLAYSTONE	13.0	0.0
447.0			CLAYSTONE	8.0	13.0
439.0			CLAYSTONE	3.5	21.0
435.5			CLAYSTONE	4.5	24.5
431.0			CLAYSTONE	5.0	29.0
426.0			SHALE	1.0	34.0

MAPID: 14500248000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 26

QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: VERGENNES

LONGITUDE: -89.291054

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.971769

DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 102.0

LOG TYPE: Drillers Log

SOURCE: FRANK J. DEAN, JR. #8A

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
355.0	CARBONDALE	HERRIN	COAL	7.0	95.0	

MAPID: 14502060000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 26

QUARTERS/FOOTAGES: 2500' S line, 1400' E line

QUADRANGLE: VERGENNES

LONGITUDE: -89.285487

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 37.972203

DATE COLLECTED:

SURFACE ELEVATION (FT.): 457.0

LOGGED (FT.): 93.3

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
407.8	CARBONDALE	BANKSTON FORK	LIMESTONE	7.5	49.2	
400.3	CARBONDALE	LAWSON	SILTSTONE	0.5	56.7	
399.8	CARBONDALE	LAWSON	GRAY SHALE	5.8	57.2	
394.0	CARBONDALE	CONANT	LIMESTONE & SHALE	1.4	63.0	
392.6	CARBONDALE	JAMESTOWN	BONE COAL	0.4	64.4	
392.2	CARBONDALE	BRERETON	LIMESTONE & SHALE	0.7	64.8	
391.5	CARBONDALE	ANNA	BLACK SHALE	1.7	65.5	
389.8	CARBONDALE	ENERGY	GRAY SHALE	19.8	67.2	
370.0	CARBONDALE	HERRIN	COAL	6.3	87.0	

MAPID: 14502061000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 26

QUARTERS/FOOTAGES: NW NW SW SE

QUADRANGLE: VERGENNES

LONGITUDE: -89.289379

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.968547

DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 444.0

LOGGED (FT.): 91.5

LOG TYPE: Other Core Study

SOURCE: UNION COLLIERY CO.

WELL TYPE: Coal Test

COMMENT: CORE STUDY BY SB SAGE, CO ENG. (P117&143

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.5	MODESTO	PIASA	LIMESTONE	1.0	25.5
417.5			CLAYSTONE	21.0	26.5
396.5	CARBONDALE	BANKSTON FORK	LIMESTONE	10.1	47.5
386.4	CARBONDALE		SHALE	10.8	57.6
375.6	CARBONDALE	JAMESTOWN	COAL	0.3	68.4
375.3	CARBONDALE	BRERETON	LIMESTONE	12.3	68.7
363.0	CARBONDALE	ANNA	SHALE	3.0	81.0
360.0	CARBONDALE	HERRIN	COAL	5.0	84.0
355.0	CARBONDALE	HERRIN	SHALE	0.1	89.0
354.9	CARBONDALE	HERRIN	COAL	0.7	89.1
354.2	CARBONDALE		CLAYSTONE	1.7	89.8

MAPID: 14503123000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 26

QUARTERS/FOOTAGES: 118' N line, 107' E line of NE NE SE

QUADRANGLE: VERGENNES

LONGITUDE: -89.280977

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.97223

DATE COLLECTED: 1 / 18 / 1973

SURFACE ELEVATION (FT.): 445.0

LOGGED (FT.): 26.0

LOG TYPE: Drillers Log

SOURCE: C. KOHNEN

WELL TYPE: Water Well

COMMENT: WATER WELL IN SDY CL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.0			CLAYSTONE	14.0	1.0
430.0			CLAYSTONE	11.0	15.0

MAPID: 14500249000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 27

QUARTERS/FOOTAGES: NW SW NW

QUADRANGLE: VERGENNES

LONGITUDE: -89.316331

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.975647

DATE COLLECTED: 0 / 0 / 1923

SURFACE ELEVATION (FT.): 440.0

LOGGED (FT.): 79.0

LOG TYPE: Other Core Study

SOURCE: FRANK J. DEAN, JR. #15-B

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	31.0	0.0
409.0	CARBONDALE		LIMESTONE	9.0	31.0
400.0	CARBONDALE		SHALE	33.0	40.0
367.0	CARBONDALE	HERRIN	COAL	6.0	73.0

MAPID: 14500250000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 27

QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: VERGENNES

LONGITUDE: -89.316398

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.973825

DATE COLLECTED:

SURFACE ELEVATION (FT.): 437.9

LOGGED (FT.): 62.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #617

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.9			UNCONSOLIDATED	36.0	0.0
401.9			SANDSTONE	1.0	36.0
400.9			SHALE	25.0	37.0

MAPID: 14528363000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 27

QUARTERS/FOOTAGES: 320' S line, 164' E line of NE NW SE

QUADRANGLE: VERGENNES

LONGITUDE: -89.304358

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.971878

DATE COLLECTED: 6 / 2 / 1981

SURFACE ELEVATION (FT.): 455.5

LOGGED (FT.): 42.0

LOG TYPE: Drillers Log

SOURCE: FREEMAN UNITED # 5 W

WELL TYPE: Observation Well

COMMENT: G. W. MONITORING

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.5			UNCONSOLIDATED	2.0	0.0
453.5			CLAYSTONE	4.0	2.0
449.5			UNCLASSIFIED	35.0	6.0
414.5			LIMESTONE	1.0	41.0

MAPID: 14500223000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: VERGENNES LONGITUDE: -89.330623 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.966837 DATE COLLECTED:

SURFACE ELEVATION (FT.): 433.4 LOGGED (FT.): 53.9 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #815 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.4			UNCONSOLIDATED	15.0	0.0
418.4	CARBONDALE		SHALE	16.0	15.0
402.4	CARBONDALE	BRERETON	LIMESTONE	6.0	31.0
396.4	CARBONDALE	ANNA	SHALE	5.0	37.0
391.4	CARBONDALE	ENERGY	SHALE	5.0	42.0
386.4	CARBONDALE	HERRIN	COAL	6.9	47.0

MAPID: 14500251000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: 200' N line, 1200' E line

QUADRANGLE: VERGENNES LONGITUDE: -89.321507 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.979735 DATE COLLECTED:

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 58.5 LOG TYPE: Drillers Log

SOURCE: FRANK J. DEAN, JR. #11-B WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	30.0	0.0
400.0	CARBONDALE		SHALE	2.0	30.0
398.0	CARBONDALE		LIMESTONE	22.5	32.0
385.5	CARBONDALE		SHALE	6.5	44.5
379.0	CARBONDALE	HERRIN	COAL	7.5	51.0

MAPID: 14500251000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: 200' N line, 1200' E line

QUADRANGLE: VERGENNES LONGITUDE: -89.321507 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.979735 DATE COLLECTED:

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 58.5 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.0	CARBONDALE	LAWSON	GRAY SHALE	2.0	30.0	
398.0	CARBONDALE	BRERETON	LIMESTONE	12.5	32.0	
385.5	CARBONDALE	ANNA	BLACK SHALE	4.0	44.5	
381.5	CARBONDALE	ENERGY	SHALE	2.5	48.5	
379.0	CARBONDALE	HERRIN	COAL	7.5	51.0	

MAPID: 14500252000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: VERGENNES LONGITUDE: -89.335274 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.966946 DATE COLLECTED:

SURFACE ELEVATION (FT.): 390.7 LOGGED (FT.): 50.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #409 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
390.7			UNCONSOLIDATED	15.0	0.0	
375.7			SHALE	35.0	15.0	

MAPID: 14500253000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: 50' S line, 330' W line of SW SE

QUADRANGLE: VERGENNES LONGITUDE: -89.326015 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.965961 DATE COLLECTED:

SURFACE ELEVATION (FT.): 412.2 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #413 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
412.2			UNCONSOLIDATED	20.0	0.0	
392.2			SHALE	18.0	20.0	
374.2			SHALE	22.0	38.0	

MAPID: 14500254000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: SW NW SW

QUADRANGLE: VERGENNES LONGITUDE: -89.335127 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.970568 DATE COLLECTED:

SURFACE ELEVATION (FT.): 404.1 LOGGED (FT.): 48.1 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #509 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
404.1			UNCONSOLIDATED	18.0	0.0
386.1	CARBONDALE	BRERETON	LIMESTONE	21.0	18.0
365.1	CARBONDALE	ANNA	SHALE	2.0	39.0
363.1	CARBONDALE	HERRIN	COAL	7.1	41.0

MAPID: 14500255000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: SW SW NW SW

QUADRANGLE: VERGENNES LONGITUDE: -89.335724 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.970127 DATE COLLECTED:

SURFACE ELEVATION (FT.): 399.9 LOGGED (FT.): 47.3 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #511 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
399.9			UNCONSOLIDATED	12.0	0.0
387.9	CARBONDALE		SHALE	10.0	12.0
377.9	CARBONDALE		SHALE	2.0	22.0
375.9	CARBONDALE	BRERETON	LIMESTONE	11.0	24.0
364.9	CARBONDALE	ANNA	SHALE	4.0	35.0
360.9	CARBONDALE	HERRIN	COAL	8.3	39.0

MAPID: 14500256000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: VERGENNES LONGITUDE: -89.325826 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.970364 DATE COLLECTED: 3 / 7 / 1950

SURFACE ELEVATION (FT.): 415.7 LOGGED (FT.): 64.6 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #513 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
415.7			UNCONSOLIDATED	20.0	0.0
395.7	CARBONDALE		SHALE	16.0	20.0
379.7	CARBONDALE	BRERETON	LIMESTONE	18.0	36.0
361.7	CARBONDALE	ANNA	SHALE	3.0	54.0
358.7	CARBONDALE	HERRIN	COAL	7.6	57.0

MAPID: 14500257000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: 200' N line, 200' W line of SW NW
 QUADRANGLE: VERGENNES LONGITUDE: -89.335357 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.976366 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 428.2 LOGGED (FT.): 61.3 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #609 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.2			UNCONSOLIDATED	15.0	0.0
413.2	CARBONDALE		SHALE	15.0	15.0
398.2	CARBONDALE	BRERETON	LIMESTONE	19.0	30.0
379.2	CARBONDALE	ANNA	SHALE	2.0	49.0
377.2	CARBONDALE	ENERGY	SHALE	5.0	51.0
372.2	CARBONDALE	HERRIN	COAL	5.3	56.0

MAPID: 14500258000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: SE NW
 QUADRANGLE: VERGENNES LONGITUDE: -89.329132 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.974979 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 410.9 LOGGED (FT.): 49.4 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #611 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.9			UNCONSOLIDATED	17.0	0.0
393.9	CARBONDALE		SHALE	4.0	17.0
389.9	CARBONDALE	BRERETON	LIMESTONE	3.0	21.0
386.9	CARBONDALE	ANNA	SHALE	6.0	24.0
380.9	CARBONDALE	ENERGY	SHALE	12.0	30.0
368.9	CARBONDALE	HERRIN	COAL	7.4	42.0

MAPID: 14500259000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: 330' S line, 330' W line of SW NE

QUADRANGLE: VERGENNES LONGITUDE: -89.325696 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.974002 DATE COLLECTED:

SURFACE ELEVATION (FT.): 412.7 LOGGED (FT.): 51.5 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #613 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
412.7			UNCONSOLIDATED	12.0	0.0
400.7	CARBONDALE		SHALE	10.0	12.0
390.7	CARBONDALE	BRERETON	LIMESTONE	20.0	22.0
370.7	CARBONDALE	ANNA	SHALE	3.0	42.0
367.7	CARBONDALE	HERRIN	COAL	6.5	45.0

MAPID: 14500260000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: SW SE NE

QUADRANGLE: VERGENNES LONGITUDE: -89.321036 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.973904 DATE COLLECTED:

SURFACE ELEVATION (FT.): 416.9 LOGGED (FT.): 57.2 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #615 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
416.9			UNCONSOLIDATED	5.0	0.0
411.9			SHALE	10.0	5.0
401.9			LIMESTONE	2.0	15.0
399.9			SHALE	10.0	17.0
389.9			LIMESTONE	8.0	27.0
381.9			SHALE	3.0	35.0
378.9			LIMESTONE	18.0	38.0
365.9	CARBONDALE	HERRIN	COAL	6.2	51.0

MAPID: 14500261000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: SW SW NW NW
 QUADRANGLE: VERGENNES LONGITUDE: -89.335432 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.977371 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 428.7 LOGGED (FT.): 58.5 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #709 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
428.7			UNCONSOLIDATED	15.0	0.0	
413.7	CARBONDALE		SHALE	20.0	15.0	
393.7	CARBONDALE	BRERETON	LIMESTONE	12.0	35.0	
381.7	CARBONDALE	ANNA	SHALE	4.0	47.0	
377.7	CARBONDALE	HERRIN	COAL	7.5	51.0	

MAPID: 14500262000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: SW NE NW
 QUADRANGLE: VERGENNES LONGITUDE: -89.330186 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.977725 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 440.9 LOGGED (FT.): 64.6 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #711A WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.9			UNCONSOLIDATED	30.0	0.0	
410.9	CARBONDALE		SHALE	6.0	30.0	
404.9	CARBONDALE	BRERETON	LIMESTONE	10.0	36.0	
394.9	CARBONDALE	ANNA	SHALE	3.0	46.0	
391.9	CARBONDALE	ENERGY	SHALE	9.0	49.0	
382.9	CARBONDALE	HERRIN	COAL	6.6	58.0	

MAPID: 14500263000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: 330' S line, 500' E line of NW NE

QUADRANGLE: VERGENNES LONGITUDE: -89.323796 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.977602 DATE COLLECTED:

SURFACE ELEVATION (FT.): 419.8 LOGGED (FT.): 55.1 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #713 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
419.8			UNCONSOLIDATED	18.0	0.0
401.8	CARBONDALE	CONANT	LIMESTONE	2.0	18.0
399.8	CARBONDALE		SHALE	2.0	20.0
397.8	CARBONDALE		SHALE	5.0	22.0
390.8	CARBONDALE	BRERETON	LIMESTONE	17.0	29.0
373.8	CARBONDALE	ANNA	SHALE	2.0	46.0
371.8	CARBONDALE	HERRIN	COAL	7.1	48.0

MAPID: 14500264000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 28 QUARTERS/FOOTAGES: NE NE

QUADRANGLE: VERGENNES LONGITUDE: -89.319696 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.978432 DATE COLLECTED:

SURFACE ELEVATION (FT.): 432.4 LOGGED (FT.): 65.7 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #715 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.4			UNCONSOLIDATED	13.0	0.0
419.4			SHALE	15.0	13.0
404.4			SAND	2.0	28.0
402.4	CARBONDALE		SHALE	9.0	30.0
393.4	CARBONDALE	BRERETON	LIMESTONE	19.0	39.0
374.4	CARBONDALE	ANNA	SHALE	1.0	58.0
373.4	CARBONDALE	HERRIN	COAL	6.7	59.0

MAPID: 14502081000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 28 **QUARTERS/FOOTAGES:** NE NW SE
QUADRANGLE: VERGENNES **LONGITUDE:** -89.32343 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.972132 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 400.0 **LOGGED (FT.):** 59.8 **LOG TYPE:** Drillers Log
SOURCE: R. P. M. INC. #17 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0			CLAYSTONE	32.0	0.0
368.0			CLAYSTONE	25.8	32.0
342.2			COAL	0.5	57.8
341.7			CLAYSTONE	1.5	58.3

MAPID: 14528364000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 28 **QUARTERS/FOOTAGES:** 100' N line, 400' E line of NE SE SE
QUADRANGLE: VERGENNES **LONGITUDE:** -89.319131 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.969031 **DATE COLLECTED:** 6 / 2 / 1981
SURFACE ELEVATION (FT.): 435.0 **LOGGED (FT.):** 63.0 **LOG TYPE:** Drillers Log
SOURCE: FREEMAN UNITED #6 W **WELL TYPE:** Observation Well
COMMENT: G. W. MONITORING

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.0			UNCONSOLIDATED	1.0	0.0
434.0			UNCLASSIFIED	40.0	1.0
394.0			SHALE	22.0	41.0

MAPID: 14500265000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 29 **QUARTERS/FOOTAGES:** SW SW SW SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.354499 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.966782 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 386.1 **LOGGED (FT.):** 58.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #405 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
386.1			UNCONSOLIDATED	20.0	0.0
366.1			SHALE	38.0	20.0

MAPID: 14500266000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 29 QUARTERS/FOOTAGES: SW SE NW SE
 QUADRANGLE: VERGENNES LONGITUDE: -89.342726 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.970245 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 402.0 LOGGED (FT.): 47.1 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #505 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
402.0			UNCONSOLIDATED	16.0	0.0
386.0	CARBONDALE	BRERETON	LIMESTONE	18.0	16.0
368.0	CARBONDALE	ANNA	SHALE	4.0	34.0
364.0	CARBONDALE	HERRIN	COAL	9.1	38.0

MAPID: 14500267000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 29 QUARTERS/FOOTAGES: SW SW NE SE
 QUADRANGLE: VERGENNES LONGITUDE: -89.340393 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.970206 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 349.9 LOGGED (FT.): 40.3 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #507 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
349.9			UNCONSOLIDATED	12.0	0.0
337.9	CARBONDALE		SHALE	18.0	12.0
319.9	CARBONDALE	ANNA	SHALE	2.0	30.0
317.9	CARBONDALE	HERRIN	COAL	8.3	32.0

MAPID: 14500268000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 29 QUARTERS/FOOTAGES: 2400' N line, 2300' E line
 QUADRANGLE: VERGENNES LONGITUDE: -89.344169 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.974101 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 411.1 LOGGED (FT.): 51.6 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #605 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
411.1			UNCONSOLIDATED	20.0	0.0
391.1	CARBONDALE	BRERETON	LIMESTONE	11.0	20.0
380.1	CARBONDALE	ANNA	SHALE	5.0	31.0
375.1	CARBONDALE	ENERGY	SHALE	8.0	36.0
367.1	CARBONDALE	HERRIN	COAL	7.6	44.0

MAPID: 14500268000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 29 QUARTERS/FOOTAGES: 2400' N line, 2300' E line

QUADRANGLE: VERGENNES LONGITUDE: -89.344169 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.974101 DATE COLLECTED:

SURFACE ELEVATION (FT.): 411.0 LOGGED (FT.): 51.6 LOG TYPE: Drillers Log

SOURCE: COMMENT: FAIR DESCRIPTION WELL TYPE: Coal Test

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
391.0	CARBONDALE	BRERETON	LIMESTONE	11.0	20.0
380.0	CARBONDALE	ANNA	BLACK SHALE	5.0	31.0
375.0	CARBONDALE	ENERGY	SHALE	8.0	36.0
367.0	CARBONDALE	HERRIN	COAL	7.6	44.0

MAPID: 14500269000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 29 QUARTERS/FOOTAGES: 330' S line, 660' E line of SE NE

QUADRANGLE: VERGENNES LONGITUDE: -89.338442 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.974261 DATE COLLECTED:

SURFACE ELEVATION (FT.): 416.1 LOGGED (FT.): 46.8 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #607 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
416.1			UNCONSOLIDATED	10.0	0.0
406.1	CARBONDALE		SHALE	20.0	10.0
386.1	CARBONDALE	BRERETON	LIMESTONE	10.0	30.0
376.1	CARBONDALE	HERRIN	COAL	6.8	40.0

MAPID: 14500270000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 29 QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: VERGENNES LONGITUDE: -89.339515 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.977904 DATE COLLECTED:

SURFACE ELEVATION (FT.): 425.8 LOGGED (FT.): 64.5 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #707 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.8			UNCONSOLIDATED	16.0	0.0
409.8			SHALE	15.0	16.0
394.8			SAND	5.0	31.0
389.8	CARBONDALE	BRERETON	LIMESTONE	22.0	36.0
367.8	CARBONDALE	HERRIN	COAL	6.5	58.0

MAPID: 14502897000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 29 QUARTERS/FOOTAGES: 200' N line, 301' W line of SW SW SE

QUADRANGLE: VERGENNES LONGITUDE: -89.344692 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.967451 DATE COLLECTED: 3 / 28 / 1968

SURFACE ELEVATION (FT.): 405.0 LOGGED (FT.): 33.0 LOG TYPE: Drillers Log

SOURCE: C. KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
405.0			UNCONSOLIDATED	3.0	0.0
402.0			CLAYSTONE	11.0	3.0
391.0			CLAYSTONE	1.0	14.0
390.0			CLAYSTONE	18.0	15.0

MAPID: 14503014000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 29 QUARTERS/FOOTAGES: 146' S line, 174' W line of SW SE SE

QUADRANGLE: VERGENNES LONGITUDE: -89.340506 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.966528 DATE COLLECTED: 9 / 20 / 1971

SURFACE ELEVATION (FT.): 405.0 LOGGED (FT.): 32.0 LOG TYPE: Drillers Log

SOURCE: C. KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
405.0			UNCONSOLIDATED	1.0	0.0
404.0			CLAYSTONE	9.0	1.0
395.0			CLAYSTONE	8.0	10.0
387.0			CLAYSTONE	6.0	18.0
381.0			CLAYSTONE	3.0	24.0
378.0			CLAYSTONE	5.0	27.0

MAPID: 14500272000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 33 QUARTERS/FOOTAGES: 330' S line, 660' W line of NE SE

QUADRANGLE: VERGENNES LONGITUDE: -89.320587 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.955652 DATE COLLECTED:

SURFACE ELEVATION (FT.): 415.0 LOGGED (FT.): 51.2 LOG TYPE: Other Core Study

SOURCE: FRANK J. DEAN, JR. #10-B WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
371.5	CARBONDALE	HERRIN	COAL	7.7	43.5

MAPID: 14502073000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** NW SW NE
QUADRANGLE: VERGENNES **LONGITUDE:** -89.326176 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.961254 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 415.0 **LOGGED (FT.):** 46.7 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC. #9 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
415.0			CLAYSTONE	39.5	0.0
375.5	CARBONDALE	HERRIN	COAL	6.7	39.5
368.8			CLAYSTONE	0.5	46.2

MAPID: 14502074000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** SW NE SE
QUADRANGLE: VERGENNES **LONGITUDE:** -89.321724 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.955676 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 30.9 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC. #10 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			CLAYSTONE	19.3	0.0
400.7	CARBONDALE	BRERETON	LIMESTONE	3.0	19.3
397.7	CARBONDALE		SHALE	0.4	22.3
396.3	CARBONDALE	HERRIN	COAL	6.7	23.7
389.6	CARBONDALE		CLAYSTONE	0.5	30.4

MAPID: 14502075000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** NW SW SE
QUADRANGLE: VERGENNES **LONGITUDE:** -89.326452 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.953944 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 410.0 **LOGGED (FT.):** 23.4 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC. #11 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			UNCONSOLIDATED	16.9	0.0
393.1	CARBONDALE	HERRIN	COAL	6.0	16.9
387.1	CARBONDALE		CLAYSTONE	0.6	22.9

MAPID: 14502076000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** SE SE SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.328852 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.952162 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 395.0 **LOGGED (FT.):** 26.7 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC. #12 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
395.0			UNCONSOLIDATED	22.0	0.0
373.0			SANDSTONE	4.7	22.0

MAPID: 14502077000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** NE SE SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.328784 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.953989 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 400.0 **LOGGED (FT.):** 30.7 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC. #13 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0			CLAYSTONE	28.7	0.0
371.3	CARBONDALE	HERRIN	COAL	1.1	28.7
370.2	CARBONDALE		CLAYSTONE	0.9	29.8

MAPID: 14502078000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.331043 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.955867 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 405.0 **LOGGED (FT.):** 32.8 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC. #14 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
405.0			UNCONSOLIDATED	30.1	0.0
374.9	CARBONDALE	HERRIN	COAL	2.1	30.1
372.8	CARBONDALE		CLAYSTONE	0.6	32.2

MAPID: 14502079000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** NW NE SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.330976 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.957694 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 390.0 **LOGGED (FT.):** 43.7 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC. #15 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
390.0			CLAYSTONE	41.7	0.0
348.3	CARBONDALE	HERRIN	COAL	1.4	41.7
346.9	CARBONDALE		CLAYSTONE	0.6	43.1

MAPID: 14502080000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 33 **QUARTERS/FOOTAGES:** NE SE NW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.328505 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.961304 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 395.0 **LOGGED (FT.):** 52.0 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC. #16 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
395.0			UNCONSOLIDATED	36.3	0.0
358.7			LIMESTONE	0.4	36.3
357.3			CLAYSTONE	3.7	37.7
353.6			SHALE	10.6	41.4

MAPID: 14500273000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 34 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.317066 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.955591 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 69.6 **LOG TYPE:** Drillers Log
SOURCE: FRANK J. DEAN, JR. #13B **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
354.5	CARBONDALE	HERRIN	COAL	4.1	65.5

MAPID: 14500274000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 34

QUARTERS/FOOTAGES: NW NW NW

QUADRANGLE: VERGENNES

LONGITUDE: -89.316739

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.964709

DATE COLLECTED: 0 / 0 / 1923

SURFACE ELEVATION (FT.): 425.0

LOGGED (FT.): 63.6

LOG TYPE: Drillers Log

SOURCE: FRANK J. DEAN, JR.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.0			UNCONSOLIDATED	25.0	0.0
400.0	CARBONDALE		SHALE	7.0	25.0
393.0	CARBONDALE		LIMESTONE	11.0	32.0
382.0	CARBONDALE		SHALE	9.4	43.0
372.6	CARBONDALE		SHALE	3.0	52.4
369.6	CARBONDALE	HERRIN	COAL	8.2	55.4

MAPID: 14502024000C VERSION: 1

PROJECT: CUSMAP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 34

QUARTERS/FOOTAGES: 330' N line, 330' E line of NE NE NW

QUADRANGLE: VERGENNES

LONGITUDE: -89.309779

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 37.964651

DATE COLLECTED: 6 / 0 / 1945

SURFACE ELEVATION (FT.): 415.0

LOGGED (FT.): 730.0

LOG TYPE: Electric Log

SOURCE: MAGNOLIA PETROLEUM

WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
211.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	204.0
150.0	SPOON	DAVIS	UNCLASSIFIED	-	265.0
-315.0	BASE OF PENN.		UNCLASSIFIED	-	730.0

MAPID: 14502024000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 330' N line, 330' E line of NE NE NW
 QUADRANGLE: VERGENNES LONGITUDE: -89.309779 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.964651 DATE COLLECTED: 6 / 7 / 1945
 SURFACE ELEVATION (FT.): 415.0 LOGGED (FT.): 2008.0 LOG TYPE: Drillers Log
 SOURCE: MAGNOLIA PETROLEUM CO. WELL TYPE: Dry Hole
 COMMENT: SS #13064

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
415.0			UNCONSOLIDATED	45.0	0.0
370.0			COAL	15.0	45.0
355.0			LIMESTONE	16.0	60.0
339.0			COAL	3.0	76.0
336.0			LIMESTONE	8.0	79.0
328.0			SHALE	303.0	87.0
25.0			COAL	4.0	390.0
21.0			SHALE	101.0	394.0
-80.0			SANDSTONE	20.0	495.0

MAPID: 14502065000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: SW SW SW SW
 QUADRANGLE: VERGENNES LONGITUDE: -89.317794 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.951496 DATE COLLECTED: 0 / 0 / 1948
 SURFACE ELEVATION (FT.): 405.0 LOGGED (FT.): 35.0 LOG TYPE: Drillers Log
 SOURCE: R.P.M. INC #1 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
405.0			UNCONSOLIDATED	29.0	0.0
376.0			CLAYSTONE	0.7	29.0
375.3	CARBONDALE	HERRIN	COAL	2.0	29.7
373.3	CARBONDALE		CLAYSTONE	3.3	31.7

MAPID: 14502066000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 34 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.317197 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.951945 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 410.0 **LOGGED (FT.):** 38.3 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC. #2 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
410.0			CLAYSTONE	33.2	0.0	
376.8	CARBONDALE	HERRIN	COAL	4.5	33.2	
372.3	CARBONDALE		CLAYSTONE	0.6	37.7	

MAPID: 14502067000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 34 **QUARTERS/FOOTAGES:** NW SW SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.31713 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.95377 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 415.0 **LOGGED (FT.):** 38.1 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC. #3 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.0			CLAYSTONE	31.7	0.0	
383.3	CARBONDALE	HERRIN	COAL	5.9	31.7	
377.4	CARBONDALE		CLAYSTONE	0.5	37.6	

MAPID: 14502068000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 34 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.317066 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.955591 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 425.0 **LOGGED (FT.):** 35.5 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC. #4 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
425.0			CLAYSTONE	26.3	0.0	
398.7	CARBONDALE	ANNA	SHALE	2.4	26.3	
396.3	CARBONDALE	HERRIN	COAL	6.3	28.7	
390.0	CARBONDALE		CLAYSTONE	0.5	35.0	

MAPID: 14502069000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 34 **QUARTERS/FOOTAGES:** NW NW SW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.317002 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.957416 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 425.0 **LOGGED (FT.):** 42.1 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC #5 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.0			CLAYSTONE	40.7	0.0
384.3			COAL	0.8	40.7
383.5			CLAYSTONE	0.6	41.5

MAPID: 14502070000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 34 **QUARTERS/FOOTAGES:** SE SW NW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.314616 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.959215 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 425.0 **LOGGED (FT.):** 51.4 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC #6 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.0			CLAYSTONE	45.2	0.0
379.8			SHALE	1.2	45.2
378.6			COAL/CLAYSTONE	2.5	46.4
376.1			CLAYSTONE	2.5	48.9

MAPID: 14502071000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 2W **SECTION:** 34 **QUARTERS/FOOTAGES:** SE NW NW
QUADRANGLE: VERGENNES **LONGITUDE:** -89.314488 **GEOLOGIST:** MAYNOR
CONFIDENTIAL: N **LATITUDE:** 37.962864 **DATE COLLECTED:** 0 / 0 / 1948
SURFACE ELEVATION (FT.): 430.0 **LOGGED (FT.):** 65.6 **LOG TYPE:** Drillers Log
SOURCE: R.P.M. INC #7 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			CLAYSTONE	45.0	0.0
385.0			CLAYSTONE	17.2	45.0
367.8			CLAY & COAL	2.0	62.2
365.8			COAL	0.9	64.2
364.9			CLAYSTONE	0.5	65.1

MAPID: 14502072000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 34

QUARTERS/FOOTAGES: NW SW NW

QUADRANGLE: VERGENNES

LONGITUDE: -89.31687

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.961063

DATE COLLECTED: 0 / 0 / 1948

SURFACE ELEVATION (FT.): 425.0

LOGGED (FT.): 64.0

LOG TYPE: Drillers Log

SOURCE: R.P.M. #8

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.0			CLAYSTONE	43.0	0.0
382.0			CLAYSTONE	13.9	43.0
368.1	CARBONDALE	HERRIN	COAL	6.6	56.9
361.5	CARBONDALE		CLAYSTONE	1.5	63.5

MAPID: 14502082000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 34

QUARTERS/FOOTAGES: SE NW SE

QUADRANGLE: VERGENNES

LONGITUDE: -89.305452

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.955465

DATE COLLECTED: 0 / 0 / 1948

SURFACE ELEVATION (FT.): 430.0

LOGGED (FT.): 41.1

LOG TYPE: Drillers Log

SOURCE: R.P.M. INC. #18

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			CLAYSTONE	16.9	0.0
413.1	CARBONDALE	ENERGY	SHALE	17.8	16.9
395.3	CARBONDALE	HERRIN	COAL	5.0	34.7
390.3	CARBONDALE		CLAYSTONE	1.4	39.7

MAPID: 14502083000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 34

QUARTERS/FOOTAGES: 1650' S line, 330' E line

QUADRANGLE: VERGENNES

LONGITUDE: -89.300794

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.95539

DATE COLLECTED: 0 / 0 / 1948

SURFACE ELEVATION (FT.): 430.0

LOGGED (FT.): 42.1

LOG TYPE: Drillers Log

SOURCE: R.P.M. INC. #19

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	22.7	0.0
407.3	CARBONDALE	BRERETON	LIMESTONE	9.5	22.7
397.8	CARBONDALE		SHALE	2.7	32.2
395.1	CARBONDALE	HERRIN	COAL	5.7	34.9
389.4	CARBONDALE		CLAYSTONE	1.5	40.6

MAPID: 14502083000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 1650' S line, 330' E line

QUADRANGLE: VERGENNES LONGITUDE: -89.300794 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.95539 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 41.8 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.1	CARBONDALE	BRERETON	LIMESTONE	9.5	23.9	
386.6	CARBONDALE	ANNA	BLACK SHALE	2.6	33.4	
384.0	CARBONDALE	HERRIN	COAL	5.8	36.0	

MAPID: 14502084000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: SE NE SW

QUADRANGLE: VERGENNES LONGITUDE: -89.310096 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.955517 DATE COLLECTED: 0 / 0 / 1948

SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 51.0 LOG TYPE: Drillers Log

SOURCE: R.P.M. INC. #20 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
435.0			CLAYSTONE	40.0	0.0	
395.0			CLAYSTONE	11.0	40.0	

MAPID: 14502085000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: VERGENNES LONGITUDE: -89.302894 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.962757 DATE COLLECTED: 0 / 0 / 1948

SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 65.4 LOG TYPE: Drillers Log

SOURCE: R.P.M. INC. #21 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
435.0			CLAYSTONE & SANDSTONE	44.0	0.0	
391.0			CLAYSTONE	10.3	44.0	
380.7			LIMESTONE W/ SHALE	1.0	54.3	
379.7			LIMESTONE	10.1	55.3	

MAPID: 14590126000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 100' S line, 40' E line of NW NE

QUADRANGLE: VERGENNES LONGITUDE: -89.304214 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 37.96213 DATE COLLECTED: 9 / 2 / 1965

SURFACE ELEVATION (FT.): LOGGED (FT.): 107.0 LOG TYPE: Drillers Log

SOURCE: FREEMAN UNITED COAL MINING CO.44-65 WELL TYPE: Coal Test

COMMENT: PERMIT 314 FIDELITY MINE NO. 11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	31.5	0.0
-	PLEISTOCENE		UNCONSOLIDATED	26.5	31.5
-	CARBONDALE		DARK SHALE	13.0	58.0
-	CARBONDALE	BRERETON	LIMESTONE	1.0	71.0
-	CARBONDALE	ANNA	BLACK SHALE	5.0	72.0
-	CARBONDALE	ENERGY	GRAY SHALE	20.0	77.0
-	CARBONDALE	HERRIN	COAL	8.3	97.0
-	CARBONDALE		UNDERCLAY	1.8	105.3

MAPID: 14590127000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 30' S line, 460' E line of SW SW

QUADRANGLE: VERGENNES LONGITUDE: -89.315341 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 37.951094 DATE COLLECTED: 1 / 2 / 1966

SURFACE ELEVATION (FT.): 407.0 LOGGED (FT.): 61.0 LOG TYPE: Drillers Log

SOURCE: FREEMAN UNITED COAL MINING CO.HK-54 WELL TYPE: Coal Test

COMMENT: PERMIT 314 FIDELITY MINE NO. 11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
407.0	PLEISTOCENE		CLAY	10.0	0.0
397.0	CARBONDALE	BRERETON	LIMESTONE	13.0	10.0
384.0	CARBONDALE	ANNA	BLACK SHALE	1.5	23.0
382.5	CARBONDALE	HERRIN	COAL	6.8	24.5
375.7	CARBONDALE		UNDERCLAY	2.3	31.3
373.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.5	33.5
372.0	CARBONDALE		SANDSTONE	19.5	35.0
352.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	54.5
351.5	CARBONDALE	SPRINGFIELD	COAL	3.5	55.5
348.0	CARBONDALE		UNDERCLAY	2.0	59.0

MAPID: 14590128000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 200' N line, 230' E line of NW SW
 QUADRANGLE: VERGENNES LONGITUDE: -89.314306 GEOLOGIST: NORTH
 CONFIDENTIAL: N LATITUDE: 37.957749 DATE COLLECTED: 7 / 16 / 1986
 SURFACE ELEVATION (FT.): LOGGED (FT.): 79.7 LOG TYPE: Drillers Log
 SOURCE: FREEMAN UNITED COAL MINING CO.F11-13-86 WELL TYPE: Coal Test
 COMMENT: PERMIT 314 FIDELITY MINE NO. 11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCLASSIFIED	65.0	0.0
-	CARBONDALE	BRERETON	LIMESTONE	6.2	65.0
-	CARBONDALE	ANNA	BLACK SHALE	2.2	71.1
-	CARBONDALE	HERRIN	COAL	5.9	73.3
-	CARBONDALE		UNDERCLAY	0.5	79.2

MAPID: 14590129000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 520' N line, 100' E line of NW SW
 QUADRANGLE: VERGENNES LONGITUDE: -89.313883 GEOLOGIST: NORTH
 CONFIDENTIAL: N LATITUDE: 37.956859 DATE COLLECTED: 6 / 24 / 1996
 SURFACE ELEVATION (FT.): 415.8 LOGGED (FT.): 104.5 LOG TYPE: Drillers Log
 SOURCE: FREEMAN UNITED COAL MINING CO.F11-2-96 WELL TYPE: Coal Test
 COMMENT: PERMIT 314 FIDELITY MINE NO. 11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
415.8	PLEISTOCENE		GLACIAL DRIFT	50.0	0.0
365.8	CARBONDALE	BRERETON	LIMESTONE	9.0	50.0
356.8	CARBONDALE	ANNA	BLACK SHALE	2.0	59.0
354.8	CARBONDALE	HERRIN	COAL	5.9	61.0
348.9	CARBONDALE		UNDERCLAY	3.0	66.9
345.9	CARBONDALE	HIGGINSVILLE	LIMESTONE	0.6	69.9
345.3	CARBONDALE		SANDSTONE	8.9	70.5
336.4	CARBONDALE		GRAY SHALE	4.0	79.4
332.4	CARBONDALE	SPRINGFIELD	COAL	4.7	83.4
327.7	CARBONDALE		UNDERCLAY	1.1	88.1
326.6	CARBONDALE		GRAY SHALE	15.3	89.2

MAPID: 14590130000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 400' N line, 350' W line of NE SW

QUADRANGLE: VERGENNES LONGITUDE: -89.312306

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 37.957174

DATE COLLECTED: 11 / 3 / 1996

SURFACE ELEVATION (FT.): 409.3 LOGGED (FT.): 115.2

LOG TYPE: Drillers Log

SOURCE: FREEMAN UNITED COAL MINING CO.F11-3-96

WELL TYPE: Coal Test

COMMENT: PERMIT 314 FIDELITY MINE NO. 11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
409.3	PLEISTOCENE		UNCONSOLIDATED	38.0	0.0
371.3	PLEISTOCENE		BOULDER	0.5	38.0
370.8	PLEISTOCENE		UNCONSOLIDATED	4.5	38.5
366.3	CARBONDALE		GRAY SHALE	9.0	43.0
357.3	CARBONDALE		SILTY SHALE	1.9	52.0
355.4	CARBONDALE	BRERETON	LIMESTONE	16.0	53.9
339.4	CARBONDALE	ANNA	BLACK SHALE	3.3	69.9
336.1	CARBONDALE	HERRIN	COAL	6.5	73.2
329.6	CARBONDALE		UNDERCLAY	4.2	79.7
325.4	CARBONDALE		SANDSTONE	12.5	83.9
312.9	CARBONDALE		SILTY SHALE	0.6	96.4
312.3	CARBONDALE	ST. DAVID	LIMESTONE	1.1	97.0
311.2	CARBONDALE	TURNER MINE	BLACK SHALE	1.1	98.1
310.1	CARBONDALE	SPRINGFIELD	COAL	3.0	99.2
307.1	CARBONDALE		UNDERCLAY	6.3	102.2
300.8	CARBONDALE		GRAY SHALE	6.7	108.5

MAPID: 14590131000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 400' S line, 660' E line of NE SW

QUADRANGLE: VERGENNES LONGITUDE: -89.311229 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 37.95572 DATE COLLECTED: 11 / 4 / 1996

SURFACE ELEVATION (FT.): 423.0 LOGGED (FT.): 133.5 LOG TYPE: Drillers Log

SOURCE: FREEMAN UNITED COAL MINING CO.F11-4-96 WELL TYPE: Coal Test

COMMENT: PERMIT 314 FIDELITY MINE NO. 11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
423.0	PLEISTOCENE		UNCONSOLIDATED	50.0	0.0
373.0	CARBONDALE	BANKSTON FORK	LIMESTONE	11.0	50.0
362.0	CARBONDALE		SHALE	15.0	61.0
347.0	CARBONDALE	BRERETON	LIMESTONE	13.0	76.0
334.0	CARBONDALE	ANNA	BLACK SHALE	3.5	89.0
330.5	CARBONDALE	HERRIN	COAL	6.6	92.5
323.9	CARBONDALE		UNDERCLAY	3.7	99.1
320.2	CARBONDALE		GRAY SHALE	1.4	102.8
318.8	CARBONDALE		SANDSTONE	10.3	104.2
308.5	CARBONDALE		GRAY SHALE	0.5	114.5
308.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	115.0
307.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.8	115.5
304.7	CARBONDALE	SPRINGFIELD	COAL	5.5	118.3
299.2	CARBONDALE		UNDERCLAY	9.7	123.8

MAPID: 14590132000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 100' N line, 240' W line of NE SW

QUADRANGLE: VERGENNES LONGITUDE: -89.312659 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 37.958008 DATE COLLECTED: 11 / 5 / 1996

SURFACE ELEVATION (FT.): 403.8 LOGGED (FT.): 89.3 LOG TYPE: Drillers Log

SOURCE: FREEMAN UNITED COAL MINING CO.F11-5-96 WELL TYPE: Coal Test

COMMENT: PERMIT 314 FIDELITY MINE NO. 11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
403.8	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
376.8	CARBONDALE		SHALE	1.0	27.0
375.8	CARBONDALE	BRERETON	LIMESTONE	15.0	28.0
360.8	CARBONDALE	ANNA	BLACK SHALE	3.0	43.0
357.8	CARBONDALE	HERRIN	COAL	6.1	46.0
351.7	CARBONDALE		UNDERCLAY	4.4	52.1
347.3	CARBONDALE		SANDSTONE	20.5	56.5
326.8	CARBONDALE		GRAY SHALE	1.2	77.0
325.6	CARBONDALE	SPRINGFIELD	COAL	2.5	78.2
323.1	CARBONDALE		UNDERCLAY	2.9	80.7
320.2	CARBONDALE		SILTSTONE	1.8	83.6
318.4	CARBONDALE		GRAY SHALE	3.9	85.4

COAL
INCLUSIONS

MAPID: 14590133000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 30' N line, 250' W line of SW SW

QUADRANGLE: VERGENNES LONGITUDE: -89.317392 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 37.954601 DATE COLLECTED: 11 / 10 / 1996

SURFACE ELEVATION (FT.): 421.0 LOGGED (FT.): 100.0 LOG TYPE: Drillers Log

SOURCE: FREEMAN UNITED COAL MINING CO.F11-10A-96 WELL TYPE: Coal Test

COMMENT: PERMIT 314 FIDELITY MINE NO. 11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
421.0	PLEISTOCENE		UNCONSOLIDATED	38.0	0.0
383.0	CARBONDALE	BRERETON	LIMESTONE	11.0	38.0
372.0	CARBONDALE	ANNA	BLACK SHALE	2.0	49.0
370.0	CARBONDALE	HERRIN	COAL	5.8	51.0
364.2	CARBONDALE		UNDERCLAY	2.2	56.8
362.0	CARBONDALE		SANDSTONE	11.0	59.0
351.0	CARBONDALE		GRAY SHALE	6.0	70.0
345.0	CARBONDALE	SPRINGFIELD	COAL	3.5	76.0
341.5	CARBONDALE		GRAY SHALE	20.5	79.5

MAPID: 14590134000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 600' S line, 500' E line of NE SE

QUADRANGLE: VERGENNES LONGITUDE: -89.301364 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 37.956162 DATE COLLECTED: 11 / 12 / 1996

SURFACE ELEVATION (FT.): 434.0 LOGGED (FT.): 123.0 LOG TYPE: Drillers Log

SOURCE: FREEMAN UNITED COAL MINING CO.F11-12-96 WELL TYPE: Coal Test

COMMENT: PERMIT 314 FIDELITY MINE NO. 11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN COMMENT	
434.0	PLEISTOCENE		UNCONSOLIDATED	52.0	0.0	
382.0	CARBONDALE		GRAY SHALE	3.0	52.0	
379.0	CARBONDALE		CALCAREOUS SHALE	15.0	55.0	
364.0	CARBONDALE	BRERETON	LIMESTONE	7.0	70.0	
357.0	CARBONDALE	ANNA	BLACK SHALE	2.5	77.0	
354.5	CARBONDALE	ENERGY	GRAY SHALE	10.2	79.5	
344.3	CARBONDALE	HERRIN	COAL	8.4	89.7	
335.9	CARBONDALE		UNDERCLAY	3.5	98.1	
332.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.0	101.6	
330.4	CARBONDALE		CLAYSTONE & SILTSTONE	2.0	103.6	
328.4	CARBONDALE		LIMESTONE	2.0	105.6	NODULAR
326.4	CARBONDALE		SHALE	4.4	107.6	LS NODS
322.0	CARBONDALE		SANDSTONE	11.0	112.0	

MAPID: 14590135000C VERSION: 1

PROJECT: NCRDS98

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 600' N line, 450' E line of NW SE

QUADRANGLE: VERGENNES LONGITUDE: -89.305822 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 37.956556 DATE COLLECTED: 11 / 13 / 1996

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 137.0 LOG TYPE: Drillers Log

SOURCE: FREEMAN UNITED COAL MINING CO.F11-13-96 WELL TYPE: Coal Test

COMMENT: PERMIT 314 FIDELITY MINE NO. 11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0	PLEISTOCENE		UNCONSOLIDATED	70.0	0.0
360.0	CARBONDALE		CALCAREOUS SHALE	7.0	70.0
353.0	CARBONDALE	BRERETON	LIMESTONE	13.0	77.0
340.0	CARBONDALE	ANNA	BLACK SHALE	3.6	90.0
336.4	CARBONDALE	HERRIN	COAL	7.5	93.6
328.9	CARBONDALE		UNDERCLAY	4.4	101.1
324.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.5	105.5
320.0	CARBONDALE		DARK SHALE	2.0	110.0
318.0	CARBONDALE		GRAY SHALE	13.0	112.0
305.0	CARBONDALE		SANDSTONE	12.0	125.0

MAPID: 14590136000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 34 QUARTERS/FOOTAGES: 140' N line, 130' W line of SW SE

QUADRANGLE: VERGENNES LONGITUDE: -89.308527 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 37.954197 DATE COLLECTED: 11 / 14 / 1996

SURFACE ELEVATION (FT.): 432.0 LOGGED (FT.): 130.0 LOG TYPE: Drillers Log

SOURCE: FREEMAN UNITED COAL MINING CO.F11-14-96 WELL TYPE: Coal Test

COMMENT: PERMIT 314 FIDELITY MINE NO. 11

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.0	PLEISTOCENE		UNCONSOLIDATED	42.0	0.0
390.0	CARBONDALE		LIMESTONE	2.0	42.0
388.0	CARBONDALE		CALCAREOUS SHALE	5.0	44.0
383.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	49.0
376.0	CARBONDALE		GRAY SHALE	13.0	56.0
363.0	CARBONDALE		CALCAREOUS SHALE	8.0	69.0
355.0	CARBONDALE	BRERETON	LIMESTONE	10.2	77.0
344.8	CARBONDALE	ANNA	BLACK SHALE	1.0	87.2
343.8	CARBONDALE	HERRIN	COAL	7.5	88.2
336.3	CARBONDALE		UNDERCLAY	1.0	95.7
335.3	CARBONDALE		SANDSTONE	5.3	96.7
330.0	CARBONDALE		DARK SHALE	3.1	102.0
326.9	CARBONDALE		GRAY SHALE	1.7	105.1
325.2	CARBONDALE	SPRINGFIELD	COAL	4.7	106.8
320.5	CARBONDALE		UNDERCLAY	4.5	111.5
316.0	CARBONDALE		SANDSTONE	4.0	116.0
312.0	CARBONDALE		SHALE	10.0	120.0

MAPID: 14500275000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 35 QUARTERS/FOOTAGES: SW SE NW SW

QUADRANGLE: VERGENNES LONGITUDE: -89.29673 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.954911 DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 107.0 LOG TYPE: Drillers Log

SOURCE: FRANK J. DEAN, JR. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
330.0	CARBONDALE	HERRIN	COAL	7.0	100.0

MAPID: 14502086000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 35

QUARTERS/FOOTAGES: NW NW SW

QUADRANGLE: VERGENNES

LONGITUDE: -89.298418

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.957219

DATE COLLECTED: 0 / 0 / 1948

SURFACE ELEVATION (FT.):

LOGGED (FT.): 76.0

LOG TYPE: Drillers Log

SOURCE: R. P. M. INC.

WELL TYPE: Coal Test

COMMENT: SEE MAP IN FILE OF CO. #2085,34-6S-2W

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAYSTONE & SANDSTONE	36.0	0.0
-			CLAYSTONE	3.5	36.0
-			SHALE	0.5	39.5
-			LIMESTONE	9.2	40.0
-			SHALE	11.5	49.2
-			LIMESTONE	1.5	60.7
-			SHALE	13.8	62.2

MAPID: 14502087000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 35

QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: VERGENNES

LONGITUDE: -89.298584

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.951726

DATE COLLECTED: 0 / 0 / 1948

SURFACE ELEVATION (FT.): 445.0

LOGGED (FT.): 64.2

LOG TYPE: Drillers Log

SOURCE: R. P. M. INC.

WELL TYPE: Coal Test

COMMENT: SEE MAP ON FILE OF CO. #2065, 34-6S-2W

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.0			CLAYSTONE	17.7	0.0
427.3	CARBONDALE	BANKSTON FORK	LIMESTONE	9.7	17.7
417.6	CARBONDALE		SHALE	15.3	27.4
402.3	CARBONDALE	BRERETON	LIMESTONE	12.7	42.7
389.6	CARBONDALE		SHALE	2.0	55.4
387.6	CARBONDALE	HERRIN	COAL	5.7	57.4
381.9	CARBONDALE		CLAYSTONE	1.1	63.1

MAPID: 14502774000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 35 QUARTERS/FOOTAGES: 100' S line, 2500' E line

QUADRANGLE: VERGENNES LONGITUDE: -89.28972 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.950998 DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 432.0 LOGGED (FT.): 100.0 LOG TYPE: Survey Core Study

SOURCE: UNION COLLIERY CO. WELL TYPE: Coal Test

COMMENT: SURVEY CORE STUDY - JN PAYNE (ALSO P143)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
407.0	PENNSYLVANIAN	PENNSYLVANIAN SY	LIMESTONE	8.0	25.0
399.0			COAL WITH SHALE	6.7	33.0
392.3			SANDSTONE	1.3	39.7
391.0			CLAYSTONE	2.0	41.0
389.0			LIMESTONE/UNDERCLAY	19.3	43.0
369.7			SILTSTONE	1.3	62.3
368.4			SHALE	11.6	63.6
356.8			LIMESTONE	0.3	75.2
356.5	CARBONDALE		SHALE	0.2	75.5
356.3	CARBONDALE		LIMESTONE	13.4	75.7
342.9	CARBONDALE		SHALE	2.2	89.1
340.7	CARBONDALE		LIMESTONE	0.8	91.3
339.9	CARBONDALE		SHALE	0.9	92.1
339.0	CARBONDALE	HERRIN	COAL	6.5	93.0
332.5	CARBONDALE		CLAYSTONE	0.5	99.5

MAPID: 14502774000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 35 QUARTERS/FOOTAGES: 100' S line, 2500' E line

QUADRANGLE: VERGENNES LONGITUDE: -89.28972 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.950998 DATE COLLECTED:

SURFACE ELEVATION (FT.): 432.0 LOGGED (FT.): 99.5 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
404.6	MODESTO	PIASA	LIMESTONE	8.0	27.4
396.6	MODESTO		GRAY SHALE	0.8	35.4
395.8	CARBONDALE	DANVILLE	COAL	2.6	36.2
393.2	CARBONDALE		SHALE & SANDSTONE	6.6	38.8
386.6	CARBONDALE	GALUM	LIMESTONE & SHALE	0.3	45.4
386.3	CARBONDALE		CALCAREOUS SHALE	6.6	45.7
379.7	CARBONDALE	BANKSTON FORK	LIMESTONE	10.3	52.3
369.4	CARBONDALE	LAWSON	SILTSTONE	1.3	62.6
368.1	CARBONDALE	LAWSON	DARK GRAY SHALE	11.5	63.9
356.6	CARBONDALE	CONANT	LIMESTONE & SHALE	0.3	75.4
356.3	CARBONDALE	JAMESTOWN	BLACK SHALE	0.2	75.7
356.1	CARBONDALE	BRERETON	LIMESTONE & SHALE	13.2	75.9
342.9	CARBONDALE	ANNA	BLACK SHALE	3.9	89.1
339.0	CARBONDALE	HERRIN	COAL	6.5	93.0

MAPID: 14502775000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 35

QUARTERS/FOOTAGES: NW NE NE NE

QUADRANGLE: VERGENNES

LONGITUDE: -89.282475

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.964804

DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 443.9

LOGGED (FT.): 73.4

LOG TYPE: Survey Core Study

SOURCE: UNION COLLIERY CO.

WELL TYPE: Coal Test

COMMENT: CORE STUDY - JN PAYNE (ALSO P143)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.9			UNCONSOLIDATED	27.0	0.0
416.9	PENNSYLVANIAN	PENNSYLVANIAN SY	LIMESTONE	8.2	27.0
408.7			SILTSTONE	0.8	35.2
407.9			SHALE	6.9	36.0
401.0	CARBONDALE		LIMESTONE	1.8	42.9
399.2	CARBONDALE		SHALE	0.3	44.7
398.9	CARBONDALE		COAL	0.2	45.0
398.7	CARBONDALE		LIMESTONE	2.3	45.2
396.4	CARBONDALE		SHALE	2.8	47.5
393.6	CARBONDALE		LIMESTONE	0.4	50.3
393.2	CARBONDALE		SHALE	15.0	50.7
378.2	CARBONDALE	HERRIN	COAL	6.3	65.7
371.9	CARBONDALE	HERRIN	SHALE	0.2	72.0
371.7	CARBONDALE	HERRIN	COAL	0.8	72.2
370.9	CARBONDALE		CLAYSTONE	0.4	73.0

MAPID: 14502776000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 35 QUARTERS/FOOTAGES: NW NW SW NE
 QUADRANGLE: VERGENNES LONGITUDE: -89.289547 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.961234 DATE COLLECTED: 0 / 0 / 1940
 SURFACE ELEVATION (FT.): 436.8 LOGGED (FT.): 92.1 LOG TYPE: Survey Core Study
 SOURCE: UNION COLLIERY CO. WELL TYPE: Coal Test
 COMMENT: CORE STUDY - JN PAYNE (ALSO P143)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.8			UNCONSOLIDATED	29.5	0.0
407.3	PENNSYLVANIAN	PENNSYLVANIAN SY	LIMESTONE	10.0	29.5
397.3			CLAYSTONE & LIMESTONE	6.0	39.5
391.3	CARBONDALE	BANKSTON FORK	LIMESTONE	7.6	45.5
383.7	CARBONDALE		SILTSTONE	0.5	53.1
383.2	CARBONDALE		SHALE	7.9	53.6
375.3	CARBONDALE		LIMESTONE	5.5	61.5
369.8	CARBONDALE		SHALE	18.3	67.0
351.5	CARBONDALE	HERRIN	COAL	6.8	85.3
345.9	CARBONDALE	HERRIN	SHALE	0.2	90.9
345.7	CARBONDALE	HERRIN	COAL	1.0	91.1

MAPID: 14502777000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 35 QUARTERS/FOOTAGES: NW NW NW NW
 QUADRANGLE: VERGENNES LONGITUDE: -89.298763 GEOLOGIST: MAYNOR
 CONFIDENTIAL: N LATITUDE: 37.965005 DATE COLLECTED: 0 / 0 / 1940
 SURFACE ELEVATION (FT.): 437.6 LOGGED (FT.): 98.9 LOG TYPE: Survey Core Study
 SOURCE: UNION COLLIERY CO. WELL TYPE: Coal Test
 COMMENT: CORE STUDIED BY JN PAYNE (P117,P143)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
409.1			LIMESTONE	35.0	28.5
374.1	CARBONDALE		SHALE	10.2	63.5
363.9	CARBONDALE	JAMESTOWN	SHALE/COAL	0.3	73.7
363.6	CARBONDALE		SHALE	0.3	74.0
363.3	CARBONDALE	BRERETON	LIMESTONE	8.7	74.3
354.6	CARBONDALE		SHALE	8.9	83.0
345.7	CARBONDALE	HERRIN	COAL	7.0	91.9

MAPID: 14528369000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 35

QUARTERS/FOOTAGES: NW NW NE NE

QUADRANGLE: VERGENNES

LONGITUDE: -89.284801

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.964833

DATE COLLECTED: 3 / 24 / 1981

SURFACE ELEVATION (FT.): 445.0

LOGGED (FT.): 40.0

LOG TYPE: Drillers Log

SOURCE: J. P. DRILLING

WELL TYPE: Observation Well

COMMENT: GROUNDWATER MONITORING P 117, P143

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.0			CLAYSTONE	4.0	0.0
441.0			SILTSTONE	4.0	4.0
437.0			CLAYSTONE	8.0	8.0
429.0			CLAYSTONE	2.0	16.0
427.0			CLAYSTONE	2.0	18.0
425.0			CLAYSTONE	2.0	20.0
423.0			SILTSTONE	2.0	22.0
421.0			CLAYSTONE	4.0	24.0
417.0			CLAYSTONE	6.0	28.0
411.0			CLAYSTONE	4.0	34.0
407.0			SHALE	2.0	38.0

MAPID: 14500132000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 36

QUARTERS/FOOTAGES: NE NE SE SE

QUADRANGLE: VERGENNES

LONGITUDE: -89.262908

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.953631

DATE COLLECTED: 8 / 0 / 1911

SURFACE ELEVATION (FT.): 431.0

LOGGED (FT.): 111.0

LOG TYPE: Drillers Log

SOURCE: SECURITY COAL & MINING

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.0			UNCONSOLIDATED	20.0	0.0
411.0			LIMESTONE	8.0	20.0
403.0			CLAYSTONE	5.5	28.0
397.5			CLAYSTONE	11.5	33.5
387.0			SHALE	6.0	44.0
381.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	50.0
374.0	CARBONDALE		SHALE	5.0	57.0
369.0	CARBONDALE		SHALE	7.5	62.0
360.5	CARBONDALE		SHALE	3.5	70.5
358.0	CARBONDALE		SHALE	5.0	73.0
353.0	CARBONDALE		SHALE	15.0	78.0
338.0	CARBONDALE	HERRIN	COAL	8.2	93.0
329.8	CARBONDALE		CLAYSTONE	10.0	101.2

MAPID: 14502778000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 36 QUARTERS/FOOTAGES: 1400' N line, 1400' W line

QUADRANGLE: VERGENNES LONGITUDE: -89.275916 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.961316 DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 449.8 LOGGED (FT.): 82.5 LOG TYPE: Survey Core Study

SOURCE: UNION COLLIERY CO. WELL TYPE: Coal Test

COMMENT: CORE STUDY - JN PAYNE (ALSO P143)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.8			UNCONSOLIDATED	17.0	0.0
432.8	PENNSYLVANIAN	PENNSYLVANIAN SY	LIMESTONE/UNDERCLAY	26.4	17.0
406.4	CARBONDALE		SILTSTONE	0.5	43.4
405.9	CARBONDALE		SHALE	6.4	43.9
399.5	CARBONDALE	CONANT	LIMESTONE W/ SHALE	1.7	50.3
397.8	CARBONDALE	JAMESTOWN	COAL	0.8	52.0
397.0	CARBONDALE	BRERETON	LIMESTONE	9.7	52.8
387.3	CARBONDALE		SHALE	11.5	62.5
375.8	CARBONDALE	HERRIN	COAL	4.4	74.0
371.3	CARBONDALE	HERRIN	SHALE	0.4	78.5
371.0	CARBONDALE	HERRIN	COAL	0.2	78.8
370.8	CARBONDALE		CLAYSTONE	2.2	79.0
368.6	CARBONDALE		LIMESTONE	1.3	81.2

MAPID: 14502778000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 36 QUARTERS/FOOTAGES: 1400' N line, 1400' W line

QUADRANGLE: VERGENNES LONGITUDE: -89.275916 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.961316 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 79.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.5	MODESTO	PIASA	LIMESTONE	11.0	17.5
421.5	CARBONDALE		SHALE	7.5	28.5
414.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.5	36.0
406.5	CARBONDALE	LAWSON	SILTSTONE	0.5	43.5
406.0	CARBONDALE	LAWSON	GRAY SHALE	6.3	44.0
399.7	CARBONDALE	CONANT	LIMESTONE	1.7	50.3
398.0	CARBONDALE	JAMESTOWN	BONE COAL	0.8	52.0
397.2	CARBONDALE	BRERETON	LIMESTONE	9.7	52.8
387.5	CARBONDALE	ANNA	BLACK SHALE	2.2	62.5
385.3	CARBONDALE	ENERGY	GRAY SHALE	9.3	64.7
376.0	CARBONDALE	HERRIN	COAL	5.0	74.0

MAPID: 14502779000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 36

QUARTERS/FOOTAGES: SW SW SW NE

QUADRANGLE: VERGENNES

LONGITUDE: -89.270975

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.958278

DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 445.2

LOGGED (FT.): 85.2

LOG TYPE: Survey Core Study

SOURCE: UNION COLLIERY CO.

WELL TYPE: Coal Test

COMMENT: CORE STUDY - JN PAYNE (ALSO P143)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
445.2			UNCONSOLIDATED	38.0	0.0	
407.2	CARBONDALE	BANKSTON FORK	LIMESTONE	8.5	38.0	
398.7	CARBONDALE		SILTSTONE	0.8	46.5	
397.9	CARBONDALE		SHALE	8.0	47.3	
389.9	CARBONDALE		LIMESTONE	1.5	55.3	
388.4	CARBONDALE		SHALE	21.2	56.8	
367.2	CARBONDALE	HERRIN	COAL	6.2	78.0	
361.0	CARBONDALE	HERRIN	COAL	0.1	84.2	
360.9	CARBONDALE	HERRIN	COAL	0.9	84.3	

MAPID: 14502780000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 36

QUARTERS/FOOTAGES: SE SE SE NE

QUADRANGLE: VERGENNES

LONGITUDE: -89.262834

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.958184

DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 435.8

LOGGED (FT.): 83.3

LOG TYPE: Survey Core Study

SOURCE: UNION COLLIERY CO

WELL TYPE: Coal Test

COMMENT: CORE STUDY BY JN PAYNE (P117,P143)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.8	CARBONDALE	BANKSTON FORK	LIMESTONE	8.3	32.0	
395.5	CARBONDALE		SILTSTONE	0.8	40.3	
394.7	CARBONDALE		SHALE	33.9	41.1	
360.8	CARBONDALE	HERRIN	COAL	6.1	75.0	
354.7	CARBONDALE	HERRIN	SHALE	0.1	81.1	
354.6	CARBONDALE	HERRIN	COAL	0.8	81.2	
353.8	CARBONDALE		CLAYSTONE	1.3	82.0	

MAPID: 14502781000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 36 QUARTERS/FOOTAGES: NE NE NE NE

QUADRANGLE: VERGENNES LONGITUDE: -89.262729 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.964561 DATE COLLECTED:

SURFACE ELEVATION (FT.): 447.5 LOGGED (FT.): 67.5 LOG TYPE: Survey Core Study

SOURCE: UNION COLLIERY CO. WELL TYPE: Coal Test

COMMENT: CORE STUDIED BY JN PAYNE (P117,P143)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.7	22.5
417.3	CARBONDALE		SILTSTONE	0.8	30.2
416.5	CARBONDALE		SHALE	29.5	31.0
387.0	CARBONDALE	HERRIN	COAL	5.0	60.5
382.0	CARBONDALE	HERRIN	SHALE	1.1	65.5
380.9	CARBONDALE	HERRIN	COAL	0.9	66.6

MAPID: 14502782000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 2W SECTION: 36 QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: VERGENNES LONGITUDE: -89.279686 GEOLOGIST: MAYNOR

CONFIDENTIAL: N LATITUDE: 37.958836 DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 447.7 LOGGED (FT.): 105.2 LOG TYPE: Survey Core Study

SOURCE: UNION COLLIERY CO. WELL TYPE: Coal Test

COMMENT: CORE STUDY - JN PAYNE (ALSO P143)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.7			UNCONSOLIDATED	60.5	0.0
387.2	CARBONDALE	BANKSTON FORK	LIMESTONE	9.0	60.5
378.2	CARBONDALE		SILTSTONE	1.4	69.5
376.8	CARBONDALE		SHALE	9.5	70.9
367.3	CARBONDALE	JAMESTOWN	COAL	0.6	80.4
366.7	CARBONDALE	BRERETON	LIMESTONE	14.1	81.0
352.6	CARBONDALE		SHALE	2.9	95.1
349.7	CARBONDALE	HERRIN	COAL	5.6	98.0
344.1	CARBONDALE	HERRIN	SHALE	0.1	103.6
344.0	CARBONDALE	HERRIN	COAL	1.1	103.7
342.9	CARBONDALE		COAL	0.4	104.8

MAPID: 14502783000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 36

QUARTERS/FOOTAGES: SE SE NW SW

QUADRANGLE: VERGENNES

LONGITUDE: -89.276858

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.954695

DATE COLLECTED: 0 / 0 / 1940

SURFACE ELEVATION (FT.): 446.1

LOGGED (FT.): 98.9

LOG TYPE: Survey Core Study

SOURCE: UNION COLLIERY CO.

WELL TYPE: Coal Test

COMMENT: CORE STUDY - JN PAYNE (ALSO P143)

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.1			UNCONSOLIDATED	26.5	0.0
419.6	MODESTO	PIASA	LIMESTONE	8.5	26.5
411.1	CARBONDALE	DANVILLE	COAL	1.0	35.0
410.1	CARBONDALE		CLAYSTONE & LIMESTONE	4.5	36.0
405.6	CARBONDALE		SHALE	2.5	40.5
403.1	CARBONDALE		CLAYSTONE & LIMESTONE	10.0	43.0
393.1	CARBONDALE	BANKSTON FORK	LIMESTONE	9.2	53.0
383.9	CARBONDALE		SILTSTONE	1.3	62.2
382.6	CARBONDALE		SHALE	8.4	63.5
374.2	CARBONDALE		LIMESTONE W/ SHALE	1.4	71.9
372.8	CARBONDALE		SHALE	0.2	73.3
372.6	CARBONDALE	JAMESTOWN	COAL	0.6	73.5
372.0	CARBONDALE	BRERETON	LIMESTONE	15.1	74.1
356.9	CARBONDALE		SHALE	2.3	89.2
354.6	CARBONDALE	HERRIN	COAL	5.0	91.5
349.6	CARBONDALE		SHALE	0.2	96.5
349.4	CARBONDALE		COAL	1.0	96.7
348.4	CARBONDALE		CLAYSTONE	1.2	97.7

MAPID: 14524402000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 2W

SECTION: 36

QUARTERS/FOOTAGES: 330' S line, 330' E line of SW NE

QUADRANGLE: VERGENNES

LONGITUDE: -89.268045

GEOLOGIST: MAYNOR

CONFIDENTIAL: N

LATITUDE: 37.9587

DATE COLLECTED: 4 / 27 / 1982

SURFACE ELEVATION (FT.): 430.0

LOGGED (FT.): 3588.0

LOG TYPE: Company Sample Study

SOURCE: UNION COLLIERY CO

WELL TYPE: Dry Hole

COMMENT: D&A, NO COAL DATA, SCOUT TKT. ONLY.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNKNOWN	0.0	0.0

MAPID: 14500386000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 400' N line, 0' E line of SE NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.376463 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.036636 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 432.6 LOGGED (FT.): 35.4 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.6			UNCONSOLIDATED	16.0	0.0
416.6	CARBONDALE		SHALE	3.0	16.0
413.6	CARBONDALE	CONANT	LIMESTONE	1.1	19.0
412.5	CARBONDALE		SHALE	1.7	20.1
410.8	CARBONDALE	BRERETON	LIMESTONE	1.9	21.8
408.9	CARBONDALE	ANNA	SHALE	2.3	23.7
406.6	CARBONDALE	ENERGY	SHALE	3.7	26.0
402.9	CARBONDALE	HERRIN	COAL	5.7	29.7

MAPID: 14500387000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 330' N line, 0' E line of SE NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.376455 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.03683 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 30.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	30.2	0.0
399.8			UNCLASSIFIED	0.0	30.2

MAPID: 14500388000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 165' N line, 0' E line of SE NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.376444 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.037285 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 428.7 LOGGED (FT.): 33.8 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.7			UNCONSOLIDATED	19.0	0.0
409.7			CONCRETION	5.8	19.0
403.9			CLAYSTONE	1.2	24.8
402.7			SHALE	7.8	26.0

MAPID: 14500389000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 1 **QUARTERS/FOOTAGES:** NW NW NW SE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.380624 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.031948 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 426.4 **LOGGED (FT.):** 28.7 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
426.4			UNCONSOLIDATED	16.8	0.0
409.6			SAND	11.9	16.8

MAPID: 14500390000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 1 **QUARTERS/FOOTAGES:** SW NW NE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.3799 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.036916 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 429.0 **LOGGED (FT.):** 38.0 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
429.0			UNCONSOLIDATED	16.0	0.0
413.0			SAND	5.0	16.0
408.0			SHALE	7.5	21.0
400.5			LIMESTONE	2.2	28.5
398.3			SAND	0.5	30.7
397.8			SHALE	6.8	31.2

MAPID: 14500391000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 1 **QUARTERS/FOOTAGES:** 200' S line, 0' E line of SE NW NE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.376466 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.036479 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 428.0 **LOGGED (FT.):** 31.3 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.0			UNCONSOLIDATED	19.2	0.0
408.8			SAND	9.0	19.2
399.8			SHALE	3.1	28.2

MAPID: 14500392000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 200' S line, 0' E line of SE NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.376466 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.036479 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 436.1 LOGGED (FT.): 35.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.1			UNCONSOLIDATED	18.5	0.0
417.6			SAND	1.7	18.5
415.9			UNCLASSIFIED	2.6	20.2
413.3			CLAYSTONE	0.7	22.8
412.6	CARBONDALE	ANNA	SHALE	2.5	23.5
410.1	CARBONDALE	ENERGY	SHALE	2.0	26.0
408.1	CARBONDALE	HERRIN	COAL	7.7	28.0

MAPID: 14500393000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: SW NE NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.375307 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.036806 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 419.3 LOGGED (FT.): 22.4 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
419.3			UNCONSOLIDATED	17.2	0.0
402.1	CARBONDALE	ANNA	SHALE	1.7	17.2
400.4	CARBONDALE	HERRIN	COAL	3.5	18.9

MAPID: 14500394000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: SW NE NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.376481 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.035913 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 426.2 LOGGED (FT.): 28.9 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
426.2			UNCONSOLIDATED	18.2	0.0
408.0	CARBONDALE	BRERETON	LIMESTONE	2.4	18.2
405.6	CARBONDALE	ANNA	SHALE	2.1	20.6
403.5	CARBONDALE	HERRIN	COAL	6.2	22.7

MAPID: 14500395000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 0' N line, 330' W line of NE SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.382223 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.036065 DATE COLLECTED: 0 / 0 / 1928
 SURFACE ELEVATION (FT.): 432.7 LOGGED (FT.): 31.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.7			UNCONSOLIDATED	21.0	0.0
411.7			CONCRETION	4.4	21.0
407.3			SHALE	2.0	25.4
405.3			UNCLASSIFIED	0.6	27.4
404.7			SHALE	1.0	28.0
403.7			SAND	2.0	29.0

MAPID: 14500396000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 0' N line, 495' W line of SE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.386299 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.034352 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 437.7 LOGGED (FT.): 35.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.7			UNCONSOLIDATED	18.0	0.0
419.7			CLAYSTONE	2.0	18.0
417.7			SHALE	1.5	20.0
416.2			LIMESTONE	0.3	21.5
415.9			SHALE	3.7	21.8
412.2			UNCLASSIFIED	1.7	25.5
410.5			SHALE	0.5	27.2
410.0	CARBONDALE	ANNA	SHALE	2.1	27.7
407.9	CARBONDALE	HERRIN	COAL	5.4	29.8

MAPID: 14500397000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: NW SE NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.384549

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.035215

DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 437.5

LOGGED (FT.): 39.8

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.5			UNCONSOLIDATED	20.0	0.0
417.5	CARBONDALE		SHALE	25.0	20.0
412.5	CARBONDALE	BRERETON	UNCLASSIFIED	6.7	25.0
405.8	CARBONDALE	ANNA	SHALE	2.3	31.7
403.5	CARBONDALE	HERRIN	COAL	5.8	34.0
397.7	CARBONDALE		CLAYSTONE	0.0	39.8

MAPID: 14500398000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: NW SE NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.384549

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.035215

DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 435.3

LOGGED (FT.): 40.7

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.3			UNCONSOLIDATED	23.1	0.0
412.2			SAND	0.9	23.1
411.3	CARBONDALE		SHALE	1.7	24.0
409.6	CARBONDALE		UNCLASSIFIED	5.2	25.7
404.4	CARBONDALE		SHALE	2.3	30.9
402.1	CARBONDALE		SHALE	0.9	33.2
401.2	CARBONDALE	ANNA	SHALE	1.0	34.1
400.2	CARBONDALE	HERRIN	COAL	5.7	35.1

MAPID: 14500399000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 660' S line, 0' E line of NE NE SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.381049 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.036953 DATE COLLECTED: 0 / 0 / 1928
 SURFACE ELEVATION (FT.): 433.2 LOGGED (FT.): 26.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.2			UNCONSOLIDATED	20.7	0.0
412.5			SHALE	3.5	20.7
409.0			COAL	2.5	24.2
406.5			CLAYSTONE	0.0	26.7

MAPID: 14500400000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: SE SE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.386343 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.032997 DATE COLLECTED: 0 / 0 / 1928
 SURFACE ELEVATION (FT.): 441.2 LOGGED (FT.): 50.3 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
441.2			UNCONSOLIDATED	18.3	0.0
422.9			SAND	1.5	18.3
421.4			SHALE	2.3	19.8
419.1			SAND	9.4	22.1
409.7	CARBONDALE		SHALE	2.6	31.5
407.1	CARBONDALE		SHALE	2.6	34.1
404.5	CARBONDALE	BRERETON	LIMESTONE	1.1	36.7
403.5	CARBONDALE	ANNA	SILTSTONE	3.3	37.7
400.1	CARBONDALE	ENERGY	SHALE	3.2	41.1
397.0	CARBONDALE	HERRIN	COAL	6.1	44.2

MAPID: 14500401000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: SE SE SE NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.381746

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.032882

DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 427.2

LOGGED (FT.): 26.5

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
427.2			UNCONSOLIDATED	18.0	0.0
409.2			SAND	3.0	18.0
406.2			SHALE	5.0	21.0
401.2			SAND	0.5	26.0

MAPID: 14500402000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: 330' N line, 0' E line of SE SE SE NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.381185

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.032409

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 432.6

LOGGED (FT.): 29.2

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.6			UNCONSOLIDATED	18.0	0.0
414.6	CARBONDALE		SHALE	5.0	18.0
408.8	CARBONDALE	ANNA	SHALE	0.8	23.8
403.4	CARBONDALE	HERRIN	COAL	5.4	29.2

MAPID: 14500403000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: 0' N line, 165' W line of NW SE NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.385095

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.036132

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 430.0

LOGGED (FT.): 32.3

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	16.0	0.0
414.0			CLAYSTONE	8.0	16.0
406.0	CARBONDALE		SHALE	3.7	24.0
402.3	CARBONDALE	HERRIN	COAL	4.6	27.7
397.7	CARBONDALE		CLAYSTONE	0.0	32.3

MAPID: 14500404000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 0' N line, 330' E line of NW NW NE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.385785 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.03253 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 435.6 LOGGED (FT.): 47.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.6			UNCONSOLIDATED	24.6	0.0
411.0	CARBONDALE	ENERGY	SHALE	1.7	24.6
409.3	CARBONDALE	ENERGY	SAND	2.3	26.3
406.9	CARBONDALE	ENERGY	SHALE	13.7	28.7
393.3	CARBONDALE	HERRIN	COAL	5.1	42.3
388.2	CARBONDALE		CLAYSTONE	0.0	47.4

MAPID: 14500405000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 340' S line, 660' E line of NW SE NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.385701 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.035277 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 435.4 LOGGED (FT.): 36.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.4			UNCONSOLIDATED	10.0	0.0
425.4			CLAYSTONE & SANDSTONE	10.0	10.0
415.4			SHALE	4.0	20.0
411.4			SAND	1.0	24.0
410.4			SHALE	5.7	25.0
404.7			COAL	0.5	30.7
404.2			CLAYSTONE	5.3	31.2

MAPID: 14500406000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 345' N line, 330' E line of SW SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.384608 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.03336 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 433.3 LOGGED (FT.): 42.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
433.3			UNCONSOLIDATED	15.0	0.0	
418.3			CLAYSTONE	8.0	15.0	
410.3			SAND	9.0	23.0	
401.3			CONCRETION	5.0	32.0	
396.3			SHALE	2.0	37.0	
394.3			COAL	3.0	39.0	
391.3			CLAYSTONE	0.0	42.0	

MAPID: 14500407000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: NW SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.379952 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.035102 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 418.6 LOGGED (FT.): 24.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
418.6			UNCONSOLIDATED	8.0	0.0	
410.6			CONCRETION	4.0	8.0	
406.6			SHALE	1.3	12.0	
405.3			LIMESTONE	3.7	13.3	
401.6			SHALE	3.0	17.0	
398.6			SHALE	4.0	20.0	

MAPID: 14500408000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 0' N line, 300' E line of NW SW NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.379825 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.036008 DATE COLLECTED:

SURFACE ELEVATION (FT.): 432.6 LOGGED (FT.): 37.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
432.6			UNCONSOLIDATED	20.0	0.0	
412.6			SAND	8.0	20.0	
404.6			SHALE	2.7	28.0	
401.9			LIMESTONE	2.8	30.7	
400.1			SHALE	0.5	32.5	
399.1			SANDSTONE	1.0	33.5	
398.1			SHALE	1.0	34.5	
397.1			SHALE	2.0	35.5	
394.9			COAL	0.2	37.7	

MAPID: 14500409000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: NW SW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.380167 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.027858 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 439.3 LOGGED (FT.): 34.3 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
439.3			UNCONSOLIDATED	16.0	0.0	
423.3	CARBONDALE		SHALE	5.0	16.0	
418.3	CARBONDALE	CONANT	LIMESTONE	1.5	21.0	
416.8	CARBONDALE		CLAYSTONE	1.5	22.5	
415.3	CARBONDALE	BRERETON	LIMESTONE	2.0	24.0	
413.3	CARBONDALE	ANNA	SHALE	2.2	26.0	
411.1	CARBONDALE	HERRIN	COAL	6.1	28.2	

MAPID: 1450041000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: SE SW NE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.377708

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.033234

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 437.2

LOGGED (FT.): 38.4

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.2			UNCONSOLIDATED	18.0	0.0
419.2			SHALE	5.0	18.0
414.2			UNCLASSIFIED	1.0	23.0
413.2	CARBONDALE		SHALE	0.7	24.0
412.5	CARBONDALE	BRERETON	LIMESTONE	6.8	24.7
405.7	CARBONDALE		SHALE	0.8	31.5
404.9	CARBONDALE	HERRIN	COAL	6.1	32.3

MAPID: 14500411000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: 330' S line, 330' W line of NE NE SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.382359

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.031544

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 438.2

LOGGED (FT.): 48.5

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
438.2			UNCONSOLIDATED	18.0	0.0
420.2			CONCRETION	6.5	18.0
413.7			SHALE	0.5	24.5
413.2	CARBONDALE	JAMESTOWN	COAL	1.5	25.0
411.7	CARBONDALE		SHALE	1.5	26.5
410.2	CARBONDALE		UNCLASSIFIED	11.5	28.0
398.7	CARBONDALE	BRERETON	LIMESTONE	2.7	39.5
396.0	CARBONDALE	ANNA	SHALE	0.3	42.2
395.7	CARBONDALE	HERRIN	COAL	6.0	42.5
389.7	CARBONDALE		CLAYSTONE	0.0	48.5

MAPID: 14500412000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 0' N line, 0' E line of NW NW NW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.388996 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.039841 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 433.4 LOGGED (FT.): 43.1 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.4			UNCONSOLIDATED	10.0	0.0
423.4			CLAYSTONE & SANDSTONE	12.0	10.0
411.4	CARBONDALE	JAMESTOWN	COAL	1.7	22.0
409.7	CARBONDALE		SHALE	3.8	23.7
405.9	CARBONDALE	BRERETON	LIMESTONE	3.1	27.5
402.8	CARBONDALE	ANNA	SHALE	3.9	30.6
398.9	CARBONDALE	ENERGY	SHALE	2.3	34.5
396.6	CARBONDALE	HERRIN	COAL	6.3	36.8

MAPID: 14500413000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 330' N line, 330' E line of SW NW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.389322 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.029902 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 42.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.0			UNCONSOLIDATED	20.3	0.0
414.7			SHALE	3.4	20.3
411.3			CONCRETION	2.3	23.7
409.0			SHALE	11.9	26.0
397.1	CARBONDALE	HERRIN	COAL	1.5	37.9
395.6	CARBONDALE	HERRIN	COAL	3.3	39.4
392.3			CLAYSTONE	0.0	42.7

MAPID: 14500415000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 660' N line, 0' E line of SW NW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.388203 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.028963 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 435.2 LOGGED (FT.): 53.8 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
435.2			UNCONSOLIDATED	23.0	0.0	
412.2			SAND	8.6	23.0	
403.6			SHALE	0.7	31.6	
402.9			UNCLASSIFIED	6.0	32.3	
396.9	CARBONDALE	BRERETON	LIMESTONE	7.0	38.3	
389.8	CARBONDALE		SHALE	1.6	45.4	
388.2	CARBONDALE	HERRIN	COAL	6.8	47.0	

MAPID: 14500416000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: SE SE NW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.386461 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.029383 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 432.0 LOGGED (FT.): 48.8 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
432.0			UNCONSOLIDATED	21.6	0.0	
410.4			SHALE	17.9	21.6	
392.5			CLAYSTONE	3.0	39.5	
389.0	CARBONDALE	HERRIN	COAL	5.8	43.0	

MAPID: 14500417000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: SW SW NW SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.389912

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.029475

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 432.5

LOGGED (FT.): 52.2

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.5			UNCONSOLIDATED	21.8	0.0
410.7			SAND	3.7	21.8
406.9			SHALE	11.7	25.6
395.3			LIMESTONE	1.5	37.2
393.8			UNCLASSIFIED	1.6	38.7
392.2	CARBONDALE	BRERETON	LIMESTONE	3.4	40.3
388.8	CARBONDALE		SHALE	0.4	43.7
388.3	CARBONDALE	ANNA	SHALE	1.4	44.2
386.9	CARBONDALE	HERRIN	COAL	6.6	45.6

MAPID: 14500418000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.384718

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.02979

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 432.0

LOGGED (FT.): 44.7

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.0			UNCONSOLIDATED	14.0	0.0
418.0			CLAYSTONE	5.0	14.0
413.0			SHALE	4.0	19.0
409.0			CONCRETION	2.0	23.0
407.0			UNCLASSIFIED	1.0	25.0
406.0			CLAYSTONE	12.0	26.0
394.0			SHALE	2.5	38.0
391.5			UNCLASSIFIED	2.5	40.5
389.0			COAL	1.7	43.0

MAPID: 14500419000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 0' N line, 300' W line of NW NE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.384738 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.032504 DATE COLLECTED:

SURFACE ELEVATION (FT.): 434.2 LOGGED (FT.): 50.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.2			UNCONSOLIDATED	23.2	0.0
411.0			CLAYSTONE & SANDSTONE	3.0	23.2
407.9			SHALE	2.2	26.3
405.7			SAND	2.3	28.5
403.4			SHALE	10.4	30.8
393.0	CARBONDALE	BRERETON	LIMESTONE	1.2	41.2
391.8	CARBONDALE		SHALE	0.4	42.4
391.4	CARBONDALE	ANNA	SHALE	1.6	42.8
389.8	CARBONDALE	HERRIN	COAL	5.8	44.4

MAPID: 14500420000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 0' N line, 660' E line of NW NW NE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.386937 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.032561 DATE COLLECTED:

SURFACE ELEVATION (FT.): 438.0 LOGGED (FT.): 45.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
438.0			UNCONSOLIDATED	22.0	0.0
416.0			SAND	3.0	22.0
413.0			SHALE	2.0	25.0
411.0			SAND	2.5	27.0
408.5			SHALE	1.0	29.5
407.5			SAND	9.5	30.5
398.0			SHALE	2.0	40.0
396.0			UNCLASSIFIED	1.5	42.0
394.5			CLAYSTONE & SHALE	1.5	43.5

MAPID: 14500421000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 330' S line, 660' E line of NW NW NE SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.386937 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.032567 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 436.0 LOGGED (FT.): 40.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.0			UNCONSOLIDATED	27.2	0.0
408.8			SHALE	11.7	27.2
397.2			COAL	1.7	38.8
395.5			CLAYSTONE	0.0	40.5

MAPID: 14500422000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 330' S line, 354' W line of NE NE SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.382276 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.031543 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 41.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	21.7	0.0
428.3			CLAYSTONE & SANDSTONE	3.8	21.7
424.5			SHALE	3.4	25.5
421.1			UNCLASSIFIED	0.3	28.9
420.8			SAND	3.4	29.2
417.4			CLAYSTONE	2.3	32.6
415.1	CARBONDALE	ANNA	SHALE	0.4	34.9
414.7	CARBONDALE	HERRIN	COAL	6.4	35.3
408.3	CARBONDALE		CLAYSTONE	0.0	41.7

MAPID: 14500423000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: NE NE NE SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.381772

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.031976

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 450.0

LOGGED (FT.): 48.7

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			UNCONSOLIDATED	21.7	0.0	
428.3			SAND	1.1	21.7	
427.3			SHALE	6.9	22.7	
420.3			SHALE	19.0	29.7	

MAPID: 14500424000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: SE SE NW SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.386461

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.029383

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 432.7

LOGGED (FT.): 32.8

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
432.7			UNCONSOLIDATED	10.0	0.0	
422.7			CLAYSTONE	15.0	10.0	
407.7			SHALE	4.0	25.0	
403.7			SAND	1.0	29.0	
402.7			COAL	2.8	30.0	

MAPID: 14500425000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: SE NE SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.382415

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.02973

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 432.0

LOGGED (FT.): 49.0

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.0			UNCONSOLIDATED	10.0	0.0
422.0			CLAYSTONE	14.0	10.0
408.0			SHALE	2.5	24.0
405.5			SAND	1.0	26.5
404.5			COAL	0.5	27.5
404.0			UNCLASSIFIED	1.0	28.0
403.0			SHALE	15.0	29.0
388.0			SHALE	5.0	44.0

MAPID: 14500426000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.380115

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.029669

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 434.3

LOGGED (FT.): 49.7

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.3			UNCONSOLIDATED	19.7	0.0
414.6			SHALE	2.3	19.7
412.3			CONCRETION	1.4	22.0
410.9			SHALE	7.6	23.4
402.6			SHALE	0.7	31.7
396.6			SHALE	6.0	37.7
396.1			UNCLASSIFIED	0.5	38.2
386.8			CLAYSTONE	9.3	47.5
384.6			SHALE	2.2	49.7

MAPID: 14500427000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 2100' S line, 1500' E line
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.377254 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.030854 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 434.7 LOGGED (FT.): 46.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.7			UNCONSOLIDATED	22.0	0.0
412.7			SHALE	4.2	22.0
408.5			SAND	2.0	26.2
406.5			UNCLASSIFIED	5.2	28.2
401.3	CARBONDALE	BRERETON	LIMESTONE	4.2	33.4
397.1	CARBONDALE	ANNA	SHALE	3.1	37.6
394.0	CARBONDALE	HERRIN	COAL	5.5	40.7

MAPID: 14500427000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 2100' S line, 1500' E line
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.377254 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.030854 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 46.5 LOG TYPE: Drillers Log
 SOURCE: WELL TYPE: Coal Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
406.5	CARBONDALE	BRERETON	LIMESTONE & SHALE	9.4	28.5
397.1	CARBONDALE	ANNA	BLACK SHALE	3.1	37.9
394.0	CARBONDALE	HERRIN	COAL	5.5	41.0

MAPID: 14500428000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: SE NW SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.377811

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.029609

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 434.2

LOGGED (FT.): 42.0

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.2			UNCONSOLIDATED	21.0	0.0
413.2			SAND	1.0	21.0
412.2	CARBONDALE		SHALE	2.7	22.0
409.5	CARBONDALE	BRERETON	LIMESTONE	2.8	24.7
406.7	CARBONDALE	ANNA	SHALE	3.0	27.5
403.7	CARBONDALE	ENERGY	UNCLASSIFIED	5.7	30.5
398.0	CARBONDALE	HERRIN	COAL	5.8	36.2

MAPID: 14500429000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.380115

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.029669

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 433.0

LOGGED (FT.): 43.0

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.0			UNCONSOLIDATED	18.0	0.0
415.0			CLAYSTONE & SANDSTONE	6.0	18.0
409.0			UNCLASSIFIED	1.0	24.0
408.0			SHALE	12.0	25.0
396.0			UNCLASSIFIED	1.0	37.0
395.0			SHALE	2.7	38.0
392.3			UNCLASSIFIED	2.3	40.7

MAPID: 14500430000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: NW NW NW SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.380624

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.031948

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 434.0

LOGGED (FT.): 41.3

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
434.0			UNCONSOLIDATED	18.0	0.0	
416.0			SANDSTONE/SHALE	4.0	18.0	
412.0			SHALE	2.9	22.0	
409.1			SAND	2.5	24.9	
406.6			SHALE	1.0	27.4	
405.6			UNCLASSIFIED	4.6	28.4	
401.0			LIMESTONE	1.0	33.0	
400.0			SHALE	1.5	34.0	
398.5	CARBONDALE	HERRIN	COAL	5.8	35.5	

MAPID: 14500431000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: SE NW SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.377811

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.029609

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 434.1

LOGGED (FT.): 39.5

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
434.1			UNCONSOLIDATED	20.0	0.0	
414.1			CLAYSTONE & SANDSTONE	2.0	20.0	
412.1			SAND	2.0	22.0	
410.1			SHALE	5.0	24.0	
405.1			UNCLASSIFIED	4.0	29.0	
401.1			UNCLASSIFIED	0.5	33.0	
400.6	CARBONDALE	HERRIN	COAL	6.0	33.5	

MAPID: 14500432000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.38006

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.03148

DATE COLLECTED:

SURFACE ELEVATION (FT.): 434.4

LOGGED (FT.): 37.9

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
434.4			UNCONSOLIDATED	10.0	0.0	
424.4			CLAYSTONE	10.0	10.0	
414.4			CLAYSTONE	3.0	20.0	
411.4	CARBONDALE	ENERGY	SHALE	9.2	23.0	
402.2	CARBONDALE	HERRIN	COAL	5.7	32.2	

MAPID: 14500433000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 1

QUARTERS/FOOTAGES: NW NW SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.38006

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.03148

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 433.4

LOGGED (FT.): 35.3

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
433.4			UNCONSOLIDATED	20.0	0.0	
413.4			CLAYSTONE & SANDSTONE	2.2	20.0	
411.2	CARBONDALE	ENERGY	SHALE	0.5	22.2	UNCERTAIN CORRELATION
410.7	CARBONDALE	ENERGY	SAND	2.8	22.7	UNCERTAIN CORRELATION
407.9	CARBONDALE	ENERGY	SHALE	5.6	25.5	UNCERTAIN CORRELATION
402.3	CARBONDALE	HERRIN	COAL	4.2	31.1	

MAPID: 14500434000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 660' N line, 150' W line of SE SE NE
 QUADRANGLE: PYATTS LONGITUDE: -89.373762 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.032222 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 433.1 LOGGED (FT.): 41.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.1			UNCONSOLIDATED	23.2	0.0
409.9			SAND	2.1	23.2
407.9	CARBONDALE		SHALE	1.0	25.2
406.9	CARBONDALE	BRERETON	LIMESTONE	6.9	26.2
399.9	CARBONDALE	ANNA	SHALE	2.0	33.2
397.9	CARBONDALE	HERRIN	COAL	6.0	35.2

MAPID: 14500435000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 0' N line, 0' W line of SE NE SE
 QUADRANGLE: PYATTS LONGITUDE: -89.374334 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.030425 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 426.6 LOGGED (FT.): 42.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
426.6			UNCONSOLIDATED	25.4	0.0
401.2	CARBONDALE		SHALE	2.7	25.4
398.5	CARBONDALE	BRERETON	LIMESTONE	6.3	28.1
392.2	CARBONDALE	ANNA	SHALE	1.8	34.4
390.4	CARBONDALE	HERRIN	COAL	5.8	36.2

MAPID: 14501937000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 330' S line, 0' E line of NW NW NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.380034 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.032391 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 36.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.0			UNCONSOLIDATED	19.0	0.0
416.0			SAND	2.0	19.0
414.0			SHALE	8.5	21.0
405.5			COAL	1.5	29.5
404.0			CLAYSTONE	5.0	31.0

MAPID: 14502784000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 1 QUARTERS/FOOTAGES: 660' N line, 0' E line of SW NW SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.388203 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.028963 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 435.0 LOGGED (FT.): 40.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.0			UNCONSOLIDATED	20.5	0.0
414.5			SHALE	4.0	20.5
410.5			COAL	0.6	24.5
409.9			SHALE	6.9	25.1
403.0			COAL	1.3	32.0
401.7			SHALE	6.2	33.3
395.5			CLAYSTONE	0.5	39.5

MAPID: 14500436000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 2

QUARTERS/FOOTAGES: SE NW NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.405066

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.037379

DATE COLLECTED:

SURFACE ELEVATION (FT.): 451.2

LOGGED (FT.): 58.8

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
451.2			UNCONSOLIDATED	19.5	0.0	
431.7			SAND	5.3	19.5	
426.4			SHALE	15.0	24.8	
411.4			SHALE	3.5	39.8	
407.9			UNCLASSIFIED	9.8	43.3	
398.1			UNCLASSIFIED	4.4	53.1	
393.7			SHALE	1.3	57.5	

MAPID: 14500437000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 2

QUARTERS/FOOTAGES: NE SE NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.400566

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.035509

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 446.2

LOGGED (FT.): 54.5

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
446.2			UNCONSOLIDATED	22.0	0.0	
424.2			SHALE	5.5	22.0	
418.7			SHALE	3.2	27.5	
415.5			UNCLASSIFIED	0.7	30.7	
414.8	CARBONDALE		SHALE	6.3	31.4	
408.5	CARBONDALE		UNCLASSIFIED	3.0	37.7	
405.5	CARBONDALE	BRERETON	UNCLASSIFIED	6.3	40.7	
399.2	CARBONDALE	ANNA	SHALE	1.7	47.0	
397.5	CARBONDALE	HERRIN	COAL	5.8	48.7	

MAPID: 14500438000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: SE NE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.400752 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.030103 DATE COLLECTED: 6 / 0 / 1927

SURFACE ELEVATION (FT.): 435.7 LOGGED (FT.): 46.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.7			UNCONSOLIDATED	18.0	0.0
417.7			ARGILLACEOUS SANDSTONE	5.0	18.0
412.7			SHALE	4.0	23.0
408.7			CLAYSTONE & SHALE	15.0	27.0
393.7			SHALE	3.0	42.0
390.7			COAL	1.7	45.0

MAPID: 14500439000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: NE NE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.40069 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.031906 DATE COLLECTED: 6 / 0 / 1927

SURFACE ELEVATION (FT.): 440.6 LOGGED (FT.): 51.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.6			UNCONSOLIDATED	20.0	0.0
420.6			CONCRETION	4.0	20.0
416.6	CARBONDALE		SHALE	5.0	24.0
411.6	CARBONDALE		SHALE	2.0	29.0
409.6	CARBONDALE	JAMESTOWN	COAL	0.5	31.0
409.1	CARBONDALE		UNCLASSIFIED	4.5	31.5
404.6	CARBONDALE		UNCLASSIFIED	3.7	36.0
400.9	CARBONDALE		SHALE	3.3	39.7
397.6	CARBONDALE	ANNA	SHALE	2.2	43.0
395.4	CARBONDALE	HERRIN	COAL	6.6	45.2

MAPID: 14500440000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 2

QUARTERS/FOOTAGES: NW NE SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.402972

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.031941

DATE COLLECTED: 6 / 0 / 1927

SURFACE ELEVATION (FT.): 449.4

LOGGED (FT.): 66.0

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.4			UNCONSOLIDATED	43.0	0.0
406.4	CARBONDALE		SHALE	10.0	43.0
396.4	CARBONDALE	BRERETON	LIMESTONE	6.0	53.0
390.4	CARBONDALE	ANNA	SHALE	2.0	59.0
388.4	CARBONDALE	HERRIN	COAL	5.0	61.0

MAPID: 14500441000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 2

QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.403034

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.030141

DATE COLLECTED: 6 / 0 / 1927

SURFACE ELEVATION (FT.): 446.7

LOGGED (FT.): 48.0

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.7			UNCONSOLIDATED	46.5	0.0
400.2			COAL	1.5	46.5

MAPID: 14500442000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: 240' N line, 0' E line of SE NE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.3996 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.030326 DATE COLLECTED:

SURFACE ELEVATION (FT.): 437.6 LOGGED (FT.): 43.6 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.6			UNCONSOLIDATED	10.0	0.0
427.6			CLAYSTONE	10.0	10.0
417.6			SHALE	4.0	20.0
413.6			UNCLASSIFIED	3.0	24.0
410.6			SHALE	2.3	27.0
408.3			UNCLASSIFIED	1.7	29.3
406.6			UNCLASSIFIED	3.3	31.0
403.3	CARBONDALE		SHALE	3.0	34.3
400.3	CARBONDALE		UNCLASSIFIED	1.1	37.3
399.2	CARBONDALE	HERRIN	COAL	5.2	38.4

MAPID: 14500443000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.403034 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.030141 DATE COLLECTED:

SURFACE ELEVATION (FT.): 445.1 LOGGED (FT.): 48.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.1			UNCONSOLIDATED	16.0	0.0
429.1			SHALE	1.0	16.0
428.1			CLAYSTONE & SANDSTONE	4.5	17.0
423.6	CARBONDALE		SHALE	6.7	21.5
416.9	CARBONDALE		LIMESTONE	1.0	28.2
415.9	CARBONDALE		SHALE	2.0	29.2
413.9	CARBONDALE		SHALE	5.0	31.2
408.9	CARBONDALE	BRERETON	LIMESTONE	5.0	36.2
403.9	CARBONDALE		UNCLASSIFIED	0.9	41.2
403.0	CARBONDALE		UNCLASSIFIED	0.6	42.1
402.4	CARBONDALE	HERRIN	COAL	5.7	42.7

MAPID: 14500444000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 2

QUARTERS/FOOTAGES: SE SW SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.405444

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.026576

DATE COLLECTED: 6 / 0 / 1927

SURFACE ELEVATION (FT.): 443.2

LOGGED (FT.): 46.5

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.2			UNCONSOLIDATED	25.0	0.0
418.2	CARBONDALE		SHALE	6.3	25.0
411.9	CARBONDALE	JAMESTOWN	COAL	0.5	31.3
411.4	CARBONDALE		SHALE	4.5	31.8
406.9	CARBONDALE	BRERETON	LIMESTONE	3.5	36.3
403.4	CARBONDALE	ANNA	SHALE	0.5	39.8
402.9	CARBONDALE	HERRIN	COAL	6.2	40.3

MAPID: 14500445000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 2

QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.40773

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.026614

DATE COLLECTED: 6 / 0 / 1927

SURFACE ELEVATION (FT.): 443.7

LOGGED (FT.): 35.5

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.7			UNCONSOLIDATED	18.0	0.0
425.7	CARBONDALE		SHALE	7.0	18.0
418.7	CARBONDALE	ANNA	SHALE	2.5	25.0
416.2	CARBONDALE	ENERGY	UNCLASSIFIED	1.5	27.5
414.7	CARBONDALE	HERRIN	COAL	6.5	29.0

MAPID: 14500446000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 2

QUARTERS/FOOTAGES: NW SW SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.407665

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.028414

DATE COLLECTED: 6 / 0 / 1927

SURFACE ELEVATION (FT.): 451.3

LOGGED (FT.): 54.7

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.3			UNCONSOLIDATED	20.0	0.0
431.3			CONCRETION	6.0	20.0
425.3	CARBONDALE		SHALE	7.0	26.0
418.3	CARBONDALE		SHALE	2.0	33.0
416.3	CARBONDALE		UNCLASSIFIED	7.5	35.0
408.8	CARBONDALE		SHALE	1.5	42.5
407.3	CARBONDALE		SHALE	1.0	44.0
406.3	CARBONDALE	ENERGY	UNCLASSIFIED	3.5	45.0
402.8	CARBONDALE	HERRIN	COAL	6.2	48.5

MAPID: 14500447000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 2

QUARTERS/FOOTAGES: 0' N line, 200' W line of NE SW SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.405796

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.029285

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 447.1

LOGGED (FT.): 49.7

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.1			UNCONSOLIDATED	23.0	0.0
424.1			SHALE	1.0	23.0
423.1			CONCRETION	3.0	24.0
420.1	CARBONDALE		SHALE	5.2	27.0
414.9	CARBONDALE	BRERETON	LIMESTONE	4.9	32.2
410.0	CARBONDALE		SHALE	0.9	37.1
409.1	CARBONDALE		SHALE	2.4	38.0
406.7	CARBONDALE		UNCLASSIFIED	2.5	40.4
404.2	CARBONDALE	HERRIN	COAL	6.8	42.9

MAPID: 14500448000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 2

QUARTERS/FOOTAGES: SE SE SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.400875

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.026501

DATE COLLECTED: 6 / 0 / 1927

SURFACE ELEVATION (FT.): 436.0

LOGGED (FT.): 51.7

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.0			UNCONSOLIDATED	20.0	0.0
416.0			CONCRETION	4.0	20.0
412.0			SHALE	4.5	24.0
407.5			UNCLASSIFIED	2.5	28.5
405.0	CARBONDALE		SHALE	2.5	31.0
402.5	CARBONDALE	JAMESTOWN	COAL	0.5	33.5
402.0	CARBONDALE		UNCLASSIFIED	6.0	34.0
396.0	CARBONDALE	BRERETON	UNCLASSIFIED	3.0	40.0
393.0	CARBONDALE		SHALE	2.6	43.0
390.4	CARBONDALE	HERRIN	COAL	6.1	45.6

MAPID: 14500449000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 2

QUARTERS/FOOTAGES: 200' S line, 0' E line of NE SE SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.399683

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.027935

DATE COLLECTED:

SURFACE ELEVATION (FT.): 434.6

LOGGED (FT.): 50.3

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.6			UNCONSOLIDATED	19.0	0.0
415.6			SHALE	5.7	19.0
409.9			UNCLASSIFIED	2.1	24.7
407.8			SHALE	19.4	26.8
388.4			SHALE	2.0	46.2
386.4			SHALE	2.1	48.2

MAPID: 1450045000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: 475' S line, 0' E line of NE SE SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.399658 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.028694 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 435.2 LOGGED (FT.): 44.9 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.2			UNCONSOLIDATED	21.0	0.0
414.2			CONCRETION	4.2	21.0
410.0	CARBONDALE		SHALE	18.3	25.2
391.7	CARBONDALE	HERRIN	COAL	1.4	43.5

MAPID: 14500451000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: 675' S line, 0' E line of NE SE SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.39964 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.029247 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 434.0 LOGGED (FT.): 45.8 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.0			UNCONSOLIDATED	12.0	0.0
422.0	CARBONDALE		SAND	5.0	12.0
417.0	CARBONDALE		SHALE	24.1	17.0
392.9	CARBONDALE	HERRIN	COAL	4.7	41.1

MAPID: 14500452000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: 170' S line, 0' E line of NW SE SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.401969 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.02789 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 443.2 LOGGED (FT.): 45.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.2			UNCONSOLIDATED	24.0	0.0
419.2	CARBONDALE		SHALE	7.0	24.0
412.2	CARBONDALE		SHALE	5.8	31.0
406.4	CARBONDALE	BRERETON	LIMESTONE	1.4	36.8
405.0	CARBONDALE	ENERGY	UNCLASSIFIED	1.0	38.2
404.0	CARBONDALE	HERRIN	COAL	0.7	39.2
403.3	CARBONDALE	HERRIN	COAL	5.3	39.9

MAPID: 14500453000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: 200' S line, 1000' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.394095 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.026039 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 422.5 LOGGED (FT.): 59.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
422.5			UNCONSOLIDATED	11.0	0.0	
411.5			CONCRETION	6.5	11.0	
405.0			SHALE	10.0	17.5	
395.0			SHALE	2.0	27.5	
393.0			SHALE	10.0	29.5	
383.0			SHALE	3.0	39.5	
380.0			SHALE	0.3	42.5	
379.7			SHALE	1.7	42.8	
378.0			UNCLASSIFIED	7.8	44.5	
370.2	CARBONDALE		UNCLASSIFIED	0.5	52.3	
369.7	CARBONDALE		SHALE	0.8	52.8	
368.9	CARBONDALE	HERRIN	COAL	6.1	53.6	

MAPID: 14500453000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: 200' S line, 1000' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.394095 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.026039 DATE COLLECTED:

SURFACE ELEVATION (FT.): 423.0 LOGGED (FT.): 60.2 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.4	CARBONDALE	LAWSON	GRAY SHALE	10.0	19.6	
393.4	CARBONDALE	LAWSON	DARK GRAY SHALE	2.0	29.6	
391.4	CARBONDALE	LAWSON	MOTTLED SHALE	10.0	31.6	
381.4	CARBONDALE	LAWSON	DARK GRAY SHALE	3.0	41.6	
378.4	CARBONDALE	LAWSON	GRAY SHALE	0.3	44.6	
378.1	CARBONDALE	BRERETON	LIMESTONE	8.1	44.9	
370.0	CARBONDALE	ANNA	BLACK SHALE	1.0	53.0	
369.0	CARBONDALE	HERRIN	COAL	6.2	54.0	

MAPID: 14500454000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 2

QUARTERS/FOOTAGES: NW SE SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.393959

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.028192

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 425.6

LOGGED (FT.): 56.2

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.6			UNCONSOLIDATED	15.0	0.0
410.6			CONCRETION	6.5	15.0
404.1	CARBONDALE		SHALE	3.3	21.5
400.8	CARBONDALE		SHALE	7.0	24.8
393.8	CARBONDALE		SHALE	2.2	31.8
391.6	CARBONDALE		LIMESTONE	6.5	34.0
385.1	CARBONDALE	BRERETON	LIMESTONE	7.5	40.5
377.6	CARBONDALE		UNCLASSIFIED	0.4	48.0
377.2	CARBONDALE	ANNA	SHALE	1.2	48.4
376.0	CARBONDALE	HERRIN	COAL	6.6	49.6

MAPID: 14500455000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 2

QUARTERS/FOOTAGES: NE SE SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.391677

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.028154

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 433.2

LOGGED (FT.): 51.5

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.2			UNCONSOLIDATED	21.0	0.0
412.2			SANDSTONE/SHALE	8.0	21.0
404.2			SHALE	5.0	29.0
399.2			CLAYSTONE & SHALE	10.5	34.0
388.7			COAL	2.6	44.5
386.1			CLAYSTONE	4.4	47.1

MAPID: 14500456000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.391739 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.026349 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 428.2 LOGGED (FT.): 59.1 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.2			UNCONSOLIDATED	16.0	0.0
412.2			SAND	1.7	16.0
410.5	CARBONDALE		SHALE	7.0	17.7
403.5	CARBONDALE		SHALE	11.5	24.7
392.0	CARBONDALE		LIMESTONE	5.3	36.2
386.7	CARBONDALE	BRERETON	LIMESTONE	9.8	41.5
376.9	CARBONDALE		UNCLASSIFIED	0.4	51.3
376.5	CARBONDALE	ANNA	SHALE	1.2	51.7
375.3	CARBONDALE	HERRIN	COAL	6.2	52.9

MAPID: 14500457000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: 660' S line, 0' W line of SW SE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.395133 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.027327 DATE COLLECTED:

SURFACE ELEVATION (FT.): 425.1 LOGGED (FT.): 60.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.1			UNCONSOLIDATED	19.6	0.0
405.5			UNCLASSIFIED	1.9	19.6
403.6			CLAYSTONE	1.5	21.5
402.1			UNCLASSIFIED	0.5	23.0
401.6			CLAYSTONE	7.5	23.5
394.1			SHALE	7.7	31.0
386.4			SHALE	1.3	38.7
385.1			UNCLASSIFIED	3.7	40.0
381.4			UNCLASSIFIED	1.2	43.7
380.2	CARBONDALE		SHALE	2.8	44.9
377.4	CARBONDALE		SHALE	6.5	47.7
370.9	CARBONDALE	HERRIN	COAL	6.2	54.2

MAPID: 14500458000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: 0' S line, 660' E line of SE NE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.392806 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.029075 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 49.1 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	14.0	0.0
416.0			CLAYSTONE	7.0	14.0
409.0			UNCLASSIFIED	1.0	21.0
408.0			SHALE	8.0	22.0
400.0			CLAYSTONE	6.0	30.0
394.0			UNCLASSIFIED	1.0	36.0
393.0			CLAYSTONE	2.0	37.0
391.0			UNCLASSIFIED	2.5	39.0
388.5			SHALE	1.2	41.5
386.7			SHALE	5.8	43.3
380.9			COAL	0.0	49.1

MAPID: 14501940000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: SE SE NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.391494 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.033568 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 425.0 LOGGED (FT.): 36.3 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.0			UNCONSOLIDATED	19.0	0.0
406.0			CONCRETION	4.0	19.0
402.0			SHALE	6.0	23.0
396.0			CLAYSTONE	4.0	29.0
392.0			COAL	34.3	33.0

MAPID: 14501941000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: 0' N line, 660' W line of SW SE NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.392585 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.034485 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 39.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	21.0	0.0
409.0			SHALE	1.0	21.0
408.0			CONCRETION	2.5	22.0
405.5			LIMESTONE	0.2	24.5
405.3			SHALE	2.0	24.7
403.3			UNCLASSIFIED	2.5	26.7
400.8	CARBONDALE	BRERETON	LIMESTONE	3.0	29.2
397.8	CARBONDALE		SHALE	0.8	32.2
397.0	CARBONDALE		SHALE	1.0	33.0
396.0	CARBONDALE	HERRIN	COAL	5.7	34.0

MAPID: 14502785000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 2 QUARTERS/FOOTAGES: 415' S line, 303' E line of SE SE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.391644 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.026592 DATE COLLECTED: 0 / 0 / 1939

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 100.0 LOG TYPE: Drillers Log

SOURCE: CHAS. KILLINGSWORTH WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	10.0	0.0
420.0			UNCLASSIFIED	6.0	10.0
414.0			CLAYSTONE	21.0	16.0
393.0			SHALE	2.0	37.0
391.0			COAL	3.0	39.0
388.0			CLAYSTONE	3.0	42.0
385.0			LIMESTONE	10.0	45.0
375.0			SHALE	10.0	55.0
365.0			LIMESTONE	17.0	65.0
348.0			SHALE	18.0	82.0

MAPID: 14502473000C VERSION: 1

PROJECT: CUSMAP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 3 QUARTERS/FOOTAGES: 330' N line, 330' E line of NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.414476 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.032086 DATE COLLECTED: 1 / 0 / 1950

SURFACE ELEVATION (FT.): 451.0 LOGGED (FT.): 730.0 LOG TYPE: Electric Log

SOURCE: KINGWOOD OIL CO WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
245.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	206.0	
191.0	SPOON	DAVIS	UNCLASSIFIED	-	260.0	
-279.0	BASE OF PENN.		UNCLASSIFIED	-	730.0	

MAPID: 14590108000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 3 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.415597 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.034577 DATE COLLECTED: 6 / 20 / 1984

SURFACE ELEVATION (FT.): 454.9 LOGGED (FT.): 108.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 7631 WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
454.9	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0	
429.9	MODESTO		SHALE	1.5	25.0	WEATHERED
428.4	MODESTO	PIASA	LIMESTONE	9.0	26.5	
419.4			GRAY SHALE	8.0	35.5	
411.4	CARBONDALE	GALUM	LIMESTONE	1.2	43.5	
410.2	CARBONDALE		CALCAREOUS SHALE	4.7	44.7	
405.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.6	49.4	
401.9	CARBONDALE		GRAY SHALE	8.0	53.0	
393.9	CARBONDALE	CONANT	LIMESTONE	1.4	61.0	DARK
392.5	CARBONDALE		GRAY SHALE	3.7	62.4	DARK
388.8	CARBONDALE		BLACK SHALE	0.3	66.1	
388.5	CARBONDALE		GRAY SHALE	8.5	66.4	DARK
380.0	CARBONDALE	BRERETON	LIMESTONE	5.1	74.9	DARK
374.9	CARBONDALE	ANNA	BLACK SHALE	2.2	80.0	
372.7	CARBONDALE	HERRIN	COAL	5.8	82.2	
366.9	CARBONDALE		UNDERCLAY	2.3	88.0	
364.6	CARBONDALE		SANDSTONE/LIMESTONE	2.7	90.3	
361.9	CARBONDALE		SHALE	5.8	93.0	
356.1	CARBONDALE	ST. DAVID	SHALE WITH LIMESTONE	4.2	98.8	
351.9	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	103.0	
351.4	CARBONDALE	SPRINGFIELD	COAL	1.5	103.5	
349.9	CARBONDALE		UNDERCLAY	3.0	105.0	

MAPID: 14590109000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 3 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.423036

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.037097

DATE COLLECTED: 8 / 20 / 1984

SURFACE ELEVATION (FT.): 452.6 LOGGED (FT.): 123.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 7814

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
452.6	PLEISTOCENE		UNCONSOLIDATED	13.5	0.0	
439.1			SHALE	16.5	13.5	WEATHERED
422.6			GRAY SHALE	7.3	30.0	
415.3	CARBONDALE	BANKSTON FORK	LIMESTONE	11.1	37.3	
404.2	CARBONDALE		GRAY SHALE	6.4	48.4	
397.8	CARBONDALE		GRAY SHALE & LIMESTONE	8.2	54.8	
389.6	CARBONDALE	CONANT	LIMESTONE	4.0	63.0	
385.6	CARBONDALE		GRAY SHALE	1.8	67.0	
383.8	CARBONDALE		GRAY SHALE & LIMESTONE	15.2	68.8	
368.6	CARBONDALE	BRERETON	LIMESTONE	6.1	84.0	
362.5	CARBONDALE	BRERETON	LIMESTONE	2.4	90.1	
360.1	CARBONDALE	ANNA	BLACK SHALE	0.4	92.5	
359.7	CARBONDALE	HERRIN	COAL	5.5	92.9	
354.2	CARBONDALE		UNDERCLAY	1.9	98.4	
352.3	CARBONDALE		SANDSTONE/LIMESTONE	2.7	100.3	
349.6	CARBONDALE		SHALE	8.5	103.0	
341.1	CARBONDALE		GRAY SHALE & LIMESTONE	4.5	111.5	
336.6	CARBONDALE	ST. DAVID	LIMESTONE	0.6	116.0	
336.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.2	116.6	
335.8	CARBONDALE	SPRINGFIELD	COAL	3.7	116.8	
332.1	CARBONDALE		UNDERCLAY	2.5	120.5	

MAPID: 14590112000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 3 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.427029

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.037122

DATE COLLECTED: 5 / 15 / 1963

SURFACE ELEVATION (FT.): 454.1 LOGGED (FT.): 126.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL EX-184-K

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
454.1	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0	
437.1	MODESTO		SHALE	5.5	17.0	RED
431.6	MODESTO		GRAY SHALE	8.0	22.5	
423.6	CARBONDALE	DANVILLE	COAL	0.6	30.5	
423.0	CARBONDALE		GRAY SHALE	3.1	31.1	
419.9	CARBONDALE	BANKSTON FORK	LIMESTONE	10.3	34.2	
409.6	CARBONDALE		GRAY SHALE	1.3	44.5	
408.3	CARBONDALE		LIMESTONE	1.8	45.8	
406.5	CARBONDALE		GRAY SHALE	5.3	47.6	
401.3	CARBONDALE		LIMESTONE	0.9	52.8	
400.4	CARBONDALE		SHALE WITH LIMESTONE	6.9	53.7	
393.4	CARBONDALE		LIMESTONE	4.5	60.7	
388.9	CARBONDALE		GRAY SHALE	10.6	65.2	
378.4	CARBONDALE	CONANT	SHALY LIMESTONE	3.6	75.7	DARK
374.8	CARBONDALE	JAMESTOWN	COAL	0.4	79.3	
374.4	CARBONDALE		SHALE	2.3	79.7	
372.0	CARBONDALE		CALCAREOUS SHALE	5.8	82.1	
366.3	CARBONDALE	BRERETON	LIMESTONE	3.4	87.8	
362.9	CARBONDALE	HERRIN	COAL	6.1	91.2	
356.8	CARBONDALE		UNDERCLAY	3.7	97.3	
353.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.3	101.0	
349.8	CARBONDALE		SANDY SHALE	2.3	104.3	
347.5	CARBONDALE		GRAY SHALE	10.1	106.6	
337.4	CARBONDALE	ST. DAVID	LIMESTONE	2.4	116.7	
335.0	CARBONDALE		GRAY SHALE	2.7	119.1	
332.3	CARBONDALE	SPRINGFIELD	COAL	2.8	121.8	
329.6	CARBONDALE		UNDERCLAY	1.5	124.5	

MAPID: 14590114000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 3 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.42526

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.040268

DATE COLLECTED: 5 / 9 / 1963

SURFACE ELEVATION (FT.): 459.0

LOGGED (FT.): 127.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL EX-182-K

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
459.0	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0	
440.0	MODESTO		SANDY SHALE	4.0	19.0	
436.0	MODESTO		GRAY SHALE	17.3	23.0	
418.7	CARBONDALE	DANVILLE	COAL	0.6	40.3	
418.2	CARBONDALE	GALUM	LIMESTONE	3.9	40.8	
414.2	CARBONDALE		GRAY SHALE	1.0	44.8	
413.2	CARBONDALE	BANKSTON FORK	LIMESTONE	8.3	45.8	
404.9	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.2	54.1	
403.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.2	55.3	
401.6	CARBONDALE		GRAY SHALE	5.4	57.4	
396.2	CARBONDALE		LIMESTONE	1.3	62.8	
394.8	CARBONDALE		CALCAREOUS SHALE	2.1	64.2	
392.7	CARBONDALE		GRAY SHALE	1.2	66.3	
391.6	CARBONDALE	CONANT	LIMESTONE	8.3	67.4	
383.2	CARBONDALE		GRAY SHALE	7.8	75.8	
375.4	CARBONDALE		LIMESTONE	1.6	83.6	DARK
373.8	CARBONDALE		GRAY SHALE	2.5	85.2	
371.3	CARBONDALE	JAMESTOWN	COAL	0.7	87.7	
370.7	CARBONDALE		SHALE	5.8	88.3	
364.8	CARBONDALE	BRERETON	LIMESTONE	5.6	94.2	
359.3	CARBONDALE	ANNA	BLACK SHALE	1.9	99.7	
357.3	CARBONDALE	HERRIN	COAL	6.5	101.7	
350.8	CARBONDALE		UNDERCLAY	1.5	108.2	
349.3	CARBONDALE	HIGGINSVILLE	SANDY LIMESTONE	1.8	109.7	
347.5	CARBONDALE		SANDY SHALE	10.8	111.5	
336.8	CARBONDALE	SPRINGFIELD	COAL	2.8	122.2	
333.9	CARBONDALE		UNDERCLAY	1.9	125.1	

MAPID: 14590139000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 3 QUARTERS/FOOTAGES: 54' S line, 30' W line of NW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.426981

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.036914

DATE COLLECTED: 5 / 15 / 1963

SURFACE ELEVATION (FT.): 454.1 LOGGED (FT.): 125.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY EX-184-K

WELL TYPE: Coal Test

COMMENT: PERMIT 292 CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
454.1	PLEISTOCENE		CLAY	17.0	0.0	
437.1	MODESTO		SHALY SANDSTONE	5.5	17.0	
431.6	MODESTO		GRAY SHALE	4.7	22.5	
426.9	MODESTO		GRAY SHALE	2.3	27.2	HARD BANDS
424.7	MODESTO		GRAY SHALE	1.1	29.4	SOFT
423.6	CARBONDALE	DANVILLE	COAL	0.6	30.5	
423.0	CARBONDALE		GRAY SHALE	3.1	31.1	SOFT
419.9	CARBONDALE	GALUM	LIMESTONE	10.3	34.2	
409.6	CARBONDALE		GRAY SHALE	1.3	44.5	SOFT
408.3	CARBONDALE	BANKSTON FORK	LIMESTONE	1.8	45.8	
406.5	CARBONDALE		GRAY SHALE	5.3	47.6	SOFT
401.3	CARBONDALE		LIMESTONE	0.9	52.8	
400.3	CARBONDALE		GRAY SHALE	6.9	53.8	SOFT
393.4	CARBONDALE	CONANT	LIMESTONE	4.5	60.7	
388.9	CARBONDALE		GRAY SHALE	10.6	65.2	
378.3	CARBONDALE		CALCAREOUS BLACK SHALES	3.6	75.8	
374.8	CARBONDALE	JAMESTOWN	COAL	0.4	79.3	
374.3	CARBONDALE		DARK SHALE	2.3	79.8	SOFT
372.0	CARBONDALE		CALCAREOUS BLACK SHALES	5.8	82.1	
366.3	CARBONDALE	BRERETON	LIMESTONE	3.4	87.8	
362.8	CARBONDALE	HERRIN	COAL	6.1	91.3	
356.8	CARBONDALE		UNDERCLAY	3.7	97.3	
353.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.3	101.0	
349.8	CARBONDALE		SANDY SHALE	2.3	104.3	
347.5	CARBONDALE		CALCAREOUS SHALE	10.1	106.6	
337.4	CARBONDALE	ST. DAVID	LIMESTONE	2.4	116.7	
335.0	CARBONDALE		GRAY SHALE	1.7	119.1	
333.3	CARBONDALE	SPRINGFIELD	COAL	2.8	120.8	
330.6	CARBONDALE		UNDERCLAY	1.5	123.5	

MAPID: 14590141000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 3 QUARTERS/FOOTAGES: 40' N line, 500' W line of NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.425211 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.040256 DATE COLLECTED: 4 / 9 / 1963

SURFACE ELEVATION (FT.): 459.0 LOGGED (FT.): 127.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY EX-182-K WELL TYPE: Coal Test

COMMENT: PERMIT 292 CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
459.0	PLEISTOCENE		CLAY	19.0	0.0	
440.0	MODESTO		SANDY SHALE	4.0	19.0	TAN
436.0	MODESTO		GRAY SHALE	17.3	23.0	
418.7	CARBONDALE	DANVILLE	COAL	0.6	40.3	
418.2	CARBONDALE		LIMESTONE	3.9	40.8	
414.2	CARBONDALE		GRAY SHALE	1.0	44.8	
413.2	CARBONDALE	GALUM	LIMESTONE	8.3	45.8	
404.9	CARBONDALE		GRAY SHALE	1.2	54.1	
403.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.2	55.3	
401.6	CARBONDALE		GRAY SHALE	5.4	57.4	
396.2	CARBONDALE		LIMESTONE	1.3	62.8	
394.8	CARBONDALE		CALCAREOUS SHALE	2.2	64.2	
392.7	CARBONDALE		GRAY SHALE	1.2	66.3	
391.6	CARBONDALE	CONANT	LIMESTONE	8.3	67.4	
383.2	CARBONDALE		DARK SHALE	7.8	75.8	
375.4	CARBONDALE		LIMESTONE	1.6	83.6	
373.8	CARBONDALE		GRAY SHALE	2.5	85.2	
371.3	CARBONDALE	JAMESTOWN	COAL	0.7	87.7	
370.7	CARBONDALE		DARK SHALE	5.8	88.3	
364.8	CARBONDALE	BRERETON	LIMESTONE	5.6	94.2	
359.2	CARBONDALE	ANNA	BLACK SHALE	1.9	99.8	
357.3	CARBONDALE	HERRIN	COAL	6.5	101.7	
350.8	CARBONDALE		UNDERCLAY	1.5	108.2	
349.3	CARBONDALE		SANDY LIMESTONE	1.8	109.7	
347.5	CARBONDALE		SANDY SHALE	10.8	111.5	
336.7	CARBONDALE	SPRINGFIELD	COAL	2.8	122.3	
333.9	CARBONDALE		UNDERCLAY	1.9	125.1	

MAPID: 14528641000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES: 1300' N line, 2900' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.437201 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.037006 DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.2 LOGGED (FT.): 136.0 LOG TYPE: Drillers Log

SOURCE: PINCKNEYVILLE MINING 8318 WELL TYPE: Coal Test

COMMENT: PERMIT 233; CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
453.2	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0	CONTAINING BOULDER SIZE LIMESTONE
435.2	MODESTO		SHALE	7.3	18.0	WEATHERED
427.9	MODESTO		GRAY SHALE	15.7	25.3	
412.2	CARBONDALE	DANVILLE	COAL	1.7	41.0	
410.5	CARBONDALE		GRAY SHALE	0.9	42.7	
409.6	CARBONDALE		LIMESTONE	14.9	43.6	
394.7	CARBONDALE		GRAY SHALE	7.5	58.5	
387.2	CARBONDALE		CALCAREOUS SHALE	8.0	66.0	
379.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.6	74.0	
374.6	CARBONDALE		GRAY SHALE	2.2	78.6	
372.4	CARBONDALE		SHALE	6.8	80.8	DARK GRAY
365.6	CARBONDALE	CONANT	LIMESTONE	1.7	87.6	DARK GRAY
363.9	CARBONDALE	JAMESTOWN	SHALE	3.3	89.3	DARK GRAY
360.6	CARBONDALE	JAMESTOWN	SHALE	0.4	92.6	SLATEY, BLACK
360.2	CARBONDALE	JAMESTOWN	SHALE	6.3	93.0	DARK GRAY
353.9	CARBONDALE	BRERETON	LIMESTONE	5.7	99.3	DARK GRAY
348.2	CARBONDALE	ANNA	SHALE	2.1	105.0	SLATEY, BLACK
346.1	CARBONDALE	HERRIN	COAL	5.8	107.1	
340.3	CARBONDALE		UNDERCLAY	2.2	112.9	
338.1	CARBONDALE		SHALE & SANDSTONE	2.2	115.1	INTERBEDDED
335.9	CARBONDALE		SHALE & SANDSTONE	9.7	117.3	INTERBEDDED SDYSH & SS
326.2	CARBONDALE		GRAY SHALE	1.1	127.0	
325.1	CARBONDALE		SHALE	1.4	128.1	DARK GRAY
323.7	CARBONDALE	SPRINGFIELD	COAL	3.5	129.5	
320.2	CARBONDALE		UNDERCLAY	3.0	133.0	

MAPID: 14590111000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.428617

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.034522

DATE COLLECTED: 10 / 31 / 1962

SURFACE ELEVATION (FT.): 431.0

LOGGED (FT.): 101.3

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL EX-151-K

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.0	PLEISTOCENE		UNCONSOLIDATED	10.2	0.0
420.8	MODESTO	PIASA	LIMESTONE	11.3	10.2
409.5			GRAY SHALE	0.8	21.5
408.7	CARBONDALE	GALUM	LIMESTONE	2.3	22.3
406.3	CARBONDALE		GRAY SHALE	5.8	24.7
400.5	CARBONDALE		CALCAREOUS SHALE	1.6	30.5
398.9	CARBONDALE		GRAY SHALE	1.3	32.1
397.6	CARBONDALE		CALCAREOUS SHALE	4.2	33.4
393.4	CARBONDALE	BANKSTON FORK	LIMESTONE	5.7	37.6
387.7	CARBONDALE		GRAY SHALE	8.0	43.3
379.7	CARBONDALE		CALCAREOUS SHALE	3.7	51.3
376.1	CARBONDALE	JAMESTOWN	COAL	0.3	54.9
375.7	CARBONDALE		CALCAREOUS SHALE	8.0	55.3
367.7	CARBONDALE	BRERETON	LIMESTONE	6.7	63.3
361.1	CARBONDALE	HERRIN	COAL	5.4	69.9
355.7	CARBONDALE		UNDERCLAY	2.8	75.3
352.9	CARBONDALE		GRAY SHALE	2.2	78.1
350.7	CARBONDALE		GRAY SHALE & SANDSTONE	4.4	80.3
346.3	CARBONDALE		SANDSTONE	1.3	84.7
345.1	CARBONDALE		SHALE	7.8	85.9
337.3	CARBONDALE		SANDSTONE	0.4	93.7
336.9	CARBONDALE	ST. DAVID	LIMESTONE	1.8	94.1
335.2	CARBONDALE	SPRINGFIELD	COAL	3.5	95.8
331.7	CARBONDALE		UNDERCLAY	2.0	99.3

MAPID: 14590113000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.428306

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.031156

DATE COLLECTED: 10 / 10 / 1971

SURFACE ELEVATION (FT.): 428.4 LOGGED (FT.): 90.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 1104

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
428.4	PLEISTOCENE		UNCONSOLIDATED	13.6	0.0	
414.8	PLEISTOCENE		UNCONSOLIDATED	19.5	13.6	
395.3	CARBONDALE		GRAY SHALE	6.3	33.1	
389.0	CARBONDALE	BRERETON	LIMESTONE	1.9	39.4	DARK
387.1	CARBONDALE	BRERETON	SHALE WITH LIMESTONE	8.3	41.3	DARK
378.8	CARBONDALE	BRERETON	LIMESTONE	6.9	49.6	DARK
371.9	CARBONDALE	ANNA	BLACK SHALE	1.3	56.5	
370.6	CARBONDALE	HERRIN	COAL	5.3	57.8	
365.3	CARBONDALE		UNDERCLAY	2.5	63.1	
362.8	CARBONDALE		GRAY SHALE	3.3	65.6	
359.5	CARBONDALE		GRAY SHALE & SANDSTONE	1.2	68.9	
358.3	CARBONDALE		SHALY SANDSTONE	8.8	70.1	
349.5	CARBONDALE		GRAY SHALE & SANDSTONE	7.3	78.9	
342.2	CARBONDALE	SPRINGFIELD	COAL	2.4	86.2	
339.8	CARBONDALE		UNDERCLAY	1.4	88.6	

MAPID: 14590115000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.317612

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.025946

DATE COLLECTED: 9 / 27 / 1974

SURFACE ELEVATION (FT.): 426.0 LOGGED (FT.): 93.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 1078

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
426.0	PLEISTOCENE		UNCONSOLIDATED	28.9	0.0
397.1	CARBONDALE		SHALE	1.2	28.9
395.9	CARBONDALE	BANKSTON FORK	LIMESTONE	5.1	30.1
390.8	CARBONDALE		GRAY SHALE	11.0	35.2
379.8	CARBONDALE		GRAY SHALE & LIMESTONE	10.7	46.2
369.1	CARBONDALE	BRERETON	LIMESTONE	5.5	56.9
363.6	CARBONDALE	HERRIN	COAL	6.2	62.4
357.4	CARBONDALE		UNDERCLAY	1.8	68.6
355.6	CARBONDALE		GRAY SHALE	2.1	70.4
353.5	CARBONDALE		SHALY SANDSTONE	2.3	72.5
351.2	CARBONDALE		SANDSTONE	2.8	74.8
348.4	CARBONDALE		GRAY SHALE & SANDSTONE	6.4	77.6
342.0	CARBONDALE	ST. DAVID	LIMESTONE	4.1	84.0
337.9	CARBONDALE	SPRINGFIELD	COAL	3.1	88.1
334.8	CARBONDALE		UNDERCLAY	1.8	91.2

MAPID: 14590116000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.435054

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.033052

DATE COLLECTED: 10 / 1 / 1974

SURFACE ELEVATION (FT.): 437.4 LOGGED (FT.): 107.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 1100

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
437.4	PLEISTOCENE		UNCONSOLIDATED	13.6	0.0	
423.8	MODESTO		SHALE	4.3	13.6	WEATHERED
419.5	MODESTO		GRAY SHALE	4.2	17.9	
415.3	MODESTO	PIASA	LIMESTONE	14.3	22.1	
401.0			SHALE W/ LIME NODULES	6.9	36.4	
394.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.6	43.3	
389.5	CARBONDALE		GRAY SHALE	2.5	47.9	
387.0	CARBONDALE		SHALE W/ LIME NODULES	20.4	50.4	
366.6	CARBONDALE	BRERETON	LIMESTONE	4.3	70.8	
362.3	CARBONDALE	ANNA	BLACK SHALE	0.5	75.1	
361.8	CARBONDALE	HERRIN	COAL	5.4	75.6	
356.4	CARBONDALE		UNDERCLAY	2.3	81.0	
354.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.2	83.3	WITH SANDSTONE
351.9	CARBONDALE		GRAY SHALE & SANDSTONE	14.5	85.5	
337.4	CARBONDALE		SHALE	0.3	100.0	
337.1	CARBONDALE	SPRINGFIELD	COAL	3.8	100.3	
333.3	CARBONDALE		UNDERCLAY	2.9	104.1	

MAPID: 14590117000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.428147

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.029577

DATE COLLECTED: 10 / 11 / 1974

SURFACE ELEVATION (FT.): 428.6 LOGGED (FT.): 82.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 1107

WELL TYPE: Coal Test

COMMENT: PERMIT #233 X-SECTIONS CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.6	PLEISTOCENE		UNCONSOLIDATED	11.4	0.0
417.2	PLEISTOCENE		UNCONSOLIDATED	10.0	11.4
407.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.1	21.5
403.0	CARBONDALE		GRAY SHALE	8.4	25.6
394.6	CARBONDALE	CONANT	LIMESTONE	0.7	34.0
393.9	CARBONDALE		SHALE WITH LIMESTONE	16.1	34.7
377.8	CARBONDALE	BRERETON	LIMESTONE	3.3	50.8
374.5	CARBONDALE	HERRIN	COAL	5.3	54.1
369.2	CARBONDALE		UNDERCLAY	2.5	59.4
366.7	CARBONDALE		SANDSTONE	7.5	61.9
359.2	CARBONDALE		GRAY SHALE	5.5	69.4
353.7	CARBONDALE	ST. DAVID	LIMESTONE	2.4	74.9
351.3	CARBONDALE	SPRINGFIELD	COAL	3.1	77.3
348.2	CARBONDALE		UNDERCLAY	1.6	80.4

MAPID: 14590122000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.450225

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.026282

DATE COLLECTED:

SURFACE ELEVATION (FT.): 449.0

LOGGED (FT.): 100.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL 418

WELL TYPE: Coal Test

COMMENT: PERMIT #233 FROM STRAT-COL CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.0	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
423.0			SHALE	2.5	26.0
420.5	CARBONDALE	GALUM	LIMESTONE	1.5	28.5
419.0	CARBONDALE		SHALE	6.5	30.0
412.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	36.5
408.0	CARBONDALE		SHALE	13.0	41.0
395.0	CARBONDALE	JAMESTOWN	COAL	0.5	54.0
394.5	CARBONDALE		SHALE	7.5	54.5
387.0	CARBONDALE	BRERETON	LIMESTONE	6.0	62.0
381.0	CARBONDALE	HERRIN	COAL	5.5	68.0
375.5	CARBONDALE		UNDERCLAY	4.5	73.5
371.0	CARBONDALE		SHALE	11.0	78.0
360.0	CARBONDALE		SHALE	2.5	89.0
357.5	CARBONDALE	ST. DAVID	LIMESTONE	2.5	91.5
355.0	CARBONDALE	SPRINGFIELD	COAL	3.0	94.0
352.0	CARBONDALE		UNDERCLAY	3.0	97.0

MAPID: 14590123000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES:

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.43637

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.033259

DATE COLLECTED:

SURFACE ELEVATION (FT.): 451.0

LOGGED (FT.): 170.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL

WELL TYPE: Coal Test

COMMENT: PERMIT #233 FROM STRAT-COL CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.0	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
421.0	MODESTO	PIASA	LIMESTONE	3.0	30.0
418.0	MODESTO	PIASA	SHALE	2.0	33.0
416.0	MODESTO	PIASA	LIMESTONE	12.0	35.0
404.0			SHALE	13.0	47.0
391.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	60.0
384.0	CARBONDALE		SHALE	13.0	67.0
371.0	CARBONDALE	BRERETON	LIMESTONE	10.0	80.0
361.0	CARBONDALE	ANNA	BLACK SHALE	4.0	90.0
357.0	CARBONDALE	HERRIN	COAL	5.0	94.0
352.0	CARBONDALE		UNDERCLAY	5.0	99.0
347.0	CARBONDALE		SHALE WITH LIMESTONE	16.0	104.0
331.0	CARBONDALE	SPRINGFIELD	COAL	2.0	120.0
329.0	CARBONDALE		UNDERCLAY	3.0	122.0
326.0	CARBONDALE		SHALE WITH LIMESTONE	11.0	125.0
315.0	CARBONDALE		LIMESTONE	4.0	136.0

MAPID: 14590137000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES: NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.434155 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.031406 DATE COLLECTED: 10 / 7 / 1974

SURFACE ELEVATION (FT.): 437.4 LOGGED (FT.): 116.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 1100 WELL TYPE: Coal Test

COMMENT: PERMIT 292 CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.4	PLEISTOCENE		CLAY	13.6	0.0
423.8	CARBONDALE		SHALE	4.3	13.6
419.5	CARBONDALE		GRAY SHALE	4.2	17.9
415.3	CARBONDALE	BANKSTON FORK	LIMESTONE	14.3	22.1
401.0	CARBONDALE		CALCAREOUS SHALE	15.9	36.4
385.1	CARBONDALE	CONANT	LIMESTONE	4.6	52.3
380.5	CARBONDALE		GRAY SHALE	2.5	56.9
378.0	CARBONDALE		CALCAREOUS SHALE	20.4	59.4
357.6	CARBONDALE	BRERETON	LIMESTONE	4.3	79.8
353.3	CARBONDALE	ANNA	BLACK SHALE	0.5	84.1
352.8	CARBONDALE	HERRIN	COAL	5.4	84.6
347.4	CARBONDALE		UNDERCLAY	2.3	90.0
345.1	CARBONDALE		GRAY SHALE	2.2	92.3
342.9	CARBONDALE		SHALY SANDSTONE	14.5	94.5
328.4	CARBONDALE		DARK SHALE	0.3	109.0
328.1	CARBONDALE	SPRINGFIELD	COAL	3.8	109.3
324.3	CARBONDALE		UNDERCLAY	2.9	113.1

MAPID: 14590138000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES: NE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.429583 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.031353 DATE COLLECTED: 10 / 10 / 1971

SURFACE ELEVATION (FT.): 428.4 LOGGED (FT.): 90.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 1104 WELL TYPE: Coal Test

COMMENT: PERMIT 292 CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.4	PLEISTOCENE		CLAY	13.6	0.0
414.8	PLEISTOCENE		UNCONSOLIDATED	19.5	13.6
395.3	CARBONDALE		GRAY SHALE	6.3	33.1
389.0	CARBONDALE	CONANT	LIMESTONE	1.9	39.4
387.1	CARBONDALE		CALCAREOUS BLACK SHALES	8.3	41.3
378.8	CARBONDALE	BRERETON	LIMESTONE	6.9	49.6
371.9	CARBONDALE	ANNA	BLACK SHALE	1.3	56.5
370.6	CARBONDALE	HERRIN	COAL	5.3	57.8
365.3	CARBONDALE		UNDERCLAY	2.5	63.1
362.8	CARBONDALE		GRAY SHALE	3.3	65.6
359.5	CARBONDALE		SANDY SHALE	1.2	68.9
358.3	CARBONDALE		SHALY SANDSTONE	8.8	70.1
349.5	CARBONDALE		SANDY SHALE	7.3	78.9
342.2	CARBONDALE	SPRINGFIELD	COAL	2.4	86.2
339.8	CARBONDALE		UNDERCLAY	1.4	88.6

MAPID: 14590140000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES: 500' S line, 900' W line of SE NE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.428606

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.034539

DATE COLLECTED: 10 / 31 / 1962

SURFACE ELEVATION (FT.): 431.0

LOGGED (FT.): 101.4

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY EX 151 K

WELL TYPE: Coal Test

COMMENT: PERMIT 292 CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.0	PLEISTOCENE		CLAY	10.2	0.0
420.8	CARBONDALE	GALUM	LIMESTONE	11.3	10.2
409.5	CARBONDALE		GRAY SHALE	0.8	21.5
408.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	22.3
406.3	CARBONDALE		GRAY SHALE	5.9	24.7
400.4	CARBONDALE		CALCAREOUS SHALE	1.6	30.6
398.8	CARBONDALE		GRAY SHALE	1.3	32.2
397.5	CARBONDALE		CALCAREOUS SHALE	4.2	33.5
393.3	CARBONDALE	CONANT	LIMESTONE	5.7	37.7
387.7	CARBONDALE		GRAY SHALE	8.0	43.3
379.7	CARBONDALE		CALCAREOUS BLACK SHALES	3.7	51.3
376.0	CARBONDALE	JAMESTOWN	COAL	0.3	55.0
375.7	CARBONDALE		CALCAREOUS BLACK SHALES	8.0	55.3
367.7	CARBONDALE	BRERETON	LIMESTONE & SHALE	3.2	63.3
364.5	CARBONDALE	ANNA	BLACK SHALE	3.5	66.5
361.0	CARBONDALE	HERRIN	COAL	5.4	70.0
355.6	CARBONDALE		UNDERCLAY	2.8	75.4
352.8	CARBONDALE		CALCAREOUS SHALE	2.2	78.2
350.7	CARBONDALE		SANDY SHALE	4.4	80.3
346.2	CARBONDALE		SANDSTONE	1.3	84.8
345.0	CARBONDALE		SHALES & SANDSTONE	7.8	86.0
337.2	CARBONDALE		SHALY SANDSTONE	0.4	93.8
336.8	CARBONDALE	ST. DAVID	SHALY LIMESTONE	1.8	94.2
335.1	CARBONDALE	SPRINGFIELD	COAL	3.5	95.9
331.6	CARBONDALE		UNDERCLAY	2.0	99.4

MAPID: 14590142000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES: SW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.434298 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.027756 DATE COLLECTED: 9 / 27 / 1974

SURFACE ELEVATION (FT.): 426.0 LOGGED (FT.): 93.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 1078 WELL TYPE: Coal Test

COMMENT: PERMIT 233 CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
426.0	PLEISTOCENE		UNCONSOLIDATED	28.9	0.0	
397.1	CARBONDALE		SHALE	1.2	28.9	YELLOW WEATHERED
395.9	CARBONDALE	CONANT	LIMESTONE	5.1	30.1	
390.8	CARBONDALE		GRAY SHALE	3.1	35.2	
387.7	CARBONDALE		DARK SHALE	7.9	38.3	
379.8	CARBONDALE		CALCAREOUS BLACK SHALE	10.7	46.2	
369.1	CARBONDALE	BRERETON	LIMESTONE	5.5	56.9	
363.6	CARBONDALE	HERRIN	COAL	6.2	62.4	
357.4	CARBONDALE		GRAY SHALE	3.9	68.6	
353.5	CARBONDALE		SHALY SANDSTONE	2.3	72.5	
351.2	CARBONDALE		SANDSTONE	2.8	74.8	
348.4	CARBONDALE		SANDY SHALE	6.4	77.6	
342.0	CARBONDALE	ST. DAVID	SHALY LIMESTONE	4.1	84.0	
337.9	CARBONDALE	SPRINGFIELD	COAL	3.1	88.1	
334.8	CARBONDALE		UNDERCLAY	1.8	91.2	

MAPID: 14590143000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 4 QUARTERS/FOOTAGES: NE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.429583 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.031353 DATE COLLECTED: 10 / 11 / 1974

SURFACE ELEVATION (FT.): 428.6 LOGGED (FT.): 82.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 1107 WELL TYPE: Coal Test

COMMENT: PERMIT 233 CONANT MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.6	PLEISTOCENE		CLAY	11.4	0.0
417.2	PLEISTOCENE		UNCONSOLIDATED	10.1	11.4
407.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.1	21.5
403.0	CARBONDALE		GRAY SHALE	2.2	25.6
400.8	CARBONDALE		DARK SHALE	6.2	27.8
394.6	CARBONDALE	CONANT	LIMESTONE	0.7	34.0
393.9	CARBONDALE		CALCAREOUS BLACK SHALES	16.1	34.7
377.8	CARBONDALE	BRERETON	LIMESTONE	3.3	50.8
374.5	CARBONDALE	HERRIN	COAL	5.3	54.1
369.2	CARBONDALE		UNDERCLAY	2.5	59.4
366.7	CARBONDALE		SHALY SANDSTONE	8.5	61.9
358.2	CARBONDALE		SANDY SHALE	6.7	70.4
351.5	CARBONDALE	ST. DAVID	LIMESTONE	0.2	77.1
351.3	CARBONDALE	SPRINGFIELD	COAL	3.1	77.3
348.2	CARBONDALE		UNDERCLAY	1.6	80.4

MAPID: 14500320000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 5 QUARTERS/FOOTAGES: SW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.461583 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.035432 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #925 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	25.0	0.0
415.0			SAND	5.0	25.0
410.0			SHALE	4.0	30.0
406.0			LIMESTONE	2.0	34.0
404.0			SHALE	3.0	36.0
401.0			LIMESTONE	11.0	39.0
390.0			SHALE	10.0	50.0
380.0			UNCLASSIFIED	5.0	60.0

MAPID: 14500276000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 6 QUARTERS/FOOTAGES: 100' S line, 3325' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.475782 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.026674 DATE COLLECTED:

SURFACE ELEVATION (FT.): 422.0 LOGGED (FT.): 348.1 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING CO. #60 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
403.0			SAND	3.0	19.0
400.0			SAND	24.0	22.0
376.0	CARBONDALE		SHALE	10.5	46.0
365.5	CARBONDALE		LIMESTONE	2.5	56.5
363.0	CARBONDALE		SHALE	2.0	59.0
361.0	CARBONDALE		SANDSTONE	13.7	61.0
347.3	CARBONDALE		SHALE	0.5	74.7
346.8	CARBONDALE	ST. DAVID	LIMESTONE	3.0	75.2
343.8	CARBONDALE		SHALE	0.2	78.2
343.6	CARBONDALE	SPRINGFIELD	COAL	4.2	78.4
339.4	CARBONDALE		CLAYSTONE	1.4	82.6
338.0	CARBONDALE		SHALE	8.0	84.0
330.0	CARBONDALE		LIMESTONE	0.7	92.0
329.3	CARBONDALE		SHALE	15.3	92.7
314.0	CARBONDALE		SHALE	35.0	108.0
279.0	CARBONDALE		SHALE	5.0	143.0
274.0	CARBONDALE	HANOVER	LIMESTONE	1.0	148.0
273.0	CARBONDALE	EXCELLO	SHALE	4.2	149.0
268.8	CARBONDALE	HOUCHIN CREEK	COAL	2.2	153.2
266.6	CARBONDALE		CLAYSTONE	2.6	155.4
264.0	CARBONDALE		SHALE	12.0	158.0
252.0	CARBONDALE		SHALE	1.0	170.0
251.0	CARBONDALE		SANDSTONE	4.0	171.0
247.0	CARBONDALE		SHALE	34.0	175.0
213.0	CARBONDALE	OAK GROVE	LIMESTONE	1.0	209.0
212.0	CARBONDALE	MECCA QUARRY	SHALE	3.5	210.0
208.5	CARBONDALE	COLCHESTER	COAL	0.7	213.5
207.8	CARBONDALE	COLCHESTER	SHALE	0.1	214.2
207.7	CARBONDALE	COLCHESTER	COAL	0.2	214.3
207.5	SPOON		CLAYSTONE	1.1	214.5
206.4	SPOON		LIMESTONE	0.1	215.6
206.3	SPOON		SANDSTONE	17.0	215.7
189.3	SPOON		SHALE	1.5	232.7
187.8	SPOON		SHALE	28.0	234.2
159.8	SPOON		SHALE	5.0	262.2
154.8	SPOON	DAVIS	COAL	1.4	267.2
153.4	SPOON	DAVIS	SHALE	0.3	268.6
153.1	SPOON	DAVIS	COAL	1.7	268.9
151.4	SPOON	DAVIS	UNCLASSIFIED	0.3	270.6

151.1	SPOON	DAVIS	COAL	0.1	270.9
151.0	SPOON		SHALE	0.1	271.0
150.9	SPOON		SHALE	8.0	271.1
142.9	SPOON		COAL	0.5	279.1
142.4	SPOON		SHALE	0.1	279.6
141.4	SPOON		COAL	0.4	280.6
141.0	SPOON		CLAYSTONE	3.0	281.0
138.0	SPOON		SHALE	15.0	284.0
123.0	SPOON		COAL	1.5	299.0
121.5	SPOON		SHALE	3.0	300.5
118.5	SPOON		COAL	0.2	303.5
118.3	SPOON		SHALE	0.2	303.7
118.1	SPOON		SHALE	3.0	303.9
115.1	SPOON		LIMESTONE	7.0	306.9
108.1	SPOON		SANDSTONE	4.0	313.9
104.1	SPOON		SHALE	2.0	317.9
102.1	SPOON		SHALE	4.0	319.9
98.1	SPOON		SHALE	2.0	323.9
96.1	SPOON		LIMESTONE	0.5	325.9
95.6	SPOON		SHALE	11.5	326.4
84.1	SPOON		SHALE	0.8	337.9
83.3	SPOON	MURPHYSBORO	COAL	0.5	338.7
82.8	SPOON	MURPHYSBORO	UNCLASSIFIED	0.5	339.2
82.3	SPOON	MURPHYSBORO	COAL	6.2	339.7
76.1	SPOON		SHALE	2.2	345.9

MAPID: 14500276000C VERSION: 2

PROJECT: NCRDS87

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 6 QUARTERS/FOOTAGES: 100' S line, 3325' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.475782 GEOLOGIST: WEIBEL

CONFIDENTIAL: N LATITUDE: 38.026674 DATE COLLECTED:

SURFACE ELEVATION (FT.): 422.1 LOGGED (FT.): 348.2 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MNG.CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
422.1			UNCONSOLIDATED	46.0	0.0	
376.1	CARBONDALE		GRAY SHALE	10.5	46.0	
365.6	CARBONDALE		LIMESTONE	2.5	56.5	
363.1	CARBONDALE		GRAY SHALE	2.0	59.0	
361.1	CARBONDALE		SANDSTONE	13.7	61.0	
347.4	CARBONDALE		BLACK SHALE	0.5	74.7	
346.9	CARBONDALE	BRERETON	LIMESTONE	3.0	75.2	
343.9	CARBONDALE	ANNA	BLACK SHALE	0.3	78.2	
343.7	CARBONDALE	HERRIN	COAL	4.2	78.4	
339.5	CARBONDALE		UNDERCLAY	1.4	82.6	
338.1	CARBONDALE		GRAY SHALE	8.0	84.0	
330.1	CARBONDALE		LIMESTONE	0.7	92.0	
329.4	CARBONDALE		SHALE	55.3	92.7	
274.1	CARBONDALE		LIMESTONE	1.0	148.0	
273.1	CARBONDALE	TURNER MINE	BLACK SHALE	4.2	149.0	
268.9	CARBONDALE	SPRINGFIELD	COAL	2.3	153.2	
266.7	CARBONDALE		UNDERCLAY	2.6	155.4	
264.1	CARBONDALE		SHALE	13.0	158.0	
251.1	CARBONDALE		SANDSTONE	4.0	171.0	
247.1	CARBONDALE		SHALE	34.0	175.0	
213.1	CARBONDALE		LIMESTONE	1.0	209.0	
212.1	CARBONDALE		BLACK SHALE	3.5	210.0	
208.6	CARBONDALE		COAL WITH SHALE PARTINGS	0.7	213.5	
207.9	CARBONDALE		UNDERCLAY	0.1	214.2	
207.8	CARBONDALE		LIMESTONE	19.3	214.3	
188.6	CARBONDALE		SANDSTONE	1.5	233.5	
187.1	CARBONDALE		GRAY SHALE	33.0	235.0	
154.1	CARBONDALE		COAL WITH SHALE PARTINGS	3.9	268.0	
150.2	CARBONDALE		SHALE	8.1	271.9	
142.1	CARBONDALE		COAL WITH SHALE PARTINGS	1.0	280.0	
141.1	CARBONDALE		UNDERCLAY	3.0	281.0	
138.1	CARBONDALE		GRAY SHALE	15.0	284.0	
123.1	CARBONDALE	COLCHESTER	COAL WITH SHALE PARTINGS	4.8	299.0	UNCERTAIN CORRELATION
118.3			BLACK SHALE	0.3	303.8	
118.1			GRAY SHALE	3.0	304.0	
115.1			UNCLASSIFIED	7.0	307.0	

108.1			SANDSTONE	4.0	314.0	
104.1			SHALE	6.0	318.0	
98.1			BLACK SHALE	2.0	324.0	
96.1			LIMESTONE	0.5	326.0	
95.6			BLACK SHALE	11.5	326.5	
84.1			SHALE	0.8	338.0	
83.3	SPOON	MURPHYSBORO	COAL WITH SHALE PARTINGS	7.2	338.8	UNCERTAIN CORRELATION
76.1			BLACK SHALE	2.2	346.0	

MAPID: 14500317000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 6 **QUARTERS/FOOTAGES:** SW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.478255 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.030169 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #821 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
440.0			UNCONSOLIDATED	20.0	0.0	
420.0			SANDSTONE/SHALE	20.0	20.0	
400.0			UNCLASSIFIED	20.0	40.0	

MAPID: 14502786000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 7 **QUARTERS/FOOTAGES:** 100' S line, 36' W line
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.483195 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.012253 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 52.0 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL CO. #19 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
440.0			UNCONSOLIDATED	16.0	0.0	
424.0			UNCLASSIFIED	2.0	16.0	
422.0			UNCLASSIFIED	0.3	18.0	
421.7	CARBONDALE		SHALE	11.7	18.3	
410.0	CARBONDALE		SHALE	10.5	30.0	
399.5	CARBONDALE	BRERETON	LIMESTONE	5.0	40.5	
394.5	CARBONDALE		SHALE	1.5	45.5	
393.0	CARBONDALE	HERRIN	COAL	5.0	47.0	

MAPID: 14502786000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 7 QUARTERS/FOOTAGES: 100' S line, 36' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.483195

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.012253

DATE COLLECTED:

SURFACE ELEVATION (FT.): 429.0

LOGGED (FT.): 52.0

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.7	CARBONDALE	LAWSON	SHALE	22.2	18.3
388.5	CARBONDALE	BRERETON	LIMESTONE	5.0	40.5
383.5	CARBONDALE	ANNA	BLACK SHALE	1.5	45.5
382.0	CARBONDALE	HERRIN	COAL	5.0	47.0

MAPID: 14502787000C VERSION: 1

PROJECT: CUSMAP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 8 QUARTERS/FOOTAGES: 330' S line, 330' W line of NE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.458711

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.016167

DATE COLLECTED: 6 / 0 / 1945

SURFACE ELEVATION (FT.): 429.0

LOGGED (FT.): 675.0

LOG TYPE: Electric Log

SOURCE: MAGNOLIA PETROLEUM

WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
219.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	210.0
161.0	SPOON	DAVIS	UNCLASSIFIED	-	268.0
-246.0	BASE OF PENN.		UNCLASSIFIED	-	675.0

MAPID: 14502787000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 8 QUARTERS/FOOTAGES: 330' S line, 330' W line of NE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.458711

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.016167

DATE COLLECTED: 6 / 0 / 1945

SURFACE ELEVATION (FT.): 429.0

LOGGED (FT.): 1699.0

LOG TYPE: Drillers Log

SOURCE: MAGNOLIA PETROLEUM CO. #1

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
429.0			UNCONSOLIDATED	71.0	0.0
358.0			SHALE	5.0	71.0
353.0	CARBONDALE	SPRINGFIELD	COAL	4.0	76.0
349.0			SHALE & SANDSTONE	20.0	80.0
329.0			SHALE	300.0	100.0
29.0			SHALE	40.0	400.0

MAPID: 14523298000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 8

QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.449344

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.023319

DATE COLLECTED: 9 / 30 / 1976

SURFACE ELEVATION (FT.): 420.0

LOGGED (FT.): 401.0

LOG TYPE: Drillers Log

SOURCE: HEPP DIRLLING CO #1

WELL TYPE: Water Well

COMMENT: COAL THICKNESSES ARE INACCURATE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
399.0			UNCLASSIFIED	6.0	21.0
393.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	27.0
387.0	CARBONDALE		SHALE	21.0	33.0
366.0	CARBONDALE	BRERETON	LIMESTONE	7.0	54.0
359.0	CARBONDALE	HERRIN	COAL/CLAYSTONE	6.8	61.0
352.2	CARBONDALE		SHALE	3.2	67.8
349.0	CARBONDALE		SANDSTONE	14.0	71.0
335.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	85.0
334.0	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	5.0	86.0
329.0	CARBONDALE		SHALE	5.0	91.0
324.0	CARBONDALE		SANDSTONE	22.0	96.0
302.0	CARBONDALE		SHALE	41.0	118.0
261.0	CARBONDALE	HOUCHIN CREEK	SHALE-COAL-CLAY	5.0	159.0
256.0	CARBONDALE		SANDSTONE	26.0	164.0
230.0	CARBONDALE		SHALE	25.0	190.0
205.0	CARBONDALE		LIMESTONE	3.0	215.0
202.0	CARBONDALE	COLCHESTER	COAL/CLAYSTONE	4.0	218.0
198.0	SPOON		SANDSTONE	13.0	222.0
185.0	SPOON		CALCAREOUS SHALE	31.0	235.0
154.0	SPOON	DAVIS	COAL/CLAYSTONE	3.0	266.0
151.0	SPOON		SHALE	46.0	269.0
105.0	SPOON		SHALE	10.0	315.0
95.0	SPOON		SHALE	40.0	325.0
55.0	SPOON		SANDSTONE	36.0	365.0

MAPID: 14500467000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 9 QUARTERS/FOOTAGES: 1000' N line, 200' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.42829 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.023109 DATE COLLECTED:

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 51.5 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
415.7	CARBONDALE	LAWSON	DARK GRAY SHALE	0.8	29.3
414.9	CARBONDALE	JAMESTOWN	COAL	0.5	30.1
414.4	CARBONDALE		DARK GRAY SHALE	5.6	30.6
408.8	CARBONDALE	BRERETON	LIMESTONE	6.8	36.2
402.0	CARBONDALE	ANNA	BLACK SHALE	2.0	43.0
400.0	CARBONDALE	HERRIN	COAL	6.5	45.0

MAPID: 14500478000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 10 QUARTERS/FOOTAGES: 1500' N line, 1200' E line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.41326 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.021627 DATE COLLECTED:

SURFACE ELEVATION (FT.): 444.0 LOGGED (FT.): 46.6 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.5	CARBONDALE	LAWSON	GRAY SHALE	4.5	19.5
420.0	CARBONDALE	LAWSON	BLACK SHALE	10.0	24.0
410.0	CARBONDALE	BRERETON	LIMESTONE	4.0	34.0
406.0	CARBONDALE	ANNA	BLACK SHALE	3.0	38.0
403.0	CARBONDALE	HERRIN	COAL	5.6	41.0

MAPID: 14502474000C VERSION: 1

PROJECT: CUSMAP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 10 QUARTERS/FOOTAGES: 330' S line, 330' W line of NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.426552 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.01956 DATE COLLECTED: 11 / 0 / 1951

SURFACE ELEVATION (FT.): 441.0 LOGGED (FT.): 680.0 LOG TYPE: Electric Log

SOURCE: PEAK DRLG CO WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
247.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	194.0
189.0	SPOON	DAVIS	UNCLASSIFIED	-	252.0
-239.0	BASE OF PENN.		UNCLASSIFIED	-	680.0

MAPID: 14500325000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' S line, 0' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.409498 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.011131 DATE COLLECTED:

SURFACE ELEVATION (FT.): 421.0 LOGGED (FT.): 48.5 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
402.2	CARBONDALE	LAWSON	SHALE	14.0	18.8
388.2	CARBONDALE	BRERETON	LIMESTONE	3.5	32.8
384.7	CARBONDALE	ANNA	BLACK SHALE	3.7	36.3
381.0	CARBONDALE	ENERGY	UNCLASSIFIED	2.0	40.0
379.0	CARBONDALE	HERRIN	COAL	6.5	42.0

MAPID: 14500502000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: SW NW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.407871 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.022978 DATE COLLECTED: 6 / 0 / 1927

SURFACE ELEVATION (FT.): 439.0 LOGGED (FT.): 34.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.0			UNCONSOLIDATED	13.0	0.0
426.0	CARBONDALE		SHALE	4.3	13.0
421.7	CARBONDALE		LIMESTONE	2.4	17.3
419.3	CARBONDALE		UNCLASSIFIED	6.3	19.7
413.0	CARBONDALE		UNCLASSIFIED	2.5	26.0
410.5	CARBONDALE	ANNA	SHALE	0.8	28.5
409.7	CARBONDALE	HERRIN	COAL	5.1	29.3

MAPID: 14500503000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 20' N line, 0' E line of SE NW NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.404401 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.023782 DATE COLLECTED:

SURFACE ELEVATION (FT.): 431.2 LOGGED (FT.): 25.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.2			UNCONSOLIDATED	21.0	0.0
410.2			SHALE	2.0	21.0
408.2			COAL	2.0	23.0

MAPID: 14500504000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 60' N line, 0' E line of SE NW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.404404 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.023671 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 433.7 LOGGED (FT.): 32.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.7			UNCONSOLIDATED	13.0	0.0
420.7			SHALE	2.0	13.0
418.7			CLAYSTONE	2.5	15.0
416.2	CARBONDALE		SHALE	2.5	17.5
413.7	CARBONDALE	BRERETON	LIMESTONE	1.7	20.0
412.0	CARBONDALE	BRERETON	CLAYSTONE	0.5	21.7
411.5	CARBONDALE	BRERETON	LIMESTONE	3.1	22.2
408.5	CARBONDALE		UNCLASSIFIED	0.9	25.2
407.6	CARBONDALE	HERRIN	COAL	5.9	26.1

MAPID: 14500505000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 660' W line of NE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.404455 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.022015 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 428.2 LOGGED (FT.): 28.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.2			UNCONSOLIDATED	15.0	0.0
413.2			SIDERITE	5.0	15.0
408.2			UNCLASSIFIED	1.0	20.0
407.2	CARBONDALE		SHALE	0.8	21.0
406.4	CARBONDALE		SHALE	1.3	21.8
405.1	CARBONDALE	HERRIN	COAL	5.8	23.1

MAPID: 14500506000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 660' N line, 0' E line of NW SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.406831 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.020228 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 431.6 LOGGED (FT.): 28.3 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
431.6			UNCONSOLIDATED	9.0	0.0	
422.6	CARBONDALE	JAMESTOWN	COAL	0.2	9.0	
422.4	CARBONDALE		SHALE	2.8	9.2	
419.6	CARBONDALE	BRERETON	LIMESTONE	8.2	12.0	
411.4	CARBONDALE		UNCLASSIFIED	0.2	20.2	
411.2	CARBONDALE	ANNA	SHALE	2.0	20.4	
409.2	CARBONDALE	HERRIN	COAL	5.9	22.4	

MAPID: 14500507000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 550' N line, 660' W line of SE NE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.399859 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.022246 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 436.2 LOGGED (FT.): 40.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
436.2			UNCONSOLIDATED	14.0	0.0	
422.2			SHALE	8.0	14.0	
414.2			CONCRETION	6.5	22.0	
407.7			SHALE	3.0	28.5	
404.7			SHALE	3.5	31.5	
402.2			COAL	6.0	34.0	

MAPID: 14500508000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 200' N line, 300' W line of SE NE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.401082 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.023232 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 440.5 LOGGED (FT.): 49.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.5			UNCONSOLIDATED	18.0	0.0
422.5			ARGILLACEOUS SANDSTONE	5.0	18.0
417.5			SHALE	7.5	23.0
410.0			SAND	2.2	30.5
407.8			CLAYSTONE	11.4	32.7
396.4	CARBONDALE	HERRIN	COAL	0.3	44.1
396.1	CARBONDALE	HERRIN	COAL	5.3	44.4

MAPID: 14500509000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 360' N line, 500' E line of SW NE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.403889 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.022834 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 435.3 LOGGED (FT.): 39.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.3			UNCONSOLIDATED	20.0	0.0
415.3			ARGILLACEOUS SANDSTONE	3.5	20.0
411.8			SHALE & MUDSTONE	6.7	23.5
405.1	CARBONDALE		SHALE	0.3	30.2
404.8	CARBONDALE		SHALE	2.4	30.5
402.4	CARBONDALE	HERRIN	COAL	1.5	32.9
400.9	CARBONDALE	HERRIN	COAL	4.8	34.4

MAPID: 1450051000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 11

QUARTERS/FOOTAGES: SE NW NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.405578

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.022943

DATE COLLECTED: 6 / 0 / 1927

SURFACE ELEVATION (FT.): 428.7

LOGGED (FT.): 55.5

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.7			UNCONSOLIDATED	12.0	0.0
416.7			SHALE	2.0	12.0
414.7			CLAYSTONE & SHALE	11.5	14.0
403.2			UNCLASSIFIED	0.9	25.5
402.3			SHALE	8.6	26.4
393.7			COAL	0.5	35.0
393.2			SHALE	13.5	35.5
379.7			LIMESTONE	4.2	49.0
375.5			SHALE	2.3	53.2

MAPID: 14500511000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 11

QUARTERS/FOOTAGES: SE SW NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.405715

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.019299

DATE COLLECTED: 6 / 0 / 1927

SURFACE ELEVATION (FT.): 437.1

LOGGED (FT.): 32.7

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.1			UNCONSOLIDATED	17.0	0.0
420.1			SHALE	2.5	17.0
417.6			UNCLASSIFIED	0.5	19.5
417.1	CARBONDALE	ANNA	SHALE	1.0	20.0
416.1	CARBONDALE	ANNA	UNCLASSIFIED	1.5	21.0
414.6	CARBONDALE	ANNA	SHALE	0.7	22.5
413.9	CARBONDALE	HERRIN	COAL	9.5	23.2

MAPID: 14500512000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 11 **QUARTERS/FOOTAGES:** SW SW NW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.408015 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.019329 **DATE COLLECTED:** 6 / 0 / 1927
SURFACE ELEVATION (FT.): 442.2 **LOGGED (FT.):** 38.0 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
442.2			UNCONSOLIDATED	15.0	0.0	
427.2	CARBONDALE		SHALE	6.5	15.0	
420.7	CARBONDALE		UNCLASSIFIED	2.0	21.5	
418.7	CARBONDALE		SHALE	1.0	23.5	
417.7	CARBONDALE		UNCLASSIFIED	1.7	24.5	
416.0	CARBONDALE		SHALE	1.9	26.2	
414.1	CARBONDALE		UNCLASSIFIED	4.0	28.1	
410.1	CARBONDALE	HERRIN	COAL	5.9	32.1	

MAPID: 14500513000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 11 **QUARTERS/FOOTAGES:** 540' S line, 0' E line of NE SW NW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.404477 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.021684 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 428.7 **LOGGED (FT.):** 16.5 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
428.7			UNCONSOLIDATED	15.5	0.0	
413.2			COAL	1.0	15.5	

MAPID: 14500514000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 11 **QUARTERS/FOOTAGES:** 740' S line, 0' E line of NE SW NW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.404458 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.022236 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 426.5 **LOGGED (FT.):** 15.9 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
426.5			UNCONSOLIDATED	13.7	0.0	
412.8	CARBONDALE	HERRIN	COAL	2.2	13.7	

MAPID: 14500515000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 940' S line, 0' E line of NE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.404437 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.022788 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 428.1 LOGGED (FT.): 19.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.1			UNCONSOLIDATED	13.2	0.0
414.9	CARBONDALE	HERRIN	COAL	5.8	13.2

MAPID: 14500516000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 660' W line of NE SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.404455 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.022015 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 428.7 LOGGED (FT.): 28.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.7			UNCONSOLIDATED	9.0	0.0
419.7	CARBONDALE		SHALE	1.0	9.0
418.7	CARBONDALE		SHALE	3.5	10.0
415.2	CARBONDALE	BRERETON	LIMESTONE	6.2	13.5
409.0	CARBONDALE	ANNA	UNCLASSIFIED	2.8	19.7
406.2	CARBONDALE	HERRIN	COAL	5.5	22.5

MAPID: 14500517000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 700' S line, 660' E line of SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.402235 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.020277 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 428.7 LOGGED (FT.): 20.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.7			UNCONSOLIDATED	10.0	0.0
418.7			CLAYSTONE	3.0	10.0
415.7	CARBONDALE		SHALE	5.0	13.0
410.7	CARBONDALE	HERRIN	COAL	2.7	18.0

MAPID: 14500518000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 400' N line, 210' E line of SW SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.403004 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.019071 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 428.7 LOGGED (FT.): 17.6 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.7			UNCONSOLIDATED	9.0	0.0
419.7			UNCLASSIFIED	1.0	9.0
418.7	CARBONDALE		SHALE	1.0	10.0
417.7	CARBONDALE	ANNA	SHALE	1.7	11.0
416.1	CARBONDALE	HERRIN	COAL	4.9	12.6

MAPID: 14500519000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 600' N line, 210' E line of SW SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.403022 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.018519 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 425.4 LOGGED (FT.): 16.4 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.4			UNCONSOLIDATED	10.0	0.0
415.4	CARBONDALE	ENERGY	SHALE	1.7	10.0
413.7	CARBONDALE	HERRIN	COAL	4.7	11.7

MAPID: 14500520000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 800' N line, 210' E line of SW SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.40304 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.017967 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 425.5 LOGGED (FT.): 10.8 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.5			UNCONSOLIDATED	10.0	0.0
415.5	CARBONDALE	ENERGY	SHALE	3.3	10.0
412.2	CARBONDALE	HERRIN	COAL	3.5	13.3

MAPID: 14500521000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 950' S line, 660' E line of NW SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.404447 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.022816 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 428.3 LOGGED (FT.): 28.9 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.3			UNCONSOLIDATED	10.0	0.0
418.3			CLAYSTONE	5.0	10.0
413.3	CARBONDALE		SHALE	0.7	15.0
412.6	CARBONDALE	BRERETON	LIMESTONE	3.6	15.7
409.0	CARBONDALE	ANNA	SHALE	3.5	19.3
405.5	CARBONDALE	HERRIN	COAL	6.1	22.8

MAPID: 14500522000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 175' N line, 660' W line of SE SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.399946 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.019651 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 423.2 LOGGED (FT.): 25.4 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
423.2			UNCONSOLIDATED	7.7	0.0
415.5	CARBONDALE		UNCLASSIFIED	2.3	7.7
413.2	CARBONDALE	BRERETON	UNCLASSIFIED	7.0	10.0
406.2	CARBONDALE	ANNA	SHALE	2.6	17.0
403.6	CARBONDALE	HERRIN	COAL	5.8	19.6

MAPID: 14500523000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 750' S line, 460' W line of NE SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.40056 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.022213 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 428.1 LOGGED (FT.): 31.8 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.1			UNCONSOLIDATED	10.0	0.0
418.1			CLAYSTONE	5.0	10.0
413.1	CARBONDALE		SHALE	4.0	15.0
409.1	CARBONDALE		UNCLASSIFIED	4.2	19.0
404.9	CARBONDALE	ANNA	SHALE	3.1	23.2
401.8	CARBONDALE	HERRIN	COAL	5.5	26.3

MAPID: 14500524000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 60' S line, 300' E line of NW SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.403274 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.020344 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 432.3 LOGGED (FT.): 30.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.3			UNCONSOLIDATED	15.0	0.0
417.3			CLAYSTONE	13.0	15.0
404.3	CARBONDALE	HERRIN	COAL	0.3	28.0
404.0	CARBONDALE	HERRIN	COAL	1.9	28.3

MAPID: 14500525000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 60' S line, 660' E line of NW SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.404531 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.020361 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 437.5 LOGGED (FT.): 51.1 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.5			UNCONSOLIDATED	21.5	0.0
416.0			CONCRETION	3.9	21.5
412.1			SHALE	3.1	25.4
409.0			CLAYSTONE	9.5	28.5
399.5			UNCLASSIFIED	6.0	38.0
393.5			SHALE	6.7	44.0
386.8			COAL	0.4	50.7

MAPID: 14500526000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 800' N line, 1000' E line of SW SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.405797 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.018002 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 427.5 LOGGED (FT.): 39.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
427.5			UNCONSOLIDATED	20.7	0.0
406.8	CARBONDALE		SHALE	0.6	20.7
406.2	CARBONDALE		UNCLASSIFIED	8.9	21.3
398.3	CARBONDALE		UNCLASSIFIED	3.1	29.2
394.2	CARBONDALE		SHALE	0.5	33.3
393.7	CARBONDALE	HERRIN	COAL	6.0	33.8

MAPID: 14500527000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 250' N line, 0' E line of NE SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.399899 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.02126 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 34.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			UNCONSOLIDATED	24.5	0.0	
425.5			SAND	2.0	24.5	
423.5			UNCLASSIFIED	1.5	26.5	
422.0			CLAYSTONE	6.0	28.0	
416.0			SAND	0.0	34.0	

MAPID: 14500529000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: NW SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.398758 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.021024 DATE COLLECTED: 6 / 0 / 1927
 SURFACE ELEVATION (FT.): 434.0 LOGGED (FT.): 51.3 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
434.0			UNCONSOLIDATED	14.0	0.0	
420.0			CLAYSTONE & SANDSTONE	10.0	14.0	
410.0			UNCLASSIFIED	2.3	24.0	
407.7			CLAYSTONE & SHALE	15.0	26.3	
392.7	CARBONDALE		SHALE	1.5	41.3	
391.2	CARBONDALE		UNCLASSIFIED	1.5	42.8	
389.7	CARBONDALE	HERRIN	COAL	6.9	44.3	

MAPID: 14500530000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 11

QUARTERS/FOOTAGES: NE SW NE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.396462

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.020992

DATE COLLECTED:

SURFACE ELEVATION (FT.): 427.1

LOGGED (FT.): 53.2

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
427.1			UNCONSOLIDATED	8.0	0.0
419.1			CLAYSTONE & SANDSTONE	10.0	8.0
409.1			SHALE	6.3	18.0
402.8			SIDERITE	5.2	24.3
397.6	CARBONDALE		SHALE	12.5	29.5
385.1	CARBONDALE		SHALE	1.2	42.0
383.9	CARBONDALE		UNCLASSIFIED	3.9	43.2
380.0	CARBONDALE	HERRIN	COAL	6.1	47.1

MAPID: 14500531000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 11

QUARTERS/FOOTAGES: 660' S line, 0' E line of NE SW NE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.395291

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.021894

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 424.3

LOGGED (FT.): 59.7

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.3			UNCONSOLIDATED	19.5	0.0
404.8			MUDSTONE	4.5	19.5
400.3			SHALE	7.2	24.0
393.1			UNCLASSIFIED	0.6	31.2
392.5	CARBONDALE		SHALE	3.7	31.8
388.8	CARBONDALE		UNCLASSIFIED	9.5	35.5
379.3	CARBONDALE		UNCLASSIFIED	7.8	45.0
371.5	CARBONDALE		SHALE	0.3	52.8
371.2	CARBONDALE	ANNA	SHALE	0.6	53.1
370.6	CARBONDALE	HERRIN	COAL	6.1	53.7

MAPID: 14500532000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 300' N line, 0' E line of NE NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.395409 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.017433 DATE COLLECTED:

SURFACE ELEVATION (FT.): 439.0 LOGGED (FT.): 60.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.0			UNCONSOLIDATED	18.0	0.0
421.0			ARGILLACEOUS SANDSTONE	6.7	18.0
414.3			CONCRETION	4.0	24.7
410.3			SHALE	12.2	28.7
398.1			UNCLASSIFIED	0.7	40.9
397.4			SHALE	2.0	41.6
395.4			COAL	0.2	43.6
395.2			UNCLASSIFIED	7.6	43.8
387.6			LIMESTONE	8.8	51.4

MAPID: 14500533000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: NE SE NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.391873 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.02093 DATE COLLECTED:

SURFACE ELEVATION (FT.): 425.6 LOGGED (FT.): 52.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.6			UNCONSOLIDATED	18.0	0.0
407.6			CLAYSTONE & SHALE	27.5	18.0
380.1			SHALE	1.7	45.5
378.4			COAL	0.3	47.2
378.1			SHALE	4.0	47.5
374.1			SHALE	1.0	51.5

MAPID: 14500534000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 210' W line of NE SE NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.392266 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.021838 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 417.2 LOGGED (FT.): 47.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
417.2			UNCONSOLIDATED	13.0	0.0
404.2			SHALE	1.0	13.0
403.2			UNCLASSIFIED	0.6	14.0
402.6			SHALE	28.1	14.6
374.5			UNCLASSIFIED	4.0	42.7
370.5			SANDSTONE	0.5	46.7

MAPID: 14500535000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 510' W line of NE SE NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.391219 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.021824 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 422.5 LOGGED (FT.): 50.6 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
422.5			UNCONSOLIDATED	12.0	0.0
410.5			SHALE	6.0	12.0
404.5			CONCRETION	4.6	18.0
399.9			COAL	0.3	22.6
399.6			SHALE	4.2	22.9
395.4			COAL	0.9	27.1
394.5			SHALE	15.2	28.0
379.3			SHALE	4.8	43.2
374.5			CLAYSTONE	2.1	48.0
372.4			SANDSTONE	0.5	50.1

MAPID: 14500536000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 710' W line of SE NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.392813 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.021847 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 424.4 LOGGED (FT.): 51.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.4			UNCONSOLIDATED	12.0	0.0
412.4			SHALE	4.5	12.0
407.9			SIDERITE	4.5	16.5
403.4			SAND	3.0	21.0
400.4			SHALE	26.8	24.0
373.6			SANDSTONE	0.4	50.8

MAPID: 14500537000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 430' E line of NE SW NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.396792 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.021903 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 425.1 LOGGED (FT.): 46.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.1			UNCONSOLIDATED	16.2	0.0
408.9			SHALE	3.3	16.2
405.6			UNCLASSIFIED	1.3	19.5
404.3			SHALE	4.2	20.8
400.1			UNCLASSIFIED	1.0	25.0
399.1			SHALE	1.7	26.0
397.4			UNCLASSIFIED	1.0	27.7
396.4			SHALE	14.3	28.7
382.1			COAL	3.0	43.0

MAPID: 14500538000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 180' E line of NW SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.398212 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.021924 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 426.4 LOGGED (FT.): 49.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
426.4			UNCONSOLIDATED	17.7	0.0
408.7			SHALE	3.1	17.7
405.6			CONCRETION	1.0	20.8
404.6	CARBONDALE		SHALE	21.4	21.8
383.2	CARBONDALE	HERRIN	COAL	1.6	43.2
381.6	CARBONDALE	HERRIN	COAL	4.4	44.8

MAPID: 14500539000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 750' W line of NE NE SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.399679 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.018314 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 423.3 LOGGED (FT.): 32.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
423.3			UNCONSOLIDATED	10.0	0.0
413.3	CARBONDALE		SHALE	1.0	10.0
412.3	CARBONDALE		UNCLASSIFIED	7.0	11.0
405.3	CARBONDALE		UNCLASSIFIED	5.5	18.0
399.8	CARBONDALE		SHALE	1.2	23.5
398.6	CARBONDALE	ANNA	SHALE	1.5	24.7
397.1	CARBONDALE	HERRIN	COAL	5.8	26.2

MAPID: 1450054000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: NW NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.398868 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.017397 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 430.2 LOGGED (FT.): 43.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
430.2			UNCONSOLIDATED	20.0	0.0	
410.2			CONCRETION	22.5	20.0	
407.7	CARBONDALE		SHALE	32.4	22.5	
397.8	CARBONDALE	BRERETON	UNCLASSIFIED	2.6	32.4	
395.2	CARBONDALE	ANNA	SHALE	2.0	35.0	
393.2	CARBONDALE		UNCLASSIFIED	0.5	37.0	
392.7	CARBONDALE	HERRIN	COAL	6.0	37.5	

MAPID: 14500541000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 660' E line of SW NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.400045 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.016504 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 428.6 LOGGED (FT.): 58.6 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
428.6			UNCONSOLIDATED	13.0	0.0	
415.6			CLAYSTONE	9.0	13.0	
406.6	CARBONDALE	DANVILLE	COAL	0.5	22.0	
406.1	CARBONDALE		SAND	7.0	22.5	
399.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	29.5	
395.1	CARBONDALE		SHALE	4.2	33.5	
390.9	CARBONDALE		SHALE	0.3	37.7	
390.6	CARBONDALE		UNCLASSIFIED	6.0	38.0	
384.6	CARBONDALE		UNCLASSIFIED	6.0	44.0	
378.6	CARBONDALE		SHALE	0.7	50.0	
377.9	CARBONDALE	ANNA	SHALE	2.0	50.7	
375.9	CARBONDALE	HERRIN	COAL	5.9	52.7	

MAPID: 14500542000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 700' S line, 660' W line of NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.397742 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.016595 DATE COLLECTED:

SURFACE ELEVATION (FT.): 435.2 LOGGED (FT.): 64.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.2			UNCONSOLIDATED	16.0	0.0
419.2	MODESTO		SHALE	7.5	16.0
411.7	MODESTO		SAND	3.5	23.5
408.2	MODESTO		SHALE	8.2	27.0
400.0	MODESTO		UNCLASSIFIED	0.8	35.2
399.2	MODESTO		UNCLASSIFIED	1.0	36.0
398.2	CARBONDALE	DANVILLE	COAL	1.5	37.0
396.7	CARBONDALE		SHALE	3.5	38.5
393.2	CARBONDALE		UNCLASSIFIED	2.0	42.0
391.2	CARBONDALE		SHALE	0.2	44.0
391.0	CARBONDALE		SHALE	0.4	44.2
390.6	CARBONDALE	JAMESTOWN	COAL	0.1	44.6
390.5	CARBONDALE		UNCLASSIFIED	5.3	44.7
385.2	CARBONDALE	BRERETON	LIMESTONE	6.8	50.0
378.4	CARBONDALE		SHALE	0.4	56.8
378.0	CARBONDALE	ANNA	SHALE	1.8	57.2
376.2	CARBONDALE	HERRIN	COAL	5.8	59.0

MAPID: 14500543000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 400' W line of NE NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.396295 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.018273 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 444.6 LOGGED (FT.): 74.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.6			UNCONSOLIDATED	21.0	0.0
423.6			MUDSTONE	7.0	21.0
416.6			CONCRETION	3.0	28.0
413.6	CARBONDALE		SHALE	17.6	31.0
396.0	CARBONDALE		LIMESTONE	0.9	48.6
395.1	CARBONDALE		SHALE	2.3	49.5
392.8	CARBONDALE		UNCLASSIFIED	7.7	51.8
385.1	CARBONDALE	BRERETON	LIMESTONE	6.8	59.5
378.3	CARBONDALE		SHALE	0.4	66.3
377.9	CARBONDALE	ANNA	SHALE	1.0	66.7
376.9	CARBONDALE	HERRIN	COAL	6.7	67.7

MAPID: 14500544000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 660' S line, 460' W line of NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.398443 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.016491 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 433.6 LOGGED (FT.): 64.1 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.6			UNCONSOLIDATED	25.0	0.0
408.6			SAND	8.0	25.0
400.6	CARBONDALE		SHALE	6.5	33.0
394.1	CARBONDALE		UNCLASSIFIED	5.5	39.5
388.6	CARBONDALE	BRERETON	LIMESTONE	6.0	45.0
382.6	CARBONDALE	BRERETON	LIMESTONE	5.0	51.0
377.6	CARBONDALE		SHALE	0.8	56.0
376.8	CARBONDALE	ANNA	SHALE	0.7	56.8
376.1	CARBONDALE	HERRIN	COAL	6.6	57.5

MAPID: 14500545000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 200' W line of NE NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.396992 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.018282 DATE COLLECTED:

SURFACE ELEVATION (FT.): 441.1 LOGGED (FT.): 70.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
441.1			UNCONSOLIDATED	29.0	0.0
412.1			SHALE	5.5	29.0
405.6			SHALE	4.5	35.5
401.1	CARBONDALE		SHALE	7.0	40.0
394.1	CARBONDALE	JAMESTOWN	COAL	1.4	47.0
392.7	CARBONDALE		UNCLASSIFIED	5.2	48.4
387.5	CARBONDALE	BRERETON	LIMESTONE	3.1	53.6
384.4	CARBONDALE		SHALE	0.6	56.7
383.9	CARBONDALE	ANNA	SHALE	2.1	57.2
381.8	CARBONDALE	ENERGY	SHALE	4.2	59.3
377.6	CARBONDALE	HERRIN	COAL	6.7	63.5

MAPID: 14500546000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 660' S line, 220' W line of NE NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.396923 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.01829 DATE COLLECTED:

SURFACE ELEVATION (FT.): 436.4 LOGGED (FT.): 66.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.4			UNCONSOLIDATED	23.0	0.0
413.4			SAND	11.0	23.0
402.4	CARBONDALE		SHALE	7.4	34.0
395.0	CARBONDALE		SHALE	3.0	41.4
392.1	CARBONDALE	JAMESTOWN	COAL	0.8	44.3
391.3	CARBONDALE		SHALE	1.0	45.1
390.3	CARBONDALE		UNCLASSIFIED	4.5	46.1
385.8	CARBONDALE		UNCLASSIFIED	3.4	50.6
381.4	CARBONDALE		SHALE	0.3	55.0
381.1	CARBONDALE		SHALE	2.2	55.3
378.9	CARBONDALE		UNCLASSIFIED	2.3	57.5
376.6	CARBONDALE	HERRIN	COAL	6.4	59.8

MAPID: 14500547000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: NE NE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.391955 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.017313 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 419.7 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
419.7			UNCONSOLIDATED	20.0	0.0	
399.7			SHALE	19.0	20.0	
380.7			UNCLASSIFIED	8.4	39.0	
372.3			SANDSTONE	3.5	47.4	
368.8			UNCLASSIFIED	8.0	50.9	
360.8			SHALE	6.1	58.9	

MAPID: 14500548000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: NW NE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.394258 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.017343 DATE COLLECTED: 6 / 0 / 1927

SURFACE ELEVATION (FT.): 439.7 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
439.7			UNCONSOLIDATED	32.0	0.0	
407.7	CARBONDALE		SHALE	11.5	32.0	
396.2	CARBONDALE		SHALE	8.0	43.5	
388.2	CARBONDALE		SHALE	8.0	51.5	
380.2	CARBONDALE	ANNA	SHALE	4.0	59.5	
376.2	CARBONDALE	HERRIN	COAL	4.5	63.5	

MAPID: 14500549000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: SW NE SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.394306 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.015532 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 429.2 LOGGED (FT.): 53.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
429.2			UNCONSOLIDATED	25.0	0.0	
404.2	CARBONDALE		SHALE	5.0	25.0	
399.2	CARBONDALE		LIMESTONE	0.1	30.0	
399.1	CARBONDALE		SANDSTONE	3.6	30.1	
395.5	CARBONDALE		SHALE	8.5	33.7	
387.0	CARBONDALE		SHALE	7.5	42.2	
379.5	CARBONDALE	HERRIN	COAL	3.8	49.7	

MAPID: 14500550000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 660' S line, 0' E line of NE SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.390822 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.016415 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 425.4 LOGGED (FT.): 53.1 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
425.4			UNCONSOLIDATED	20.0	0.0	
405.4			SHALE	5.0	20.0	
400.4			SAND	1.2	25.0	
399.2			SHALE	4.1	26.2	
395.1			UNCLASSIFIED	1.5	30.3	
393.6			SHALE	19.5	31.8	
374.1			COAL	1.8	51.3	

MAPID: 14500551000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 860' S line, 0' E line of SE NE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.390811 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.016967 DATE COLLECTED: 0 / 0 / 1928

SURFACE ELEVATION (FT.): 424.6 LOGGED (FT.): 43.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.6			UNCONSOLIDATED	22.0	0.0
402.6			SHALE	4.0	22.0
398.6			SAND	3.0	26.0
395.6	CARBONDALE		LIMESTONE	3.0	29.0
392.6	CARBONDALE		SHALE	4.5	32.0
388.1	CARBONDALE		UNCLASSIFIED	1.2	36.5
386.9	CARBONDALE		SHALE	1.3	37.7
385.6	CARBONDALE	HERRIN	COAL	4.9	39.0

MAPID: 14500552000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 660' S line, 22' E line of NW NE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.393161 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.018248 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 438.5 LOGGED (FT.): 68.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
438.5			UNCONSOLIDATED	18.0	0.0
420.5			SHALE	3.5	18.0
417.0			SAND	10.0	21.5
407.0	CARBONDALE		SHALE	1.0	31.5
406.0	CARBONDALE		SAND	5.0	32.5
401.0	CARBONDALE		SHALE	6.0	37.5
395.0	CARBONDALE		SHALE	3.5	43.5
391.5	CARBONDALE		UNCLASSIFIED	3.3	47.0
388.2	CARBONDALE	BRERETON	LIMESTONE	10.5	50.3
377.7	CARBONDALE		SHALE	0.7	60.8
377.0	CARBONDALE	ANNA	SHALE	1.4	61.5
375.6	CARBONDALE	HERRIN	COAL	6.0	62.9

MAPID: 14500553000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 660' S line, 320' E line of NW NE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.394201 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.01826 DATE COLLECTED:

SURFACE ELEVATION (FT.): 441.3 LOGGED (FT.): 69.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
441.3			UNCONSOLIDATED	16.0	0.0
425.3			SHALE	22.0	16.0
403.3			SAND	5.0	38.0
398.3			SHALE	1.2	43.0
397.1			UNCLASSIFIED	2.5	44.2
394.6			SHALE	7.8	46.7
386.8			SHALE	1.5	54.5
385.3			UNCLASSIFIED	6.4	56.0
378.9			LIMESTONE	0.8	62.4
378.1			SHALE	0.9	63.2
377.2			COAL	5.7	64.1

MAPID: 14500554000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: NW SW SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.408231 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.013857 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 423.0 LOGGED (FT.): 33.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
423.0			UNCONSOLIDATED	11.5	0.0
411.5	CARBONDALE	JAMESTOWN	COAL	0.2	11.5
411.3	CARBONDALE		UNCLASSIFIED	13.2	11.7
398.1	CARBONDALE		SHALE	1.8	24.9
396.3	CARBONDALE	HERRIN	COAL	6.3	26.7

MAPID: 14500555000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 11

QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.408303

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.012033

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 425.4

LOGGED (FT.): 50.8

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.4			UNCONSOLIDATED	17.5	0.0
407.9	CARBONDALE		SHALE	3.1	17.5
404.8	CARBONDALE		SHALE	9.6	20.6
395.2	CARBONDALE	JAMESTOWN	COAL	0.4	30.2
394.8	CARBONDALE		UNCLASSIFIED	4.1	30.6
390.7	CARBONDALE		SHALE	0.5	34.7
390.2	CARBONDALE	ANNA	SHALE	3.2	35.2
387.0	CARBONDALE	ENERGY	UNCLASSIFIED	6.1	38.4
380.9	CARBONDALE	HERRIN	COAL	6.3	44.5

MAPID: 14500556000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 11

QUARTERS/FOOTAGES: SE SW SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.405987

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.012011

DATE COLLECTED:

SURFACE ELEVATION (FT.): 414.5

LOGGED (FT.): 47.5

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
414.5			UNCONSOLIDATED	13.0	0.0
401.5	CARBONDALE		SHALE	9.0	13.0
392.5	CARBONDALE		UNCLASSIFIED	1.5	22.0
391.0	CARBONDALE		SHALE	2.2	23.5
388.8	CARBONDALE	JAMESTOWN	COAL	0.6	25.7
388.2	CARBONDALE		UNCLASSIFIED	9.9	26.3
378.3	CARBONDALE		SHALE	0.9	36.2
377.4	CARBONDALE		SHALE	3.0	37.1
374.4	CARBONDALE		UNCLASSIFIED	0.3	40.1
374.1	CARBONDALE	HERRIN	COAL	7.1	40.4

MAPID: 14500557000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 11

QUARTERS/FOOTAGES: NE SW SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.405918

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.013833

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 422.7

LOGGED (FT.): 44.0

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
422.7			UNCONSOLIDATED	17.0	0.0
405.7	CARBONDALE		SHALE	3.0	17.0
402.7	CARBONDALE	JAMESTOWN	COAL	0.2	20.0
402.5	CARBONDALE		UNCLASSIFIED	14.0	20.2
388.5	CARBONDALE		UNCLASSIFIED	3.8	34.2
384.7	CARBONDALE	HERRIN	COAL	6.0	38.0

MAPID: 14500558000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 11

QUARTERS/FOOTAGES: 0' N line, 520' E line of NW SE SW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.404231

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.014729

DATE COLLECTED:

SURFACE ELEVATION (FT.): 423.7

LOGGED (FT.): 44.3

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
423.7			UNCONSOLIDATED	10.0	0.0
413.7	CARBONDALE		SHALE	8.7	10.0
405.0	CARBONDALE	JAMESTOWN	COAL	0.1	18.7
404.9	CARBONDALE		UNCLASSIFIED	8.0	18.8
396.9	CARBONDALE		UNCLASSIFIED	11.4	26.8
385.5	CARBONDALE	HERRIN	COAL	6.1	38.2

MAPID: 14500559000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 11

QUARTERS/FOOTAGES: NW SW SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.398977

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.013767

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 423.7

LOGGED (FT.): 48.0

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
423.7			UNCONSOLIDATED	21.0	0.0
402.7	CARBONDALE		SHALE	3.7	21.0
399.0	CARBONDALE		LIMESTONE	6.5	24.7
392.5	CARBONDALE	BRERETON	LIMESTONE	10.6	31.2
381.9	CARBONDALE		UNCLASSIFIED	0.5	41.8
381.4	CARBONDALE	HERRIN	COAL	5.7	42.3

MAPID: 14500560000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 11

QUARTERS/FOOTAGES: SE SW SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.396715

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.011934

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 427.7

LOGGED (FT.): 45.8

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
427.7			UNCONSOLIDATED	17.0	0.0
410.7			SAND	2.0	17.0
408.7			SHALE	5.2	19.0
403.5			SHALE	2.0	24.2
401.5			UNCLASSIFIED	4.5	26.2
397.0			SHALE	0.6	30.7
396.4			UNCLASSIFIED	5.5	31.3
390.9			SAND	0.4	36.8
390.5			UNCLASSIFIED	2.1	37.2
388.4	CARBONDALE	HERRIN	COAL	6.5	39.3

MAPID: 14500561000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 11

QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.399032

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.011953

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 420.0

LOGGED (FT.): 46.7

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	14.0	0.0
406.0	CARBONDALE		SHALE	8.2	14.0
397.8	CARBONDALE		SHALE	5.1	22.2
392.7	CARBONDALE		UNCLASSIFIED	0.9	27.3
391.8	CARBONDALE	JAMESTOWN	COAL	0.7	28.2
391.1	CARBONDALE	BRERETON	LIMESTONE	3.2	28.9
387.9	CARBONDALE	ANNA	SHALE	3.5	32.1
384.4	CARBONDALE	ENERGY	UNCLASSIFIED	4.4	35.6
380.0	CARBONDALE	HERRIN	COAL	6.7	40.0

MAPID: 14500562000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 11

QUARTERS/FOOTAGES: 660' S line, 0' E line of NE SW SE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.395483

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.01465

DATE COLLECTED:

SURFACE ELEVATION (FT.): 428.7

LOGGED (FT.): 55.7

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.7			UNCONSOLIDATED	22.5	0.0
406.2	CARBONDALE		SHALE	1.0	22.5
405.2	CARBONDALE		SHALE	9.0	23.5
396.2	CARBONDALE		SHALE	1.0	32.5
395.2	CARBONDALE		UNCLASSIFIED	15.2	33.5
380.0	CARBONDALE		UNCLASSIFIED	0.9	48.7
379.1	CARBONDALE	HERRIN	COAL	6.1	49.6

MAPID: 14500563000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 200' S line, 0' E line of NW SE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.393203 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.013358 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 56.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	15.0	0.0
415.0			CLAYSTONE	14.0	15.0
401.0			SHALE	4.0	29.0
397.0			CLAYSTONE	1.0	33.0
396.0			SHALE	1.0	34.0
395.0			CLAYSTONE	5.0	35.0
390.0			UNCLASSIFIED	4.5	40.0
385.5	CARBONDALE		SHALE	1.0	44.5
384.5	CARBONDALE	ANNA	SHALE	3.2	45.5
381.3	CARBONDALE	ENERGY	SHALE	2.2	48.7
379.1	CARBONDALE	HERRIN	COAL	5.8	50.9

MAPID: 14500564000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 250' W line of NE SE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.392301 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.014608 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 44.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	19.0	0.0
411.0			SHALE	17.3	19.0
403.7			SAND	6.0	26.3
397.7	CARBONDALE	BRERETON	UNCLASSIFIED	5.9	32.3
391.8	CARBONDALE		UNCLASSIFIED	0.6	38.2
391.2	CARBONDALE	HERRIN	COAL	5.9	38.8

MAPID: 14500565000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.392078 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.011894 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 435.2 LOGGED (FT.): 35.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.2			UNCONSOLIDATED	13.0	0.0
422.2			CLAYSTONE & SHALE	5.0	13.0
417.2			SAND	2.0	18.0
415.2	CARBONDALE		SHALE	6.7	20.0
408.5	CARBONDALE		UNCLASSIFIED	2.0	26.7
406.5	CARBONDALE	HERRIN	COAL	7.2	28.7

MAPID: 14500566000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 11 QUARTERS/FOOTAGES: 0' N line, 400' E line of NW SE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.394569 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.01463 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 429.2 LOGGED (FT.): 49.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
429.2			UNCONSOLIDATED	17.0	0.0
412.2			SHALE	7.0	17.0
405.2			SHALE	14.0	24.0
391.2			SHALE	6.0	38.0
385.2			UNCLASSIFIED	0.5	44.0
384.7			COAL	5.4	44.5

MAPID: 14500278000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 17 QUARTERS/FOOTAGES: NW SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.46248 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.002484 DATE COLLECTED:

SURFACE ELEVATION (FT.): 413.8 LOGGED (FT.): 1370.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
407.8			UNCLASSIFIED	9.0	6.0
398.8			UNCLASSIFIED	9.0	15.0
389.8			SAND	8.0	24.0
381.8			CLAYSTONE	8.0	32.0
373.8			SAND	8.0	40.0
365.8			SAND	10.0	48.0
355.8			SAND	9.0	58.0
346.8			SAND	7.0	67.0
339.8			CALCAREOUS SHALE	10.0	74.0
329.8			SHALE	3.0	84.0
326.8			SHALE	5.0	87.0
321.8			SHALE	6.0	92.0
315.8			LIMESTONE	7.0	98.0
308.8			SHALE	9.0	105.0
299.8			SHALE	6.0	114.0
293.8			SHALE	7.0	120.0
286.8			SHALE	8.0	127.0
278.8			LIMESTONE	8.0	135.0
270.8			CARBONACEOUS LIMESTONE	6.0	143.0
264.8			CARBONACEOUS LIMESTONE	4.0	149.0
260.8			SANDSTONE	7.0	153.0
253.8			LIMESTONE AND SANDSTONE	6.0	160.0
247.8			SANDY LIMESTONE	6.0	166.0
241.8			CALCAREOUS SHALE	6.0	172.0
235.8			CALCAREOUS SHALE	6.0	178.0
229.8			CALCAREOUS SHALE	6.0	184.0
223.8			SHALE	6.0	190.0
217.8			SHALE	6.0	196.0
211.8			SHALE	4.0	202.0
207.8			SHALE	6.0	206.0
201.8			SHALE	6.0	212.0
195.8			SHALE	6.0	218.0
189.8			SAND	6.0	224.0
183.8			SAND	6.0	230.0
177.8			SHALE	6.0	236.0
171.8			SHALE	6.0	242.0
165.8			SHALE	24.0	248.0

141.8	COAL	6.0	272.0
135.8	SHALE	6.0	278.0
129.8	COAL	6.0	284.0
123.8	LIMESTONE	5.0	290.0

MAPID: 14500319000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 17 **QUARTERS/FOOTAGES:** SW NE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.45326 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.00602 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 66.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #527 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	10.0	0.0
410.0			CLAYSTONE	8.0	10.0
402.0			UNCLASSIFIED	3.0	18.0
399.0			SHALE	13.0	21.0
386.0			UNCLASSIFIED	32.0	34.0

MAPID: 14502818000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 17 **QUARTERS/FOOTAGES:** 1300' N line, 2000' W line of NW
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.457652 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.00802 **DATE COLLECTED:** 9 / 11 / 1964
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 93.0 **LOG TYPE:** Drillers Log
SOURCE: GWIN DRILLING CO. **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
395.0			UNCLASSIFIED	1.0	25.0
394.0			CLAYSTONE	7.0	26.0
387.0			SHALE	32.0	33.0
355.0			SHALE	11.0	65.0
344.0			SAND	2.0	76.0
342.0			SAND	2.0	78.0
340.0			SHALE	13.0	80.0

MAPID: 14523379000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 17

QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.454308

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.010641

DATE COLLECTED: 6 / 7 / 1977

SURFACE ELEVATION (FT.): 425.0

LOGGED (FT.): 348.5

LOG TYPE: Drillers Log

SOURCE: FRANK HEPP, JR.

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
387.0			UNCLASSIFIED	23.0	38.0
364.0			SIDERITE	21.0	61.0
343.0			SHALE	20.0	82.0
323.0			SANDSTONE	9.0	102.0
314.0			SHALE	29.0	111.0
285.0			LIMESTONE	3.0	140.0
282.0			CARBONACEOUS SHALE	3.0	143.0
279.0			LIMESTONE AND SANDSTONE	11.0	146.0
268.0			SHALE	27.0	157.0
241.0			LIMESTONE W/ SHALE	13.0	184.0
228.0			COAL/CLAYSTONE	2.0	197.0
226.0			SHALE	27.0	199.0
199.0			SANDSTONE	10.0	226.0
189.0			LIMESTONE W/ SHALE	39.0	236.0
150.0			COAL/CLAYSTONE	3.0	275.0
147.0			SANDSTONE	6.0	278.0

MAPID: 14500316000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 3W

SECTION: 18

QUARTERS/FOOTAGES: 2600' N line, 2500' E line of SW NE

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.478215

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.00108

DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.2

LOGGED (FT.): 59.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTIC COAL #523

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.2			UNCONSOLIDATED	20.0	0.0
420.2	CARBONDALE		SHALE	21.0	20.0
399.2	CARBONDALE		SHALE	3.0	41.0
396.2	CARBONDALE	ST. DAVID	LIMESTONE	9.0	44.0
387.2	CARBONDALE	TURNER MINE	SHALE	1.0	53.0
386.2	CARBONDALE	SPRINGFIELD	COAL	5.5	54.0

MAPID: 14528372000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' S line, 675' W line of SE SE

QUADRANGLE: AVA LONGITUDE: -89.46721 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.998173 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 47.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #76 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	8.5	0.0
411.5			CLAYSTONE	6.6	8.5
404.9	CARBONDALE		SHALE	1.9	15.1
403.0	CARBONDALE		SHALE	0.7	17.0
402.3	CARBONDALE	SPRINGFIELD	COAL	3.7	17.7
398.6	CARBONDALE		CLAYSTONE	1.2	21.4
397.4	CARBONDALE		SHALE	24.8	22.6

MAPID: 14528373000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 430' N line, 0' E line of SW SE SE

QUADRANGLE: AVA LONGITUDE: -89.467231 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.997715 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #89 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	19.7	0.0
400.3			CLAYSTONE	2.5	19.7
397.8	CARBONDALE		SHALE	5.9	22.2
391.9	CARBONDALE		CLAYSTONE	1.7	28.1
390.2	CARBONDALE		SHALE	5.2	29.8
385.0	CARBONDALE		SHALE	1.0	35.0
384.0	CARBONDALE	ST. DAVID	LIMESTONE	1.3	36.0
382.7	CARBONDALE		SHALE	0.3	37.3
382.4	CARBONDALE	SPRINGFIELD	COAL	3.8	37.6

MAPID: 14528374000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 800' S line, 600' W line of SE SE

QUADRANGLE: AVA LONGITUDE: -89.467443 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.999283 DATE COLLECTED:

SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 49.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #91 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			UNCONSOLIDATED	22.4	0.0
387.6			CLAYSTONE	6.8	22.4
380.8			SHALE	17.1	29.2
363.7			SHALE	3.6	46.3

MAPID: 14528375000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 680' S line, 630' W line of SE SE

QUADRANGLE: AVA LONGITUDE: -89.467349 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.998949 DATE COLLECTED:

SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 37.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #92 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			UNCONSOLIDATED	22.8	0.0
387.2			CLAYSTONE	1.6	22.8
385.6			SHALE	4.7	24.4
380.9			SHALE	8.6	29.1
362.0	CARBONDALE		SHALE	2.0	48.0
360.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	50.0
358.5	CARBONDALE	SPRINGFIELD	COAL	4.0	51.5

MAPID: 14528376000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' S line, 340' W line of SE SE
 QUADRANGLE: AVA LONGITUDE: -89.468378 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.998198 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 45.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #93 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			UNCONSOLIDATED	19.2	0.0
390.8			CLAYSTONE	5.7	19.2
385.1			SHALE	1.2	24.9
383.9			SHALE	7.7	26.1
376.2			UNCLASSIFIED	0.7	33.8
375.5			SHALE	5.8	34.5
369.7			SHALE	4.7	40.3

MAPID: 14528377000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 900' S line, 25' W line of SE SE
 QUADRANGLE: AVA LONGITUDE: -89.469442 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.999604 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 50.9 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #94 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	18.2	0.0
401.8			CLAYSTONE	11.7	18.2
390.1			SHALE	21.0	29.9

MAPID: 14528378000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 700' S line, 20' W line of SE SE
 QUADRANGLE: AVA LONGITUDE: -89.469473 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.999052 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 317.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #95 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			UNCONSOLIDATED	18.7	0.0
391.3			CLAYSTONE	9.4	18.7
381.9	CARBONDALE	SPRINGFIELD	COAL	1.2	28.1
380.7	CARBONDALE	SPRINGFIELD	COAL	2.4	29.3

MAPID: 14528379000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 40' S line, 40' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.474131 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.997338 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 56.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G167 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	12.0	0.0
428.0			CLAYSTONE	4.0	12.0
424.0	CARBONDALE		SHALE	27.5	16.0
396.5	CARBONDALE	BRERETON	LIMESTONE	6.0	43.5
390.5	CARBONDALE		SHALE	2.0	49.5
388.5	CARBONDALE	HERRIN	COAL	6.0	51.5

MAPID: 14528380000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 60' N line, 200' E line of SE NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.474717 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.008033 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 37.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #G168 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	12.0	0.0
408.0			CLAYSTONE	8.0	12.0
400.0	CARBONDALE		SAND	4.0	20.0
396.0	CARBONDALE	BRERETON	LIMESTONE	4.0	24.0
392.0	CARBONDALE		SHALE	3.0	28.0
389.0	CARBONDALE	HERRIN	COAL	6.0	31.0

MAPID: 14528381000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 20' S line, 700' W line of SE NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.466969 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.004454 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G171 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
405.0			CLAYSTONE	15.0	15.0
390.0			SHALE	21.0	30.0
369.0			SHALE	19.0	51.0

MAPID: 14528382000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 100' S line, 250' E line of SW NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470277 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.004736 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 59.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G169 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	12.0	0.0
408.0			CLAYSTONE	6.0	12.0
402.0			UNCLASSIFIED	5.0	18.0
397.0	CARBONDALE		SHALE	1.5	23.0
395.5	CARBONDALE	HERRIN	COAL	6.0	24.5
389.5	CARBONDALE		CLAYSTONE	4.5	30.5
385.0	CARBONDALE		SHALE	7.0	35.0
378.0	CARBONDALE		LIMESTONE	2.0	42.0
376.0	CARBONDALE		SHALE	12.0	44.0
364.0	CARBONDALE	SPRINGFIELD	COAL	1.0	56.0
363.0	CARBONDALE		SAND	1.0	57.0
362.0	CARBONDALE		COAL	1.0	58.0

MAPID: 14528383000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 750' S line, 800' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471434 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.999237 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 58.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G170 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	15.0	0.0
405.0			UNCLASSIFIED	10.0	15.0
395.0			SHALE	26.0	25.0
369.0			SHALE	7.0	51.0

MAPID: 14528384000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 20' N line, 200' W line of NE SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.468717 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.004377 DATE COLLECTED:

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO G172 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	15.0	0.0
415.0			CLAYSTONE	11.0	15.0
404.0			UNCLASSIFIED	26.0	26.0
378.0			SHALE	18.0	52.0

MAPID: 14528385000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 500' S line, 350' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.473022 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.998583 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 56.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G173 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	8.0	0.0
412.0			CLAYSTONE	13.0	8.0
399.0	CARBONDALE		SHALE	28.0	21.0
371.0	CARBONDALE	ST. DAVID	LIMESTONE	3.0	49.0
368.0	CARBONDALE		SHALE	0.8	52.0
367.2	CARBONDALE	SPRINGFIELD	COAL	4.0	52.8

MAPID: 14528386000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 75' N line, 400' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.472627 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.007956 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 54.3 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G174 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	12.0	0.0
428.0			CLAYSTONE	6.0	12.0
422.0	CARBONDALE		SAND	24.0	18.0
398.0	CARBONDALE		SHALE	8.0	42.0
390.0	CARBONDALE		LIMESTONE	0.5	50.0
389.5	CARBONDALE	SPRINGFIELD	COAL	3.8	50.5

MAPID: 14528387000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' S line, 425' E line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.47087 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.005576 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 60.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G175 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	6.0	0.0
424.0			CLAYSTONE	12.0	6.0
412.0			UNCLASSIFIED	23.0	18.0
389.0	CARBONDALE		SHALE	11.0	41.0
378.0	CARBONDALE		SHALE	1.0	52.0
377.0	CARBONDALE	ST. DAVID	LIMESTONE	3.0	53.0
374.0	CARBONDALE		SHALE	0.5	56.0
373.5	CARBONDALE	SPRINGFIELD	COAL	4.0	56.5

MAPID: 14528388000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 40' S line, 650' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.472003 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.997288 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 58.3 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G176 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	8.0	0.0
432.0			UNCLASSIFIED	5.0	8.0
427.0	CARBONDALE		SHALE	6.0	13.0
421.0	CARBONDALE	BRERETON	LIMESTONE	5.5	19.0
415.5	CARBONDALE	HERRIN	COAL	5.8	24.5
409.7	CARBONDALE		CLAYSTONE	4.0	30.3
405.7	CARBONDALE		SHALE	1.7	34.3
404.0	CARBONDALE		LIMESTONE	2.0	36.0
402.0	CARBONDALE		SHALE	2.0	38.0
400.0	CARBONDALE		LIMESTONE	3.0	40.0
397.0	CARBONDALE		SHALE	10.0	43.0
387.0	CARBONDALE	ST. DAVID	LIMESTONE	1.3	53.0
385.7	CARBONDALE	SPRINGFIELD	COAL	4.0	54.3

MAPID: 14528389000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' S line, 550' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.472331 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.99829 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 60.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO G177 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	10.0	0.0
430.0			CLAYSTONE	8.0	10.0
422.0	CARBONDALE		SHALE	20.0	18.0
402.0	CARBONDALE		SHALE	4.0	38.0
398.0	CARBONDALE		LIMESTONE	2.5	42.0
395.5	CARBONDALE		SHALE	1.0	44.5
394.9	CARBONDALE		LIMESTONE	3.5	45.1
391.0	CARBONDALE		SHALE	4.0	49.0
387.0	CARBONDALE		SHALE	1.5	53.0
385.5	CARBONDALE	ST. DAVID	LIMESTONE	2.0	54.5
383.5	CARBONDALE	SPRINGFIELD	COAL	4.0	56.5

MAPID: 14528390000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 650' S line, 50' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.474058 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.99902 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G178 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	12.0	0.0
408.0			CLAYSTONE	14.0	12.0
394.0	CARBONDALE		SHALE	12.0	26.0
382.0	CARBONDALE		SHALE	6.0	38.0
376.0	CARBONDALE		LIMESTONE	1.5	44.0
374.5	CARBONDALE		SHALE	7.0	45.5
367.5	CARBONDALE		SHALE	1.5	52.5
366.0	CARBONDALE	ST. DAVID	LIMESTONE	2.5	54.0
363.5	CARBONDALE	SPRINGFIELD	COAL	3.5	56.5

MAPID: 14528391000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' N line, 350' E line of NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470661 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.003364 DATE COLLECTED:

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 49.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G179 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	16.0	0.0
414.0	CARBONDALE		SHALE	13.0	16.0
401.0	CARBONDALE		LIMESTONE	1.5	29.0
399.5	CARBONDALE		SHALE	8.5	30.5
391.0	CARBONDALE	ST. DAVID	LIMESTONE	5.0	39.0
386.0	CARBONDALE		SHALE	1.0	44.0
385.0	CARBONDALE		LIMESTONE	0.5	45.0
384.5	CARBONDALE		SHALE	0.2	45.5
384.3	CARBONDALE	SPRINGFIELD	COAL	4.0	45.7

MAPID: 14528392000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 300' N line, 600' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471944 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.007323 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 53.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G180 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0			UNCONSOLIDATED	16.0	0.0
384.0			UNCLASSIFIED	10.0	16.0
374.0	CARBONDALE		SHALE	18.5	26.0
355.5	CARBONDALE		SHALE	3.0	44.5
352.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	47.5
351.0	CARBONDALE	SPRINGFIELD	COAL	4.0	49.0

MAPID: 14528393000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 350' S line, 5' E line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.469497 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.001749 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G181 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	15.0	0.0
425.0			UNCLASSIFIED	35.0	15.0
390.0			SHALE	20.0	50.0

MAPID: 14528394000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 350' S line, 200' E line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.465581 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.997996 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 63.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G182 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	12.0	0.0
438.0			CLAYSTONE	6.0	12.0
432.0	CARBONDALE		SHALE	4.0	18.0
428.0	CARBONDALE	BRERETON	LIMESTONE	6.0	22.0
422.0	CARBONDALE		SHALE	2.2	28.0
419.8	CARBONDALE	HERRIN	COAL	6.0	30.2
413.8	CARBONDALE		CLAYSTONE	3.8	36.2
410.0	CARBONDALE		LIMESTONE	2.0	40.0
408.0	CARBONDALE		SHALE	4.0	42.0
404.0	CARBONDALE		LIMESTONE	0.5	46.0
403.5	CARBONDALE		SHALE	10.0	46.5
393.5	CARBONDALE	ST. DAVID	LIMESTONE	3.0	56.5
390.5	CARBONDALE	SPRINGFIELD	COAL	3.5	59.5

MAPID: 14528396000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 450' S line, 250' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.473374 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.998454 DATE COLLECTED:

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 60.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G183 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	15.0	0.0
415.0			SHALE	7.0	15.0
408.0			SAND	2.0	22.0
406.0	CARBONDALE		SHALE	4.0	24.0
402.0	CARBONDALE		LIMESTONE	0.5	28.0
401.5	CARBONDALE		SHALE	1.0	28.5
400.5	CARBONDALE	HERRIN	COAL	6.0	29.5
394.5	CARBONDALE		CLAYSTONE	4.0	35.5
390.5	CARBONDALE		SHALE	4.5	39.5
386.0	CARBONDALE		LIMESTONE	2.0	44.0
384.0	CARBONDALE		SHALE	9.5	46.0
374.5	CARBONDALE	ST. DAVID	LIMESTONE	1.2	55.5
373.3	CARBONDALE	SPRINGFIELD	COAL	4.0	56.7

MAPID: 14528397000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471628 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.009974 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 51.8 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G186 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	14.0	0.0
406.0			CLAYSTONE	6.0	14.0
400.0	CARBONDALE		SHALE	24.0	20.0
376.0	CARBONDALE		SAND	2.0	44.0
374.0	CARBONDALE		SHALE	2.0	46.0
372.0	CARBONDALE	SPRINGFIELD	COAL	3.8	48.0

MAPID: 14528398000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 300' N line, 25' W line of SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.474035 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.003705 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 69.8 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G187 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	14.0	0.0
416.0			CLAYSTONE	6.0	14.0
410.0	CARBONDALE		SHALE	7.0	20.0
403.0	CARBONDALE		LIMESTONE	2.0	27.0
401.0	CARBONDALE		SHALE	9.0	29.0
392.0	CARBONDALE		UNCLASSIFIED	0.5	38.0
391.5	CARBONDALE	HERRIN	COAL	6.0	38.5
385.5	CARBONDALE		CLAYSTONE	2.5	44.5
383.0	CARBONDALE		LIMESTONE	1.8	47.0
381.2	CARBONDALE		SHALE	10.2	48.8
371.0	CARBONDALE		SHALE	6.2	59.0
364.8	CARBONDALE		LIMESTONE	0.6	65.2
364.2	CARBONDALE	SPRINGFIELD	COAL	4.0	65.8

MAPID: 14528399000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 700' S line, 1000' W line of NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470484 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.010059 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 76.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G184 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	12.0	0.0
408.0			CLAYSTONE	10.0	12.0
398.0			SHALE	15.0	22.0
383.0			SHALE	10.0	37.0
373.0			SAND	18.0	47.0
355.0			SHALE	11.0	65.0

MAPID: 14528400000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 10' N line, 650' W line of NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471666 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.011776 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 57.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G189 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			UNCONSOLIDATED	14.0	0.0
396.0			CLAYSTONE	10.0	14.0
386.0			SAND	21.0	24.0
365.0			SAND	12.0	45.0

MAPID: 14528401000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 300' S line, 650' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471815 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.005319 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G190 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			UNCONSOLIDATED	12.0	0.0
398.0			CLAYSTONE	10.0	12.0
388.0			SHALE	34.0	22.0
354.0			SHALE	9.0	56.0

MAPID: 14528402000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 50' N line, 850' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471057 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.007997 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 49.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G191 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	8.0	0.0
422.0			SAND	14.0	8.0
408.0			UNCLASSIFIED	10.0	22.0
398.0	CARBONDALE		SHALE	12.0	32.0
386.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	44.0
385.0	CARBONDALE	SPRINGFIELD	COAL	4.0	45.0

MAPID: 14528403000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 200' N line, 10' W line of NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.47391 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.011285 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 48.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G188 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			UNCONSOLIDATED	15.0	0.0
395.0			CLAYSTONE	10.0	15.0
385.0	CARBONDALE		SHALE	6.0	25.0
379.0	CARBONDALE		SHALE	2.5	31.0
376.5	CARBONDALE		LIMESTONE	2.5	33.5
374.0	CARBONDALE		SHALE	4.0	36.0
370.0	CARBONDALE	ST. DAVID	LIMESTONE	4.0	40.0
366.0	CARBONDALE	SPRINGFIELD	COAL	4.0	44.0

MAPID: 14528404000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 900' N line, 20' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.474091 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.002048 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 54.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G192 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	12.0	0.0
408.0			CLAYSTONE	8.0	12.0
400.0	CARBONDALE		SHALE	2.0	20.0
398.0	CARBONDALE	HERRIN	COAL	6.0	22.0
392.0	CARBONDALE		CLAYSTONE	4.0	28.0
388.0	CARBONDALE		LIMESTONE	1.0	32.0
387.0	CARBONDALE		SHALE	15.5	33.0
371.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	48.5
370.0	CARBONDALE	SPRINGFIELD	COAL	4.0	50.0

MAPID: 14528405000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 1100' N line, 450' E line of NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471056 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.00144 DATE COLLECTED:

SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 49.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G193 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			UNCONSOLIDATED	12.0	0.0
398.0			CLAYSTONE	14.0	12.0
384.0	CARBONDALE		SHALE	6.0	26.0
378.0	CARBONDALE		LIMESTONE	1.0	32.0
377.0	CARBONDALE		SHALE	9.0	33.0
368.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	42.0
367.0	CARBONDALE		SHALE	1.5	43.0
365.5	CARBONDALE	SPRINGFIELD	COAL	5.0	44.5

MAPID: 14528406000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 250' S line, 650' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471993 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.997868 DATE COLLECTED:

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 58.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G194 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	12.0	0.0
418.0			CLAYSTONE	12.0	12.0
406.0	CARBONDALE		SHALE	16.0	24.0
390.0	CARBONDALE		LIMESTONE	1.0	40.0
389.0	CARBONDALE		SHALE	8.0	41.0
381.0	CARBONDALE		SHALE	1.0	49.0
380.0	CARBONDALE	ST. DAVID	LIMESTONE	4.0	50.0
376.0	CARBONDALE		SHALE	0.5	54.0
375.5	CARBONDALE	SPRINGFIELD	COAL	4.0	54.5

MAPID: 14528407000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 200' S line, 1100' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470426 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.997694 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 58.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G195 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	14.0	0.0
426.0			CLAYSTONE	8.0	14.0
418.0			UNCLASSIFIED	20.0	22.0
398.0	CARBONDALE		SHALE	6.0	42.0
392.0	CARBONDALE		LIMESTONE	1.0	48.0
391.0	CARBONDALE		SHALE	1.0	49.0
390.0	CARBONDALE		LIMESTONE	2.0	50.0
388.0	CARBONDALE		SHALE	1.0	52.0
387.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	53.0
385.5	CARBONDALE	SPRINGFIELD	COAL	4.0	54.5

MAPID: 14528408000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 100' N line, 150' E line of NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.469942 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.004178 DATE COLLECTED:

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 54.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G196 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	24.7	0.0
405.3	CARBONDALE	HERRIN	COAL	4.9	24.7
400.4	CARBONDALE		CLAYSTONE	4.0	29.6
396.4	CARBONDALE		SHALE	15.6	33.6
380.8	CARBONDALE		SHALE	1.6	49.2
379.2	CARBONDALE	SPRINGFIELD	COAL	4.1	50.8

MAPID: 14528409000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 200' S line, 350' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.473039 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.997755 DATE COLLECTED: 9 / 19 / 1988

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G197 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	15.0	0.0
425.0	CARBONDALE		SHALE	7.2	15.0
417.8	CARBONDALE	BRERETON	LIMESTONE	2.9	22.2
414.9	CARBONDALE		SHALE	2.4	25.1
412.5	CARBONDALE	ENERGY	UNCLASSIFIED	3.1	27.5
409.4	CARBONDALE	HERRIN	COAL	4.7	30.6
404.7	CARBONDALE		CLAYSTONE	3.7	35.3
401.0	CARBONDALE		SHALE	13.8	39.0
387.2	CARBONDALE		SHALE	1.3	52.8
385.9	CARBONDALE	ST. DAVID	LIMESTONE	2.6	54.1
383.3	CARBONDALE	TURNER MINE	SHALE	0.4	56.7
382.9	CARBONDALE	SPRINGFIELD	COAL	3.7	57.1

MAPID: 1452841000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 150' N line, 650' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471847 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.004077 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 66.1 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G198 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	21.0	0.0
419.0	CARBONDALE		SHALE	8.8	21.0
410.2	CARBONDALE	BRERETON	LIMESTONE	3.4	29.8
406.8	CARBONDALE	ANNA	SHALE	1.3	33.2
405.5	CARBONDALE	HERRIN	COAL	5.1	34.5
400.4	CARBONDALE		CLAYSTONE	3.2	39.6
397.2	CARBONDALE		SHALE	15.5	42.8
381.7	CARBONDALE	ST. DAVID	LIMESTONE	4.1	58.3
377.6	CARBONDALE	SPRINGFIELD	COAL	3.7	62.4

MAPID: 14528411000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 425' N line, 650' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471865 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.003318 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 67.3 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G199 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	30.0	0.0
410.0			CLAYSTONE	8.3	30.0
401.7	CARBONDALE	HERRIN	COAL	2.1	38.3 UNIT ABOVE TILL & TOP OF COAL ERODED?
399.6	CARBONDALE		CLAYSTONE	2.3	40.4
397.3	CARBONDALE		SHALE	18.7	42.7
378.6	CARBONDALE	ST. DAVID	LIMESTONE	1.8	61.4
376.8	CARBONDALE	SPRINGFIELD	COAL	4.1	63.2

MAPID: 14528412000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 700' N line, 300' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.4731 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.002584 DATE COLLECTED:

SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 62.6 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G200 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			UNCONSOLIDATED	19.0	0.0
391.0			CLAYSTONE	20.6	19.0
370.4	CARBONDALE		UNCLASSIFIED	0.4	39.6
370.0	CARBONDALE		CLAYSTONE	2.7	40.0
367.3	CARBONDALE		SHALE	14.6	42.7
352.7	CARBONDALE	ST. DAVID	LIMESTONE	1.2	57.3
351.5	CARBONDALE	SPRINGFIELD	COAL	4.1	58.5

MAPID: 14528413000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' S line, 300' W line of NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.473114 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.001965 DATE COLLECTED:

SURFACE ELEVATION (FT.): 410.0 LOGGED (FT.): 54.6 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G201 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
410.0			UNCONSOLIDATED	15.0	0.0
395.0			CLAYSTONE	9.7	15.0
385.3	CARBONDALE	HERRIN	COAL	5.3	24.7
380.0	CARBONDALE		CLAYSTONE	3.6	30.0
376.4	CARBONDALE		SHALE	12.9	33.6
363.5	CARBONDALE	ST. DAVID	LIMESTONE	4.5	46.5
359.0	CARBONDALE	SPRINGFIELD	COAL	3.6	51.0

MAPID: 14528414000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 200' N line, 20' E line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.469496 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.003894 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 60.1 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G202 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	7.0	0.0
423.0			CLAYSTONE	8.0	7.0
415.0			UNCLASSIFIED	41.2	15.0
373.8	CARBONDALE	SPRINGFIELD	COAL	3.9	56.2

MAPID: 14528415000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 250' S line, 800' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471381 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.001515 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 24.6 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G204 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	18.7	0.0
401.3	CARBONDALE	HERRIN	COAL	5.9	18.7

MAPID: 14528416000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 100' S line, 700' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.47174 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.001106 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G203 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	13.0	0.0
417.0	CARBONDALE		SHALE	4.7	13.0
412.3	CARBONDALE	HERRIN	COAL	6.4	17.7
405.9	CARBONDALE		CLAYSTONE	2.7	24.1
403.2	CARBONDALE		SHALE	16.1	26.8
387.1	CARBONDALE	ST. DAVID	LIMESTONE	3.7	42.9
383.4	CARBONDALE	SPRINGFIELD	COAL	4.2	46.6

MAPID: 14528417000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 250' S line, 400' E line of NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470878 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.001504 DATE COLLECTED:

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 50.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G205 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	17.4	0.0
412.6	CARBONDALE	ANNA	SHALE	0.3	17.4
412.3	CARBONDALE	HERRIN	COAL	5.8	17.7
406.5	CARBONDALE		CLAYSTONE	2.7	23.5
403.8	CARBONDALE		SHALE	17.2	26.2
386.6	CARBONDALE		SHALE	1.3	43.4
385.3	CARBONDALE	ST. DAVID	LIMESTONE	1.5	44.7
383.8	CARBONDALE	SPRINGFIELD	COAL	3.8	46.2

MAPID: 14528418000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 250' S line, 200' E line of NW SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470181 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.00149 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 48.1 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G206 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	17.0	0.0
403.0			CLAYSTONE	7.5	17.0
395.5	CARBONDALE		SHALE	15.8	24.5
379.7	CARBONDALE		SHALE	1.2	40.3
378.5	CARBONDALE	ST. DAVID	LIMESTONE	2.3	41.5
376.2	CARBONDALE	SPRINGFIELD	COAL	4.3	43.8

MAPID: 14528419000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 150' N line, 900' W line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470975 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.00406 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 54.6 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G207 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	16.9	0.0
403.1	CARBONDALE	BRERETON	LIMESTONE	7.5	16.9
395.6	CARBONDALE	HERRIN	COAL	5.7	24.4
389.9	CARBONDALE		CLAYSTONE	3.3	30.1
386.6	CARBONDALE		SHALE	17.5	33.4
369.1	CARBONDALE	SPRINGFIELD	COAL	3.7	50.9

MAPID: 14528420000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 50' N line, 660' E line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.467029 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.00426 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 61.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G210 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	30.0	0.0
410.0			CLAYSTONE	11.0	30.0
399.0	CARBONDALE		SHALE	6.6	41.0
392.4	CARBONDALE	BRERETON	LIMESTONE	5.9	47.6
386.5	CARBONDALE	ANNA	SHALE	1.7	53.5
384.8	CARBONDALE	HERRIN	COAL	6.0	55.2

MAPID: 14528421000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' S line, 600' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.472071 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.001943 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 62.9 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO G208 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	24.0	0.0
406.0			CLAYSTONE	6.6	24.0
399.4	CARBONDALE	HERRIN	COAL	5.9	30.6
393.5	CARBONDALE		CLAYSTONE	2.0	36.5
391.5	CARBONDALE		SHALE	15.9	38.5
375.6	CARBONDALE	ST. DAVID	LIMESTONE	4.3	54.4
371.3	CARBONDALE	SPRINGFIELD	COAL	4.2	58.7

MAPID: 14528422000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 750' S line, 20' W line of SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.478678 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.006693 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 99.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G209 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	31.7	0.0
398.3	CARBONDALE		SHALE	3.0	31.7
395.3	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	34.7
391.6	CARBONDALE		SHALE	8.7	38.4
382.9	CARBONDALE		SHALE	8.3	47.1
374.6	CARBONDALE	BRERETON	LIMESTONE	1.1	55.4
373.5	CARBONDALE	ANNA	SHALE	7.7	56.5
365.8	CARBONDALE	HERRIN	COAL	5.4	64.2
360.4	CARBONDALE		CLAYSTONE	2.7	69.6
357.7	CARBONDALE		SHALE	18.1	72.3
339.6	CARBONDALE	ST. DAVID	LIMESTONE	4.9	90.4
334.7	CARBONDALE	SPRINGFIELD	COAL	4.2	95.3

MAPID: 14590355000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' S line, 675' W line of SE SE
 QUADRANGLE: AVA LONGITUDE: -89.46721 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.998173 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 46.3 LOG TYPE: Drillers Log
 SOURCE: OTHER 76 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	15.1	0.0
404.9	CARBONDALE		ROCK	2.6	15.1
402.3	CARBONDALE	SPRINGFIELD	COAL	3.8	17.7
398.5	CARBONDALE		ROCK	24.8	21.5

MAPID: 14590368000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 430' S line, 1' W line of SE SE
 QUADRANGLE: AVA LONGITUDE: -89.469557 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.998309 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 41.6 LOG TYPE: Drillers Log
 SOURCE: OTHER 89 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	22.2	0.0
397.8	CARBONDALE		ROCK	15.6	22.2
382.2	CARBONDALE	SPRINGFIELD	COAL	3.8	37.8

MAPID: 14590369000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 800' S line, 200' W line of SE SE
 QUADRANGLE: AVA LONGITUDE: -89.468838 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.999314 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 29.7 LOG TYPE: Drillers Log
 SOURCE: OTHER 90 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0
397.0			ROCK	2.9	23.0
394.1	CARBONDALE	SPRINGFIELD	COAL	3.8	25.9

MAPID: 14590370000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 18 **QUARTERS/FOOTAGES:** 800' S line, 600' W line of SE SE
QUADRANGLE: AVA **LONGITUDE:** -89.467443 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 37.999283 **DATE COLLECTED:** 0 / 0 / 1945
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 50.0 **LOG TYPE:** Drillers Log
SOURCE: OTHER 91 **WELL TYPE:** Coal Test
COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	29.4	0.0
390.6			ROCK	20.6	29.4

MAPID: 14590371000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 18 **QUARTERS/FOOTAGES:** 660' S line, 630' W line of SE SE
QUADRANGLE: AVA **LONGITUDE:** -89.467349 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 37.998894 **DATE COLLECTED:** 0 / 0 / 1945
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 37.7 **LOG TYPE:** Drillers Log
SOURCE: OTHER 92 **WELL TYPE:** Coal Test
COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	24.5	0.0
395.5			ROCK	13.2	24.5

MAPID: 14590372000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 18 **QUARTERS/FOOTAGES:** 400' S line, 340' W line of SE SE
QUADRANGLE: AVA **LONGITUDE:** -89.468378 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 37.998198 **DATE COLLECTED:** 0 / 0 / 1945
SURFACE ELEVATION (FT.): 420.0 **LOGGED (FT.):** 45.0 **LOG TYPE:** Drillers Log
SOURCE: OTHER 93 **WELL TYPE:** Coal Test
COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
395.0			ROCK	20.0	25.0

MAPID: 14590373000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 900' S line, 25' W line of SE SE
 QUADRANGLE: AVA LONGITUDE: -89.469442 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.999604 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 50.8 LOG TYPE: Drillers Log
 SOURCE: OTHER 94 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	29.5	0.0	
390.5			ROCK	21.0	29.5	

MAPID: 14590374000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 700' S line, 20' W line of SE SE
 QUADRANGLE: AVA LONGITUDE: -89.469473 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.999052 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 31.7 LOG TYPE: Drillers Log
 SOURCE: OTHER 95 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	28.1	0.0	
391.9	CARBONDALE	HERRIN	COAL	3.7	28.1	TOP ERODED

MAPID: 14590445000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 40' S line, 40' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.473961 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.004643 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 57.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G167 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0	
404.0			ROCK	35.5	16.0	
368.5	CARBONDALE	HERRIN	COAL	6.0	51.5	

MAPID: 14590446000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 60' N line, 200' E line of SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.474717 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.008033 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 37.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G168 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0	
396.0			ROCK	7.0	24.0	
389.0	CARBONDALE	HERRIN	COAL	6.0	31.0	

MAPID: 14590447000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 100' S line, 250' E line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470277 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.004736 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 58.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G169 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.0	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0	
377.0	CARBONDALE	HERRIN	COAL	1.5	23.0	TOP ERODED
375.5	CARBONDALE		ROCK	31.5	24.5	
344.0	CARBONDALE	SPRINGFIELD	COAL	2.0	56.0	

MAPID: 14590448000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 750' S line, 800' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471263 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.00655 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 58.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G170 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.0	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0	
375.0			ROCK	33.0	25.0	

MAPID: 14590449000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 20' S line, 700' W line of SE NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.466969 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.004454 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G171 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
370.0			ROCK	40.0	30.0

MAPID: 14590450000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 20' N line, 200' W line of NE SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.468717 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.004377 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G172 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	52.0	0.0
348.0			ROCK	18.0	52.0

MAPID: 14590451000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 500' S line, 350' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.472851 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.005891 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 56.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G173 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
399.0			ROCK	31.8	21.0
367.2	CARBONDALE	SPRINGFIELD	COAL	4.0	52.8

MAPID: 14590452000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 75' N line, 400' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.472627 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.007956 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 54.3 LOG TYPE: Drillers Log
 SOURCE: OTHER G174 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	42.0	0.0
378.0			ROCK	8.5	42.0
369.5	CARBONDALE	SPRINGFIELD	COAL	3.8	50.5

MAPID: 14590453000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' S line, 425' E line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.47087 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.005576 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 60.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G175 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	41.0	0.0
359.0			ROCK	15.5	41.0
343.5	CARBONDALE	SPRINGFIELD	COAL	4.0	56.5

MAPID: 14590454000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 40' S line, 650' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471833 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.004601 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 58.3 LOG TYPE: Drillers Log
 SOURCE: OTHER G176 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0
387.0			ROCK	11.5	13.0
375.5	CARBONDALE	HERRIN	COAL	5.8	24.5
369.7	CARBONDALE		ROCK	24.1	30.3
345.6	CARBONDALE	SPRINGFIELD	COAL	4.0	54.4

MAPID: 14590455000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' S line, 550' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.472157 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.005601 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 60.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G177 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
382.0			ROCK	38.5	18.0
343.5	CARBONDALE	SPRINGFIELD	COAL	4.0	56.5

MAPID: 14590456000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 650' S line, 50' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.473887 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.006324 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G178 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
394.0			ROCK	30.5	26.0
363.5	CARBONDALE	SPRINGFIELD	COAL	3.5	56.5

MAPID: 14590457000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' N line, 350' E line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470661 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.003364 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 49.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G179 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
404.0			ROCK	29.8	16.0
374.2	CARBONDALE	SPRINGFIELD	COAL	4.0	45.8

MAPID: 14590458000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 300' N line, 600' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471944 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.007323 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 53.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G180 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
394.0			ROCK	23.0	26.0
371.0	CARBONDALE	SPRINGFIELD	COAL	4.0	49.0

MAPID: 14590459000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 350' N line, 5' E line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.469454 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.00348 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 70.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G181 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	50.0	0.0
370.0			ROCK	20.0	50.0

MAPID: 14590460000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 350' S line, 200' E line of SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.474777 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.005513 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 63.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G182 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0
402.0			ROCK	12.2	18.0
389.8	CARBONDALE	HERRIN	COAL	6.0	30.2
383.8	CARBONDALE		ROCK	23.3	36.2
360.5	CARBONDALE	SPRINGFIELD	COAL	3.5	59.5

MAPID: 14590461000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' S line, 250' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.473204 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.00562 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 60.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G183 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
405.0			ROCK	14.5	15.0
390.5	CARBONDALE	HERRIN	COAL	6.0	29.5
384.5	CARBONDALE		ROCK	21.3	35.5
363.2	CARBONDALE	SPRINGFIELD	COAL	4.0	56.8

MAPID: 14590462000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 300' N line, 25' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.474035 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.003705 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 69.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G184 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
400.0			ROCK	18.0	20.0
382.0	CARBONDALE	HERRIN	COAL	6.0	38.0
376.0	CARBONDALE		ROCK	21.8	44.0
354.2	CARBONDALE	SPRINGFIELD	COAL	4.0	65.8

MAPID: 14590463000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 300' S line, 100' W line of NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.473649 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.009008 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 55.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G185 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
380.0			UNCONSOLIDATED	18.0	20.0
362.0			ROCK	13.5	38.0
348.5	CARBONDALE	SPRINGFIELD	COAL	4.0	51.5

MAPID: 14590464000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471583 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.009965 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 51.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G186 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
380.0			ROCK	28.0	20.0
352.0	CARBONDALE	SPRINGFIELD	COAL	3.8	48.0

MAPID: 14590465000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 700' S line, 1000' W line of NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470484 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.010059 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 76.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G187 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
378.0			ROCK	54.0	22.0

MAPID: 14590466000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 200' N line, 10' W line of NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.47391 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.011285 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 48.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G188 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
375.0			ROCK	19.0	25.0
356.0	CARBONDALE	SPRINGFIELD	COAL	4.0	44.0

MAPID: 14590467000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 10' N line, 650' W line of NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471666 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.011776 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 57.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G189 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	57.0	0.0

MAPID: 14590468000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 300' S line, 650' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471815 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.005319 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G190 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
398.0			ROCK	43.0	22.0

MAPID: 14590469000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 50' N line, 850' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471057 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.007997 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 49.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G191 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0
368.0			ROCK	13.0	32.0
355.0	CARBONDALE	SPRINGFIELD	COAL	4.0	45.0

MAPID: 1459047000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 900' N line, 20' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.474091 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.002048 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 54.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G192 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
400.0			ROCK	2.0	20.0
398.0	CARBONDALE	HERRIN	COAL	6.0	22.0
392.0	CARBONDALE		ROCK	22.0	28.0
370.0	CARBONDALE	SPRINGFIELD	COAL	4.0	50.0

MAPID: 14590471000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 1100' N line, 450' E line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471056 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.00144 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 49.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G193 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
394.0			ROCK	18.5	26.0
375.5	CARBONDALE	SPRINGFIELD	COAL	5.0	44.5

MAPID: 14590472000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 250' S line, 600' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471993 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.005184 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 58.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G194 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
376.0			ROCK	30.5	24.0
345.5	CARBONDALE	SPRINGFIELD	COAL	4.0	54.5

MAPID: 14590473000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 200' S line, 1100' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470252 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.005012 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 58.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G195 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
378.0			UNCONSOLIDATED	20.0	22.0
358.0			ROCK	12.5	42.0
345.5	CARBONDALE	SPRINGFIELD	COAL	4.0	54.5

MAPID: 14590474000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 100' N line, 150' E line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.469942 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.004178 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 54.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G196 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	24.7	0.0
395.3	CARBONDALE	HERRIN	COAL	4.9	24.7 TOP ERODED
390.4	CARBONDALE		ROCK	21.1	29.6
369.3	CARBONDALE	SPRINGFIELD	COAL	4.1	50.7

MAPID: 14590475000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 200' S line, 350' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.472869 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.005063 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 61.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G197 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
405.0			ROCK	15.6	15.0
389.4	CARBONDALE	HERRIN	COAL	4.8	30.6
384.6	CARBONDALE		ROCK	21.8	35.4
362.8	CARBONDALE	SPRINGFIELD	COAL	3.8	57.2

MAPID: 14590476000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 150' N line, 650' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471847 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.004077 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 66.2 LOG TYPE: Drillers Log
 SOURCE: OTHER G198 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0	
399.0			ROCK	13.6	21.0	
385.4	CARBONDALE	HERRIN	COAL	5.1	34.6	
380.3	CARBONDALE		ROCK	22.7	39.7	
357.6	CARBONDALE	SPRINGFIELD	COAL	3.8	62.4	

MAPID: 14590477000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 425' N line, 650' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.471865 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.003318 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 67.3 LOG TYPE: Drillers Log
 SOURCE: OTHER G199 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	38.4	0.0	
381.6	CARBONDALE	HERRIN	COAL	2.1	38.4	TOP ERODED
379.5	CARBONDALE		ROCK	22.8	40.5	
356.7	CARBONDALE	SPRINGFIELD	COAL	4.1	63.3	

MAPID: 14590478000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 700' N line, 300' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.4731 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.002584 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 62.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G200 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0	PLEISTOCENE		UNCONSOLIDATED	39.6	0.0	
400.4	CARBONDALE	HERRIN	COAL	0.4	39.6	SMUTT; TOP ERODED
400.0	CARBONDALE		ROCK	18.4	40.0	
381.6	CARBONDALE	SPRINGFIELD	COAL	4.1	58.4	

MAPID: 14590479000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' S line, 300' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.473114 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.001965 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 54.6 LOG TYPE: Drillers Log
 SOURCE: OTHER G201 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	24.8	0.0	
395.2	CARBONDALE	HERRIN	COAL	5.4	24.8	TOP ERODED
389.8	CARBONDALE		ROCK	20.8	30.2	
369.0	CARBONDALE	SPRINGFIELD	COAL	3.6	51.0	

MAPID: 14590480000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 200' N line, 20' E line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.469496 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.003894 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 60.1 LOG TYPE: Drillers Log
 SOURCE: OTHER G202 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	56.2	0.0	
363.8	CARBONDALE	SPRINGFIELD	COAL	3.9	56.2	TOP ERODED

MAPID: 14590481000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 100' S line, 700' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.47174 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.001109 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 418.5 LOGGED (FT.): 50.8 LOG TYPE: Drillers Log
 SOURCE: AMAX/OTHER G203 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA AMAX-DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
418.5	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0	
405.5			ROCK	4.7	13.0	
400.8	CARBONDALE	HERRIN	COAL	6.4	17.7	
394.4	CARBONDALE		ROCK	22.5	24.1	
371.9	CARBONDALE	SPRINGFIELD	COAL	4.2	46.6	

MAPID: 14590482000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 100' S line, 700' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.47174 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.001106 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 24.5 LOG TYPE: Drillers Log
 SOURCE: OTHER G204 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	18.6	0.0	
401.4	CARBONDALE	HERRIN	COAL	5.9	18.6	TOP ERODED

MAPID: 14590483000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 250' S line, 400' E line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470878 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.001504 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 49.9 LOG TYPE: Drillers Log
 SOURCE: OTHER G205 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	17.4	0.0	
402.6			ROCK	0.4	17.4	
402.2	CARBONDALE	HERRIN	COAL	5.8	17.8	
396.4	CARBONDALE		ROCK	22.5	23.6	
373.9	CARBONDALE	SPRINGFIELD	COAL	3.8	46.1	

MAPID: 14590484000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 250' S line, 200' E line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470181 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.00149 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 48.3 LOG TYPE: Drillers Log
 SOURCE: OTHER G206 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	24.5	0.0	
395.5			ROCK	19.4	24.5	
376.1	CARBONDALE	SPRINGFIELD	COAL	4.4	43.9	

MAPID: 14590485000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 150' N line, 900' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.470975 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.00406 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 54.8 LOG TYPE: Drillers Log
 SOURCE: OTHER G207 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	16.9	0.0	
403.1			ROCK	7.5	16.9	
395.6	CARBONDALE	HERRIN	COAL	5.8	24.4	
389.8	CARBONDALE		ROCK	20.8	30.2	
369.0	CARBONDALE	SPRINGFIELD	COAL	3.8	51.0	

MAPID: 14590486000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 400' S line, 600' W line of NW SE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.472071 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.001943 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 62.9 LOG TYPE: Drillers Log
 SOURCE: OTHER G208 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	30.6	0.0	
389.4	CARBONDALE	HERRIN	COAL	5.9	30.6	TOPE ERODED
383.5	CARBONDALE		ROCK	22.4	36.5	
361.1	CARBONDALE	SPRINGFIELD	COAL	4.2	58.9	

MAPID: 14590487000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 750' S line, 20' W line of SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.478678 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.006693 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 99.6 LOG TYPE: Drillers Log
 SOURCE: OTHER G209 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	31.7	0.0	
388.3			ROCK	32.9	31.7	
355.4	CARBONDALE	HERRIN	COAL	5.4	64.6	
350.0	CARBONDALE		ROCK	25.4	70.0	
324.6	CARBONDALE	SPRINGFIELD	COAL	4.2	95.4	

MAPID: 14590488000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 18 QUARTERS/FOOTAGES: 50' N line, 660' E line of NE SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.476407 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.004439 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 61.3 LOG TYPE: Drillers Log
 SOURCE: OTHER G210 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	41.0	0.0
379.0			ROCK	14.3	41.0
364.7	CARBONDALE	HERRIN	COAL	6.0	55.3

MAPID: 14523233000C VERSION: 1

PROJECT: CUSMAP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 330' N line, 480' W line of NW
 QUADRANGLE: AVA LONGITUDE: -89.481985 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 37.996498 DATE COLLECTED: 10 / 0 / 1975
 SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 750.0 LOG TYPE: Electric Log
 SOURCE: FULK, PERRY WELL TYPE: Producer-Oil and Gas
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
255.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	195.0
198.0	SPOON	DAVIS	UNCLASSIFIED	-	252.0
-300.0	BASE OF PENN.		UNCLASSIFIED	-	750.0

MAPID: 14528423000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 485' N line, 680' W line of NE NW
 QUADRANGLE: AVA LONGITUDE: -89.476616 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.995945 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 51.8 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G69 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	20.0	0.0
-	CARBONDALE		SHALE	27.1	20.0
-	CARBONDALE	SPRINGFIELD	COAL	4.7	47.1

MAPID: 14528424000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 25' N line, 640' E line of NW NW
 QUADRANGLE: AVA LONGITUDE: -89.481189 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.997321 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 49.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #70 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	35.9	0.0
-	CARBONDALE		LIMESTONE	3.0	35.9
-	CARBONDALE		LIMESTONE	5.3	38.9
-	CARBONDALE	SPRINGFIELD	COAL	5.3	44.2

MAPID: 14528425000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 350' N line, 840' E line of NW NW
 QUADRANGLE: AVA LONGITUDE: -89.481908 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.99644 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 48.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #69 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	19.0	0.0
-			SHALE & MUDSTONE	19.4	19.0
-	CARBONDALE		LIMESTONE	2.0	38.4
-	CARBONDALE		UNCLASSIFIED	3.1	40.4
-	CARBONDALE	SPRINGFIELD	COAL	4.5	43.5

MAPID: 14528426000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 1000' N line, 10' W line of NE NW
 QUADRANGLE: AVA LONGITUDE: -89.478981 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.994579 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 80.4 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #73 WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	19.0	0.0
-			CONCRETION	18.6	19.0
-			LIMESTONE	0.3	37.6
-			UNCLASSIFIED	1.5	37.9
-			LIMESTONE	0.8	39.4
-			UNCLASSIFIED	2.0	40.2
-			UNCLASSIFIED	0.4	42.2
-	CARBONDALE		LIMESTONE	0.7	42.6
-	CARBONDALE		SHALE	2.0	43.3
-	CARBONDALE		LIMESTONE	1.5	45.3
-	CARBONDALE		SHALE	1.0	46.8
-	CARBONDALE		UNCLASSIFIED	0.3	47.8
-	CARBONDALE	HERRIN	COAL	2.4	48.1
-	CARBONDALE		CLAYSTONE	4.4	50.5
-	CARBONDALE		LIMESTONE	2.0	54.9
-	CARBONDALE		SHALE	0.6	56.9
-	CARBONDALE		SHALE	1.8	57.5
-	CARBONDALE		SHALE	12.2	59.3
-	CARBONDALE		SHALE	2.4	71.5
-	CARBONDALE		COAL	0.2	73.9
-	CARBONDALE		SAND	2.0	74.1
-	CARBONDALE	SPRINGFIELD	COAL	4.3	76.1

MAPID: 14528427000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 850' N line, 340' E line of NW NW
 QUADRANGLE: AVA LONGITUDE: -89.480192 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.995021 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 46.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #72 WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	42.5	0.0
-	CARBONDALE	SPRINGFIELD	COAL	4.2	42.5

MAPID: 14528428000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 450' S line, 600' E line of NE NW
 QUADRANGLE: AVA LONGITUDE: -89.476421 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.994882 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 48.7 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #74 WELL TYPE: Water Well
 COMMENT: DATE ENTERED AS 45-47

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	36.9	0.0
-			LIMESTONE	1.5	36.9
-			CLAYSTONE	1.1	38.4
-			UNCLASSIFIED	0.3	39.5
-	CARBONDALE		SHALE	6.2	39.8
-	CARBONDALE	SPRINGFIELD	COAL	2.7	46.0

MAPID: 14528429000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 500' N line, 250' E line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.465918 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.992025 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 24.5 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #81 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	12.5	0.0
-			CLAYSTONE	5.3	12.5
-	CARBONDALE		SHALE	2.5	17.8
-	CARBONDALE		SHALE	0.4	20.3
-	CARBONDALE	SPRINGFIELD	COAL	3.8	20.7

MAPID: 14528430000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 30' N line, 25' W line

QUADRANGLE: AVA LONGITUDE: -89.483554 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.997362 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 70.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #75 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	35.0	0.0
-	CARBONDALE		SHALE	20.2	35.0
-	CARBONDALE		SHALE	1.2	55.2
-	CARBONDALE		LIMESTONE	3.4	56.4
-	CARBONDALE		SHALE	1.7	59.8
-	CARBONDALE		LIMESTONE	1.8	61.5
-	CARBONDALE		SHALE	0.4	63.3
-	CARBONDALE		LIMESTONE	1.4	63.7
-	CARBONDALE		UNCLASSIFIED	1.0	65.1
-	CARBONDALE	SPRINGFIELD	COAL	3.9	66.1

MAPID: 14528431000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 375' N line, 650' E line of NE SE NE

QUADRANGLE: AVA LONGITUDE: -89.467303 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.992401 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 35.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #79 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	11.4	0.0
-			UNCLASSIFIED	2.2	11.4
-			CLAYSTONE	2.4	13.6
-			CLAYSTONE	8.8	16.0
-	CARBONDALE		SHALE	4.7	24.8
-	CARBONDALE		LIMESTONE	2.1	29.5
-	CARBONDALE		SHALE	0.3	31.6
-	CARBONDALE	SPRINGFIELD	COAL	3.5	31.9

MAPID: 14528432000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 400' N line, 600' W line of NE NE

QUADRANGLE: AVA LONGITUDE: -89.467525 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.99597 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 45.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #77 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	17.5	0.0
-			UNCLASSIFIED	2.1	17.5
-			UNCLASSIFIED	1.5	19.6
-			CLAYSTONE	2.5	21.1
-	CARBONDALE		SHALE	1.0	23.6
-	CARBONDALE		SHALE	13.9	37.5
-	CARBONDALE		SHALE	1.9	39.4
-	CARBONDALE		LIMESTONE	1.0	41.3
-	CARBONDALE		SHALE	0.2	42.3
-	CARBONDALE	SPRINGFIELD	COAL	3.4	42.5

MAPID: 14528433000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 0' N line, 250' W line of SE NE NE

QUADRANGLE: AVA LONGITUDE: -89.466426 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.995233 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 35.9 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #78 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	18.3	0.0
-			CLAYSTONE	2.8	18.3
-	CARBONDALE		SHALE	6.7	21.1
-	CARBONDALE	ST. DAVID	LIMESTONE	4.1	27.8
-	CARBONDALE		SHALE	0.2	31.9
-	CARBONDALE	SPRINGFIELD	COAL	3.8	32.1

MAPID: 14528434000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 500' N line, 500' E line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.466787 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.992044 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 28.6 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #80 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	19.3	0.0
-			CLAYSTONE	3.8	19.3
-	CARBONDALE		SHALE	1.3	23.1
-	CARBONDALE	ST. DAVID	LIMESTONE	0.7	24.4
-	CARBONDALE		SHALE	0.7	25.1
-	CARBONDALE	SPRINGFIELD	COAL	2.8	25.8

MAPID: 14528435000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 845' N line, 0' E line of NE SE NE
 QUADRANGLE: AVA LONGITUDE: -89.465071 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.991055 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 50.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #82 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	21.5	0.0
-			CLAYSTONE	4.7	21.5
-			CLAYSTONE	12.8	26.2
-			SHALE	11.0	39.0

MAPID: 14528436000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 430' S line, 60' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.465185 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.994578 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 37.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #87 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	21.7	0.0
-			SHALE	15.5	21.7

MAPID: 14528437000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 365' S line, 650' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.467246 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.994443 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 52.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #83 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	14.0	0.0
-			CLAYSTONE	9.7	14.0
-			SHALE	0.5	23.7
-			UNCLASSIFIED	1.1	24.2
-	CARBONDALE	SPRINGFIELD	COAL	1.6	25.3
-	CARBONDALE		CLAYSTONE	1.5	26.9
-	CARBONDALE		SHALE	17.2	28.4
-	CARBONDALE		SHALE	6.4	45.6

MAPID: 14528438000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 200' N line, 300' W line of NE SE
 QUADRANGLE: AVA LONGITUDE: -89.468745 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.989284 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 35.1 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #84 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	17.7	0.0
-			UNCLASSIFIED	1.1	17.7
-			CLAYSTONE	4.6	18.8
-	CARBONDALE		SHALE	6.9	23.4
-	CARBONDALE		SHALE	0.2	30.3
-	CARBONDALE	SPRINGFIELD	COAL	2.8	32.3

MAPID: 14528439000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 20' N line, 650' E line of NE NE

QUADRANGLE: AVA LONGITUDE: -89.467175 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.997011 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 39.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #85 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	20.2	0.0
-			CLAYSTONE	2.2	20.2
-			UNCLASSIFIED	0.5	22.4
-			CLAYSTONE	1.2	22.9
-	CARBONDALE		SHALE	6.1	24.1
-	CARBONDALE	ST. DAVID	LIMESTONE	4.7	30.2
-	CARBONDALE		SHALE	0.5	34.9
-	CARBONDALE	SPRINGFIELD	COAL	3.8	35.4

MAPID: 14528440000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 30' N line, 250' E line of NE NE

QUADRANGLE: AVA LONGITUDE: -89.46578 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.996953 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 26.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #86 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	15.5	0.0
-			CLAYSTONE	3.1	15.5
-	CARBONDALE		SHALE	1.4	18.6
-	CARBONDALE		SHALE	1.0	20.0
-	CARBONDALE		CLAYSTONE	1.4	21.0
-	CARBONDALE	SPRINGFIELD	COAL	4.1	22.4

MAPID: 14528441000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 380' S line, 335' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.466144 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.99446 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 46.1 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #88 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	18.2	0.0
-			SHALE	3.5	18.2
-			SHALE	3.0	21.7
-			SHALE	21.4	24.7

MAPID: 14528442000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 10' N line, 600' W line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.467592 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.993417 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 0.0 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G131 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	17.2	0.0
-			CLAYSTONE	2.7	17.2
-	CARBONDALE	HERRIN	COAL	1.7	19.9
-	CARBONDALE		CLAYSTONE	1.4	21.6
-	CARBONDALE		SHALE	2.3	23.0
-	CARBONDALE		SHALE	13.7	25.3
-	CARBONDALE		SHALE	3.0	39.0
-	CARBONDALE		SHALE	0.3	42.0
-	CARBONDALE	SPRINGFIELD	COAL	3.7	42.3

MAPID: 14528443000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 400' S line, 650' W line of NE NE

QUADRANGLE: AVA LONGITUDE: -89.467389 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.994543 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 48.1 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. G132 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	17.4	0.0
-			CLAYSTONE	2.0	17.4
-	CARBONDALE	HERRIN	COAL	5.5	19.4
-	CARBONDALE		CLAYSTONE	1.9	24.9
-	CARBONDALE		SHALE	1.2	26.8
-	CARBONDALE		SHALE	11.8	28.0
-	CARBONDALE		SHALE	4.0	39.8
-	CARBONDALE		UNCLASSIFIED	0.5	43.8
-	CARBONDALE		SHALE	0.2	44.3
-	CARBONDALE	SPRINGFIELD	COAL	3.6	44.5

MAPID: 14528444000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 350' S line, 250' E line of NE NE

QUADRANGLE: AVA LONGITUDE: -89.465851 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.994371 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 30.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO G133 WELL TYPE: Coal Test

COMMENT: DATE LISTED 1945 - 1947

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	14.3	0.0
-			CLAYSTONE	1.2	14.3
-			CLAYSTONE	3.4	15.5
-	CARBONDALE		SHALE	7.7	18.9
-	CARBONDALE	SPRINGFIELD	COAL	4.2	26.6

MAPID: 14528445000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 870' S line, 275' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.465899 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.995807 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 30.3 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G134 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	16.3	0.0
-			CLAYSTONE	6.7	16.3
-	CARBONDALE		SHALE	2.1	23.0
-	CARBONDALE		SHALE	1.1	25.1
-	CARBONDALE	SPRINGFIELD	COAL	4.1	26.2

MAPID: 14528446000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 750' N line, 800' E line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.467855 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.991379 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 32.3 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL G135 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	15.2	0.0
-			CLAYSTONE	14.2	15.2
-	CARBONDALE		SHALE	0.8	29.4
-	CARBONDALE	SPRINGFIELD	COAL	2.1	30.2

MAPID: 14528447000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 600' N line, 300' W line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.468681 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.99181 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 47.8 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. G136 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	16.3	0.0	
-	PLEISTOCENE		CLAY	4.2	16.3	
-	CARBONDALE		SMUT	0.5	20.5	
-	CARBONDALE	HERRIN	COAL	2.5	21.0	TOP OF COAL ERODED
-	CARBONDALE		UNDERCLAY	2.7	23.5	
-	CARBONDALE		HARD SHALE	17.8	26.2	
-	CARBONDALE	SPRINGFIELD	COAL	3.8	44.0	

MAPID: 14528645000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 1' N line, 330' W line
 QUADRANGLE: AVA LONGITUDE: -89.48249 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.997417 DATE COLLECTED: 7 / 23 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 50.5 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 22-D WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0	CLAY, SAND, GRAVEL
-	CARBONDALE		SANDY SHALE	6.0	28.0	
-	CARBONDALE		BLUE SHALE	3.0	34.0	
-	CARBONDALE		LIMESTONE	7.0	37.0	
-	CARBONDALE		BLACK SHALE	0.5	44.0	
-	CARBONDALE		COAL	5.5	44.5	
-	CARBONDALE		UNDERCLAY	0.5	50.0	

MAPID: 14528646000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 19 **QUARTERS/FOOTAGES:** 330' N line, 330' W line
QUADRANGLE: AVA **LONGITUDE:** -89.482508 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.996509 **DATE COLLECTED:** 7 / 0 / 1937
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 57.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY #23-D **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	19.0	0.0	
-			SANDSTONE	4.0	19.0	BROWN
-			SHALE	5.0	23.0	
-			LIMESTONE	2.0	28.0	
-			SHALE	27.0	30.0	SOFT

MAPID: 14528647000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 19 **QUARTERS/FOOTAGES:** 660' N line, 660' W line
QUADRANGLE: AVA **LONGITUDE:** -89.481374 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.995573 **DATE COLLECTED:** 7 / 0 / 1937
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 55.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY #24-D **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	20.0	0.0	
-			SANDSTONE	4.0	20.0	BROWN
-			LIMESTONE	1.0	24.0	
-			GRAY SHALE	6.0	25.0	SOFT
-			LIMESTONE	2.0	31.0	
-			GRAY SHALE	22.0	33.0	SOFT

MAPID: 14590348000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 6S 3W **SECTION:** 19 **QUARTERS/FOOTAGES:** 485' N line, 680' W line of NE NW
QUADRANGLE: AVA **LONGITUDE:** -89.476616 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 37.995945 **DATE COLLECTED:** 0 / 0 / 1945
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 51.7 **LOG TYPE:** Drillers Log
SOURCE: OTHER 69 **WELL TYPE:** Coal Test
COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0	
420.0			ROCK	27.1	20.0	
392.9	CARBONDALE	SPRINGFIELD	COAL	4.6	47.1	

MAPID: 14590349000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 25' N line, 640' E line of NW NW
 QUADRANGLE: AVA LONGITUDE: -89.481189 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.997321 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 49.6 LOG TYPE: Drillers Log
 SOURCE: OTHER 70 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0	PLEISTOCENE		UNCONSOLIDATED	35.9	0.0	
404.1			ROCK	8.4	35.9	
395.7	CARBONDALE	HERRIN	COAL	5.4	44.3	

MAPID: 14590350000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 350' N line, 640' E line of NW NW
 QUADRANGLE: AVA LONGITUDE: -89.48121 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.996423 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): LOGGED (FT.): 48.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 71 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0	
-			ROCK	24.5	19.0	
-	CARBONDALE	HERRIN	COAL	4.5	43.5	

MAPID: 14590351000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 850' N line, 340' E line of NW NW
 QUADRANGLE: AVA LONGITUDE: -89.480192 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.995021 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): LOGGED (FT.): 46.8 LOG TYPE: Drillers Log
 SOURCE: OTHER 72 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	42.5	0.0	
-	CARBONDALE	HERRIN	COAL	4.3	42.5	TOP ERODED

MAPID: 14590352000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 1000' N line, 10' W line of NE NW
 QUADRANGLE: AVA LONGITUDE: -89.478981 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994579 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): LOGGED (FT.): 80.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 73 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	37.6	0.0
-			ROCK	10.6	37.6
-	CARBONDALE	HERRIN	COAL	2.4	48.2
-	CARBONDALE		ROCK	25.6	50.6
-	CARBONDALE	SPRINGFIELD	COAL	4.4	76.2

MAPID: 14590353000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 450' S line, 600' E line of NE NW
 QUADRANGLE: AVA LONGITUDE: -89.476421 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994882 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): LOGGED (FT.): 48.8 LOG TYPE: Drillers Log
 SOURCE: OTHER 74 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	36.9	0.0
-			ROCK	9.3	36.9
-	CARBONDALE		COAL	2.7	46.2

MAPID: 14590354000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 30' S line, 25' E line of SE NW
 QUADRANGLE: AVA LONGITUDE: -89.474532 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.990039 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 60.6 LOG TYPE: Drillers Log
 SOURCE: OTHER 75 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0
385.0			ROCK	21.7	35.0
363.3	CARBONDALE	HERRIN	COAL	3.9	56.7

MAPID: 14590356000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 400' N line, 600' W line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.467525 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.99597 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 44.6 LOG TYPE: Drillers Log
 SOURCE: OTHER 77 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	17.5	0.0	
402.5	CARBONDALE	HERRIN	COAL	3.7	17.5	TOP ERODED;SMUTT
398.8	CARBONDALE		ROCK	19.7	21.2	
379.1	CARBONDALE	SPRINGFIELD	COAL	3.7	40.9	

MAPID: 14590357000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 1' S line, 250' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.465879 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.993408 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 35.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 78 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	21.2	0.0	
398.8	CARBONDALE		ROCK	10.4	21.2	
388.4	CARBONDALE	SPRINGFIELD	COAL	3.9	31.6	

MAPID: 14590358000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 375' N line, 650' E line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.467303 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.992401 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 35.4 LOG TYPE: Drillers Log
 SOURCE: OTHER 79 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	11.4	0.0	
408.6	CARBONDALE	HERRIN	COAL	2.2	11.4	TOP ERODED
406.4	CARBONDALE		ROCK	18.3	13.6	
388.1	CARBONDALE	SPRINGFIELD	COAL	3.5	31.9	

MAPID: 14590359000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 500' N line, 500' E line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.466787 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.992044 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 28.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 80 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	23.2	0.0
376.8	CARBONDALE		ROCK	2.5	23.2
374.3	CARBONDALE	SPRINGFIELD	COAL	2.8	25.7

MAPID: 14590360000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 500' N line, 250' E line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.465918 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.992025 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 24.4 LOG TYPE: Drillers Log
 SOURCE: OTHER 81 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	17.8	0.0
382.2	CARBONDALE		ROCK	2.9	17.8
379.3	CARBONDALE	SPRINGFIELD	COAL	3.8	20.7

MAPID: 14590361000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 845' N line, 1' W line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.469738 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.991159 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 409.4 LOGGED (FT.): 50.0 LOG TYPE: Drillers Log
 SOURCE: AMAX/OTHER 82 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA AMAX-DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
409.4	PLEISTOCENE		UNCONSOLIDATED	39.0	0.0
370.4			ROCK	11.0	39.0

MAPID: 14590362000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 365' S line, 650' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.467246 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994443 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 52.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 83 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	23.7	0.0
376.3	CARBONDALE		ROCK	0.5	23.7
375.8	CARBONDALE	SPRINGFIELD	COAL	2.7	24.2
373.1	CARBONDALE		ROCK	25.1	26.9

MAPID: 14590363000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 200' N line, 300' W line of NE SE
 QUADRANGLE: AVA LONGITUDE: -89.468745 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.989284 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 33.3 LOG TYPE: Drillers Log
 SOURCE: OTHER 84 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	23.4	0.0
396.6	CARBONDALE		ROCK	7.1	23.4
389.5	CARBONDALE	SPRINGFIELD	COAL	2.8	30.5

MAPID: 14590364000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 20' N line, 650' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.467175 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.997011 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 39.3 LOG TYPE: Drillers Log
 SOURCE: OTHER 85 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
400.0	PLEISTOCENE		UNCONSOLIDATED	24.3	0.0
375.7	CARBONDALE		ROCK	11.1	24.3
364.6	CARBONDALE	SPRINGFIELD	COAL	3.8	35.4

MAPID: 14590365000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 30' N line, 250' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.46578 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.996953 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 26.6 LOG TYPE: Drillers Log
 SOURCE: OTHER 86 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	18.7	0.0
401.3	CARBONDALE		ROCK	3.8	18.7
397.5	CARBONDALE	SPRINGFIELD	COAL	4.1	22.5

MAPID: 14590366000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 430' S line, 60' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.465185 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994578 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 37.2 LOG TYPE: Drillers Log
 SOURCE: OTHER 87 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	21.7	0.0
398.3			ROCK	15.5	21.7

MAPID: 14590367000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 380' S line, 335' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.466144 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.99446 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 46.1 LOG TYPE: Drillers Log
 SOURCE: OTHER 88 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	18.2	0.0
401.8			ROCK	27.9	18.2

MAPID: 14590410000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 10' N line, 600' W line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.467592 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.993417 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 46.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G131 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	19.9	0.0	
400.1	CARBONDALE	HERRIN	COAL	1.8	19.9	TOP ERODED
398.3	CARBONDALE		ROCK	20.7	21.7	
377.6	CARBONDALE	SPRINGFIELD	COAL	3.7	42.4	

MAPID: 14590411000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 400' S line, 650' W line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.467389 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994543 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 48.1 LOG TYPE: Drillers Log
 SOURCE: OTHER G132 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	19.4	0.0	
400.6	CARBONDALE	HERRIN	COAL	5.5	19.4	TOP ERODED
395.1	CARBONDALE		ROCK	19.6	24.9	
375.5	CARBONDALE	SPRINGFIELD	COAL	3.6	44.5	

MAPID: 14590412000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 350' S line, 250' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.465851 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994371 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 30.9 LOG TYPE: Drillers Log
 SOURCE: OTHER G133 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	19.1	0.0	
400.9			ROCK	7.6	19.1	
393.3	CARBONDALE	SPRINGFIELD	COAL	4.3	26.7	

MAPID: 14590413000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 870' S line, 275' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.465899 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.995807 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 30.3 LOG TYPE: Drillers Log
 SOURCE: OTHER G134 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	23.1	0.0	
396.9			ROCK	3.1	23.1	
393.8	CARBONDALE	SPRINGFIELD	COAL	4.1	26.2	

MAPID: 14590414000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 750' N line, 800' E line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.467855 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.991379 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 32.1 LOG TYPE: Drillers Log
 SOURCE: OTHER G135 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	29.5	0.0	
390.5			ROCK	0.5	29.5	
390.0	CARBONDALE		COAL	2.1	30.0	COAL MAY BE PARTIALLY ERODED

MAPID: 14590415000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 600' N line, 300' W line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.468681 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.99181 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 47.9 LOG TYPE: Drillers Log
 SOURCE: OTHER G136 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	20.7	0.0	
399.3	CARBONDALE	HERRIN	COAL	0.5	20.7	SMUTT; TOP ERODED
398.8	CARBONDALE	HERRIN	COAL	2.5	21.2	
396.3	CARBONDALE		ROCK	20.4	23.7	
375.9	CARBONDALE	SPRINGFIELD	COAL	3.8	44.1	

MAPID: 14590416000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 200' S line, 20' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.465063 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.99394 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 25.2 LOG TYPE: Drillers Log
 SOURCE: OTHER G137 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	20.8	0.0	
399.2			ROCK	0.6	20.8	
398.6	CARBONDALE	SPRINGFIELD	COAL	3.8	21.4	

MAPID: 14590417000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 400' N line, 25' E line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.465123 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.992284 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 25.2 LOG TYPE: Drillers Log
 SOURCE: OTHER G138 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	21.2	0.0	
398.8	CARBONDALE	HERRIN	COAL	3.8	21.2	TOP ERODED

MAPID: 14590418000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 10' S line, 300' W line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.468731 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.989861 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 35.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G139 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0	PLEISTOCENE		UNCONSOLIDATED	23.7	0.0	
396.3			ROCK	11.4	23.7	

MAPID: 14590419000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 10' S line, 200' W line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.46908 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.98987 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 35.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G140 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	24.2	0.0
395.8			ROCK	10.8	24.2

MAPID: 14590420000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 10' S line, 75' W line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.469516 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.989878 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 25.7 LOG TYPE: Drillers Log
 SOURCE: OTHER G141 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	21.6	0.0
398.4			ROCK	0.2	21.6
398.2	CARBONDALE	SPRINGFIELD	COAL	3.8	21.8

MAPID: 14590421000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 650' S line, 100' E line of NE NE
 QUADRANGLE: AVA LONGITUDE: -89.465306 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.995188 DATE COLLECTED: 0 / 0 / 1947
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 29.0 LOG TYPE: Drillers Log
 SOURCE: OTHER G142 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	23.2	0.0
396.8	CARBONDALE	HERRIN	COAL	1.7	23.2 TOP ERODED
395.1	CARBONDALE		ROCK	4.1	24.9

MAPID: 14591093000C VERSION: 1

PROJECT: NCRDS 02

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 19 QUARTERS/FOOTAGES: 500' S line, 500' E line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.466801 GEOLOGIST: PHILLIPS
 CONFIDENTIAL: N LATITUDE: 37.991169 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 400.0 LOGGED (FT.): 28.5 LOG TYPE: Drillers Log
 SOURCE: AMAX/OTHER 80 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX 43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.0	PLEISTOCENE		UNCONSOLIDATED	19.3	0.0	
380.7	PLEISTOCENE		CLAY	3.8	19.3	YELLOW
376.8	CARBONDALE		GRAY SHALE	1.3	23.2	
375.5	CARBONDALE	ST. DAVID	LIMESTONE	0.5	24.5	
375.0	CARBONDALE	TURNER MINE	DARK SHALE	0.7	25.0	
374.3	CARBONDALE	SPRINGFIELD	COAL	2.8	25.7	

MAPID: 14502907000C VERSION: 1

PROJECT: CUSMAP

COUNTY: PERRY TWP/RNG: 6S 3W SECTION: 21 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW NE
 QUADRANGLE: AVA LONGITUDE: -89.436327 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 37.992147 DATE COLLECTED: 8 / 0 / 1968
 SURFACE ELEVATION (FT.): 412.0 LOGGED (FT.): 580.0 LOG TYPE: Electric Log
 SOURCE: PESSINA, LOUIS A. WELL TYPE: Producer-Oil and Gas
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
232.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	180.0	
176.0	SPOON	DAVIS	UNCLASSIFIED	-	236.0	
-168.0	BASE OF PENN.		UNCLASSIFIED	-	580.0	

MAPID: 14500282000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 1340' S line, 1300' E line of SE

QUADRANGLE: PERCY LONGITUDE: -89.487514 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.030532 DATE COLLECTED:

SURFACE ELEVATION (FT.): 451.5 LOGGED (FT.): 350.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.5			CLAYSTONE	17.0	0.0
434.5			CLAYSTONE	8.0	17.0
426.5			SHALE	5.0	25.0
421.5			CLAYSTONE	7.5	30.0
414.5	CARBONDALE	GALUM	LIMESTONE	1.5	37.0
412.5	CARBONDALE		SHALE	4.7	39.0
408.5	CARBONDALE		CALCAREOUS SHALE	2.8	43.0
405.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	46.0
403.5	CARBONDALE		SHALE	5.5	48.0
397.5	CARBONDALE		SHALE	11.1	54.0
386.4	CARBONDALE	JAMESTOWN	COAL	0.4	65.1
386.0	CARBONDALE		SHALE	3.0	65.5
383.0	CARBONDALE	BRERETON	LIMESTONE	6.1	68.5
376.9	CARBONDALE	ANNA	SHALE	1.7	74.6
375.2	CARBONDALE	HERRIN	COAL	6.1	76.3
369.1	CARBONDALE		CLAYSTONE	2.1	82.4
367.0	CARBONDALE		SHALE	2.6	84.5
364.5	CARBONDALE		SHALE	2.0	87.0
362.5	CARBONDALE		LIMESTONE	1.0	89.0
361.5	CARBONDALE		LIMESTONE W/ SHALE	2.0	90.0
359.5	CARBONDALE		LIMESTONE	9.0	92.0
350.5	CARBONDALE	ST. DAVID	LIMESTONE	3.7	101.0
346.8	CARBONDALE		SHALE	0.5	104.7
346.3	CARBONDALE	SPRINGFIELD	COAL	3.3	105.2
343.0	CARBONDALE		CLAYSTONE	4.6	108.5
338.4	CARBONDALE		SHALE	6.9	113.1
331.5	CARBONDALE		SHALE	5.0	120.0
326.5	CARBONDALE		SHALE	5.0	125.0
321.5	CARBONDALE		SHALE	7.0	130.0
314.5	CARBONDALE		SHALE	32.0	137.0
282.5	CARBONDALE		SHALE	7.0	169.0
275.5	CARBONDALE		SHALE	1.2	176.0
274.3	CARBONDALE	HANOVER	LIMESTONE	0.5	177.2
273.8	CARBONDALE		SHALE	5.2	177.7
268.6	CARBONDALE	HOUCHIN CREEK	COAL	2.4	182.9
266.2	CARBONDALE		CLAYSTONE	0.7	185.3
265.5	CARBONDALE		SHALE	9.0	186.0
256.5	CARBONDALE		LIMESTONE	0.5	195.0
255.9	CARBONDALE		SHALE	36.8	195.6

219.1	CARBONDALE	OAK GROVE	LIMESTONE	1.6	232.4
217.5	CARBONDALE		SHALE	3.8	234.0
213.7	CARBONDALE	COLCHESTER	COAL	0.9	237.8
212.8	SPOON		CLAYSTONE	0.3	238.7
212.5	SPOON		SHALE	1.0	239.0
211.5	SPOON		LIMESTONE	2.4	240.0
209.1	SPOON		SHALE	3.6	242.4
205.5	SPOON		SHALE	15.0	246.0
190.5	SPOON		LIMESTONE	0.4	261.0
190.1	SPOON		SHALE	12.6	261.4
177.5	SPOON		SHALE	4.0	274.0
173.5	SPOON		SHALE	5.0	278.0
168.5	SPOON		SHALE	1.8	283.0
166.7	SPOON	DEKOVEN	COAL	1.8	284.8
164.9	SPOON		CLAYSTONE	1.4	286.6
163.5	SPOON	DAVIS	COAL	1.3	288.0
162.2	SPOON		SHALE	8.7	289.3
153.5	SPOON		SHALE	3.0	298.0
150.5	SPOON		LIMESTONE	3.0	301.0
147.5	SPOON		SHALE	13.0	304.0
134.5	SPOON		COAL	0.5	317.0
134.0	SPOON		SHALE	5.5	317.5
128.5	SPOON		LIMESTONE	10.0	323.0
118.5	SPOON		SHALE	1.0	333.0
117.5	SPOON		SHALE	103.0	334.0
107.2	SPOON	MURPHYSBORO	COAL	5.0	344.3
102.2	SPOON		CLAYSTONE	0.7	349.3

MAPID: 14502837000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 127' S line, 1265' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.496872

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.027151

DATE COLLECTED:

SURFACE ELEVATION (FT.): 422.0 LOGGED (FT.): 40.0

LOG TYPE: Drillers Log

SOURCE: NO COMPANY

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN COMMENT
384.0	CARBONDALE	HERRIN	COAL	2.0	38.0

MAPID: 14528184000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 150' S line, 635' W line of SW SW

QUADRANGLE: PERCY LONGITUDE: -89.499064 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.027207 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 420.9 LOGGED (FT.): 41.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.9			UNCONSOLIDATED	10.0	0.0	
410.9			SAND	27.0	10.0	
383.9	CARBONDALE	BRERETON	LIMESTONE	1.0	37.0	
382.9	CARBONDALE	HERRIN	COAL	3.5	38.0	

MAPID: 14528185000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 25' S line, 10' W line of SW SW SW

QUADRANGLE: PERCY LONGITUDE: -89.501276 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.026856 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 431.8 LOGGED (FT.): 47.2 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
431.8			UNCONSOLIDATED	3.0	0.0	
428.8			CLAYSTONE	10.0	3.0	
418.8			SHALE	10.0	13.0	
408.8	CARBONDALE	CONANT	LIMESTONE	2.0	23.0	
406.8	CARBONDALE		SILTSTONE	8.0	25.0	
398.8	CARBONDALE	BRERETON	LIMESTONE	6.5	33.0	
392.3	CARBONDALE	ANNA	SILTSTONE	1.5	39.5	
390.8	CARBONDALE	HERRIN	COAL	6.2	41.0	

MAPID: 14528186000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 1 **QUARTERS/FOOTAGES:** 2630' S line, 1310' W line
QUADRANGLE: PERCY **LONGITUDE:** -89.496132 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 38.034064 **DATE COLLECTED:** 0 / 0 / 1947
SURFACE ELEVATION (FT.): 430.0 **LOGGED (FT.):** 37.4 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL CO. **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	14.0	0.0
416.0			UNCLASSIFIED	1.0	14.0
415.0	CARBONDALE		SHALE	10.1	15.0
404.9	CARBONDALE	BRERETON	LIMESTONE	4.5	25.1
400.4	CARBONDALE	ANNA	SILTSTONE	2.4	29.6
398.0	CARBONDALE	HERRIN	COAL	5.4	32.0

MAPID: 14528187000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 1 **QUARTERS/FOOTAGES:** 1330' S line, 1100' W line
QUADRANGLE: PERCY **LONGITUDE:** -89.497165 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 38.030472 **DATE COLLECTED:** 0 / 0 / 1947
SURFACE ELEVATION (FT.): 450.0 **LOGGED (FT.):** 40.4 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL CO. **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	12.0	0.0
438.0			UNCLASSIFIED	22.3	12.0
415.7	CARBONDALE	ANNA	SILTSTONE	0.3	34.3
415.4	CARBONDALE	HERRIN	COAL	5.8	34.6

MAPID: 14528188000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 1 **QUARTERS/FOOTAGES:** 660' S line, 660' W line of SW SW
QUADRANGLE: PERCY **LONGITUDE:** -89.498858 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 38.028617 **DATE COLLECTED:** 0 / 0 / 1947
SURFACE ELEVATION (FT.): 470.0 **LOGGED (FT.):** 41.0 **LOG TYPE:** Drillers Log
SOURCE: PYRAMID COAL CO. **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
470.0			UNCONSOLIDATED	14.5	0.0
455.5			CLAYSTONE	7.2	14.5
448.3			UNCLASSIFIED	12.3	21.7
436.0	CARBONDALE	ANNA	SILTSTONE	1.0	34.0
435.0	CARBONDALE	HERRIN	COAL	6.0	35.0

MAPID: 14528189000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 1980' N line, 660' W line of NW

QUADRANGLE: PERCY LONGITUDE: -89.498194 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.036482 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 53.7 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0			CLAYSTONE	17.7	0.0	
432.3	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	17.7	
428.8	CARBONDALE		SHALE	8.2	21.2	
420.6	CARBONDALE	CONANT	LIMESTONE	1.7	29.4	
418.9	CARBONDALE		SILTSTONE	4.2	31.1	
414.7	CARBONDALE	JAMESTOWN	COAL	0.2	35.3	
414.5	CARBONDALE		SILTSTONE	5.5	35.5	
409.0	CARBONDALE	BRERETON	LIMESTONE	5.3	41.0	
403.7	CARBONDALE	ANNA	SILTSTONE	1.6	46.3	
402.1	CARBONDALE	HERRIN	COAL	5.8	47.9	

MAPID: 14528190000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 1980' S line, 660' W line of SW

QUADRANGLE: PERCY LONGITUDE: -89.498551 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.032261 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 39.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.3	CARBONDALE	BRERETON	LIMESTONE	4.7	26.7	
398.6	CARBONDALE	ANNA	SILTSTONE	2.1	31.4	
396.5	CARBONDALE	HERRIN	COAL	6.0	33.5	

MAPID: 14528191000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 0' N line, 0' E line of NE SW NW

QUADRANGLE: PERCY LONGITUDE: -89.496582 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.038125 DATE COLLECTED: 0 / 0 / 1947

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 59.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	16.0	0.0
444.0	CARBONDALE	GALUM	LIMESTONE	0.5	16.0
443.5	CARBONDALE		CLAYSTONE	7.3	16.5
436.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	23.8
431.9	CARBONDALE		SHALE	8.2	28.1
423.7	CARBONDALE	CONANT	LIMESTONE	2.0	36.3
421.7	CARBONDALE		SILTSTONE	3.7	38.3
418.0	CARBONDALE	JAMESTOWN	COAL	0.2	42.0
417.8	CARBONDALE		SILTSTONE	5.2	42.2
412.6	CARBONDALE	BRERETON	LIMESTONE	5.9	47.4
406.8	CARBONDALE	HERRIN	COAL	5.9	53.2

MAPID: 14590280000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 150' S line, 25' E line of SW SW

QUADRANGLE: PERCY LONGITUDE: -89.496813 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.027215 DATE COLLECTED: 4 / 0 / 1967

SURFACE ELEVATION (FT.): 420.9 LOGGED (FT.): 41.5 LOG TYPE: Drillers Log

SOURCE: AMAX/OTHER 1-B WELL TYPE: Coal Test

COMMENT: BIG GALUM AREAS BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.9	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
410.9			ROCK	28.0	10.0
382.9	CARBONDALE	HERRIN	COAL	3.5	38.0

MAPID: 14590286000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 25' S line, 10' W line of SW
 QUADRANGLE: PERCY LONGITUDE: -89.501276 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.026856 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 431.8 LOGGED (FT.): 47.3 LOG TYPE: Drillers Log
 SOURCE: OTHER 7-B WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.8	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0
418.8			ROCK	28.0	13.0
390.8	CARBONDALE	HERRIN	COAL	6.3	41.0

MAPID: 14590323000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 10' N line, 10' E line of NW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.496264 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.034313 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 37.4 LOG TYPE: Drillers Log
 SOURCE: OTHER 44 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
405.0			ROCK	17.0	15.0
388.0	CARBONDALE	HERRIN	COAL	5.5	32.0

MAPID: 14590330000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 10' S line, 1100' W line of NW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.497154 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.030602 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 40.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 51 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	34.4	0.0
385.6			ROCK	0.4	34.4
385.2	CARBONDALE	HERRIN	COAL	5.8	34.8

MAPID: 14590331000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.498931 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.028617 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 41.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 52 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	34.0	0.0
386.0			ROCK	1.0	34.0
385.0	CARBONDALE	HERRIN	COAL	6.0	35.0

MAPID: 14590335000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.498404 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.036187 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 53.6 LOG TYPE: Drillers Log
 SOURCE: OTHER 56 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	17.8	0.0
402.2			ROCK	17.6	17.8
384.6	CARBONDALE	JAMESTOWN	COAL	0.3	35.4
384.3	CARBONDALE		ROCK	12.1	35.7
372.2	CARBONDALE	HERRIN	COAL	5.8	47.8

MAPID: 14590345000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.498669 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.032402 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 39.4 LOG TYPE: Drillers Log
 SOURCE: OTHER 66 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	26.7	0.0
393.3			ROCK	6.7	26.7
386.6	CARBONDALE	HERRIN	COAL	6.0	33.4

MAPID: 14590346000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 1 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.495971 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.038106 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 59.4 LOG TYPE: Drillers Log
 SOURCE: OTHER 67 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
424.0			ROCK	26.0	16.0
398.0	CARBONDALE	JAMESTOWN	COAL	0.2	42.0
397.8	CARBONDALE		ROCK	11.3	42.2
386.5	CARBONDALE	HERRIN	COAL	5.7	53.5

MAPID: 14500025000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 2290' N line, 1320' W line
 QUADRANGLE: PERCY LONGITUDE: -89.515043 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.035982 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 461.0 LOGGED (FT.): 89.0 LOG TYPE: Drillers Log
 SOURCE: WELL TYPE: Coal Test
 COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.0	MODESTO	PIASA	LIMESTONE	9.0	28.0
424.0	CARBONDALE		CLAYSTONE & SHALE	9.0	37.0
415.0	CARBONDALE	GALUM	LIMESTONE	2.0	46.0
413.0	CARBONDALE		GRAY SHALE	5.7	48.0
407.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	53.7
403.0	CARBONDALE	LAWSON	GRAY SHALE	6.3	58.0
396.7	CARBONDALE	CONANT	LIMESTONE W/ SHALE	7.0	64.3
389.7	CARBONDALE	JAMESTOWN	COAL	0.3	71.3
389.3	CARBONDALE		LIMESTONE W/ SHALE	2.4	71.7
386.9	CARBONDALE	BRERETON	LIMESTONE	6.3	74.1
380.7	CARBONDALE	ANNA	BLACK SHALE	2.3	80.3
378.0	CARBONDALE	HERRIN	COAL	6.0	83.0

MAPID: 14500591000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: SW NW

QUADRANGLE: PERCY LONGITUDE: -89.517245 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.036658 DATE COLLECTED: 0 / 0 / 1929

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 37.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #35 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	17.6	0.0
442.4	CARBONDALE	BANKSTON FORK	LIMESTONE	10.1	17.6
432.3	CARBONDALE		SHALE	3.4	27.7
428.9	CARBONDALE	JAMESTOWN	COAL	0.9	31.1
428.0	CARBONDALE		CLAYSTONE	1.5	32.0
426.5	CARBONDALE		SHALE	4.0	33.5

MAPID: 14502549000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 208' N line, 265' E line of NW NE

QUADRANGLE: PERCY LONGITUDE: -89.50587 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.041543 DATE COLLECTED: 7 / 29 / 1959

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 245.0 LOG TYPE: Drillers Log

SOURCE: OTHO KINMAN WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	1.0	0.0
449.0			CLAYSTONE	29.0	1.0
420.0			SAND	6.0	30.0
414.0			CLAYSTONE	7.0	36.0
407.0			SIDERITE	4.0	43.0
403.0	CARBONDALE		SHALE	12.0	47.0
391.0	CARBONDALE	BRERETON	LIMESTONE	1.0	59.0
390.0	CARBONDALE		SHALE	4.0	60.0
386.0	CARBONDALE	HERRIN	COAL	6.0	64.0
380.0	CARBONDALE		SHALE	7.0	70.0
373.0	CARBONDALE		LIMESTONE	1.0	77.0
372.0	CARBONDALE		SHALE	23.0	78.0
349.0	CARBONDALE		LIMESTONE	4.0	101.0
345.0	CARBONDALE		SHALE	38.0	105.0
307.0	CARBONDALE		LIMESTONE	1.0	143.0
306.0	CARBONDALE		SHALE	14.0	144.0
292.0	CARBONDALE		SHALE	4.0	158.0
288.0	CARBONDALE	HOUCHIN CREEK	COAL	2.0	162.0
286.0	CARBONDALE		SHALE	2.0	164.0
284.0	CARBONDALE		LIMESTONE	3.0	166.0

MAPID: 14528192000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 50' N line, 135' W line of NE NW

QUADRANGLE: PERCY LONGITUDE: -89.514185 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.042146 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 37.3 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #3 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	12.0	0.0
438.0			SAND	10.0	12.0
428.0	CARBONDALE	BRERETON	LIMESTONE	5.0	22.0
423.0	CARBONDALE		SHALE	1.0	27.0
422.0	CARBONDALE	ENERGY	SHALE	3.0	28.0
419.0	CARBONDALE	HERRIN	COAL	6.3	31.0

MAPID: 14528215000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 250' N line, 400' W line of SE NW

QUADRANGLE: PERCY LONGITUDE: -89.513417 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.037782 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 46.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #4 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	10.0	0.0
440.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	10.0
438.0	CARBONDALE		SHALE	8.5	12.0
429.5	CARBONDALE	CONANT	LIMESTONE	2.5	20.5
427.0	CARBONDALE		SHALE	10.0	23.0
417.0	CARBONDALE	BRERETON	LIMESTONE	6.0	33.0
411.0	CARBONDALE	HERRIN	COAL	7.0	39.0

MAPID: 14590282000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 50' N line, 135' W line of NE NW
 QUADRANGLE: PERCY LONGITUDE: -89.514185 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.042146 DATE COLLECTED: 2 / 0 / 1937
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 37.3 LOG TYPE: Drillers Log
 SOURCE: OTHER 3-B WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREAS BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
398.0			ROCK	9.0	22.0
389.0	CARBONDALE	HERRIN	ROCK	6.4	31.0

MAPID: 14590283000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 250' N line, 400' W line of SE NW
 QUADRANGLE: PERCY LONGITUDE: -89.513417 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.037782 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 46.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 4-B WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
430.0	CARBONDALE		ROCK	29.0	10.0
401.0	CARBONDALE	HERRIN	COAL	7.0	39.0

MAPID: 14590301000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 100' N line, 35' W line of NW
 QUADRANGLE: PERCY LONGITUDE: -89.519407 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.042115 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 53.1 LOG TYPE: Drillers Log
 SOURCE: OTHER 22 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
481.0			ROCK	13.0	19.0
468.0	CARBONDALE	JAMESTOWN	COAL	0.1	32.0
467.9	CARBONDALE		ROCK	15.0	32.1
452.9	CARBONDALE	HERRIN	COAL	6.0	47.1

MAPID: 14590302000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 1' N line, 1' W line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.519595 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.038601 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 48.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 23 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0	PLEISTOCENE		UNCONSOLIDATED	6.7	0.0
493.3			ROCK	24.6	6.7
468.7	CARBONDALE	JAMESTOWN	COAL	0.2	31.3
468.5	CARBONDALE		ROCK	9.3	31.5
459.2	CARBONDALE	HERRIN	COAL	7.5	40.8

MAPID: 14590303000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 10' S line, 20' W line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.519605 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.034841 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 81.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 24 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
520.0	PLEISTOCENE		UNCONSOLIDATED	18.5	0.0
501.5			ROCK	46.1	18.5
455.4	CARBONDALE	JAMESTOWN	COAL	0.5	64.6
454.9	CARBONDALE		ROCK	9.8	65.1
445.1	CARBONDALE	HERRIN	COAL	6.1	74.9

MAPID: 14590304000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 350' S line, 1' W line of SE NW
 QUADRANGLE: PERCY LONGITUDE: -89.514886 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.035675 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 88.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 25 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0	PLEISTOCENE		UNCONSOLIDATED	25.4	0.0
474.6			COAL	2.5	25.4
472.1			ROCK	43.5	27.9
428.6	CARBONDALE	JAMESTOWN	COAL	0.3	71.4
428.3	CARBONDALE		ROCK	10.8	71.7
417.5	CARBONDALE	HERRIN	COAL	6.0	82.5

MAPID: 14590305000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 15' N line, 1000' W line of NE SW
 QUADRANGLE: PERCY LONGITUDE: -89.511437 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.034591 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 79.4 LOG TYPE: Drillers Log
 SOURCE: OTHER 26 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0	PLEISTOCENE		UNCONSOLIDATED	24.7	0.0
475.3			ROCK	36.8	24.7
438.5	CARBONDALE	JAMESTOWN	COAL	0.2	61.5
438.3	CARBONDALE		ROCK	11.6	61.7
426.7	CARBONDALE	HERRIN	COAL	6.0	73.3

MAPID: 14590306000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 1' S line, 1' E line of NE SW
 QUADRANGLE: PERCY LONGITUDE: -89.510375 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.030812 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 81.7 LOG TYPE: Drillers Log
 SOURCE: OTHER 27 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
520.0	PLEISTOCENE		UNCONSOLIDATED	19.7	0.0
500.3			ROCK	43.4	19.7
456.9	CARBONDALE	JAMESTOWN	COAL	0.2	63.1
456.7	CARBONDALE		ROCK	12.3	63.3
444.4	CARBONDALE	HERRIN	COAL	6.1	75.6

MAPID: 14590307000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 500' S line, 1' E line of NE SE
 QUADRANGLE: PERCY LONGITUDE: -89.500882 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.031966 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 36.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 28 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0	PLEISTOCENE		UNCONSOLIDATED	29.1	0.0
450.9			COAL	0.2	29.1
450.7			ROCK	0.7	29.3
450.0	CARBONDALE	HERRIN	COAL	6.5	30.0

MAPID: 14590308000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 500' S line, 1' E line of SW NE
 QUADRANGLE: PERCY LONGITUDE: -89.505336 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.035878 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 41.2 LOG TYPE: Drillers Log
 SOURCE: OTHER 29 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0	PLEISTOCENE		UNCONSOLIDATED	24.1	0.0
475.9			ROCK	0.7	24.1
475.2	CARBONDALE	JAMESTOWN	COAL	0.3	24.8
474.9	CARBONDALE		ROCK	9.4	25.1
465.5	CARBONDALE	HERRIN	COAL	6.7	34.5

MAPID: 14590309000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 1' N line, 1' W line of SW NE
 QUADRANGLE: PERCY LONGITUDE: -89.509975 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.038398 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 53.8 LOG TYPE: Drillers Log
 SOURCE: OTHER 30 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0	PLEISTOCENE		UNCONSOLIDATED	17.7	0.0
482.3			ROCK	18.0	17.7
464.3	CARBONDALE	JAMESTOWN	COAL	0.3	35.7
464.0	CARBONDALE		ROCK	11.1	36.0
452.9	CARBONDALE	HERRIN	COAL	6.7	47.1

MAPID: 14590310000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE NW
 QUADRANGLE: PERCY LONGITUDE: -89.509783 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.042194 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 70.8 LOG TYPE: Drillers Log
 SOURCE: OTHER 31 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
520.0	PLEISTOCENE		UNCONSOLIDATED	44.0	0.0
476.0			ROCK	5.4	44.0
470.6	CARBONDALE	JAMESTOWN	COAL	0.4	49.4
470.2	CARBONDALE		ROCK	14.6	49.8
455.6	CARBONDALE	HERRIN	COAL	6.3	64.4

MAPID: 14590311000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.500358 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.038194 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 64.7 LOG TYPE: Drillers Log
 SOURCE: OTHER 32 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0	PLEISTOCENE		UNCONSOLIDATED	50.8	0.0
429.2			ROCK	2.3	50.8
426.9	CARBONDALE	JAMESTOWN	COAL	0.2	53.1
426.7	CARBONDALE		ROCK	5.5	53.3
421.2	CARBONDALE	HERRIN	COAL	5.8	58.8

MAPID: 14590321000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 25' N line, 25' E line of NE SE

QUADRANGLE: PERCY LONGITUDE: -89.500767 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.034326 DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 49.4 LOG TYPE: Drillers Log

SOURCE: OTHER 42 WELL TYPE: Coal Test

COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0	PLEISTOCENE		UNCONSOLIDATED	18.1	0.0
481.9			ROCK	12.1	18.1
469.8	CARBONDALE	JAMESTOWN	COAL	0.2	30.2
469.6	CARBONDALE		ROCK	13.2	30.4
456.4	CARBONDALE	HERRIN	COAL	5.7	43.6

MAPID: 14590322000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW NE

QUADRANGLE: PERCY LONGITUDE: -89.505168 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.038296 DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 49.0 LOG TYPE: Drillers Log

SOURCE: OTHER 43 WELL TYPE: Coal Test

COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	18.7	0.0
421.3			ROCK	12.9	18.7
408.4	CARBONDALE	JAMESTOWN	COAL	0.3	31.6
408.1	CARBONDALE		ROCK	11.1	31.9
397.0	CARBONDALE	HERRIN	COAL	6.0	43.0

MAPID: 14590328000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 30' S line, 100' W line of NE SE

QUADRANGLE: PERCY LONGITUDE: -89.505329 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.030773 DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 57.3 LOG TYPE: Drillers Log

SOURCE: OTHER 49 WELL TYPE: Coal Test

COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	14.5	0.0
405.5			ROCK	24.4	14.5
381.1	CARBONDALE	JAMESTOWN	COAL	0.2	38.9
380.9	CARBONDALE		ROCK	12.5	39.1
368.4	CARBONDALE	HERRIN	COAL	5.9	51.6

MAPID: 14590329000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 25' S line, 10' E line of NE SE
 QUADRANGLE: PERCY LONGITUDE: -89.501025 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.03066 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 53.2 LOG TYPE: Drillers Log
 SOURCE: OTHER 50 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0
405.0			ROCK	15.4	15.0
389.6	CARBONDALE	JAMESTOWN	COAL	0.2	30.4
389.4	CARBONDALE		ROCK	16.9	30.6
372.5	CARBONDALE	HERRIN	COAL	5.7	47.5

MAPID: 14590336000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.502823 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.036262 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 54.1 LOG TYPE: Drillers Log
 SOURCE: OTHER 57 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	25.4	0.0
394.6			ROCK	11.2	25.4
383.5	CARBONDALE	JAMESTOWN	COAL	0.4	36.5
383.0	CARBONDALE		ROCK	11.3	37.0
371.7	CARBONDALE	HERRIN	COAL	5.8	48.3

MAPID: 14590337000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 660' S line, 660' E line of SW NE
 QUADRANGLE: PERCY LONGITUDE: -89.507601 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.036369 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 64.4 LOG TYPE: Drillers Log
 SOURCE: OTHER 58 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	18.3	0.0
401.7			ROCK	40.1	18.3
361.6	CARBONDALE	HERRIN	COAL	6.0	58.4

MAPID: 14590342000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.517026 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.040371 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 49.2 LOG TYPE: Drillers Log
 SOURCE: OTHER 63 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	12.4	0.0
427.6			ROCK	19.8	12.4
407.8	CARBONDALE	JAMESTOWN	COAL	0.2	32.2
407.6	CARBONDALE		ROCK	11.0	32.4
396.6	CARBONDALE	HERRIN	COAL	5.8	43.4

MAPID: 14590343000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE NW
 QUADRANGLE: PERCY LONGITUDE: -89.512185 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.040269 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 49.1 LOG TYPE: Drillers Log
 SOURCE: OTHER 64 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	32.5	0.0
387.5			ROCK	10.2	32.5
377.3	CARBONDALE	HERRIN	COAL	6.4	42.7

MAPID: 14590344000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE SE
 QUADRANGLE: PERCY LONGITUDE: -89.50314 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.03246 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 48.6 LOG TYPE: Drillers Log
 SOURCE: OTHER 65 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	22.5	0.0
397.5			ROCK	6.0	22.5
391.5	CARBONDALE	JAMESTOWN	COAL	0.2	28.5
391.3	CARBONDALE		ROCK	14.1	28.7
377.2	CARBONDALE	HERRIN	COAL	5.8	42.8

MAPID: 14590347000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 2 QUARTERS/FOOTAGES: 10' S line, 650' W line of NE SE

QUADRANGLE: PERCY LONGITUDE: -89.503416 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.030674 DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 53.3 LOG TYPE: Drillers Log

SOURCE: OTHER 68 WELL TYPE: Coal Test

COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	17.2	0.0
402.8			ROCK	16.4	17.2
386.4	CARBONDALE	JAMESTOWN	COAL	0.4	33.6
386.0	CARBONDALE		ROCK	13.0	34.0
373.0	CARBONDALE	HERRIN	COAL	6.3	47.0

MAPID: 14502002000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 3 QUARTERS/FOOTAGES: 200' N line, 200' W line of NE

QUADRANGLE: PERCY LONGITUDE: -89.527974 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.041984 DATE COLLECTED: 7 / 0 / 1939

SURFACE ELEVATION (FT.): 476.6 LOGGED (FT.): 1349.0 LOG TYPE: Drillers Log

SOURCE: G. H. BLANKENSHIP WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
476.6			UNCONSOLIDATED	3.0	0.0
473.6			CLAYSTONE	12.0	3.0
461.6			LIMESTONE	3.0	15.0
458.6			SHALE	3.0	18.0
455.6			SHALE	19.0	21.0
436.6			LIMESTONE	5.0	40.0
431.6			SHALE	3.0	45.0
428.6			LIMESTONE	7.0	48.0
421.6	CARBONDALE	HERRIN	COAL	8.0	55.0
413.6			SHALE	7.0	63.0
406.6			LIMESTONE	23.0	70.0
383.6			SHALE	63.0	93.0
320.6			LIMESTONE	1.0	156.0
319.6			COAL	9.0	157.0

MAPID: 14502840000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 3 QUARTERS/FOOTAGES: 1393' S line, 5' E line

QUADRANGLE: PERCY LONGITUDE: -89.519764 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.031081 DATE COLLECTED:

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 92.3 LOG TYPE: Drillers Log

SOURCE: NO COMPANY WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.0	MODESTO	PIASA	LIMESTONE	12.0	25.0
433.0	MODESTO		DARK GRAY SHALE	2.3	37.0
430.7	CARBONDALE	DANVILLE	COAL	2.2	39.3
428.5	CARBONDALE		CLAYSTONE & SHALE	7.0	41.5
421.5	CARBONDALE	GALUM	LIMESTONE	2.5	48.5
419.0	CARBONDALE		GRAY SHALE	5.5	51.0
413.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	56.5
409.5	CARBONDALE	LAWSON	DARK GRAY SHALE	7.0	60.5
402.5	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.8	67.5
396.7	CARBONDALE	JAMESTOWN	COAL	0.5	73.3
396.2	CARBONDALE		DARK GRAY SHALE	5.0	73.8
391.2	CARBONDALE	BRERETON	LIMESTONE	6.3	78.8
384.0	CARBONDALE	HERRIN	COAL	6.3	86.0

MAPID: 14528370000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 3 QUARTERS/FOOTAGES: 542' S line, 1273' E line of SE

QUADRANGLE: PERCY LONGITUDE: -89.524234 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.028819 DATE COLLECTED: 5 / 8 / 1975

SURFACE ELEVATION (FT.): 471.1 LOGGED (FT.): 133.0 LOG TYPE: Drillers Log

SOURCE: CONSOL MIDWEST REGION WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.7	MODESTO		SHALE	13.3	19.4
438.4	MODESTO		SHALE	5.5	32.7
432.9	MODESTO	DEGRAFF	COAL	0.7	38.2
432.2	MODESTO		SHALE	0.6	38.9
431.6	MODESTO	PIASA	LIMESTONE	12.0	39.5
419.6	MODESTO		SHALE	3.5	51.5
416.1	MODESTO		SHALE	4.2	55.0
411.9	CARBONDALE		SHALE	3.8	59.2
408.1	CARBONDALE	GALUM	LIMESTONE	2.0	63.0
406.1	CARBONDALE		SHALE	6.1	65.0
400.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	71.1
397.3	CARBONDALE		SHALE	2.6	73.8
394.7	CARBONDALE		SHALE	4.3	76.4
390.4	CARBONDALE	CONANT	LIMESTONE	2.8	80.7
387.6	CARBONDALE		SHALE	4.2	83.5
383.4	CARBONDALE	JAMESTOWN	COAL	0.3	87.7
383.1	CARBONDALE		SHALE	0.5	88.0
382.6	CARBONDALE		SHALE	1.1	88.5
381.5	CARBONDALE		SHALE	1.8	89.6
379.7	CARBONDALE		SHALE	4.9	91.4
374.8	CARBONDALE	BRERETON	LIMESTONE	4.1	96.3
370.7	CARBONDALE		SHALE	0.5	100.4
370.2	CARBONDALE	HERRIN	COAL	5.9	100.9
364.3	CARBONDALE		CLAYSTONE	1.6	106.8
362.7	CARBONDALE		LIMESTONE	3.6	108.4
359.1	CARBONDALE		SHALE	2.0	112.0
357.1	CARBONDALE		SANDSTONE	2.5	114.0
354.6	CARBONDALE		SANDSTONE	2.9	116.5
351.7	CARBONDALE		LIMESTONE	4.5	119.4
347.2	CARBONDALE		SHALE	0.8	123.9
346.4	CARBONDALE		LIMESTONE	0.5	124.7
345.9	CARBONDALE		SHALE	0.1	125.2
345.8	CARBONDALE	ST. DAVID	LIMESTONE	1.0	125.3
344.8	CARBONDALE	TURNER MINE	SHALE	0.6	126.3
344.2	CARBONDALE	SPRINGFIELD	COAL	4.1	126.9
340.1	CARBONDALE		CLAYSTONE	0.4	131.0
339.7	CARBONDALE		SHALE	0.6	131.4
339.1	CARBONDALE		SHALE	0.1	132.0
339.0	CARBONDALE		SHALE	0.9	132.1



MAPID: 14590025000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 3 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.52429 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.028753 DATE COLLECTED: 5 / 7 / 1975

SURFACE ELEVATION (FT.): 471.1 LOGGED (FT.): 133.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL CO JC8544 WELL TYPE: Coal Test

COMMENT: PERMIT 73; BURNING STAR #4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
471.1	PLEISTOCENE		UNCONSOLIDATED	19.4	0.0	
451.7	MODESTO		SHALE	13.3	19.4	
438.4	MODESTO		GRAY SHALE	5.5	32.7	
432.9	MODESTO	DEGRAFF	COAL	0.7	38.2	
432.2	MODESTO		GRAY SHALE	0.6	38.9	
431.6	MODESTO	PIASA	LIMESTONE	12.0	39.5	GRAY
419.6	MODESTO		DARK GRAY SHALE	3.5	51.5	
416.1	CARBONDALE		GRAY SHALE	4.2	55.0	
411.9	CARBONDALE		DARK GRAY SHALE	3.8	59.2	
408.1	CARBONDALE	GALUM	LIMESTONE	2.0	63.0	GRAY
406.1	CARBONDALE		CALCAREOUS SHALE	6.1	65.0	
400.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.7	71.1	GRAY
397.3	CARBONDALE		GRAY SHALE	2.6	73.8	
394.7	CARBONDALE		SILTY SHALE	4.3	76.4	
390.4	CARBONDALE	CONANT	LIMESTONE	2.8	80.7	
387.6	CARBONDALE		CALCAREOUS SHALE	4.2	83.5	
383.4	CARBONDALE	JAMESTOWN	COAL	0.3	87.7	
383.1	CARBONDALE		DARK GRAY SHALE	0.5	88.0	
382.6	CARBONDALE		DARK SHALE	1.1	88.5	
381.5	CARBONDALE		DARK GRAY SHALE	1.8	89.6	
379.7	CARBONDALE		CALCAREOUS SHALE	4.9	91.4	
374.8	CARBONDALE	BRERETON	LIMESTONE	4.1	96.3	
370.7	CARBONDALE		SHALE WITH LIMESTONE	0.5	100.4	
370.2	CARBONDALE	HERRIN	COAL	5.9	100.9	
364.3	CARBONDALE		UNDERCLAY	1.6	106.8	
362.7	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.6	108.4	
359.1	CARBONDALE		SANDY SHALE	2.0	112.0	
357.1	CARBONDALE		SANDSTONE	2.5	114.0	GRAY
354.6	CARBONDALE		SHALY SANDSTONE	2.9	116.5	GRAY
351.7	CARBONDALE	ST. DAVID	LIMESTONE	4.5	119.4	GRAY
347.2	CARBONDALE	ST. DAVID	CALCAREOUS SHALE	0.8	123.9	
346.4	CARBONDALE	ST. DAVID	LIMESTONE	0.5	124.7	
345.9	CARBONDALE	ST. DAVID	DARK GRAY SHALE	0.1	125.2	
345.8	CARBONDALE	ST. DAVID	LIMESTONE	1.0	125.3	
344.8	CARBONDALE	TURNER MINE	BLACK SHALE	0.6	126.3	
344.2	CARBONDALE	SPRINGFIELD	COAL	4.1	126.9	
340.1	CARBONDALE		UNDERCLAY	0.4	131.0	
339.7	CARBONDALE		GRAY SHALE	0.6	131.4	
339.1	CARBONDALE		CARBONACEOUS SHALE	0.1	132.0	

339.0 CARBONDALE

GREEN SHALE

0.9 132.1

MAPID: 14590312000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 3 QUARTERS/FOOTAGES: 1' N line, 1' W line of NE NE

QUADRANGLE: PERCY LONGITUDE: -89.524089 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.042468 DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 66.0 LOG TYPE: Drillers Log

SOURCE: OTHER 33 WELL TYPE: Coal Test

COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0	PLEISTOCENE		UNCONSOLIDATED	25.4	0.0
474.6			ROCK	22.7	25.4
451.9	CARBONDALE	JAMESTOWN	COAL	0.3	48.1
451.6	CARBONDALE		ROCK	11.8	48.4
439.8	CARBONDALE	HERRIN	COAL	5.8	60.2

MAPID: 14590319000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 3 QUARTERS/FOOTAGES: 256' N line, 75' W line of SE NE

QUADRANGLE: PERCY LONGITUDE: -89.52393 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.037973 DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 82.3 LOG TYPE: Drillers Log

SOURCE: OTHER 40 WELL TYPE: Coal Test

COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	21.7	0.0
438.3			ROCK	7.6	21.7
430.7			COAL	2.5	29.3
428.2			ROCK	32.2	31.8
396.0	CARBONDALE	JAMESTOWN	COAL	0.2	64.0
395.8	CARBONDALE		ROCK	12.1	64.2
383.7	CARBONDALE	HERRIN	COAL	6.0	76.3

MAPID: 14590341000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 3 QUARTERS/FOOTAGES: 660' S line, 660' E line of NE NE

QUADRANGLE: PERCY LONGITUDE: -89.521868 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.040467 DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 70.1 LOG TYPE: Drillers Log

SOURCE: OTHER 62 WELL TYPE: Coal Test

COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
413.0			ROCK	25.4	27.0
387.6	CARBONDALE	JAMESTOWN	COAL	0.4	52.4
387.2	CARBONDALE		ROCK	11.3	52.8
375.9	CARBONDALE	HERRIN	COAL	6.0	64.1

MAPID: 14503081000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 4 QUARTERS/FOOTAGES: 330' N line, 330' E line
 QUADRANGLE: PERCY LONGITUDE: -89.53897 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.041812 DATE COLLECTED: 6 / 9 / 1972
 SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 533.0 LOG TYPE: Drillers Log
 SOURCE: CONSOLIDATED COAL CO. WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0			CLAYSTONE	22.0	0.0
458.0	MODESTO		SHALE	4.0	22.0
454.0	MODESTO		SHALE	2.0	26.0
452.0	MODESTO		SHALE	9.0	28.0
443.0	MODESTO		SHALE	7.0	37.0
434.0	MODESTO		SHALE	2.0	46.0
432.0	CARBONDALE		SHALE	10.0	48.0
422.0	CARBONDALE	BANKSTON FORK	LIMESTONE	14.0	58.0
408.0	CARBONDALE		SHALE	9.0	72.0
399.0	CARBONDALE	BRERETON	LIMESTONE	2.0	81.0
397.0	CARBONDALE	ANNA	SHALE	26.0	83.0
362.0	CARBONDALE	HERRIN	COAL	6.5	118.0
356.5	CARBONDALE		SHALE	5.5	123.5
351.0	CARBONDALE	ST. DAVID	LIMESTONE	15.5	129.0
335.5	CARBONDALE	SPRINGFIELD	COAL	2.0	144.5
333.5	CARBONDALE		SHALE	15.5	146.5
318.0	CARBONDALE		SHALE	62.0	162.0
256.0	CARBONDALE	HOUCHIN CREEK	COAL	1.5	224.0
254.5	CARBONDALE		SHALE	11.5	225.5
243.0	CARBONDALE		SHALE	26.0	237.0
217.0	CARBONDALE		LIMESTONE	2.0	263.0
215.0	CARBONDALE		SHALE	4.0	265.0
211.0	CARBONDALE	COLCHESTER	COAL	1.0	269.0
210.0	SPOON		SHALE	13.0	270.0
197.0	SPOON		SHALE	68.0	283.0
129.0	SPOON		LIMESTONE	2.0	351.0
127.0	SPOON		SHALE	51.0	353.0
76.0	SPOON		SANDSTONE	20.0	404.0
56.0	SPOON		SHALE	23.0	424.0
33.0			SANDSTONE	86.0	447.0

MAPID: 14503081000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 4 QUARTERS/FOOTAGES: 330' N line, 330' E line

QUADRANGLE: PERCY LONGITUDE: -89.53897 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.041812 DATE COLLECTED:

SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 124.5 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.0	MODESTO	PIASA	LIMESTONE	14.0	67.0
404.0	MODESTO		GRAY SHALE	2.9	81.0
401.1	CARBONDALE	DANVILLE	COAL	0.1	83.9
401.0	CARBONDALE		GRAY SHALE	6.0	84.0
395.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	90.0
393.0	CARBONDALE	ENERGY	UNCLASSIFIED	26.0	92.0
367.0	CARBONDALE	HERRIN	COAL	6.5	118.0

MAPID: 14528283000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 4 QUARTERS/FOOTAGES: NE NE NE

QUADRANGLE: PERCY LONGITUDE: -89.538956 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.041779 DATE COLLECTED: 8 / 26 / 1980

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 533.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION COAL WELL TYPE: Observation Well

COMMENT: WATER FROM SS 450-533' D.P. #17274 P120

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
490.0			CLAYSTONE	22.0	0.0
468.0			SHALE	36.0	22.0
432.0			LIMESTONE	14.0	58.0
418.0			SHALE/COAL	9.0	72.0
409.0	CARBONDALE		SHALE	37.0	81.0
372.0	CARBONDALE	HERRIN	COAL	5.5	118.0
366.5	CARBONDALE		CALCAREOUS SHALE	20.9	123.5
345.4	CARBONDALE	SPRINGFIELD	COAL	2.0	144.6
343.4	CARBONDALE		SHALE	77.4	146.6
266.0	CARBONDALE	HOUCHIN CREEK	COAL	1.5	224.0
264.5	CARBONDALE		SHALE	43.5	225.5
221.0	CARBONDALE	COLCHESTER	COAL	1.0	269.0
220.0	SPOON		SHALE	83.0	270.0
137.0	SPOON		LIMESTONE	2.0	353.0
135.0	SPOON		SHALE	52.0	355.0
83.0			SANDSTONE	17.0	407.0
66.0			SHALE	26.0	424.0
40.0			SANDSTONE	73.0	450.0

MAPID: 14502789000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 5 QUARTERS/FOOTAGES: 2083' S line, 348' W line of SE

QUADRANGLE: PERCY LONGITUDE: -89.564204 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.033728 DATE COLLECTED: 0 / 0 / 1939

SURFACE ELEVATION (FT.): LOGGED (FT.): 550.0 LOG TYPE: Drillers Log

SOURCE: CLARENCE BINGHAM WELL TYPE: Observation Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			SHALE	135.0	225.0
-			LIMESTONE	60.0	360.0
-			SAND	130.0	420.0
-			CLAYSTONE	30.0	0.0
-			LIMESTONE	45.0	30.0
-	CARBONDALE		SHALE	5.0	75.0
-	CARBONDALE	BRERETON	LIMESTONE	10.0	80.0
-	CARBONDALE	HERRIN	COAL	5.0	90.0
-			LIMESTONE	40.0	95.0
-			SHALE	55.0	135.0
-			SHALE	35.0	190.0

MAPID: 14503071000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 5 QUARTERS/FOOTAGES: 495' N line, 990' E line

QUADRANGLE: PERCY LONGITUDE: -89.559474 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.041776 DATE COLLECTED:

SURFACE ELEVATION (FT.): 452.0 LOGGED (FT.): 70.9 LOG TYPE: Survey Core Study

SOURCE: CONSOLIDATION COAL CO. JC7566 WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.7	MODESTO	PIASA	LIMESTONE	4.5	17.3
430.2	MODESTO		BLACK SHALE	1.4	21.8
428.8	CARBONDALE	DANVILLE	COAL	2.8	23.2
426.0	CARBONDALE		CLAYSTONE	4.2	26.0
421.8	CARBONDALE	GALUM	LIMESTONE	3.0	30.2
418.8	CARBONDALE		CALCAREOUS SHALE	5.8	33.2
413.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	39.0
408.7	CARBONDALE	LAWSON	CALCAREOUS SHALE	0.6	43.3
408.1	CARBONDALE	LAWSON	GRAY SHALE	2.9	43.9
405.2	CARBONDALE	LAWSON	DARK GRAY SHALE	2.4	46.8
402.8	CARBONDALE	CONANT	LIMESTONE W/ SHALE	4.9	49.2
397.9	CARBONDALE	JAMESTOWN	BONE COAL	0.4	54.1
397.5	CARBONDALE		LIMESTONE W/ SHALE	0.8	54.5
396.7	CARBONDALE	BRERETON	LIMESTONE	4.3	55.3
392.4	CARBONDALE	ANNA	BLACK SHALE	2.6	59.6
389.8	CARBONDALE	ENERGY	GRAY SHALE	2.8	62.2
387.0	CARBONDALE	HERRIN	COAL	5.9	65.0

MAPID: 14523392000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 5 QUARTERS/FOOTAGES: 600' S line, 3000' E line of SE

QUADRANGLE: PERCY LONGITUDE: -89.566801 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.029669 DATE COLLECTED: 12 / 0 / 1977

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 595.0 LOG TYPE: Drillers Log

SOURCE: HEPP DRILLING CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
490.0			CLAYSTONE	37.0	0.0
453.0			LIMESTONE	12.0	37.0
441.0			SHALE	11.0	49.0
430.0	CARBONDALE		LIMESTONE	12.0	60.0
418.0	CARBONDALE		SHALE	5.0	72.0
413.0	CARBONDALE		LIMESTONE	17.0	77.0
396.0	CARBONDALE	HERRIN	COAL	8.0	94.0
388.0	CARBONDALE		LIMESTONE	15.5	102.0
372.5	CARBONDALE	SPRINGFIELD	COAL	4.0	117.5
368.5	CARBONDALE		CLAYSTONE	1.5	121.5
367.0	CARBONDALE		SHALE	12.0	123.0
355.0	CARBONDALE		SANDSTONE	11.0	135.0
344.0	CARBONDALE		SHALE	41.0	146.0
303.0	CARBONDALE		LIMESTONE W/ SHALE	4.0	187.0
299.0	CARBONDALE	HOUCHIN CREEK	COAL	4.0	191.0
295.0	CARBONDALE		SHALE	45.0	195.0
250.0	CARBONDALE		LIMESTONE	3.0	240.0
247.0	CARBONDALE	COLCHESTER	COAL	3.0	243.0
244.0	SPOON		SANDSTONE/SHALE	44.0	246.0
200.0	SPOON		SHALE	7.0	290.0
193.0	SPOON		SHALE	36.0	297.0
157.0	SPOON	MURPHYSBORO	COAL	3.0	333.0
154.0	SPOON		SHALE	11.0	336.0
143.0			SANDSTONE	29.0	347.0
114.0			SANDSTONE/SHALE	17.0	376.0
97.0			SANDSTONE/SHALE	47.0	393.0
50.0			SANDSTONE	153.0	440.0
-103.0			SHALE & SANDSTONE	2.0	593.0

MAPID: 14502819000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 600' N line, 2100' W line of NW

QUADRANGLE: PERCY LONGITUDE: -89.586116 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.041933 DATE COLLECTED: 10 / 11 / 1947

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 574.0 LOG TYPE: Drillers Log

SOURCE: GWIN DRILLING CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
534.0			SANDSTONE	19.0	16.0
515.0			SHALE	25.0	35.0
490.0			SHALE	26.0	60.0
464.0			SHALE	10.0	86.0
454.0			LIMESTONE	9.0	96.0
445.0			SHALE	15.0	105.0

MAPID: 14503032000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 120' N line, 95' W line of NE SW

QUADRANGLE: PERCY LONGITUDE: -89.588496 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.035661 DATE COLLECTED: 12 / 26 / 1971

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 32.0 LOG TYPE: Drillers Log

SOURCE: C. KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			CLAYSTONE	10.0	10.0
440.0			CLAYSTONE	10.0	20.0
430.0			CLAYSTONE	2.0	30.0

MAPID: 14503065000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 101' N line, 194' W line of SW NE SW

QUADRANGLE: PERCY LONGITUDE: -89.588197 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.033809 DATE COLLECTED: 2 / 6 / 1972

SURFACE ELEVATION (FT.): 510.0 LOGGED (FT.): 30.0 LOG TYPE: Drillers Log

SOURCE: C. KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0			CLAYSTONE	10.0	10.0
490.0			CLAYSTONE	10.0	20.0

MAPID: 14523231000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 94' S line, 102' W line of NW SE SE

QUADRANGLE: PERCY LONGITUDE: -89.579111 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.030384 DATE COLLECTED:

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 32.0 LOG TYPE: Drillers Log

SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
499.0			CLAYSTONE	11.0	1.0
488.0			CLAYSTONE	20.0	12.0

MAPID: 14523522000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 1900' S line, 550' E line of SW NE SE

QUADRANGLE: PERCY LONGITUDE: -89.578805 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.037286 DATE COLLECTED: 6 / 0 / 1979

SURFACE ELEVATION (FT.): 502.0 LOGGED (FT.): 390.0 LOG TYPE: Drillers Log

SOURCE: FRANK HEPP, JR. WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
477.0			UNCLASSIFIED	15.0	25.0
462.0			SHALE	12.0	40.0
450.0			LIMESTONE	9.0	52.0
441.0			CALCAREOUS SHALE	10.0	61.0
431.0			LIMESTONE	4.0	71.0
427.0	CARBONDALE		LIMESTONE W/ SHALE	31.0	75.0
396.0	CARBONDALE	HERRIN	COAL/CLAYSTONE	5.0	106.0
389.0	CARBONDALE		SHALE	2.0	113.0
387.0	CARBONDALE		LIMESTONE	8.0	115.0
379.0	CARBONDALE		CALCAREOUS SHALE	10.0	123.0
369.0	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	6.0	133.0
363.0	CARBONDALE		SHALE	21.0	139.0
342.0	CARBONDALE		SHALE	36.0	160.0
306.0	CARBONDALE		LIMESTONE W/ SHALE	6.0	196.0
300.0	CARBONDALE	HOUCHIN CREEK	COAL/CLAYSTONE	3.0	202.0
297.0	CARBONDALE		SANDSTONE	30.0	205.0
267.0	CARBONDALE		SHALE	16.0	235.0
251.0	CARBONDALE		LIMESTONE	3.0	251.0
248.0	CARBONDALE		SHALE	11.0	254.0
237.0	CARBONDALE	COLCHESTER	COAL/CLAYSTONE	2.0	265.0
235.0	SPOON		SANDSTONE	73.0	267.0
162.0	SPOON		UNCLASSIFIED	5.0	340.0
157.0	SPOON		COAL/CLAYSTONE	2.0	345.0
155.0	SPOON		SHALE	21.0	347.0
123.0			SANDSTONE	11.0	379.0

MAPID: 14590037000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 25' N line, 65' W line of NW NE NE

QUADRANGLE: PERCY LONGITUDE: -89.578857 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.043498 DATE COLLECTED: 10 / 18 / 1980

SURFACE ELEVATION (FT.): 492.7 LOGGED (FT.): 120.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 4954 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
492.7	PLEISTOCENE		UNCONSOLIDATED	8.0	0.0	
484.7	MODESTO		SHALE WITH LIMESTONE	7.0	8.0	
477.7	MODESTO		GRAY SHALE	18.9	15.0	
458.8	MODESTO	DEGRAFF	COAL	1.1	33.9	
457.7	MODESTO		UNDERCLAY	1.0	35.0	
456.7	MODESTO	PIASA	LIMESTONE	11.5	36.0	GRAY
445.2			CALCAREOUS SHALE	11.0	47.5	
434.2	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	9.5	58.5	GRAY
424.7	CARBONDALE	BANKSTON FORK	LIMESTONE	5.2	68.0	GRAY
419.5	CARBONDALE		DARK GRAY SHALE	3.6	73.2	
415.9	CARBONDALE	CONANT	LIMESTONE	2.9	76.8	GRAY
413.0	CARBONDALE		DARK SHALE & LIMESTONE	5.3	79.7	
407.7	CARBONDALE		SHALE	3.0	85.0	
404.7	CARBONDALE	BRERETON	LIMESTONE	6.1	88.0	DARK
398.6	CARBONDALE	ANNA	BLACK SHALE	3.0	94.1	
395.6	CARBONDALE	HERRIN	COAL	8.0	97.1	
387.6	CARBONDALE		UNDERCLAY	0.9	105.1	
386.7	CARBONDALE		CALCAREOUS SHALE	6.0	106.0	
380.7	CARBONDALE	ST. DAVID	LIMESTONE	2.5	112.0	GRAY
378.2	CARBONDALE	SPRINGFIELD	COAL	0.3	114.5	
377.9	CARBONDALE		CALCAREOUS SHALE	5.2	114.8	

MAPID: 14590039000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 25' N line, 70' W line of NW NE NE

QUADRANGLE: PERCY LONGITUDE: -89.578839 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.043498 DATE COLLECTED: 10 / 3 / 1980

SURFACE ELEVATION (FT.): 515.2 LOGGED (FT.): 126.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 4930 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
515.2	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0	
499.2	MODESTO		SANDY SHALE	3.0	16.0	
496.2	MODESTO		SHALE WITH LIMESTONE	4.0	19.0	
492.2	MODESTO		GRAY SHALE	18.6	23.0	
473.6	MODESTO	DEGRAFF	COAL	1.0	41.6	
472.6	MODESTO		GRAY SHALE	0.4	42.6	
472.2	MODESTO	PIASA	LIMESTONE	10.0	43.0	GRAY
462.2	MODESTO		CALCAREOUS SHALE	15.2	53.0	
447.0	CARBONDALE	GALUM	LIMESTONE	1.7	68.2	GRAY
445.3	CARBONDALE		CALCAREOUS SHALE	5.1	69.9	
440.2	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	75.0	GRAY
434.2	CARBONDALE		CALCAREOUS SHALE	2.0	81.0	
432.2	CARBONDALE		DARK SHALE	7.3	83.0	
424.9	CARBONDALE	BRERETON	LIMESTONE	4.7	90.3	DARK
420.2	CARBONDALE	ANNA	BLACK SHALE	2.9	95.0	
417.3	CARBONDALE	HERRIN	COAL	6.2	97.9	
411.1	CARBONDALE		UNDERCLAY	1.3	104.1	
409.8	CARBONDALE	HIGGINSVILLE	LIMESTONE & SHALE	2.6	105.4	GRAY
407.2	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.0	108.0	GRAY
404.2	CARBONDALE		SANDSTONE	6.0	111.0	GRAY
398.2	CARBONDALE	ST. DAVID	LIMESTONE	4.6	117.0	GRAY
393.6	CARBONDALE	SPRINGFIELD	COAL	2.3	121.6	
391.3	CARBONDALE		UNDERCLAY	2.1	123.9	

MAPID: 14590040000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 260' S line, 80' E line of NW NE NW

QUADRANGLE: PERCY LONGITUDE: -89.586556

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.042404

DATE COLLECTED: 11 / 2 / 1978

SURFACE ELEVATION (FT.): 566.3 LOGGED (FT.): 217.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 4446

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
566.3	PLEISTOCENE		CLAY	19.9	0.0	
546.4	MODESTO		SHALE	2.8	19.9	BROWN
543.6	MODESTO		GRAY SHALE	1.9	22.7	
541.7	MODESTO		SANDSTONE/SHALE	15.7	24.6	BROWN
526.0	MODESTO		SANDY SHALE	5.8	40.3	
520.2	MODESTO		SHALY SANDSTONE	6.7	46.1	GRAY
513.5	MODESTO		GRAY SHALE	24.1	52.8	
489.4	MODESTO		LIMESTONE & SHALE	18.3	76.9	
471.1	MODESTO		SHALE	15.6	95.2	
455.5	MODESTO		GRAY SHALE	3.4	110.8	
452.1	MODESTO		DARK SHALE	0.7	114.2	
451.4	MODESTO	DEGRAFF	COAL	0.7	114.9	
450.7	MODESTO		GRAY SHALE	3.2	115.6	
447.5	MODESTO	PIASA	LIMESTONE	6.1	118.8	
441.4	MODESTO		CALCAREOUS SHALE	7.7	124.9	
433.7	CARBONDALE		GRAY SHALE	9.7	132.6	
424.0	CARBONDALE		GRAY SHALE	2.4	142.3	
421.6	CARBONDALE		LIMESTONE & SHALE	6.6	144.7	
415.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.3	151.3	
408.7	CARBONDALE		GRAY SHALE	3.3	157.6	
405.4	CARBONDALE	CONANT	LIMESTONE	2.9	160.9	DARK
402.5	CARBONDALE		DARK SHALE	9.7	163.8	
392.8	CARBONDALE	BRERETON	LIMESTONE	4.4	173.5	DARK
388.4	CARBONDALE	ANNA	DARK SHALE	4.9	177.9	
383.5	CARBONDALE	HERRIN	COAL	6.9	182.8	
376.6	CARBONDALE		UNDERCLAY	1.6	189.7	
375.0	CARBONDALE		GRAY SHALE	1.6	191.3	
373.4	CARBONDALE	HIGGINSVILLE	LIMESTONE & CONGLOMERATE	2.7	192.9	
370.7	CARBONDALE		SHALE WITH LIMESTONE	2.6	195.6	
368.1	CARBONDALE		DARK SHALE	0.3	198.2	
367.8	CARBONDALE	SPRINGFIELD	COAL	0.6	198.5	
367.2	CARBONDALE		GRAY SHALE	5.9	199.1	
361.3	CARBONDALE		LIMESTONE & SHALE	7.2	205.0	
354.1	CARBONDALE		SANDY SHALE	4.8	212.2	

MAPID: 14590041000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 180' N line, 320' E line of NE SW NW

QUADRANGLE: PERCY LONGITUDE: -89.589855 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.039307 DATE COLLECTED: 11 / 1 / 1978

SURFACE ELEVATION (FT.): 547.7 LOGGED (FT.): 194.2 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 4445 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
547.7	PLEISTOCENE		CLAY	12.6	0.0	
535.1	MODESTO		SANDSTONE/SHALE	7.1	12.6	BROWN
528.0	MODESTO		SANDY SHALE	9.7	19.7	
518.3	MODESTO		GRAY SHALE	1.1	29.4	
517.2	MODESTO		COAL	0.3	30.5	
516.9	MODESTO		SANDSTONE	0.8	30.8	GRAY
516.1	MODESTO		GRAY SHALE	30.3	31.6	
485.8	MODESTO		SANDY SHALE	3.4	61.9	
482.4	MODESTO		DARK SHALE	0.8	65.3	
481.6	MODESTO		SHALE	5.8	66.1	
475.8	MODESTO		CALCAREOUS SHALE	4.5	71.9	
471.3	MODESTO		GRAY SHALE	19.5	76.4	
451.8	MODESTO		UNDERCLAY	0.8	95.9	
451.0	MODESTO		GRAY SHALE	1.2	96.7	
449.8	MODESTO	PIASA	LIMESTONE	8.2	97.9	
441.6	MODESTO		CALCAREOUS SHALE	12.2	106.1	
429.4	CARBONDALE		GRAY SHALE	6.2	118.3	
423.2	CARBONDALE	BANKSTON FORK	LIMESTONE & SHALE	10.1	124.5	
413.1	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	134.6	
410.6	CARBONDALE		GRAY SHALE	2.9	137.1	
407.7	CARBONDALE		LIMESTONE & SHALE	3.7	140.0	DARK
404.0	CARBONDALE		SHALE WITH LIMESTONE	4.8	143.7	
399.2	CARBONDALE		DARK SHALE	9.6	148.5	
389.6	CARBONDALE	HERRIN	COAL	6.6	158.1	
383.0	CARBONDALE		UNDERCLAY	1.3	164.7	
381.7	CARBONDALE		GRAY SHALE	4.7	166.0	
377.0	CARBONDALE	HIGGINSVILLE	LIMESTONE & CONGLOMERATE	3.4	170.7	
373.6	CARBONDALE		SHALE WITH LIMESTONE	7.8	174.1	
365.8	CARBONDALE	SPRINGFIELD	COAL	1.2	181.9	
364.6	CARBONDALE		UNDERCLAY	0.9	183.1	
363.7	CARBONDALE		CALCAREOUS SHALE	5.4	184.0	
358.3	CARBONDALE		SANDY SHALE	4.8	189.4	

MAPID: 14590056000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 180' N line, 25' E line of NE SE NE

QUADRANGLE: PERCY LONGITUDE: -89.574531 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.039199 DATE COLLECTED: 8 / 18 / 1972

SURFACE ELEVATION (FT.): 511.2 LOGGED (FT.): 132.8 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C92K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
511.2	PLEISTOCENE		CLAY	25.6	0.0	
485.6	MODESTO		SHALE	3.7	25.6	TAN
481.9	MODESTO		GRAY SHALE	4.4	29.3	
477.5	MODESTO		SHALE	5.2	33.7	TAN
472.3	MODESTO		GRAY SHALE	10.3	38.9	
462.0	MODESTO	DEGRAFF	COAL	0.5	49.2	
461.5	MODESTO		UNDERCLAY	2.7	49.7	
458.8	MODESTO	PIASA	LIMESTONE	12.1	52.4	GRAY
446.7	MODESTO		GRAY SHALE	8.3	64.5	
438.4	CARBONDALE	GALUM	LIMESTONE	2.4	72.8	TAN
436.0	CARBONDALE		CALCAREOUS SHALE	6.1	75.2	
429.9	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	81.3	TAN
426.1	CARBONDALE		DARK GRAY SHALE	12.3	85.1	
413.8	CARBONDALE	BRERETON	LIMESTONE	3.3	97.4	DARK
410.5	CARBONDALE	ANNA	BLACK SHALE	1.9	100.7	
408.6	CARBONDALE	ENERGY	GRAY SHALE	3.0	102.6	
405.6	CARBONDALE	HERRIN	COAL	6.2	105.6	
399.4	CARBONDALE		UNDERCLAY	4.2	111.8	
395.2	CARBONDALE	HIGGINSVILLE	LIMESTONE	5.5	116.0	GRAY
389.7	CARBONDALE		CALCAREOUS SHALE	8.5	121.5	
381.2	CARBONDALE	SPRINGFIELD	COAL	1.5	130.0	
379.7	CARBONDALE		UNDERCLAY	1.3	131.5	

MAPID: 14590057000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 230' S line, 55' W line of SW NE SW

QUADRANGLE: PERCY

LONGITUDE: -89.588705

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.032829

DATE COLLECTED: 8 / 8 / 1972

SURFACE ELEVATION (FT.): 509.0

LOGGED (FT.): 172.9

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C88K

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
509.0	PLEISTOCENE		CLAY	24.5	0.0	
484.5	MODESTO		SANDY SHALE	6.8	24.5	
477.7	MODESTO		SANDY SHALE	6.0	31.3	
471.7	MODESTO		BLACK SHALE	0.5	37.3	
471.2	MODESTO		SHALE	30.8	37.8	
440.4	MODESTO	DEGRAFF	COAL	0.5	68.6	
439.9	MODESTO		GRAY SHALE	1.3	69.1	
438.6	MODESTO	PIASA	LIMESTONE	12.4	70.4	GRAY
426.2	MODESTO		DARK SHALE	2.6	82.8	
423.6	CARBONDALE		SANDY SHALE	8.8	85.4	
414.8	CARBONDALE	GALUM	LIMESTONE	1.5	94.2	TAN
413.3			CALCAREOUS SHALE	6.4	95.7	
406.9	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	102.1	GRAY
404.6	CARBONDALE	BANKSTON FORK	LIMESTONE	1.7	104.4	TAN
402.9	CARBONDALE		SHALE WITH LIMESTONE	24.1	106.1	
378.8	CARBONDALE	BRERETON	LIMESTONE	5.9	130.2	DARK
372.9	CARBONDALE	ANNA	BLACK SHALE	2.1	136.1	
370.8	CARBONDALE	HERRIN	COAL	6.1	138.2	
364.7	CARBONDALE		UNDERCLAY	7.2	144.3	
357.5	CARBONDALE		CALCAREOUS SHALE	4.8	151.5	
352.7	CARBONDALE	ST. DAVID	LIMESTONE	1.3	156.3	GRAY
351.4	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	157.6	
349.9	CARBONDALE	SPRINGFIELD	COAL	3.9	159.1	
346.0	CARBONDALE		CLAYSTONE	9.9	163.0	

MAPID: 14590058000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 60' N line, 5' W line of NW NE SW

QUADRANGLE: PERCY LONGITUDE: -89.588807 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.035829 DATE COLLECTED: 8 / 2 / 1972

SURFACE ELEVATION (FT.): 504.9 LOGGED (FT.): 148.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C87K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
504.9	PLEISTOCENE		CLAY	18.5	0.0	
486.4	MODESTO		SANDSTONE	7.7	18.5	
478.7	MODESTO		SANDY SHALE	2.8	26.2	
475.9	MODESTO		SIDERITE	0.3	29.0	
475.6	MODESTO		SHALE	25.3	29.3	
450.3	MODESTO		COAL	0.3	54.6	
450.0	MODESTO	PIASA	LIMESTONE	5.3	54.9	GRAY
444.7	MODESTO	PIASA	LIMESTONE	5.2	60.2	TAN
439.5	MODESTO		DARK SHALE	10.3	65.4	
429.2	MODESTO		SHALE	4.8	75.7	
424.4	CARBONDALE		SHALE WITH LIMESTONE	1.4	80.5	
423.0	CARBONDALE	GALUM	LIMESTONE	0.8	81.9	TAN
422.2	CARBONDALE		SHALE WITH LIMESTONE	6.5	82.7	
415.7	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	89.2	TAN
410.2	CARBONDALE		SHALE WITH LIMESTONE	13.8	94.7	
396.4	CARBONDALE	BRERETON	LIMESTONE	3.7	108.5	DARK
392.7	CARBONDALE	ANNA	DARK SHALE	1.3	112.2	
391.4	CARBONDALE	ANNA	BLACK SHALE	1.5	113.5	
389.9	CARBONDALE	HERRIN	COAL	6.2	115.0	
383.7	CARBONDALE		UNDERCLAY	5.3	121.2	
378.4	CARBONDALE		SANDSTONE/SHALE	13.3	126.5	GRAY
365.1	CARBONDALE	SPRINGFIELD	COAL	1.1	139.8	
364.0	CARBONDALE		UNDERCLAY	7.1	140.9	

MAPID: 14590059000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 330' N line, 215' W line of SW NW NW

QUADRANGLE: PERCY LONGITUDE: -89.592719

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.040804

DATE COLLECTED: 8 / 11 / 1972

SURFACE ELEVATION (FT.): 558.9 LOGGED (FT.): 193.3

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C86K

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
558.9	PLEISTOCENE		CLAY	12.2	0.0	
546.7	MODESTO		SANDSTONE/SHALE	12.3	12.2	BROWN-TAN
534.4	MODESTO		SANDY SHALE	46.5	24.5	
487.9	MODESTO		BLACK SHALE	0.5	71.0	
487.4	MODESTO		GRAY SHALE	3.0	71.5	
484.4	MODESTO		SHALE	4.5	74.5	
479.9	MODESTO		LIMESTONE & SHALE	7.3	79.0	GRAY
472.6	MODESTO		RED SHALE	0.7	86.3	
471.9	MODESTO		GRAY SHALE	15.1	87.0	
456.8	MODESTO	DEGRAFF	COAL	0.3	102.1	
456.5	MODESTO		UNDERCLAY	2.0	102.4	
454.5	MODESTO	PIASA	LIMESTONE	13.2	104.4	GRAY
441.3	MODESTO		DARK GRAY SHALE	8.3	117.6	
433.0	MODESTO		GRAY SHALE	4.3	125.9	
428.7	CARBONDALE		CALCAREOUS SHALE	1.7	130.2	
427.0	CARBONDALE	GALUM	LIMESTONE	1.3	131.9	TAN
425.7	CARBONDALE		CALCAREOUS SHALE	8.5	133.2	
417.2	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	141.7	TAN
414.7	CARBONDALE		DARK GRAY SHALE	3.5	144.2	
411.2	CARBONDALE	CONANT	LIMESTONE	1.0	147.7	DARK
410.2	CARBONDALE		DARK SHALE	4.5	148.7	
405.7	CARBONDALE	JAMESTOWN	COAL	0.3	153.2	
405.4	CARBONDALE		DARK SHALE	1.1	153.5	
404.3	CARBONDALE	BRERETON	LIMESTONE	6.6	154.6	DARK
397.7	CARBONDALE	ANNA	GRAY SHALE	0.2	161.2	
397.5	CARBONDALE	ANNA	BLACK SHALE	2.8	161.4	
394.7	CARBONDALE	ENERGY	GRAY SHALE	0.7	164.2	
394.0	CARBONDALE	HERRIN	COAL	6.4	164.9	
387.6	CARBONDALE		CLAYSTONE	12.9	171.3	
374.7	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.2	184.2	GRAY
372.5	CARBONDALE		GRAY SHALE	1.3	186.4	
371.2	CARBONDALE	ST. DAVID	LIMESTONE	0.5	187.7	TAN
370.7	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	188.2	
370.2	CARBONDALE	SPRINGFIELD	COAL	1.3	188.7	
368.9	CARBONDALE		UNDERCLAY	3.3	190.0	

MAPID: 14590060000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 5' N line, 180' W line of NW SE NW

QUADRANGLE: PERCY LONGITUDE: -89.588099 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.039778 DATE COLLECTED: 7 / 31 / 1972

SURFACE ELEVATION (FT.): 551.1 LOGGED (FT.): 191.4 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C85K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
551.1	PLEISTOCENE		CLAY	12.2	0.0	
538.9	MODESTO		SHALE & SANDSTONE	5.8	12.2	
533.1	MODESTO		GRAY SHALE	55.3	18.0	
477.8	MODESTO		SHALE	1.5	73.3	
476.3	MODESTO		GRAY SHALE	24.3	74.8	
452.0	MODESTO	DEGRAFF	COAL	0.4	99.1	
451.6	MODESTO		GRAY SHALE	2.3	99.5	
449.3	MODESTO	PIASA	LIMESTONE	7.2	101.8	GRAY
442.1			GRAY SHALE	18.2	109.0	
423.9	CARBONDALE	GALUM	LIMESTONE	1.4	127.2	TAN
422.5	CARBONDALE		CALCAREOUS SHALE	6.6	128.6	
415.9	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	135.2	TAN
411.4	CARBONDALE		DARK SHALE	4.5	139.7	
406.9	CARBONDALE	CONANT	LIMESTONE	1.2	144.2	DARK
405.7	CARBONDALE		DARK SHALE	4.8	145.4	
400.9	CARBONDALE	JAMESTOWN	COAL	0.3	150.2	
400.6	CARBONDALE		SHALE WITH LIMESTONE	9.7	150.5	
390.9	CARBONDALE		GRAY SHALE	2.7	160.2	
388.2	CARBONDALE	ANNA	BLACK SHALE	0.7	162.9	
387.5	CARBONDALE	HERRIN	COAL	7.0	163.6	
380.5	CARBONDALE		CLAYSTONE	12.7	170.6	
367.8	CARBONDALE	ST. DAVID	LIMESTONE	4.3	183.3	TAN
363.5	CARBONDALE	SPRINGFIELD	COAL	1.6	187.6	
361.9	CARBONDALE		UNDERCLAY	2.2	189.2	

MAPID: 14590061000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 110' N line, 60' W line of NW NW SE

QUADRANGLE: PERCY

LONGITUDE: -89.58386

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.035637

DATE COLLECTED: 8 / 7 / 1972

SURFACE ELEVATION (FT.): 509.3

LOGGED (FT.): 135.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C84K

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
509.3	PLEISTOCENE		CLAY	21.5	0.0	
487.8	PLEISTOCENE		UNCONSOLIDATED	11.8	21.5	
476.0	MODESTO		SHALE	12.6	33.3	TAN
463.4	MODESTO	DEGRAFF	COAL	0.5	45.9	
462.9	MODESTO		UNDERCLAY	5.2	46.4	
457.7	MODESTO	PIASA	LIMESTONE	7.4	51.6	GRAY
450.3			CALCAREOUS SHALE	12.7	59.0	
437.6	CARBONDALE	GALUM	LIMESTONE	2.1	71.7	TAN
435.5	CARBONDALE		CALCAREOUS SHALE	6.3	73.8	
429.2	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	80.1	TAN
424.9	CARBONDALE		DARK GRAY SHALE	4.8	84.4	
420.1	CARBONDALE	CONANT	LIMESTONE	2.3	89.2	DARK
417.8	CARBONDALE		DARK SHALE	3.7	91.5	
414.1	CARBONDALE	JAMESTOWN	COAL	0.3	95.2	
413.8	CARBONDALE		DARK SHALE	7.6	95.5	
406.2	CARBONDALE	BRERETON	LIMESTONE	4.2	103.1	DARK
402.0	CARBONDALE	HERRIN	COAL	5.7	107.3	
396.3	CARBONDALE		UNDERCLAY	4.6	113.0	
391.7	CARBONDALE		SANDY SHALE	7.6	117.6	
384.1	CARBONDALE	ST. DAVID	LIMESTONE	2.3	125.2	GRAY-TAN
381.8	CARBONDALE		CALCAREOUS SHALE	1.8	127.5	
380.0	CARBONDALE	SPRINGFIELD	CARBONACEOUS SHALE	0.4	129.3	
379.6	CARBONDALE	SPRINGFIELD	UNDERCLAY	3.3	129.7	
376.3	CARBONDALE		UNDERCLAY	2.0	133.0	

MAPID: 14590062000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 30' N line, 60' E line of NE SE NW

QUADRANGLE: PERCY LONGITUDE: -89.584172 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.039681 DATE COLLECTED: 7 / 28 / 1972

SURFACE ELEVATION (FT.): 529.9 LOGGED (FT.): 163.3 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C83K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
529.9	PLEISTOCENE		CLAY	18.0	0.0	
511.9	MODESTO		SANDSTONE/SHALE	13.3	18.0	BROWN-TAN
498.6	MODESTO		GRAY SHALE	0.8	31.3	
497.8	MODESTO		BLACK SHALE	0.5	32.1	
497.3	MODESTO		SHALE	32.2	32.6	
465.1	MODESTO	DEGRAFF	COAL	0.3	64.8	
464.8	MODESTO		GRAY SHALE	2.2	65.1	
462.6	MODESTO	PIASA	LIMESTONE	2.0	67.3	GRAY
460.6	MODESTO	PIASA	LIMESTONE	6.3	69.3	GRAY-TAN
454.3			DARK SHALE	13.6	75.6	
440.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.2	89.2	TAN
438.5	CARBONDALE		SHALE WITH LIMESTONE	6.5	91.4	
432.0	CARBONDALE	CONANT	LIMESTONE	3.8	97.9	GRAY
428.2	CARBONDALE		SHALE WITH LIMESTONE	15.2	101.7	
413.0	CARBONDALE	BRERETON	LIMESTONE	5.0	116.9	DARK
408.0	CARBONDALE	ANNA	GRAY SHALE	0.5	121.9	
407.5	CARBONDALE	ANNA	BLACK SHALE	3.7	122.4	
403.8	CARBONDALE	HERRIN	COAL	5.6	126.1	
398.2	CARBONDALE		UNDERCLAY	2.3	131.7	
395.9	CARBONDALE		UNDERCLAY	2.3	134.0	
393.6	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.2	136.3	GRAY
389.4	CARBONDALE		GRAY SHALE	2.0	140.5	
387.4	CARBONDALE		CALCAREOUS SHALE	1.0	142.5	
386.4	CARBONDALE	ST. DAVID	LIMESTONE	3.4	143.5	GRAY
383.0	CARBONDALE		GRAY SHALE	1.0	146.9	
382.0	CARBONDALE	SPRINGFIELD	COAL	0.5	147.9	
381.5	CARBONDALE		UNDERCLAY	1.0	148.4	
380.5	CARBONDALE		CALCAREOUS SHALE	3.9	149.4	
376.6	CARBONDALE		SANDSTONE/SHALE	10.0	153.3	

MAPID: 14590063000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 160' S line, 30' E line of NW NE NW

QUADRANGLE: PERCY

LONGITUDE: -89.586388

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.042126

DATE COLLECTED: 7 / 25 / 1972

SURFACE ELEVATION (FT.): 570.5

LOGGED (FT.): 233.1

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C82K

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.5	PLEISTOCENE		CLAY	20.0	0.0	
550.5	PLEISTOCENE		SAND	2.3	20.0	BROWN
548.2	MODESTO		SHALE	1.5	22.3	BROWN-TAN
546.7	MODESTO		GRAY SHALE	6.3	23.8	
540.4	MODESTO		SHALE	15.9	30.1	BROWN-TAN
524.5	MODESTO		GRAY SHALE	41.2	46.0	
483.3	MODESTO		BLACK SHALE	0.3	87.2	
483.0	MODESTO		GRAY SHALE	4.5	87.5	
478.5	MODESTO		SHALE	2.3	92.0	
476.2	MODESTO		SHALE WITH LIMESTONE	6.2	94.3	
470.0	MODESTO		GRAY SHALE	16.5	100.5	
453.5	MODESTO	DEGRAFF	COAL	0.3	117.0	
453.2	MODESTO		GRAY SHALE	3.8	117.3	
449.4	MODESTO	PIASA	LIMESTONE	7.3	121.1	GRAY
442.1			GRAY SHALE	19.3	128.4	
422.8	CARBONDALE	BANKSTON FORK	LIMESTONE	1.4	147.7	TAN
421.4	CARBONDALE		CALCAREOUS SHALE	6.9	149.1	
414.5	CARBONDALE	CONANT	LIMESTONE	4.7	156.0	GRAY
409.8	CARBONDALE		SHALE WITH LIMESTONE	19.3	160.7	
390.5	CARBONDALE	BRERETON	LIMESTONE	1.0	180.0	DARK
389.5	CARBONDALE	ANNA	GRAY SHALE	0.7	181.0	
388.8	CARBONDALE	ANNA	BLACK SHALE	5.8	181.7	
383.0	CARBONDALE	HERRIN	COAL	6.2	187.5	
376.8	CARBONDALE		UNDERCLAY	6.4	193.7	
370.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.0	200.1	GRAY
369.4	CARBONDALE		CARBONACEOUS SHALE	3.0	201.1	
366.4	CARBONDALE		GRAY SHALE	5.0	204.1	
361.4	CARBONDALE		SANDSTONE/SHALE	24.0	209.1	

MAPID: 14590066000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 75' N line, 250' W line of SW NW NW

QUADRANGLE: PERCY

LONGITUDE: -89.592584

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.041508

DATE COLLECTED: 9 / 2 / 1965

SURFACE ELEVATION (FT.): 503.5

LOGGED (FT.): 117.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C48K

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
503.5	PLEISTOCENE		CLAY	23.6	0.0	
479.9	MODESTO		SHALE	11.5	23.6	
468.4	MODESTO		GRAY SHALE	6.1	35.1	
462.3	MODESTO	DEGRAFF	COAL	0.5	41.2	
461.8	MODESTO		UNDERCLAY	1.9	41.7	
459.9	MODESTO		SHALE WITH LIMESTONE	2.3	43.6	
457.6	MODESTO	PIASA	LIMESTONE	7.6	45.9	
450.0	MODESTO		GRAY SHALE	5.4	53.5	
444.6	CARBONDALE		CALCAREOUS SHALE	12.5	58.9	
432.1	CARBONDALE	GALUM	LIMESTONE	1.5	71.4	LIGHT
430.6	CARBONDALE		GRAY SHALE	5.0	72.9	
425.6	CARBONDALE	BANKSTON FORK	LIMESTONE	5.2	77.9	TAN
420.4	CARBONDALE		DARK SHALE	4.2	83.1	
416.2	CARBONDALE	CONANT	LIMESTONE	2.8	87.3	DARK
413.4	CARBONDALE		DARK GRAY SHALE	4.2	90.1	
409.2	CARBONDALE	JAMESTOWN	COAL	0.2	94.3	
409.0	CARBONDALE		DARK GRAY SHALE	6.1	94.5	
402.9	CARBONDALE	BRERETON	LIMESTONE	3.8	100.6	DARK
399.1	CARBONDALE	ANNA	BLACK SHALE	4.5	104.4	
394.6	CARBONDALE	HERRIN	COAL	6.8	108.9	
387.8	CARBONDALE		UNDERCLAY	1.3	115.7	

MAPID: 14590067000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES: 230' S line, 75' W line of SW NW SW

QUADRANGLE: PERCY LONGITUDE: -89.593386 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.032899 DATE COLLECTED: 8 / 25 / 1965

SURFACE ELEVATION (FT.): 498.2 LOGGED (FT.): 148.4 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C43K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
498.2	PLEISTOCENE		CLAY	20.3	0.0	
477.9	MODESTO		GRAY SHALE	4.3	20.3	
473.6	MODESTO		SMUT	0.6	24.6	
473.0	MODESTO		GRAY SHALE	9.7	25.2	
463.3	MODESTO		DARK GRAY SHALE	19.8	34.9	
443.5	MODESTO	DEGRAFF	COAL	0.3	54.7	
443.2	MODESTO		UNDERCLAY	1.1	55.0	
442.1	MODESTO	PIASA	LIMESTONE	10.9	56.1	LIGHT GRAY
431.2	MODESTO		DARK SHALE	3.2	67.0	
428.0	CARBONDALE		GRAY SHALE	12.3	70.2	
415.7	CARBONDALE	GALUM	LIMESTONE	2.2	82.5	LIGHT
413.5	CARBONDALE		GRAY SHALE	6.0	84.7	
407.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	90.7	TAN
402.7	CARBONDALE		DARK SHALE	3.1	95.5	
399.6	CARBONDALE		DARK GRAY SHALE	1.3	98.6	
398.3	CARBONDALE	CONANT	LIMESTONE	3.3	99.9	DARK
395.0	CARBONDALE		DARK GRAY SHALE	12.6	103.2	
382.4	CARBONDALE		SHALE WITH LIMESTONE	3.4	115.8	
379.0	CARBONDALE	BRERETON	LIMESTONE	1.2	119.2	DARK
377.8	CARBONDALE	HERRIN	COAL	6.1	120.4	
371.7	CARBONDALE		GRAY SHALE	2.7	126.5	
369.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.2	129.2	LIGHT
364.8	CARBONDALE		GRAY SHALE	4.2	133.4	
360.6	CARBONDALE	ST. DAVID	LIMESTONE	3.8	137.6	TAN
356.8	CARBONDALE	TURNER MINE	DARK GRAY SHALE	1.7	141.4	
355.1	CARBONDALE	SPRINGFIELD	COAL	3.3	143.1	
351.8	CARBONDALE		UNDERCLAY	2.0	146.4	

MAPID: 14590070000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.584063

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.035943

DATE COLLECTED: 8 / 8 / 1972

SURFACE ELEVATION (FT.): 509.0 LOGGED (FT.): 163.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C88K

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
509.0	PLEISTOCENE		CLAY	24.5	0.0	
484.5	MODESTO		SANDY SHALE	6.8	24.5	
477.7	MODESTO		SANDY SHALE	6.0	31.3	
471.7	MODESTO		BLACK SHALE	0.5	37.3	
471.2	MODESTO		SHALE	30.8	37.8	
440.3	MODESTO	DEGRAFF	COAL	0.5	68.7	
439.8	MODESTO		GRAY SHALE	1.3	69.2	
438.5	MODESTO	PIASA	LIMESTONE	12.4	70.5	
426.1	MODESTO		SHALE WITH LIMESTONE	2.6	82.9	
423.5			SANDY SHALE	8.8	85.5	
414.7	CARBONDALE	GALUM	LIMESTONE	1.5	94.3	BROWN
413.2	CARBONDALE		CALCAREOUS SHALE	6.4	95.8	
406.7	CARBONDALE	BANKSTON FORK	LIMESTONE	2.3	102.3	GRAY
404.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.7	104.5	BROWN
402.8	CARBONDALE		CALCAREOUS SHALE	14.1	106.2	
388.7	CARBONDALE	BRERETON	LIMESTONE	5.9	120.3	DARK
382.8	CARBONDALE	ANNA	BLACK SHALE	2.1	126.2	
380.7	CARBONDALE	HERRIN	COAL	6.1	128.3	
374.7	CARBONDALE	ST. DAVID	LIMESTONE	7.2	134.3	GRAY
367.5	CARBONDALE		CALCAREOUS SHALE	4.8	141.5	
362.7	CARBONDALE	ST. DAVID	LIMESTONE	1.3	146.3	GRAY
361.3	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	147.7	
359.8	CARBONDALE	SPRINGFIELD	COAL	3.9	149.2	
355.9	CARBONDALE		CLAYSTONE	9.9	153.1	

MAPID: 14590071000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.588943

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.036166

DATE COLLECTED: 8 / 2 / 1972

SURFACE ELEVATION (FT.): 504.9 LOGGED (FT.): 148.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C87K

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
504.9	PLEISTOCENE		CLAY	18.5	0.0	
486.4	MODESTO		SANDSTONE/SHALE	7.7	18.5	
478.7	MODESTO		SANDY SHALE	2.8	26.2	
475.9	MODESTO	POND CREEK	COAL	0.3	29.0	
475.6	MODESTO		SHALE	25.3	29.3	
450.3	MODESTO	DEGRAFF	COAL	0.3	54.6	
450.0	MODESTO	PIASA	LIMESTONE	5.3	54.9	GRAY
444.7	MODESTO	PIASA	LIMESTONE	5.2	60.2	BROWN
439.6	MODESTO		DARK SHALE	10.3	65.3	
429.2			SHALE	4.8	75.7	
424.4	CARBONDALE		SHALE WITH LIMESTONE	1.4	80.5	
423.0	CARBONDALE	GALUM	LIMESTONE	0.8	81.9	BROWN
422.2	CARBONDALE		SHALE WITH LIMESTONE	6.5	82.7	
415.7	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	89.2	BROWN
410.2	CARBONDALE		SHALE WITH LIMESTONE	13.8	94.7	
396.4	CARBONDALE	BRERETON	LIMESTONE	3.7	108.5	DARK
392.7	CARBONDALE	ANNA	DARK SHALE	1.3	112.2	
391.4	CARBONDALE	ANNA	BLACK SHALE	1.5	113.5	
389.9	CARBONDALE	HERRIN	COAL	6.2	115.0	
383.7	CARBONDALE		UNDERCLAY	5.3	121.2	
378.4	CARBONDALE		SHALE & SANDSTONE	13.3	126.5	LIMY
365.1	CARBONDALE	SPRINGFIELD	COAL	1.1	139.8	
364.0	CARBONDALE		UNDERCLAY	7.1	140.9	

MAPID: 14590072000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.588283

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.038764

DATE COLLECTED: 7 / 31 / 1972

SURFACE ELEVATION (FT.): 551.1 LOGGED (FT.): 191.1

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C85K

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
551.1	PLEISTOCENE		CLAY	12.2	0.0	
538.9	MODESTO		SHALY SANDSTONE	5.8	12.2	BROWN
533.1	MODESTO		GRAY SHALE	55.3	18.0	
477.8	MODESTO		SHALE	1.5	73.3	
476.3	MODESTO		GRAY SHALE	24.3	74.8	
452.1	MODESTO	DEGRAFF	COAL	0.4	99.0	
451.7	MODESTO		GRAY SHALE	2.3	99.4	
449.4	MODESTO	PIASA	LIMESTONE	7.2	101.7	GRAY
442.3			GRAY SHALE	18.2	108.8	
424.1	CARBONDALE	GALUM	LIMESTONE	1.4	127.0	BROWN
422.7	CARBONDALE		CALCAREOUS SHALE	6.6	128.4	
416.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	135.0	LIGHT BROWN
411.6	CARBONDALE		SHALE WITH LIMESTONE	4.5	139.5	
407.1	CARBONDALE	CONANT	LIMESTONE	1.2	144.0	DARK
405.9	CARBONDALE		DARK SHALE	4.8	145.2	
401.1	CARBONDALE	JAMESTOWN	COAL	0.3	150.0	
400.8	CARBONDALE		SHALE WITH LIMESTONE	9.7	150.3	
391.1	CARBONDALE		GRAY SHALE	2.7	160.0	
388.4	CARBONDALE	ANNA	BLACK SHALE	0.7	162.7	
387.8	CARBONDALE	HERRIN	COAL	7.0	163.3	
380.8	CARBONDALE		CLAYSTONE	12.7	170.3	
368.1	CARBONDALE	ST. DAVID	LIMESTONE	4.3	183.0	BROWN
363.8	CARBONDALE	SPRINGFIELD	COAL	1.6	187.3	
362.2	CARBONDALE		UNDERCLAY	2.2	188.9	

MAPID: 14590073000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.586755

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.042169

DATE COLLECTED: 7 / 25 / 1972

SURFACE ELEVATION (FT.): 570.5 LOGGED (FT.): 233.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY C82K

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.5	PLEISTOCENE		CLAY	20.0	0.0	
550.5	PLEISTOCENE		SANDY CLAY	2.3	20.0	BROWN
548.2	MODESTO		SHALE	1.5	22.3	
546.7	MODESTO		GRAY SHALE	6.3	23.8	
540.4	MODESTO		SHALE	15.9	30.1	TAN
524.5	MODESTO		GRAY SHALE	41.2	46.0	
483.3	MODESTO		BLACK SHALE	0.3	87.2	
483.0	MODESTO		GRAY SHALE	4.5	87.5	
478.5	MODESTO		SHALE	2.3	92.0	
476.2	MODESTO		SHALE WITH LIMESTONE	6.2	94.3	
470.0	MODESTO		GRAY SHALE	16.5	100.5	
453.5	MODESTO	DEGRAFF	COAL	0.3	117.0	
453.2	MODESTO		GRAY SHALE	3.8	117.3	
449.5	MODESTO	PIASA	LIMESTONE	7.3	121.0	GRAY
442.2			GRAY SHALE	19.3	128.3	
422.8	CARBONDALE	GALUM	LIMESTONE	1.4	147.7	BROWN
421.4	CARBONDALE		CALCAREOUS SHALE	6.9	149.1	
414.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	156.0	GRAY
409.8	CARBONDALE		SHALE WITH LIMESTONE	19.3	160.7	
390.5	CARBONDALE	BRERETON	LIMESTONE	1.0	180.0	DARK
389.5	CARBONDALE	ANNA	GRAY SHALE	0.7	181.0	
388.8	CARBONDALE	ANNA	BLACK SHALE	5.8	181.7	
383.1	CARBONDALE	HERRIN	COAL	6.2	187.4	
376.9	CARBONDALE		UNDERCLAY	6.4	193.6	
370.5	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.0	200.0	GRAY
369.5	CARBONDALE		CARBONACEOUS SHALE	3.0	201.0	
366.5	CARBONDALE		GRAY SHALE	5.0	204.0	
361.5	CARBONDALE		SANDSTONE/SHALE	24.0	209.0	

MAPID: 14590079000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.588694

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.029013

DATE COLLECTED: 9 / 10 / 1985

SURFACE ELEVATION (FT.): 511.6 LOGGED (FT.): 139.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 8079

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
511.6	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0	
491.6	MODESTO		GRAY SHALE	27.6	20.0	
464.0	MODESTO		CALCAREOUS SHALE	6.6	47.6	
457.4	MODESTO		GRAY SHALE	21.6	54.2	
435.8	MODESTO	PIASA	LIMESTONE	10.4	75.8	GRAY
425.4			GRAY SHALE	10.9	86.2	
414.5	CARBONDALE	GALUM	LIMESTONE	1.9	97.1	GRAY
412.6	CARBONDALE		CALCAREOUS SHALE	6.7	99.0	
405.9	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	105.7	GRAY
401.6	CARBONDALE		DARK GRAY SHALE	4.2	110.0	
397.4	CARBONDALE	CONANT	LIMESTONE	2.3	114.2	DARK GRAY
395.1	CARBONDALE		DARK GRAY SHALE	5.8	116.5	
389.3	CARBONDALE	BRERETON	LIMESTONE	6.1	122.3	DARK GRAY
383.2	CARBONDALE	ANNA	DARK GRAY SHALE	2.5	128.4	
380.7	CARBONDALE	HERRIN	COAL	5.9	130.9	
374.8	CARBONDALE		UNDERCLAY	2.2	136.8	

MAPID: 14590085000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 6 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.587221 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.043533 DATE COLLECTED:

SURFACE ELEVATION (FT.): 542.5 LOGGED (FT.): 172.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 4956 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
542.5	PLEISTOCENE		UNCONSOLIDATED	12.0	0.0	
530.5	MODESTO		SANDY SHALE	5.7	12.0	
524.8	MODESTO		SHALE/SANDSTONE/LIMES TONE	3.8	17.7	
521.0	MODESTO		SANDY SHALE	15.5	21.5	
505.5	MODESTO		CALCAREOUS SHALE	22.0	37.0	
483.5	MODESTO		SMUT	0.2	59.0	
483.3	MODESTO		SHALE WITH LIMESTONE	30.8	59.2	
452.5	MODESTO	DEGRAFF	COAL	0.1	90.0	
452.4	MODESTO		UNDERCLAY	1.1	90.1	
451.3	MODESTO	PIASA	LIMESTONE	4.3	91.2	GRAY
447.0	MODESTO		SHALE WITH LIMESTONE	17.5	95.5	
429.5	CARBONDALE		LIMESTONE & SHALE	10.5	113.0	
419.0	CARBONDALE	GALUM	LIMESTONE	4.5	123.5	GRAY
414.5	CARBONDALE		DARK GRAY SHALE	3.5	128.0	
411.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	131.5	DARK
407.5	CARBONDALE		DARK GRAY SHALE	4.1	135.0	
403.4	CARBONDALE	CONANT	LIMESTONE	0.7	139.1	DARK
402.7	CARBONDALE		SHALE	4.7	139.8	
398.0	CARBONDALE	BRERETON	LIMESTONE	3.0	144.5	DARK
395.0	CARBONDALE	ANNA	BLACK SHALE	4.5	147.5	
390.5	CARBONDALE	HERRIN	COAL	6.5	152.0	
384.0	CARBONDALE		UNDERCLAY	1.5	158.5	
382.5	CARBONDALE	HIGGINSVILLE	SANDY LIMESTONE	12.0	160.0	

MAPID: 14500295000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: PERCY LONGITUDE: -89.583351 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.014742 DATE COLLECTED:

SURFACE ELEVATION (FT.): 493.0 LOGGED (FT.): 170.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #37 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
493.0			UNCONSOLIDATED	28.0	0.0
465.0			SHALE	14.0	28.0
451.0	MODESTO		CLAYSTONE & LIMESTONE	19.0	42.0
432.0	MODESTO		SHALE	10.5	61.0
421.5	MODESTO	DEGRAFF	COAL	0.5	71.5
421.0	MODESTO		CLAYSTONE	1.5	72.0
419.5	MODESTO	PIASA	LIMESTONE	7.5	73.5
412.0	MODESTO		SHALE	8.0	81.0
404.0	MODESTO		CLAYSTONE & LIMESTONE	2.0	89.0
402.0	MODESTO		CLAYSTONE	7.0	91.0
395.0	MODESTO		LIMESTONE	3.0	98.0
392.0	MODESTO		CLAYSTONE & LIMESTONE	5.5	101.0
386.5			LIMESTONE	5.5	106.5
381.0	MODESTO		SHALE	4.0	112.0
377.0	CARBONDALE	CONANT	LIMESTONE	2.0	116.0
375.0	CARBONDALE		SHALE	4.0	118.0
371.0	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.5	122.0
370.5	CARBONDALE		CALCAREOUS SHALE	5.0	122.5
365.5	CARBONDALE	BRERETON	LIMESTONE	6.5	127.5
359.0	CARBONDALE	ANNA	SHALE	3.2	134.0
355.8	CARBONDALE	HERRIN	COAL	6.3	137.2
349.5	CARBONDALE		CLAYSTONE	1.7	143.5
347.8	CARBONDALE		LIMESTONE	6.5	145.2
341.3	CARBONDALE		CLAYSTONE	1.0	151.7
340.3	CARBONDALE	ST. DAVID	LIMESTONE	7.3	152.7
333.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	160.0
331.5	CARBONDALE	TURNER MINE	SHALE	2.5	161.5
329.0	CARBONDALE	SPRINGFIELD	COAL	4.2	164.0
324.8	CARBONDALE		CLAYSTONE	1.8	168.2

MAPID: 14501986000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES: 1980' N line, 660' W line

QUADRANGLE: PERCY LONGITUDE: -89.591537 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.022979 DATE COLLECTED: 8 / 17 / 1921

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 170.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.0	MODESTO		LIMESTONE	0.7	38.0
461.3	MODESTO		CLAYSTONE	3.3	38.7
458.0	MODESTO		SHALE	10.0	42.0
448.0	MODESTO		SHALE	8.0	52.0
440.0	MODESTO		CLAYSTONE	4.0	60.0
436.0	MODESTO		CLAYSTONE & LIMESTONE	4.0	64.0
432.0	MODESTO	PIASA	LIMESTONE	2.0	68.0
430.0	MODESTO	PIASA	LIMESTONE	5.0	70.0
425.0	MODESTO		SHALE	7.0	75.0
418.0	CARBONDALE		CLAYSTONE & LIMESTONE	6.0	82.0
412.0	CARBONDALE	BANKSTON FORK	LIMESTONE	15.7	88.0
396.3	CARBONDALE		CLAYSTONE	1.3	103.7
395.0	CARBONDALE		SHALE	4.0	105.0
391.0	CARBONDALE		CALCAREOUS SHALE	4.0	109.0
387.0	CARBONDALE	CONANT	LIMESTONE	1.7	113.0
385.3	CARBONDALE		SHALE	4.3	114.7
381.0	CARBONDALE	BRERETON	LIMESTONE	5.0	119.0
376.0	CARBONDALE		SHALE	3.5	124.0
372.5	CARBONDALE	HERRIN	COAL	6.2	127.5
366.3	CARBONDALE		CLAYSTONE	5.3	133.7
361.0	CARBONDALE		LIMESTONE	5.0	139.0
356.0	CARBONDALE		CLAYSTONE	1.0	144.0
355.0	CARBONDALE		LIMESTONE	7.0	145.0
348.0	CARBONDALE		SHALE	1.0	152.0
347.0	CARBONDALE		LIMESTONE	2.0	153.0
345.0	CARBONDALE		SHALE	2.0	155.0
343.0	CARBONDALE	SPRINGFIELD	COAL	4.0	157.0
339.0	CARBONDALE		CLAYSTONE	4.0	161.0
335.0	CARBONDALE		SHALE	5.0	165.0

MAPID: 14501986000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES: 1980' N line, 660' W line

QUADRANGLE: PERCY LONGITUDE: -89.591537 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.022979 DATE COLLECTED:

SURFACE ELEVATION (FT.): 510.0 LOGGED (FT.): 134.3 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.0	MODESTO	PIASA	LIMESTONE	7.0	68.0
435.0	CARBONDALE		LIMESTONE W/ SHALE	13.0	75.0
422.0	CARBONDALE	BANKSTON FORK	LIMESTONE	15.8	88.0
406.2	CARBONDALE	LAWSON	LIMESTONE W/ SHALE	9.3	103.8
397.0	CARBONDALE	CONANT	LIMESTONE	1.8	113.0
395.2	CARBONDALE		BLACK SHALE	4.3	114.8
391.0	CARBONDALE	BRERETON	LIMESTONE	5.0	119.0
386.0	CARBONDALE	ANNA	BLACK SHALE	3.5	124.0
382.0	CARBONDALE	HERRIN	COAL	6.3	128.0

MAPID: 14590042000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES: 70' S line, 30' E line of NE SW NE

QUADRANGLE: PERCY LONGITUDE: -89.579742 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.022996 DATE COLLECTED: 6 / 8 / 1977

SURFACE ELEVATION (FT.): 492.4 LOGGED (FT.): 151.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 3951 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
492.4	PLEISTOCENE		CLAY	24.3	0.0	
468.1	MODESTO		GRAY SHALE	24.6	24.3	
443.5	MODESTO	DEGRAFF	COAL	0.9	48.9	
442.6	MODESTO		UNDERCLAY	1.1	49.8	
441.5	MODESTO	PIASA	LIMESTONE	12.2	50.9	TAN
429.3			GRAY SHALE	11.5	63.1	
417.8	CARBONDALE	GALUM	LIMESTONE	2.9	74.6	TAN
414.9	CARBONDALE		GRAY SHALE	6.9	77.5	
408.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	84.4	TAN
404.0	CARBONDALE		DARK SHALE	4.0	88.4	
400.0	CARBONDALE	CONANT	LIMESTONE	2.1	92.4	DARK
397.9	CARBONDALE		DARK SHALE	4.1	94.5	
393.8	CARBONDALE	JAMESTOWN	COAL	0.2	98.6	
393.6	CARBONDALE		DARK SHALE	3.9	98.8	
389.7	CARBONDALE	BRERETON	LIMESTONE	6.1	102.7	DARK
383.6	CARBONDALE	ANNA	BLACK SHALE	2.4	108.8	
381.2	CARBONDALE	HERRIN	COAL	5.9	111.2	
375.3	CARBONDALE		UNDERCLAY	2.8	117.1	
372.5	CARBONDALE	HIGGINSVILLE	SANDY LIMESTONE	7.2	119.9	TAN
365.3	CARBONDALE		SANDSTONE/SHALE	8.0	127.1	
357.3	CARBONDALE	ST. DAVID	LIMESTONE	1.7	135.1	TAN-GRAY
355.6	CARBONDALE		DARK SHALE	1.9	136.8	
353.7	CARBONDALE	SPRINGFIELD	COAL	4.8	138.7	
348.9	CARBONDALE		UNDERCLAY	7.5	143.5	

MAPID: 14590043000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES: 120' N line, 205' W line of SW SE NW

QUADRANGLE: PERCY LONGITUDE: -89.588396

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.022625

DATE COLLECTED: 4 / 14 / 1977

SURFACE ELEVATION (FT.): 508.3 LOGGED (FT.): 170.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 3852

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
508.3	PLEISTOCENE		CLAY	23.9	0.0	
484.4	MODESTO		CALCAREOUS SHALE	15.9	23.9	
468.5	MODESTO		SHALE WITH LIMESTONE	10.3	39.8	
458.2	MODESTO		CALCAREOUS SHALE	8.1	50.1	
450.1	MODESTO		SHALE	9.9	58.2	
440.2	MODESTO	DEGRAFF	COAL	0.8	68.1	
439.4	MODESTO		GRAY SHALE	1.3	68.9	
438.1	MODESTO	PIASA	LIMESTONE	9.5	70.2	GRAY
428.6	MODESTO	PIASA	LIMESTONE & SHALE	3.6	79.7	GRAY
425.0	CARBONDALE		CALCAREOUS SHALE	10.4	83.3	
414.6	CARBONDALE	GALUM	LIMESTONE	1.8	93.7	GRAY
412.8	CARBONDALE		CALCAREOUS SHALE	5.6	95.5	
407.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.6	101.1	GRAY
401.6	CARBONDALE		SHALE WITH LIMESTONE	4.7	106.7	
396.9	CARBONDALE	CONANT	LIMESTONE	1.1	111.4	DARK
395.8	CARBONDALE		SHALE WITH LIMESTONE	9.6	112.5	
386.2	CARBONDALE	BRERETON	LIMESTONE	5.8	122.1	DARK
380.4	CARBONDALE	ANNA	SHALE	1.5	127.9	DARK TO BLACK
378.9	CARBONDALE	ANNA	BLACK SHALE	0.7	129.4	
378.2	CARBONDALE	HERRIN	COAL	6.0	130.1	
372.2	CARBONDALE		UNDERCLAY	1.8	136.1	
370.4	CARBONDALE	HIGGINSVILLE	LIMESTONE & CONGLOMERATE	6.9	137.9	
363.5	CARBONDALE		SANDY SHALE	4.9	144.8	
358.6	CARBONDALE		SHALY SANDSTONE	1.6	149.7	GRAY
357.0	CARBONDALE		DARK SHALE	1.1	151.3	
355.9	CARBONDALE	ST. DAVID	LIMESTONE	3.6	152.4	DARK
352.3	CARBONDALE	TURNER MINE	BLACK SHALE	2.1	156.0	
350.2	CARBONDALE	SPRINGFIELD	COAL	4.6	158.1	
345.6	CARBONDALE		UNDERCLAY	1.2	162.7	
344.4	CARBONDALE		SANDY SHALE	6.1	163.9	

MAPID: 14590044000C VERSION: 1

PROJECT: LUMP97

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES: 70' N line, 35' E line of SE SE NW

QUADRANGLE: PERCY LONGITUDE: -89.584502 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.022695 DATE COLLECTED: 1 / 17 / 1975

SURFACE ELEVATION (FT.): 532.3 LOGGED (FT.): 272.0 LOG TYPE: Drillers Log

SOURCE: PEABODY COAL CO. 16159C WELL TYPE: Coal Test

COMMENT: PERMIT #48 SWANWICK

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
532.3	PLEISTOCENE		UNCONSOLIDATED	87.0	0.0
445.3	MODESTO		GRAY SHALE	117.0	87.0
328.3	MODESTO	PIASA	LIMESTONE	11.0	204.0
317.3			GRAY SHALE	15.0	215.0
302.3	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	230.0
300.3	CARBONDALE	BANKSTON FORK	GRAY SHALE	1.3	232.0
299.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.2	233.3
297.8	CARBONDALE	BANKSTON FORK	GRAY SHALE	2.0	234.5
295.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	236.5
292.1	CARBONDALE		DARK SHALE	2.3	240.2
289.8	CARBONDALE	CONANT	LIMESTONE	1.5	242.5
288.3	CARBONDALE	CONANT	DARK SHALE	0.7	244.0
287.6	CARBONDALE	CONANT	LIMESTONE	1.6	244.7
286.0	CARBONDALE		DARK SHALE	8.3	246.3
277.7	CARBONDALE	BRERETON	LIMESTONE	5.6	254.6
272.1	CARBONDALE	ANNA	DARK SHALE	0.4	260.2
271.7	CARBONDALE	HERRIN	COAL	6.6	260.6
265.1	CARBONDALE		UNDERCLAY	1.7	267.2
263.4	CARBONDALE		GRAY SHALE	1.0	268.9
262.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.1	269.9

MAPID: 14590044000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES: 70' N line, 35' E line of SE SE NW

QUADRANGLE: PERCY LONGITUDE: -89.584502 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.022695 DATE COLLECTED: 6 / 7 / 1977

SURFACE ELEVATION (FT.): 500.4 LOGGED (FT.): 162.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 3950 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
500.4	PLEISTOCENE		CLAY	18.1	0.0	
482.3	MODESTO		GRAY SHALE	40.0	18.1	
442.3	MODESTO	DEGRAFF	COAL	0.8	58.1	
441.5	MODESTO		UNDERCLAY	1.0	58.9	
440.5	MODESTO	PIASA	LIMESTONE	12.6	59.9	TAN
427.9			GRAY SHALE	11.3	72.5	
416.6	CARBONDALE	GALUM	LIMESTONE	3.6	83.8	TAN
413.0	CARBONDALE		GRAY SHALE	6.4	87.4	
406.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	93.8	TAN
402.1	CARBONDALE		DARK SHALE	2.9	98.3	
399.2	CARBONDALE	CONANT	LIMESTONE	3.2	101.2	DARK
396.0	CARBONDALE		DARK SHALE	4.3	104.4	
391.7	CARBONDALE	JAMESTOWN	COAL	0.2	108.7	
391.5	CARBONDALE		DARK SHALE	3.9	108.9	
387.6	CARBONDALE	BRERETON	LIMESTONE	5.8	112.8	DARK
381.8	CARBONDALE	ANNA	DARK SHALE	2.5	118.6	
379.3	CARBONDALE	HERRIN	COAL	6.1	121.1	
373.2	CARBONDALE		UNDERCLAY	2.5	127.2	
370.7	CARBONDALE	HIGGINSVILLE	SANDY LIMESTONE	7.2	129.7	TAN
363.5	CARBONDALE		SANDSTONE/SHALE	6.9	136.9	
356.6	CARBONDALE	ST. DAVID	LIMESTONE	1.8	143.8	TAN
354.8	CARBONDALE	TURNER MINE	DARK SHALE	2.8	145.6	
352.0	CARBONDALE	SPRINGFIELD	COAL	4.9	148.4	
347.1	CARBONDALE		CLAYSTONE	8.7	153.3	

MAPID: 14590087000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.579486

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.02243

DATE COLLECTED: 6 / 8 / 1977

SURFACE ELEVATION (FT.): 492.4 LOGGED (FT.): 151.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 3951

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
492.4	PLEISTOCENE		UNCONSOLIDATED	14.9	0.0	
477.5	PLEISTOCENE		ROCK	0.5	14.9	
477.0	PLEISTOCENE		CLAY	8.9	15.4	BROWN
468.1	MODESTO		GRAY SHALE	24.6	24.3	
443.5	MODESTO	DEGRAFF	COAL	0.9	48.9	
442.6	MODESTO		UNDERCLAY	1.1	49.8	
441.5	MODESTO	PIASA	LIMESTONE	12.2	50.9	BROWN
429.3			GRAY SHALE	11.5	63.1	
417.8	CARBONDALE	GALUM	LIMESTONE	2.9	74.6	BROWN
414.9	CARBONDALE		GRAY SHALE	6.9	77.5	
408.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	84.4	BROWN
404.0	CARBONDALE		DARK SHALE	4.0	88.4	
400.0	CARBONDALE	CONANT	LIMESTONE	2.1	92.4	DARK
397.9	CARBONDALE		DARK SHALE	4.1	94.5	
393.8	CARBONDALE	JAMESTOWN	COAL	0.2	98.6	
393.6	CARBONDALE		DARK SHALE	3.9	98.8	
389.7	CARBONDALE	BRERETON	LIMESTONE	6.1	102.7	DARK
383.6	CARBONDALE	ANNA	BLACK SHALE	2.4	108.8	
381.2	CARBONDALE	HERRIN	COAL	5.9	111.2	
375.3	CARBONDALE		UNDERCLAY	2.8	117.1	
372.5	CARBONDALE	HIGGINSVILLE	SANDY LIMESTONE	7.2	119.9	BROWN
365.3	CARBONDALE		SANDSTONE/SHALE	8.0	127.1	
357.3	CARBONDALE	ST. DAVID	LIMESTONE	1.7	135.1	BROWN-GRAY
355.6	CARBONDALE	TURNER MINE	BLACK SHALE	1.9	136.8	
353.7	CARBONDALE	SPRINGFIELD	COAL	4.8	138.7	
348.9	CARBONDALE		UNDERCLAY	7.5	143.5	

MAPID: 14590088000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.584125

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.022543

DATE COLLECTED: 6 / 7 / 1977

SURFACE ELEVATION (FT.): 500.4 LOGGED (FT.): 162.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 3950

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
500.4	PLEISTOCENE		UNCONSOLIDATED	18.1	0.0	
482.3	MODESTO		SHALE	40.0	18.1	BROWN-GRAY
442.3	MODESTO	DEGRAFF	COAL	0.8	58.1	
441.5	MODESTO		UNDERCLAY	1.0	58.9	
440.5	MODESTO	PIASA	LIMESTONE	12.6	59.9	BROWN
427.9			GRAY SHALE	11.3	72.5	
416.6	CARBONDALE	GALUM	LIMESTONE	3.6	83.8	BROWN
413.0	CARBONDALE		GRAY SHALE	6.4	87.4	
406.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	93.8	BROWN
402.1	CARBONDALE		DARK SHALE	2.9	98.3	
399.2	CARBONDALE	CONANT	LIMESTONE	3.2	101.2	DARK
396.0	CARBONDALE		DARK SHALE	4.3	104.4	
391.7	CARBONDALE	JAMESTOWN	COAL	0.2	108.7	
391.5	CARBONDALE		DARK SHALE	3.9	108.9	
387.6	CARBONDALE	BRERETON	LIMESTONE	5.8	112.8	DARK
381.8	CARBONDALE	ANNA	BLACK SHALE	2.5	118.6	
379.3	CARBONDALE	HERRIN	COAL	6.1	121.1	
373.2	CARBONDALE		UNDERCLAY	2.5	127.2	
370.7	CARBONDALE	HIGGINSVILLE	SANDY LIMESTONE	7.2	129.7	BROWN
363.5	CARBONDALE		SANDSTONE/SHALE	6.9	136.9	
356.6	CARBONDALE	ST. DAVID	LIMESTONE	1.8	143.8	BROWN
354.8	CARBONDALE	TURNER MINE	DARK SHALE	2.8	145.6	
352.0	CARBONDALE	SPRINGFIELD	COAL	4.9	148.4	
347.1	CARBONDALE		CLAYSTONE	8.7	153.3	

MAPID: 14590089000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.579887

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.01555

DATE COLLECTED: 6 / 1 / 1977

SURFACE ELEVATION (FT.): 490.6 LOGGED (FT.): 153.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 3948

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE\

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
490.6	PLEISTOCENE		UNCONSOLIDATED	25.8	0.0	
464.8	MODESTO		SHALE	23.1	25.8	BROWN-GRAY
441.7	MODESTO	DEGRAFF	COAL	1.2	48.9	
440.5	MODESTO		UNDERCLAY	1.1	50.1	
439.4	MODESTO	PIASA	LIMESTONE	9.7	51.2	GRAY
429.7			GRAY SHALE	14.6	60.9	
415.1	CARBONDALE	GALUM	LIMESTONE	2.6	75.5	BROWN
412.5	CARBONDALE		SANDY SHALE	5.5	78.1	
407.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.7	83.6	BROWN
401.3	CARBONDALE		DARK SHALE	4.5	89.3	
396.8	CARBONDALE	CONANT	LIMESTONE	1.6	93.8	DARK
395.2	CARBONDALE		DARK SHALE	5.2	95.4	
390.0	CARBONDALE	JAMESTOWN	COAL	0.2	100.6	
389.8	CARBONDALE		DARK SHALE	4.5	100.8	
385.3	CARBONDALE	BRERETON	LIMESTONE	4.3	105.3	DARK
381.0	CARBONDALE	ANNA	BLACK SHALE	2.0	109.6	
379.0	CARBONDALE	ENERGY	GRAY SHALE	1.2	111.6	
377.8	CARBONDALE	HERRIN	COAL	6.1	112.8	
371.7	CARBONDALE		UNDERCLAY	3.8	118.9	
367.9	CARBONDALE		CALCAREOUS SANDSTONE	6.2	122.7	
361.7	CARBONDALE		SANDSTONE/SHALE	5.5	128.9	
356.2	CARBONDALE	ST. DAVID	LIMESTONE	2.5	134.4	BROWN
353.7	CARBONDALE	TURNER MINE	BLACK SHALE	3.7	136.9	
350.0	CARBONDALE	SPRINGFIELD	COAL	4.9	140.6	
345.1	CARBONDALE		UNDERCLAY	7.5	145.5	

MAPID: 14590090000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.584409

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.02108

DATE COLLECTED: 4 / 14 / 1977

SURFACE ELEVATION (FT.): 508.3 LOGGED (FT.): 170.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 3852

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
508.3	PLEISTOCENE		UNCONSOLIDATED	23.9	0.0	
484.4	MODESTO		CALCAREOUS SHALE	15.9	23.9	
468.5	MODESTO		SHALE WITH LIMESTONE	10.3	39.8	
458.2	MODESTO		CALCAREOUS SHALE	8.1	50.1	
450.1	MODESTO		SHALE	9.9	58.2	
440.2	MODESTO	DEGRAFF	COAL	0.8	68.1	
439.4	MODESTO		GRAY SHALE	1.3	68.9	
438.1	MODESTO	PIASA	LIMESTONE	9.5	70.2	GRAY
428.6			CALCAREOUS SHALE	3.6	79.7	
425.0	CARBONDALE		CALCAREOUS SHALE	10.4	83.3	
414.6	CARBONDALE	GALUM	LIMESTONE	1.8	93.7	GRAY
412.8	CARBONDALE		CALCAREOUS SHALE	5.6	95.5	
407.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.6	101.1	GRAY
401.6	CARBONDALE		SHALE WITH LIMESTONE	4.7	106.7	
396.9	CARBONDALE	CONANT	LIMESTONE	1.1	111.4	DARK
395.8	CARBONDALE		SHALE WITH LIMESTONE	9.6	112.5	
386.2	CARBONDALE	BRERETON	LIMESTONE	5.8	122.1	DARK
380.4	CARBONDALE	ANNA	BLACK SHALE	2.2	127.9	
378.2	CARBONDALE	HERRIN	COAL	6.0	130.1	
372.2	CARBONDALE		UNDERCLAY	1.8	136.1	
370.4	CARBONDALE	HIGGINSVILLE	LIMESTONE & CONGLOMERATE	6.9	137.9	
363.5	CARBONDALE		SANDY SHALE	4.9	144.8	
358.6	CARBONDALE		SANDY SHALE	1.6	149.7	
357.0	CARBONDALE		DARK SHALE	1.1	151.3	
355.9	CARBONDALE	ST. DAVID	LIMESTONE	3.6	152.4	DARK
352.3	CARBONDALE	TURNER MINE	BLACK SHALE	2.1	156.0	
350.2	CARBONDALE	SPRINGFIELD	COAL	4.6	158.1	
345.6	CARBONDALE		UNDERCLAY	1.2	162.7	
344.4	CARBONDALE		SANDY SHALE	6.1	163.9	

MAPID: 14590091000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.592475

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.022313

DATE COLLECTED: 4 / 14 / 1977

SURFACE ELEVATION (FT.): 515.4 LOGGED (FT.): 170.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 3851

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
515.4	PLEISTOCENE		UNCONSOLIDATED	12.2	0.0	
503.2	MODESTO		LIMESTONE	6.5	12.2	RED
496.7	MODESTO		GRAY SHALE	11.6	18.7	
485.1	MODESTO		CALCAREOUS SHALE	22.2	30.3	
462.9	MODESTO		GRAY SHALE	7.2	52.5	
455.7	MODESTO		SHALE	9.4	59.7	
446.3	MODESTO		GRAY SHALE	2.0	69.1	
444.3	MODESTO	DEGRAFF	COAL WITH SHALE	0.5	71.1	
443.8	MODESTO		GRAY SHALE	1.5	71.6	
442.3	MODESTO	PIASA	LIMESTONE	5.6	73.1	GRAY
436.7	MODESTO	PIASA	CALCAREOUS SHALE	1.5	78.7	
435.2	MODESTO	PIASA	LIMESTONE	4.6	80.2	DARK GRAY
430.6	MODESTO		LIMESTONE & SHALE	1.3	84.8	DARK
429.3	MODESTO		CALCAREOUS SHALE	1.3	86.1	
428.0			CALCAREOUS SHALE	10.4	87.4	
417.6	CARBONDALE	GALUM	LIMESTONE	1.9	97.8	GRAY
415.7	CARBONDALE		CALCAREOUS SHALE	6.4	99.7	
409.3	CARBONDALE	BANKSTON FORK	LIMESTONE	5.2	106.1	DARK
404.1	CARBONDALE		DARK SHALE	3.6	111.3	
400.5	CARBONDALE		CALCAREOUS SHALE	7.6	114.9	
392.9	CARBONDALE		DARK SHALE	4.1	122.5	
388.8	CARBONDALE		CALCAREOUS SHALE	7.8	126.6	
381.0	CARBONDALE	BRERETON	LIMESTONE	1.2	134.4	DARK
379.8	CARBONDALE	ANNA	BLACK SHALE	0.3	135.6	
379.5	CARBONDALE	HERRIN	COAL	5.2	135.9	
374.3	CARBONDALE		UNDERCLAY	3.5	141.1	
370.8	CARBONDALE		GRAY SHALE	4.8	144.6	
366.0	CARBONDALE	HIGGINSVILLE	LIMESTONE & CONGLOMERATE	6.4	149.4	
359.6	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.3	155.8	GRAY
355.3	CARBONDALE	TURNER MINE	DARK SHALE	1.1	160.1	
354.2	CARBONDALE	TURNER MINE	BLACK SHALE	0.6	161.2	
353.6	CARBONDALE	SPRINGFIELD	COAL	5.0	161.8	
348.6	CARBONDALE		UNDERCLAY	2.1	166.8	
346.5	CARBONDALE		SHALE	1.1	168.9	

MAPID: 14590298000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 7 QUARTERS/FOOTAGES: 100' S line, 35' W line of SW
 QUADRANGLE: PERCY LONGITUDE: -89.593868 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.01427 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 52.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 19 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	18.3	0.0
401.7			ROCK	28.7	18.3
373.0	CARBONDALE	HERRIN	COAL	5.0	47.0

MAPID: 14528127000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 189' N line, 441' E line of SW SE
 QUADRANGLE: PERCY LONGITUDE: -89.562695 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.016555 DATE COLLECTED: 12 / 23 / 1983
 SURFACE ELEVATION (FT.): 490.7 LOGGED (FT.): 115.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT: PERFORATED 91-111

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
490.7			UNCONSOLIDATED	115.0	0.0

MAPID: 14528648000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 1320' S line, 2490' E line

QUADRANGLE: PERCY LONGITUDE: -89.565208 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.017147 DATE COLLECTED: 6 / 21 / 1937

SURFACE ELEVATION (FT.): 461.5 LOGGED (FT.): 63.7 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY E-1 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
461.5	PLEISTOCENE		CLAY	4.0	0.0
457.5	CARBONDALE		LIMESTONE	2.5	4.0
455.0	CARBONDALE		ARGILLACEOUS SANDSTONE	10.5	6.5
444.5	CARBONDALE		LIMESTONE	2.5	17.0
442.0	CARBONDALE		SANDY SHALE	6.0	19.5
436.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	25.5
431.0	CARBONDALE		BLUE SHALE	4.5	30.5
426.5	CARBONDALE	CONANT	LIMESTONE	1.8	35.0
424.7	CARBONDALE		BLACK SHALE	4.8	36.8
419.8	CARBONDALE	JAMESTOWN	COAL	0.2	41.7
419.7	CARBONDALE		BLACK SHALE	4.7	41.8
415.0	CARBONDALE	BRERETON	LIMESTONE	7.0	46.5
408.0	CARBONDALE	ANNA	BLACK SHALE	3.7	53.5
404.3	CARBONDALE	HERRIN	COAL	5.5	57.2
398.8	CARBONDALE		UNDERCLAY	1.0	62.7

MAPID: 14528649000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 1320' S line, 1320' E line

QUADRANGLE: PERCY LONGITUDE: -89.561126 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.017058 DATE COLLECTED: 6 / 22 / 1937

SURFACE ELEVATION (FT.): 457.6 LOGGED (FT.): 65.1 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY E-2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
457.6	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0	
435.6	CARBONDALE		LIMESTONE	5.7	22.0	
429.9	CARBONDALE		SHALE	6.7	27.7	
423.3	CARBONDALE	CONANT	LIMESTONE	1.8	34.3	
421.4	CARBONDALE		BLACK SHALE	4.3	36.2	
417.1	CARBONDALE	JAMESTOWN	COAL	0.2	40.5	
416.9	CARBONDALE		LIMESTONE	1.0	40.7	
415.9	CARBONDALE		BLACK SHALE	9.3	41.7	
406.7	CARBONDALE	BRERETON	LIMESTONE	5.6	50.9	
401.1	CARBONDALE	ANNA	BLACK SHALE	0.5	56.5	
400.6	CARBONDALE	HERRIN	COAL	6.0	57.0	
394.6	CARBONDALE	HERRIN	BLUE SHALE	0.3	63.0	
394.3	CARBONDALE	HERRIN	COAL	1.8	63.3	

MAPID: 14528650000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 1320' S line, 150' E line

QUADRANGLE: PERCY LONGITUDE: -89.557046 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.016969 DATE COLLECTED: 6 / 25 / 1937

SURFACE ELEVATION (FT.): 450.3 LOGGED (FT.): 55.8 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY E-3 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.3	PLEISTOCENE		UNCONSOLIDATED	36.0	0.0	SOIL, CLAY, SOAP
414.3	CARBONDALE	BRERETON	LIMESTONE	5.6	36.0	
408.7	CARBONDALE	ANNA	BLACK SHALE	6.8	41.6	
402.0	CARBONDALE	HERRIN	COAL	3.5	48.3	
398.5	CARBONDALE		UNDERCLAY	4.0	51.8	

MAPID: 14528651000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 1' S line, 1320' E line
QUADRANGLE: PERCY LONGITUDE: -89.561175 GEOLOGIST: KOROSE
CONFIDENTIAL: N LATITUDE: 38.01342 DATE COLLECTED: 6 / 28 / 1937
SURFACE ELEVATION (FT.): 473.6 LOGGED (FT.): 70.7 LOG TYPE: Drillers Log
SOURCE: PITTSBURG & MIDWAY E-4 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
473.6	PLEISTOCENE		UNCONSOLIDATED	41.6	0.0	SOIL, CLAY, SOAP
432.0	CARBONDALE	CONANT	LIMESTONE	0.4	41.6	
431.6	CARBONDALE		BLACK SHALE	5.4	42.0	
426.2	CARBONDALE	JAMESTOWN	COAL	0.2	47.4	
426.0	CARBONDALE		BLACK SHALE	14.4	47.6	
411.6	CARBONDALE	BRERETON	LIMESTONE	1.7	62.0	
409.9	CARBONDALE	HERRIN	COAL	6.3	63.7	
403.6	CARBONDALE		UNDERCLAY	0.7	70.0	

MAPID: 14590032000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 70' N line, 70' W line of NW NE NE

QUADRANGLE: PERCY LONGITUDE: -89.56074 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.02774 DATE COLLECTED: 4 / 26 / 1963

SURFACE ELEVATION (FT.): 490.6 LOGGED (FT.): 143.1 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY EX178K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
490.6	PLEISTOCENE		CLAY	46.2	0.0	
444.4	MODESTO		GRAY SHALE	2.8	46.2	
441.6	MODESTO	DEGRAFF	COAL	0.3	49.0	
441.3	MODESTO		GRAY SHALE	2.2	49.3	
439.1	MODESTO		SHALE WITH LIMESTONE	0.5	51.5	
438.6	MODESTO	PIASA	LIMESTONE	9.0	52.0	DARK
429.6			SHALE	13.3	61.0	
416.3	CARBONDALE	GALUM	LIMESTONE	2.1	74.3	GRAY
414.2	CARBONDALE		GRAY SHALE	5.9	76.4	
408.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	82.3	GRAY
404.0	CARBONDALE		SHALE	1.3	86.6	
402.7	CARBONDALE		DARK SHALE	2.4	87.9	
400.3	CARBONDALE	CONANT	LIMESTONE	2.5	90.3	DARK
397.8	CARBONDALE		DARK SHALE	9.4	92.8	
388.4	CARBONDALE	BRERETON	LIMESTONE	5.3	102.2	DARK
383.1	CARBONDALE	ANNA	BLACK SHALE	2.9	107.5	
380.2	CARBONDALE	HERRIN	COAL	6.1	110.4	
374.1	CARBONDALE		UNDERCLAY	4.2	116.5	
369.9	CARBONDALE	HIGGINSVILLE	LIMESTONE	5.5	120.7	
364.4	CARBONDALE		SHALE	5.2	126.2	
359.2	CARBONDALE	ST. DAVID	LIMESTONE	3.7	131.4	
355.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.3	135.1	
353.2	CARBONDALE	SPRINGFIELD	COAL	4.8	137.4	
348.4	CARBONDALE		UNDERCLAY	0.9	142.2	

MAPID: 14590033000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 35' N line, 35' E line of NE NE NE

QUADRANGLE: PERCY

LONGITUDE: -89.5565

GEOLOGIST: NORTH

CONFIDENTIAL: N

LATITUDE: 38.027778

DATE COLLECTED: 12 / 28 / 1962

SURFACE ELEVATION (FT.): 478.8

LOGGED (FT.): 124.1

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY EX167K

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
478.8	PLEISTOCENE		UNCONSOLIDATED	7.0	0.0	
471.8	MODESTO		GRAY SHALE	3.5	7.0	
468.3	MODESTO		SHALE	4.5	10.5	
463.8	MODESTO		SHALE	12.5	15.0	
451.3	MODESTO	DEGRAFF	COAL	1.3	27.5	
450.0	MODESTO		UNDERCLAY	0.8	28.8	
449.2	MODESTO	PIASA	LIMESTONE	14.3	29.6	GRAY
434.9			CALCAREOUS SHALE	9.5	43.9	
425.4	CARBONDALE	GALUM	LIMESTONE	3.0	53.4	GRAY
422.4	CARBONDALE		CALCAREOUS SHALE	5.2	56.4	
417.2	CARBONDALE	BANKSTON FORK	LIMESTONE	5.3	61.6	GRAY
411.9	CARBONDALE		SHALE WITH LIMESTONE	5.3	66.9	
406.6	CARBONDALE	CONANT	LIMESTONE	1.2	72.2	DARK
405.4	CARBONDALE		DARK SHALE	17.2	73.4	
388.2	CARBONDALE	BRERETON	LIMESTONE	1.2	90.6	DARK
387.0	CARBONDALE	HERRIN	COAL	5.5	91.8	
381.5	CARBONDALE		UNDERCLAY	2.8	97.3	
378.7	CARBONDALE		CALCAREOUS SHALE	6.3	100.1	
372.4	CARBONDALE		GRAY SHALE	6.7	106.4	
365.7	CARBONDALE	ST. DAVID	LIMESTONE	3.5	113.1	
362.2	CARBONDALE		DARK SHALE	1.1	116.6	
361.1	CARBONDALE	SPRINGFIELD	COAL	4.4	117.7	
356.7	CARBONDALE		UNDERCLAY	2.0	122.1	

MAPID: 14590048000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 20' S line, 300' W line of SW NW NW

QUADRANGLE: PERCY LONGITUDE: -89.573825 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.024557 DATE COLLECTED: 10 / 29 / 1975

SURFACE ELEVATION (FT.): 493.6 LOGGED (FT.): 134.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 2529 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
493.6	PLEISTOCENE		UNCONSOLIDATED	40.1	0.0	
453.5	MODESTO	PIASA	LIMESTONE	10.1	40.1	TAN
443.4			GRAY SHALE	11.0	50.2	
432.4	CARBONDALE	GALUM	LIMESTONE	2.8	61.2	TAN
429.6	CARBONDALE		GRAY SHALE	6.1	64.0	
423.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	70.1	TAN
418.7	CARBONDALE		SHALE WITH LIMESTONE	11.1	74.9	
407.6	CARBONDALE	JAMESTOWN	COAL	0.2	86.0	
407.4	CARBONDALE		SHALE WITH LIMESTONE	6.3	86.2	
401.1	CARBONDALE	BRERETON	LIMESTONE	5.6	92.5	DARK
395.5	CARBONDALE	ANNA	BLACK SHALE	1.3	98.1	
394.2	CARBONDALE	HERRIN	COAL	4.9	99.4	
389.3	CARBONDALE		UNDERCLAY	3.3	104.3	
386.0	CARBONDALE		SANDSTONE/SHALE	12.6	107.6	
373.4	CARBONDALE	ST. DAVID	LIMESTONE	3.5	120.2	TAN
369.9	CARBONDALE	TURNER MINE	SHALE WITH LIMESTONE	1.5	123.7	
368.4	CARBONDALE	SPRINGFIELD	COAL	4.6	125.2	
363.8	CARBONDALE		UNDERCLAY	4.2	129.8	

MAPID: 14590049000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 5' S line, 295' E line of NW SW NE

QUADRANGLE: PERCY LONGITUDE: -89.5644 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.022559 DATE COLLECTED: 10 / 16 / 1975

SURFACE ELEVATION (FT.): 469.0 LOGGED (FT.): 113.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 2514 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
469.0	PLEISTOCENE		UNCONSOLIDATED	25.3	0.0	
443.7	PLEISTOCENE		UNCONSOLIDATED	21.8	25.3	
421.9	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	47.1	TAN
417.6	CARBONDALE		SHALE WITH LIMESTONE	11.4	51.4	
406.2	CARBONDALE	JAMESTOWN	COAL	0.2	62.8	
406.0	CARBONDALE		SHALE WITH LIMESTONE	4.4	63.0	
401.6	CARBONDALE	BRERETON	LIMESTONE	5.9	67.4	DARK
395.7	CARBONDALE	ANNA	BLACK SHALE	2.3	73.3	
393.4	CARBONDALE	HERRIN	COAL	6.1	75.6	
387.3	CARBONDALE		UNDERCLAY	7.2	81.7	
380.1	CARBONDALE		CALCAREOUS SANDSTONE	11.0	88.9	
369.1	CARBONDALE	ST. DAVID	LIMESTONE	0.9	99.9	GRAY
368.2	CARBONDALE	TURNER MINE	SHALE WITH LIMESTONE	2.8	100.8	
365.4	CARBONDALE	SPRINGFIELD	COAL	5.2	103.6	
360.2	CARBONDALE		UNDERCLAY	4.2	108.8	

MAPID: 14590050000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 5' S line, 20' W line of NW SE NE

QUADRANGLE: PERCY LONGITUDE: -89.560994 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.022502 DATE COLLECTED: 10 / 15 / 1975

SURFACE ELEVATION (FT.): 479.3 LOGGED (FT.): 110.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 2511E WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
479.3	PLEISTOCENE		UNCONSOLIDATED	43.8	0.0	
435.5	PLEISTOCENE		UNCONSOLIDATED	15.3	43.8	
420.2	CARBONDALE	JAMESTOWN	COAL	0.2	59.1	
420.0	CARBONDALE		DARK SHALE	5.5	59.3	
414.5	CARBONDALE	BRERETON	LIMESTONE	4.8	64.8	DARK
409.7	CARBONDALE	ANNA	BLACK SHALE	3.3	69.6	
406.4	CARBONDALE	HERRIN	COAL	6.0	72.9	
400.4	CARBONDALE		CLAYSTONE	10.4	78.9	
390.0	CARBONDALE		SANDSTONE/LIMESTONE	5.2	89.3	
384.8	CARBONDALE	ST. DAVID	LIMESTONE	4.1	94.5	TAN
380.7	CARBONDALE	TURNER MINE	SHALE WITH LIMESTONE	2.3	98.6	
378.4	CARBONDALE	SPRINGFIELD	COAL	4.4	100.9	
374.0	CARBONDALE		UNDERCLAY	4.7	105.3	

MAPID: 14590051000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 30' N line, 5' E line of NE SW NE

QUADRANGLE: PERCY LONGITUDE: -89.561055 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.024222 DATE COLLECTED: 10 / 7 / 1975

SURFACE ELEVATION (FT.): 483.9 LOGGED (FT.): 129.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 2507 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
483.9	PLEISTOCENE		UNCONSOLIDATED	55.7	0.0	
428.2	CARBONDALE		GRAY SHALE	5.9	55.7	
422.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	61.6	TAN
417.8	CARBONDALE		SHALE WITH LIMESTONE	11.8	66.1	
406.0	CARBONDALE	JAMESTOWN	COAL	0.2	77.9	
405.8	CARBONDALE		SHALE WITH LIMESTONE	5.7	78.1	
400.1	CARBONDALE	BRERETON	LIMESTONE	6.1	83.8	DARK
394.0	CARBONDALE	ANNA	BLACK SHALE	1.7	89.9	
392.3	CARBONDALE	HERRIN	COAL	6.4	91.6	
385.9	CARBONDALE		UNDERCLAY	7.2	98.0	
378.7	CARBONDALE		SANDSTONE	8.3	105.2	
370.4	CARBONDALE	ST. DAVID	LIMESTONE	3.2	113.5	TAN
367.2	CARBONDALE	TURNER MINE	SHALE WITH LIMESTONE	2.8	116.7	
364.4	CARBONDALE	SPRINGFIELD	COAL	4.7	119.5	
359.7	CARBONDALE		UNDERCLAY	4.8	124.2	

MAPID: 14590052000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 210' S line, 100' W line of NW NW NW

QUADRANGLE: PERCY LONGITUDE: -89.574469 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.026892 DATE COLLECTED: 6 / 22 / 1961

SURFACE ELEVATION (FT.): 494.6 LOGGED (FT.): 142.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY WE13K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
494.6	PLEISTOCENE		CLAY	47.0	0.0	
447.6	MODESTO		SHALE	2.0	47.0	
445.6	MODESTO	DEGRAFF	COAL	0.5	49.0	
445.1	MODESTO		GRAY SHALE	1.5	49.5	
443.6	MODESTO	PIASA	LIMESTONE	12.5	51.0	GRAY
431.1	MODESTO		GRAY SHALE	5.5	63.5	
425.6	MODESTO		GRAY SHALE	6.0	69.0	
419.6	CARBONDALE		CALCAREOUS SHALE	0.8	75.0	
418.8	CARBONDALE		GRAY SHALE	2.2	75.8	
416.6	CARBONDALE		CALCAREOUS SHALE	2.0	78.0	
414.6	CARBONDALE		GRAY SHALE	2.5	80.0	
412.1	CARBONDALE		CALCAREOUS SHALE	2.0	82.5	
410.1	CARBONDALE	BANKSTON FORK	LIMESTONE	5.3	84.5	GRAY
404.8	CARBONDALE		SHALE WITH LIMESTONE	4.2	89.8	
400.6	CARBONDALE	CONANT	LIMESTONE	1.0	94.0	DARK
399.6	CARBONDALE		SHALE WITH LIMESTONE	5.0	95.0	
394.6	CARBONDALE	JAMESTOWN	COAL	0.3	100.0	
394.3	CARBONDALE		SHALE WITH LIMESTONE	4.2	100.3	
390.1	CARBONDALE	BRERETON	LIMESTONE	2.5	104.5	DARK
387.6	CARBONDALE	ANNA	BLACK SHALE	3.5	107.0	
384.1	CARBONDALE	HERRIN	COAL	5.6	110.5	
378.5	CARBONDALE		UNDERCLAY	1.9	116.1	
376.6	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.0	118.0	GRAY
375.6	CARBONDALE	HIGGINSVILLE	CALCAREOUS SHALE	1.5	119.0	
374.1	CARBONDALE	HIGGINSVILLE	SANDY LIMESTONE	3.0	120.5	GRAY
371.1	CARBONDALE		GRAY SHALE	1.0	123.5	
370.1	CARBONDALE		CALCAREOUS SHALE	3.0	124.5	
367.1	CARBONDALE	ST. DAVID	SANDY LIMESTONE	4.0	127.5	GRAY
363.1	CARBONDALE	ST. DAVID	SANDSTONE	1.0	131.5	GRAY
362.1	CARBONDALE	ST. DAVID	CALCAREOUS SHALE	1.5	132.5	
360.6	CARBONDALE	ST. DAVID	SHALE WITH LIMESTONE	1.2	134.0	
359.4	CARBONDALE	ST. DAVID	LIMESTONE	0.8	135.2	DARK
358.6	CARBONDALE	TURNER MINE	BLACK SHALE	0.4	136.0	
358.2	CARBONDALE	SPRINGFIELD	COAL	4.1	136.4	
354.1	CARBONDALE		UNDERCLAY	1.5	140.5	

MAPID: 14590053000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 75' N line, 40' W line of NE NE NW

QUADRANGLE: PERCY LONGITUDE: -89.567752 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.027819 DATE COLLECTED: 6 / 20 / 1961

SURFACE ELEVATION (FT.): 479.9 LOGGED (FT.): 115.1 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY WE11K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
479.9	PLEISTOCENE		CLAY	38.0	0.0	
441.9	CARBONDALE		GRAY SHALE	7.5	38.0	
434.4	CARBONDALE	GALUM	LIMESTONE	1.5	45.5	GRAY
432.9	CARBONDALE		CALCAREOUS SHALE	7.0	47.0	
425.9	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	54.0	GRAY
421.9	CARBONDALE		CALCAREOUS SHALE	5.0	58.0	
416.9	CARBONDALE	CONANT	LIMESTONE	2.0	63.0	DARK
414.9	CARBONDALE		CALCAREOUS SHALE	4.3	65.0	
410.6	CARBONDALE	JAMESTOWN	COAL	0.7	69.3	
409.9	CARBONDALE		SHALE WITH LIMESTONE	8.0	70.0	
401.9	CARBONDALE	BRERETON	LIMESTONE	1.0	78.0	DARK
400.9	CARBONDALE	BRERETON	SHALE WITH LIMESTONE	0.5	79.0	
400.4	CARBONDALE	BRERETON	LIMESTONE	3.3	79.5	DARK
397.1	CARBONDALE	HERRIN	COAL	6.0	82.8	
391.1	CARBONDALE		UNDERCLAY	2.3	88.8	
388.8	CARBONDALE	HIGGINSVILLE	LIMESTONE	7.0	91.1	GRAY
381.8	CARBONDALE		SHALE	5.0	98.1	
376.8	CARBONDALE		SANDSTONE	3.0	103.1	GRAY
373.8	CARBONDALE		GRAY SHALE	0.8	106.1	
373.0	CARBONDALE	ST. DAVID	LIMESTONE	1.2	106.9	DARK
371.8	CARBONDALE	TURNER MINE	DARK SHALE	1.0	108.1	
370.8	CARBONDALE	SPRINGFIELD	COAL	4.4	109.1	
366.4	CARBONDALE		UNDERCLAY	1.6	113.5	

MAPID: 14590054000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 30' N line, 40' E line of NW SW NE

QUADRANGLE: PERCY LONGITUDE: -89.563484 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.02426 DATE COLLECTED: 6 / 19 / 1961

SURFACE ELEVATION (FT.): 469.1 LOGGED (FT.): 105.1 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY WE10K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
469.1	PLEISTOCENE		CLAY	24.0	0.0	
445.1	CARBONDALE		GRAY SHALE	7.0	24.0	
438.1	CARBONDALE		GREEN SHALE	6.0	31.0	
432.1	CARBONDALE		SHALE	4.7	37.0	TAN
427.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	41.7	GRAY
423.1	CARBONDALE		GRAY SHALE	5.0	46.0	
418.1	CARBONDALE		SHALE WITH LIMESTONE	0.7	51.0	
417.4	CARBONDALE	CONANT	LIMESTONE	1.3	51.7	DARK
416.1	CARBONDALE		SHALE WITH LIMESTONE	5.0	53.0	
411.1	CARBONDALE	JAMESTOWN	COAL	0.5	58.0	
410.6	CARBONDALE		DARK SHALE	5.5	58.5	
405.1	CARBONDALE		SHALE WITH LIMESTONE	2.0	64.0	
403.1	CARBONDALE	BRERETON	LIMESTONE	4.7	66.0	
398.4	CARBONDALE	ANNA	BLACK SHALE	0.5	70.7	
397.9	CARBONDALE	HERRIN	COAL	5.6	71.2	
392.3	CARBONDALE		UNDERCLAY	3.3	76.8	
389.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.5	80.1	GRAY
387.5	CARBONDALE	HIGGINSVILLE	CALCAREOUS SHALE	1.0	81.6	
386.5	CARBONDALE	HIGGINSVILLE	SANDY LIMESTONE	1.5	82.6	GRAY
385.0	CARBONDALE		SANDSTONE	2.0	84.1	GRAY
383.0	CARBONDALE		GRAY SHALE	4.5	86.1	
378.5	CARBONDALE		SANDSTONE	1.0	90.6	GRAY
377.5	CARBONDALE		GRAY SHALE	0.5	91.6	
377.0	CARBONDALE	ST. DAVID	SANDY LIMESTONE	4.0	92.1	GRAY
373.0	CARBONDALE	TURNER MINE	SHALE WITH LIMESTONE	0.5	96.1	
372.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	96.6	
370.5	CARBONDALE	SPRINGFIELD	COAL	4.5	98.6	
366.0	CARBONDALE		LIMESTONE	0.3	103.1	DARK
365.7	CARBONDALE		UNDERCLAY	1.7	103.4	

MAPID: 14590095000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.573772 GEOLOGIST: NORTH
CONFIDENTIAL: N LATITUDE: 38.024256 DATE COLLECTED: 10 / 29 / 1975
SURFACE ELEVATION (FT.): 493.6 LOGGED (FT.): 134.0 LOG TYPE: Drillers Log
SOURCE: APOGEE COAL COMPANY 2529 WELL TYPE: Coal Test
COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
493.6	PLEISTOCENE		UNCONSOLIDATED	40.1	0.0	
453.5	MODESTO	PIASA	LIMESTONE	10.1	40.1	BROWN
443.4			GRAY SHALE	11.0	50.2	
432.4	CARBONDALE	GALUM	LIMESTONE	2.8	61.2	BROWN
429.6	CARBONDALE		GRAY SHALE	6.1	64.0	
423.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	70.1	BROWN
418.7	CARBONDALE		SHALE WITH LIMESTONE	11.1	74.9	
407.6	CARBONDALE	JAMESTOWN	COAL	0.2	86.0	
407.4	CARBONDALE		SHALE WITH LIMESTONE	6.3	86.2	
401.1	CARBONDALE	BRERETON	LIMESTONE	5.6	92.5	DARK
395.5	CARBONDALE	ANNA	BLACK SHALE	1.3	98.1	
394.2	CARBONDALE	HERRIN	COAL	4.9	99.4	
389.3	CARBONDALE		UNDERCLAY	3.3	104.3	
386.0	CARBONDALE		SANDSTONE/SHALE	12.6	107.6	
373.4	CARBONDALE	ST. DAVID	LIMESTONE	3.5	120.2	BROWN
369.9	CARBONDALE	TURNER MINE	SHALE WITH LIMESTONE	1.5	123.7	
368.4	CARBONDALE	SPRINGFIELD	COAL	4.6	125.2	
363.8	CARBONDALE		UNDERCLAY	4.2	129.8	

MAPID: 14590214000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 8 QUARTERS/FOOTAGES: 189' N line, 441' E line of NE SW SE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.562695 GEOLOGIST: GRAETENGER
CONFIDENTIAL: N LATITUDE: 38.016555 DATE COLLECTED: 12 / 23 / 1983
SURFACE ELEVATION (FT.): 490.7 LOGGED (FT.): 115.0 LOG TYPE: Drillers Log
SOURCE: ARCH OF IL WELL TYPE: Observation Well
COMMENT: WATER SURFACE ELEV. 400.7

MAPID: 14528126000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 9 QUARTERS/FOOTAGES: 579' N line, 751' E line of SE SW

QUADRANGLE: PERCY LONGITUDE: -89.550202 GEOLOGIST: L. SMITH
CONFIDENTIAL: N LATITUDE: 38.01525 DATE COLLECTED:
SURFACE ELEVATION (FT.): 492.7 LOGGED (FT.): 118.0 LOG TYPE: Drillers Log
SOURCE: ARCH OF IL WELL TYPE: Observation Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
492.7			UNCONSOLIDATED	118.0	0.0	

MAPID: 14590055000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 9 QUARTERS/FOOTAGES: 100' N line, 25' W line of NW NW NW

QUADRANGLE: PERCY LONGITUDE: -89.556294 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.027596 DATE COLLECTED: 9 / 16 / 1972

SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 112.4 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY EX303K WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.0	PLEISTOCENE		CLAY	23.6	0.0
461.4	MODESTO	PIASA	LIMESTONE	10.8	23.6
450.6	MODESTO		GRAY SHALE	2.1	34.4
448.5	CARBONDALE	DANVILLE	COAL	0.2	36.5
448.3	CARBONDALE		GRAY SHALE	8.8	36.7
439.5	CARBONDALE	GALUM	LIMESTONE	2.3	45.5
437.2	CARBONDALE		GRAY SHALE	6.4	47.8
430.8	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	54.2
426.0	CARBONDALE		SHALE	5.8	59.0
420.2	CARBONDALE	BRERETON	LIMESTONE	2.2	64.8
418.0	CARBONDALE	ANNA	BLACK SHALE	16.0	67.0
402.0	CARBONDALE	HERRIN	COAL	5.9	83.0
396.1	CARBONDALE	ST. DAVID	LIMESTONE	15.2	88.9
380.9	CARBONDALE	TURNER MINE	BLACK SHALE	2.3	104.1
378.6	CARBONDALE	SPRINGFIELD	COAL	4.6	106.4
374.0	CARBONDALE		UNDERCLAY	1.4	111.0

MAPID: 14590080000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 9 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.552059

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.026369

DATE COLLECTED: 7 / 7 / 1983

SURFACE ELEVATION (FT.): 481.4 LOGGED (FT.): 142.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6710

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
481.4	PLEISTOCENE		UNCONSOLIDATED	22.5	0.0	
458.9	PLEISTOCENE		UNCONSOLIDATED	20.6	22.5	
438.3	MODESTO		DARK GRAY SHALE	0.7	43.1	
437.6	MODESTO	DEGRAFF	COAL	0.8	43.8	
436.8	MODESTO		UNDERCLAY	1.2	44.6	
435.6	MODESTO	PIASA	LIMESTONE	12.2	45.8	GRAY
423.4			GRAY SHALE	11.5	58.0	
411.9	CARBONDALE	GALUM	LIMESTONE	2.9	69.5	GRAY
409.0	CARBONDALE		CALCAREOUS SHALE	5.9	72.4	
403.1	CARBONDALE	BANKSTON FORK	LIMESTONE	5.6	78.3	GRAY
397.5	CARBONDALE		DARK GRAY SHALE	5.3	83.9	
392.2	CARBONDALE	CONANT	LIMESTONE	3.2	89.2	DARK GRAY
389.0	CARBONDALE		CALCAREOUS SHALE	10.4	92.4	
378.6	CARBONDALE	BRERETON	LIMESTONE	2.2	102.8	DARK GRAY
376.4	CARBONDALE	ANNA	DARK GRAY SHALE	2.7	105.0	
373.7	CARBONDALE	HERRIN	COAL	6.3	107.7	
367.4	CARBONDALE		UNDERCLAY	3.4	114.0	
364.0	CARBONDALE		CALCAREOUS SANDSTONE	5.9	117.4	GRAY
358.1	CARBONDALE		SHALE & SANDSTONE	6.7	123.3	
351.4	CARBONDALE	ST. DAVID	LIMESTONE	1.4	130.0	GRAY
350.0	CARBONDALE	TURNER MINE	DARK GRAY SHALE	2.9	131.4	
347.1	CARBONDALE	SPRINGFIELD	COAL	4.9	134.3	
342.2	CARBONDALE		UNDERCLAY	2.8	139.2	

MAPID: 14590081000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 9 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.548388

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.026434

DATE COLLECTED: 7 / 1 / 1983

SURFACE ELEVATION (FT.): 476.7 LOGGED (FT.): 141.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6404A

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
476.7	PLEISTOCENE		UNCONSOLIDATED	26.3	0.0	
450.4	MODESTO		SHALE	7.3	26.3	
443.1	MODESTO		GRAY SHALE	7.2	33.6	
435.9	MODESTO	PIASA	LIMESTONE	10.0	40.8	GRAY
425.9	MODESTO		BLACK SHALE	5.1	50.8	
420.8	CARBONDALE	DANVILLE	COAL	2.8	55.9	
418.0	CARBONDALE		UNDERCLAY	1.9	58.7	
416.1	CARBONDALE		GRAY SHALE	6.2	60.6	
409.9	CARBONDALE	GALUM	LIMESTONE	2.1	66.8	GRAY
407.8	CARBONDALE		CALCAREOUS SHALE	6.4	68.9	
401.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	75.3	GRAY
397.2	CARBONDALE		GRAY SHALE	1.2	79.5	
396.0	CARBONDALE		DARK GRAY SHALE	4.8	80.7	
391.2	CARBONDALE	CONANT	LIMESTONE	1.5	85.5	DARK GRAY
389.7	CARBONDALE		DARK GRAY SHALE	5.5	87.0	
384.2	CARBONDALE		BLACK SHALE	0.5	92.5	
383.7	CARBONDALE		DARK GRAY SHALE	4.2	93.0	
379.5	CARBONDALE	BRERETON	LIMESTONE	6.6	97.2	DARK GRAY
372.9	CARBONDALE	ANNA	BLACK SHALE	2.1	103.8	
370.8	CARBONDALE	HERRIN	COAL	5.9	105.9	
364.9	CARBONDALE		UNDERCLAY	4.1	111.8	
360.8	CARBONDALE		CALCAREOUS SANDSTONE	4.6	115.9	GRAY
356.2	CARBONDALE		SANDSTONE/SHALE	7.5	120.5	GRAY
348.7	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.8	128.0	GRAY
346.9	CARBONDALE		CALCAREOUS SHALE	2.2	129.8	
344.7	CARBONDALE	ST. DAVID	LIMESTONE	1.4	132.0	DARK GRAY
343.3	CARBONDALE	TURNER MINE	BLACK SHALE	0.7	133.4	
342.6	CARBONDALE	SPRINGFIELD	COAL	4.3	134.1	
338.3	CARBONDALE		UNDERCLAY	2.6	138.4	

MAPID: 14590082000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 9 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.541628

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.02631

DATE COLLECTED: 6 / 15 / 1983

SURFACE ELEVATION (FT.): 478.0 LOGGED (FT.): 139.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6272

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
478.0	PLEISTOCENE		UNCONSOLIDATED	31.3	0.0	
446.7	MODESTO		SHALE	14.7	31.3	
432.0	MODESTO		GRAY SHALE	2.3	46.0	
429.7	MODESTO	PIASA	LIMESTONE	7.1	48.3	GRAY
422.6	MODESTO		DARK GRAY SHALE	4.7	55.4	
417.9	CARBONDALE	DANVILLE	COAL	2.5	60.1	
415.4	CARBONDALE		UNDERCLAY	1.4	62.6	
414.0	CARBONDALE		GRAY SHALE	5.8	64.0	
408.2	CARBONDALE	GALUM	LIMESTONE	2.2	69.8	GRAY
406.0	CARBONDALE		CALCAREOUS SHALE	6.0	72.0	
400.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	78.0	GRAY
395.8	CARBONDALE		GRAY SHALE	1.3	82.2	
394.5	CARBONDALE		DARK GRAY SHALE	4.8	83.5	
389.7	CARBONDALE	CONANT	LIMESTONE	1.7	88.3	DARK GRAY
388.0	CARBONDALE		DARK GRAY SHALE	3.5	90.0	
384.5	CARBONDALE		BLACK SHALE	0.5	93.5	
384.0	CARBONDALE		DARK GRAY SHALE	4.6	94.0	
379.4	CARBONDALE	BRERETON	LIMESTONE	4.0	98.6	DARK GRAY
375.4	CARBONDALE	ANNA	BLACK SHALE	3.1	102.6	
372.3	CARBONDALE	ENERGY	GRAY SHALE	2.2	105.7	
370.1	CARBONDALE	HERRIN	COAL	5.9	107.9	
364.2	CARBONDALE		UNDERCLAY	2.4	113.8	
361.8	CARBONDALE		CALCAREOUS SANDSTONE	5.1	116.2	GRAY
356.7	CARBONDALE		SHALE & SANDSTONE	8.4	121.3	
348.3	CARBONDALE	TURNER MINE	BLACK SHALE	2.4	129.7	
345.9	CARBONDALE	SPRINGFIELD	COAL	3.9	132.1	
342.0	CARBONDALE		UNDERCLAY	3.0	136.0	

MAPID: 14590083000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 9 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.544978

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.026505

DATE COLLECTED: 6 / 14 / 1983

SURFACE ELEVATION (FT.): 479.7 LOGGED (FT.): 141.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 6267

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
479.7	PLEISTOCENE		UNCONSOLIDATED	23.1	0.0	
456.6	PLEISTOCENE		UNCONSOLIDATED	2.9	23.1	
453.7	MODESTO		SHALE	15.0	26.0	
438.7	MODESTO		GRAY SHALE	2.5	41.0	
436.2	MODESTO	PIASA	LIMESTONE	10.5	43.5	GRAY
425.7	MODESTO		DARK GRAY SHALE	4.8	54.0	
420.9	CARBONDALE	DANVILLE	COAL	2.5	58.8	
418.4	CARBONDALE		UNDERCLAY	1.1	61.3	
417.3	CARBONDALE		GRAY SHALE	6.4	62.4	
410.9	CARBONDALE	GALUM	LIMESTONE	2.1	68.8	GRAY
408.8	CARBONDALE		CALCAREOUS SHALE	6.1	70.9	
402.7	CARBONDALE	BANKSTON FORK	LIMESTONE	4.6	77.0	GRAY
398.1	CARBONDALE		GRAY SHALE	1.4	81.6	
396.7	CARBONDALE		DARK GRAY SHALE	4.4	83.0	
392.3	CARBONDALE	CONANT	LIMESTONE	2.1	87.4	DARK GRAY
390.2	CARBONDALE		SHALE	4.5	89.5	DARK GRAY
385.7	CARBONDALE		DARK GRAY SHALE	6.8	94.0	
378.9	CARBONDALE	BRERETON	LIMESTONE	5.7	100.8	DARK GRAY
373.2	CARBONDALE	ANNA	DARK GRAY SHALE	0.7	106.5	
372.5	CARBONDALE	HERRIN	COAL	5.6	107.2	
366.9	CARBONDALE		UNDERCLAY	4.2	112.8	
362.7	CARBONDALE		CALCAREOUS SANDSTONE	2.8	117.0	GRAY
359.9	CARBONDALE		SHALE & SANDSTONE	6.0	119.8	
353.9	CARBONDALE	HIGGINSVILLE	LIMESTONE	5.6	125.8	
348.3	CARBONDALE		CALCAREOUS SHALE	2.0	131.4	
346.3	CARBONDALE	ST. DAVID	LIMESTONE	0.6	133.4	DARK GRAY
345.7	CARBONDALE	SPRINGFIELD	COAL	3.4	134.0	
342.3	CARBONDALE		UNDERCLAY	3.6	137.4	

MAPID: 14590094000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 9 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.538141

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.026297

DATE COLLECTED: 10 / 7 / 1975

SURFACE ELEVATION (FT.): 478.0 LOGGED (FT.): 159.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 2544

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
478.0	PLEISTOCENE		UNCONSOLIDATED	26.2	0.0	
451.8	PLEISTOCENE		UNCONSOLIDATED	35.3	26.2	
416.5	MODESTO	PIASA	LIMESTONE	10.4	61.5	BROWN
406.1	MODESTO		DARK SHALE	3.9	71.9	
402.2	CARBONDALE	DANVILLE	COAL	3.0	75.8	
399.2	CARBONDALE		UNDERCLAY	7.2	78.8	
392.0	CARBONDALE	GALUM	LIMESTONE	2.1	86.0	BROWN
389.9	CARBONDALE		CALCAREOUS SHALE	6.5	88.1	
383.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.3	94.6	BROWN
379.1	CARBONDALE		SHALE WITH LIMESTONE	12.7	98.9	
366.4	CARBONDALE	JAMESTOWN	COAL	0.2	111.6	
366.2	CARBONDALE		SHALE WITH LIMESTONE	6.5	111.8	
359.7	CARBONDALE	BRERETON	LIMESTONE	6.6	118.3	DARK
353.1	CARBONDALE	HERRIN	COAL	6.1	124.9	
347.0	CARBONDALE		UNDERCLAY	5.4	131.0	
341.6	CARBONDALE		SANDSTONE/SHALE	8.7	136.4	
332.9	CARBONDALE	ST. DAVID	LIMESTONE	3.1	145.1	BROWN
329.8	CARBONDALE	ST. DAVID	LIMESTONE	2.1	148.2	DARK
327.7	CARBONDALE	SPRINGFIELD	COAL	4.4	150.3	
323.3	CARBONDALE		UNDERCLAY	4.3	154.7	

MAPID: 14590213000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 9 QUARTERS/FOOTAGES: 579' N line, 751' E line of NE SE SW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.550202

GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.01525

DATE COLLECTED: 12 / 29 / 1983

SURFACE ELEVATION (FT.): 492.7 LOGGED (FT.): 118.0

LOG TYPE: Drillers Log

SOURCE: ARCH OF IL

WELL TYPE: Observation Well

COMMENT: WATER SURFACE ELEV. 403

MAPID: 14500284000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 10 QUARTERS/FOOTAGES: 54' S line, 2576' E line

QUADRANGLE: PERCY LONGITUDE: -89.529226 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.013018 DATE COLLECTED: 0 / 0 / 1921

SURFACE ELEVATION (FT.): 455.5 LOGGED (FT.): 131.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #40 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.5			UNCONSOLIDATED	62.0	0.0
393.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	62.0
389.5	CARBONDALE		CLAYSTONE	2.0	66.0
387.5	CARBONDALE		SHALE	4.5	68.0
383.0	CARBONDALE	CONANT	LIMESTONE	2.0	72.5
381.0	CARBONDALE		SHALE	6.0	74.5
375.0	CARBONDALE		LIMESTONE W/ SHALE	0.5	80.5
374.5	CARBONDALE	JAMESTOWN	COAL	0.5	81.0
374.0	CARBONDALE		SHALE	5.0	81.5
369.0	CARBONDALE	BRERETON	LIMESTONE	6.5	86.5
362.5	CARBONDALE	ANNA	SHALE	1.5	93.0
361.0	CARBONDALE	HERRIN	COAL	6.2	94.5
354.8	CARBONDALE		CLAYSTONE	2.3	100.7
352.5	CARBONDALE		CLAYSTONE & LIMESTONE	3.0	103.0
349.5	CARBONDALE		LIMESTONE	4.0	106.0
345.5	CARBONDALE		CLAYSTONE	4.0	110.0
341.5	CARBONDALE		SANDSTONE	8.0	114.0
333.5	CARBONDALE	TURNER MINE	SHALE	2.5	122.0
331.0	CARBONDALE	SPRINGFIELD	COAL	4.2	124.5
326.8	CARBONDALE		CLAYSTONE	2.3	128.7

MAPID: 14500284000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 10 QUARTERS/FOOTAGES: 54' S line, 2576' E line

QUADRANGLE: PERCY LONGITUDE: -89.529226 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.013018 DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.0 LOGGED (FT.): 101.3 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
394.0	CARBONDALE	GALUM	LIMESTONE	4.0	62.0
390.0	CARBONDALE		DARK GRAY SHALE	6.6	66.0
383.4	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	72.6
381.4	CARBONDALE	LAWSON	DARK GRAY SHALE	6.0	74.6
375.4	CARBONDALE	CONANT	LIMESTONE W/ SHALE	0.6	80.6
374.8	CARBONDALE	JAMESTOWN	COAL	0.6	81.2
374.2	CARBONDALE		DARK GRAY SHALE	5.0	81.8
369.2	CARBONDALE	BRERETON	LIMESTONE	6.6	86.8
362.6	CARBONDALE	ANNA	BLACK SHALE	1.6	93.4
361.0	CARBONDALE	HERRIN	COAL	6.3	95.0

MAPID: 14502790000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 10 QUARTERS/FOOTAGES: 330' N line, 330' E line of NW NE

QUADRANGLE: PERCY LONGITUDE: -89.525609 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.026439 DATE COLLECTED: 9 / 27 / 1946

SURFACE ELEVATION (FT.): 465.0 LOGGED (FT.): 1434.0 LOG TYPE: Drillers Log

SOURCE: JOHN E. SOPER WELL TYPE: Plugged and/or Abandoned

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
465.0			UNCONSOLIDATED	12.0	0.0
453.0			CLAYSTONE	18.0	12.0
435.0			LIMESTONE	4.0	30.0
431.0			SIDERITE	2.0	34.0
429.0			LIMESTONE	4.0	36.0
425.0			SHALE	2.0	40.0
423.0	CARBONDALE	DANVILLE	COAL	3.0	42.0
420.0	CARBONDALE		SHALE	20.0	45.0
400.0	CARBONDALE		LIMESTONE	5.0	65.0
395.0	CARBONDALE	HERRIN	COAL	5.0	70.0
390.0	CARBONDALE		SHALE	5.0	75.0
385.0	CARBONDALE		LIMESTONE	5.0	80.0
380.0	CARBONDALE		SHALE	5.0	85.0
375.0	CARBONDALE		UNCLASSIFIED	5.0	90.0
370.0	CARBONDALE		LIMESTONE	5.0	95.0
365.0	CARBONDALE		SHALE	10.0	100.0
355.0	CARBONDALE		SHALE	17.0	110.0
338.0	CARBONDALE		SHALE	18.0	127.0
320.0	CARBONDALE		SHALE	5.0	145.0
315.0	CARBONDALE		SHALE	10.0	150.0

MAPID: 14528344000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 10 QUARTERS/FOOTAGES: 2500' S line, 1350' W line of SW

QUADRANGLE: PERCY LONGITUDE: -89.533769 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.019833 DATE COLLECTED:

SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 0.0 LOG TYPE:

SOURCE: ARCH OF IL CW-4 WELL TYPE: Observation Well

COMMENT: POINT ONLY - NO DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNKNOWN	0.0	0.0

MAPID: 14528642000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 10 QUARTERS/FOOTAGES: 100' N line, 100' W line

QUADRANGLE: PERCY LONGITUDE: -89.537911 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.027316 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 160.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY DC#2 WELL TYPE: Coal Test

COMMENT: PERMIT 54; CAPTAIN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNKNOWN	64.0	0.0	LOG DOES NOT LIST
-	MODESTO	PIASA	LIMESTONE	6.8	64.0	
-	MODESTO		BLACK SHALE	3.2	70.8	
-	CARBONDALE	DANVILLE	COAL	2.9	74.0	
-	CARBONDALE		UNDERCLAY	1.7	76.9	
-	CARBONDALE		SHALE	6.0	78.6	
-	CARBONDALE	GALUM	LIMESTONE	2.4	84.6	
-	CARBONDALE		CLAYSTONE	1.5	87.0	
-	CARBONDALE		CALCAREOUS SHALE	4.8	88.5	LIMESTONE NODS. & PARTINGS UP TO 10MM
-	CARBONDALE	BANKSTON FORK	FOSSILIFEROUS LIMESTONE	4.8	93.3	
-	CARBONDALE		SHALE	0.7	98.1	FISSILE; GREEN GRAY
-	CARBONDALE		CARBONACEOUS SHALE	4.6	98.8	FISSIL; DK GRAY
-	CARBONDALE		CARBONACEOUS SHALE	3.1	103.4	GREENISH BLK, CALC, FOSSILIF. AT BOTTOM
-	CARBONDALE		CARBONACEOUS SHALE	4.5	106.5	CALC, MED. FISSILITY; GRAYISH BLACK
-	CARBONDALE		CALCAREOUS SHALE	0.5	111.0	SOFT; DK GRAY, FRIABLE
-	CARBONDALE		CALCAREOUS SHALE	3.7	111.5	GRAY-BLK; CARB; SOME FOSSIL LAYERS
-	CARBONDALE	CONANT	LIMESTONE	4.6	115.2	
-	CARBONDALE	JAMESTOWN	BLACK SHALE	1.8	119.8	HIGH FISSILITY
-	CARBONDALE	BRERETON	LIMESTONE	0.7	121.6	GRAYISH BLACK
-	CARBONDALE	ANNA	CALCAREOUS SHALE	0.2	122.3	GRAYISH BLACK; FISSILE
-	CARBONDALE	HERRIN	COAL	6.1	122.5	
-	CARBONDALE		CALCAREOUS SHALE	0.9	128.6	DK GRAY; SOFT
-	CARBONDALE		CALCAREOUS SHALE	2.0	129.5	GREENISH GRAY; LIMESTONE NODULES
-	CARBONDALE		ARGILLACEOUS LIMESTONE	2.9	131.5	FOSSILIFEROUS
-	CARBONDALE		SHALE	1.5	134.4	FE-STAINED; SOME PYRITE
-	CARBONDALE		SILTY SHALE	4.4	135.9	
-	CARBONDALE		SILTSTONE	0.5	140.3	
-	CARBONDALE		SHALE	2.3	140.8	DK. GREENISH GRAY; FISSILE
-	CARBONDALE	ST. DAVID	LIMESTONE	3.4	143.1	
-	CARBONDALE	TURNER MINE	SHALE	1.0	146.5	DARK GRAY; SOME FOSSILS
-	CARBONDALE	SPRINGFIELD	COAL	5.1	147.5	
-	CARBONDALE		CALCAREOUS SHALE	5.3	152.6	DK. GREENISH GRAY; SOFT; CARBONACEOUS
-	CARBONDALE		SHALE	2.1	157.9	INTERBEDDED LIMESTONE; FISSILE

MAPID: 14550092000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 10 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.534784

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.026227

DATE COLLECTED: 11 / 11 / 1975

SURFACE ELEVATION (FT.): 476.2 LOGGED (FT.): 174.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 2554

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
476.2	PLEISTOCENE		UNCONSOLIDATED	23.5	0.0	
452.7	PLEISTOCENE		UNCONSOLIDATED	11.5	23.5	
441.2	PLEISTOCENE		CLAY	12.1	35.0	
429.1	MODESTO		CALCAREOUS SHALE	26.0	47.1	
403.1	MODESTO	PIASA	LIMESTONE	11.2	73.1	BROWN
391.9	MODESTO		DARK SHALE	2.5	84.3	
389.4	CARBONDALE	DANVILLE	COAL	2.5	86.8	
386.9	CARBONDALE		CLAYSTONE	8.4	89.3	
378.5	CARBONDALE		CALCAREOUS SHALE	8.9	97.7	
369.6	CARBONDALE	BANKSTON FORK	LIMESTONE	5.2	106.6	BROWN
364.4	CARBONDALE		SHALE WITH LIMESTONE	12.3	111.8	
352.1	CARBONDALE	JAMESTOWN	COAL	0.2	124.1	
351.9	CARBONDALE		SHALE WITH LIMESTONE	9.9	124.3	
342.0	CARBONDALE	BRERETON	LIMESTONE	2.0	134.2	DARK
340.0	CARBONDALE	ANNA	BLACK SHALE	1.3	136.2	
338.7	CARBONDALE	HERRIN	COAL	6.1	137.5	
332.6	CARBONDALE		UNDERCLAY	4.6	143.6	
328.0	CARBONDALE		SHALE & SANDSTONE	11.7	148.2	LIMY
316.3	CARBONDALE	ST. DAVID	LIMESTONE	3.1	159.9	BROWN
313.2	CARBONDALE	TURNER MINE	SHALE WITH LIMESTONE	1.6	163.0	
311.6	CARBONDALE	SPRINGFIELD	COAL	4.5	164.6	
307.1	CARBONDALE		UNDERCLAY	4.9	169.1	

MAPID: 14590084000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 10 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.522279

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.02615

DATE COLLECTED: 9 / 28 / 1982

SURFACE ELEVATION (FT.): 462.1 LOGGED (FT.): 125.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 5630

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
462.1	PLEISTOCENE		UNCONSOLIDATED	15.5	0.0	
446.6	MODESTO		SHALE	13.0	15.5	
433.6	MODESTO		GRAY SHALE	4.5	28.5	
429.1	MODESTO	DEGRAFF	COAL	0.9	33.0	
428.2	MODESTO		UNDERCLAY	0.7	33.9	
427.5	MODESTO		GRAY SHALE	2.9	34.6	
424.6	MODESTO	PIASA	LIMESTONE	8.3	37.5	GRAY
416.3	MODESTO	PIASA	SHALE	0.6	45.8	
415.7	MODESTO	PIASA	LIMESTONE	1.6	46.4	GRAY
414.1	MODESTO		CALCAREOUS SHALE	2.1	48.0	
412.0			DARK GRAY SHALE	7.7	50.1	
404.3	CARBONDALE	GALUM	LIMESTONE	2.5	57.8	GRAY
401.8	CARBONDALE		CALCAREOUS SHALE	5.5	60.3	
396.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.4	65.8	GRAY
391.9	CARBONDALE		DARK GRAY SHALE	5.4	70.2	
386.5	CARBONDALE		SHALE WITH LIMESTONE	5.8	75.6	
380.7	CARBONDALE	BRERETON	LIMESTONE	3.4	81.4	DARK
377.3	CARBONDALE	ANNA	DARK SHALE	7.1	84.8	
370.2	CARBONDALE	HERRIN	COAL	6.0	91.9	
364.2	CARBONDALE		UNDERCLAY	2.2	97.9	
362.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.9	100.1	GRAY
360.1	CARBONDALE		CALCAREOUS SANDSTONE	1.0	102.0	GRAY
359.1	CARBONDALE		SANDSTONE/SHALE	5.9	103.0	GRAY
353.2	CARBONDALE		SHALE	6.1	108.9	
347.1	CARBONDALE	ST. DAVID	LIMESTONE	1.9	115.0	DARK
345.2	CARBONDALE	TURNER MINE	DARK SHALE	2.0	116.9	
343.2	CARBONDALE	SPRINGFIELD	COAL	3.9	118.9	
339.3	CARBONDALE		UNDERCLAY	1.0	122.8	
338.3	CARBONDALE		GRAY SHALE	1.1	123.8	

MAPID: 14590096000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 10 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.526722

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.02606

DATE COLLECTED: 8 / 7 / 1975

SURFACE ELEVATION (FT.): 468.2 LOGGED (FT.): 129.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 1961

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
468.2	PLEISTOCENE		UNCONSOLIDATED	31.8	0.0	
436.4	MODESTO	PIASA	LIMESTONE	11.2	31.8	BROWN
425.2	MODESTO		BLACK SHALE	3.7	43.0	
421.5	CARBONDALE	DANVILLE	COAL	2.4	46.7	
419.1	CARBONDALE		UNDERCLAY	2.9	49.1	
416.2	CARBONDALE		GRAY SHALE	4.0	52.0	
412.2	CARBONDALE	GALUM	LIMESTONE	2.1	56.0	BROWN
410.1	CARBONDALE		CALCAREOUS SHALE	5.7	58.1	
404.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	63.8	BROWN
400.2	CARBONDALE		GRAY SHALE	1.8	68.0	
398.4	CARBONDALE		DARK SHALE	4.6	69.8	
393.8	CARBONDALE	CONANT	LIMESTONE	1.3	74.4	DARK
392.5	CARBONDALE		SHALE WITH LIMESTONE	4.3	75.7	
388.2	CARBONDALE	JAMESTOWN	COAL	0.2	80.0	
388.0	CARBONDALE		SHALE WITH LIMESTONE	7.3	80.2	
380.7	CARBONDALE	BRERETON	LIMESTONE	6.5	87.5	DARK
374.2	CARBONDALE	HERRIN	COAL	5.2	94.0	
369.0	CARBONDALE		UNDERCLAY	1.8	99.2	
367.2	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.0	101.0	BROWN
365.2	CARBONDALE		SANDSTONE/SHALE	11.1	103.0	
354.1	CARBONDALE	ST. DAVID	LIMESTONE	5.0	114.1	BROWN
349.1	CARBONDALE	TURNER MINE	SHALE WITH LIMESTONE	1.9	119.1	
347.2	CARBONDALE	SPRINGFIELD	COAL	4.0	121.0	
343.2	CARBONDALE		UNDERCLAY	4.0	125.0	

MAPID: 14590097000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 10 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.530453

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.026186

DATE COLLECTED: 7 / 9 / 1975

SURFACE ELEVATION (FT.): 471.0 LOGGED (FT.): 160.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 1758

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
471.0	PLEISTOCENE		UNCONSOLIDATED	26.4	0.0	
444.6	PLEISTOCENE		UNCONSOLIDATED	17.4	26.4	
427.2	MODESTO		SHALE	14.5	43.8	BROWN-GRAY
412.7	MODESTO	PIASA	LIMESTONE	11.5	58.3	BROWN
401.2	MODESTO		DARK SHALE	3.5	69.8	
397.7	CARBONDALE	DANVILLE	COAL	2.8	73.3	
394.9	CARBONDALE		CLAYSTONE	8.5	76.1	
386.4	CARBONDALE	GALUM	LIMESTONE	2.1	84.6	BROWN
384.3	CARBONDALE		GRAY SHALE	6.2	86.7	
378.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	92.9	BROWN
374.3	CARBONDALE		SHALE WITH LIMESTONE	12.8	96.7	
361.5	CARBONDALE	JAMESTOWN	COAL	0.2	109.5	
361.3	CARBONDALE		SHALE WITH LIMESTONE	6.1	109.7	
355.2	CARBONDALE	BRERETON	LIMESTONE	5.9	115.8	DARK
349.3	CARBONDALE	ANNA	BLACK SHALE	1.5	121.7	
347.8	CARBONDALE	HERRIN	COAL	5.9	123.2	
341.9	CARBONDALE		UNDERCLAY	1.8	129.1	
340.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.0	130.9	BROWN
336.1	CARBONDALE		SANDSTONE	9.2	134.9	
326.9	CARBONDALE	ST. DAVID	LIMESTONE	3.7	144.1	BROWN
323.2	CARBONDALE		SHALE WITH LIMESTONE	3.5	147.8	
319.7	CARBONDALE	SPRINGFIELD	COAL	4.5	151.3	
315.2	CARBONDALE		UNDERCLAY	4.2	155.8	

MAPID: 14500048000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: 2540' N line, 1270' E line

QUADRANGLE: PERCY LONGITUDE: -89.505984

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.019888

DATE COLLECTED:

SURFACE ELEVATION (FT.): 404.0 LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: UN ELEC CC2417

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
369.0	CARBONDALE	HERRIN	COAL	3.0	35.0	

MAPID: 14500048000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: 2540' N line, 1270' E line

QUADRANGLE: PERCY LONGITUDE: -89.505984 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.019888 DATE COLLECTED:

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 55.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
427.1	CARBONDALE	BANKSTON FORK	LIMESTONE	3.6	17.9
423.5	CARBONDALE	LAWSON	GRAY SHALE	9.8	21.5
413.7	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.4	31.3
408.2	CARBONDALE	JAMESTOWN	COAL	0.2	36.8
408.1	CARBONDALE		BLACK SHALE	4.1	36.9
404.0	CARBONDALE	BRERETON	LIMESTONE	6.1	41.0
397.9	CARBONDALE	ANNA	BLACK SHALE	1.9	47.1
396.0	CARBONDALE	HERRIN	COAL	6.0	49.0

MAPID: 14500048000C VERSION: 3

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: 2540' N line, 1270' E line

QUADRANGLE: PERCY LONGITUDE: -89.505984 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.019888 DATE COLLECTED:

SURFACE ELEVATION (FT.): 404.0 LOGGED (FT.): 38.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
404.0			UNCONSOLIDATED	21.0	0.0
383.0	CARBONDALE		SHALE	14.0	21.0
369.0	CARBONDALE	HERRIN	COAL	3.0	35.0

MAPID: 14500592000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 11

QUARTERS/FOOTAGES: SW NW

QUADRANGLE: PERCY

LONGITUDE: -89.517671

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.021753

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 460.0

LOGGED (FT.): 55.8

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #34

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	18.2	0.0
441.8			UNCLASSIFIED	5.8	18.2
436.0			SHALE	1.3	24.0
434.7			SHALE	1.4	25.3
433.3			SHALE	9.3	26.7
424.0			UNCLASSIFIED	1.1	36.0
422.9			SHALE	7.3	37.1
415.6			UNCLASSIFIED	4.1	44.4
411.5			SHALE	1.3	48.5
410.2			SHALE	5.2	49.8
405.0			UNCLASSIFIED	0.8	55.0

MAPID: 14524378000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: 2340' S line, 200' E line

QUADRANGLE: PERCY LONGITUDE: -89.502285 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 38.01893 DATE COLLECTED: 9 / 25 / 1981

SURFACE ELEVATION (FT.): 447.7 LOGGED (FT.): 382.0 LOG TYPE: Drillers Log

SOURCE: ARCH MINERAL 16 WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG & COMPANY CORE DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
447.7	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0	
430.7	CARBONDALE		SHALE	2.5	17.0	
428.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.9	19.5	
424.3	CARBONDALE		SHALE	0.6	23.4	
423.7	CARBONDALE		GRAY SHALE	7.5	24.0	
416.2	CARBONDALE	CONANT	LIMESTONE	0.8	31.5	
415.4	CARBONDALE		DARK SHALE	5.0	32.3	
410.4	CARBONDALE	JAMESTOWN	COAL	0.8	37.3	
409.6	CARBONDALE		DARK SHALE	5.7	38.1	
403.9	CARBONDALE	BRERETON	LIMESTONE	4.3	43.8	
399.6	CARBONDALE	ANNA	BLACK SHALE	1.8	48.1	
397.8	CARBONDALE	HERRIN	COAL	5.9	49.9	
391.9	CARBONDALE		UNDERCLAY	5.1	55.8	
386.8	CARBONDALE		LIMESTONE	1.6	60.9	
385.2	CARBONDALE		SANDSTONE	14.0	62.5	
371.2	CARBONDALE		GRAY SHALE	3.5	76.5	W/LM
367.7	CARBONDALE	ST. DAVID	LIMESTONE	0.8	80.0	
366.9	CARBONDALE	SPRINGFIELD	COAL	3.0	80.8	
363.9	CARBONDALE		UNDERCLAY	2.7	83.8	
361.2	CARBONDALE		GRAY SHALE	2.5	86.5	
358.7	CARBONDALE		SANDY SHALE	4.5	89.0	
354.2	CARBONDALE		SANDSTONE	27.5	93.5	
326.7	CARBONDALE		SANDY SHALE	28.2	121.0	
298.5	CARBONDALE	HANOVER	LIMESTONE	0.9	149.2	
297.6	CARBONDALE		SHALE	0.5	150.1	
297.1	CARBONDALE	EXCELLO	BLACK SHALE	5.2	150.6	
291.9	CARBONDALE	HOUCHIN CREEK	COAL	1.8	155.8	
290.1	CARBONDALE		UNDERCLAY	0.5	157.6	
289.6	CARBONDALE		GRAY SHALE	4.5	158.1	
285.1	CARBONDALE		SANDY SHALE	44.8	162.6	
240.3	CARBONDALE	OAK GROVE	LIMESTONE	1.7	207.4	
238.6	CARBONDALE	MECCA QUARRY	BLACK SHALE	3.7	209.1	
234.9	CARBONDALE	COLCHESTER	COAL	0.7	212.8	
234.2	CARBONDALE		UNDERCLAY	0.5	213.5	
233.7	CARBONDALE		GRAY SHALE	5.5	214.0	
228.2	CARBONDALE		SANDSTONE	18.5	219.5	
209.7	CARBONDALE		DARK GRAY SHALE	6.0	238.0	
203.7	CARBONDALE		SANDSTONE	17.0	244.0	
186.7	CARBONDALE		DARK SHALE	1.5	261.0	

185.2	CARBONDALE	DEKOVEN	COAL	1.3	262.5
183.9	CARBONDALE		LAMINATED SHALE	1.0	263.8
182.9	CARBONDALE	DAVIS	COAL	2.4	264.8
180.5	SPOON		UNDERCLAY	1.3	267.2
179.2	SPOON		GRAY SHALE	14.9	268.5
164.3	SPOON		DARK GRAY SHALE	7.6	283.4
156.7	SPOON		SANDSTONE	5.5	291.0
151.2	SPOON		COAL	1.1	296.5
150.1	SPOON		GRAY SHALE	27.7	297.6
122.4	SPOON		DARK SHALE	6.7	325.3
115.7	SPOON		BLACK SHALE	19.7	332.0
96.0	SPOON		COAL	0.3	351.7
95.7	SPOON		SANDSTONE	1.0	352.0
94.7	SPOON		LIMESTONE	0.3	353.0
94.4	SPOON		SANDSTONE	5.5	353.3
88.9	SPOON		SHALE	2.6	358.8
86.3	SPOON		SANDSTONE	0.3	361.4
86.0	SPOON		COAL	0.4	361.7
85.6	SPOON		DARK SHALE	2.4	362.1
83.2	SPOON		LIMESTONE	2.8	364.5
80.4	SPOON		DARK SHALE	4.3	367.3
76.1	SPOON		DARK SHALE	0.4	371.6
75.7	SPOON		BLACK SHALE	4.0	372.0
71.7	SPOON		DARK SHALE	6.0	376.0

MAPID: 14528312000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: 75' S line, 350' E line of NE

QUADRANGLE: PERCY LONGITUDE: -89.502777 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.019855 DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.7 LOGGED (FT.): 80.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #5 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.7			UNCONSOLIDATED	13.0	0.0
440.7	MODESTO	PIASA	LIMESTONE	8.0	13.0
432.7			UNCLASSIFIED	14.0	21.0
418.7	CARBONDALE		LIMESTONE	2.0	35.0
416.7	CARBONDALE		UNCLASSIFIED	5.0	37.0
411.7	CARBONDALE		LIMESTONE	5.0	42.0
406.7	CARBONDALE		SHALE	2.0	47.0
404.7	CARBONDALE		SHALE	4.0	49.0
400.7	CARBONDALE		LIMESTONE	2.0	53.0
398.7	CARBONDALE		SHALE	17.0	55.0
381.7	CARBONDALE	BRERETON	LIMESTONE	2.0	72.0
379.7	CARBONDALE	HERRIN	COAL	6.0	74.0

MAPID: 14528313000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: NE NE

QUADRANGLE: PERCY LONGITUDE: -89.503691 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.02505 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 57.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	19.7	0.0
430.3	CARBONDALE	BANKSTON FORK	LIMESTONE	3.4	19.7
426.9	CARBONDALE		SHALE	9.3	23.1
417.6	CARBONDALE	CONANT	LIMESTONE	2.0	32.4
415.6	CARBONDALE		SHALE	4.3	34.4
411.3	CARBONDALE		LIMESTONE	1.2	38.7
410.1	CARBONDALE		SHALE	3.6	39.9
406.5	CARBONDALE	BRERETON	LIMESTONE	6.2	43.5
400.3	CARBONDALE	ANNA	SHALE	2.1	49.7
398.2	CARBONDALE	HERRIN	COAL	6.0	51.8

MAPID: 14528314000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: 100' S line, 50' W line of SE NE

QUADRANGLE: PERCY LONGITUDE: -89.505998 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.01999 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 54.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #48 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	18.2	0.0
431.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.6	18.2
428.2	CARBONDALE		SHALE	9.8	21.8
418.4	CARBONDALE	CONANT	LIMESTONE	1.5	31.6
416.9	CARBONDALE		SHALE	3.9	33.1
413.0	CARBONDALE	JAMESTOWN	COAL	0.2	37.0
412.8	CARBONDALE		SHALE	4.1	37.2
408.7	CARBONDALE	BRERETON	LIMESTONE	6.1	41.3
402.6	CARBONDALE	ANNA	SHALE	2.0	47.4
400.6	CARBONDALE	HERRIN	COAL	6.0	49.4

MAPID: 14528315000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: 50' N line, 50' E line of SE NE

QUADRANGLE: PERCY LONGITUDE: -89.501618 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.023071 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 62.6 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #47 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	26.4	0.0
393.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	26.4
389.6	CARBONDALE		SHALE	8.7	30.4
380.9	CARBONDALE	CONANT	LIMESTONE	1.9	39.1
379.0	CARBONDALE		SHALE	4.4	41.0
374.6	CARBONDALE	JAMESTOWN	COAL	0.3	45.4
374.3	CARBONDALE		SHALE	3.5	45.7
370.8	CARBONDALE	BRERETON	LIMESTONE	5.8	49.2
365.0	CARBONDALE	ANNA	SHALE	1.9	55.0
363.1	CARBONDALE	HERRIN	COAL	5.7	56.9

MAPID: 14528643000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: 1550' S line, 2700' W line

QUADRANGLE: PERCY LONGITUDE: -89.510705 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 38.016878 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 114.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY DC#3 WELL TYPE: Coal Test

COMMENT: PERMIT 54; CAPTAIN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNKNOWN	58.0	0.0	
-	CARBONDALE		CARBONACEOUS SHALE	1.7	58.0	DK GRAY, FISSILE, CALCAREOUS
-	CARBONDALE		CALCAREOUS BLACK SHALES	0.2	59.7	
-	CARBONDALE		CARBONACEOUS SHALE	6.1	59.9	GRAYISH BLK; FISSILE, CALCAREOUS
-	CARBONDALE	BRERETON	FOSSILIFEROUS LIMESTONE	5.5	66.0	
-	CARBONDALE	ANNA	CARBONACEOUS SHALE	1.5	71.5	GRAYISH BLACK, FISSILE
-	CARBONDALE	HERRIN	COAL	5.8	73.0	
-	CARBONDALE		CALCAREOUS SHALE	5.7	78.8	LIMESTONE NODULES
-	CARBONDALE		LIMESTONE	1.1	84.5	SILTY
-	CARBONDALE		SHALE	1.2	85.6	V. FRIABLE, FE STAINING
-	CARBONDALE		SILTY SHALE	1.1	86.8	
-	CARBONDALE		GRAY SHALE	5.6	87.9	THINLY BEDDED; FISSILE
-	CARBONDALE		CALCAREOUS BLACK SHALES	0.8	93.5	CALC.; FOSSILIFEROUS
-	CARBONDALE		FOSSILIFEROUS SHALE	5.7	94.3	CALC.; GREENISH GRAY TO GRAYISH BLACK
-	CARBONDALE		CARBONACEOUS SHALE	0.3	100.0	CALCAREOUS, FISSILE
-	CARBONDALE		CALCAREOUS SHALE	0.6	100.3	FOSSILIF., NON- FISSILE
-	CARBONDALE		CALCAREOUS SHALE	0.2	100.9	FISSILE, CARBONACEOUS
-	CARBONDALE	SPRINGFIELD	COAL	4.1	101.1	
-	CARBONDALE		CALCAREOUS SHALE	4.4	105.2	CARBONACEOUS LAYERING
-	CARBONDALE		CALCAREOUS SILTY SHALES	4.4	109.6	THINLY LAYERED

MAPID: 14590284000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: 75' N line, 350' W line of NW NE
 QUADRANGLE: PERCY LONGITUDE: -89.509356 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.026775 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 453.8 LOGGED (FT.): 80.0 LOG TYPE: Drillers Log
 SOURCE: AMAX/OTHER 5-B WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.8	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0
440.8			ROCK	61.0	13.0
379.8	CARBONDALE	HERRIN	COAL	6.0	74.0

MAPID: 14590324000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: 300' S line, 20' W line of NE NE
 QUADRANGLE: PERCY LONGITUDE: -89.505963 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.024134 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 57.8 LOG TYPE: Drillers Log
 SOURCE: OTHER 45 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	19.7	0.0
420.3			ROCK	32.1	19.7
388.2	CARBONDALE	HERRIN	COAL	6.0	51.8

MAPID: 14590326000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: 50' S line, 50' W line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.506001 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.019852 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 62.8 LOG TYPE: Drillers Log
 SOURCE: OTHER 47 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	26.4	0.0
413.6			ROCK	19.1	26.4
394.5	CARBONDALE	JAMESTOWN	COAL	0.3	45.5
394.2	CARBONDALE		ROCK	11.2	45.8
383.0	CARBONDALE	HERRIN	COAL	5.8	57.0

MAPID: 14590327000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 11 QUARTERS/FOOTAGES: 100' S line, 50' W line of SE NE

QUADRANGLE: PERCY LONGITUDE: -89.505998 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 38.01999 DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 55.3 LOG TYPE: Drillers Log

SOURCE: OTHER 48 WELL TYPE: Coal Test

COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	18.3	0.0
401.7			ROCK	18.8	18.3
382.9	CARBONDALE	JAMESTOWN	COAL	0.2	37.1
382.7	CARBONDALE		ROCK	12.1	37.3
370.6	CARBONDALE	HERRIN	COAL	6.0	49.4

MAPID: 14500053000C VERSION: 1

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 1330' N line, 2630' W line

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492262 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.023145 DATE COLLECTED:

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 84.0 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
417.0	MODESTO	PIASA	LIMESTONE	7.1	28.0
409.9	CARBONDALE		GRAY SHALE	18.1	35.1
391.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.8	53.2
388.1	CARBONDALE	LAWSON	GRAY SHALE	8.8	56.9
379.3	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.3	65.7
374.0	CARBONDALE	JAMESTOWN	COAL	0.2	71.0
373.8	CARBONDALE		GRAY SHALE	0.7	71.2
373.2	CARBONDALE	BRERETON	LIMESTONE	6.3	71.8
366.9	CARBONDALE	ANNA	BLACK SHALE	1.4	78.1
367.0	CARBONDALE	HERRIN	COAL	6.0	78.0

MAPID: 14528118000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 1320' N line, 900' W line of NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.4983 GEOLOGIST: KRUMM

CONFIDENTIAL: N LATITUDE: 38.023151 DATE COLLECTED:

SURFACE ELEVATION (FT.): 448.8 LOGGED (FT.): 91.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: REF NW CORNER

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.8			CLAYSTONE	32.0	0.0
416.8	CARBONDALE		SHALE	6.0	32.0
410.8	CARBONDALE		LIMESTONE	1.0	38.0
409.8	CARBONDALE		SHALE	15.0	39.0
394.8	CARBONDALE	BRERETON	LIMESTONE	7.0	54.0
387.8	CARBONDALE	HERRIN		6.0	61.0
381.8	CARBONDALE		SHALE	5.0	67.0
376.8	CARBONDALE		LIMESTONE	6.0	72.0
370.8	CARBONDALE		SANDSTONE/SHALE	6.0	78.0
364.8	CARBONDALE		LIMESTONE W/ SHALE	4.0	84.0
360.8	CARBONDALE	SPRINGFIELD	COAL	3.0	88.0

MAPID: 14528316000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 575' S line, 80' E line of NE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492709 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.017558 DATE COLLECTED:

SURFACE ELEVATION (FT.): 419.7 LOGGED (FT.): 45.1 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
419.7			UNCONSOLIDATED	15.0	0.0
404.7	CARBONDALE		SAND	7.0	15.0
397.7	CARBONDALE		SHALE	11.0	22.0
386.7	CARBONDALE	BRERETON	LIMESTONE	5.0	33.0
381.7	CARBONDALE		SHALE	2.0	38.0
379.7	CARBONDALE	HERRIN	COAL	5.1	40.0

MAPID: 14528317000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: SE NW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.494625 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.021398 DATE COLLECTED:

SURFACE ELEVATION (FT.): 449.1 LOGGED (FT.): 63.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #6 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
449.1			UNCONSOLIDATED	40.0	0.0	
409.1	CARBONDALE	CONANT	LIMESTONE	1.5	40.0	
407.6	CARBONDALE		SHALE	6.5	41.5	
401.1	CARBONDALE	BRERETON	LIMESTONE	6.5	48.0	
394.6	CARBONDALE		SHALE	2.5	54.5	
392.1	CARBONDALE	HERRIN	COAL	6.0	57.0	

MAPID: 14528318000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 600' N line, 700' E line of SE SW

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.494957 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.014331 DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 57.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #8 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.0			UNCONSOLIDATED	10.0	0.0	
410.0			SAND	26.0	10.0	
384.0			UNCLASSIFIED	10.0	36.0	
374.0			UNCLASSIFIED	1.0	46.0	
373.0			SHALE	8.0	47.0	
365.0			COAL	2.5	55.0	

MAPID: 14528319000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: SE NE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.485457 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.021375 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 76.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #20 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	12.0	0.0
428.0			CLAYSTONE	13.0	12.0
415.0			SAND	22.5	25.0
392.5			SAND	20.5	47.5
372.0	CARBONDALE	BRERETON	LIMESTONE	2.0	68.0
370.0	CARBONDALE	HERRIN	COAL	6.0	70.0

MAPID: 14528320000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 225' N line, 10' E line of SE

QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.483242 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.018923 DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 99.1 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #21 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	15.0	0.0
425.0			CLAYSTONE	20.0	15.0
405.0			CLAYSTONE	19.0	35.0
386.0			UNCLASSIFIED	0.3	54.0
385.7			CLAYSTONE	3.7	54.3
382.0			UNCLASSIFIED	1.2	58.0
380.8	CARBONDALE		SHALE	4.0	59.2
376.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	64.0
371.2	CARBONDALE		SHALE	5.0	68.8
366.2	CARBONDALE	CONANT	LIMESTONE	2.6	73.8
363.6	CARBONDALE		SHALE	5.0	76.4
358.6	CARBONDALE	JAMESTOWN	COAL	0.2	81.4
358.4	CARBONDALE		SHALE	5.0	81.6
353.4	CARBONDALE	BRERETON	LIMESTONE	5.6	86.6
347.8	CARBONDALE		SHALE	1.7	92.2
346.1	CARBONDALE	HERRIN	COAL	6.0	93.9

MAPID: 14528321000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 12

QUARTERS/FOOTAGES: NW NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.499095

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.024998

DATE COLLECTED:

SURFACE ELEVATION (FT.): 420.0

LOGGED (FT.): 53.1

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #46

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	43.7	0.0
376.3	CARBONDALE	CONANT	LIMESTONE	3.0	43.7
373.3	CARBONDALE		SHALE	1.7	46.7
371.6	CARBONDALE	BRERETON	LIMESTONE	0.5	48.4
371.1	CARBONDALE	HERRIN	COAL	4.2	48.9

MAPID: 14528322000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 12

QUARTERS/FOOTAGES: 10' N line, 10' E line of SE NW

QUADRANGLE: PINCKNEYVILLE

LONGITUDE: -89.492321

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.023173

DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0

LOGGED (FT.): 84.4

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CO. #53

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	27.8	0.0
412.2			LIMESTONE	7.1	27.8
405.1	CARBONDALE		CLAYSTONE	1.7	34.9
403.4	CARBONDALE		SHALE	16.5	36.6
386.9	CARBONDALE	BANKSTON FORK	LIMESTONE	3.7	53.1
383.2	CARBONDALE		SHALE	8.7	56.8
374.5	CARBONDALE	CONANT	LIMESTONE	1.0	65.5
373.5	CARBONDALE		SHALE	3.3	66.5
370.2	CARBONDALE	JAMESTOWN	COAL	0.2	69.8
370.0	CARBONDALE		SHALE	0.7	70.0
369.3	CARBONDALE	BRERETON	LIMESTONE	6.3	70.7
363.0	CARBONDALE	ANNA	SHALE	1.4	77.0
361.6	CARBONDALE	HERRIN	COAL	6.0	78.4

MAPID: 14528324000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 10' S line, 10' W line of NW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.50165 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.01607 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 63.2 LOG TYPE: Drillers Log
 SOURCE: PYRAMID COAL CO. #54 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
430.0			UNCONSOLIDATED	28.3	0.0	
401.7	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	28.3	
398.2	CARBONDALE		SHALE	8.7	31.8	
389.5	CARBONDALE	CONANT	LIMESTONE	1.2	40.5	
388.3	CARBONDALE		SHALE	5.7	41.7	
382.6	CARBONDALE	BRERETON	LIMESTONE	2.0	47.4	
380.6	CARBONDALE	ENERGY	SHALE	7.5	49.4	
373.1	CARBONDALE	ENERGY	SHALE	0.2	56.9	
372.9	CARBONDALE	HERRIN	COAL	6.1	57.1	

MAPID: 14590281000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 575' N line, 80' W line of NE SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.49674 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.018016 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 419.8 LOGGED (FT.): 45.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 2-B WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREAS BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
419.8	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0	
397.8			ROCK	18.0	22.0	
379.8	CARBONDALE	HERRIN	COAL	5.0	40.0	

MAPID: 14590285000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 130' N line, 1' W line of SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.496869 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.022845 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 449.1 LOGGED (FT.): 63.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 6-B WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
449.1	PLEISTOCENE		UNCONSOLIDATED	40.0	0.0	
409.1			ROCK	17.0	40.0	
392.1	CARBONDALE	HERRIN	COAL	6.0	57.0	

MAPID: 14590287000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 600' S line, 700' W line of SE SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.494695 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.014032 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 57.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 8-B WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0	PLEISTOCENE		UNCONSOLIDATED	47.0	0.0
433.0			ROCK	8.0	47.0
425.0	CARBONDALE	HERRIN	COAL	2.5	55.0

MAPID: 14590299000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.483076 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.026846 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 76.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 20 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	68.0	0.0
372.0			ROCK	2.0	68.0
370.0	CARBONDALE	HERRIN	COAL	6.0	70.0

MAPID: 14590300000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 225' S line, 10' W line of SE NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.48774 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.020185 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 99.1 LOG TYPE: Drillers Log
 SOURCE: OTHER 21 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	59.2	0.0
380.8			ROCK	21.4	59.2
359.4	CARBONDALE	JAMESTOWN	COAL	0.2	80.6
359.2	CARBONDALE		ROCK	12.3	80.8
346.9	CARBONDALE	HERRIN	COAL	6.0	93.1

MAPID: 14590325000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 25' S line, 25' W line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.50135 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.023273 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 53.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 46 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	43.7	0.0
376.3			ROCK	5.1	43.7
371.2	CARBONDALE	HERRIN	COAL	4.2	48.8

MAPID: 14590332000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 10' N line, 10' E line of SE NW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492321 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.023173 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 84.3 LOG TYPE: Drillers Log
 SOURCE: OTHER 53 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	36.6	0.0
403.4			ROCK	33.4	36.6
370.0	CARBONDALE	JAMESTOWN	COAL	0.2	70.0
369.8	CARBONDALE		ROCK	8.2	70.2
361.6	CARBONDALE	HERRIN	COAL	6.0	78.4

MAPID: 14590333000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 15' N line, 25' E line of NW SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.497061 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.019562 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 72.7 LOG TYPE: Drillers Log
 SOURCE: OTHER 54 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
395.0			ROCK	26.5	25.0
368.5	CARBONDALE	JAMESTOWN	COAL	0.4	51.5
368.1	CARBONDALE		ROCK	15.3	51.9
352.8	CARBONDALE	HERRIN	COAL	5.5	67.2

MAPID: 14590334000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 12 QUARTERS/FOOTAGES: 10' S line, 10' W line of NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.50165 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.01607 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 63.3 LOG TYPE: Drillers Log
 SOURCE: OTHER 55 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0	PLEISTOCENE		UNCONSOLIDATED	28.3	0.0
391.7			ROCK	28.9	28.3
362.8	CARBONDALE	HERRIN	COAL	6.1	57.2

MAPID: 14500007000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 13 QUARTERS/FOOTAGES: 660' N line, 660' E line
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.485662 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.010446 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 432.8 LOGGED (FT.): 0.0 LOG TYPE:
 SOURCE: MISSISSIPPI COAL CORP. 2619 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
387.8	CARBONDALE	HERRIN	COAL	6.5	45.0

MAPID: 14500007000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 13 QUARTERS/FOOTAGES: 660' N line, 660' E line
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.485662 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.010446 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 85.8 LOG TYPE: Drillers Log
 SOURCE: WELL TYPE: Coal Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
398.5	CARBONDALE		GRAY SHALE	16.0	31.5
382.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.2	47.5
378.3	CARBONDALE	LAWSON	GRAY SHALE	8.8	51.7
369.6	CARBONDALE	LAWSON	BLACK SHALE	4.2	60.4
365.4	CARBONDALE	CONANT	LIMESTONE	1.7	64.6
363.7	CARBONDALE	JAMESTOWN	COAL	0.3	66.3
363.4	CARBONDALE		BLACK SHALE	4.4	66.6
359.0	CARBONDALE	BRERETON	LIMESTONE	6.5	71.0
352.5	CARBONDALE	ANNA	BLACK SHALE	2.5	77.5
350.0	CARBONDALE	HERRIN	COAL	5.8	80.0

MAPID: 14500326000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 13 **QUARTERS/FOOTAGES:** SW NE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.490383 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 38.00678 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 450.0 **LOGGED (FT.):** 62.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL CO. **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	15.0	0.0
435.0			SANDSTONE/SHALE	39.0	15.0
396.0			SHALE	4.0	54.0
392.0			COAL	0.5	58.0
391.5			SHALE	3.5	58.5

MAPID: 14528346000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 13 **QUARTERS/FOOTAGES:** 545' N line, 995' E line of NE NE NE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.486824 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 38.010777 **DATE COLLECTED:** 5 / 7 / 1984
SURFACE ELEVATION (FT.): 451.1 **LOGGED (FT.):** 118.0 **LOG TYPE:** Drillers Log
SOURCE: ARCH OF IL CW-5 **WELL TYPE:** Observation Well
COMMENT:

MAPID: 14528653000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 13 **QUARTERS/FOOTAGES:** 1320' S line, 2640' E line
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.492771 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 38.001217 **DATE COLLECTED:** 7 / 29 / 1937
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY R-28 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	28.0	0.0
-			SANDY SHALE	18.0	28.0
-			LIMESTONE	5.0	46.0
-			CLAYSTONE & SILTSTONE	3.0	51.0
-			SHALE	6.0	54.0

MAPID: 14590220000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 13 **QUARTERS/FOOTAGES:** 545' N line, 995' E line of NE
QUADRANGLE: PINCKNEYVILLE **LONGITUDE:** -89.486824 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 38.010777 **DATE COLLECTED:** 5 / 7 / 1984
SURFACE ELEVATION (FT.): 451.1 **LOGGED (FT.):** 118.0 **LOG TYPE:** Drillers Log
SOURCE: ARCH OF IL **WELL TYPE:** Observation Well
COMMENT:

MAPID: 14590288000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 13 QUARTERS/FOOTAGES: 285' N line, 30' E line of SE NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.483524 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.007756 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 439.7 LOGGED (FT.): 69.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 9-B WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.7	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
419.7			ROCK	43.0	20.0
376.7	CARBONDALE	HERRIN	COAL	6.0	63.0

MAPID: 14590289000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 13 QUARTERS/FOOTAGES: 250' N line, 20' E line of NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.488027 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.011605 DATE COLLECTED: 7 / 0 / 1973
 SURFACE ELEVATION (FT.): 416.3 LOGGED (FT.): 59.5 LOG TYPE: Drillers Log
 SOURCE: AMAX/OTHER 10-B WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
416.3	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
397.3			ROCK	19.0	19.0
378.3	CARBONDALE	JAMESTOWN	COAL	0.2	38.0
378.1	CARBONDALE		ROCK	14.8	38.2
363.3	CARBONDALE	HERRIN	COAL	6.5	53.0

MAPID: 14590290000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 13 QUARTERS/FOOTAGES: 110' N line, 10' E line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.48807 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.008295 DATE COLLECTED: 7 / 0 / 1973
 SURFACE ELEVATION (FT.): 418.6 LOGGED (FT.): 59.5 LOG TYPE: Drillers Log
 SOURCE: AMAX/OTHER 11-B WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.6	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
402.6			ROCK	38.0	16.0
364.6	CARBONDALE	HERRIN	COAL	5.5	54.0

MAPID: 14590291000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 13 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.485743 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.006694 DATE COLLECTED: 7 / 0 / 1973
 SURFACE ELEVATION (FT.): 444.6 LOGGED (FT.): 88.0 LOG TYPE: Drillers Log
 SOURCE: AMAX/OTHER 12-B WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.6	PLEISTOCENE		UNCONSOLIDATED	32.0	0.0
412.6			ROCK	34.0	32.0
378.6	CARBONDALE	JAMESTOWN	COAL	0.2	66.0
378.4	CARBONDALE		ROCK	15.8	66.2
362.6	CARBONDALE	HERRIN	COAL	6.0	82.0

MAPID: 14590292000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 13 QUARTERS/FOOTAGES: 1' N line, 1' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492648 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.008655 DATE COLLECTED: 7 / 0 / 1973
 SURFACE ELEVATION (FT.): 449.1 LOGGED (FT.): 93.0 LOG TYPE: Drillers Log
 SOURCE: AMAX/OTHER 13-B WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.1	PLEISTOCENE		UNCONSOLIDATED	53.0	0.0
396.1			ROCK	19.0	53.0
377.1	CARBONDALE	JAMESTOWN	COAL	0.2	72.0
376.9	CARBONDALE		ROCK	14.8	72.2
362.1	CARBONDALE	HERRIN	COAL	6.0	87.0

MAPID: 14590293000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 13 QUARTERS/FOOTAGES: 660' N line, 660' E line of NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.490289 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.010501 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 444.1 LOGGED (FT.): 85.3 LOG TYPE: Drillers Log
 SOURCE: OTHER 14 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.1	PLEISTOCENE		UNCONSOLIDATED	49.0	0.0
395.1			ROCK	17.5	49.0
377.6	CARBONDALE	JAMESTOWN	COAL	0.2	66.5
377.4	CARBONDALE		ROCK	12.8	66.7
364.6	CARBONDALE	HERRIN	COAL	5.7	79.5

MAPID: 14590294000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 13 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE SW
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492742 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.004961 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 444.1 LOGGED (FT.): 81.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 15 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.1	PLEISTOCENE		UNCONSOLIDATED	57.0	0.0
387.1			ROCK	1.0	57.0
386.1	CARBONDALE	JAMESTOWN	COAL	0.2	58.0
385.9	CARBONDALE		ROCK	17.8	58.2
368.1	CARBONDALE	HERRIN	COAL	5.5	76.0

MAPID: 14590295000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 13 QUARTERS/FOOTAGES: 1' N line, 1' W line of NW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.492563 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.012348 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): LOGGED (FT.): 58.0 LOG TYPE: Drillers Log
 SOURCE: OTHER 16 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
-			ROCK	22.0	20.0
-	CARBONDALE	JAMESTOWN	COAL	0.2	42.0
-	CARBONDALE		ROCK	9.3	42.2
-	CARBONDALE	HERRIN	COAL	6.5	51.5

MAPID: 14590296000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 13 QUARTERS/FOOTAGES: 660' N line, 660' E line of NE NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.485662 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.010446 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 443.0 LOGGED (FT.): 85.3 LOG TYPE: Drillers Log
 SOURCE: OTHER 17 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.0	PLEISTOCENE		UNCONSOLIDATED	31.0	0.0
412.0			ROCK	48.5	31.0
363.5	CARBONDALE	HERRIN	COAL	5.8	79.5

MAPID: 14590297000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 13 QUARTERS/FOOTAGES: 660' N line, 660' E line of SE NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.485743 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.006749 DATE COLLECTED: 0 / 0 / 1945
 SURFACE ELEVATION (FT.): 438.6 LOGGED (FT.): 78.2 LOG TYPE: Drillers Log
 SOURCE: OTHER 18 WELL TYPE: Coal Test
 COMMENT: BIG GALUM AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
438.6	PLEISTOCENE		UNCONSOLIDATED	21.5	0.0
417.1			ROCK	50.9	21.5
366.2	CARBONDALE	HERRIN	COAL	5.7	72.4

MAPID: 14500965000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 2455' S line, 185' W line
 QUADRANGLE: PERCY LONGITUDE: -89.519687 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 38.004658 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 444.1 LOGGED (FT.): 43.0 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #513 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.1			UNCONSOLIDATED	10.0	0.0
434.1	CARBONDALE		SAND	1.0	10.0
433.1	CARBONDALE		SANDSTONE/SHALE	10.0	11.0
423.1	CARBONDALE		SHALE	8.0	21.0
415.1	CARBONDALE	BRERETON	LIMESTONE	6.5	29.0
408.6	CARBONDALE	ANNA	SHALE	1.5	35.5
407.1	CARBONDALE	HERRIN	COAL	6.0	37.0

MAPID: 14500965000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 2455' S line, 185' W line
 QUADRANGLE: PERCY LONGITUDE: -89.519687 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 38.004658 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 444.0 LOGGED (FT.): 43.0 LOG TYPE: Drillers Log
 SOURCE: WELL TYPE: Coal Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
423.0	CARBONDALE	LAWSON	DARK GRAY SHALE	8.0	21.0
415.0	CARBONDALE	BRERETON	LIMESTONE	6.5	29.0
408.5	CARBONDALE	ANNA	BLACK SHALE	1.5	35.5
407.0	CARBONDALE	HERRIN	COAL	6.0	37.0

MAPID: 14500966000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 14

QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: PERCY

LONGITUDE: -89.509999

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 38.006112

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 445.0

LOGGED (FT.): 65.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #515

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.0			UNCONSOLIDATED	15.0	0.0
430.0			SHALE	20.0	15.0
410.0			UNCLASSIFIED	30.0	35.0

MAPID: 14500967000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 14

QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.519253

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.998806

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 452.2

LOGGED (FT.): 51.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #413

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.2			UNCONSOLIDATED	19.0	0.0
433.2			SHALE	10.0	19.0
423.2			SANDSTONE	1.0	29.0
422.2			SHALE	7.0	30.0
415.2			SANDSTONE	1.0	37.0
414.2			SHALE	12.0	38.0
402.2			SANDSTONE	1.0	50.0

MAPID: 14500968000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 14

QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.510138

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.99871

DATE COLLECTED:

SURFACE ELEVATION (FT.): 444.7

LOGGED (FT.): 50.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #415

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
444.7			UNCONSOLIDATED	15.0	0.0	
429.7			SHALE	25.0	15.0	
404.7			UNCLASSIFIED	0.5	40.0	
404.2			CLAYSTONE	0.5	40.5	
403.7			UNCLASSIFIED	2.0	41.0	
401.7			UNCLASSIFIED	7.0	43.0	

MAPID: 14528654000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 14

QUARTERS/FOOTAGES: 1' N line, 1' W line

QUADRANGLE: PERCY

LONGITUDE: -89.520244

GEOLOGIST: KOROSE

CONFIDENTIAL: N

LATITUDE: 38.012742

DATE COLLECTED: 7 / 10 / 1937

SURFACE ELEVATION (FT.): 453.4

LOGGED (FT.): 65.0

LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY E-7

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
453.4	PLEISTOCENE		CLAY	23.0	0.0	
430.4	CARBONDALE		LIMESTONE	1.5	23.0	
428.9	CARBONDALE		SHALE	2.5	24.5	SOFT
426.4	CARBONDALE		LIMESTONE	1.0	27.0	
425.4	CARBONDALE		SHALE	27.0	28.0	
398.4	CARBONDALE		SHALE	3.0	55.0	
395.4	CARBONDALE	HERRIN	COAL	6.0	58.0	
389.4	CARBONDALE		UNDERCLAY	1.0	64.0	

MAPID: 14528655000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 1' N line, 1320' W line
 QUADRANGLE: PERCY LONGITUDE: -89.515642 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.012673 DATE COLLECTED: 7 / 15 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 71.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY E-9 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	32.0	0.0
-	CARBONDALE		LIMESTONE	3.5	32.0
-	CARBONDALE		SHALE	8.5	35.5
-	CARBONDALE		BLACK SHALE	6.8	44.0
-	CARBONDALE	JAMESTOWN	COAL	0.3	50.8
-	CARBONDALE		BLUE SHALE	4.0	51.0
-	CARBONDALE	BRERETON	LIMESTONE	6.0	55.0
-	CARBONDALE	ANNA	BLACK SHALE	3.0	61.0
-	CARBONDALE	HERRIN	COAL	5.6	64.0
-	CARBONDALE		UNDERCLAY	1.4	69.6

MAPID: 14528656000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 1320' N line, 1320' W line
 QUADRANGLE: PERCY LONGITUDE: -89.51568 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.009032 DATE COLLECTED: 7 / 16 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 72.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY E-10 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	35.0	0.0
-			SHALE	33.0	35.0
-			SHALE	2.0	68.0
-			BLACK SHALE	0.5	70.0
-			COAL	0.5	70.5
-			UNDERCLAY	1.0	71.0

MAPID: 14528657000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 1320' N line, 2640' W line
 QUADRANGLE: PERCY LONGITUDE: -89.511074 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.008961 DATE COLLECTED: 7 / 16 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 65.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY E-11 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	31.0	0.0	
-	PLEISTOCENE		SAND	4.0	31.0	
-	CARBONDALE		SHALE	30.0	35.0	SOFT

MAPID: 14528658000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 1' N line, 2640' E line
 QUADRANGLE: PERCY LONGITUDE: -89.511015 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.012602 DATE COLLECTED: 7 / 17 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 61.5 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 12-E WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	25.0	0.0	
-			GRAY SHALE	34.0	25.0	SOFT
-			BLACK SHALE	1.0	59.0	
-			COAL	0.5	60.0	
-			UNDERCLAY	1.0	60.5	

MAPID: 14528659000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 1320' S line, 1320' W line

QUADRANGLE: PERCY LONGITUDE: -89.515758 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.001484 DATE COLLECTED: 7 / 10 / 1937

SURFACE ELEVATION (FT.): 431.8 LOGGED (FT.): 55.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY D-13 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.8	PLEISTOCENE		CLAY	18.0	0.0
413.8	CARBONDALE		LIMESTONE	4.0	18.0
409.8	CARBONDALE		SHALE	8.0	22.0
401.8	CARBONDALE		BLACK SHALE	11.0	30.0
390.8	CARBONDALE	BRERETON	LIMESTONE	6.0	41.0
384.8	CARBONDALE	ANNA	BLACK SHALE	1.5	47.0
383.3	CARBONDALE	HERRIN	COAL	5.7	48.5
377.6	CARBONDALE		UNDERCLAY	0.8	54.2

MAPID: 14528660000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 1320' S line, 2640' W line

QUADRANGLE: PERCY LONGITUDE: -89.511157 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.001438 DATE COLLECTED: 7 / 13 / 1937

SURFACE ELEVATION (FT.): LOGGED (FT.): 68.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY D-14 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	26.0	0.0
-	CARBONDALE		SHALE	20.0	26.0
-	CARBONDALE		BLUE SHALE	4.0	46.0
-	CARBONDALE	BRERETON	LIMESTONE	7.0	50.0
-	CARBONDALE	ANNA	BLACK SHALE	2.0	57.0
-	CARBONDALE	ENERGY	SHALE	2.0	59.0
-	CARBONDALE	HERRIN	COAL	6.4	61.0
-			UNDERCLAY	0.6	67.4

MAPID: 14528661000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 2640' N line, 1' W line
 QUADRANGLE: PERCY LONGITUDE: -89.520319 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.005459 DATE COLLECTED: 7 / 23 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 53.6 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 14-E WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	22.5	0.0
-	CARBONDALE		LIMESTONE	9.7	22.5
-	CARBONDALE		BLUE SHALE	4.3	32.2
-	CARBONDALE	BRERETON	LIMESTONE	6.0	36.5
-	CARBONDALE	ANNA	BLACK SHALE	4.3	42.5
-	CARBONDALE	HERRIN	COAL	5.8	46.8
-	CARBONDALE		UNDERCLAY	1.0	52.6

MAPID: 14528662000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 1320' S line, 1320' E line
 QUADRANGLE: PERCY LONGITUDE: -89.506698 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.001391 DATE COLLECTED: 7 / 16 / 1937
 SURFACE ELEVATION (FT.): 441.9 LOGGED (FT.): 75.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY D-15 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
441.9	PLEISTOCENE		CLAY	35.0	0.0
406.9	CARBONDALE		LIMESTONE	3.0	35.0
403.9	CARBONDALE		SHALE	8.0	38.0
395.9	CARBONDALE		BLACK SHALE	16.0	46.0
379.9	CARBONDALE	BRERETON	LIMESTONE	5.0	62.0
374.9	CARBONDALE	ANNA	BLACK SHALE	2.0	67.0
372.9	CARBONDALE	HERRIN	COAL	5.5	69.0
367.4	CARBONDALE		UNDERCLAY	0.5	74.5

MAPID: 14528663000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 14 **QUARTERS/FOOTAGES:** 2640' S line, 1320' E line
QUADRANGLE: PERCY **LONGITUDE:** -89.506604 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 38.005035 **DATE COLLECTED:** 7 / 10 / 1937
SURFACE ELEVATION (FT.): 449.5 **LOGGED (FT.):** 63.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY 16-D **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
449.5	PLEISTOCENE		CLAY	25.0	0.0	
424.5			GRAY SHALE	38.0	25.0	SOFT

MAPID: 14528664000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 14 **QUARTERS/FOOTAGES:** 2640' N line, 2640' E line
QUADRANGLE: PERCY **LONGITUDE:** -89.511202 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 38.005319 **DATE COLLECTED:** 7 / 17 / 1937
SURFACE ELEVATION (FT.): 452.9 **LOGGED (FT.):** 65.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY 17-D **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
452.9	PLEISTOCENE		CLAY	18.0	0.0	
434.9			SHALE	14.0	18.0	
420.9			LIMESTONE	2.0	32.0	
418.9			SHALE	31.0	34.0	SOFT

MAPID: 14528665000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 14 **QUARTERS/FOOTAGES:** 330' S line, 130' E line
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.502616 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.998617 **DATE COLLECTED:** 7 / 20 / 1937
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 56.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY 19-D **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	20.0	0.0	
-			SHALE	15.0	20.0	
-			SHALE	21.0	35.0	SOFT

MAPID: 14528666000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 1' S line, 330' E line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.503338

GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 37.997717

DATE COLLECTED: 7 / 21 / 1937

SURFACE ELEVATION (FT.): LOGGED (FT.): 62.0

LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY D-20

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	20.0	0.0	
-			SHALE	20.0	20.0	
-			SHALE	18.0	40.0	SOFT
-			SANDY LIMESTONE	4.0	58.0	

MAPID: 14590098000C VERSION: 1

PROJECT: ISGS97

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 1000' S line, 1300' E line of SE SE

QUADRANGLE: PERCY LONGITUDE: -89.506649 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.000508 DATE COLLECTED: 4 / 12 / 1982

SURFACE ELEVATION (FT.): LOGGED (FT.): 348.5 LOG TYPE: Drillers Log

SOURCE: ARCH MINERALS 57A WELL TYPE: Coal Test

COMMENT: MURPHYSBORO

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0	
-	PLEISTOCENE		UNCONSOLIDATED	21.0	30.0	
-	CARBONDALE	CONANT	LIMESTONE	4.0	51.0	
-	CARBONDALE		SHALE	3.2	55.0	
-	CARBONDALE	BRERETON	SHALY LIMESTONE	6.1	58.2	
-	CARBONDALE	ANNA	DARK SHALE	0.4	64.3	
-	CARBONDALE	HERRIN	COAL	6.3	64.7	
-	CARBONDALE		UNDERCLAY	1.0	71.0	
-	CARBONDALE	HIGGINSVILLE	SHALY LIMESTONE	11.0	72.0	
-	CARBONDALE		SANDY SHALE	4.0	83.0	WITH SANDSTONE STRINGERS
-	CARBONDALE		LIMESTONE	0.2	87.0	
-	CARBONDALE		GRAY SHALE	1.2	87.2	
-	CARBONDALE		DARK GRAY SHALE	1.9	88.4	
-	CARBONDALE	ST. DAVID	LIMESTONE	1.8	90.3	
-	CARBONDALE	TURNER MINE	DARK SHALE	1.8	92.1	
-	CARBONDALE	SPRINGFIELD	COAL	4.5	93.9	
-	CARBONDALE		UNDERCLAY	1.1	98.4	
-	CARBONDALE		GRAY SHALE	0.5	99.5	
-	CARBONDALE		SANDY SHALE	1.2	100.0	
-	CARBONDALE		LIMESTONE	2.5	101.2	
-	CARBONDALE		GRAY SHALE	6.2	103.7	
-	CARBONDALE		LIMESTONE	0.1	109.9	
-	CARBONDALE		GRAY SHALE	4.5	110.0	
-	CARBONDALE		DARK SHALE	24.7	114.5	
-	CARBONDALE		GRAY SHALE & LIMESTONE	0.8	139.2	
-	CARBONDALE		DARK SHALE & LIMESTONE	19.5	140.0	
-	CARBONDALE		GRAY SHALE & LIMESTONE	0.5	159.5	
-	CARBONDALE		DARK SHALE & LIMESTONE	1.5	160.0	
-	CARBONDALE	HANOVER	LIMESTONE	0.8	161.5	DARK
-	CARBONDALE	EXCELLO	DARK SHALE	6.4	162.3	
-	CARBONDALE	HOUCHIN CREEK	COAL	3.0	168.7	
-	CARBONDALE		UNDERCLAY	0.6	171.7	
-	CARBONDALE		GRAY SHALE	3.7	172.3	
-	CARBONDALE		GRAY SHALE & LIMESTONE	3.0	176.0	
-	CARBONDALE		DARK SHALE & COAL	0.5	179.0	

-	CARBONDALE		UNDERCLAY	0.5	179.5	
-	CARBONDALE		GRAY SHALE & LIMESTONE	4.7	180.0	
-	CARBONDALE		DARK SHALE	3.4	184.7	
-	CARBONDALE	SURVANT	COAL	0.8	188.1	
-	CARBONDALE		GRAY SHALE & LIMESTONE	7.2	188.9	
-	CARBONDALE		SANDY SHALE	3.0	196.1	
-	CARBONDALE		COAL WITH SHALE	1.4	199.1	
-	CARBONDALE		SANDY SHALE	12.5	200.5	
-	CARBONDALE	OAK GROVE	LIMESTONE	2.2	213.0	DARK
-	CARBONDALE	MECCA QUARRY	DARK SHALE	4.0	215.2	
-	CARBONDALE	COLCHESTER	COAL	0.7	219.2	
-	CARBONDALE		GRAY SHALE	5.0	219.9	
-	CARBONDALE		SANDY SHALE	10.0	224.9	
-	CARBONDALE		DARK GRAY SHALE	11.6	234.9	
-	CARBONDALE		DARK SHALE	2.0	246.5	
-	CARBONDALE		SHALY SANDSTONE	5.3	248.5	
-	CARBONDALE		SANDY DARK SHALE	13.1	253.8	
-	CARBONDALE		SHALY SANDSTONE	1.6	266.9	
-	CARBONDALE		DARK SHALE	1.5	268.5	
-	CARBONDALE	DAVIS	COAL	1.7	270.0	
-	CARBONDALE	DAVIS	LAMINATED SHALE	1.0	271.7	
-	CARBONDALE	DAVIS	COAL	1.8	272.7	
-	TRADEWATER		UNDERCLAY	0.3	274.5	
-	TRADEWATER		GRAY SHALE	4.9	274.8	
-	TRADEWATER		DARK SHALE & LIMESTONE	2.5	279.7	
-	TRADEWATER	SEAHORNE LS	COAL	1.6	282.2	
-	TRADEWATER	SEAHORNE LS	UNDERCLAY	0.8	283.8	
-	TRADEWATER	SEAHORNE LS	COAL	1.1	284.6	
-	TRADEWATER		UNDERCLAY	1.0	285.7	
-	TRADEWATER		GRAY SHALE	3.4	286.7	
-	TRADEWATER		SANDY SHALE	3.5	290.1	
-	TRADEWATER		DARK GRAY SHALE	2.6	293.6	
-	TRADEWATER		BLACK SHALE	0.4	296.2	
-	TRADEWATER	MT. RORAH	COAL	0.5	296.6	
-	TRADEWATER		DARK GRAY SHALE	12.8	297.1	
-	TRADEWATER		SANDY SHALE	14.1	309.9	WITH COAL STREAKS
-	TRADEWATER		DARK SHALE & LIMESTONE	4.9	324.0	
-	TRADEWATER	MURPHYSBORO	COAL	7.0	328.9	
-	TRADEWATER		UNDERCLAY	0.3	335.9	
-	TRADEWATER		SANDY DARK SHALE	12.3	336.2	

MAPID: 14590099000C VERSION: 1

PROJECT: ISGS97

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 14 QUARTERS/FOOTAGES: 1000' S line, 1300' E line of SE SE

QUADRANGLE: PERCY LONGITUDE: -89.506649 GEOLOGIST: D NORTH

CONFIDENTIAL: N LATITUDE: 38.000508 DATE COLLECTED: 4 / 12 / 1982

SURFACE ELEVATION (FT.): LOGGED (FT.): 348.5 LOG TYPE: Drillers Log

SOURCE: ARCH MINERALS 57 WELL TYPE: Coal Test

COMMENT: MURPHYSBORO

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0	
-	PLEISTOCENE		UNCONSOLIDATED	13.2	29.0	
-	CARBONDALE		LIMESTONE	14.6	42.2	GRAY
-	CARBONDALE		SHALE	2.0	56.8	
-	CARBONDALE	BRERETON	LIMESTONE	5.1	58.8	DARK
-	CARBONDALE	ANNA	BLACK SHALE	4.1	63.9	
-	CARBONDALE	HERRIN	COAL	5.6	68.0	
-	CARBONDALE		UNDERCLAY	0.6	73.6	
-	CARBONDALE		SANDSTONE/LIMESTONE	8.1	74.2	GRAY
-	CARBONDALE		SANDY SHALE	7.7	82.3	
-	CARBONDALE		DARK SHALE	1.4	90.0	
-	CARBONDALE	ST. DAVID	LIMESTONE	1.5	91.4	
-	CARBONDALE	TURNER MINE	DARK SHALE	2.1	92.9	
-	CARBONDALE	SPRINGFIELD	COAL	3.9	95.0	
-	CARBONDALE		UNDERCLAY	4.1	98.9	
-	CARBONDALE		SANDY SHALE	20.0	103.0	
-	CARBONDALE		DARK GRAY SHALE	40.0	123.0	
-	CARBONDALE	HANOVER	LIMESTONE	1.5	163.0	
-	CARBONDALE	EXCELLO	BLACK SHALE	6.1	164.5	
-	CARBONDALE	HOUCHIN CREEK	COAL	2.8	170.6	
-	CARBONDALE		UNDERCLAY	3.4	173.4	
-	CARBONDALE		GRAY SHALE	15.2	176.8	WITH COAL STREAKS
-	CARBONDALE		SANDY SHALE	23.4	192.0	W/SS
-	CARBONDALE	OAK GROVE	LIMESTONE	1.7	215.4	
-	CARBONDALE	MECCA QUARRY	DARK SHALE	5.7	217.1	
-	CARBONDALE	COLCHESTER	COAL	0.7	222.8	
-	CARBONDALE		UNDERCLAY	1.5	223.5	
-	CARBONDALE		GRAY SHALE & LIMESTONE	3.5	225.0	
-	CARBONDALE		SANDY SHALE	21.5	228.5	
-	CARBONDALE		SANDSTONE	8.0	250.0	
-	CARBONDALE		SANDY DARK SHALE	14.1	258.0	
-	CARBONDALE	DAVIS	COAL	1.7	272.1	
-	TRADEWATER		GRAY SHALE	4.7	273.8	
-	TRADEWATER		SANDY SHALE	3.9	278.5	
-	TRADEWATER		SHALE WITH LIMESTONE	3.6	282.4	
-	TRADEWATER	SEAHORNE LS	COAL	1.0	286.0	
-	TRADEWATER		GRAY SHALE	11.0	287.0	
-	TRADEWATER	MT. RORAH	DARK GRAY SHALE	9.5	298.0	

-	TRADEWATER		SANDY SHALE	3.5	307.5
-	TRADEWATER		DARK GRAY SHALE	14.0	311.0
-	TRADEWATER		DARK SHALE	5.4	325.0
-	TRADEWATER	MURPHYSBORO	COAL	6.4	330.4
-	TRADEWATER		UNDERCLAY	1.2	336.8
-	TRADEWATER		SANDY SHALE	10.5	338.0

MAPID: 14500970000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 15 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.537611 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.999025 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 446.2 **LOGGED (FT.):** 62.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #409 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.2			UNCONSOLIDATED	20.0	0.0
426.2			UNCLASSIFIED	42.0	20.0

MAPID: 14500971000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 15 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.53302 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.998971 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 458.7 **LOGGED (FT.):** 42.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #410 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
458.7			UNCONSOLIDATED	28.0	0.0
430.7			UNCLASSIFIED	14.0	28.0

MAPID: 14502820000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 100' S line, 100' E line of NW NE

QUADRANGLE: PERCY LONGITUDE: -89.525237 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.009372 DATE COLLECTED: 4 / 28 / 1961

SURFACE ELEVATION (FT.): 452.0 LOGGED (FT.): 631.0 LOG TYPE: Drillers Log

SOURCE: GWIN DRILLING CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.0			UNCONSOLIDATED	26.0	0.0
426.0	CARBONDALE		SHALE	28.0	26.0
398.0	CARBONDALE		SHALE	18.0	54.0
380.0	CARBONDALE		CALCAREOUS SHALE	87.0	72.0
372.0	CARBONDALE		SHALE	3.0	80.0
369.0	CARBONDALE	BRERETON	LIMESTONE	7.0	83.0
362.0	CARBONDALE		SHALE	2.0	90.0
360.0	CARBONDALE	HERRIN	COAL	1.0	92.0
359.0	CARBONDALE	HERRIN	COAL	7.0	93.0
352.0	CARBONDALE		SHALE	3.0	100.0
349.0	CARBONDALE		LIMESTONE	9.0	103.0
340.0	CARBONDALE		SHALE	11.0	112.0
329.0	CARBONDALE		LIMESTONE	8.0	123.0
321.0	CARBONDALE		SHALE	3.0	131.0
318.0	CARBONDALE		LIMESTONE	7.0	134.0
311.0	CARBONDALE		SHALE	29.0	141.0
282.0	CARBONDALE		SHALE	23.0	170.0
259.0	CARBONDALE		SHALE	2.0	193.0

MAPID: 14503085000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 250' S line, 2100' E line of SW

QUADRANGLE: PERCY LONGITUDE: -89.536903 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.998777 DATE COLLECTED: 10 / 0 / 1964

SURFACE ELEVATION (FT.): LOGGED (FT.): 512.0 LOG TYPE: Drillers Log

SOURCE: GWIN DRILLING CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	14.0	0.0
-			CLAYSTONE	18.0	14.0
-			LIMESTONE	3.0	32.0
-			SHALE	10.0	35.0
-			SHALE	4.0	45.0
-			LIMESTONE	1.0	49.0
-			SHALE	5.0	50.0
-			SHALE	5.0	55.0
-	CARBONDALE		SHALE	5.0	60.0
-	CARBONDALE		LIMESTONE	5.0	65.0
-	CARBONDALE		SHALE	6.0	70.0
-	CARBONDALE		LIMESTONE	2.0	76.0
-	CARBONDALE	HERRIN	COAL	9.0	78.0
-	CARBONDALE		LIMESTONE	2.0	87.0
-	CARBONDALE		SHALE	6.0	89.0
-	CARBONDALE		SHALE	20.0	95.0
-	CARBONDALE		LIMESTONE	35.0	115.0
-	CARBONDALE		SHALE	2.0	150.0

MAPID: 14523386000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 270' S line, 40' E line of NW SE SW

QUADRANGLE: PERCY LONGITUDE: -89.531998 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.000633 DATE COLLECTED: 9 / 0 / 1977

SURFACE ELEVATION (FT.): LOGGED (FT.): 500.0 LOG TYPE: Drillers Log

SOURCE: SOUTHWESTERN ILLINOIS COAL CO. WELL TYPE: Coal Test

COMMENT: IMPRECISE COAL THICKNESSES

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	27.0	0.0
-	CARBONDALE		LIMESTONE	6.0	27.0
-	CARBONDALE		CALCAREOUS SHALE	29.0	33.0
-	CARBONDALE	HERRIN	COAL/CLAYSTONE	7.0	62.0
-	CARBONDALE		CALCAREOUS SHALE	13.0	69.0
-	CARBONDALE		SANDSTONE/SHALE	6.0	82.0
-	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	6.0	88.0
-	CARBONDALE		SHALE	56.0	94.0
-	CARBONDALE		CALCAREOUS SHALE	11.0	150.0
-	CARBONDALE	HOUCHIN CREEK	COAL/CLAYSTONE	4.0	161.0
-	CARBONDALE		SHALE	15.0	165.0
-	CARBONDALE		SANDSTONE/SHALE	41.0	180.0
-	CARBONDALE	COLCHESTER	LIMESTONE W/ SHALE	4.0	221.0
-	SPOON		SHALE	21.0	225.0
-	SPOON		SANDSTONE	9.0	246.0
-	SPOON	DEKOVEN	LIMESTONE W/ SHALE	5.0	255.0
-	SPOON		LIMESTONE	1.0	260.0
-	SPOON	DAVIS	COAL/CLAYSTONE	3.0	261.0
-	SPOON		SHALE	43.0	264.0
-	SPOON		SANDSTONE/SHALE	14.0	307.0
-	SPOON		SHALE	22.0	321.0
-	SPOON	MURPHYSBORO	COAL/CLAYSTONE	3.0	343.0

MAPID: 14528113000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 960' S line, 2100' E line of SE

QUADRANGLE: PERCY LONGITUDE: -89.5277 GEOLOGIST: KRUMM

CONFIDENTIAL: N LATITUDE: 38.000626 DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.1 LOGGED (FT.): 101.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: REF. SE CORNER OF SEC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.1			CLAYSTONE	37.0	0.0
416.1	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	37.0
409.1	CARBONDALE		SHALE	19.0	44.0
390.1	CARBONDALE	BRERETON	LIMESTONE	8.0	63.0
382.1	CARBONDALE	HERRIN	COAL/CLAYSTONE	6.0	71.0
376.1	CARBONDALE		SHALE	19.0	77.0
357.1	CARBONDALE	SPRINGFIELD		4.0	96.0
353.1	CARBONDALE		SHALE	1.0	100.0

MAPID: 14528114000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 1100' S line, 2100' E line of SE

QUADRANGLE: PERCY LONGITUDE: -89.527697 GEOLOGIST: KRUMM

CONFIDENTIAL: N LATITUDE: 38.001013 DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.1 LOGGED (FT.): 103.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: REF. SE OF CORNER OF SEC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.1			CLAYSTONE	38.0	0.0
415.1	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	38.0
409.1	CARBONDALE		SHALE	9.0	44.0
390.1	CARBONDALE	BRERETON	LIMESTONE	8.0	63.0
382.1	CARBONDALE	HERRIN	COAL/CLAYSTONE	6.0	71.0
376.1	CARBONDALE		SHALE	19.0	77.0
357.1	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	4.0	96.0
353.1	CARBONDALE		SHALE	3.0	100.0

MAPID: 14528115000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 960' S line, 2200' E line of SE

QUADRANGLE: PERCY LONGITUDE: -89.528049 GEOLOGIST: KRUMM

CONFIDENTIAL: N LATITUDE: 38.000632 DATE COLLECTED:

SURFACE ELEVATION (FT.): 452.7 LOGGED (FT.): 154.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: REF. SE CORNER OF SEC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.7			CLAYSTONE	37.0	0.0
415.7	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	37.0
408.7	CARBONDALE		SHALE	19.0	44.0
389.7	CARBONDALE	BRERETON	LIMESTONE	8.0	63.0
381.7	CARBONDALE	HERRIN	COAL/CLAYSTONE	6.0	71.0
375.7	CARBONDALE		CALCAREOUS SHALE	19.0	77.0
356.7	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	4.0	96.0
352.7	CARBONDALE		SHALE	26.0	100.0
326.7	CARBONDALE		SANDSTONE	19.0	126.0
307.7	CARBONDALE		SHALE	9.0	145.0

MAPID: 14528116000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 960' S line, 2300' E line of SE

QUADRANGLE: PERCY LONGITUDE: -89.528398 GEOLOGIST: KRUMM

CONFIDENTIAL: N LATITUDE: 38.000634 DATE COLLECTED: 12 / 21 / 1983

SURFACE ELEVATION (FT.): 451.3 LOGGED (FT.): 62.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: REF. SE CORNER OF SEC.

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.3			CLAYSTONE	34.0	0.0
417.3			LIMESTONE	8.0	34.0
409.3			SHALE	20.0	42.0

MAPID: 14528117000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 1100' S line, 2250' E line of SE
 QUADRANGLE: PERCY LONGITUDE: -89.52822 GEOLOGIST: KRUMM
 CONFIDENTIAL: N LATITUDE: 38.001018 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 452.8 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT: REF SE CORNER

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.8			CLAYSTONE	38.0	0.0
414.8			LIMESTONE	4.0	38.0
410.8			SHALE	23.0	42.0

MAPID: 14528128000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 43' N line, 25' W line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.538595 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.01288 DATE COLLECTED: 12 / 30 / 1983
 SURFACE ELEVATION (FT.): 470.8 LOGGED (FT.): 121.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT: PERFORATED 101-121

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
470.8			UNCONSOLIDATED	121.0	0.0

MAPID: 14528129000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 707' S line, 182' W line of NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.538098 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 38.003776 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 469.3 LOGGED (FT.): 90.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT: PERFORATED 68-88

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
469.3			UNCONSOLIDATED	90.0	0.0

MAPID: 14528667000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 1320' S line, 1320' W line

QUADRANGLE: PERCY LONGITUDE: -89.534141 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.001698 DATE COLLECTED: 6 / 12 / 1937

SURFACE ELEVATION (FT.): 472.0 LOGGED (FT.): 74.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY D-2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
472.0	PLEISTOCENE		CLAY	20.0	0.0
452.0	CARBONDALE		LIMESTONE	1.0	20.0
451.0	CARBONDALE		SHALE	6.0	21.0
445.0	CARBONDALE		LIMESTONE	13.0	27.0
432.0	CARBONDALE		BLUE SHALE	5.0	40.0
427.0	CARBONDALE		ROCK	1.0	45.0
426.0	CARBONDALE		BLACK SHALE	6.0	46.0
420.0	CARBONDALE	JAMESTOWN	COAL	0.5	52.0
419.5	CARBONDALE		BLACK SHALE	5.0	52.5
414.5	CARBONDALE	BRERETON	LIMESTONE	4.0	57.5
410.5	CARBONDALE	ANNA	BLACK SHALE	6.0	61.5
404.5	CARBONDALE	HERRIN	COAL	6.0	67.5
398.5	CARBONDALE		UNDERCLAY	0.5	73.5

MAPID: 14528668000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 1980' N line, 660' W line

QUADRANGLE: PERCY LONGITUDE: -89.536408 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.007503 DATE COLLECTED: 6 / 16 / 1937

SURFACE ELEVATION (FT.): 463.1 LOGGED (FT.): 81.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY D-4 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.1	PLEISTOCENE		CLAY	20.0	0.0
443.1	CARBONDALE		SHALE	10.0	20.0
433.1	CARBONDALE		SANDY SHALE	10.0	30.0
423.1	CARBONDALE		LIMESTONE	6.0	40.0
417.1	CARBONDALE		BLACK SHALE	19.5	46.0
397.6	CARBONDALE	BRERETON	LIMESTONE	7.0	65.5
390.6	CARBONDALE	ANNA	BLACK SHALE	1.5	72.5
389.1	CARBONDALE	HERRIN	COAL	6.0	74.0
383.1	CARBONDALE		UNDERCLAY	1.0	80.0

MAPID: 14528669000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.529523

GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.005437

DATE COLLECTED: 6 / 15 / 1937

SURFACE ELEVATION (FT.): 461.2 LOGGED (FT.): 69.0

LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY F-4

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
461.2	PLEISTOCENE		CLAY	26.0	0.0	
435.2			GRAY SHALE	2.0	26.0	SOFT
433.2			LIMESTONE	1.0	28.0	
432.2			SHALE	40.0	29.0	SOFT

MAPID: 14528670000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 1980' S line, 660' W line

QUADRANGLE: PERCY LONGITUDE: -89.53643

GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.003547

DATE COLLECTED: 6 / 26 / 1937

SURFACE ELEVATION (FT.): 459.8 LOGGED (FT.): 66.0

LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 5-D

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
459.8	PLEISTOCENE		CLAY	29.0	0.0	
430.8	CARBONDALE		LIMESTONE	2.5	29.0	
428.3	CARBONDALE		GRAY SHALE	7.5	31.5	
420.8	CARBONDALE		BLACK SHALE	12.0	39.0	
408.8	CARBONDALE	BRERETON	LIMESTONE	7.0	51.0	
401.8	CARBONDALE	ANNA	BLACK SHALE	2.0	58.0	
399.8	CARBONDALE	HERRIN	COAL	5.3	60.0	
394.5	CARBONDALE		UNDERCLAY	0.8	65.3	

MAPID: 14528671000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 660' S line, 660' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.536453 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 37.999903 DATE COLLECTED: 6 / 28 / 1937

SURFACE ELEVATION (FT.): 452.5 LOGGED (FT.): 54.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY D-6 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.5	PLEISTOCENE		CLAY	25.0	0.0
427.5	CARBONDALE		SHALE	20.0	25.0
407.5	CARBONDALE	ANNA	BLACK SHALE	2.5	45.0
405.0	CARBONDALE	HERRIN	COAL	6.0	47.5
399.0	CARBONDALE		UNDERCLAY	0.5	53.5

MAPID: 14528672000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 660' S line, 1980' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.531848 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 37.999849 DATE COLLECTED: 6 / 28 / 1937

SURFACE ELEVATION (FT.): 457.0 LOGGED (FT.): 63.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY D-7 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
457.0	PLEISTOCENE		CLAY	49.0	0.0
408.0	CARBONDALE	BRERETON	LIMESTONE	5.5	49.0
402.5	CARBONDALE	ANNA	BLACK SHALE	2.5	54.5
400.0	CARBONDALE	HERRIN	COAL	5.5	57.0
394.5	CARBONDALE		UNDERCLAY	0.5	62.5

MAPID: 14528673000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 660' S line, 1980' E line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.527292 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.999792 DATE COLLECTED: 6 / 30 / 1937
 SURFACE ELEVATION (FT.): 447.9 LOGGED (FT.): 75.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY D-8 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
447.9	PLEISTOCENE		CLAY	20.0	0.0	
427.9	CARBONDALE		SHALE	13.0	20.0	
414.9	CARBONDALE		LIMESTONE	9.0	33.0	
405.9	CARBONDALE		SHALE	5.0	42.0	SOFT
400.9	CARBONDALE		BLACK SHALE	12.0	47.0	
388.9	CARBONDALE	BRERETON	LIMESTONE	7.0	59.0	
381.9	CARBONDALE	ANNA	BLACK SHALE	2.5	66.0	
379.4	CARBONDALE	HERRIN	COAL	5.8	68.5	
373.6	CARBONDALE		UNDERCLAY	0.8	74.3	

MAPID: 14528674000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 1320' N line, 1' E line
 QUADRANGLE: PERCY LONGITUDE: -89.520289 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.009103 DATE COLLECTED: 7 / 13 / 1937
 SURFACE ELEVATION (FT.): 441.6 LOGGED (FT.): 71.4 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY E-8 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
441.6	PLEISTOCENE		UNCONSOLIDATED	57.0	0.0	SOIL, CLAY, SOAP
384.6			SHALE	3.0	57.0	
381.6			LIMESTONE	3.5	60.0	
378.1			BLACK SHALE	1.0	63.5	
377.1			ROCK	1.5	64.5	
375.6			BLACK SHALE	1.0	66.0	
374.6			COAL	3.4	67.0	
371.2			UNDERCLAY	1.0	70.4	

MAPID: 14528675000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 1320' S line, 1' E line
 QUADRANGLE: PERCY LONGITUDE: -89.520367 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.001533 DATE COLLECTED: 7 / 2 / 1937
 SURFACE ELEVATION (FT.): 453.2 LOGGED (FT.): 57.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 9-D WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
453.2	PLEISTOCENE		CLAY	20.0	0.0	
433.2	CARBONDALE		SHALE	15.0	20.0	
418.2	CARBONDALE		BLUE SHALE	8.0	35.0	
410.2	CARBONDALE	BRERETON	LIMESTONE	4.5	43.0	
405.7	CARBONDALE	ANNA	BLACK SHALE	3.5	47.5	
402.2	CARBONDALE	HERRIN	COAL	5.3	51.0	
396.9	CARBONDALE		UNDERCLAY	0.8	56.3	

MAPID: 14528676000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 1' S line, 1' E line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.520404 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.997892 DATE COLLECTED: 7 / 5 / 1937
 SURFACE ELEVATION (FT.): 450.7 LOGGED (FT.): 69.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 10-D WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.7	PLEISTOCENE		CLAY	25.0	0.0	
425.7			SHALE	34.5	25.0	SOFT
391.2			LIMESTONE	2.5	59.5	
388.7			SHALE	4.0	62.0	
384.7			SANDSTONE	3.0	66.0	GRAY

MAPID: 14528677000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 2640' N line, 1320' W line
 QUADRANGLE: PERCY LONGITUDE: -89.534118 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.005649 DATE COLLECTED: 7 / 17 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 76.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY F-14 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	21.0	0.0	
-			LIMESTONE	3.0	21.0	
-			SHALE	2.0	24.0	SOFT
-			BLACK SHALE	3.0	26.0	
-			COAL	1.0	29.0	
-			SANDSTONE	2.0	30.0	
-			SANDY SHALE	13.0	32.0	
-			LIMESTONE	6.0	45.0	
-			SHALE	9.0	51.0	
-			BLACK SHALE	11.0	60.0	HARD
-			ROCK	2.0	71.0	
-			BLACK SHALE	2.5	73.0	
-			LIMESTONE	0.5	75.5	

MAPID: 14528678000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 2640' N line, 2640' W line
 QUADRANGLE: PERCY LONGITUDE: -89.529513 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.005587 DATE COLLECTED: 7 / 17 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 56.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 15-F WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	23.0	0.0	
-			LIMESTONE	1.0	23.0	
-			SHALE	26.0	24.0	SOFT
-			SANDSTONE	2.0	50.0	
-			SHALE	2.0	52.0	SOFT
-			SANDSTONE	2.0	54.0	

MAPID: 14528679000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 1320' S line, 1320' E line

QUADRANGLE: PERCY LONGITUDE: -89.524969 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.001587 DATE COLLECTED: 7 / 22 / 1937

SURFACE ELEVATION (FT.): LOGGED (FT.): 63.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 16-F WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	23.0	0.0	
-	CARBONDALE		LIMESTONE	1.0	23.0	SOFT
-	CARBONDALE		SHALE	16.0	24.0	
-	CARBONDALE		LIMESTONE	5.0	40.0	
-	CARBONDALE		BLUE SHALE	8.0	45.0	
-	CARBONDALE		ROCK	1.0	53.0	
-	CARBONDALE		BLACK SHALE	4.0	54.0	
-	CARBONDALE	JAMESTOWN	COAL	0.5	58.0	
-	CARBONDALE		BLACK SHALE	2.5	58.5	
-	CARBONDALE		LIMESTONE	2.0	61.0	

MAPID: 14590006000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 300' S line, 220' E line of NW SW SE

QUADRANGLE: PERCY LONGITUDE: -89.528032 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.000667 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 154.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL CW1C WELL TYPE: Water Well

COMMENT: PERMIT 188; MONITORING WELL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0	PLEISTOCENE		CLAY	37.0	0.0	
413.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	37.0	
406.0	CARBONDALE		DARK SHALE	19.0	44.0	
387.0	CARBONDALE	BRERETON	LIMESTONE	8.0	63.0	
379.0	CARBONDALE	HERRIN	COAL/CLAYSTONE	6.0	71.0	APPROXIMATE THICKNESS
373.0	CARBONDALE		CALCAREOUS SHALE	19.0	77.0	
354.0	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	4.0	96.0	APPROXIMATE THICKNESS
350.0	CARBONDALE		GRAY SHALE	26.0	100.0	
324.0	CARBONDALE		SANDSTONE	19.0	126.0	GRAY
305.0	CARBONDALE		GRAY SHALE	9.0	145.0	

MAPID: 14590007000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 340' S line, 120' E line of NW SW SE

QUADRANGLE: PERCY LONGITUDE: -89.527683 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.000772 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 103.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL CW1B WELL TYPE: Water Well

COMMENT: PERMIT 188; MONITORING WELL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0	PLEISTOCENE		CLAY	38.0	0.0	
412.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	38.0	
406.0	CARBONDALE		DARK SHALE	19.0	44.0	
387.0	CARBONDALE	BRERETON	LIMESTONE	8.0	63.0	DARK
379.0	CARBONDALE	HERRIN	COAL/CLAYSTONE	6.0	71.0	APPROXIMATE THICKNESS
373.0	CARBONDALE		CALCAREOUS SHALE	19.0	77.0	
354.0	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	4.0	96.0	APPROXIMATE THICKNESS
350.0	CARBONDALE		GRAY SHALE	3.0	100.0	

MAPID: 14590008000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 300' S line, 120' E line of NW SW SE

QUADRANGLE: PERCY LONGITUDE: -89.527683 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.000662 DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.0 LOGGED (FT.): 101.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL CW1A WELL TYPE: Water Well

COMMENT: PERMIT 188; MONITORING WELL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.0	PLEISTOCENE		CLAY	37.0	0.0	
413.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	37.0	
406.0	CARBONDALE		DARK SHALE	19.0	44.0	
387.0	CARBONDALE	BRERETON	LIMESTONE	8.0	63.0	DARK
379.0	CARBONDALE	HERRIN	COAL/CLAYSTONE	6.0	71.0	APPROXIMATE THICKNESS
373.0	CARBONDALE		CALCAREOUS SHALE	19.0	77.0	
354.0	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	4.0	96.0	APPROXIMATE THICKNESS
350.0	CARBONDALE		GRAY SHALE	1.0	100.0	

MAPID: 1459020000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 300' S line, 120' E line of NW SW SE

QUADRANGLE: PERCY LONGITUDE: -89.527683 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.000662 DATE COLLECTED: 12 / 21 / 1983

SURFACE ELEVATION (FT.): 453.1 LOGGED (FT.): 101.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.1			CLAYSTONE	37.0	0.0
416.1			LIMESTONE	7.0	37.0
409.1	CARBONDALE		SHALE	19.0	44.0
390.1	CARBONDALE		LIMESTONE	8.0	63.0
382.1	CARBONDALE	HERRIN	COAL	6.0	71.0
376.1	CARBONDALE		CALCAREOUS SHALE	19.0	77.0
357.1	CARBONDALE	SPRINGFIELD	COAL	4.0	96.0
353.1	CARBONDALE		SHALE	1.0	100.0

MAPID: 14590201000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 540' S line, 120' E line of NW SW SE

QUADRANGLE: PERCY LONGITUDE: -89.527679 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 38.001325 DATE COLLECTED: 12 / 21 / 1983

SURFACE ELEVATION (FT.): 453.1 LOGGED (FT.): 103.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.1			CLAYSTONE	38.0	0.0
415.1			LIMESTONE	0.0	38.0
409.1	CARBONDALE		SHALE	0.0	44.0
390.1	CARBONDALE		LIMESTONE	0.0	63.0
382.1	CARBONDALE	HERRIN	COAL/CLAYSTONE	0.0	71.0
376.1	CARBONDALE		CALCAREOUS SHALE	0.0	77.0
357.1	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	0.0	96.0
353.1	CARBONDALE		SHALE	0.0	100.0

MAPID: 14590202000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 300' S line, 220' E line of NW SW SE
 QUADRANGLE: PERCY LONGITUDE: -89.528032 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.000667 DATE COLLECTED: 12 / 21 / 1983
 SURFACE ELEVATION (FT.): 452.7 LOGGED (FT.): 154.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.7			CLAYSTONE	37.0	0.0
415.7			LIMESTONE	7.0	37.0
408.7	CARBONDALE		SHALE	19.0	44.0
389.7	CARBONDALE		LIMESTONE	8.0	63.0
381.7	CARBONDALE	HERRIN	COAL/CLAYSTONE	6.0	71.0
375.7	CARBONDALE		CALCAREOUS SHALE	19.0	77.0
356.7	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	4.0	96.0
352.7	CARBONDALE		SHALE	26.0	100.0
326.7	CARBONDALE		SANDSTONE	19.0	126.0
307.7	CARBONDALE		SHALE	9.0	145.0

MAPID: 14590203000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 960' S line, 2300' E line of SE
 QUADRANGLE: PERCY LONGITUDE: -89.528398 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.000634 DATE COLLECTED: 12 / 21 / 1983
 SURFACE ELEVATION (FT.): 451.3 LOGGED (FT.): 62.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.3			CLAYSTONE	34.0	0.0
417.3	CARBONDALE		LIMESTONE	0.0	34.0
409.3	CARBONDALE		SHALE	0.0	42.0

MAPID: 14590215000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 43' N line, 25' W line of NW NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.538595 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.01288 DATE COLLECTED: 12 / 30 / 1983
 SURFACE ELEVATION (FT.): 470.8 LOGGED (FT.): 121.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT: WATER SURFACE ELEV. 383.7

MAPID: 14590216000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 707' S line, 182' W line of SW NW SW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.538098 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.003776 DATE COLLECTED: 12 / 21 / 1983
 SURFACE ELEVATION (FT.): 469.3 LOGGED (FT.): 90.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT: WATER SURFACE ELEV. 389.4

MAPID: 14590245000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 80' S line, 80' W line of NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.538464 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.00205 DATE COLLECTED: 9 / 28 / 1946
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 45.0 LOG TYPE: Drillers Log
 SOURCE: OTHER P12 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	26.8	0.0
433.2			ROCK	12.1	26.8
421.1	CARBONDALE	HERRIN	COAL	6.1	38.9

MAPID: 14590249000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 40' N line, 40' W line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.538543 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.012889 DATE COLLECTED: 1 / 30 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 90.5 LOG TYPE: Drillers Log
 SOURCE: OTHER P16 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	64.0	0.0
396.0			ROCK	20.7	64.0
375.3	CARBONDALE	HERRIN	COAL	5.8	84.7

MAPID: 1459025000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 30' N line, 30' E line of NW NW
 QUADRANGLE: PERCY LONGITUDE: -89.534177 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.012857 DATE COLLECTED: 1 / 31 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 77.0 LOG TYPE: Drillers Log
 SOURCE: OTHER P17 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
434.0			ROCK	45.0	26.0
389.0	CARBONDALE	HERRIN	COAL	6.0	71.0

MAPID: 14590251000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 25' N line, 30' W line of SE NW
 QUADRANGLE: PERCY LONGITUDE: -89.533994 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.009147 DATE COLLECTED: 2 / 1 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 86.5 LOG TYPE: Drillers Log
 SOURCE: OTHER P18 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	23.0	0.0
437.0			ROCK	57.5	23.0
379.5	CARBONDALE	HERRIN	COAL	6.0	80.5

MAPID: 14590252000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 25' S line, 25' E line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.534209 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.005566 DATE COLLECTED: 2 / 5 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 86.0 LOG TYPE: Drillers Log
 SOURCE: OTHER P19 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	24.0	0.0
436.0			ROCK	4.0	24.0
432.0	CARBONDALE	DANVILLE	COAL	2.5	28.0
429.5	CARBONDALE		ROCK	35.0	30.5
394.5	CARBONDALE	JAMESTOWN	COAL	0.2	65.5
394.3	CARBONDALE		ROCK	14.3	65.7
380.0	CARBONDALE	HERRIN	COAL	6.0	80.0

MAPID: 14590253000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 650' S line, 20' E line of SE NW
 QUADRANGLE: PERCY LONGITUDE: -89.52958 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.007232 DATE COLLECTED: 2 / 6 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 79.0 LOG TYPE: Drillers Log
 SOURCE: OTHER P20 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	28.0	0.0
432.0			ROCK	45.0	28.0
387.0	CARBONDALE	HERRIN	COAL	6.0	73.0

MAPID: 14590254000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 400' S line, 650' W line of SW NW
 QUADRANGLE: PERCY LONGITUDE: -89.536449 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.006631 DATE COLLECTED: 2 / 8 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 75.5 LOG TYPE: Drillers Log
 SOURCE: OTHER P21 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	27.0	0.0
433.0			ROCK	42.5	27.0
390.5	CARBONDALE	HERRIN	COAL	6.0	69.5

MAPID: 14590256000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.536437 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.003624 DATE COLLECTED: 2 / 13 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 66.4 LOG TYPE: Drillers Log
 SOURCE: OTHER P23 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
438.0			ROCK	38.4	22.0
399.6	CARBONDALE	HERRIN	COAL	6.0	60.4

MAPID: 14590257000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 25' S line, 25' E line of NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.534235 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.001845 DATE COLLECTED: 2 / 17 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 73.0 LOG TYPE: Drillers Log
 SOURCE: OTHER P24 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
438.0			ROCK	45.0	22.0
393.0	CARBONDALE	HERRIN	COAL	6.0	67.0

MAPID: 14590258000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 650' S line, 40' W line of NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.538594 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.003624 DATE COLLECTED: 2 / 19 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 55.0 LOG TYPE: Drillers Log
 SOURCE: OTHER P25 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	28.5	0.0
431.5			ROCK	20.5	28.5
411.0	CARBONDALE	HERRIN	COAL	6.0	49.0

MAPID: 14590275000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 300' S line, 10' E line of SW SW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.534202 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.998882 DATE COLLECTED: 4 / 17 / 1950
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 83.2 LOG TYPE: Drillers Log
 SOURCE: OTHER P42 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	49.0	0.0
411.0	CARBONDALE		ROCK	25.2	49.0
385.8	CARBONDALE	SPRINGFIELD	COAL	1.8	74.2
384.0	CARBONDALE		ROCK	7.3	76.0

MAPID: 14590276000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 15 QUARTERS/FOOTAGES: 15' S line, 270' W line of SW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.537823

GEOLOGIST: LAWSON

CONFIDENTIAL: N

LATITUDE: 37.998139

DATE COLLECTED: 4 / 19 / 1950

SURFACE ELEVATION (FT.): 440.0

LOGGED (FT.): 96.0

LOG TYPE: Drillers Log

SOURCE: OTHER P43

WELL TYPE: Coal Test

COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
420.0	CARBONDALE		ROCK	28.7	20.0
391.3	CARBONDALE	SPRINGFIELD	COAL	3.6	48.7
387.7	CARBONDALE		ROCK	43.8	52.3

MAPID: 14500285000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 1980' N line, 1400' E line

QUADRANGLE: PERCY LONGITUDE: -89.543595 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.007622 DATE COLLECTED:

SURFACE ELEVATION (FT.): 466.1 LOGGED (FT.): 88.2 LOG TYPE: Drillers Log

SOURCE: WILLISVILLE COAL WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
466.1			UNCONSOLIDATED	18.0	0.0
448.1			SAND	4.0	18.0
444.1			CLAYSTONE	11.0	22.0
433.1	CARBONDALE		LIMESTONE	0.5	33.0
432.6	CARBONDALE		SHALE	4.5	33.5
428.1	CARBONDALE	JAMESTOWN	COAL WITH SHALE	0.5	38.0
427.6	CARBONDALE		CLAYSTONE	4.0	38.5
423.6	CARBONDALE		CLAYSTONE	2.0	42.5
421.6	CARBONDALE	BRERETON	LIMESTONE	3.5	44.5
418.1	CARBONDALE	BRERETON	LIMESTONE	2.0	48.0
416.1	CARBONDALE		SHALE	1.5	50.0
414.6	CARBONDALE	HERRIN	COAL	6.2	51.5
408.4	CARBONDALE		CLAYSTONE	2.3	57.7
406.1	CARBONDALE		SHALE	3.0	60.0
403.1	CARBONDALE		LIMESTONE	4.0	63.0
399.1	CARBONDALE		CLAYSTONE	1.5	67.0
397.6	CARBONDALE		SANDSTONE	4.5	68.5
393.1	CARBONDALE		LIMESTONE	3.0	73.0
390.1	CARBONDALE		SHALE	2.0	76.0
388.1	CARBONDALE	ST. DAVID	LIMESTONE	1.5	78.0
386.6	CARBONDALE	TURNER MINE	SHALE	2.0	79.5
384.6	CARBONDALE	SPRINGFIELD	COAL	4.7	81.5
379.9	CARBONDALE		CLAYSTONE	2.0	86.2

MAPID: 14500285000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 1980' N line, 1400' E line

QUADRANGLE: PERCY LONGITUDE: -89.543595 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.007622 DATE COLLECTED:

SURFACE ELEVATION (FT.): 466.0 LOGGED (FT.): 57.5 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.2	CARBONDALE	BANKSTON FORK	LIMESTONE	0.5	32.8
432.7	CARBONDALE	LAWSON	DARK GRAY SHALE	4.5	33.3
428.2	CARBONDALE	JAMESTOWN	BONE COAL	0.5	37.8
427.7	CARBONDALE		DARK GRAY SHALE	6.0	38.3
421.7	CARBONDALE	BRERETON	LIMESTONE	5.5	44.3
416.2	CARBONDALE	ANNA	BLACK SHALE	1.3	49.8
415.0	CARBONDALE	HERRIN	COAL	6.5	51.0

MAPID: 14500972000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: PERCY LONGITUDE: -89.551192 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.999262 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 452.0 LOGGED (FT.): 53.1 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #406 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
452.0			UNCONSOLIDATED	15.0	0.0
437.0			CLAYSTONE	10.0	15.0
427.0			UNCLASSIFIED	10.0	25.0
417.0	CARBONDALE		SHALE	5.0	35.0
412.0	CARBONDALE	ST. DAVID	LIMESTONE	8.0	40.0
404.0	CARBONDALE		SHALE	1.0	48.0
403.0	CARBONDALE	SPRINGFIELD	COAL	4.1	49.0

MAPID: 14500973000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 16

QUARTERS/FOOTAGES: SW SE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.54215

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.9991

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 441.2

LOGGED (FT.): 31.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #408

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
441.2			UNCONSOLIDATED	10.0	0.0
431.2			SHALE	21.0	10.0

MAPID: 14528680000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 16

QUARTERS/FOOTAGES: 660' S line, 660' E line

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.541058

GEOLOGIST: KOROSE

CONFIDENTIAL: N

LATITUDE: 37.999971

DATE COLLECTED: 6 / 11 / 1937

SURFACE ELEVATION (FT.):

LOGGED (FT.): 48.0

LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY F-1

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	21.0	0.0
-	CARBONDALE	CONANT	LIMESTONE	1.0	21.0
-	CARBONDALE		GRAY SHALE	3.0	22.0
-	CARBONDALE	JAMESTOWN	BLACK SHALE	8.0	25.0
-	CARBONDALE	BRERETON	LIMESTONE	8.5	33.0
-	CARBONDALE	ANNA	BLACK SHALE	0.3	41.5
-	CARBONDALE	HERRIN	COAL	5.3	41.8
-	CARBONDALE		UNDERCLAY	1.0	47.0

MAPID: 14528681000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 1320' S line, 1470' E line

QUADRANGLE: PERCY LONGITUDE: -89.543871 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.001844 DATE COLLECTED: 6 / 10 / 1937

SURFACE ELEVATION (FT.): 439.2 LOGGED (FT.): 46.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-1 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
439.2	PLEISTOCENE		CLAY	15.0	0.0	
424.2	CARBONDALE	HERRIN	COAL	5.0	15.0	TOP MAY BE ERODED
419.2	CARBONDALE		UNDERCLAY	2.0	20.0	
417.2	CARBONDALE		LIMESTONE	4.0	22.0	
413.2	CARBONDALE		SANDY SHALE	4.0	26.0	
409.2	CARBONDALE		SANDY LIMESTONE	2.0	30.0	
407.2	CARBONDALE		SANDY SHALE	5.0	32.0	
402.2	CARBONDALE		BLACK SHALE	3.0	37.0	
399.2	CARBONDALE		LIMESTONE	1.0	40.0	
398.2	CARBONDALE	SPRINGFIELD	COAL	4.0	41.0	
394.2	CARBONDALE		UNDERCLAY	1.0	45.0	

MAPID: 14528682000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 1320' S line, 1520' E line

QUADRANGLE: PERCY LONGITUDE: -89.544046 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.001847 DATE COLLECTED: 6 / 12 / 1937

SURFACE ELEVATION (FT.): 459.1 LOGGED (FT.): 39.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
459.1	PLEISTOCENE		CLAY	24.0	0.0	
435.1	CARBONDALE	BRERETON	LIMESTONE	6.0	24.0	HARD
429.1	CARBONDALE	ANNA	BLACK SHALE	2.0	30.0	
427.1	CARBONDALE	HERRIN	COAL	5.5	32.0	
421.6	CARBONDALE		UNDERCLAY	1.5	37.5	

MAPID: 14528683000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 330' S line, 1' E line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.538762 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 37.999019 DATE COLLECTED: 6 / 14 / 1937

SURFACE ELEVATION (FT.): 447.8 LOGGED (FT.): 40.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY F-3 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
447.8	PLEISTOCENE		CLAY	26.0	0.0	
421.8	CARBONDALE	BRERETON	LIMESTONE	6.0	26.0	
415.8	CARBONDALE	ANNA	BLACK SHALE	2.0	32.0	
413.8	CARBONDALE	HERRIN	COAL	5.5	34.0	
408.3	CARBONDALE		UNDERCLAY	0.5	39.5	

MAPID: 14528684000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 1320' S line, 1320' W line

QUADRANGLE: PERCY LONGITUDE: -89.552189 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.001992 DATE COLLECTED: 6 / 0 / 1937

SURFACE ELEVATION (FT.): 464.5 LOGGED (FT.): 44.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-3 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
464.5	PLEISTOCENE		CLAY	18.0	0.0	
446.5	CARBONDALE		SANDSTONE	2.0	18.0	
444.5	CARBONDALE		SHALE	9.0	20.0	
435.5	CARBONDALE	BRERETON	LIMESTONE	6.0	29.0	HARD
429.5	CARBONDALE	ANNA	BLACK SHALE	3.0	35.0	
426.5	CARBONDALE	HERRIN	COAL	5.5	38.0	
421.0	CARBONDALE		UNDERCLAY	0.5	43.5	

MAPID: 14528685000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 1980' S line, 1980' W line

QUADRANGLE: PERCY LONGITUDE: -89.549849 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.003774 DATE COLLECTED: 6 / 15 / 1937

SURFACE ELEVATION (FT.): 496.1 LOGGED (FT.): 43.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-4 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
496.1	PLEISTOCENE		CLAY	20.0	0.0	
476.1	CARBONDALE		BLACK SHALE	2.0	20.0	
474.1	CARBONDALE	CONANT	LIMESTONE	1.0	22.0	HARD
473.1	CARBONDALE		SHALE	5.0	23.0	
468.1	CARBONDALE	JAMESTOWN	BLACK SHALE	1.0	28.0	
467.1	CARBONDALE	BRERETON	LIMESTONE	5.0	29.0	HARD
462.1	CARBONDALE	ANNA	BLACK SHALE	2.0	34.0	
460.1	CARBONDALE	HERRIN	COAL	5.7	36.0	
454.4	CARBONDALE		UNDERCLAY	1.3	41.7	

MAPID: 14528686000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 1980' N line, 660' E line

QUADRANGLE: PERCY LONGITUDE: -89.541014 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.007576 DATE COLLECTED: 6 / 17 / 1937

SURFACE ELEVATION (FT.): 461.2 LOGGED (FT.): 56.5 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY F-5 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
461.2	PLEISTOCENE		CLAY	22.5	0.0	
438.7	CARBONDALE		LIMESTONE	4.5	22.5	
434.2	CARBONDALE		SHALE	8.0	27.0	
426.2	CARBONDALE		BLUE SHALE	3.5	35.0	
422.7	CARBONDALE	JAMESTOWN	COAL	1.0	38.5	0.5' IRON BAND IN LOWER HALF OF SEAM
421.7	CARBONDALE	BRERETON	LIMESTONE	6.5	39.5	
415.2	CARBONDALE	ANNA	BLACK SHALE	4.0	46.0	
411.2	CARBONDALE	HERRIN	COAL	6.0	50.0	
405.2	CARBONDALE		UNDERCLAY	0.5	56.0	

MAPID: 14528687000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 1980' N line, 1980' W line

QUADRANGLE: PERCY LONGITUDE: -89.549771 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.00773 DATE COLLECTED: 6 / 17 / 1937

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 26.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-5 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.0	PLEISTOCENE		CLAY	4.0	0.0
441.0	CARBONDALE		BLUE SHALE	5.0	4.0
436.0	CARBONDALE	BRERETON	LIMESTONE	7.0	9.0
429.0	CARBONDALE	ANNA	BLACK SHALE	3.0	16.0
426.0	CARBONDALE	HERRIN	COAL	5.8	19.0
420.2	CARBONDALE		UNDERCLAY	1.2	24.8

MAPID: 14528688000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 1980' N line, 1980' E line

QUADRANGLE: PERCY LONGITUDE: -89.545619 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.007657 DATE COLLECTED: 6 / 25 / 1937

SURFACE ELEVATION (FT.): 442.5 LOGGED (FT.): 51.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 6-F WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.5	PLEISTOCENE		CLAY	8.0	0.0
434.5	CARBONDALE	BRERETON	LIMESTONE	5.0	8.0
429.5	CARBONDALE	ANNA	BLACK SHALE	3.0	13.0
426.5	CARBONDALE	HERRIN	COAL	6.0	16.0
420.5	CARBONDALE		UNDERCLAY	1.0	22.0
419.5	CARBONDALE		LIMESTONE & SHALE	18.0	23.0
401.5	CARBONDALE		BLACK SHALE	1.0	41.0 HARD
400.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	42.0
399.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.2	43.5
396.8	CARBONDALE	SPRINGFIELD	COAL	5.0	45.7
391.8	CARBONDALE		UNDERCLAY	0.3	50.7

MAPID: 14528689000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.547718 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.005716 DATE COLLECTED: 6 / 19 / 1937

SURFACE ELEVATION (FT.): 476.3 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-6 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
476.3	PLEISTOCENE		CLAY	21.0	0.0
455.3	CARBONDALE		LIMESTONE	8.0	21.0
447.3	CARBONDALE		SHALE	2.0	29.0
445.3	CARBONDALE		BLUE SHALE	3.0	31.0
442.3	CARBONDALE		LIMESTONE	3.0	34.0
439.3	CARBONDALE		BLUE SHALE	6.0	37.0
433.3	CARBONDALE		BLACK SHALE	3.0	43.0
430.3	CARBONDALE	BRERETON	LIMESTONE	6.0	46.0
424.3	CARBONDALE	ANNA	BLACK SHALE	1.0	52.0
423.3	CARBONDALE	HERRIN	COAL	6.0	53.0
417.3	CARBONDALE		UNDERCLAY	1.0	59.0

MAPID: 14528690000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 1980' S line, 1980' E line

QUADRANGLE: PERCY LONGITUDE: -89.545641 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.003698 DATE COLLECTED: 6 / 26 / 1937

SURFACE ELEVATION (FT.): 463.4 LOGGED (FT.): 42.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY F-7 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.4	PLEISTOCENE		CLAY	26.0	0.0
437.4	CARBONDALE	BRERETON	LIMESTONE	7.0	26.0
430.4	CARBONDALE	ANNA	BLACK SHALE	2.5	33.0
427.9	CARBONDALE	HERRIN	COAL	5.5	35.5
422.4	CARBONDALE		UNDERCLAY	1.0	41.0

MAPID: 14528691000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 1980' S line, 1980' W line

QUADRANGLE: PERCY LONGITUDE: -89.549849 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.003774 DATE COLLECTED: 6 / 28 / 1937

SURFACE ELEVATION (FT.): 466.5 LOGGED (FT.): 39.5 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY F-8 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
466.5	PLEISTOCENE		CLAY	20.0	0.0
446.5	CARBONDALE	JAMESTOWN	COAL	0.5	20.0
446.0	CARBONDALE		UNDERCLAY	0.5	20.5
445.5	CARBONDALE		SHALE	3.0	21.0
442.5	CARBONDALE		BLACK SHALE	3.0	24.0
439.5	CARBONDALE	BRERETON	LIMESTONE	5.0	27.0
434.5	CARBONDALE	ANNA	BLACK SHALE	1.5	32.0
433.0	CARBONDALE	HERRIN	COAL	5.5	33.5
427.5	CARBONDALE		UNDERCLAY	0.5	39.0

MAPID: 14528692000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 600' S line, 2190' E line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.546396 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 37.999902 DATE COLLECTED: 6 / 30 / 1937

SURFACE ELEVATION (FT.): 462.1 LOGGED (FT.): 48.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY F-9 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.1	PLEISTOCENE		CLAY	34.0	0.0
428.1	CARBONDALE	BRERETON	LIMESTONE	6.5	34.0
421.6	CARBONDALE	ANNA	BLACK SHALE	1.5	40.5
420.1	CARBONDALE	HERRIN	COAL	5.5	42.0
414.6	CARBONDALE		UNDERCLAY	0.5	47.5

MAPID: 14528693000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 16 **QUARTERS/FOOTAGES:** 660' S line, 1980' W line
QUADRANGLE: PERCY **LONGITUDE:** -89.549923 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 38.00013 **DATE COLLECTED:** 7 / 6 / 1937
SURFACE ELEVATION (FT.): 461.1 **LOGGED (FT.):** 63.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY 11-R **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
461.1	PLEISTOCENE		CLAY	19.0	0.0
442.1	CARBONDALE		LIMESTONE	3.0	19.0
439.1	CARBONDALE		SHALE	17.0	22.0
422.1	CARBONDALE		SANDY LIMESTONE	3.0	39.0
419.1	CARBONDALE		SANDY SHALE	8.0	42.0
411.1	CARBONDALE	BRERETON	LIMESTONE	4.0	50.0
407.1	CARBONDALE	ANNA	BLACK SHALE	3.0	54.0
404.1	CARBONDALE	HERRIN	COAL	5.3	57.0
398.8	CARBONDALE		UNDERCLAY	0.7	62.3

MAPID: 14590234000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 16 **QUARTERS/FOOTAGES:** 150' S line, 300' E line of NE SW
QUADRANGLE: PERCY **LONGITUDE:** -89.548808 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 38.002424 **DATE COLLECTED:** 1 / 19 / 1946
SURFACE ELEVATION (FT.): 460.0 **LOGGED (FT.):** 43.8 **LOG TYPE:** Drillers Log
SOURCE: OTHER P1 **WELL TYPE:** Coal Test
COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
430.0			ROCK	7.8	30.0
422.2	CARBONDALE	HERRIN	COAL	6.0	37.8

MAPID: 14590235000C **VERSION:** 1 **PROJECT:** AMAX DATA
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 16 **QUARTERS/FOOTAGES:** 50' N line, 25' W line of SE SW
QUADRANGLE: PERCY **LONGITUDE:** -89.552192 **GEOLOGIST:** LAWSON
CONFIDENTIAL: N **LATITUDE:** 38.001934 **DATE COLLECTED:** 1 / 22 / 1946
SURFACE ELEVATION (FT.): 440.0 **LOGGED (FT.):** 42.0 **LOG TYPE:** Drillers Log
SOURCE: OTHER P2 **WELL TYPE:** Coal Test
COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	29.0	0.0
411.0			ROCK	7.0	29.0
404.0	CARBONDALE	HERRIN	COAL	6.0	36.0

MAPID: 14590236000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 10' S line, 10' W line of SE SW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.552301 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.998379 DATE COLLECTED: 1 / 24 / 1946
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 50.5 LOG TYPE: Drillers Log
 SOURCE: OTHER P3 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	28.4	0.0
431.6			ROCK	16.6	28.4
415.0	CARBONDALE	HERRIN	COAL	5.5	45.0

MAPID: 14590237000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 660' S line, 660' W line of SE SW
 QUADRANGLE: PERCY LONGITUDE: -89.550007 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.000133 DATE COLLECTED: 1 / 29 / 1946
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 61.4 LOG TYPE: Drillers Log
 SOURCE: OTHER P4 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	44.7	0.0
415.3			ROCK	11.6	44.7
403.7	CARBONDALE	HERRIN	COAL	5.2	56.3

MAPID: 14590238000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 20' N line, 600' E line of NW SW
 QUADRANGLE: PERCY LONGITUDE: -89.554313 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.005776 DATE COLLECTED: 2 / 1 / 1946
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 45.4 LOG TYPE: Drillers Log
 SOURCE: OTHER P5 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
441.0			ROCK	20.8	19.0
420.2	CARBONDALE	HERRIN	COAL	5.5	39.8

MAPID: 14590239000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 300' S line, 300' W line of SW NE
 QUADRANGLE: PERCY LONGITUDE: -89.546662 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.006525 DATE COLLECTED: 2 / 4 / 1946
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 43.0 LOG TYPE: Drillers Log
 SOURCE: OTHER P6 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	27.3	0.0
432.7			ROCK	10.2	27.3
422.5	CARBONDALE	HERRIN	COAL	5.5	37.5

MAPID: 14590240000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 700' N line, 50' E line of SE SE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.53893 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.999902 DATE COLLECTED: 2 / 8 / 1946
 SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 41.3 LOG TYPE: Drillers Log
 SOURCE: OTHER P7 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0	PLEISTOCENE		UNCONSOLIDATED	25.0	0.0
455.0			ROCK	10.5	25.0
444.5	CARBONDALE	HERRIN	COAL	5.7	35.5

MAPID: 14590241000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 700' N line, 50' W line of SE SE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.543099 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.999978 DATE COLLECTED: 2 / 11 / 1946
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 25.2 LOG TYPE: Drillers Log
 SOURCE: OTHER P8 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	14.9	0.0
445.1			ROCK	5.0	14.9
440.1	CARBONDALE	HERRIN	COAL	5.3	19.9

MAPID: 14590244000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 10' S line, 40' E line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.538863 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.005584 DATE COLLECTED: 9 / 26 / 1946
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 54.2 LOG TYPE: Drillers Log
 SOURCE: OTHER P11 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	30.2	0.0
429.8			ROCK	18.5	30.2
411.3	CARBONDALE	HERRIN	COAL	5.5	48.7

MAPID: 14590246000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 100' S line, 40' W line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.543078 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.005908 DATE COLLECTED: 10 / 1 / 1946
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 27.3 LOG TYPE: Drillers Log
 SOURCE: OTHER P13 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	8.7	0.0
431.3			ROCK	12.6	8.7
418.7	CARBONDALE	HERRIN	COAL	6.0	21.3

MAPID: 14590247000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 10' N line, 100' W line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.542836 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.009326 DATE COLLECTED: 10 / 3 / 1946
 SURFACE ELEVATION (FT.): LOGGED (FT.): 46.2 LOG TYPE: Drillers Log
 SOURCE: OTHER P14 WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA AMAX-DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	18.2	0.0
-			ROCK	21.7	18.2
-	CARBONDALE	HERRIN	COAL	6.3	39.9

MAPID: 14590248000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 15' N line, 60' E line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.538911 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.009239 DATE COLLECTED: 10 / 11 / 1946
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 75.4 LOG TYPE: Drillers Log
 SOURCE: OTHER P15 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	41.1	0.0
418.9			ROCK	28.0	41.1
390.9	CARBONDALE	HERRIN	COAL	6.4	69.1

MAPID: 14590255000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 660' S line, 660' E line of SE NE
 QUADRANGLE: PERCY LONGITUDE: -89.541013 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.007416 DATE COLLECTED: 2 / 11 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 59.5 LOG TYPE: Drillers Log
 SOURCE: OTHER P22 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	20.0	0.0
440.0			ROCK	33.5	20.0
406.5	CARBONDALE	HERRIN	COAL	6.0	53.5

MAPID: 14590272000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 225' N line, 215' E line of SW SE
 QUADRANGLE: PERCY LONGITUDE: -89.54401 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 38.001306 DATE COLLECTED: 4 / 12 / 1950
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 44.7 LOG TYPE: Drillers Log
 SOURCE: OTHER P39 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	16.9	0.0
423.1	CARBONDALE		ROCK	1.9	16.9
421.2	CARBONDALE	HERRIN	COAL	5.8	18.8
415.4	CARBONDALE		ROCK	20.1	24.6

MAPID: 14590273000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 16 QUARTERS/FOOTAGES: 300' S line, 300' E line of SW SE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.54433 GEOLOGIST: LAWSON

CONFIDENTIAL: N LATITUDE: 37.999036 DATE COLLECTED: 4 / 14 / 1950

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 46.3 LOG TYPE: Drillers Log

SOURCE: OTHER P40 WELL TYPE: Coal Test

COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0	PLEISTOCENE		UNCONSOLIDATED	15.6	0.0	
424.4	CARBONDALE	HERRIN	COAL	5.8	15.6	TOP ERODED
418.6	CARBONDALE		ROCK	20.4	21.4	
398.2	CARBONDALE	SPRINGFIELD	COAL	3.8	41.8	
394.4	CARBONDALE		ROCK	0.7	45.6	

MAPID: 14500287000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 17 QUARTERS/FOOTAGES: 1320' N line, 0' E line

QUADRANGLE: PERCY LONGITUDE: -89.556643 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.009673 DATE COLLECTED: 6 / 0 / 1919

SURFACE ELEVATION (FT.): 483.0 LOGGED (FT.): 410.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL #38 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
483.0			UNCONSOLIDATED	17.5	0.0
465.5	MODESTO	PIASA	LIMESTONE	1.2	17.5
464.3			SHALE	11.3	18.7
453.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.7	30.0
451.3	CARBONDALE	BANKSTON FORK	CALCAREOUS SHALE	2.3	31.7
449.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	34.0
443.0	CARBONDALE		CLAYSTONE	5.0	40.0
438.0	CARBONDALE	CONANT	LIMESTONE	1.5	45.0
436.5	CARBONDALE		SHALE	6.5	46.5
430.0	CARBONDALE	JAMESTOWN	COAL WITH SHALE	0.5	53.0
429.5	CARBONDALE		SHALE	1.5	53.5
428.0	CARBONDALE		SHALE	4.0	55.0
424.0	CARBONDALE	BRERETON	LIMESTONE	6.0	59.0
418.0	CARBONDALE	ANNA	SHALE	1.5	65.0
416.5	CARBONDALE	HERRIN	COAL	6.2	66.5
410.3	CARBONDALE		CLAYSTONE	1.3	72.7
409.0	CARBONDALE		CLAYSTONE	1.5	74.0
407.5	CARBONDALE		LIMESTONE	6.5	75.5
401.0	CARBONDALE		LIMESTONE	3.0	82.0
398.0	CARBONDALE		CLAYSTONE	0.5	85.0
397.5	CARBONDALE	ST. DAVID	LIMESTONE	7.5	85.5
390.0	CARBONDALE	TURNER MINE	SHALE	1.5	93.0
388.5	CARBONDALE	SPRINGFIELD	COAL	4.5	94.5
384.0	CARBONDALE		CLAYSTONE	5.0	99.0
383.5	CARBONDALE		CLAYSTONE	10.0	99.5
373.5	CARBONDALE		SHALE	7.0	109.5
366.5	CARBONDALE		SANDSTONE	25.8	116.5
340.7	CARBONDALE	HANOVER	LIMESTONE	2.0	142.3
338.7	CARBONDALE	EXCELLO	SHALE	5.0	144.3
333.7	CARBONDALE	HOUCHIN CREEK	COAL	22.0	149.3
330.5	CARBONDALE		CLAYSTONE	1.0	152.5
329.5	CARBONDALE		SHALE	19.0	153.5
310.5	CARBONDALE		SANDSTONE	3.0	172.5
307.5	CARBONDALE		SHALE	23.0	175.5
284.5	CARBONDALE	OAK GROVE	LIMESTONE	2.0	198.5
282.5	CARBONDALE	MECCA QUARRY	SHALE	3.8	200.5
278.7	CARBONDALE	COLCHESTER	COAL	1.2	204.3
277.5	SPOON		SHALE	1.0	205.5
276.5	SPOON		CLAYSTONE	2.5	206.5

274.0	SPOON		LIMESTONE	8.0	209.0
266.0	SPOON		LIMESTONE	20.0	217.0
246.0	SPOON		SHALE	1.5	237.0
244.5	SPOON	DAVIS	COAL	1.7	238.5
242.8	SPOON		CLAYSTONE	0.3	240.2
242.5	SPOON		LIMESTONE	1.5	240.5
241.0	SPOON		CLAYSTONE	3.0	242.0
238.0	SPOON		CLAYSTONE & LIMESTONE	7.0	245.0
231.0	SPOON		CLAYSTONE	2.0	252.0
229.0	SPOON	MURPHYSBORO	COAL	2.0	254.0
227.0	SPOON		CLAYSTONE	12.0	256.0
215.0	SPOON		SHALE	12.0	268.0
203.0	SPOON		SANDSTONE	7.0	280.0
196.0	SPOON		SHALE	3.0	287.0
193.0	SPOON		SHALE	8.0	290.0
185.0			SANDSTONE	112.0	298.0

MAPID: 14500287000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 17 QUARTERS/FOOTAGES: 1320' N line, 0' E line

QUADRANGLE: PERCY LONGITUDE: -89.556643 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.009673 DATE COLLECTED:

SURFACE ELEVATION (FT.): 483.0 LOGGED (FT.): 73.3 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT	OVERBURDEN COMMENT
465.0	MODESTO	PIASA	LIMESTONE	1.3	18.0
463.7	CARBONDALE		MOTTLED SHALE	11.3	19.3
452.5	CARBONDALE	GALUM	LIMESTONE	1.8	30.5
450.7	CARBONDALE		LIMESTONE W/ SHALE	2.3	32.3
448.5	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	34.5
442.5	CARBONDALE	LAWSON	DARK GRAY SHALE	5.0	40.5
437.5	CARBONDALE	CONANT	LIMESTONE W/ SHALE	8.0	45.5
429.5	CARBONDALE	JAMESTOWN	BONE COAL	0.5	53.5
429.0	CARBONDALE		DARK GRAY SHALE	5.5	54.0
423.5	CARBONDALE	BRERETON	LIMESTONE	6.0	59.5
417.5	CARBONDALE	ANNA	BLACK SHALE	1.5	65.5
416.0	CARBONDALE	HERRIN	COAL	6.3	67.0

MAPID: 14528124000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 17 QUARTERS/FOOTAGES: 380' S line, 60' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.575233 GEOLOGIST: L. SMITH

CONFIDENTIAL: N LATITUDE: 37.99981 DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 37.0 LOG TYPE: Drillers Log

SOURCE: ARCH OF IL WELL TYPE: Observation Well

COMMENT: PERFORATED 30-37

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
490.0			CLAYSTONE	21.0	0.0
469.0			SHALE	9.0	21.0
460.0			LIMESTONE	7.0	30.0

MAPID: 14528694000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 17 QUARTERS/FOOTAGES: 1980' N line, 660' E line

QUADRANGLE: PERCY LONGITUDE: -89.558979 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.007902 DATE COLLECTED: 6 / 22 / 1937

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 88.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-7 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0	PLEISTOCENE		CLAY	19.0	0.0
461.0	CARBONDALE		LIMESTONE	9.0	19.0
452.0	CARBONDALE		BLUE SHALE	1.0	28.0
451.0	CARBONDALE		LIMESTONE	1.0	29.0
450.0	CARBONDALE		BLUE SHALE	12.0	30.0
438.0	CARBONDALE		LIMESTONE	3.0	42.0
435.0	CARBONDALE		SANDY SHALE	5.0	45.0
430.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	50.0
425.0	CARBONDALE		BLUE SHALE	5.0	55.0
420.0	CARBONDALE	CONANT	LIMESTONE	2.0	60.0
418.0	CARBONDALE		BLUE SHALE	5.0	62.0
413.0	CARBONDALE	JAMESTOWN	COAL	0.1	67.0
412.9	CARBONDALE		BLACK SHALE	1.9	67.1
411.0	CARBONDALE	BRERETON	LIMESTONE	4.0	69.0
407.0	CARBONDALE		BLACK SHALE	2.0	73.0
405.0	CARBONDALE		BLUE SHALE	4.0	75.0
401.0	CARBONDALE		GRAY SHALE	2.0	79.0
399.0	CARBONDALE	HERRIN	COAL	6.0	81.0
393.0	CARBONDALE		UNDERCLAY	1.0	87.0

MAPID: 14528695000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 17 QUARTERS/FOOTAGES: 1980' S line, 660' E line

QUADRANGLE: PERCY LONGITUDE: -89.559056 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.003938 DATE COLLECTED: 6 / 26 / 1937

SURFACE ELEVATION (FT.): 469.9 LOGGED (FT.): 69.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-8 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
469.9	PLEISTOCENE		CLAY	22.0	0.0
447.9	CARBONDALE		GRAY SHALE	8.0	22.0
439.9	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	30.0
433.9	CARBONDALE		BLUE SHALE	5.0	36.0
428.9	CARBONDALE	CONANT	LIMESTONE	4.0	41.0
424.9	CARBONDALE	JAMESTOWN	BLACK SHALE	2.0	45.0
422.9	CARBONDALE		BLUE SHALE	5.0	47.0
417.9	CARBONDALE	BRERETON	LIMESTONE	8.0	52.0
409.9	CARBONDALE	ANNA	BLACK SHALE	2.0	60.0
407.9	CARBONDALE	HERRIN	COAL	5.5	62.0
402.4	CARBONDALE		UNDERCLAY	1.5	67.5

MAPID: 14528696000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 17 QUARTERS/FOOTAGES: 1980' S line, 1980' E line

QUADRANGLE: PERCY LONGITUDE: -89.563662 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 38.004021 DATE COLLECTED: 6 / 30 / 1937

SURFACE ELEVATION (FT.): LOGGED (FT.): 79.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-9 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	21.0	0.0
-	CARBONDALE		SHALE	5.0	21.0
-	CARBONDALE		SHALE	13.0	26.0
-	CARBONDALE		LIMESTONE	5.0	39.0
-	CARBONDALE		BLUE SHALE	5.0	44.0
-	CARBONDALE		LIMESTONE	3.0	49.0
-	CARBONDALE		BLUE SHALE	8.0	52.0
-	CARBONDALE		BLACK SHALE	1.0	60.0
-	CARBONDALE	BRERETON	LIMESTONE	7.0	61.0
-	CARBONDALE	ANNA	BLACK SHALE	3.0	68.0
-	CARBONDALE	HERRIN	COAL	7.0	71.0
-	CARBONDALE		UNDERCLAY	1.0	78.0

MAPID: 14528697000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 17 QUARTERS/FOOTAGES: 1980' S line, 1' E line
 QUADRANGLE: PERCY LONGITUDE: -89.55676 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 38.003898 DATE COLLECTED: 0 / 0 / 1937
 SURFACE ELEVATION (FT.): 473.8 LOGGED (FT.): 56.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 10-R WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
473.8	PLEISTOCENE		CLAY	21.0	0.0
452.8	CARBONDALE		LIMESTONE	5.0	21.0
447.8	CARBONDALE		BLUE SHALE	5.0	26.0
442.8	CARBONDALE		LIMESTONE	3.0	31.0
439.8	CARBONDALE		BLUE SHALE	5.5	34.0
434.3	CARBONDALE	BRERETON	LIMESTONE	4.5	39.5
429.8	CARBONDALE	ANNA	BLACK SHALE	3.0	44.0
426.8	CARBONDALE	ENERGY	GRAY SHALE	2.5	47.0
424.3	CARBONDALE	HERRIN	COAL	6.0	49.5
418.3	CARBONDALE		UNDERCLAY	0.5	55.5

MAPID: 14590211000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 17 QUARTERS/FOOTAGES: 380' S line, 60' W line of SW
 QUADRANGLE: PERCY LONGITUDE: -89.575233 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 37.99981 DATE COLLECTED: 5 / 5 / 1978
 SURFACE ELEVATION (FT.): 490.0 LOGGED (FT.): 37.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT: WATER SURFACE ELEV. 461.4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
490.0			CLAYSTONE	21.0	0.0
469.0	CARBONDALE		SHALE	0.0	21.0
460.0	CARBONDALE		LIMESTONE	0.0	30.0

MAPID: 14500288000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 0' N line, 0' E line of NW NW NW

QUADRANGLE: PERCY LONGITUDE: -89.591631 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.01396 DATE COLLECTED:

SURFACE ELEVATION (FT.): 491.1 LOGGED (FT.): 185.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #29 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.1	MODESTO		SHALE	19.0	40.0
432.1	MODESTO		CLAYSTONE	10.0	59.0
422.1	MODESTO		SHALE	2.5	69.0
419.6	MODESTO		CLAYSTONE	1.5	71.5
418.1	MODESTO		LIMESTONE	5.0	73.0
413.1	MODESTO		CLAYSTONE & LIMESTONE	1.0	78.0
412.1	MODESTO	PIASA	LIMESTONE	8.0	79.0
404.1	MODESTO		SHALE	4.0	87.0
400.1	CARBONDALE		CLAYSTONE	8.0	91.0
392.1	CARBONDALE	GALUM	LIMESTONE	4.0	99.0
388.1	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	103.0
382.6	CARBONDALE	BANKSTON FORK	LIMESTONE	6.5	108.5
376.1	CARBONDALE		SHALE	4.0	115.0
372.1	CARBONDALE	CONANT	LIMESTONE	1.5	119.0
370.6	CARBONDALE		SHALE	5.5	120.5
365.1	CARBONDALE	JAMESTOWN	COAL WITH SHALE	0.5	126.0
364.6	CARBONDALE		SHALE	1.5	126.5
363.1	CARBONDALE	BRERETON	LIMESTONE	3.0	128.0
360.1	CARBONDALE	ANNA	SHALE	3.0	131.0
357.1	CARBONDALE	ENERGY	SHALE	3.4	134.0
353.7	CARBONDALE	HERRIN	COAL	6.6	137.4
347.1	CARBONDALE		CLAYSTONE	8.0	144.0
339.1	CARBONDALE		LIMESTONE	2.0	152.0
337.1	CARBONDALE		LIMESTONE	7.0	154.0
330.1	CARBONDALE		SHALE	2.5	161.0
327.6	CARBONDALE	ST. DAVID	LIMESTONE	6.5	163.5
321.1	CARBONDALE	TURNER MINE	SHALE	5.0	170.0
316.1	CARBONDALE	SPRINGFIELD	COAL	4.0	175.0
312.1	CARBONDALE		CLAYSTONE	6.0	179.0

MAPID: 14500289000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 0' N line, 0' E line of NW NE NE

QUADRANGLE: PERCY LONGITUDE: -89.577467 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.013752 DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.4 LOGGED (FT.): 135.7 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #31 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
495.4			UNCONSOLIDATED	38.0	0.0
457.4	MODESTO		SHALE	6.0	38.0
451.4	MODESTO		LIMESTONE	0.3	44.0
451.1	MODESTO		SHALE	6.7	44.3
444.4	MODESTO		SHALE	15.0	51.0
429.4	MODESTO	DEGRAFF	COAL WITH SHALE	0.5	66.0
428.9	MODESTO		CLAYSTONE	2.5	66.5
426.4	MODESTO	PIASA	LIMESTONE	10.0	69.0
416.4	MODESTO		SHALE	6.5	79.0
409.9	CARBONDALE		CLAYSTONE & LIMESTONE	6.5	85.5
403.4	CARBONDALE	GALUM	LIMESTONE	3.0	92.0
400.4	CARBONDALE		CLAYSTONE & LIMESTONE	6.0	95.0
394.4	CARBONDALE	BANKSTON FORK	LIMESTONE	5.5	101.0
388.9	CARBONDALE	BANKSTON FORK	SHALE	3.5	106.5
385.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	110.0
381.4	CARBONDALE		LIMESTONE	1.5	114.0
379.9	CARBONDALE	CONANT	LIMESTONE	1.5	115.5
378.4	CARBONDALE	JAMESTOWN	COAL	0.3	117.0
378.1	CARBONDALE		SHALE	4.0	117.3
374.1	CARBONDALE	BRERETON	LIMESTONE	5.7	121.3
368.4	CARBONDALE	ANNA	SHALE	2.5	127.0
365.9	CARBONDALE	HERRIN	COAL	6.2	129.5

MAPID: 14500290000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 0' N line, 0' E line of NW NW

QUADRANGLE: PERCY LONGITUDE: -89.589272 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.013926 DATE COLLECTED:

SURFACE ELEVATION (FT.): 494.5 LOGGED (FT.): 163.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #32 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
467.5	MODESTO		SHALE	7.0	27.0
460.5	MODESTO		SHALE	0.7	34.0
459.8	MODESTO		CLAYSTONE	4.3	34.7
455.5	MODESTO		CLAYSTONE & LIMESTONE	3.0	39.0
452.5	MODESTO		SHALE	7.0	42.0
445.5	MODESTO		CLAYSTONE & LIMESTONE	9.0	49.0
436.5	MODESTO		SHALE	6.0	58.0
430.5	MODESTO	DEGRAFF	COAL WITH SHALE	0.5	64.0
430.0	MODESTO		CLAYSTONE	2.5	64.5
427.5	MODESTO	PIASA	LIMESTONE	11.5	67.0
416.0	MODESTO		SHALE	8.0	78.5
408.0	CARBONDALE		CLAYSTONE	5.5	86.5
402.5	CARBONDALE	GALUM	LIMESTONE	2.0	92.0
400.5	CARBONDALE		CLAYSTONE & LIMESTONE	6.0	94.0
394.5	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	100.0
389.5	CARBONDALE		SHALE	4.0	105.0
385.5	CARBONDALE	CONANT	LIMESTONE	1.5	109.0
384.0	CARBONDALE		SHALE	5.0	110.5
379.0	CARBONDALE		LIMESTONE W/ SHALE	5.0	115.5
378.5	CARBONDALE	JAMESTOWN	COAL	0.5	116.0
378.0	CARBONDALE		SHALE	4.0	116.5
374.0	CARBONDALE	BRERETON	LIMESTONE	6.5	120.5
367.5	CARBONDALE	ANNA	SHALE	3.0	127.0
364.5			COAL	6.3	130.0
358.2	CARBONDALE		CLAYSTONE	2.7	136.3
355.5	CARBONDALE		LIMESTONE	5.0	139.0
350.5	CARBONDALE		SHALE	10.0	144.0
340.5	CARBONDALE	TURNER MINE	SHALE	2.5	154.0
338.0	CARBONDALE	SPRINGFIELD	COAL	4.5	156.5
333.5	CARBONDALE		CLAYSTONE	2.0	161.0

MAPID: 14500291000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 330' N line, 2310' E line

QUADRANGLE: PERCY LONGITUDE: -89.583185 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.012925 DATE COLLECTED: 5 / 18 / 1921

SURFACE ELEVATION (FT.): 490.3 LOGGED (FT.): 160.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
490.3			UNCONSOLIDATED	28.0	0.0
462.3	MODESTO		LIMESTONE	0.7	28.0
461.6	MODESTO		SHALE	2.3	28.7
459.3	MODESTO		SHALE	32.0	31.0
427.3	MODESTO		COAL WITH SHALE	0.7	63.0
426.6	MODESTO		CLAYSTONE	1.3	63.7
425.3	MODESTO	PIASA	LIMESTONE	9.0	65.0
416.3	MODESTO		SHALE	8.0	74.0
408.3	CARBONDALE		CLAYSTONE	7.0	82.0
401.3	CARBONDALE	GALUM	LIMESTONE	2.7	89.0
398.6	CARBONDALE		CLAYSTONE & LIMESTONE	6.3	91.7
392.3	CARBONDALE	BANKSTON FORK	LIMESTONE	5.3	98.0
387.0	CARBONDALE		SHALE	4.0	103.3
383.0	CARBONDALE	CONANT	LIMESTONE	2.7	107.3
380.3	CARBONDALE		SHALE	5.0	110.0
375.3	CARBONDALE	JAMESTOWN	COAL WITH SHALE	0.5	115.0
374.8	CARBONDALE		SHALE	2.5	115.5
372.3	CARBONDALE	BRERETON	LIMESTONE	5.3	118.0
367.0	CARBONDALE	ANNA	SHALE	2.7	123.3
364.3	CARBONDALE	HERRIN	COAL	6.3	126.0
358.0	CARBONDALE		CLAYSTONE	2.7	132.3
355.3	CARBONDALE		LIMESTONE	15.0	135.0
340.3	CARBONDALE	ST. DAVID	LIMESTONE	2.0	150.0
338.3	CARBONDALE	TURNER MINE	SHALE	2.0	152.0
336.3	CARBONDALE	SPRINGFIELD	COAL	4.5	154.0
331.8	CARBONDALE		CLAYSTONE	1.5	158.5

MAPID: 14500291000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 330' N line, 2310' E line

QUADRANGLE: PERCY LONGITUDE: -89.583185

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 38.012925

DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.0

LOGGED (FT.): 132.3

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.0	MODESTO	PIASA	LIMESTONE	9.0	65.0
416.0	CARBONDALE		CLAYSTONE & SHALE	15.0	74.0
401.0	CARBONDALE	GALUM	LIMESTONE	2.8	89.0
398.2	CARBONDALE		LIMESTONE W/ SHALE	6.3	91.8
391.9	CARBONDALE	BANKSTON FORK	LIMESTONE	5.3	98.1
386.7	CARBONDALE	LAWSON	DARK GRAY SHALE	4.0	103.3
382.7	CARBONDALE	CONANT	LIMESTONE W/ SHALE	8.0	107.3
374.7	CARBONDALE	JAMESTOWN	BONE COAL	0.5	115.3
374.2	CARBONDALE		DARK GRAY SHALE	2.5	115.8
371.7	CARBONDALE	BRERETON	LIMESTONE	5.3	118.3
366.5	CARBONDALE	ANNA	BLACK SHALE	2.8	123.5
364.0	CARBONDALE	HERRIN	COAL	6.3	126.0

MAPID: 14500292000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 0' N line, 0' E line of NW NW NE

QUADRANGLE: PERCY LONGITUDE: -89.582188 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.013821 DATE COLLECTED:

SURFACE ELEVATION (FT.): 489.3 LOGGED (FT.): 165.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #34 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
489.3			UNCONSOLIDATED	38.0	0.0
451.3	MODESTO		LIMESTONE	0.7	38.0
450.6	MODESTO		CLAYSTONE	3.3	38.7
447.3	MODESTO		SHALE	10.0	42.0
437.3	MODESTO		SHALE	8.0	52.0
429.3	MODESTO		SHALE	2.0	60.0
427.3	MODESTO	DEGRAFF	COAL	0.3	62.0
427.0	MODESTO		CLAYSTONE	1.7	62.3
425.3	MODESTO		CLAYSTONE & LIMESTONE	2.0	64.0
423.3	MODESTO		CLAYSTONE & LIMESTONE	2.0	66.0
421.3	MODESTO	PIASA	LIMESTONE	2.0	68.0
419.3	MODESTO	PIASA	LIMESTONE	5.0	70.0
414.3	MODESTO		SHALE	7.0	75.0
407.3	CARBONDALE		CLAYSTONE	2.0	82.0
405.3	CARBONDALE		CLAYSTONE	4.0	84.0
401.3	CARBONDALE	GALUM	LIMESTONE	3.5	88.0
397.8	CARBONDALE		CLAYSTONE	6.5	91.5
391.3	CARBONDALE	BANKSTON FORK	LIMESTONE	5.7	98.0
385.6	CARBONDALE		CLAYSTONE	1.3	103.7
384.3	CARBONDALE		SHALE	4.0	105.0
380.3	CARBONDALE		SHALE	4.0	109.0
376.3	CARBONDALE	JAMESTOWN	SHALE	0.5	113.0
375.8	CARBONDALE		LIMESTONE	0.8	113.5
375.0	CARBONDALE		SHALE	4.7	114.3
370.3	CARBONDALE	BRERETON	LIMESTONE	5.0	119.0
365.3	CARBONDALE	ANNA	SHALE	3.7	124.0
355.6	CARBONDALE	HERRIN	COAL	5.3	133.7
350.3	CARBONDALE		CLAYSTONE	5.0	139.0
345.3	CARBONDALE		LIMESTONE	1.0	144.0
344.3	CARBONDALE		CLAYSTONE	7.0	145.0
337.3	CARBONDALE		SHALE	1.0	152.0
336.3	CARBONDALE	ST. DAVID	LIMESTONE	2.0	153.0
334.3	CARBONDALE		SHALE	2.0	155.0
332.3	CARBONDALE	SPRINGFIELD	COAL	4.0	157.0
328.3	CARBONDALE		SANDSTONE	1.0	161.0
327.3	CARBONDALE		CLAYSTONE	3.0	162.0

MAPID: 14500293000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 0' N line, 0' E line of NW NW NE

QUADRANGLE: PERCY LONGITUDE: -89.582188 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.013821 DATE COLLECTED:

SURFACE ELEVATION (FT.): 489.0 LOGGED (FT.): 164.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #35 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
489.0			UNCONSOLIDATED	39.0	0.0
450.0	MODESTO		SHALE	2.0	39.0
448.0	MODESTO		SHALE	8.0	41.0
440.0	MODESTO		SHALE	13.0	49.0
427.0	MODESTO	DEGRAFF	COAL	0.7	62.0
426.3	MODESTO		CLAYSTONE	1.3	62.7
425.0			LIMESTONE	10.5	64.0
414.5	CARBONDALE		SHALE	7.5	74.5
407.0	CARBONDALE		CLAYSTONE	6.0	82.0
401.0	CARBONDALE	GALUM	LIMESTONE	3.0	88.0
398.0	CARBONDALE		CLAYSTONE	7.0	91.0
391.0	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	98.0
385.0	CARBONDALE		SHALE	5.0	104.0
380.0	CARBONDALE	CONANT	LIMESTONE	2.0	109.0
378.0	CARBONDALE		SHALE	3.0	111.0
375.0	CARBONDALE	JAMESTOWN	SHALE	0.5	114.0
374.5	CARBONDALE		SHALE	6.5	114.5
368.0	CARBONDALE	BRERETON	LIMESTONE	4.5	121.0
363.5	CARBONDALE	ANNA	SHALE	2.5	125.5
361.0	CARBONDALE	HERRIN	COAL	6.0	128.0
355.0	CARBONDALE		CLAYSTONE	5.0	134.0
350.0	CARBONDALE		LIMESTONE	7.0	139.0
343.0	CARBONDALE		CLAYSTONE	1.0	146.0
342.0	CARBONDALE	ST. DAVID	LIMESTONE	7.0	147.0
335.0	CARBONDALE	ST. DAVID	LIMESTONE	1.3	154.0
333.7	CARBONDALE		SHALE	1.0	155.3
332.7	CARBONDALE		SHALE	1.4	156.3
331.3	CARBONDALE	SPRINGFIELD	COAL	4.3	157.7
327.0	CARBONDALE		CLAYSTONE	0.0	162.0

MAPID: 14500294000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 372' S line, 566' E line of NW NW NE

QUADRANGLE: PERCY LONGITUDE: -89.58418 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.013021 DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.4 LOGGED (FT.): 163.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #36 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
490.4			UNCONSOLIDATED	39.0	0.0
451.4	MODESTO		SHALE	21.0	39.0
430.4	MODESTO		SHALE	1.0	60.0
429.4	MODESTO	DEGRAFF	COAL	0.7	61.0
428.7	MODESTO		CLAYSTONE	1.3	61.7
427.4	MODESTO	PIASA	LIMESTONE	9.5	63.0
417.9	MODESTO		SHALE	7.5	72.5
410.4	CARBONDALE		CLAYSTONE	7.0	80.0
403.4	CARBONDALE	GALUM	LIMESTONE	3.0	87.0
400.4	CARBONDALE		CLAYSTONE	5.0	90.0
395.4	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	95.0
388.4	CARBONDALE		CLAYSTONE	0.7	102.0
387.7	CARBONDALE		SHALE	4.3	102.7
383.4	CARBONDALE	CONANT	LIMESTONE	2.5	107.0
380.9	CARBONDALE		SHALE	3.0	109.5
378.4	CARBONDALE		SHALE	0.5	112.0
377.9	CARBONDALE		SHALE	8.5	112.5
369.4	CARBONDALE	BRERETON	LIMESTONE	6.0	121.0
363.4	CARBONDALE	ANNA	SHALE	1.0	127.0
362.4	CARBONDALE	HERRIN	COAL	6.7	128.0
355.7	CARBONDALE		CLAYSTONE	3.3	134.7
352.4	CARBONDALE		LIMESTONE	5.0	138.0
347.4	CARBONDALE		CLAYSTONE	1.0	143.0
346.4	CARBONDALE	ST. DAVID	LIMESTONE	8.0	144.0
338.4	CARBONDALE	ST. DAVID	LIMESTONE	1.5	152.0
336.9	CARBONDALE	TURNER MINE	SHALE	2.5	153.5
334.4	CARBONDALE	SPRINGFIELD	COAL	4.5	156.0
329.9	CARBONDALE		CLAYSTONE	2.5	160.5

MAPID: 14503148000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 2050' S line, 2300' E line of SE

QUADRANGLE: PERCY LONGITUDE: -89.58335 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 38.004627 DATE COLLECTED: 11 / 16 / 1973

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 515.0 LOG TYPE: Drillers Log

SOURCE: FRANK HEPP, JR. WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.0			CARBONACEOUS SHALE	5.0	38.0
437.0			LIMESTONE	9.0	43.0
428.0			SHALE	14.0	52.0
414.0			LIMESTONE	2.0	66.0
412.0			CALCAREOUS SHALE	36.0	68.0
376.0	CARBONDALE	HERRIN	COAL	5.0	104.0
371.0			CARBONACEOUS LIMESTONE	10.0	109.0
351.0			SHALE	24.0	129.0
327.0			SHALE	45.0	153.0
282.0			SHALE & SANDSTONE	46.0	198.0
236.0			LIMESTONE	3.0	244.0
233.0			SHALE & SANDSTONE	148.0	247.0
85.0			SHALE & SANDSTONE	100.0	395.0
-15.0			SANDSTONE	20.0	495.0

MAPID: 14528119000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 2000' S line, 2180' W line of SW
 QUADRANGLE: PERCY LONGITUDE: -89.586497 GEOLOGIST: KRUMM
 CONFIDENTIAL: N LATITUDE: 38.004572 DATE COLLECTED: 12 / 1 / 1983
 SURFACE ELEVATION (FT.): 476.7 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT: REF. SW CORNER

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
476.7			CLAYSTONE	37.0	0.0	
439.7	MODESTO		SHALE	6.0	37.0	
433.7	MODESTO	PIASA	LIMESTONE	9.0	43.0	
422.7			SHALE	12.0	54.0	
410.7	CARBONDALE		LIMESTONE W/ SHALE	9.0	66.0	
401.7	CARBONDALE		CALCAREOUS SHALE	28.0	75.0	
373.7	CARBONDALE		SHALE	3.0	103.0	
370.7	CARBONDALE	HERRIN	COAL/CLAYSTONE	8.0	106.0	
362.7	CARBONDALE		LIMESTONE	6.0	114.0	
356.7	CARBONDALE		SANDSTONE/SHALE	5.0	120.0	
351.7	CARBONDALE		UNCLASSIFIED	5.0	125.0	
346.7	CARBONDALE		SHALE	4.0	130.0	
342.7	CARBONDALE	SPRINGFIELD	COAL	4.0	134.0	

MAPID: 14590005000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 20' S line, 200' W line of NE NE SW
 QUADRANGLE: PERCY LONGITUDE: -89.586365 GEOLOGIST: NORTH
 CONFIDENTIAL: N LATITUDE: 38.004666 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL CW7 WELL TYPE: Water Well
 COMMENT: PERMIT 188; MONITORING WELL

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
480.0	PLEISTOCENE		CLAY	37.0	0.0	
443.0	CARBONDALE		GRAY SHALE	6.0	37.0	
437.0	CARBONDALE	BANKSTON FORK	LIMESTONE	11.0	43.0	
426.0	CARBONDALE		DARK SHALE	12.0	54.0	
414.0	CARBONDALE	BRERETON	LIMESTONE & SHALE	9.0	66.0	
405.0	CARBONDALE	BRERETON	DARK SHALE & LIMESTONE	28.0	75.0	
377.0	CARBONDALE	ANNA	BLACK SHALE	3.0	103.0	
374.0	CARBONDALE	HERRIN	COAL/CLAYSTONE	8.0	106.0	APPROXIMATE THICKNESS
366.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	6.0	114.0	
360.0	CARBONDALE		SANDSTONE/SHALE	10.0	120.0	
350.0	CARBONDALE	TURNER MINE	DARK SHALE	4.0	130.0	
346.0	CARBONDALE	SPRINGFIELD	COAL	4.0	134.0	APPROXIMATE THICKNESS

MAPID: 14590069000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.575193

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.001521

DATE COLLECTED: 7 / 18 / 1961

SURFACE ELEVATION (FT.): 490.3 LOGGED (FT.): 123.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY WE24K

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
490.3	PLEISTOCENE		CLAY	23.0	0.0	
467.3	MODESTO		SHALE	2.0	23.0	
465.3	MODESTO	DEGRAFF	SMUT	0.9	25.0	
464.4	MODESTO		SHALE	2.1	25.9	
462.3	MODESTO	PIASA	LIMESTONE	11.0	28.0	GRAY
451.3	MODESTO		CALCAREOUS SHALE	8.0	39.0	
443.3			GRAY SHALE	4.5	47.0	
438.8	CARBONDALE	GALUM	LIMESTONE	2.5	51.5	GRAY
436.3	CARBONDALE		CALCAREOUS SHALE	6.5	54.0	
429.8	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	60.5	GRAY
425.3	CARBONDALE		GRAY SHALE	5.5	65.0	
419.8	CARBONDALE		CALCAREOUS SHALE	1.5	70.5	
418.3	CARBONDALE		DARK SHALE	4.3	72.0	
414.0	CARBONDALE	JAMESTOWN	COAL	0.4	76.3	
413.5	CARBONDALE		SHALE WITH LIMESTONE	7.3	76.8	
406.3	CARBONDALE	BRERETON	LIMESTONE	4.7	84.0	DARK
401.6	CARBONDALE	ANNA	BLACK SHALE	1.3	88.7	
400.3	CARBONDALE	ANNA	BLACK SHALE	1.3	90.0	
399.0	CARBONDALE	HERRIN	COAL	5.9	91.3	
393.0	CARBONDALE		UNDERCLAY	2.3	97.3	
390.8	CARBONDALE		CALCAREOUS SHALE	2.5	99.5	
388.3	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.3	102.0	GRAY
386.0	CARBONDALE		CALCAREOUS SHALE	3.2	104.3	
382.8	CARBONDALE	ST. DAVID	LIMESTONE	6.3	107.5	GRAY
376.5	CARBONDALE	TURNER MINE	DARK SHALE	3.1	113.8	
373.4	CARBONDALE	SPRINGFIELD	COAL	5.1	116.9	
368.3	CARBONDALE		UNDERCLAY	1.0	122.0	

MAPID: 14590074000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.587201

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.001168

DATE COLLECTED: 8 / 7 / 1985

SURFACE ELEVATION (FT.): 475.7 LOGGED (FT.): 126.3

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 8346

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
475.7	PLEISTOCENE		UNCONSOLIDATED	17.2	0.0	
458.5	PLEISTOCENE		SANDY CLAY	19.9	17.2	
438.6	PLEISTOCENE		UNCONSOLIDATED	9.4	37.1	
429.2	PLEISTOCENE		CLAY	2.2	46.5	GRAY
427.0	CARBONDALE		GRAY SHALE	7.6	48.7	
419.4	CARBONDALE	GALUM	LIMESTONE	1.7	56.3	GRAY
417.7	CARBONDALE		CALCAREOUS SHALE	7.4	58.0	
410.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	65.4	GRAY
405.5	CARBONDALE		DARK GRAY SHALE	3.8	70.2	
401.7	CARBONDALE	CONANT	LIMESTONE	2.3	74.0	DARK GRAY
399.4	CARBONDALE		DARK GRAY SHALE	5.7	76.3	
393.7	CARBONDALE	BRERETON	LIMESTONE	3.3	82.0	DARK GRAY
390.4	CARBONDALE	ANNA	BLACK SHALE	4.5	85.3	
385.9	CARBONDALE	ENERGY	GRAY SHALE	3.0	89.8	
382.9	CARBONDALE	HERRIN	COAL	6.0	92.8	
376.9	CARBONDALE		UNDERCLAY	4.7	98.8	
372.2	CARBONDALE		CALCAREOUS SANDSTONE	5.8	103.5	GRAY
366.4	CARBONDALE		SANDY SHALE	3.7	109.3	
362.7	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.0	113.0	GRAY
360.7	CARBONDALE		CALCAREOUS SHALE	2.2	115.0	
358.5	CARBONDALE	ST. DAVID	LIMESTONE	1.3	117.2	DARK GRAY
357.2	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	118.5	
356.2	CARBONDALE	SPRINGFIELD	COAL	5.1	119.5	
351.1	CARBONDALE		UNDERCLAY	1.8	124.6	

MAPID: 14590075000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.591412

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.00083

DATE COLLECTED: 8 / 6 / 1985

SURFACE ELEVATION (FT.): 470.7 LOGGED (FT.): 116.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 8345

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
470.7	PLEISTOCENE		UNCONSOLIDATED	12.5	0.0	
458.2	PLEISTOCENE		SANDY CLAY	14.5	12.5	
443.7	PLEISTOCENE		SAND & GRAVEL	4.5	27.0	
439.2	CARBONDALE		SHALE & SANDSTONE	20.0	31.5	WEATHERED
419.2	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	51.5	GRAY
413.2	CARBONDALE		DARK GRAY SHALE	4.8	57.5	
408.4	CARBONDALE	CONANT	LIMESTONE	1.7	62.3	DARK GRAY
406.7	CARBONDALE		DARK GRAY SHALE	12.0	64.0	
394.7	CARBONDALE	BRERETON	LIMESTONE	3.0	76.0	DARK GRAY
391.7	CARBONDALE	ANNA	BLACK SHALE	1.6	79.0	
390.1	CARBONDALE	ENERGY	GRAY SHALE	1.9	80.6	
388.2	CARBONDALE	HERRIN	COAL	6.2	82.5	
382.0	CARBONDALE		UNDERCLAY	1.3	88.7	
380.7	CARBONDALE		CALCAREOUS SANDSTONE	6.5	90.0	GRAY
374.2	CARBONDALE		SANDY SHALE	3.8	96.5	
370.4	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.0	100.3	GRAY
366.4	CARBONDALE		CALCAREOUS SHALE	1.3	104.3	
365.1	CARBONDALE	ST. DAVID	LIMESTONE	0.8	105.6	DARK GRAY
364.3	CARBONDALE	TURNER MINE	BLACK SHALE	2.1	106.4	
362.2	CARBONDALE	SPRINGFIELD	COAL	5.1	108.5	
357.2	CARBONDALE		UNDERCLAY	2.5	113.5	

MAPID: 14590076000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.581865

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.008324

DATE COLLECTED: 7 / 12 / 1985

SURFACE ELEVATION (FT.): 486.7 LOGGED (FT.): 149.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 8332

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
486.7	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0	
468.7	PLEISTOCENE		UNCONSOLIDATED	15.5	18.0	
453.2	MODESTO		SHALE	4.7	33.5	
448.5	MODESTO		GRAY SHALE	15.1	38.2	
433.4	MODESTO	PIASA	LIMESTONE	12.4	53.3	GRAY
421.0			GRAY SHALE	11.7	65.7	
409.3	CARBONDALE	GALUM	LIMESTONE	2.4	77.4	GRAY
406.9	CARBONDALE		GRAY SHALE	6.3	79.8	
400.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	86.1	GRAY
395.8	CARBONDALE		DARK GRAY SHALE	4.8	90.9	
391.0	CARBONDALE	CONANT	LIMESTONE	1.5	95.7	DARK GRAY
389.5	CARBONDALE		DARK GRAY SHALE	9.4	97.2	
380.1	CARBONDALE	BRERETON	LIMESTONE	5.8	106.6	DARK GRAY
374.3	CARBONDALE	ANNA	BLACK SHALE	3.3	112.4	
371.0	CARBONDALE	HERRIN	COAL	5.8	115.7	
365.2	CARBONDALE		UNDERCLAY	2.7	121.5	
362.5	CARBONDALE		CALCAREOUS SANDSTONE	6.0	124.2	GRAY
356.5	CARBONDALE		SANDY SHALE	4.2	130.2	
352.3	CARBONDALE	HIGGINSVILLE	LIMESTONE	2.1	134.4	GRAY
350.2	CARBONDALE		CALCAREOUS SHALE	1.3	136.5	
348.9	CARBONDALE	ST. DAVID	LIMESTONE	3.4	137.8	DARK GRAY
345.5	CARBONDALE	TURNER MINE	DARK GRAY SHALE	1.6	141.2	
343.9	CARBONDALE	SPRINGFIELD	COAL	4.5	142.8	
339.4	CARBONDALE		UNDERCLAY	1.8	147.3	

MAPID: 14590077000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.582352 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.000956 DATE COLLECTED: 7 / 10 / 1985

SURFACE ELEVATION (FT.): 481.4 LOGGED (FT.): 131.5 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 8330 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
481.4	PLEISTOCENE		UNCONSOLIDATED	18.0	0.0	
463.4	PLEISTOCENE		UNCONSOLIDATED	20.3	18.0	
443.1	MODESTO	PIASA	LIMESTONE	9.1	38.3	GRAY
434.0	MODESTO		CALCAREOUS SHALE	2.7	47.4	
431.3			GRAY SHALE	7.8	50.1	
423.5	CARBONDALE	GALUM	LIMESTONE	2.1	57.9	GRAY
421.4	CARBONDALE		CALCAREOUS SHALE	6.7	60.0	
414.7	CARBONDALE	BANKSTON FORK	LIMESTONE	5.3	66.7	GRAY
409.4	CARBONDALE		DARK GRAY SHALE	4.8	72.0	
404.6	CARBONDALE	CONANT	LIMESTONE	2.0	76.8	DARK GRAY
402.6	CARBONDALE		DARK GRAY SHALE	14.6	78.8	
388.0	CARBONDALE	BRERETON	LIMESTONE	4.0	93.4	DARK GRAY
384.0	CARBONDALE	ANNA	DARK GRAY SHALE	1.6	97.4	
382.4	CARBONDALE	HERRIN	COAL	5.8	99.0	
376.6	CARBONDALE		UNDERCLAY	3.0	104.8	
373.6	CARBONDALE		CALCAREOUS SANDSTONE	5.4	107.8	GRAY
368.2	CARBONDALE		SANDY SHALE	3.2	113.2	
365.0	CARBONDALE	HIGGINSVILLE	LIMESTONE	4.7	116.4	GRAY
360.3	CARBONDALE		CALCAREOUS SHALE	1.1	121.1	
359.2	CARBONDALE	ST. DAVID	LIMESTONE	1.3	122.2	DARK GRAY
357.9	CARBONDALE	TURNER MINE	BLACK SHALE	1.3	123.5	
356.7	CARBONDALE	SPRINGFIELD	COAL	4.5	124.7	
352.2	CARBONDALE		UNDERCLAY	2.4	129.2	

MAPID: 14590078000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.58216 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.004313 DATE COLLECTED: 7 / 9 / 1985

SURFACE ELEVATION (FT.): 486.4 LOGGED (FT.): 143.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 8329 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
486.4	PLEISTOCENE		UNCONSOLIDATED	22.2	0.0	
464.2	PLEISTOCENE		UNCONSOLIDATED	22.9	22.2	
441.3	MODESTO	PIASA	LIMESTONE	14.2	45.1	GRAY
427.1			GRAY SHALE	10.7	59.3	
416.4	CARBONDALE	GALUM	LIMESTONE	1.8	70.0	GRAY
414.6	CARBONDALE		CALCAREOUS SHALE	6.8	71.8	
407.8	CARBONDALE	BANKSTON FORK	LIMESTONE	4.6	78.6	GRAY
403.2	CARBONDALE		DARK GRAY SHALE	5.2	83.2	
398.0	CARBONDALE	CONANT	LIMESTONE	1.3	88.4	DARK GRAY
396.7	CARBONDALE		DARK GRAY SHALE	9.7	89.7	
387.0	CARBONDALE	BRERETON	LIMESTONE	5.3	99.4	DARK GRAY
381.7	CARBONDALE	ANNA	BLACK SHALE	3.7	104.7	
378.0	CARBONDALE	HERRIN	COAL	6.6	108.4	
371.4	CARBONDALE		UNDERCLAY	4.1	115.0	
367.3	CARBONDALE		CALCAREOUS SANDSTONE	4.9	119.1	GRAY
362.4	CARBONDALE		SANDY SHALE	4.5	124.0	
357.9	CARBONDALE	HIGGINSVILLE	LIMESTONE	1.2	128.5	GRAY
356.7	CARBONDALE		CALCAREOUS SHALE	1.3	129.7	
355.4	CARBONDALE	ST. DAVID	LIMESTONE	1.2	131.0	GRAY
354.2	CARBONDALE	TURNER MINE	DARK GRAY SHALE	4.4	132.2	
349.8	CARBONDALE	SPRINGFIELD	COAL	4.1	136.6	
345.7	CARBONDALE		UNDERCLAY	2.3	140.7	

MAPID: 14590086000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.579499 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.011898 DATE COLLECTED: 6 / 14 / 1977

SURFACE ELEVATION (FT.): 492.4 LOGGED (FT.): 156.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 3957 WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
492.4	PLEISTOCENE		UNCONSOLIDATED	19.5	0.0	
472.9	PLEISTOCENE		ROCK	1.0	19.5	
471.9	PLEISTOCENE		SANDY CLAY	11.7	20.5	
460.2	MODESTO		SANDY SHALE	20.7	32.2	
439.5	MODESTO	DEGRAFF	COAL	0.7	52.9	
438.8	MODESTO		UNDERCLAY	1.2	53.6	
437.6	MODESTO	PIASA	LIMESTONE	11.8	54.8	BROWN
425.8			GRAY SHALE	12.5	66.6	
413.3	CARBONDALE	GALUM	LIMESTONE	2.6	79.1	BROWN
410.7	CARBONDALE		GRAY SHALE	6.8	81.7	
403.9	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	88.5	BROWN
399.4	CARBONDALE		SHALE WITH LIMESTONE	4.1	93.0	
395.3	CARBONDALE	CONANT	LIMESTONE	2.1	97.1	DARK
393.2	CARBONDALE		DARK SHALE	3.7	99.2	
389.5	CARBONDALE	JAMESTOWN	COAL	0.1	102.9	
389.4	CARBONDALE		DARK SHALE	1.6	103.0	
387.8	CARBONDALE	BRERETON	LIMESTONE	2.7	104.6	DARK
385.1	CARBONDALE	ANNA	DARK SHALE	6.1	107.3	
379.0	CARBONDALE	ENERGY	GRAY SHALE	2.5	113.4	
376.5	CARBONDALE	HERRIN	COAL	6.2	115.9	
370.3	CARBONDALE		UNDERCLAY	2.8	122.1	
367.5	CARBONDALE		CALCAREOUS SANDSTONE	5.9	124.9	
361.6	CARBONDALE		SANDY SHALE	3.2	130.8	
358.4	CARBONDALE	ST. DAVID	LIMESTONE	6.2	134.0	BROWN
352.2	CARBONDALE	TURNER MINE	BLACK SHALE	2.4	140.2	
349.8	CARBONDALE	SPRINGFIELD	COAL	4.8	142.6	
345.0	CARBONDALE		CLAYSTONE	8.6	147.4	

MAPID: 14590093000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES:

QUADRANGLE: PERCY LONGITUDE: -89.584027

GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 38.00117

DATE COLLECTED: 4 / 13 / 1977

SURFACE ELEVATION (FT.): 474.9 LOGGED (FT.): 137.0

LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY 3850

WELL TYPE: Coal Test

COMMENT: PERMIT 124; KATHLEEN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
474.9	PLEISTOCENE		UNCONSOLIDATED	36.5	0.0	
438.4	MODESTO	PIASA	LIMESTONE	5.4	36.5	GRAY
433.0	MODESTO		LIMESTONE & SHALE	14.3	41.9	GRAY
418.7	CARBONDALE	GALUM	LIMESTONE	1.7	56.2	GRAY
417.0	CARBONDALE		LIMESTONE & SHALE	5.9	57.9	GRAY
411.1	CARBONDALE	BANKSTON FORK	LIMESTONE	5.3	63.8	GRAY
405.8	CARBONDALE		DARK GRAY SHALE	4.7	69.1	
401.1	CARBONDALE		CALCAREOUS SHALE	0.9	73.8	
400.2	CARBONDALE	CONANT	LIMESTONE	0.9	74.7	DARK
399.3	CARBONDALE		CALCAREOUS SHALE	12.8	75.6	
386.5	CARBONDALE		LIMESTONE & SHALE	5.2	88.4	DARK
381.3	CARBONDALE	BRERETON	LIMESTONE	4.3	93.6	DARK
377.0	CARBONDALE	HERRIN	COAL	5.7	97.9	
371.3	CARBONDALE		UNDERCLAY	4.5	103.6	
366.8	CARBONDALE	HIGGINSVILLE	LIMESTONE & CONGLOMERATE	3.7	108.1	
363.1	CARBONDALE	HIGGINSVILLE	LIMESTONE	3.8	111.8	GRAY
359.3	CARBONDALE		CALCAREOUS SHALE	4.3	115.6	
355.0	CARBONDALE	ST. DAVID	LIMESTONE	4.9	119.9	GRAY
350.1	CARBONDALE	TURNER MINE	DARK SHALE	1.7	124.8	
348.4	CARBONDALE	SPRINGFIELD	COAL	4.7	126.5	
343.7	CARBONDALE		UNDERCLAY	2.7	131.2	
341.0	CARBONDALE		CALCAREOUS SHALE	3.1	133.9	

MAPID: 14590206000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 2000' S line, 2180' W line of SW
 QUADRANGLE: PERCY LONGITUDE: -89.586497 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 38.004572 DATE COLLECTED: 12 / 1 / 1983
 SURFACE ELEVATION (FT.): 476.7 LOGGED (FT.): 138.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
476.7			CLAYSTONE	37.0	0.0
439.7			SHALE	0.0	37.0
433.7			LIMESTONE	0.0	43.0
422.7			SHALE	0.0	54.0
410.7			LIMESTONE W/ SHALE	0.0	66.0
401.7	CARBONDALE		CALCAREOUS SHALE	0.0	75.0
373.7	CARBONDALE	ANNA	SILTSTONE	0.0	103.0
370.7	CARBONDALE	HERRIN	COAL/CLAYSTONE	0.0	106.0
362.7	CARBONDALE		LIMESTONE	0.0	114.0
356.7	CARBONDALE		SANDSTONE/SHALE	0.0	120.0
346.7	CARBONDALE		SHALE	0.0	130.0
342.7	CARBONDALE	SPRINGFIELD	COAL	0.0	134.0

MAPID: 14590494000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 18 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW SW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.594162 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.999249 DATE COLLECTED: 1 / 7 / 1927
 SURFACE ELEVATION (FT.): 455.0 LOGGED (FT.): 69.5 LOG TYPE: Drillers Log
 SOURCE: OTHER 313 WELL TYPE: Coal Test
 COMMENT: SE DENMARK BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.0	PLEISTOCENE		UNCONSOLIDATED	10.0	0.0
445.0			ROCK	60.0	10.0

MAPID: 14500296000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 19 QUARTERS/FOOTAGES: 1980' S line, 660' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.592002 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.989933 DATE COLLECTED:

SURFACE ELEVATION (FT.): 482.3 LOGGED (FT.): 104.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING CO. #1 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.3			UNCONSOLIDATED	33.0	0.0
449.3			LIMESTONE	3.5	33.0
445.8			CLAYSTONE	3.5	36.5
442.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	40.0
437.8	CARBONDALE		SHALE	5.5	44.5
432.3	CARBONDALE	CONANT	LIMESTONE	2.0	50.0
430.3	CARBONDALE		SHALE	0.3	52.0
430.0	CARBONDALE	JAMESTOWN	COAL	0.5	52.3
429.5	CARBONDALE		SHALE	3.5	52.8
426.0	CARBONDALE	BRERETON	LIMESTONE	6.0	56.3
420.0	CARBONDALE	ANNA	SHALE	6.0	62.3
414.0	CARBONDALE	HERRIN	COAL	6.0	68.3
408.0	CARBONDALE		CLAYSTONE	3.0	74.3
405.0	CARBONDALE		LIMESTONE	2.3	77.3
402.7	CARBONDALE		CLAYSTONE	7.0	79.6
395.7	CARBONDALE		LIMESTONE	3.0	86.6
392.7	CARBONDALE		CLAYSTONE	1.0	89.6
391.7	CARBONDALE	ST. DAVID	LIMESTONE	4.0	90.6
387.7	CARBONDALE	TURNER MINE	SHALE	1.0	94.6
386.7	CARBONDALE	SPRINGFIELD	COAL	4.0	95.6
382.7	CARBONDALE		CLAYSTONE	4.4	99.6

MAPID: 14500296000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 19 QUARTERS/FOOTAGES: 1980' S line, 660' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.592002

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.989933

DATE COLLECTED:

SURFACE ELEVATION (FT.): 482.0

LOGGED (FT.): 78.0

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.0	CARBONDALE	GALUM	LIMESTONE	3.5	33.0
445.5	CARBONDALE		CLAYSTONE	3.5	36.5
442.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	40.0
437.5	CARBONDALE	LAWSON	DARK GRAY SHALE	5.5	44.5
432.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	6.0	50.0
426.0	CARBONDALE	JAMESTOWN	COAL	0.5	56.0
425.5	CARBONDALE		DARK GRAY SHALE	3.5	56.5
422.0	CARBONDALE	BRERETON	LIMESTONE	6.0	60.0
416.0	CARBONDALE	ANNA	BLACK SHALE	6.0	66.0
410.0	CARBONDALE	HERRIN	COAL	6.0	72.0

MAPID: 14502940000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 19 QUARTERS/FOOTAGES: 1600' N line, 1500' E line of NE SW NE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.585504 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.990938 DATE COLLECTED: 9 / 27 / 1958

SURFACE ELEVATION (FT.): 482.0 LOGGED (FT.): 555.0 LOG TYPE: Drillers Log

SOURCE: GWIN DRILLING CO. WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.0			UNCONSOLIDATED	14.0	0.0
468.0			CLAYSTONE	6.0	14.0
462.0			SHALE	4.0	20.0
458.0			UNCLASSIFIED	8.0	24.0
446.0			SHALE	6.0	36.0
440.0			LIMESTONE	2.0	42.0
438.0			UNCLASSIFIED	9.0	44.0
429.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	53.0
424.0	CARBONDALE		SHALE	5.0	58.0
419.0	CARBONDALE	CONANT	LIMESTONE	1.0	63.0
418.0	CARBONDALE		SHALE	13.0	64.0
405.0	CARBONDALE	BRERETON	LIMESTONE	4.0	77.0
401.0	CARBONDALE		SHALE	4.0	81.0
397.0	CARBONDALE	HERRIN	COAL	6.0	85.0
391.0	CARBONDALE		SHALE	3.0	91.0
388.0	CARBONDALE		LIMESTONE	5.0	94.0
383.0	CARBONDALE		SHALE	5.0	99.0
378.0	CARBONDALE		LIMESTONE	2.0	104.0
376.0	CARBONDALE		SHALE	10.0	106.0
366.0	CARBONDALE	SPRINGFIELD	COAL	3.0	116.0
363.0	CARBONDALE		SHALE	3.0	119.0
360.0	CARBONDALE		UNCLASSIFIED	2.0	122.0

MAPID: 14502949000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 19 QUARTERS/FOOTAGES: 111' S line, 74' E line of NE SW SW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.589943 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.986573 DATE COLLECTED: 9 / 10 / 1970
 SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 24.0 LOG TYPE: Drillers Log
 SOURCE: C. KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
610.0			UNCONSOLIDATED	1.0	0.0
609.0			CLAYSTONE	7.0	1.0
602.0			CLAYSTONE	10.0	8.0
592.0			CLAYSTONE	4.0	18.0
588.0			SAND	2.0	22.0

MAPID: 14503098000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 19 QUARTERS/FOOTAGES: NE NW SE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.581444 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.990678 DATE COLLECTED: 10 / 10 / 1972
 SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 494.0 LOG TYPE: Drillers Log
 SOURCE: GWIN DRILLING CO. WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.0			UNCONSOLIDATED	30.0	0.0
455.0			CLAYSTONE	8.0	30.0
447.0			LIMESTONE	13.0	38.0
434.0			SHALE	9.0	51.0
425.0			LIMESTONE W/ SHALE	5.0	60.0
420.0	CARBONDALE		LIMESTONE	7.0	65.0
413.0	CARBONDALE		SHALE	0.5	72.0
412.5	CARBONDALE		LIMESTONE	11.5	72.5
401.0	CARBONDALE		SHALE	5.0	84.0
396.0	CARBONDALE		SHALE	7.0	89.0
389.0	CARBONDALE	HERRIN	COAL	7.0	96.0
382.0	CARBONDALE		LIMESTONE	4.0	103.0
378.0	CARBONDALE		SHALE	3.0	107.0
375.0	CARBONDALE		LIMESTONE	4.0	110.0
371.0	CARBONDALE		SHALE	2.0	114.0
369.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	116.0
368.0	CARBONDALE		SHALE	4.0	117.0
364.0	CARBONDALE	SPRINGFIELD	COAL	4.0	121.0
360.0	CARBONDALE		SHALE	2.0	125.0

MAPID: 14503099000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 19

QUARTERS/FOOTAGES: NE NW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.581444

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.990678

DATE COLLECTED:

SURFACE ELEVATION (FT.): 485.0

LOGGED (FT.): 105.5

LOG TYPE: Drillers Log

SOURCE: GWIN DRILLING CO. #2

WELL TYPE: Plugged and/or Abandoned

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.0			UNCONSOLIDATED	31.0	0.0
454.0			LIMESTONE	8.0	31.0
446.0			SHALE	14.0	39.0
432.0			LIMESTONE	3.0	53.0
429.0			SHALE	6.0	56.0
423.0			LIMESTONE	6.0	62.0
417.0			SHALE	17.0	68.0
400.0			LIMESTONE	7.0	85.0
393.0			SHALE	3.0	92.0
390.0			UNCLASSIFIED	8.0	95.0
382.0			SHALE	1.5	103.0
380.5			LIMESTONE	1.0	104.5

MAPID: 14500001000C VERSION: 1

PROJECT: CIRC 24

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 20

QUARTERS/FOOTAGES: 1975' S line, 2240' E line

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.564838

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 37.98945

DATE COLLECTED:

SURFACE ELEVATION (FT.): 490.0

LOGGED (FT.): 0.0

LOG TYPE:

SOURCE: YOUNG OR 0001

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
297.0	CARBONDALE	HERRIN	COAL	7.0	193.0

MAPID: 14500001000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 1975' S line, 2240' E line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.564838

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.98945

DATE COLLECTED:

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 71.3

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.8	CARBONDALE	BANKSTON FORK	LIMESTONE	4.1	34.2
441.8	CARBONDALE	LAWSON	GRAY SHALE	6.6	38.2
435.2	CARBONDALE	CONANT	LIMESTONE W/ SHALE	6.3	44.8
428.9	CARBONDALE	JAMESTOWN	COAL	0.2	51.1
428.8	CARBONDALE		GRAY SHALE	5.2	51.2
423.6	CARBONDALE	BRERETON	LIMESTONE	5.7	56.4
417.9	CARBONDALE	ANNA	BLACK SHALE	2.9	62.1
415.0	CARBONDALE	HERRIN	COAL	6.3	65.0

MAPID: 14528299000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 665' N line, 400' W line of NW SE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.564929

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.98945

DATE COLLECTED: 11 / 0 / 1948

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 73.4

LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CORP. #1

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0			UNCONSOLIDATED	34.2	0.0
465.8	CARBONDALE	GALUM	LIMESTONE	4.1	34.2
461.7	CARBONDALE		SHALE	6.6	38.3
455.1	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	44.9
448.1	CARBONDALE		SHALE	5.7	51.9
442.4	CARBONDALE	JAMESTOWN	COAL	2.0	57.6
440.4	CARBONDALE		SHALE	5.2	59.6
435.2	CARBONDALE	BRERETON	LIMESTONE	5.7	64.8
429.5	CARBONDALE	ANNA	SHALE	2.9	70.5

MAPID: 14528300000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 25' S line, 40' W line of NW SE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.566215 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.987732 DATE COLLECTED: 11 / 0 / 1948

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 71.6 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CORP. #2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
470.0			UNCONSOLIDATED	30.0	0.0
440.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	30.0
435.2	CARBONDALE		SHALE	8.0	34.8
427.2	CARBONDALE	CONANT	LIMESTONE	2.6	42.8
424.6	CARBONDALE		SHALE	4.3	45.4
420.3	CARBONDALE		SHALE	0.5	49.7
419.8	CARBONDALE	JAMESTOWN	COAL	0.2	50.2
419.6	CARBONDALE		SHALE	7.7	50.4
411.9	CARBONDALE	BRERETON	LIMESTONE	3.7	58.1
408.2			SHALE	1.2	61.8

MAPID: 14528301000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 5' S line, 5' W line of SW NE SE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.56169 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.987604 DATE COLLECTED: 11 / 0 / 1948

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 75.0 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CORP. #3 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
470.0			UNCONSOLIDATED	26.0	0.0
444.0	CARBONDALE	GALUM	LIMESTONE	1.5	26.0
442.5	CARBONDALE		SHALE	7.6	27.5
434.9	CARBONDALE	BANKSTON FORK	LIMESTONE	4.4	35.1
430.5	CARBONDALE		SHALE	6.1	39.5
424.4	CARBONDALE	CONANT	LIMESTONE	0.7	45.6
423.7	CARBONDALE		SHALE	5.7	46.3
418.0	CARBONDALE	JAMESTOWN	COAL	0.2	52.0
417.8	CARBONDALE		SHALE	5.6	52.2
412.2	CARBONDALE	BRERETON	LIMESTONE	4.8	57.8
407.4	CARBONDALE	ANNA	SHALE	3.1	62.6
404.3	CARBONDALE	HERRIN	COAL	5.6	65.7
398.7	CARBONDALE		CLAYSTONE	3.7	71.3

MAPID: 14528302000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 36' S line, 30' E line of NE SE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.557163 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.987615 DATE COLLECTED: 11 / 0 / 1948

SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 64.8 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CORP. #4 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
470.0			UNCONSOLIDATED	17.5	0.0
452.5	CARBONDALE	GALUM	LIMESTONE	1.2	17.5
451.3	CARBONDALE		SHALE	4.7	18.7
446.6	CARBONDALE	BANKSTON FORK	LIMESTONE	5.9	23.4
440.7	CARBONDALE		SHALE	4.4	29.3
436.3	CARBONDALE	CONANT	LIMESTONE	1.0	33.7
435.3	CARBONDALE		SHALE	5.4	34.7
429.9	CARBONDALE	JAMESTOWN	COAL	0.2	40.1
429.7	CARBONDALE		SHALE	9.8	40.3
419.9	CARBONDALE	BRERETON	LIMESTONE	3.9	50.1
416.0	CARBONDALE		SHALE	1.8	54.0
414.2	CARBONDALE	HERRIN	COAL	6.0	55.8
408.2	CARBONDALE		CLAYSTONE	3.0	61.8

MAPID: 14528303000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 17' N line, 22' E line of NE SE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.557071 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.991107 DATE COLLECTED: 11 / 0 / 1948

SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 68.5 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CORP. #5 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0			UNCONSOLIDATED	20.7	0.0
459.3			LIMESTONE	1.0	20.7
458.3			SHALE	18.3	21.7
440.0	CARBONDALE		SHALE	4.2	40.0
435.8	CARBONDALE	CONANT	LIMESTONE	0.7	44.2
435.1	CARBONDALE		SHALE	7.7	44.9
427.4	CARBONDALE		SHALE	2.5	52.6
424.9	CARBONDALE	BRERETON	LIMESTONE	4.0	55.1
420.9	CARBONDALE	ANNA	SHALE	0.3	59.1
420.6	CARBONDALE	HERRIN	COAL	5.9	59.4
414.7	CARBONDALE		CLAYSTONE	3.2	65.3

MAPID: 14528304000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 29' N line, 160' E line
QUADRANGLE: WILLISVILLE LONGITUDE: -89.557422 GEOLOGIST: G. TAYLOR
CONFIDENTIAL: N LATITUDE: 37.998359 DATE COLLECTED: 11 / 0 / 1948
SURFACE ELEVATION (FT.): 480.0 LOGGED (FT.): 52.7 LOG TYPE: Drillers Log
SOURCE: PYRAMID COAL CORP. #6 WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0			UNCONSOLIDATED	13.0	0.0
467.0			LIMESTONE	0.5	13.0
466.5			CLAYSTONE	0.4	13.5
466.1	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	13.9
465.1	CARBONDALE		SHALE	8.3	14.9
456.8	CARBONDALE	CONANT	LIMESTONE	0.3	23.2
456.5	CARBONDALE		SHALE	4.7	23.5
451.8	CARBONDALE	JAMESTOWN	COAL	0.2	28.2
451.6	CARBONDALE		SHALE	6.9	28.4
444.7	CARBONDALE		SHALE	1.0	35.3
443.7	CARBONDALE	BRERETON	LIMESTONE	4.5	36.3
439.2	CARBONDALE	ANNA	SHALE	3.0	40.8
436.2	CARBONDALE	HERRIN	COAL	5.8	43.8
430.4	CARBONDALE		CLAYSTONE	3.1	49.6

MAPID: 14528306000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 5' N line, 10' W line of NE SE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.561606 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.991218 DATE COLLECTED: 11 / 0 / 1948

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 79.4 LOG TYPE: Drillers Log

SOURCE: PYRAMID COAL CORP. #9 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0			UNCONSOLIDATED	26.0	0.0
474.0	CARBONDALE		SHALE	3.1	26.0
470.9	CARBONDALE	GALUM	LIMESTONE	1.2	29.1
469.7	CARBONDALE		SHALE	6.6	30.3
463.1	CARBONDALE	BANKSTON FORK	LIMESTONE	4.8	36.9
458.3	CARBONDALE		SHALE	0.8	41.7
457.5	CARBONDALE		SHALE	4.6	42.5
452.9	CARBONDALE		SHALE	0.4	47.1
452.5	CARBONDALE	CONANT	LIMESTONE	1.1	47.5
451.4	CARBONDALE		SHALE	11.2	48.6
440.2	CARBONDALE	BRERETON	LIMESTONE	5.8	59.8
434.4	CARBONDALE	ANNA	SHALE	1.6	65.6
432.8	CARBONDALE	HERRIN	COAL	6.2	67.2
426.6	CARBONDALE		CLAYSTONE	6.0	73.4

MAPID: 14528698000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 660' N line, 660' E line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.559197 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 37.99665 DATE COLLECTED: 7 / 18 / 1937

SURFACE ELEVATION (FT.): 458.6 LOGGED (FT.): 55.5 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY F-13 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
458.6	PLEISTOCENE		CLAY	23.0	0.0
435.6	CARBONDALE		SHALE	7.0	23.0
428.6	CARBONDALE		BLUE SHALE	4.0	30.0
424.6	CARBONDALE	JAMESTOWN	COAL	0.5	34.0
424.1	CARBONDALE		BLACK SHALE	7.5	34.5
416.6	CARBONDALE	BRERETON	LIMESTONE	6.5	42.0
410.1	CARBONDALE	ANNA	BLACK SHALE	1.0	48.5 HARD
409.1	CARBONDALE	HERRIN	COAL	5.5	49.5
403.6	CARBONDALE		UNDERCLAY	0.5	55.0

MAPID: 14590221000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 665' N line, 400' W line of NW SE
 QUADRANGLE: PERCY LONGITUDE: -89.564929 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.98945 DATE COLLECTED: 4 / 6 / 1967
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 71.8 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 1-A WELL TYPE: Coal Test
 COMMENT: A.KUEKER PROPERTY BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	34.2	0.0
425.8			ROCK	30.0	34.2
395.0	CARBONDALE	HERRIN	COAL	6.3	65.0
388.7	CARBONDALE		ROCK	0.6	71.3

MAPID: 14590222000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 25' S line, 40' W line of NW SE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.566215 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.987732 DATE COLLECTED: 11 / 6 / 1948
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 71.6 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 2-A WELL TYPE: Coal Test
 COMMENT: A.KUEKER PROPERTY BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
430.0			ROCK	33.0	30.0
397.0	CARBONDALE	HERRIN	COAL	6.1	63.0
390.9	CARBONDALE		ROCK	2.5	69.1

MAPID: 14590223000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 5' S line, 5' W line of NE SE
 QUADRANGLE: PERCY LONGITUDE: -89.56169 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.987604 DATE COLLECTED: 2 / 9 / 1937
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 75.0 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 3-A WELL TYPE: Coal Test
 COMMENT: A.KUEKER PROPERTY BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
434.0			ROCK	39.7	26.0
394.3	CARBONDALE	HERRIN	COAL	5.6	65.7
388.7	CARBONDALE		ROCK	3.7	71.3

MAPID: 14590224000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 36' S line, 30' E line of NE SE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.557163 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.987615 DATE COLLECTED: 11 / 9 / 1948
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 64.8 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 4-A WELL TYPE: Coal Test
 COMMENT: A.KUEKER PROPERTY BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	17.5	0.0
442.5			ROCK	38.3	17.5
404.2	CARBONDALE	HERRIN	COAL	6.0	55.8
398.2	CARBONDALE		ROCK	3.0	61.8

MAPID: 14590225000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 17' N line, 22' E line of NE SE
 QUADRANGLE: PERCY LONGITUDE: -89.557071 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.991107 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 68.6 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 5-A WELL TYPE: Coal Test
 COMMENT: A.KUEKER PROPERTY BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	20.7	0.0
439.3			ROCK	38.8	20.7
400.5	CARBONDALE	HERRIN	COAL	5.9	59.5
394.6	CARBONDALE		ROCK	3.2	65.4

MAPID: 14590226000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 29' N line, 160' E line of SE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.557486 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994721 DATE COLLECTED: 11 / 12 / 1948
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 52.7 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 6-A WELL TYPE: Coal Test
 COMMENT: A.KUEKER PROPERTY BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	13.0	0.0
447.0			ROCK	30.8	13.0
416.2	CARBONDALE	HERRIN	COAL	5.8	43.8
410.4	CARBONDALE		ROCK	3.1	49.6

MAPID: 14590227000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 650' S line, 565' E line of SE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.558929 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.992981 DATE COLLECTED: 11 / 13 / 1948
 SURFACE ELEVATION (FT.): LOGGED (FT.): 55.3 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 7-A WELL TYPE: Coal Test
 COMMENT: ST.JOHN AREA AMAX-DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		UNCONSOLIDATED	14.5	0.0
-			ROCK	34.4	14.5
-	CARBONDALE	HERRIN	COAL	6.4	48.9

MAPID: 14590228000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 660' S line, 760' E line of SE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.559612 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.993019 DATE COLLECTED: 11 / 15 / 1948
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 61.2 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 8-A WELL TYPE: Coal Test
 COMMENT: A.KUEKER PROPERTY BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	17.0	0.0
443.0			ROCK	38.1	17.0
404.9	CARBONDALE	HERRIN	COAL	6.1	55.1

MAPID: 14590229000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 5' N line, 10' W line of NE SE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.561606 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.991218 DATE COLLECTED: 11 / 16 / 1948
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 74.0 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 9-A WELL TYPE: Coal Test
 COMMENT: A.KUEKER PROPERTY BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	26.0	0.0
434.0			ROCK	41.2	26.0
392.8	CARBONDALE	HERRIN	COAL	6.3	67.2
386.5	CARBONDALE		ROCK	0.5	73.5

MAPID: 14590230000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 15' S line, 5' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.566274 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.991351 DATE COLLECTED: 7 / 17 / 1973
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 72.8 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 10-A WELL TYPE: Coal Test
 COMMENT: A.KUEKER PROPERTY BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	26.3	0.0
433.7			ROCK	39.2	26.3
394.5	CARBONDALE	HERRIN	COAL	6.3	65.5
388.2	CARBONDALE		ROCK	1.0	71.8

MAPID: 14590231000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 800' S line, 660' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.563952 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.993478 DATE COLLECTED: 7 / 18 / 1973
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 11-A WELL TYPE: Coal Test
 COMMENT: A.KUEKER PROPERTY BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	20.9	0.0
419.1			ROCK	32.1	20.9
387.0	CARBONDALE	HERRIN	COAL	5.7	53.0
381.3	CARBONDALE		ROCK	1.3	58.7

MAPID: 14590232000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 5' N line, 5' E line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.561595 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.99486 DATE COLLECTED: 7 / 19 / 1973
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 70.1 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 12-A WELL TYPE: Coal Test
 COMMENT: A.KUEKER PROPERTY BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	33.2	0.0
426.8			ROCK	28.7	33.2
398.1	CARBONDALE	HERRIN	COAL	6.1	61.9
392.0	CARBONDALE		ROCK	2.1	68.0

MAPID: 14590233000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 20 QUARTERS/FOOTAGES: 20' N line, 10' W line of SW NE
 QUADRANGLE: PINCKNEYVILLE LONGITUDE: -89.566193 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994898 DATE COLLECTED: 7 / 19 / 1973
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 71.6 LOG TYPE: Drillers Log
 SOURCE: MCDONNOUGH AND CLARK 13-A WELL TYPE: Coal Test
 COMMENT: A.KUEKER PROPERTY BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	33.1	0.0
426.9			ROCK	32.1	33.1
394.8	CARBONDALE	HERRIN	COAL	5.9	65.2
388.9	CARBONDALE		ROCK	0.5	71.1

MAPID: 14500297000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 660' S line, 660' W line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.55479 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.985662 DATE COLLECTED: 0 / 0 / 1919
 SURFACE ELEVATION (FT.): 485.6 LOGGED (FT.): 97.0 LOG TYPE: Drillers Log
 SOURCE: WILLIS COAL & MINING #44 WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.6			UNCONSOLIDATED	25.0	0.0
460.6			SHALE	3.0	25.0
457.6			LIMESTONE	5.0	28.0
452.6	CARBONDALE		CLAYSTONE	1.0	33.0
451.6	CARBONDALE		SHALE	6.0	34.0
445.6	CARBONDALE		SHALE	7.0	40.0
438.6	CARBONDALE	JAMESTOWN	CARBONACEOUS SHALE	0.5	47.0
438.1	CARBONDALE		SHALE	3.5	47.5
434.6	CARBONDALE	BRERETON	LIMESTONE	6.5	51.0
428.1	CARBONDALE	ANNA	SHALE	3.5	57.5
424.6	CARBONDALE	HERRIN	COAL	6.2	61.0
418.4	CARBONDALE		CLAYSTONE	4.7	67.2
413.6	CARBONDALE		LIMESTONE	5.7	72.0
407.9	CARBONDALE		LIMESTONE	7.3	77.7
400.6	CARBONDALE	ST. DAVID	LIMESTONE	2.0	85.0
398.6	CARBONDALE		SHALE	3.3	87.0
395.3	CARBONDALE	SPRINGFIELD	COAL	4.7	90.3
390.6	CARBONDALE		CLAYSTONE	2.0	95.0

MAPID: 14500297000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 660' S line, 660' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.55479 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.985662 DATE COLLECTED:

SURFACE ELEVATION (FT.): 486.0 LOGGED (FT.): 67.3 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
458.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	28.0
453.0	CARBONDALE	LAWSON	CLAYSTONE	1.0	33.0
452.0	CARBONDALE	LAWSON	DARK GRAY SHALE	6.0	34.0
446.0	CARBONDALE	LAWSON	CALCAREOUS SHALE	7.0	40.0
439.0	CARBONDALE	JAMESTOWN	BONE COAL	0.5	47.0
438.5	CARBONDALE		DARK GRAY SHALE	3.5	47.5
435.0	CARBONDALE	BRERETON	LIMESTONE	6.5	51.0
428.5	CARBONDALE	ANNA	BLACK SHALE	3.5	57.5
425.0	CARBONDALE	HERRIN	COAL	6.3	61.0

MAPID: 14500974000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: SW NE NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.551256 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.995605 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 463.3 LOGGED (FT.): 38.1 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #356 WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.3			UNCONSOLIDATED	15.0	0.0
448.3			SHALE	6.5	15.0
441.8			UNCLASSIFIED	2.5	21.5
439.3	CARBONDALE		SHALE	6.0	24.0
433.3	CARBONDALE		SHALE	3.0	30.0
430.3	CARBONDALE	HERRIN	COAL	5.1	33.0

MAPID: 14500975000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 21

QUARTERS/FOOTAGES: SW NW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.546735

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.995524

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 464.4

LOGGED (FT.): 57.4

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #357

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
464.4			UNCONSOLIDATED	10.0	0.0
454.4	CARBONDALE		SHALE	28.7	10.0
425.7	CARBONDALE		UNCLASSIFIED	7.0	38.7
418.7	CARBONDALE	ST. DAVID	LIMESTONE	5.3	45.7
413.4	CARBONDALE		SHALE	3.0	51.0
410.4	CARBONDALE	SPRINGFIELD	COAL	3.4	54.0

MAPID: 14500976000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 21

QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.54221

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.995445

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 465.7

LOGGED (FT.): 62.4

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #358

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
465.7			UNCONSOLIDATED	18.0	0.0
447.7			SHALE	9.0	18.0
438.7			CONCRETION	10.0	27.0
428.7	CARBONDALE		SHALE	9.0	37.0
419.7	CARBONDALE		SANDSTONE	8.0	46.0
411.7	CARBONDALE	ST. DAVID	LIMESTONE	5.0	54.0
406.7	CARBONDALE	SPRINGFIELD	COAL	3.4	59.0

MAPID: 14500977000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 21 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.551323 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.991969 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 481.5 **LOGGED (FT.):** 61.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #306 **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
481.5			UNCONSOLIDATED	25.0	0.0
456.5	CARBONDALE		SHALE	17.0	25.0
439.5	CARBONDALE		SHALE	1.0	42.0
438.5	CARBONDALE		SHALE	5.0	43.0
433.5	CARBONDALE		LIMESTONE	5.0	48.0
428.5	CARBONDALE		SHALE	1.0	53.0
427.5	CARBONDALE		SHALE	2.0	54.0
425.5	CARBONDALE	HERRIN	COAL	5.0	56.0

MAPID: 14500979000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 21 **QUARTERS/FOOTAGES:** SW SE NE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.542282 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.991815 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 464.4 **LOGGED (FT.):** 32.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #308 **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
464.4			UNCONSOLIDATED	25.0	0.0
439.4	CARBONDALE	HERRIN	COAL	7.0	25.0

MAPID: 14500980000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 21 **QUARTERS/FOOTAGES:** SW SE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.54579 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.985514 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 473.7 **LOGGED (FT.):** 25.7 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #207A **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
473.7			UNCONSOLIDATED	13.0	0.0
460.7	CARBONDALE		SHALE	7.5	13.0
453.2	CARBONDALE	HERRIN	COAL	5.2	20.5

MAPID: 14500981000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 21

QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.551391

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.988333

DATE COLLECTED:

SURFACE ELEVATION (FT.): 483.1

LOGGED (FT.): 57.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #256

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
483.1			UNCONSOLIDATED	21.0	0.0	
462.1	CARBONDALE		SANDSTONE	4.0	21.0	
458.1	CARBONDALE		SHALE	18.0	25.0	
440.1	CARBONDALE	BRERETON	LIMESTONE	6.0	43.0	
434.1	CARBONDALE	ANNA	SHALE	3.0	49.0	
431.1	CARBONDALE	HERRIN	COAL	5.0	52.0	

MAPID: 14500982000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 21

QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.54687

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.988257

DATE COLLECTED:

SURFACE ELEVATION (FT.): 474.2

LOGGED (FT.): 44.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #257

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
474.2			UNCONSOLIDATED	25.0	0.0	
449.2	CARBONDALE		SHALE	11.0	25.0	
438.2	CARBONDALE	BRERETON	LIMESTONE	3.0	36.0	UNCERTAIN CORRELATION
435.2	CARBONDALE	ANNA	SHALE	1.5	39.0	UNCERTAIN CORRELATION
433.7	CARBONDALE	HERRIN	COAL	4.2	40.5	UNCERTAIN CORRELATION

MAPID: 14500983000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 21

QUARTERS/FOOTAGES: SW NE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.542349

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.988182

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 449.2

LOGGED (FT.): 27.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #258

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
449.2			UNCONSOLIDATED	8.0	0.0	
441.2	CARBONDALE		SHALE	3.0	8.0	
438.2	CARBONDALE		SHALE	6.5	11.0	
431.7	CARBONDALE	BRERETON	LIMESTONE	5.0	17.5	UNCERTAIN CORRELATION
426.7	CARBONDALE	ANNA	SHALE	1.0	22.5	UNCERTAIN CORRELATION
425.7	CARBONDALE	HERRIN	COAL	4.2	23.5	UNCERTAIN CORRELATION

MAPID: 14500984000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 21

QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.555978

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.984769

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 482.5

LOGGED (FT.): 61.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #205

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
482.5			UNCONSOLIDATED	16.0	0.0	
466.5			SHALE	13.0	16.0	
453.5			SHALE	5.0	29.0	
448.5			LIMESTONE	5.0	34.0	
443.5			SHALE	5.5	39.0	
438.0			UNCLASSIFIED	16.5	44.5	

MAPID: 14500985000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 21

QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.551458

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.984697

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 487.7

LOGGED (FT.): 58.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #206

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
487.7			UNCONSOLIDATED	20.5	0.0
467.2			LIMESTONE	3.5	20.5
463.7	CARBONDALE		SHALE	6.8	24.0
456.9	CARBONDALE	BANKSTON FORK	LIMESTONE	5.7	30.8
451.2	CARBONDALE		SHALE	7.8	36.5
443.4	CARBONDALE	BRERETON	LIMESTONE	7.0	44.3
436.4	CARBONDALE	ANNA	SHALE	1.7	51.3
434.7	CARBONDALE	HERRIN	COAL	5.7	53.0

MAPID: 14500986000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 21

QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.546937

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.984624

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 477.3

LOGGED (FT.): 52.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #207

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
477.3			UNCONSOLIDATED	22.0	0.0
455.3	CARBONDALE		SHALE	2.0	22.0
453.3	CARBONDALE	HERRIN	COAL	5.7	24.0
447.6	CARBONDALE		CLAYSTONE	2.6	29.7
445.0	CARBONDALE		LIMESTONE	3.0	32.3
442.0	CARBONDALE		SHALE	7.4	35.3
434.6	CARBONDALE	ST. DAVID	LIMESTONE	5.3	42.7
429.3	CARBONDALE	TURNER MINE	SHALE	0.5	48.0
428.8	CARBONDALE	SPRINGFIELD	COAL	3.5	48.5

MAPID: 14500987000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 21

QUARTERS/FOOTAGES: SW SE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.542417

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.984552

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 450.5

LOGGED (FT.): 42.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #208

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.5			UNCONSOLIDATED	22.5	0.0
428.0			UNCLASSIFIED	1.5	22.5
426.5	CARBONDALE		SHALE	8.5	24.0
418.0	CARBONDALE	ST. DAVID	LIMESTONE	5.0	32.5
413.0	CARBONDALE		SHALE	1.0	37.5
412.0	CARBONDALE	SPRINGFIELD	COAL	3.5	38.5

MAPID: 14502207000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 21

QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.546802

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.991891

DATE COLLECTED:

SURFACE ELEVATION (FT.): 479.3

LOGGED (FT.): 44.8

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #307

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
479.3			UNCONSOLIDATED	26.0	0.0
453.3	CARBONDALE		SHALE	2.0	26.0
451.3	CARBONDALE		SHALE	2.0	28.0
449.3	CARBONDALE		LIMESTONE	5.0	30.0
444.3	CARBONDALE		SHALE	2.0	35.0
442.3	CARBONDALE		CLAYSTONE	2.0	37.0
440.3	CARBONDALE		UNCLASSIFIED	1.0	39.0
439.3	CARBONDALE	HERRIN	COAL	4.8	40.0

MAPID: 14528123000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 1800' N line, 2500' E line of NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.547581 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 37.993295 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 462.7 LOGGED (FT.): 42.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT: PERFORATED 37-42

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.7			SILTSTONE	9.0	0.0
453.7			CLAYSTONE	18.0	9.0
435.7			SILTSTONE	10.0	27.0
425.7	CARBONDALE		LIMESTONE	5.0	37.0

MAPID: 14528125000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 306' S line, 553' E line of SE SE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.540959 GEOLOGIST: L. SMITH
 CONFIDENTIAL: N LATITUDE: 37.984467 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 497.7 LOGGED (FT.): 80.0 LOG TYPE: Drillers Log
 SOURCE: ARCH OF IL WELL TYPE: Observation Well
 COMMENT: PERFORATED 59-79

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
497.7			UNCONSOLIDATED	80.0	0.0

MAPID: 14528699000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 135' N line, 1' E line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.538779 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.997735 DATE COLLECTED: 6 / 12 / 1937
 SURFACE ELEVATION (FT.): 442.0 LOGGED (FT.): 56.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY F-2 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.0	PLEISTOCENE		CLAY	20.0	0.0
422.0			SHALE	5.0	20.0
417.0			GRAY SHALE	16.0	25.0 SOFT
401.0			LIMESTONE	9.0	41.0
392.0			BLACK SHALE	2.0	50.0
390.0			LIMESTONE	4.0	52.0

MAPID: 1452870000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 660' N line, 1980' E line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.545706 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.99641 DATE COLLECTED: 7 / 2 / 1937
 SURFACE ELEVATION (FT.): 457.1 LOGGED (FT.): 72.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY F-10 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
457.1	PLEISTOCENE		CLAY	27.0	0.0	
430.1	CARBONDALE		LIMESTONE & SHALE	27.0	27.0	GRAY
403.1	CARBONDALE		LIMESTONE	2.0	54.0	
401.1	CARBONDALE		UNDERCLAY	2.0	56.0	
399.1	CARBONDALE		LIMESTONE	5.0	58.0	
394.1	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	63.0	
391.1	CARBONDALE	SPRINGFIELD	COAL	4.0	66.0	
387.1	CARBONDALE		UNDERCLAY	2.0	70.0	

MAPID: 14528701000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 1320' N line, 2640' E line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.548043 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.994629 DATE COLLECTED: 7 / 6 / 1937
 SURFACE ELEVATION (FT.): 462.4 LOGGED (FT.): 59.5 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY F-11 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
462.4	PLEISTOCENE		CLAY	31.0	0.0	
431.4			LIMESTONE	1.0	31.0	
430.4			CLAYSTONE & SILTSTONE	8.0	32.0	
422.4			SANDSTONE	2.0	40.0	
420.4			SHALE	3.0	42.0	
417.4			LIMESTONE	7.0	45.0	
410.4			GRAY SHALE	2.5	52.0	
407.9	CARBONDALE	SPRINGFIELD	COAL	3.5	54.5	
404.4			UNDERCLAY	1.5	58.0	

MAPID: 14528702000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 2640' N line, 1320' E line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.543509 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 37.990904 DATE COLLECTED: 7 / 7 / 1937

SURFACE ELEVATION (FT.): 453.8 LOGGED (FT.): 45.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY R-12 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.8	PLEISTOCENE		CLAY	19.0	0.0
434.8	CARBONDALE		LIMESTONE	4.0	19.0
430.8	CARBONDALE		SHALE	3.0	23.0
427.8	CARBONDALE		GRAY SHALE	4.0	26.0
423.8	CARBONDALE	ST. DAVID	LIMESTONE	6.0	30.0
417.8	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	36.0
415.8	CARBONDALE	SPRINGFIELD	COAL	3.5	38.0
412.3	CARBONDALE		UNDERCLAY	3.5	41.5

MAPID: 14528703000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 2640' N line, 1' E line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.538911 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 37.99082 DATE COLLECTED: 7 / 8 / 1937

SURFACE ELEVATION (FT.): 434.3 LOGGED (FT.): 37.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 13-R WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.3	PLEISTOCENE		CLAY	24.0	0.0
410.3	CARBONDALE	ST. DAVID	LIMESTONE	4.0	24.0
406.3	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	28.0
403.3	CARBONDALE	SPRINGFIELD	COAL	4.0	31.0
399.3			UNDERCLAY	2.0	35.0

MAPID: 14528704000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 21 **QUARTERS/FOOTAGES:** 1320' S line, 1320' E line
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.543576 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.987306 **DATE COLLECTED:** 7 / 17 / 1937
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 43.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY 20-R **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	30.0	0.0
-	CARBONDALE		LIMESTONE	3.0	30.0
-	CARBONDALE		BLUE SHALE	4.0	33.0
-	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	37.0
-	CARBONDALE	SPRINGFIELD	COAL	2.7	38.0
-	CARBONDALE		UNDERCLAY	2.3	40.7

MAPID: 14590210000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 21 **QUARTERS/FOOTAGES:** 1800' N line, 2500' E line of NE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.547581 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 37.993295 **DATE COLLECTED:** 12 / 21 / 1983
SURFACE ELEVATION (FT.): 462.7 **LOGGED (FT.):** 42.0 **LOG TYPE:** Drillers Log
SOURCE: ARCH OF IL **WELL TYPE:** Observation Well
COMMENT: WATER SURFACE ELEV. 450.2

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.7			SILTSTONE	9.0	0.0
453.7			CLAYSTONE	0.0	9.0
435.7			SILTSTONE	0.0	27.0
425.7	CARBONDALE		LIMESTONE	0.0	37.0

MAPID: 14590212000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 21 **QUARTERS/FOOTAGES:** 306' S line, 553' E line of SE SE SE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.540959 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 37.984467 **DATE COLLECTED:** 12 / 21 / 1983
SURFACE ELEVATION (FT.): 497.7 **LOGGED (FT.):** 80.0 **LOG TYPE:** Drillers Log
SOURCE: ARCH OF IL **WELL TYPE:** Observation Well
COMMENT: WATER SURFACE ELEV. 432.3

MAPID: 14590242000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 650' N line, 300' E line of NE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.539849 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.996332 DATE COLLECTED: 2 / 12 / 1946
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 51.3 LOG TYPE: Drillers Log
 SOURCE: OTHER P9 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0	
405.0			ROCK	12.8	35.0	
392.2	CARBONDALE	HERRIN	COAL	3.5	47.8	

MAPID: 14590243000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 450' S line, 300' W line of NE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.542291 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.995779 DATE COLLECTED: 2 / 13 / 1946
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 42.7 LOG TYPE: Drillers Log
 SOURCE: OTHER P10 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0	PLEISTOCENE		UNCONSOLIDATED	15.9	0.0	
424.1			COAL	0.2	15.9	
423.9			ROCK	7.6	16.1	
416.3	CARBONDALE	JAMESTOWN	COAL	0.2	23.7	
416.1	CARBONDALE		ROCK	14.3	23.9	
401.8	CARBONDALE	HERRIN	COAL	4.5	38.2	

MAPID: 14590264000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 50' S line, 50' W line of NE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.543183 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994691 DATE COLLECTED: 10 / 8 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 41.1 LOG TYPE: Drillers Log
 SOURCE: OTHER P31 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0	PLEISTOCENE		UNCONSOLIDATED	14.3	0.0	
425.7	CARBONDALE	HERRIN	COAL	4.1	14.3	TOP ERODED
421.6	CARBONDALE		ROCK	22.7	18.4	

MAPID: 14590265000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 50' S line, 50' W line of NE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.543183 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994691 DATE COLLECTED: 10 / 9 / 1947
 SURFACE ELEVATION (FT.): 460.0 LOGGED (FT.): 62.8 LOG TYPE: Drillers Log
 SOURCE: OTHER P32 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0	PLEISTOCENE		UNCONSOLIDATED	42.3	0.0
417.7			ROCK	16.1	42.3
401.6	CARBONDALE	HERRIN	COAL	4.4	58.4

MAPID: 14590266000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 250' N line, 50' E line of NE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.538953 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.99742 DATE COLLECTED: 10 / 10 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 60.1 LOG TYPE: Drillers Log
 SOURCE: OTHER P33 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	41.0	0.0
399.0			ROCK	15.1	41.0
383.9	CARBONDALE	HERRIN	COAL	4.0	56.1

MAPID: 14590269000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 400' S line, 300' E line of NE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.539863 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.995601 DATE COLLECTED: 10 / 13 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 47.5 LOG TYPE: Drillers Log
 SOURCE: OTHER P36 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0
418.0			ROCK	19.5	22.0
398.5	CARBONDALE	SPRINGFIELD	COAL	6.0	41.5

MAPID: 14590274000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 200' N line, 600' E line of NW NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.545393 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.997675 DATE COLLECTED: 4 / 15 / 1950
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 48.5 LOG TYPE: Drillers Log
 SOURCE: OTHER P41 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	20.6	0.0
419.4	CARBONDALE		ROCK	24.3	20.6
395.1	CARBONDALE	SPRINGFIELD	COAL	3.5	44.9

MAPID: 14590277000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 50' S line, 325' E line of NW NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.544491 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994716 DATE COLLECTED: 4 / 21 / 1950
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 49.4 LOG TYPE: Drillers Log
 SOURCE: OTHER P44 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	21.0	0.0
419.0	CARBONDALE		ROCK	24.6	21.0
394.4	CARBONDALE	SPRINGFIELD	COAL	3.8	45.6

MAPID: 14590278000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 600' S line, 10' W line of NW NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.547817 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.996291 DATE COLLECTED: 4 / 22 / 1950
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 53.6 LOG TYPE: Drillers Log
 SOURCE: OTHER P45 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	30.6	0.0
409.4	CARBONDALE		ROCK	18.4	30.6
391.0	CARBONDALE	SPRINGFIELD	COAL	3.8	49.0
387.2	CARBONDALE		ROCK	0.6	52.8

MAPID: 14590279000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 21 QUARTERS/FOOTAGES: 660' S line, 50' W line of NE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.543149 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.996375 DATE COLLECTED: 4 / 26 / 1950
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 63.1 LOG TYPE: Drillers Log
 SOURCE: OTHER P46 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	30.0	0.0
410.0			ROCK	28.3	30.0
381.7	CARBONDALE	SPRINGFIELD	COAL	4.3	58.3
377.4			ROCK	0.4	62.6

MAPID: 14500988000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: SW NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.537672 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.995372 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 436.2 LOGGED (FT.): 15.7 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #359 WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.2			UNCONSOLIDATED	10.0	0.0
426.2			SAND	1.5	10.0
424.7	CARBONDALE	SPRINGFIELD	COAL	4.2	11.5

MAPID: 14500989000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: SW NE NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.533081 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.995316 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 446.3 LOGGED (FT.): 31.0 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #360 WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.3			UNCONSOLIDATED	25.0	0.0
421.3			UNCLASSIFIED	5.0	25.0
416.3			COAL	1.0	30.0

MAPID: 14500990000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: SW NW NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.528493 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.995262 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 446.7 LOGGED (FT.): 44.7 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #361 WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.7			UNCONSOLIDATED	24.0	0.0
422.7			UNCLASSIFIED	9.0	24.0
413.7			SHALE	6.0	33.0
407.7	CARBONDALE	HERRIN	COAL	5.7	39.0

MAPID: 14500991000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: SW NE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.523906 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.995205 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 429.2 LOGGED (FT.): 49.5 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #362 WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
429.2			UNCONSOLIDATED	32.0	0.0
397.2			UNCLASSIFIED	13.0	32.0
384.2	CARBONDALE	SPRINGFIELD	COAL	4.5	45.0

MAPID: 14500992000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: SW SW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.537743 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.991742 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 437.3 LOGGED (FT.): 29.0 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #309 WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.3			UNCONSOLIDATED	15.0	0.0
422.3			SHALE	7.0	15.0
415.3			UNCLASSIFIED	0.5	22.0
414.8	CARBONDALE	TURNER MINE	SHALE	2.5	22.5
412.3	CARBONDALE	SPRINGFIELD	COAL	4.0	25.0

MAPID: 14500993000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 22 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.533156 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.991686 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 436.0 **LOGGED (FT.):** 36.5 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #310 **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.0			UNCONSOLIDATED	16.0	0.0
420.0			UNCLASSIFIED	17.0	16.0
403.0	CARBONDALE	SPRINGFIELD	COAL	3.5	33.0

MAPID: 14500994000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 22 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.528572 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.991632 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 435.1 **LOGGED (FT.):** 22.5 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #311 **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.1			UNCONSOLIDATED	6.0	0.0
429.1	CARBONDALE		SAND	8.5	6.0
420.6	CARBONDALE		SHALE	2.0	14.5
418.6	CARBONDALE	HERRIN	COAL	6.0	16.5

MAPID: 14500995000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 22 **QUARTERS/FOOTAGES:** SW SE NE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.523989 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.991575 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 449.0 **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #312 **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.0			UNCONSOLIDATED	35.0	0.0
414.0			UNCLASSIFIED	8.0	35.0
406.0			LIMESTONE	17.0	43.0

MAPID: 14500996000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 22

QUARTERS/FOOTAGES: SW NW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.537811

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.988115

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 447.1

LOGGED (FT.): 44.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #259

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.1			UNCONSOLIDATED	25.0	0.0
422.1	CARBONDALE		SHALE	11.0	25.0
411.1	CARBONDALE	ST. DAVID	LIMESTONE	3.0	36.0
408.1	CARBONDALE	TURNER MINE	SHALE	1.5	39.0
406.6	CARBONDALE	SPRINGFIELD	COAL	4.2	40.5

MAPID: 14500997000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 22

QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.533231

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.988058

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 464.3

LOGGED (FT.): 37.9

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #260

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
464.3			UNCONSOLIDATED	23.0	0.0
441.3	CARBONDALE		SHALE	3.0	23.0
438.3	CARBONDALE	BRERETON	LIMESTONE	5.5	26.0
432.8	CARBONDALE	ANNA	SHALE	1.0	31.5
431.8	CARBONDALE	HERRIN	COAL	5.4	32.5

MAPID: 14500998000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 22

QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.528651

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.987998

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 460.2

LOGGED (FT.): 47.4

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #261

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.2			UNCONSOLIDATED	20.0	0.0
440.2			SHALE	5.0	20.0
435.2			CONCRETION	7.5	25.0
427.7	CARBONDALE	BRERETON	LIMESTONE	6.0	32.5
421.7	CARBONDALE	ANNA	SHALE	2.5	38.5
419.2	CARBONDALE	HERRIN	COAL	6.4	41.0

MAPID: 14500999000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 22

QUARTERS/FOOTAGES: SW NE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.524068

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.987942

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 449.3

LOGGED (FT.): 26.9

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #262

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.3			UNCONSOLIDATED	14.0	0.0
435.3	CARBONDALE		SHALE	7.5	14.0
427.8	CARBONDALE	HERRIN	COAL	5.4	21.5

MAPID: 14501000000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 22

QUARTERS/FOOTAGES: SE NW SW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.537283

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.985837

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 500.0

LOGGED (FT.): 50.1

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #209A-A

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0			UNCONSOLIDATED	8.0	0.0
492.0			SAND	2.0	8.0
490.0	CARBONDALE		SHALE	26.0	10.0
464.0	CARBONDALE	BRERETON	LIMESTONE	6.0	36.0
458.0	CARBONDALE	ANNA	SHALE	2.0	42.0
456.0	CARBONDALE	HERRIN	COAL	6.1	44.0

MAPID: 14501001000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 22

QUARTERS/FOOTAGES: SE NW SW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.528127

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.985724

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 455.7

LOGGED (FT.): 32.4

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #211A

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.7			UNCONSOLIDATED	10.0	0.0
445.7	CARBONDALE		SHALE	18.0	10.0
427.7	CARBONDALE	TURNER MINE	SHALE	1.0	28.0
426.7	CARBONDALE	SPRINGFIELD	COAL	3.4	29.0

MAPID: 14501002000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 22

QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.537882

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.984484

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 478.7

LOGGED (FT.): 52.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #209

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
478.7			UNCONSOLIDATED	28.0	0.0
450.7			UNCLASSIFIED	8.0	28.0
442.7	CARBONDALE	BRERETON	LIMESTONE	5.0	36.0
437.7	CARBONDALE	ANNA	SHALE	3.0	41.0
434.7	CARBONDALE	ENERGY	UNCLASSIFIED	3.0	44.0
431.7	CARBONDALE	HERRIN	COAL	5.7	47.0

MAPID: 14501003000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 22

QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.533306

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.984428

DATE COLLECTED:

SURFACE ELEVATION (FT.): 468.7

LOGGED (FT.): 48.6

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #210

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
468.7			UNCONSOLIDATED	13.0	0.0
455.7	CARBONDALE		SHALE	21.0	13.0
434.7	CARBONDALE	BRERETON	LIMESTONE	6.5	34.0
428.2	CARBONDALE	ANNA	SHALE	2.5	40.5
425.7	CARBONDALE	HERRIN	COAL	5.6	43.0

MAPID: 14501004000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 22

QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.528726

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.984368

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 463.3

LOGGED (FT.): 38.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #211

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.3			UNCONSOLIDATED	16.0	0.0
447.3	CARBONDALE		SHALE	3.0	16.0
444.3	CARBONDALE		SHALE	5.0	19.0
439.3	CARBONDALE	BRERETON	LIMESTONE	5.0	24.0
434.3	CARBONDALE	ANNA	SHALE	3.0	29.0
431.3	CARBONDALE	HERRIN	COAL	6.0	32.0

MAPID: 14501005000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 22

QUARTERS/FOOTAGES: SW SE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.52415

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.984311

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 468.2

LOGGED (FT.): 46.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #212

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
468.2			UNCONSOLIDATED	19.0	0.0
449.2	CARBONDALE		SHALE	6.0	19.0
443.2	CARBONDALE		SHALE	5.0	25.0
438.2	CARBONDALE	BRERETON	LIMESTONE	7.0	30.0
431.2	CARBONDALE	ANNA	SHALE	3.0	37.0
428.2	CARBONDALE	HERRIN	COAL	6.5	40.0

MAPID: 14528705000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 22 **QUARTERS/FOOTAGES:** 1320' N line, 1' E line
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.520491 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.994245 **DATE COLLECTED:** 7 / 17 / 1937
SURFACE ELEVATION (FT.): 452.3 **LOGGED (FT.):** 57.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY 11-D **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
452.3	PLEISTOCENE		CLAY	20.0	0.0	
432.3			SHALE	15.0	20.0	
417.3			GRAY SHALE	16.0	35.0	SOFT
401.3			SANDY LIMESTONE	6.0	51.0	

MAPID: 14528706000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 22 **QUARTERS/FOOTAGES:** 2640' N line, 1320' W line
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.534303 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.990766 **DATE COLLECTED:** 7 / 9 / 1937
SURFACE ELEVATION (FT.): 436.3 **LOGGED (FT.):** 13.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY 11-R **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
436.3	PLEISTOCENE		CLAY	7.0	0.0	
429.3	CARBONDALE	HERRIN	COAL	4.0	7.0	TOP OF COAL ERODED
425.3	CARBONDALE		UNDERCLAY	2.0	11.0	

MAPID: 14528707000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 22 **QUARTERS/FOOTAGES:** 660' N line, 1320' E line
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.525047 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.996121 **DATE COLLECTED:** 7 / 8 / 1937
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 56.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY D-12 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	15.0	0.0	
-			SHALE	15.0	15.0	
-			BLUE SHALE	14.0	30.0	SOFT
-			LIMESTONE	7.0	44.0	
-			SANDSTONE	3.0	51.0	
-			BLACK SHALE	1.5	54.0	
-			LIMESTONE	0.5	55.5	

MAPID: 14528708000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 1980' N line, 660' W line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.536568 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.992615 DATE COLLECTED: 7 / 10 / 1937
 SURFACE ELEVATION (FT.): 430.9 LOGGED (FT.): 30.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY R-15 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.9	PLEISTOCENE		CLAY	22.0	0.0
408.9	PLEISTOCENE		GRAVEL	8.0	22.0

MAPID: 14528709000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 1' N line, 1320' E line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.525006 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.997941 DATE COLLECTED: 7 / 26 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 62.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY F-17 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	23.0	0.0
-			LIMESTONE	2.0	23.0
-			GRAY SHALE	35.0	25.0 SOFT
-			SANDSTONE	1.0	60.0
-			GRAY SHALE	1.0	61.0 SOFT

MAPID: 14528710000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 1980' S line, 660' W line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.53664 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.989026 DATE COLLECTED: 7 / 15 / 1937
 SURFACE ELEVATION (FT.): 462.3 LOGGED (FT.): 67.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY R-17 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
462.3	PLEISTOCENE		CLAY	42.0	0.0
420.3	CARBONDALE		SANDY SHALE	8.0	42.0
412.3	CARBONDALE		BLUE SHALE	2.0	50.0
410.3	CARBONDALE		LIMESTONE	7.0	52.0
403.3	CARBONDALE		BLACK SHALE	2.5	59.0
400.8	CARBONDALE	SPRINGFIELD	COAL	4.0	61.5
396.8	CARBONDALE		UNDERCLAY	1.5	65.5

MAPID: 14528711000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 1' N line, 2640' E line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.529611 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.997995 DATE COLLECTED: 7 / 29 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 61.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY F-18 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	22.0	0.0	
-			LIMESTONE	3.0	22.0	
-			GRAY SHALE	8.0	25.0	SOFT
-			LIMESTONE	2.0	33.0	
-			GRAY SHALE	24.0	35.0	SOFT
-			SANDSTONE	2.0	59.0	

MAPID: 14590259000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 660' S line, 660' E line of NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.536514 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.996273 DATE COLLECTED: 10 / 3 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 52.8 LOG TYPE: Drillers Log
 SOURCE: OTHER P26 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0	PLEISTOCENE		UNCONSOLIDATED	42.8	0.0	
397.2			ROCK	4.8	42.8	
392.4	CARBONDALE	HERRIN	COAL	5.3	47.6	

MAPID: 14590260000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 330' S line, 25' E line of NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.534316 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.995335 DATE COLLECTED: 10 / 6 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 70.8 LOG TYPE: Drillers Log
 SOURCE: OTHER P27 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0	PLEISTOCENE		UNCONSOLIDATED	58.6	0.0	
381.4	CARBONDALE		ROCK	6.8	58.6	
374.6	CARBONDALE	HERRIN	COAL	5.4	65.4	

MAPID: 14590261000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 25' S line, 340' E line of NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.535432 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994506 DATE COLLECTED: 10 / 6 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 56.0 LOG TYPE: Drillers Log
 SOURCE: OTHER P28 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	33.3	0.0
406.7			ROCK	22.8	33.3

MAPID: 14590262000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 360' S line, 640' E line of NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.536461 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.995445 DATE COLLECTED: 10 / 7 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 36.8 LOG TYPE: Drillers Log
 SOURCE: OTHER P29 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	31.0	0.0
409.0	CARBONDALE		ROCK	4.6	31.0
404.4	CARBONDALE		COAL	1.2	35.6

MAPID: 14590263000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 330' N line, 15' E line of NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.534247 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.997143 DATE COLLECTED: 10 / 8 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 76.0 LOG TYPE: Drillers Log
 SOURCE: OTHER P30 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	30.4	0.0
409.6			ROCK	45.6	30.4

MAPID: 14590267000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 660' N line, 100' W line of NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.53845 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.996283 DATE COLLECTED: 10 / 11 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 53.6 LOG TYPE: Drillers Log
 SOURCE: OTHER P34 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	38.0	0.0
402.0			ROCK	11.1	38.0
390.9	CARBONDALE	HERRIN	COAL	4.5	49.1

MAPID: 14590268000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 15' N line, 700' W line of NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.536323 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.998037 DATE COLLECTED: 10 / 11 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 73.2 LOG TYPE: Drillers Log
 SOURCE: OTHER P35 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	55.8	0.0
384.2			ROCK	13.6	55.8
370.6	CARBONDALE	SPRINGFIELD	COAL	3.7	69.4

MAPID: 14590270000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 660' N line, 40' E line of NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.534351 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.996235 DATE COLLECTED: 10 / 14 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 65.5 LOG TYPE: Drillers Log
 SOURCE: OTHER P37 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	16.0	0.0
424.0			ROCK	43.5	16.0
380.5	CARBONDALE	SPRINGFIELD	COAL	6.0	59.5

MAPID: 14590271000C VERSION: 1

PROJECT: AMAX DATA

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 22 QUARTERS/FOOTAGES: 50' S line, 50' E line of NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.53442 GEOLOGIST: LAWSON
 CONFIDENTIAL: N LATITUDE: 37.994565 DATE COLLECTED: 10 / 15 / 1947
 SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 57.0 LOG TYPE: Drillers Log
 SOURCE: OTHER P38 WELL TYPE: Coal Test
 COMMENT: PIPESTONE AREA BOX43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	19.0	0.0
421.0			ROCK	34.0	19.0
387.0	CARBONDALE	HERRIN	COAL	4.0	53.0

MAPID: 14501006000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: SW NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.519326 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.995153 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 451.2 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #363 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.2			UNCONSOLIDATED	50.0	0.0
401.2			LIMESTONE	5.0	50.0
396.2			SHALE	1.0	55.0
395.2			SANDSTONE	4.0	56.0

MAPID: 14501007000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: SW NE NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.514763 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.995104 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 446.7 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #364 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.7			UNCONSOLIDATED	15.0	0.0
431.7			SAND	5.0	15.0
426.7			SHALE	10.0	20.0
416.7			UNCLASSIFIED	30.0	30.0

MAPID: 14501008000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 23

QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.505637

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.995006

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 431.2

LOGGED (FT.): 55.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #366

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.2			UNCONSOLIDATED	12.0	0.0
419.2			SHALE	17.0	12.0
402.2			UNCLASSIFIED	22.0	29.0
380.2			SANDSTONE	4.0	51.0

MAPID: 14501009000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 23

QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.519405

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.99152

DATE COLLECTED:

SURFACE ELEVATION (FT.): 435.7

LOGGED (FT.): 36.4

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #313

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
435.7			UNCONSOLIDATED	17.5	0.0
418.2			UNCLASSIFIED	1.5	17.5
416.7	CARBONDALE		SHALE	4.0	19.0
412.7	CARBONDALE		LIMESTONE	2.0	23.0
410.7	CARBONDALE		SHALE	2.0	25.0
408.7	CARBONDALE		UNCLASSIFIED	2.0	27.0
406.7	CARBONDALE		SHALE	1.0	29.0
405.7	CARBONDALE		SHALE	1.0	30.0
404.7	CARBONDALE	SPRINGFIELD	COAL	5.4	31.0

MAPID: 14501010000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 23

QUARTERS/FOOTAGES: SW SE NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.514828

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.991469

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 446.0

LOGGED (FT.): 36.3

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #314

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
446.0			UNCONSOLIDATED	10.0	0.0
436.0	CARBONDALE		SHALE	16.0	10.0
420.0	CARBONDALE	ST. DAVID	LIMESTONE	3.0	26.0
417.0	CARBONDALE		SHALE	1.0	29.0
416.0	CARBONDALE	TURNER MINE	SHALE	1.0	30.0
415.0	CARBONDALE	SPRINGFIELD	COAL	5.3	31.0

MAPID: 14501011000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 23

QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.510255

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.991417

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 437.6

LOGGED (FT.): 58.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #315

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.6			UNCONSOLIDATED	18.0	0.0
419.6			SHALE	4.0	18.0
415.6			CLAYSTONE	11.0	22.0
404.6			SHALE	18.0	33.0
386.6			UNCLASSIFIED	7.0	51.0

MAPID: 14501012000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 23

QUARTERS/FOOTAGES: SW SE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.505679

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.991364

DATE COLLECTED:

SURFACE ELEVATION (FT.): 442.5

LOGGED (FT.): 52.4

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #316

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.5			UNCONSOLIDATED	20.0	0.0
422.5	CARBONDALE		SHALE	14.0	20.0
408.5	CARBONDALE		SHALE	4.0	34.0
404.5	CARBONDALE	ST. DAVID	LIMESTONE	4.5	38.0
400.0	CARBONDALE	TURNER MINE	SHALE	5.0	42.5
395.0	CARBONDALE	SPRINGFIELD	COAL	4.9	47.5

MAPID: 14501013000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 23

QUARTERS/FOOTAGES: SW NW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.519484

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.987887

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 451.2

LOGGED (FT.): 64.2

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #263

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
451.2			UNCONSOLIDATED	19.0	0.0
432.2	CARBONDALE		SHALE	6.0	19.0
426.2	CARBONDALE	HERRIN	COAL	5.7	25.0
420.5	CARBONDALE		CLAYSTONE	4.0	30.7
416.5	CARBONDALE		LIMESTONE	7.0	34.7
409.5	CARBONDALE		SHALE	2.5	41.7
407.0	CARBONDALE		SANDSTONE	6.0	44.2
401.0	CARBONDALE		SHALE	3.0	50.2
398.0	CARBONDALE	ST. DAVID	LIMESTONE	1.6	53.2
396.4	CARBONDALE	TURNER MINE	SHALE	4.0	54.8
392.4	CARBONDALE	SPRINGFIELD	COAL	5.4	58.8

MAPID: 14501014000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 23

QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.514897

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.98783

DATE COLLECTED:

SURFACE ELEVATION (FT.): 424.7

LOGGED (FT.): 27.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #263

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.7			UNCONSOLIDATED	12.0	0.0
412.7	CARBONDALE		SAND	5.0	12.0
407.7	CARBONDALE		SANDSTONE	1.0	17.0
406.7	CARBONDALE		SHALE	7.0	18.0
399.7	CARBONDALE	SPRINGFIELD	COAL	2.7	25.0

MAPID: 14501015000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 23

QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.510311

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.987775

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 421.2

LOGGED (FT.): 48.3

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #265

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
421.2			UNCONSOLIDATED	10.0	0.0
411.2	CARBONDALE		SHALE	11.0	10.0
400.2	CARBONDALE		UNCLASSIFIED	13.0	21.0
387.2	CARBONDALE	BRERETON	LIMESTONE	7.0	34.0
380.2	CARBONDALE	ANNA	SHALE	1.0	41.0
379.2	CARBONDALE	HERRIN	COAL	6.3	42.0

MAPID: 14501016000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES:

QUADRANGLE: WILLISVILLE LONGITUDE: -89.511413

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.990519

DATE COLLECTED:

SURFACE ELEVATION (FT.): 431.1 LOGGED (FT.): 42.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #266

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
431.1			UNCONSOLIDATED	18.0	0.0
413.1			SHALE	5.0	18.0
408.1			UNCLASSIFIED	3.0	23.0
405.1			UNCLASSIFIED	10.5	26.0
394.6	CARBONDALE	TURNER MINE	SHALE	2.2	36.5
392.4	CARBONDALE	SPRINGFIELD	COAL	4.0	38.7

MAPID: 14501017000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: SW NE SW SW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.517813

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.985593

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 434.0 LOGGED (FT.): 26.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #213A

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.0			UNCONSOLIDATED	15.0	0.0
419.0	CARBONDALE		SHALE	4.0	15.0
415.0	CARBONDALE	ANNA	SHALE	1.0	19.0
414.0	CARBONDALE	HERRIN	COAL	6.5	20.0

MAPID: 14501018000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 23

QUARTERS/FOOTAGES: SE NW SW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.50977

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.985495

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 438.3

LOGGED (FT.): 41.4

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #215A

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
438.3			UNCONSOLIDATED	19.0	0.0
419.3	CARBONDALE		SHALE	2.0	19.0
417.3	CARBONDALE		SHALE	4.0	21.0
413.3	CARBONDALE	BRERETON	LIMESTONE	5.0	25.0
408.3	CARBONDALE	ANNA	SHALE	5.0	30.0
403.3	CARBONDALE	HERRIN	COAL	6.5	35.0

MAPID: 14501019000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 23

QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.519567

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.984254

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 442.7

LOGGED (FT.): 39.8

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO.

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.7			UNCONSOLIDATED	13.0	0.0
429.7	CARBONDALE		LIMESTONE	3.0	13.0
426.7	CARBONDALE		SHALE	5.0	16.0
421.7	CARBONDALE		LIMESTONE	3.0	21.0
418.7	CARBONDALE		SHALE	3.5	24.0
415.2	CARBONDALE		LIMESTONE	2.0	27.5
413.2	CARBONDALE		SHALE	1.5	29.5
411.7	CARBONDALE		SHALE	4.0	31.0
407.7	CARBONDALE	HERRIN	COAL	4.8	35.0

MAPID: 14501020000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 23

QUARTERS/FOOTAGES: SW SE SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.514966

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.984194

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 452.3

LOGGED (FT.): 36.9

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #214

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
452.3			UNCONSOLIDATED	22.0	0.0	
430.3	CARBONDALE		SHALE	9.0	22.0	
421.3	CARBONDALE	TURNER MINE	SHALE	1.0	31.0	UNCERTAIN CORRELATION
420.3	CARBONDALE	SPRINGFIELD	COAL	4.9	32.0	UNCERTAIN CORRELATION

MAPID: 14501021000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 23

QUARTERS/FOOTAGES: SW SE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.505765

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.984079

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 453.5

LOGGED (FT.): 38.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #215

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
453.5			UNCONSOLIDATED	16.0	0.0	
437.5			CONCRETION	2.0	16.0	
435.5	CARBONDALE		SHALE	1.0	18.0	
434.5	CARBONDALE		SHALE	2.0	19.0	
432.5	CARBONDALE	BRERETON	LIMESTONE	5.0	21.0	
427.5	CARBONDALE	ANNA	SHALE	6.5	26.0	
421.0	CARBONDALE	HERRIN	COAL	6.0	32.5	

MAPID: 1452827000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: 5' N line, 139' W line of NE SW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.515508 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 37.990552 DATE COLLECTED: 8 / 16 / 1978
 SURFACE ELEVATION (FT.): 449.1 LOGGED (FT.): 63.3 LOG TYPE: Drillers Log
 SOURCE: AMAX COAL CO. WELL TYPE: Observation Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.1			UNCONSOLIDATED	4.0	0.0
445.1			CLAYSTONE	17.0	4.0
428.1			UNCLASSIFIED	12.0	21.0
416.1	CARBONDALE	HERRIN	COAL	7.0	33.0
409.1	CARBONDALE		SHALE	1.5	40.0
407.6	CARBONDALE		LIMESTONE	3.0	41.5
404.6	CARBONDALE		SHALE	12.5	44.5
392.1	CARBONDALE		SANDSTONE	3.5	57.0
388.6	CARBONDALE		SHALE	0.5	60.5
388.1	CARBONDALE	ST. DAVID	LIMESTONE	2.1	61.0
386.0	CARBONDALE		SHALE	0.2	63.1
385.8	CARBONDALE	SPRINGFIELD	COAL	0.0	63.3

MAPID: 14528271000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: 15' N line, 135' W line of NE SW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.515522 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 37.990524 DATE COLLECTED: 8 / 15 / 1978
 SURFACE ELEVATION (FT.): 448.3 LOGGED (FT.): 65.5 LOG TYPE: Drillers Log
 SOURCE: AMAX COAL CO. WELL TYPE: Observation Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.3			UNCONSOLIDATED	3.0	0.0
445.3			CLAYSTONE	20.0	3.0
425.3			UNCLASSIFIED	10.5	23.0
414.8	CARBONDALE	HERRIN	COAL	6.5	33.5
408.3	CARBONDALE		SHALE	0.5	40.0
407.8	CARBONDALE		LIMESTONE	3.0	40.5
404.8	CARBONDALE		SHALE	12.1	43.5
392.7	CARBONDALE		SANDSTONE	2.1	55.6
390.6	CARBONDALE		SHALE	1.3	57.7
389.3	CARBONDALE	ST. DAVID	LIMESTONE	5.2	59.0
384.1	CARBONDALE		SHALE	0.3	64.2
383.8	CARBONDALE	TURNER MINE	SHALE	1.0	64.5
382.8	CARBONDALE	SPRINGFIELD	COAL	0.0	65.5

MAPID: 14528279000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: 0' S line, 80' W line of SE SW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.515856 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 37.983297 DATE COLLECTED: 4 / 24 / 1978

SURFACE ELEVATION (FT.): 449.5 LOGGED (FT.): 63.7 LOG TYPE:

SOURCE: AMAX COAL CO WELL TYPE: Observation Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
449.5			CLAYSTONE	34.4	0.0	
415.1	CARBONDALE	HERRIN	COAL	3.0	34.4	TOP OF COAL ERODED
412.1	CARBONDALE		CLAYSTONE	1.6	37.4	
410.5	CARBONDALE		SANDSTONE	4.1	39.0	
406.4	CARBONDALE		SHALE	7.9	43.1	
398.5	CARBONDALE		SHALE	5.0	51.0	
393.5	CARBONDALE		LIMESTONE	2.0	56.0	
391.5	CARBONDALE		SHALE	1.2	58.0	
390.3	CARBONDALE	ST. DAVID	LIMESTONE	1.8	59.2	
388.5	CARBONDALE	TURNER MINE	SHALE	2.7	61.0	
385.8	CARBONDALE	SPRINGFIELD	COAL	0.0	63.7	

MAPID: 1452828000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: 25' N line, 143' W line of NE SW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.515494 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 37.990497 DATE COLLECTED: 8 / 14 / 1978

SURFACE ELEVATION (FT.): 447.7 LOGGED (FT.): 99.5 LOG TYPE: Drillers Log

SOURCE: AMAX COAL CO. WELL TYPE: Observation Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
447.7			UNCONSOLIDATED	3.0	0.0
444.7			CLAYSTONE	21.0	3.0
423.7			UNCLASSIFIED	4.0	24.0
419.7			LIMESTONE	0.5	28.0
419.2			UNCLASSIFIED	5.7	28.5
413.5	CARBONDALE	HERRIN	COAL	5.2	34.2
408.3	CARBONDALE		SHALE	1.2	39.4
407.1	CARBONDALE		LIMESTONE	2.9	40.6
404.2	CARBONDALE		SHALE	13.2	43.5
391.0	CARBONDALE		SANDSTONE	1.3	56.7
389.7	CARBONDALE		SHALE	3.0	58.0
386.7	CARBONDALE		SHALE	0.5	61.0
386.2	CARBONDALE	ST. DAVID	LIMESTONE	1.6	61.5
384.6	CARBONDALE	ST. DAVID	LIMESTONE	0.9	63.1
383.7	CARBONDALE	SPRINGFIELD	COAL	5.5	64.0
378.2	CARBONDALE		SHALE	30.0	69.5

MAPID: 14528712000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: 1' N line, 1320' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.515799 GEOLOGIST: KOROSE

CONFIDENTIAL: N LATITUDE: 37.99784 DATE COLLECTED: 7 / 24 / 1937

SURFACE ELEVATION (FT.): LOGGED (FT.): 65.0 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY 15-E WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	30.0	0.0
-			GRAY SHALE	35.0	30.0 SOFT

MAPID: 14528713000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: 1320' N line, 1320' W line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.515882 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.994199 DATE COLLECTED: 7 / 24 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 68.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 16-E WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	32.0	0.0	
-			GRAY SHALE	36.0	32.0	SOFT

MAPID: 14528714000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: 1320' N line, 2640' E line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.511431 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.994152 DATE COLLECTED: 7 / 26 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 65.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 17-E WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	30.0	0.0	
-			GRAY SHALE	35.0	30.0	SOFT

MAPID: 14528715000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: 2640' N line, 2640' E line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.511465 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.990508 DATE COLLECTED: 7 / 29 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 61.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 18-E WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	28.0	0.0	
-			LIMESTONE	0.5	28.0	
-			GRAY SHALE	18.5	28.5	SOFT
-			SANDY LIMESTONE	14.0	47.0	

MAPID: 14528716000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: 2640' N line, 1320' W line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.515965 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.990555 DATE COLLECTED: 7 / 30 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 19-E WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	22.0	0.0	
-			SHALE	9.0	22.0	
-			SANDSTONE	9.0	31.0	
-			GRAY SHALE	3.0	40.0	SOFT
-			LIMESTONE	5.0	43.0	
-			SANDY SHALE	12.0	48.0	

MAPID: 14528717000C VERSION: 1

PROJECT: NCRDS95

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 23 QUARTERS/FOOTAGES: 1320' N line, 1320' E line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.506826 GEOLOGIST: KOROSE
 CONFIDENTIAL: N LATITUDE: 37.994106 DATE COLLECTED: 0 / 0 / 1937
 SURFACE ELEVATION (FT.): LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: PITTSBURG & MIDWAY 26-D WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	20.0	0.0	
-			SHALE	10.0	20.0	
-			GRAY SHALE	25.0	30.0	SOFT
-			LIMESTONE	3.0	55.0	
-			SANDY SHALE	2.0	58.0	

MAPID: 14501023000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 24

QUARTERS/FOOTAGES: SW NW NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.501057

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.994954

DATE COLLECTED:

SURFACE ELEVATION (FT.): 422.4

LOGGED (FT.): 41.8

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #367

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
422.4			UNCONSOLIDATED	16.0	0.0
406.4	CARBONDALE		SHALE	7.0	16.0
399.4	CARBONDALE		SHALE	12.0	23.0
387.4	CARBONDALE		SHALE	1.0	35.0
386.4	CARBONDALE	HERRIN	COAL	5.8	36.0

MAPID: 14501024000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 24

QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.501091

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.991307

DATE COLLECTED:

SURFACE ELEVATION (FT.): 421.3

LOGGED (FT.): 31.9

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #317

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
421.3			UNCONSOLIDATED	15.0	0.0
406.3	CARBONDALE		SANDSTONE	2.0	15.0
404.3	CARBONDALE		SHALE	3.0	17.0
401.3	CARBONDALE		SHALE	6.0	20.0
395.3	CARBONDALE	HERRIN	COAL	5.9	26.0

MAPID: 14501025000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW SE NW
QUADRANGLE: AVA **LONGITUDE:** -89.496473 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.991243 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 440.7 **LOGGED (FT.):** 63.1 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #318 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.7			UNCONSOLIDATED	20.0	0.0
420.7	CARBONDALE		SHALE	18.0	20.0
402.7	CARBONDALE		SHALE	11.5	38.0
391.2	CARBONDALE	BRERETON	LIMESTONE	2.5	49.5
388.7	CARBONDALE	ANNA	SHALE	4.0	52.0
384.7	CARBONDALE	ENERGY	UNCLASSIFIED	1.0	56.0
383.7	CARBONDALE	HERRIN	COAL	6.1	57.0

MAPID: 14501026000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW SW NE
QUADRANGLE: AVA **LONGITUDE:** -89.491851 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.991179 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 444.2 **LOGGED (FT.):** 62.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #319 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.2			UNCONSOLIDATED	25.0	0.0
419.2			SHALE	15.0	25.0
404.2			UNCLASSIFIED	22.0	40.0

MAPID: 14501028000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW NW SW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.50113 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.987663 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 432.3 **LOGGED (FT.):** 35.7 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #267 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
432.3			UNCONSOLIDATED	15.0	0.0
417.3			CONCRETION	13.0	15.0
404.3	CARBONDALE		SHALE	4.0	28.0
400.3	CARBONDALE	SPRINGFIELD	COAL	3.7	32.0

MAPID: 14501029000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW NE SW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.496518 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.987599 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 444.3 **LOGGED (FT.):** 57.9 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #268 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
444.3			UNCONSOLIDATED	20.0	0.0
424.3	CARBONDALE		SHALE	17.0	20.0
407.3	CARBONDALE		UNCLASSIFIED	8.0	37.0
399.3	CARBONDALE	BRERETON	LIMESTONE	6.0	45.0
393.3	CARBONDALE	ANNA	SHALE	1.5	51.0
391.8	CARBONDALE	HERRIN	COAL	5.4	52.5

MAPID: 14501030000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: AVA **LONGITUDE:** -89.491907 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.987532 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 443.2 **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #269 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.2			UNCONSOLIDATED	45.0	0.0
398.2			SHALE	7.0	45.0
391.2			UNCLASSIFIED	3.0	52.0
388.2			SANDSTONE	5.0	55.0

MAPID: 14501031000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW NE SE
QUADRANGLE: AVA **LONGITUDE:** -89.487296 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.987466 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 437.2 **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #270 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.2			UNCONSOLIDATED	40.0	0.0
397.2			UNCLASSIFIED	16.0	40.0
381.2			SANDSTONE	4.0	56.0

MAPID: 14501032000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW NE SW SW
QUADRANGLE: AVA **LONGITUDE:** -89.499424 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.98536 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 418.0 **LOGGED (FT.):** 46.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #217A **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.0			UNCONSOLIDATED	20.0	0.0
398.0			UNCLASSIFIED	16.0	20.0
382.0			SHALE	2.0	36.0
380.0			SANDSTONE	8.0	38.0

MAPID: 14501033000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW SW SW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.501165 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.984018 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 419.4 **LOGGED (FT.):** 21.5 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL CO. #217 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
419.4			UNCONSOLIDATED	19.0	0.0
400.4	CARBONDALE	SPRINGFIELD	COAL	2.5	19.0

MAPID: 14501034000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW SE SW
QUADRANGLE: AVA **LONGITUDE:** -89.496564 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.983952 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 438.7 **LOGGED (FT.):** 44.3 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #218 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
438.7			UNCONSOLIDATED	18.0	0.0
420.7	CARBONDALE		SHALE	5.0	18.0
415.7	CARBONDALE		SHALE	6.5	23.0
409.2	CARBONDALE	BRERETON	UNCLASSIFIED	5.5	29.5
403.7	CARBONDALE	ANNA	SHALE	3.5	35.0
400.2	CARBONDALE	HERRIN	COAL	5.8	38.5

MAPID: 14501035000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW SW SE
QUADRANGLE: AVA **LONGITUDE:** -89.49196 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.983886 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 439.5 **LOGGED (FT.):** 52.5 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #219 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
439.5			UNCONSOLIDATED	28.0	0.0	
411.5	CARBONDALE		SHALE	10.0	28.0	
401.5	CARBONDALE	BRERETON	LIMESTONE	6.0	38.0	
395.5	CARBONDALE	ANNA	SHALE	3.0	44.0	
392.5	CARBONDALE	HERRIN	COAL	5.5	47.0	

MAPID: 14501036000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW SE SE
QUADRANGLE: AVA **LONGITUDE:** -89.487359 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.983819 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 429.7 **LOGGED (FT.):** 32.8 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #220 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
429.7			UNCONSOLIDATED	27.0	0.0	
402.7	CARBONDALE	HERRIN	COAL	5.8	27.0	

MAPID: 14501042000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** SW NW NW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.501057 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.994954 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 420.5 **LOGGED (FT.):** 50.1 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #171 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
420.5			UNCONSOLIDATED	18.0	0.0	
402.5			CLAYSTONE	16.0	18.0	
386.5	CARBONDALE		SHALE	9.0	34.0	
377.5	CARBONDALE	ST. DAVID	LIMESTONE	2.5	43.0	
375.0	CARBONDALE		SHALE	1.0	45.5	
374.0	CARBONDALE	SPRINGFIELD	COAL	3.6	46.5	

MAPID: 14503066000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 24 QUARTERS/FOOTAGES: 370' N line, 130' W line of NW NE NW
 QUADRANGLE: AVA LONGITUDE: -89.497111 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.99661 DATE COLLECTED:
 SURFACE ELEVATION (FT.): LOGGED (FT.): 430.0 LOG TYPE: Drillers Log
 SOURCE: GWIN DRILLING CO. WELL TYPE: Coal Test
 COMMENT: COAL THICKNESSES IMPRECISE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	50.0	0.0
-			SHALE	29.0	50.0
-			LIMESTONE	1.0	79.0
-			LIMESTONE W/ SHALE	20.0	80.0
-			COAL	6.0	100.0
-			SHALE	67.0	106.0
-			COAL	5.0	173.0
-			SHALE	139.0	178.0
-			UNCLASSIFIED	2.0	317.0
-			SHALE	73.0	319.0
-			SANDSTONE	38.0	392.0

MAPID: 14523381000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 24 QUARTERS/FOOTAGES: 103' S line, 110' W line of SE NE
 QUADRANGLE: AVA LONGITUDE: -89.488014 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.990497 DATE COLLECTED: 8 / 30 / 1977
 SURFACE ELEVATION (FT.): LOGGED (FT.): 31.0 LOG TYPE: Drillers Log
 SOURCE: CLARENCE KOHNEN WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	1.0	0.0
-			CLAYSTONE	10.0	1.0
-			CLAYSTONE	12.0	11.0
-			CLAYSTONE	6.0	23.0
-			CLAYSTONE	2.0	29.0

MAPID: 14528268000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 24 QUARTERS/FOOTAGES: 814' S line, 25' W line of SE NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.497523 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 37.992593 DATE COLLECTED: 4 / 12 / 1985
 SURFACE ELEVATION (FT.): 434.1 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: AMAX COAL CO WELL TYPE: Observation Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.1			CLAYSTONE	6.0	0.0
428.1			UNCLASSIFIED	27.0	6.0
401.1			UNCLASSIFIED	26.5	33.0
374.6			LIMESTONE	0.5	59.5

MAPID: 14528269000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 24 QUARTERS/FOOTAGES: 822' S line, 16' W line of SE NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.497554 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 37.992615 DATE COLLECTED: 4 / 11 / 1985
 SURFACE ELEVATION (FT.): 433.6 LOGGED (FT.): 85.0 LOG TYPE: Drillers Log
 SOURCE: AMAX COAL CO WELL TYPE: Observation Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.6			CLAYSTONE	5.0	0.0
428.6			UNCONSOLIDATED	24.0	5.0
404.6			UNCONSOLIDATED	31.5	29.0
373.1	CARBONDALE		LIMESTONE	1.0	60.5
372.1	CARBONDALE		SHALE	4.5	61.5
367.6	CARBONDALE		SANDSTONE	6.0	66.0
361.6	CARBONDALE		SHALE	3.0	72.0
358.6	CARBONDALE	BRERETON	LIMESTONE	2.3	75.0
356.3	CARBONDALE	ANNA	SHALE	2.1	77.3
354.2	CARBONDALE	HERRIN	COAL	3.6	79.4
350.6	CARBONDALE		CLAYSTONE	2.0	83.0

MAPID: 14528555000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 24 QUARTERS/FOOTAGES: 330' S line, 330' W line of SE NW

QUADRANGLE: AVA LONGITUDE: -89.496476 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 37.991243 DATE COLLECTED: 12 / 19 / 1958

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 87.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE 318K WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	54.0	0.0
386.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	54.0
385.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.3	55.0
383.7	CARBONDALE	SPRINGFIELD	COAL	5.5	56.3
378.2	CARBONDALE		UNDERCLAY	4.2	61.8
374.0	CARBONDALE		LIMESTONE	3.8	66.0
370.2	CARBONDALE		SANDY SHALE	12.3	69.8
358.0	CARBONDALE		LIMESTONE	4.0	82.0 ¹
354.0	CARBONDALE		BLACK SHALE	1.0	86.0

MAPID: 14528556000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 24 QUARTERS/FOOTAGES: 495' N line, 495' W line of SE NW

QUADRANGLE: AVA LONGITUDE: -89.495883 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 37.992604 DATE COLLECTED: 1 / 8 / 1959

SURFACE ELEVATION (FT.): 440.5 LOGGED (FT.): 89.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE 318HA WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.5	PLEISTOCENE		UNCONSOLIDATED	41.0	0.0
399.5	PLEISTOCENE		BOULDER	1.0	41.0
398.5	PLEISTOCENE		UNCONSOLIDATED	29.0	42.0
369.5	CARBONDALE		LIMESTONE	1.5	71.0
368.0	CARBONDALE		SANDY SHALE	3.5	72.5
364.5	CARBONDALE		SANDSTONE	2.0	76.0
362.5	CARBONDALE		CARBONACEOUS SHALE	0.5	78.0
362.0	CARBONDALE	ST. DAVID	LIMESTONE	4.7	78.5
357.3	CARBONDALE		SHALE	0.3	83.2
357.0	CARBONDALE	SPRINGFIELD	COAL	3.7	83.5
353.3			UNDERCLAY	1.8	87.2

MAPID: 14528557000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 24 QUARTERS/FOOTAGES: 495' S line, 495' E line of NW

QUADRANGLE: AVA LONGITUDE: -89.494725 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 37.991674 DATE COLLECTED: 12 / 22 / 1958

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 91.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE 318LA WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0	PLEISTOCENE		UNCONSOLIDATED	59.5	0.0	
380.5	CARBONDALE	HERRIN	COAL	1.2	59.5	TOP OF COAL ERODED
379.3	CARBONDALE		UNDERCLAY	2.5	60.7	
376.8	CARBONDALE		LIMESTONE	2.8	63.2	
374.0	CARBONDALE		SANDY SHALE	9.5	66.0	
364.5	CARBONDALE		WHITE SANDSTONE	3.0	75.5	
361.5	CARBONDALE		SANDY SHALE	2.0	78.5	
359.5	CARBONDALE	ST. DAVID	LIMESTONE	5.0	80.5	
354.5	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	85.5	
354.0	CARBONDALE	SPRINGFIELD	COAL	3.7	86.0	
350.3	CARBONDALE		UNDERCLAY	1.3	89.7	

MAPID: 14528558000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 24 QUARTERS/FOOTAGES: 495' S line, 660' W line of SE NW

QUADRANGLE: AVA LONGITUDE: -89.495318 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 37.991682 DATE COLLECTED: 12 / 23 / 1958

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 98.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE 318A1 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.0	PLEISTOCENE		UNCONSOLIDATED	50.0	0.0	
390.0	CARBONDALE		SANDY SHALE	6.0	50.0	
384.0	CARBONDALE	ANNA	BLACK SHALE	1.5	56.0	
382.5	CARBONDALE	HERRIN	COAL	6.0	57.5	
376.5	CARBONDALE		UNDERCLAY	2.0	63.5	
374.5	CARBONDALE		LIMESTONE	2.0	65.5	
372.5	CARBONDALE		SANDY SHALE	16.0	67.5	
356.5	CARBONDALE	ST. DAVID	LIMESTONE	3.5	83.5	
353.0	CARBONDALE		SHALE	1.0	87.0	
352.0	CARBONDALE	SPRINGFIELD	COAL	3.3	88.0	
348.7	CARBONDALE		UNDERCLAY	1.7	91.3	
347.0	CARBONDALE		ROCK	5.0	93.0	

MAPID: 14528559000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 24 QUARTERS/FOOTAGES: 330' N line, 660' W line of SE NW

QUADRANGLE: AVA LONGITUDE: -89.495304 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 37.993051 DATE COLLECTED: 1 / 8 / 1959

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 98.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE 318F WELL TYPE: Coal Test

COMMENT: TOO LOW FOR #5, TOO HIGH FOR #4

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
445.0	PLEISTOCENE		UNCONSOLIDATED	85.0	0.0	
360.0	PLEISTOCENE		SAND & GRAVEL	6.0	85.0	
354.0	CARBONDALE		WHITE SANDSTONE	4.0	91.0	
350.0	CARBONDALE		SANDY SHALE	3.0	95.0	
-	CARBONDALE	HERRIN	COAL	0.0		COAL ERODED

MAPID: 14528560000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 24 QUARTERS/FOOTAGES:

QUADRANGLE: AVA LONGITUDE: -89.49302 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 37.990282 DATE COLLECTED: 1 / 5 / 1959

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 108.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE 319 WELL TYPE: Coal Test

COMMENT: ? #5 ERODED BY SAND STONE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
445.0	PLEISTOCENE		UNCONSOLIDATED	69.2	0.0	
375.8	PLEISTOCENE		BOULDER	2.3	69.2	
373.5	PLEISTOCENE		UNCONSOLIDATED	13.5	71.5	
360.0	CARBONDALE		SANDSTONE	3.0	85.0	
357.0	CARBONDALE		UNDERCLAY	7.0	88.0	
350.0	CARBONDALE		SANDY SHALE	13.0	95.0	
-	CARBONDALE	HERRIN	COAL	0.0		COAL ERODED

MAPID: 14528561000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 24 QUARTERS/FOOTAGES: 0' S line, 330' W line of SE NE

QUADRANGLE: AVA LONGITUDE: -89.48725 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 37.990202 DATE COLLECTED: 12 / 31 / 1958

SURFACE ELEVATION (FT.): 440.0 LOGGED (FT.): 198.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE 320N WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0	PLEISTOCENE		UNCONSOLIDATED	91.0	0.0
349.0	CARBONDALE		GRAY SHALE	45.8	91.0
303.2	CARBONDALE		LIMESTONE	1.5	136.8
301.7	CARBONDALE		BLACK SHALE	1.5	138.3
300.2	CARBONDALE		LIMESTONE	0.8	139.8
299.3	CARBONDALE	EXCELLO	BLACK SHALE	2.0	140.7
297.3	CARBONDALE	HOUCHIN CREEK	COAL	2.0	142.7
295.3	CARBONDALE		SANDY SHALE	18.3	144.7
277.0	CARBONDALE		SANDSTONE	13.0	163.0
264.0	CARBONDALE		SANDY SHALE	14.0	176.0
250.0	CARBONDALE		LIMESTONE	2.3	190.0
247.7	CARBONDALE		SANDY SHALE	5.8	192.3

MAPID: 14528562000C VERSION: 1

PROJECT: AVAIL

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 24 QUARTERS/FOOTAGES: 0' S line, 330' W line of NE NE

QUADRANGLE: AVA LONGITUDE: -89.48719 GEOLOGIST: CHENOWETH

CONFIDENTIAL: N LATITUDE: 37.993848 DATE COLLECTED: 12 / 31 / 1958

SURFACE ELEVATION (FT.): 445.0 LOGGED (FT.): 198.0 LOG TYPE: Drillers Log

SOURCE: AYRSHIRE 370N WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.0	PLEISTOCENE		UNCONSOLIDATED	78.0	0.0
367.0	CARBONDALE		SANDY SHALE	5.0	78.0
362.0	CARBONDALE	SPRINGFIELD	COAL	3.3	83.0
358.7	CARBONDALE		UNDERCLAY	2.8	86.3
356.0	CARBONDALE		SANDY SHALE	31.0	89.0
325.0	CARBONDALE		LIMESTONE	1.0	120.0
324.0	CARBONDALE		SANDY SHALE	27.0	121.0
297.0	CARBONDALE	HANOVER	LIMESTONE	1.0	148.0
296.0	CARBONDALE	EXCELLO	BLACK SHALE	5.0	149.0
291.0	CARBONDALE	HOUCHIN CREEK	COAL	2.0	154.0
289.0	CARBONDALE		UNDERCLAY	2.0	156.0
287.0	CARBONDALE		SANDY SHALE	40.0	158.0

MAPID: 14528718000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 1' N line, 990' E line
QUADRANGLE: AVA **LONGITUDE:** -89.487095 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.997493 **DATE COLLECTED:** 7 / 22 / 1937
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY 21-D **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	20.0	0.0	
-			LIMESTONE	1.0	20.0	
-			GRAY SHALE	11.0	21.0	SOFT
-			LIMESTONE	2.0	32.0	
-			GRAY SHALE	26.0	34.0	SOFT

MAPID: 14528719000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 2640' N line, 1320' E line
QUADRANGLE: AVA **LONGITUDE:** -89.488387 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.990224 **DATE COLLECTED:** 7 / 23 / 1937
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 62.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY R-22 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	28.0	0.0	
-			SANDY SHALE	34.0	28.0	

MAPID: 14528720000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 2640' N line, 2640' E line
QUADRANGLE: AVA **LONGITUDE:** -89.492992 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.990288 **DATE COLLECTED:** 7 / 23 / 1936
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY R-23 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	30.0	0.0	
-			SANDY SHALE	30.0	30.0	

MAPID: 14528721000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 2640' N line, 1320' W line
QUADRANGLE: AVA **LONGITUDE:** -89.497652 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.990351 **DATE COLLECTED:** 7 / 23 / 1937
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 63.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY R-24 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	30.0	0.0	
-	CARBONDALE		SHALE	18.0	30.0	
-	CARBONDALE	BRERETON	LIMESTONE	5.0	48.0	HARD
-	CARBONDALE	ANNA	BLACK SHALE	3.0	53.0	
-	CARBONDALE	HERRIN	COAL	5.7	56.0	
-	CARBONDALE		UNDERCLAY	1.3	61.7	

MAPID: 14528722000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 1320' N line, 1' W line
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.502218 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.994059 **DATE COLLECTED:** 7 / 29 / 1937
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 48.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY 25-D **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	20.0	0.0	
-			SHALE	21.0	20.0	
-			SANDSTONE	2.0	41.0	
-			COAL	3.0	43.0	
-			UNDERCLAY	1.5	46.0	
-			LIMESTONE	0.5	47.5	

MAPID: 14528723000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 1' N line, 1320' W line
QUADRANGLE: AVA **LONGITUDE:** -89.497582 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.997637 **DATE COLLECTED:** 7 / 26 / 1937
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY R-26 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		CLAY	28.0	0.0	
-			SHALE	32.0	28.0	

MAPID: 14528724000C **VERSION:** 1 **PROJECT:** NCRDS95
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 1' N line, 2640' E line
QUADRANGLE: AVA **LONGITUDE:** -89.492848 **GEOLOGIST:** KOROSE
CONFIDENTIAL: N **LATITUDE:** 37.99757 **DATE COLLECTED:** 7 / 27 / 1937
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: PITTSBURG & MIDWAY R-27 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	PLEISTOCENE		CLAY	28.0	0.0
-			SANDY SHALE	32.0	28.0

MAPID: 14501038000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SW NW NW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.501799 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.979919 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 426.4 **LOGGED (FT.):** 29.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #167 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
426.4			UNCONSOLIDATED	17.0	0.0
409.4	CARBONDALE	BRERETON	LIMESTONE	2.0	17.0
407.4	CARBONDALE	ANNA	SHALE	4.0	19.0
403.4	CARBONDALE	HERRIN	COAL	6.0	23.0

MAPID: 14501039000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SW NE NW
QUADRANGLE: AVA **LONGITUDE:** -89.497203 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.979853 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 430.0 **LOGGED (FT.):** 26.4 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #168 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	20.0	0.0
410.0	CARBONDALE		SHALE	2.0	20.0
408.0	CARBONDALE	SPRINGFIELD	COAL	4.4	22.0

MAPID: 14501040000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SW NW NE
QUADRANGLE: AVA **LONGITUDE:** -89.492609 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.979786 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 437.2 **LOGGED (FT.):** 62.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #169 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.2			UNCONSOLIDATED	32.0	0.0
405.2	CARBONDALE		SHALE	13.0	32.0
392.2	CARBONDALE	JAMESTOWN	COAL	0.5	45.0
391.7	CARBONDALE		SHALE	1.0	45.5
390.7	CARBONDALE		LIMESTONE	3.5	46.5
387.2	CARBONDALE		SHALE	5.0	50.0
382.2	CARBONDALE		SHALE	1.0	55.0
381.2	CARBONDALE	HERRIN	COAL	6.0	56.0

MAPID: 14501041000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SW NE NE
QUADRANGLE: AVA **LONGITUDE:** -89.488012 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.979719 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 428.2 **LOGGED (FT.):** 40.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #170 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
428.2			UNCONSOLIDATED	15.0	0.0
413.2	CARBONDALE		SHALE	21.0	15.0
392.2	CARBONDALE	SPRINGFIELD	COAL	4.0	36.0

MAPID: 14501043000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SW SW NW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.501855 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.976264 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 422.6 **LOGGED (FT.):** 27.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #117A **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
422.6			UNCONSOLIDATED	20.0	0.0
402.6	CARBONDALE	ANNA	SHALE	2.0	20.0
400.6	CARBONDALE	HERRIN	COAL	5.0	22.0

MAPID: 14501044000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SW SW NW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.501855 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.976264 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 437.2 **LOGGED (FT.):** 41.5 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #117 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.2			UNCONSOLIDATED	18.0	0.0
419.2			UNCLASSIFIED	2.0	18.0
417.2	CARBONDALE		CLAYSTONE	17.0	20.0
400.2	CARBONDALE	HERRIN	COAL	4.5	37.0

MAPID: 14501045000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SW SE NW
QUADRANGLE: AVA **LONGITUDE:** -89.497265 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.976197 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 415.1 **LOGGED (FT.):** 30.5 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #118 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
415.1			UNCONSOLIDATED	29.0	0.0
386.1	CARBONDALE	SPRINGFIELD	COAL	1.5	29.0

MAPID: 14501046000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SW SW NE
QUADRANGLE: AVA **LONGITUDE:** -89.492676 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.976134 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 418.3 **LOGGED (FT.):** 40.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL # 119 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
418.3			UNCONSOLIDATED	10.0	0.0
408.3			SHALE	15.0	10.0
393.3			UNCLASSIFIED	15.0	25.0

MAPID: 14501048000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 25

QUARTERS/FOOTAGES: SW SW NW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.501911

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.972611

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 420.2

LOGGED (FT.): 13.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #67

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.2			UNCONSOLIDATED	12.0	0.0
408.2			COAL	1.0	12.0

MAPID: 14501049000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 25

QUARTERS/FOOTAGES: SW SW NE SW

QUADRANGLE: AVA

LONGITUDE: -89.497325

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.972545

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 427.5

LOGGED (FT.): 54.2

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #68

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
427.5			UNCONSOLIDATED	25.0	0.0
402.5	CARBONDALE		SANDSTONE/SHALE	18.0	25.0
384.5	CARBONDALE		SHALE	4.5	43.0
380.0	CARBONDALE		UNCLASSIFIED	1.5	47.5
378.5	CARBONDALE		SHALE	1.0	49.0
377.5	CARBONDALE	SPRINGFIELD	COAL	4.2	50.0

MAPID: 14501051000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 25

QUARTERS/FOOTAGES: SW SW SW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.501967

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.968956

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 427.5

LOGGED (FT.): 42.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #17

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
427.5			UNCONSOLIDATED	20.0	0.0
407.5	CARBONDALE		SANDSTONE	8.0	20.0
399.5	CARBONDALE		CLAYSTONE	3.0	28.0
396.5	CARBONDALE		SHALE	3.0	31.0
393.5	CARBONDALE		UNCLASSIFIED	2.0	34.0
391.5	CARBONDALE		SHALE	1.5	36.0
390.0	CARBONDALE	SPRINGFIELD	COAL	4.5	37.5

MAPID: 14501052000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SW SE SW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.497388 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.96889 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 412.5 **LOGGED (FT.):** 50.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #18 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
412.5			UNCONSOLIDATED	10.0	0.0
402.5			UNCLASSIFIED	1.0	10.0
401.5			UNCLASSIFIED	26.0	11.0
375.5			SANDSTONE	13.0	37.0

MAPID: 14501053000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 25 **QUARTERS/FOOTAGES:** SW SW SW SE
QUADRANGLE: AVA **LONGITUDE:** -89.492809 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.968826 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 411.2 **LOGGED (FT.):** 57.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #19 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
411.2			UNCONSOLIDATED	25.0	0.0
386.2			UNCLASSIFIED	30.0	25.0
356.2			SANDSTONE	2.0	55.0

MAPID: 14501054000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** 1320' N line, 0' W line
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.520811 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.979715 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 476.2 **LOGGED (FT.):** 39.2 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #163 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
476.2			UNCONSOLIDATED	23.0	0.0
453.2	CARBONDALE	BRERETON	LIMESTONE	6.0	23.0
447.2	CARBONDALE	ANNA	SHALE	1.0	29.0
446.2	CARBONDALE	ANNA	SHALE	3.0	30.0
443.2	CARBONDALE	HERRIN	COAL	6.2	33.0

MAPID: 14501054000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 26 QUARTERS/FOOTAGES: 1320' N line, 0' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.520811 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.979715 DATE COLLECTED:

SURFACE ELEVATION (FT.): 476.0 LOGGED (FT.): 39.3 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
453.0	CARBONDALE	BRERETON	LIMESTONE	6.5	23.0	
446.5	CARBONDALE	ANNA	BLACK SHALE	3.5	29.5	
443.0	CARBONDALE	HERRIN	COAL	6.3	33.0	

MAPID: 14501055000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 26 QUARTERS/FOOTAGES: SW SW NE NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.515618 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.980108 DATE COLLECTED:

SURFACE ELEVATION (FT.): 468.5 LOGGED (FT.): 44.2 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #164 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
468.5			UNCONSOLIDATED	26.0	0.0	
442.5	CARBONDALE		LIMESTONE	4.5	26.0	
438.0	CARBONDALE		SHALE	1.5	30.5	
436.5	CARBONDALE		SHALE	3.0	32.0	
433.5	CARBONDALE		SHALE	3.0	35.0	
430.5	CARBONDALE	HERRIN	COAL	6.2	38.0	

MAPID: 14501056000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW NW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.511011

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.980045

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 456.0

LOGGED (FT.): 57.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #165

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
456.0			UNCONSOLIDATED	11.0	0.0
445.0	CARBONDALE		SHALE	2.5	11.0
442.5	CARBONDALE	BRERETON	LIMESTONE	8.0	13.5
434.5	CARBONDALE	ANNA	SHALE	3.5	21.5
431.0	CARBONDALE	HERRIN	COAL	5.7	25.0
425.3	CARBONDALE		CLAYSTONE	3.0	30.7
422.3	CARBONDALE		LIMESTONE	4.5	33.7
417.8	CARBONDALE		SANDSTONE	16.0	38.2
401.8	CARBONDALE	SPRINGFIELD	COAL	3.5	54.2

MAPID: 14501057000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW NE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.506403

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.979982

DATE COLLECTED:

SURFACE ELEVATION (FT.): 453.6

LOGGED (FT.): 42.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #166

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.6			UNCONSOLIDATED	16.0	0.0
437.6	CARBONDALE		SANDSTONE/SHALE	3.0	16.0
434.6	CARBONDALE		SHALE	5.0	19.0
429.6	CARBONDALE	BRERETON	LIMESTONE	8.0	24.0
421.6	CARBONDALE	ANNA	SHALE	5.0	32.0
416.6	CARBONDALE	HERRIN	COAL	5.7	37.0

MAPID: 14501058000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW SW NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.520301

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976535

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 466.7

LOGGED (FT.): 31.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #113A

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
466.7			UNCONSOLIDATED	18.0	0.0	
448.7	CARBONDALE		SHALE	11.0	18.0	
437.7	CARBONDALE	HERRIN	COAL	2.5	29.0	

MAPID: 14501059000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW SW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.511076

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976398

DATE COLLECTED:

SURFACE ELEVATION (FT.): 450.3

LOGGED (FT.): 31.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
450.3			UNCONSOLIDATED	26.0	0.0	
424.3	CARBONDALE	HERRIN	COAL	5.5	26.0	

MAPID: 1450106000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW SW NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.520301

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976535

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 471.4

LOGGED (FT.): 67.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #113

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
471.4			UNCONSOLIDATED	21.0	0.0
450.4	CARBONDALE		SHALE	4.0	21.0
446.4	CARBONDALE	BRERETON	LIMESTONE	7.5	25.0
438.9	CARBONDALE	ANNA	SHALE	2.5	32.5
436.4	CARBONDALE	HERRIN	COAL	5.7	35.0
430.7	CARBONDALE		CLAYSTONE	2.0	40.7
428.7	CARBONDALE		LIMESTONE	4.0	42.7
424.7	CARBONDALE		SHALE	1.0	46.7
423.7	CARBONDALE		UNCLASSIFIED	3.0	47.7
420.7	CARBONDALE		SHALE	4.0	50.7
416.7	CARBONDALE	ST. DAVID	LIMESTONE	7.0	54.7
409.7	CARBONDALE	SPRINGFIELD	COAL	5.3	61.7

MAPID: 14501061000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW SE NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.515687

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976467

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 459.2

LOGGED (FT.): 51.8

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #114

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
459.2			UNCONSOLIDATED	36.0	0.0
423.2	CARBONDALE		UNCLASSIFIED	1.5	36.0
421.7	CARBONDALE		SHALE	3.0	37.5
416.2	CARBONDALE	ST. DAVID	LIMESTONE	2.5	43.0
413.7	CARBONDALE	TURNER MINE	SHALE	2.5	45.5
410.7	CARBONDALE	SPRINGFIELD	COAL	3.3	48.5

MAPID: 14501062000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW SW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.511076

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976398

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 453.7

LOGGED (FT.): 52.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #115

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.7			UNCONSOLIDATED	31.0	0.0
422.7			UNCLASSIFIED	3.0	31.0
419.7	CARBONDALE		SHALE	2.0	34.0
417.7	CARBONDALE		LIMESTONE	7.0	36.0
410.7	CARBONDALE		SHALE	1.0	43.0
409.7	CARBONDALE	ST. DAVID	LIMESTONE	4.0	44.0
405.7	CARBONDALE	TURNER MINE	SHALE	1.0	48.0
404.7	CARBONDALE	SPRINGFIELD	COAL	3.7	49.0

MAPID: 14501063000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW SE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.506462

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976333

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 445.6

LOGGED (FT.): 41.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #116

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
445.6			UNCONSOLIDATED	21.0	0.0
424.6	CARBONDALE	ST. DAVID	LIMESTONE	6.0	21.0
418.6	CARBONDALE	TURNER MINE	SHALE	8.0	27.0
407.6	CARBONDALE	SPRINGFIELD	COAL	3.0	38.0

MAPID: 14501064000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** SW SW NW SW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.520377 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.972899 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 466.1 **LOGGED (FT.):** 40.9 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #63 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
466.1			UNCONSOLIDATED	20.0	0.0	
446.1	CARBONDALE		SANDSTONE/SHALE	9.0	20.0	
437.1	CARBONDALE	ST. DAVID	LIMESTONE	4.5	29.0	
432.6	CARBONDALE	TURNER MINE	SHALE	1.5	33.5	
431.1	CARBONDALE	SPRINGFIELD	COAL	5.9	35.0	

MAPID: 14501065000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** SW SW NE SW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.515759 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.972828 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 455.7 **LOGGED (FT.):** 33.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #64 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
455.7			UNCONSOLIDATED	14.5	0.0	
441.2			UNCLASSIFIED	1.5	14.5	
439.7	CARBONDALE		SHALE	5.0	16.0	
434.7	CARBONDALE	ST. DAVID	LIMESTONE	7.0	21.0	
427.7	CARBONDALE	SPRINGFIELD	COAL	5.0	28.0	

MAPID: 14501066000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** SW SW NW SE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.511142 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.972754 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 439.0 **LOGGED (FT.):** 12.7 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #65 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
439.0			UNCONSOLIDATED	7.0	0.0	
432.0			COAL	5.7	7.0	

MAPID: 14501067000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW NE SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.515174

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.973273

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 424.0

LOGGED (FT.): 25.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #66

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
424.0			UNCONSOLIDATED	20.0	0.0	
404.0	CARBONDALE		UNCLASSIFIED	2.5	20.0	
401.5	CARBONDALE		SHALE	0.5	22.5	
401.0	CARBONDALE		UNCLASSIFIED	1.0	23.0	
400.0	CARBONDALE		COAL	1.0	24.0	

MAPID: 14501068000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW SW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.520449

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969264

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 463.4

LOGGED (FT.): 50.2

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #13A

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
463.4			UNCONSOLIDATED	32.0	0.0	
431.4	CARBONDALE		SANDSTONE	4.0	32.0	
427.4	CARBONDALE		SHALE	4.0	36.0	
423.4	CARBONDALE		UNCLASSIFIED	4.0	40.0	
419.4	CARBONDALE		SHALE	2.0	44.0	
417.4	CARBONDALE	SPRINGFIELD	COAL	4.2	46.0	

MAPID: 14501069000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW SW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.511204

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.96911

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 450.2

LOGGED (FT.): 46.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #15A

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.2			UNCONSOLIDATED	8.0	0.0
442.2	CARBONDALE		SHALE	16.0	8.0
426.2	CARBONDALE		UNCLASSIFIED	9.5	24.0
416.7	CARBONDALE		SHALE	4.5	33.5
412.2	CARBONDALE		UNCLASSIFIED	4.0	38.0
408.2	CARBONDALE	TURNER MINE	SHALE	0.5	42.0
407.7	CARBONDALE	SPRINGFIELD	COAL	4.0	42.5

MAPID: 14501070000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW SW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.520449

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969264

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 460.3

LOGGED (FT.): 40.9

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #13

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.3			UNCONSOLIDATED	16.0	0.0
444.3	CARBONDALE		SANDSTONE/SHALE	11.0	16.0
433.3	CARBONDALE	ST. DAVID	LIMESTONE	7.0	27.0
426.3	CARBONDALE	TURNER MINE	SHALE	1.5	34.0
424.8	CARBONDALE	SPRINGFIELD	COAL	5.4	35.5

MAPID: 14501071000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW SE SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.515828

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969187

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 491.5

LOGGED (FT.): 44.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #14

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
491.5			UNCONSOLIDATED	18.0	0.0
473.5			UNCLASSIFIED	5.0	18.0
468.5	CARBONDALE		SHALE	12.0	23.0
456.5	CARBONDALE	ST. DAVID	LIMESTONE	2.0	35.0
454.5	CARBONDALE	TURNER MINE	SHALE	3.0	37.0
451.5	CARBONDALE	SPRINGFIELD	COAL	4.0	40.0

MAPID: 14501072000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW SW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.511204

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.96911

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 450.2

LOGGED (FT.): 30.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #15

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.2			UNCONSOLIDATED	20.0	0.0
430.2	CARBONDALE		SHALE	7.5	20.0
422.7	CARBONDALE	SPRINGFIELD	COAL	3.0	27.5

MAPID: 14501073000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 26

QUARTERS/FOOTAGES: SW SW SE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.506584

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969033

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 448.4

LOGGED (FT.): 52.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #16

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
448.4			UNCONSOLIDATED	30.0	0.0
418.4	CARBONDALE		SANDSTONE/SHALE	13.0	30.0
405.4	CARBONDALE	ST. DAVID	LIMESTONE	5.0	43.0
400.4	CARBONDALE	TURNER MINE	SHALE	0.5	48.0
399.9	CARBONDALE	SPRINGFIELD	COAL	3.5	48.5

MAPID: 14528281000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 26 QUARTERS/FOOTAGES: 658' S line, 155' E line of SW SE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.507679 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 37.970411 DATE COLLECTED: 9 / 20 / 1978

SURFACE ELEVATION (FT.): 440.7 LOGGED (FT.): 55.0 LOG TYPE: Drillers Log

SOURCE: AMAX COAL CO. WELL TYPE: Observation Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.7			UNCONSOLIDATED	55.0	0.0

MAPID: 14501074000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 27 QUARTERS/FOOTAGES: SE NW NW NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.537362 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.982204 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 477.7 LOGGED (FT.): 51.2 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #159A WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
477.7			UNCONSOLIDATED	24.0	0.0
453.7			UNCLASSIFIED	13.0	24.0
440.7	CARBONDALE	BRERETON	LIMESTONE	8.0	37.0
432.7	CARBONDALE	HERRIN	COAL	6.2	45.0

MAPID: 14501075000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 27 QUARTERS/FOOTAGES: SW SW NW NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.538547 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.980401 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 482.7 LOGGED (FT.): 67.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #159 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.7			UNCONSOLIDATED	20.0	0.0
462.7	CARBONDALE		SHALE	2.0	20.0
460.7	CARBONDALE		CLAYSTONE	6.0	22.0
454.7	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	28.0
450.7	CARBONDALE		SHALE	7.0	32.0
443.7	CARBONDALE		UNCLASSIFIED	3.0	39.0
440.7	CARBONDALE		SHALE	8.0	42.0
432.7	CARBONDALE	BRERETON	LIMESTONE	10.0	50.0
422.7	CARBONDALE	ANNA	SHALE	1.5	60.0
421.2	CARBONDALE	HERRIN	COAL	5.5	61.5

MAPID: 14501076000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 27 QUARTERS/FOOTAGES: SW SW NE NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.533967 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.980344 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 470.0 LOGGED (FT.): 44.9 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #160 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
470.0			UNCONSOLIDATED	19.0	0.0
451.0	CARBONDALE		SHALE	10.0	19.0
441.0	CARBONDALE		SHALE	2.5	29.0
438.5	CARBONDALE	BRERETON	LIMESTONE	7.5	31.5
431.0	CARBONDALE		SHALE	0.5	39.0
430.5	CARBONDALE	HERRIN	COAL	5.3	39.5

MAPID: 14501077000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 27 QUARTERS/FOOTAGES: SW SW NW NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.529388 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.980285 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 485.0 LOGGED (FT.): 51.5 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #161 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.0			UNCONSOLIDATED	16.0	0.0
469.0			SHALE	12.0	16.0
457.0			SHALE	4.0	28.0
453.0			LIMESTONE	3.0	32.0
450.0			SHALE	5.0	35.0
445.0			LIMESTONE	1.5	40.0
443.5			SHALE	7.0	41.5
436.5			LIMESTONE	1.5	48.5
435.0			SHALE	1.5	50.0

MAPID: 14501078000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: SW SW NE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.524808

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.980228

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 466.2

LOGGED (FT.): 53.3

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #162

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
466.2			UNCONSOLIDATED	12.0	0.0
454.2			UNCLASSIFIED	8.0	12.0
446.2	CARBONDALE		SHALE	14.0	20.0
432.2	CARBONDALE		UNCLASSIFIED	7.5	34.0
424.7	CARBONDALE		SHALE	3.5	41.5
421.2	CARBONDALE		SHALE	3.0	45.0
418.2	CARBONDALE	HERRIN	COAL	5.3	48.0

MAPID: 14501079000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: SW SW SW NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.538632

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976762

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 493.6

LOGGED (FT.): 58.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #109A

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
493.6			UNCONSOLIDATED	18.0	0.0
475.6			UNCLASSIFIED	3.0	18.0
472.6	CARBONDALE		CLAYSTONE	4.0	21.0
468.6	CARBONDALE		SHALE	4.5	25.0
464.1	CARBONDALE	CONANT	LIMESTONE	2.0	29.5
462.1	CARBONDALE		UNCLASSIFIED	12.5	31.5
449.6	CARBONDALE	BRERETON	LIMESTONE	6.5	44.0
443.1	CARBONDALE	ANNA	SHALE	2.0	50.5
441.1	CARBONDALE	HERRIN	COAL	5.5	52.5

MAPID: 1450108000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 27 QUARTERS/FOOTAGES: SW SW SW NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.52947 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.976649 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 477.2 LOGGED (FT.): 61.3 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #111A WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
477.2			UNCONSOLIDATED	18.0	0.0
459.2	CARBONDALE		SANDSTONE/SHALE	2.0	18.0
457.2	CARBONDALE	BANKSTON FORK	LIMESTONE	6.0	20.0
451.2	CARBONDALE		SHALE	8.5	26.0
442.7	CARBONDALE		UNCLASSIFIED	17.0	34.5
425.7	CARBONDALE		SHALE	3.5	51.5
422.2	CARBONDALE	HERRIN	COAL	6.3	55.0

MAPID: 14501081000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 27 QUARTERS/FOOTAGES: SW SW SW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.538632 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.976762 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 494.0 LOGGED (FT.): 64.9 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #109 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
494.0			UNCONSOLIDATED	24.0	0.0
470.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	24.0
466.0	CARBONDALE		SHALE	13.7	28.0
452.3	CARBONDALE	JAMESTOWN	COAL	3.0	41.7
452.0	CARBONDALE		SHALE	9.0	42.0
443.0	CARBONDALE	BRERETON	LIMESTONE	7.0	51.0
436.0	CARBONDALE		SHALE	1.0	58.0
435.0	CARBONDALE	HERRIN	COAL	5.9	59.0

MAPID: 14501082000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: SW SW SE NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.534049

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976706

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 495.2

LOGGED (FT.): 47.2

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #110

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
495.2			UNCONSOLIDATED	19.0	0.0
476.2	CARBONDALE		SHALE	11.0	19.0
465.2	CARBONDALE		SHALE	3.0	30.0
462.2	CARBONDALE	BRERETON	LIMESTONE	3.0	33.0
459.2	CARBONDALE	ANNA	SHALE	3.0	36.0
456.2	CARBONDALE		SHALE	2.0	39.0
454.2	CARBONDALE	HERRIN	COAL	6.2	41.0

MAPID: 14501083000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: SW SW SW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.52947

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976649

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 479.3

LOGGED (FT.): 41.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #111

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
479.3			UNCONSOLIDATED	11.0	0.0
468.3			UNCLASSIFIED	1.0	11.0
467.3	CARBONDALE		CLAYSTONE	7.0	12.0
460.3	CARBONDALE		SANDSTONE/SHALE	2.0	19.0
458.3	CARBONDALE		SHALE	4.5	21.0
453.8	CARBONDALE	BRERETON	LIMESTONE	7.5	25.5
446.3	CARBONDALE	ANNA	SHALE	3.0	33.0
443.3	CARBONDALE	HERRIN	COAL	5.7	36.0

MAPID: 14501084000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: SW SW SE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.524887

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976592

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 478.3

LOGGED (FT.): 62.2

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #112

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
478.3			UNCONSOLIDATED	23.0	0.0
455.3	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	23.0
450.3	CARBONDALE		SHALE	8.0	28.0
442.3	CARBONDALE		UNCLASSIFIED	2.0	36.0
440.3	CARBONDALE		SHALE	4.0	38.0
436.3	CARBONDALE	BRERETON	LIMESTONE	12.0	42.0
424.3	CARBONDALE	ANNA	SHALE	2.0	54.0
422.3	CARBONDALE	HERRIN	COAL	6.2	56.0

MAPID: 14501085000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: SW SW NW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.538717

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.973127

DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.1

LOGGED (FT.): 60.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #59

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
508.1			UNCONSOLIDATED	15.0	0.0
493.1	CARBONDALE		SANDSTONE/SHALE	10.0	15.0
483.1	CARBONDALE		LIMESTONE	3.0	25.0
480.1	CARBONDALE		SHALE	8.0	28.0
472.1	CARBONDALE		SHALE	8.0	36.0
464.1	CARBONDALE		UNCLASSIFIED	7.0	44.0
457.1	CARBONDALE		SHALE	4.0	51.0
453.1	CARBONDALE	HERRIN	COAL	5.7	55.0

MAPID: 14501086000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: SW SW NE SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.534131

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.97307

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 493.5

LOGGED (FT.): 67.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #60

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
493.5			UNCONSOLIDATED	20.0	0.0
473.5	CARBONDALE		SHALE	15.0	20.0
458.5	CARBONDALE		SHALE	1.5	35.0
457.0	CARBONDALE	HERRIN	COAL	6.0	36.5
451.0	CARBONDALE		CLAYSTONE	3.5	42.5
447.5	CARBONDALE		LIMESTONE	5.0	46.0
442.5	CARBONDALE		UNCLASSIFIED	9.0	51.0
433.5	CARBONDALE	ST. DAVID	LIMESTONE	3.0	60.0
430.5	CARBONDALE	SPRINGFIELD	COAL	4.0	63.0

MAPID: 14501087000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: SW SW NW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.529549

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.973013

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 483.7

LOGGED (FT.): 34.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #61

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
483.7			UNCONSOLIDATED	19.0	0.0
464.7	CARBONDALE		SHALE	2.0	19.0
462.7	CARBONDALE		LIMESTONE	2.5	21.0
460.2	CARBONDALE		SHALE	2.0	23.5
458.2	CARBONDALE	ANNA	SHALE	2.5	25.5
455.7	CARBONDALE	HERRIN	COAL	6.7	28.0

MAPID: 14501088000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: SW SW NE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.524963

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.972956

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 469.6

LOGGED (FT.): 55.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #62

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
469.6			UNCONSOLIDATED	15.0	0.0
454.6	CARBONDALE		CLAYSTONE	15.0	15.0
439.6	CARBONDALE		SHALE	6.0	30.0
433.6	CARBONDALE		UNCLASSIFIED	4.0	36.0
429.6	CARBONDALE	BRERETON	LIMESTONE	6.2	40.0
423.4	CARBONDALE	ANNA	SHALE	3.0	46.2
420.3	CARBONDALE	HERRIN	COAL	5.7	49.3

MAPID: 14501089000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: 660' S line, 660' W line

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.537042

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.970836

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 495.2

LOGGED (FT.): 45.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #9A

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
495.2			UNCONSOLIDATED	15.0	0.0
480.2			SHALE	3.0	15.0
487.2			CONCRETION	3.0	8.0
474.2			UNCLASSIFIED	1.0	21.0
473.2	CARBONDALE	HERRIN	COAL	5.0	22.0
468.2	CARBONDALE		SHALE	5.0	27.0
463.2	CARBONDALE		SHALE	6.5	32.0
456.7	CARBONDALE	SPRINGFIELD	COAL	6.5	38.5

MAPID: 14501089000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 27 QUARTERS/FOOTAGES: 660' S line, 660' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.537042 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.970836 DATE COLLECTED:

SURFACE ELEVATION (FT.): 495.0 LOGGED (FT.): 45.5 LOG TYPE: Drillers Log

SOURCE: COMMENT: POOR DESCRIPTION WELL TYPE: Coal Test

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
467.5	CARBONDALE	ANNA	BLACK SHALE	5.0	27.5
462.5	CARBONDALE	ENERGY	GRAY SHALE	6.5	32.5
456.0	CARBONDALE	HERRIN	COAL	6.5	39.0

MAPID: 14501090000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 27 QUARTERS/FOOTAGES: SW SW SW SE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.529627 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.969377 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 574.7 LOGGED (FT.): 44.0 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #11A WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
574.7			UNCONSOLIDATED	18.0	0.0
556.7	CARBONDALE		SHALE	3.0	18.0
553.7	CARBONDALE		UNCLASSIFIED	12.0	21.0
541.7	CARBONDALE	ST. DAVID	LIMESTONE	5.5	33.0
536.2	CARBONDALE	TURNER MINE	SHALE	0.5	38.5
535.7	CARBONDALE	SPRINGFIELD	COAL	5.0	39.0

MAPID: 14501091000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 27 QUARTERS/FOOTAGES: SW SW SW SW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.538802 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.969488 DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 497.2 LOGGED (FT.): 36.2 LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #9 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
497.2			UNCONSOLIDATED	21.0	0.0
476.2	CARBONDALE		SANDSTONE/SHALE	3.0	21.0
473.2	CARBONDALE		UNCLASSIFIED	1.0	24.0
472.2	CARBONDALE		SHALE	4.0	25.0
468.2	CARBONDALE	ANNA	SHALE	2.0	29.0
466.2	CARBONDALE	HERRIN	COAL	5.2	31.0

MAPID: 14501092000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: SW SW SE SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.534217

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969434

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 479.4

LOGGED (FT.): 50.3

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #10

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
479.4			UNCONSOLIDATED	24.0	0.0	
455.4			SHALE	19.0	24.0	
436.4	CARBONDALE		UNCLASSIFIED	1.0	43.0	
435.4	CARBONDALE		SHALE	3.0	44.0	
432.4	CARBONDALE	SPRINGFIELD	COAL	3.3	47.0	

MAPID: 14501093000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.529045

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969825

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 480.2

LOGGED (FT.): 39.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #11

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
480.2			UNCONSOLIDATED	20.0	0.0	
460.2	CARBONDALE		SHALE	8.0	20.0	
452.2	CARBONDALE		SANDSTONE	2.0	28.0	
450.2	CARBONDALE		SHALE	4.0	30.0	
446.2	CARBONDALE	SPRINGFIELD	COAL	5.7	34.0	

MAPID: 14501094000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 27

QUARTERS/FOOTAGES: SW SW SE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.525042

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969323

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 460.4

LOGGED (FT.): 41.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #12

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.4			UNCONSOLIDATED	21.0	0.0	
439.4			SHALE	1.0	21.0	
438.4			LIMESTONE	11.5	22.0	
426.9			SHALE	2.5	33.5	
424.4			COAL	5.7	36.0	

MAPID: 14501109000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 27 **QUARTERS/FOOTAGES:** SW SW SW SW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.538802 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.969488 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 507.7 **LOGGED (FT.):** 63.6 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #5A **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
507.7			UNCONSOLIDATED	23.0	0.0
484.7	CARBONDALE		SANDSTONE/SHALE	12.0	23.0
472.7	CARBONDALE		SHALE	16.0	35.0
456.7	CARBONDALE	BRERETON	LIMESTONE	68.0	51.0
449.9	CARBONDALE	ANNA	SHALE	0.7	57.8
449.2	CARBONDALE	HERRIN	COAL	5.1	58.5

MAPID: 14520523000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 27 **QUARTERS/FOOTAGES:** NW NE NE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.524188 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.982492 **DATE COLLECTED:** 9 / 1 / 1975
SURFACE ELEVATION (FT.): 450.0 **LOGGED (FT.):** 106.0 **LOG TYPE:** Drillers Log
SOURCE: DAN CAMERON **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
450.0			UNCONSOLIDATED	2.0	0.0
448.0			CLAYSTONE	19.0	2.0
429.0			UNCLASSIFIED	24.0	21.0
405.0			LIMESTONE	61.0	45.0

MAPID: 14528276000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 27 **QUARTERS/FOOTAGES:** 335' S line, 208' W line of SE SW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.534053 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 37.969901 **DATE COLLECTED:** 9 / 19 / 1978
SURFACE ELEVATION (FT.): 497.1 **LOGGED (FT.):** 65.0 **LOG TYPE:** Drillers Log
SOURCE: AMAX COAL CO **WELL TYPE:** Observation Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
497.1			UNCONSOLIDATED	65.0	0.0

MAPID: 14528277000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 27 QUARTERS/FOOTAGES: 325' S line, 205' W line of SE SW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.534063 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 37.969873 DATE COLLECTED: 9 / 19 / 1978
 SURFACE ELEVATION (FT.): 497.2 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log
 SOURCE: AMAX COAL CO WELL TYPE: Observation Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
497.2			UNCONSOLIDATED	65.0	0.0	

MAPID: 14528278000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 27 QUARTERS/FOOTAGES: 333' S line, 563' W line of SE SW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.532815 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 37.969882 DATE COLLECTED: 9 / 3 / 1985
 SURFACE ELEVATION (FT.): 487.5 LOGGED (FT.): 65.0 LOG TYPE: Drillers Log
 SOURCE: AMAX COAL CO. WELL TYPE: Observation Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	UNIT OVERBURDEN	COMMENT
487.5			UNCONSOLIDATED	61.0	0.0	
426.5			CLAYSTONE	4.0	61.0	

MAPID: 14500298000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW NW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.547026

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.980983

DATE COLLECTED:

SURFACE ELEVATION (FT.): 456.0

LOGGED (FT.): 53.0

LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #45

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
456.0			UNCONSOLIDATED	22.0	0.0
434.0	CARBONDALE	HERRIN	COAL	4.0	22.0
430.0	CARBONDALE		CLAYSTONE	3.0	26.0
427.0	CARBONDALE		LIMESTONE	3.0	29.0
424.0	CARBONDALE		CLAYSTONE	3.5	32.0
420.5	CARBONDALE		SHALE	3.5	35.5
417.0	CARBONDALE	ST. DAVID	LIMESTONE	3.0	39.0
414.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	42.0
412.5	CARBONDALE		CLAYSTONE	0.5	43.5
412.0	CARBONDALE	ST. DAVID	LIMESTONE	5.0	44.0
411.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	44.5
410.5	CARBONDALE	SPRINGFIELD	COAL	4.0	45.5
406.5	CARBONDALE		CLAYSTONE	3.5	49.5

MAPID: 14501095000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: NE NW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.544718

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.98277

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 463.3

LOGGED (FT.): 47.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #157A

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.3			UNCONSOLIDATED	19.0	0.0
444.3	CARBONDALE		SHALE	9.5	19.0
434.8	CARBONDALE		SANDSTONE	2.5	28.5
432.3	CARBONDALE		SANDSTONE/SHALE	4.5	31.0
427.8	CARBONDALE		SHALE	3.0	35.5
424.8	CARBONDALE	ST. DAVID	LIMESTONE	5.8	38.5
419.0	CARBONDALE	SPRINGFIELD	COAL	3.4	44.3

MAPID: 14501096000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW NW NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.556648

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.980669

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 493.2

LOGGED (FT.): 49.2

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #155

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
493.2			UNCONSOLIDATED	23.0	0.0
470.2			SHALE	1.2	23.0
469.0			UNCLASSIFIED	2.0	24.2
467.0			SHALE	3.0	26.2
464.0			LIMESTONE	5.0	29.2
459.0			SHALE	7.0	34.2
452.0			UNCLASSIFIED	6.0	41.2
446.0			COAL	0.5	47.2
445.5			SHALE	1.5	47.7

MAPID: 14501097000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW SE NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.552223

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976953

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 480.0

LOGGED (FT.): 60.2

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #156

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0			UNCONSOLIDATED	23.0	0.0
457.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	23.0
453.0	CARBONDALE		SHALE	6.0	27.0
447.0	CARBONDALE		UNCLASSIFIED	3.0	33.0
444.0	CARBONDALE		SHALE	5.0	36.0
439.0	CARBONDALE		SHALE	5.0	41.0
434.0	CARBONDALE	BRERETON	LIMESTONE	6.0	46.0
428.0	CARBONDALE	ANNA	SHALE	2.0	52.0
426.0	CARBONDALE	HERRIN	COAL	6.2	54.0

MAPID: 14501098000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW NW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.547601

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.980536

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 479.6

LOGGED (FT.): 52.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #157

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
479.6			UNCONSOLIDATED	35.0	0.0
444.6			UNCLASSIFIED	3.5	35.0
441.1	CARBONDALE		SHALE	7.5	38.5
433.6	CARBONDALE	ST. DAVID	LIMESTONE	3.0	46.0
430.6	CARBONDALE	SPRINGFIELD	COAL	3.0	49.0

MAPID: 14501099000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW NE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.543077

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.980468

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 458.6

LOGGED (FT.): 47.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #158

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
458.6			UNCONSOLIDATED	17.0	0.0
441.6	CARBONDALE	BRERETON	LIMESTONE	3.0	17.0
438.6	CARBONDALE	HERRIN	COAL	5.7	20.0
432.9	CARBONDALE		CLAYSTONE	2.0	25.7
430.9	CARBONDALE		LIMESTONE	5.0	27.7
425.9	CARBONDALE		SHALE	6.5	32.7
419.4	CARBONDALE		UNCLASSIFIED	4.0	39.2
415.4	CARBONDALE	TURNER MINE	SHALE	0.5	43.2
414.9	CARBONDALE	SPRINGFIELD	COAL	4.0	43.7

MAPID: 1450110000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW SW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.547696

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976889

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 484.2

LOGGED (FT.): 35.8

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #107A

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
484.2			UNCONSOLIDATED	20.0	0.0
464.2	CARBONDALE		SHALE	3.0	20.0
461.2	CARBONDALE		UNCLASSIFIED	4.0	23.0
457.2	CARBONDALE		SHALE	3.0	27.0
454.2	CARBONDALE	HERRIN	COAL	5.8	30.0

MAPID: 14501101000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW SW NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.556754

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.977014

DATE COLLECTED:

SURFACE ELEVATION (FT.): 505.2

LOGGED (FT.): 77.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #105

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
505.2			UNCONSOLIDATED	22.0	0.0
483.2	CARBONDALE		SHALE	18.0	22.0
465.2	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	40.0
461.7	CARBONDALE		SHALE	6.0	43.5
455.7	CARBONDALE		UNCLASSIFIED	2.0	49.5
453.7	CARBONDALE		SHALE	3.5	51.5
450.2	CARBONDALE		COAL	1.0	55.0
449.2	CARBONDALE		UNCLASSIFIED	4.0	56.0
445.2	CARBONDALE	BRERETON	LIMESTONE	8.0	60.0
437.2	CARBONDALE	ANNA	SHALE	3.0	68.0
434.2	CARBONDALE	HERRIN	COAL	6.0	71.0

MAPID: 14501102000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 28 QUARTERS/FOOTAGES: SW SW SE NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.552223 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.976953 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 486.0 LOGGED (FT.): 53.7 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #106 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
486.0			UNCONSOLIDATED	8.0	0.0
478.0	CARBONDALE		SANDSTONE	7.0	8.0
471.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	15.0
467.0	CARBONDALE		SHALE	7.5	19.0
459.5	CARBONDALE		SHALE	14.5	26.5
445.0	CARBONDALE	BRERETON	LIMESTONE	7.0	41.0
438.0	CARBONDALE	HERRIN	COAL	5.7	48.0

MAPID: 14501103000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 28 QUARTERS/FOOTAGES: SW SW SW NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.547696 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.976889 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 486.0 LOGGED (FT.): 49.7 LOG TYPE: Drillers Log
 SOURCE: UNTIED ELECTRIC COAL #107 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
486.0			UNCONSOLIDATED	15.0	0.0
471.0	CARBONDALE		SANDSTONE/SHALE	6.0	15.0
465.0	CARBONDALE		SHALE	5.0	21.0
460.0	CARBONDALE		LIMESTONE	7.0	26.0
453.0	CARBONDALE		SHALE	3.0	33.0
450.0	CARBONDALE		SHALE	7.0	36.0
443.0	CARBONDALE	HERRIN	COAL	6.7	43.0

MAPID: 14501104000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW SE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.543166

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.976827

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 488.4

LOGGED (FT.): 52.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #108

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
488.4			UNCONSOLIDATED	16.0	0.0
472.4	CARBONDALE		SANDSTONE/SHALE	8.0	16.0
464.4	CARBONDALE		SHALE	15.0	24.0
449.4	CARBONDALE	BRERETON	LIMESTONE	7.0	39.0
442.4	CARBONDALE	ANNA	SHALE	1.0	46.0
441.4	CARBONDALE	HERRIN	COAL	5.5	47.0

MAPID: 14501105000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW NW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.556855

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.973359

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 506.6

LOGGED (FT.): 58.8

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #55

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
506.6			UNCONSOLIDATED	20.0	0.0
486.6			UNCLASSIFIED	4.0	20.0
482.6	CARBONDALE		SHALE	6.0	24.0
476.6	CARBONDALE		UNCLASSIFIED	1.0	30.0
475.6	CARBONDALE		SHALE	6.0	31.0
469.6	CARBONDALE	JAMESTOWN	COAL	1.0	37.0
468.6	CARBONDALE		SHALE	6.0	38.0
462.6	CARBONDALE	BRERETON	LIMESTONE	6.0	44.0
456.6	CARBONDALE	ANNA	SHALE	3.0	50.0
453.6	CARBONDALE	HERRIN	COAL	5.8	53.0

MAPID: 14501106000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW NE SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.552322

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.973301

DATE COLLECTED:

SURFACE ELEVATION (FT.): 507.2

LOGGED (FT.): 59.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #56

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
507.2			UNCONSOLIDATED	18.0	0.0
489.2	CARBONDALE		SANDSTONE/SHALE	5.0	18.0
484.2	CARBONDALE		UNCLASSIFIED	3.5	23.0
480.7	CARBONDALE		SHALE	12.5	26.5
468.2	CARBONDALE		UNCLASSIFIED	1.0	39.0
467.2	CARBONDALE		SHALE	6.0	40.0
461.2	CARBONDALE	BRERETON	LIMESTONE	6.0	46.0
455.2	CARBONDALE	ANNA	SHALE	3.5	52.0
451.7	CARBONDALE	HERRIN	COAL	3.5	55.5

MAPID: 14501107000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW NW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.547788

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.973242

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 501.0

LOGGED (FT.): 39.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #57

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
501.0			UNCONSOLIDATED	28.5	0.0
472.5			UNCLASSIFIED	1.0	28.5
471.5	CARBONDALE		SHALE	3.0	29.5
468.5	CARBONDALE	ANNA	SHALE	1.0	32.5
467.5	CARBONDALE	HERRIN	COAL	6.0	33.5

MAPID: 14501108000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW NE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.543258

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.973186

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 504.6

LOGGED (FT.): 60.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #58

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
504.6			UNCONSOLIDATED	19.0	0.0
485.6	CARBONDALE		SANDSTONE	3.0	19.0
482.6	CARBONDALE		SHALE	14.0	22.0
468.6	CARBONDALE		SHALE	5.0	36.0
463.6	CARBONDALE	BRERETON	LIMESTONE	11.0	41.0
452.6	CARBONDALE	ANNA	SHALE	3.0	52.0
449.6	CARBONDALE	HERRIN	COAL	5.7	55.0

MAPID: 14501110000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW SW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.547883

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969598

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 503.7

LOGGED (FT.): 49.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #7A

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
503.7			UNCONSOLIDATED	19.0	0.0
484.7	CARBONDALE		SHALE	2.0	19.0
482.7	CARBONDALE		SHALE	7.0	21.0
475.7	CARBONDALE		SHALE	1.0	28.0
474.7	CARBONDALE		UNCLASSIFIED	5.0	29.0
469.7	CARBONDALE	ST. DAVID	LIMESTONE	6.0	34.0
463.7	CARBONDALE		SHALE	2.5	40.0
461.2	CARBONDALE	TURNER MINE	SHALE	2.5	42.5
458.7	CARBONDALE	SPRINGFIELD	COAL	4.7	45.0

MAPID: 14501112000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 28 QUARTERS/FOOTAGES: 0' S line, 1320' W line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.552936 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.969201 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 505.5 LOGGED (FT.): 55.9 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #6 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
505.5			UNCONSOLIDATED	20.0	0.0
485.5	CARBONDALE		SANDSTONE/SHALE	12.0	20.0
473.5	CARBONDALE	JAMESTOWN	COAL	0.5	32.0
473.0	CARBONDALE		UNCLASSIFIED	1.0	32.5
472.0	CARBONDALE		SHALE	6.5	33.5
465.5	CARBONDALE	BRERETON	LIMESTONE	5.0	40.0
460.5	CARBONDALE	ANNA	SHALE	5.0	45.0
455.5	CARBONDALE	HERRIN	COAL	5.9	50.0

MAPID: 14501112000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 28 QUARTERS/FOOTAGES: 0' S line, 1320' W line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.552936 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 37.969201 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 506.0 LOGGED (FT.): 55.9 LOG TYPE: Drillers Log
 SOURCE: WELL TYPE: Coal Test
 COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
486.0	CARBONDALE	LAWSON	SILTY SHALE	12.0	20.0
474.0	CARBONDALE	JAMESTOWN	COAL	0.5	32.0
473.5	CARBONDALE		SHALE	7.5	32.5
466.0	CARBONDALE	BRERETON	LIMESTONE	5.0	40.0
461.0	CARBONDALE	ANNA	BLACK SHALE	5.0	45.0
456.0	CARBONDALE	HERRIN	COAL	5.9	50.0

MAPID: 14501113000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW SW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.547883

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969598

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 500.7

LOGGED (FT.): 52.3

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #7

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.7			UNCONSOLIDATED	20.0	0.0
480.7	CARBONDALE		SANDSTONE/SHALE	14.0	20.0
466.7	CARBONDALE		CLAYSTONE	7.5	34.0
459.2	CARBONDALE	BRERETON	LIMESTONE	5.5	41.5
453.7	CARBONDALE	ANNA	SHALE	2.0	47.0
451.7	CARBONDALE	HERRIN	COAL	3.3	49.0

MAPID: 14501114000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW SE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.543346

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969544

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 499.6

LOGGED (FT.): 56.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #8

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
499.6			UNCONSOLIDATED	41.5	0.0
458.1			SHALE	1.5	41.5
456.6			COAL	1.0	43.0
455.6			LIMESTONE	4.0	44.0
451.6			SANDSTONE	8.0	48.0

MAPID: 14501120000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 28

QUARTERS/FOOTAGES: SW SW SE SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.55242

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969651

DATE COLLECTED:

SURFACE ELEVATION (FT.): 516.1

LOGGED (FT.): 64.6

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
516.1			UNCONSOLIDATED	16.0	0.0
500.1	CARBONDALE		SHALE	9.5	16.0
490.6	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	25.5
486.1	CARBONDALE		SHALE	15.5	30.0
470.5	CARBONDALE	BRERETON	LIMESTONE	9.5	45.6
461.1	CARBONDALE	ANNA	SHALE	3.5	55.0
457.6	CARBONDALE	HERRIN	COAL	6.1	58.5

MAPID: 14500300000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 29 QUARTERS/FOOTAGES: SE SW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.569031 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.971257 DATE COLLECTED: 12 / 14 / 1925

SURFACE ELEVATION (FT.): 521.4 LOGGED (FT.): 95.5 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #55 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
521.4			UNCONSOLIDATED	21.0	0.0	
500.4	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	21.0	
495.9	CARBONDALE		CLAYSTONE	3.5	25.5	
492.4	CARBONDALE		SHALE	3.7	29.0	
488.7	CARBONDALE		SHALE	2.0	32.7	
486.7	CARBONDALE		SHALE	4.0	34.7	
482.7	CARBONDALE		COAL	0.3	38.7	
482.4	CARBONDALE		SHALE	12.0	39.0	
470.4	CARBONDALE		SHALE	3.5	51.0	
466.9	CARBONDALE	BRERETON	LIMESTONE	1.2	54.5	
465.7	CARBONDALE		SHALE	0.5	55.7	
465.2	CARBONDALE	HERRIN	COAL	6.3	56.2	
458.9	CARBONDALE		CLAYSTONE	6.0	62.5	
452.9	CARBONDALE		LIMESTONE	5.7	68.5	
447.2	CARBONDALE		CLAYSTONE	1.8	74.2	
445.4	CARBONDALE		UNCLASSIFIED	10.0	76.0	
435.4	CARBONDALE		SHALE	1.0	86.0	
434.4	CARBONDALE	ST. DAVID	LIMESTONE	1.2	87.0	
433.2	CARBONDALE		CLAYSTONE	0.5	88.2	
432.7	CARBONDALE		SHALE	0.5	88.7	
432.2	CARBONDALE	SPRINGFIELD	COAL	4.8	89.2	
427.4	CARBONDALE		CLAYSTONE	1.5	94.0	

MAPID: 14500301000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 29

QUARTERS/FOOTAGES: 0' S line, 0' W line

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.575997

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969533

DATE COLLECTED: 12 / 0 / 1925

SURFACE ELEVATION (FT.): 509.1

LOGGED (FT.): 74.0

LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #54

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
509.1			UNCONSOLIDATED	26.0	0.0
483.1	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	26.0
481.6	CARBONDALE	BANKSTON FORK	CLAYSTONE & LIMESTONE	6.5	27.5
475.1	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	34.0
470.1	CARBONDALE		CLAYSTONE	1.0	39.0
469.1	CARBONDALE		SHALE	4.0	40.0
465.1	CARBONDALE		SHALE	2.0	44.0
463.1	CARBONDALE	CONANT	LIMESTONE	5.0	46.0
462.6	CARBONDALE		SHALE	5.0	46.5
457.6	CARBONDALE		COAL	1.0	51.5
456.6	CARBONDALE		UNCLASSIFIED	2.5	52.5
454.1	CARBONDALE		UNCLASSIFIED	6.0	55.0
448.1	CARBONDALE	ANNA	UNCLASSIFIED	4.5	61.0
443.6	CARBONDALE	HERRIN	COAL	6.5	65.5
437.1	CARBONDALE		CLAYSTONE	2.0	72.0

MAPID: 14500301000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 29 QUARTERS/FOOTAGES: 0' S line, 0' W line

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.575997

GEOLOGIST:

CONFIDENTIAL: N

LATITUDE: 37.969533

DATE COLLECTED:

SURFACE ELEVATION (FT.): 509.0

LOGGED (FT.): 72.4

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.5	CARBONDALE	GALUM	LIMESTONE	1.5	26.5
481.0	CARBONDALE		LIMESTONE W/ SHALE	6.5	28.0
474.5	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	34.5
469.5	CARBONDALE	LAWSON	CLAYSTONE	1.0	39.5
468.5	CARBONDALE	LAWSON	GRAY SHALE	4.0	40.5
464.5	CARBONDALE	LAWSON	DARK GRAY SHALE	2.0	44.5
462.5	CARBONDALE	CONANT	LIMESTONE W/ SHALE	5.5	46.5
457.0	CARBONDALE	JAMESTOWN	BONE COAL	1.0	52.0
456.0	CARBONDALE		BLACK SHALE	2.5	53.0
453.5	CARBONDALE	BRERETON	LIMESTONE	6.0	55.5
447.5	CARBONDALE	ANNA	BLACK SHALE	4.5	61.5
443.0	CARBONDALE	HERRIN	COAL	6.4	66.0

MAPID: 14500302000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 29

QUARTERS/FOOTAGES: NE SW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.563236

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.972083

DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.0

LOGGED (FT.): 72.0

LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #58

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
508.0			UNCONSOLIDATED	19.5	0.0
488.5	CARBONDALE		SHALE	3.5	19.5
485.0	CARBONDALE		SHALE	2.0	23.0
483.0	CARBONDALE	BRERETON	LIMESTONE	4.0	25.0
479.0	CARBONDALE	ANNA	SHALE	5.0	29.0
474.0	CARBONDALE	HERRIN	COAL	6.5	34.0
467.5	CARBONDALE		CLAYSTONE	2.5	40.5
465.0	CARBONDALE		CLAYSTONE & LIMESTONE	2.0	43.0
463.0	CARBONDALE		LIMESTONE	6.0	45.0
457.0	CARBONDALE		SHALE	1.0	51.0
456.0	CARBONDALE		SHALE	1.0	52.0
455.0	CARBONDALE		LIMESTONE	4.0	53.0
451.0	CARBONDALE		SHALE	4.0	57.0
447.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	61.0
446.0	CARBONDALE	TURNER MINE	SHALE	1.5	62.0
444.5	CARBONDALE	SPRINGFIELD	COAL	4.7	63.5
439.8	CARBONDALE		CLAYSTONE	3.8	68.2

MAPID: 14500594000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 29

QUARTERS/FOOTAGES: SE SW SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.563283

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.970255

DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.0

LOGGED (FT.): 105.0

LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING #57

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
508.0			UNCONSOLIDATED	36.0	0.0
472.0	CARBONDALE		LIMESTONE	3.5	36.0
468.5	CARBONDALE		CLAYSTONE	3.5	39.5
465.0	CARBONDALE		SHALE	4.0	43.0
461.0	CARBONDALE	ST. DAVID	LIMESTONE	4.0	47.0
457.0	CARBONDALE	TURNER MINE	SHALE	6.0	51.0
451.0	CARBONDALE	SPRINGFIELD	COAL	5.8	57.0
445.2	CARBONDALE		CLAYSTONE	3.2	62.8
442.0	CARBONDALE		LIMESTONE AND SANDSTONE	3.0	66.0
439.0	CARBONDALE		LIMESTONE	1.0	69.0
438.0	CARBONDALE		LIMESTONE	2.0	70.0
436.0	CARBONDALE		SHALE	5.0	72.0
431.0	CARBONDALE		SANDSTONE	28.0	77.0

MAPID: 14501116000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 29

QUARTERS/FOOTAGES: SW SW SE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.561371

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.977084

DATE COLLECTED:

SURFACE ELEVATION (FT.): 505.6

LOGGED (FT.): 54.4

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #104

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
505.6			UNCONSOLIDATED	22.0	0.0
483.6			UNCLASSIFIED	1.0	22.0
482.6	CARBONDALE		CLAYSTONE	5.0	23.0
477.6	CARBONDALE		LIMESTONE	2.0	28.0
475.6	CARBONDALE		SANDSTONE	7.5	30.0
468.1	CARBONDALE		LIMESTONE	4.5	37.5
463.6	CARBONDALE		SHALE	1.5	42.0
462.1	CARBONDALE		SHALE	11.0	43.5

MAPID: 14501117000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 29

QUARTERS/FOOTAGES: SE NW NE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.560264

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.975237

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 502.8

LOGGED (FT.): 55.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #54A

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
502.8			UNCONSOLIDATED	18.0	0.0
484.8	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	18.0
481.3	CARBONDALE		SHALE	6.5	21.5
474.8	CARBONDALE		SHALE	7.5	28.0
467.3	CARBONDALE		COAL	1.5	35.5
465.8	CARBONDALE		SHALE	3.5	37.0
462.3	CARBONDALE	BRERETON	LIMESTONE	5.5	40.5
456.8	CARBONDALE	ANNA	SHALE	3.0	46.0
453.8	CARBONDALE	HERRIN	COAL	6.0	49.0

MAPID: 14501118000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 29

QUARTERS/FOOTAGES: SW SW NE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.561466

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.973428

DATE COLLECTED:

SURFACE ELEVATION (FT.): 512.3

LOGGED (FT.): 70.9

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #54

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
512.3			UNCONSOLIDATED	20.0	0.0
492.3	CARBONDALE		SHALE	6.0	20.0
486.3	CARBONDALE	BRERETON	LIMESTONE	3.0	26.0
483.3	CARBONDALE	ANNA	SHALE	5.0	29.0
478.3	CARBONDALE	HERRIN	COAL	6.7	34.0
471.6	CARBONDALE		CLAYSTONE	2.0	40.7
469.6	CARBONDALE		LIMESTONE	6.0	42.7
463.6	CARBONDALE		SHALE	3.0	48.7
460.6	CARBONDALE	ST. DAVID	LIMESTONE	9.0	51.7
451.6	CARBONDALE		SHALE	2.0	60.7
449.6	CARBONDALE		UNCLASSIFIED	1.0	62.7
448.6	CARBONDALE	TURNER MINE	SHALE	1.0	63.7
447.6	CARBONDALE	SPRINGFIELD	COAL	6.2	64.7

MAPID: 14501122000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 29

QUARTERS/FOOTAGES: SW SW SE SE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.561564

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.969773

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 510.6

LOGGED (FT.): 62.9

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL # 4

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
510.6			UNCONSOLIDATED	24.0	0.0
486.6	CARBONDALE		SANDSTONE	1.0	24.0
485.6	CARBONDALE		CLAYSTONE	20.0	25.0
465.6	CARBONDALE		SHALE	2.0	45.0
463.6	CARBONDALE		LIMESTONE	3.0	47.0
460.6	CARBONDALE		SHALE	2.0	50.0
458.6	CARBONDALE		SHALE	3.0	52.0
455.6	CARBONDALE		SHALE	3.0	55.0
452.6	CARBONDALE	SPRINGFIELD	COAL	4.9	58.0

MAPID: 14590196000C VERSION: 1

PROJECT: NCRDS 02

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 29

QUARTERS/FOOTAGES: 1' S line, 1' W line of SW SW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.566585

GEOLOGIST: PHILLIPS

CONFIDENTIAL: N

LATITUDE: 37.976711

DATE COLLECTED: 1 / 5 / 1927

SURFACE ELEVATION (FT.): 480.0

LOGGED (FT.): 48.5

LOG TYPE: Drillers Log

SOURCE: OTHER 169

WELL TYPE: Coal Test

COMMENT: SE DENMARK BOX 43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
480.0	PLEISTOCENE		UNCONSOLIDATED	11.0	0.0
469.0	SHELBURN		LIMESTONE	5.0	11.0
464.0	SHELBURN		GRAY SHALE	4.0	16.0
460.0	SHELBURN		LIMESTONE	3.0	20.0
457.0	SHELBURN		GRAY SHALE	5.0	23.0
452.0	SHELBURN		LIMESTONE	9.0	28.0
443.0	CARBONDALE	ANNA	BLACK SHALE	5.0	37.0
438.0	CARBONDALE	HERRIN	COAL	6.5	42.0 FAIR

MAPID: 14500281000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 30 QUARTERS/FOOTAGES: NW NW NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.593811 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.984043 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 502.7 LOGGED (FT.): 555.0 LOG TYPE: Drillers Log
 SOURCE: WILLIS COAL & MINING WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
502.7			UNCONSOLIDATED	35.0	0.0
467.7			SIDERITE	6.0	35.0
461.7	CARBONDALE		UNCLASSIFIED	6.0	41.0
455.7	CARBONDALE		SHALE	5.0	47.0
450.7	CARBONDALE		UNCLASSIFIED	3.0	52.0
447.7	CARBONDALE		SHALE	11.0	55.0
436.7	CARBONDALE		UNCLASSIFIED	6.0	66.0
430.7	CARBONDALE		CLAYSTONE	6.0	72.0

MAPID: 14500304000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 30 QUARTERS/FOOTAGES: NW NW NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.593811 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.984043 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 502.2 LOGGED (FT.): 547.2 LOG TYPE: Drillers Log
 SOURCE: WILLIS COAL & MINING WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
502.2			UNCONSOLIDATED	25.0	0.0
477.2	CARBONDALE		LIMESTONE	16.0	25.0
461.2	CARBONDALE		SHALE	6.0	41.0
455.2	CARBONDALE		LIMESTONE	20.0	47.0
435.2	CARBONDALE	HERRIN	COAL	6.0	67.0
429.2	CARBONDALE		CLAYSTONE	2.0	73.0
427.2	CARBONDALE		LIMESTONE	15.0	75.0
412.2	CARBONDALE		SHALE	2.0	90.0
410.2	CARBONDALE	SPRINGFIELD	COAL	4.7	92.0
405.5	CARBONDALE		LIMESTONE	17.0	96.7

MAPID: 14501200000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 30 QUARTERS/FOOTAGES: 485' N line, 825' W line of NE NW NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.589203 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.983075 DATE COLLECTED:

SURFACE ELEVATION (FT.): 503.2 LOGGED (FT.): 76.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL CO. WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
503.2			UNCONSOLIDATED	0.0	0.0
427.2	CARBONDALE	HERRIN	COAL	0.0	76.0

MAPID: 14502791000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 30 QUARTERS/FOOTAGES: 990' S line, 930' E line of NW SE NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.590683 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.981691 DATE COLLECTED: 11 / 20 / 1939

SURFACE ELEVATION (FT.): 498.0 LOGGED (FT.): 550.0 LOG TYPE: Drillers Log

SOURCE: GLEN CLARK WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
498.0			CLAYSTONE	20.0	0.0
478.0	CARBONDALE		LIMESTONE	20.0	20.0
458.0	CARBONDALE		SHALE	5.0	40.0
453.0	CARBONDALE		LIMESTONE	5.0	45.0
448.0	CARBONDALE		SHALE	10.0	50.0
438.0	CARBONDALE		LIMESTONE	15.0	60.0
423.0	CARBONDALE		CARBONACEOUS LIMESTONE	5.0	75.0
418.0	CARBONDALE	HERRIN	COAL WITH SHALE	5.0	80.0
413.0	CARBONDALE		SAND	55.0	85.0
358.0	CARBONDALE		SANDSTONE/SHALE	20.0	140.0
338.0	CARBONDALE		SHALE	35.0	160.0
303.0	CARBONDALE	SPRINGFIELD	COAL	5.0	195.0
298.0	CARBONDALE		COAL WITH SHALE	5.0	200.0
293.0	CARBONDALE		LIMESTONE	30.0	205.0
263.0	CARBONDALE		SHALE	30.0	235.0
233.0	CARBONDALE		LIMESTONE	35.0	265.0

MAPID: 14502793000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 30 QUARTERS/FOOTAGES: NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.589793 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.98077 DATE COLLECTED:

SURFACE ELEVATION (FT.): 520.0 LOGGED (FT.): 104.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
520.0			UNCONSOLIDATED	33.0	0.0
487.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	33.0
483.5	CARBONDALE	BANKSTON FORK	CLAYSTONE	3.5	36.5
480.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	40.0
475.5	CARBONDALE		SHALE	5.5	44.5
470.0	CARBONDALE	CONANT	LIMESTONE	2.0	50.0
468.0	CARBONDALE		SHALE	4.0	52.0
464.0	CARBONDALE		COAL	0.5	56.0
463.5	CARBONDALE		SHALE	3.5	56.5
460.0	CARBONDALE	BRERETON	LIMESTONE	6.0	60.0
454.0	CARBONDALE	ANNA	SHALE	6.0	66.0
448.0	CARBONDALE	HERRIN	COAL	6.0	72.0
442.0	CARBONDALE		CLAYSTONE	3.0	78.0
439.0	CARBONDALE		LIMESTONE	2.0	81.0
437.0	CARBONDALE		CLAYSTONE	7.0	83.0
430.0	CARBONDALE		LIMESTONE	3.0	90.0
427.0	CARBONDALE		CLAYSTONE	1.0	93.0
426.0	CARBONDALE	ST. DAVID	LIMESTONE	4.0	94.0
422.0	CARBONDALE	TURNER MINE	SHALE	1.0	98.0
421.0	CARBONDALE	SPRINGFIELD	COAL	4.0	99.0
417.0	CARBONDALE		CLAYSTONE	1.0	103.0

MAPID: 14502821000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 30 QUARTERS/FOOTAGES: 25' N line, 15' W line of NW NW NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.594335 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.98444 DATE COLLECTED: 6 / 1 / 1954

SURFACE ELEVATION (FT.): 497.0 LOGGED (FT.): 557.0 LOG TYPE: Drillers Log

SOURCE: GWIN DRILLING CO. WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
497.0			UNCONSOLIDATED	16.0	0.0
481.0	CARBONDALE		UNCLASSIFIED	4.0	16.0
477.0	CARBONDALE		SHALE	5.0	20.0
472.0	CARBONDALE		UNCLASSIFIED	2.0	25.0
470.0	CARBONDALE		SHALE	12.0	27.0
458.0	CARBONDALE	BRERETON	UNCLASSIFIED	5.0	39.0
453.0	CARBONDALE	ANNA	SHALE	2.0	44.0
451.0	CARBONDALE	HERRIN	COAL	5.0	46.0
446.0	CARBONDALE		SHALE	9.0	51.0
437.0	CARBONDALE		UNCLASSIFIED	5.0	60.0
432.0	CARBONDALE		SHALE	25.0	65.0
407.0	CARBONDALE		SANDSTONE	2.0	90.0
405.0	CARBONDALE		SANDSTONE/SHALE	8.0	92.0
397.0	CARBONDALE		SHALE	37.0	100.0
360.0	CARBONDALE	SPRINGFIELD	COAL	2.0	137.0
358.0	CARBONDALE		SHALE	10.0	139.0
348.0	CARBONDALE		UNCLASSIFIED	61.0	149.0
287.0	CARBONDALE		SANDSTONE	10.0	210.0

MAPID: 14503011000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 30 QUARTERS/FOOTAGES: SE NE SE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.577097 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.974129 DATE COLLECTED: 8 / 21 / 1971

SURFACE ELEVATION (FT.): 500.0 LOGGED (FT.): 128.0 LOG TYPE:

SOURCE: HORAN FORD WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.0			UNCONSOLIDATED	35.0	0.0
465.0	CARBONDALE		UNCLASSIFIED	8.0	35.0
457.0	CARBONDALE	HERRIN	COAL	5.0	43.0
452.0	CARBONDALE		UNCLASSIFIED	23.0	48.0
429.0	CARBONDALE		SHALE	49.0	71.0
380.0	CARBONDALE		SANDSTONE	8.0	120.0

MAPID: 14591095000C VERSION: 1

PROJECT: NCRDS 02

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 30 QUARTERS/FOOTAGES: 1' S line, 1' W line of SW NE NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.589786 GEOLOGIST: PHILLIPS

CONFIDENTIAL: N LATITUDE: 37.980772 DATE COLLECTED: 6 / 21 / 1928

SURFACE ELEVATION (FT.): 497.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log

SOURCE: OTHER 161 WELL TYPE: Coal Test

COMMENT: SE DENMARK BOX 43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
497.0	PLEISTOCENE		UNCONSOLIDATED	15.0	0.0	
482.0	PLEISTOCENE		UNKNOWN	10.0	15.0	DRILLER REPORTS SANDY SHALE
472.0	PLEISTOCENE		MUD	29.0	25.0	BLUE
443.0			SHALE	6.0	54.0	

MAPID: 14500305000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 31 QUARTERS/FOOTAGES: 1320' N line, 0' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.594761 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.966256 DATE COLLECTED:

SURFACE ELEVATION (FT.): 507.7 LOGGED (FT.): 68.0 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
507.7			UNCONSOLIDATED	14.0	0.0	
493.7	CARBONDALE		UNCLASSIFIED	7.0	14.0	
493.0	CARBONDALE		SHALE	7.0	14.7	
486.0	CARBONDALE		UNCLASSIFIED	0.3	21.7	
485.7	CARBONDALE		SHALE	3.5	22.0	
482.2	CARBONDALE	BRERETON	UNCLASSIFIED	7.0	25.5	
475.2	CARBONDALE	ANNA	SHALE	3.7	32.5	
471.5	CARBONDALE	HERRIN	COAL	5.7	36.2	
465.7	CARBONDALE		CLAYSTONE	5.0	42.0	
460.7	CARBONDALE		UNCLASSIFIED	6.5	47.0	
454.2	CARBONDALE	ST. DAVID	LIMESTONE	5.2	53.5	
449.0	CARBONDALE	TURNER MINE	SHALE	2.0	58.7	
447.0	CARBONDALE	SPRINGFIELD	COAL	4.0	60.7	
443.0	CARBONDALE		CLAYSTONE	3.3	64.7	

MAPID: 14500305000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 31 QUARTERS/FOOTAGES: 1320' N line, 0' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.594761

GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.966256

DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.0

LOGGED (FT.): 41.8

LOG TYPE: Drillers Log

SOURCE:

WELL TYPE: Coal Test

COMMENT: FAIR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
494.2	CARBONDALE	BANKSTON FORK	LIMESTONE	0.8	13.8
493.5	CARBONDALE	LAWSON	DARK GRAY SHALE	7.0	14.5
486.5	CARBONDALE	CONANT	LIMESTONE	0.3	21.5
486.2	CARBONDALE		BLACK SHALE	3.5	21.8
482.7	CARBONDALE	BRERETON	LIMESTONE	7.0	25.3
475.7	CARBONDALE	ANNA	BLACK SHALE	3.8	32.3
472.0	CARBONDALE	HERRIN	COAL	5.8	36.0

MAPID: 14500306000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 31 QUARTERS/FOOTAGES: NW NW SE NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.58952

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.965694

DATE COLLECTED:

SURFACE ELEVATION (FT.): 485.3

LOGGED (FT.): 73.0

LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.3			UNCONSOLIDATED	22.0	0.0
463.3	CARBONDALE		LIMESTONE	3.5	22.0
459.8	CARBONDALE		SHALE	2.0	25.5
457.8	CARBONDALE		UNCLASSIFIED	2.0	27.5
455.8	CARBONDALE		SHALE	1.0	29.5
454.8	CARBONDALE	TURNER MINE	SHALE	0.2	30.5
454.6	CARBONDALE	SPRINGFIELD	COAL	3.8	30.7
450.8	CARBONDALE		CLAYSTONE	2.5	34.5
448.3	CARBONDALE		CLAYSTONE	4.0	37.0
444.3	CARBONDALE		SANDSTONE	13.0	41.0
431.3	CARBONDALE		SHALE	8.0	54.0
423.3	CARBONDALE		SHALE	11.0	62.0

MAPID: 14500307000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 31

QUARTERS/FOOTAGES: SW SW SW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.58491

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.962868

DATE COLLECTED:

SURFACE ELEVATION (FT.): 469.4

LOGGED (FT.): 90.0

LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
469.4			UNCONSOLIDATED	31.5	0.0
437.9	CARBONDALE		LIMESTONE	3.0	31.5
434.9	CARBONDALE		SHALE	6.0	34.5
428.9	CARBONDALE	ST. DAVID	LIMESTONE	3.0	40.5
425.9	CARBONDALE		CLAYSTONE & SHALE	1.5	43.5
424.4	CARBONDALE	TURNER MINE	SHALE	1.5	45.0
422.9	CARBONDALE	SPRINGFIELD	COAL	3.7	46.5
419.2	CARBONDALE		CLAYSTONE	4.8	50.2
414.4	CARBONDALE		UNCLASSIFIED	4.0	55.0
410.4	CARBONDALE		SHALE	3.0	59.0
407.4	CARBONDALE		SANDSTONE	11.0	62.0
396.4	CARBONDALE		SHALE	17.0	73.0

MAPID: 14500308000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 31

QUARTERS/FOOTAGES: SE SE SW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.581409

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.962799

DATE COLLECTED:

SURFACE ELEVATION (FT.): 504.2

LOGGED (FT.): 89.0

LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
504.2			UNCONSOLIDATED	26.5	0.0	
477.7	CARBONDALE		SANDSTONE	15.0	26.5	
463.2	CARBONDALE		SANDSTONE	1.5	41.0	
461.2	CARBONDALE		SHALE	3.5	43.0	
457.7	CARBONDALE		SHALE	4.5	46.5	
453.2	CARBONDALE		SANDSTONE	14.0	51.0	
439.2	CARBONDALE		SHALE	9.0	65.0	
430.2	CARBONDALE		SANDSTONE	1.0	74.0	
429.2	CARBONDALE		UNCLASSIFIED	1.0	75.0	
428.2	CARBONDALE		SHALE	2.0	76.0	
426.2	CARBONDALE	BRIAR HILL	COAL	2.5	78.0	
423.7	CARBONDALE		UNCLASSIFIED	0.5	80.5	
423.2	CARBONDALE	TURNER MINE	SHALE	1.5	81.0	
421.7	CARBONDALE	SPRINGFIELD	COAL	4.5	82.5	
417.2	CARBONDALE		CLAYSTONE	2.0	87.0	

MAPID: 14528644000C VERSION: 1

PROJECT: NCRDS99

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 31 QUARTERS/FOOTAGES: 25' N line, 1500' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.589462 GEOLOGIST: C KOROSE

CONFIDENTIAL: N LATITUDE: 37.969727 DATE COLLECTED: 6 / 22 / 1937

SURFACE ELEVATION (FT.): 457.6 LOGGED (FT.): 65.1 LOG TYPE: Drillers Log

SOURCE: PITTSBURG & MIDWAY E-2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
457.6	PLEISTOCENE		UNCONSOLIDATED	22.0	0.0	
435.6	CARBONDALE		LIMESTONE	5.7	22.0	
429.9	CARBONDALE		SHALE	6.7	27.7	
423.3	CARBONDALE	CONANT	LIMESTONE	1.8	34.3	
421.4	CARBONDALE		SHALE	4.3	36.2	BLACK
417.1	CARBONDALE	JAMESTOWN	COAL	0.2	40.5	
416.9	CARBONDALE		LIMESTONE	1.0	40.7	
415.9	CARBONDALE		SHALE	9.3	41.7	BLACK
406.7	CARBONDALE	BRERETON	LIMESTONE	5.6	50.9	
401.1	CARBONDALE	ANNA	SHALE	0.5	56.5	BLACK
400.6	CARBONDALE	HERRIN	COAL	6.0	57.0	
394.6	CARBONDALE	HERRIN	SHALE	0.3	63.0	BLUE
394.3	CARBONDALE	HERRIN	COAL	1.8	63.3	

MAPID: 14528644000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 31 QUARTERS/FOOTAGES: 25' N line, 1500' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.589462 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 37.969727 DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 78.0 LOG TYPE: Drillers Log

SOURCE: APOGEE COAL COMPANY DC#1 WELL TYPE: Coal Test

COMMENT: PERMIT 54; CAPTAIN MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		UNKNOWN	28.0	0.0	LOG DOES NOT LIST
-	CARBONDALE		CALCAREOUS SHALE	2.0	28.0	DK GRAY; FOSSILIFEROUS; FISSILE
-	CARBONDALE	BRERETON	LIMESTONE	2.3	30.0	SOME SHALEY LAYERS
-	CARBONDALE	ANNA	CARBONACEOUS SHALE	1.7	32.3	DK GRAY, FISSILE, CALCAREOUS
-	CARBONDALE	ENERGY	CARBONACEOUS SHALE	4.0	34.0	
-	CARBONDALE	ENERGY	GRAY SHALE	0.4	38.0	FISSILE, < 0.5% PYRITE
-	CARBONDALE	HERRIN	COAL	6.4	38.4	
-	CARBONDALE		CARBONACEOUS SHALE	1.9	44.8	CALC.; FOSSILIFEROUS; FISSILE
-	CARBONDALE		GRAY SHALE	2.1	46.7	CALCAREOUS
-	CARBONDALE		LIMESTONE	2.1	48.8	
-	CARBONDALE		CALCAREOUS SHALE	3.1	50.9	GREENISH GRAY; FOSSILIFEROUS
-	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	5.0	54.0	
-	CARBONDALE	DYKERSBURG	FOSSILIFEROUS SHALE	3.0	59.0	OLIVE GRAY; CARB. LAYERS; CALC.
-	CARBONDALE	SPRINGFIELD	COAL	4.0	62.0	
-	CARBONDALE		CALCAREOUS SHALE	0.5	66.0	COALY LAYERS TO IMM THICK
-	CARBONDALE		CALCAREOUS SHALE	1.8	66.5	SOFT, POORLY CEMENTED; GREEN GRAY
-	CARBONDALE		SHALE	2.1	68.3	FISSIL; GREEN GRAY
-	CARBONDALE		SILTY SHALE	6.4	70.4	
-	CARBONDALE		SILTSTONE	1.2	76.8	

MAPID: 14500309000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 32 QUARTERS/FOOTAGES: 0' N line, 300' E line of SW SE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.56105 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.963846 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 425.0 LOGGED (FT.): 89.0 LOG TYPE: Drillers Log
 SOURCE: MURPHYSBORO PAVING BRICK CO. WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.0			UNCONSOLIDATED	26.0	0.0
399.0	CARBONDALE		CLAYSTONE	1.0	26.0
398.0	CARBONDALE		UNCLASSIFIED	3.0	27.0
395.0	CARBONDALE		CLAYSTONE	11.0	30.0
384.0	CARBONDALE		SHALE	16.0	41.0
368.0	CARBONDALE		SANDSTONE	1.0	57.0
367.0	CARBONDALE		SHALE	1.0	58.0
366.0	CARBONDALE		SANDSTONE	15.0	59.0
351.0	CARBONDALE		SANDSTONE	7.4	74.0
343.6	CARBONDALE		SHALE	4.2	81.4
339.4	CARBONDALE	BRIAR HILL	COAL	2.6	85.6
336.8	CARBONDALE		CLAYSTONE	0.8	88.2

MAPID: 14500310000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 32 QUARTERS/FOOTAGES: SE SE SE NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.567527 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.962573 DATE COLLECTED: 9 / 0 / 1920
 SURFACE ELEVATION (FT.): 515.4 LOGGED (FT.): 95.0 LOG TYPE: Drillers Log
 SOURCE: WILLIS COAL & MINING NO. 51 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
515.4			UNCONSOLIDATED	21.0	0.0
494.4			UNCLASSIFIED	7.0	21.0
487.4	CARBONDALE		SHALE	3.0	28.0
484.4	CARBONDALE	ST. DAVID	LIMESTONE	5.5	31.0
478.9	CARBONDALE	ST. DAVID	LIMESTONE	2.5	36.5
476.4	CARBONDALE	ST. DAVID	LIMESTONE	1.5	39.0
474.9	CARBONDALE	TURNER MINE	SHALE	1.5	40.5
473.4	CARBONDALE	SPRINGFIELD	COAL	5.0	42.0
468.4	CARBONDALE		CLAYSTONE	4.5	47.0
463.9			UNCLASSIFIED	6.5	51.5
457.4			SHALE	37.0	58.0

MAPID: 14500311000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 32

QUARTERS/FOOTAGES: SW SW SW NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.575582

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.962684

DATE COLLECTED:

SURFACE ELEVATION (FT.): 510.4

LOGGED (FT.): 90.0

LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING NO. 49

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
510.4			UNCONSOLIDATED	38.0	0.0
472.4			UNCLASSIFIED	6.5	38.0
465.9			SHALE	4.0	44.5
461.9	CARBONDALE		UNCLASSIFIED	0.5	48.5
461.4	CARBONDALE	TURNER MINE	SHALE	0.5	49.0
460.9	CARBONDALE	SPRINGFIELD	COAL	4.0	49.5
456.9	CARBONDALE		CLAYSTONE	3.5	53.5
453.4	CARBONDALE		CLAYSTONE	5.0	57.0
448.4	CARBONDALE		SHALE	16.0	62.0
432.4	CARBONDALE		SANDSTONE	12.0	78.0

MAPID: 14500312000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 32

QUARTERS/FOOTAGES: SW SW SE NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.570979

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.96262

DATE COLLECTED:

SURFACE ELEVATION (FT.): 510.4

LOGGED (FT.): 89.0

LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING NO. 50

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
510.4			UNCONSOLIDATED	40.0	0.0
470.4	CARBONDALE		SHALE	2.0	40.0
468.4	CARBONDALE		SHALE	1.5	42.0
466.9	CARBONDALE	BRERETON	UNCLASSIFIED	6.0	43.5
460.9	CARBONDALE	ANNA	SHALE	4.0	49.5
456.9	CARBONDALE	HERRIN	COAL	6.0	53.5
450.9	CARBONDALE		CLAYSTONE	2.5	59.5
448.4	CARBONDALE		CLAYSTONE	3.0	62.0
445.4	CARBONDALE		UNCLASSIFIED	5.0	65.0
440.4	CARBONDALE		CLAYSTONE	3.0	70.0
437.4	CARBONDALE	ST. DAVID	LIMESTONE	3.2	73.0
434.2	CARBONDALE	TURNER MINE	SHALE	5.0	76.2
429.2	CARBONDALE	SPRINGFIELD	COAL	5.0	81.2
424.2	CARBONDALE		CLAYSTONE	2.8	86.2

MAPID: 14500313000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 32

QUARTERS/FOOTAGES: NE NE SE NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.567453

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.965306

DATE COLLECTED:

SURFACE ELEVATION (FT.): 518.7

LOGGED (FT.): 77.0

LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING NO. 52

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
518.7			UNCONSOLIDATED	20.0	0.0
498.7			UNCLASSIFIED	3.0	20.0
495.7			SHALE	1.0	23.0
494.7	CARBONDALE	ANNA	SHALE	3.0	24.0
491.7	CARBONDALE	HERRIN	COAL	6.5	27.0
485.2	CARBONDALE		CLAYSTONE	6.0	33.5
479.2	CARBONDALE		CLAYSTONE	2.5	39.5
476.7	CARBONDALE		UNCLASSIFIED	7.0	42.0
469.7	CARBONDALE		CLAYSTONE	2.0	49.0
467.7	CARBONDALE		CLAYSTONE	1.0	51.0
466.7	CARBONDALE	ST. DAVID	LIMESTONE	6.0	52.0
460.7	CARBONDALE	TURNER MINE	SHALE	3.0	58.0
457.7	CARBONDALE	TURNER MINE	SHALE	3.0	61.0
454.7	CARBONDALE	TURNER MINE	SHALE	3.0	64.0
451.7	CARBONDALE	SPRINGFIELD	COAL	6.0	67.0
445.7	CARBONDALE		CLAYSTONE	4.0	73.0

MAPID: 14500314000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 32 QUARTERS/FOOTAGES: 660' N line, 660' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.573739 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.967676 DATE COLLECTED:

SURFACE ELEVATION (FT.): 513.1 LOGGED (FT.): 75.3 LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING NO. 53 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
513.1			UNCONSOLIDATED	27.0	0.0
486.1	CARBONDALE		LIMESTONE	2.0	27.0
484.1	CARBONDALE		CLAYSTONE	7.0	29.0
477.1	CARBONDALE	BANKSTON FORK	CLAYSTONE	5.0	36.0
472.1	CARBONDALE		CLAYSTONE	1.0	41.0
471.1	CARBONDALE		SHALE	3.5	42.0
467.6	CARBONDALE	CONANT	LIMESTONE	2.5	45.5
465.1	CARBONDALE		SHALE	4.5	48.0
460.6	CARBONDALE		CARBONACEOUS SHALE	1.0	52.5
459.6	CARBONDALE		SHALE	6.2	53.5
453.4	CARBONDALE	BRERETON	LIMESTONE	5.3	59.7
448.1	CARBONDALE	ANNA	SHALE	3.5	65.0
444.6	CARBONDALE	HERRIN	COAL	6.0	68.5
438.6	CARBONDALE		CLAYSTONE	1.0	74.5

MAPID: 14500314000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 32 QUARTERS/FOOTAGES: 660' N line, 660' W line

QUADRANGLE: WILLISVILLE LONGITUDE: -89.573739 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.967676 DATE COLLECTED:

SURFACE ELEVATION (FT.): 513.0 LOGGED (FT.): 74.8 LOG TYPE: Drillers Log

SOURCE: WELL TYPE: Coal Test

COMMENT: GOOD DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.5	CARBONDALE	GALUM	LIMESTONE W/ SHALE	2.0	27.5
483.5	CARBONDALE		LIMESTONE W/ SHALE	7.0	29.5
476.5	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	36.5
471.5	CARBONDALE	LAWSON	CLAYSTONE	1.0	41.5
470.5	CARBONDALE	LAWSON	GRAY SHALE	3.5	42.5
467.0	CARBONDALE	CONANT	LIMESTONE W/ SHALE	7.0	46.0
460.0	CARBONDALE	JAMESTOWN	BONE COAL	1.0	53.0
459.0	CARBONDALE		CLAYSTONE & SHALE	6.3	54.0
452.7	CARBONDALE	BRERETON	LIMESTONE	5.3	60.3
447.5	CARBONDALE	ANNA	BLACK SHALE	3.5	65.5
444.0	CARBONDALE	HERRIN	COAL	5.8	69.0

MAPID: 14500315000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 32

QUARTERS/FOOTAGES: NW NW NE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.561587

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.96886

DATE COLLECTED:

SURFACE ELEVATION (FT.): 508.2

LOGGED (FT.): 80.0

LOG TYPE: Drillers Log

SOURCE: WILLIS COAL & MINING NO. 56

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
508.2			UNCONSOLIDATED	37.0	0.0
471.2	CARBONDALE		SHALE	5.0	37.0
466.2	CARBONDALE		UNCLASSIFIED	1.3	42.0
464.9	CARBONDALE	TURNER MINE	SHALE	1.7	43.3
463.2	CARBONDALE	SPRINGFIELD	COAL	5.2	45.0
458.0	CARBONDALE		CLAYSTONE	3.8	50.2
454.2	CARBONDALE		UNCLASSIFIED	2.5	54.0
451.7	CARBONDALE		LIMESTONE	0.2	56.5
451.5	CARBONDALE		CLAYSTONE	1.3	56.7
450.2	CARBONDALE		SHALE	6.0	58.0
444.2	CARBONDALE		SHALE	14.0	64.0
430.2	CARBONDALE		SANDSTONE	2.0	78.0

MAPID: 14501123000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 32

QUARTERS/FOOTAGES: SW SW NW NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.575495

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.966333

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 516.1

LOGGED (FT.): 78.2

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #1-1

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
516.1			UNCONSOLIDATED	27.0	0.0
489.1			LIMESTONE	2.5	27.0
486.6	CARBONDALE		SHALE	4.5	29.5
482.1	CARBONDALE	BANKSTON FORK	LIMESTONE	8.5	34.0
473.6	CARBONDALE		SHALE	3.5	42.5
470.1	CARBONDALE	CONANT	LIMESTONE	3.0	46.0
467.1	CARBONDALE		SHALE	8.0	49.0
459.1	CARBONDALE	BRERETON	LIMESTONE	2.0	57.0
457.1	CARBONDALE	ANNA	SHALE	5.0	59.0
452.1	CARBONDALE	ENERGY	UNCLASSIFIED	8.0	64.0
444.1	CARBONDALE	HERRIN	COAL	6.2	72.0

MAPID: 14501124000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 32

QUARTERS/FOOTAGES: SE NW NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.572605

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.966747

DATE COLLECTED:

SURFACE ELEVATION (FT.): 516.1

LOGGED (FT.): 62.9

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
516.1			UNCONSOLIDATED	26.5	0.0
489.6			UNCLASSIFIED	4.5	26.5
485.1	CARBONDALE		SHALE	4.5	31.0
480.6	CARBONDALE		LIMESTONE	3.5	35.5
477.1	CARBONDALE		SHALE	5.0	39.0
472.1	CARBONDALE		UNCLASSIFIED	5.5	44.0
466.6	CARBONDALE	BRERETON	LIMESTONE	5.0	49.5
461.6	CARBONDALE	ANNA	SHALE	3.5	54.5
458.1	CARBONDALE	HERRIN	COAL	4.9	58.0

MAPID: 14501125000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 32

QUARTERS/FOOTAGES: SW SW NE NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.570885

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.966265

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 514.3

LOGGED (FT.): 54.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
514.3			UNCONSOLIDATED	19.0	0.0
495.3			SHALE	6.0	19.0
489.3			UNCLASSIFIED	1.5	25.0
487.8	CARBONDALE		SHALE	5.0	26.5
482.8	CARBONDALE		SHALE	8.5	31.5
474.3	CARBONDALE	BRERETON	LIMESTONE	4.5	40.0
469.8	CARBONDALE	ANNA	SHALE	3.5	44.5
466.3	CARBONDALE	HERRIN	COAL	6.5	48.0

MAPID: 14501126000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 32

QUARTERS/FOOTAGES: SW SW NW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.566275

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.966198

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 521.7

LOGGED (FT.): 67.1

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL CO.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
521.7			UNCONSOLIDATED	22.0	0.0
499.7	CARBONDALE	ANNA	SHALE	3.5	22.0
496.2	CARBONDALE	HERRIN	COAL	6.0	25.5
490.2	CARBONDALE		CLAYSTONE	4.0	31.5
486.2	CARBONDALE		UNCLASSIFIED	7.0	35.5
479.2	CARBONDALE		SHALE	3.0	42.5
476.2	CARBONDALE	ST. DAVID	LIMESTONE	10.0	45.5
466.2	CARBONDALE	TURNER MINE	SHALE	5.0	55.5
461.2	CARBONDALE	SPRINGFIELD	COAL	6.6	60.5

MAPID: 14501127000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 32

QUARTERS/FOOTAGES: SW SW NE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.561669

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.966132

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 514.7

LOGGED (FT.): 43.5

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #4-1

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
514.7			UNCONSOLIDATED	13.0	0.0
501.7			SHALE	14.0	13.0
487.7	CARBONDALE		LIMESTONE	5.5	27.0
482.2	CARBONDALE		SHALE	4.5	32.5
477.7	CARBONDALE	TURNER MINE	SHALE	1.5	37.0
476.2	CARBONDALE	SPRINGFIELD	COAL	5.0	38.5

MAPID: 14501129000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 32 QUARTERS/FOOTAGES: SW SW SE NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.570979 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.96262 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 511.6 LOGGED (FT.): 57.8 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #52-1 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
511.6			UNCONSOLIDATED	15.0	0.0
496.6			SHALE	25.0	15.0
471.6	CARBONDALE		UNCLASSIFIED	9.0	40.0
462.6	CARBONDALE	TURNER MINE	SHALE	4.0	49.0
458.6	CARBONDALE	SPRINGFIELD	COAL	4.8	53.0

MAPID: 14501131000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 32 QUARTERS/FOOTAGES: SW SW SE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.56177 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.962493 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 508.2 LOGGED (FT.): 23.0 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #54-1 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
508.2			UNCONSOLIDATED	16.0	0.0
492.2	CARBONDALE	TURNER MINE	SHALE	3.5	16.0
488.7	CARBONDALE	SPRINGFIELD	COAL	3.5	19.5

MAPID: 14502822000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 32 QUARTERS/FOOTAGES: SE SW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.569408 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.956678 DATE COLLECTED: 5 / 22 / 1950
 SURFACE ELEVATION (FT.): LOGGED (FT.): 60.0 LOG TYPE:
 SOURCE: GWIN DRILLING CO. WELL TYPE: Plugged and/or Abandoned
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	16.0	0.0
-	CARBONDALE		SANDSTONE	27.0	16.0
-	CARBONDALE		SHALE	2.0	43.0
-	CARBONDALE		SANDSTONE	10.0	45.0
-	CARBONDALE		SHALE	5.0	55.0

MAPID: 14528273000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 32 QUARTERS/FOOTAGES: 93' N line, 5' E line of NE SE

QUADRANGLE: WILLISVILLE LONGITUDE: -89.557784 GEOLOGIST: GRAETENGER

CONFIDENTIAL: N LATITUDE: 37.961725 DATE COLLECTED: 8 / 16 / 1978

SURFACE ELEVATION (FT.): 500.3 LOGGED (FT.): 78.5 LOG TYPE: Drillers Log

SOURCE: AMAX COAL CO 105-100 WELL TYPE: Observation Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
500.3			UNCONSOLIDATED	4.0	0.0
496.3			CLAYSTONE	8.0	4.0
488.3			UNCLASSIFIED	9.5	12.0
478.8			SHALE	4.0	21.5
474.8			SANDSTONE	0.2	25.5
474.6			SHALE	3.3	25.7
471.3			SANDSTONE	1.0	29.0
470.3			SHALE	27.7	30.0
442.6			SANDSTONE	3.3	57.7
439.3			SHALE	6.0	61.0
433.3			SANDSTONE	7.0	67.0
426.3			SHALE	4.5	74.0
421.8			COAL	0.0	78.5

MAPID: 14528275000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 32 QUARTERS/FOOTAGES: 445' S line, 35' W line of SW NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.56681 GEOLOGIST: GRAETENGER
 CONFIDENTIAL: N LATITUDE: 37.963335 DATE COLLECTED: 4 / 26 / 1978
 SURFACE ELEVATION (FT.): 517.5 LOGGED (FT.): 55.0 LOG TYPE: Drillers Log
 SOURCE: AMAX COAL CO 53-1JC WELL TYPE: Observation Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
517.5			CLAYSTONE	6.0	0.0
511.5			CLAYSTONE	13.8	6.0
497.7	CARBONDALE	HERRIN	COAL	4.0	19.8
493.7	CARBONDALE		SANDSTONE	6.5	23.8
487.2	CARBONDALE		SANDSTONE	0.7	30.3
486.5	CARBONDALE		LIMESTONE	4.2	31.0
482.3	CARBONDALE		SHALE	0.8	35.2
481.5	CARBONDALE		LIMESTONE	0.4	36.0
481.1	CARBONDALE		SHALE	2.6	36.4
478.5	CARBONDALE		LIMESTONE	5.0	39.0
473.5	CARBONDALE		SHALE	1.4	44.0
472.1	CARBONDALE		SANDSTONE	4.2	45.4
467.9	CARBONDALE	ST. DAVID	LIMESTONE	2.5	49.6
465.4	CARBONDALE	TURNER MINE	SHALE	2.9	52.1
462.5	CARBONDALE	SPRINGFIELD	COAL	0.0	55.0

MAPID: 14591094000C VERSION: 1

PROJECT: NCRDS 02

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 32 QUARTERS/FOOTAGES: 1' N line, 1' E line of NE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.557539 GEOLOGIST: PHILLIPS
 CONFIDENTIAL: N LATITUDE: 37.969254 DATE COLLECTED: 1 / 5 / 1927
 SURFACE ELEVATION (FT.): 506.0 LOGGED (FT.): 55.3 LOG TYPE: Drillers Log
 SOURCE: OTHER 121 WELL TYPE: Coal Test
 COMMENT: SE DENMARK BOX 43

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
506.0	PLEISTOCENE		UNCONSOLIDATED	35.0	0.0
471.0	SHELBURN		GRAY SHALE	5.0	35.0
466.0	SHELBURN	BRERETON	LIMESTONE	7.0	40.0
459.0	CARBONDALE	ANNA	BLACK SHALE	2.0	47.0
457.0	CARBONDALE	HERRIN	COAL	6.3	49.0 GOOD

MAPID: 14501132000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 33 **QUARTERS/FOOTAGES:** SW SW NW NW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.557066 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.966065 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 507.5 **LOGGED (FT.):** 53.3 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #5-1 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
507.5			UNCONSOLIDATED	35.0	0.0
472.5	CARBONDALE		SHALE	5.0	35.0
467.5	CARBONDALE		LIMESTONE	3.0	40.0
464.5	CARBONDALE		SHALE	4.5	43.0
460.0	CARBONDALE	TURNER MINE	SHALE	2.0	47.5
458.0	CARBONDALE	SPRINGFIELD	COAL	3.8	49.5

MAPID: 14501133000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 33 **QUARTERS/FOOTAGES:** SW SW NE NW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.552515 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.966012 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 501.2 **LOGGED (FT.):** 59.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED LELECTRIC COAL #6-1 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
501.2			UNCONSOLIDATED	12.0	0.0
489.2	CARBONDALE		SHALE	40.0	12.0
449.2			UNCLASSIFIED	7.0	52.0

MAPID: 14501134000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 33 **QUARTERS/FOOTAGES:** SW SW NE NE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.54341 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.965903 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 461.2 **LOGGED (FT.):** 40.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #8-1 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
461.2			UNCONSOLIDATED	28.0	0.0
433.2	CARBONDALE		SANDSTONE	12.0	28.0

MAPID: 14502794000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 33 QUARTERS/FOOTAGES:

QUADRANGLE: WILLISVILLE LONGITUDE: -89.548621

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.961873

DATE COLLECTED:

SURFACE ELEVATION (FT.): LOGGED (FT.): 333.0

LOG TYPE: Drillers Log

SOURCE: FLOYD ALSPACH

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCONSOLIDATED	12.0	0.0
-			UNCLASSIFIED	2.0	12.0
-			CLAYSTONE	22.0	14.0
-			SAND	3.0	36.0
-			CLAYSTONE	29.0	39.0
-			UNCLASSIFIED	1.0	68.0
-			SAND	17.0	69.0
-			SHALE	25.0	86.0
-			UNCLASSIFIED	2.0	111.0
-			COAL	5.0	113.0
-			SHALE	47.0	118.0
-			UNCLASSIFIED	2.0	165.0
-			SHALE	15.0	167.0
-			UNCLASSIFIED	4.0	182.0
-			SHALE	27.0	186.0
-			COAL	41.0	213.0
-			UNCLASSIFIED	36.0	254.0
-			SHALE	43.0	290.0

MAPID: 14502800000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 33 QUARTERS/FOOTAGES: 330' N line, 330' W line of SW NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.556524

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.964694

DATE COLLECTED: 8 / 11 / 1964

SURFACE ELEVATION (FT.): 503.0 LOGGED (FT.): 1401.0

LOG TYPE: Drillers Log

SOURCE: W. T. FREDERKING

WELL TYPE: Plugged and/or Abandoned

COMMENT: NO DATA UPPER ELEVATIONS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
503.0			UNKNOWN	0.0	0.0

MAPID: 14501136000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 34 QUARTERS/FOOTAGES: SW SW NW NW
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.538856 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.965849 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 488.3 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #9-1 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
488.3			UNCONSOLIDATED	15.0	0.0
473.3			SHALE	25.0	15.0
448.3			CLAYSTONE	12.0	40.0
436.3			SHALE	4.0	52.0
432.3			SANDSTONE	4.0	56.0

MAPID: 14501137000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 34 QUARTERS/FOOTAGES: 1320' N line, 1320' W line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.534832 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.965343 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 482.2 LOGGED (FT.): 51.3 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #10-1 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
482.2			UNCONSOLIDATED	12.0	0.0
470.2	CARBONDALE		SHALE	10.0	12.0
460.2	CARBONDALE		CLAYSTONE	8.0	22.0
452.2	CARBONDALE		SANDSTONE	8.0	30.0
444.2	CARBONDALE		SHALE	4.0	38.0
440.2	CARBONDALE	ST. DAVID	LIMESTONE	3.0	42.0
437.2	CARBONDALE	TURNER MINE	SHALE	1.0	45.0
436.2	CARBONDALE	SPRINGFIELD	COAL	5.3	46.0

MAPID: 14501137000C VERSION: 2

PROJECT: ROOF STUDY

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 34 QUARTERS/FOOTAGES: 1320' N line, 1320' W line
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.534832 GEOLOGIST:
 CONFIDENTIAL: N LATITUDE: 37.965343 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 482.0 LOGGED (FT.): 0.0 LOG TYPE: Drillers Log
 SOURCE: WELL TYPE: Coal Test
 COMMENT: POOR DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	LAWSON	SHALE & SANDSTONE	12.0	
-	CARBONDALE	BRERETON	LIMESTONE	3.0	
-	CARBONDALE	ANNA	BLACK SHALE	1.0	
-	CARBONDALE	HERRIN	COAL	5.3	

MAPID: 14501138000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 34 QUARTERS/FOOTAGES: SW SW NW NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.529689 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.965733 DATE COLLECTED: 0 / 0 / 1927
 SURFACE ELEVATION (FT.): 473.5 LOGGED (FT.): 61.0 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #11-1 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
473.5			UNCONSOLIDATED	40.0	0.0
433.5	CARBONDALE		SHALE	6.0	40.0
417.5	CARBONDALE	SPRINGFIELD	COAL	5.0	56.0

MAPID: 14501139000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 34 QUARTERS/FOOTAGES: SW SW NE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.525107 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.965677 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 472.1 LOGGED (FT.): 52.7 LOG TYPE: Drillers Log
 SOURCE: UNITED ELECTRIC COAL #12-1 WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
472.1			UNCONSOLIDATED	10.0	0.0
462.1	CARBONDALE		SHALE	20.0	10.0
442.1	CARBONDALE		UNCLASSIFIED	1.0	30.0
441.1	CARBONDALE		SHALE	7.0	31.0
434.1	CARBONDALE	BRERETON	LIMESTONE	7.5	38.0
426.6	CARBONDALE	ANNA	SHALE	1.5	45.5
425.1	CARBONDALE	HERRIN	COAL	5.7	47.0

MAPID: 14501140000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 34 **QUARTERS/FOOTAGES:** SW SW SW NE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.529747 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.962089 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 465.0 **LOGGED (FT.):** 50.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #61-1 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
465.0			UNCONSOLIDATED	20.0	0.0	
445.0			UNCLASSIFIED	20.0	20.0	
425.0			UNCLASSIFIED	10.0	40.0	

MAPID: 14528272000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 34 **QUARTERS/FOOTAGES:** 16' S line, 35' E line of NE SW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.530508 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 37.958042 **DATE COLLECTED:** 8 / 29 / 1978
SURFACE ELEVATION (FT.): 436.2 **LOGGED (FT.):** 33.0 **LOG TYPE:** Drillers Log
SOURCE: AMAX COAL CO. **WELL TYPE:** Observation Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
436.2			CLAYSTONE	31.5	0.0	
404.7			SHALE	1.5	31.5	

MAPID: 14528274000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 34 **QUARTERS/FOOTAGES:** 330' S line, 73' W line of NE NE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.525417 **GEOLOGIST:** GRAETENGER
CONFIDENTIAL: N **LATITUDE:** 37.966135 **DATE COLLECTED:** 4 / 18 / 1978
SURFACE ELEVATION (FT.): 469.9 **LOGGED (FT.):** 92.0 **LOG TYPE:** Drillers Log
SOURCE: AMAX COAL CO. **WELL TYPE:** Observation Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
469.9			UNCONSOLIDATED	92.0	0.0	

MAPID: 14501141000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 35

QUARTERS/FOOTAGES: SW SW NW NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.520518

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.965617

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 463.4

LOGGED (FT.): 57.7

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #13-1

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
463.4			UNCONSOLIDATED	36.0	0.0
427.4			UNCLASSIFIED	1.0	36.0
426.4	CARBONDALE		SANDSTONE	6.0	37.0
420.4	CARBONDALE		SHALE	1.0	43.0
419.4	CARBONDALE		UNCLASSIFIED	4.5	44.0
414.9	CARBONDALE	TURNER MINE	SHALE	3.5	48.5
411.4	CARBONDALE	SPRINGFIELD	COAL	5.7	52.0

MAPID: 14501142000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 35

QUARTERS/FOOTAGES: SW SW NE NW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.515894

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.965543

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 449.1

LOGGED (FT.): 47.0

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #14-1

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
449.1			UNCONSOLIDATED	29.0	0.0
420.1	CARBONDALE		SHALE	8.0	29.0
412.1	CARBONDALE		UNCLASSIFIED	2.5	37.0
409.6	CARBONDALE	TURNER MINE	SHALE	2.7	39.5
406.9	CARBONDALE	SPRINGFIELD	COAL	4.8	42.2

MAPID: 14501143000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 35 **QUARTERS/FOOTAGES:** SW SW NW NE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.511274 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.965469 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 434.7 **LOGGED (FT.):** 22.3 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #15-1 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
434.7			UNCONSOLIDATED	14.0	0.0
420.7	CARBONDALE		SHALE	2.0	14.0
418.7	CARBONDALE	TURNER MINE	SHALE	1.3	16.0
417.4	CARBONDALE	SPRINGFIELD	COAL	5.0	17.3

MAPID: 14501144000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 35 **QUARTERS/FOOTAGES:** SW SW NE NE
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.50665 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.965395 **DATE COLLECTED:**
SURFACE ELEVATION (FT.): 436.4 **LOGGED (FT.):** 60.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #16-1 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
436.4			UNCONSOLIDATED	10.0	0.0
426.4			SHALE	10.0	10.0
416.4			UNCLASSIFIED	40.0	20.0

MAPID: 14501145000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: PERRY **TWP/RNG:** 6S 4W **SECTION:** 35 **QUARTERS/FOOTAGES:** SW SW SW NW
QUADRANGLE: WILLISVILLE **LONGITUDE:** -89.520586 **GEOLOGIST:** G. TAYLOR
CONFIDENTIAL: N **LATITUDE:** 37.961967 **DATE COLLECTED:** 0 / 0 / 1927
SURFACE ELEVATION (FT.): 439.5 **LOGGED (FT.):** 40.0 **LOG TYPE:** Drillers Log
SOURCE: UNITED ELECTRIC COAL #63-1 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.5			UNCONSOLIDATED	20.0	0.0
419.5			SHALE	14.0	20.0
405.5	CARBONDALE		CLAYSTONE	3.0	34.0
402.5	CARBONDALE		SANDSTONE	3.0	37.0

MAPID: 14501146000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 35

QUARTERS/FOOTAGES: SW SW SW NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.511339

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.961828

DATE COLLECTED: 0 / 0 / 1927

SURFACE ELEVATION (FT.): 433.3

LOGGED (FT.): 58.6

LOG TYPE: Drillers Log

SOURCE: UNITED ELECTRIC COAL #65-1

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.3			UNCONSOLIDATED	15.0	0.0
418.3			SHALE	15.0	15.0
403.3	CARBONDALE		SHALE	18.0	30.0
385.3	CARBONDALE		SAND	10.6	48.0

MAPID: 14502823000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 35

QUARTERS/FOOTAGES: 1600' S line, 700' W line of SE NW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.516406

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.962216

DATE COLLECTED: 1 / 29 / 1954

SURFACE ELEVATION (FT.): 420.0

LOGGED (FT.): 189.0

LOG TYPE: Drillers Log

SOURCE: GWIN DRILLING CO.

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
420.0			UNCONSOLIDATED	30.0	0.0
390.0			SHALE	46.0	30.0
344.0			UNCLASSIFIED	4.0	76.0
340.0			SANDSTONE	5.0	80.0
335.0			SHALE	13.0	85.0
322.0			SHALE	23.0	98.0
299.0			UNCLASSIFIED	2.0	121.0
297.0			SHALE	8.0	123.0
289.0			SANDSTONE	4.0	131.0
285.0			SHALE	20.0	135.0
265.0			SANDSTONE/SHALE	5.0	155.0
260.0			SANDSTONE	5.0	160.0
255.0			SANDSTONE/SHALE	5.0	165.0
250.0			SHALE	5.0	170.0
245.0			COAL	5.0	175.0
240.0			SHALE	9.0	180.0

MAPID: 14502824000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 35 QUARTERS/FOOTAGES: 1700' N line, 100' E line of SE SE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.503075 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.958372 DATE COLLECTED: 4 / 14 / 1954
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 100.0 LOG TYPE: Drillers Log
 SOURCE: GWIN DRILLING CO. WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	20.0	0.0
410.0			SHALE	35.0	20.0
375.0			SHALE	12.0	55.0
363.0			SANDSTONE	33.0	67.0

MAPID: 14502826000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 35 QUARTERS/FOOTAGES: 1700' N line, 150' E line of SE SE NE
 QUADRANGLE: WILLISVILLE LONGITUDE: -89.50325 GEOLOGIST: G. TAYLOR
 CONFIDENTIAL: N LATITUDE: 37.958375 DATE COLLECTED: 12 / 28 / 1955
 SURFACE ELEVATION (FT.): 430.0 LOGGED (FT.): 419.0 LOG TYPE: Drillers Log
 SOURCE: GWIN DRILLING CO. WELL TYPE: Water Well
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0			UNCONSOLIDATED	10.0	0.0
420.0			CLAYSTONE	15.0	10.0
405.0			SHALE	30.0	25.0
375.0			SHALE	24.0	55.0
351.0			UNCLASSIFIED	1.0	79.0
350.0			SHALE	13.0	80.0
337.0			SANDSTONE	7.0	93.0
330.0			SHALE	39.0	100.0
291.0			UNCLASSIFIED	2.0	139.0
289.0			SHALE	74.0	141.0
215.0			SANDSTONE/SHALE	38.0	215.0
177.0			SANDSTONE	3.0	253.0

MAPID: 14503133000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 35

QUARTERS/FOOTAGES: SE NE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.503752

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.965801

DATE COLLECTED:

SURFACE ELEVATION (FT.): 440.0

LOGGED (FT.): 393.0

LOG TYPE: Drillers Log

SOURCE: GWIN DRILLING CO.

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	12.0	0.0
428.0			CLAYSTONE	0.0	12.0
363.0			UNCLASSIFIED	0.0	77.0
360.0			SHALE	0.0	80.0
340.0			SANDSTONE/SHALE	0.0	100.0
302.0			UNCLASSIFIED	0.0	138.0
298.0			SHALE	0.0	142.0
225.0			SHALE	0.0	215.0
-			SHALE & SANDSTONE	0.0	

MAPID: 14523272000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 35

QUARTERS/FOOTAGES: 130' N line, 550' E line of NE NE

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.50447

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.96818

DATE COLLECTED: 1 / 2 / 1976

SURFACE ELEVATION (FT.): 440.0

LOGGED (FT.): 0.0

LOG TYPE: Drillers Log

SOURCE: HEPP DRILLING CO.

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.0			UNCONSOLIDATED	38.0	0.0
402.0	CARBONDALE		SHALE	4.0	38.0
398.0	CARBONDALE	SPRINGFIELD	COAL/CLAYSTONE	5.0	42.0
393.0	CARBONDALE		SHALE	16.0	47.0
377.0	CARBONDALE		SANDSTONE	53.0	63.0
324.0	CARBONDALE	HOUCHIN CREEK	SHALE	6.0	116.0
318.0	CARBONDALE		SHALE	47.0	122.0
271.0	CARBONDALE		LIMESTONE W/ SHALE	5.0	169.0
266.0	SPOON		SANDSTONE	53.0	174.0
213.0	SPOON		SHALE	7.0	227.0
206.0	SPOON		SANDSTONE/SHALE	37.0	234.0
169.0	SPOON	DAVIS	COAL/CLAYSTONE	3.0	271.0
166.0	SPOON		LIMESTONE	14.0	274.0
152.0	SPOON		SHALE	16.0	288.0
136.0	SPOON	MURPHYSBORO	COAL	3.0	304.0
133.0	SPOON		SANDSTONE/SHALE	52.0	307.0
81.0	SPOON		SANDSTONE	43.0	359.0

MAPID: 14502476000C VERSION: 1

PROJECT: CUSMAP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 36 QUARTERS/FOOTAGES: 330' N line, 330' E line of NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.49456 GEOLOGIST:

CONFIDENTIAL: N LATITUDE: 37.967485 DATE COLLECTED: 12 / 0 / 1947

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 615.0 LOG TYPE: Electric Log

SOURCE: MATTERN ED C WELL TYPE: Producer-Oil and Gas

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
220.0	CARBONDALE	COLCHESTER	UNCLASSIFIED	-	200.0
188.0	SPOON	DAVIS	UNCLASSIFIED	-	232.0
-195.0	BASE OF PENN.		UNCLASSIFIED	-	615.0

MAPID: 14502476000C VERSION: 2

PROJECT: LUMP

COUNTY: PERRY TWP/RNG: 6S 4W SECTION: 36 QUARTERS/FOOTAGES: 330' N line, 330' E line of NW

QUADRANGLE: WILLISVILLE LONGITUDE: -89.49456 GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N LATITUDE: 37.967485 DATE COLLECTED: 12 / 0 / 1947

SURFACE ELEVATION (FT.): 420.0 LOGGED (FT.): 1565.0 LOG TYPE: Drillers Log

SOURCE: ED C. MATTERN WELL TYPE: Plugged and/or Abandoned

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
220.0			SHALE	190.0	200.0
30.0			SAND	25.0	390.0
5.0			SHALE & SANDSTONE	130.0	415.0
-125.0			SAND	0.0	545.0

MAPID: 14523482000C VERSION: 1

PROJECT: LUMP

COUNTY: PERRY

TWP/RNG: 6S 4W

SECTION: 36

QUARTERS/FOOTAGES: SW SW SW

QUADRANGLE: WILLISVILLE

LONGITUDE: -89.501646

GEOLOGIST: G. TAYLOR

CONFIDENTIAL: N

LATITUDE: 37.954866

DATE COLLECTED: 11 / 20 / 1978

SURFACE ELEVATION (FT.): 460.0

LOGGED (FT.): 348.0

LOG TYPE: Drillers Log

SOURCE: FRANK HEPP JR.

WELL TYPE: Water Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
460.0			UNCONSOLIDATED	24.0	0.0
436.0			CLAYSTONE	3.0	24.0
433.0	CARBONDALE		SHALE & SANDSTONE	19.0	27.0
414.0	CARBONDALE	HOUCHIN CREEK	COAL/CLAYSTONE	2.0	46.0
412.0	CARBONDALE		SHALE	2.0	48.0
375.0	CARBONDALE		SHALE	37.0	85.0
367.0	CARBONDALE		UNCLASSIFIED	8.0	93.0
365.0	CARBONDALE		SHALE	2.0	95.0
363.0	CARBONDALE	COLCHESTER	COAL/CLAYSTONE	2.0	97.0
361.0	SPOON		SHALE	31.0	99.0
330.0	SPOON		SHALE	16.0	130.0
314.0	SPOON		SHALE	76.0	146.0
238.0	SPOON	MURPHYSBORO	COAL/CLAYSTONE	3.0	222.0
235.0	SPOON		SHALE	21.0	225.0
214.0	SPOON		SANDSTONE/SHALE	20.0	246.0
194.0			SHALE	34.0	266.0
160.0			SANDSTONE	5.0	300.0
155.0			SANDSTONE	43.0	305.0