

Status Report**Total Records: 489**

Top 3 County Records		Top 3 Log Type Records		Top 3 Coal Records		Top 3 Member Records	
Logan	489	Multiple log types	380	SPRINGFIELD	509	SPRINGFIELD COAL	509
		Drillers Log	82	HERRIN	406	HERRIN COAL	406
		Gamma Ray Density	11	DANVILLE	252	DANVILLE COAL	252

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
SURVANT - UPPER		368.3	296.5	440.0	1.8	1.0	2.5
SURVANT - LOWER		383.8	321.5	446.0	1.5	1.0	2.0
CARTHAGE	LIMESTONE	100.7	44.0	142.0	5.1	2.0	10.5
NEW HAVEN	COAL	87.5	14.0	145.0	2.9	1.5	6.0
MACOUPIN	LIMESTONE	103.6	25.0	164.0	5.5	1.5	8.0
CHAPEL	COAL	96.0	22.0	228.0	1.6	0.5	5.0
TRIVOLI	SANDSTONE	107.0	78.5	158.5	7.8	1.0	12.5
WEST FRANKLIN	LIMESTONE	121.4	14.5	260.0	12.3	2.5	31.0
LONSDALE	LIMESTONE	135.0	120.0	144.0	7.4	5.0	13.0
PIASA	LIMESTONE	159.4	94.0	232.4	2.7	0.3	15.5
DANVILLE	COAL	167.1	52.0	375.7	1.7	0.2	9.0
DANVILLE SUMP	COAL	224.4	184.0	264.8	1.2	0.3	2.0
BANKSTON FORK	LIMESTONE	184.7	94.5	308.0	2.5	1.0	7.0
COPPERAS CREEK	SANDSTONE	197.5	196.8	199.0	4.1	3.2	6.0
ANVIL ROCK	SANDSTONE	176.4	99.0	275.8	9.6	1.0	30.0
BRERETON	LIMESTONE	206.5	95.5	361.0	3.7	1.0	16.0
ANNA	SHALE	190.1	98.5	365.0	1.7	0.1	6.0
HERRIN	COAL	200.2	73.0	398.0	3.2	0.3	8.0
CANTON	SHALE	249.6	210.0	308.0	26.1	11.0	35.2
ST. DAVID	LIMESTONE	250.7	148.4	361.5	2.3	0.3	14.1
TURNER MINE	SHALE	250.5	145.0	399.0	2.9	0.4	17.4
SPRINGFIELD	COAL	253.0	138.0	457.6	5.5	0.1	8.0
COVEL CGL.	CONGLAMERAT	269.4	269.4	269.4	0.5	0.5	0.5
HANOVER	LIMESTONE	283.0	223.0	310.0	1.0	0.3	5.8
EXCELLO	SHALE	255.9	148.0	426.5	2.2	0.3	5.2
HOUCHIN CREEK	COAL	272.8	187.0	386.0	1.2	0.1	3.0
SURVANT	COAL	298.3	279.0	322.0	1.7	1.0	2.3
OAK GROVE	LIMESTONE	335.5	331.5	339.5	2.5	1.0	4.0
MECCA QUARRY	SHALE	334.2	208.0	456.5	2.9	1.0	4.0
COLCHESTER	COAL	329.2	209.0	379.0	2.6	1.0	3.1

Net Coal	21.5
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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: 10700321000C VERSION: 1 PROJECT: NCRDS88
COUNTY: LOGAN TWP/RNG: 17N 1W SECTION: 13 QUARTERS/FOOTAGES: 10' S line, 200' E line of SE
QUADRANGLE: LATHAM LONGITUDE: -89.144205 GEOLOGIST: R. SMITH
CONFIDENTIAL: N LATITUDE: 39.917501 DATE COLLECTED: 6 / 8 / 1953
SURFACE ELEVATION (FT.): 601.0 LOGGED (FT.): 380.0 LOG TYPE: Geologic Tops
SOURCE: SUN OIL CO. WELL TYPE: Structure Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
276.0	CARBONDALE	HERRIN	COAL	2.0	325.0
274.0	CARBONDALE		UNCLASSIFIED	41.0	327.0
233.0	CARBONDALE	SPRINGFIELD	COAL	4.0	368.0
229.0	CARBONDALE		UNCLASSIFIED	8.0	372.0

MAPID: 10700322000C

VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN

TWP/RNG: 17N 1W

SECTION: 15

QUARTERS/FOOTAGES: 528' N line, 25' E line of SE SE

QUADRANGLE: LATHAM

LONGITUDE: -89.180845

GEOLOGIST: R. SMITH

CONFIDENTIAL: N

LATITUDE: 39.919444

DATE COLLECTED: 5 / 25 / 1953

SURFACE ELEVATION (FT.): 598.0

LOGGED (FT.): 380.0

LOG TYPE: Geologic Tops

SOURCE: SUN OIL CO.

WELL TYPE: Structure Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
264.0	CARBONDALE	SPRINGFIELD	COAL	4.0	334.0	
260.0	CARBONDALE		UNCLASSIFIED	42.0	338.0	

MAPID: 10700323000C

VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN

TWP/RNG: 17N 1W

SECTION: 17

QUARTERS/FOOTAGES: 835' N line, 20' E line of NW NE

QUADRANGLE: LATHAM

LONGITUDE: -89.222544

GEOLOGIST: R. SMITH

CONFIDENTIAL: N

LATITUDE: 39.928976

DATE COLLECTED: 7 / 10 / 1956

SURFACE ELEVATION (FT.): 592.0

LOGGED (FT.): 840.0

LOG TYPE: Geologic Tops

SOURCE: SUN OIL CO.

WELL TYPE: Structure Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
296.0	CARBONDALE	HERRIN	COAL	5.0	296.0	
291.0	CARBONDALE		UNCLASSIFIED	40.0	301.0	
251.0	CARBONDALE	SPRINGFIELD	COAL	5.0	341.0	
246.0			UNCLASSIFIED	450.0	346.0	TOP OF MISS. ABOUT 500'
-204.0			LIMESTONE	10.0	796.0	
-214.0			UNCLASSIFIED	34.0	806.0	

MAPID: 10700325000C VERSION: 1 PROJECT: NCRDS88

COUNTY: LOGAN TWP/RNG: 17N 1W SECTION: 17 QUARTERS/FOOTAGES: 528' N line, 50' E line of SE

QUADRANGLE: LATHAM LONGITUDE: -89.21811 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 39.922703 DATE COLLECTED: 6 / 20 / 1953

SURFACE ELEVATION (FT.): 606.0 LOGGED (FT.): 350.0 LOG TYPE: Drillers Log

SOURCE: SUN OIL CO. WELL TYPE: Structure Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
606.0			UNCONSOLIDATED	130.0	0.0	
476.0	MODESTO		GRAY SHALE	65.0	130.0	
411.0	MODESTO	WEST FRANKLIN	LIMESTONE	12.0	195.0	
399.0	MODESTO		BLACK SHALE	2.0	207.0	
397.0	MODESTO		SHALE	50.0	209.0	GRAY AND RED ALTERNATING
347.0	CARBONDALE	DANVILLE	COAL	1.0	259.0	
346.0	CARBONDALE		GRAY SHALE	31.0	260.0	
315.0	CARBONDALE	HERRIN	COAL	2.0	291.0	
313.0	CARBONDALE		GRAY SHALE	42.0	293.0	
271.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	335.0	
267.5	CARBONDALE	SPRINGFIELD	COAL	5.5	338.5	
262.0	CARBONDALE		SHALE	6.0	344.0	

MAPID: 10700605000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 17N 2W SECTION: 5 QUARTERS/FOOTAGES: 1363' N line, 1380' W line of NW

QUADRANGLE: LAKE FORK LONGITUDE: -89.343268 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 39.95727 DATE COLLECTED: 9 / 21 / 1973

SURFACE ELEVATION (FT.): 599.0 LOGGED (FT.): 315.0 LOG TYPE: Drillers Log

SOURCE: PIAMCO C.C.-ENERGY DEVELOPMENTS WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
334.0	CARBONDALE	HERRIN	COAL	1.0	265.0	
292.0	CARBONDALE	SPRINGFIELD	COAL	4.0	307.0	

MAPID: 10700605000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 17N 2W SECTION: 5 QUARTERS/FOOTAGES: 1363' N line, 1380' W line of NW
QUADRANGLE: LAKE FORK LONGITUDE: -89.343268 GEOLOGIST: BARGH
CONFIDENTIAL: N LATITUDE: 39.95727 DATE COLLECTED: 9 / 21 / 1973
SURFACE ELEVATION (FT.): 599.0 LOGGED (FT.): 315.0 LOG TYPE: Drillers Log
SOURCE: PIAMCO (COAL ENERGY DEVELOPMENT) WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
599.0			UNCONSOLIDATED	215.0	0.0
384.0			SHALE	38.5	215.0
345.5			LIMESTONE	2.5	253.5
343.0			SHALE	20.5	256.0
322.5	CARBONDALE	HERRIN	COAL	1.0	276.5
321.5	CARBONDALE		SHALE	2.0	277.5
319.5	CARBONDALE		LIMESTONE	1.0	279.5
318.5	CARBONDALE		SHALE	4.0	280.5
314.5	CARBONDALE		LIMESTONE	1.0	284.5
313.5	CARBONDALE		SHALE	33.0	285.5
280.5	CARBONDALE	SPRINGFIELD	COAL	4.0	318.5
276.5	CARBONDALE		SHALE	3.0	322.5
273.5	CARBONDALE		LIMESTONE	1.0	325.5

MAPID: 10700606000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 17N 2W SECTION: 8 QUARTERS/FOOTAGES: 1260' N line, 1338' W line of NW
QUADRANGLE: LAKE FORK LONGITUDE: -89.343475 GEOLOGIST: PRUSSEN
CONFIDENTIAL: N LATITUDE: 39.94304 DATE COLLECTED: 9 / 24 / 1973
SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 281.0 LOG TYPE: Drillers Log
SOURCE: PIAMCO C.C.-ENERGY DEVELOPMENTB WELL TYPE: Coal Test
COMMENT: COMPANY CORE STUDY

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
338.0	CARBONDALE	HERRIN	COAL	2.5	232.0
294.8	CARBONDALE	SPRINGFIELD	COAL	5.0	275.2

MAPID: 10700606000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 17N 2W SECTION: 8 QUARTERS/FOOTAGES: 1260' N line, 1338' W line of NW
 QUADRANGLE: LAKE FORK LONGITUDE: -89.343475 GEOLOGIST: BARGH
 CONFIDENTIAL: N LATITUDE: 39.94304 DATE COLLECTED: 9 / 24 / 1983
 SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 289.0 LOG TYPE: Multiple log types
 SOURCE: PIAMCO (COAL ENERGY DEVELOPMENT) WELL TYPE: Coal Test
 COMMENT: 11,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.0			UNCONSOLIDATED	177.0	0.0	
393.0			LIMESTONE	1.0	177.0	
392.0			SHALE	10.0	178.0	
382.0			LIMESTONE	9.0	188.0	
373.0			SHALE	24.0	197.0	
349.0	CARBONDALE	BRERETON	LIMESTONE	3.5	221.0	
345.5	CARBONDALE		SHALE	7.5	224.5	
338.0	CARBONDALE	HERRIN	COAL	2.5	232.0	
335.5	CARBONDALE		SHALE	3.5	234.5	
332.0	CARBONDALE		LIMESTONE	2.0	238.0	
330.0	CARBONDALE		SHALE	24.5	240.0	
305.5	CARBONDALE		LIMESTONE AND BLACK SHALE	0.5	264.5	DK GRAY AND BK SLATE
305.0	CARBONDALE		SHALE	3.0	265.0	CORE BEGINS. WITH LENTEC LS NODES
302.0	CARBONDALE	ST. DAVID	LIMESTONE	3.4	268.0	MOD FOSS
298.6	CARBONDALE	ST. DAVID	LIMESTONE	2.9	271.4	
295.7	CARBONDALE	TURNER MINE	BLACK SHALE	0.9	274.3	
294.8	CARBONDALE	SPRINGFIELD	COAL	4.0	275.2	GOOD CORE
290.8	CARBONDALE		COAL	1.0	279.2	BROKEN
289.8	CARBONDALE		SHALE	0.5	280.2	

MAPID: 10700608000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 17N 2W SECTION: 16 QUARTERS/FOOTAGES: 30' S line, 30' W line of SW
 QUADRANGLE: LAKE FORK LONGITUDE: -89.329643 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 39.917408 DATE COLLECTED: 10 / 17 / 1973
 SURFACE ELEVATION (FT.): 602.0 LOGGED (FT.): 354.5 LOG TYPE: Drillers Log
 SOURCE: PIAMCO C.C.-ENERGY DEVELOPMENTV WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
305.5	CARBONDALE	HERRIN	COAL	4.5	296.5	
257.5	CARBONDALE	SPRINGFIELD	COAL	6.2	344.5	

MAPID: 10700608000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 17N 2W SECTION: 16 QUARTERS/FOOTAGES: 30' S line, 30' W line of SW

QUADRANGLE: LAKE FORK LONGITUDE: -89.329643 GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 39.917408 DATE COLLECTED: 10 / 17 / 1972

SURFACE ELEVATION (FT.): 602.0 LOGGED (FT.): 354.5 LOG TYPE: Drillers Log

SOURCE: PIAMCO (COAL-ENERGY DEVELOPMENT) WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
602.0			UNCONSOLIDATED	236.0	0.0	
366.0			LIMESTONE	2.0	236.0	
364.0			SHALE	52.0	238.0	
312.0	CARBONDALE	BRERETON	LIMESTONE	6.5	290.0	
305.5	CARBONDALE	HERRIN	COAL	4.5	296.5	
301.0	CARBONDALE		SHALE	2.0	301.0	
299.0	CARBONDALE		LIMESTONE	1.0	303.0	
298.0	CARBONDALE		SHALE	44.5	304.0	
253.5	CARBONDALE	SPRINGFIELD	COAL	6.2	348.5	
247.3			SHALE	3.8	354.7	

MAPID: 10700607000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 17N 2W SECTION: 18 QUARTERS/FOOTAGES: 2610' N line, 1350' E line

QUADRANGLE: LAKE FORK LONGITUDE: -89.353144 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 39.924928 DATE COLLECTED: 9 / 25 / 1973

SURFACE ELEVATION (FT.): 615.0 LOGGED (FT.): 348.0 LOG TYPE: Drillers Log

SOURCE: PIAMCO C.C-ENERGY DEVELOPMENT C WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
322.5	CARBONDALE	HERRIN	COAL	3.5	292.5	

MAPID: 10700607000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 17N 2W SECTION: 18 QUARTERS/FOOTAGES: 2610' N line, 1350' E line

QUADRANGLE: LAKE FORK LONGITUDE: -89.353144 GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 39.924928 DATE COLLECTED: 9 / 25 / 1973

SURFACE ELEVATION (FT.): 615.0 LOGGED (FT.): 348.0 LOG TYPE: Drillers Log

SOURCE: PIAMCO (COAL ENERGY DEVELOPMENT) WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
615.0			UNCONSOLIDATED	221.5	0.0	
393.5	MODESTO	WEST FRANKLIN	LIMESTONE	4.5	221.5	
389.0	MODESTO		SHALE	7.5	226.0	
381.5	MODESTO		SANDSTONE	8.0	233.5	
373.5			SHALE	38.0	241.5	TOP OF CARBONDALE IN THIS INTERVAL
335.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	279.5	
332.5	CARBONDALE		SHALE & SANDSTONE	9.0	282.5	
323.5	CARBONDALE	BRERETON	LIMESTONE	5.5	291.5	
318.0	CARBONDALE	HERRIN	COAL	3.5	297.0	
314.5	CARBONDALE		SHALE & SANDSTONE	34.5	300.5	
280.0	CARBONDALE		BLACK SHALE	0.5	335.0	
279.5	CARBONDALE	ST. DAVID	LIMESTONE	2.5	335.5	
277.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	338.0	WITH COAL (#5 HORIZON)
273.5	CARBONDALE	SPRINGFIELD	SHALE	3.0	341.5	CLAYDIKE
270.5	CARBONDALE	SPRINGFIELD	BLACK SHALE	1.0	344.5	WITH COAL
269.5	CARBONDALE		SHALE	6.0	345.5	
263.5	CARBONDALE		LIMESTONE	1.0	351.5	

MAPID: 10700609000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 17N 3W SECTION: 3 QUARTERS/FOOTAGES: 200' N line, 1000' W line of NW

QUADRANGLE: CORNLAND LONGITUDE: -89.420235 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 39.961141 DATE COLLECTED: 0 / 0 / 1972

SURFACE ELEVATION (FT.): 579.8 LOGGED (FT.): 389.0 LOG TYPE: Drillers Log

SOURCE: CONSOLIDATION C.C. P-10-L WELL TYPE: Coal Test

COMMENT: CORE SURVEY STUDY

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
289.8	CARBONDALE	SPRINGFIELD	SHALY COAL	5.8	290.0	SLATEY
198.9			COAL	2.1	380.9	

MAPID: 10700609000C VERSION: 2

PROJECT: IGS88

COUNTY: LOGAN TWP/RNG: 17N 3W SECTION: 3 QUARTERS/FOOTAGES: 200' N line, 1000' W line of NW
 QUADRANGLE: CORNLAND LONGITUDE: -89.420235 GEOLOGIST: BARGH
 CONFIDENTIAL: N LATITUDE: 39.961141 DATE COLLECTED: 9 / 20 / 1972
 SURFACE ELEVATION (FT.): 579.5 LOGGED (FT.): 398.5 LOG TYPE: Multiple log types
 SOURCE: CONSOLIDATION COAL CO. WELL TYPE: Coal Test
 COMMENT: 11,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
579.5			UNCONSOLIDATED	184.0	0.0	
395.5			SANDSTONE	3.0	184.0	
392.5			SHALE & SANDSTONE	99.1	187.0	WITH COAL STREAKS
293.4	CARBONDALE	ST. DAVID	LIMESTONE	2.0	286.1	
291.4	CARBONDALE	TURNER MINE	BLACK SHALE	1.8	288.1	
289.6	CARBONDALE	SPRINGFIELD	COAL	5.8	289.9	SLATEY
283.8	CARBONDALE		SHALE	2.3	295.7	
281.5	CARBONDALE		LIMESTONE W/ SHALE	2.3	298.0	
279.4	CARBONDALE		SANDSTONE	2.1	300.1	
277.3	CARBONDALE		SHALE & SANDSTONE	22.0	302.2	
255.3	CARBONDALE		SANDSTONE	13.3	324.2	
242.0	CARBONDALE		SANDSTONE	12.0	337.5	CORE BEGINS
230.0	CARBONDALE		SHALE	1.8	349.5	SPRINGFIELD COAL MISSING
228.2	CARBONDALE		CLAYSTONE	0.8	351.3	
227.4	CARBONDALE		SANDSTONE	2.9	352.1	
224.5	CARBONDALE		SILTSTONE	6.6	355.0	
217.9	CARBONDALE		SHALE	24.4	361.6	
193.5	CARBONDALE	HOUCHIN CREEK	COAL	2.1	386.0	INTERVAL REMOVED
191.4	CARBONDALE		SANDSTONE	1.5	388.1	
189.9	CARBONDALE		SHALE	3.9	389.6	

MAPID: 10720877000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 17N 3W SECTION: 4 QUARTERS/FOOTAGES: 2604' N line, 2598' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.433106 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 39.954611 DATE COLLECTED: 6 / 12 / 1979
 SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 310.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
378.0	CARBONDALE	DANVILLE	COAL	2.0	217.0	
304.2	CARBONDALE	SPRINGFIELD	COAL	5.3	290.8	

MAPID: 10720877000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 17N 3W **SECTION:** 4 **QUARTERS/FOOTAGES:** 2604' N line, 2598' E line
QUADRANGLE: CORNLAND **LONGITUDE:** -89.433106 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 39.954611 **DATE COLLECTED:** 6 / 12 / 1979
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 310.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0			CLAY	30.0	0.0	
565.0			SAND & GRAVEL	3.0	30.0	
562.0			CLAY	6.5	33.0	
555.5			SAND & GRAVEL	1.0	39.5	
554.5			CLAY	79.5	40.5	
475.0			SILT	25.0	120.0	W/ WOOD
450.0			SILT & CLAY	10.0	145.0	
440.0			SILT	18.0	155.0	
422.0	MODESTO	WEST FRANKLIN	LIMESTONE	4.0	173.0	
418.0	MODESTO		GRAY SHALE	35.0	177.0	
383.0	MODESTO		BLACK SHALE	2.0	212.0	DARK GRAY TO BLACK IN COLOR
381.0	MODESTO		GRAY SHALE	4.8	214.0	
376.2	CARBONDALE	DANVILLE	COAL	1.6	218.8	
374.6	CARBONDALE		GRAY SHALE	8.6	220.4	
366.0	CARBONDALE	BRERETON	LIMESTONE	3.3	229.0	
362.7	CARBONDALE		GRAY SHALE	7.2	232.3	
355.5	CARBONDALE	HERRIN	COAL	0.5	239.5	
355.0	CARBONDALE		GRAY SHALE	46.0	240.0	
309.0	CARBONDALE	ST. DAVID	LIMESTONE	2.5	286.0	
306.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.3	288.5	CORE NO. 1 288.5-297.5
304.2	CARBONDALE	SPRINGFIELD	COAL	4.5	290.8	
299.7	CARBONDALE	SPRINGFIELD	CLAYSTONE	0.2	295.3	
299.5	CARBONDALE	SPRINGFIELD	COAL	0.5	295.5	
298.9	CARBONDALE		CLAYSTONE & SHALE	1.1	296.1	
297.8	CARBONDALE		CORE LOSS	0.3	297.2	
297.5	CARBONDALE		GRAY SHALE	3.0	297.5	
294.5	CARBONDALE		LIMESTONE	2.0	300.5	
292.5	CARBONDALE		GRAY SHALE	7.5	302.5	

MAPID: 10720878000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 17N 3W

SECTION: 6

QUARTERS/FOOTAGES: 2630' S line, 2560' E line

QUADRANGLE: CORNLAND

LONGITUDE: -89.47084

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 39.955031

DATE COLLECTED: 6 / 13 / 1979

SURFACE ELEVATION (FT.): 595.0

LOGGED (FT.): 340.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
344.0	CARBONDALE	DANVILLE	COAL	2.5	251.0	
323.5	CARBONDALE	HERRIN	COAL	2.0	271.5	
276.0	CARBONDALE	SPRINGFIELD	COAL	4.5	319.0	

MAPID: 10720878000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 17N 3W SECTION: 6 QUARTERS/FOOTAGES: 2630' S line, 2560' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.47084 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 39.955031 DATE COLLECTED: 6 / 13 / 1979
 SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 340.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0			CLAY	20.0	0.0	
575.0			SAND/CLAY	15.0	20.0	
560.0			CLAY	67.0	35.0	
493.0	MODESTO		SANDSTONE	10.0	102.0	
483.0	MODESTO		GRAY SHALE	18.0	112.0	
465.0	MODESTO	CHAPEL	COAL	1.0	130.0	
464.0	MODESTO		GRAY SHALE	5.0	131.0	
459.0	MODESTO		LIMESTONE	1.0	136.0	
458.0	MODESTO		GRAY SHALE	57.0	137.0	
401.0	MODESTO	WEST FRANKLIN	LIMESTONE	3.0	194.0	
398.0	MODESTO		BLACK SHALE	3.0	197.0	
395.0	MODESTO		SHALE	49.0	200.0	
346.0	MODESTO		BLACK SHALE	2.0	249.0	
344.0	CARBONDALE	DANVILLE	COAL	2.5	251.0	
341.5	CARBONDALE		GRAY SHALE	8.0	253.5	
333.5	CARBONDALE	BRERETON	LIMESTONE	4.5	261.5	
329.0	CARBONDALE		GRAY SHALE	5.0	266.0	
324.0	CARBONDALE	HERRIN	COAL	2.5	271.0	
321.5	CARBONDALE		GRAY SHALE	5.5	273.5	
316.0	CARBONDALE		SANDSTONE	2.0	279.0	
314.0	CARBONDALE		GRAY SHALE	35.2	281.0	
278.8	CARBONDALE	ST. DAVID	LIMESTONE	1.3	316.2	
277.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	317.5	CORE NO. 1 317.5-325.5
276.0	CARBONDALE	SPRINGFIELD	COAL	0.6	319.0	
275.4	CARBONDALE	SPRINGFIELD	CLAYSTONE	3.1	319.6	HORSEBACK
272.4	CARBONDALE	SPRINGFIELD	CLAYSTONE	0.2	322.6	HARD
272.2	CARBONDALE	SPRINGFIELD	COAL	0.6	322.8	
271.6	CARBONDALE	SPRINGFIELD	CLAYSTONE & SHALE	2.0	323.4	
269.6	CARBONDALE		CORE LOSS	0.1	325.4	
269.5	CARBONDALE		GRAY SHALE	4.0	325.5	
265.5	CARBONDALE		LIMESTONE	2.0	329.5	
263.5	CARBONDALE		GRAY SHALE	8.5	331.5	LIMESTONE NODULES

MAPID: 10720826000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 17N 3W **SECTION:** 7 **QUARTERS/FOOTAGES:** 63' N line, 1005' E line
QUADRANGLE: CORNLAND **LONGITUDE:** -89.465281 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 39.947599 **DATE COLLECTED:** 8 / 16 / 1978
SURFACE ELEVATION (FT.): 605.0 **LOGGED (FT.):** 340.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL CO. **WELL TYPE:** Coal Test
COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
356.0	CARBONDALE	DANVILLE	COAL	2.0	249.0
335.5	CARBONDALE	HERRIN	COAL	1.5	269.5
286.0	CARBONDALE	SPRINGFIELD	COAL	5.7	319.0

MAPID: 10720826000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 17N 3W **SECTION:** 7 **QUARTERS/FOOTAGES:** 63' N line, 1005' E line
QUADRANGLE: CORNLAND **LONGITUDE:** -89.465281 **GEOLOGIST:** BARGH
CONFIDENTIAL: N **LATITUDE:** 39.947599 **DATE COLLECTED:** 8 / 16 / 1978
SURFACE ELEVATION (FT.): 605.0 **LOGGED (FT.):** 340.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL CO. **WELL TYPE:** Coal Test
COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
605.0			CLAY	14.0	0.0
591.0			SANDY CLAY	4.0	14.0
587.0			SAND	17.0	18.0
570.0			CLAY, SAND & GRAVEL	121.0	35.0
449.0	MODESTO		SHALE	61.0	156.0
388.0	MODESTO	WEST FRANKLIN	LIMESTONE	5.0	217.0
383.0	MODESTO		SHALE	10.4	222.0
372.6	MODESTO	PIASA	LIMESTONE	1.6	232.4
371.0	MODESTO		SHALE	13.0	234.0
358.0	CARBONDALE	DANVILLE	COAL	2.0	247.0
356.0	CARBONDALE		SHALE	25.4	249.0
330.6	CARBONDALE	BRERETON	LIMESTONE	4.6	274.4
326.0	CARBONDALE	HERRIN	COAL	1.5	279.0
324.5	CARBONDALE		SHALE	47.0	280.5
277.5	CARBONDALE	ST. DAVID	LIMESTONE	0.5	327.5
277.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	328.0
276.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	329.0
275.0	CARBONDALE	SPRINGFIELD	COAL	5.7	330.0
269.3	CARBONDALE		UNDERCLAY	0.3	335.7

MAPID: 10720714000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 17N 3W SECTION: 9 QUARTERS/FOOTAGES: 40' N line, 36' W line
 QUADRANGLE: CORNLAND LONGITUDE: -89.442819 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 39.947441 DATE COLLECTED: 11 / 12 / 1975
 SURFACE ELEVATION (FT.): 628.0 LOGGED (FT.): 354.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
 COMMENT: 11, 12, 19

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
284.5	CARBONDALE	SPRINGFIELD	COAL	5.5	343.5	SEE COAL SECTION MAP #6-203

MAPID: 10720714000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 17N 3W SECTION: 9 QUARTERS/FOOTAGES: 40' N line, 36' W line
 QUADRANGLE: CORNLAND LONGITUDE: -89.442819 GEOLOGIST: BARGH
 CONFIDENTIAL: N LATITUDE: 39.947441 DATE COLLECTED: 11 / 12 / 1975
 SURFACE ELEVATION (FT.): 628.0 LOGGED (FT.): 354.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
 COMMENT: 11, 12, 19

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
628.0			CLAY	74.0	0.0	
554.0			GRAVEL	8.0	74.0	FINE
546.0			CLAY	13.0	82.0	W/ GRAVEL STREAKS
533.0			CLAY	12.0	95.0	
521.0			GRAVEL	4.0	107.0	FINE
517.0			CLAY	59.0	111.0	W/ THIN GRAVEL BEDS
458.0			CLAY	40.0	170.0	
418.0			GRAVEL	5.0	210.0	FINE TO COARSE
413.0	MODESTO		CLAYSTONE & SHALE	15.5	215.0	
397.5	MODESTO	WEST FRANKLIN	LIMESTONE	5.5	230.5	
392.0	MODESTO		CLAYSTONE & SHALE	20.0	236.0	
372.0	MODESTO		LIMESTONE	1.0	256.0	
371.0	MODESTO		SHALE	11.5	257.0	
359.5	CARBONDALE		BLACK SHALE	2.0	268.5	
357.5	CARBONDALE		SHALE	11.0	270.5	
346.5	CARBONDALE	BRERETON	LIMESTONE	5.0	281.5	
341.5	CARBONDALE		SHALE	51.0	286.5	
290.5	CARBONDALE	ST. DAVID	LIMESTONE	2.0	337.5	
288.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	339.5	
285.0	CARBONDALE	SPRINGFIELD	COAL	5.5	343.0	
279.5	CARBONDALE		CLAYSTONE & SHALE	5.0	348.5	

MAPID: 10721095000C VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN TWP/RNG: 18N 1W SECTION: 1 QUARTERS/FOOTAGES: 1570' S line, 287' W line
QUADRANGLE: CHESTNUT LONGITUDE: -89.162279 GEOLOGIST: R. SMITH
CONFIDENTIAL: N LATITUDE: 40.037938 DATE COLLECTED: 7 / 9 / 1980
SURFACE ELEVATION (FT.): 623.0 LOGGED (FT.): 346.5 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL CORP. CI-80-1-9 WELL TYPE: Coal Test
COMMENT: GAMMA, DENS. AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
623.0			UNCONSOLIDATED	100.0	0.0
523.0	BOND		UNCLASSIFIED	16.0	100.0
507.0	BOND	CARTHAGE	LIMESTONE	10.5	116.0
496.5	MODESTO	NEW HAVEN	BLACK SHALE	2.5	126.5
494.0	MODESTO		UNCLASSIFIED	8.0	129.0
486.0	MODESTO	MACOUPIN	LIMESTONE	5.5	137.0
480.5	MODESTO		UNCLASSIFIED	72.0	142.5
408.5	MODESTO	CHAPEL	COAL	1.5	214.5
407.0	MODESTO		UNCLASSIFIED	23.0	216.0
384.0	MODESTO	WEST FRANKLIN	LIMESTONE	3.0	239.0
381.0	MODESTO	WEST FRANKLIN	UNCLASSIFIED	6.0	242.0
375.0	MODESTO	WEST FRANKLIN	LIMESTONE	6.0	248.0
369.0	MODESTO	WEST FRANKLIN	UNCLASSIFIED	10.0	254.0
359.0	MODESTO	WEST FRANKLIN	LIMESTONE	6.0	264.0
353.0	MODESTO		UNCLASSIFIED	51.0	270.0
302.0	CARBONDALE	DANVILLE	COAL	2.0	321.0
300.0	CARBONDALE		UNCLASSIFIED	18.0	323.0
282.0	CARBONDALE	BRERETON	LIMESTONE	2.5	341.0
279.5	CARBONDALE		UNCLASSIFIED	1.0	343.5
278.5	CARBONDALE	HERRIN	COAL	2.0	344.5

MAPID: 10721096000C **VERSION:** 1 **PROJECT:** NCRDS88
COUNTY: LOGAN **TWP/RNG:** 18N 1W **SECTION:** 17 **QUARTERS/FOOTAGES:** 220' S line, 1836' W line
QUADRANGLE: CHESTNUT **LONGITUDE:** -89.231268 **GEOLOGIST:** R. SMITH
CONFIDENTIAL: N **LATITUDE:** 40.004671 **DATE COLLECTED:** 7 / 1 / 1980
SURFACE ELEVATION (FT.): 628.0 **LOGGED (FT.):** 368.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL CORP. CI80-17-10 **WELL TYPE:** Coal Test
COMMENT: GAMMA, DENS. AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
628.0			UNCONSOLIDATED	88.0	0.0
540.0	BOND	CARTHAGE	LIMESTONE	3.0	88.0
537.0	MODESTO	NEW HAVEN	BLACK SHALE	2.5	91.0
534.5	MODESTO		UNCLASSIFIED	11.5	93.5
523.0	MODESTO	MACOUPIN	LIMESTONE	5.0	105.0
518.0	MODESTO		UNCLASSIFIED	70.5	110.0
447.5	MODESTO	CHAPEL	COAL	1.0	180.5
446.5	MODESTO		UNCLASSIFIED	28.5	181.5
418.0	MODESTO	WEST FRANKLIN	LIMESTONE	9.0	210.0
409.0	MODESTO	WEST FRANKLIN	SHALE	3.0	219.0
406.0	MODESTO	WEST FRANKLIN	LIMESTONE	5.0	222.0
401.0	MODESTO		UNCLASSIFIED	51.8	227.0
349.2	CARBONDALE	DANVILLE	COAL	1.5	278.8
347.7	CARBONDALE		UNCLASSIFIED	23.8	280.3
324.0	CARBONDALE	BRERETON	LIMESTONE	1.5	304.0
322.5	CARBONDALE	HERRIN	COAL	4.8	305.5
317.7	CARBONDALE		UNCLASSIFIED	36.3	310.3
281.5	CARBONDALE	SPRINGFIELD	COAL	3.5	346.5
278.0	CARBONDALE		UNCLASSIFIED	18.0	350.0

MAPID: 10721097000C

VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN

TWP/RNG: 18N 1W

SECTION: 24

QUARTERS/FOOTAGES: 70' N line, 1250' E line

QUADRANGLE: CHESTNUT

LONGITUDE: -89.148658

GEOLOGIST: R. SMITH

CONFIDENTIAL: N

LATITUDE: 40.004827

DATE COLLECTED: 7 / 8 / 1980

SURFACE ELEVATION (FT.): 625.0

LOGGED (FT.): 376.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP.

CI-80-24-7

WELL TYPE: Coal Test

COMMENT: GAMMA, DENS. RESIST. AND DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
625.0			UNCONSOLIDATED	142.0	0.0	
483.0	BOND	CARTHAGE	LIMESTONE	3.0	142.0	
480.0	MODESTO	NEW HAVEN	BLACK SHALE	3.0	145.0	
477.0	MODESTO		UNCLASSIFIED	16.0	148.0	
461.0	MODESTO	MACOUPIN	LIMESTONE	8.0	164.0	
453.0	MODESTO		BLACK SHALE	6.0	172.0	
447.0	MODESTO		UNCLASSIFIED	50.0	178.0	
397.0	MODESTO	CHAPEL	BLACK SHALE & CLAY	3.0	228.0	
394.0	MODESTO		UNCLASSIFIED	29.0	231.0	
365.0	MODESTO	WEST FRANKLIN	LIMESTONE	3.5	260.0	
361.5	MODESTO		UNCLASSIFIED	81.0	263.5	
280.5	CARBONDALE	DANVILLE	COAL	2.0	344.5	UNCERTAIN CORRELATION
278.5	CARBONDALE		UNCLASSIFIED	14.5	346.5	
264.0	CARBONDALE	BRERETON	LIMESTONE	4.0	361.0	UNCERTAIN CORRELATION
260.0	CARBONDALE	ANNA	BLACK SHALE	2.0	365.0	UNCERTAIN CORRELATION
258.0	CARBONDALE		UNCLASSIFIED	3.0	367.0	
255.0	CARBONDALE	HERRIN	COAL	2.0	370.0	UNCERTAIN CORRELATION
253.0	CARBONDALE		UNCLASSIFIED	4.0	372.0	

MAPID: 10721098000C VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN TWP/RNG: 18N 2W SECTION: 2 QUARTERS/FOOTAGES: 1260' N line, 2415' E line

QUADRANGLE: MOUNT PULASKI LONGITUDE: -89.2812 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 40.044552 DATE COLLECTED: 7 / 13 / 1980

SURFACE ELEVATION (FT.): 627.0 LOGGED (FT.): 725.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. CI-80-2-2C WELL TYPE: Coal Test

COMMENT: GAMMA, DENS. AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
627.0			UNCONSOLIDATED	73.0	0.0
554.0	BOND	CARTHAGE	LIMESTONE	4.0	73.0
550.0	MODESTO	NEW HAVEN	BLACK SHALE	2.0	77.0
548.0	MODESTO		UNCLASSIFIED	13.0	79.0
535.0	MODESTO	MACOUPIN	LIMESTONE	5.0	92.0
530.0	MODESTO		UNCLASSIFIED	65.0	97.0
465.0	MODESTO	CHAPEL	COAL	1.0	162.0
464.0	MODESTO		UNCLASSIFIED	22.0	163.0
442.0	MODESTO	WEST FRANKLIN	LIMESTONE	18.0	185.0
424.0	MODESTO	WEST FRANKLIN	SHALE	3.0	203.0
421.0	MODESTO	WEST FRANKLIN	LIMESTONE	5.0	206.0
416.0	MODESTO		UNCLASSIFIED	51.0	211.0
365.0	CARBONDALE	DANVILLE	COAL	0.0	262.0
365.0	CARBONDALE		UNCLASSIFIED	27.0	262.0
338.0	CARBONDALE	BRERETON	LIMESTONE	2.3	289.0
335.7	CARBONDALE		UNCLASSIFIED	2.8	291.3
333.0	CARBONDALE	HERRIN	COAL	3.0	294.0
330.0	CARBONDALE		UNCLASSIFIED	37.5	297.0
292.5	CARBONDALE	SPRINGFIELD	COAL	4.5	334.5
288.0	CARBONDALE		UNCLASSIFIED	29.0	339.0
259.0	CARBONDALE	EXCELLO	BLACK SHALE	3.0	368.0
256.0	CARBONDALE		UNCLASSIFIED	1.0	371.0
255.0	CARBONDALE	HOUCHIN CREEK	COAL	2.0	372.0
253.0	CARBONDALE		UNCLASSIFIED	66.0	374.0
187.0	CARBONDALE	SURVANT - UPPER	COAL	1.0	440.0
186.0	CARBONDALE		UNCLASSIFIED	5.0	441.0
181.0	CARBONDALE	SURVANT - LOWER	COAL	2.0	446.0
179.0	CARBONDALE		UNCLASSIFIED	8.5	448.0
170.5	CARBONDALE	MECCA QUARRY	BLACK SHALE	2.0	456.5
168.5	SPOON		UNCLASSIFIED	89.5	458.5
79.0	SPOON		BLACK SHALE	3.0	548.0
76.0	SPOON		COAL	2.0	551.0
74.0	SPOON		UNCLASSIFIED	17.0	553.0
57.0	SPOON		BLACK SHALE	4.0	570.0
53.0	SPOON		UNCLASSIFIED	151.0	574.0

MAPID: 10721099000C

VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN

TWP/RNG: 18N 2W

SECTION: 5

QUARTERS/FOOTAGES: 162' S line, 1203' W line

QUADRANGLE: MOUNT PULASKI

LONGITUDE: -89.344203

GEOLOGIST: R. SMITH

CONFIDENTIAL: N

LATITUDE: 40.034175

DATE COLLECTED: 6 / 30 / 1980

SURFACE ELEVATION (FT.): 580.0

LOGGED (FT.): 273.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP.

CI-80-5-12

WELL TYPE: Coal Test

COMMENT: GAMMA, DENS. AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
580.0			UNCONSOLIDATED	50.0	0.0
530.0			UNCLASSIFIED	30.0	50.0
500.0	MODESTO	CHAPEL	COAL	2.0	80.0
498.0	MODESTO		UNCLASSIFIED	31.0	82.0
467.0	MODESTO	WEST FRANKLIN	LIMESTONE	15.0	113.0
452.0	MODESTO		UNCLASSIFIED	81.5	128.0
370.5	CARBONDALE	BRERETON	LIMESTONE	1.8	209.5
368.7	CARBONDALE		UNCLASSIFIED	2.3	211.3
366.5	CARBONDALE	HERRIN	COAL	5.5	213.5
361.0	CARBONDALE		UNCLASSIFIED	33.8	219.0
327.2	CARBONDALE	ST. DAVID	LIMESTONE	3.5	252.8
323.7	CARBONDALE		UNCLASSIFIED	3.0	256.3
320.7	CARBONDALE	SPRINGFIELD	COAL	5.5	259.3

MAPID: 10700009000C VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN TWP/RNG: 18N 2W SECTION: 14 QUARTERS/FOOTAGES: SW SW SE

QUADRANGLE: MOUNT PULASKI LONGITUDE: -89.281115 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 40.005252 DATE COLLECTED:

SURFACE ELEVATION (FT.): 683.0 LOGGED (FT.): 351.8 LOG TYPE: Drillers Log

SOURCE: MOUNT PULASKI COLLIERY WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
683.0			UNCONSOLIDATED	92.0	0.0	
591.0	MODESTO		SANDY SHALE	20.0	92.0	
571.0	MODESTO		LIMESTONE	1.0	112.0	
570.0	MODESTO		CLAYSTONE	1.5	113.0	
568.5	MODESTO		GRAY SHALE	20.0	114.5	
548.5	MODESTO		SANDY SHALE	40.0	134.5	
508.5	MODESTO		LIMESTONE	2.0	174.5	
506.5	MODESTO		BLACK SHALE	1.0	176.5	
505.5	MODESTO	CHAPEL	COAL	1.5	177.5	UNCERTAIN CORRELATION
504.0	MODESTO		UNDERCLAY	2.0	179.0	
502.0	MODESTO		SHALE	64.0	181.0	
438.0	MODESTO	WEST FRANKLIN	LIMESTONE	15.0	245.0	CONGLOMERATIC
423.0	MODESTO		SHALE	2.0	260.0	
421.0	MODESTO		BLACK SHALE	1.0	262.0	
420.0	CARBONDALE	DANVILLE	COAL	0.5	263.0	
419.5			UNDERCLAY	0.5	263.5	
419.0	CARBONDALE		BLACK SHALE	0.8	264.0	
418.2	CARBONDALE	DANVILLE SUMP	COAL	0.3	264.8	
417.8	CARBONDALE		UNDERCLAY	0.7	265.2	
417.2	CARBONDALE		RED SHALE	10.0	265.8	
407.2	CARBONDALE	ANVIL ROCK	SANDSTONE	30.0	275.8	HERRIN COAL ERODED?
377.2	CARBONDALE		SANDY SHALE	30.0	305.8	
347.2	CARBONDALE	ST. DAVID	LIMESTONE	8.0	335.8	
339.2	CARBONDALE	SPRINGFIELD	COAL	4.0	343.8	
335.2	CARBONDALE		UNDERCLAY	4.0	347.8	

MAPID: 10721100000C **VERSION:** 1 **PROJECT:** NCRDS88
COUNTY: LOGAN **TWP/RNG:** 18N 2W **SECTION:** 16 **QUARTERS/FOOTAGES:** 252' S line, 2052' E line
QUADRANGLE: MOUNT PULASKI **LONGITUDE:** -89.318026 **GEOLOGIST:** R. SMITH
CONFIDENTIAL: N **LATITUDE:** 40.005343 **DATE COLLECTED:** 6 / 30 / 1980
SURFACE ELEVATION (FT.): 613.0 **LOGGED (FT.):** 339.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL CORP. CI80-16-11 **WELL TYPE:** Coal Test
COMMENT: GAMMA, DENS., AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
613.0			UNCONSOLIDATED	68.0	0.0	
545.0	MODESTO		UNCLASSIFIED	2.0	68.0	
543.0	MODESTO		LIMESTONE	6.0	70.0	
537.0	MODESTO		UNCLASSIFIED	71.0	76.0	
466.0	MODESTO	CHAPEL	COAL	1.0	147.0	
465.0	MODESTO		UNCLASSIFIED	41.0	148.0	
424.0	MODESTO	WEST FRANKLIN	LIMESTONE	6.0	189.0	
418.0	MODESTO	WEST FRANKLIN	SHALE	3.0	195.0	
415.0	MODESTO	WEST FRANKLIN	LIMESTONE	5.0	198.0	
410.0	CARBONDALE		BLACK SHALE	2.0	203.0	
408.0	CARBONDALE		UNCLASSIFIED	38.0	205.0	
370.0	CARBONDALE		BLACK SHALE	2.0	243.0	
368.0	CARBONDALE		UNCLASSIFIED	28.3	245.0	
339.7	CARBONDALE	BRERETON	LIMESTONE	2.3	273.3	
337.5	CARBONDALE	HERRIN	COAL	4.5	275.5	
333.0	CARBONDALE		UNCLASSIFIED	32.5	280.0	
300.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	312.5	
299.5	CARBONDALE		UNCLASSIFIED	4.0	313.5	
295.5	CARBONDALE	SPRINGFIELD	COAL	5.0	317.5	
290.5	CARBONDALE		UNCLASSIFIED	16.5	322.5	

MAPID: 10721144000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 2 **QUARTERS/FOOTAGES:** 2547' S line, 1434' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.390917 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.041172 **DATE COLLECTED:** 6 / 24 / 1977
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 300.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL CO. **WELL TYPE:** Coal Test
COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	CARBONDALE	HERRIN	COAL	3.8	212.7	VERY SMUTTY
-	CARBONDALE	SPRINGFIELD	COAL	5.4	262.8	

MAPID: 10721144000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 2 **QUARTERS/FOOTAGES:** 2547' S line, 1434' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.390917 **GEOLOGIST:** BARGH
CONFIDENTIAL: N **LATITUDE:** 40.041172 **DATE COLLECTED:** 6 / 24 / 1977
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 300.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL CO. **WELL TYPE:** Coal Test
COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			CLAY	5.0	0.0
-			SAND & GRAVEL	13.0	5.0
-			CLAY, SAND & GRAVEL	22.0	18.0
-			SAND & GRAVEL	25.0	40.0
-			CLAY, SAND & GRAVEL	53.0	65.0
-			SAND & GRAVEL	25.0	118.0
-			SHALE	83.6	113.0
-	CARBONDALE	BANKSTON FORK	LIMESTONE	4.9	196.6
-	CARBONDALE		SHALE	11.2	201.5
-	CARBONDALE	HERRIN	COAL	3.8	212.7
-	CARBONDALE		SHALE	5.5	216.5
-	CARBONDALE		LIMESTONE	1.3	222.0
-	CARBONDALE		SHALE	35.7	223.3
-	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	259.0
-	CARBONDALE	TURNER MINE	BLACK SHALE	2.8	260.0
-	CARBONDALE	SPRINGFIELD	COAL	5.4	262.8
-	CARBONDALE		ROCK	2.4	268.2
-	CARBONDALE		SHALE	2.8	270.5
-	CARBONDALE		LIMESTONE	6.2	273.3
-	CARBONDALE		BLACK SHALE	1.8	279.5
-	CARBONDALE		SHALE	17.0	281.3

MAPID: 10700424000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 3 **QUARTERS/FOOTAGES:** SW NW SE
QUADRANGLE: BROADWELL **LONGITUDE:** -89.413038 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.038743 **DATE COLLECTED:** 0 / 0 / 1967
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 299.0 **LOG TYPE:** Multiple log types
SOURCE: ATLANTIC RICHFIELD **WELL TYPE:** Coal Test
COMMENT: DRILLER'S LOG & CORE DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
374.0	CARBONDALE	DANVILLE	COAL	3.0	201.0
337.0	CARBONDALE	HERRIN	COAL	5.0	238.0
290.0	CARBONDALE	SPRINGFIELD	COAL	5.8	285.0

MAPID: 10700424000C VERSION: 2

PROJECT: AVAIL

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 3

QUARTERS/FOOTAGES: SW NW SE

QUADRANGLE: BROADWELL

LONGITUDE: -89.413038

GEOLOGIST: C TREWORYG

CONFIDENTIAL: N

LATITUDE: 40.038743

DATE COLLECTED: 0 / 0 / 1967

SURFACE ELEVATION (FT.): 575.0

LOGGED (FT.): 299.0

LOG TYPE: Multiple log types

SOURCE: ATLANTIC RICHFIELD

WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG & CORE DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
575.0			CLAY	30.0	0.0	
545.0			SAND	20.0	30.0	
525.0			GRAVEL	13.0	50.0	
512.0			CLAY	42.0	63.0	
470.0			SILTY CLAY	15.0	105.0	
455.0			GRAVEL	22.0	120.0	WITH SOME CLAY
433.0			CLAY	8.0	142.0	
425.0			CLAY	6.0	150.0	
419.0			GRAVEL	3.0	156.0	
416.0			CLAY	1.0	159.0	
415.0	MODESTO	WEST FRANKLIN	LIMESTONE	10.0	160.0	
405.0	MODESTO		GRAY SHALE	17.0	170.0	
388.0	MODESTO		RED SHALE	14.0	187.0	
374.0	CARBONDALE	DANVILLE	COAL	3.0	201.0	
371.0	CARBONDALE		SHALE	11.0	204.0	
360.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	215.0	
358.0	CARBONDALE		SHALE	18.0	217.0	
340.0	CARBONDALE	BRERETON	LIMESTONE	3.0	235.0	
337.0	CARBONDALE	HERRIN	COAL	5.0	238.0	
332.0	CARBONDALE		BLACK SHALE	6.0	243.0	
326.0	CARBONDALE		LIMESTONE	2.0	249.0	
324.0	CARBONDALE		GRAY SHALE	24.0	251.0	
300.0	CARBONDALE		UNKNOWN	1.7	275.0	NOT RECORDED
298.3	CARBONDALE		GRAY SHALE	0.6	276.7	CORE 276.7 TO 298.75
297.7	CARBONDALE		CLAYSTONE	0.5	277.3	
297.2	CARBONDALE		GRAY SHALE	1.3	277.8	
295.9	CARBONDALE		CORE LOSS	0.4	279.1	
295.5	CARBONDALE		GRAY SHALE	0.6	279.5	
294.9	CARBONDALE	ST. DAVID	LIMESTONE	1.7	280.1	
293.2	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	281.8	
290.2	CARBONDALE		LIMESTONE	0.2	284.8	
290.0	CARBONDALE	SPRINGFIELD	COAL	5.8	285.0	CONTAINS MANY CLAY VEIN PARTINGS
284.2	CARBONDALE		UNDERCLAY	0.5	290.8	
283.7	CARBONDALE		CORE LOSS	1.0	291.3	
282.7	CARBONDALE		UNDERCLAY	6.5	292.3	

MAPID: 10720888000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 3 QUARTERS/FOOTAGES: 2000' S line, 1290' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.418937 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 40.039741 DATE COLLECTED: 6 / 28 / 1979
 SURFACE ELEVATION (FT.): 572.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
 COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN
345.0	CARBONDALE	HERRIN	COAL	4.0	227.0
293.5	CARBONDALE	SPRINGFIELD	COAL	5.6	278.5

MAPID: 10720888000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 3 QUARTERS/FOOTAGES: 2000' S line, 1290' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.418937 GEOLOGIST: BARGH
 CONFIDENTIAL: N LATITUDE: 40.039741 DATE COLLECTED: 6 / 28 / 1979
 SURFACE ELEVATION (FT.): 572.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
 COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN
572.0			CLAY, SAND & GRAVEL	34.0	0.0
538.0			SILT	16.0	34.0
522.0			CLAY	55.0	50.0
467.0			SILT, SAND & GRAVEL	25.0	105.0
442.0			CLAY	28.0	130.0
414.0	MODESTO		SANDSTONE	3.5	158.0
410.5	MODESTO		SHALE	31.5	161.5
379.0	CARBONDALE		BLACK SHALE	1.0	193.0
378.0	CARBONDALE		SHALE	13.5	194.0
364.5	CARBONDALE	ANVIL ROCK	SANDSTONE	4.0	207.5
360.5	CARBONDALE		SHALE	9.0	211.5
351.5	CARBONDALE	BRERETON	LIMESTONE	6.0	220.5
345.5	CARBONDALE		SHALE	0.5	226.5
345.0	CARBONDALE	HERRIN	COAL	4.0	227.0
341.0	CARBONDALE		SHALE	43.5	231.0
297.5	CARBONDALE	ST. DAVID	LIMESTONE	0.5	274.5
297.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.9	275.0
294.1	CARBONDALE		LIMESTONE	0.1	277.9
294.0	CARBONDALE	SPRINGFIELD	COAL	5.6	278.0
288.4	CARBONDALE		SHALE	1.1	283.6

MAPID: 10721145000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 3

QUARTERS/FOOTAGES: 11' S line, 2502' E line

QUADRANGLE: BROADWELL

LONGITUDE: -89.413841

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.03425

DATE COLLECTED: 6 / 24 / 1977

SURFACE ELEVATION (FT.): 572.0

LOGGED (FT.): 320.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO.

WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
337.0	CARBONDALE	HERRIN	COAL	4.9	235.0	
291.9	CARBONDALE	SPRINGFIELD	COAL	5.8	280.1	

MAPID: 10721145000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 3 QUARTERS/FOOTAGES: 11' S line, 2502' E line
 QUADRANGLE: BROADWELL LONGITUDE: -89.413841 GEOLOGIST: BARGH
 CONFIDENTIAL: N LATITUDE: 40.03425 DATE COLLECTED: 6 / 24 / 1977
 SURFACE ELEVATION (FT.): 572.0 LOGGED (FT.): 320.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
 COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
572.0			CLAY	32.0	0.0
540.0			SAND & GRAVEL	21.0	32.0
519.0			SILTY CLAY	42.0	53.0
477.0			CLAY	24.0	95.0
453.0			SILT	2.0	119.0
451.0			SAND & GRAVEL	21.0	121.0
430.0			CLAY	10.0	142.0
420.0	MODESTO		CLAYSTONE	2.0	152.0
418.0	MODESTO		BLACK SHALE	2.0	154.0
416.0	MODESTO		SHALE	6.0	156.0
410.0	MODESTO		SANDSTONE	4.0	162.0
406.0	MODESTO	WEST FRANKLIN	LIMESTONE	7.0	166.0
399.0	MODESTO		SHALE	48.0	173.0
351.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	221.0
349.0	CARBONDALE		SHALE	18.0	223.0
331.0	CARBONDALE	HERRIN	COAL	4.9	241.0
326.1	CARBONDALE		SHALE	5.6	245.9
320.5	CARBONDALE		LIMESTONE	1.5	251.5
319.0	CARBONDALE		ROCK	28.5	253.0
290.5	CARBONDALE	ST. DAVID	LIMESTONE	1.4	281.5
289.1	CARBONDALE	TURNER MINE	BLACK SHALE	3.2	282.9
285.9	CARBONDALE	SPRINGFIELD	COAL	5.4	286.1
280.5	CARBONDALE	SPRINGFIELD	COAL	0.4	291.5
280.1	CARBONDALE		UNDERCLAY	0.3	291.9
279.8	CARBONDALE		UNKNOWN	2.4	292.2

MAPID: 10720941000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 4 QUARTERS/FOOTAGES: 2550' S line, 2400' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.432217 GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 40.041364 DATE COLLECTED: 12 / 16 / 1979

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 271.2 LOG TYPE: Drillers Log

SOURCE: TULLIS COAL CO. 83-4-7 WELL TYPE: Coal Test

COMMENT: PERMIT 3;ELKHART MINE, ELEV. ESTIMATED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
558.0	PLEISTOCENE		SOIL	3.0	0.0	
555.0	PLEISTOCENE		CLAY	15.0	3.0	
540.0	PLEISTOCENE		SAND	33.0	18.0	
507.0	PLEISTOCENE		SAND & GRAVEL	5.0	51.0	
502.0	PLEISTOCENE		CLAY	44.0	56.0	
458.0	PLEISTOCENE		SAND & GRAVEL	14.0	100.0	
444.0	PLEISTOCENE		CLAY	16.0	114.0	CALCAREOUS
428.0	PLEISTOCENE		CLAY	15.0	130.0	SILTY
413.0	PLEISTOCENE		CLAY	5.0	145.0	
408.0	PLEISTOCENE		CLAY	5.0	150.0	SANDY
403.0	CARBONDALE		SHALE	9.0	155.0	CALCAREOUS, RED
394.0	CARBONDALE		SHALE	4.0	164.0	BLACK
390.0	CARBONDALE		SILTY SHALE	8.0	168.0	CALCAREOUS
382.0	CARBONDALE		LIMESTONE	29.0	176.0	ARGILLACEOUS, FOSSILIFEROUS
353.0	CARBONDALE	HERRIN	COAL	3.0	205.0	
350.0	CARBONDALE	HERRIN	LIMESTONE	2.0	208.0	POSSIBLE COAL BALL
348.0	CARBONDALE	HERRIN	COAL	3.0	210.0	
345.0	CARBONDALE		UNDERCLAY	7.0	213.0	CALCAREOUS
338.0	CARBONDALE	CANTON	SHALE	22.0	220.0	WITH LIMESTONE NODULES
316.0	CARBONDALE	ST. DAVID	LIMESTONE	3.5	242.0	ARGILLACEOUS, FOSSILIFEROUS, DARK GRAY
312.5	CARBONDALE	TURNER MINE	SHALE	3.9	245.5	BLACK
308.6	CARBONDALE		LIMESTONE	0.8	249.4	CRINOID STEMS
307.8	CARBONDALE		LIMESTONE	0.2	250.2	VERTICAL FRACTURE
307.6	CARBONDALE	SPRINGFIELD	COAL	5.3	250.4	
302.3	CARBONDALE		UNDERCLAY	4.4	255.7	
298.0	CARBONDALE		LIMESTONE	3.7	260.0	
294.3	CARBONDALE		SILTSTONE	5.7	263.7	LIMESTONE AND PHOSPATIC NODULES
288.6	CARBONDALE	COVEL CGL.	SHALE	0.5	269.4	BLACK, PYRITE AND PHOSPATIC NODULES
288.1	CARBONDALE	EXCELLO	SHALE	1.2	269.9	FOSSIL; BLACK
286.9	CARBONDALE	HOUCHIN CREEK	COAL	0.1	271.1	

MAPID: 10720941000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 4 QUARTERS/FOOTAGES: 2550' S line, 2400' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.432217 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 40.041364 DATE COLLECTED: 12 / 16 / 1979

SURFACE ELEVATION (FT.): 558.0 LOGGED (FT.): 271.2 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-4-7 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE; ELEV. ESTIMATED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
558.0	PLEISTOCENE		SOIL	3.0	0.0	
555.0	PLEISTOCENE		CLAY	15.0	3.0	
540.0	PLEISTOCENE		SAND	33.0	18.0	
507.0	PLEISTOCENE		SAND & GRAVEL	5.0	51.0	
502.0	PLEISTOCENE		CLAY	44.0	56.0	
458.0	PLEISTOCENE		SAND & GRAVEL	14.0	100.0	
444.0	PLEISTOCENE		CLAY	16.0	114.0	
428.0	PLEISTOCENE		SILTY CLAYSTONE	15.0	130.0	
413.0	PLEISTOCENE		CLAYSTONE	5.0	145.0	
408.0	PLEISTOCENE		SANDY CLAYSTONE	5.0	150.0	
403.0			CALCAREOUS SHALE	9.0	155.0	RED
394.0			BLACK SHALE	4.0	164.0	FISSILE
390.0			CALCAREOUS SHALE	8.0	168.0	
382.0	CARBONDALE		LIMESTONE	29.0	176.0	FOSSILIFEROUS
353.0	CARBONDALE	HERRIN	COAL	3.0	205.0	
350.0	CARBONDALE	HERRIN	LIMESTONE	2.0	208.0	POSS. COAL BALL B/C OF PLANT IMPS
348.0	CARBONDALE	HERRIN	COAL	3.0	210.0	
345.0	CARBONDALE		CALCAREOUS CLAYSTONE	7.0	213.0	
338.0	CARBONDALE	CANTON	SHALE	22.0	220.0	WITH LIMESTONE NODULES
316.0	CARBONDALE	ST. DAVID	LIMESTONE	3.5	242.0	DARK GRAY; VERY FOSSILIFEROUS
312.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.9	245.5	
308.6	CARBONDALE		LIMESTONE	0.8	249.4	CRINOID STEMS
307.8	CARBONDALE		LIMESTONE W/ COAL	0.2	250.2	SEPARATED BYU VERT. FRACTURE
307.6	CARBONDALE	SPRINGFIELD	COAL	5.3	250.4	
302.3	CARBONDALE		UNDERCLAY	4.4	255.7	
298.0	CARBONDALE		LIMESTONE	3.7	260.0	
294.3	CARBONDALE		SILTSTONE	5.7	263.7	LS & PHOS. NODS
288.6	CARBONDALE		CONGLOMERATE	0.5	269.4	PYR & PHOS NODS IN BKSH
288.1	CARBONDALE	EXCELLO	BLACK SHALE	1.2	269.9	FISSILE
286.9	CARBONDALE	HOUCHIN CREEK	COAL	0.1	271.1	

MAPID: 10721146000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 4

QUARTERS/FOOTAGES: 1458' S line, 741' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.439727

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.03844

DATE COLLECTED: 6 / 28 / 1977

SURFACE ELEVATION (FT.): 570.0

LOGGED (FT.): 300.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO.

WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
358.4	CARBONDALE	HERRIN	COAL	3.8	211.6	
300.6	CARBONDALE	SPRINGFIELD	COAL	5.4	269.4	

MAPID: 10721146000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 4 QUARTERS/FOOTAGES: 1458' S line, 741' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.439727 GEOLOGIST: BARGH
 CONFIDENTIAL: N LATITUDE: 40.03844 DATE COLLECTED: 6 / 28 / 1977
 SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
 COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
570.0			CLAY	18.0	0.0
552.0			SAND & GRAVEL	42.0	18.0
510.0			SILT	90.0	60.0
420.0			CLAY	26.0	150.0
394.0			SAND & GRAVEL	5.0	176.0
389.0	CARBONDALE		SHALE	7.6	181.0
381.4	CARBONDALE	BANKSTON FORK	LIMESTONE	1.4	188.6
380.0	CARBONDALE		SHALE	18.2	190.0
361.8	CARBONDALE	BRERETON	LIMESTONE	0.2	208.2
361.6	CARBONDALE	BRERETON	LIMESTONE	3.2	208.4
358.4	CARBONDALE	HERRIN	COAL	0.5	211.6
357.9	CARBONDALE	HERRIN	COAL	1.4	212.1
356.6	CARBONDALE	HERRIN	CLAYSTONE	0.2	213.4
356.4	CARBONDALE	HERRIN	COAL	0.3	213.6
356.1	CARBONDALE	HERRIN	PYRITE	0.1	213.9
356.0	CARBONDALE	HERRIN	COAL	1.0	214.0
355.0	CARBONDALE	HERRIN	CLAYSTONE	0.1	215.0
354.9	CARBONDALE	HERRIN	COAL	0.3	215.1
354.6	CARBONDALE		UNDERCLAY	0.7	215.4
353.9	CARBONDALE		UNKNOWN	48.5	216.1
305.5	CARBONDALE	ST. DAVID	LIMESTONE	0.3	264.5
305.2	CARBONDALE	TURNER MINE	BLACK SHALE	4.6	264.8
300.6	CARBONDALE	SPRINGFIELD	COAL	5.4	269.4
295.3	CARBONDALE		UNDERCLAY	0.1	274.7
295.2	CARBONDALE		UNKNOWN	0.2	274.8

MAPID: 10720943000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 5 QUARTERS/FOOTAGES: 1275' S line, 1750' E line
 QUADRANGLE: BROADWELL LONGITUDE: -89.448668 GEOLOGIST: J MCBETH
 CONFIDENTIAL: N LATITUDE: 40.038072 DATE COLLECTED: 11 / 10 / 1979
 SURFACE ELEVATION (FT.): LOGGED (FT.): 262.0 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO. 83-5-10 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		SOIL	3.0	0.0	
-	PLEISTOCENE		CLAY	112.0	3.0	
-	PLEISTOCENE		CLAY	5.0	115.0	WITH SMALL AMOUNT OF SAND
-	PLEISTOCENE		CLAY	35.0	120.0	WITH SILTY STRINGER
-	PLEISTOCENE		CLAY	25.0	155.0	
-	PLEISTOCENE		GRAVEL	9.0	180.0	FINE
-	CARBONDALE	HERRIN	COAL	1.0	189.0	TOP ERODED
-	CARBONDALE		GRAY SHALE	8.0	190.0	
-	CARBONDALE		LIMESTONE	4.0	198.0	TAN FIRM
-	CARBONDALE		GRAY SHALE	26.0	202.0	WITH SILTSTONE STRINGER
-	CARBONDALE		LIMESTONE	2.5	228.0	HARD, DARK GRAY TO BLACK
-	CARBONDALE		SHALE	2.5	230.5	BLACK
-	CARBONDALE	ST. DAVID	LIMESTONE	1.5	233.0	LIGHT GRAY, FOSSILIFEROUS AT BASE
-	CARBONDALE	TURNER MINE	SHALE	2.5	234.5	BLACK
-	CARBONDALE	SPRINGFIELD	COAL	5.6	237.0	
-	CARBONDALE		GRAY SHALE	4.6	242.5	WAXY, FRIABLE, FRACTURED
-	CARBONDALE		GRAY SHALE	0.4	247.1	HARD, WITH THIN LIMESTONE BEDS
-	CARBONDALE		GRAY SHALE	5.3	247.5	LIMESTONE NODULES AND BEDS
-	CARBONDALE	HANOVER	LIMESTONE	0.6	252.8	
-	CARBONDALE	EXCELLO	SHALE	0.5	253.4	DARK GRAY, FIRM
-	CARBONDALE		GRAY SHALE	0.6	253.9	WAXY, CRUMBLY
-	CARBONDALE	HOUCHIN CREEK	COAL	0.1	254.4	POORLY MIXED, WITH SOFT GRAY SHALE
-	CARBONDALE		SHALE	0.8	254.5	DARK GRAY; CRUMBLED INFO "DIRT"
-	CARBONDALE		GRAY SHALE	1.0	255.3	
-	CARBONDALE		SILTSTONE	0.4	256.3	
-	CARBONDALE		CORE LOSS	5.3	256.7	

MAPID: 10720943000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 5 QUARTERS/FOOTAGES: 1275' S line, 1750' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.448668 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 40.038072 DATE COLLECTED: 11 / 10 / 1979

SURFACE ELEVATION (FT.): LOGGED (FT.): 262.0 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-5-10 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		SOIL	3.0	0.0	
-	PLEISTOCENE		CLAY	112.0	3.0	
-	PLEISTOCENE		CLAY	5.0	115.0	WITH SMALL AMOUNT OF SAND
-	PLEISTOCENE		CLAY	35.0	120.0	WITH OCCASIONAL SITLY STRINGER
-	PLEISTOCENE		CLAY	25.0	155.0	
-	PLEISTOCENE		GRAVEL	9.0	180.0	FINE
-	CARBONDALE	HERRIN	COAL	1.0	189.0	TOP ERODED
-	CARBONDALE		GRAY SHALE	8.0	190.0	
-	CARBONDALE		LIMESTONE	4.0	198.0	TAN FIRM
-	CARBONDALE		GRAY SHALE	26.0	202.0	WITH OCCASIONAL SILTSTONE STRINGER
-	CARBONDALE		LIMESTONE	2.5	228.0	DARK GRAY TO BLACK ; HARD
-	CARBONDALE		BLACK SHALE	2.5	230.5	
-	CARBONDALE	ST. DAVID	LIMESTONE	1.5	233.0	SOME FOSSILS IN BOTTOM .2'; LT. GRAY
-	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	234.5	
-	CARBONDALE	SPRINGFIELD	COAL	5.6	237.0	
-	CARBONDALE		GRAY SHALE	4.6	242.5	WAXY; CRUMBLY; MANY ANG. FRACTURES
-	CARBONDALE		GRAY SHALE	0.4	247.1	HARD WITH THIN LS STREAKS
-	CARBONDALE		GRAY SHALE	5.3	247.5	WITH LIMESTONE NODULES AND STREAKS
-	CARBONDALE	HANOVER	LIMESTONE	0.6	252.8	
-	CARBONDALE	EXCELLO	SHALE	0.5	253.4	DARK GRAY; FIRM
-	CARBONDALE		GRAY SHALE	0.6	253.9	WAXY, CRUMBLY
-	CARBONDALE	HOUCHIN CREEK	COAL	0.1	254.4	POOR; MIXED WITH SOFT GRAY SHALE
-	CARBONDALE		SHALE	0.8	254.5	DARK GRAY; CRUMBLD INTO "DIRT"
-	CARBONDALE		GRAY SHALE	1.0	255.3	
-	CARBONDALE		SILTSTONE	0.4	256.3	
-	CARBONDALE		CORE LOSS	5.3	256.7	

MAPID: 10722012000C

VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 5

QUARTERS/FOOTAGES: 150' N line, 2200' E line

QUADRANGLE: BROADWELL

LONGITUDE: -89.450348

GEOLOGIST: J MCBETH

CONFIDENTIAL: N

LATITUDE: 40.048524

DATE COLLECTED: 4 / 8 / 1977

SURFACE ELEVATION (FT.): 565.0

LOGGED (FT.): 281.0

LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO

83-5-2

WELL TYPE: Coal Test

COMMENT: PERMIT3;ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
565.0	PLEISTOCENE		CLAY	171.0	0.0	
394.0	CARBONDALE		SHALE	7.0	171.0	MULTICOLORED
387.0	CARBONDALE		GRAY SHALE	11.0	178.0	
376.0	CARBONDALE		SANDY LIMESTONE	2.0	189.0	
374.0	CARBONDALE		SHALE	15.0	191.0	WITH SANDSTONE
359.0	CARBONDALE		SHALE	2.9	206.0	DARK GRAY
356.1	CARBONDALE	HERRIN	COAL	4.4	208.9	
351.7	CARBONDALE		GRAY SHALE	3.7	213.3	
348.0	CARBONDALE		SANDY SHALE	3.0	217.0	CALCAREOUS
345.0	CARBONDALE		GRAY SHALE	38.0	220.0	
307.0	CARBONDALE		SHALE	3.0	258.0	DARK GRAY
304.0	CARBONDALE	ST. DAVID	LIMESTONE	0.6	261.0	FOSSILS, ARGILLACEOUS
303.4	CARBONDALE	TURNER MINE	SHALE	4.1	261.6	HARD FISSILE; BLACK
299.4	CARBONDALE	SPRINGFIELD	COAL	6.4	265.6	BONEY
293.0	CARBONDALE		CLAYSTONE	5.0	272.0	
288.0	CARBONDALE		SHALE	4.0	277.0	CALCAREOUS, LIMESTONE LENSES AND NODULES

MAPID: 10722012000C VERSION: 2 PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 5 QUARTERS/FOOTAGES: 150' N line, 2200' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.450348 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 40.048524 DATE COLLECTED: 4 / 8 / 1977

SURFACE ELEVATION (FT.): 565.0 LOGGED (FT.): 281.0 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-5-2 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
565.0	PLEISTOCENE		CLAY	171.0	0.0	
394.0	CARBONDALE		SHALE	7.0	171.0	MULTICOLORED
387.0	CARBONDALE		GRAY SHALE	11.0	178.0	
376.0	CARBONDALE		SANDY LIMESTONE	2.0	189.0	
374.0	CARBONDALE		SHALE & SANDSTONE	15.0	191.0	
359.0	CARBONDALE		SHALE	2.9	206.0	DARK GRAY
356.1	CARBONDALE	HERRIN	COAL	4.4	208.9	
351.7	CARBONDALE		GRAY SHALE	3.7	213.3	
348.0	CARBONDALE		SANDY SHALE	3.0	217.0	LIMEY
345.0	CARBONDALE		GRAY SHALE	38.0	220.0	
307.0	CARBONDALE		SHALE	3.0	258.0	DARK GRAY
304.0	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	0.6	261.0	ARGILLACEOUS
303.4	CARBONDALE	TURNER MINE	BLACK SHALE	4.1	261.6	HARD, FISSILE
299.4	CARBONDALE	SPRINGFIELD	COAL	6.4	265.6	BONY
293.0	CARBONDALE		CLAYSTONE	5.0	272.0	
288.0	CARBONDALE		CALCAREOUS SHALE	4.0	277.0	LS LENSES & NODS THROUGHOUT

MAPID: 10720953000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 8 QUARTERS/FOOTAGES: 1305' S line, 800' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.445053 GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 40.023601 DATE COLLECTED: 10 / 22 / 1979

SURFACE ELEVATION (FT.): 574.0 LOGGED (FT.): 266.6 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-8-9 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
574.0	PLEISTOCENE		UNKNOWN	12.0	0.0	LOG DOES NOT SAY
562.0	PLEISTOCENE		CLAY	33.0	12.0	
529.0	PLEISTOCENE		SAND	5.0	45.0	
524.0	PLEISTOCENE		GRAVEL	5.0	50.0	
519.0	PLEISTOCENE		CLAY	70.0	55.0	WITH SAND AND GRAVEL
449.0	PLEISTOCENE		SAND	5.0	125.0	
444.0	PLEISTOCENE		CLAY	10.0	130.0	
434.0	PLEISTOCENE		CLAY	5.0	140.0	WITH SAND
429.0	PLEISTOCENE		CLAY	10.0	145.0	
419.0	PLEISTOCENE		CLAY	13.0	155.0	WITH SAND AND GRAVEL
406.0	PLEISTOCENE		SAND & GRAVEL	2.0	168.0	
404.0	PLEISTOCENE		CLAY	5.0	170.0	
399.0	PLEISTOCENE		SAND & GRAVEL	8.0	175.0	
391.0	CARBONDALE		LIMESTONE	2.0	183.0	TAN, HARD
389.0	CARBONDALE		GRAY SHALE	16.0	185.0	
373.0	CARBONDALE	BRERETON	LIMESTONE	4.0	201.0	TAN, DENSE, HARD
369.0	CARBONDALE		GRAY SHALE	3.0	205.0	WITH THIN LIMESTONE STRINGERS
366.0	CARBONDALE	HERRIN	COAL	4.0	208.0	POOR APPEARANCE, SOME FUSAIN
362.0	CARBONDALE		SANDSTONE	9.0	212.0	VF POOR TO NO APPARENT POROSITY
353.0	CARBONDALE		LIMESTONE W/ SHALE	5.0	221.0	
348.0	CARBONDALE		GRAY SHALE	14.0	226.0	
334.0	CARBONDALE		SILTSTONE	8.0	240.0	
326.0	CARBONDALE		GRAY SHALE	7.5	248.0	
318.5	CARBONDALE	ST. DAVID	LIMESTONE	3.2	255.5	
315.2	CARBONDALE	TURNER MINE	SHALE	1.9	258.8	BLACK
313.4	CARBONDALE	SPRINGFIELD	COAL	6.0	260.6	

MAPID: 10720953000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 8 QUARTERS/FOOTAGES: 1305' S line, 800' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.445053 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 40.023601 DATE COLLECTED: 10 / 22 / 1979

SURFACE ELEVATION (FT.): 574.0 LOGGED (FT.): 272.8 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-8-9 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
574.0	PLEISTOCENE		UNKNOWN	12.0	0.0	LOG DOES NOT SAY
562.0	PLEISTOCENE		CLAY	33.0	12.0	
529.0	PLEISTOCENE		SAND	5.0	45.0	
524.0	PLEISTOCENE		GRAVEL	5.0	50.0	
519.0	PLEISTOCENE		CLAY	70.0	55.0	WITH SAND AND GRAVEL
449.0	PLEISTOCENE		SAND	5.0	125.0	
444.0	PLEISTOCENE		CLAY	10.0	130.0	
434.0	PLEISTOCENE		CLAY	5.0	140.0	WITH SAND
429.0	PLEISTOCENE		CLAY	10.0	145.0	
419.0	PLEISTOCENE		CLAY	13.0	155.0	WITH SAND AND GRAVEL
406.0	PLEISTOCENE		SAND & GRAVEL	2.0	168.0	
404.0	PLEISTOCENE		CLAY	5.0	170.0	
399.0	PLEISTOCENE		SAND & GRAVEL	8.0	175.0	
391.0	CARBONDALE		LIMESTONE	2.0	183.0	TAN, HARD
389.0	CARBONDALE		GRAY SHALE	16.0	185.0	WITH THIN LS STRINGERS
373.0	CARBONDALE	BRERETON	LIMESTONE	4.0	201.0	
369.0	CARBONDALE		GRAY SHALE	3.0	205.0	WITH THIN LS STRINGERS
366.0	CARBONDALE	HERRIN	COAL	4.0	208.0	POOR APPEARANCE, SOME FUSAIN
362.0	CARBONDALE		SANDSTONE	9.0	212.0	VF, POOR TO NO APPARENT POROSITY
353.0	CARBONDALE		LIMESTONE & SHALE	5.0	221.0	
348.0	CARBONDALE		GRAY SHALE	14.0	226.0	
334.0	CARBONDALE		SILTSTONE	8.0	240.0	
326.0	CARBONDALE		GRAY SHALE	7.5	248.0	
318.5	CARBONDALE	ST. DAVID	LIMESTONE	3.2	255.5	
315.2	CARBONDALE	TURNER MINE	BLACK SHALE	1.9	258.8	
313.4	CARBONDALE	SPRINGFIELD	COAL	6.0	260.6	
307.4	CARBONDALE		CORE LOSS	6.2	266.6	

MAPID: 10720889000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 9 **QUARTERS/FOOTAGES:** 40' S line, 1245' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.437651 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.020006 **DATE COLLECTED:** 6 / 26 / 1979
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL CO. **WELL TYPE:** Coal Test
COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
376.0	CARBONDALE	HERRIN	COAL	3.5	199.0	
316.5	CARBONDALE	SPRINGFIELD	COAL	5.7	258.5	

MAPID: 10720889000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 9 **QUARTERS/FOOTAGES:** 40' S line, 1245' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.437651 **GEOLOGIST:** BARGH
CONFIDENTIAL: N **LATITUDE:** 40.020006 **DATE COLLECTED:** 6 / 26 / 1979
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL CO. **WELL TYPE:** Coal Test
COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
575.0			CLAY	22.0	0.0	
553.0			SILTY CLAY	20.0	22.0	
533.0			SAND & GRAVEL	10.0	42.0	
523.0			CLAY	110.0	52.0	
413.0	MODESTO		SHALE	13.0	162.0	
400.0	CARBONDALE		BLACK SHALE	1.0	175.0	DANVILLE NO.7 HORIZON
399.0	CARBONDALE		SHALE	23.0	176.0	
376.0	CARBONDALE	HERRIN	COAL	3.5	199.0	
372.5	CARBONDALE		SHALE	50.5	202.5	
322.0	CARBONDALE	ST. DAVID	LIMESTONE	2.5	253.0	
319.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	255.5	
318.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	257.0	CORE BEGINS ROOF
316.5	CARBONDALE	SPRINGFIELD	COAL	5.9	258.5	PYRITE LENSES
310.6	CARBONDALE		SHALE	0.3	264.4	FLOOR HIGH CLAY CONTENT
310.3	CARBONDALE		UNKNOWN	0.6	264.7	CORE LOSS

MAPID: 10722013000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 9 QUARTERS/FOOTAGES: 48' S line, 375' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.424696 GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 40.019838 DATE COLLECTED: 5 / 20 / 1975

SURFACE ELEVATION (FT.): 573.0 LOGGED (FT.): 283.3 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-9-1 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
573.0	PLEISTOCENE		SOIL	1.0	0.0	
572.0	PLEISTOCENE		LOESS	21.0	1.0	
551.0	PLEISTOCENE		CLAY	24.0	22.0	
527.0	PLEISTOCENE		CLAY	44.0	46.0	WITH SAND AND SOME GRAVEL
483.0	PLEISTOCENE		CLAY	10.0	90.0	
473.0	PLEISTOCENE		CLAY	18.0	100.0	WITH GRAVEL AND SOME BOULDERS
455.0	PLEISTOCENE		CLAY	12.0	118.0	WITH SOME GRAVEL AND MANY BOULDERS
443.0	MODESTO		LIMESTONE	2.0	130.0	DARK GRAY, DENSE
441.0	MODESTO		SHALE	2.0	132.0	
439.0	MODESTO	LONSDALE	LIMESTONE	8.0	134.0	FOSSILS, LIGHT GRAY TO BUFF
431.0	MODESTO		SHALE	2.0	142.0	BLACK
429.0	MODESTO		SHALE	1.0	144.0	LIGHT GRAY
428.0	MODESTO		SHALE	7.4	145.0	MULTICOLORED
420.6	MODESTO	PIASA	LIMESTONE	1.9	152.4	
418.7	PLEISTOCENE		SHALE	19.7	154.3	LIGHT GRAY WITH LIMESTONE
399.0	MODESTO		SHALE	13.0	174.0	SOFT RED BROWN
386.0	MODESTO		GRAY SHALE	8.0	187.0	
378.0	CARBONDALE		GRAY SHALE	1.8	195.0	WITH THIN SANDSTONE STRINGERS
376.2	CARBONDALE	COPPERAS CREEK	SANDSTONE	3.2	196.8	WITH CALCITE CEMENT
373.0	CARBONDALE		SHALE	9.8	200.0	WITH SANDSTONE
363.2	CARBONDALE		LIMESTONE	3.9	209.8	
359.3	CARBONDALE	HERRIN	COAL	7.8	213.7	
351.5	CARBONDALE		CLAYSTONE	2.5	221.5	
349.0	CARBONDALE		GRAY SHALE	16.0	224.0	WITH SIDERITE NODULES AND BANDS
333.0	CARBONDALE		GRAY SHALE	10.0	240.0	WITH LIMESTONE NODULES
323.0	CARBONDALE		GRAY SHALE	18.0	250.0	
305.0	CARBONDALE		GRAY SHALE	1.8	268.0	WITH SIDERITE BANDS AND NODULES
303.2	CARBONDALE		SHALE	1.1	269.8	CALCAREOUS, FOSSILS
302.2	CARBONDALE	ST. DAVID	LIMESTONE	1.1	270.8	ARGILLACEOUS, FOSSILIFEROUS
301.1	CARBONDALE	TURNER MINE	SHALE	2.2	271.9	CALCAREOUS AT BASE; BLACK
299.0	CARBONDALE		LIMESTONE	0.6	274.0	ARGILLACEOUS, FOSSILIFEROUS
298.4	CARBONDALE	SPRINGFIELD	COAL	5.3	274.6	THIN SCATTERED VEINS OF PYRITE
293.1	CARBONDALE		SHALE	3.4	279.9	CALCAREOUS, WITH LIMESTONE

MAPID: 10722013000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 9 QUARTERS/FOOTAGES: 48' S line, 375' E line
 QUADRANGLE: BROADWELL LONGITUDE: -89.424696 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 40.019838 DATE COLLECTED: 5 / 20 / 1975
 SURFACE ELEVATION (FT.): 573.0 LOGGED (FT.): 283.3 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO 83-9-1 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
573.0	PLEISTOCENE		SOIL	1.0	0.0	
572.0	PLEISTOCENE		LOESS	21.0	1.0	
551.0	PLEISTOCENE		CLAY	24.0	22.0	
527.0	PLEISTOCENE		CLAY	44.0	46.0	WITH SAND
483.0	PLEISTOCENE		CLAY	10.0	90.0	
473.0	PLEISTOCENE		CLAY	18.0	100.0	WITH SOME GRAVEL
455.0	PLEISTOCENE		CLAY	12.0	118.0	WITH SOME GRAVEL
443.0	MODESTO		LIMESTONE	2.0	130.0	DARK GRAY; DENSE
441.0	MODESTO		SHALE	2.0	132.0	
439.0	MODESTO		FOSSILIFEROUS LIMESTONE	8.0	134.0	GRAY TO BLUE
431.0	MODESTO		BLACK SHALE	2.0	142.0	
429.0	MODESTO		SHALE	1.0	144.0	LIGHT GRAY
428.0	MODESTO		SHALE	7.4	145.0	MULTICOLORED
420.6	MODESTO	PIASA	LIMESTONE	1.9	152.4	
418.7	MODESTO		SHALE	19.7	154.3	WITH LIMESTONE STRINGERS; LIGHT GRAY
399.0	MODESTO		SHALE	13.0	174.0	SOFT REDDISH BROWN
386.0	MODESTO		GRAY SHALE	8.0	187.0	
378.0	CARBONDALE		GRAY SHALE	1.8	195.0	WITH THIN SANDSTONE STRINGERS
376.2	CARBONDALE	COPPERAS CREEK	SANDSTONE	3.2	196.8	WITH CALCITE CEMENT
373.0	CARBONDALE		SHALE & SANDSTONE	9.8	200.0	
363.2	CARBONDALE		LIMESTONE	3.9	209.8	
359.3	CARBONDALE	HERRIN	COAL	7.8	213.7	
351.5	CARBONDALE		CLAYSTONE	2.5	221.5	
349.0	CARBONDALE		GRAY SHALE	16.0	224.0	WITH SIDERITE
333.0	CARBONDALE		GRAY SHALE	10.0	240.0	WITH LIMESTONE NODULES
323.0	CARBONDALE		GRAY SHALE	18.0	250.0	
305.0	CARBONDALE		GRAY SHALE	1.8	268.0	WITH SIDERITE
303.2	CARBONDALE		CALCAREOUS SHALE	1.1	269.8	FOSSILIFEROUS
302.2	CARBONDALE	ST. DAVID	LIMESTONE	1.1	270.8	FOSSILIFEROUS
301.1	CARBONDALE	TURNER MINE	BLACK SHALE	2.2	271.9	CALC AT BOTTOM
299.0	CARBONDALE		LIMESTONE	0.6	274.0	VERY FOSSILIFEROUS
298.4	CARBONDALE	SPRINGFIELD	COAL	5.3	274.6	THIN SCATTERED LAMS OF PYRITE
293.1	CARBONDALE		CALCAREOUS SHALE	3.4	279.9	WITH LIMESTONE NODULES

MAPID: 10720890000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 10

QUARTERS/FOOTAGES: 2580' N line, 2605' E line of NE

QUADRANGLE: BROADWELL

LONGITUDE: -89.414073

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.0271

DATE COLLECTED: 6 / 27 / 1979

SURFACE ELEVATION (FT.): 570.0

LOGGED (FT.): 300.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO.

WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
355.0	CARBONDALE	HERRIN	COAL	5.0	215.0	
310.0	CARBONDALE	SPRINGFIELD	COAL	5.0	260.0	

MAPID: 10720890000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 10 QUARTERS/FOOTAGES: 2580' N line, 2605' E line of NE

QUADRANGLE: BROADWELL LONGITUDE: -89.414073 GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 40.0271 DATE COLLECTED: 6 / 27 / 1979

SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.0			CLAY	18.0	0.0	
552.0			SAND & GRAVEL	4.0	18.0	
548.0			SILT	30.0	22.0	
518.0			CLAY	24.0	52.0	
494.0			SAND & GRAVEL	2.0	76.0	
492.0			CLAY	18.0	78.0	
474.0	MODESTO		SHALE	23.8	96.0	
450.2	MODESTO	WEST FRANKLIN	LIMESTONE	4.2	119.8	
446.0	MODESTO	WEST FRANKLIN	SHALE	2.0	124.0	
444.0	MODESTO	WEST FRANKLIN	LIMESTONE	9.5	126.0	
434.5	MODESTO		SHALE	30.0	135.5	
404.5	MODESTO		LIMESTONE	2.0	165.5	
402.5	MODESTO		SHALE	54.0	167.5	
348.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	221.5	TOP OF CARBONDALE IN THIS INTERVAL
347.5			SHALE	9.0	222.5	
338.5			SANDSTONE	8.5	231.5	
330.0			SHALE	5.0	240.0	GRADES FROM SS
325.0	CARBONDALE	HERRIN	COAL	5.0	245.0	
320.0	CARBONDALE		SHALE	7.0	250.0	
313.0	CARBONDALE		LIMESTONE	4.0	257.0	
309.0	CARBONDALE		SHALE	29.0	261.0	.5' ST. DAVID LS FROM E- LOG
280.0	CARBONDALE	SPRINGFIELD	COAL	5.0	290.0	FROM E-LOG
275.0	CARBONDALE		UNKNOWN	15.0	295.0	NO SAMPLES
260.0	CARBONDALE		SHALE	19.0	310.0	
241.0	CARBONDALE		SANDSTONE	1.0	329.0	

MAPID: 10720891000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 11

QUARTERS/FOOTAGES: 100' S line, 640' W line of SW

QUADRANGLE: BROADWELL

LONGITUDE: -89.402286

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.019871

DATE COLLECTED: 6 / 26 / 1979

SURFACE ELEVATION (FT.): 590.0

LOGGED (FT.): 293.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO.

WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
369.5	CARBONDALE	HERRIN	COAL	4.5	220.5	
317.8	CARBONDALE	SPRINGFIELD	COAL	5.2	272.2	

MAPID: 10720891000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 11 QUARTERS/FOOTAGES: 100' S line, 640' W line of SW

QUADRANGLE: BROADWELL LONGITUDE: -89.402286 GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 40.019871 DATE COLLECTED: 6 / 26 / 1979

SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 293.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0			CLAY	18.0	0.0	
572.0			SAND & GRAVEL	2.0	18.0	
570.0			CLAY	25.0	20.0	
545.0			SAND & GRAVEL	10.0	45.0	
535.0			CLAY, SAND & GRAVEL	39.0	55.0	
496.0	MODESTO		SHALE	14.0	94.0	WITH SS LENSES
482.0	MODESTO		SANDSTONE	8.0	108.0	
474.0	MODESTO		SHALE	14.5	116.0	
459.5	MODESTO	WEST FRANKLIN	LIMESTONE	6.5	130.5	
453.0	MODESTO	WEST FRANKLIN	SHALE	2.0	137.0	
451.0	MODESTO	WEST FRANKLIN	LIMESTONE	6.0	139.0	
445.0	MODESTO		SHALE	11.5	145.0	
433.5	MODESTO		LIMESTONE	2.0	156.5	
431.5			SHALE	55.5	158.5	TOP OF CARBONDALE IN THIS INTERVAL
376.0	CARBONDALE	BRERETON	LIMESTONE	3.5	214.0	
372.5	CARBONDALE	HERRIN	COAL	4.5	217.5	
368.0	CARBONDALE		SHALE	15.0	222.0	
353.0	CARBONDALE		SANDSTONE	3.0	237.0	CORE BEGINS
350.0	CARBONDALE		SHALE	21.9	240.0	.35' LS AT 268.9'
328.1	CARBONDALE		LIMESTONE	0.4	261.9	
327.7	CARBONDALE	TURNER MINE	BLACK SHALE	2.3	262.3	
325.4	CARBONDALE		LIMESTONE	0.7	264.6	
324.8	CARBONDALE	SPRINGFIELD	COAL	5.2	265.2	BROKEN AT TOP
319.6	CARBONDALE		CLAYSTONE & SHALE	2.7	270.4	
317.0	CARBONDALE		LIMESTONE	0.2	273.0	
316.8	CARBONDALE		SHALE	12.5	273.2	
304.3	CARBONDALE		UNKNOWN	0.2	285.7	

MAPID: 10720830000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 12 QUARTERS/FOOTAGES: 60' S line, 24' E line of SE
 QUADRANGLE: MOUNT PULASKI LONGITUDE: -89.366757 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 40.019499 DATE COLLECTED: 8 / 4 / 1978
 SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
 COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
367.0	CARBONDALE	HERRIN	COAL	4.5	233.0
320.3	CARBONDALE	SPRINGFIELD	COAL	5.3	279.7

MAPID: 10720830000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 12 QUARTERS/FOOTAGES: 60' S line, 24' E line of SE
 QUADRANGLE: MOUNT PULASKI LONGITUDE: -89.366757 GEOLOGIST: BARGH
 CONFIDENTIAL: N LATITUDE: 40.019499 DATE COLLECTED: 8 / 4 / 1978
 SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
 COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
600.0			CLAY	30.0	0.0
570.0			SAND & GRAVEL	2.0	30.0
568.0			SANDY CLAY	13.0	32.0
555.0			CLAY	7.0	45.0
548.0			CLAY, SAND & GRAVEL	28.0	52.0
520.0	MODESTO		SHALE	52.0	80.0
468.0	MODESTO	WEST FRANKLIN	LIMESTONE	17.2	132.0
450.8	MODESTO	WEST FRANKLIN	SHALE	2.8	149.2
448.0	MODESTO	WEST FRANKLIN	LIMESTONE	11.0	152.0 WITH THIN LS BAND
437.0			SHALE	69.0	163.0
368.0	CARBONDALE	BRERETON	LIMESTONE	1.0	232.0
367.0	CARBONDALE	HERRIN	COAL	4.5	233.0
362.5	CARBONDALE		SHALE/UNDERCLAY	4.5	237.5
358.0	CARBONDALE		LIMESTONE	0.7	242.0
357.3	CARBONDALE		SHALE	32.8	242.7
324.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	275.5 CORE BEGINS, HARD, CARBONACEOUS
323.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.7	276.5
320.8	CARBONDALE	SPRINGFIELD	COAL	5.3	279.2
315.6	CARBONDALE		UNDERCLAY	2.1	284.4
313.5	CARBONDALE		SHALE/UNDERCLAY	5.0	286.5
308.5	CARBONDALE		SHALE	8.0	291.5

MAPID: 10720831000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 12 **QUARTERS/FOOTAGES:** 550' N line, 175' W line of NW
QUADRANGLE: BROADWELL **LONGITUDE:** -89.385128 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.032591 **DATE COLLECTED:** 8 / 9 / 1978
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 306.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL CORP. **WELL TYPE:** Coal Test
COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
392.0	CARBONDALE	DANVILLE	COAL	1.0	208.0
366.0	CARBONDALE	HERRIN	COAL	4.0	234.0
318.6	CARBONDALE	SPRINGFIELD	COAL	5.6	281.4

MAPID: 10720831000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 12 **QUARTERS/FOOTAGES:** 550' N line, 175' W line of NW
QUADRANGLE: BROADWELL **LONGITUDE:** -89.385128 **GEOLOGIST:** BARGH
CONFIDENTIAL: N **LATITUDE:** 40.032591 **DATE COLLECTED:** 8 / 9 / 1978
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 306.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL CORP. **WELL TYPE:** Coal Test
COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
600.0			CLAY	45.0	0.0
555.0			SAND & GRAVEL	25.0	45.0
530.0			SANDY CLAY	47.5	70.0
482.5	MODESTO		LIMESTONE	0.5	117.5
482.0	MODESTO		SHALE	24.0	118.0
458.0	MODESTO	WEST FRANKLIN	LIMESTONE	14.0	142.0
444.0			SHALE	63.0	156.0
381.0	CARBONDALE	ANVIL ROCK	SANDSTONE	10.0	219.0 TOP OF CARBONDALE IN THIS INTERVAL
371.0	CARBONDALE		SHALE	4.0	229.0
367.0	CARBONDALE	HERRIN	COAL	4.0	233.0
363.0	CARBONDALE		SHALE	37.7	237.0 WITH BK SHALE
325.3	CARBONDALE	ST. DAVID	LIMESTONE	3.8	274.7
321.5	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	278.5
321.0	CARBONDALE	SPRINGFIELD	COAL	5.6	279.0
315.4	CARBONDALE		SHALE	19.1	284.6 CORE BEGINS

MAPID: 10721147000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 14

QUARTERS/FOOTAGES: 38' S line, 498' E line of SE

QUADRANGLE: BROADWELL

LONGITUDE: -89.387488

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.005145

DATE COLLECTED: 6 / 28 / 1977

SURFACE ELEVATION (FT.): 595.0

LOGGED (FT.): 310.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO.

WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
477.0	MODESTO	CHAPEL	COAL	2.0	118.0	
381.0	CARBONDALE	DANVILLE	COAL	2.0	214.0	
352.5	CARBONDALE	HERRIN	COAL	5.5	242.5	
313.0	CARBONDALE	SPRINGFIELD	COAL	5.4	282.0	

MAPID: 10721147000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 14 QUARTERS/FOOTAGES: 38' S line, 498' E line of SE

QUADRANGLE: BROADWELL LONGITUDE: -89.387488 GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 40.005145 DATE COLLECTED: 6 / 28 / 1977

SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 310.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
595.0			CLAY	22.0	0.0
573.0			SAND & GRAVEL	11.0	22.0
562.0			CLAY	26.0	33.0
536.0			SAND & GRAVEL	4.5	59.0
531.5	MODESTO		LIMESTONE	1.5	63.5
530.0	MODESTO		SHALE	53.0	65.0
477.0	MODESTO	CHAPEL	COAL	2.0	118.0
475.0	MODESTO		SHALE	36.5	120.0
438.5	MODESTO	WEST FRANKLIN	LIMESTONE	13.5	156.5
425.0	MODESTO		SHALE	44.0	170.0
381.0	CARBONDALE	DANVILLE	COAL	2.0	214.0
379.0	CARBONDALE		SHALE	9.0	216.0
370.0	CARBONDALE	BRERETON	LIMESTONE	16.0	225.0
354.0	CARBONDALE	HERRIN	COAL	5.5	241.0
348.5	CARBONDALE		SHALE	2.0	246.5
346.5	CARBONDALE		LIMESTONE	2.5	248.5
344.0	CARBONDALE		SHALE	2.0	251.0
342.0	CARBONDALE		LIMESTONE	2.0	253.0
340.0	CARBONDALE		SHALE	22.5	255.0
317.5	CARBONDALE	ST. DAVID	LIMESTONE	0.6	277.5
316.9	CARBONDALE	TURNER MINE	BLACK SHALE	17.4	278.1
299.5	CARBONDALE	SPRINGFIELD	COAL	5.4	295.5
294.1	CARBONDALE		SHALE	1.7	300.9

MAPID: 10721191000C VERSION: 1

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 14 QUARTERS/FOOTAGES: 61' N line, 72' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.404322 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 40.019431 DATE COLLECTED: 6 / 9 / 1981
 SURFACE ELEVATION (FT.): 576.0 LOGGED (FT.): 309.0 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO 83-14-4 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
576.0	PLEISTOCENE		SOIL	2.0	0.0	
574.0	PLEISTOCENE		CLAY	19.0	2.0	
555.0	PLEISTOCENE		SAND	34.0	21.0	>MEDIUM COARSE ROUNDED
521.0	PLEISTOCENE		SAND & GRAVEL	8.0	55.0	
513.0	PLEISTOCENE		CLAY	17.0	63.0	
496.0	MODESTO	CHAPEL	GRAY SHALE	3.0	80.0	WEATHERED
493.0	MODESTO		BLACK SHALE	1.0	83.0	
492.0	MODESTO		COAL	2.0	84.0	
490.0	MODESTO		CLAYSTONE	2.0	86.0	
488.0	MODESTO		GRAY SHALE	5.0	88.0	
483.0	MODESTO		SILTY SHALE	6.0	93.0	
477.0	MODESTO		SILTSTONE	7.0	99.0	
470.0	MODESTO		SILTY SHALE	14.0	106.0	
456.0	MODESTO		GRAY SHALE	4.0	120.0	
452.0	MODESTO		LIMESTONE	15.0	124.0	VERY HARD
437.0	MODESTO	PIASA	BLACK SHALE	3.0	139.0	COALY, SOFT
434.0	MODESTO		CLAYSTONE	9.0	142.0	
425.0	MODESTO		SHALE	11.0	151.0	MULTICOLORED
414.0	MODESTO		SILTY SHALE	10.0	162.0	
404.0	MODESTO		LIMESTONE	1.0	172.0	
403.0	MODESTO		SHALE	13.0	173.0	MULTICOLORED, BUT MAINLY RED
390.0	CARBONDALE	DANVILLE	BLACK SHALE	2.0	186.0	
388.0	CARBONDALE		CLAYSTONE	2.0	188.0	BLACK, COALY, SOFT
386.0	CARBONDALE		CALCAREOUS CLAYSTONE	4.0	190.0	
382.0	CARBONDALE	COPPERAS CREEK	SANDY SHALE	5.0	194.0	
377.0	CARBONDALE		SANDSTONE	6.0	199.0	
371.0	CARBONDALE		SILTY SHALE	6.0	205.0	
365.0	CARBONDALE	ANNA	BLACK SHALE	3.0	211.0	
362.0	CARBONDALE	HERRIN	COAL	4.0	214.0	
358.0	CARBONDALE		CLAYSTONE	5.0	218.0	
353.0	CARBONDALE		SANDSTONE	5.0	223.0	V.F. GRAINED
348.0	CARBONDALE		SILTY SHALE	22.0	228.0	
326.0	CARBONDALE		GRAY SHALE	9.1	250.0	CORING BEGAN
316.9	CARBONDALE		SHALE	0.7	259.1	VERY DARK GRAY
316.2	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	0.5	259.8	ARGILLACEOUS
315.7	CARBONDALE	TURNER MINE	BLACK SHALE	3.6	260.3	
312.2	CARBONDALE	SPRINGFIELD	COAL	2.1	263.8	

310.1	CARBONDALE	SPRINGFIELD	PYRITE	0.0	265.9	
310.1	CARBONDALE	SPRINGFIELD	COAL	0.6	265.9	
309.4	CARBONDALE	SPRINGFIELD	PYRITE	0.0	266.6	
309.4	CARBONDALE	SPRINGFIELD	COAL	0.3	266.6	OLIVE GRAY
309.1	CARBONDALE	SPRINGFIELD	PYRITE	0.0	266.9	
309.1	CARBONDALE	SPRINGFIELD	COAL	2.5	266.9	
306.7	CARBONDALE		CLAYSTONE	0.1	269.3	VERY DARK GRAY; COAL SPARS
306.5	CARBONDALE		CALCAREOUS CLAYSTONE	3.8	269.5	
302.7	CARBONDALE		CORE LOSS	0.3	273.3	
302.5	CARBONDALE		CLAYSTONE	1.5	273.5	
301.0	CARBONDALE		LIMESTONE	2.0	275.0	
299.0	CARBONDALE		SILTSTONE	6.0	277.0	
293.0	CARBONDALE	HANOVER	LIMESTONE	1.0	283.0	
292.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	284.0	
290.0	CARBONDALE		CLAYSTONE	4.0	286.0	
286.0	CARBONDALE		SILTSTONE	19.0	290.0	

MAPID: 10721192000C VERSION: 1

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 14 QUARTERS/FOOTAGES: 1990' N line, 2685' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.395331 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 40.014086 DATE COLLECTED: 6 / 10 / 1981

SURFACE ELEVATION (FT.): 608.0 LOGGED (FT.): 332.0 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-14-6 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
608.0	PLEISTOCENE		SOIL	2.0	0.0	
606.0	PLEISTOCENE		CLAY	22.0	2.0	
584.0	PLEISTOCENE		SILTY CLAY	19.0	24.0	
565.0	PLEISTOCENE		CLAY	40.0	43.0	WITH SAND AND GRAVEL UP TO .25"
525.0	PLEISTOCENE		CLAY	7.0	83.0	
518.0	MODESTO		GRAY SHALE	24.0	90.0	SOFT WEATHERED
494.0	MODESTO		GRAY SHALE	2.0	114.0	
492.0	MODESTO	CHAPEL	COAL	2.0	116.0	
490.0	MODESTO		CLAYSTONE	3.0	118.0	
487.0	MODESTO		CALCAREOUS SHALE	4.0	121.0	
483.0	MODESTO		LIMESTONE	3.0	125.0	
480.0	MODESTO		SILTSTONE	11.0	128.0	
469.0	MODESTO		SILTY SHALE	13.0	139.0	
456.0	MODESTO		GRAY SHALE	4.0	152.0	
452.0	MODESTO		LIMESTONE	15.0	156.0	
437.0	MODESTO		BLACK SHALE & COAL	3.0	171.0	
434.0	MODESTO		CLAYSTONE	5.0	174.0	
429.0	MODESTO		SHALE	13.0	179.0	MULTICOLORED
416.0	MODESTO		SILTY SHALE	18.0	192.0	
398.0	MODESTO		SHALE	6.0	210.0	MULTICOLORED
392.0	MODESTO		BLACK SHALE	1.5	216.0	
390.5	CARBONDALE	DANVILLE	COAL	2.0	217.5	
388.5	CARBONDALE		CLAYSTONE	5.5	219.5	
383.0	CARBONDALE		SILTY SHALE	14.5	225.0	OCCASIONAL SANDSTONE ZONE
368.5	CARBONDALE	BRERETON	LIMESTONE	2.5	239.5	FOFFILIF
366.0	CARBONDALE		GRAY SHALE	1.0	242.0	
365.0	CARBONDALE		BLACK SHALE	1.0	243.0	
364.0	CARBONDALE	HERRIN	COAL	4.0	244.0	
360.0	CARBONDALE		CLAYSTONE	5.0	248.0	
355.0	CARBONDALE		LIMESTONE	2.0	253.0	NODULE
353.0	CARBONDALE		SILTY SHALE	15.0	255.0	
338.0	CARBONDALE		GRAY SHALE	11.0	270.0	SIDERITE
327.0	CARBONDALE		CORE LOSS	2.0	281.0	
325.0	CARBONDALE	ST. DAVID	CALCAREOUS SHALE	0.9	283.0	CORRELATION UNCERTAIN
324.1	CARBONDALE	ST. DAVID	LIMESTONE	0.5	283.9	VERY FOSSILIFEROUS
323.6	CARBONDALE	TURNER MINE	BLACK SHALE	1.7	284.4	
321.9	CARBONDALE	SPRINGFIELD	COAL	2.8	286.1	
319.1	CARBONDALE	SPRINGFIELD	PYRITE	0.0	288.9	

319.1	CARBONDALE	SPRINGFIELD	COAL	0.2	288.9	
318.9	CARBONDALE	SPRINGFIELD	PYRITE	0.0	289.1	
318.9	CARBONDALE	SPRINGFIELD	COAL	0.9	289.1	
317.9	CARBONDALE	SPRINGFIELD	PYRITE	0.0	290.1	
317.9	CARBONDALE	SPRINGFIELD	COAL	1.5	290.1	
316.4	CARBONDALE		CLAYSTONE	5.3	291.6	
311.1	CARBONDALE		CORE LOSS	1.1	296.9	
310.0	CARBONDALE		CLAYSTONE	2.0	298.0	
308.0	CARBONDALE		SILTY SHALE	5.0	300.0	
303.0	CARBONDALE	EXCELLO	BLACK SHALE	3.0	305.0	TRACE COAL
300.0	CARBONDALE		CLAYSTONE	2.0	308.0	
298.0	CARBONDALE		SILTSTONE	22.0	310.0	

MAPID: 10700218000C VERSION: 1

PROJECT: NCRDS89

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 15 QUARTERS/FOOTAGES: 330' S line, 330' E line of NW NE

QUADRANGLE: BROADWELL LONGITUDE: -89.410463

GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.016936

DATE COLLECTED: 6 / 14 / 1960

SURFACE ELEVATION (FT.): LOGGED (FT.): 601.0

LOG TYPE: Drillers Log

SOURCE: HENRY LEE LITTERLY #1

WELL TYPE: Producer-Oil and Gas

COMMENT: CABLE TOOLS; NO ELEVATION GIVEN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNCONSOLIDATED	70.0	0.0	
-			SHALE	18.0	70.0	YELLOW
-			LIMESTONE	4.0	88.0	GRAY
-			SANDY SHALE	35.0	92.0	GRAY
-			LIMESTONE	13.0	127.0	GRAY
-			SHALE	5.0	140.0	DRK-GRAY
-			LIMESTONE	4.0	145.0	GRAY
-			GRAY SHALE	26.0	149.0	
-			SHALE	7.0	175.0	RED-BRN
-			SHALE	13.0	182.0	DRK-GRAY
-			SANDSTONE	4.0	195.0	
-			GRAY SHALE	9.0	199.0	
-			LIMESTONE	6.0	208.0	GRAY
-			SHALE	5.0	214.0	DRK-GRAY
-			GRAY SHALE	34.0	219.0	
-			SHALE	4.0	253.0	DRK-GRAY
-			LIMESTONE	2.0	257.0	DRK-GRAY
-			BLACK SHALE	9.0	259.0	
-			GRAY SHALE	6.0	268.0	
-			SHALE	4.0	274.0	GRN-GRAY
-			GRAY SHALE	21.0	278.0	
-			SANDSTONE	4.0	299.0	GRAY
-			SANDY SHALE	21.0	303.0	GRAY
-			GRAY SHALE	18.0	324.0	
-			SHALE	3.0	342.0	W/COAL CHIPS, DRK-GRAY
-			GRAY SHALE	7.0	345.0	
-			BLACK SHALE	6.0	352.0	SOME DRK GRAY SH
-			GRAY SHALE	11.0	358.0	SLATE ON DRILL LOG
-			SHALE	12.0	369.0	DRK-GRAY
-			SANDY SHALE	3.0	381.0	SLATE ON DRILL LOG, GRAY
-			SHALE	2.0	384.0	BRN-GRAY
-			BLACK SHALE	9.0	386.0	
-			BLACK SHALE	4.0	395.0	COAL CHIPS MIX
-			COAL WITH SHALE	2.0	399.0	
-			GRAY SHALE	11.0	401.0	
-			GRAY SHALE	13.0	412.0	DRK-GRAY
-			COAL	1.0	425.0	
-			GRAY SHALE	6.0	426.0	
-			SANDSTONE	2.0	432.0	BLUE GRY

-	SHALE	2.0	434.0	BLUE
-	SANDY SHALE	3.0	436.0	GRAY
-	GRAY SHALE	4.0	439.0	
-	SANDSTONE	3.0	443.0	GRAY
-	SANDSTONE/SHALE	1.0	446.0	
-	GRAY SHALE	9.0	447.0	DRK-GRAY
-	SHALE	6.0	456.0	
-	SANDY SHALE	12.0	462.0	GRAY
-	SANDSTONE	13.0	474.0	WHITE
-	SHALE/COAL	2.0	487.0	
-	SANDY SHALE	4.0	489.0	GRAY
-	SHALE	11.0	493.0	DRK GRAY AND GRAY
-	LIMESTONE	4.0	504.0	DRK-GRAY
-	SHALE/COAL	10.0	508.0	
-	SHALE	3.0	518.0	DRK-GRAY
-	SHALE/COAL	7.0	521.0	
-	GRAY SHALE	23.0	528.0	
-	SANDY SHALE	19.0	551.0	GRAY
-	SHALE	25.0	570.0	GRAY AND BLACK
-	LIMESTONE	3.0	595.0	
-	SHALE	3.0	598.0	DRK-GRAY

MAPID: 10721193000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 15 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: BROADWELL LONGITUDE: -89.405804

GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 40.006138

DATE COLLECTED: 6 / 5 / 1981

SURFACE ELEVATION (FT.): 578.0 LOGGED (FT.): 317.0

LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-15-16

WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
578.0	PLEISTOCENE		SOIL	2.0	0.0	
576.0	PLEISTOCENE		CLAY	20.0	2.0	
556.0	PLEISTOCENE		CLAY	6.0	22.0	WITH SAND
550.0	PLEISTOCENE		SAND & GRAVEL	4.0	28.0	
546.0	PLEISTOCENE		SANDY CLAY	36.0	32.0	WITH 50% SAND, GRAVEL UP TO 1/2"
510.0	PLEISTOCENE		CLAY	60.0	68.0	
450.0	MODESTO		GRAY SHALE	7.0	128.0	
443.0	MODESTO	LONSDALE	LIMESTONE	13.0	135.0	
430.0	MODESTO		SHALE	2.0	148.0	BLACK
428.0	MODESTO		CLAYSTONE	2.0	150.0	
426.0	MODESTO		SHALE	18.0	152.0	MULTICOLORED
408.0	MODESTO		SILTY SHALE	10.0	170.0	
398.0	MODESTO	PIASA	LIMESTONE	2.0	180.0	FOSSILS, ARGILLACEOUS
396.0	MODESTO		SHALE	3.0	182.0	
393.0	MODESTO		SHALE	7.0	185.0	MULTICOLORED MOSTLY RED
386.0	MODESTO		SHALE	3.0	192.0	BLACK
383.0	CARBONDALE	DANVILLE	COAL	1.0	195.0	VERY SHALEY
382.0	CARBONDALE		CLAYSTONE	3.0	196.0	
379.0	CARBONDALE		SHALE	8.0	199.0	MULTICOLORED
371.0	CARBONDALE		SANDY SHALE	16.0	207.0	ARGILLACEOUS, WITH LIMESTONE NODULES
355.0	CARBONDALE		SANDY SHALE	1.0	223.0	
354.0	CARBONDALE	HERRIN	COAL	3.0	224.0	
351.0	CARBONDALE		CLAYSTONE	4.0	227.0	
347.0	CARBONDALE		SANDY SHALE	9.0	231.0	
338.0	CARBONDALE		SANDSTONE	5.0	240.0	CALCAREOUS
333.0	CARBONDALE		GRAY SHALE	15.0	245.0	SOFT WITH SIDERITE
318.0	CARBONDALE		GRAY SHALE	5.7	260.0	FIRM WITH SIDERITE BANDS AND NODULES
312.3	CARBONDALE	ST. DAVID	SHALE	0.6	265.7	CALCAREOUS, BLACK
311.8	CARBONDALE	ST. DAVID	LIMESTONE	1.1	266.2	FOSSILS, ARGILLACEOUS
310.7	CARBONDALE	TURNER MINE	SHALE	4.5	267.3	BLACK
306.2	CARBONDALE		LIMESTONE	0.3	271.8	NODULAR
306.0	CARBONDALE	SPRINGFIELD	COAL	2.4	272.0	
303.6	CARBONDALE	SPRINGFIELD	PYRITE	0.0	274.4	
303.6	CARBONDALE	SPRINGFIELD	COAL	2.5	274.4	
301.1	CARBONDALE		CLAYSTONE	3.9	276.9	CALCAREOUS
297.2	CARBONDALE		SANDSTONE	6.0	280.8	
291.2	CARBONDALE		CORE LOSS	0.3	286.8	
291.0	CARBONDALE		SANDSTONE	2.0	287.0	

289.0	CARBONDALE		SILTY SHALE	5.0	289.0	
284.0	CARBONDALE	EXCELLO	SHALE	2.5	294.0	BLACK
281.5	CARBONDALE	HOUCHIN CREEK	COAL	2.5	296.5	
279.0	CARBONDALE		CLAYSTONE	4.0	299.0	
275.0	CARBONDALE		SILTY SHALE	4.0	303.0	
271.0	CARBONDALE		SILTSTONE	10.0	307.0	

MAPID: 10721193000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 15

QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: BROADWELL

LONGITUDE: -89.405804

GEOLOGIST: J. MCBETH

CONFIDENTIAL: N

LATITUDE: 40.006138

DATE COLLECTED: 6 / 5 / 1981

SURFACE ELEVATION (FT.): 578.0

LOGGED (FT.): 317.0

LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-15-16

WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
578.0	PLEISTOCENE		SOIL	2.0	0.0	
576.0	PLEISTOCENE		CLAY	20.0	2.0	
556.0	PLEISTOCENE		CLAY	6.0	22.0	WITH SAND
550.0	PLEISTOCENE		SAND & GRAVEL	4.0	28.0	
546.0	PLEISTOCENE		SANDY CLAY	36.0	32.0	WITH 50% SAND
510.0	PLEISTOCENE		CLAY	60.0	68.0	
450.0	MODESTO		GRAY SHALE	7.0	128.0	
443.0	MODESTO		LIMESTONE	13.0	135.0	
430.0	MODESTO		BLACK SHALE	2.0	148.0	
428.0	MODESTO		CLAYSTONE	2.0	150.0	
426.0	MODESTO		SHALE	18.0	152.0	MULTICOLORED
408.0	MODESTO		SILTY SHALE	10.0	170.0	
398.0	MODESTO	PIASA	FOSSILIFEROUS LIMESTONE	2.0	180.0	ARGILLACEOUS
396.0	MODESTO		SHALE	3.0	182.0	
393.0	MODESTO		SHALE	7.0	185.0	MULTICOLORED MOSTLY RED
386.0	MODESTO		BLACK SHALE	3.0	192.0	
383.0	CARBONDALE	DANVILLE	COAL	1.0	195.0	V. SHALEY
382.0	CARBONDALE		CLAYSTONE	3.0	196.0	
379.0	CARBONDALE		SHALE	8.0	199.0	MULTICOLORED
371.0	CARBONDALE		SANDY SHALE	16.0	207.0	ARGILLACEOUS LIMESTONE NODULES
355.0	CARBONDALE		SANDY SHALE	1.0	223.0	
354.0	CARBONDALE	HERRIN	COAL	3.0	224.0	
351.0	CARBONDALE		CLAYSTONE	4.0	227.0	
347.0	CARBONDALE		SANDY SHALE	9.0	231.0	
338.0	CARBONDALE		CALCAREOUS SANDSTONE	5.0	240.0	
333.0	CARBONDALE		GRAY SHALE	15.0	245.0	WITH SIDERITE
318.0	CARBONDALE		GRAY SHALE	5.7	260.0	FIRM WITH SIDERITE BANDS AND NODS
312.3	CARBONDALE	ST. DAVID	CALCAREOUS BLACK SHALE	0.6	265.7	PER LOG
311.8	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	1.1	266.2	ARGILLACEOUS
310.7	CARBONDALE	TURNER MINE	BLACK SHALE	4.5	267.3	
306.2	CARBONDALE		LIMESTONE	0.3	271.8	NODULAR
306.0	CARBONDALE	SPRINGFIELD	COAL	2.4	272.0	
303.6	CARBONDALE	SPRINGFIELD	PYRITE	0.0	274.4	
303.6	CARBONDALE	SPRINGFIELD	COAL	2.5	274.4	
301.1	CARBONDALE		CALCAREOUS CLAYSTONE	3.9	276.9	

297.2	CARBONDALE		SANDSTONE	6.0	280.8
291.2	CARBONDALE		CORE LOSS	0.3	286.8
291.0	CARBONDALE		SANDSTONE	2.0	287.0
289.0	CARBONDALE		SILTY SHALE	5.0	289.0
284.0	CARBONDALE	EXCELLO	BLACK SHALE	2.5	294.0
281.5	CARBONDALE	HOUCHIN CREEK	COAL	2.5	296.5
279.0	CARBONDALE		CLAYSTONE	4.0	299.0
275.0	CARBONDALE		SILTY SHALE	4.0	303.0
271.0	CARBONDALE		SILTSTONE	10.0	307.0

MAPID: 10720702000C
VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN
TWP/RNG: 18N 3W
SECTION: 16
QUARTERS/FOOTAGES: 400' N line, 805' E line of NE

QUADRANGLE: BROADWELL
LONGITUDE: -89.426241
GEOLOGIST: PRUSSEN

CONFIDENTIAL: N
LATITUDE: 40.018625
DATE COLLECTED: 10 / 9 / 1975

SURFACE ELEVATION (FT.): 575.0
LOGGED (FT.): 290.0
LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO.
WELL TYPE: Coal Test

COMMENT: 11,12,19,16,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
353.0	CARBONDALE	HERRIN	COAL	4.0	222.0
296.1	CARBONDALE	SPRINGFIELD	COAL	5.6	278.9

MAPID: 10720702000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 16 QUARTERS/FOOTAGES: 400' N line, 805' E line of NE

QUADRANGLE: BROADWELL LONGITUDE: -89.426241 GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 40.018625 DATE COLLECTED: 10 / 9 / 1975

SURFACE ELEVATION (FT.): 575.0 LOGGED (FT.): 290.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test

COMMENT: 11,12,19,16,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
575.0			CLAY	40.0	0.0	
535.0			SAND & GRAVEL	20.0	40.0	
515.0			CLAY, SAND & GRAVEL	40.0	60.0	
475.0			CLAY	36.0	100.0	
439.0	MODESTO	WEST FRANKLIN	LIMESTONE	11.5	136.0	
427.5	MODESTO	WEST FRANKLIN	SHALE	10.5	147.5	
417.0	MODESTO	WEST FRANKLIN	LIMESTONE	8.0	158.0	
409.0			SHALE	42.0	166.0	TOP OF CARBONDALE IN THIS INTERVAL
367.0	CARBONDALE	ANVIL ROCK	SANDSTONE	10.0	208.0	
357.0	CARBONDALE		SHALE	4.0	218.0	
353.0	CARBONDALE	HERRIN	COAL	4.0	222.0	
349.0	CARBONDALE		UNDERCLAY	2.0	226.0	
347.0	CARBONDALE		LIMESTONE	2.0	228.0	
345.0	CARBONDALE		CLAYSTONE	7.0	230.0	CORE BEGIN - ISGS STUDY
338.0	CARBONDALE		SILTSTONE	3.0	237.0	
335.0	CARBONDALE		SANDSTONE	3.0	240.0	
332.0	CARBONDALE		SILTSTONE	27.0	243.0	
305.0	CARBONDALE		BLACK SHALE	1.3	270.0	FRAGMENTS
303.7	CARBONDALE	ST. DAVID	LIMESTONE	1.2	271.3	
302.5	CARBONDALE		BLACK SHALE	4.4	272.5	
298.1	CARBONDALE	SPRINGFIELD	COAL	5.6	276.9	
292.5	CARBONDALE		CLAYSTONE	5.0	282.5	

MAPID: 10722014000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 16 QUARTERS/FOOTAGES: 2650' S line, 2075' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.430784 GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 40.012589 DATE COLLECTED: 12 / 4 / 1979

SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 306.0 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-16-7 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.0	PLEISTOCENE		SOIL	3.0	0.0	
582.0	PLEISTOCENE		CLAY	52.0	3.0	
530.0	PLEISTOCENE		SAND/CLAY	5.0	55.0	WITH COAL
525.0	PLEISTOCENE		SAND	25.0	60.0	
500.0	PLEISTOCENE		CLAY	20.0	85.0	WITH GRAVEL
480.0	PLEISTOCENE		CLAY	5.0	105.0	
475.0	PLEISTOCENE		SAND/CLAY	10.0	110.0	
465.0	PLEISTOCENE		CLAY	40.0	120.0	
425.0	PLEISTOCENE		SAND	38.0	160.0	
387.0	CARBONDALE		GRAY SHALE	12.0	198.0	WITH SILTY STREAKS
375.0	CARBONDALE		SANDSTONE	5.0	210.0	FINE
370.0	CARBONDALE	BRERETON	LIMESTONE	2.0	215.0	TAN
368.0	CARBONDALE		SILTSTONE	8.0	217.0	WITH SANDSTONE INTERBEDS
360.0	CARBONDALE	HERRIN	COAL	3.0	225.0	
357.0	CARBONDALE		SILTSTONE	12.0	228.0	
345.0	CARBONDALE		SILTSTONE	34.5	240.0	
310.5	CARBONDALE	ST. DAVID	LIMESTONE	1.3	274.5	TAN
309.2	CARBONDALE	TURNER MINE	SHALE	4.0	275.8	BLACK
305.2	CARBONDALE	SPRINGFIELD	COAL	0.1	279.8	DULL FUSSAIN
305.1	CARBONDALE		SHALE	1.8	279.9	
303.3	CARBONDALE		SHALE	5.1	281.7	
298.2	CARBONDALE		SILTSTONE	1.5	286.8	
296.7	CARBONDALE		CORE LOSS	2.7	288.3	
294.0	CARBONDALE		SILTSTONE	1.2	291.0	
292.8	CARBONDALE		GRAY SHALE	5.6	292.2	LIMESTONE NODULES
287.2	CARBONDALE	HANOVER	LIMESTONE	0.3	297.8	
286.9	CARBONDALE	EXCELLO	SHALE	0.3	298.1	BLACK
286.7	CARBONDALE	HOUCHIN CREEK	COAL	0.2	298.3	VERY POOR, MAY BE BLACK SHALE, DULL
286.5	CARBONDALE		SHALE	1.4	298.5	BLACK
285.1	CARBONDALE		GRAY SHALE	3.8	299.9	
281.3	CARBONDALE		SANDSTONE	2.4	303.7	

MAPID: 10722014000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 16 QUARTERS/FOOTAGES: 2650' S line, 2075' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.430784 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 40.012589 DATE COLLECTED: 12 / 4 / 1979

SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 306.0 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-16-7 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.0	PLEISTOCENE		SOIL	3.0	0.0	
582.0	PLEISTOCENE		CLAY	52.0	3.0	
530.0	PLEISTOCENE		SAND/CLAY	5.0	55.0	WITH COAL CHIPS AND CHUNKS UP TO .5"
525.0	PLEISTOCENE		SAND	25.0	60.0	
500.0	PLEISTOCENE		CLAY	20.0	85.0	WITH GRAVEL
480.0	PLEISTOCENE		CLAY	5.0	105.0	
475.0	PLEISTOCENE		SAND/CLAY	10.0	110.0	
465.0	PLEISTOCENE		CLAY	40.0	120.0	
425.0	PLEISTOCENE		SAND	38.0	160.0	
387.0	CARBONDALE		GRAY SHALE	12.0	198.0	WITH SILTY STREAKS
375.0	CARBONDALE		SANDSTONE	5.0	210.0	FINE
370.0	CARBONDALE	BRERETON	LIMESTONE	2.0	215.0	TAN
368.0	CARBONDALE		SILTSTONE	8.0	217.0	SANDSTONE INTERBEDS
360.0	CARBONDALE	HERRIN	COAL	3.0	225.0	
357.0	CARBONDALE		SILTSTONE	12.0	228.0	
345.0	CARBONDALE		SILTSTONE	34.5	240.0	SANDSTONE INTERBEDS, GRAY
310.5	CARBONDALE	ST. DAVID	LIMESTONE	1.3	274.5	TAN
309.2	CARBONDALE	TURNER MINE	BLACK SHALE	4.0	275.8	
305.2	CARBONDALE	SPRINGFIELD	COAL	0.1	279.8	DULL FUSSAIN & CLAY
305.1	CARBONDALE	SPRINGFIELD	COAL	5.1	279.9	
300.0	CARBONDALE		SHALE	1.8	285.0	
298.2	CARBONDALE		SILTSTONE	1.5	286.8	
296.7	CARBONDALE		CORE LOSS	2.7	288.3	
294.0	CARBONDALE		SILTSTONE	1.2	291.0	
292.8	CARBONDALE		GRAY SHALE	5.6	292.2	LS NODS
287.2	CARBONDALE	HANOVER	LIMESTONE	0.3	297.8	
286.9	CARBONDALE	EXCELLO	BLACK SHALE	0.3	298.1	
286.7	CARBONDALE	HOUCHIN CREEK	COAL	0.2	298.3	V. POOR MAY BE 1/2 BKSH; DULL
286.5	CARBONDALE		BLACK SHALE	1.4	298.5	
285.1	CARBONDALE		GRAY SHALE	3.8	299.9	
281.3	CARBONDALE		SANDSTONE	2.4	303.7	

MAPID: 10720963000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 18 QUARTERS/FOOTAGES: 75' S line, 3475' W line

QUADRANGLE: BROADWELL LONGITUDE: -89.471567 GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 40.005948 DATE COLLECTED: 9 / 27 / 1939

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 259.0 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO. 83-18-15 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE; ELEV ESTIMATED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
580.0	PLEISTOCENE		SOIL	5.0	0.0	
575.0	PLEISTOCENE		CLAY	20.0	5.0	
555.0	PLEISTOCENE		CLAY	25.0	25.0	WITH SAND
530.0	PLEISTOCENE		SAND	5.0	50.0	WITH SOME CLAY
525.0	PLEISTOCENE		GRAVEL	25.0	55.0	WITH SOME CLAY
500.0	PLEISTOCENE		SAND & GRAVEL	25.0	80.0	
475.0	PLEISTOCENE		CLAY	5.0	105.0	WITH SOME GRAVEL
470.0	PLEISTOCENE		CLAY	10.0	110.0	
460.0	MODESTO	LONSDALE	LIMESTONE	5.0	120.0	
455.0	MODESTO		LIMESTONE	5.0	125.0	WITH BLACK SHALE
450.0	MODESTO		SHALE	5.0	130.0	BLACK AND VARIEGATED
445.0	MODESTO		SHALE	30.0	135.0	OLIVE
415.0	MODESTO		SHALE	8.0	165.0	GRAY TO BLACK
407.0	CARBONDALE	DANVILLE	COAL	2.0	173.0	
405.0	CARBONDALE		UNDERCLAY	5.0	175.0	
400.0	CARBONDALE		GRAY SHALE	10.0	180.0	
390.0	CARBONDALE	BRERETON	LIMESTONE	5.0	190.0	
385.0	CARBONDALE		SHALE	7.0	195.0	DARK GRAY
378.0	CARBONDALE	HERRIN	COAL	5.0	202.0	WITH DARK GRAY SHALE
373.0	CARBONDALE		UNDERCLAY	3.0	207.0	
370.0	CARBONDALE	CANTON	GRAY SHALE	30.0	210.0	
340.0	CARBONDALE	ST. DAVID	LIMESTONE	3.3	240.0	
336.7	CARBONDALE	TURNER MINE	SHALE	0.7	243.3	BLACK
336.0	CARBONDALE	SPRINGFIELD	COAL	6.1	244.0	
329.9	CARBONDALE		CLAYSTONE	8.9	250.1	

MAPID: 10720963000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 18 QUARTERS/FOOTAGES: 75' S line, 3475' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.471567 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 40.005948 DATE COLLECTED: 9 / 27 / 1939
 SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 259.0 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO 83-18-15 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE; ELEV. ESTIMATED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
580.0	PLEISTOCENE		SOIL	5.0	0.0	
575.0	PLEISTOCENE		CLAY	20.0	5.0	
555.0	PLEISTOCENE		CLAY	25.0	25.0	WITH SAND
530.0	PLEISTOCENE		SAND	5.0	50.0	WITH SOME CLAY
525.0	PLEISTOCENE		GRAVEL	25.0	55.0	WITH SOME CLAY
500.0	PLEISTOCENE		SAND & GRAVEL	25.0	80.0	
475.0	PLEISTOCENE		CLAY	5.0	105.0	
470.0	PLEISTOCENE		CLAY	10.0	110.0	
460.0	MODESTO		LIMESTONE	5.0	120.0	
455.0	MODESTO		LIMESTONE AND BLACK SHALE	5.0	125.0	
450.0	MODESTO		BLACK SHALE	5.0	130.0	VARIGATED SHALE
445.0	MODESTO		SHALE	30.0	135.0	OLIVE
415.0	MODESTO		SHALE	8.0	165.0	GRAY TO BLACK
407.0	CARBONDALE	DANVILLE	COAL	2.0	173.0	
405.0	CARBONDALE		UNDERCLAY	5.0	175.0	
400.0	CARBONDALE		GRAY SHALE	10.0	180.0	
390.0	CARBONDALE	BRERETON	LIMESTONE	5.0	190.0	
385.0	CARBONDALE		SHALE	7.0	195.0	DARK GRAY
378.0	CARBONDALE	HERRIN	COAL	5.0	202.0	SOME DARK GRAY SHALE
373.0	CARBONDALE		UNDERCLAY	3.0	207.0	
370.0	CARBONDALE		GRAY SHALE	30.0	210.0	
340.0	CARBONDALE	ST. DAVID	LIMESTONE	3.3	240.0	
336.7	CARBONDALE	TURNER MINE	BLACK SHALE	0.7	243.3	
336.0	CARBONDALE	SPRINGFIELD	COAL	6.1	244.0	
329.9	CARBONDALE		CLAYSTONE	8.9	250.1	

MAPID: 10720715000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 21 QUARTERS/FOOTAGES: 2610' S line, 50' W line of SW
QUADRANGLE: CORNLAND LONGITUDE: -89.441998 GEOLOGIST: PRUSSEN
CONFIDENTIAL: N LATITUDE: 39.997944 DATE COLLECTED: 11 / 19 / 1975
SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
COMMENT: 11,12,19

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
367.0	CARBONDALE	HERRIN	COAL	2.0	233.0	
313.0	CARBONDALE	SPRINGFIELD	COAL	5.0	287.0	

MAPID: 10720715000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 21 QUARTERS/FOOTAGES: 2610' S line, 50' W line of SW
QUADRANGLE: CORNLAND LONGITUDE: -89.441998 GEOLOGIST: BARGH
CONFIDENTIAL: N LATITUDE: 39.997944 DATE COLLECTED: 11 / 19 / 1975
SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
COMMENT: 11,12,19

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
369.0	CARBONDALE		SHALE	45.5	231.0	
323.5	CARBONDALE	ST. DAVID	LIMESTONE	3.0	276.5	
320.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	279.5	
317.0	CARBONDALE	SPRINGFIELD	COAL	5.0	283.0	
312.0	CARBONDALE		UNDERCLAY	4.0	288.0	
308.0	CARBONDALE		SHALE	4.0	292.0	
600.0			CLAY	2.0	0.0	
598.0			SILTY CLAY	63.0	2.0	
535.0			SAND & GRAVEL	15.0	65.0	W/ CLAY
520.0			CLAY, SAND & GRAVEL	25.0	80.0	
495.0			CLAY	47.0	105.0	
448.0			SAND & GRAVEL	8.0	152.0	
440.0			SILTY CLAY	20.0	160.0	
420.0			CLAY	25.0	180.0	
395.0			SAND & GRAVEL	4.0	205.0	
391.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	209.0	
388.0	CARBONDALE		SHALE	17.0	212.0	
371.0	CARBONDALE	HERRIN	COAL	2.0	229.0	

MAPID: 10722015000C
VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN
TWP/RNG: 18N 3W
SECTION: 21

QUADRANGLE: CORNLAND
LONGITUDE: -89.428185
GEOLOGIST: J MCBETH

CONFIDENTIAL: N
LATITUDE: 39.998405
DATE COLLECTED: 3 / 30 / 1977

SURFACE ELEVATION (FT.): 600.0
LOGGED (FT.): 310.0
LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO
83-21-7
WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		CLAY	21.0	0.0	
579.0	PLEISTOCENE		SAND & GRAVEL	11.0	21.0	
568.0	PLEISTOCENE		CLAY	18.0	32.0	WITH SAND AND GRAVEL
550.0	PLEISTOCENE		SAND & GRAVEL	106.0	50.0	
444.0	PLEISTOCENE		SILT	67.0	156.0	
377.0	PLEISTOCENE		SAND & GRAVEL	4.0	223.0	
373.0	CARBONDALE		GRAY SHALE	1.3	227.0	
371.7	CARBONDALE	BRERETON	LIMESTONE	4.7	228.3	
367.0	CARBONDALE		GRAY SHALE	0.3	233.0	
366.7	CARBONDALE	HERRIN	COAL	3.2	233.3	
363.5	CARBONDALE		GRAY SHALE	17.7	236.5	
345.8	CARBONDALE		SANDY LIMESTONE	1.2	254.2	
344.6	CARBONDALE		SANDY SHALE	6.6	255.4	
338.0	CARBONDALE		GRAY SHALE	22.5	262.0	
315.5	CARBONDALE		SHALE	1.5	284.5	DARK GRAY
314.0	CARBONDALE	ST. DAVID	LIMESTONE	3.0	286.0	
311.0	CARBONDALE	TURNER MINE	SHALE	2.7	289.0	CALCAREOUS; BLACK
308.3	CARBONDALE	SPRINGFIELD	COAL	5.3	291.7	
303.0	CARBONDALE		GRAY SHALE	5.3	297.0	
297.7	CARBONDALE		SILTY SHALE	7.7	302.3	

MAPID: 10722015000C
VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN
TWP/RNG: 18N 3W
SECTION: 21

QUADRANGLE: CORNLAND
LONGITUDE: -89.428185
GEOLOGIST: J. MCBETH

CONFIDENTIAL: N
LATITUDE: 39.998405
DATE COLLECTED: 3 / 30 / 1977

SURFACE ELEVATION (FT.): 600.0
LOGGED (FT.): 310.0
LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO
83-21-7
WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		CLAY	21.0	0.0	
579.0	PLEISTOCENE		SAND & GRAVEL	11.0	21.0	
568.0	PLEISTOCENE		CLAY	18.0	32.0	WITH SAND
550.0	PLEISTOCENE		SAND & GRAVEL	106.0	50.0	
444.0	PLEISTOCENE		SILT	67.0	156.0	
377.0	PLEISTOCENE		SAND & GRAVEL	4.0	223.0	
373.0	CARBONDALE		GRAY SHALE	1.3	227.0	
371.7	CARBONDALE	BRERETON	LIMESTONE	4.7	228.3	
367.0	CARBONDALE		GRAY SHALE	0.3	233.0	
366.7	CARBONDALE	HERRIN	COAL	3.2	233.3	
363.5	CARBONDALE		GRAY SHALE	17.7	236.5	
345.8	CARBONDALE		SANDY LIMESTONE	1.2	254.2	
344.6	CARBONDALE		SANDY SHALE	6.6	255.4	
338.0	CARBONDALE		GRAY SHALE	22.5	262.0	
315.5	CARBONDALE		SHALE	1.5	284.5	DARK GRAY
314.0	CARBONDALE	ST. DAVID	LIMESTONE	3.0	286.0	
311.0	CARBONDALE	TURNER MINE	CALCAREOUS BLACK SHALE	2.7	289.0	
308.3	CARBONDALE	SPRINGFIELD	COAL	5.3	291.7	
303.0	CARBONDALE		GRAY SHALE	5.3	297.0	
297.7	CARBONDALE		SILTY SHALE	7.7	302.3	

MAPID: 10700087000C VERSION: 1

PROJECT: NCRDS89

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 22 QUARTERS/FOOTAGES: 362' S line, 312' W line of NW NE

QUADRANGLE: BROADWELL LONGITUDE: -89.412886 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.002559 DATE COLLECTED: 9 / 0 / 1950

SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 1465.0 LOG TYPE: Survey Sample Study

SOURCE: HERMAN HERRING WELL TYPE: Producer-Oil and Gas

COMMENT: SAMPLE SET 20468; STARR & BROUGHTON FARM

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.0			UNCONSOLIDATED	90.0	0.0	
480.0			SILTY SHALE	10.0	90.0	GRAY
470.0			SILTSTONE	10.0	100.0	SIDERITIC, SHALY, GRAY
460.0			SILTY SHALE	18.0	110.0	DRK-GRAY
442.0			DOLOMITE	3.0	128.0	CALCAREOUS, SILTY, GRY/BUFF
439.0			LIMESTONE	4.0	131.0	DOLOMITIC, FOSSILIF., BUFF/GRY
435.0			LIMESTONE	7.0	135.0	DENSE, OLIV/GRY
428.0			SHALE	3.0	142.0	DK GRAY TO BLACK; W/COAL
425.0			SHALE	10.0	145.0	RED/YEL
415.0			SHALE	15.0	155.0	W/DOLOMITE, GRN- GRAY
400.0			SHALE	13.0	170.0	BRN-GRAY, DRK GRN-GRAY, RED
387.0	CARBONDALE	DANVILLE	COAL	2.0	183.0	
385.0	CARBONDALE		SANDSTONE	15.0	185.0	SIDERITIC, CALCAREOUS, MICACEOUS, GRAY
370.0	CARBONDALE		SHALE	40.0	200.0	W/SIDERITE SPHERULES, GRN/GRAY
330.0	CARBONDALE		GRAY SHALE	35.0	240.0	
295.0	CARBONDALE	SPRINGFIELD	COAL	5.0	275.0	W/SOME BLACK SHALE
290.0			BLACK SHALE	20.0	280.0	
270.0			SILTSTONE	5.0	300.0	GRN-GRAY
265.0			SANDSTONE	20.0	305.0	SILTY-SIDER, GRAY
245.0			GRAY SHALE	25.0	325.0	
220.0			COAL	2.0	350.0	
218.0			SANDSTONE	38.0	352.0	CARBONACEOUS PARTINGS, GRAY
180.0			SHALE	15.0	390.0	DK GRAY/BRN- GRAY
165.0			CARBONACEOUS SHALE	5.0	405.0	W/COAL, BKSH, PYRITE, GRAY
160.0			SILTY SHALE	5.0	410.0	GRAY
155.0			SILTSTONE	7.0	415.0	W/SS, GRAY
148.0			SANDSTONE	23.0	422.0	TRACE OF OIL, PYRITIC, GRAY
125.0			SANDSTONE	30.0	445.0	GRAY
95.0			SANDSTONE	10.0	475.0	GRAY
85.0			SANDSTONE	10.0	485.0	W/BLACK GRAINS, FRIABLE, GRAY
75.0			COAL	10.0	495.0	W/BKSH AND UC
65.0			LIMESTONE AND SANDSTONE	11.0	505.0	
54.0			BLACK SHALE	4.0	516.0	
50.0			COAL WITH SHALE	12.0	520.0	SH IS DARK GRAY
38.0			GRAY & BLACK SHALE	28.0	532.0	SH IS GRAY TO DARK GRAY
10.0			SANDY SHALE	8.0	560.0	W/SS LAMINAE, DRK- GRAY
2.0			SHALY LIMESTONE	5.0	568.0	DOLOMITIC, DRK- GRAY

-3.0	SHALE	25.0	573.0	W/TRACE COAL, DRK-GRAY
-28.0	SANDSTONE	24.0	598.0	PYRITIC, GRAY
-52.0	LIMESTONE	3.0	622.0	SANDY/SHALY, GRAY
-55.0	CALCAREOUS SANDSTONE	20.0	625.0	W/DARK GRAY SHALE
-75.0	SHALY LIMESTONE	10.0	645.0	DENSE, DRK-GRAY
-85.0	CALCAREOUS SANDSTONE	61.0	655.0	GRAY
-146.0	UNCLASSIFIED	134.0	716.0	MISSISSIPPIAN SYST; LS, SS, SH, DOLOMITE
-280.0	UNCLASSIFIED	150.0	850.0	MISSISSIPPIAN SYST; SS, SH, DOLOMITE
-430.0	UNCLASSIFIED	95.0	1000.0	MISSISSIPPIAN SYST; DOLOMITE, SH
-525.0	UNCLASSIFIED	180.0	1095.0	MISSISSIPPIAN SYST; DOLOMITE, LS
-705.0	LIMESTONE W/ SHALE	57.0	1275.0	MISSISSIPPIAN SYSTEM
-762.0	SANDSTONE/SHALE	133.0	1332.0	MISSISSIPPIAN SYSTEM

MAPID: 10720716000C
VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN
TWP/RNG: 18N 3W
SECTION: 22

QUARTERS/FOOTAGES: 2315' S line, 1410' E line of SE

QUADRANGLE: CORNLAND
LONGITUDE: -89.409753

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N
LATITUDE: 39.997037

DATE COLLECTED: 10 / 21 / 1975

SURFACE ELEVATION (FT.): 585.0
LOGGED (FT.): 300.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO.

WELL TYPE: Coal Test

COMMENT: 11,12,19

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
352.0	CARBONDALE	HERRIN	COAL	3.5	233.0
301.0	CARBONDALE	SPRINGFIELD	COAL	5.0	284.0

MAPID: 10720716000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 22 QUARTERS/FOOTAGES: 2315' S line, 1410' E line of SE
 QUADRANGLE: CORNLAND LONGITUDE: -89.409753 GEOLOGIST: BARGH
 CONFIDENTIAL: N LATITUDE: 39.997037 DATE COLLECTED: 10 / 21 / 1975
 SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
 COMMENT: 11,12,19

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.0			CLAY	52.0	0.0	
533.0			SAND & GRAVEL	2.0	52.0	
531.0			CLAY, SAND & GRAVEL	6.0	54.0	
525.0			CLAY	50.0	60.0	
475.0			SILT & CLAY	25.0	110.0	
450.0			CLAY	6.0	135.0	
440.0	MODESTO	WEST FRANKLIN	LIMESTONE	12.0	145.0	
428.0	MODESTO		SHALE	10.0	157.0	
418.0	MODESTO		LIMESTONE	1.0	167.0	
417.0	MODESTO		SHALE	20.0	168.0	
397.0	MODESTO		LIMESTONE	1.0	188.0	DANVILLE COAL HORIZON?
396.0	MODESTO		SHALE	14.0	189.0	
382.0	CARBONDALE		SHALE/COAL	0.5	203.0	
381.5	CARBONDALE		SHALE	29.5	203.5	
352.0	CARBONDALE	HERRIN	COAL	3.5	233.0	
348.5	CARBONDALE		UNDERCLAY	6.5	236.5	
342.0	CARBONDALE		LIMESTONE	2.0	243.0	
340.0	CARBONDALE		SHALE	33.5	245.0	
306.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	278.5	
305.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.0	280.0	
301.0	CARBONDALE	SPRINGFIELD	COAL	5.0	284.0	
296.0	CARBONDALE		UNDERCLAY	5.0	289.0	
291.0	CARBONDALE		SHALE	6.0	294.0	

MAPID: 10720892000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 22 QUARTERS/FOOTAGES: 1601' S line, 255' W line of SW
 QUADRANGLE: CORNLAND LONGITUDE: -89.422541 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 39.995076 DATE COLLECTED: 6 / 25 / 1979
 SURFACE ELEVATION (FT.): 565.0 LOGGED (FT.): 288.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
 COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
356.0	CARBONDALE	HERRIN	COAL	3.0	209.0	
298.7	CARBONDALE	SPRINGFIELD	COAL	5.3	266.3	

MAPID: 10720892000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 22 QUARTERS/FOOTAGES: 1601' S line, 255' W line of SW
 QUADRANGLE: CORNLAND LONGITUDE: -89.422541 GEOLOGIST: BARGH
 CONFIDENTIAL: N LATITUDE: 39.995076 DATE COLLECTED: 6 / 25 / 1979
 SURFACE ELEVATION (FT.): 565.0 LOGGED (FT.): 288.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
 COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
565.0			CLAY	26.0	0.0	
539.0			SAND & GRAVEL	28.0	26.0	
511.0			CLAY, SAND & GRAVEL	16.0	54.0	
495.0			CLAY	70.0	70.0	
425.0			SILT	40.0	140.0	
385.0	CARBONDALE		SHALE	11.5	180.0	
373.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	191.5	
372.5	CARBONDALE		SHALE	16.5	192.5	
356.0	CARBONDALE	HERRIN	COAL	3.0	209.0	
353.0			SHALE	1.5	212.0	
351.5			LIMESTONE	2.5	213.5	
349.0			BLACK SHALE	46.0	216.0	
303.0			BLACK SHALE	3.3	262.0	CORE BEGINS ROOF
299.7	CARBONDALE	SPRINGFIELD	COAL	5.3	265.3	
294.5	CARBONDALE		SHALE	0.6	270.5	FLOOR
293.9	CARBONDALE		UNKNOWN	0.2	271.1	

MAPID: 10720879000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 23 QUARTERS/FOOTAGES: 2590' S line, 2200' W line of SW
 QUADRANGLE: CORNLAND LONGITUDE: -89.396794 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 39.997774 DATE COLLECTED: 6 / 20 / 1979
 SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 260.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
 COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
384.0	CARBONDALE	HERRIN	COAL	2.0	186.0	
335.5	CARBONDALE	SPRINGFIELD	COAL	4.8	234.5	
316.0			COAL	3.0	254.0	

MAPID: 10720879000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 23 QUARTERS/FOOTAGES: 2590' S line, 2200' W line of SW

QUADRANGLE: CORNLAND LONGITUDE: -89.396794 GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 39.997774 DATE COLLECTED: 6 / 20 / 1979

SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 260.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.0			CLAY	12.0	0.0	
558.0			SAND & GRAVEL	2.0	12.0	
556.0			CLAY, SAND & GRAVEL	6.0	14.0	
550.0			SAND & GRAVEL	8.0	20.0	
542.0			SANDY CLAY	42.0	28.0	
500.0	MODESTO		SHALE	33.5	70.0	
466.5	MODESTO	WEST FRANKLIN	LIMESTONE	4.5	103.5	
462.0	MODESTO	WEST FRANKLIN	SHALE	1.5	108.0	
460.5	MODESTO	WEST FRANKLIN	LIMESTONE	5.5	109.5	
455.0	MODESTO		SHALE	10.0	115.0	
445.0	MODESTO		SANDSTONE	3.0	125.0	
442.0	MODESTO	PIASA	LIMESTONE	1.0	128.0	WITH COAL TRACE AT BASE
441.0	MODESTO		SHALE	7.0	129.0	
434.0	CARBONDALE		SHALE	16.0	136.0	
418.0	CARBONDALE	ANVIL ROCK	SANDSTONE	6.0	152.0	
412.0	CARBONDALE		SHALE	5.0	158.0	
407.0	CARBONDALE	BRERETON	LIMESTONE	4.0	163.0	
403.0	CARBONDALE	HERRIN	COAL	2.0	167.0	
401.0	CARBONDALE		SHALE	42.0	169.0	
359.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	211.0	
358.0	CARBONDALE		SHALE	2.3	212.0	CORE BEGINS. PYRITE LENSES
355.7	CARBONDALE	SPRINGFIELD	COAL	4.8	214.3	
350.9	CARBONDALE		SHALE	0.5	219.1	
350.4	CARBONDALE		UNDERCLAY	1.1	219.6	CORE ENDS
349.4	CARBONDALE		UNKNOWN	0.2	220.6	
349.2	CARBONDALE		SHALE	1.5	220.8	
347.7	CARBONDALE		LIMESTONE	2.0	222.3	
345.7	CARBONDALE		SHALE	10.0	224.3	
335.7	CARBONDALE	HOUCHIN CREEK	COAL	3.0	234.3	
332.7	CARBONDALE		SHALE	3.0	237.3	

MAPID: 10721214000C VERSION: 1

PROJECT: LUMP

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 23

QUARTERS/FOOTAGES: SW SW NE

QUADRANGLE: CORNLAND

LONGITUDE: -89.394022

GEOLOGIST: J. MCBETH

CONFIDENTIAL: N

LATITUDE: 39.998776

DATE COLLECTED: 10 / 30 / 1981

SURFACE ELEVATION (FT.): 571.0

LOGGED (FT.): 281.0

LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-23-7

WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
571.0	PLEISTOCENE		UNCONSOLIDATED	53.0	0.0	
518.0	MODESTO		CALCAREOUS SANDSTONE	5.0	53.0	VF-FINE
513.0	MODESTO	CHAPEL	COAL	1.5	58.0	
511.5	MODESTO		CLAYSTONE	3.5	59.5	SOFT
508.0	MODESTO		SILTY SHALE	5.0	63.0	
503.0	MODESTO		SILTSTONE	22.0	68.0	
481.0	MODESTO		SILTY SHALE	8.0	90.0	
473.0	MODESTO		GRAY SHALE	3.0	98.0	DARK
470.0	MODESTO		LIMESTONE	5.0	101.0	
465.0	MODESTO		CALCAREOUS SHALE	3.0	106.0	
462.0	MODESTO		LIMESTONE	8.0	109.0	SANDY OLIVE GRAY FIRM
454.0	MODESTO		BLACK SHALE	2.0	117.0	
452.0	MODESTO		CLAYSTONE	4.0	119.0	
448.0	MODESTO		SILTY SHALE	7.0	123.0	
441.0	MODESTO		SHALE	12.0	130.0	MULTICOLORED
429.0	MODESTO		SILTY SHALE	10.0	142.0	
419.0	MODESTO	PIASA	LIMESTONE	3.0	152.0	
416.0	MODESTO		SHALE	6.0	155.0	
410.0	CARBONDALE	DANVILLE	BLACK SHALE	2.0	161.0	TRACE BONY COAL
408.0	CARBONDALE		CLAYSTONE	4.0	163.0	
404.0	CARBONDALE		SILTY SHALE	6.5	167.0	
397.5	CARBONDALE		LIMESTONE	1.5	173.5	
396.0	CARBONDALE		SILTY SHALE	12.0	175.0	
384.0	CARBONDALE	ANNA	BLACK SHALE	2.0	187.0	
382.0	CARBONDALE	HERRIN	COAL	1.5	189.0	
380.5	CARBONDALE		CLAYSTONE	5.5	190.5	
375.0	CARBONDALE		SILTY SHALE	14.0	196.0	
361.0	CARBONDALE		SHALE	15.0	210.0	WITH SIDERITE
346.0	CARBONDALE		GRAY SHALE	1.9	225.0	START CORE 225' WITH SIDERITE
344.1	CARBONDALE		CALCAREOUS SHALE	1.1	226.9	
343.0	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	2.7	228.0	
340.3	CARBONDALE	TURNER MINE	BLACK SHALE	3.6	230.7	FISSILE SLIPFRACTURES
336.7	CARBONDALE	SPRINGFIELD	COAL	0.3	234.3	
336.4	CARBONDALE	SPRINGFIELD	SHALE	0.0	234.6	
336.4	CARBONDALE	SPRINGFIELD	COAL	0.4	234.6	
336.0	CARBONDALE	SPRINGFIELD	SHALE	0.0	235.0	
336.0	CARBONDALE	SPRINGFIELD	COAL	1.6	235.0	

334.3	CARBONDALE	SPRINGFIELD	PYRITE	0.1	236.7	
334.2	CARBONDALE	SPRINGFIELD	COAL	0.3	236.8	
333.9	CARBONDALE	SPRINGFIELD	PYRITE	0.1	237.1	
333.9	CARBONDALE	SPRINGFIELD	COAL	1.9	237.1	
332.0	CARBONDALE	SPRINGFIELD	PYRITE	0.0	239.0	
332.0	CARBONDALE	SPRINGFIELD	COAL	0.4	239.0	
331.6	CARBONDALE		CLAYSTONE	3.3	239.4	
328.3	CARBONDALE		LIMESTONE	0.9	242.7	NODULAR
327.4	CARBONDALE		SANDSTONE	3.2	243.6	WITH LIMESTONE NODULES
324.3	CARBONDALE		SILTSTONE	1.0	246.7	
323.3	CARBONDALE		CORE LOSS	0.3	247.7	
323.0	CARBONDALE		SILTSTONE	3.0	248.0	
320.0	CARBONDALE		SHALE	4.0	251.0	
316.0	CARBONDALE	HANOVER	FOSSILIFEROUS LIMESTONE	1.0	255.0	ARGILLACEOUS
315.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	256.0	
313.0	CARBONDALE		CLAYSTONE	4.0	258.0	
309.0	CARBONDALE		SANDSTONE	19.0	262.0	

MAPID: 10720838000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 24 QUARTERS/FOOTAGES: 35' N line, 1300' E line of NE

QUADRANGLE: MOUNT PULASKI LONGITUDE: -89.371307 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.004667 DATE COLLECTED: 8 / 11 / 1978

SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 320.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
480.0	MODESTO	CHAPEL	COAL	2.0 115.0	
383.0	CARBONDALE	DANVILLE	COAL	2.0 212.0	
354.5	CARBONDALE	HERRIN	COAL	3.5 240.5	
312.7	CARBONDALE	SPRINGFIELD	COAL	3.5 282.3	

MAPID: 10720838000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 24 QUARTERS/FOOTAGES: 35' N line, 1300' E line of NE

QUADRANGLE: MOUNT PULASKI

LONGITUDE: -89.371307

GEOLOGIST: BARGH

CONFIDENTIAL: N

LATITUDE: 40.004667

DATE COLLECTED: 8 / 11 / 1978

SURFACE ELEVATION (FT.): 595.0

LOGGED (FT.): 320.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO.

WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0			CLAY	24.0	0.0	
571.0			SAND & GRAVEL	10.0	24.0	
561.0			CLAY, SAND & GRAVEL	24.0	34.0	
537.0			SHALE	57.0	58.0	
480.0	MODESTO	CHAPEL	COAL	2.0	115.0	
478.0	MODESTO		CLAYSTONE	1.5	117.0	
476.5	MODESTO		LIMESTONE	0.5	118.5	
476.0	MODESTO		SHALE	42.0	119.0	
434.0	MODESTO	WEST FRANKLIN	LIMESTONE	9.0	161.0	
425.0	MODESTO	WEST FRANKLIN	SHALE	3.0	170.0	
422.0	MODESTO	WEST FRANKLIN	LIMESTONE	1.5	173.0	
420.5	MODESTO		SILTSTONE	36.5	174.5	
384.0	CARBONDALE	DANVILLE	COAL	2.0	211.0	BLACK AT BASE
382.0	CARBONDALE		SHALE	3.0	213.0	
379.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	216.0	
375.5	CARBONDALE		SHALE	20.0	219.5	
355.5	CARBONDALE	HERRIN	COAL	3.5	239.5	
352.0	CARBONDALE		SHALE	25.5	243.0	
326.5	CARBONDALE		LIMESTONE	12.5	268.5	
314.0	CARBONDALE	SPRINGFIELD	COAL	3.5	281.0	
310.5	CARBONDALE		CLAY & COAL	0.7	284.5	CORE BEGINS
309.8	CARBONDALE		UNDERCLAY	1.8	285.2	HORSEBACK
308.0	CARBONDALE		LIMESTONE	6.7	287.0	CORE ENDS
301.3	CARBONDALE		SHALE	19.0	293.7	
282.3	CARBONDALE		LIMESTONE	6.0	312.7	

MAPID: 10720880000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 24

QUARTERS/FOOTAGES: 2614' N line, 2583' E line of NE

QUADRANGLE: CORNLAND

LONGITUDE: -89.376003

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 39.997632

DATE COLLECTED: 6 / 21 / 1979

SURFACE ELEVATION (FT.): 592.0

LOGGED (FT.): 320.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO.

WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
474.5	MODESTO	CHAPEL	COAL	1.0	117.5	
336.8	CARBONDALE	HERRIN	COAL	5.1	255.2	
294.5	CARBONDALE	SPRINGFIELD	COAL	5.0	297.5	

MAPID: 10720880000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 24 QUARTERS/FOOTAGES: 2614' N line, 2583' E line of NE

QUADRANGLE: CORNLAND LONGITUDE: -89.376003 GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 39.997632 DATE COLLECTED: 6 / 21 / 1979

SURFACE ELEVATION (FT.): 592.0 LOGGED (FT.): 320.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
592.0			CLAY	12.0	0.0	
580.0			SANDY CLAY	10.0	12.0	
570.0			CLAY, SAND & GRAVEL	21.0	22.0	
549.0			LIMESTONE	2.0	43.0	
547.0			SHALE	72.5	45.0	
474.5	MODESTO	CHAPEL	COAL	1.0	117.5	
473.5	MODESTO		SHALE	36.5	118.5	
437.0	MODESTO	WEST FRANKLIN	LIMESTONE	12.0	155.0	
425.0	MODESTO	WEST FRANKLIN	SHALE	11.3	167.0	
413.7	MODESTO	WEST FRANKLIN	LIMESTONE	6.2	178.3	
407.5	MODESTO		SHALE	39.5	184.5	
368.0	CARBONDALE		BLACK SHALE	2.0	224.0	
366.0	CARBONDALE		SHALE	13.0	226.0	DANVILLE COAL HORIZON
353.0	CARBONDALE	ANVIL ROCK	SANDSTONE	5.0	239.0	
348.0	CARBONDALE	ANVIL ROCK	SHALE	9.0	244.0	
339.0	CARBONDALE	BRERETON	LIMESTONE	2.2	253.0	
336.8	CARBONDALE	HERRIN	COAL	5.1	255.2	
331.7	CARBONDALE		SHALE	33.2	260.3	
298.5	CARBONDALE	ST. DAVID	LIMESTONE	0.5	293.5	
298.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	294.0	
297.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	294.5	CORE BEGINS
294.5	CARBONDALE	SPRINGFIELD	COAL	3.3	297.5	
291.2	CARBONDALE	SPRINGFIELD	SHALE	0.2	300.8	
291.0	CARBONDALE	SPRINGFIELD	COAL	1.5	301.0	SH PARTING
289.5	CARBONDALE		SHALE	0.9	302.5	
288.6	CARBONDALE		UNKNOWN	0.2	303.4	
288.5	CARBONDALE		SHALE	4.0	303.5	CORE LOSS
284.5	CARBONDALE		LIMESTONE	1.5	307.5	
283.0	CARBONDALE		SHALE	7.0	309.0	
276.0	CARBONDALE		LIMESTONE	2.0	316.0	
274.0	CARBONDALE		SHALE	2.0	318.0	

MAPID: 10720839000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 25

QUARTERS/FOOTAGES: 1380' N line, 1145' E line of NE

QUADRANGLE: LAKE FORK

LONGITUDE: -89.370891

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 39.986694

DATE COLLECTED: 8 / 11 / 1978

SURFACE ELEVATION (FT.): 580.0

LOGGED (FT.): 300.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO.

WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
363.5	CARBONDALE	DANVILLE	COAL	1.5	216.5	
332.5	CARBONDALE	HERRIN	COAL	4.0	247.5	
297.4	CARBONDALE	SPRINGFIELD	COAL	4.7	282.6	

MAPID: 10720839000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 25 QUARTERS/FOOTAGES: 1380' N line, 1145' E line of NE

QUADRANGLE: LAKE FORK LONGITUDE: -89.370891

GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 39.986694

DATE COLLECTED: 8 / 11 / 1978

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 300.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO.

WELL TYPE: Coal Test

COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
580.0			CLAY	14.0	0.0	
566.0			SAND & GRAVEL	4.0	14.0	
562.0			CLAY, SAND & GRAVEL	24.0	18.0	
538.0			SAND & GRAVEL	2.0	42.0	
536.0			SANDY CLAY	84.0	44.0	
452.0	MODESTO		SHALE	21.5	128.0	
430.5	MODESTO	WEST FRANKLIN	LIMESTONE	10.0	149.5	
420.5	MODESTO	WEST FRANKLIN	SHALE	0.5	159.5	
420.0	MODESTO	WEST FRANKLIN	LIMESTONE	1.0	160.0	
419.0	MODESTO	WEST FRANKLIN	SHALE	9.0	161.0	
410.0	MODESTO	WEST FRANKLIN	LIMESTONE	3.0	170.0	
407.0	MODESTO		SANDSTONE	5.0	173.0	
402.0	MODESTO		SHALE	38.5	178.0	WITH BKSH
363.5	CARBONDALE	DANVILLE	COAL	1.5	216.5	
362.0	CARBONDALE		SHALE	12.5	218.0	
349.5	CARBONDALE	ANVIL ROCK	SANDSTONE	7.5	230.5	
342.0	CARBONDALE		SHALE	9.5	238.0	
332.5	CARBONDALE	HERRIN	COAL	4.0	247.5	
328.5	CARBONDALE		SHALE	25.5	251.5	
303.0	CARBONDALE	ST. DAVID	LIMESTONE	3.0	277.0	
300.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	280.0	CORE BEGINS
298.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.6	282.0	
297.4	CARBONDALE	SPRINGFIELD	COAL	4.7	282.6	
292.7	CARBONDALE		CLAYSTONE & SHALE	0.3	287.3	CORE ENDS
292.4	CARBONDALE		UNKNOWN	0.4	287.6	
292.0	CARBONDALE		SHALE	12.0	288.0	

MAPID: 10720881000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 25 QUARTERS/FOOTAGES: 1250' S line, 20' W line of SW
QUADRANGLE: CORNLAND LONGITUDE: -89.385714 GEOLOGIST: PRUSSEN
CONFIDENTIAL: N LATITUDE: 39.979314 DATE COLLECTED: 6 / 19 / 1979
SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
308.9	CARBONDALE	SPRINGFIELD	COAL	4.6	261.1	

MAPID: 10720881000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 25 QUARTERS/FOOTAGES: 1250' S line, 20' W line of SW
QUADRANGLE: CORNLAND LONGITUDE: -89.385714 GEOLOGIST: BARGH
CONFIDENTIAL: N LATITUDE: 39.979314 DATE COLLECTED: 6 / 19 / 1979
SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test
COMMENT: 11,12,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.0			CLAY	144.0	0.0	
426.0	MODESTO		SHALE	42.0	144.0	
384.0	CARBONDALE	DANVILLE	COAL	1.0	186.0	WITH BKSH
383.0	CARBONDALE		SHALE	20.0	187.0	
363.0	CARBONDALE	ANVIL ROCK	SANDSTONE	28.0	207.0	
335.0	CARBONDALE		SHALE	17.5	235.0	
317.5	CARBONDALE	ST. DAVID	LIMESTONE	7.0	252.5	
310.5	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	259.5	
310.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.1	260.0	CORE BEGINS
308.9	CARBONDALE	SPRINGFIELD	COAL	4.6	261.1	
304.3	CARBONDALE		UNDERCLAY	1.2	265.7	CORE ENDS
303.1	CARBONDALE		SHALE	3.0	266.9	
300.1	CARBONDALE		LIMESTONE	4.0	269.9	
296.1	CARBONDALE		SHALE	6.0	273.9	

MAPID: 10721215000C VERSION: 1

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 25 QUARTERS/FOOTAGES: 21' N line, 15' W line
 QUADRANGLE: CORNLAND LONGITUDE: -89.385717 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 39.990538 DATE COLLECTED: 11 / 4 / 1981
 SURFACE ELEVATION (FT.): 593.0 LOGGED (FT.): 307.0 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO 83-25-4 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
593.0	PLEISTOCENE		SOIL	1.0	0.0	LOAM
592.0	PLEISTOCENE		CLAY	6.0	1.0	
586.0	PLEISTOCENE		SAND	2.0	7.0	
584.0	PLEISTOCENE		CLAY	2.0	9.0	
582.0	PLEISTOCENE		SAND	2.0	11.0	
580.0	PLEISTOCENE		CLAY	17.0	13.0	
563.0	PLEISTOCENE		SAND & GRAVEL	11.0	30.0	UP TO 1/4"
552.0	PLEISTOCENE		CLAY	44.0	41.0	
508.0	MODESTO	CHAPEL	BLACK SHALE	1.0	85.0	
507.0	MODESTO		COAL	1.5	86.0	
505.5	MODESTO		CLAYSTONE	2.5	87.5	
503.0	MODESTO		SILTSTONE	20.0	90.0	
483.0	MODESTO		SILTY SHALE	10.0	110.0	
473.0	MODESTO		GRAY SHALE	6.0	120.0	
467.0	MODESTO		LIMESTONE	10.0	126.0	
457.0	MODESTO		BLACK SHALE	1.0	136.0	
456.0	MODESTO		SHALE	4.0	137.0	GREEN TO OLIVE GREEN
452.0	MODESTO		SILTSTONE	4.0	141.0	
448.0	MODESTO		SANDSTONE	3.0	145.0	
445.0	MODESTO		CALCAREOUS SHALE	7.0	148.0	
438.0	MODESTO		SHALE	10.0	155.0	
428.0	MODESTO		SILTY SHALE	12.0	165.0	
416.0	MODESTO		SHALE	7.0	177.0	MULTICOLORED
409.0	MODESTO		SILTY SHALE	3.0	184.0	
406.0	MODESTO		BLACK SHALE	1.0	187.0	
405.0	CARBONDALE	DANVILLE	COAL	1.0	188.0	
404.0	CARBONDALE		CLAYSTONE	5.0	189.0	
399.0	CARBONDALE		SILTY SHALE	6.0	194.0	
393.0	CARBONDALE		SILTSTONE	6.0	200.0	
387.0	CARBONDALE		SILTY SHALE	9.0	206.0	
378.0	CARBONDALE		SHALE	1.5	215.0	VERY DARK GRAY; FIRM
376.5	CARBONDALE	HERRIN	COAL	2.5	216.5	
374.0	CARBONDALE		CLAYSTONE	4.0	219.0	
370.0	CARBONDALE		SILTY SHALE	6.0	223.0	
364.0	CARBONDALE		SANDSTONE	3.0	229.0	
361.0	CARBONDALE		GRAY SHALE	20.7	232.0	WITH SIDERITE
340.3	CARBONDALE		CLAYSTONE	0.4	252.7	
339.9	CARBONDALE		CALCAREOUS SHALE	0.9	253.1	DARK GRAY
339.1	CARBONDALE	ST. DAVID	LIMESTONE	7.3	253.9	DARK GRAY TO BLACK; FOSSILIFEROUS

331.8	CARBONDALE	TURNER MINE	BLACK SHALE	0.8	261.2	
331.0	CARBONDALE	SPRINGFIELD	COAL	0.1	262.0	
330.9	CARBONDALE	SPRINGFIELD	PYRITE	0.1	262.1	
330.9	CARBONDALE	SPRINGFIELD	COAL	2.0	262.1	
328.9	CARBONDALE	SPRINGFIELD	PYRITE	0.0	264.1	
328.9	CARBONDALE	SPRINGFIELD	COAL	0.9	264.1	
328.0	CARBONDALE	SPRINGFIELD	PYRITE	0.0	265.0	
328.0	CARBONDALE	SPRINGFIELD	COAL	1.7	265.0	
326.2	CARBONDALE		CLAYSTONE	1.7	266.8	
324.6	CARBONDALE		CALCAREOUS CLAYSTONE	1.1	268.4	LS NODS
323.5	CARBONDALE		SANDSTONE	5.4	269.5	
318.2	CARBONDALE		CORE LOSS	0.2	274.8	
318.0	CARBONDALE		SILTSTONE	8.0	275.0	
310.0	CARBONDALE	EXCELLO	BLACK SHALE	3.0	283.0	
307.0	CARBONDALE	HOUCHIN CREEK	COAL	1.0	286.0	
306.0	CARBONDALE		CLAYSTONE	3.0	287.0	
303.0	CARBONDALE		SANDSTONE	17.0	290.0	

MAPID: 10720936000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 26 QUARTERS/FOOTAGES: 30' S line, 1170' W line

QUADRANGLE: CORNLAND LONGITUDE: -89.400517 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 39.976187 DATE COLLECTED: 8 / 15 / 1979

SURFACE ELEVATION (FT.): 584.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
367.0	CARBONDALE	HERRIN	COAL	0.5	217.0
321.3	CARBONDALE	SPRINGFIELD	COAL	4.7	262.7

MAPID: 10720936000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 26 QUARTERS/FOOTAGES: 30' S line, 1170' W line

QUADRANGLE: CORNLAND LONGITUDE: -89.400517 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 39.976187 DATE COLLECTED: 8 / 15 / 1979

SURFACE ELEVATION (FT.): 584.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
584.0			CLAY	25.0	0.0
559.0			CLAY	188.0	25.0
371.0	CARBONDALE		SHALE	4.0	213.0
367.0	CARBONDALE	HERRIN	COAL	0.5	217.0
366.5	CARBONDALE		SHALE	42.0	217.5
324.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	259.5
323.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.2	260.5
321.3	CARBONDALE	SPRINGFIELD	COAL	4.7	262.7
316.6	CARBONDALE		CLAYSTONE & SHALE	0.9	267.4
315.7	CARBONDALE		CORE LOSS	0.2	268.3
315.5	CARBONDALE		SHALE	11.5	268.5

MAPID: 10720840000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 27 QUARTERS/FOOTAGES: 2620' S line, 850' E line

QUADRANGLE: CORNLAND LONGITUDE: -89.407772 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 39.983404 DATE COLLECTED: 8 / 15 / 1978

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 320.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
355.0	CARBONDALE	HERRIN	COAL	2.0	245.0
311.2	CARBONDALE	SPRINGFIELD	COAL	5.1	288.8

MAPID: 10720840000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 27 **QUARTERS/FOOTAGES:** 2620' S line, 850' E line
QUADRANGLE: CORNLAND **LONGITUDE:** -89.407772 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 39.983404 **DATE COLLECTED:** 8 / 15 / 1978
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 320.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0			CLAY	20.0	0.0	
580.0			SAND & GRAVEL	18.0	20.0	
562.0			CLAY	76.0	38.0	
486.0			SAND & GRAVEL	4.0	114.0	
482.0			CLAY, SAND & GRAVEL	53.0	118.0	
430.0			SANDSTONE	8.5	170.0	
421.5			SHALE	42.0	178.5	
379.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	220.5	
378.5	CARBONDALE		SHALE	20.0	221.5	
358.5	CARBONDALE	HERRIN	COAL	3.5	241.5	
355.0	CARBONDALE		SHALE	40.5	245.0	
314.5	CARBONDALE	ST. DAVID	LIMESTONE	0.8	285.5	CORE 287-296
313.7	CARBONDALE	TURNER MINE	BLACK SHALE	2.1	286.3	
311.6	CARBONDALE		PYRITE	0.1	288.4	
311.6	CARBONDALE	TURNER MINE	BLACK SHALE	0.4	288.4	
311.2	CARBONDALE	SPRINGFIELD	COAL	5.1	288.8	
306.1	CARBONDALE		CLAYSTONE & SHALE	1.9	293.9	
304.2	CARBONDALE		CORE LOSS	0.2	295.8	
304.0	CARBONDALE		SHALE	14.0	296.0	
290.0	CARBONDALE	HANOVER	LIMESTONE	1.0	310.0	
289.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	311.0	
287.0	CARBONDALE	HOUCHIN CREEK	COAL	2.5	313.0	
284.5			SHALE	4.5	315.5	

MAPID: 10722017000C VERSION: 1

PROJECT: LUMP

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 27

QUARTERS/FOOTAGES: 50' S line, 38' W line

QUADRANGLE: CORNLAND

LONGITUDE: -89.423368

GEOLOGIST: J. MCBETH

CONFIDENTIAL: N

LATITUDE: 39.976323

DATE COLLECTED: 5 / 9 / 1975

SURFACE ELEVATION (FT.): 647.0

LOGGED (FT.): 404.0

LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-27-1P

WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
647.0	PLEISTOCENE		CLAY	190.0	0.0	WITH SAND AND GRAVEL
457.0	PLEISTOCENE		SAND & GRAVEL	30.0	190.0	
427.0	PLEISTOCENE		CLAY	54.5	220.0	WITH SAND
372.5	CARBONDALE		GRAY SHALE	3.5	274.5	
369.0	CARBONDALE		SHALE	2.0	278.0	LS NODS; GRAY GREEN
367.0	CARBONDALE		CALCAREOUS SHALE	2.5	280.0	FIRM; GRAY GREEN
364.5	CARBONDALE		LIMESTONE	0.5	282.5	
364.0	CARBONDALE		GRAY SHALE	1.5	283.0	SOFT; EST. 1.0' LOSS HERE
362.5	CARBONDALE		GRAY SHALE	2.5	284.5	EST. 1.0' LOSS HERE
360.0	CARBONDALE		CLAYSTONE	3.8	287.0	
356.2	CARBONDALE	BRERETON	LIMESTONE	0.2	290.8	HARD
356.0	CARBONDALE	BRERETON	LIMESTONE	2.6	291.0	FOSSILS
353.4	CARBONDALE		GRAY SHALE	1.7	293.6	SOFT WITH CARBONACEOUS LEF IMPRESSIONS
351.7	CARBONDALE	HERRIN	COAL	0.8	295.3	LOWER 0.5' PRACT. & BROKEN
350.9	CARBONDALE		UNDERCLAY	3.4	296.1	PHOSPH. NODS & LEAF IMPRESSIONS
347.5	CARBONDALE		CORE LOSS	8.5	299.5	
339.0	CARBONDALE	CANTON	SHALE	24.9	308.0	WITH DARK STRKS AND OCC SIDERITE BANDS
314.1	CARBONDALE	CANTON	CORE LOSS	0.1	332.9	
314.0	CARBONDALE	CANTON	SHALE	10.2	333.0	FIRM WITH SIDERITE NODS AND BANDS
303.8	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	2.4	343.2	DARK GRAY; HARD
301.4	CARBONDALE	TURNER MINE	BLACK SHALE	1.6	345.6	WITH LIMESTONE NODULES
299.8	CARBONDALE	TURNER MINE	FOSSILIFEROUS SHALE	0.2	347.2	DARK GRAY HARD, CALCAREOUS
299.6	CARBONDALE	SPRINGFIELD	COAL	1.3	347.4	
298.3	CARBONDALE	SPRINGFIELD	ROCK	0.1	348.7	PYRITE
298.2	CARBONDALE	SPRINGFIELD	COAL	0.3	348.8	
297.9	CARBONDALE	SPRINGFIELD	PYRITE	0.0	349.1	
297.9	CARBONDALE	SPRINGFIELD	COAL	1.1	349.1	
296.7	CARBONDALE	SPRINGFIELD	PYRITE	0.0	350.3	
296.7	CARBONDALE	SPRINGFIELD	COAL	0.8	350.3	
295.9	CARBONDALE	SPRINGFIELD	PYRITE	0.1	351.1	
295.8	CARBONDALE	SPRINGFIELD	COAL	1.7	351.2	
294.2	CARBONDALE		UNDERCLAY	2.7	352.8	
291.5	CARBONDALE		CORE LOSS	0.5	355.5	
291.0	CARBONDALE		CLAYSTONE	1.2	356.0	
289.8	CARBONDALE		SHALE	11.8	357.2	WITH LIMESTONE NODULES
278.0	CARBONDALE		SHALY LIMESTONE	1.0	369.0	
277.0	CARBONDALE		SHALE	0.4	370.0	DARK GRAY WITH SILTY LAMS

276.6	CARBONDALE	CORE LOSS	0.6	370.4	
276.0	CARBONDALE	CARBONACEOUS SHALE	2.0	371.0	FISSILE INTERBED BKSH & BROWNISH GRAY
274.0	CARBONDALE	CARBONACEOUS SHALE	2.9	373.0	BROWNISH GRAY MASSIVE
271.1	CARBONDALE	CLAYSTONE	3.3	375.9	LIGHT GREEN-GRAY SOFT
267.8	CARBONDALE	CLAYSTONE	2.6	379.2	WITH LIMESTONE NODULES; GREEN-GRAY
265.2	CARBONDALE	SHALE	2.8	381.8	
262.4	CARBONDALE	SHALEY CLAYSTONE	0.6	384.6	
261.8	CARBONDALE	CORE LOSS	0.8	385.2	
261.0	CARBONDALE	SANDY SHALE	4.0	386.0	FIRM
257.0	CARBONDALE	SANDSTONE	13.6	390.0	V. FINE; WELL CONSOL; OIL & WATER
243.4	CARBONDALE	CORE LOSS	0.4	403.6	

MAPID: 10720703000C			VERSION: 1		PROJECT: EIA-DOE	
COUNTY: LOGAN		TWP/RNG: 18N 3W		SECTION: 28	QUARTERS/FOOTAGES: 60' S line, 65' E line	
QUADRANGLE: CORNLAND		LONGITUDE: -89.423737			GEOLOGIST: PRUSSEN	
CONFIDENTIAL: N		LATITUDE: 39.976351			DATE COLLECTED: 11 / 21 / 1975	
SURFACE ELEVATION (FT.): 645.0		LOGGED (FT.): 356.0			LOG TYPE: Multiple log types	
SOURCE: MOBIL OIL		WELL TYPE: Coal Test				
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE						
ELEVATION TOP (FT.)		FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN COMMENT	
348.0		CARBONDALE	HERRIN	COAL	1.0	297.0
300.4		CARBONDALE	SPRINGFIELD	COAL	5.3	344.6

MAPID: 10720703000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 28 QUARTERS/FOOTAGES: 60' S line, 65' E line

QUADRANGLE: CORNLAND LONGITUDE: -89.423737 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 39.976351 DATE COLLECTED: 11 / 21 / 1975

SURFACE ELEVATION (FT.): 640.0 LOGGED (FT.): 356.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
640.0			CLAY	2.0	0.0	
638.0			SANDY CLAY	72.0	2.0	
566.0			SILTY CLAY	46.0	74.0	
520.0			SAND & GRAVEL	16.0	120.0	
504.0			BOULDER	2.0	136.0	
502.0			CLAY	60.0	138.0	
442.0			SAND & GRAVEL	7.0	198.0	
435.0			CLAY, SAND & GRAVEL	15.0	205.0	
420.0			CLAY	45.0	220.0	
375.0			CLAY, SAND & GRAVEL	5.0	265.0	
369.0	CARBONDALE		SHALE	18.0	271.0	
351.0	CARBONDALE	BRERETON	LIMESTONE	2.0	289.0	
349.0	CARBONDALE		SHALE	6.0	291.0	
343.0	CARBONDALE	HERRIN	COAL	1.0	297.0	
342.0	CARBONDALE		SHALE	32.0	298.0	CORE 320-356, DESCRIPTION ISGS
310.0	CARBONDALE		SHALE	4.0	330.0	PECTINOID BIVALVE
306.0	CARBONDALE		SHALE	2.0	334.0	
304.0	CARBONDALE		UNKNOWN	2.0	336.0	GAP IN CORE OR MARKING ERROR
302.0	CARBONDALE		SHALE	1.7	338.0	
300.3	CARBONDALE	ST. DAVID	LIMESTONE	2.8	339.7	
297.5	CARBONDALE	ST. DAVID	LIMESTONE	0.6	342.5	MARINE
296.9	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	343.1	
295.5	CARBONDALE	SPRINGFIELD	COAL	5.3	344.5	ORBICULOIDEA NEAR BASE
290.1	CARBONDALE		CLAYSTONE & SILTSTONE	4.6	349.9	
285.5	CARBONDALE		CLAYSTONE & SILTSTONE	1.0	354.5	
284.5	CARBONDALE		CORE LOSS	0.5	355.5	

MAPID: 10720841000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 28 QUARTERS/FOOTAGES: 50' N line, 575' E line
QUADRANGLE: CORNLAND LONGITUDE: -89.425577 GEOLOGIST: J MCBETH
CONFIDENTIAL: N LATITUDE: 39.990527 DATE COLLECTED: 10 / 14 / 1979
SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 287.8 LOG TYPE: Drillers Log
SOURCE: TURRIS COAL CO 83-28-1B WELL TYPE: Coal Test
COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0	PLEISTOCENE		SAND	215.0	0.0	COARSE, WITH CLAY
375.0	CARBONDALE		CLAYSTONE	5.0	215.0	WITH COAL
370.0	CARBONDALE		SANDSTONE	10.0	220.0	AND COAL
360.0	CARBONDALE		SHALE/COAL	10.0	230.0	COAL MAYBE #6
350.0	CARBONDALE	CANTON	GRAY SHALE	35.0	240.0	
315.0	CARBONDALE		SHALE	3.5	275.0	DARK GRAY
311.5	CARBONDALE	TURNER MINE	SHALE	1.0	278.5	BLACK
310.5	CARBONDALE	SPRINGFIELD	COAL	5.7	279.5	
304.8	CARBONDALE		CLAYSTONE	2.6	285.2	

MAPID: 10720841000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 28 QUARTERS/FOOTAGES: 50' N line, 575' E line
QUADRANGLE: CORNLAND LONGITUDE: -89.425577 GEOLOGIST: J. MCBETH
CONFIDENTIAL: N LATITUDE: 39.990527 DATE COLLECTED: 10 / 14 / 1977
SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 287.8 LOG TYPE: Drillers Log
SOURCE: TURRIS COAL CO 83-28-1B WELL TYPE: Coal Test
COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0	PLEISTOCENE		SAND	215.0	0.0	COARSE & CLAY
375.0	PLEISTOCENE		CLAY & COAL	5.0	215.0	
370.0	PLEISTOCENE		SANDSTONE	10.0	220.0	COAL
360.0	CARBONDALE		SHALE/COAL	10.0	230.0	COAL MAY BE #6
350.0	CARBONDALE	CANTON	GRAY SHALE	35.0	240.0	
315.0	CARBONDALE		SHALE	3.5	275.0	DARK GRAY
311.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	278.5	
310.5	CARBONDALE	SPRINGFIELD	COAL	5.7	279.5	
304.8	CARBONDALE		CLAYSTONE	2.6	285.2	

MAPID: 10722018000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 28 QUARTERS/FOOTAGES: 1350' N line, 2625' W line

QUADRANGLE: CORNLAND LONGITUDE: -89.432825 GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 39.986974 DATE COLLECTED: 5 / 23 / 1975

SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 321.7 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-28-1P WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.0	PLEISTOCENE		LOESS	45.0	0.0	
575.0	PLEISTOCENE		SAND & GRAVEL	15.0	45.0	
560.0	PLEISTOCENE		CLAY	20.0	60.0	WITH SAND AND GRAVEL
540.0	PLEISTOCENE		SAND & GRAVEL	16.0	80.0	
524.0	PLEISTOCENE		CLAY	4.0	96.0	WITH LIMESTONE NODULES
520.0	PLEISTOCENE		CLAY	60.0	100.0	
460.0	PLEISTOCENE		CLAY	10.0	160.0	WITH SAND
450.0	PLEISTOCENE		SAND & GRAVEL	33.0	170.0	
417.0	CARBONDALE		LIMESTONE	2.0	203.0	WITH SANDSTONE INTERBEDDED
415.0	MODESTO		SHALE	23.0	205.0	SANDY
392.0	MODESTO		SHALE	4.8	228.0	TAN
387.2	MODESTO		LIMESTONE	0.5	232.8	LIGHT BROWN
386.7	MODESTO		SHALE	4.7	233.3	RED-BROWN
382.0	MODESTO		GRAY SHALE	7.0	238.0	
375.0	CARBONDALE	DANVILLE	COAL	0.2	245.0	
374.8	CARBONDALE		GRAY SHALE	10.5	245.2	
364.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	255.7	SHALY IN UPPER 2.3
359.6	CARBONDALE		GRAY SHALE	4.6	260.4	
355.0	CARBONDALE		GRAY SHALE	3.0	265.0	WITH LIMESTONE
352.0	CARBONDALE		LIMESTONE	0.3	268.0	
351.7	CARBONDALE		GRAY SHALE	3.7	268.3	BECOMES DARK GRAY TOWARDS BASE
348.0	CARBONDALE	HERRIN	COAL	4.5	272.0	
343.5	CARBONDALE		CLAYSTONE	3.5	276.5	
340.0	CARBONDALE		SHALE	27.0	280.0	CALCAREOUS, WITH LIMESTONE
313.0	CARBONDALE		SHALE	0.5	307.0	DARK GRAY
312.5	CARBONDALE		COAL	0.2	307.5	
312.3	CARBONDALE	ST. DAVID	LIMESTONE	1.5	307.7	FOSSILIFEROUS
310.8	CARBONDALE	TURNER MINE	SHALE	2.2	309.2	BLACK
308.6	CARBONDALE	TURNER MINE	LIMESTONE	0.2	311.4	FOSSILS, BLACK VERY ARGILLACEOUS
308.4	CARBONDALE	SPRINGFIELD	COAL	5.3	311.6	UNIFORM; SOME THIN PYRITE VEINS
303.1	CARBONDALE		CLAYSTONE	1.4	316.9	
301.7	CARBONDALE		CLAYSTONE	3.0	318.3	CALCAREOUS, WITH LIMESTONE NODULES
298.7	CARBONDALE		CORE LOSS	0.4	321.3	

MAPID: 10722018000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 28 QUARTERS/FOOTAGES: 1350' N line, 2625' W line

QUADRANGLE: CORNLAND LONGITUDE: -89.432825 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 39.986974 DATE COLLECTED: 5 / 23 / 1975

SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 321.7 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-28-1P WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
620.0	PLEISTOCENE		LOESS	45.0	0.0	
575.0	PLEISTOCENE		SAND & GRAVEL	15.0	45.0	
560.0	PLEISTOCENE		CLAY	20.0	60.0	WITH SAND AND GRAVEL
540.0	PLEISTOCENE		SAND & GRAVEL	16.0	80.0	
524.0	PLEISTOCENE		ROCK	4.0	96.0	LS WITH CLAY BETWEEN
520.0	PLEISTOCENE		CLAY	60.0	100.0	
460.0	PLEISTOCENE		CLAY	10.0	160.0	WITH SAND
450.0	PLEISTOCENE		SAND & GRAVEL	33.0	170.0	
417.0	PLEISTOCENE		LIMESTONE AND SANDSTONE	2.0	203.0	
415.0	PLEISTOCENE		SANDY CLAYSTONE	23.0	205.0	
392.0	MODESTO		SHALE	4.8	228.0	TAN
387.2	MODESTO		LIMESTONE	0.5	232.8	LIGHT BROWN
386.7	MODESTO		SHALE	4.7	233.3	RED-BROWN
382.0	MODESTO		GRAY SHALE	7.0	238.0	
375.0	CARBONDALE	DANVILLE	COAL	0.2	245.0	
374.8	CARBONDALE		GRAY SHALE	10.5	245.2	
364.3	CARBONDALE	BANKSTON FORK	LIMESTONE	4.7	255.7	SHALY IN UPPER 2.3'
359.6	CARBONDALE		GRAY SHALE	4.6	260.4	
355.0	CARBONDALE		GRAY SHALE	3.0	265.0	WITH LIMESTONE STREAKS
352.0	CARBONDALE		LIMESTONE	0.3	268.0	
351.7	CARBONDALE		GRAY SHALE	3.7	268.3	TURNING DARK GRAY AT 271'
348.0	CARBONDALE	HERRIN	COAL	4.5	272.0	
343.5	CARBONDALE		CLAYSTONE	3.5	276.5	
340.0	CARBONDALE		CALCAREOUS SHALE	27.0	280.0	WITH LIMESTONE STREAKS
313.0	CARBONDALE		SHALE	0.5	307.0	DARK GRAY
312.5	CARBONDALE		COAL	0.2	307.5	
312.3	CARBONDALE	ST. DAVID	LIMESTONE	1.5	307.7	
310.8	CARBONDALE	TURNER MINE	BLACK SHALE	2.2	309.2	
308.6	CARBONDALE	TURNER MINE	FOSSILIFEROUS LIMESTONE	0.2	311.4	BLACK VERY ARGILLACEOUS
308.4	CARBONDALE	SPRINGFIELD	COAL	5.3	311.6	UNIFORM V. FEW THIN PYR STREAKS
303.1	CARBONDALE		CLAYSTONE	1.4	316.9	
301.7	CARBONDALE		CALCAREOUS CLAYSTONE	3.0	318.3	WITH LIMESTONE NODULES
298.7	CARBONDALE		CORE LOSS	0.4	321.3	

MAPID: 10720973000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 29 QUARTERS/FOOTAGES: 2800' S line, 3000' E line

QUADRANGLE: CORNLAND LONGITUDE: -89.453016 GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 39.984205 DATE COLLECTED: 11 / 20 / 1979

SURFACE ELEVATION (FT.): LOGGED (FT.): 290.2 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-29-6 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		SOIL	3.0	0.0	
-	PLEISTOCENE		CLAY	27.0	3.0	
-	PLEISTOCENE		CLAY	15.0	30.0	WITH COARSE SAND
-	PLEISTOCENE		SAND & GRAVEL	35.0	45.0	
-	PLEISTOCENE		CLAY	80.0	80.0	WITH SAND AND GRAVEL IN UPPER 25 FEET
-	PLEISTOCENE		SAND	20.0	160.0	COARSE WITH GRAVEL IN LOWER HALF
-	MODESTO		SILTSTONE	3.0	180.0	
-	MODESTO		GRAY SHALE	12.0	183.0	
-	MODESTO		SHALE	9.0	195.0	MULTICOLORED
-	MODESTO	PIASA	LIMESTONE	1.5	204.0	HARD, TAN
-	CARBONDALE		GRAY SHALE	1.5	205.5	
-	CARBONDALE	DANVILLE	COAL	2.0	207.0	BRIGHT, SPLINTERY
-	CARBONDALE		GRAY SHALE	7.0	209.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	216.0	BUFF HARD
-	CARBONDALE		GRAY SHALE	2.5	219.5	
-	CARBONDALE	BRERETON	LIMESTONE	4.0	222.0	HARD
-	CARBONDALE	HERRIN	COAL	2.0	226.0	
-	CARBONDALE		SILTSTONE	30.0	228.0	WITH SHALE LAMINATIONS
-	CARBONDALE		LIMESTONE	2.5	258.0	DARK GRAY, HARD
-	CARBONDALE		SHALE	0.5	260.5	BLACK
-	CARBONDALE	ST. DAVID	LIMESTONE	12.5	261.0	
-	CARBONDALE	SPRINGFIELD	COAL	1.7	273.5	
-	CARBONDALE	SPRINGFIELD	CORE LOSS	0.2	275.1	
-	CARBONDALE	SPRINGFIELD	COAL	2.5	275.3	
-	CARBONDALE	SPRINGFIELD	PYRITE	0.0	277.8	
-	CARBONDALE	SPRINGFIELD	COAL	1.5	277.8	
-	CARBONDALE		SHALE	0.3	279.3	DARK GRAY, ROTTEN
-	CARBONDALE		GRAY SHALE	4.7	279.6	ROTTEN WITH LIMESTONE
-	CARBONDALE		SHALE	6.0	284.3	SLIGHTLY SANDY WITH LIMESTONE NODULES

MAPID: 10720973000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 29 QUARTERS/FOOTAGES: 2800' S line, 3000' E line

QUADRANGLE: CORNLAND LONGITUDE: -89.453016 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 39.984205 DATE COLLECTED: 11 / 20 / 1979

SURFACE ELEVATION (FT.): LOGGED (FT.): 290.2 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO. 83-29-6 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		SOIL	3.0	0.0	
-	PLEISTOCENE		CLAY	27.0	3.0	
-	PLEISTOCENE		CLAY	15.0	30.0	WITH COARSE SAND MIXED IN
-	PLEISTOCENE		SAND & GRAVEL	35.0	45.0	
-	PLEISTOCENE		CLAY	80.0	80.0	WITH SAND AND GRAVEL IN TOP 25'
-	PLEISTOCENE		SAND	20.0	160.0	COARSE WITH GRAVEL IN LOWER 10'
-	MODESTO		SILTSTONE	3.0	180.0	
-	MODESTO		GRAY SHALE	12.0	183.0	
-	MODESTO		SHALE	9.0	195.0	MULTICOLORED
-	MODESTO	PIASA	LIMESTONE	1.5	204.0	HARD, TAN
-	MODESTO		GRAY SHALE	1.5	205.5	
-	CARBONDALE	DANVILLE	COAL	2.0	207.0	BRIGHT, SPLINTERY
-	CARBONDALE		GRAY SHALE	7.0	209.0	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	216.0	BUFF, HARD
-	CARBONDALE		GRAY SHALE	2.5	219.5	
-	CARBONDALE	BRERETON	LIMESTONE	4.0	222.0	HARD
-	CARBONDALE	HERRIN	COAL	2.0	226.0	
-	CARBONDALE		SILTSTONE	30.0	228.0	WITH SHALE
-	CARBONDALE		LIMESTONE	2.5	258.0	DARK GRAY; HARD
-	CARBONDALE		BLACK SHALE	0.5	260.5	
-	CARBONDALE	ST. DAVID	LIMESTONE	12.5	261.0	
-	CARBONDALE	SPRINGFIELD	COAL	1.7	273.5	
-	CARBONDALE	SPRINGFIELD	CORE LOSS	0.2	275.1	
-	CARBONDALE	SPRINGFIELD	COAL	2.5	275.3	
-	CARBONDALE	SPRINGFIELD	PYRITE	0.0	277.8	
-	CARBONDALE	SPRINGFIELD	COAL	1.5	277.8	
-	CARBONDALE		SHALE	0.3	279.3	DARK GRAY; ROTTEN
-	CARBONDALE		GRAY SHALE	4.7	279.6	ROTTEN WITH OCC. LS STREAK
-	CARBONDALE		SHALE	6.0	284.3	SANDY WITH SOME LS NODS

MAPID: 10720974000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 29 QUARTERS/FOOTAGES: 2825' S line, 50' E line

QUADRANGLE: CORNLAND LONGITUDE: -89.442432 GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 39.984137 DATE COLLECTED: 9 / 30 / 1979

SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 314.0 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO. 83-29-8 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0	PLEISTOCENE		CLAY	40.0	0.0	WITH SAND AND GRAVEL
555.0	PLEISTOCENE		GRAVEL	20.0	40.0	
535.0	PLEISTOCENE		CLAY	15.0	60.0	WITH SAND AND GRAVEL
520.0	PLEISTOCENE		SAND/CLAY	15.0	75.0	COARSE SAND
505.0	PLEISTOCENE		CLAY	5.0	90.0	WITH SAND AND GRAVEL
500.0	PLEISTOCENE		CLAY	115.0	95.0	WITH SOME SAND
385.0	CARBONDALE	DANVILLE	COAL	5.0	210.0	WITH CLAYSTONE
380.0	CARBONDALE		GRAY SHALE	5.0	215.0	PEPPERED WITH BLACK CARBONATE SPECKS
375.0	CARBONDALE		GRAY SHALE	5.0	220.0	
370.0	CARBONDALE		GRAY SHALE	5.0	225.0	CARBONACEOUS
365.0	CARBONDALE	BRERETON	LIMESTONE	5.0	230.0	
360.0	CARBONDALE		GRAY SHALE	15.0	235.0	CARBONACEOUS
345.0	CARBONDALE	CANTON	GRAY SHALE	30.0	250.0	
315.0	CARBONDALE	ST. DAVID	LIMESTONE	5.0	280.0	FOSSILS, DENSE, HARD
310.0	CARBONDALE	TURNER MINE	SHALE	1.6	285.0	BLACK, FISSILE, PYRITIC, SHARP CONTACT
308.4	CARBONDALE	SPRINGFIELD	COAL	0.1	286.6	DULL, BONY
308.4	CARBONDALE	SPRINGFIELD	COAL	1.3	286.6	BRIGHT, BANDED CLEAN
307.1	CARBONDALE	SPRINGFIELD	PYRITE	0.0	287.9	PYRITIZED FUSAIN LENS
307.1	CARBONDALE	SPRINGFIELD	COAL	2.1	287.9	CLEAN SOLID
305.0	CARBONDALE	SPRINGFIELD	COAL	0.1	290.0	CLEAN, SOLID
305.0	CARBONDALE	SPRINGFIELD	COAL	1.9	290.0	SOLID BRIGHT
303.0	CARBONDALE	SPRINGFIELD	COAL	0.1	292.0	PYRITIC, SHALEY
303.0	CARBONDALE		CLAYSTONE	3.0	292.0	
300.0	CARBONDALE		CLAYSTONE	3.0	295.0	SOME PHOSPATIC AND LIMESTONE NODULES
297.0	CARBONDALE		SHALE	0.6	298.0	SOME GRANULAR SIDERITE
296.4	CARBONDALE		LIMESTONE	0.1	298.6	ARGILLACEOUS, FOSSILIFEROUS
296.3	CARBONDALE		SHALE	5.9	298.7	CALCAEROUS, SIDERITE, PYRITE AT BASE
290.5	CARBONDALE	HANOVER	LIMESTONE	0.4	304.5	FOSSILS, VERY ARGILLACEOUS
290.1	CARBONDALE	EXCELLO	SHALE	0.6	304.9	DARK GRAY TO BLACK & GREEN LAMS
289.5	CARBONDALE	EXCELLO	SHALE	1.0	305.5	PYRITIC, SMOOTH, FISSILE, BLACK
288.5	CARBONDALE	EXCELLO	SHALE	0.8	306.5	DARK GRAY TO BLACK & GREEN LAMS
287.7	CARBONDALE	HOUCHIN CREEK	COAL	0.1	307.3	BONY, DULL, IMPURE
287.6	CARBONDALE		CLAYSTONE	5.0	307.4	
282.6	CARBONDALE		LIMESTONE	0.3	312.4	PYRITIC, VERY ARGILLACEOUS
282.3	CARBONDALE		SHALE	1.0	312.7	GREEN GRAY, POORLY LAMINATED, PYRITE
281.3	CARBONDALE		CORE LOSS	0.3	313.7	

MAPID: 10720974000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 29 QUARTERS/FOOTAGES: 2825' S line, 50' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.442432 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 39.984137 DATE COLLECTED: 9 / 30 / 1979
 SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 314.0 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO 83-29-8 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0	PLEISTOCENE		CLAY	40.0	0.0	WITH SOME SAND AND GRAVEL
555.0	PLEISTOCENE		GRAVEL	20.0	40.0	
535.0	PLEISTOCENE		CLAY	15.0	60.0	WITH SAND AND GRAVEL
520.0	PLEISTOCENE		SAND/CLAY	15.0	75.0	COARSE & SAND
505.0	PLEISTOCENE		CLAY	5.0	90.0	WITH SAND AND GRAVEL
500.0	PLEISTOCENE		CLAY	115.0	95.0	WITH A LITTLE SAND
385.0	PLEISTOCENE		CLAY & COAL	5.0	210.0	#7 COAL
380.0	CARBONDALE		GRAY SHALE	5.0	215.0	PEPPERED WITH BLACK CARBONACEOUS SPECKS
375.0	CARBONDALE		GRAY SHALE	5.0	220.0	
370.0	CARBONDALE		CARBONACEOUS SHALE	5.0	225.0	
365.0	CARBONDALE	BRERETON	LIMESTONE	5.0	230.0	
360.0	CARBONDALE		CARBONACEOUS SHALE	15.0	235.0	
345.0	CARBONDALE	CANTON	GRAY SHALE	30.0	250.0	
315.0	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	5.0	280.0	DENSE HARD
310.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.6	285.0	FISSILE ABRUPT BASAL CONTACT
308.4	CARBONDALE	SPRINGFIELD	COAL	0.1	286.6	DULL; BONY
308.4	CARBONDALE	SPRINGFIELD	COAL	1.3	286.6	BRIGHT BANDED CLEAN
307.1	CARBONDALE	SPRINGFIELD	PYRITE	0.0	287.9	PYRITIZED FUSAIN LENS
307.1	CARBONDALE	SPRINGFIELD	COAL	2.1	287.9	CLEAN SOLID
305.0	CARBONDALE	SPRINGFIELD	COAL	0.1	290.0	DULL HEAVY BONY
305.0	CARBONDALE	SPRINGFIELD	COAL	1.9	290.0	SOLID BRIGHT
303.0	CARBONDALE	SPRINGFIELD	COAL	0.1	292.0	SHALY
303.0	CARBONDALE		CLAYSTONE	3.0	292.0	
300.0	CARBONDALE		CLAYSTONE	3.0	295.0	SOME PHOS, & LS NODS
297.0	CARBONDALE		SHALE	0.6	298.0	SOME GRANULAR SIDERITE
296.4	CARBONDALE		LIMESTONE	0.1	298.6	FOSSILIFEROUS
296.3	CARBONDALE		SHALE	5.9	298.7	CALC. SID STRINGERS & PYRITE AT BOTTOM
290.5	CARBONDALE	HANOVER	LIMESTONE	0.4	304.5	VERY ARGILLACEOUS
290.1	CARBONDALE	EXCELLO	SHALE	0.6	304.9	DARK GRAY TO BLACK & GREEN LAMS
289.5	CARBONDALE	EXCELLO	BLACK SHALE	1.0	305.5	SMOOTH FISSILE
288.5	CARBONDALE	EXCELLO	SHALE	0.8	306.5	DARK GRAY TO BLACK & GREEN LAMS
287.7	CARBONDALE	HOUCHIN CREEK	COAL	0.1	307.3	BONY DULL IMPURE
287.6	CARBONDALE		CLAYSTONE	5.0	307.4	
282.6	CARBONDALE		LIMESTONE	0.3	312.4	NODLUE; VERY ARGILLACEOUS
282.3	CARBONDALE		SHALE	1.0	312.7	GREEN-GRAY; POORLY LAM, XTEN PYRITE
281.3	CARBONDALE		CORE LOSS	0.3	313.7	

MAPID: 10720975000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 29 QUARTERS/FOOTAGES: 2300' S line, 75' W line

QUADRANGLE: CORNLAND LONGITUDE: -89.460827 GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 39.982925 DATE COLLECTED: 9 / 16 / 1979

SURFACE ELEVATION (FT.): 592.0 LOGGED (FT.): 290.3 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO. 83-29-12 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
592.0	PLEISTOCENE		CLAY	35.0	0.0	
557.0	PLEISTOCENE		SAND	5.0	35.0	AND SMALL GRAVEL
552.0	PLEISTOCENE		CLAY	10.0	40.0	WITH SMALL GRAVEL
542.0	PLEISTOCENE		SAND	30.0	50.0	AND SMALL GRAVEL
512.0	PLEISTOCENE		SAND	90.0	80.0	COARSE WITH SOME CLAY AND GRAVEL
422.0	PLEISTOCENE		CLAY	5.0	170.0	
417.0	PLEISTOCENE		SAND	25.0	175.0	MEDIUM TO COARSE
392.0	CARBONDALE		GRAY SHALE	10.0	200.0	SOME BLACK SHALE (COAL?)
382.0	CARBONDALE		GRAY SHALE	5.0	210.0	
377.0	CARBONDALE		SILTSTONE	10.0	215.0	PEPPERED WITH BLACK CARBONATE SPECS
367.0	CARBONDALE		LIMESTONE	5.0	225.0	#6 HORIZON, LIMESTONE, BLACK SHALE, COAL
362.0	CARBONDALE		SILTSTONE	5.0	230.0	
357.0	CARBONDALE	CANTON	GRAY SHALE	28.0	235.0	SOME LIMESTONE AT 260-263 FEET
329.0	CARBONDALE	ST. DAVID	LIMESTONE	11.0	263.0	
318.0	CARBONDALE	TURNER MINE	SHALE	0.5	274.0	BLACK
317.5	CARBONDALE	SPRINGFIELD	COAL	6.0	274.5	
311.5	CARBONDALE		CLAYSTONE	5.7	280.5	
305.8	CARBONDALE		GRAY SHALE	3.7	286.2	
302.1	CARBONDALE		LIMESTONE	0.4	289.9	

MAPID: 10720975000C VERSION: 2 PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 29 QUARTERS/FOOTAGES: 2300' S line, 75' W line

QUADRANGLE: CORNLAND LONGITUDE: -89.460827 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 39.982925 DATE COLLECTED: 9 / 16 / 1979

SURFACE ELEVATION (FT.): 592.0 LOGGED (FT.): 290.3 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO. 83-29-12 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
592.0	PLEISTOCENE		CLAY	35.0	0.0	
557.0	PLEISTOCENE		SAND	5.0	35.0	SMALL GRAVEL
552.0	PLEISTOCENE		CLAY	10.0	40.0	SMALL GRAVEL
542.0	PLEISTOCENE		SAND	30.0	50.0	SMALL GRAVEL
512.0	PLEISTOCENE		SAND	90.0	80.0	COARSE WITH SOME CLAY AND GRAVEL
422.0	PLEISTOCENE		CLAY	5.0	170.0	
417.0	PLEISTOCENE		SAND	25.0	175.0	MEDIUM COARSE
392.0	CARBONDALE		GRAY SHALE	10.0	200.0	WITH SOME BLACK SHALE OR COAL
382.0	CARBONDALE		GRAY SHALE	5.0	210.0	
377.0	CARBONDALE		SILTSTONE	10.0	215.0	PEPPERED WITH BLACK CARBONACEOUS SPECS
367.0	CARBONDALE		LIMESTONE	5.0	225.0	#6 HORIZON: CHIPS OF LS, BKSH, & COAL
362.0	CARBONDALE		SILTSTONE	5.0	230.0	
357.0	CARBONDALE	CANTON	GRAY SHALE	28.0	235.0	SOME LS AT 260- 263
329.0	CARBONDALE	ST. DAVID	LIMESTONE	11.0	263.0	
318.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.5	274.0	
317.5	CARBONDALE	SPRINGFIELD	COAL	6.0	274.5	
311.5	CARBONDALE		CLAYSTONE	5.7	280.5	
305.8	CARBONDALE		GRAY SHALE	3.7	286.2	
302.1	CARBONDALE		LIMESTONE	0.4	289.9	

MAPID: 10722019000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 29 QUARTERS/FOOTAGES: 50' N line, 50' E line

QUADRANGLE: CORNLAND LONGITUDE: -89.442416 GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 39.990606 DATE COLLECTED: 3 / 22 / 1977

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 290.0 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-29-1 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
580.0	PLEISTOCENE		CLAY	16.0	0.0	
564.0	PLEISTOCENE		CLAY	16.0	16.0	WITH SAND AND GRAVEL
548.0	PLEISTOCENE		SAND	12.0	32.0	AND SILT
536.0	PLEISTOCENE		CLAY	16.0	44.0	WITH SAND AND GRAVEL
520.0	PLEISTOCENE		CLAY	60.0	60.0	
460.0	PLEISTOCENE		SAND & GRAVEL	22.0	120.0	AND SILT
438.0	MODESTO	LONSDALE	LIMESTONE	6.0	142.0	WEATHERED
432.0	MODESTO		SHALE	4.0	148.0	GRAY BLACK
428.0	MODESTO		SHALE	6.0	152.0	GRAY TAN
422.0	MODESTO		LIMESTONE & SHALE	4.0	158.0	BROKEN
418.0	MODESTO		SANDY SHALE	3.0	162.0	
415.0	MODESTO		SANDY LIMESTONE	1.3	165.0	
413.7	MODESTO		GRAY SHALE	13.7	166.3	
400.0	MODESTO		SHALE	15.0	180.0	TAN
385.0	MODESTO		SHALE	5.2	195.0	DARK GRAY
379.8	MODESTO		LIMESTONE	0.8	200.2	
379.0	CARBONDALE	DANVILLE	COAL	1.3	201.0	
377.7	CARBONDALE		GRAY SHALE	22.5	202.3	
355.2	CARBONDALE	HERRIN	COAL	1.8	224.8	
353.4	CARBONDALE		GRAY SHALE	4.9	226.6	
348.5	CARBONDALE		GRAY SHALE	2.5	231.5	WITH LIMESTONE
346.0	CARBONDALE		SANDY SHALE	8.0	234.0	WITH LIMESTONE AND SANDSTONE STREAKS
338.0	CARBONDALE		GRAY SHALE	21.5	242.0	
316.5	CARBONDALE		SHALE	1.5	263.5	DARK GRAY
315.0	CARBONDALE	ST. DAVID	LIMESTONE	7.0	265.0	
308.0	CARBONDALE	TURNER MINE	SHALE	1.4	272.0	BLACK
306.6	CARBONDALE		PYRITE	0.4	273.4	AND CALCITE NODULES
306.2	CARBONDALE	SPRINGFIELD	COAL	5.7	273.8	
300.5	CARBONDALE		SHALE	0.3	279.5	
300.3	CARBONDALE		CLAYSTONE	3.8	279.7	
296.5	CARBONDALE		SHALE	6.5	283.5	CALCAREOUS

MAPID: 10722019000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 29 QUARTERS/FOOTAGES: 50' N line, 50' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.442416 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 39.990606 DATE COLLECTED: 3 / 22 / 1977
 SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 290.0 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO 83-29-1 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
580.0	PLEISTOCENE		CLAY	16.0	0.0	
564.0	PLEISTOCENE		CLAY	16.0	16.0	WITH SAND AND GRAVEL AND SILT
548.0	PLEISTOCENE		SAND	12.0	32.0	
536.0	PLEISTOCENE		CLAY	16.0	44.0	
520.0	PLEISTOCENE		CLAY	60.0	60.0	
460.0	PLEISTOCENE		SAND & GRAVEL	22.0	120.0	AND SILT
438.0	MODESTO		LIMESTONE	6.0	142.0	WEATHERED
432.0	MODESTO		SHALE	4.0	148.0	GRAY BLACK
428.0	MODESTO		SHALE	6.0	152.0	GRAY TAN
422.0	MODESTO		LIMESTONE & SHALE	4.0	158.0	BROKEN
418.0	MODESTO		SANDY SHALE	3.0	162.0	
415.0	MODESTO		SANDY LIMESTONE	1.3	165.0	
413.7	MODESTO		GRAY SHALE	13.7	166.3	
400.0	MODESTO		SHALE	15.0	180.0	TAN
385.0	MODESTO		SHALE	5.2	195.0	DARK GRAY
379.8	MODESTO		LIMESTONE	0.8	200.2	
379.0	CARBONDALE	DANVILLE	COAL	1.3	201.0	
377.7	CARBONDALE		GRAY SHALE	22.5	202.3	
355.2	CARBONDALE	HERRIN	COAL	1.8	224.8	
353.4	CARBONDALE		GRAY SHALE	4.9	226.6	
348.5	CARBONDALE		GRAY SHALE	2.5	231.5	WITH LIMESTONE STREAKS
346.0	CARBONDALE		SANDY SHALE	8.0	234.0	WITH LIMESTONE AND SANDSTONE STREAKS
338.0	CARBONDALE		GRAY SHALE	21.5	242.0	
316.5	CARBONDALE		SHALE	1.5	263.5	DARK GRAY
315.0	CARBONDALE	ST. DAVID	LIMESTONE	7.0	265.0	
308.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.4	272.0	
306.6	CARBONDALE		ROCK	0.4	273.4	PYRITE & CALCITE
306.2	CARBONDALE	SPRINGFIELD	COAL	5.7	273.8	
300.5	CARBONDALE		SHALE	0.3	279.5	
300.3	CARBONDALE		CLAYSTONE	3.8	279.7	
296.5	CARBONDALE		CALCAREOUS SHALE	6.5	283.5	

MAPID: 10722020000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 29 QUARTERS/FOOTAGES: 75' S line, 50' W line
 QUADRANGLE: CORNLAND LONGITUDE: -89.46087 GEOLOGIST: J MCBETH
 CONFIDENTIAL: N LATITUDE: 39.976784 DATE COLLECTED: 3 / 14 / 1977
 SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 301.6 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO 83-29-13 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0	PLEISTOCENE		CLAY	48.0	0.0	
547.0	PLEISTOCENE		SAND & GRAVEL	8.0	48.0	
539.0	PLEISTOCENE		SAND & GRAVEL	4.0	56.0	WITH CLAY
535.0	PLEISTOCENE		CLAY	130.0	60.0	
405.0	CARBONDALE		LIMESTONE	10.0	190.0	WEATHEREDD
395.0	CARBONDALE		SHALE	24.0	200.0	
371.0	CARBONDALE		LIMESTONE	3.3	224.0	
367.7	CARBONDALE		GRAY SHALE	7.2	227.3	
360.5	CARBONDALE		SANDSTONE	1.0	234.5	
359.5	CARBONDALE		SHALE	6.5	235.5	CALCAREOUS
353.0	CARBONDALE		SANDY LIMESTONE	2.0	242.0	
351.0	CARBONDALE		GRAY SHALE	29.0	244.0	
322.0	CARBONDALE		SHALE	0.5	273.0	BLACK
321.5	CARBONDALE		GRAY SHALE	2.5	273.5	
319.0	CARBONDALE	SPRINGFIELD	COAL	2.0	276.0	WITH CLAY DIKE
317.0	CARBONDALE		GRAY SHALE	5.0	278.0	
312.0	CARBONDALE		GRAY SHALE	5.0	283.0	WITH LIMESTONE
307.0	CARBONDALE		GRAY SHALE	13.0	288.0	
294.0	CARBONDALE		LIMESTONE	0.6	301.0	

MAPID: 10722020000C

VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 29

QUARTERS/FOOTAGES: 75' S line, 50' W line

QUADRANGLE: CORNLAND

LONGITUDE: -89.46087

GEOLOGIST: J. MCBETH

CONFIDENTIAL: N

LATITUDE: 39.976784

DATE COLLECTED: 3 / 14 / 1977

SURFACE ELEVATION (FT.): 595.0

LOGGED (FT.): 301.6

LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO

83-29-13

WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0	PLEISTOCENE		CLAY	48.0	0.0	
547.0	PLEISTOCENE		SAND & GRAVEL	8.0	48.0	
539.0	PLEISTOCENE		SAND & GRAVEL	4.0	56.0	WITH CLAY
535.0	PLEISTOCENE		CLAY	130.0	60.0	
405.0			LIMESTONE	10.0	190.0	WEATHERED
395.0			SHALE	24.0	200.0	
371.0			LIMESTONE	3.3	224.0	
367.7			GRAY SHALE	7.2	227.3	
360.5			SANDSTONE	1.0	234.5	
359.5			CALCAREOUS SHALE	6.5	235.5	
353.0			SANDY LIMESTONE	2.0	242.0	
351.0			GRAY SHALE	29.0	244.0	
322.0			BLACK SHALE	0.5	273.0	
321.5			GRAY SHALE	2.5	273.5	
319.0	CARBONDALE	SPRINGFIELD	CLAY & COAL	2.0	276.0	CLAY DIKE
317.0			GRAY SHALE	5.0	278.0	
312.0			GRAY SHALE	5.0	283.0	WITH LIMESTONE STREAKS
307.0			GRAY SHALE	13.0	288.0	
294.0			LIMESTONE	0.6	301.0	

MAPID: 10722021000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 29 QUARTERS/FOOTAGES: 45' S line, 60' E line

QUADRANGLE: CORNLAND LONGITUDE: -89.442485 GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 39.976464 DATE COLLECTED: 3 / 14 / 1977

SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 306.5 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO. 83-29-16 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0	PLEISTOCENE		CLAY	2.0	0.0	BLACK
588.0	PLEISTOCENE		SOIL	10.0	2.0	
578.0	PLEISTOCENE		CLAY	28.0	12.0	WITH SAND AND GRAVEL
550.0	PLEISTOCENE		SAND & GRAVEL	11.0	40.0	
539.0	PLEISTOCENE		CLAY	131.0	51.0	WITH SAND AND GRAVEL
408.0	CARBONDALE		SANDY LIMESTONE	6.0	182.0	
402.0	CARBONDALE		GRAY SHALE	16.0	188.0	
386.0	CARBONDALE		LIMESTONE	1.3	204.0	
384.7	CARBONDALE		SHALE	4.7	205.3	GRAY TAN
380.0	CARBONDALE		SHALE	7.0	210.0	TAN
373.0	CARBONDALE		SHALE	3.0	217.0	DARK GRAY-BLACK
370.0	CARBONDALE		SHALE	5.0	220.0	DARK GRAY
365.0	CARBONDALE	HERRIN	COAL	2.8	225.0	
362.2	CARBONDALE		GRAY SHALE	6.2	227.8	
356.0	CARBONDALE		SHALE	2.0	234.0	CALCAREOUS
354.0	CARBONDALE		GRAY SHALE	5.0	236.0	
349.0	CARBONDALE		LIMESTONE	2.6	241.0	
346.4	CARBONDALE		GRAY SHALE	3.4	243.6	
343.0	CARBONDALE		LIMESTONE	4.0	247.0	
339.0	CARBONDALE		GRAY SHALE	6.0	251.0	
333.0	CARBONDALE		SILTY SHALE	2.0	257.0	
331.0	CARBONDALE	CANTON	GRAY SHALE	25.0	259.0	
306.0	CARBONDALE		SHALE	1.5	284.0	DARK GRAY
304.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	285.5	
303.5	CARBONDALE	TURNER MINE	SHALE	4.1	286.5	BLACK
299.4	CARBONDALE	SPRINGFIELD	COAL	1.7	290.6	
297.7	CARBONDALE	SPRINGFIELD	PYRITE	0.0	292.3	
297.7	CARBONDALE		COAL	3.8	292.3	WITH PYRITE
293.9	CARBONDALE		CLAYSTONE	1.0	296.1	
292.9	CARBONDALE		CORE LOSS	1.4	297.1	
291.5	CARBONDALE		SHALE	8.0	298.5	

MAPID: 10722021000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 29 QUARTERS/FOOTAGES: 45' S line, 60' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.442485 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 39.976464 DATE COLLECTED: 3 / 14 / 1977
 SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 306.5 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO. 83-29-16 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0	PLEISTOCENE		CLAY	2.0	0.0	BLACK
588.0	PLEISTOCENE		SILT & CLAY	10.0	2.0	
578.0	PLEISTOCENE		CLAY	28.0	12.0	WITH SAND AND GRAVEL
550.0	PLEISTOCENE		SAND & GRAVEL	11.0	40.0	
539.0	PLEISTOCENE		CLAY	131.0	51.0	WITH SAND AND GRAVEL
408.0	CARBONDALE		SANDY LIMESTONE	6.0	182.0	
402.0	CARBONDALE		GRAY SHALE	16.0	188.0	
386.0	CARBONDALE		LIMESTONE	1.3	204.0	
384.7	CARBONDALE		SHALE	4.7	205.3	GRAY TAN
380.0	CARBONDALE		SHALE	7.0	210.0	TAN
373.0	CARBONDALE		SHALE	3.0	217.0	DARK GRAY- BLACK
370.0	CARBONDALE		SHALE	5.0	220.0	DARK GRAY
365.0	CARBONDALE	HERRIN	COAL	2.8	225.0	
362.2	CARBONDALE		GRAY SHALE	6.2	227.8	
356.0	CARBONDALE		CALCAREOUS SHALE	2.0	234.0	
354.0	CARBONDALE		GRAY SHALE	5.0	236.0	
349.0	CARBONDALE		LIMESTONE	2.6	241.0	
346.4	CARBONDALE		GRAY SHALE	3.4	243.6	
343.0	CARBONDALE		LIMESTONE	4.0	247.0	
339.0	CARBONDALE		GRAY SHALE	6.0	251.0	
333.0	CARBONDALE		SILTY SHALE	2.0	257.0	
331.0	CARBONDALE	CANTON	GRAY SHALE	25.0	259.0	
306.0	CARBONDALE		SHALE	1.5	284.0	DARK GRAY
304.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	285.5	
303.5	CARBONDALE	TURNER MINE	BLACK SHALE	4.1	286.5	
299.4	CARBONDALE	SPRINGFIELD	COAL	1.7	290.6	
297.7	CARBONDALE	SPRINGFIELD	PYRITE	0.0	292.3	
297.7	CARBONDALE	SPRINGFIELD	COAL	3.8	292.3	
293.9	CARBONDALE		CLAYSTONE	1.0	296.1	
292.9	CARBONDALE		CORE LOSS	1.4	297.1	
291.5	CARBONDALE		SHALE	8.0	298.5	

MAPID: 10720882000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 30

QUARTERS/FOOTAGES: 75' S line, 1780' E line

QUADRANGLE: CORNLAND

LONGITUDE: -89.467435

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 39.976783

DATE COLLECTED: 6 / 22 / 1979

SURFACE ELEVATION (FT.): 605.0

LOGGED (FT.): 310.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
384.0	CARBONDALE	DANVILLE	COAL	1.5	221.0	
361.5	CARBONDALE	HERRIN	COAL	0.5	243.5	
316.0	CARBONDALE	SPRINGFIELD	COAL	6.1	289.0	

MAPID: 10720882000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 30 **QUARTERS/FOOTAGES:** 75' S line, 1780' E line
QUADRANGLE: CORNLAND **LONGITUDE:** -89.467435 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 39.976783 **DATE COLLECTED:** 6 / 22 / 1979
SURFACE ELEVATION (FT.): 605.0 **LOGGED (FT.):** 310.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.0			CLAY, SAND & GRAVEL	50.0	0.0	
555.0			CLAY	10.0	50.0	
545.0			SAND & GRAVEL	2.5	60.0	
542.5			CLAY	115.5	62.5	
427.0	MODESTO		SHALE	6.0	178.0	
421.0	MODESTO		LIMESTONE	1.5	184.0	
419.5	MODESTO		SHALE	14.0	185.5	
405.5	MODESTO	PIASA	LIMESTONE	2.0	199.5	UNCERTAIN CORRELATION
403.5	MODESTO		SHALE	14.5	201.5	
389.0	MODESTO		BLACK SHALE	1.0	216.0	
388.0	MODESTO		SHALE	6.0	217.0	
382.0	CARBONDALE	DANVILLE	COAL	1.0	223.0	
381.0	CARBONDALE		SHALE	11.0	224.0	
370.0	CARBONDALE	BRERETON	LIMESTONE	9.0	235.0	
361.0	CARBONDALE	HERRIN	COAL	1.0	244.0	
360.0	CARBONDALE		SHALE	40.5	245.0	
319.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	285.5	
318.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	286.5	CORE NO.1 286.5-296
316.0	CARBONDALE	SPRINGFIELD	COAL	6.1	289.0	
309.9	CARBONDALE		CLAYSTONE & SHALE	0.5	295.1	
309.4	CARBONDALE		CORE LOSS	0.4	295.6	
309.0	CARBONDALE		SHALE	9.0	296.0	
300.0	CARBONDALE		LIMESTONE	1.0	305.0	
299.0	CARBONDALE		SHALE	4.0	306.0	

MAPID: 10722022000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 30 QUARTERS/FOOTAGES: 2700' S line, 2400' W line

QUADRANGLE: CORNLAND LONGITUDE: -89.475378 GEOLOGIST: J MCBETH

CONFIDENTIAL: N LATITUDE: 39.984022 DATE COLLECTED: 4 / 0 / 1977

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 281.0 LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-30-6 WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		CLAY	17.0	0.0	
583.0	PLEISTOCENE		SAND & GRAVEL	81.0	17.0	
502.0	PLEISTOCENE		CLAY	28.0	98.0	
474.0	MODESTO		GRAY SHALE	18.0	126.0	
456.0	MODESTO	LONSDALE	LIMESTONE	5.0	144.0	
451.0	MODESTO		SHALE	3.0	149.0	DARK GRAY
448.0	MODESTO		SHALE	7.5	152.0	RED*
440.5	MODESTO		SANDY SHALE	15.5	159.5	
425.0	MODESTO		LIMESTONE	2.0	175.0	
423.0	MODESTO		GRAY SHALE	2.0	177.0	
421.0	MODESTO		LIMESTONE	0.5	179.0	
420.5	MODESTO		GRAY SHALE	4.5	179.5	
416.0	MODESTO		SHALE	2.0	184.0	RED
414.0	MODESTO		GRAY SHALE	5.0	186.0	
409.0	CARBONDALE	DANVILLE	COAL	4.0	191.0	
405.0	CARBONDALE		GRAY SHALE	15.0	195.0	
390.0	CARBONDALE		LIMESTONE	4.5	210.0	
385.5	CARBONDALE		GRAY SHALE	4.5	214.5	
381.0	CARBONDALE	HERRIN	COAL	1.5	219.0	
379.5	CARBONDALE		GRAY SHALE	15.5	220.5	
364.0	CARBONDALE		SHALY SANDSTONE	13.0	236.0	
351.0	CARBONDALE	CANTON	GRAY SHALE	11.0	249.0	
340.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	260.0	
339.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.8	261.0	
336.2	CARBONDALE	SPRINGFIELD	COAL	5.6	263.8	PER LOG:POSSIBLE CLAY DIKE IN COAL
330.6	CARBONDALE		GRAY SHALE	11.6	269.4	

MAPID: 10722022000C **VERSION:** 2 **PROJECT:** LUMP
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 30 **QUARTERS/FOOTAGES:** 2700' S line, 2400' W line
QUADRANGLE: CORNLAND **LONGITUDE:** -89.475378 **GEOLOGIST:** J. MCBETH
CONFIDENTIAL: N **LATITUDE:** 39.984022 **DATE COLLECTED:** 4 / 0 / 1977
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 281.0 **LOG TYPE:** Drillers Log
SOURCE: TURRIS COAL CO 83-30-6 **WELL TYPE:** Coal Test
COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0	PLEISTOCENE		CLAY	17.0	0.0	
583.0	PLEISTOCENE		SAND & GRAVEL	81.0	17.0	
502.0	PLEISTOCENE		CLAY	28.0	98.0	
474.0	MODESTO		GRAY SHALE	18.0	126.0	
456.0	MODESTO		LIMESTONE	5.0	144.0	
451.0	MODESTO		SHALE	3.0	149.0	DARK GRAY
448.0	MODESTO		SHALE	7.5	152.0	RED
440.5	MODESTO		SANDY SHALE	15.5	159.5	
425.0	MODESTO		LIMESTONE	2.0	175.0	
423.0	MODESTO		GRAY SHALE	2.0	177.0	
421.0	MODESTO		LIMESTONE	0.5	179.0	
420.5	MODESTO		GRAY SHALE	4.5	179.5	
416.0	MODESTO		SHALE	2.0	184.0	RED
414.0	MODESTO		GRAY SHALE	5.0	186.0	
409.0	CARBONDALE	DANVILLE	COAL	4.0	191.0	
405.0	CARBONDALE		GRAY SHALE	15.0	195.0	
390.0	CARBONDALE		LIMESTONE	4.5	210.0	
385.5	CARBONDALE		GRAY SHALE	4.5	214.5	
381.0	CARBONDALE	HERRIN	COAL	1.5	219.0	
379.5	CARBONDALE		GRAY SHALE	15.5	220.5	
364.0	CARBONDALE		SHALY SANDSTONE	13.0	236.0	
351.0	CARBONDALE	CANTON	GRAY SHALE	11.0	249.0	
340.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	260.0	
339.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.8	261.0	
336.2	CARBONDALE	SPRINGFIELD	COAL	5.6	263.8	PER LOG; POSSIBLE CLAY DIKE IN COAL
330.6	CARBONDALE		GRAY SHALE	11.6	269.4	

MAPID: 10722023000C VERSION: 1

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 31 QUARTERS/FOOTAGES: 20' S line, 160' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.461713 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 39.962132 DATE COLLECTED: 4 / 0 / 1977
 SURFACE ELEVATION (FT.): 603.0 LOGGED (FT.): 315.0 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO; PERMIT 3 83-31-16A WELL TYPE: Coal Test
 COMMENT: DEPTH/THICK DIFFS. ON LOG-DEPTHS USED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
603.0	PLEISTOCENE		CLAY	16.0	0.0	
587.0	PLEISTOCENE		CLAY	4.0	16.0	WITH SAND AND GRAVEL
583.0	PLEISTOCENE		SAND & GRAVEL	10.0	20.0	
573.0	PLEISTOCENE		CLAY	47.0	30.0	WITH SAND AND GRAVEL
526.0	PLEISTOCENE		CLAY	90.0	77.0	
436.0	MODESTO		GRAY SHALE	15.0	167.0	
421.0	MODESTO		LIMESTONE	4.0	182.0	
417.0	MODESTO		SHALE	14.0	186.0	TAN-GRAY
403.0	MODESTO		LIMESTONE	3.0	200.0	SHALY BOTTOM
400.0	MODESTO		SHALE	12.5	203.0	
387.5	MODESTO		LIMESTONE	1.5	215.5	
386.0	MODESTO		SHALE	6.0	217.0	
380.0	MODESTO		SHALE	8.0	223.0	DARK GRAY TO BLACK
372.0	MODESTO		LIMESTONE	0.2	231.0	STREAK
371.8	MODESTO		SHALE	3.8	231.2	DARK GRAY
368.0	CARBONDALE	DANVILLE	COAL	1.0	235.0	
367.0	CARBONDALE		GRAY SHALE	13.0	236.0	
354.0	CARBONDALE		CALCAREOUS SHALE	1.0	249.0	
353.0	CARBONDALE	BRERETON	LIMESTONE	3.8	250.0	
349.2	CARBONDALE		GRAY SHALE	1.7	253.8	
347.5	CARBONDALE	HERRIN	COAL	1.6	255.5	
345.9	CARBONDALE		GRAY SHALE	11.9	257.1	
334.0	CARBONDALE		GRAY SHALE	3.0	269.0	WITH CALCAREOUS SAND STREAKS
331.0	CARBONDALE		GRAY SHALE	22.0	272.0	
309.0	CARBONDALE		CALCAREOUS SHALE	1.0	294.0	DARK
308.0	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	2.0	295.0	
306.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.6	297.0	
303.4	CARBONDALE	SPRINGFIELD	COAL	5.5	299.6	
297.9	CARBONDALE		CLAYSTONE	2.9	305.1	WEAK, BROKEN
295.0	CARBONDALE		CLAYSTONE	2.0	308.0	FIRMER
293.0	CARBONDALE		CALCAREOUS SHALE	3.0	310.0	GREENISH-GRAY, HARD
290.0	CARBONDALE		CORE LOSS	0.5	313.0	
289.5	CARBONDALE		CALCAREOUS SHALE	0.3	313.5	GRAY GREEN; HARD
289.2	CARBONDALE		CORE LOSS	1.2	313.8	

MAPID: 10722033000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 31 QUARTERS/FOOTAGES: 20' S line, 160' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.461713 GEOLOGIST: J MCBETH
 CONFIDENTIAL: N LATITUDE: 39.962132 DATE COLLECTED: 4 / 0 / 1977
 SURFACE ELEVATION (FT.): 603.0 LOGGED (FT.): 315.0 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO; PERMIT 3 83-31-16A WELL TYPE: Coal Test
 COMMENT: DEPTH/THICK DIFFS. ON LOG-DEPTHS USED

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
603.0	PLEISTOCENE		CLAY	16.0	0.0	
587.0	PLEISTOCENE		CLAY	4.0	16.0	WITH SAND AND GRAVEL
583.0	PLEISTOCENE		SAND & GRAVEL	10.0	20.0	
573.0	PLEISTOCENE		CLAY	47.0	30.0	WITH SAND AND GRAVEL
526.0	PLEISTOCENE		CLAY	90.0	77.0	
436.0	MODESTO		GRAY SHALE	15.0	167.0	
421.0	MODESTO		LIMESTONE	4.0	182.0	
417.0	MODESTO		SHALE	14.0	186.0	TAN, GRAY
403.0	MODESTO		LIMESTONE	3.0	200.0	SHALY BOTTOM
400.0	CARBONDALE		SHALE	12.0	203.0	
388.0	CARBONDALE		LIMESTONE	2.0	215.0	
386.0	CARBONDALE		SHALE	6.0	217.0	
380.0	CARBONDALE		SHALE	8.0	223.0	DARK GRAY TO BLACK
372.0	CARBONDALE		LIMESTONE	0.2	231.0	STREAK
371.8	CARBONDALE		SHALE	3.8	231.2	DARK GRAY
368.0	CARBONDALE	DANVILLE	COAL	1.0	235.0	
367.0	CARBONDALE		GRAY SHALE	13.0	236.0	
354.0	CARBONDALE		SHALE	1.0	249.0	CALCAREOUS
353.0	CARBONDALE	BRERETON	LIMESTONE	3.8	250.0	
349.2	CARBONDALE		GRAY SHALE	1.7	253.8	
347.5	CARBONDALE	HERRIN	COAL	1.6	255.5	
345.9	CARBONDALE		GRAY SHALE	11.9	257.1	
334.0	CARBONDALE		GRAY SHALE	3.0	269.0	WITH CALCAREOUS SAND STREAKS
331.0	CARBONDALE		GRAY SHALE	22.0	272.0	
309.0	CARBONDALE		SHALE	1.0	294.0	CALCAREOUS, DARK
308.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	295.0	FOSSILIFEROUS
306.0	CARBONDALE	TURNER MINE	SHALE	2.6	297.0	BLACK
303.4	CARBONDALE	SPRINGFIELD	COAL	5.5	299.6	
297.9	CARBONDALE		CLAYSTONE	2.9	305.1	WEAK, BROKEN
295.0	CARBONDALE		CLAYSTONE	2.0	308.0	FIRMER
293.0	CARBONDALE		SHALE	3.0	310.0	CALCAREOUS, GREENISH GRAY, HARD
290.0	CARBONDALE		CORE LOSS	0.5	313.0	
289.5	CARBONDALE		SHALE	0.3	313.5	CALCAREOUS, GRAY GREEN, HARD
289.2	CARBONDALE		CORE LOSS	1.2	313.8	

MAPID: 10720679000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 32 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE SW SE
 QUADRANGLE: CORNLAND LONGITUDE: -89.446957 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 39.963749 DATE COLLECTED: 3 / 29 / 1968
 SURFACE ELEVATION (FT.): 645.0 LOGGED (FT.): 375.4 LOG TYPE: Multiple log types
 SOURCE: CARTER OIL COMPANY WELL TYPE: Coal Test
 COMMENT: DRILLERS LOG & SURVEY CORE DESCRIPTIONS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
283.4	CARBONDALE	SPRINGFIELD	COAL	5.5	361.6	

MAPID: 10720679000C VERSION: 2

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 32 QUARTERS/FOOTAGES: 1' N line, 1' E line of SE SW SE
 QUADRANGLE: CORNLAND LONGITUDE: -89.446957 GEOLOGIST: COATS
 CONFIDENTIAL: N LATITUDE: 39.963749 DATE COLLECTED: 3 / 29 / 1968
 SURFACE ELEVATION (FT.): 645.0 LOGGED (FT.): 375.4 LOG TYPE: Multiple log types
 SOURCE: CARTER OIL COMPANY WELL TYPE: Coal Test
 COMMENT: DRILLERS LOG & SURVEY CORE DESCRIPTIONS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
645.0			UNCONSOLIDATED	17.0	0.0	
628.0			UNCONSOLIDATED	212.0	17.0	
416.0	MODESTO		LIMESTONE	2.0	229.0	GRAY
414.0	MODESTO		GRAY SHALE	6.0	231.0	
408.0	MODESTO		BLACK SHALE	1.5	237.0	
406.5	MODESTO		SHALE	15.5	238.5	MULTI-COLORED
391.0	MODESTO		GRAY SHALE	23.0	254.0	
368.0	MODESTO		LIMESTONE	1.0	277.0	
367.0	MODESTO		BLACK SHALE	2.0	278.0	
365.0			GRAY SHALE	9.5	280.0	
355.5	MODESTO		BLACK SHALE	3.5	289.5	MED. TO DARK
352.0	CARBONDALE	DANVILLE	COAL	1.5	293.0	
350.5	CARBONDALE		GRAY SHALE	13.5	294.5	
337.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	308.0	GRAY
335.5	CARBONDALE		SILTY SHALE	5.5	309.5	THICKNESS ADJ. TO MATCH DEPTH ON CORE
330.0	CARBONDALE		SILTY CLAYSTONE	1.9	315.0	GRAY, START CORE 315.00 - 420.40'
328.1	CARBONDALE		SHALY SILTSTONE	25.9	316.9	GRAY, SILTY & CLAY ZONES
302.2	CARBONDALE		SILTY SHALE	14.8	342.8	W/ SIDERITIC NODULES
287.4	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	1.5	357.6	GRAY
285.9	CARBONDALE		FOSSILIFEROUS BLACK SHALE	2.1	359.1	
283.8	CARBONDALE	SPRINGFIELD	COAL	5.5	361.2	
278.3	CARBONDALE		CLAYSTONE	3.1	366.7	GRAY, W/ CALCAREOUS NODULES
275.2	CARBONDALE		SHALY SILTSTONE	5.6	369.8	LIGHT OLIVE GRAY

MAPID: 10720843000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 32 **QUARTERS/FOOTAGES:** 50' N line, 2618' W line
QUADRANGLE: CORNLAND **LONGITUDE:** -89.451658 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 39.976319 **DATE COLLECTED:** 7 / 27 / 1978
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 297.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
390.0	CARBONDALE	HERRIN	COAL	2.0	205.0
322.2	CARBONDALE	SPRINGFIELD	COAL	6.1	272.8

MAPID: 10720843000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 32 **QUARTERS/FOOTAGES:** 50' N line, 2618' W line
QUADRANGLE: CORNLAND **LONGITUDE:** -89.451658 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 39.976319 **DATE COLLECTED:** 7 / 27 / 1978
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 297.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
595.0			CLAY	28.0	0.0
567.0			SAND & GRAVEL	4.0	28.0
563.0			CLAY	12.0	32.0
551.0			SAND & GRAVEL	3.0	44.0
548.0			CLAY, SAND & GRAVEL	3.0	47.0
545.0			CLAY	151.0	50.0
394.0	CARBONDALE		SHALE	3.0	201.0
391.0	CARBONDALE	ANNA	BLACK SHALE	3.0	204.0
388.0	CARBONDALE	HERRIN	COAL	1.0	207.0
387.0	CARBONDALE		SHALE	9.0	208.0
378.0	CARBONDALE		LIMESTONE	4.5	217.0
373.5	CARBONDALE		SHALE	4.5	221.5
369.0	CARBONDALE		LIMESTONE	2.0	226.0
367.0	CARBONDALE		SHALE	35.5	228.0
331.5	CARBONDALE	ST. DAVID	LIMESTONE	8.7	263.5
322.8	CARBONDALE	TURNER MINE	BLACK SHALE	0.6	272.2 CORE #1 272-279.4
322.2	CARBONDALE	SPRINGFIELD	COAL	6.1	272.8
316.1	CARBONDALE		CLAYSTONE & SHALE	0.2	278.9
315.8	CARBONDALE		CORE LOSS	0.3	279.2
315.6	CARBONDALE		SHALE	16.6	279.4
299.0	CARBONDALE		LIMESTONE	1.0	296.0

MAPID: 10720976000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN

TWP/RNG: 18N 3W

SECTION: 33

QUARTERS/FOOTAGES: 2700' S line, 2650' E line

QUADRANGLE: CORNLAND

LONGITUDE: -89.432996

GEOLOGIST: J MCBETH

CONFIDENTIAL: N

LATITUDE: 39.96928

DATE COLLECTED: 12 / 11 / 1979

SURFACE ELEVATION (FT.):

LOGGED (FT.): 314.9

LOG TYPE: Drillers Log

SOURCE: TURRIS COAL CO 83-33-7

WELL TYPE: Coal Test

COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		SOIL	3.0	0.0	
-	PLEISTOCENE		CLAY	17.0	3.0	
-	PLEISTOCENE		SAND & GRAVEL	5.0	20.0	
-	PLEISTOCENE		CLAY	5.0	25.0	
-	PLEISTOCENE		CLAY	5.0	30.0	WITH COARSE GRAVEL AND WOOD
-	PLEISTOCENE		CLAY	5.0	35.0	
-	PLEISTOCENE		SAND & GRAVEL	50.0	40.0	
-	PLEISTOCENE		CLAY	25.0	90.0	WITH GRAVEL
-	PLEISTOCENE		CLAY	25.0	115.0	
-	PLEISTOCENE		CLAY	24.0	140.0	WITH COARSE SAND
-			LIMESTONE	2.0	164.0	TAN,HARD,SPLINTERY
-			GRAY SHALE	9.0	166.0	
-			SHALE	6.0	175.0	RED
-			LIMESTONE	4.0	181.0	TAN, SLIGHTLY SANDY
-			GRAY SHALE	25.0	185.0	
-			LIMESTONE	1.0	210.0	TAN,FIRM
-			SHALE	9.0	211.0	LIGHT BROWN
-			GRAY SHALE	9.0	220.0	
-			LIMESTONE	3.0	229.0	
-			GRAY SHALE	11.0	232.0	
-			LIMESTONE & SHALE	38.0	243.0	INTERBEDDED
-	CARBONDALE	ST. DAVID	LIMESTONE	7.3	281.0	DARK GRAY TO BLACK, VERY HARD
-	CARBONDALE	TURNER MINE	SHALE	0.1	288.3	BLACK
-	CARBONDALE	TURNER MINE	SHALE	1.4	288.4	BLACK
-	CARBONDALE	SPRINGFIELD	COAL	5.3	289.8	
-	CARBONDALE		UNDERCLAY	3.1	295.1	
-	CARBONDALE		SILTSTONE	3.8	298.1	SPARSE LIMESTONE NODULES
-	CARBONDALE		GRAY SHALE	3.0	301.9	
-	CARBONDALE		SHALE	3.9	304.9	FIRM, GRAY-GREEN
-	CARBONDALE	HANOVER	LIMESTONE	0.4	308.8	HAS WORM BORINGS
-	CARBONDALE	EXCELLO	SHALE	1.5	309.2	BLACK
-	CARBONDALE	HOUCHIN CREEK	COAL	1.0	310.7	POOR, VERY SOFT, WITH ROTTEN BLACK SHALE
-	CARBONDALE	HOUCHIN CREEK	COAL	0.5	311.7	BRIGHT,HARD,GREEN
-	CARBONDALE		UNDERCLAY	0.5	312.2	
-	CARBONDALE		GRAY SHALE	2.3	312.6	

MAPID: 10720976000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 33 QUARTERS/FOOTAGES: 2700' S line, 2650' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.432996 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 39.96928 DATE COLLECTED: 12 / 11 / 1979
 SURFACE ELEVATION (FT.): LOGGED (FT.): 314.9 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO 83-33-7 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		SOIL	3.0	0.0	
-	PLEISTOCENE		CLAY	17.0	3.0	
-	PLEISTOCENE		SAND & GRAVEL	5.0	20.0	
-	PLEISTOCENE		CLAY	5.0	25.0	
-	PLEISTOCENE		CLAY	5.0	30.0	WITH COARSE GRAVEL AND WOOD PULP
-	PLEISTOCENE		CLAY	5.0	35.0	
-	PLEISTOCENE		SAND & GRAVEL	50.0	40.0	
-	PLEISTOCENE		CLAY	25.0	90.0	WITH GRAVEL
-	PLEISTOCENE		CLAY	25.0	115.0	
-	PLEISTOCENE		CLAY	24.0	140.0	WITH COARSE SAND
-			LIMESTONE	2.0	164.0	TAN, HARD,SPLINTERY
-			GRAY SHALE	9.0	166.0	
-			SHALE	6.0	175.0	RED
-			LIMESTONE	4.0	181.0	TAN, SL. SANDY
-			GRAY SHALE	25.0	185.0	
-			LIMESTONE	1.0	210.0	TAN, FIRM
-			SHALE	9.0	211.0	LIGHT BROWN GUMMY
-			GRAY SHALE	9.0	220.0	
-			LIMESTONE	3.0	229.0	
-			GRAY SHALE	11.0	232.0	
-			LIMESTONE & SHALE	38.0	243.0	INTERBEDDED
-	CARBONDALE	ST. DAVID	LIMESTONE	7.3	281.0	DARK GRAY TO BLACK; VERY HARD
-	CARBONDALE	TURNER MINE	LIMESTONE AND BLACK SHALE	0.1	288.3	
-	CARBONDALE	TURNER MINE	BLACK SHALE	1.4	288.4	
-	CARBONDALE	SPRINGFIELD	COAL	5.3	289.8	
-	CARBONDALE		UNDERCLAY	3.1	295.1	
-	CARBONDALE		SILTSTONE	3.8	298.1	SPARSE LS NODS
-	CARBONDALE		GRAY SHALE	3.0	301.9	
-	CARBONDALE		SHALE	3.9	304.9	FIRM, GRAY- GREEN
-	CARBONDALE	HANOVER	LIMESTONE	0.4	308.8	HAS WORM BORINGS
-	CARBONDALE	EXCELLO	BLACK SHALE	1.5	309.2	
-	CARBONDALE	HOUCHIN CREEK	COAL	1.0	310.7	POOR COAL; VERY SOFT; VERY ROTTEN BKSH
-	CARBONDALE	HOUCHIN CREEK	COAL	0.5	311.7	BRIGHT, HARD, CLEAN
-	CARBONDALE		UNDERCLAY	0.5	312.2	
-	CARBONDALE		GRAY SHALE	2.3	312.6	

MAPID: 10722024000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 33 QUARTERS/FOOTAGES: 50' S line, 2500' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.432443 GEOLOGIST: J MCBETH
 CONFIDENTIAL: N LATITUDE: 39.961961 DATE COLLECTED: 3 / 22 / 1977
 SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 334.0 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO 83-33-15 WELL TYPE: Coal Test
 COMMENT: PERMIT 3;ELHARTMINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0	PLEISTOCENE		CLAY	50.0	0.0	
560.0	PLEISTOCENE		CLAY	104.0	50.0	WITH SAND AND GRAVEL
456.0	PLEISTOCENE		SAND & GRAVEL	6.0	154.0	
450.0	PLEISTOCENE		CLAY	27.0	160.0	
423.0	MODESTO		LIMESTONE	3.0	187.0	WEATHERED
420.0	MODESTO		SHALE	16.3	190.0	GRAY TAN
403.7	MODESTO		LIMESTONE & SHALE	4.7	206.3	
399.0	MODESTO		GRAY SHALE	16.4	211.0	
382.6	MODESTO		LIMESTONE & SHALE	0.7	227.4	
381.9	PLEISTOCENE		GRAY SHALE	5.9	228.1	
376.0	PLEISTOCENE		SHALE	10.0	234.0	DARK GRAY BLACK
366.0	CARBONDALE	DANVILLE	COAL	1.0	244.0	
365.0	CARBONDALE		GRAY SHALE	10.0	245.0	
355.0	CARBONDALE	BRERETON	LIMESTONE	4.4	255.0	CORRELATION FROM LOG
350.6	CARBONDALE		GRAY SHALE	5.3	259.4	
345.3	CARBONDALE	HERRIN	COAL	0.7	264.7	
344.6	CARBONDALE		GRAY SHALE	14.6	265.4	
330.0	CARBONDALE		SANDY LIMESTONE	2.0	280.0	
328.0	CARBONDALE		GRAY SHALE	3.3	282.0	
324.7	CARBONDALE		SANDSTONE/LIMESTONE	0.7	285.3	
324.0	CARBONDALE	CANTON	GRAY SHALE	26.5	286.0	
297.5	CARBONDALE		SHALE	1.5	312.5	DARK GRAY
296.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	314.0	VERY CARBONACEOUS AT TOP, FOSSILIFEROUS
294.0	CARBONDALE	TURNER MINE	SHALE	2.7	316.0	BLACK
291.3	CARBONDALE	SPRINGFIELD	COAL	3.4	318.7	
287.9	CARBONDALE	SPRINGFIELD	PYRITE	0.1	322.1	
287.9	CARBONDALE	SPRINGFIELD	COAL	1.5	322.1	
286.4	CARBONDALE	SPRINGFIELD	PYRITE	0.1	323.6	
286.4	CARBONDALE	SPRINGFIELD	COAL	0.3	323.6	
286.1	CARBONDALE		GRAY SHALE	4.3	323.9	
281.8	CARBONDALE		CORE LOSS	0.8	328.2	
281.0	CARBONDALE		SILTY SHALE	5.0	329.0	CALCAREOUS

MAPID: 10722024000C VERSION: 2

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 33 QUARTERS/FOOTAGES: 50' S line, 2500' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.432443 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 39.961961 DATE COLLECTED: 3 / 22 / 1977
 SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 334.0 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO 83-33-15 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0	PLEISTOCENE		CLAY	50.0	0.0	
560.0	PLEISTOCENE		CLAY	104.0	50.0	WITH SAND AND GRAVEL
456.0	PLEISTOCENE		SAND & GRAVEL	6.0	154.0	
450.0	PLEISTOCENE		CLAY	27.0	160.0	
423.0	MODESTO		LIMESTONE	3.0	187.0	WEATHERED
420.0	MODESTO		SHALE	16.3	190.0	GRAY TAN
403.7	MODESTO		SHALY LIMESTONE	4.7	206.3	
399.0	MODESTO		GRAY SHALE	16.4	211.0	
382.6	MODESTO		LIMESTONE & SHALE	0.7	227.4	
381.9	MODESTO		GRAY SHALE	5.9	228.1	
376.0	MODESTO		SHALE	10.0	234.0	DARK GRAY TO BLACK
366.0	CARBONDALE	DANVILLE	COAL	1.0	244.0	
365.0	CARBONDALE		GRAY SHALE	10.0	245.0	
355.0	CARBONDALE	BRERETON	LIMESTONE	4.4	255.0	CORRELATION FROM LOG
350.6	CARBONDALE		GRAY SHALE	5.3	259.4	
345.3	CARBONDALE	HERRIN	COAL	0.7	264.7	
344.6	CARBONDALE		GRAY SHALE	14.6	265.4	
330.0	CARBONDALE		SANDY LIMESTONE	2.0	280.0	
328.0	CARBONDALE		GRAY SHALE	3.3	282.0	
324.7	CARBONDALE		SANDSTONE/LIMESTONE	0.7	285.3	
324.0	CARBONDALE	CANTON	GRAY SHALE	26.5	286.0	
297.5	CARBONDALE		SHALE	1.5	312.5	DARK GRAY
296.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	314.0	V. CARB. IN TOP 0.2'; FOSSILIFEROUS
294.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.7	316.0	
291.3	CARBONDALE	SPRINGFIELD	COAL	3.4	318.7	
287.9	CARBONDALE	SPRINGFIELD	PYRITE	0.1	322.1	
287.9	CARBONDALE	SPRINGFIELD	COAL	1.5	322.1	
286.4	CARBONDALE	SPRINGFIELD	PYRITE	0.1	323.6	
286.4	CARBONDALE	SPRINGFIELD	COAL	0.3	323.6	
286.1	CARBONDALE		GRAY SHALE	4.3	323.9	
281.8	CARBONDALE		CORE LOSS	0.8	328.2	
281.0	CARBONDALE		CALCAREOUS SHALE	5.0	329.0	

MAPID: 10720844000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** 2420' S line, 930' E line
QUADRANGLE: CORNLAND **LONGITUDE:** -89.389265 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 39.967949 **DATE COLLECTED:** 8 / 15 / 1978
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 300.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENSITY, DRILL. LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
371.0	CARBONDALE	DANVILLE	COAL	2.0	204.0
339.2	CARBONDALE	HERRIN	COAL	0.3	235.8
295.0	CARBONDALE	SPRINGFIELD	COAL	5.0	280.0

MAPID: 10720844000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** 2420' S line, 930' E line
QUADRANGLE: CORNLAND **LONGITUDE:** -89.389265 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 39.967949 **DATE COLLECTED:** 8 / 15 / 1978
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 300.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENSITY, DRILL. LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
575.0			CLAY	18.0	0.0
557.0			SAND & GRAVEL	3.0	18.0
554.0			CLAY, SAND & GRAVEL	19.0	21.0
535.0			SANDY CLAY	23.0	40.0
512.0			CLAY	109.0	63.0
403.0			SILT	18.0	172.0
385.0	MODESTO		SHALE	10.5	190.0
374.5	MODESTO		BLACK SHALE	2.0	200.5
372.5	CARBONDALE	DANVILLE	COAL	2.0	202.5
370.5	CARBONDALE		GRAY SHALE	27.5	204.5
343.0	CARBONDALE	BRERETON	LIMESTONE	2.5	232.0
340.5	CARBONDALE	ANNA	BLACK SHALE	1.0	234.5
339.5	CARBONDALE	HERRIN	COAL	0.6	235.5
338.9	CARBONDALE		GRAY SHALE	41.9	236.1 CORE 279-286
297.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	278.0
296.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.0	279.0
295.0	CARBONDALE	SPRINGFIELD	COAL	5.0	280.0
290.1	CARBONDALE		CLAYSTONE & SHALE	0.2	284.9
289.9	CARBONDALE		CORE LOSS	0.9	285.1
289.0	CARBONDALE		CLAYSTONE & SHALE	4.0	286.0
285.0	CARBONDALE		LIMESTONE	4.0	290.0
281.0	CARBONDALE		GRAY SHALE	6.0	294.0

MAPID: 10722025000C VERSION: 1

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 35 QUARTERS/FOOTAGES: 110' N line, 75' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.386064 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 39.975566 DATE COLLECTED: 6 / 3 / 1975
 SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 281.5 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO 84-35-1P WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.0	PLEISTOCENE		CLAY	14.0	0.0	
556.0	PLEISTOCENE		SAND & GRAVEL	2.0	14.0	
554.0	PLEISTOCENE		CLAY	74.5	16.0	WITH SAND
479.5	MODESTO		SANDY SHALE	55.7	90.5	
423.8	MODESTO		LIMESTONE	1.1	146.2	DARK GRAY
422.7	MODESTO		BLACK SHALE	0.7	147.3	WITH COAL
422.0	MODESTO		GRAY SHALE	4.5	148.0	
417.5	MODESTO		GRAY SHALE	0.5	152.5	WITH LIMESTONE
417.0	MODESTO		LIMESTONE	3.5	153.0	
413.5	MODESTO		GRAY SHALE	1.5	156.5	
412.0	MODESTO		BLACK SHALE	1.0	158.0	
411.0	MODESTO		GRAY SHALE	5.0	159.0	
406.0	MODESTO		SHALE	4.0	164.0	MULTICOLORED
402.0	MODESTO		LIMESTONE	5.5	168.0	WITH SANDSTONE STREAKS
396.5	MODESTO		SHALE	4.5	173.5	WITH SANDSTONE STREAKS
392.0	MODESTO	PIASA	LIMESTONE	2.0	178.0	
390.0	MODESTO		SHALE	8.0	180.0	WITH LIMESTONE STREAKS
382.0	MODESTO		SHALE	6.5	188.0	RED TAN
375.5	MODESTO		SHALE	4.0	194.5	DARK GRAY TO BLACK
371.5	CARBONDALE	DANVILLE	COAL	3.5	198.5	
368.0	CARBONDALE		GRAY SHALE	15.2	202.0	
352.8	CARBONDALE		LIMESTONE	1.0	217.2	
351.8	CARBONDALE		GRAY SHALE	2.5	218.2	
349.3	CARBONDALE	HERRIN	COAL	2.0	220.7	
347.3	CARBONDALE		GRAY SHALE	7.3	222.7	
340.0	CARBONDALE		GRAY SHALE	4.0	230.0	WITH SANDSTONE STREAKS
336.0	CARBONDALE		GRAY SHALE	4.0	234.0	
332.0	CARBONDALE		GRAY SHALE	8.0	238.0	WITH SANDSTONE STREAKS
324.0	CARBONDALE		GRAY SHALE	21.2	246.0	
302.8	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	2.2	267.2	
300.6	CARBONDALE	TURNER MINE	BLACK SHALE	2.3	269.4	
298.3	CARBONDALE	SPRINGFIELD	COAL	2.7	271.7	
295.6	CARBONDALE	SPRINGFIELD	LIMESTONE	0.1	274.4	
295.5	CARBONDALE	SPRINGFIELD	COAL	3.2	274.5	
292.3	CARBONDALE		SHALE	0.4	277.7	GRAY STREAKED WITH COAL
292.0	CARBONDALE		CLAYSTONE	3.3	278.0	
288.7	CARBONDALE		CORE LOSS	0.2	281.3	

MAPID: 10720845000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 36 QUARTERS/FOOTAGES: 2600' N line, 2110' W line

QUADRANGLE: CORNLAND LONGITUDE: -89.378349 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 39.968636 DATE COLLECTED: 8 / 6 / 1978

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 295.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
351.0	CARBONDALE	HERRIN	COAL	4.5	229.0	
304.0	CARBONDALE	SPRINGFIELD	COAL	4.7	276.0	

MAPID: 10720845000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 3W SECTION: 36 QUARTERS/FOOTAGES: 2600' N line, 2110' W line

QUADRANGLE: CORNLAND LONGITUDE: -89.378349 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 39.968636 DATE COLLECTED: 8 / 6 / 1978

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 295.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
580.0			CLAY	19.0	0.0	SCATTERED SAND & GRAVEL
561.0			SAND & GRAVEL	2.0	19.0	
559.0			CLAY	27.0	21.0	
532.0			SAND & GRAVEL	3.0	48.0	
529.0			SANDY CLAY	5.0	51.0	
524.0			SAND & GRAVEL	1.0	56.0	
523.0			CLAY	3.0	57.0	
520.0			CLAY, SAND & GRAVEL	116.5	60.0	
404.5	MODESTO		GRAY SHALE	20.5	175.5	
384.0	MODESTO		BLACK SHALE	4.0	196.0	DRILLERS LOG INDICATES RED SHALE
380.0	CARBONDALE		GRAY SHALE	11.0	200.0	
369.0	CARBONDALE	BANKSTON FORK	LIMESTONE	5.0	211.0	
364.0	CARBONDALE		GRAY SHALE	8.5	216.0	
355.5	CARBONDALE	BRERETON	LIMESTONE	4.3	224.5	CORE NO. 1 276-282
351.2	CARBONDALE	HERRIN	COAL	4.7	228.8	
346.5	CARBONDALE		GRAY SHALE	33.0	233.5	
313.5	CARBONDALE	ST. DAVID	LIMESTONE	7.5	266.5	
306.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	274.0	
304.5	CARBONDALE	SPRINGFIELD	COAL	5.2	275.5	
299.3	CARBONDALE		CLAYSTONE & SHALE	0.6	280.7	
298.7	CARBONDALE		CORE LOSS	0.8	281.3	
298.0	CARBONDALE		SHALE	13.0	282.0	

MAPID: 10721148000C VERSION: 1 PROJECT: EIA-DOE
COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 1 QUARTERS/FOOTAGES: 192' N line, 1940' W line
QUADRANGLE: BROADWELL LONGITUDE: -89.496177 GEOLOGIST: PRUSSEN
CONFIDENTIAL: N LATITUDE: 40.048524 DATE COLLECTED: 6 / 30 / 1977
SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL WELL TYPE: Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
398.0	CARBONDALE	HERRIN	COAL	4.5	192.0
339.7	CARBONDALE	SPRINGFIELD	COAL	6.3	250.3

MAPID: 10721148000C VERSION: 2 PROJECT: ISGS88
COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 1 QUARTERS/FOOTAGES: 192' N line, 1940' W line
QUADRANGLE: BROADWELL LONGITUDE: -89.496177 GEOLOGIST: SROKA
CONFIDENTIAL: N LATITUDE: 40.048524 DATE COLLECTED: 6 / 30 / 1977
SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL WELL TYPE: Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
590.0			CLAY	171.0	0.0
419.0	CARBONDALE		GRAY SHALE	2.0	171.0
417.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	173.0
415.0	CARBONDALE		GRAY SHALE	18.0	175.0
397.0	CARBONDALE	HERRIN	COAL	3.5	193.0
393.5	CARBONDALE		GRAY SHALE	53.0	196.5
340.5	CARBONDALE	TURNER MINE	BLACK SHALE	0.8	249.5
339.7	CARBONDALE	SPRINGFIELD	COAL	6.3	250.3
333.4	CARBONDALE		CLAYSTONE & SHALE	2.5	256.6
331.0	CARBONDALE		GRAY SHALE	21.0	259.0

MAPID: 10722026000C VERSION: 1

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 1 QUARTERS/FOOTAGES: 50' S line, 50' E line
 QUADRANGLE: BROADWELL LONGITUDE: -89.484344 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 40.034879 DATE COLLECTED: 4 / 24 / 1977
 SURFACE ELEVATION (FT.): 604.0 LOGGED (FT.): 293.0 LOG TYPE: Drillers Log
 SOURCE: TURRIS COAL CO 84-1-16 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
604.0	PLEISTOCENE		CLAY	26.0	0.0	
578.0	PLEISTOCENE		SAND & GRAVEL	2.0	26.0	
576.0	PLEISTOCENE		CLAY	86.0	28.0	
490.0	MODESTO		GRAY SHALE	22.5	114.0	
467.5	MODESTO		LIMESTONE	1.0	136.5	
466.5	MODESTO		GRAY SHALE	4.5	137.5	
462.0	MODESTO		LIMESTONE	8.5	142.0	
453.5	MODESTO		BLACK SHALE	1.0	150.5	
452.5	MODESTO		SHALE	11.5	151.5	RED
441.0	MODESTO	PIASA	LIMESTONE	2.0	163.0	
439.0			GRAY SHALE	10.0	165.0	
429.0	CARBONDALE		SHALE	12.0	175.0	RED
417.0	CARBONDALE		GRAY SHALE	11.0	187.0	
406.0	CARBONDALE		SANDY LIMESTONE	9.0	198.0	
397.0	CARBONDALE		SANDY SHALE	7.0	207.0	
390.0	CARBONDALE	BRERETON	LIMESTONE	5.0	214.0	
385.0	CARBONDALE	ANNA	SHALE	0.5	219.0	DARK GRAY
384.5	CARBONDALE	HERRIN	COAL	5.3	219.5	
379.2	CARBONDALE		GRAY SHALE	4.2	224.8	
375.0	CARBONDALE		SANDY LIMESTONE	3.0	229.0	
372.0	CARBONDALE		SANDY SHALE	15.0	232.0	
357.0	CARBONDALE	CANTON	GRAY SHALE	24.0	247.0	
333.0	CARBONDALE		GRAY SHALE	2.0	271.0	DARK
331.0	CARBONDALE	ST. DAVID	LIMESTONE	1.9	273.0	
329.1	CARBONDALE	TURNER MINE	BLACK SHALE	1.9	274.9	
327.2	CARBONDALE	SPRINGFIELD	COAL	6.0	276.8	
321.2	CARBONDALE		CLAYSTONE	8.8	282.8	
312.4	CARBONDALE		SILTY SHALE	1.4	291.6	

MAPID: 10720751000C VERSION: 1

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 2 QUARTERS/FOOTAGES: 51' S line, 57' E line
 QUADRANGLE: MIDDLETOWN LONGITUDE: -89.503176 GEOLOGIST: C TREWORY
 CONFIDENTIAL: N LATITUDE: 40.034726 DATE COLLECTED: 12 / 11 / 1975
 SURFACE ELEVATION (FT.): 603.0 LOGGED (FT.): 273.0 LOG TYPE: Multiple log types
 SOURCE: HYDROCARBON SURVEY WELL TYPE: Coal Test
 COMMENT: CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
603.0			UNCONSOLIDATED	103.0	0.0	
500.0	MODESTO		UNCLASSIFIED	23.5	103.0	
476.5	MODESTO	WEST FRANKLIN	LIMESTONE	3.0	126.5	
473.5	MODESTO	WEST FRANKLIN	UNCLASSIFIED	3.5	129.5	
470.0	MODESTO	WEST FRANKLIN	LIMESTONE	3.5	133.0	
466.5	MODESTO		UNCLASSIFIED	3.5	136.5	
463.0	MODESTO		BLACK SHALE	3.0	140.0	
460.0	MODESTO		UNCLASSIFIED	8.0	143.0	
452.0	MODESTO		LIMESTONE	5.0	151.0	
447.0	MODESTO		UNCLASSIFIED	14.0	156.0	
433.0	MODESTO		BLACK SHALE	2.0	170.0	
431.0	MODESTO		UNCLASSIFIED	4.0	172.0	
427.0	MODESTO		BLACK SHALE	4.0	176.0	
423.0	CARBONDALE	DANVILLE	COAL	0.0	180.0	
423.0	CARBONDALE		UNCLASSIFIED	25.0	180.0	
398.0	CARBONDALE	BRERETON	LIMESTONE	3.0	205.0	CORE 207-217
395.0	CARBONDALE		SHALE	1.0	208.0	
394.0	CARBONDALE	HERRIN	COAL	4.4	209.0	
389.6	CARBONDALE		UNDERCLAY	3.3	213.4	
386.3	CARBONDALE		UNCLASSIFIED	33.0	216.7	
353.3	CARBONDALE		SHALE	9.0	249.7	CORE 249.7-274.7, GREY
344.3	CARBONDALE		DARK SHALE	0.4	258.7	SHELL FRAGMENTS
343.9	CARBONDALE	ST. DAVID	LIMESTONE	1.0	259.1	
342.9	CARBONDALE		CLAYSTONE	1.4	260.1	BLACK
341.5	CARBONDALE		LIMESTONE	0.3	261.5	
341.2	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	261.8	
338.7	CARBONDALE	SPRINGFIELD	COAL	6.0	264.3	
332.7	CARBONDALE		UNDERCLAY	2.8	270.3	

MAPID: 10720759000C VERSION: 1 PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 2 QUARTERS/FOOTAGES: 202' N line, 2112' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.510728 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 40.048452 DATE COLLECTED: 11 / 13 / 1975

SURFACE ELEVATION (FT.): 594.0 LOGGED (FT.): 320.0 LOG TYPE: Gamma Ray Density

SOURCE: HYDROCARBON SURVEY WELL TYPE: Coal Test

COMMENT: 75-C-22

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
594.0			UNCONSOLIDATED	122.0	0.0	
472.0	MODESTO		UNCLASSIFIED	36.0	122.0	
436.0	MODESTO		BLACK SHALE	5.0	158.0	
431.0	CARBONDALE	DANVILLE	COAL	0.0	163.0	DANVILLE HORIZON
431.0	CARBONDALE		UNCLASSIFIED	24.5	163.0	
406.5	CARBONDALE	BRERETON	LIMESTONE	1.5	187.5	
405.0	CARBONDALE		SHALE	1.0	189.0	
404.0	CARBONDALE	HERRIN	COAL	3.0	190.0	
401.0	CARBONDALE		UNCLASSIFIED	52.0	193.0	
349.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	245.0	
347.0	CARBONDALE	SPRINGFIELD	COAL	5.3	247.0	
341.7	CARBONDALE		UNCLASSIFIED	6.8	252.3	
335.0	CARBONDALE	EXCELLO	BLACK SHALE	3.0	259.0	
332.0	CARBONDALE	HOUCHIN CREEK	COAL	0.0	262.0	HOACHIN COAL HORIZON NO COALS
332.0	CARBONDALE		UNCLASSIFIED	58.0	262.0	

MAPID: 10720846000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 2 QUARTERS/FOOTAGES: 1540' N line, 28' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.503198 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.044749 DATE COLLECTED: 7 / 26 / 1978

SURFACE ELEVATION (FT.): 596.0 LOGGED (FT.): 276.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.0	CARBONDALE	HERRIN	COAL	2.3	196.0	
340.4	CARBONDALE	SPRINGFIELD	COAL	5.5	255.6	

MAPID: 10720846000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 2 **QUARTERS/FOOTAGES:** 1540' N line, 28' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.503198 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.044749 **DATE COLLECTED:** 7 / 26 / 1978
SURFACE ELEVATION (FT.): 596.0 **LOGGED (FT.):** 276.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
596.0			CLAY	32.0	0.0	
564.0			CLAY, SAND & GRAVEL	94.0	32.0	
470.0	MODESTO		GRAY SHALE	11.0	126.0	
459.0	MODESTO	WEST FRANKLIN	LIMESTONE	3.5	137.0	
455.5	MODESTO		GRAY SHALE	16.5	140.5	
439.0	MODESTO		BLACK SHALE	1.5	157.0	DRILLERS LOG INDICATES RED SHALE
437.5	MODESTO		SHALE	6.0	158.5	
431.5	MODESTO		BLACK SHALE	2.5	164.5	DRILLERS LOG INDICATES RED SHALE
429.0	CARBONDALE		GRAY SHALE	24.0	167.0	
405.0	CARBONDALE	BRERETON	LIMESTONE	4.0	191.0	
401.0	CARBONDALE	HERRIN	COAL	3.0	195.0	
398.0	CARBONDALE		CLAYSTONE & SHALE	2.0	198.0	
396.0	CARBONDALE		GRAY SHALE	46.5	200.0	
349.5	CARBONDALE	ST. DAVID	LIMESTONE	4.0	246.5	
345.5	CARBONDALE	TURNER MINE	BLACK SHALE	4.8	250.5	CORE 253-263
340.7	CARBONDALE		LIMESTONE	0.4	255.3	PROBABLY A CONCRETION
340.4	CARBONDALE	SPRINGFIELD	COAL	5.5	255.6	
334.9	CARBONDALE		CLAYSTONE & SHALE	1.7	261.1	
333.2	CARBONDALE		CORE LOSS	0.2	262.8	
333.0	CARBONDALE		CLAYSTONE & SHALE	3.0	263.0	
330.0	CARBONDALE		LIMESTONE	1.0	266.0	
329.0	CARBONDALE		GRAY SHALE	9.0	267.0	

MAPID: 10720689000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 3 **QUARTERS/FOOTAGES:** 200' S line, 900' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.525123 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.035015 **DATE COLLECTED:** 7 / 2 / 1968
SURFACE ELEVATION (FT.): 605.0 **LOGGED (FT.):** 270.7 **LOG TYPE:** Multiple log types
SOURCE: CARTER OIL COMPANY **WELL TYPE:** Coal Test
COMMENT: DL & SCD; APPROX. LOC. FROM CONSOL. MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
349.4	CARBONDALE	SPRINGFIELD	COAL	5.6	255.6	

MAPID: 10720689000C VERSION: 2

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 3 QUARTERS/FOOTAGES: 200' S line, 900' E line
 QUADRANGLE: MIDDLETOWN LONGITUDE: -89.525123 GEOLOGIST: COATS
 CONFIDENTIAL: N LATITUDE: 40.035015 DATE COLLECTED: 7 / 2 / 1968
 SURFACE ELEVATION (FT.): 605.0 LOGGED (FT.): 270.7 LOG TYPE: Multiple log types
 SOURCE: CARTER OIL COMPANY WELL TYPE: Coal Test
 COMMENT: DL & SCD; APPROX. LOC. FROM CONSOL. MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.0			UNCONSOLIDATED	8.0	0.0	
597.0			CLAY	17.0	8.0	BLUE
580.0			SANDY CLAY	97.0	25.0	
483.0	MODESTO		LIMESTONE	1.5	122.0	GRAY
481.5	MODESTO		GRAY SHALE	1.5	123.5	DARK
480.0	MODESTO		GRAY SHALE	2.0	125.0	
478.0	MODESTO		VARRIGATED SHALE	10.0	127.0	
468.0	MODESTO		SANDY SHALE	4.0	137.0	
464.0	MODESTO		LIMESTONE	1.5	141.0	GRAY
462.5	MODESTO		SILTY SHALE	14.5	142.5	
448.0	MODESTO		VARRIGATED SHALE	16.0	157.0	
432.0	MODESTO		LIMESTONE	1.0	173.0	GRAY
431.0	MODESTO		SILTY SHALE	8.0	174.0	W/ SS
423.0			SANDSTONE	5.0	182.0	
418.0	CARBONDALE		SANDY SHALE	12.0	187.0	W/ SS
406.0	CARBONDALE	HERRIN	COAL	1.5	199.0	
404.5	CARBONDALE		SILTY, SANDY SHALE	11.5	200.5	
393.0	CARBONDALE		SANDSTONE	3.0	212.0	
390.0	CARBONDALE		SILTY SHALE	38.3	215.0	W/SID & SS; THICK ADJ TO MATCH CORE DEPTH
351.7	CARBONDALE	ST. DAVID	ARGILLACEOUS LIMESTONE	0.3	253.3	START CORE 253.3 - 270.7'
351.4	CARBONDALE	TURNER MINE	FOSSILIFEROUS BLACK SHALE	1.5	253.6	
349.9	CARBONDALE	TURNER MINE	FOSSILIFEROUS LIMESTONE	0.5	255.1	GRAY, CONCRETION?
349.4	CARBONDALE	SPRINGFIELD	COAL	5.6	255.6	
343.8	CARBONDALE		SILTY CLAYSTONE	5.8	261.2	GRAY, W/ CALCAREOUS NODULES
338.0	CARBONDALE		ARGILLACEOUS LIMESTONE	1.9	267.0	GRAY, W/ TAN CAST
336.1	CARBONDALE		SANDSTONE	1.3	268.9	GRAY, W/ CALCAREOUS NODULES
334.8	CARBONDALE		CLAYSTONE	0.5	270.2	GRAY

MAPID: 10720893000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 3 **QUARTERS/FOOTAGES:** 33' N line, 2350' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.532281 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.048826 **DATE COLLECTED:** 7 / 30 / 1979
SURFACE ELEVATION (FT.): 590.0 **LOGGED (FT.):** 245.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
456.5	CARBONDALE	DANVILLE	COAL	0.5	133.5
367.3	CARBONDALE	SPRINGFIELD	COAL	5.9	222.7

MAPID: 10720893000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 3 **QUARTERS/FOOTAGES:** 33' N line, 2350' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.532281 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.048826 **DATE COLLECTED:** 7 / 30 / 1979
SURFACE ELEVATION (FT.): 590.0 **LOGGED (FT.):** 245.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
590.0			CLAY	82.0	0.0
508.0			SAND & GRAVEL	2.0	82.0
506.0			CLAY	8.0	84.0
498.0	MODESTO		SHALE	3.0	92.0
495.0	MODESTO	WEST FRANKLIN	LIMESTONE	4.0	95.0
491.0	MODESTO		GRAY SHALE	10.0	99.0
481.0	MODESTO		LIMESTONE	1.0	109.0
480.0	MODESTO		SHALE	19.0	110.0
461.0	MODESTO		BLACK SHALE	2.0	129.0
459.0	CARBONDALE	DANVILLE	COAL	1.7	131.0
457.3	CARBONDALE		GRAY SHALE	21.8	132.7
435.5	CARBONDALE	BRERETON	LIMESTONE	7.0	154.5
428.5	CARBONDALE	HERRIN	COAL	0.0	161.5
428.5	CARBONDALE		SHALE	56.5	161.5
372.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	218.0
371.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.7	219.0
367.3	CARBONDALE	SPRINGFIELD	COAL	5.9	222.7
361.4	CARBONDALE		SHALE	1.2	228.6
360.2	CARBONDALE		CORE LOSS	0.2	229.8
360.0	CARBONDALE		SHALE	15.0	230.0

MAPID: 10700423000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 4

QUARTERS/FOOTAGES: 2640' S line, 450' E line

QUADRANGLE: MIDDLETOWN

LONGITUDE: -89.542278

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.041667

DATE COLLECTED: 3 / 30 / 1967

SURFACE ELEVATION (FT.): 610.0

LOGGED (FT.): 247.8

LOG TYPE: Multiple log types

SOURCE: ATLANTIC RICHFIELD

WELL TYPE: Coal Test

COMMENT: DRILLER'S LOG & CORE DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
431.0			COAL	3.0	179.0	
369.2	CARBONDALE	SPRINGFIELD	COAL	5.0	240.8	

MAPID: 10700423000C VERSION: 2

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 4 QUARTERS/FOOTAGES: 2640' S line, 450' E line
 QUADRANGLE: MIDDLETOWN LONGITUDE: -89.542278 GEOLOGIST: C TREWORGY
 CONFIDENTIAL: N LATITUDE: 40.041667 DATE COLLECTED: 3 / 30 / 1967
 SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 247.8 LOG TYPE: Multiple log types
 SOURCE: ATLANTIC RICHFIELD WELL TYPE: Coal Test
 COMMENT: DRILLER'S LOG & CORE DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0			CLAY	30.0	0.0	
580.0			CLAY & GRAVEL	15.0	30.0	
565.0			CLAY	18.0	45.0	
547.0	MODESTO		LIMESTONE	0.5	63.0	
546.5	MODESTO		SHALE WITH LIMESTONE	17.5	63.5	
529.0	MODESTO		SHALE	16.0	81.0	
513.0	MODESTO	WEST FRANKLIN	LIMESTONE	3.0	97.0	
510.0	MODESTO	WEST FRANKLIN	SHALE	1.0	100.0	
509.0	MODESTO	WEST FRANKLIN	LIMESTONE	9.0	101.0	
500.0	MODESTO		SHALE	10.0	110.0	
490.0	MODESTO		LIMESTONE	2.0	120.0	
488.0	MODESTO		SHALE WITH LIMESTONE	37.0	122.0	
451.0	MODESTO		SANDSTONE	13.0	159.0	
438.0	MODESTO		SHALE	7.0	172.0	
431.0	CARBONDALE	DANVILLE	COAL	3.0	179.0	
428.0	CARBONDALE		SHALE WITH LIMESTONE	9.0	182.0	
419.0	CARBONDALE		SANDSTONE WITH COAL	6.0	191.0	
413.0	CARBONDALE	HERRIN	COAL WITH SHALE	6.0	197.0	COAL, SHALE, & LIMESTONE
407.0	CARBONDALE		SHALE	27.0	203.0	
380.0	CARBONDALE		SHALE	7.3	230.0	CORE 230 TO 248'
372.7	CARBONDALE	ST. DAVID	ARGILLACEOUS LIMESTONE	0.9	237.3	
371.7	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	238.3	
369.2	CARBONDALE	SPRINGFIELD	COAL	5.0	240.8	CLAY VEIN IN UPPER 13"
364.2	CARBONDALE		UNDERCLAY	1.9	245.8	

MAPID: 10720894000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 4

QUARTERS/FOOTAGES: 324' N line, 2545' E line

QUADRANGLE: MIDDLETOWN

LONGITUDE: -89.549855

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.047954

DATE COLLECTED: 6 / 27 / 1979

SURFACE ELEVATION (FT.): 605.0

LOGGED (FT.): 260.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
425.5	CARBONDALE	HERRIN	COAL	1.5	179.5	
368.8	CARBONDALE	SPRINGFIELD	COAL	6.3	236.2	

MAPID: 10720894000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 4 QUARTERS/FOOTAGES: 324' N line, 2545' E line
 QUADRANGLE: MIDDLETOWN LONGITUDE: -89.549855 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.047954 DATE COLLECTED: 6 / 27 / 1979
 SURFACE ELEVATION (FT.): 605.0 LOGGED (FT.): 260.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.0			CLAY	20.0	0.0	
585.0			SAND/CLAY	20.0	20.0	
565.0			SAND & GRAVEL	19.5	40.0	COARSE TO FINE
545.5			CLAY	20.5	59.5	
525.0			GRAY SHALE	6.0	80.0	
519.0	MODESTO	WEST FRANKLIN	LIMESTONE	2.0	86.0	
517.0	MODESTO	WEST FRANKLIN	GRAY SHALE	3.0	88.0	
514.0	MODESTO	WEST FRANKLIN	LIMESTONE	8.5	91.0	
505.5	MODESTO		BLACK SHALE	2.5	99.5	DRILLERS LOG INDICATES GRAY SHALE
503.0	MODESTO		GRAY SHALE	10.5	102.0	
492.5	MODESTO		SANDSTONE	3.5	112.5	
489.0	MODESTO		GRAY SHALE	16.0	116.0	
473.0	MODESTO		SHALE	3.5	132.0	SMALL GAMMA KICK
469.5	MODESTO		SHALE	8.0	135.5	
461.5	MODESTO		BLACK SHALE	4.0	143.5	
457.5	CARBONDALE	DANVILLE	COAL	0.5	147.5	
457.0	CARBONDALE		GRAY SHALE	8.5	148.0	
448.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	156.5	
446.0	CARBONDALE		GRAY SHALE	6.5	159.0	
439.5	CARBONDALE		SHALE	3.0	165.5	WITH SS
436.5	CARBONDALE	ANVIL ROCK	SANDSTONE	9.0	168.5	
427.5	CARBONDALE	ANNA	BLACK SHALE	2.3	177.5	
425.2	CARBONDALE	HERRIN	COAL	1.7	179.8	
423.5	CARBONDALE		SHALE	52.5	181.5	
371.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	234.0	
370.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.8	234.5	CORE NO. 1 236-243.5
368.7	CARBONDALE	SPRINGFIELD	COAL	5.3	236.3	
363.5	CARBONDALE	SPRINGFIELD	COAL	0.9	241.5	PARTIAL HORSEBACK
362.6	CARBONDALE		GRAY SHALE	1.1	242.4	
361.5	CARBONDALE		GRAY SHALE	7.5	243.5	LIMESTONE NODULES
354.0	CARBONDALE		GRAY SHALE	9.0	251.0	

MAPID: 10720760000C VERSION: 1

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 8 QUARTERS/FOOTAGES: 1050' N line, 32' E line
 QUADRANGLE: MIDDLETOWN LONGITUDE: -89.559906 GEOLOGIST: C TREWORY
 CONFIDENTIAL: N LATITUDE: 40.031272 DATE COLLECTED: 10 / 9 / 1975
 SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 342.0 LOG TYPE: Gamma Ray Density
 SOURCE: HYDROCARBON SURVEY WELL TYPE: Coal Test
 COMMENT: NO DENSITY LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0			UNCONSOLIDATED	39.0	0.0	
556.0	MODESTO		UNCLASSIFIED	38.0	39.0	
518.0	MODESTO		LIMESTONE	8.0	77.0	
510.0	MODESTO		BLACK SHALE	3.0	85.0	
507.0	MODESTO		UNCLASSIFIED	31.0	88.0	
476.0	MODESTO		BLACK SHALE	3.0	119.0	
473.0	CARBONDALE	DANVILLE	COAL	0.0	122.0	DANVILLE HORIZON
473.0	CARBONDALE		UNCLASSIFIED	28.0	122.0	
445.0	CARBONDALE	HERRIN	COAL	4.3	150.0	
440.7	CARBONDALE		UNCLASSIFIED	54.7	154.3	
386.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	209.0	
383.5	CARBONDALE	SPRINGFIELD	COAL	6.5	211.5	
377.0	CARBONDALE		UNCLASSIFIED	8.0	218.0	
369.0	CARBONDALE	EXCELLO	BLACK SHALE	4.0	226.0	
365.0	CARBONDALE	HOUCHIN CREEK	COAL	0.0	230.0	HOACHIN CREEK HORIZON
365.0	CARBONDALE		UNCLASSIFIED	49.0	230.0	
316.0	CARBONDALE	SURVANT	COAL	1.5	279.0	
314.5	CARBONDALE		UNCLASSIFIED	38.5	280.5	
276.0	CARBONDALE	MECCA QUARRY	BLACK SHALE	3.0	319.0	
273.0	CARBONDALE	COLCHESTER	COAL	0.0	322.0	COLCHESTER HORIZON
273.0	CARBONDALE		UNCLASSIFIED	20.0	322.0	

MAPID: 10720895000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 8 QUARTERS/FOOTAGES: 2610' N line, 60' W line
 QUADRANGLE: MIDDLETOWN LONGITUDE: -89.578939 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 40.026892 DATE COLLECTED: 8 / 3 / 1979
 SURFACE ELEVATION (FT.): 612.0 LOGGED (FT.): 270.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
425.5	CARBONDALE	HERRIN	COAL	3.5	186.5	
361.4	CARBONDALE	SPRINGFIELD	COAL	6.1	250.6	

MAPID: 10720895000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 8 **QUARTERS/FOOTAGES:** 2610' N line, 60' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.578939 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.026892 **DATE COLLECTED:** 8 / 3 / 1979
SURFACE ELEVATION (FT.): 612.0 **LOGGED (FT.):** 270.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0			SOIL	4.0	0.0	
608.0			CLAY	56.0	4.0	
552.0	MODESTO	CHAPEL	COAL	1.5	60.0	
550.5	MODESTO		GRAY SHALE	48.0	61.5	
502.5	MODESTO	WEST FRANKLIN	LIMESTONE	1.0	109.5	
501.5	MODESTO	WEST FRANKLIN	GRAY SHALE	3.5	110.5	
498.0	MODESTO	WEST FRANKLIN	LIMESTONE	6.8	114.0	
491.2	MODESTO		BLACK SHALE	2.5	120.8	GAMMA KICK
488.7	MODESTO		GRAY SHALE	6.7	123.3	
482.0	MODESTO	PIASA	LIMESTONE	3.0	130.0	CORRELATION UNCERTAIN
479.0			SHALE	33.0	133.0	TOP OF CARBONDALE IN THIS INTERVAL
446.0	CARBONDALE	ANVIL ROCK	SANDSTONE	8.0	166.0	
438.0	CARBONDALE		GRAY SHALE	13.0	174.0	
425.0	CARBONDALE	HERRIN	COAL	2.5	187.0	
422.5	CARBONDALE		GRAY SHALE	58.5	189.5	
364.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.6	248.0	CORE 250.62-256.69
361.4	CARBONDALE	SPRINGFIELD	COAL	6.1	250.6	
355.3	CARBONDALE		CLAYSTONE & SHALE	0.5	256.7	
354.8	CARBONDALE		CORE LOSS	0.3	257.2	
354.5	CARBONDALE		GRAY SHALE	10.5	257.5	
344.0	CARBONDALE		BLACK SHALE	2.0	268.0	

MAPID: 10720896000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 9 **QUARTERS/FOOTAGES:** 650' N line, 30' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.559702 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.032378 **DATE COLLECTED:** 8 / 6 / 1979
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 245.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
440.5	CARBONDALE	HERRIN	COAL	3.0	159.5	
380.0	CARBONDALE	SPRINGFIELD	COAL	6.1	220.0	

MAPID: 10720896000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 9 QUARTERS/FOOTAGES: 650' N line, 30' W line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.559702

GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.032378

DATE COLLECTED: 8 / 6 / 1979

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 245.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0			SOIL	3.0	0.0	
597.0			CLAY	18.0	3.0	
579.0			SAND & GRAVEL	5.0	21.0	
574.0			CLAY	14.0	26.0	
560.0	MODESTO		GRAY SHALE	37.0	40.0	
523.0	MODESTO	WEST FRANKLIN	LIMESTONE	2.0	77.0	
521.0	MODESTO	WEST FRANKLIN	GRAY SHALE	2.0	79.0	
519.0	MODESTO	WEST FRANKLIN	LIMESTONE	7.0	81.0	
512.0	MODESTO		BLACK SHALE	2.0	88.0	
510.0	MODESTO		GRAY SHALE	7.5	90.0	
502.5	MODESTO		LIMESTONE	2.5	97.5	
500.0	MODESTO		SHALE	38.0	100.0	
462.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	138.0	
460.5	CARBONDALE	ANVIL ROCK	SANDSTONE/SHALE	18.5	139.5	
442.0	CARBONDALE		GRAY SHALE	1.5	158.0	
440.5	CARBONDALE	HERRIN	COAL	3.0	159.5	
437.5	CARBONDALE		GRAY SHALE	2.5	162.5	
435.0	CARBONDALE		DARK SHALE & SANDSTONE	7.0	165.0	SANDSTONE LENSES
428.0	CARBONDALE		SHALE	9.0	172.0	
419.0	CARBONDALE		DARK SHALE & SANDSTONE	12.0	181.0	SANDSTONE LENSES
407.0	CARBONDALE		GRAY SHALE	5.0	193.0	
402.0	CARBONDALE		SANDSTONE	8.0	198.0	
394.0	CARBONDALE		DARK SHALE & SANDSTONE	10.0	206.0	SANDSTONE LENSES
384.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	216.0	
382.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	217.5	
380.0	CARBONDALE	SPRINGFIELD	COAL	6.1	220.0	CORE 220-227
373.9	CARBONDALE		CLAYSTONE & SHALE	0.1	226.1	
373.8	CARBONDALE		GRAY SHALE	0.7	226.2	
373.1	CARBONDALE		CORE LOSS	0.1	226.9	
373.0	CARBONDALE		GRAY SHALE	3.0	227.0	
370.0	CARBONDALE		LIMESTONE	1.5	230.0	
368.5	CARBONDALE		GRAY SHALE	6.5	231.5	
362.0	CARBONDALE		LIMESTONE	1.0	238.0	
361.0	CARBONDALE		GRAY SHALE	6.0	239.0	

MAPID: 10721149000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 9

QUARTERS/FOOTAGES: 594' N line, 321' E line

QUADRANGLE: MIDDLETOWN

LONGITUDE: -89.541748

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.03275

DATE COLLECTED: 6 / 29 / 1977

SURFACE ELEVATION (FT.): 598.0

LOGGED (FT.): 280.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
409.0	CARBONDALE	HERRIN	COAL	3.0	189.0	
349.7	CARBONDALE	SPRINGFIELD	COAL	5.6	248.3	

MAPID: 10721149000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 9 **QUARTERS/FOOTAGES:** 594' N line, 321' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.541748 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.03275 **DATE COLLECTED:** 6 / 29 / 1977
SURFACE ELEVATION (FT.): 598.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
598.0			CLAY	17.0	0.0
581.0			SAND & GRAVEL	29.0	17.0
552.0			CLAY	13.0	46.0
539.0	MODESTO		BLACK SHALE	3.5	59.0
535.5	MODESTO	CHAPEL	COAL	1.5	62.5
534.0	MODESTO		GRAY SHALE	44.0	64.0
490.0	MODESTO		LIMESTONE	2.0	108.0
488.0	MODESTO		GRAY SHALE	1.0	110.0
487.0	MODESTO		LIMESTONE	8.0	111.0
479.0	MODESTO		BLACK SHALE	4.0	119.0
475.0	MODESTO		SHALE	7.0	123.0
468.0	MODESTO		LIMESTONE	3.0	130.0
465.0	MODESTO		SHALE	25.0	133.0
440.0	MODESTO		BLACK SHALE	2.5	158.0
437.5	CARBONDALE	DANVILLE	COAL	0.0	160.5
437.5	CARBONDALE		GRAY SHALE	9.0	160.5
428.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	169.5
426.5	CARBONDALE		SANDY SHALE	2.5	171.5
424.0	CARBONDALE	ANVIL ROCK	SHALY SANDSTONE	8.5	174.0
415.5	CARBONDALE	BRERETON	LIMESTONE	8.0	182.5
407.5	CARBONDALE	HERRIN	COAL	4.5	190.5
403.0	CARBONDALE		GRAY SHALE	50.0	195.0
353.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.3	245.0
349.7	CARBONDALE	SPRINGFIELD	COAL	5.6	248.3
344.1	CARBONDALE		CLAYSTONE & SHALE	2.4	253.9
341.7	CARBONDALE		CORE LOSS	0.2	256.3
341.5	CARBONDALE		GRAY SHALE	13.5	256.5
328.0	CARBONDALE		BLACK SHALE	1.5	270.0
326.5	CARBONDALE		SHALE	8.5	271.5

MAPID: 10720752000C VERSION: 1 PROJECT: AVAIL
COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 10 QUARTERS/FOOTAGES: 39' S line, 30' W line of NE
QUADRANGLE: MIDDLETOWN LONGITUDE: -89.531058 GEOLOGIST: C TREWORY
CONFIDENTIAL: N LATITUDE: 40.027303 DATE COLLECTED: 0 / 0 / 1975
SURFACE ELEVATION (FT.): 608.0 LOGGED (FT.): 263.0 LOG TYPE: Multiple log types
SOURCE: HYDROCARBON SURVEY WELL TYPE: Coal Test
COMMENT: CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
608.0			UNCONSOLIDATED	104.0	0.0	
504.0	MODESTO		UNCLASSIFIED	15.0	104.0	
489.0	MODESTO	WEST FRANKLIN	LIMESTONE	10.0	119.0	
479.0	MODESTO		BLACK SHALE	3.0	129.0	
476.0	MODESTO		UNCLASSIFIED	33.0	132.0	
443.0	MODESTO		BLACK SHALE	3.5	165.0	
439.5	CARBONDALE	DANVILLE	COAL	0.0	168.5	DANVILLE HORIZON
439.5	CARBONDALE		UNCLASSIFIED	28.5	168.5	
411.0	CARBONDALE	HERRIN	COAL	5.0	197.0	
406.0	CARBONDALE		UNCLASSIFIED	38.0	202.0	CORE 240-263
368.0	CARBONDALE		SHALE	6.7	240.0	
361.3	CARBONDALE		BLACK SHALE	0.8	246.7	
360.5	CARBONDALE	ST. DAVID	LIMESTONE	2.5	247.5	
358.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.4	250.0	
354.6	CARBONDALE	SPRINGFIELD	COAL	6.4	253.4	
348.2	CARBONDALE		UNDERCLAY	3.2	259.8	

MAPID: 10720897000C VERSION: 1 PROJECT: EIA-DOE
COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 10 QUARTERS/FOOTAGES: 48' S line, 3' E line
QUADRANGLE: MIDDLETOWN LONGITUDE: -89.521625 GEOLOGIST: PRUSSEN
CONFIDENTIAL: N LATITUDE: 40.020152 DATE COLLECTED: 8 / 8 / 1979
SURFACE ELEVATION (FT.): 602.0 LOGGED (FT.): 260.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL WELL TYPE: Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.0	CARBONDALE	HERRIN	COAL	3.0	188.0	
362.2	CARBONDALE	SPRINGFIELD	COAL	5.8	239.8	

MAPID: 10720897000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 10 **QUARTERS/FOOTAGES:** 48' S line, 3' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.521625 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.020152 **DATE COLLECTED:** 8 / 8 / 1979
SURFACE ELEVATION (FT.): 602.0 **LOGGED (FT.):** 260.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
602.0			SOIL	4.0	0.0	
598.0			CLAY	8.0	4.0	
590.0			SANDY CLAY	124.0	12.0	
466.0			SAND & GRAVEL	4.0	136.0	
462.0	MODESTO		DARK SHALE & LIMESTONE	3.0	140.0	
459.0			SHALE	24.5	143.0	TOP OF CARBONDALE IN THIS INTERVAL
434.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	167.5	
432.0	CARBONDALE		GRAY SHALE	16.5	170.0	LIMESTONE NODULES
415.5	CARBONDALE	HERRIN	COAL	2.5	186.5	
413.0	CARBONDALE		GRAY SHALE	43.5	189.0	
369.5	CARBONDALE	ST. DAVID	LIMESTONE	5.0	232.5	
364.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.3	237.5	CORE 239.5-248.5
362.2	CARBONDALE	SPRINGFIELD	COAL	5.8	239.8	
356.4	CARBONDALE		CLAYSTONE & SHALE	1.3	245.6	
355.0	CARBONDALE		CORE LOSS	1.6	247.0	
353.5	CARBONDALE		GRAY SHALE	11.5	248.5	

MAPID: 10720847000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 12 **QUARTERS/FOOTAGES:** 15' N line, 28' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.502867 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.034546 **DATE COLLECTED:** 7 / 25 / 1978
SURFACE ELEVATION (FT.): 603.0 **LOGGED (FT.):** 292.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
393.0	CARBONDALE	HERRIN	COAL	1.0	210.0	
390.5	CARBONDALE	HERRIN	COAL	3.5	212.5	
336.8	CARBONDALE	SPRINGFIELD	COAL	6.1	266.2	

MAPID: 10720847000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 12 **QUARTERS/FOOTAGES:** 15' N line, 28' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.502867 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.034546 **DATE COLLECTED:** 7 / 25 / 1978
SURFACE ELEVATION (FT.): 603.0 **LOGGED (FT.):** 292.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
603.0			CLAY	10.0	0.0	
593.0			CLAY, SAND & GRAVEL	20.0	10.0	
573.0			SAND & GRAVEL	17.5	30.0	
555.5			CLAY, SAND & GRAVEL	36.5	47.5	
519.0	MODESTO		SHALE	43.0	84.0	
476.0	MODESTO	WEST FRANKLIN	LIMESTONE	2.5	127.0	
473.5	MODESTO		GRAY SHALE	3.0	129.5	
470.5	MODESTO		LIMESTONE	7.0	132.5	
463.5	MODESTO		BLACK SHALE	3.5	139.5	DANVILLE COAL HORIZON AT BASE OF UNIT
460.0	CARBONDALE		SHALE	8.0	143.0	
452.0	CARBONDALE		DARK SHALE & LIMESTONE	5.5	151.0	
446.5	CARBONDALE		GRAY SHALE	31.5	156.5	GAMMA KICKS AT 171-173 AND 178-181
415.0	CARBONDALE		CALCAREOUS SHALE	4.0	188.0	
411.0	CARBONDALE		SANDY SHALE	16.5	192.0	
394.5	CARBONDALE	ANNA	BLACK SHALE	2.0	208.5	
392.5	CARBONDALE	HERRIN	COAL	4.0	210.5	
388.5	CARBONDALE		GRAY SHALE	45.5	214.5	SANDY BETWEEN 219.5- 231
343.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	260.0	
341.5	CARBONDALE	TURNER MINE	BLACK SHALE	4.7	261.5	CORE 262-272.5
336.8	CARBONDALE	SPRINGFIELD	COAL	6.1	266.2	
330.8	CARBONDALE		CORE LOSS	0.3	272.2	
330.5	CARBONDALE		CLAYSTONE & SHALE	13.5	272.5	
317.0	CARBONDALE		SANDY SHALE	6.0	286.0	

MAPID: 10720848000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 12 **QUARTERS/FOOTAGES:** 2589' N line, 87' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.484446 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.027596 **DATE COLLECTED:** 7 / 24 / 1978
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
340.7	CARBONDALE	SPRINGFIELD	COAL	6.2	254.3	

MAPID: 10720848000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 12 QUARTERS/FOOTAGES: 2589' N line, 87' E line
 QUADRANGLE: BROADWELL LONGITUDE: -89.484446 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.027596 DATE COLLECTED: 7 / 24 / 1978
 SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0			CLAY	23.0	0.0	
572.0			SAND & GRAVEL	4.0	23.0	
568.0			CLAY	19.0	27.0	
549.0			CLAY, SAND & GRAVEL	41.0	46.0	
508.0	MODESTO		SHALE	40.0	87.0	
468.0	MODESTO	WEST FRANKLIN	LIMESTONE	7.0	127.0	
461.0	MODESTO		BLACK SHALE	3.0	134.0	
458.0	MODESTO		SHALE	12.0	137.0	
446.0	MODESTO	PIASA	LIMESTONE	3.5	149.0	CORRELATION UNCERTAIN
442.5	MODESTO		SHALE	15.5	152.5	
427.0	MODESTO		SHALE	8.5	168.0	GAMMA KICK, TOP OF RED SH.
418.5	MODESTO		BLACK SHALE	3.5	176.5	DRILLERS LOG LISTS BKSH AND COAL
415.0	CARBONDALE	DANVILLE	COAL	0.0	180.0	DANVILLE #7 COAL NOT PRESENT
415.0	CARBONDALE		SHALE	11.0	180.0	
404.0	CARBONDALE	ANVIL ROCK	SANDSTONE	10.5	191.0	
393.5	CARBONDALE		SHALE	1.5	201.5	
392.0	CARBONDALE	ANNA	BLACK SHALE	2.0	203.0	
390.0	CARBONDALE	HERRIN	COAL	3.0	205.0	
387.0	CARBONDALE		SHALE	4.0	208.0	
383.0	CARBONDALE		LIMESTONE	2.0	212.0	
381.0	CARBONDALE		SHALE	32.0	214.0	
349.0	CARBONDALE		BLACK SHALE	1.9	246.0	CORE NO.1 247-252
347.1	CARBONDALE	ST. DAVID	LIMESTONE	2.5	247.9	
344.6	CARBONDALE	TURNER MINE	BLACK SHALE	1.4	250.4	
343.3	CARBONDALE	TURNER MINE	CORE LOSS	0.8	251.7	
342.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.8	252.5	CORE NO.2 252.5- 261.50
340.7	CARBONDALE	SPRINGFIELD	COAL	6.2	254.3	
334.6	CARBONDALE		CLAYSTONE & SHALE	0.1	260.4	
334.5	CARBONDALE		CORE LOSS	1.0	260.5	
333.5	CARBONDALE		CLAYSTONE	3.5	261.5	
315.0	CARBONDALE		SHALE	15.0	280.0	W/ LS STREAKS

MAPID: 10721150000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 12

QUARTERS/FOOTAGES: 280' S line, 1210' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.498455

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.020952

DATE COLLECTED: 6 / 29 / 1977

SURFACE ELEVATION (FT.): 605.0

LOGGED (FT.): 305.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
376.5	CARBONDALE	HERRIN	COAL	4.0	228.5	
323.1	CARBONDALE	SPRINGFIELD	COAL	6.5	281.9	

MAPID: 10721150000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 12 **QUARTERS/FOOTAGES:** 280' S line, 1210' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.498455 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.020952 **DATE COLLECTED:** 6 / 29 / 1977
SURFACE ELEVATION (FT.): 605.0 **LOGGED (FT.):** 305.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
605.0			CLAY	20.0	0.0
585.0			SAND & GRAVEL	21.0	20.0
564.0			CLAY, SAND & GRAVEL	25.0	41.0
539.0			CLAY	43.0	66.0
496.0	MODESTO		GRAY SHALE	38.5	109.0
457.5	MODESTO	WEST FRANKLIN	LIMESTONE	9.0	147.5
448.5	MODESTO		BLACK SHALE	3.0	156.5
445.5	MODESTO		SHALE	38.5	159.5
407.0	MODESTO		BLACK SHALE	3.0	198.0
404.0	CARBONDALE		GRAY SHALE	8.0	201.0
396.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	209.0
394.5	CARBONDALE		SHALE	3.5	210.5
391.0	CARBONDALE	ANVIL ROCK	SANDSTONE/SHALE	6.0	214.0
385.0	CARBONDALE		GRAY SHALE	5.5	220.0
379.5	CARBONDALE	ANNA	BLACK SHALE	2.5	225.5
377.0	CARBONDALE	HERRIN	COAL	4.0	228.0
373.0	CARBONDALE		GRAY SHALE	4.5	232.0
368.5	CARBONDALE		LIMESTONE	1.5	236.5
367.0	CARBONDALE		GRAY SHALE	37.5	238.0
329.5	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	2.0	275.5
327.5	CARBONDALE	TURNER MINE	BLACK SHALE	4.5	277.5
323.1	CARBONDALE	SPRINGFIELD	COAL	6.5	281.9
316.5	CARBONDALE		CLAYSTONE & SHALE	2.1	288.5
314.5	CARBONDALE		GRAY SHALE	14.5	290.5

MAPID: 10720761000C VERSION: 1

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 13 QUARTERS/FOOTAGES: 144' N line, 1584' E line
 QUADRANGLE: BROADWELL LONGITUDE: -89.489786 GEOLOGIST: C TREWORGY
 CONFIDENTIAL: N LATITUDE: 40.019869 DATE COLLECTED: 11 / 8 / 1975
 SURFACE ELEVATION (FT.): 594.0 LOGGED (FT.): 283.0 LOG TYPE: Gamma Ray Density
 SOURCE: HYDROCARBON SURVEY WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
594.0			UNCONSOLIDATED	87.0	0.0	
507.0	MODESTO		UNCLASSIFIED	53.0	87.0	
454.0	MODESTO	WEST FRANKLIN	LIMESTONE	4.0	140.0	
450.0	MODESTO		UNCLASSIFIED	4.0	144.0	
446.0	MODESTO		BLACK SHALE	3.5	148.0	
442.5	MODESTO		UNCLASSIFIED	27.5	151.5	
415.0	MODESTO		BLACK SHALE	2.0	179.0	
413.0	MODESTO		UNCLASSIFIED	6.0	181.0	
407.0	MODESTO		BLACK SHALE	5.0	187.0	
402.0	CARBONDALE	DANVILLE	COAL	2.5	192.0	
399.5	CARBONDALE		UNCLASSIFIED	6.5	194.5	
393.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	201.0	
389.0	CARBONDALE		UNCLASSIFIED	10.0	205.0	
379.0	CARBONDALE	ANNA	BLACK SHALE	2.5	215.0	
376.5	CARBONDALE	HERRIN	COAL	3.5	217.5	
373.0	CARBONDALE		UNCLASSIFIED	42.5	221.0	
330.5	CARBONDALE	ST. DAVID	LIMESTONE	2.5	263.5	
328.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	266.0	
325.0	CARBONDALE	SPRINGFIELD	COAL	6.0	269.0	EXPANDED SCALE LOG
319.0	CARBONDALE		UNCLASSIFIED	6.0	275.0	
313.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	281.0	HOLE FINISHED IN EXCELLO SH.

MAPID: 10720849000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 13 QUARTERS/FOOTAGES: 2594' S line, 24' W line
 QUADRANGLE: MIDDLETOWN LONGITUDE: -89.502611 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 40.012623 DATE COLLECTED: 7 / 26 / 1978
 SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 275.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
395.0	CARBONDALE	HERRIN	COAL	2.5	200.0	
344.0	CARBONDALE	SPRINGFIELD	COAL	5.8	251.0	

MAPID: 10720849000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 13 **QUARTERS/FOOTAGES:** 2594' S line, 24' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.502611 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.012623 **DATE COLLECTED:** 7 / 26 / 1978
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 275.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0			CLAY	20.0	0.0	
575.0			CLAY, SAND & GRAVEL	15.5	20.0	
559.5			SAND & GRAVEL	2.5	35.5	
557.0			CLAY	90.0	38.0	
466.5	MODESTO	WEST FRANKLIN	LIMESTONE	5.0	128.5	
461.5	MODESTO		BLACK SHALE	2.0	133.5	
459.5	MODESTO		SHALE	8.5	135.5	
451.0	MODESTO	PIASA	LIMESTONE	2.0	144.0	CORRELATION UNCERTAIN
449.0	MODESTO		SHALE	5.0	146.0	
444.0	MODESTO		LIMESTONE	1.0	151.0	
443.0	MODESTO		SHALE	14.5	152.0	
428.5	MODESTO		SHALE	10.5	166.5	GAMMA KICK AT TOP AND BASE OF SH
418.0	CARBONDALE		SHALE	9.0	177.0	
409.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	186.0	
406.5	CARBONDALE		SHALE	10.0	188.5	
396.5	CARBONDALE	BRERETON	LIMESTONE	1.0	198.5	
395.5	CARBONDALE	ANNA	BLACK SHALE	2.0	199.5	
393.5	CARBONDALE	HERRIN	COAL	1.5	201.5	
392.0	CARBONDALE		SHALE	41.0	203.0	
351.0	CARBONDALE	ST. DAVID	LIMESTONE	4.0	244.0	
347.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	248.0	CORE 249-258
344.0	CARBONDALE	SPRINGFIELD	COAL	5.8	251.0	
338.2	CARBONDALE		SHALE	1.2	256.8	
337.0	CARBONDALE		SHALE	10.0	258.0	WITH LS NODULES
327.0	CARBONDALE		SHALE	7.0	268.0	

MAPID: 10720675000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 15 **QUARTERS/FOOTAGES:** 1' N line, 1' E line of SW
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.531008 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.012607 **DATE COLLECTED:** 4 / 8 / 1968
SURFACE ELEVATION (FT.): 607.0 **LOGGED (FT.):** 266.2 **LOG TYPE:** Multiple log types
SOURCE: CATER OIL CO. **WELL TYPE:** Coal Test
COMMENT: DL & SCD; APPROX. LOC. FROM CONSOL. MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
354.8	CARBONDALE	SPRINGFIELD	COAL	5.6	252.2	

MAPID: 10720675000C VERSION: 2

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 15 QUARTERS/FOOTAGES: 1' N line, 1' E line of SW
 QUADRANGLE: MIDDLETOWN LONGITUDE: -89.531008 GEOLOGIST: COATS
 CONFIDENTIAL: N LATITUDE: 40.012607 DATE COLLECTED: 4 / 8 / 1968
 SURFACE ELEVATION (FT.): 607.0 LOGGED (FT.): 266.2 LOG TYPE: Multiple log types
 SOURCE: CATER OIL CO. WELL TYPE: Coal Test
 COMMENT: DL & SCD; APPROX. LOC. FROM CONSOL. MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
607.0			CLAY	10.0	0.0	
597.0			UNCONSOLIDATED	79.0	10.0	
518.0	MODESTO		SANDY SHALE	39.0	89.0	
479.0	MODESTO		LIMESTONE	7.5	128.0	GRAY
471.5	MODESTO		SANDY SHALE	3.0	135.5	
468.5	MODESTO		BLACK SHALE	2.0	138.5	
466.5	MODESTO		SHALE	11.5	140.5	MULTI-COLORED
455.0	MODESTO		LIMESTONE	0.5	152.0	GRAY
454.5	MODESTO		SANDY SHALE	3.5	152.5	
451.0	MODESTO		SHALE	19.0	156.0	MULTI-COLORED
432.0	MODESTO		DARK SHALE	3.0	175.0	
429.0			LIMESTONE	1.0	178.0	GRAY
428.0	CARBONDALE		GRAY SHALE	20.5	179.0	W/ SS
407.5	CARBONDALE	HERRIN	COAL	1.5	199.5	
406.0	CARBONDALE		SILTY, SANDY SHALE	13.0	201.0	W/ S.S.
393.0	CARBONDALE		SANDSTONE	2.0	214.0	
391.0	CARBONDALE		SANDY SHALE	12.0	216.0	W/SID BND;THICK ADJ. TO MATCH CORE DEPTH
379.0	CARBONDALE		SILTY SHALE	18.0	228.0	W/ SID. BANDS; START CORE 228.00-266.2'
361.0	CARBONDALE	ST. DAVID	FOSSILIFEROUS & ARG LIMESTONE	2.4	246.0	GRAY
358.6	CARBONDALE	TURNER MINE	FOSSILIFEROUS BLACK SHALE	2.4	248.4	
356.2	CARBONDALE	TURNER MINE	FOSSILIFEROUS LIMESTONE	0.8	250.8	GRAY,CONCRETION?
355.4	CARBONDALE	SPRINGFIELD	COAL	5.6	251.6	
349.8	CARBONDALE		CLAYSTONE	6.7	257.2	GRAY,W/ CALCAREOUS NODULES
343.1	CARBONDALE		SILTSTONE	2.2	263.9	GRAY
340.9	CARBONDALE		SILTY SHALE	0.1	266.1	

MAPID: 10720898000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 15 **QUARTERS/FOOTAGES:** 66' N line, 30' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.540448 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.019697 **DATE COLLECTED:** 8 / 8 / 1979
SURFACE ELEVATION (FT.): 605.0 **LOGGED (FT.):** 255.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
424.3	CARBONDALE	HERRIN	COAL	2.8	180.7
374.2	CARBONDALE	SPRINGFIELD	COAL	6.2	230.8

MAPID: 10720898000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 15 **QUARTERS/FOOTAGES:** 66' N line, 30' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.540448 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.019697 **DATE COLLECTED:** 8 / 8 / 1979
SURFACE ELEVATION (FT.): 605.0 **LOGGED (FT.):** 255.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
605.0			SOIL	4.0	0.0
601.0			CLAY	14.0	4.0
587.0			CLAY, SAND & GRAVEL	73.0	18.0
514.0			SAND & GRAVEL	61.0	91.0
453.0	CARBONDALE		SHALE	8.0	152.0
445.0	CARBONDALE		SANDSTONE	9.0	160.0
436.0	CARBONDALE		SHALE	7.0	169.0
429.0	CARBONDALE	BRERETON	LIMESTONE	2.0	176.0
427.0	CARBONDALE		SHALE	2.0	178.0
425.0	CARBONDALE	HERRIN	COAL	3.5	180.0
421.5	CARBONDALE		SHALE	27.5	183.5
394.0	CARBONDALE		SHALE	9.4	211.0
384.6	CARBONDALE	ST. DAVID	LIMESTONE	9.0	220.4
375.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.6	229.5
373.9	CARBONDALE	SPRINGFIELD	COAL	5.9	231.1 CORE 231.1-238.1
368.0	CARBONDALE		CLAYSTONE & SHALE	0.2	237.0
367.9	CARBONDALE		CORE LOSS	1.0	237.1
366.9	CARBONDALE		SHALE	16.9	238.1

MAPID: 10720762000C VERSION: 1 PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 16 QUARTERS/FOOTAGES: 135' S line, 38' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.540483 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 40.005567 DATE COLLECTED: 10 / 11 / 1975

SURFACE ELEVATION (FT.): 611.0 LOGGED (FT.): 264.0 LOG TYPE: Gamma Ray Density

SOURCE: HYDROCARBON SURVEY WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
611.0			UNCONSOLIDATED	150.0	0.0	
461.0	MODESTO		UNCLASSIFIED	4.0	150.0	
457.0	MODESTO	WEST FRANKLIN	LIMESTONE	4.0	154.0	
453.0	MODESTO		UNCLASSIFIED	14.5	158.0	
438.5	MODESTO		BLACK SHALE	1.5	172.5	
437.0	MODESTO		SHALE	1.0	174.0	
436.0	MODESTO		BLACK SHALE	2.5	175.0	
433.5	CARBONDALE	DANVILLE	COAL	0.0	177.5	
433.5	CARBONDALE		UNCLASSIFIED	8.5	177.5	
425.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	186.0	
421.5	CARBONDALE		UNCLASSIFIED	11.5	189.5	
410.0	CARBONDALE	ANNA	BLACK SHALE	1.5	201.0	THIN COAL
408.5	CARBONDALE	HERRIN	COAL	1.5	202.5	
407.0	CARBONDALE		UNCLASSIFIED	48.0	204.0	DETAILED LOG
359.0	CARBONDALE	SPRINGFIELD	COAL	5.4	252.0	
353.6	CARBONDALE		UNCLASSIFIED	7.0	257.4	

MAPID: 10720899000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 16 QUARTERS/FOOTAGES: 40' S line, 1284' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.544951 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.005306 DATE COLLECTED: 8 / 9 / 1979

SURFACE ELEVATION (FT.): 630.0 LOGGED (FT.): 282.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
415.0	CARBONDALE	HERRIN	COAL	3.0	215.0	
369.3	CARBONDALE	SPRINGFIELD	COAL	6.1	260.7	

MAPID: 10720899000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 16 QUARTERS/FOOTAGES: 40' S line, 1284' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.544951 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.005306 DATE COLLECTED: 8 / 9 / 1979

SURFACE ELEVATION (FT.): 630.0 LOGGED (FT.): 282.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
630.0			SAND/CLAY	39.0	0.0	W/ SAND ZONES
591.0			CLAY, SAND & GRAVEL	19.0	39.0	THIN SAND AND GRAVEL SECTIONS
572.0			SAND & GRAVEL	1.0	58.0	
571.0			SANDY CLAY	22.0	59.0	
549.0	MODESTO		BLACK SHALE	3.0	81.0	
546.0	MODESTO	CHAPEL	COAL	1.0	84.0	
545.0	MODESTO		GRAY SHALE	58.0	85.0	
487.0	MODESTO	WEST FRANKLIN	LIMESTONE	6.0	143.0	
481.0	MODESTO		BLACK SHALE	2.5	149.0	
478.5	MODESTO		SHALE	39.0	151.5	
439.5	MODESTO		BLACK SHALE	4.5	190.5	
435.0	CARBONDALE	DANVILLE	COAL	0.0	195.0	DANVILLE COAL NOT PRESENT
435.0	CARBONDALE		GRAY SHALE	9.0	195.0	
426.0	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	204.0	
422.0	CARBONDALE		GRAY SHALE	5.5	208.0	
416.5	CARBONDALE	BRERETON	LIMESTONE	1.5	213.5	
415.0	CARBONDALE	ANNA	BLACK SHALE	2.0	215.0	
413.0	CARBONDALE	HERRIN	COAL	2.0	217.0	
411.0	CARBONDALE		GRAY SHALE	30.0	219.0	CORE NO. 1 239-249; SIDERITE BANDS
381.0	CARBONDALE		SHALE	4.5	249.0	CORE NO 2 249-259
376.5	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	5.5	253.5	
371.0	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	1.0	259.0	CORE NO. 3 259-269
370.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.7	260.0	
369.3	CARBONDALE	SPRINGFIELD	COAL	0.3	260.7	TRANSITION ZONE
369.0	CARBONDALE	SPRINGFIELD	COAL	5.8	261.0	
363.2	CARBONDALE		SHALE	2.2	266.8	
361.0	CARBONDALE		GRAY SHALE	2.3	269.0	CORE NO. 4 269-279
358.7	CARBONDALE		GRAY SHALE	5.5	271.3	LIMESTONE NODULES
353.2	CARBONDALE	EXCELLO	BLACK SHALE	0.7	276.8	CORRELATION UNCERTAIN
352.5	CARBONDALE	HOUCHIN CREEK	COAL	0.2	277.5	CORRELATION UNCERTAIN
352.4	CARBONDALE		GRAY SHALE	1.4	277.6	
351.0	CARBONDALE		GRAY SHALE	2.0	279.0	CORE NO. 5 279-282
349.0	CARBONDALE		SANDSTONE	1.0	281.0	

MAPID: 10720674000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 17

QUARTERS/FOOTAGES: NW NE

QUADRANGLE: MIDDLETOWN

LONGITUDE: -89.566843

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.017844

DATE COLLECTED: 7 / 9 / 1968

SURFACE ELEVATION (FT.): 610.0

LOGGED (FT.): 265.9

LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY

WELL TYPE: Coal Test

COMMENT: DRILLERS LOG & SURVEY CORE DESCRIPTIONS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
356.4	CARBONDALE	SPRINGFIELD	COAL	5.5	253.6	

MAPID: 10720674000C VERSION: 2

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 17 QUARTERS/FOOTAGES: NW NE

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.566843 GEOLOGIST: COATS

CONFIDENTIAL: N LATITUDE: 40.017844 DATE COLLECTED: 7 / 9 / 1968

SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 265.9 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY WELL TYPE: Coal Test

COMMENT: DRILLERS LOG & SURVEY CORE DESCRIPTIONS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0			UNCONSOLIDATED	10.0	0.0	
600.0			CLAY	13.0	10.0	BROWN
587.0			SAND	7.0	23.0	
580.0			SANDY CLAY	39.0	30.0	GRAY, GLACIAL
541.0	MODESTO		GRAY SHALE	6.0	69.0	
535.0	MODESTO	CHAPEL	COAL	1.5	75.0	
533.5	MODESTO		GRAY SHALE	6.5	76.5	
527.0	MODESTO		SANDY SHALE	42.5	83.0	W/ S.S.
484.5	MODESTO	WEST FRANKLIN	LIMESTONE	6.0	125.5	GRAY
478.5	MODESTO		BLACK SHALE	3.0	131.5	
475.5	MODESTO		SILTY SHALE	6.5	134.5	
469.0	MODESTO		VARRIGATED SHALE	4.0	141.0	
465.0	MODESTO		SANDY SHALE	12.0	145.0	
453.0	MODESTO		SANDSTONE	1.0	157.0	
452.0	MODESTO		SANDY SHALE	2.0	158.0	
450.0	MODESTO		VARRIGATED SHALE	15.0	160.0	
435.0	MODESTO		SILTY SHALE	7.0	175.0	
428.0	CARBONDALE		SANDSTONE	4.0	182.0	
424.0	CARBONDALE		SANDY SHALE	13.5	186.0	W/ S.S. & SIDERITE
410.5	CARBONDALE	HERRIN	COAL	3.0	199.5	DRILLER UNCERTAIN ABOUT LITHOLOGY
407.5	CARBONDALE		SILTY, SANDY SHALE	19.5	202.5	THICKNESS ADJ. TO MATCH CORE DEPTH
388.0	CARBONDALE		GRAY SHALE	17.4	222.0	W/ SID. NODS.; START CORE 222.0 - 265.9'
370.6	CARBONDALE	ST. DAVID	FOSSILIFEROUS & ARG LIMESTONE	2.8	239.4	GRAY
367.8	CARBONDALE	ST. DAVID	SILTSTONE	1.9	242.2	GRAY
365.9	CARBONDALE	ST. DAVID	ARGILLACEOUS LIMESTONE	9.4	244.1	GRAY
356.5	CARBONDALE		GRAY SHALE	0.1	253.5	
356.4	CARBONDALE	SPRINGFIELD	COAL	5.5	253.6	
350.9	CARBONDALE		SILTY CLAYSTONE	6.8	259.1	GRAY, W/ CALCAREOUS NODULES

MAPID: 10720753000C VERSION: 1 PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 17 QUARTERS/FOOTAGES: 42' S line, 84' W line of NW

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.578499 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 40.012367 DATE COLLECTED: 10 / 11 / 1975

SURFACE ELEVATION (FT.): 602.0 LOGGED (FT.): 215.0 LOG TYPE: Multiple log types

SOURCE: HYDROCARBON SURVEY WELL TYPE: Coal Test

COMMENT: CORE, GAMMA, DENSITY, RESISTIVITY

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
602.0			UNCONSOLIDATED	143.5	0.0	
458.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	143.5	
454.5	CARBONDALE		UNCLASSIFIED	9.5	147.5	
445.0	CARBONDALE	ANNA	BLACK SHALE	2.0	157.0	
443.0	CARBONDALE	HERRIN	COAL	2.0	159.0	
441.0	CARBONDALE		UNCLASSIFIED	38.0	161.0	
403.0	CARBONDALE		LIMESTONE	6.0	199.0	
397.0	CARBONDALE		DARK SHALE	1.8	205.0	CORE 205-215'
395.2	CARBONDALE	ST. DAVID	LIMESTONE	1.8	206.8	
393.5	CARBONDALE	SPRINGFIELD	COAL	4.7	208.5	E-LOG INDICATES 6 TO 7 FT OF COAL
388.8	CARBONDALE		CLAYSTONE	1.8	213.2	CLAYDIKE ?

MAPID: 10720850000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 20 QUARTERS/FOOTAGES: 381' S line, 468' E line

QUADRANGLE: WILLIAMSVILLE LONGITUDE: -89.561221 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 39.991845 DATE COLLECTED: 8 / 21 / 1978

SURFACE ELEVATION (FT.): 610.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
334.7	CARBONDALE	SPRINGFIELD	COAL	5.7	275.3	

MAPID: 10720850000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 20 **QUARTERS/FOOTAGES:** 381' S line, 468' E line
QUADRANGLE: WILLIAMSVILLE **LONGITUDE:** -89.561221 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 39.991845 **DATE COLLECTED:** 8 / 21 / 1978
SURFACE ELEVATION (FT.): 610.0 **LOGGED (FT.):** 300.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
610.0			CLAY	36.0	0.0	
574.0			SANDY CLAY	8.0	36.0	
566.0			SAND & GRAVEL	2.0	44.0	
564.0			SANDY CLAY	7.0	46.0	
557.0	MODESTO		GRAY SHALE	38.5	53.0	
518.5	MODESTO		BLACK SHALE	2.0	91.5	
516.5	MODESTO		GRAY SHALE	60.0	93.5	
456.5	MODESTO	WEST FRANKLIN	LIMESTONE	7.5	153.5	
449.0	MODESTO		BLACK SHALE	2.0	161.0	
447.0	MODESTO		GRAY SHALE	11.0	163.0	
436.0	MODESTO		SHALE	2.5	174.0	RED
433.5	MODESTO		GRAY SHALE	24.5	176.5	
409.0	MODESTO		BLACK SHALE	4.0	201.0	
405.0	CARBONDALE	DANVILLE	COAL	2.0	205.0	
403.0	CARBONDALE		GRAY SHALE	10.0	207.0	
393.0	CARBONDALE	BANKSTON FORK	LIMESTONE	7.0	217.0	INCL. 1' SHALE BED, MAY INCL. BRERETON
386.0	CARBONDALE	ANNA	BLACK SHALE	1.5	224.0	
384.5	CARBONDALE	HERRIN	COAL	0.0	225.5	HERRIN COAL HORIZON
384.5	CARBONDALE		SHALE	47.5	225.5	
337.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	273.0	
336.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.8	273.5	CORE 275-282
334.7	CARBONDALE	SPRINGFIELD	COAL	5.7	275.3	
329.0	CARBONDALE		CLAYSTONE & SHALE	1.0	281.0	
328.0	CARBONDALE		CLAYSTONE & SHALE	1.5	282.0	
326.5	CARBONDALE		LIMESTONE	2.0	283.5	
324.5	CARBONDALE		SHALE	14.5	285.5	

MAPID: 10720900000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 20

QUARTERS/FOOTAGES: 45' N line, 2610' E line

QUADRANGLE: MIDDLETOWN

LONGITUDE: -89.568977

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.004966

DATE COLLECTED: 8 / 3 / 1979

SURFACE ELEVATION (FT.): 605.0

LOGGED (FT.): 270.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
427.0	CARBONDALE	DANVILLE	COAL	1.5	178.0	
405.2	CARBONDALE	HERRIN	COAL	0.7	199.8	
357.6	CARBONDALE	SPRINGFIELD	COAL	6.9	247.4	

MAPID: 10720900000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 20 **QUARTERS/FOOTAGES:** 45' N line, 2610' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.568977 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.004966 **DATE COLLECTED:** 8 / 3 / 1979
SURFACE ELEVATION (FT.): 605.0 **LOGGED (FT.):** 270.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.0			CLAY	10.0	0.0	
595.0			SILTY CLAY	19.0	10.0	
576.0			SAND & GRAVEL	8.0	29.0	W/ SILT
568.0			CLAY	5.0	37.0	
563.0			SILT, SAND & GRAVEL	6.0	42.0	
557.0			CLAY, SAND & GRAVEL	70.0	48.0	POOR CUTTINGS RETURN
487.0	MODESTO		SHALE	25.5	118.0	GAMMA KICK AT 132- 134
461.5	MODESTO	PIASA	LIMESTONE	2.5	143.5	
459.0	MODESTO		GRAY SHALE	28.0	146.0	
431.0	MODESTO		BLACK SHALE	4.0	174.0	
427.0	CARBONDALE	DANVILLE	COAL	2.0	178.0	
425.0	CARBONDALE		GRAY SHALE	10.0	180.0	
415.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	190.0	
413.5	CARBONDALE		SHALE	3.5	191.5	
410.0	CARBONDALE	BRERETON	LIMESTONE	2.0	195.0	
408.0	CARBONDALE	ANNA	BLACK SHALE	2.0	197.0	
406.0	CARBONDALE		LIMESTONE	0.8	199.0	
405.2	CARBONDALE	HERRIN	COAL	0.7	199.8	
404.5	CARBONDALE		GRAY SHALE	41.1	200.5	
363.4	CARBONDALE	ST. DAVID	LIMESTONE	5.0	241.6	
358.4	CARBONDALE	TURNER MINE	BLACK SHALE	0.9	246.6	CORE 247.4-254.5
357.5	CARBONDALE	SPRINGFIELD	COAL	1.2	247.5	HORSEBACK
356.3	CARBONDALE	SPRINGFIELD	CORE LOSS	1.6	248.7	
354.7	CARBONDALE	SPRINGFIELD	CLAYSTONE	0.5	250.3	WITH COAL FRAGMENTS
354.2	CARBONDALE	SPRINGFIELD	COAL	1.5	250.8	
352.7	CARBONDALE		CORE LOSS	2.2	252.3	
350.5	CARBONDALE		SHALE	1.5	254.5	
349.0	CARBONDALE		LIMESTONE	0.4	256.0	
348.6	CARBONDALE		SHALE	13.6	256.4	

MAPID: 10700015000C VERSION: 1 PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 22 QUARTERS/FOOTAGES: 330' S line, 330' W line

QUADRANGLE: WILLIAMSVILLE LONGITUDE: -89.539251 GEOLOGIST: HINDMAN

CONFIDENTIAL: N LATITUDE: 39.99168 DATE COLLECTED: 0 / 0 / 1945

SURFACE ELEVATION (FT.): 592.0 LOGGED (FT.): 350.0 LOG TYPE: Survey Sample Study

SOURCE: LEE WERNER WELL TYPE: Dry Hole

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
592.0			UNCONSOLIDATED	30.0	0.0
562.0	MODESTO		UNCLASSIFIED	0.0	30.0
432.0	CARBONDALE	DANVILLE	COAL	-	160.0
432.0	CARBONDALE		UNCLASSIFIED	20.0	160.0
412.0	CARBONDALE	HERRIN	COAL	-	180.0
412.0	CARBONDALE		UNCLASSIFIED	60.0	180.0
352.0	CARBONDALE	SPRINGFIELD	COAL	-	240.0
352.0	CARBONDALE		UNCLASSIFIED	110.0	240.0
242.0	CARBONDALE	COLCHESTER	COAL	-	350.0

MAPID: 10720851000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 22 QUARTERS/FOOTAGES: 60' N line, 1300' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.526174 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.005149 DATE COLLECTED: 7 / 21 / 1978

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
388.0	CARBONDALE	HERRIN	COAL	1.0	212.0
340.0	CARBONDALE	SPRINGFIELD	COAL	6.3	260.0

MAPID: 10720851000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 22 **QUARTERS/FOOTAGES:** 60' N line, 1300' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.526174 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.005149 **DATE COLLECTED:** 7 / 21 / 1978
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0			CLAY	99.0	0.0	
501.0			SAND & GRAVEL	21.0	99.0	
480.0			CLAY	14.0	120.0	
466.0			SAND & GRAVEL	3.0	134.0	
463.0	MODESTO	WEST FRANKLIN	LIMESTONE	7.0	137.0	
456.0	MODESTO		SHALE	2.0	144.0	GAMMA KICK
454.0	MODESTO		SHALE	10.0	146.0	RED AND TAN
444.0	MODESTO		SANDSTONE	4.0	156.0	
440.0	MODESTO		SHALE	17.0	160.0	
423.0	MODESTO		SHALE	6.0	177.0	GAMMA KICK AT TOP
417.0	MODESTO		BLACK SHALE	4.0	183.0	DANVILLE COAL HORIZON AT BASE OF UNIT
413.0	CARBONDALE		SHALE	7.5	187.0	
405.5	CARBONDALE	BANKSTON FORK	LIMESTONE	3.5	194.5	
402.0	CARBONDALE		SHALE	15.0	198.0	
387.0	CARBONDALE	HERRIN	COAL	1.5	213.0	
385.5	CARBONDALE		SHALE	8.5	214.5	
377.0	CARBONDALE		LIMESTONE	1.0	223.0	
376.0	CARBONDALE		SHALE	29.0	224.0	
347.0	CARBONDALE	ST. DAVID	LIMESTONE	3.3	253.0	CORE #1&2 253-267 DESCRIPTION ISGS
343.7	CARBONDALE	TURNER MINE	BLACK SHALE	3.7	256.3	SHELL BRECCIA AT BASE
340.0	CARBONDALE	SPRINGFIELD	COAL	6.3	260.0	
333.8	CARBONDALE		SHALE & CLAYSTONE	0.2	266.2	
333.6	CARBONDALE		CORE LOSS	0.6	266.4	
333.0	CARBONDALE		SHALE	4.0	267.0	
329.0	CARBONDALE		LIMESTONE	1.0	271.0	
328.0	CARBONDALE		SHALE	1.0	272.0	
327.0	CARBONDALE		LIMESTONE	1.5	273.0	
325.5	CARBONDALE		SHALE	5.5	274.5	

MAPID: 10700553000C VERSION: 1

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 23 QUARTERS/FOOTAGES: 41' S line, 35' E line of NW

QUADRANGLE: WILLIAMSVILLE LONGITUDE: -89.512396 GEOLOGIST: BARGH

CONFIDENTIAL: N LATITUDE: 39.998381 DATE COLLECTED: 7 / 13 / 1972

SURFACE ELEVATION (FT.): 597.0 LOGGED (FT.): 283.0 LOG TYPE: Multiple log types

SOURCE: CONSOLIDATION COAL CO. P-2-L WELL TYPE: Coal Test

COMMENT: 11,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
597.0			UNCONSOLIDATED	70.0	0.0
527.0	MODESTO		SANDSTONE	2.0	70.0
525.0	MODESTO		SHALE	12.9	72.0
512.1	MODESTO	CHAPEL	COAL	1.3	84.9
510.8	MODESTO		SHALE & SANDSTONE	4.2	86.2
506.6	MODESTO		SANDSTONE	16.1	90.4
490.5	MODESTO		SHALE	39.8	106.5
450.7	MODESTO	WEST FRANKLIN	LIMESTONE	6.5	146.3
444.2	MODESTO		SHALE	14.5	152.8
429.7	MODESTO		SANDSTONE/SHALE	4.5	167.3
425.2	MODESTO		SHALE	30.2	171.8 WITH LS STREAKS
395.0	CARBONDALE	DANVILLE	COAL	0.4	202.0
394.6	CARBONDALE		SHALE	12.6	202.4
382.0	CARBONDALE		LIMESTONE	1.9	215.0
380.1	CARBONDALE		SHALE	1.5	216.9 CORE BEGINS
378.6	CARBONDALE	BRERETON	LIMESTONE	3.8	218.4
374.8	CARBONDALE		SHALE	0.5	222.2
374.3	CARBONDALE	HERRIN	COAL	1.4	222.7
372.9	CARBONDALE		CLAYSTONE	4.2	224.1
368.7	CARBONDALE		LIMESTONE	5.7	228.3
363.0	CARBONDALE		SILTSTONE	8.3	234.0
354.7	CARBONDALE		SHALE	22.5	242.3
332.2	CARBONDALE	ST. DAVID	LIMESTONE	0.7	264.8
331.5	CARBONDALE		SILTSTONE	1.6	265.5
329.9	CARBONDALE	SPRINGFIELD	COAL	6.0	267.1 REMOVED BY COMPANY
323.9	CARBONDALE		SHALE	4.7	273.1

MAPID: 10700553000C VERSION: 2

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 23 QUARTERS/FOOTAGES: 41' S line, 35' E line of NW

QUADRANGLE: WILLIAMSVILLE LONGITUDE: -89.512396 GEOLOGIST: COATS

CONFIDENTIAL: N LATITUDE: 39.998381 DATE COLLECTED: 7 / 13 / 1972

SURFACE ELEVATION (FT.): 597.0 LOGGED (FT.): 282.9 LOG TYPE: Multiple log types

SOURCE: CONSOLIDATION COAL CO. P-2-L WELL TYPE: Coal Test

COMMENT: DRILLERS LOG & SURVEY CORE DESCRIPTIONS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
597.0			CLAY	3.0	0.0	
594.0			UNCONSOLIDATED	57.0	3.0	
537.0	MODESTO		GRAY SHALE	10.0	60.0	W/ SANDSTONE STKS.
527.0	MODESTO		SANDSTONE	2.0	70.0	GRAY
525.0	MODESTO		GRAY SHALE	12.9	72.0	W/ SANDSTONE STKS.
512.1	MODESTO	CHAPEL	COAL	1.3	84.9	
510.8	MODESTO		GRAY SHALE	4.2	86.2	W/ SANDSTONE STKS.
506.6	MODESTO		SANDSTONE	16.1	90.4	GRAY
490.5	MODESTO		SANDY SHALE	4.1	106.5	
486.4	MODESTO		SANDY SHALE	22.2	110.6	W/ SANDSTONE STKS.,DARK
464.2	MODESTO		GRAY SHALE	11.1	132.8	DARK,W/ SIDERITE BND.
453.1	MODESTO		GRAY SHALE	2.4	143.9	W/ LIMESTONE NODULES
450.7	MODESTO	WEST FRANKLIN	LIMESTONE	6.5	146.3	GRAY
444.2	MODESTO		GRAY SHALE	2.7	152.8	W/ LIMESTONE STKS.
441.5	MODESTO		DARK SHALE	0.3	155.5	
441.2	MODESTO		GRAY SHALE	0.9	155.8	
440.3	MODESTO		GRAY SHALE	1.1	156.7	
439.2	MODESTO		VARRIGATED SHALE	5.0	157.8	
434.2	MODESTO		SANDSTONE	4.5	162.8	GRAY,W/ SHALE STKS.
429.7	MODESTO		SANDY SHALE	9.5	167.3	W/ SANDSTONE STKS.
420.2	MODESTO		VARRIGATED SHALE	20.7	176.8	W/ LIMESTONE STKS.
399.5	CARBONDALE	DANVILLE	COAL	0.4	197.5	
399.1	CARBONDALE		VARRIGATED SHALE	5.1	197.9	
394.0	CARBONDALE		GRAY SHALE	7.5	203.0	W/ SANDSTONE STKS.
386.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.9	210.5	GRAY
384.6	CARBONDALE		SHALE	1.5	212.4	GREEN-GRAY;DEPTHS ADJ.;START CORE 212.0'
383.1	CARBONDALE	BRERETON	FOSSILIFEROUS LIMESTONE	3.8	213.9	GRAY
379.3	CARBONDALE		GRAY SHALE	0.5	217.7	POORLY BEDDED
378.8	CARBONDALE	HERRIN	COAL	1.4	218.2	
377.4	CARBONDALE		CLAYSTONE	4.2	219.6	GRAY,SMOOTH W/ OLIVE CAST
373.2	CARBONDALE		LIMESTONE	5.7	223.8	LIGHT GREENISH-GRAY
367.5	CARBONDALE		SANDSTONE	8.3	229.5	GRAY,W/ GRANULAR SIDERITE
359.2	CARBONDALE		SILTY SHALE	1.3	237.8	LIGHT GREENISH-GRAY
357.9	CARBONDALE		CORE LOSS	2.7	239.1	
355.2	CARBONDALE		SILTY SHALE	4.6	241.8	
350.6	CARBONDALE		SHALE & SILTSTONE	4.3	246.4	W/ BROWNISH LIMESTONE NODULES
346.3	CARBONDALE		SHALE	10.0	250.7	

336.3	CARBONDALE		CLAYSTONE	2.3	260.7	GRAY
334.0	CARBONDALE	ST. DAVID	ARGILLACEOUS LIMESTONE	0.7	263.0	GRAY
333.3	CARBONDALE	TURNER MINE	BLACK SHALE	1.6	263.7	
331.7	CARBONDALE	SPRINGFIELD	COAL	6.0	265.3	
325.7	CARBONDALE		CLAYSTONE	5.5	271.3	GRAY, GREENISH W/ BROWNISH LIMESTONE NODU
320.2	CARBONDALE		SHALE	5.3	276.8	
314.9	CARBONDALE		GRAY SHALE	0.8	282.1	GREENISH- GRAY

MAPID: 10700553000C **VERSION:** 3 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 23 **QUARTERS/FOOTAGES:** 41' S line, 35' E line of NW
QUADRANGLE: WILLIAMSVILLE **LONGITUDE:** -89.512396 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 39.998381 **DATE COLLECTED:** 7 / 13 / 1972
SURFACE ELEVATION (FT.): 597.0 **LOGGED (FT.):** 283.0 **LOG TYPE:** Multiple log types
SOURCE: CONSOLIDATION COAL CO. P-2-L **WELL TYPE:** Coal Test
COMMENT: 11,17

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
512.1			COAL	1.3	84.9
379.2			COAL	1.4	217.8
331.9	CARBONDALE	SPRINGFIELD	COAL	6.0	265.1

MAPID: 10720886000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 23 **QUARTERS/FOOTAGES:** 150' S line, 2535' E line
QUADRANGLE: WILLIAMSVILLE **LONGITUDE:** -89.512204 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 39.991545 **DATE COLLECTED:** 7 / 1 / 1977
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 290.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
518.0	MODESTO	CHAPEL	COAL	2.0	82.0
403.3	CARBONDALE	DANVILLE	COAL	1.0	196.7
383.5	CARBONDALE	HERRIN	COAL	3.0	216.5
331.7	CARBONDALE	SPRINGFIELD	COAL	0.7	268.3

MAPID: 10720886000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 23 QUARTERS/FOOTAGES: 150' S line, 2535' E line

QUADRANGLE: WILLIAMSVILLE LONGITUDE: -89.512204 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 39.991545 DATE COLLECTED: 7 / 1 / 1977

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 290.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0			CLAY	12.0	0.0	
588.0			SILT	10.0	12.0	
578.0			SAND & GRAVEL	10.0	22.0	
568.0			CLAY	20.0	32.0	
548.0	MODESTO		SHALE	29.0	52.0	
519.0	MODESTO		BLACK SHALE	1.5	81.0	
517.5	MODESTO	CHAPEL	COAL	2.0	82.5	
515.5	MODESTO		SHALE	4.5	84.5	
511.0	MODESTO		SANDSTONE	2.0	89.0	
509.0	MODESTO		SHALE	50.0	91.0	
459.0	MODESTO		SHALE	4.5	141.0	
454.5	MODESTO	WEST FRANKLIN	LIMESTONE	6.0	145.5	
448.5	MODESTO		SHALE	0.5	151.5	
448.0	MODESTO		BLACK SHALE	2.0	152.0	
446.0	MODESTO		SHALE	20.0	154.0	
426.0	MODESTO	PIASA	LIMESTONE	1.0	174.0	CORRELATION UNCERTAIN
425.0	MODESTO		SHALE	18.0	175.0	
407.0	MODESTO		BLACK SHALE	3.0	193.0	
404.0	CARBONDALE	DANVILLE	COAL	1.0	196.0	
403.0	CARBONDALE		SHALE	10.0	197.0	
393.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	207.0	
390.0	CARBONDALE		SHALE	5.5	210.0	
384.5	CARBONDALE	BRERETON	LIMESTONE	1.0	215.5	
383.5	CARBONDALE	HERRIN	COAL	3.0	216.5	
380.5	CARBONDALE		SHALE	5.5	219.5	
375.0	CARBONDALE		LIMESTONE	5.0	225.0	
370.0	CARBONDALE		SHALE	2.5	230.0	
367.5	CARBONDALE		SHALE	26.0	232.5	
341.5	CARBONDALE	ST. DAVID	LIMESTONE	1.4	258.5	CORES 1 AND 2, 258.5- 274.8
340.1	CARBONDALE	TURNER MINE	BLACK SHALE	8.4	259.9	HORSEBACK
331.7	CARBONDALE	SPRINGFIELD	COAL	0.7	268.3	HORSEBACK
331.0	CARBONDALE		CLAYSTONE & SHALE	3.2	269.0	PIECES OF COAL, DRILLERS LIST HORSEBACK
327.8	CARBONDALE		CLAYSTONE & SHALE	2.6	272.2	
325.2	CARBONDALE		SHALE	15.2	274.8	

MAPID: 10720717000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 24

QUARTERS/FOOTAGES: 275' S line, 125' E line

QUADRANGLE: CORNLAND

LONGITUDE: -89.484436

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 39.992279

DATE COLLECTED: 11 / 5 / 1975

SURFACE ELEVATION (FT.): 589.0

LOGGED (FT.): 380.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.0	CARBONDALE	HERRIN	COAL	1.0	193.0	
353.5	CARBONDALE	SPRINGFIELD	COAL	5.0	235.5	
288.0	CARBONDALE	SURVANT	COAL	2.0	301.0	
267.0			COAL WITH SHALE	1.0	322.0	TRACE BLK SH & COAL

MAPID: 10720717000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 24 QUARTERS/FOOTAGES: 275' S line, 125' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.484436 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 39.992279 DATE COLLECTED: 11 / 5 / 1975
 SURFACE ELEVATION (FT.): 589.0 LOGGED (FT.): 380.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
589.0			SOIL	3.0	0.0	
586.0			CLAY	12.0	3.0	
574.0			SAND & GRAVEL	35.0	15.0	
539.0			CLAY	25.0	50.0	
514.0			CLAY, SAND & GRAVEL	10.0	75.0	
504.0			CLAY	32.0	85.0	
472.0	MODESTO		GRAY SHALE	6.0	117.0	
466.0	MODESTO	WEST FRANKLIN	LIMESTONE	5.0	123.0	
461.0	MODESTO		BLACK SHALE	2.0	128.0	FROM GAMMA
459.0	MODESTO		GRAY SHALE	8.5	130.0	
450.5	MODESTO		LIMESTONE	4.5	138.5	
446.0	MODESTO		SHALE	29.0	143.0	
417.0	MODESTO		BLACK SHALE	2.5	172.0	
414.5	CARBONDALE	DANVILLE	COAL	0.5	174.5	
414.0	CARBONDALE		GRAY SHALE	8.0	175.0	
406.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	183.0	
404.0	CARBONDALE		GRAY SHALE	7.0	185.0	
397.0	CARBONDALE	ANNA	BLACK SHALE	1.0	192.0	
396.0	CARBONDALE	HERRIN	COAL	1.0	193.0	
395.0	CARBONDALE		GRAY SHALE	25.0	194.0	
370.0	CARBONDALE		LIMESTONE	2.5	219.0	SHALE PARTINGS
367.5	CARBONDALE		SHALE	10.5	221.5	
357.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	232.0	
353.5	CARBONDALE	SPRINGFIELD	COAL	5.0	235.5	
348.5	CARBONDALE		GRAY SHALE	8.5	240.5	
340.0	CARBONDALE		BLACK SHALE	2.5	249.0	OFF GAMMA
337.5	CARBONDALE		GRAY SHALE	23.0	251.5	
314.5	CARBONDALE		LIMESTONE	1.5	274.5	
313.0	CARBONDALE		GRAY SHALE	25.0	276.0	
288.0	CARBONDALE	HOUCHIN CREEK	COAL	2.0	301.0	
286.0	CARBONDALE		GRAY SHALE	22.0	303.0	
264.0	CARBONDALE		BLACK SHALE	1.0	325.0	
263.0	CARBONDALE		GRAY SHALE	33.5	326.0	
229.5	CARBONDALE		LIMESTONE	1.0	359.5	
228.5	CARBONDALE		GRAY SHALE	19.5	360.5	

MAPID: 10720852000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 24

QUARTERS/FOOTAGES: 2300' S line, 2550' E line

QUADRANGLE: CORNLAND

LONGITUDE: -89.493158

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 39.997708

DATE COLLECTED: 7 / 28 / 1978

SURFACE ELEVATION (FT.): 635.0

LOGGED (FT.): 300.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
419.0	CARBONDALE	DANVILLE	COAL	2.0	216.0	
398.2	CARBONDALE	HERRIN	COAL	0.7	236.8	
354.8	CARBONDALE	SPRINGFIELD	COAL	6.1	280.2	

MAPID: 10720852000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 24 QUARTERS/FOOTAGES: 2300' S line, 2550' E line
 QUADRANGLE: CORNLAND LONGITUDE: -89.493158 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 39.997708 DATE COLLECTED: 7 / 28 / 1978
 SURFACE ELEVATION (FT.): 635.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
635.0			CLAY	22.0	0.0	
613.0			SAND & GRAVEL	16.0	22.0	W/ CLAY
597.0			CLAY	45.0	38.0	
552.0	MODESTO		GRAY SHALE	29.0	83.0	
523.0	MODESTO		LIMESTONE	1.5	112.0	
521.5	MODESTO		SANDSTONE	6.5	113.5	
515.0	MODESTO		GRAY SHALE	43.0	120.0	
472.0	MODESTO		BLACK SHALE	1.0	163.0	
471.0	MODESTO		GRAY SHALE	6.0	164.0	
465.0	MODESTO	WEST FRANKLIN	LIMESTONE	7.5	170.0	
457.5	MODESTO		GRAY SHALE	0.5	177.5	
457.0	MODESTO		BLACK SHALE	2.0	178.0	
455.0	MODESTO		SHALE	32.0	180.0	
423.0	MODESTO		BLACK SHALE	3.5	212.0	
419.5	CARBONDALE	DANVILLE	COAL	1.0	215.5	
418.5	CARBONDALE		GRAY SHALE	6.0	216.5	
412.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	222.5	
410.5	CARBONDALE		GRAY SHALE	10.5	224.5	
400.0	CARBONDALE	HERRIN	COAL	1.0	235.0	
399.0	CARBONDALE		GRAY SHALE	3.5	236.0	
395.5	CARBONDALE		LIMESTONE	0.5	239.5	
395.0	CARBONDALE		GRAY SHALE	32.5	240.0	
362.5	CARBONDALE	ST. DAVID	LIMESTONE	6.5	272.5	
356.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.2	279.0	CORE 280-287
354.8	CARBONDALE	SPRINGFIELD	COAL	6.1	280.2	
348.7	CARBONDALE		GRAY SHALE	0.8	286.3	
348.0	CARBONDALE		GRAY SHALE	1.5	287.0	
346.5	CARBONDALE		LIMESTONE	1.0	288.5	
345.5	CARBONDALE		GRAY SHALE	9.0	289.5	
336.5	CARBONDALE		LIMESTONE	1.5	298.5	

MAPID: 10721919000C VERSION: 1

PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 24 QUARTERS/FOOTAGES: 75' N line, 2125' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.494988 GEOLOGIST: J. MCBETH
 CONFIDENTIAL: N LATITUDE: 40.0054 DATE COLLECTED: 3 / 16 / 1977
 SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 257.4 LOG TYPE:
 SOURCE: TURRIS COAL CO 84-24-3 WELL TYPE: Coal Test
 COMMENT: PERMIT 3; ELKHART MINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0	PLEISTOCENE		CLAY	10.0	0.0	
585.0	PLEISTOCENE		SILT	10.0	10.0	
575.0	PLEISTOCENE		CLAY	75.0	20.0	WITH SAND AND GRAVEL
500.0	MODESTO		GRAY SHALE	24.0	95.0	
476.0	MODESTO		SHALE	1.0	119.0	DARK BROWN
475.0	MODESTO		GRAY SHALE	4.0	120.0	
471.0	MODESTO		LIMESTONE	6.5	124.0	
464.5	MODESTO		SHALE	5.5	130.5	DARK GRAY TO BLACK
459.0	MODESTO		SHALE	3.0	136.0	GRAY TNA
456.0	MODESTO		LIMESTONE & SHALE	3.3	139.0	
452.7	MODESTO		SHALE	24.7	142.3	
428.0	MODESTO		GRAY SHALE	6.8	167.0	DARK
421.2	CARBONDALE	DANVILLE	COAL	1.4	173.8	
419.8	CARBONDALE		GRAY SHALE	6.6	175.2	
413.2	CARBONDALE		LIMESTONE	2.2	181.8	
411.0	CARBONDALE		GRAY SHALE	12.0	184.0	
399.0	CARBONDALE	HERRIN	COAL	1.4	196.0	
397.6	CARBONDALE		GRAY SHALE	3.6	197.4	
394.0	CARBONDALE		GRAY SHALE	4.5	201.0	WITH LIMESTONE STREAKS
389.5	CARBONDALE		GRAY SHALE	2.0	205.5	
387.5	CARBONDALE		SANDY LIMESTONE	1.7	207.5	
385.8	CARBONDALE		SHALE & SANDSTONE	3.8	209.2	INTERBEDDED SANDY SHALE AND SANDSTONE
382.0	CARBONDALE		GRAY SHALE	20.0	213.0	
362.0	CARBONDALE		GRAY SHALE	1.3	233.0	DARK
360.7	CARBONDALE	ST. DAVID	LIMESTONE	8.4	234.3	
352.3	CARBONDALE	TURNER MINE	BLACK SHALE	0.6	242.7	
351.7	CARBONDALE	SPRINGFIELD	COAL	5.5	243.3	
346.2	CARBONDALE		CLAYSTONE	5.2	248.8	
341.0	CARBONDALE		SHALE	3.4	254.0	

MAPID: 10721181000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 25

QUARTERS/FOOTAGES: 490' S line, 2484' E line

QUADRANGLE: CORNLAND

LONGITUDE: -89.492905

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 39.977945

DATE COLLECTED: 7 / 1 / 1977

SURFACE ELEVATION (FT.): 585.0

LOGGED (FT.): 310.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
372.0	CARBONDALE	DANVILLE	COAL	2.5	213.0	
352.5	CARBONDALE	HERRIN	COAL	4.5	232.5	
306.0	CARBONDALE	SPRINGFIELD	COAL	5.8	279.0	

MAPID: 10721181000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 25 **QUARTERS/FOOTAGES:** 490' S line, 2484' E line
QUADRANGLE: CORNLAND **LONGITUDE:** -89.492905 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 39.977945 **DATE COLLECTED:** 7 / 1 / 1977
SURFACE ELEVATION (FT.): 585.0 **LOGGED (FT.):** 310.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
585.0			CLAY	14.0	0.0
571.0			SAND & GRAVEL	37.0	14.0
534.0			CLAY	6.0	51.0
528.0			SAND & GRAVEL	3.0	57.0
525.0	MODESTO		SHALE	39.5	60.0
485.5	MODESTO	CHAPEL	COAL	1.0	99.5
484.5	MODESTO		SHALE	5.5	100.5
479.0	MODESTO		SANDSTONE	5.0	106.0
474.0	MODESTO		SHALE	57.0	111.0
417.0	MODESTO	WEST FRANKLIN	LIMESTONE	8.0	168.0
409.0	MODESTO		SHALE	1.0	176.0
408.0	MODESTO		BLACK SHALE	2.0	177.0
406.0	MODESTO		SHALE	14.0	179.0
392.0	MODESTO		LIMESTONE	2.0	193.0
390.0	MODESTO		SHALE	10.5	195.0
379.5	MODESTO		SHALE	4.5	205.5
375.0	MODESTO		SHALE	1.0	210.0
374.0	MODESTO		BLACK SHALE	3.5	211.0
370.5	CARBONDALE	DANVILLE	COAL	1.5	214.5
369.0	CARBONDALE		SHALE	11.0	216.0
358.0	CARBONDALE		LIMESTONE	1.0	227.0
357.0	CARBONDALE		SHALE	3.5	228.0
353.5	CARBONDALE	ANNA	BLACK SHALE	2.5	231.5
351.0	CARBONDALE	HERRIN	COAL	3.0	234.0
348.0	CARBONDALE		SHALE	36.5	237.0
311.5	CARBONDALE	ST. DAVID	LIMESTONE	1.6	273.5
309.9	CARBONDALE	TURNER MINE	BLACK SHALE	2.4	275.1
307.5	CARBONDALE	SPRINGFIELD	COAL	8.0	277.5
299.5	CARBONDALE		CLAYSTONE & SHALE	1.6	285.5
297.9	CARBONDALE		CORE LOSS	0.4	287.1
297.5	CARBONDALE		SHALE	12.5	287.5
285.0	CARBONDALE		SHALE	10.0	300.0

MAPID: 10720883000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 26

QUARTERS/FOOTAGES: 725' N line, 2610' E line

QUADRANGLE: WILLIAMSVILLE

LONGITUDE: -89.512451

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 39.989128

DATE COLLECTED: 6 / 21 / 1979

SURFACE ELEVATION (FT.): 595.0

LOGGED (FT.): 278.3

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
519.0	MODESTO	CHAPEL	COAL	1.0	76.0
406.0	CARBONDALE	DANVILLE	COAL	1.5	189.0
386.0	CARBONDALE	HERRIN	COAL	2.0	209.0
337.7	CARBONDALE	SPRINGFIELD	COAL	6.0	257.3

MAPID: 10720883000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 18N 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** 725' N line, 2610' E line
QUADRANGLE: WILLIAMSVILLE **LONGITUDE:** -89.512451 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 39.989128 **DATE COLLECTED:** 6 / 21 / 1979
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 278.3 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0			CLAY	12.0	0.0	
583.0			SILT	10.0	12.0	
573.0			CLAY	15.0	22.0	
558.0			SAND & GRAVEL	4.0	37.0	
554.0			CLAY	7.0	41.0	
547.0	MODESTO		SHALE	27.0	48.0	
520.0	MODESTO		BLACK SHALE	1.0	75.0	
519.0	MODESTO	CHAPEL	COAL	1.0	76.0	
518.0	MODESTO		SHALE	62.0	77.0	
456.0	MODESTO	WEST FRANKLIN	LIMESTONE	5.0	139.0	
451.0	MODESTO	WEST FRANKLIN	BLACK SHALE	2.0	144.0	
449.0	MODESTO	WEST FRANKLIN	SHALE	7.5	146.0	
441.5	MODESTO	WEST FRANKLIN	SANDSTONE	2.5	153.5	
439.0	MODESTO	WEST FRANKLIN	SHALE	10.0	156.0	
429.0	MODESTO	WEST FRANKLIN	LIMESTONE	1.0	166.0	
428.0	MODESTO		SHALE	20.0	167.0	
408.0	MODESTO		BLACK SHALE	2.0	187.0	
406.0	CARBONDALE	DANVILLE	COAL	2.0	189.0	
404.0	CARBONDALE		SHALE	9.0	191.0	
395.0	CARBONDALE	BRERETON	LIMESTONE	7.0	200.0	
388.0	CARBONDALE	ANNA	BLACK SHALE	2.0	207.0	
386.0	CARBONDALE	HERRIN	COAL	2.0	209.0	
384.0	CARBONDALE		SHALE	34.0	211.0	CORE #1 235-245, CORE #2 245-253
350.0	CARBONDALE		SHALE	6.0	245.0	NUMEROUS DIAGONAL FRACTURE PLANES, FRIM
344.0	CARBONDALE		SHALE	0.5	251.0	BROKEN AND FRACTURED
343.5	CARBONDALE		CORE LOSS	1.5	251.5	
342.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	253.0	CORE #3 253-263.34
340.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.3	255.0	FOSSILS AT BASE
337.7	CARBONDALE	TURNER MINE	BLACK SHALE	0.1	257.3	WITH COAL PARTINGS, TRANSITION ZONE
337.7	CARBONDALE	SPRINGFIELD	COAL	6.0	257.3	HORSEBACK 258.07-258.70
331.7	CARBONDALE		SHALE	0.8	263.3	CORE #4 263.34-269.34
330.9	CARBONDALE		SHALE	5.1	264.1	LIMESTONES NODULES
325.8	CARBONDALE		CORE LOSS	0.1	269.2	
325.7	CARBONDALE		SHALE	0.8	269.3	CORE #5 269.34-278.34
324.9	CARBONDALE		LIMESTONE	0.6	270.1	
324.3	CARBONDALE		SHALE	0.8	270.7	
323.5	CARBONDALE		SHALE	0.5	271.5	LIMESTONE NODULES
323.0	CARBONDALE	HANOVER	LIMESTONE	0.7	272.0	UNCERTAIN CORRELATION

322.4	CARBONDALE	EXCELLO	BLACK SHALE	0.3	272.6	TRACE OF COAL
322.1	CARBONDALE	HOUCHIN CREEK	COAL	0.0	272.9	SUMMUM #4 COAL NOT PRESENT
322.1	CARBONDALE		SHALE	5.4	272.9	
316.7	CARBONDALE		CORE LOSS	0.1	278.3	

MAPID: 10720853000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 27 QUARTERS/FOOTAGES: 32' S line, 1340' E line

QUADRANGLE: WILLIAMSVILLE LONGITUDE: -89.526493 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 39.976568 DATE COLLECTED: 7 / 28 / 1978

SURFACE ELEVATION (FT.): 575.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
315.9	CARBONDALE	SPRINGFIELD	COAL	5.7 259.1	

MAPID: 10720853000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 27 QUARTERS/FOOTAGES: 32' S line, 1340' E line
 QUADRANGLE: WILLIAMSVILLE LONGITUDE: -89.526493 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 39.976568 DATE COLLECTED: 7 / 28 / 1978
 SURFACE ELEVATION (FT.): 575.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
575.0			CLAY	17.0	0.0	
558.0			CLAY, SAND & GRAVEL	2.0	17.0	
556.0			SAND & GRAVEL	1.0	19.0	
555.0			CLAY	7.0	20.0	
548.0	MODESTO		SHALE	45.5	27.0	
502.5	MODESTO	CHAPEL	COAL	1.0	72.5	
501.5	MODESTO		SHALE	5.0	73.5	
496.5	MODESTO	TRIVOLI	SANDSTONE	1.0	78.5	UNCERTAIN CORRELATION
495.5	MODESTO		SHALE	64.0	79.5	
431.5	MODESTO	WEST FRANKLIN	LIMESTONE	3.0	143.5	
428.5	MODESTO		BLACK SHALE	2.5	146.5	
426.0	MODESTO		SHALE	7.0	149.0	
419.0	MODESTO		LIMESTONE	3.0	156.0	
416.0	MODESTO		SHALE	10.5	159.0	
405.5	MODESTO		LIMESTONE	1.5	169.5	
404.0	MODESTO		SHALE	6.0	171.0	
398.0	MODESTO		LIMESTONE	1.5	177.0	
396.5	MODESTO		SHALE	7.5	178.5	
389.0	MODESTO		BLACK SHALE	4.0	186.0	
385.0	CARBONDALE	DANVILLE	COAL	0.0	190.0	DANVILLE #7 COAL NOT PRESENT
385.0	CARBONDALE		SHALE	17.5	190.0	
367.5	CARBONDALE		LIMESTONE	3.5	207.5	
364.0	CARBONDALE		SHALE	1.0	211.0	
363.0	CARBONDALE	BRERETON	LIMESTONE	1.5	212.0	
361.5	CARBONDALE	ANNA	BLACK SHALE	1.0	213.5	
360.5	CARBONDALE	HERRIN	COAL	0.0	214.5	HERRIN NO.6 COAL NOT PRESENT
360.5	CARBONDALE		SHALE	3.5	214.5	
357.0	CARBONDALE		LIMESTONE	8.0	218.0	
349.0	CARBONDALE		SHALE	27.5	226.0	
320.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	254.5	
319.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.1	256.0	CORE #1 256-265.5
315.9	CARBONDALE	SPRINGFIELD	COAL	5.7	259.1	
310.2	CARBONDALE		SHALE	0.6	264.8	
309.5	CARBONDALE		CORE LOSS	0.0	265.5	
309.5	CARBONDALE		SHALE	9.5	265.5	
300.0	CARBONDALE	EXCELLO	BLACK SHALE	1.0	275.0	OFF DRILLERS LOG
299.0	CARBONDALE	HOUCHIN CREEK	COAL	2.0	276.0	
297.0	CARBONDALE		SHALE	2.0	278.0	

MAPID: 10720678000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 28

QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: WILLIAMSVILLE

LONGITUDE: -89.548783

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 39.989872

DATE COLLECTED: 6 / 29 / 1968

SURFACE ELEVATION (FT.): 600.0

LOGGED (FT.): 285.0

LOG TYPE: Drillers Log

SOURCE: CARTER OIL COMPANY

W-107

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
331.4	CARBONDALE	SPRINGFIELD	COAL	5.5	268.6	

MAPID: 10720678000C VERSION: 2

PROJECT: NCRDS92

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 28 QUARTERS/FOOTAGES: NW NW NE

QUADRANGLE: WILLIAMSVILLE LONGITUDE: -89.548783

GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 39.989872

DATE COLLECTED: 6 / 29 / 1968

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 285.0

LOG TYPE: Drillers Log

SOURCE: CARTER OIL COMPANY W-107

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0			UNCONSOLIDATED	8.0	0.0	
592.0			CLAY	7.0	8.0	
585.0			SAND	9.0	15.0	
576.0			SANDY CLAY	20.0	24.0	
556.0	MODESTO		GRAY SHALE	39.0	44.0	
517.0	MODESTO	CHAPEL	COAL	1.0	83.0	
516.0	MODESTO		GRAY SHALE	7.0	84.0	
509.0	MODESTO		SANDSTONE	9.0	91.0	
500.0	MODESTO		SANDY SHALE	40.0	100.0	
460.0	MODESTO		LIMESTONE	0.5	140.0	
459.5	MODESTO		SANDY SHALE	3.5	140.5	
456.0	MODESTO	WEST FRANKLIN	LIMESTONE	7.0	144.0	
449.0	MODESTO		GRAY SHALE	32.5	151.0	
416.5	MODESTO		LIMESTONE	0.5	183.5	
416.0	MODESTO		BLACK SHALE	14.0	184.0	
402.0	CARBONDALE	DANVILLE	COAL	1.5	198.0	
400.5	CARBONDALE		GRAY SHALE	10.5	199.5	
390.0	CARBONDALE		SANDSTONE	1.0	210.0	
389.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	211.0	
388.0	CARBONDALE		GRAY SHALE	4.0	212.0	
384.0	CARBONDALE	ANVIL ROCK	SANDSTONE	6.0	216.0	
378.0	CARBONDALE	HERRIN	COAL	1.0	222.0	
377.0	CARBONDALE		GRAY SHALE	2.0	223.0	
375.0	CARBONDALE		SANDSTONE	6.0	225.0	
369.0	CARBONDALE		GRAY SHALE	10.8	231.0	THICKNESS ADJUSTED TO MATCH CORE
358.2	CARBONDALE		SILTSTONE	10.7	241.8	
347.5	CARBONDALE		GRAY SHALE	14.5	252.5	
333.0	CARBONDALE	ST. DAVID	LIMESTONE	0.8	267.0	
332.2	CARBONDALE	TURNER MINE	BLACK SHALE	0.8	267.8	
331.4	CARBONDALE	SPRINGFIELD	COAL	6.0	268.6	
325.4	CARBONDALE		CLAYSTONE & SILTSTONE	6.4	274.6	
319.0	CARBONDALE		GRAY SILTSTONE	4.0	281.0	

MAPID: 10720884000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 28

QUARTERS/FOOTAGES: 2067' N line, 39' E line

QUADRANGLE: WILLIAMSVILLE

LONGITUDE: -89.540521

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 39.985045

DATE COLLECTED: 6 / 18 / 1979

SURFACE ELEVATION (FT.): 595.0

LOGGED (FT.): 280.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
407.0	CARBONDALE	DANVILLE	COAL	1.5	188.0	
337.1	CARBONDALE	SPRINGFIELD	COAL	6.0	257.9	

MAPID: 10720884000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 28 QUARTERS/FOOTAGES: 2067' N line, 39' E line
 QUADRANGLE: WILLIAMSVILLE LONGITUDE: -89.540521 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 39.985045 DATE COLLECTED: 6 / 18 / 1979
 SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0			SOIL	4.0	0.0	
591.0			CLAY	8.0	4.0	
583.0			SANDY CLAY	8.0	12.0	
575.0			SAND & GRAVEL	14.0	20.0	W/ CLAY LENSES
561.0			CLAY	2.0	34.0	
559.0	MODESTO		CLAYSTONE	8.0	36.0	RESISTIVITY AFFECTED BY DRILLING FLUID
551.0	MODESTO		SHALE	8.0	44.0	
543.0	MODESTO		SANDSTONE	3.0	52.0	
540.0	MODESTO		SHALE	23.0	55.0	
517.0	MODESTO	CHAPEL	COAL	1.0	78.0	
516.0	MODESTO		SHALE	5.0	79.0	
511.0	MODESTO	TRIVOLI	SANDSTONE	10.0	84.0	
501.0	MODESTO		SHALE	44.0	94.0	
457.0	MODESTO	WEST FRANKLIN	LIMESTONE	3.0	138.0	
454.0	MODESTO		SHALE	3.5	141.0	
449.5	MODESTO		BLACK SHALE	1.5	145.5	
448.0	MODESTO		SHALE	9.0	147.0	
439.0	MODESTO		LIMESTONE	3.0	156.0	
436.0	MODESTO		SHALE	25.0	159.0	
411.0	MODESTO		BLACK SHALE	4.5	184.0	
406.5	CARBONDALE	DANVILLE	COAL	1.0	188.5	
405.5	CARBONDALE		SHALE	7.0	189.5	
398.5	CARBONDALE	BRERETON	LIMESTONE	5.0	196.5	
393.5	CARBONDALE	BRERETON	SHALE	2.5	201.5	
391.0	CARBONDALE	BRERETON	LIMESTONE	2.0	204.0	
389.0	CARBONDALE	ANNA	BLACK SHALE	1.0	206.0	WITH COAL
388.0	CARBONDALE	HERRIN	COAL	0.0	207.0	HERRIN #6 COAL NOT PRESENT
388.0	CARBONDALE		SHALE	9.0	207.0	
379.0	CARBONDALE		SANDSTONE	13.0	216.0	
366.0	CARBONDALE		SHALE	25.0	229.0	
341.0	CARBONDALE	ST. DAVID	LIMESTONE	1.3	254.0	
339.7	CARBONDALE	TURNER MINE	BLACK SHALE	2.6	255.3	CORE #1 257.5-264.5
337.1	CARBONDALE	SPRINGFIELD	COAL	6.0	257.9	
331.1	CARBONDALE		SHALE	5.1	263.9	
326.0	CARBONDALE		LIMESTONE	2.0	269.0	
324.0	CARBONDALE		SHALE	9.0	271.0	WITH LIMESTONE NODULES

MAPID: 10720690000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 18N 4W

SECTION: 29

QUARTERS/FOOTAGES: 500' S line, 10' W line

QUADRANGLE: WILLIAMSVILLE

LONGITUDE: -89.578262

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 39.977425

DATE COLLECTED: 4 / 9 / 1968

SURFACE ELEVATION (FT.): 592.0

LOGGED (FT.): 261.3

LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY

WELL TYPE: Coal Test

COMMENT: DL & SCD; APPROX. LOC. FROM CONSOL. MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
340.7	CARBONDALE	SPRINGFIELD	COAL	5.2	251.3	

MAPID: 10720690000C VERSION: 2

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 18N 4W SECTION: 29 QUARTERS/FOOTAGES: 500' S line, 10' W line
 QUADRANGLE: WILLIAMSVILLE LONGITUDE: -89.578262 GEOLOGIST: COATS
 CONFIDENTIAL: N LATITUDE: 39.977425 DATE COLLECTED: 4 / 9 / 1968
 SURFACE ELEVATION (FT.): 592.0 LOGGED (FT.): 261.3 LOG TYPE: Multiple log types
 SOURCE: CARTER OIL COMPANY WELL TYPE: Coal Test
 COMMENT: DL & SCD; APPROX. LOC. FROM CONSOL. MAP

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
592.0			CLAY	15.0	0.0	
577.0			UNCONSOLIDATED	55.0	15.0	
522.0	MODESTO		SHALE	40.0	70.0	CLAY BASE
482.0	MODESTO		SANDY DARK SHALE	20.0	110.0	W/ NODULES
462.0	MODESTO	CHAPEL	COAL	0.5	130.0	
461.5	MODESTO		GRAY SHALE	2.5	130.5	SOFT
459.0	MODESTO		LIMESTONE	3.8	133.0	
455.2	MODESTO		GRAY SHALE	12.2	136.8	MULTI-COLORED
443.0	MODESTO		LIMESTONE	2.0	149.0	
441.0	MODESTO		SANDSTONE	7.0	151.0	
434.0	MODESTO		GRAY SHALE	7.0	158.0	
427.0	MODESTO		VARRIGATED SHALE	16.0	165.0	
411.0	CARBONDALE	DANVILLE	COAL	1.6	181.0	
409.4	CARBONDALE		GRAY SHALE	1.4	182.6	
408.0	CARBONDALE	DANVILLE SUMP	COAL	2.0	184.0	
406.0	CARBONDALE		GRAY SHALE	11.0	186.0	
395.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	197.0	
392.5	CARBONDALE		DARK SHALE	5.0	199.5	BROWN
387.5	CARBONDALE	BRERETON	LIMESTONE	2.5	204.5	
385.0	CARBONDALE		SANDSTONE	35.3	207.0	
349.7	CARBONDALE		SILTY SHALE	6.2	242.3	W/SID. LENSES; START CORE 242.30-261.30'
343.5	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	0.5	248.5	GRAY
343.0	CARBONDALE		FOSSILIFEROUS SHALE	2.3	249.0	
340.7	CARBONDALE	SPRINGFIELD	COAL	5.2	251.3	
335.5	CARBONDALE		SILTY CLAYSTONE	3.8	256.5	GRAY
331.7	CARBONDALE		SILTSTONE	1.0	260.3	GRAY,W/ CALCAREOUS LENSES

MAPID: 10721103000C VERSION: 1 PROJECT: NCRDS88

COUNTY: LOGAN TWP/RNG: 19N 1W SECTION: 11 QUARTERS/FOOTAGES: 1300' S line, 2035' W line

QUADRANGLE: CHESTNUT LONGITUDE: -89.17566 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 40.109929 DATE COLLECTED: 7 / 10 / 1980

SURFACE ELEVATION (FT.): 632.0 LOGGED (FT.): 396.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. CI80-11-14 WELL TYPE: Coal Test

COMMENT: GAMMA, DENSITY AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
632.0			UNCONSOLIDATED	108.0	0.0	
524.0	BOND	CARTHAGE	LIMESTONE	3.0	108.0	
521.0	MODESTO	NEW HAVEN	BLACK SHALE	2.0	111.0	
519.0	MODESTO		UNCLASSIFIED	9.0	113.0	
510.0	MODESTO	MACOUPIN	LIMESTONE	6.0	122.0	
504.0	MODESTO		DARK SHALE	34.5	128.0	
469.5	MODESTO	CHAPEL	BLACK SHALE & CLAY	3.5	162.5	UNCERTAIN CORRELATION
466.0	MODESTO		UNCLASSIFIED	34.0	166.0	
432.0	MODESTO		COAL	2.0	200.0	
430.0	MODESTO		UNCLASSIFIED	18.0	202.0	
412.0	MODESTO	WEST FRANKLIN	LIMESTONE	13.0	220.0	
399.0	MODESTO		UNCLASSIFIED	56.5	233.0	
342.5	CARBONDALE	DANVILLE	COAL	2.0	289.5	
340.5	CARBONDALE		UNCLASSIFIED	23.5	291.5	
317.0	CARBONDALE	HERRIN	COAL	4.0	315.0	
313.0	CARBONDALE		UNCLASSIFIED	42.5	319.0	
270.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	361.5	
269.5	CARBONDALE	TURNER MINE	BLACK SHALE	0.7	362.5	
268.8	CARBONDALE	SPRINGFIELD	COAL	4.3	363.2	
264.5	CARBONDALE		UNCLASSIFIED	28.5	367.5	

MAPID: 10721105000C VERSION: 1 PROJECT: NCRDS88

COUNTY: LOGAN TWP/RNG: 19N 1W SECTION: 24 QUARTERS/FOOTAGES: 310' S line, 290' W line

QUADRANGLE: CHESTNUT LONGITUDE: -89.162967 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 40.078471 DATE COLLECTED: 7 / 10 / 1980

SURFACE ELEVATION (FT.): 627.0 LOGGED (FT.): 354.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. CI-80-24-8 WELL TYPE: Coal Test

COMMENT: GAMMA, DENS. & RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
627.0			UNCONSOLIDATED	105.0	0.0
522.0	BOND	CARTHAGE	LIMESTONE	2.0	105.0
520.0	MODESTO	NEW HAVEN	BLACK SHALE	2.0	107.0
518.0	MODESTO		UNCLASSIFIED	7.0	109.0
511.0	MODESTO	MACOUPIN	LIMESTONE	6.0	116.0
505.0	MODESTO		UNCLASSIFIED	2.0	122.0
503.0	MODESTO		BLACK SHALE	2.5	124.0
500.5	MODESTO		UNCLASSIFIED	84.5	126.5
416.0	MODESTO	WEST FRANKLIN	LIMESTONE	14.0	211.0
402.0	MODESTO		UNCLASSIFIED	63.0	225.0
339.0	CARBONDALE	DANVILLE	BLACK SHALE & CLAY	9.0	288.0
330.0	CARBONDALE		UNCLASSIFIED	20.0	297.0
310.0	CARBONDALE		BLACK SHALE	2.5	317.0
307.5	CARBONDALE	HERRIN	COAL	3.5	319.5
304.0	CARBONDALE		UNCLASSIFIED	31.0	323.0

MAPID: 10700027000C VERSION: 1

PROJECT: NCRDS99

COUNTY: LOGAN

TWP/RNG: 19N 2W

SECTION: 5

QUARTERS/FOOTAGES: NW NW NW

QUADRANGLE: LINCOLN EAST

LONGITUDE: -89.347682

GEOLOGIST: HAMER

CONFIDENTIAL: N

LATITUDE: 40.134738

DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.):

LOGGED (FT.): 268.0

LOG TYPE: Drillers Log

SOURCE: DEER CREEK COAL CO. 1005

WELL TYPE: Mine Shaft

COMMENT: NO FOOTAGES, NO DAY OR MONTH OF DATA

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	PLEISTOCENE		SOIL	3.0	0.0	SUB-SOIL
-	PLEISTOCENE		CLAY	10.0	3.0	
-	PLEISTOCENE		SAND	6.0	13.0	
-	PLEISTOCENE		CLAY	22.0	19.0	
-	PLEISTOCENE		SAND & GRAVEL	3.0	41.0	
-	PLEISTOCENE		CLAY	14.0	44.0	
-	PLEISTOCENE		CLAY	12.0	58.0	
-	PLEISTOCENE		SAND & GRAVEL	3.0	70.0	AQUIFER
-	PLEISTOCENE		CLAY	8.0	73.0	
-	PLEISTOCENE		SAND & GRAVEL	3.0	81.0	
-	PLEISTOCENE		CLAY	5.0	84.0	
-	PLEISTOCENE		GLACIAL DRIFT	16.0	89.0	LOG REPORTS SHAPE
-	PLEISTOCENE		CLAY	10.0	105.0	INCLUDES GRAVEL
-	PLEISTOCENE		CLAY	12.0	115.0	
-	PLEISTOCENE		CLAY	26.0	127.0	
-	PLEISTOCENE		CLAY	14.0	153.0	
-	PLEISTOCENE		CLAY	6.0	167.0	INCLUDES GRAVEL
-	PLEISTOCENE		CLAY	5.0	173.0	SANDY
-	PLEISTOCENE		CLAY	14.0	178.0	CLAY
-	CARBONDALE		SHALE	28.0	192.0	SANDY
-	CARBONDALE	HERRIN	COAL	4.5	220.0	
-	CARBONDALE		UNDERCLAY	4.5	224.5	
-	CARBONDALE		SHALE	10.0	229.0	SANDY
-	CARBONDALE		SHALE	20.5	239.0	SOAPSTONE
-	CARBONDALE	ST. DAVID	LIMESTONE	0.5	259.5	CAPROCK
-	CARBONDALE	TURNER MINE	SHALE	3.0	260.0	BLACK
-	CARBONDALE	SPRINGFIELD	COAL	5.0	263.0	

MAPID: 10700027000C VERSION: 2

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 2W

SECTION: 5

QUARTERS/FOOTAGES: NW NW NW

QUADRANGLE: LINCOLN EAST

LONGITUDE: -89.347682

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.134738

DATE COLLECTED: 0 / 0 / 1937

SURFACE ELEVATION (FT.):

LOGGED (FT.): 268.0

LOG TYPE: Drillers Log

SOURCE: DEER CREEK COAL CO.

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-	CARBONDALE	HERRIN	COAL	4.5	220.0
-	CARBONDALE	SPRINGFIELD	COAL	5.0	263.0

MAPID: 10721107000C VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN

TWP/RNG: 19N 2W

SECTION: 10

QUARTERS/FOOTAGES: 1200' S line, 129' E line

QUADRANGLE: MOUNT PULASKI

LONGITUDE: -89.292177

GEOLOGIST: R. SMITH

CONFIDENTIAL: N

LATITUDE: 40.109713

DATE COLLECTED: 7 / 13 / 1980

SURFACE ELEVATION (FT.): 608.0

LOGGED (FT.): 318.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. CI80-10-15

WELL TYPE: Coal Test

COMMENT: GAMMA, DENS. & RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
608.0			UNCONSOLIDATED	112.0	0.0
496.0	MODESTO		UNCLASSIFIED	29.0	112.0
467.0	MODESTO		BLACK SHALE & CLAY	3.0	141.0
464.0	MODESTO		UNCLASSIFIED	31.5	144.0
432.5	MODESTO	WEST FRANKLIN	LIMESTONE	3.5	175.5
429.0	MODESTO		UNCLASSIFIED	19.0	179.0
410.0	MODESTO		BLACK SHALE	2.0	198.0
408.0	MODESTO	CHAPEL	COAL	1.5	200.0
406.5	MODESTO		UNCLASSIFIED	12.0	201.5
394.5	MODESTO	PIASA	LIMESTONE	2.5	213.5
392.0	MODESTO		UNCLASSIFIED	4.0	216.0
388.0	MODESTO		BLACK SHALE	2.0	220.0
386.0	CARBONDALE	DANVILLE	COAL	4.0	222.0
382.0	CARBONDALE		UNCLASSIFIED	22.5	226.0
359.5	CARBONDALE	BRERETON	LIMESTONE	2.7	248.5
356.8	CARBONDALE		UNCLASSIFIED	0.8	251.2
356.0	CARBONDALE	HERRIN	COAL	4.8	252.0
351.2	CARBONDALE		UNCLASSIFIED	38.3	256.8
312.9	CARBONDALE	ST. DAVID	LIMESTONE	0.6	295.1
312.3	CARBONDALE	TURNER MINE	BLACK SHALE	2.7	295.7
309.6	CARBONDALE	SPRINGFIELD	COAL	4.5	298.4
305.1	CARBONDALE		UNCLASSIFIED	15.0	302.9

MAPID: 10721108000C **VERSION:** 1 **PROJECT:** NCRDS88
COUNTY: LOGAN **TWP/RNG:** 19N 2W **SECTION:** 29 **QUARTERS/FOOTAGES:** 775' S line, 200' E line
QUADRANGLE: MOUNT PULASKI **LONGITUDE:** -89.330295 **GEOLOGIST:** R. SMITH
CONFIDENTIAL: N **LATITUDE:** 40.064993 **DATE COLLECTED:** 7 / 8 / 1980
SURFACE ELEVATION (FT.): 619.0 **LOGGED (FT.):** 338.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL CORP. CI-80-29-5 **WELL TYPE:** Coal Test
COMMENT: GAMMA, DENS. AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
513.0	MODESTO		BLACK SHALE	2.0	106.0
511.0	MODESTO		UNCLASSIFIED	16.5	108.0
494.5	MODESTO		COAL	1.5	124.5
493.0	MODESTO		UNCLASSIFIED	24.0	126.0
469.0	MODESTO		LIMESTONE	22.0	150.0
447.0	MODESTO		UNCLASSIFIED	40.5	172.0
406.5	MODESTO	PIASA	LIMESTONE	3.0	212.5
403.5	MODESTO		UNCLASSIFIED	5.5	215.5
398.0	CARBONDALE	DANVILLE	COAL	1.8	221.0
396.2	CARBONDALE		BLACK SHALE	4.2	222.8
392.0	CARBONDALE		UNCLASSIFIED	25.0	227.0
367.0	CARBONDALE		SHALE	4.0	252.0
363.0	CARBONDALE	HERRIN	COAL	3.0	256.0
360.0	CARBONDALE		UNCLASSIFIED	42.2	259.0
317.8	CARBONDALE	ST. DAVID	LIMESTONE	1.0	301.2
316.8	CARBONDALE	TURNER MINE	BLACK SHALE	2.6	302.2
314.2	CARBONDALE	SPRINGFIELD	COAL	4.7	304.8
309.5	CARBONDALE		UNCLASSIFIED	12.0	309.5
297.5	CARBONDALE	EXCELLO	BLACK SHALE	2.0	321.5
295.5	CARBONDALE		UNCLASSIFIED	14.5	323.5

MAPID: 10721151000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 3 **QUARTERS/FOOTAGES:** 1343' N line, 10' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.405771 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.13225 **DATE COLLECTED:** 5 / 18 / 1977
SURFACE ELEVATION (FT.): 545.0 **LOGGED (FT.):** 270.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
476.7	MODESTO	CHAPEL	COAL	1.7	68.3
346.0	CARBONDALE	HERRIN	COAL	5.7	199.0
295.8	CARBONDALE	SPRINGFIELD	COAL	5.8	249.2

MAPID: 10721151000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 3 QUARTERS/FOOTAGES: 1343' N line, 10' E line
 QUADRANGLE: LINCOLN WEST LONGITUDE: -89.405771 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.13225 DATE COLLECTED: 5 / 18 / 1977
 SURFACE ELEVATION (FT.): 545.0 LOGGED (FT.): 270.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
545.0			CLAY	25.0	0.0
521.0	MODESTO		SHALE	26.0	24.0
495.0	MODESTO		SILTSTONE	18.5	50.0
476.5	MODESTO	CHAPEL	COAL	1.5	68.5
475.0	MODESTO		SHALE	24.5	70.0
450.5	MODESTO	WEST FRANKLIN	LIMESTONE	2.0	94.5
448.5	MODESTO	WEST FRANKLIN	SHALE	3.5	96.5
445.0	MODESTO	WEST FRANKLIN	LIMESTONE	11.0	100.0
434.0	MODESTO		BLACK SHALE	3.0	111.0
431.0	MODESTO		SHALE	9.0	114.0
422.0	MODESTO		SHALE	5.0	123.0
417.0	MODESTO		LIMESTONE	10.0	128.0
407.0	MODESTO		SHALE	26.0	138.0
381.0	MODESTO		BLACK SHALE	2.5	164.0
378.5	CARBONDALE	DANVILLE	COAL	0.0	166.5
378.5	CARBONDALE		SHALE	8.5	166.5
370.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	175.0
368.5	CARBONDALE		SHALE	2.5	176.5
366.0	CARBONDALE	ANVIL ROCK	SANDSTONE	8.0	179.0
358.0	CARBONDALE		SHALE	10.0	187.0
348.0	CARBONDALE	ANNA	BLACK SHALE	2.0	197.0
346.0	CARBONDALE	HERRIN	COAL	5.7	199.0
340.3	CARBONDALE		UNDERCLAY	1.0	204.7
339.2	CARBONDALE		CORE LOSS	0.3	205.8
339.0	CARBONDALE		SHALE	28.0	206.0
311.0	CARBONDALE		BLACK SHALE	1.5	234.0
309.5	CARBONDALE		SHALE	7.5	235.5
302.0	CARBONDALE	ST. DAVID	LIMESTONE	1.7	243.0
300.3	CARBONDALE	TURNER MINE	BLACK SHALE	4.5	244.7
295.8	CARBONDALE	SPRINGFIELD	COAL	5.8	249.2
290.0	CARBONDALE		UNDERCLAY	3.6	255.0
286.5	CARBONDALE		CORE LOSS	0.7	258.5
285.8	CARBONDALE		SHALE	4.6	259.2
281.2	CARBONDALE		LIMESTONE	2.2	263.8
279.0	CARBONDALE	EXCELLO	BLACK SHALE	1.5	266.0
277.5	CARBONDALE		SHALE	2.5	267.5

MAPID: 10721175000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 4

QUARTERS/FOOTAGES: 39' S line, 1281' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.438401

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.121664

DATE COLLECTED: 6 / 9 / 1977

SURFACE ELEVATION (FT.): 545.0

LOGGED (FT.): 240.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
402.0	CARBONDALE	HERRIN	COAL	3.7	143.0	
343.6	CARBONDALE	SPRINGFIELD	COAL	5.7	201.4	

MAPID: 10721175000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 4 **QUARTERS/FOOTAGES:** 39' S line, 1281' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.438401 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.121664 **DATE COLLECTED:** 6 / 9 / 1977
SURFACE ELEVATION (FT.): 545.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
545.0			CLAY	12.0	0.0	
533.0			SAND & GRAVEL	4.0	12.0	
529.0			CLAY	10.0	16.0	
520.0	MODESTO		SHALE	13.0	25.0	
507.0	MODESTO		LIMESTONE	17.5	38.0	
489.5	MODESTO		BLACK SHALE	2.5	55.5	
487.0	MODESTO		SHALE	13.0	58.0	
474.0	MODESTO	WEST FRANKLIN	LIMESTONE	7.0	71.0	UNCERTAIN CORRELATION
467.0	MODESTO		SHALE	8.0	78.0	
459.0	MODESTO		LIMESTONE	4.0	86.0	
455.0	MODESTO		SHALE	20.0	90.0	
435.0	MODESTO		BLACK SHALE	3.0	110.0	
432.0	CARBONDALE	DANVILLE	COAL	2.0	113.0	
430.0	CARBONDALE		SHALE	25.0	115.0	
405.0	CARBONDALE	BRERETON	LIMESTONE	2.5	140.0	
402.5	CARBONDALE	ANNA	BLACK SHALE	0.5	142.5	
402.0	CARBONDALE	HERRIN	COAL	3.7	143.0	
398.3	CARBONDALE		UNDERCLAY	1.3	146.7	
397.0	CARBONDALE		SHALE	7.0	148.0	
390.0	CARBONDALE		SANDSTONE	5.0	155.0	
385.0	CARBONDALE		SHALE	16.0	160.0	
369.0	CARBONDALE		SANDSTONE	6.0	176.0	
363.0	CARBONDALE		SHALE	15.5	182.0	
347.5	CARBONDALE	ST. DAVID	LIMESTONE	0.6	197.5	
346.9	CARBONDALE	TURNER MINE	BLACK SHALE	3.2	198.1	
343.6	CARBONDALE	SPRINGFIELD	COAL	5.7	201.4	
338.0	CARBONDALE		UNDERCLAY	1.6	207.0	
336.4	CARBONDALE		CORE LOSS	0.5	208.6	
336.0	CARBONDALE		SHALE	31.0	209.0	

MAPID: 10700017000C VERSION: 1

PROJECT: NCRDS89

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 5 QUARTERS/FOOTAGES: SW SW

QUADRANGLE: BROADWELL LONGITUDE: -89.459548

GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.123613

DATE COLLECTED: 3 / 16 / 1950

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 315.8

LOG TYPE: Survey Core Study

SOURCE: A.M. PARKS, DIAMOND DRILL HOLE #11

WELL TYPE: Coal Test

COMMENT: CORE #C6884, VERY CONDENSED CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
379.0	CARBONDALE	ST. DAVID	LIMESTONE	0.8	171.0	
378.2	CARBONDALE	TURNER MINE	BLACK SHALE	4.8	171.8	PYRITIC FOSSILS
373.5	CARBONDALE	SPRINGFIELD	COAL	5.9	176.5	
367.6	CARBONDALE		CORE LOSS	42.0	182.4	NO CORE
325.6	CARBONDALE		SILTY SHALE	1.0	224.4	W/CALCAREOUS CONCRETIONS; CARB., GRAY
324.6	CARBONDALE		SILTY SHALE	5.0	225.4	CARBONACEOUS; W/RED AND GRN MOTTLING, GR
319.6	CARBONDALE		SILTY SHALE	0.4	230.4	W/CARB. LAMINAE AND SLTST LAMS., GRAY
319.2	CARBONDALE		CARBONACEOUS SILTSTONE	3.2	230.8	GRAY
316.0	CARBONDALE		SILTSTONE	1.8	234.0	INTERLAMINATED W/GRAY SH
314.2	CARBONDALE		GRAY SHALE	7.3	235.8	SIDERITE CONC. IN BOTTOM 4.75 FEET
306.8	CARBONDALE		UNCLASSIFIED	0.8	243.2	
306.0	CARBONDALE		GRAY SHALE	6.7	244.0	W/PYRITE TRAILS
299.3	CARBONDALE	EXCELLO	BLACK SHALE	1.3	250.7	W/PYRITE TRAILS
298.0	CARBONDALE	HOUCHIN CREEK	COAL	1.2	252.0	
296.8	CARBONDALE		SANDSTONE	0.9	253.2	STIGMARIA, GRAY
295.9	CARBONDALE		GRAY SHALE	0.2	254.1	STIGMARIA
295.7	CARBONDALE		GRAY SHALE	1.8	254.3	MACERATED PLANTS
294.0	CARBONDALE		CARBONACEOUS SHALE	1.7	256.0	INTERLAMINATED W/SS, DRK- GRAY
292.3	CARBONDALE		CARBONACEOUS SHALE	9.3	257.7	GRAY
283.1	CARBONDALE		SHALE	0.0	266.9	PYRITIC PLANT FRAGMENTS, DRK-GRAY
283.0	CARBONDALE		COAL	0.0	267.0	
283.0	CARBONDALE		CARBONACEOUS SANDSTONE	0.8	267.0	STIGMARIA, GRAY
282.2	CARBONDALE		SANDSTONE	2.2	267.8	CARBONACEOUS INTERLAMs, GRAY
280.1	CARBONDALE		GRAY SHALE	4.1	269.9	PYRITIC PLANT FRAGS; W/SS INTERLAMs
276.0	CARBONDALE		SANDSTONE	5.8	274.0	W/SH INTERLAMINATIONS, GRAY
270.2	CARBONDALE		GRAY SHALE	4.9	279.8	CARBONACEOUS
265.2	CARBONDALE		LIMESTONE	0.2	284.8	SIDERITIC, FOSSILIF., DRK- BRN
265.0	CARBONDALE		GRAY SHALE	9.0	285.0	IN PLACES W/SLTST INTERLAMs
256.0	CARBONDALE		SHALE	10.0	294.0	DARK GRAY TO BLACK; W/PYRITIC TRAILS
246.0	CARBONDALE		LIMESTONE	1.0	304.0	
245.0	CARBONDALE	MECCA QUARRY	BLACK SHALE	3.3	305.0	
241.7	CARBONDALE	COLCHESTER	COAL	2.4	308.3	
239.3	SPOON		CARBONACEOUS SHALE	0.1	310.7	DARK GRAY TO BLACK
239.2	SPOON		CARBONACEOUS SANDSTONE	1.8	310.8	W/STIGMARIA, GRAY
237.4	SPOON		CARBONACEOUS SILTSTONE	0.6	312.6	W/STIGMARIA, GRAY

236.8	SPOON	GRAY SHALE	1.2	313.2	MOTTLED, GRAY
235.7	SPOON	BLACK SHALE	0.1	314.3	
235.6	SPOON	SHALE	1.4	314.4	GRN-GRAY

MAPID: 10720901000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 5

QUARTERS/FOOTAGES: 55' S line, 2550' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.452733

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.121883

DATE COLLECTED: 7 / 12 / 1979

SURFACE ELEVATION (FT.): 570.0

LOGGED (FT.): 237.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
415.0	CARBONDALE	HERRIN	COAL	3.8	155.0
353.4	CARBONDALE	SPRINGFIELD	COAL	5.5	216.6

MAPID: 10720901000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 5 **QUARTERS/FOOTAGES:** 55' S line, 2550' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.452733 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.121883 **DATE COLLECTED:** 7 / 12 / 1979
SURFACE ELEVATION (FT.): 570.0 **LOGGED (FT.):** 237.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
570.0			CLAY	31.0	0.0	
539.0	MODESTO		SHALE	17.0	31.0	
522.0	MODESTO	WEST FRANKLIN	LIMESTONE	4.0	48.0	
518.0	MODESTO	WEST FRANKLIN	SHALE	2.5	52.0	
515.5	MODESTO	WEST FRANKLIN	LIMESTONE	8.5	54.5	
507.0	MODESTO		BLACK SHALE	2.0	63.0	
505.0	MODESTO		SHALE	18.0	65.0	
487.0	MODESTO		SANDSTONE	2.0	83.0	
485.0	MODESTO		SHALE	13.5	85.0	
471.5	MODESTO		LIMESTONE	1.5	98.5	PIASA LS ON DRILLERS LOG
470.0	MODESTO		SHALE	24.5	100.0	
445.5	MODESTO		BLACK SHALE	2.0	124.5	
443.5	CARBONDALE	DANVILLE	COAL	1.0	126.5	
442.5	CARBONDALE		SHALE	8.5	127.5	
434.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	136.0	
432.5	CARBONDALE		SHALE	14.0	137.5	
418.5	CARBONDALE	BRERETON	LIMESTONE	4.0	151.5	
414.5	CARBONDALE	ANNA	BLACK SHALE	1.0	155.5	
413.5	CARBONDALE	HERRIN	COAL	4.0	156.5	
409.5	CARBONDALE		SHALE	3.0	160.5	
406.5	CARBONDALE		LIMESTONE	2.5	163.5	
404.0	CARBONDALE		SHALE	25.0	166.0	SANDSTONE LENSES
379.0	CARBONDALE		SHALE	5.3	191.0	CORE #1 191-201
373.7	CARBONDALE		SHALE	0.3	196.3	WITH SIDERITE NODULES
373.4	CARBONDALE		SHALE	4.4	196.6	WITH THIN SIDERITE BANDS
369.0	CARBONDALE		SHALE	3.9	201.0	CORE #2 201-211
365.1	CARBONDALE		SHALE	3.7	204.9	WITH THIN TO WIDE SIDERITE BANDS
361.4	CARBONDALE		SHALE	2.0	208.6	
359.4	CARBONDALE	ST. DAVID	LIMESTONE	1.6	210.6	
357.8	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	212.2	CALCAREOUS TOP AND BOTTOM
354.4	CARBONDALE	ST. DAVID	LIMESTONE	0.3	215.6	
354.1	CARBONDALE		CORE LOSS	0.1	215.9	
354.0	CARBONDALE	ST. DAVID	LIMESTONE	0.6	216.0	SHARP CONTACT, CORE #4 216-220
353.4	CARBONDALE	SPRINGFIELD	COAL	5.5	216.6	CORE #5 220-230, LOSS 218.1-220
348.0	CARBONDALE		UNDERCLAY	0.5	222.0	
347.5	CARBONDALE		SHALE	5.5	222.5	SCATTERED LIMESTONE NODULES
342.0	CARBONDALE		LIMESTONE	0.3	228.0	
341.7	CARBONDALE		SHALE	1.9	228.3	CORE #6 230-237

339.8	CARBONDALE	EXCELLO	BLACK SHALE	0.6	230.2	INTERBEDDED WITH THIN GRAY SH LENSES
339.2	CARBONDALE	HOUCHIN CREEK	COAL	1.2	230.8	
338.0	CARBONDALE		SHALE	5.0	232.0	NUMEROUS DIAGONAL FRACTURE PLANES

MAPID: 10700020000C **VERSION:** 1 **PROJECT:** NCRDS89
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 7 **QUARTERS/FOOTAGES:** NE SW NE
QUADRANGLE: BROADWELL **LONGITUDE:** -89.469049 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.117322 **DATE COLLECTED:** 6 / 30 / 1949
SURFACE ELEVATION (FT.): **LOGGED (FT.):** 159.7 **LOG TYPE:** Survey Core Study
SOURCE: A. M. PARKS, DIAMOND DRILL HOLE #1 **WELL TYPE:** Coal Test
COMMENT: CORE C-2544

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	MODESTO		SHALY LIMESTONE	5.0	28.0	GRN-GRAY
-	MODESTO		CALCAREOUS SHALE	3.3	33.0	W/LS NODULES, GRN-GRAY
-	MODESTO		CORE LOSS	2.7	36.3	
-	MODESTO		SHALE	21.2	39.0	GRN-BLUE, BRN, YELLOW-BRN, MULT
-	MODESTO		SHALE	3.8	59.2	DK-GRAY
-	MODESTO		SHALE	2.2	63.0	
-	CARBONDALE	DANVILLE	COAL	1.2	65.2	
-	CARBONDALE		UNDERCLAY	1.6	66.4	
-	CARBONDALE		CLAYSTONE	7.0	68.0	W/LS NODULES, GRAY
-	CARBONDALE		SILTSTONE	2.5	75.0	
-	CARBONDALE		GRAY SHALE	10.5	77.5	
-	CARBONDALE		SHALY LIMESTONE	4.3	88.0	DRK-GRAY
-	CARBONDALE		SHALE	0.2	92.3	GRN-GRAY
-	CARBONDALE		CORE LOSS	1.1	92.4	
-	CARBONDALE	HERRIN	COAL	3.0	93.5	
-	CARBONDALE		UNDERCLAY	1.3	96.5	W/STIGMARIA, GRAY
-	CARBONDALE		SHALE	1.4	97.8	W/LS NODULES, GRAY
-	CARBONDALE		SHALE	2.3	99.2	W/SLTST, GRN-GRAY
-	CARBONDALE		SILTSTONE	0.5	101.5	SHALY, GRN-GRAY
-	CARBONDALE		SHALE	4.7	102.0	W/SLTST, GRN-GRAY
-	CARBONDALE		CORE LOSS	0.3	106.7	
-	CARBONDALE		SHALE	12.7	107.0	GRN-GRAY
-	CARBONDALE		SILTSTONE	4.3	119.7	GRAY
-	CARBONDALE		GRAY SHALE	18.4	123.9	
-	CARBONDALE		SHALE	6.1	142.3	DRK-GRAY
-	CARBONDALE	ST. DAVID	SHALY LIMESTONE	1.9	148.4	
-	CARBONDALE	TURNER MINE	BLACK SHALE	3.3	150.3	
-	CARBONDALE	SPRINGFIELD	COAL	6.1	153.6	

MAPID: 10700546000C VERSION: 1 PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 7 QUARTERS/FOOTAGES: 365' N line, 115' E line of SE

QUADRANGLE: BROADWELL LONGITUDE: -89.462228 GEOLOGIST: HINDMAN

CONFIDENTIAL: N LATITUDE: 40.113583 DATE COLLECTED: 5 / 3 / 1972

SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 404.0 LOG TYPE: Nuclear Log

SOURCE: CENTRAL ILLINOIS LIGHT WELL TYPE: Gas Storage Operational Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.0			UNCONSOLIDATED	70.0	0.0	
515.0			UNCLASSIFIED	86.0	70.0	
429.0	CARBONDALE	HERRIN	COAL	2.8	156.0	
426.2	CARBONDALE		UNCLASSIFIED	55.3	158.8	
371.0	CARBONDALE	SPRINGFIELD	COAL	5.8	214.0	
365.2	CARBONDALE		UNCLASSIFIED	124.3	219.8	
241.0	CARBONDALE	COLCHESTER	COAL	3.0	344.0	
238.0	SPOON		UNCLASSIFIED	57.0	347.0	
181.0	SPOON		COAL	0.0	404.0	THIN COAL

MAPID: 10720902000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 7 QUARTERS/FOOTAGES: 2630' N line, 2615' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.471224 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.114609 DATE COLLECTED: 7 / 9 / 1979

SURFACE ELEVATION (FT.): 535.0 LOGGED (FT.): 195.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
421.5	CARBONDALE	HERRIN	COAL	4.5	113.5	
360.4	CARBONDALE	SPRINGFIELD	COAL	5.9	174.6	

MAPID: 10720902000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 7 **QUARTERS/FOOTAGES:** 2630' N line, 2615' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.471224 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.114609 **DATE COLLECTED:** 7 / 9 / 1979
SURFACE ELEVATION (FT.): 535.0 **LOGGED (FT.):** 195.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
535.0			CLAY	8.0	0.0	
527.0			SAND & GRAVEL	4.0	8.0	
523.0			CLAY	2.0	12.0	
520.5	MODESTO	WEST FRANKLIN	LIMESTONE	12.5	14.5	
508.0	MODESTO		BLACK SHALE	3.0	27.0	
505.0	MODESTO		SHALE	22.0	30.0	
483.0	MODESTO		LIMESTONE	4.0	52.0	
479.0	MODESTO		SHALE	36.5	56.0	
442.5	MODESTO		SHALE	2.0	92.5	
440.5	CARBONDALE	DANVILLE	COAL	0.0	94.5	DANVILLE #7 COAL NOT PRESENT
440.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	94.5	
439.5	CARBONDALE		SHALE	3.5	95.5	
436.0	CARBONDALE	ANVIL ROCK	SANDSTONE	3.0	99.0	
433.0	CARBONDALE		SHALE	11.0	102.0	WITH SANDSTONE LENSES
422.0	CARBONDALE	BRERETON	LIMESTONE	1.5	113.0	
420.5	CARBONDALE	HERRIN	COAL	4.0	114.5	
416.5	CARBONDALE		UNDERCLAY	5.0	118.5	
411.5	CARBONDALE		SHALE	48.5	123.5	SANDY DOWN TO 169 FROM DRILLERS LOG
363.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	172.0	
362.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.6	173.0	CORE #1 174-182
360.4	CARBONDALE	SPRINGFIELD	COAL	5.9	174.6	CLAY 177.47-177.5
354.5	CARBONDALE		SHALE	0.6	180.5	
354.0	CARBONDALE		SHALE	0.9	181.0	
353.1	CARBONDALE		CORE LOSS	0.1	181.9	
353.0	CARBONDALE		SHALE	13.0	182.0	WITH LIMESTONE NODULES 185-190

MAPID: 10700115000C VERSION: 1

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 8 QUARTERS/FOOTAGES: 335' S line, 344' W line of NW

QUADRANGLE: BROADWELL LONGITUDE: -89.460599 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 40.115498 DATE COLLECTED: 4 / 7 / 1971

SURFACE ELEVATION (FT.): 579.0 LOGGED (FT.): 558.0 LOG TYPE: Gamma Ray Density

SOURCE: CENTRAL ILLINOIS LIGHT CO. WELL TYPE: Gas Storage Operational Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
579.0			UNCONSOLIDATED	35.0	0.0	
544.0	MODESTO		UNCLASSIFIED	40.0	35.0	
504.0	MODESTO	WEST FRANKLIN	LIMESTONE	3.0	75.0	
501.0	MODESTO	WEST FRANKLIN	SHALE	2.0	78.0	
499.0	MODESTO	WEST FRANKLIN	LIMESTONE	4.0	80.0	
495.0			UNCLASSIFIED	58.0	84.0	
437.0	CARBONDALE	HERRIN	COAL	2.5	142.0	
434.5	CARBONDALE		UNCLASSIFIED	56.0	144.5	
378.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	200.5	
376.0	CARBONDALE	SPRINGFIELD	COAL	6.3	203.0	
369.7	CARBONDALE		UNCLASSIFIED	7.3	209.3	
362.5	CARBONDALE	EXCELLO	BLACK SHALE	2.5	216.5	
360.0	CARBONDALE		UNCLASSIFIED	62.0	219.0	
298.0	CARBONDALE	SURVANT	COAL	2.3	281.0	
295.7	CARBONDALE		UNCLASSIFIED	48.3	283.3	
247.5	CARBONDALE	OAK GROVE	LIMESTONE	1.0	331.5	
246.5	CARBONDALE	MECCA QUARRY	BLACK SHALE	4.0	332.5	
242.5	CARBONDALE	COLCHESTER	COAL	2.5	336.5	
240.0	SPOON		UNCLASSIFIED	53.0	339.0	
187.0	SPOON		BLACK SHALE	6.0	392.0	
181.0	SPOON		UNCLASSIFIED	76.0	398.0	
105.0			LIMESTONE	2.0	474.0	
103.0			SHALE	1.0	476.0	
102.0			COAL	4.5	477.0	
97.5			UNCLASSIFIED	76.5	481.5	NO OTHER COALS OR LS
21.0	MISSISSIPPIAN		LIMESTONE	0.0	558.0	TOP OF MISSISSIPPIAN

MAPID: 10720718000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 8 **QUARTERS/FOOTAGES:** 1800' S line, 18' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.443046 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.112051 **DATE COLLECTED:** 10 / 17 / 1975
SURFACE ELEVATION (FT.): 585.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
442.0	CARBONDALE	HERRIN	COAL	2.5	143.0	
384.0	CARBONDALE	SPRINGFIELD	COAL	4.5	201.0	

MAPID: 10720718000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 8 **QUARTERS/FOOTAGES:** 1800' S line, 18' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.443046 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.112051 **DATE COLLECTED:** 10 / 17 / 1975
SURFACE ELEVATION (FT.): 585.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.0			CLAY	41.0	0.0	
544.0	MODESTO		SHALE	2.0	41.0	WEATHERED
542.0	MODESTO	WEST FRANKLIN	LIMESTONE	4.0	43.0	
538.0	MODESTO	WEST FRANKLIN	SHALE	3.0	47.0	
535.0	MODESTO	WEST FRANKLIN	LIMESTONE	10.5	50.0	
524.5	MODESTO		BLACK SHALE	2.0	60.5	OFF GAMMA
522.5	MODESTO		SHALE	9.5	62.5	
513.0	MODESTO		LIMESTONE	4.5	72.0	
508.5	MODESTO		SHALE	3.5	76.5	
505.0	MODESTO		LIMESTONE	4.0	80.0	
501.0	MODESTO		SHALE	30.0	84.0	
471.0	MODESTO		BLACK SHALE	2.5	114.0	OFF GAMMA
468.5	CARBONDALE	DANVILLE	COAL	0.0	116.5	DANVILLE #7 COAL NOT PRESENT
468.5	CARBONDALE		SHALE	7.5	116.5	
461.0	CARBONDALE	ANVIL ROCK	SANDSTONE	19.0	124.0	DRILLERS LOG
442.0	CARBONDALE	HERRIN	COAL	2.5	143.0	PARTIALLY ERODED?
439.5	CARBONDALE		SHALE	36.5	145.5	WITH SANDSTONE STREAKS
403.0	CARBONDALE		SANDSTONE	14.5	182.0	
388.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	196.5	
387.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	197.5	
384.0	CARBONDALE	SPRINGFIELD	COAL	4.5	201.0	
379.5	CARBONDALE		SHALE	9.5	205.5	
370.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	215.0	OFF GAMMA
368.0	CARBONDALE		SHALE	23.0	217.0	

MAPID: 10700021000C VERSION: 1 PROJECT: NCRDS89

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 9 QUARTERS/FOOTAGES: NE NW SW

QUADRANGLE: BROADWELL LONGITUDE: -89.439483 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.113402 DATE COLLECTED: 7 / 0 / 1949

SURFACE ELEVATION (FT.): LOGGED (FT.): 62.3 LOG TYPE: Survey Core Study

SOURCE: A.M. PARKS, DIAMOND DRILL HOLE #3 WELL TYPE: Coal Test

COMMENT: FROM CORE; NO ELEVATION GIVEN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			CALCAREOUS SILTSTONE	1.3	37.6	W/LS NODULES, GRAY
-			SILTY SHALE	3.3	38.9	W/LS NODULES; CALCAREOUS
-			LIMESTONE	4.3	42.2	WHT/GRY
-			CORE LOSS	0.6	46.5	
-			SHALE	1.9	47.1	GRN-GRAY
-			SHALY LIMESTONE	9.5	49.0	WHT/GRAY
-			SHALE	0.4	58.5	GRN W/DRK GRAY, MOTTLED
-			BLACK SHALE	1.2	58.9	
-			GRAY SHALE	0.7	60.1	BRACHIPODS AND CRINOIDS, FOSSILIF., GRAY
-			SHALE	1.5	60.8	GRAY

MAPID: 10721152000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 10 QUARTERS/FOOTAGES: 147' S line, 285' W line

QUADRANGLE: BROADWELL LONGITUDE: -89.423103 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.107282 DATE COLLECTED: 6 / 8 / 1977

SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 285.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
520.0	MODESTO	CHAPEL	COAL	1.5	75.0	
393.1	CARBONDALE	HERRIN	COAL	1.7	201.9	
332.6	CARBONDALE	SPRINGFIELD	COAL	5.8	262.4	

MAPID: 10721152000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 10 QUARTERS/FOOTAGES: 147' S line, 285' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.423103 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.107282 DATE COLLECTED: 6 / 8 / 1977
 SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 285.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
595.0			CLAY, SAND & SILTSTONE	12.0	0.0
583.0			CLAY	28.0	12.0
553.0	MODESTO		SHALE	32.5	42.0
520.5	MODESTO	CHAPEL	COAL	1.5	74.5
519.0	MODESTO		SHALE	20.0	76.0
499.0	MODESTO	WEST FRANKLIN	LIMESTONE	22.0	96.0
477.0	MODESTO		BLACK SHALE	2.5	118.0
474.5	MODESTO		SHALE	26.0	120.5
448.5	MODESTO		LIMESTONE	6.0	146.5
442.5	MODESTO		SHALE	20.5	152.5
422.0	MODESTO		BLACK SHALE	1.0	173.0
421.0	CARBONDALE	DANVILLE	COAL	0.0	174.0
421.0	CARBONDALE		GRAY SHALE	6.0	174.0
415.0	CARBONDALE		SHALE	4.0	180.0
411.0	CARBONDALE		SHALE	17.0	184.0
394.0	CARBONDALE	HERRIN	COAL	2.6	201.0
391.4	CARBONDALE		SHALE	2.3	203.6
389.1	CARBONDALE		SHALE	52.1	205.9
337.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	258.0
336.0	CARBONDALE		SHALE	1.3	259.0
334.7	CARBONDALE	TURNER MINE	BLACK SHALE	1.7	260.3
333.0	CARBONDALE	SPRINGFIELD	COAL	7.0	262.0
326.0	CARBONDALE		CLAYSTONE & SILTSTONE	1.5	269.0
324.5	CARBONDALE		SHALE	3.5	270.5
321.0	CARBONDALE		SHALE	4.5	274.0
316.5	CARBONDALE	EXCELLO	BLACK SHALE	1.6	278.5
314.9	CARBONDALE		SHALE	4.9	280.1

MAPID: 10720719000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 11

QUARTERS/FOOTAGES: 2000' N line, 335' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.404186

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.115787

DATE COLLECTED: 11 / 18 / 1975

SURFACE ELEVATION (FT.): 560.0

LOGGED (FT.): 276.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
484.0	MODESTO	CHAPEL	COAL	1.5	76.0	
354.0	CARBONDALE	HERRIN	COAL	5.0	206.0	
299.0	CARBONDALE	SPRINGFIELD	COAL	5.6	261.0	

MAPID: 10720719000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 11 QUARTERS/FOOTAGES: 2000' N line, 335' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.404186 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.115787 DATE COLLECTED: 11 / 18 / 1975
 SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 276.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
560.0			SOIL	1.0	0.0	
559.0			SILTY CLAY	20.0	1.0	
540.0			CLAY, SAND & GRAVEL	8.0	20.0	
532.0			SANDY CLAY	46.0	28.0	
485.0	MODESTO		BLACK SHALE	2.0	75.0	OFF GAMMA
483.0	MODESTO	CHAPEL	COAL	1.5	77.0	
481.5	MODESTO		SHALE	24.0	78.5	
457.5	MODESTO	WEST FRANKLIN	LIMESTONE	5.5	102.5	
452.0	MODESTO	WEST FRANKLIN	SHALE	3.0	108.0	
449.0	MODESTO	WEST FRANKLIN	LIMESTONE	9.5	111.0	
439.5	MODESTO		BLACK SHALE	2.5	120.5	
437.0	MODESTO		SHALE	22.0	123.0	
415.0	MODESTO		LIMESTONE	9.5	145.0	
405.5	MODESTO		SHALE	23.0	154.5	
382.5	MODESTO		BLACK SHALE	2.0	177.5	
380.5	CARBONDALE	DANVILLE	COAL	0.0	179.5	DANVILLE #7 COAL NOT PRESENT
380.5	CARBONDALE		SHALE	26.5	179.5	LS STREAKS 190- 206
354.0	CARBONDALE	HERRIN	COAL	5.0	206.0	
349.0	CARBONDALE		SHALE	6.0	211.0	WITH UNDERCLAY
343.0	CARBONDALE		LIMESTONE	1.0	217.0	
342.0	CARBONDALE		SHALE	31.0	218.0	
311.0	CARBONDALE		LIMESTONE	1.0	249.0	
310.0	CARBONDALE		SHALE	7.0	250.0	
303.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	257.0	
302.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	258.0	
299.0	CARBONDALE	SPRINGFIELD	COAL	5.6	261.0	
293.4	CARBONDALE		UNDERCLAY	3.4	266.6	
290.0	CARBONDALE		SHALE	6.0	270.0	

MAPID: 10721153000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 12

QUARTERS/FOOTAGES: NE NE SE

QUADRANGLE: MOUNT PULASKI

LONGITUDE: -89.368566

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.113075

DATE COLLECTED:

SURFACE ELEVATION (FT.): 565.0

LOGGED (FT.): 280.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
312.7	CARBONDALE	SPRINGFIELD	COAL	5.3	252.3	

MAPID: 10721153000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 12 QUARTERS/FOOTAGES: NE NE SE

QUADRANGLE: MOUNT PULASKI LONGITUDE: -89.368566 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.113075 DATE COLLECTED:

SURFACE ELEVATION (FT.): 565.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
565.0			SOIL	2.0	0.0
563.0			SAND & GRAVEL	51.0	2.0
511.0	MODESTO		SHALE	19.0	54.0
492.0	MODESTO		BLACK SHALE	1.5	73.0
490.5	MODESTO	CHAPEL	COAL	1.5	74.5
489.0	MODESTO		SHALE	28.0	76.0
461.0	MODESTO	WEST FRANKLIN	LIMESTONE	26.5	104.0
434.5	MODESTO		BLACK SHALE	4.5	130.5
430.0	MODESTO		SHALE	3.0	135.0
427.0	MODESTO		COAL	1.0	138.0
426.0	MODESTO		SHALE	9.0	139.0
417.0	MODESTO		LIMESTONE	4.0	148.0
413.0	MODESTO		SHALE	14.0	152.0
399.0	MODESTO		BLACK SHALE	1.0	166.0
398.0	CARBONDALE	DANVILLE	COAL	0.0	167.0
398.0	CARBONDALE		SHALE	10.0	167.0
388.0	CARBONDALE	ANVIL ROCK	SANDSTONE	3.5	177.0
384.5	CARBONDALE		SHALE	10.5	180.5
374.0	CARBONDALE	BRERETON	LIMESTONE	3.0	191.0
371.0	CARBONDALE		SHALE	1.0	194.0
370.0	CARBONDALE	HERRIN	COAL	5.0	195.0
365.0	CARBONDALE		SHALE	3.5	200.0
361.5	CARBONDALE		LIMESTONE	2.5	203.5
359.0	CARBONDALE		SHALE	41.5	206.0
317.5	CARBONDALE	ST. DAVID	LIMESTONE	1.1	247.5
316.4	CARBONDALE	TURNER MINE	BLACK SHALE	3.7	248.6
312.7	CARBONDALE	SPRINGFIELD	COAL	5.3	252.3
307.4	CARBONDALE		UNDERCLAY	2.9	257.6
304.5	CARBONDALE		CORE LOSS	19.5	260.5

MAPID: 10720854000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 14

QUARTERS/FOOTAGES: 1380' S line, 69' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.40486

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.096188

DATE COLLECTED: 8 / 8 / 1978

SURFACE ELEVATION (FT.): 600.0

LOGGED (FT.): 332.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
471.0	MODESTO	CHAPEL	COAL	2.0	129.0	
344.0	CARBONDALE	HERRIN	COAL	5.0	256.0	
289.4	CARBONDALE	SPRINGFIELD	COAL	5.3	310.6	

MAPID: 10720854000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 14 QUARTERS/FOOTAGES: 1380' S line, 69' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.40486 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.096188 DATE COLLECTED: 8 / 8 / 1978
 SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 332.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0			CLAY	10.0	0.0	
590.0			SAND & GRAVEL	1.0	10.0	
589.0			SANDY CLAY	19.0	11.0	
570.0			CLAY, SAND & GRAVEL	14.0	30.0	
556.0	BOND	CARTHAGE	LIMESTONE	7.0	44.0	
549.0	MODESTO	NEW HAVEN	BLACK SHALE	4.0	51.0	
545.0	MODESTO		SHALE	9.0	55.0	
536.0	MODESTO	MACOUPIN	LIMESTONE	7.0	64.0	
529.0	MODESTO		BLACK SHALE	4.0	71.0	
525.0	MODESTO		SHALE	54.0	75.0	
471.0	MODESTO		BLACK SHALE	1.5	129.0	
469.5	MODESTO	CHAPEL	COAL	1.5	130.5	
468.0	MODESTO		SHALE	26.0	132.0	
442.0	MODESTO	WEST FRANKLIN	LIMESTONE	17.0	158.0	
425.0	MODESTO		BLACK SHALE	2.0	175.0	
423.0	MODESTO		SHALE	8.5	177.0	
414.5	MODESTO		LIMESTONE	3.5	185.5	
411.0	MODESTO		SHALE	15.0	189.0	
396.0	MODESTO		LIMESTONE	1.5	204.0	
394.5	MODESTO		SHALE	18.0	205.5	
376.5	MODESTO		BLACK SHALE	1.0	223.5	
375.5	CARBONDALE	DANVILLE	COAL	0.0	224.5	DANVILLE #7 COAL NOT PRESENT
375.5	CARBONDALE		SHALE	13.0	224.5	
362.5	CARBONDALE	ANVIL ROCK	SANDSTONE	3.5	237.5	
359.0	CARBONDALE		SHALE	15.0	241.0	
344.0	CARBONDALE	HERRIN	COAL	4.0	256.0	
340.0	CARBONDALE		SHALE	46.5	260.0	
293.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	306.5	
292.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.1	307.5	CORE #1 308.5-317.5
289.4	CARBONDALE	SPRINGFIELD	COAL	5.3	310.6	
284.1	CARBONDALE		UNDERCLAY	0.9	315.9	
283.3	CARBONDALE		CORE LOSS	0.8	316.7	
282.5	CARBONDALE		SHALE	14.5	317.5	WITH UNDERCLAY

MAPID: 10721154000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 14

QUARTERS/FOOTAGES: 21' N line, 59' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.405014

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.106775

DATE COLLECTED: 6 / 21 / 1977

SURFACE ELEVATION (FT.): 586.0

LOGGED (FT.): 310.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
485.5	MODESTO	CHAPEL	COAL	2.2	100.5
388.5	CARBONDALE	DANVILLE	COAL	1.0	197.5
358.0	CARBONDALE	HERRIN	COAL	4.3	228.0
300.7	CARBONDALE	SPRINGFIELD	COAL	5.6	285.3

MAPID: 10721154000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 14 QUARTERS/FOOTAGES: 21' N line, 59' W line

QUADRANGLE: BROADWELL LONGITUDE: -89.405014

GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.106775

DATE COLLECTED: 6 / 21 / 1977

SURFACE ELEVATION (FT.): 586.0 LOGGED (FT.): 310.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
586.0			SOIL	2.0	0.0
584.0			CLAY	30.5	2.0
553.5	MODESTO		LIMESTONE	2.0	32.5
551.5	MODESTO		SHALE	3.5	34.5
548.0	MODESTO		BLACK SHALE	2.0	38.0
546.0	MODESTO		SHALE	6.0	40.0
540.0	MODESTO		SANDSTONE	7.5	46.0
532.5	MODESTO		SHALE	47.0	53.5
485.5	MODESTO	CHAPEL	COAL	2.0	100.5
483.5	MODESTO		SHALE	25.0	102.5
458.5	MODESTO	WEST FRANKLIN	LIMESTONE	18.5	127.5
440.0	MODESTO		BLACK SHALE	2.0	146.0
438.0	MODESTO		SHALE	8.0	148.0
430.0	MODESTO		LIMESTONE	4.0	156.0
426.0	MODESTO		SHALE	35.0	160.0
391.0	MODESTO		BLACK SHALE	2.5	195.0
388.5	CARBONDALE	DANVILLE	COAL	1.0	197.5
387.5	CARBONDALE		SHALE	6.0	198.5
381.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	204.5
379.5	CARBONDALE		SHALE	21.0	206.5
358.5	CARBONDALE	HERRIN	COAL	4.8	227.5
353.7	CARBONDALE		UNDERCLAY	0.7	232.3
353.0	CARBONDALE		CORE LOSS	0.1	233.0
353.0	CARBONDALE		SHALE	3.5	233.0
349.5	CARBONDALE		LIMESTONE	3.5	236.5
346.0	CARBONDALE		SHALE	13.0	240.0
333.0	CARBONDALE		SHALE	26.5	253.0
306.5	CARBONDALE		SHALE	1.5	279.5
305.0	CARBONDALE	ST. DAVID	LIMESTONE	0.7	281.0
304.3	CARBONDALE	TURNER MINE	BLACK SHALE	3.6	281.7
300.7	CARBONDALE	SPRINGFIELD	COAL	5.6	285.3
295.1	CARBONDALE		UNDERCLAY	2.2	290.9
292.9	CARBONDALE		CORE LOSS	0.4	293.1
292.5	CARBONDALE		SHALE	4.5	293.5
288.0	CARBONDALE		LIMESTONE	5.0	298.0
283.0	CARBONDALE	EXCELLO	BLACK SHALE	2.3	303.0
280.7	CARBONDALE		SHALE	4.7	305.3

MAPID: 10720903000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 17

QUARTERS/FOOTAGES: 2595' S line, 30' E line

QUADRANGLE: BROADWELL

LONGITUDE: -89.443013

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.099619

DATE COLLECTED: 7 / 3 / 1979

SURFACE ELEVATION (FT.): 605.0

LOGGED (FT.): 290.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
396.0	CARBONDALE	HERRIN	COAL	4.0	209.0	
338.1	CARBONDALE	SPRINGFIELD	COAL	5.6	266.9	

MAPID: 10720903000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 17 **QUARTERS/FOOTAGES:** 2595' S line, 30' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.443013 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.099619 **DATE COLLECTED:** 7 / 3 / 1979
SURFACE ELEVATION (FT.): 605.0 **LOGGED (FT.):** 290.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
605.0			SOIL	4.0	0.0	
601.0			CLAY	28.0	4.0	
573.0			SANDY CLAY	7.5	32.0	
565.5			SAND & GRAVEL	4.5	39.5	
561.0			SANDY CLAY	1.0	44.0	
560.0	MODESTO		SHALE	39.0	45.0	
521.0	MODESTO	CHAPEL	COAL	1.5	84.0	
519.5	MODESTO		SHALE	27.0	85.5	
492.5	MODESTO	WEST FRANKLIN	LIMESTONE	16.5	112.5	
476.0	MODESTO		BLACK SHALE	1.5	129.0	
474.5	MODESTO		SHALE	13.5	130.5	
461.0	MODESTO		LIMESTONE	2.0	144.0	DRILLERS LOG INDICATES PIASA LS
459.0	MODESTO		SHALE	8.0	146.0	
451.0	MODESTO		LIMESTONE	1.5	154.0	
449.5	MODESTO		SHALE	23.5	155.5	
426.0	MODESTO		BLACK SHALE	1.0	179.0	
425.0	CARBONDALE	DANVILLE	COAL	0.0	180.0	DANVILLE #7 COAL NOT PRESENT
425.0	CARBONDALE		SHALE	12.0	180.0	
413.0	CARBONDALE		SHALE	14.5	192.0	
398.5	CARBONDALE	BRERETON	LIMESTONE	1.5	206.5	
397.0	CARBONDALE	HERRIN	COAL	4.0	208.0	WITH SHALE PARTINGS
393.0	CARBONDALE		SHALE	48.0	212.0	
345.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	260.0	
343.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.9	262.0	CORE #1 263-273
338.1	CARBONDALE	SPRINGFIELD	COAL	5.4	266.9	3 PYRITIC ZONES BETWEEN 268.63-270.31
332.8	CARBONDALE		CORE LOSS	0.8	272.2	
332.0	CARBONDALE		SHALE	5.0	273.0	
327.0	CARBONDALE		LIMESTONE	2.0	278.0	
325.0	CARBONDALE		SHALE	10.0	280.0	

MAPID: 10700022000C VERSION: 1

PROJECT: NCRDS89

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 18

QUARTERS/FOOTAGES: SW NW NE

QUADRANGLE: BROADWELL

LONGITUDE: -89.471786

GEOLOGIST: SROKA

CONFIDENTIAL: N

LATITUDE: 40.104603

DATE COLLECTED: 7 / 0 / 1949

SURFACE ELEVATION (FT.):

LOGGED (FT.): 130.0

LOG TYPE: Survey Core Study

SOURCE: A.M. PARKS, DIAMOND DRILL HOLE #5

WELL TYPE: Coal Test

COMMENT: CORE #C-2543; NO ELEVATION GIVEN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	MODESTO		LIMESTONE	0.2	44.3	FOSSILIF., BRN-GRAY
-	MODESTO		SHALE	2.5	44.5	GRN-GRAY
-	MODESTO		CORE LOSS	14.5	47.0	NO CORE
-	MODESTO		SHALE	3.5	61.5	MOTTLED GRN-GRAY; W/LS NODS.
-	MODESTO		LIMESTONE	2.5	65.0	W/CALC. GRN-GRAY SH, GRAY
-	MODESTO		SHALE	2.0	67.5	BRACHS, CRINOIDS; W/LS NOD., FOSSILIF.,
-	MODESTO		SHALE	0.6	69.5	GRN-GRAY
-	MODESTO		CORE LOSS	2.9	70.1	
-	MODESTO		GRAY SHALE	4.0	73.0	YELLOW MOTTLING
-	MODESTO		CLAYSTONE & SHALE	0.7	77.0	MULTI-COLORED MOTTLING
-	MODESTO		SHALE	5.1	77.7	RED, BROWN, GRAY, GRN, YELLOW, MOTTLED,
-	MODESTO		SHALE	1.9	82.8	GRN-GRAY
-	MODESTO		SHALE	5.5	84.8	RED, BRN, GRAY, GRN, YELLOW, MOTTLED, MU
-	MODESTO		SHALE	1.6	90.3	DRK-GRAY
-	MODESTO		GRAY SHALE	2.8	91.8	
-	MODESTO		GRAY SHALE	0.4	94.6	W/BRN-YELLOW MOTTLING
-	MODESTO		CORE LOSS	0.7	95.0	
-	MODESTO		SHALE	0.3	95.7	DRK-GRAY
-	MODESTO		GRAY SHALE	1.2	95.9	
-	MODESTO		BLACK SHALE	0.4	97.1	W/PYRITE TRAILS
-	MODESTO		SHALE	0.3	97.5	MOTTLED W/GREEN-GRAY
-	MODESTO		GRAY SHALE	0.6	97.8	MOTTLED W/GREEN GRAY
-	MODESTO		SHALE	0.8	98.4	W/STIGMARIA, GRAY
-			CORE LOSS	2.6	99.2	
-	CARBONDALE		GRAY SHALE	1.4	101.8	
-	CARBONDALE		SHALE	0.8	103.2	NON-CALCAREOUS, GRAY
-	CARBONDALE		SHALE	6.6	103.9	W/LS NODULES, GRAY, GRAY
-	CARBONDALE		SHALE	1.0	110.5	W/LS NODULES, GRN-GRAY
-	CARBONDALE		SHALE	6.5	111.5	W/IRREGULAR LS LENSES, GRN-GRAY
-	CARBONDALE		CORE LOSS	1.0	118.0	
-	CARBONDALE		SILTSTONE	2.0	119.0	SH INTERLAMs, GRAY
-	CARBONDALE		SILTSTONE	1.3	121.0	W/SS INTERLAMINATIONS, GRAY
-	CARBONDALE		GRAY SHALE	2.8	122.3	
-	CARBONDALE		GRAY SHALE	0.5	125.0	W/BLACK AND COAL FRAGS
-	CARBONDALE		CORE LOSS	0.6	125.5	
-	CARBONDALE	HERRIN	COAL	2.6	126.1	
-	CARBONDALE		CLAYSTONE & SHALE	1.3	128.7	

MAPID: 10700023000C VERSION: 1

PROJECT: NCRDS89

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 18

QUARTERS/FOOTAGES: SW NE NW

QUADRANGLE: BROADWELL

LONGITUDE: -89.477532

GEOLOGIST: SROKA

CONFIDENTIAL: N

LATITUDE: 40.104588

DATE COLLECTED: 7 / 0 / 1949

SURFACE ELEVATION (FT.):

LOGGED (FT.): 157.5

LOG TYPE: Survey Core Study

SOURCE: A. M. PARKS, DIAMOND DRILL HOLE #8

WELL TYPE: Coal Test

COMMENT: CORE #C-2467; NO ELEVATION GIVEN

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-	MODESTO		LIMESTONE	3.7	38.0	HARD AND DENSE, FOSSILIF., GRAY
-	MODESTO		SHALE	1.8	41.7	GRN-GRAY
-	MODESTO		LIMESTONE	11.1	43.5	HARD AND DENSE, FOSSILIF., GRAY
-	MODESTO		SHALY LIMESTONE	0.2	54.6	FOSSILIFEROUS, GRAY
-	MODESTO		CALCAREOUS SHALE	1.8	54.8	WEATHERS TO POLTER CHIP PATTERN, BLACK
-	MODESTO		SHALY LIMESTONE	0.1	56.6	FOSSILIFEROUS, GRAY
-	MODESTO		CLAYSTONE	0.3	56.7	GRAY
-	MODESTO		CORE LOSS	1.0	57.0	
-	MODESTO		SHALE	10.7	58.0	RED-BROWN, YELLOW-GRN, GRN, GRAY
-	MODESTO		CORE LOSS	4.8	68.7	
-	MODESTO		SILTSTONE	1.4	73.4	GRAY
-	MODESTO		SHALE	0.2	74.8	GRN-GRAY
-	MODESTO		SHALY LIMESTONE	3.9	75.0	
-	MODESTO		GRAY SHALE	3.0	78.9	W/LS NODULES
-	MODESTO		CORE LOSS	0.1	81.9	
-	MODESTO		CALCAREOUS SHALE	0.3	82.0	GRN TO GRY; W/CRINOIDS, BRACHS
-	MODESTO		SHALE	13.0	82.3	RED-BROWN, BLUE-GRN, YELL, GRN-GRAY
-	MODESTO		CORE LOSS	2.7	95.3	
-	MODESTO		SHALE	2.8	98.0	W/SLST INTERLAMs, BRN-GRAY
-	MODESTO		GRAY SHALE	1.6	100.8	
-	MODESTO		CALCAREOUS SANDSTONE	0.3	102.3	W/SIDERITE GRANULES
-	MODESTO		GRAY SHALE	2.2	102.6	INTERLAMs OF SLTST
-	MODESTO		BLACK SHALE	2.1	104.8	
-	MODESTO		CORE LOSS	0.8	106.9	
-	CARBONDALE	DANVILLE	COAL	1.3	107.7	
-	CARBONDALE		UNDERCLAY	3.4	109.0	STIGMARIA FOSSILS, GRAY
-	CARBONDALE		CORE LOSS	2.3	112.4	
-	CARBONDALE		SHALE	0.2	114.7	W/LS NODULES, GRAY
-	CARBONDALE		SHALY LIMESTONE	2.9	114.8	GRAY
-	CARBONDALE		SHALE	0.9	117.8	GRAY
-	CARBONDALE		SANDSTONE	11.3	118.7	W/SIDERITE GRANULES, GRAY
-	CARBONDALE		GRAY SHALE	1.8	130.0	
-	CARBONDALE		GRAY SHALE	2.2	131.8	W/PYRITIC TRAILS
-	CARBONDALE	HERRIN	COAL	3.3	134.0	
-	CARBONDALE		UNDERCLAY	4.1	137.3	W/STIGMARIA, BRN-GRAY
-	CARBONDALE		CLAYSTONE & SILTY SHALE	4.2	141.4	W/LS NODULES, GRAY

-	CARBONDALE	SHALE	5.9	145.6	GRN-GRAY
-	CARBONDALE	SHALE	6.0	151.5	W/SS INTERLAMs, GRN-GRAY

MAPID: 10700023000C VERSION: 2

PROJECT: NCRDS88

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 18

QUARTERS/FOOTAGES: SW NE NW

QUADRANGLE: BROADWELL

LONGITUDE: -89.477532

GEOLOGIST: R. SMITH

CONFIDENTIAL: N

LATITUDE: 40.104588

DATE COLLECTED: 7 / 0 / 1949

SURFACE ELEVATION (FT.):

LOGGED (FT.): 157.5

LOG TYPE: Drillers Log

SOURCE: A.M. PARK

WELL TYPE: Diamond Drill

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNCONSOLIDATED	38.0	0.0	
-	MODESTO	WEST FRANKLIN	LIMESTONE	3.7	38.0	LONSDALE LS
-	MODESTO	WEST FRANKLIN	SHALE	1.8	41.7	
-	MODESTO	WEST FRANKLIN	LIMESTONE	4.3	43.5	LONSDALE LS
-	MODESTO	WEST FRANKLIN	CORE LOSS	0.6	47.8	
-	MODESTO	WEST FRANKLIN	LIMESTONE	6.5	48.3	
-	MODESTO		BLACK SHALE	1.8	54.8	
-	MODESTO		LIMESTONE	0.1	56.6	
-	MODESTO		SHALE	0.3	56.7	
-	MODESTO		CORE LOSS	1.0	57.0	
-	MODESTO		SHALE	3.8	58.0	
-	MODESTO		CORE LOSS	0.9	61.8	
-	MODESTO		CLAYSTONE & SHALE	6.0	62.7	
-	MODESTO		CORE LOSS	4.8	68.7	
-	MODESTO		SILTSTONE	1.4	73.4	
-	MODESTO		GRAY SHALE	0.2	74.8	
-	MODESTO		LIMESTONE	3.9	75.0	
-	MODESTO		SHALE	23.5	78.9	
-	MODESTO		SANDSTONE	0.3	102.3	
-	MODESTO		GRAY SHALE	2.2	102.6	
-	MODESTO		BLACK SHALE	2.1	104.8	
-	MODESTO		CORE LOSS	0.8	106.9	
-	CARBONDALE	DANVILLE	COAL	1.3	107.7	
-	CARBONDALE		UNDERCLAY	3.4	109.0	
-	CARBONDALE		CORE LOSS	2.3	112.4	
-	CARBONDALE		CLAYSTONE & SHALE	0.2	114.7	
-	CARBONDALE	BANKSTON FORK	LIMESTONE	2.9	114.8	
-	CARBONDALE		CLAYSTONE & SHALE	0.9	117.8	
-	CARBONDALE	ANVIL ROCK	SANDSTONE	4.6	118.7	
-	CARBONDALE	ANVIL ROCK	CORE LOSS	0.4	123.3	
-	CARBONDALE	ANVIL ROCK	SANDSTONE	6.3	123.7	
-	CARBONDALE		GRAY SHALE	2.8	130.0	
-	CARBONDALE		CORE LOSS	0.9	132.8	
-	CARBONDALE		SHALE	0.3	133.7	
-	CARBONDALE	HERRIN	COAL	3.3	134.0	
-	CARBONDALE		UNDERCLAY	4.2	137.3	
-	CARBONDALE		CLAYSTONE & SHALE	4.2	141.4	
-	CARBONDALE		GREEN SHALE	5.9	145.6	
-	CARBONDALE		SHALE & SANDSTONE	6.0	151.5	

MAPID: 10720904000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 18 QUARTERS/FOOTAGES: 2613' S line, 30' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.461786 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.100027 DATE COLLECTED: 7 / 5 / 1979

SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 235.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
436.0	CARBONDALE	HERRIN	COAL	4.0	154.0	
377.0	CARBONDALE	SPRINGFIELD	COAL	5.0	213.0	

MAPID: 10720904000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 18 QUARTERS/FOOTAGES: 2613' S line, 30' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.461786 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.100027 DATE COLLECTED: 7 / 5 / 1979

SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 235.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0			CLAY	38.0	0.0	
551.0	MODESTO		SHALE	24.0	39.0	
527.0	MODESTO	WEST FRANKLIN	LIMESTONE	16.0	63.0	
511.0	MODESTO		SHALE	11.0	79.0	
500.0	MODESTO		LIMESTONE	10.0	90.0	DRILLERS LOG INDICATES PIASA LS
490.0	MODESTO		SHALE	25.0	100.0	
465.0	MODESTO		BLACK SHALE	1.5	125.0	
463.5	CARBONDALE	DANVILLE	COAL	0.0	126.5	DANVILLE #7 COAL NOT PRESENT
463.5	CARBONDALE		SHALE	13.5	126.5	
450.0	CARBONDALE	ANVIL ROCK	SANDSTONE	11.5	140.0	
438.5	CARBONDALE		SHALE	2.5	151.5	
436.0	CARBONDALE	HERRIN	COAL	4.5	154.0	
431.5	CARBONDALE		SHALE	5.5	158.5	
426.0	CARBONDALE		LIMESTONE	1.5	164.0	
424.5	CARBONDALE		SHALE	30.5	165.5	WITH SS STREAKS
394.0	CARBONDALE		SHALE	12.5	196.0	
381.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	208.5	
380.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	210.0	CORE #1 211-220
377.0	CARBONDALE	SPRINGFIELD	COAL	5.9	213.0	
371.1	CARBONDALE		SHALE	1.0	218.9	
370.1	CARBONDALE		CORE LOSS	0.1	219.9	
370.0	CARBONDALE		SHALE	15.0	220.0	

MAPID: 10721155000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 18

QUARTERS/FOOTAGES: 57' S line, 2629' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.475157

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.092875

DATE COLLECTED: 6 / 7 / 1977

SURFACE ELEVATION (FT.): 590.0

LOGGED (FT.): 268.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
525.0	MODESTO	CHAPEL	COAL	1.0	65.0	
402.0	CARBONDALE	HERRIN	COAL	3.5	188.0	
346.5	CARBONDALE	SPRINGFIELD	COAL	5.9	243.5	

MAPID: 10721155000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 18 QUARTERS/FOOTAGES: 57' S line, 2629' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.475157 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.092875 DATE COLLECTED: 6 / 7 / 1977
 SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 268.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
590.0			CLAY, SAND & SILTSTONE	16.0	0.0
574.0			CLAY	26.0	16.0
548.0	MODESTO		SHALE	16.0	42.0
532.0	MODESTO		SANDSTONE	2.5	58.0
529.5	MODESTO		SHALE	3.0	60.5
526.5	MODESTO		BLACK SHALE	1.5	63.5
525.0	MODESTO	CHAPEL	COAL	1.5	65.0
523.5	MODESTO		SHALE	28.0	66.5
495.5	MODESTO	WEST FRANKLIN	LIMESTONE	16.5	94.5
479.0	MODESTO		BLACK SHALE	1.0	111.0
478.0	MODESTO		SHALE	25.5	112.0
452.5	MODESTO		SHALE	5.5	137.5
447.0	MODESTO		SHALE	14.5	143.0
432.5	MODESTO		BLACK SHALE	1.0	157.5
431.5	CARBONDALE	DANVILLE	COAL	0.0	158.5
431.5	CARBONDALE		SHALE	28.5	158.5
403.0	CARBONDALE	HERRIN	COAL	4.0	187.0
399.0	CARBONDALE		SHALE	10.0	191.0
389.0	CARBONDALE		LIMESTONE	5.0	201.0
384.0	CARBONDALE		SHALE	7.0	206.0
377.0	CARBONDALE		SHALE	22.0	213.0
355.0	CARBONDALE	TURNER MINE	BLACK SHALE	8.5	235.0
346.5	CARBONDALE	SPRINGFIELD	COAL	2.6	243.5
344.0	CARBONDALE	SPRINGFIELD	CLAYSTONE	0.6	246.0
343.4	CARBONDALE	SPRINGFIELD	COAL	2.7	246.6
340.7	CARBONDALE		UNDERCLAY	1.7	249.3
339.0	CARBONDALE		SHALE	4.0	251.0
335.0	CARBONDALE		LIMESTONE	1.0	255.0
334.0	CARBONDALE		SHALE	12.0	256.0

MAPID: 10720905000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 19 **QUARTERS/FOOTAGES:** 1452' S line, 42' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.484413 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.082125 **DATE COLLECTED:** 7 / 5 / 1979
SURFACE ELEVATION (FT.): 585.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
364.6	CARBONDALE	SPRINGFIELD	COAL	5.6	220.4	

MAPID: 10720905000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 19 **QUARTERS/FOOTAGES:** 1452' S line, 42' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.484413 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.082125 **DATE COLLECTED:** 7 / 5 / 1979
SURFACE ELEVATION (FT.): 585.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.0			SOIL	4.0	0.0	
581.0			CLAY	9.0	4.0	
572.0			SAND & GRAVEL	2.0	13.0	
570.0			CLAY, SAND & GRAVEL	40.0	15.0	
530.0			SILTY CLAY	105.0	55.0	
425.0			SANDY CLAY	19.0	160.0	
455.0	CARBONDALE	DANVILLE	COAL	0.0	130.0	ERODED
425.0	CARBONDALE	HERRIN	COAL	0.0	160.0	ERODED
406.0	CARBONDALE		SHALE	21.0	179.0	POOR CUTTING RETREIVAL 20'TOL
385.0	CARBONDALE		SHALE	14.5	200.0	
370.5	CARBONDALE	ST. DAVID	LIMESTONE	2.5	214.5	
368.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.3	217.0	CORE #1 219-227.5
364.7	CARBONDALE	SPRINGFIELD	COAL	5.7	220.3	
359.0	CARBONDALE		UNDERCLAY	0.2	226.0	
358.8	CARBONDALE		SHALE	0.1	226.2	
358.8	CARBONDALE		SHALE	0.9	226.2	
357.9	CARBONDALE		CORE LOSS	0.4	227.1	
357.5	CARBONDALE		SHALE	12.5	227.5	WITH LS NODULES

MAPID: 10720906000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 20

QUARTERS/FOOTAGES: 25' S line, 790' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.458741

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.078249

DATE COLLECTED: 7 / 10 / 1979

SURFACE ELEVATION (FT.): 600.0

LOGGED (FT.): 280.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
400.3	CARBONDALE	HERRIN	COAL	3.8	199.7	
340.2	CARBONDALE	SPRINGFIELD	COAL	5.7	259.8	

MAPID: 10720906000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 20 QUARTERS/FOOTAGES: 25' S line, 790' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.458741 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.078249 DATE COLLECTED: 7 / 10 / 1979
 SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0			CLAY	28.0	0.0	
572.0			SANDY CLAY	11.7	28.0	
560.3			BOULDER	0.5	39.7	
559.8			CLAY	61.8	40.2	
498.0			BOULDER	1.0	102.0	
497.0			CLAY	5.0	103.0	
492.0			BOULDER	0.5	108.0	
491.5			CLAY	40.5	108.5	
452.0	MODESTO		SHALE	20.5	148.0	
431.5	MODESTO		SHALE	2.0	168.5	MODERATE GAMMA KICK
429.5	CARBONDALE	DANVILLE	COAL	0.0	170.5	DANVILLE #7 COAL NOT PRESENT
429.5	CARBONDALE		SHALE	10.5	170.5	
419.0	CARBONDALE		SHALE	15.5	181.0	
403.5	CARBONDALE	BRERETON	LIMESTONE	3.0	196.5	
400.5	CARBONDALE		SHALE	1.0	199.5	
399.5	CARBONDALE	HERRIN	COAL	4.0	200.5	
395.5	CARBONDALE		SHALE	9.5	204.5	
386.0	CARBONDALE		SANDSTONE	2.5	214.0	
383.5	CARBONDALE		SHALE	19.5	216.5	
364.0	CARBONDALE		SHALE	18.5	236.0	
345.5	CARBONDALE	ST. DAVID	LIMESTONE	2.0	254.5	
343.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.3	256.5	CORE #1 257-267
340.2	CARBONDALE	SPRINGFIELD	COAL	5.7	259.8	
334.5	CARBONDALE		SHALE	0.1	265.5	PROBABLY AN UNDERCLAY
334.4	CARBONDALE		SHALE	1.2	265.6	WITH DIAGONAL FRACTURE PLANES
333.2	CARBONDALE		CORE LOSS	0.3	266.8	
333.0	CARBONDALE		SHALE	12.0	267.0	ALSO LS NODULES
321.0	CARBONDALE		LIMESTONE	0.5	279.0	
320.5	CARBONDALE		SHALE	0.5	279.5	

MAPID: 10720907000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 21

QUARTERS/FOOTAGES: 2637' S line, 45' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.44264

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.085161

DATE COLLECTED: 7 / 11 / 1979

SURFACE ELEVATION (FT.): 602.0

LOGGED (FT.): 295.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
385.0	CARBONDALE	HERRIN	COAL	4.0	217.0	
329.0	CARBONDALE	SPRINGFIELD	COAL	5.8	273.0	

MAPID: 10720907000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 21 **QUARTERS/FOOTAGES:** 2637' S line, 45' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.44264 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.085161 **DATE COLLECTED:** 7 / 11 / 1979
SURFACE ELEVATION (FT.): 602.0 **LOGGED (FT.):** 295.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
602.0			CLAY	12.0	0.0	
590.0			SANDY CLAY	38.0	12.0	
552.0			BOULDER	1.0	50.0	
551.0			CLAY	61.0	51.0	
490.0	MODESTO	WEST FRANKLIN	GRAY SHALE	12.5	112.0	
477.5	MODESTO		LIMESTONE W/ SHALE	17.5	124.5	
460.0	MODESTO		BLACK SHALE	1.0	142.0	
459.0	MODESTO		SHALE	10.0	143.0	
449.0	MODESTO		SHALY LIMESTONE	3.0	153.0	
446.0	MODESTO		SANDY SHALE	10.0	156.0	
436.0	MODESTO		SHALE	7.5	166.0	TAN
428.5	MODESTO		SHALE	14.0	173.5	RED
414.5	MODESTO		BLACK SHALE	0.5	187.5	OFF GAMMA, DRILLERS LOG SHOWS RED
414.0	CARBONDALE	DANVILLE	COAL	0.0	188.0	DANVILLE #7 COAL NOT PRESENT
414.0	CARBONDALE		SHALE	8.0	188.0	
406.0	CARBONDALE		DARK SHALE & SANDSTONE	17.0	196.0	
389.0	CARBONDALE	BRERETON	GRAY SHALE	2.0	213.0	
387.0	CARBONDALE		LIMESTONE	2.5	215.0	
384.5	CARBONDALE		COAL	4.5	217.5	
380.0	CARBONDALE	HERRIN	GRAY SHALE	3.0	222.0	
377.0	CARBONDALE		SHALY LIMESTONE	3.0	225.0	
374.0	CARBONDALE		CALCAREOUS SHALE	31.0	228.0	
343.0	CARBONDALE	ST. DAVID	GRAY SHALE	8.0	259.0	
335.0	CARBONDALE		LIMESTONE W/ SHALE	4.5	267.0	
330.5	CARBONDALE		BLACK SHALE	1.5	271.5	CORE #1 272-280
329.0	CARBONDALE	TURNER MINE	COAL	5.8	273.0	
323.3	CARBONDALE		GRAY SHALE	1.2	278.7	WITH FEW DIAGONAL FRACTURES
322.1	CARBONDALE		CORE LOSS	0.1	279.9	
322.0	CARBONDALE	SPRINGFIELD	DARK SHALE & LIMESTONE	11.0	280.0	
311.0	CARBONDALE		GRAY SHALE	4.0	291.0	

MAPID: 10721156000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 21

QUARTERS/FOOTAGES: 58' N line, 79' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.442563

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.092295

DATE COLLECTED: 6 / 7 / 1977

SURFACE ELEVATION (FT.): 593.0

LOGGED (FT.): 290.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
512.5	MODESTO	CHAPEL	COAL	1.5	80.5	
383.0	CARBONDALE	HERRIN	COAL	3.0	210.0	
326.6	CARBONDALE	SPRINGFIELD	COAL	5.8	266.4	

MAPID: 10721156000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 21 QUARTERS/FOOTAGES: 58' N line, 79' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.442563 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.092295 DATE COLLECTED: 6 / 7 / 1977
 SURFACE ELEVATION (FT.): 593.0 LOGGED (FT.): 290.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
593.0			CLAY	31.0	0.0
562.0			SAND & GRAVEL	2.0	31.0
560.0	MODESTO		GRAY SHALE	45.5	33.0
514.5	MODESTO		BLACK SHALE	3.0	78.5
511.5	MODESTO	CHAPEL	COAL	1.5	81.5
510.0	MODESTO		GRAY SHALE	27.5	83.0
482.5	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	16.5	110.5
466.0	MODESTO		BLACK SHALE	2.5	127.0
463.5	MODESTO		SHALE	7.0	129.5
456.5	MODESTO		CALCAREOUS SANDSTONE	4.5	136.5
452.0	MODESTO		SANDY SHALE	12.0	141.0
440.0	MODESTO		SHALE	23.0	153.0
417.0	MODESTO		BLACK SHALE	1.0	176.0
416.0	CARBONDALE	DANVILLE	COAL	0.0	177.0
416.0	CARBONDALE		GRAY SHALE	9.0	177.0
407.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	186.0
406.0	CARBONDALE		SANDY SHALE	17.0	187.0
389.0	CARBONDALE		GRAY SHALE	4.0	204.0
385.0	CARBONDALE	HERRIN	COAL	4.0	208.0
381.0	CARBONDALE		GRAY SHALE	5.5	212.0
375.5	CARBONDALE		LIMESTONE	1.0	217.5
374.5	CARBONDALE		GRAY SHALE	42.0	218.5
332.5	CARBONDALE	ST. DAVID	LIMESTONE	2.0	260.5
330.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.9	262.5
326.6	CARBONDALE	SPRINGFIELD	COAL	5.8	266.4
320.8	CARBONDALE		UNDERCLAY	0.2	272.2
320.7	CARBONDALE		CORE LOSS	0.2	272.3
320.5	CARBONDALE		UNDERCLAY	2.6	272.5
317.9	CARBONDALE		CORE LOSS	0.5	275.1
317.5	CARBONDALE		GRAY SHALE	9.5	275.5
308.0	CARBONDALE	EXCELLO	BLACK SHALE	1.5	285.0
306.5	CARBONDALE		GRAY SHALE	3.5	286.5

MAPID: 10721157000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 22

QUARTERS/FOOTAGES: 31' S line, 1555' E line

QUADRANGLE: BROADWELL

LONGITUDE: -89.410367

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.077943

DATE COLLECTED: 6 / 21 / 1977

SURFACE ELEVATION (FT.): 565.0

LOGGED (FT.): 310.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
473.0	MODESTO	CHAPEL	COAL	3.5	92.0	
341.5	CARBONDALE	HERRIN	COAL	4.5	223.5	
285.5	CARBONDALE	SPRINGFIELD	COAL	5.3	279.5	

MAPID: 10721157000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 22 **QUARTERS/FOOTAGES:** 31' S line, 1555' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.410367 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.077943 **DATE COLLECTED:** 6 / 21 / 1977
SURFACE ELEVATION (FT.): 565.0 **LOGGED (FT.):** 310.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
565.0			CLAY	15.0	0.0	
551.0	MODESTO	NEW HAVEN	BLACK SHALE	6.0	14.0	UNCERTAIN CORRELATION
545.0	MODESTO		GRAY SHALE	5.0	20.0	
540.0	MODESTO	MACOUPIN	LIMESTONE	1.5	25.0	UNCERTAIN CORRELATION
538.5	MODESTO		GRAY SHALE	3.5	26.5	
535.0	MODESTO		BLACK SHALE	2.0	30.0	
533.0	MODESTO		GRAY SHALE	4.5	32.0	
528.5	MODESTO		SANDY SHALE	29.5	36.5	
499.0	MODESTO		GRAY SHALE	25.0	66.0	
474.0	MODESTO		BLACK SHALE	1.0	91.0	
473.0	MODESTO	CHAPEL	COAL	2.0	92.0	
471.0	MODESTO		GRAY SHALE	29.5	94.0	
441.5	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	19.0	123.5	
422.5	MODESTO		BLACK SHALE	2.5	142.5	
420.0	MODESTO		SHALE	6.0	145.0	
414.0	MODESTO		LIMESTONE	4.0	151.0	
410.0	MODESTO		CALCAREOUS SANDSTONE	7.0	155.0	
403.0	MODESTO		SANDY SHALE	12.0	162.0	
391.0	MODESTO		SHALE	12.0	174.0	
379.0	MODESTO		SHALE	4.0	186.0	
375.0	MODESTO		GRAY SHALE	1.5	190.0	
373.5	MODESTO		BLACK SHALE	4.0	191.5	
369.5	CARBONDALE	DANVILLE	COAL	0.0	195.5	
369.5	CARBONDALE		GRAY SHALE	27.0	195.5	
342.5	CARBONDALE	HERRIN	COAL	4.0	222.5	
338.5	CARBONDALE		GRAY SHALE	6.0	226.5	
332.5	CARBONDALE		SHALE	43.0	232.5	
289.5	CARBONDALE	TURNER MINE	BLACK SHALE	4.0	275.5	
285.5	CARBONDALE	SPRINGFIELD	COAL	5.3	279.5	
280.2	CARBONDALE		UNDERCLAY	1.7	284.8	
278.5	CARBONDALE		GRAY SHALE	4.5	286.5	
274.0	CARBONDALE	HANOVER	LIMESTONE W/ SHALE	5.8	291.0	
268.2	CARBONDALE	EXCELLO	BLACK SHALE	5.2	296.8	
263.0	CARBONDALE		GRAY SHALE	8.0	302.0	

MAPID: 10721158000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 23

QUARTERS/FOOTAGES: 954' N line, 2612' E line

QUADRANGLE: BROADWELL

LONGITUDE: -89.395465

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.089742

DATE COLLECTED: 6 / 10 / 1977

SURFACE ELEVATION (FT.): 570.0

LOGGED (FT.): 320.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
455.6	MODESTO	CHAPEL	COAL	1.1	114.4
359.2	CARBONDALE	DANVILLE	COAL	1.4	210.8
330.9	CARBONDALE	HERRIN	COAL	5.9	239.1
275.3	CARBONDALE	SPRINGFIELD	COAL	5.2	294.7

MAPID: 10721158000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 23 QUARTERS/FOOTAGES: 954' N line, 2612' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.395465 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.089742 DATE COLLECTED: 6 / 10 / 1977

SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 320.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
570.0			CLAY	18.0	0.0
547.0	MODESTO		GRAY SHALE	13.5	23.0
533.5	MODESTO	NEW HAVEN	BLACK SHALE	1.5	36.5
532.0	MODESTO		GRAY SHALE	9.5	38.0
522.5	MODESTO	MACOUPIN	LIMESTONE	5.0	47.5
517.5	MODESTO		SHALE	3.5	52.5
514.0	MODESTO		BLACK SHALE	2.0	56.0
512.0	MODESTO		SHALE	54.0	58.0
458.0	MODESTO		BLACK SHALE	1.0	112.0
457.0	MODESTO	CHAPEL	COAL	2.0	113.0
455.0	MODESTO		GRAY SHALE	30.0	115.0
425.0	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	16.5	145.0
408.5	MODESTO		BLACK SHALE	2.0	161.5
406.5	MODESTO		SHALE	9.0	163.5
397.5	MODESTO		SILTSTONE	2.5	172.5
395.0	MODESTO		SILTY LIMESTONE	6.5	175.0
388.5	MODESTO		SILTY SHALE	16.5	181.5
372.0	MODESTO		SHALE	7.5	198.0
364.5	MODESTO		BLACK SHALE	4.0	205.5
360.5	CARBONDALE	DANVILLE	COAL	2.0	209.5
358.5	CARBONDALE		GRAY SHALE	27.5	211.5
331.0	CARBONDALE	HERRIN	COAL	4.0	239.0
327.0	CARBONDALE		GRAY SHALE	6.0	243.0
321.0	CARBONDALE		SHALY LIMESTONE	4.0	249.0
317.0	CARBONDALE		SANDY SHALE	4.0	253.0
313.0	CARBONDALE		CALCAREOUS SHALE	3.0	257.0
310.0	CARBONDALE		GRAY SHALE	29.5	260.0
280.5	CARBONDALE	ST. DAVID	LIMESTONE	1.8	289.5
278.7	CARBONDALE	TURNER MINE	BLACK SHALE	3.4	291.3
275.3	CARBONDALE	SPRINGFIELD	COAL	5.2	294.7
270.1	CARBONDALE		UNDERCLAY	1.6	299.9
268.6	CARBONDALE		CORE LOSS	0.1	301.4
268.5	CARBONDALE		GRAY SHALE	3.5	301.5
265.0	CARBONDALE		CALCAREOUS SHALE	3.0	305.0
262.0	CARBONDALE		GRAY SHALE	5.0	308.0
257.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	313.0
255.0	CARBONDALE		GRAY SHALE	5.0	315.0

MAPID: 10721159000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 27

QUARTERS/FOOTAGES: NE SE SE

QUADRANGLE: BROADWELL

LONGITUDE: -89.405878

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.066009

DATE COLLECTED: 6 / 23 / 1977

SURFACE ELEVATION (FT.): 565.0

LOGGED (FT.): 320.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
345.3	CARBONDALE	HERRIN	COAL	4.5	219.7	
287.8	CARBONDALE	SPRINGFIELD	COAL	5.8	277.2	

MAPID: 10721159000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 27 QUARTERS/FOOTAGES: NE SE SE

QUADRANGLE: BROADWELL LONGITUDE: -89.405878 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.066009 DATE COLLECTED: 6 / 23 / 1977

SURFACE ELEVATION (FT.): 565.0 LOGGED (FT.): 320.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
565.0			SOIL	2.0	0.0
563.0			SAND & GRAVEL	52.0	2.0
511.0	MODESTO		GRAY SHALE	6.0	54.0
505.0	MODESTO		SANDY SHALE	31.5	60.0
473.5	MODESTO		BLACK SHALE	1.5	91.5
472.0	MODESTO	CHAPEL	COAL	1.5	93.0
470.5	MODESTO		GRAY SHALE	3.5	94.5
467.0	MODESTO		SANDY SHALE	20.0	98.0
447.0	MODESTO		GRAY SHALE	4.5	118.0
442.5	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	16.5	122.5
426.0	MODESTO		BLACK SHALE	2.5	139.0
423.5	MODESTO		GRAY SHALE	5.0	141.5
418.5	MODESTO		SANDSTONE	8.5	146.5
410.0	MODESTO		SANDY SHALE	20.0	155.0
390.0	MODESTO		GRAY SHALE	13.0	175.0
377.0	MODESTO		BLACK SHALE	3.0	188.0
374.0	CARBONDALE	DANVILLE	COAL	0.0	191.0
374.0	CARBONDALE		GRAY SHALE	7.0	191.0
367.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	198.0
365.0	CARBONDALE		SANDY SHALE	14.5	200.0
350.5	CARBONDALE	BRERETON	LIMESTONE	6.0	214.5
344.5	CARBONDALE	HERRIN	COAL	4.5	220.5
340.0	CARBONDALE		SANDY SHALE	48.0	225.0
292.0	CARBONDALE	ST. DAVID	LIMESTONE	0.6	273.0
291.4	CARBONDALE	TURNER MINE	BLACK SHALE	3.7	273.6
287.8	CARBONDALE	SPRINGFIELD	COAL	5.8	277.2
282.0	CARBONDALE		UNDERCLAY	1.6	283.0
280.5	CARBONDALE		DARK SHALE & LIMESTONE	12.0	284.5
268.5	CARBONDALE	EXCELLO	BLACK SHALE	2.0	296.5
266.5	CARBONDALE		GRAY SHALE	21.5	298.5

MAPID: 10720908000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 28

QUARTERS/FOOTAGES: 21' N line, 40' E line

QUADRANGLE: BROADWELL

LONGITUDE: -89.423972

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.077798

DATE COLLECTED: 6 / 29 / 1979

SURFACE ELEVATION (FT.): 583.0

LOGGED (FT.): 304.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
299.8	CARBONDALE	SPRINGFIELD	COAL	5.8	283.2	

MAPID: 10720908000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 28 **QUARTERS/FOOTAGES:** 21' N line, 40' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.423972 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.077798 **DATE COLLECTED:** 6 / 29 / 1979
SURFACE ELEVATION (FT.): 583.0 **LOGGED (FT.):** 304.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
583.0			SOIL	10.0	0.0	
573.0			SANDY CLAY	22.0	10.0	
551.0	MODESTO		SHALE	33.0	32.0	
518.0	MODESTO		SHALE	27.0	65.0	
491.0	MODESTO		BLACK SHALE	1.5	92.0	
489.5	MODESTO	CHAPEL	COAL	2.0	93.5	
487.5	MODESTO		SHALE	30.0	95.5	
457.5	MODESTO	WEST FRANKLIN	LIMESTONE	19.0	125.5	
438.5	MODESTO		BLACK SHALE	2.0	144.5	
436.5	MODESTO		SHALE	6.5	146.5	
430.0	MODESTO		SHALE	5.5	153.0	
424.5	MODESTO	TRIVOLI	SANDSTONE	12.5	158.5	
412.0	MODESTO		SHALE	3.5	171.0	
408.5	MODESTO		SHALE	3.5	174.5	
405.0	MODESTO		SHALE	8.0	178.0	
397.0	MODESTO		BLACK SHALE	3.5	186.0	
393.5	CARBONDALE	DANVILLE	COAL	1.0	189.5	
392.5	CARBONDALE		SHALE	20.0	190.5	
372.5	CARBONDALE		SHALE	8.0	210.5	
364.5	CARBONDALE	ANVIL ROCK	SANDSTONE	9.0	218.5	
355.5	CARBONDALE	HERRIN	COAL	1.5	227.5	
354.0	CARBONDALE		SHALE	6.0	229.0	
348.0	CARBONDALE		SHALE	5.0	235.0	
343.0	CARBONDALE		SANDSTONE	4.0	240.0	
339.0	CARBONDALE		SHALE	16.9	244.0	
322.1	CARBONDALE		SHALE	0.2	260.9	
321.9	CARBONDALE		SILTSTONE	1.2	261.1	
320.7	CARBONDALE		SANDSTONE	4.6	262.3	
316.1	CARBONDALE		SHALE	2.8	266.9	CORE #1 260-270
313.4	CARBONDALE		CORE LOSS	0.4	269.6	
313.0	CARBONDALE		SHALE	7.4	270.0	BLACK SH STRINGERS ABUNDANT
305.6	CARBONDALE		SHALE	0.6	277.4	SH STRINGERS; BASE CONTACT UNEVEN, SHARP
305.0	CARBONDALE	ST. DAVID	LIMESTONE	0.9	278.0	
304.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.2	279.0	
299.8	CARBONDALE	SPRINGFIELD	COAL	5.8	283.2	CORE #2 270-280, BASAL CONTACT SHARP
294.0	CARBONDALE		SHALE	4.7	289.0	
289.3	CARBONDALE		LIMESTONE	2.6	293.7	
286.7	CARBONDALE		SHALE	1.6	296.3	LOSS 279.7-280, CORE #3 280- 290.05
285.2	CARBONDALE		LIMESTONE	0.6	297.8	BONEY

284.6	CARBONDALE		SHALE	1.3	298.4	LIMEY BELOW 289.7 CORE #4 290.05-300
283.3	CARBONDALE		CORE LOSS	0.3	299.7	
283.0	CARBONDALE		SHALE	0.3	300.0	
282.7	CARBONDALE	EXCELLO	BLACK SHALE	2.0	300.3	
280.7	CARBONDALE		SHALE	0.7	302.3	
280.0	CARBONDALE		LIMESTONE	0.2	303.0	
279.8	CARBONDALE		CORE LOSS	0.9	303.2	CORE #5 300-304

MAPID: 10720704000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 29 **QUARTERS/FOOTAGES:** 186' N line, 546' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.444716 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.077404 **DATE COLLECTED:** 10 / 3 / 1975
SURFACE ELEVATION (FT.): 601.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
512.0			COAL WITH SHALE	3.0	89.0	BLK SH W/ COAL
510.0	MODESTO	CHAPEL	COAL	1.5	91.0	
415.0	CARBONDALE	DANVILLE	COAL	2.0	186.0	
383.5	CARBONDALE	HERRIN	COAL	2.5	217.5	
328.6	CARBONDALE	SPRINGFIELD	COAL	5.0	272.4	

MAPID: 10720704000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 29 QUARTERS/FOOTAGES: 186' N line, 546' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.444716 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.077404 DATE COLLECTED: 10 / 3 / 1975

SURFACE ELEVATION (FT.): 601.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
601.0			SOIL	1.0	0.0	
600.0			CLAY	29.0	1.0	
571.0			CLAY, SAND & GRAVEL	15.0	30.0	
554.0	MODESTO		GRAY SHALE	43.0	47.0	
511.0	MODESTO		BLACK SHALE	2.0	90.0	
509.0	MODESTO	CHAPEL	COAL	1.0	92.0	
508.0	MODESTO		GRAY SHALE	32.5	93.0	
475.5	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	17.5	125.5	
458.0	MODESTO		BLACK SHALE	2.0	143.0	
456.0	MODESTO		SHALE	10.5	145.0	
445.5	MODESTO		LIMESTONE	4.0	155.5	
441.5	MODESTO		GRAY SHALE	4.0	159.5	
437.5	MODESTO		LIMESTONE	0.5	163.5	
437.0	MODESTO		SHALE	5.0	164.0	
432.0	MODESTO		LIMESTONE	2.0	169.0	
430.0	MODESTO		SHALE	13.0	171.0	
417.0	MODESTO		BLACK SHALE	4.0	184.0	DRILLERS LOG INDICATES DRK.GRAY-BLK SH
413.0	CARBONDALE	DANVILLE	COAL	2.0	188.0	
411.0	CARBONDALE		GRAY SHALE	5.5	190.0	
405.5	CARBONDALE	ANVIL ROCK	SANDSTONE/SILTSTONE	4.5	195.5	
401.0	CARBONDALE		GRAY SHALE	17.5	200.0	
383.5	CARBONDALE	HERRIN	COAL	2.5	217.5	
381.0	CARBONDALE		UNDERCLAY	2.0	220.0	6 CORES 222-280, ISGS DESCRIBED
379.0	CARBONDALE		ARGILLACEOUS LIMESTONE	0.4	222.0	PROBABLY A NODULE
378.6	CARBONDALE		SILTY SHALE	2.2	222.4	N SH SLTST, SMALL SIDERITE NODULES
376.4	CARBONDALE		SILTY SHALE	6.4	224.6	PARALLEL & X-LAMINATIONS, LIMEY NODULES
370.0	CARBONDALE		SHALE	1.3	231.0	TRACE OF SLTST LAMINATION
368.7	CARBONDALE		CLAYSTONE & SILTSTONE	1.8	232.3	SLIP FRACTURES, CALCAREOUS BANOS
366.9	CARBONDALE		CORE LOSS	0.6	234.1	
366.3	CARBONDALE		SANDSTONE	1.7	234.7	SHALEY LAMINATIONS NEAR BASE
364.6	CARBONDALE		SILTY SHALE	1.6	236.4	20% THIN SS LAMINATIONS
363.0	CARBONDALE		SANDSTONE	2.6	238.0	FAINT LAMINATIONS OF SHALE
360.5	CARBONDALE		SANDSTONE	2.7	240.5	THIN DARK SH PARTINGS MICRO X-LAMS.
357.8	CARBONDALE		CALCAREOUS SANDSTONE	1.5	243.2	
356.3	CARBONDALE		CARBONACEOUS SHALE	2.7	244.7	PARALL. LAMS, SS PART., BASAL SIDERITE
353.6	CARBONDALE		GRAY SHALE	1.3	247.4	N SH SLTST
352.3	CARBONDALE		GRAY SHALE	10.0	248.7	LOSS 1 FT. SH; SOFT

342.3	CARBONDALE		GRAY SHALE	5.4	258.7	VERT. FRACTURES, SIDERITE LENSES
336.9	CARBONDALE		BLACK SHALE	2.4	264.1	WHITE FOSSIL FRAGMENTS
334.5	CARBONDALE		CALCAREOUS SHALE	0.9	266.5	ABUND. WH. FOSSIL FRAGMENTS
333.6	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	0.7	267.4	CRINOID FRAGS. AT TOP, SHARP BASAL CONT.
332.9	CARBONDALE	TURNER MINE	BLACK SHALE	3.9	268.1	VERT. FRACT. AND 1 45 SLIP
329.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.4	272.0	ABUND. LARGE PYRITIZED BRACH. SHELLS
328.6	CARBONDALE	SPRINGFIELD	COAL	5.0	272.4	
323.6	CARBONDALE		CLAYSTONE & SILTSTONE	2.6	277.4	CARBONACEOUS PARTINGS, CRUMBLY

MAPID: 10720909000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 29 **QUARTERS/FOOTAGES:** 1530' S line, 1480' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.448007 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.067695 **DATE COLLECTED:** 7 / 3 / 1979
SURFACE ELEVATION (FT.): 590.0 **LOGGED (FT.):** 295.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		UNIT OVERBURDEN COMMENT
376.0	CARBONDALE	HERRIN	COAL	2.5	214.0	
316.8	CARBONDALE	SPRINGFIELD	COAL	6.0	273.2	

MAPID: 10720909000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 29 **QUARTERS/FOOTAGES:** 1530' S line, 1480' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.448007 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.067695 **DATE COLLECTED:** 7 / 3 / 1979
SURFACE ELEVATION (FT.): 590.0 **LOGGED (FT.):** 295.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0			CLAY	92.0	0.0	
498.0	MODESTO		DARK SHALE & SANDSTONE	19.0	92.0	
479.0	MODESTO		GRAY SHALE	10.0	111.0	
469.0	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	15.5	121.0	
453.5	MODESTO		SHALE	10.0	136.5	MULTICOLORED
443.5	MODESTO		SANDSTONE	15.0	146.5	
428.5	MODESTO		SHALE	5.5	161.5	MULTICOLORED
423.0	MODESTO		LIMESTONE	2.0	167.0	PIASA
421.0	MODESTO		SHALE	10.0	169.0	RED
411.0	MODESTO		GRAY SHALE	6.0	179.0	
405.0	MODESTO		BLACK SHALE	1.5	185.0	
403.5	CARBONDALE	DANVILLE	COAL	1.5	186.5	
402.0	CARBONDALE		GRAY SHALE	5.5	188.0	
396.5	CARBONDALE	ANVIL ROCK	SANDSTONE	4.5	193.5	
392.0	CARBONDALE		CALCAREOUS SHALE	15.0	198.0	
377.0	CARBONDALE		GRAY SHALE	1.0	213.0	
376.0	CARBONDALE	HERRIN	COAL	3.0	214.0	
373.0	CARBONDALE		DARK SHALE & SANDSTONE	6.5	217.0	
366.5	CARBONDALE		SANDSTONE	7.0	223.5	
359.5	CARBONDALE		SANDY SHALE	24.5	230.5	
335.0	CARBONDALE		GRAY SHALE	13.3	255.0	
321.7	CARBONDALE	ST. DAVID	LIMESTONE	1.1	268.3	
320.6	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	269.4	CORE #1 270-280
317.1	CARBONDALE		CLAYSTONE	0.3	272.9	WITH CARBONACEOUS SH STREAKS
316.8	CARBONDALE	SPRINGFIELD	COAL	6.0	273.2	CLAY 277.83-277.93
310.9	CARBONDALE		GRAY SHALE	0.7	279.1	DIAGONAL FRACTURES WITH SLICKENSIDES
310.2	CARBONDALE		CORE LOSS	0.2	279.8	
310.0	CARBONDALE		DARK SHALE & LIMESTONE	15.0	280.0	

MAPID: 10720910000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 30 **QUARTERS/FOOTAGES:** 2625' S line, 3700' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.471185 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.070902 **DATE COLLECTED:** 7 / 2 / 1979
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 265.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
411.0	CARBONDALE	HERRIN	COAL	3.0	184.0
351.2	CARBONDALE	SPRINGFIELD	COAL	5.7	243.8

MAPID: 10720910000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 30 **QUARTERS/FOOTAGES:** 2625' S line, 3700' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.471185 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.070902 **DATE COLLECTED:** 7 / 2 / 1979
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 265.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
595.0			CLAY	34.0	0.0
561.0			SAND & GRAVEL	15.0	34.0
546.0			CLAY	20.0	49.0
526.0			SILT	8.0	69.0
518.0			CLAY	76.0	77.0
442.0	CARBONDALE	DANVILLE	COAL	0.0	153.0 ERODED
442.0	CARBONDALE		SHALE	13.0	153.0
429.0	CARBONDALE	ANVIL ROCK	SANDSTONE/SHALE	13.5	166.0
415.5	CARBONDALE	BRERETON	LIMESTONE	4.0	179.5
411.5	CARBONDALE	ANNA	BLACK SHALE	0.5	183.5 FROM DRILLERS LOG
411.0	CARBONDALE	HERRIN	COAL	4.0	184.0
407.0	CARBONDALE		GRAY SHALE	2.5	188.0
404.5	CARBONDALE		SHALY LIMESTONE	2.0	190.5
402.5	CARBONDALE		SANDY SHALE	19.0	192.5
383.5	CARBONDALE		SHALY SANDSTONE	6.5	211.5
377.0	CARBONDALE		SANDY SHALE	7.0	218.0
370.0	CARBONDALE		GRAY SHALE	14.0	225.0
356.0	CARBONDALE	ST. DAVID	LIMESTONE W/ SHALE	3.5	239.0
352.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.3	242.5 CORE #1 245.5-250.5
351.2	CARBONDALE	SPRINGFIELD	COAL	5.7	243.8
345.5	CARBONDALE		CALCAREOUS SHALE	1.0	249.5
344.5	CARBONDALE		GRAY SHALE	14.5	250.5

MAPID: 10720720000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 31 **QUARTERS/FOOTAGES:** 35' N line, 1345' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.466368 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.063551 **DATE COLLECTED:** 10 / 17 / 1975
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
340.0	CARBONDALE	SPRINGFIELD	COAL	5.0	255.0	

MAPID: 10720720000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 31 **QUARTERS/FOOTAGES:** 35' N line, 1345' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.466368 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.063551 **DATE COLLECTED:** 10 / 17 / 1975
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0			SOIL	4.0	0.0	
591.0			CLAY	21.0	4.0	
570.0			SANDY CLAY	143.0	25.0	
425.0	CARBONDALE	DANVILLE	COAL	0.0	170.0	ERODED DANVILLE #7 COAL
395.0	CARBONDALE	HERRIN	COAL	0.0	200.0	ERODED HERRIN #6 COAL
427.0	CARBONDALE		GRAY SHALE	81.5	168.0	
345.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	249.5	
344.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	251.0	
340.5	CARBONDALE	SPRINGFIELD	COAL	5.0	254.5	
335.5	CARBONDALE		UNDERCLAY	8.0	259.5	
327.5	CARBONDALE		CARBONACEOUS SHALE	3.0	267.5	MODERATE GAMMA KICK, MAYBE A BLACK SH.
324.5	CARBONDALE		CLAYSTONE	9.5	270.5	

MAPID: 10720721000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 31 **QUARTERS/FOOTAGES:** 60' S line, 36' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.48414 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.049318 **DATE COLLECTED:** 10 / 14 / 1975
SURFACE ELEVATION (FT.): 596.0 **LOGGED (FT.):** 270.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
404.5	CARBONDALE	HERRIN	COAL	4.0	191.5	
344.0	CARBONDALE	SPRINGFIELD	COAL	5.0	252.0	

MAPID: 10720721000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 31 **QUARTERS/FOOTAGES:** 60' S line, 36' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.48414 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.049318 **DATE COLLECTED:** 10 / 14 / 1975
SURFACE ELEVATION (FT.): 596.0 **LOGGED (FT.):** 270.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST. DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
596.0			CLAY	65.0	0.0	
531.0			SANDY CLAY	100.0	65.0	
431.0			SAND	10.0	165.0	
441.0	CARBONDALE	DANVILLE	COAL	0.0	155.0	ERODED DANVILLE #7 COAL
421.0	CARBONDALE	ANVIL ROCK	SANDSTONE	16.5	175.0	DRILLERS LOG PLACES GLACIAL BASE AT 175
404.5	CARBONDALE	HERRIN	COAL	4.0	191.5	
400.5	CARBONDALE		SANDSTONE	21.5	195.5	
379.0	CARBONDALE		GRAY SHALE	29.2	217.0	
349.8	CARBONDALE	ST. DAVID	LIMESTONE	0.8	246.2	
349.0	CARBONDALE	TURNER MINE	BLACK SHALE	5.0	247.0	
344.0	CARBONDALE	SPRINGFIELD	COAL	5.0	252.0	
339.0	CARBONDALE		CLAYSTONE	13.0	257.0	WITH LIMESTONE NODULES

MAPID: 10720722000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 31 **QUARTERS/FOOTAGES:** 60' S line, 1360' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.466425 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.049247 **DATE COLLECTED:** 10 / 19 / 1975
SURFACE ELEVATION (FT.): 580.0 **LOGGED (FT.):** 260.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
348.0	CARBONDALE	SPRINGFIELD	COAL	5.0	232.0	

MAPID: 10720722000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 31 **QUARTERS/FOOTAGES:** 60' S line, 1360' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.466425 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.049247 **DATE COLLECTED:** 10 / 19 / 1975
SURFACE ELEVATION (FT.): 580.0 **LOGGED (FT.):** 260.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
580.0			SOIL	4.0	0.0	
576.0			CLAY	151.0	4.0	
425.0			SANDY CLAY	16.0	155.0	
444.0	CARBONDALE	DANVILLE	COAL	0.0	136.0	ERODED DANVILLE #7 COAL
409.0	CARBONDALE	HERRIN	COAL	0.0	171.0	ERODED HERRIN COAL
409.0	CARBONDALE		SANDSTONE	28.0	171.0	
381.0	CARBONDALE		GRAY SHALE	26.5	199.0	
354.5	CARBONDALE	ST. DAVID	LIMESTONE	3.0	225.5	
351.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	228.5	
348.0	CARBONDALE	SPRINGFIELD	COAL	5.0	232.0	
343.0	CARBONDALE		UNDERCLAY	8.0	237.0	WITH LIMESTONES NODULES
335.0	CARBONDALE		CARBONACEOUS SHALE	2.0	245.0	STRONG GAMMA KICK, MAYBE A BLACK SH
333.0	CARBONDALE		CLAYSTONE	13.0	247.0	

MAPID: 10720767000C **VERSION:** 1 **PROJECT:** AVAIL
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 31 **QUARTERS/FOOTAGES:** 60' S line, 15' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.461595 **GEOLOGIST:** C TREWORGY
CONFIDENTIAL: N **LATITUDE:** 40.049226 **DATE COLLECTED:** 11 / 9 / 1975
SURFACE ELEVATION (FT.): 580.0 **LOGGED (FT.):** 264.0 **LOG TYPE:** Gamma Ray Density
SOURCE: HYDROCARBON SURVEY **WELL TYPE:** Coal Test
COMMENT: NO DENSITY LOG OF UPPER PART OF HOLE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
580.0			UNCONSOLIDATED	176.5	0.0	
403.5	CARBONDALE	HERRIN	COAL	5.1	176.5	NO DENSITY LOG
398.4	CARBONDALE		UNCLASSIFIED	55.9	181.6	
342.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	237.5	
341.0	CARBONDALE	TURNER MINE	BLACK SHALE	5.5	239.0	
335.5	CARBONDALE	SPRINGFIELD	COAL	6.9	244.5	DETAILED LOG
328.6	CARBONDALE		UNCLASSIFIED	12.6	251.4	

MAPID: 10720911000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 31 **QUARTERS/FOOTAGES:** 1850' N line, 1060' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.48055 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.05857 **DATE COLLECTED:** 7 / 2 / 1979
SURFACE ELEVATION (FT.): 590.0 **LOGGED (FT.):** 265.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
346.1	CARBONDALE	SPRINGFIELD	COAL	5.3	243.9	

MAPID: 10720911000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 31 **QUARTERS/FOOTAGES:** 1850' N line, 1060' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.48055 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.05857 **DATE COLLECTED:** 7 / 2 / 1979
SURFACE ELEVATION (FT.): 590.0 **LOGGED (FT.):** 265.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
590.0			CLAY	10.0	0.0	
580.0			CLAY, SAND & GRAVEL	15.0	10.0	
565.0			SAND & GRAVEL	3.0	25.0	
562.0			CLAY, SAND & GRAVEL	72.0	28.0	
490.0			SANDY CLAY	73.0	100.0	
417.0	CARBONDALE	DANVILLE	COAL	0.0	173.0	ERODED DANVILLE #7 COAL
417.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	173.0	
414.0	CARBONDALE		DARK SHALE & LIMESTONE	30.0	176.0	
384.0	CARBONDALE	HERRIN	COAL	0.0	206.0	HERRIN #6 COAL NOT PRESENT
384.0	CARBONDALE		GRAY SHALE	10.0	206.0	
374.0	CARBONDALE		SANDSTONE	3.0	216.0	
371.0	CARBONDALE		GRAY SHALE	21.0	219.0	
350.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	240.0	
349.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.2	241.0	CORE #1 243-250.5
346.8	CARBONDALE		SHALY LIMESTONE	0.5	243.2	CONCRETION?
346.4	CARBONDALE	SPRINGFIELD	COAL	5.7	243.6	PYRITIC LENSES, HORSEBACK 248.6-249.33
340.7	CARBONDALE		GRAY SHALE	0.2	249.3	
340.5	CARBONDALE		CORE LOSS	1.0	249.5	
339.5	CARBONDALE		GRAY SHALE	5.5	250.5	
334.0	CARBONDALE		SHALY LIMESTONE	1.5	256.0	
332.5	CARBONDALE		GRAY SHALE	2.5	257.5	
330.0	CARBONDALE	EXCELLO	BLACK SHALE	1.5	260.0	UNCERTAIN CORRELATION
328.5	CARBONDALE		GRAY SHALE	3.5	261.5	

MAPID: 10720912000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 32

QUARTERS/FOOTAGES: 110' S line, 1920' E line

QUADRANGLE: BROADWELL

LONGITUDE: -89.449439

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.04923

DATE COLLECTED: 7 / 4 / 1979

SURFACE ELEVATION (FT.): 565.0

LOGGED (FT.): 287.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
350.0	CARBONDALE	HERRIN	COAL	4.5	215.0	
299.0	CARBONDALE	SPRINGFIELD	COAL	6.0	266.0	

MAPID: 10720912000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 32 QUARTERS/FOOTAGES: 110' S line, 1920' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.449439

GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.04923

DATE COLLECTED: 7 / 4 / 1979

SURFACE ELEVATION (FT.): 565.0 LOGGED (FT.): 287.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
565.0			CLAY	125.0	0.0	
439.0	MODESTO	WEST FRANKLIN	LIMESTONE	8.0	126.0	
431.0	MODESTO		BLACK SHALE	2.0	134.0	
429.0	MODESTO		GRAY SHALE	2.5	136.0	
426.5	MODESTO		SHALE	7.5	138.5	RED/TAN
419.0	MODESTO		DARK SHALE & SANDSTONE	16.0	146.0	
403.0	MODESTO		CALCAREOUS SHALE	5.0	162.0	
398.0	MODESTO		SHALE	11.0	167.0	RED/TAN
387.0	MODESTO		GRAY SHALE	2.5	178.0	MOD. GAMMA KICK
384.5	CARBONDALE	DANVILLE	COAL	0.0	180.5	DANVILLE #7 COAL NOT PRESENT
384.5	CARBONDALE		GRAY SHALE	9.5	180.5	TOP OF CARBONDALE IN THIS INTERVAL
375.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	190.0	
373.0	CARBONDALE	ANVIL ROCK	SANDSTONE/SHALE	14.0	192.0	UNCERTAIN CORRELATION
359.0	CARBONDALE		GRAY SHALE	9.0	206.0	DARK GRAY BOTTOM 1 FOOT
350.0	CARBONDALE	HERRIN	COAL	5.0	215.0	
345.0	CARBONDALE		GRAY SHALE	5.0	220.0	
340.0	CARBONDALE		SANDSTONE	5.0	225.0	
335.0	CARBONDALE		GRAY SHALE	32.5	230.0	
302.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	262.5	
301.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.8	263.5	
298.7	CARBONDALE	SPRINGFIELD	COAL	6.0	266.3	CORE #1 266-273
292.7	CARBONDALE		CALCAREOUS SHALE	0.1	272.3	
292.6	CARBONDALE		GRAY SHALE	0.9	272.4	
291.7	CARBONDALE		GRAY SHALE	6.2	273.3	
285.5	CARBONDALE		LIMESTONE	2.0	279.5	
283.5	CARBONDALE		GRAY SHALE	5.5	281.5	LS NODULES

MAPID: 10720913000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 33

QUARTERS/FOOTAGES: 650' N line, 2020' E line

QUADRANGLE: BROADWELL

LONGITUDE: -89.430983

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.061548

DATE COLLECTED: 6 / 29 / 1979

SURFACE ELEVATION (FT.): 565.0

LOGGED (FT.): 285.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG , CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
361.5	CARBONDALE	HERRIN	COAL	3.5	203.5	
299.1	CARBONDALE	SPRINGFIELD	COAL	5.9	265.9	

MAPID: 10720913000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 33 QUARTERS/FOOTAGES: 650' N line, 2020' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.430983 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.061548 DATE COLLECTED: 6 / 29 / 1979

SURFACE ELEVATION (FT.): 565.0 LOGGED (FT.): 285.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG , CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
565.0			CLAY	25.0	0.0	
540.0			CLAY, SAND & GRAVEL	54.5	25.0	THIN SAND & GRAVEL ZONES
485.5			SAND & GRAVEL	5.5	79.5	W/ CLAY
480.0			CLAY	24.0	85.0	
456.0	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	17.0	109.0	SH 115-119
439.0	MODESTO		GRAY SHALE	9.0	126.0	
430.0	MODESTO		SANDSTONE	8.0	135.0	
422.0	MODESTO		DARK SHALE & SANDSTONE	16.0	143.0	
406.0	MODESTO		SHALE	2.5	159.0	TAN
403.5	MODESTO		SHALY LIMESTONE	1.5	161.5	PIASA LS ON DRILLERS LOG
402.0	MODESTO		SHALE	4.0	163.0	TAN
398.0	MODESTO		SHALE	7.0	167.0	RED/TAN
391.0	MODESTO		GRAY SHALE	2.5	174.0	
388.5	MODESTO		BLACK SHALE	2.0	176.5	
386.5	CARBONDALE	DANVILLE	COAL	0.0	178.5	DANVILLE #7 COAL NOT PRESENT
386.5	CARBONDALE		GRAY SHALE	10.5	178.5	
376.0	CARBONDALE	ANVIL ROCK	SANDSTONE	1.5	189.0	
374.5	CARBONDALE		GRAY SHALE	9.5	190.5	
365.0	CARBONDALE	BRERETON	LIMESTONE	3.5	200.0	
361.5	CARBONDALE		GRAY SHALE	0.5	203.5	
361.0	CARBONDALE	HERRIN	COAL	3.5	204.0	
357.5	CARBONDALE		GRAY SHALE	11.0	207.5	WITH LIMESTONE NODULES
346.5	CARBONDALE		SANDSTONE	6.0	218.5	
340.5	CARBONDALE		DARK SHALE & SANDSTONE	35.5	224.5	
305.0	CARBONDALE	ST. DAVID	LIMESTONE W/ SHALE	2.0	260.0	SH 260.6-261.7
303.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.9	262.0	CORE #1 262-272.5
299.1	CARBONDALE	SPRINGFIELD	COAL	5.9	265.9	
293.2	CARBONDALE		CARBONACEOUS SHALE	0.3	271.8	
292.9	CARBONDALE		CORE LOSS	0.4	272.1	
292.5	CARBONDALE		GRAY SHALE	6.5	272.5	
286.0	CARBONDALE		SHALY LIMESTONE	1.5	279.0	
284.5	CARBONDALE		GRAY SHALE	4.5	280.5	

MAPID: 10720723000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 34

QUARTERS/FOOTAGES: 2585' N line, 1375' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.418752

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.056161

DATE COLLECTED: 10 / 20 / 1975

SURFACE ELEVATION (FT.): 580.0

LOGGED (FT.): 308.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
346.0	CARBONDALE	HERRIN	COAL	4.0	234.0	
287.0	CARBONDALE	SPRINGFIELD	COAL	6.0	293.0	

MAPID: 10720723000C VERSION: 2

PROJECT: IGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 34 QUARTERS/FOOTAGES: 2585' N line, 1375' W line

QUADRANGLE: BROADWELL LONGITUDE: -89.418752 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.056161 DATE COLLECTED: 10 / 20 / 1975

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 308.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
580.0			CLAY	52.0	0.0
528.0			CLAY, SAND & GRAVEL	64.0	52.0
468.0	MODESTO		GRAY SHALE	27.0	112.0
441.0	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	15.0	139.0
426.0	MODESTO		BLACK SHALE	2.0	154.0
424.0	MODESTO		SHALE	9.5	156.0 SH 144-146.5
414.5	MODESTO		DARK SHALE & SANDSTONE	30.0	165.5
384.5	MODESTO		SHALE	9.0	195.5
375.5	MODESTO		BLACK SHALE	1.5	204.5
374.0	CARBONDALE	DANVILLE	COAL	0.0	206.0
374.0	CARBONDALE		GRAY SHALE	7.0	206.0
367.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	213.0 DANVILLE #7 COAL NOT PRESENT
366.0	CARBONDALE		GRAY SHALE	17.5	214.0
348.5	CARBONDALE	BRERETON	LIMESTONE	2.5	231.5
346.0	CARBONDALE	HERRIN	COAL	4.0	234.0 STREAKED W/LS & SS (FROM DRILLERS LOG)
342.0	CARBONDALE		CLAYSTONE & SHALE	6.5	238.0
335.5	CARBONDALE		LIMESTONE	1.5	244.5
334.0	CARBONDALE		DARK SHALE & LIMESTONE	12.0	246.0
322.0	CARBONDALE		SILTY SHALE	27.0	258.0
295.0	CARBONDALE		GRAY SHALE	3.0	285.0 THIN LIMESTONES LENSES
292.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	288.0
290.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	289.5
287.5	CARBONDALE	SPRINGFIELD	COAL	6.0	292.5
281.5	CARBONDALE		UNDERCLAY	5.5	298.5
276.0	CARBONDALE		SHALY LIMESTONE	1.0	304.0
275.0	CARBONDALE		GRAY SHALE	3.0	305.0

MAPID: 10720914000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 35

QUARTERS/FOOTAGES: 2600' S line, 60' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.404484

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.055838

DATE COLLECTED: 6 / 2 / 1979

SURFACE ELEVATION (FT.): 568.0

LOGGED (FT.): 310.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
336.0	CARBONDALE	HERRIN	COAL	4.5	232.0	
280.3	CARBONDALE	SPRINGFIELD	COAL	5.8	287.7	

MAPID: 10720914000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 3W **SECTION:** 35 **QUARTERS/FOOTAGES:** 2600' S line, 60' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.404484 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.055838 **DATE COLLECTED:** 6 / 2 / 1979
SURFACE ELEVATION (FT.): 568.0 **LOGGED (FT.):** 310.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
568.0			CLAY	14.0	0.0	
554.0			SAND & GRAVEL	2.0	14.0	
552.0			CLAY	3.0	16.0	
549.0			SAND & GRAVEL	23.0	19.0	
526.0			CLAY	92.0	42.0	
434.0			SAND & GRAVEL	2.0	134.0	
432.0	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	12.5	136.0	
419.5	MODESTO		BLACK SHALE	1.5	148.5	
418.0	MODESTO		SHALE	18.0	150.0	MULTICOLORED
400.0	MODESTO		SILTY SHALE	21.0	168.0	
379.0	MODESTO		SHALE	10.0	189.0	MULTICOLORED
369.0	MODESTO		GRAY SHALE	2.0	199.0	MODERATE GAMMA KICK
367.0	CARBONDALE	DANVILLE	COAL	0.0	201.0	DANVILLE #7 COAL NOT PRESENT
367.0	CARBONDALE		SHALE	5.0	201.0	TOP OF CARBONDALE IN THIS INTERVAL
362.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	206.0	
360.0	CARBONDALE		GRAY SHALE	7.0	208.0	
353.0	CARBONDALE	ANVIL ROCK	SILTSTONE	7.0	215.0	CALCAREOUS AT TOP
346.0	CARBONDALE		GRAY SHALE	8.5	222.0	
337.5	CARBONDALE	HERRIN	COAL	4.0	230.5	
333.5	CARBONDALE		GRAY SHALE	4.0	234.5	
329.5	CARBONDALE		SILTY LIMESTONE	3.0	238.5	
326.5	CARBONDALE		SANDY SHALE	20.5	241.5	
306.0	CARBONDALE		GRAY SHALE	21.5	262.0	
284.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	283.5	
283.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.7	285.0	CORE #1 286.5-294.5, FRACTS 30,45,90
280.3	CARBONDALE	SPRINGFIELD	COAL	5.8	287.7	
274.5	CARBONDALE		GRAY SHALE	0.9	293.5	
273.6	CARBONDALE		CORE LOSS	0.2	294.4	
273.5	CARBONDALE		GRAY SHALE	15.5	294.5	

MAPID: 10721180000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 3W

SECTION: 35

QUARTERS/FOOTAGES: NW SW SE

QUADRANGLE: BROADWELL

LONGITUDE: -89.394065

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.051355

DATE COLLECTED: 6 / 56 / 1977

SURFACE ELEVATION (FT.): 573.0

LOGGED (FT.): 320.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
335.0	CARBONDALE	HERRIN	COAL	4.5	238.0	
276.8	CARBONDALE	SPRINGFIELD	COAL	5.7	296.2	

MAPID: 10721180000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 3W SECTION: 35 QUARTERS/FOOTAGES: NW SW SE

QUADRANGLE: BROADWELL LONGITUDE: -89.394065 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.051355 DATE COLLECTED: 6 / 56 / 1977

SURFACE ELEVATION (FT.): 573.0 LOGGED (FT.): 320.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
573.0			CLAY, SAND & SILTSTONE	20.0	0.0
553.0			SAND & GRAVEL	50.0	20.0
503.0			CLAY, SAND & GRAVEL	20.0	70.0
483.0			CLAY	30.0	90.0
453.0			SAND & GRAVEL	21.3	120.0
431.5	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	17.5	141.5
414.0	MODESTO		BLACK SHALE	1.5	159.0
412.5	MODESTO		SHALE	9.0	160.5
403.5	MODESTO		LIMESTONE	4.0	169.5
399.5	MODESTO		GRAY SHALE	22.0	173.5
377.5	MODESTO		SHALE	12.0	195.5
365.5	MODESTO		GRAY SHALE	2.5	207.5
363.0	MODESTO		BLACK SHALE	1.5	210.0
361.5	CARBONDALE	DANVILLE	COAL	0.0	211.5
361.5	CARBONDALE		GRAY SHALE	10.5	211.5
351.0	CARBONDALE	BANKSTON FORK	SHALY LIMESTONE	3.0	222.0
348.0	CARBONDALE		GRAY SHALE	8.0	225.0
340.0	CARBONDALE	BRERETON	LIMESTONE	4.5	233.0
335.5	CARBONDALE	HERRIN	COAL	4.0	237.5
331.5	CARBONDALE		GRAY SHALE	5.0	241.5
326.5	CARBONDALE		DARK SHALE & LIMESTONE	3.5	246.5
323.0	CARBONDALE		GRAY SHALE	8.5	250.0
314.5	CARBONDALE		SANDY SHALE	3.5	258.5
311.0	CARBONDALE		GRAY SHALE	29.5	262.0
281.5	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	1.6	291.5
279.9	CARBONDALE	TURNER MINE	BLACK SHALE	1.4	293.1
278.5	CARBONDALE	SPRINGFIELD	COAL	7.0	294.5
271.5	CARBONDALE		CLAYSTONE	1.9	301.5
269.6	CARBONDALE		CLAYSTONE	1.0	303.4
268.6	CARBONDALE		CORE LOSS	0.6	304.4
268.0	CARBONDALE		GRAY SHALE	1.5	305.0
266.5	CARBONDALE		CALCAREOUS SHALE	2.5	306.5
264.0	CARBONDALE		GRAY SHALE	5.5	309.0
258.5	CARBONDALE		LIMESTONE	1.0	314.5
257.5	CARBONDALE		GRAY SHALE	4.5	315.5

MAPID: 10700498000C VERSION: 1

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 1 QUARTERS/FOOTAGES: 212' N line, 67' W line of NE SE
 QUADRANGLE: LINCOLN WEST LONGITUDE: -89.48945 GEOLOGIST: C TREWORY
 CONFIDENTIAL: N LATITUDE: 40.128502 DATE COLLECTED:
 SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 437.0 LOG TYPE: Nuclear Log
 SOURCE: CENTRAL ILLINOIS LIGHT WELL TYPE: Structure Test
 COMMENT: GAMMA LOG ONLY

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0			UNCONSOLIDATED	86.0	0.0	BASED ON CASING DEPTH
504.0			UNCLASSIFIED	8.0	86.0	
496.0	MODESTO		BLACK SHALE	5.0	94.0	CHAPEL COAL HORIZON
491.0	MODESTO		UNCLASSIFIED	53.0	99.0	
438.0	MODESTO		BLACK SHALE	4.0	152.0	
434.0	CARBONDALE	DANVILLE	COAL	0.0	156.0	
434.0	CARBONDALE		UNCLASSIFIED	28.0	156.0	
406.0	CARBONDALE	HERRIN	COAL	4.0	184.0	
402.0	CARBONDALE		UNCLASSIFIED	59.0	188.0	
343.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	247.0	
340.0	CARBONDALE	SPRINGFIELD	COAL	6.0	250.0	
334.0	CARBONDALE		UNCLASSIFIED	7.0	256.0	
327.0	CARBONDALE	EXCELLO	BLACK SHALE	4.0	263.0	
323.0	CARBONDALE	HOUCHIN CREEK	COAL	0.0	267.0	HOACHIN CREEK COAL HORIZON
323.0	CARBONDALE		UNCLASSIFIED	55.0	267.0	
268.0	CARBONDALE	SURVANT	COAL	1.0	322.0	
267.0	CARBONDALE		UNCLASSIFIED	52.0	323.0	
215.0	CARBONDALE	MECCA QUARRY	BLACK SHALE	4.0	375.0	
211.0	CARBONDALE	COLCHESTER	COAL	3.0	379.0	
208.0	SPOON		UNCLASSIFIED	51.0	382.0	
157.0			BLACK SHALE	4.0	433.0	

MAPID: 10721160000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 1 QUARTERS/FOOTAGES: 1949' N line, 1785' E line
 QUADRANGLE: LINCOLN WEST LONGITUDE: -89.49142 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 40.130878 DATE COLLECTED: 5 / 5 / 1977
 SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 285.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
527.0	MODESTO	CHAPEL	COAL	1.5	68.0	
403.5	CARBONDALE	HERRIN	COAL	4.1	191.5	
338.1	CARBONDALE	SPRINGFIELD	COAL	5.9	256.9	

MAPID: 10721160000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 1 QUARTERS/FOOTAGES: 1949' N line, 1785' E line

QUADRANGLE: LINCOLN WEST LONGITUDE: -89.49142 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.130878 DATE COLLECTED: 5 / 5 / 1977

SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 285.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
595.0			SOIL	1.0	0.0
594.0			CLAY	19.0	1.0
575.0			CLAY, SAND & GRAVEL	29.0	20.0
547.0	MODESTO		GRAY SHALE	17.0	48.0
530.0	MODESTO		BLACK SHALE	2.5	65.0
527.5	MODESTO	CHAPEL	COAL	1.5	67.5
526.0	MODESTO		GRAY SHALE	21.0	69.0
505.0	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	13.0	90.0
492.0	MODESTO		BLACK SHALE	2.0	103.0
490.0	MODESTO		SHALE	15.5	105.0
474.5	MODESTO		SHALY LIMESTONE	4.5	120.5
470.0	MODESTO		GRAY SHALE	14.5	125.0
455.5	MODESTO		SHALE	8.5	139.5
447.0	MODESTO		GRAY SHALE	10.0	148.0
437.0	MODESTO		BLACK SHALE	1.0	158.0
436.0	CARBONDALE	DANVILLE	COAL	0.0	159.0
436.0	CARBONDALE		GRAY SHALE	13.0	159.0
423.0	CARBONDALE		SANDY SHALE	16.0	172.0
407.0	CARBONDALE	BRERETON	LIMESTONE	2.5	188.0
404.5	CARBONDALE	HERRIN	COAL	4.0	190.5
400.5	CARBONDALE		GRAY SHALE	57.0	194.5
343.5	CARBONDALE	ST. DAVID	LIMESTONE	2.4	251.5
341.1	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	253.9
338.1	CARBONDALE	SPRINGFIELD	COAL	5.9	256.9
332.2	CARBONDALE		CORE LOSS	0.4	262.8
331.8	CARBONDALE		UNDERCLAY	4.0	263.2
327.8	CARBONDALE		GRAY SHALE	17.8	267.2

MAPID: 10721161000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 4W

SECTION: 1

QUARTERS/FOOTAGES: 1949' N line, 1775' E line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.491384

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.130878

DATE COLLECTED: 5 / 9 / 1977

SURFACE ELEVATION (FT.): 595.0

LOGGED (FT.): 215.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
528.9	MODESTO	CHAPEL	COAL	1.5	66.1
402.2	CARBONDALE	HERRIN	COAL	4.0	192.8

MAPID: 10721161000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 1 **QUARTERS/FOOTAGES:** 1949' N line, 1775' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.491384 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.130878 **DATE COLLECTED:** 5 / 9 / 1977
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 215.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
595.0			CLAY	20.0	0.0
575.0			CLAY, SAND & GRAVEL	28.0	20.0
547.0	MODESTO		GRAY SHALE	17.5	48.0
529.5	MODESTO		BLACK SHALE	1.5	65.5
528.0	MODESTO	CHAPEL	COAL	1.5	67.0
526.5	MODESTO		GRAY SHALE	21.5	68.5
505.0	MODESTO	WEST FRANKLIN	LIMESTONE	13.5	90.0
491.5	MODESTO		BLACK SHALE	1.5	103.5
490.0	MODESTO		SHALE	18.0	105.0
472.0	MODESTO		CALCAREOUS SHALE	2.5	123.0
469.5	MODESTO		GRAY SHALE	14.5	125.5
455.0	MODESTO		LIMESTONE W/ SHALE	3.0	140.0
452.0	MODESTO		SHALE	9.0	143.0
443.0	MODESTO		GRAY SHALE	11.0	152.0
432.0	MODESTO		BLACK SHALE	1.0	163.0
431.0	CARBONDALE	DANVILLE	COAL	0.0	164.0
431.0	CARBONDALE		GRAY SHALE	9.0	164.0
422.0	CARBONDALE	ANVIL ROCK	SANDY SHALE	2.0	173.0
420.0	CARBONDALE	ANVIL ROCK	CALCAREOUS SANDSTONE	6.5	175.0
413.5	CARBONDALE	ANVIL ROCK	SANDY SHALE	5.5	181.5
408.0	CARBONDALE	BRERETON	LIMESTONE	5.7	187.0
402.3	CARBONDALE	ANNA	BLACK SHALE	0.1	192.7
402.2	CARBONDALE	HERRIN	COAL	3.0	192.8
399.2	CARBONDALE		UNDERCLAY	0.3	195.8
398.9	CARBONDALE		CORE LOSS	1.0	196.1
397.9	CARBONDALE		GRAY SHALE	4.9	197.1
393.0	CARBONDALE		DARK SHALE & SANDSTONE	4.0	202.0
389.0	CARBONDALE		DARK SHALE & SANDSTONE	9.0	206.0

MAPID: 10721162000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 4W

SECTION: 1

QUARTERS/FOOTAGES: 416' S line, 1233' W line

QUADRANGLE: BROADWELL

LONGITUDE: -89.499214

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.123064

DATE COLLECTED: 5 / 26 / 1977

SURFACE ELEVATION (FT.): 590.0

LOGGED (FT.): 265.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
436.0	CARBONDALE	DANVILLE	COAL	1.7	154.0	
404.0	CARBONDALE	HERRIN	COAL	2.5	186.0	
349.0	CARBONDALE	SPRINGFIELD	COAL	6.0	241.0	

MAPID: 10721162000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 1 QUARTERS/FOOTAGES: 416' S line, 1233' W line
 QUADRANGLE: BROADWELL LONGITUDE: -89.499214 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.123064 DATE COLLECTED: 5 / 26 / 1977
 SURFACE ELEVATION (FT.): 590.0 LOGGED (FT.): 265.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
590.0			CLAY	16.0	0.0
574.0			CLAY, SAND & GRAVEL	28.0	16.0
546.0	MODESTO		GRAY SHALE	8.5	44.0
537.5	MODESTO		SILTSTONE	7.5	52.5
530.0	MODESTO		GRAY SHALE	9.0	60.0
521.0	MODESTO		SHALE	4.0	69.0
517.0	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	14.5	73.0
502.5	MODESTO		BLACK SHALE	1.5	87.5
501.0	MODESTO		SHALE	18.5	89.0
482.5	MODESTO		LIMESTONE W/ SHALE	7.5	107.5
475.0	MODESTO		GRAY SHALE	9.5	115.0
465.5	MODESTO		LIMESTONE	1.0	124.5
464.5	MODESTO		SHALE	9.5	125.5
455.0	MODESTO		GRAY SHALE	14.0	135.0
441.0	MODESTO		BLACK SHALE	2.0	149.0
439.0	MODESTO		GRAY SHALE	3.0	151.0
436.0	CARBONDALE	DANVILLE	COAL	1.0	154.0
435.0	CARBONDALE		GRAY SHALE	13.5	155.0
421.5	CARBONDALE		SANDY SHALE	4.0	168.5
417.5	CARBONDALE	ANVIL ROCK	SHALY SANDSTONE	8.5	172.5
409.0	CARBONDALE		GRAY SHALE	2.5	181.0
406.5	CARBONDALE	BRERETON	LIMESTONE	1.5	183.5
405.0	CARBONDALE	HERRIN	COAL	2.0	185.0
403.0	CARBONDALE		GRAY SHALE	14.0	187.0
389.0	CARBONDALE		LIMESTONE W/ SHALE	8.5	201.0
380.5	CARBONDALE		GRAY SHALE	23.0	209.5
357.5	CARBONDALE		CALCAREOUS SANDSTONE	2.0	232.5
355.5	CARBONDALE		GRAY SHALE	3.5	234.5
352.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	238.0
349.0	CARBONDALE	SPRINGFIELD	COAL	6.0	241.0
343.0	CARBONDALE		UNDERCLAY	3.0	247.0
340.0	CARBONDALE		GRAY SHALE	8.0	250.0
332.0	CARBONDALE		GRAY SHALE	7.0	258.0

MAPID: 10721163000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 4W

SECTION: 2

QUARTERS/FOOTAGES: 1306' N line, 2605' W line

QUADRANGLE: NEW HOLLAND

LONGITUDE: -89.51348

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.132611

DATE COLLECTED: 5 / 26 / 1977

SURFACE ELEVATION (FT.): 620.0

LOGGED (FT.): 280.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST., DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
454.5	CARBONDALE	DANVILLE	COAL	1.5	165.5	
428.0	CARBONDALE	HERRIN	COAL	1.0	192.0	
364.9	CARBONDALE	SPRINGFIELD	COAL	5.6	255.1	

MAPID: 10721163000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 2 QUARTERS/FOOTAGES: 1306' N line, 2605' W line
 QUADRANGLE: NEW HOLLAND LONGITUDE: -89.51348 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.132611 DATE COLLECTED: 5 / 26 / 1977
 SURFACE ELEVATION (FT.): 620.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST., DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
620.0			CLAY	38.0	0.0
582.0	MODESTO		GRAY SHALE	22.0	38.0
560.0	MODESTO	CHAPEL	COAL	1.0	60.0
559.0	MODESTO		GRAY SHALE	21.0	61.0
538.0	MODESTO	WEST FRANKLIN	LIMESTONE W/ SHALE	14.0	82.0
524.0	MODESTO		BLACK SHALE	2.0	96.0
522.0	MODESTO		GRAY SHALE	5.0	98.0
517.0	MODESTO		SHALE	11.5	103.0
505.5	MODESTO		LIMESTONE	5.5	114.5
500.0	MODESTO		GRAY SHALE	6.5	120.0
493.5	MODESTO		LIMESTONE	0.5	126.5
493.0	MODESTO		GRAY SHALE	6.5	127.0
486.5	MODESTO		LIMESTONE	1.5	133.5
485.0	MODESTO		SHALE	7.5	135.0
477.5	MODESTO		GRAY SHALE	20.0	142.5
457.5	MODESTO		BLACK SHALE	2.5	162.5
455.0	CARBONDALE	DANVILLE	COAL	1.0	165.0
454.0	CARBONDALE		CLAYSTONE & SHALE	5.0	166.0
449.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	171.0
446.5	CARBONDALE		SANDY SHALE	6.5	173.5
440.0	CARBONDALE		GRAY SHALE	11.0	180.0
429.0	CARBONDALE	HERRIN	COAL	1.5	191.0
427.5	CARBONDALE		GRAY SHALE	3.0	192.5
424.5	CARBONDALE		LIMESTONE W/ SHALE	2.5	195.5
422.0	CARBONDALE		SANDY SHALE	9.5	198.0
412.5	CARBONDALE		GRAY SHALE	2.5	207.5
410.0	CARBONDALE		SANDY SHALE	11.0	210.0
399.0	CARBONDALE		SANDSTONE	8.0	221.0
391.0	CARBONDALE		SANDY SHALE	9.0	229.0
382.0	CARBONDALE		GRAY SHALE	12.0	238.0
370.0	CARBONDALE	ST. DAVID	FOSSILIFEROUS LIMESTONE	2.5	250.0
367.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.6	252.5
364.9	CARBONDALE	SPRINGFIELD	COAL	5.6	255.1
359.3	CARBONDALE		UNDERCLAY	5.3	260.7
354.0	CARBONDALE		DARK SHALE & LIMESTONE	14.0	266.0

MAPID: 10720768000C VERSION: 1

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 3 QUARTERS/FOOTAGES: 1386' S line, 1320' W line
 QUADRANGLE: NEW HOLLAND LONGITUDE: -89.536591 GEOLOGIST: C TREWORY
 CONFIDENTIAL: N LATITUDE: 40.125459 DATE COLLECTED: 10 / 27 / 1975
 SURFACE ELEVATION (FT.): 565.0 LOGGED (FT.): 200.0 LOG TYPE: Gamma Ray Density
 SOURCE: HYDROCARBON SURVEY WELL TYPE: Coal Test
 COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
565.0			UNCONSOLIDATED	29.0	0.0
536.0	MODESTO		UNCLASSIFIED	18.0	29.0
518.0	MODESTO	WEST FRANKLIN	LIMESTONE	2.5	47.0
515.5	MODESTO		UNCLASSIFIED	37.0	49.5
478.5	MODESTO		BLACK SHALE	2.5	86.5
476.0	MODESTO		UNCLASSIFIED	3.0	89.0
473.0	MODESTO		BLACK SHALE	2.0	92.0
471.0	CARBONDALE	DANVILLE	COAL	2.0	94.0
469.0	CARBONDALE		UNCLASSIFIED	12.0	96.0
457.0	CARBONDALE	BANKSTON FORK	LIMESTONE	3.0	108.0
454.0	CARBONDALE		UNCLASSIFIED	6.5	111.0
447.5	CARBONDALE	BRERETON	LIMESTONE	3.5	117.5
444.0	CARBONDALE	ANNA	BLACK SHALE	2.0	121.0
442.0	CARBONDALE	HERRIN	COAL	0.0	123.0
442.0	CARBONDALE		UNCLASSIFIED	47.0	123.0
395.0	CARBONDALE	ST. DAVID	LIMESTONE	2.5	170.0
392.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.5	172.5
390.0	CARBONDALE	SPRINGFIELD	COAL	6.6	175.0 DETAILED LOG
383.4	CARBONDALE		UNCLASSIFIED	5.9	181.6
377.5	CARBONDALE	EXCELLO	BLACK SHALE	2.5	187.5
375.0	CARBONDALE	HOUCHIN CREEK	COAL	0.0	190.0 COAL THIN OR ABSENT
375.0	CARBONDALE		UNCLASSIFIED	10.0	190.0

MAPID: 10720855000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 3 QUARTERS/FOOTAGES: 1318' S line, 235' E line
 QUADRANGLE: MIDDLETOWN LONGITUDE: -89.52343 GEOLOGIST: PRUSSEN
 CONFIDENTIAL: N LATITUDE: 40.125374 DATE COLLECTED: 7 / 31 / 1978
 SURFACE ELEVATION (FT.): 581.0 LOGGED (FT.): 235.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
453.0	CARBONDALE	DANVILLE	COAL	1.0	128.0
429.0	CARBONDALE	HERRIN	COAL	2.0	152.0
369.8	CARBONDALE	SPRINGFIELD	COAL	5.6	211.2

MAPID: 10720855000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 3 **QUARTERS/FOOTAGES:** 1318' S line, 235' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.52343 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.125374 **DATE COLLECTED:** 7 / 31 / 1978
SURFACE ELEVATION (FT.): 581.0 **LOGGED (FT.):** 235.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
581.0			CLAY	15.0	0.0	TAN/RED
566.0			SAND & GRAVEL	2.0	15.0	
564.0			CLAY	27.0	17.0	
537.0			SAND & GRAVEL	2.0	44.0	
535.0			CLAY	35.0	46.0	
499.0	MODESTO		GRAY SHALE	7.0	82.0	
492.0	MODESTO		SHALE	6.5	89.0	
485.5	MODESTO		LIMESTONE	1.0	95.5	
484.5	MODESTO		SHALE	11.5	96.5	
473.0	MODESTO		GRAY SHALE	15.5	108.0	
457.5	MODESTO		BLACK SHALE	3.0	123.5	
454.5	CARBONDALE	DANVILLE	COAL	1.0	126.5	
453.5	CARBONDALE		GRAY SHALE	20.0	127.5	
433.5	CARBONDALE	ANNA	BLACK SHALE	1.5	147.5	
432.0	CARBONDALE	HERRIN	COAL	3.5	149.0	
428.5	CARBONDALE		GRAY SHALE	24.5	152.5	
404.0	CARBONDALE		SHALY SANDSTONE	10.0	177.0	
394.0	CARBONDALE		SANDY SHALE	20.5	187.0	
373.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	207.5	CORE #1 210.5-217.5
372.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.7	208.5	
369.8	CARBONDALE	SPRINGFIELD	COAL	5.6	211.2	
364.2	CARBONDALE		GRAY SHALE	0.4	216.8	
363.8	CARBONDALE		CORE LOSS	0.3	217.2	
363.5	CARBONDALE		GRAY SHALE	5.5	217.5	OFF GAMMA, DRILL LOG INDICATES GRAY SH
358.0	CARBONDALE	EXCELLO	BLACK SHALE	2.5	223.0	W/ LIMESTONE NODULES
355.5	CARBONDALE		GRAY SHALE	9.5	225.5	

MAPID: 10720856000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 4W

SECTION: 5

QUARTERS/FOOTAGES: 925' N line, 1000' E line

QUADRANGLE: NEW HOLLAND

LONGITUDE: -89.564344

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.133464

DATE COLLECTED: 7 / 27 / 1978

SURFACE ELEVATION (FT.): 540.0

LOGGED (FT.): 190.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
377.3	CARBONDALE	SPRINGFIELD	COAL	6.0	162.7	

MAPID: 10720856000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 5 QUARTERS/FOOTAGES: 925' N line, 1000' E line

QUADRANGLE: NEW HOLLAND LONGITUDE: -89.564344 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.133464 DATE COLLECTED: 7 / 27 / 1978

SURFACE ELEVATION (FT.): 540.0 LOGGED (FT.): 190.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
540.0			CLAY	9.0	0.0	
531.0			SAND & GRAVEL	9.0	9.0	
522.0			CLAY	8.0	18.0	
514.0			SAND & GRAVEL	2.0	26.0	
512.0			CLAY, SAND & GRAVEL	10.0	28.0	
502.0	MODESTO		SHALE	13.5	38.0	TAN
488.5	MODESTO		GRAY SHALE	2.0	51.5	
486.5	MODESTO		SHALE	18.0	53.5	
468.5	MODESTO		GRAY SHALE	8.5	71.5	
460.0	MODESTO		BLACK SHALE	2.5	80.0	
457.5	CARBONDALE	DANVILLE	COAL	1.5	82.5	
456.0	CARBONDALE		GRAY SHALE	7.0	84.0	
449.0	CARBONDALE		DARK SHALE & LIMESTONE	4.5	91.0	
444.5	CARBONDALE	BRERETON	LIMESTONE	3.0	95.5	
441.5	CARBONDALE	ANNA	BLACK SHALE	6.0	98.5	DARK GRAY ON DRILLERS LOG; OFF GAMMA
435.5	CARBONDALE	HERRIN	COAL	0.0	104.5	HERRIN #6 COAL NOT PRESENT
435.5	CARBONDALE		GRAY SHALE	2.0	104.5	
433.5	CARBONDALE		SANDY SHALE	31.5	106.5	
402.0	CARBONDALE		GRAY SHALE	21.5	138.0	
380.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.2	159.5	CORE #1 161.7-170.7
377.3	CARBONDALE	SPRINGFIELD	COAL	6.0	162.7	
371.3	CARBONDALE		UNDERCLAY	1.7	168.7	
369.6	CARBONDALE		CORE LOSS	0.3	170.4	
369.3	CARBONDALE		UNDERCLAY	0.8	170.7	
368.5	CARBONDALE		LIMESTONE W/ SHALE	4.0	171.5	
364.5	CARBONDALE	EXCELLO	BLACK SHALE	2.5	175.5	UNCERTAIN CORRELATION
362.0	CARBONDALE		SANDY SHALE	12.0	178.0	

MAPID: 10721164000C VERSION: 1 PROJECT: EIA-DOE
COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 8 QUARTERS/FOOTAGES: 241' N line, 198' E line
QUADRANGLE: MIDDLETOWN LONGITUDE: -89.561133 GEOLOGIST: PRUSSEN
CONFIDENTIAL: N LATITUDE: 40.120807 DATE COLLECTED: 5 / 31 / 1977
SURFACE ELEVATION (FT.): 535.0 LOGGED (FT.): 240.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL WELL TYPE: Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
325.0	CARBONDALE	HOUCHIN CREEK	COAL	1.5	210.0	LOGBOOK SAYS "NO 4?"

MAPID: 10721164000C VERSION: 2 PROJECT: ISGS88
COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 8 QUARTERS/FOOTAGES: 241' N line, 198' E line
QUADRANGLE: MIDDLETOWN LONGITUDE: -89.561133 GEOLOGIST: SROKA
CONFIDENTIAL: N LATITUDE: 40.120807 DATE COLLECTED: 5 / 31 / 1977
SURFACE ELEVATION (FT.): 535.0 LOGGED (FT.): 240.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL WELL TYPE: Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
535.0			CLAY	3.0	0.0	
532.0			SAND & GRAVEL	15.0	3.0	
517.0			CLAY	117.0	18.0	
400.0			SILT	7.0	135.0	
393.0			GRAVEL	6.0	142.0	
462.0	CARBONDALE	HERRIN	COAL	0.0	73.0	
397.0	CARBONDALE	SPRINGFIELD	COAL	0.0	138.0	
387.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	148.0	
385.0	CARBONDALE		SHALE	15.5	150.0	
369.5	CARBONDALE		SANDSTONE	10.5	165.5	
359.0	CARBONDALE		SHALE	32.0	176.0	
327.0	CARBONDALE	MECCA QUARRY	BLACK SHALE	1.0	208.0	
326.0	CARBONDALE	COLCHESTER	COAL	1.0	209.0	
325.0	SPOON		SHALE	5.5	210.0	
319.5	SPOON		SANDSTONE	5.5	215.5	
314.0	SPOON		SHALE	19.0	221.0	

MAPID: 10721165000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 10 **QUARTERS/FOOTAGES:** 2169' S line, 2601' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.531901 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.112964 **DATE COLLECTED:** 5 / 31 / 1977
SURFACE ELEVATION (FT.): 612.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.0	CARBONDALE	SPRINGFIELD	COAL	1.2	201.0	

MAPID: 10721165000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 10 **QUARTERS/FOOTAGES:** 2169' S line, 2601' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.531901 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.112964 **DATE COLLECTED:** 5 / 31 / 1977
SURFACE ELEVATION (FT.): 612.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
612.0			CLAY, SAND & SILTSTONE	24.0	0.0	
588.0			CLAY, SAND & GRAVEL	156.0	24.0	
432.0			SAND & GRAVEL	19.7	180.0	
505.3	CARBONDALE	DANVILLE	COAL	0.0	106.7	
477.3	CARBONDALE	HERRIN	COAL	0.0	134.7	
412.3	CARBONDALE	SPRINGFIELD	COAL	1.7	199.7	
410.6	CARBONDALE		CLAYSTONE & SHALE	6.6	201.4	
404.0	CARBONDALE	EXCELLO	BLACK SHALE	1.5	208.0	
402.5	CARBONDALE	HOUCHIN CREEK	COAL	0.0	209.5	
402.5	CARBONDALE		SHALE	1.5	209.5	
401.0	CARBONDALE		SHALE	4.0	211.0	
397.0	CARBONDALE		SHALE	16.0	215.0	
381.0	CARBONDALE		LIMESTONE	2.4	231.0	
378.6	CARBONDALE		SHALE	6.6	233.4	

MAPID: 10720724000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 11 **QUARTERS/FOOTAGES:** 66' N line, 1340' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.517648 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.121605 **DATE COLLECTED:** 11 / 18 / 1975
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
465.0	CARBONDALE	DANVILLE	COAL	1.0	135.0
437.0	CARBONDALE	HERRIN	COAL	2.0	163.0
373.0	CARBONDALE	SPRINGFIELD	COAL	6.0	227.0

MAPID: 10720724000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 11 **QUARTERS/FOOTAGES:** 66' N line, 1340' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.517648 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.121605 **DATE COLLECTED:** 11 / 18 / 1975
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
600.0			SOIL	1.0	0.0
599.0			SILTY CLAY	19.0	1.0
580.0			CLAY, SAND & GRAVEL	40.0	20.0
540.0			CLAY	54.0	60.0
486.0	MODESTO		SHALE	6.0	114.0
480.0	MODESTO		SHALE	6.0	120.0
474.0	MODESTO		SHALE	4.0	126.0
470.0	MODESTO		SHALE	3.0	130.0
467.0	MODESTO		BLACK SHALE	3.0	133.0
464.0	CARBONDALE	DANVILLE	COAL	1.0	136.0
463.0	CARBONDALE		SHALE	9.0	137.0
454.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	146.0
451.5	CARBONDALE		SHALE	13.0	148.5
438.5	CARBONDALE	ANNA	BLACK SHALE	1.5	161.5 MOD. GAMMA KICK
437.0	CARBONDALE	HERRIN	COAL	2.0	163.0
435.0	CARBONDALE		SHALE	29.0	165.0 WITH SS LENSES
406.0	CARBONDALE		SHALE	26.0	194.0
380.0	CARBONDALE		SHALE	3.5	220.0
376.5	CARBONDALE	ST. DAVID	LIMESTONE	2.0	223.5
374.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	225.5
373.0	CARBONDALE	SPRINGFIELD	COAL	6.0	227.0
367.0	CARBONDALE		UNDERCLAY	3.0	233.0
364.0	CARBONDALE		SHALE	4.0	236.0

MAPID: 10720915000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 4W

SECTION: 11

QUARTERS/FOOTAGES: 2230' N line, 2545' W line

QUADRANGLE: MIDDLETOWN

LONGITUDE: -89.513215

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.115672

DATE COLLECTED: 7 / 24 / 1979

SURFACE ELEVATION (FT.): 595.0

LOGGED (FT.): 237.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
455.3	CARBONDALE	HERRIN	COAL	3.8	139.7	
389.7	CARBONDALE	SPRINGFIELD	COAL	5.8	205.3	

MAPID: 10720915000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 11 **QUARTERS/FOOTAGES:** 2230' N line, 2545' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.513215 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.115672 **DATE COLLECTED:** 7 / 24 / 1979
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 237.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
595.0			SOIL	6.0	0.0
589.0			CLAY	12.0	6.0
577.0			SANDY CLAY	17.0	18.0
560.0	MODESTO		LIMESTONE	20.1	35.0
539.5	MODESTO		BLACK SHALE	1.5	55.5
538.0	MODESTO		SHALE	5.0	57.0
533.0	MODESTO		SHALE	3.0	62.0
530.0	MODESTO		LIMESTONE	1.0	65.0
529.0	MODESTO		SHALE	5.0	66.0
524.0	MODESTO		LIMESTONE	9.5	71.0
514.5	MODESTO		SHALE	7.0	80.5
507.5	MODESTO		LIMESTONE	0.5	87.5
507.0	MODESTO		SHALE	22.0	88.0
485.0	MODESTO		BLACK SHALE	2.5	110.0
482.5	CARBONDALE	DANVILLE	COAL	1.0	112.5
481.5	CARBONDALE		SHALE	26.5	113.5
455.0	CARBONDALE	HERRIN	COAL	2.0	140.0
453.0	CARBONDALE		SHALE	59.5	142.0
393.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	201.5
392.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.3	203.0
389.7	CARBONDALE	SPRINGFIELD	COAL	5.8	205.3
383.9	CARBONDALE		SHALE	0.3	211.1
383.6	CARBONDALE		SHALE	0.9	211.4
382.7	CARBONDALE		CORE LOSS	0.3	212.3
382.5	CARBONDALE		GRAY SHALE	7.5	212.5
375.0	CARBONDALE		DARK GRAY SHALE	2.0	220.0
373.0	CARBONDALE		SHALE	3.0	222.0
370.0	CARBONDALE		SHALE	12.0	225.0

MAPID: 10700199000C VERSION: 1

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 12 QUARTERS/FOOTAGES: 440' S line, 343' W line of SE SE

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.488198 GEOLOGIST: C TREWORY

CONFIDENTIAL: N LATITUDE: 40.108657 DATE COLLECTED: 4 / 22 / 1972

SURFACE ELEVATION (FT.): 583.0 LOGGED (FT.): 564.0 LOG TYPE: Gamma Ray Density

SOURCE: CENTRAL ILLINOIS LIGHT WELL TYPE: Gas Storage Operational Well

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
583.0			UNCONSOLIDATED	58.0	0.0	BASED ON CASING DEPTH
525.0	MODESTO		UNCLASSIFIED	39.5	58.0	
485.5	MODESTO	WEST FRANKLIN	LIMESTONE	4.0	97.5	
481.5	MODESTO		UNCLASSIFIED	27.5	101.5	
454.0	MODESTO		BLACK SHALE	3.0	129.0	
451.0	CARBONDALE	DANVILLE	COAL	0.0	132.0	COAL THIN OR ABSENT
451.0	CARBONDALE		UNCLASSIFIED	27.5	132.0	
423.5	CARBONDALE	HERRIN	COAL	4.5	159.5	
419.0	CARBONDALE		UNCLASSIFIED	50.0	164.0	
369.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	214.0	
368.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.0	215.0	
364.0	CARBONDALE	SPRINGFIELD	COAL	6.5	219.0	
357.5	CARBONDALE		UNCLASSIFIED	9.0	225.5	
348.5	CARBONDALE	EXCELLO	BLACK SHALE	2.0	234.5	
346.5	CARBONDALE	HOUCHIN CREEK	COAL	0.0	236.5	COAL THIN OR ABSENT
346.5	CARBONDALE		UNCLASSIFIED	60.0	236.5	
286.5	CARBONDALE	SURVANT - UPPER	COAL	2.5	296.5	
284.0	CARBONDALE		UNCLASSIFIED	22.5	299.0	
261.5	CARBONDALE	SURVANT - LOWER	COAL	1.0	321.5	
260.5	CARBONDALE		UNCLASSIFIED	17.0	322.5	
243.5	CARBONDALE	OAK GROVE	LIMESTONE	4.0	339.5	
239.5	CARBONDALE	MECCA QUARRY	BLACK SHALE	3.0	343.5	
236.5	CARBONDALE	COLCHESTER	COAL	3.0	346.5	
233.5	SPOON		UNCLASSIFIED	95.5	349.5	
138.0	SPOON		COAL	3.0	445.0	
135.0	SPOON		UNCLASSIFIED	12.8	448.0	
122.2	SPOON		LIMESTONE	3.3	460.8	
119.0	SPOON		UNCLASSIFIED	100.0	464.0	NO OTHER COALS OR LS

MAPID: 10720705000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 12 **QUARTERS/FOOTAGES:** 440' S line, 2015' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.492005 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.108608 **DATE COLLECTED:** 10 / 13 / 1975
SURFACE ELEVATION (FT.): 564.0 **LOGGED (FT.):** 191.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: ISGS CORE DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNCLASSIFIED	0.0		ROOF CORE ONLY (FOR #5)

MAPID: 10720705000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 12 **QUARTERS/FOOTAGES:** 440' S line, 2015' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.492005 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.108608 **DATE COLLECTED:** 10 / 13 / 1975
SURFACE ELEVATION (FT.): 564.0 **LOGGED (FT.):** 191.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: ISGS CORE DESCRIPTION

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
419.0	CARBONDALE	ST. DAVID	SILTSTONE	10.0	145.0	LIMESTONE NODULES
409.0	CARBONDALE		SANDSTONE	10.0	155.0	GRADATIONAL UPPER CONTACT
399.0	CARBONDALE		SANDSTONE	0.7	165.0	SHARP CONTACT AT BASE
398.3	CARBONDALE		SHALE	4.3	165.7	SIDERITE LENSES AND NODULES
394.0	CARBONDALE		SHALE	5.0	170.0	SIDERITE NODULES
389.0	CARBONDALE		SHALE	10.0	175.0	
379.0	CARBONDALE		SHALE	2.1	185.0	GRADATIONAL BASAL CONTACT
376.9	CARBONDALE		SHALE	1.5	187.1	WELL LAMINATED
375.4	CARBONDALE		LIMESTONE	2.0	188.6	CRINOIDAL COLUMINALS ABUNDANT
373.4	CARBONDALE		CORE LOSS	0.4	190.6	

MAPID: 10720706000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 12 **QUARTERS/FOOTAGES:** 460' S line, 1985' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.491897 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.108663 **DATE COLLECTED:** 10 / 10 / 1975
SURFACE ELEVATION (FT.): 565.0 **LOGGED (FT.):** 205.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
370.4	CARBONDALE	SPRINGFIELD	COAL	5.7	194.6	

MAPID: 10720706000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 12 **QUARTERS/FOOTAGES:** 460' S line, 1985' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.491897 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.108663 **DATE COLLECTED:** 10 / 10 / 1975
SURFACE ELEVATION (FT.): 565.0 **LOGGED (FT.):** 205.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
565.0			CLAY, SAND & GRAVEL	40.0	0.0	
525.0			CLAY	55.0	40.0	
470.0			SILTY CLAY	45.0	95.0	
463.5	CARBONDALE	DANVILLE	COAL	0.0	101.5	DANVILLE #7 COAL ERODED
435.5	CARBONDALE	HERRIN	COAL	0.0	129.5	HERRIN #6 COAL ERODED
425.0	CARBONDALE		SHALE	7.5	140.0	WITH LIMESTONE LENSES
417.5	CARBONDALE		SHALE	17.5	147.5	
400.0	CARBONDALE		SHALE	6.0	165.0	
394.0	CARBONDALE		SHALE	15.0	171.0	
379.0	CARBONDALE		SHALE	3.7	186.0	
375.3	CARBONDALE		LIMESTONE	1.3	189.7	CORE 189.7-205, ISGS DESCRIBED; BRACHS
374.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.6	191.0	OBICULOIDEA AT TOP; INCLINED SLIP FRACTS
370.4	CARBONDALE	SPRINGFIELD	COAL	5.7	194.6	
364.7	CARBONDALE		CLAYSTONE & SILTSTONE	4.1	200.3	TOP .5 FT. HIGHLY CARBONACEOUS
360.7	CARBONDALE		CORE LOSS	0.7	204.3	

MAPID: 10720857000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 12 **QUARTERS/FOOTAGES:** 18' S line, 400' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.501982 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.107311 **DATE COLLECTED:** 7 / 31 / 1978
SURFACE ELEVATION (FT.): 590.0 **LOGGED (FT.):** 250.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
430.0	CARBONDALE	HERRIN	COAL	3.0	160.0	
363.8	CARBONDALE	SPRINGFIELD	COAL	6.1	226.2	

MAPID: 10720857000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 12 **QUARTERS/FOOTAGES:** 18' S line, 400' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.501982 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.107311 **DATE COLLECTED:** 7 / 31 / 1978
SURFACE ELEVATION (FT.): 590.0 **LOGGED (FT.):** 250.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0			CLAY	11.0	0.0	
579.0			SILTY CLAY	8.0	11.0	
571.0			CLAY	11.0	19.0	
560.0			CLAY, SAND & GRAVEL	27.0	30.0	
533.0			SAND & GRAVEL	2.5	57.0	
530.5			CLAY	7.5	59.5	
523.0	MODESTO		SHALE	2.0	67.0	
521.0	MODESTO	WEST FRANKLIN	LIMESTONE	9.0	69.0	
512.0	MODESTO		BLACK SHALE	2.0	78.0	
510.0	MODESTO		SHALE	4.0	80.0	
506.0	MODESTO			8.5	84.0	
497.5	MODESTO		SHALE	7.5	92.5	
490.0	MODESTO		LIMESTONE	4.0	100.0	PIASA
486.0	MODESTO		SHALE	4.0	104.0	
482.0	MODESTO		SHALE	4.0	108.0	
478.0	MODESTO		SHALE	4.0	112.0	
474.0	MODESTO		SHALE	15.0	116.0	
459.0	MODESTO		BLACK SHALE	3.0	131.0	
456.0	CARBONDALE	DANVILLE	COAL	2.0	134.0	
454.0	CARBONDALE		SHALE	16.0	136.0	
438.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	152.0	
436.5	CARBONDALE		SHALE	6.5	153.5	
430.0	CARBONDALE	ANNA	BLACK SHALE	2.5	160.0	
427.5	CARBONDALE	HERRIN	COAL	1.5	162.5	
426.0	CARBONDALE		UNDERCLAY	3.5	164.0	
422.5	CARBONDALE		SHALE	20.0	167.5	
402.5	CARBONDALE		SANDSTONE	3.0	187.5	
399.5	CARBONDALE		SHALE	3.5	190.5	
396.0	CARBONDALE		SHALE	27.0	194.0	
369.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	221.0	
367.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.2	223.0	CORED 223-233
363.8	CARBONDALE	SPRINGFIELD	COAL	6.1	226.2	CLAY AND PYRITE 231.98-232.10
357.8	CARBONDALE		UNDERCLAY	5.4	232.2	
352.4	CARBONDALE		SHALE	12.5	237.6	

MAPID: 10720916000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 4W

SECTION: 12

QUARTERS/FOOTAGES: 1062' N line, 1240' E line

QUADRANGLE: BROADWELL

LONGITUDE: -89.489361

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.118987

DATE COLLECTED: 7 / 26 / 1979

SURFACE ELEVATION (FT.): 585.0

LOGGED (FT.): 252.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
418.0	CARBONDALE	HERRIN	COAL	4.5	167.0	
353.7	CARBONDALE	SPRINGFIELD	COAL	5.6	231.3	

MAPID: 10720916000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 12 **QUARTERS/FOOTAGES:** 1062' N line, 1240' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.489361 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.118987 **DATE COLLECTED:** 7 / 26 / 1979
SURFACE ELEVATION (FT.): 585.0 **LOGGED (FT.):** 252.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.0			CLAY	34.0	0.0	
551.0			CLAY, SAND & GRAVEL	67.0	34.0	
484.0	MODESTO	PIASA	LIMESTONE	4.0	101.0	UNCERTAIN CORRELATION
480.0	MODESTO		SHALE	5.0	105.0	
475.0	MODESTO		SHALE	10.0	110.0	
465.0	MODESTO		SHALE	13.0	120.0	
452.0	CARBONDALE	DANVILLE	SHALE	7.0	133.0	
445.0	CARBONDALE		SHALE	9.5	140.0	
435.5	CARBONDALE		LIMESTONE	2.0	149.5	
433.5	CARBONDALE		SHALE	6.5	151.5	
427.0	CARBONDALE	ANVIL ROCK	SILTSTONE	4.5	158.0	
422.5	CARBONDALE	BRERETON	LIMESTONE	2.5	162.5	
420.0	CARBONDALE		SHALE	1.0	165.0	
419.0	CARBONDALE	HERRIN	COAL	1.0	166.0	
418.0	CARBONDALE		SHALE	30.0	167.0	
388.0	CARBONDALE		SILTSTONE	1.5	197.0	
386.5	CARBONDALE		SHALE	28.0	198.5	
358.5	CARBONDALE	ST. DAVID	LIMESTONE	2.1	226.5	
356.4	CARBONDALE	TURNER MINE	BLACK SHALE	2.7	228.6	
353.7	CARBONDALE	SPRINGFIELD	COAL	5.6	231.3	
348.1	CARBONDALE		SHALE	0.6	236.9	
347.6	CARBONDALE		SHALE	5.6	237.4	
342.0	CARBONDALE		SHALE	3.0	243.0	
339.0	CARBONDALE		SHALE	1.5	246.0	
337.5	CARBONDALE		SHALE	4.5	247.5	

MAPID: 10721166000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 19N 4W

SECTION: 13

QUARTERS/FOOTAGES: 306' S line, 10' E line

QUADRANGLE: BROADWELL

LONGITUDE: -89.484658

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.093608

DATE COLLECTED: 6 / 6 / 1977

SURFACE ELEVATION (FT.): 560.0

LOGGED (FT.): 240.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
403.5	CARBONDALE	HERRIN	COAL	2.7	156.5	
341.4	CARBONDALE	SPRINGFIELD	COAL	5.8	218.6	

MAPID: 10721166000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 13 **QUARTERS/FOOTAGES:** 306' S line, 10' E line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.484658 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.093608 **DATE COLLECTED:** 6 / 6 / 1977
SURFACE ELEVATION (FT.): 560.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
560.0			CLAY	29.0	0.0
531.0			SAND & GRAVEL	1.5	29.0
529.5			CLAY	31.5	30.5
498.0	MODESTO	WEST FRANKLIN	LIMESTONE	14.5	62.0
483.5	MODESTO		BLACK SHALE	2.5	76.5
481.0	MODESTO		SHALE	17.0	79.0
464.0	MODESTO		LIMESTONE	3.0	96.0
461.0	MODESTO		SHALE	6.5	99.0
454.5	MODESTO		LIMESTONE	0.5	105.5
454.0	MODESTO		SHALE	14.0	106.0
440.0	MODESTO		SHALE	2.0	120.0
438.0	MODESTO		BLACK SHALE	3.0	122.0
435.0	CARBONDALE	DANVILLE	COAL	1.5	125.0
433.5	CARBONDALE		SHALE	11.5	126.5
422.0	CARBONDALE	ANVIL ROCK	SANDSTONE	11.0	138.0
411.0	CARBONDALE		SHALE	2.0	149.0
409.0	CARBONDALE		SHALE	6.0	151.0
403.0	CARBONDALE	HERRIN	COAL	2.0	157.0
401.0	CARBONDALE		SHALE	28.0	159.0
373.0	CARBONDALE		SHALE	26.0	187.0
347.0	CARBONDALE	ST. DAVID	LIMESTONE	2.7	213.0
344.3	CARBONDALE	TURNER MINE	BLACK SHALE	2.3	215.7
342.0	CARBONDALE	SPRINGFIELD	COAL	8.0	218.0
334.0	CARBONDALE		CLAYSTONE & SILTSTONE	1.0	226.0
333.0	CARBONDALE		SHALE	4.0	227.0
329.0	CARBONDALE		SHALE	2.0	231.0
327.0	CARBONDALE		SHALE	2.0	233.0
325.0	CARBONDALE		SHALE	1.0	235.0
324.0	CARBONDALE		SHALE	4.0	236.0

MAPID: 10720858000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 14 **QUARTERS/FOOTAGES:** 1050' S line, 2200' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.513958 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.095342 **DATE COLLECTED:** 8 / 20 / 1979
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 257.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
365.4	CARBONDALE	SPRINGFIELD	COAL	5.5	234.6	

MAPID: 10720858000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 14 **QUARTERS/FOOTAGES:** 1050' S line, 2200' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.513958 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.095342 **DATE COLLECTED:** 8 / 20 / 1979
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 257.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
600.0			CLAY, SAND & GRAVEL	34.0	0.0	
566.0			SANDY CLAY	16.0	34.0	
550.0			CLAY	150.0	50.0	
455.0	CARBONDALE	DANVILLE	COAL	0.0	145.0	DANVILLE #7 COAL ERODED
425.0	CARBONDALE	HERRIN	COAL	0.0	175.0	HERRIN #6 COAL ERODED
400.0	CARBONDALE		SHALE	31.5	200.0	
368.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	231.5	
367.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.1	232.5	
365.4	CARBONDALE	SPRINGFIELD	COAL	5.5	234.6	CORED 234-241
359.9	CARBONDALE		UNDERCLAY	0.8	240.1	
359.1	CARBONDALE		CORE LOSS	0.1	240.9	
359.0	CARBONDALE		CLAYSTONE & SHALE	16.0	241.0	WITH LS STREAKS

MAPID: 10720937000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 14 **QUARTERS/FOOTAGES:** 2525' N line, 1630' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.509101 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.100208 **DATE COLLECTED:** 8 / 20 / 1979
SURFACE ELEVATION (FT.): 592.0 **LOGGED (FT.):** 255.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL CO. **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		
				UNIT	OVERBURDEN	COMMENT
358.2	CARBONDALE	SPRINGFIELD	COAL	5.7	233.8	

MAPID: 10720937000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 14 QUARTERS/FOOTAGES: 2525' N line, 1630' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.509101 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.100208 DATE COLLECTED: 8 / 20 / 1979

SURFACE ELEVATION (FT.): 592.0 LOGGED (FT.): 255.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CO. WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
592.0			SANDY CLAY	192.0	0.0
447.0	CARBONDALE	DANVILLE	COAL	0.0	145.0
417.0	CARBONDALE	HERRIN	COAL	0.0	175.0
400.0	CARBONDALE		SHALE	2.5	192.0
397.5	CARBONDALE		SANDSTONE	1.5	194.5
396.0	CARBONDALE		SHALE	4.5	196.0
391.5	CARBONDALE		SANDSTONE	1.0	200.5
390.5	CARBONDALE		SHALE	18.5	201.5
372.0	CARBONDALE		SHALE	10.4	220.0
361.6	CARBONDALE	ST. DAVID	LIMESTONE	1.6	230.4
360.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.7	232.0
358.3	CARBONDALE	SPRINGFIELD	COAL	5.7	233.7
352.6	CARBONDALE		CORE LOSS	0.1	239.4
352.5	CARBONDALE		SHALE	9.5	239.5
343.0	CARBONDALE		SHALE	6.0	249.0

MAPID: 10720859000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 15 QUARTERS/FOOTAGES: 2400' N line, 2600' W line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.531719 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.100356 DATE COLLECTED: 7 / 28 / 1978

SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 235.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
387.4	CARBONDALE	SPRINGFIELD	COAL	5.7	207.6

MAPID: 10720859000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 15 **QUARTERS/FOOTAGES:** 2400' N line, 2600' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.531719 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.100356 **DATE COLLECTED:** 7 / 28 / 1978
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 235.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0			CLAY	8.0	0.0	
587.0			SAND	5.0	8.0	
582.0			CLAY	45.0	13.0	
537.0			SAND & GRAVEL	2.5	58.0	
534.5			CLAY, SAND & GRAVEL	39.5	60.5	
495.0			CLAY	101.5	100.0	
477.5	CARBONDALE	DANVILLE	COAL	0.0	117.5	DANVILLE #7 COAL ERODED
447.5	CARBONDALE	HERRIN	COAL	0.0	147.5	HERRIN #6 COAL ERODED
393.5	CARBONDALE		SHALE	4.0	201.5	
389.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.1	205.5	CORE #1 206.6-214.6
387.4	CARBONDALE	SPRINGFIELD	COAL	5.7	207.6	
381.7	CARBONDALE		CLAYSTONE & SHALE	9.7	213.3	LOSS 213.65-214.6 (.95)
372.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	223.0	OFF GAMMA
370.0	CARBONDALE		SHALE	5.2	225.0	
364.8	CARBONDALE		LIMESTONE	2.8	230.2	
362.0	CARBONDALE		SHALE	2.0	233.0	

MAPID: 10721167000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 15 **QUARTERS/FOOTAGES:** 36' N line, 54' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.522403 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.106915 **DATE COLLECTED:** 5 / 27 / 1977
SURFACE ELEVATION (FT.): 608.0 **LOGGED (FT.):** 231.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
397.4	CARBONDALE	SPRINGFIELD	COAL	5.8	210.6	

MAPID: 10721167000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 15 QUARTERS/FOOTAGES: 36' N line, 54' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.522403 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.106915 DATE COLLECTED: 5 / 27 / 1977

SURFACE ELEVATION (FT.): 608.0 LOGGED (FT.): 231.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
608.0			CLAY	7.0	0.0
601.0			CLAY, SAND & SILTSTONE	29.0	7.0
572.0			CLAY, SAND & GRAVEL	105.0	36.0
494.0	CARBONDALE	DANVILLE	COAL	0.0	114.0
467.0	CARBONDALE	BRERETON	LIMESTONE	2.5	141.0
464.5	CARBONDALE	HERRIN	SMUT	5.5	143.5
459.0	CARBONDALE		SHALE	4.5	149.0
454.5	CARBONDALE		SHALE	31.5	153.5
423.0	CARBONDALE		SHALE	3.5	185.0
419.5	CARBONDALE		SHALE	15.5	188.5
404.0	CARBONDALE	ST. DAVID	LIMESTONE	3.8	204.0
400.2	CARBONDALE	TURNER MINE	BLACK SHALE	2.8	207.8
397.4	CARBONDALE	SPRINGFIELD	COAL	5.8	210.6
391.6	CARBONDALE		UNDERCLAY	1.5	216.4
390.1	CARBONDALE		SHALE	7.1	217.9
383.0	CARBONDALE		SHALE	6.0	225.0

MAPID: 10720725000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 16 QUARTERS/FOOTAGES: 820' S line, 1170' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.545055 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.09452 DATE COLLECTED: 11 / 17 / 1975

SURFACE ELEVATION (FT.): 530.0 LOGGED (FT.): 172.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
372.3	CARBONDALE	SPRINGFIELD	COAL	5.8	157.7

MAPID: 10720725000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 16 QUARTERS/FOOTAGES: 820' S line, 1170' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.545055 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.09452 DATE COLLECTED: 11 / 17 / 1975

SURFACE ELEVATION (FT.): 530.0 LOGGED (FT.): 172.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
530.0			CLAY	8.0	0.0	
522.0			CLAY, SAND & GRAVEL	32.0	8.0	DANVILLE #7 COAL ERODED
490.0			CLAY	60.0	40.0	HERRIN #6 COAL ERODED
430.0			SILTY CLAY	30.0	100.0	
400.0			CLAY	13.0	130.0	
387.0			SAND & GRAVEL	5.0	143.0	
462.0	CARBONDALE	DANVILLE	COAL	0.0	68.0	
432.0	CARBONDALE	HERRIN	COAL	0.0	98.0	
382.0	CARBONDALE		SHALE	4.0	148.0	
378.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	152.0	
377.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.7	153.0	
372.3	CARBONDALE	SPRINGFIELD	COAL	5.8	157.7	
366.5	CARBONDALE		UNDERCLAY	2.5	163.5	
364.0	CARBONDALE		SHALE	6.0	166.0	

MAPID: 10721168000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 16 QUARTERS/FOOTAGES: 2852' S line, 1851' W line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.553335 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.100072 DATE COLLECTED: 5 / 31 / 1977

SURFACE ELEVATION (FT.): 530.0 LOGGED (FT.): 200.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNCLASSIFIED	0.0		TD 200' - NO COAL PICKS

MAPID: 10721168000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 16 QUARTERS/FOOTAGES: 2852' S line, 1851' W line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.553335 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.100072 DATE COLLECTED: 5 / 31 / 1977

SURFACE ELEVATION (FT.): 530.0 LOGGED (FT.): 200.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
530.0			CLAY	20.0	0.0
510.0			SAND & GRAVEL	8.0	20.0
502.0			CLAY	40.0	28.0
462.0			CLAY, SAND & GRAVEL	12.0	68.0
450.0			CLAY	40.0	80.0
410.0			SILT	30.0	120.0
380.0			SILT, SAND & GRAVEL	14.0	150.0
462.0	CARBONDALE	DANVILLE	COAL	0.0	68.0
432.0	CARBONDALE	HERRIN	COAL	0.0	98.0
372.0	CARBONDALE	SPRINGFIELD	COAL	0.0	158.0
366.0	CARBONDALE		SHALE	36.0	164.0

MAPID: 10720726000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 17 QUARTERS/FOOTAGES: 2565' S line, 310' W line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.577803 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.099393 DATE COLLECTED: 10 / 31 / 1975

SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 240.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
-			UNCLASSIFIED	0.0	TD 240' - NO COAL PICKS

MAPID: 10720726000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 17 QUARTERS/FOOTAGES: 2565' S line, 310' W line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.577803 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.099393 DATE COLLECTED: 10 / 31 / 1975

SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 240.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
427.0	CARBONDALE	SPRINGFIELD	COAL	0.0	158.0	
389.0	CARBONDALE		SHALE	4.0	196.0	
385.0	CARBONDALE		SHALE	10.0	200.0	
375.0	CARBONDALE		SHALE	30.0	210.0	
585.0			CLAY	66.0	0.0	
519.0			BOULDER	6.0	66.0	
513.0			CLAY	121.0	72.0	
392.0			SAND & GRAVEL	3.0	193.0	DANVILLE #7 COAL ERODED
517.0	CARBONDALE	DANVILLE	COAL	0.0	68.0	HERRIN #6 COAL ERODED
487.0	CARBONDALE	HERRIN	COAL	0.0	98.0	SPRINGFIELD #5 COAL ERODED

MAPID: 10721169000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 20 QUARTERS/FOOTAGES: 2214' S line, 129' W line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.578335 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.083781 DATE COLLECTED: 6 / 1 / 1977

SURFACE ELEVATION (FT.): 613.0 LOGGED (FT.): 255.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
473.0	CARBONDALE	DANVILLE	COAL	2.0	140.0	
441.2	CARBONDALE	HERRIN	COAL	2.2	171.8	
382.2	CARBONDALE	SPRINGFIELD	COAL	5.8	230.8	

MAPID: 10721169000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 20 **QUARTERS/FOOTAGES:** 2214' S line, 129' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.578335 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.083781 **DATE COLLECTED:** 6 / 1 / 1977
SURFACE ELEVATION (FT.): 613.0 **LOGGED (FT.):** 255.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
613.0			CLAY	8.0	0.0
605.0			SAND	6.0	8.0
599.0			CLAY	6.0	14.0
593.0			CLAY, SAND & SILTSTONE	18.0	20.0
575.0			CLAY, SAND & GRAVEL	82.0	38.0
493.0	MODESTO		SHALE	16.0	120.0
477.0	MODESTO		SHALE	4.5	136.0
472.5	CARBONDALE	DANVILLE	COAL	1.5	140.5
471.0	CARBONDALE		SHALE	10.0	142.0
461.0	CARBONDALE		SHALE	7.5	152.0
453.5	CARBONDALE		SHALE	5.0	159.5
448.5	CARBONDALE	BRERETON	LIMESTONE	5.5	164.5
443.0	CARBONDALE	ANNA	BLACK SHALE	1.5	170.0
441.5	CARBONDALE	HERRIN	COAL	1.5	171.5
440.0	CARBONDALE		SHALE	5.0	173.0
435.0	CARBONDALE		SHALE	17.5	178.0
417.5	CARBONDALE		SHALE	32.5	195.5
385.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.8	228.0
382.2	CARBONDALE	SPRINGFIELD	COAL	5.8	230.8
376.4	CARBONDALE		UNDERCLAY	3.8	236.6
372.6	CARBONDALE		SHALE	6.6	240.4
366.0	CARBONDALE		SHALE	4.0	247.0
362.0	CARBONDALE		SHALE	4.0	251.0

MAPID: 10720769000C VERSION: 1 PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 21 QUARTERS/FOOTAGES: 72' N line, 175' W line of SE NE

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.544889 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 40.088454 DATE COLLECTED: 10 / 20 / 1975

SURFACE ELEVATION (FT.): 595.0 LOGGED (FT.): 340.0 LOG TYPE: Gamma Ray Density

SOURCE: HYDROCARBON SURVEY WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
595.0			UNCONSOLIDATED	225.0	0.0	
370.0	CARBONDALE		UNCLASSIFIED	6.0	225.0	
364.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.9	231.0	
361.1	CARBONDALE	SPRINGFIELD	COAL	6.1	233.9	EXPANDED-SCALE LOG
355.0	CARBONDALE		UNCLASSIFIED	10.0	240.0	
345.0	CARBONDALE	EXCELLO	BLACK SHALE	2.5	250.0	
342.5	CARBONDALE	HOUCHIN CREEK	COAL	0.0	252.5	
342.5	CARBONDALE		UNCLASSIFIED	13.5	252.5	
329.0	CARBONDALE		LIMESTONE	4.0	266.0	
325.0	CARBONDALE		UNCLASSIFIED	38.6	270.0	
286.4	CARBONDALE	SURVANT	COAL	1.9	308.6	
284.5	CARBONDALE		UNCLASSIFIED	29.5	310.5	

MAPID: 10721170000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 21 QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.544337 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.089558 DATE COLLECTED: 6 / 1 / 1977

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
363.7	CARBONDALE	SPRINGFIELD	COAL	6.2	236.3	

MAPID: 10721170000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 21 QUARTERS/FOOTAGES: SW NE NE

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.544337 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.089558 DATE COLLECTED: 6 / 1 / 1977

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
600.0			SAND/CLAY	32.0	0.0
568.0			CLAY	204.0	32.0
452.0	CARBONDALE	DANVILLE	COAL	0.0	148.0
422.0	CARBONDALE	HERRIN	COAL	0.0	178.0
364.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	236.0
362.5	CARBONDALE	SPRINGFIELD	COAL	5.8	237.5
356.7	CARBONDALE		SHALE	9.7	243.3
347.0	CARBONDALE	EXCELLO	BLACK SHALE	1.5	253.0
345.5	CARBONDALE		SHALE	13.0	254.5
332.5	CARBONDALE		SANDSTONE	12.5	267.5

MAPID: 10720727000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 22 QUARTERS/FOOTAGES: 505' S line, 2580' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.530952 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.07939 DATE COLLECTED: 10 / 31 / 1975

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 232.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
343.0	CARBONDALE	SPRINGFIELD	COAL	5.0	217.0

MAPID: 10720727000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 22 QUARTERS/FOOTAGES: 505' S line, 2580' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.530952 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.07939 DATE COLLECTED: 10 / 31 / 1975

SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 232.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
560.0			CLAY	2.0	0.0	
558.0			CLAY, SAND & GRAVEL	18.0	2.0	
540.0			CLAY	164.0	20.0	
432.0	CARBONDALE	DANVILLE	COAL	0.0	128.0	DANVILLE #7 COAL ERODED
402.0	CARBONDALE	HERRIN	COAL	0.0	158.0	HERRIN #6 COAL ERODED
376.0	CARBONDALE		SHALE	31.0	184.0	
345.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	215.0	
344.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	216.0	
342.5	CARBONDALE	SPRINGFIELD	COAL	5.5	217.5	
337.0	CARBONDALE		UNDERCLAY	3.0	223.0	
334.0	CARBONDALE		LIMESTONE	1.0	226.0	
333.0	CARBONDALE		SHALE	4.0	227.0	

MAPID: 10720728000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 22 QUARTERS/FOOTAGES: 420' N line, 2565' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.530986 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.091241 DATE COLLECTED: 11 / 11 / 1975

SURFACE ELEVATION (FT.): 521.0 LOGGED (FT.): 180.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
358.5	CARBONDALE	SPRINGFIELD	COAL	6.5	162.5	

MAPID: 10720728000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 22 **QUARTERS/FOOTAGES:** 420' N line, 2565' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.530986 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.091241 **DATE COLLECTED:** 11 / 11 / 1975
SURFACE ELEVATION (FT.): 521.0 **LOGGED (FT.):** 180.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
521.0			CLAY	15.0	0.0	
506.0			SAND & GRAVEL	25.0	15.0	
481.0			GRAVEL	20.0	40.0	
461.0			CLAY	25.0	60.0	
436.0			SAND & GRAVEL	5.0	85.0	
431.0			CLAY	5.0	90.0	
426.0			GRAVEL	5.0	95.0	
421.0			CLAY & GRAVEL	10.0	100.0	
411.0			CLAYSTONE	34.0	110.0	W/ STREAKS OF GRAVEL
448.5	CARBONDALE	DANVILLE	COAL	0.0	72.5	DANVILLE #7 COAL ERODED
418.5	CARBONDALE	HERRIN	COAL	0.0	102.5	HERRIN #6 COAL ERODED
377.0	CARBONDALE		SHALE	11.5	144.0	
365.5	CARBONDALE	ST. DAVID	LIMESTONE	2.0	155.5	
363.5	CARBONDALE	TURNER MINE	BLACK SHALE	5.0	157.5	
358.5	CARBONDALE	SPRINGFIELD	COAL	6.5	162.5	
352.0	CARBONDALE		CLAYSTONE & SHALE	7.0	169.0	
345.0	CARBONDALE		SHALE	4.0	176.0	

MAPID: 10721171000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 23 **QUARTERS/FOOTAGES:** 2530' S line, 1225' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.517323 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.085075 **DATE COLLECTED:** 6 / 3 / 1977
SURFACE ELEVATION (FT.): 530.0 **LOGGED (FT.):** 210.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
344.1	CARBONDALE	SPRINGFIELD	COAL	6.2	185.9	

MAPID: 10721171000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 23 QUARTERS/FOOTAGES: 2530' S line, 1225' W line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.517323 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.085075 DATE COLLECTED: 6 / 3 / 1977

SURFACE ELEVATION (FT.): 530.0 LOGGED (FT.): 210.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
530.0			CLAY	7.0	0.0
523.0			SAND & GRAVEL	5.0	7.0
518.0			CLAY	64.0	12.0
454.0			SAND & GRAVEL	18.0	76.0
436.0			SILT	18.0	94.0
418.0			SAND & GRAVEL	8.0	112.0
410.0			CLAY	4.0	120.0
406.0			SAND & GRAVEL	2.5	124.0
439.0	CARBONDALE	DANVILLE	COAL	0.0	91.0
409.0	CARBONDALE	HERRIN	COAL	0.0	121.0
403.5	CARBONDALE		SHALE	2.0	126.5
401.5	CARBONDALE		LIMESTONE	2.0	128.5
399.5	CARBONDALE		SHALE	39.5	130.5
360.0	CARBONDALE		SHALE	10.5	170.0
349.5	CARBONDALE	ST. DAVID	LIMESTONE	1.7	180.5
347.8	CARBONDALE	TURNER MINE	BLACK SHALE	3.8	182.2
344.1	CARBONDALE	SPRINGFIELD	COAL	5.8	185.9
338.3			UNDERCLAY	1.8	191.7
336.5			SHALE	16.5	193.5

MAPID: 10720770000C VERSION: 1 PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 24 QUARTERS/FOOTAGES: 51' S line, 84' E line

QUADRANGLE: BROADWELL LONGITUDE: -89.484852 GEOLOGIST: C TREWORGY

CONFIDENTIAL: N LATITUDE: 40.078455 DATE COLLECTED: 11 / 5 / 1975

SURFACE ELEVATION (FT.): 594.0 LOGGED (FT.): 280.0 LOG TYPE: Gamma Ray Density

SOURCE: HYDROCARBON SURVEY WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
594.0			UNCONSOLIDATED	228.0	0.0	
366.0	CARBONDALE	HERRIN	COAL	0.0	228.0	COAL ERODED
366.0	CARBONDALE		UNCLASSIFIED	22.0	228.0	
344.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	250.0	
342.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.7	252.0	
339.3	CARBONDALE	SPRINGFIELD	COAL	5.8	254.7	EXPANDED SCALE LOG
333.5	CARBONDALE		UNCLASSIFIED	8.0	260.5	
325.5	CARBONDALE	EXCELLO	BLACK SHALE	2.0	268.5	
323.5	CARBONDALE	HOUCHIN CREEK	COAL	0.0	270.5	
323.5	CARBONDALE		UNCLASSIFIED	9.5	270.5	NO COALS

MAPID: 10720917000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 24 QUARTERS/FOOTAGES: 2620' N line, 1320' W line

QUADRANGLE: BROADWELL LONGITUDE: -89.49836 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.085231 DATE COLLECTED: 7 / 9 / 1979

SURFACE ELEVATION (FT.): 575.0 LOGGED (FT.): 240.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
354.6	CARBONDALE	SPRINGFIELD	COAL	5.8	220.4	

MAPID: 10720917000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 2620' N line, 1320' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.49836 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.085231 **DATE COLLECTED:** 7 / 9 / 1979
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
575.0			CLAY	9.0	0.0
566.0			CLAY, SAND & GRAVEL	21.0	9.0
545.0			SILTY CLAY	130.0	30.0
450.0	CARBONDALE	DANVILLE	COAL	0.0	125.0
420.0	CARBONDALE	HERRIN	COAL	0.0	155.0
415.0	CARBONDALE		SHALE	56.0	160.0
359.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	216.0
358.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.4	217.0
354.6	CARBONDALE	SPRINGFIELD	COAL	5.9	220.4
348.8	CARBONDALE		UNDERCLAY	0.1	226.2
348.7	CARBONDALE		SHALE	0.1	226.3
348.5	CARBONDALE		SHALE	6.5	226.5
342.0	CARBONDALE		SHALE	7.0	233.0

MAPID: 10721172000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 138' S line, 1245' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.498683 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.078415 **DATE COLLECTED:** 6 / 3 / 1977
SURFACE ELEVATION (FT.): 560.0 **LOGGED (FT.):** 255.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
396.0	CARBONDALE	HERRIN	COAL	4.5	164.0
328.9	CARBONDALE	SPRINGFIELD	COAL	6.1	231.1

MAPID: 10721172000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 138' S line, 1245' W line
QUADRANGLE: BROADWELL **LONGITUDE:** -89.498683 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.078415 **DATE COLLECTED:** 6 / 3 / 1977
SURFACE ELEVATION (FT.): 560.0 **LOGGED (FT.):** 255.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
560.0			CLAY, SAND & GRAVEL	20.0	0.0	
540.0			CLAY	104.0	20.0	
436.0			CLAY, SAND & GRAVEL	10.0	124.0	
426.0	MODESTO		BLACK SHALE	0.5	134.0	UNCERTAIN CORRELATION
425.5	CARBONDALE	DANVILLE	COAL	0.0	134.5	
425.5	CARBONDALE		SHALE	9.5	134.5	
416.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	144.0	
414.5	CARBONDALE		SHALE	3.0	145.5	
411.5	CARBONDALE	ANVIL ROCK	SANDSTONE	3.0	148.5	
408.5	CARBONDALE		SHALE	3.5	151.5	
405.0	CARBONDALE		SHALE	9.0	155.0	
396.0	CARBONDALE	BRERETON	LIMESTONE	1.0	164.0	
395.0	CARBONDALE	HERRIN	COAL	3.5	165.0	
391.5	CARBONDALE		UNDERCLAY	3.5	168.5	
388.0	CARBONDALE		SHALE	5.0	172.0	
383.0	CARBONDALE		SANDSTONE	4.5	177.0	
378.5	CARBONDALE		SHALE	6.5	181.5	
372.0	CARBONDALE		SHALE	39.0	188.0	
333.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	227.0	
331.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.6	228.5	
328.9	CARBONDALE	SPRINGFIELD	COAL	6.1	231.1	
322.9	CARBONDALE		UNDERCLAY	5.9	237.1	
317.0	CARBONDALE		SHALE	12.0	243.0	

MAPID: 10720918000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** 693' N line, 12' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.503141 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.07603 **DATE COLLECTED:** 7 / 3 / 1979
SURFACE ELEVATION (FT.): 583.0 **LOGGED (FT.):** 275.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
398.0	CARBONDALE	HERRIN	COAL	4.5	185.0	
331.1	CARBONDALE	SPRINGFIELD	COAL	6.1	251.9	

MAPID: 10720918000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** 693' N line, 12' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.503141 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.07603 **DATE COLLECTED:** 7 / 3 / 1979
SURFACE ELEVATION (FT.): 583.0 **LOGGED (FT.):** 275.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
583.0			CLAY	10.0	0.0
573.0			SAND & GRAVEL	2.0	10.0
571.0			CLAY	2.0	12.0
569.0			SAND & GRAVEL	2.0	14.0
567.0			SANDY CLAY	34.0	16.0
533.0			SAND & GRAVEL	2.0	50.0
531.0			SANDY CLAY	108.0	52.0
428.0	CARBONDALE	DANVILLE	COAL	0.0	155.0
423.0	CARBONDALE		SHALE	6.5	160.0
416.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.5	166.5
412.0	CARBONDALE		SHALE	8.5	171.0
403.5	CARBONDALE	BRERETON	LIMESTONE	5.5	179.5
398.0	CARBONDALE	HERRIN	COAL	4.0	185.0
394.0	CARBONDALE		SHALE	15.0	189.0
379.0	CARBONDALE		SHALE	42.0	204.0
337.0	CARBONDALE	ST. DAVID	LIMESTONE	1.8	246.0
335.2	CARBONDALE	TURNER MINE	BLACK SHALE	4.1	247.8
331.1	CARBONDALE	SPRINGFIELD	COAL	6.1	251.9
325.0	CARBONDALE		UNDERCLAY	0.1	258.0
324.9	CARBONDALE		SHALE	0.1	258.1
324.8	CARBONDALE		SHALE	5.9	258.2
319.0	CARBONDALE		SHALE	4.0	264.0
315.0	CARBONDALE		SHALE	7.0	268.0

MAPID: 10721173000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** 1695' N line, 2020' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.514371 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.073383 **DATE COLLECTED:** 6 / 6 / 1977
SURFACE ELEVATION (FT.): 550.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
344.8	CARBONDALE	SPRINGFIELD	COAL	5.9	205.2

MAPID: 10721173000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** 1695' N line, 2020' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.514371 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.073383 **DATE COLLECTED:** 6 / 6 / 1977
SURFACE ELEVATION (FT.): 550.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
550.0			CLAY	134.0	0.0
416.0			SILT	11.0	134.0
405.0			SAND & GRAVEL	2.0	145.0
436.5	CARBONDALE	DANVILLE	COAL	0.0	113.5
406.5	CARBONDALE	HERRIN	COAL	0.0	143.5
403.0	CARBONDALE		SHALE	16.0	147.0
387.0	CARBONDALE		SANDSTONE	2.5	163.0
384.5	CARBONDALE		SHALE	37.0	165.5
347.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.7	202.5
344.8	CARBONDALE	SPRINGFIELD	COAL	5.9	205.2
338.9	CARBONDALE		UNDERCLAY	2.0	211.1
336.9	CARBONDALE		CORE LOSS	0.5	213.1
336.5	CARBONDALE		SHALE	4.5	213.5
332.0	CARBONDALE		LIMESTONE	1.5	218.0
330.5	CARBONDALE		SHALE	1.5	219.5
329.0	CARBONDALE	EXCELLO	BLACK SHALE	1.5	221.0
327.5	CARBONDALE		SHALE	17.5	222.5

MAPID: 10720860000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 28 **QUARTERS/FOOTAGES:** 30' S line, 1390' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.545466 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.063448 **DATE COLLECTED:** 9 / 11 / 1978
SURFACE ELEVATION (FT.): 602.0 **LOGGED (FT.):** 255.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
439.5	CARBONDALE	HERRIN	COAL	2.0	162.5
369.0	CARBONDALE	SPRINGFIELD	COAL	5.9	233.0

MAPID: 10720860000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 28 **QUARTERS/FOOTAGES:** 30' S line, 1390' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.545466 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.063448 **DATE COLLECTED:** 9 / 11 / 1978
SURFACE ELEVATION (FT.): 602.0 **LOGGED (FT.):** 255.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
602.0			CLAY	11.0	0.0	
591.0			SAND & GRAVEL	25.5	11.0	
565.5			CLAY, SAND & GRAVEL	29.5	36.5	
536.0			SAND & GRAVEL	4.0	66.0	
532.0			CLAY, SAND & GRAVEL	40.0	70.0	
492.0			CLAY	29.5	110.0	
472.0	CARBONDALE	DANVILLE	COAL	0.0	130.0	DANVILLE #7 COAL ERODED
462.5	CARBONDALE		SANDSTONE	1.5	139.5	
461.0	CARBONDALE		SHALE	8.0	141.0	
453.0	CARBONDALE		SHALE	11.5	149.0	
441.5	CARBONDALE	HERRIN	COAL	1.0	160.5	
440.5	CARBONDALE		SHALE	7.0	161.5	
433.5	CARBONDALE		SHALE	16.5	168.5	
417.0	CARBONDALE		SHALE	44.3	185.0	
372.7	CARBONDALE	ST. DAVID	LIMESTONE	0.7	229.3	
372.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.2	230.0	CORE #1 233-240
369.8	CARBONDALE	SPRINGFIELD	COAL	6.7	232.2	
363.1	CARBONDALE		SHALE	1.1	238.9	
362.0	CARBONDALE		SHALE	15.0	240.0	WITH LS LENSES

MAPID: 10721174000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 28 **QUARTERS/FOOTAGES:** 1905' S line, 1371' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.54543 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.068623 **DATE COLLECTED:** 6 / 2 / 1977
SURFACE ELEVATION (FT.): 570.0 **LOGGED (FT.):** 220.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
369.8	CARBONDALE	SPRINGFIELD	COAL	5.8	200.2	

MAPID: 10721174000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 28 **QUARTERS/FOOTAGES:** 1905' S line, 1371' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.54543 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.068623 **DATE COLLECTED:** 6 / 2 / 1977
SURFACE ELEVATION (FT.): 570.0 **LOGGED (FT.):** 220.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
570.0			CLAY	111.0	0.0
459.0			SILT	9.0	111.0
465.0	CARBONDALE	DANVILLE	COAL	0.0	105.0
450.0	CARBONDALE		SHALE	5.5	120.0
444.5	CARBONDALE		SHALE	5.5	125.5
439.0	CARBONDALE		LIMESTONE	0.5	131.0
438.5	CARBONDALE	HERRIN	COAL	0.0	131.5
438.5	CARBONDALE		SHALE	14.5	131.5
424.0	CARBONDALE		SANDSTONE	1.0	146.0
423.0	CARBONDALE		SHALE	18.0	147.0
405.0	CARBONDALE		SHALE	15.0	165.0
390.0	CARBONDALE		SHALE	17.4	180.0
372.6	CARBONDALE	ST. DAVID	LIMESTONE	0.9	197.4
371.7	CARBONDALE	TURNER MINE	BLACK SHALE	1.9	198.3
369.8	CARBONDALE	SPRINGFIELD	COAL	5.8	200.2
363.9	CARBONDALE		UNDERCLAY	1.3	206.1
362.7	CARBONDALE		CORE LOSS	0.1	207.3
362.6	CARBONDALE		SHALE	2.3	207.4
360.3	CARBONDALE		SHALE	3.3	209.7
357.0	CARBONDALE		SHALE	3.0	213.0
354.0	CARBONDALE		SHALE	4.0	216.0

MAPID: 10700008000C **VERSION:** 1 **PROJECT:** NCRDS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 29 **QUARTERS/FOOTAGES:** 200' S line, 200' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.577914 **GEOLOGIST:** R. SMITH
CONFIDENTIAL: N **LATITUDE:** 40.063658 **DATE COLLECTED:** 12 / 0 / 1940
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 200.0 **LOG TYPE:** Drillers Log
SOURCE: R. C. ROWDEN **WELL TYPE:** Water Well
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
600.0			UNCONSOLIDATED	99.0	0.0
501.0	CARBONDALE	HERRIN	SHALE	24.0	99.0
477.0	CARBONDALE		COAL	3.0	123.0
474.0	CARBONDALE		SHALE	6.0	126.0
468.0	CARBONDALE		LIMESTONE	2.0	132.0
466.0	CARBONDALE		GRAY SHALE	15.0	134.0
451.0	CARBONDALE		LIMESTONE	2.0	149.0
449.0	CARBONDALE		GRAY SHALE	13.0	151.0
436.0	CARBONDALE		LIMESTONE	3.0	164.0
433.0	CARBONDALE		GRAY SHALE	33.0	167.0

MAPID: 10720729000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 29 **QUARTERS/FOOTAGES:** 360' S line, 105' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.578259 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.064096 **DATE COLLECTED:** 10 / 30 / 1975
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 233.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
471.5	CARBONDALE	DANVILLE	COAL	1.0	128.5
444.5	CARBONDALE	HERRIN	COAL	3.5	155.5
380.5	CARBONDALE	SPRINGFIELD	COAL	5.5	219.5

MAPID: 10720729000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 29 **QUARTERS/FOOTAGES:** 360' S line, 105' W line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.578259 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.064096 **DATE COLLECTED:** 10 / 30 / 1975
SURFACE ELEVATION (FT.): 600.0 **LOGGED (FT.):** 233.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
600.0			SILT & CLAY	34.0	0.0
566.0			CLAY	56.0	34.0
510.0	MODESTO		SHALE	6.0	90.0
504.0	MODESTO		SHALE	9.0	96.0
495.0	MODESTO		SHALE	15.0	105.0
480.0	MODESTO		SHALE	6.5	120.0
473.5	MODESTO		BLACK SHALE	2.0	126.5
471.5	CARBONDALE	DANVILLE	COAL	1.0	128.5
470.5	CARBONDALE		SHALE	5.5	129.5
465.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	135.0
463.0	CARBONDALE		SHALE	7.0	137.0
456.0	CARBONDALE		SHALE	11.5	144.0
444.5	CARBONDALE	HERRIN	COAL	3.5	155.5
441.0	CARBONDALE		UNDERCLAY	3.0	159.0
438.0	CARBONDALE		SHALE	8.5	162.0
429.5	CARBONDALE		SHALE	47.0	170.5
382.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	217.5
380.5	CARBONDALE	SPRINGFIELD	COAL	5.5	219.5
375.0	CARBONDALE		UNDERCLAY	4.0	225.0
371.0	CARBONDALE		SHALE	4.0	229.0

MAPID: 10720861000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 29 **QUARTERS/FOOTAGES:** 22' N line, 870' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.562733 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.077722 **DATE COLLECTED:** 9 / 7 / 1978
SURFACE ELEVATION (FT.): 602.0 **LOGGED (FT.):** 235.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
389.7	CARBONDALE	SPRINGFIELD	COAL	5.0	212.3

MAPID: 10720861000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 29 QUARTERS/FOOTAGES: 22' N line, 870' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.562733 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.077722 DATE COLLECTED: 9 / 7 / 1978

SURFACE ELEVATION (FT.): 602.0 LOGGED (FT.): 235.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
602.0			CLAY	26.0	0.0	
576.0			CLAY, SAND & GRAVEL	18.0	26.0	
558.0			SANDY CLAY	102.0	44.0	
456.0			SAND & GRAVEL	2.0	146.0	
454.0			SANDY CLAY	6.0	148.0	
484.0	CARBONDALE	DANVILLE	COAL	0.0	118.0	HERRIN #6 COAL ERODED
454.0	CARBONDALE	HERRIN	COAL	0.0	148.0	DANVILLE #7 COAL ERODED
448.0	CARBONDALE		SHALE	55.0	154.0	
393.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.4	209.0	
389.6	CARBONDALE	SPRINGFIELD	COAL	4.9	212.4	CORE #1 212.4-218.4
384.7	CARBONDALE		UNDERCLAY	0.1	217.3	
384.6	CARBONDALE		CORE LOSS	1.0	217.4	
383.6	CARBONDALE		SHALE	6.6	218.4	
377.0	CARBONDALE	EXCELLO	BLACK SHALE	3.0	225.0	OFF GAMMA
374.0	CARBONDALE		SHALE	7.0	228.0	

MAPID: 10720676000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 32 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.560823 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.049762 DATE COLLECTED: 7 / 1 / 1968

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 244.1 LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY WELL TYPE: Coal Test

COMMENT: DRILLERS LOG & SURVEY CORE DESCRIPTIONS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
367.2	CARBONDALE	SPRINGFIELD	COAL	6.0	232.8	

MAPID: 10720676000C VERSION: 2

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 32 QUARTERS/FOOTAGES: SE SE SE

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.560823

GEOLOGIST: COATS

CONFIDENTIAL: N LATITUDE: 40.049762

DATE COLLECTED: 7 / 1 / 1968

SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 244.1

LOG TYPE: Multiple log types

SOURCE: CARTER OIL COMPANY

WELL TYPE: Coal Test

COMMENT: DRILLERS LOG & SURVEY CORE DESCRIPTIONS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0			UNCONSOLIDATED	15.0	0.0	
585.0			SAND	9.0	15.0	
576.0			UNCONSOLIDATED	6.0	24.0	SOFT BLUE
570.0			SANDY CLAY	20.0	30.0	
550.0			SAND	2.0	50.0	W/ GRAVEL BED
548.0			SANDY CLAY	8.0	52.0	GRAY
540.0	MODESTO		SHALE	19.0	60.0	LT. TAN
521.0	MODESTO		UNCLASSIFIED	8.0	79.0	
513.0	MODESTO		LIMESTONE	0.8	87.0	
512.2	MODESTO		SANDY SHALE	3.3	87.8	
508.9	MODESTO	WEST FRANKLIN	LIMESTONE	8.5	91.1	GRAY
500.4	MODESTO		GRAY SHALE	11.5	99.6	BLACK,MULTI-COLORED
488.9	MODESTO		CALCAREOUS SANDSTONE	9.0	111.1	
479.9			SANDY SHALE	32.0	120.1	SILTY,MULTI-COLORED
447.9	CARBONDALE	ANVIL ROCK	SANDSTONE	8.0	152.1	
439.9	CARBONDALE		SILTY, SANDY SHALE	12.0	160.1	W/ HD. SMS.
427.9	CARBONDALE	HERRIN	COAL	2.7	172.1	
425.2	CARBONDALE		CLAYSTONE	3.3	174.8	
421.9	CARBONDALE		SANDY SHALE	17.0	178.1	W/ SAND
404.9	CARBONDALE		SANDSTONE	2.0	195.1	GRAY
402.9	CARBONDALE		SANDY SHALE	9.9	197.1	W/SID;THICKNESS ADJ. TO MATCH CORE DEPTH
393.0	CARBONDALE		SILTY SHALE	20.1	207.0	W/ SID. NODS.; START CORE 207.0 - 244.1'
372.9	CARBONDALE	ST. DAVID	FOSSILIFEROUS & ARG LIMESTONE	4.9	227.1	GRAY
368.0	CARBONDALE	TURNER MINE	BLACK SHALE, SILTY, FOSSILIFEROUS	1.4	232.0	
366.6	CARBONDALE	SPRINGFIELD	COAL	6.0	233.4	
360.6	CARBONDALE		SILTY CLAYSTONE	4.7	239.4	GRAY,W/ CALCAREOUS NODULES

MAPID: 10720771000C VERSION: 1

PROJECT: AVAIL

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 32 QUARTERS/FOOTAGES: 33' N line, 242' E line
QUADRANGLE: MIDDLETOWN LONGITUDE: -89.560325 GEOLOGIST: C TREWORY
CONFIDENTIAL: N LATITUDE: 40.063138 DATE COLLECTED: 10 / 28 / 1975
SURFACE ELEVATION (FT.): 600.0 LOGGED (FT.): 260.0 LOG TYPE: Gamma Ray Density
SOURCE: HYDROCARBON SURVEY WELL TYPE: Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
600.0			UNCONSOLIDATED	109.0	0.0	
491.0	MODESTO		UNCLASSIFIED	35.0	109.0	
456.0	MODESTO		BLACK SHALE	2.0	144.0	
454.0	CARBONDALE	DANVILLE	COAL	0.0	146.0	COAL THIN OR ABSENT
454.0	CARBONDALE		UNCLASSIFIED	24.0	146.0	
430.0	CARBONDALE	BRERETON	LIMESTONE	3.5	170.0	
426.5	CARBONDALE		SHALE	0.5	173.5	
426.0	CARBONDALE	HERRIN	COAL	1.5	174.0	
424.5	CARBONDALE		UNCLASSIFIED	58.0	175.5	
366.5	CARBONDALE		BLACK SHALE	2.5	233.5	
364.0	CARBONDALE	SPRINGFIELD	COAL	5.5	236.0	EXPANDED-SCALE LOG
358.5	CARBONDALE		UNCLASSIFIED	10.5	241.5	
348.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	252.0	
346.0	CARBONDALE		UNCLASSIFIED	6.0	254.0	

MAPID: 10720862000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 32 QUARTERS/FOOTAGES: 60' N line, 1295' E line
QUADRANGLE: MIDDLETOWN LONGITUDE: -89.564107 GEOLOGIST: PRUSSEN
CONFIDENTIAL: N LATITUDE: 40.06304 DATE COLLECTED: 9 / 8 / 1978
SURFACE ELEVATION (FT.): 598.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL WELL TYPE: Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
414.3	CARBONDALE	HERRIN	COAL	1.3	183.7	
354.7	CARBONDALE	SPRINGFIELD	COAL	5.2	243.3	

MAPID: 10720862000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 32 **QUARTERS/FOOTAGES:** 60' N line, 1295' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.564107 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.06304 **DATE COLLECTED:** 9 / 8 / 1978
SURFACE ELEVATION (FT.): 598.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
598.0			CLAY	35.0	0.0	
563.0			CLAY, SAND & GRAVEL	63.0	35.0	
500.5	MODESTO	PIASA	LIMESTONE	15.5	97.5	
485.0	MODESTO		SHALE	5.0	113.0	
480.0	MODESTO		SHALE	14.0	118.0	
466.0	MODESTO		SHALE	14.0	132.0	
452.0	MODESTO		BLACK SHALE	2.0	146.0	
450.0	CARBONDALE	DANVILLE	COAL	0.0	148.0	DANVILLE #7 COAL NOT PRESENT
450.0	CARBONDALE		SHALE	10.0	148.0	TOP OF CARBONDALE IN THIS INTERVAL
440.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	158.0	
439.0	CARBONDALE		SHALE	5.5	159.0	
433.5	CARBONDALE	ANVIL ROCK	SANDSTONE	15.5	164.5	
418.0	CARBONDALE	HERRIN	COAL	2.5	180.0	
415.5	CARBONDALE		SHALE	41.5	182.5	
374.0	CARBONDALE		SHALE	13.5	224.0	
360.5	CARBONDALE	ST. DAVID	LIMESTONE	2.5	237.5	
358.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	240.0	CORE #1 241.5-250
354.5	CARBONDALE	SPRINGFIELD	COAL	4.6	243.5	
349.9	CARBONDALE		CORE LOSS	1.9	248.1	0.4' COAL AND 1.5' UNDERCLAY
348.0	CARBONDALE		SHALE	9.0	250.0	
339.0	CARBONDALE	EXCELLO	BLACK SHALE	2.5	259.0	OFF GAMMA
336.5	CARBONDALE		SHALE	8.5	261.5	
328.0	CARBONDALE		SHALE	10.0	270.0	

MAPID: 10720730000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 19N 4W **SECTION:** 35 **QUARTERS/FOOTAGES:** 90' N line, 1670' E line
QUADRANGLE: MIDDLETOWN **LONGITUDE:** -89.508712 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.063305 **DATE COLLECTED:** 10 / 20 / 1975
SURFACE ELEVATION (FT.): 582.0 **LOGGED (FT.):** 245.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
416.0	CARBONDALE	HERRIN	COAL	2.0	166.0	
355.0	CARBONDALE	SPRINGFIELD	COAL	5.2	227.0	

MAPID: 10720730000C VERSION: 2 PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 19N 4W SECTION: 35 QUARTERS/FOOTAGES: 90' N line, 1670' E line

QUADRANGLE: MIDDLETOWN LONGITUDE: -89.508712 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.063305 DATE COLLECTED: 10 / 20 / 1975

SURFACE ELEVATION (FT.): 582.0 LOGGED (FT.): 245.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
582.0			CLAY	113.0	0.0	
469.0	MODESTO		SHALE	22.0	113.0	
447.0	MODESTO		BLACK SHALE	3.5	135.0	
443.5	CARBONDALE	DANVILLE	COAL	0.0	138.5	DANVILLE COAL ERODED
443.5	CARBONDALE		SHALE	27.5	138.5	TOP OF CARBONDALE IN THIS INTERVAL
416.0	CARBONDALE	HERRIN	COAL	2.0	166.0	
414.0	CARBONDALE		SHALE	54.5	168.0	
359.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	222.5	
358.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	224.0	
355.0	CARBONDALE	SPRINGFIELD	COAL	5.2	227.0	
349.8	CARBONDALE		UNDERCLAY	8.8	232.2	WITH LS NODULES
341.0	CARBONDALE	EXCELLO	BLACK SHALE	2.5	241.0	
338.5	CARBONDALE		UNCLASSIFIED	1.5	243.5	

MAPID: 10721116000C VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN TWP/RNG: 20N 1W SECTION: 14 QUARTERS/FOOTAGES: 102' N line, 2492' E line

QUADRANGLE: WAYNESVILLE WEST LONGITUDE: -89.174822 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 40.193376 DATE COLLECTED: 7 / 11 / 1980

SURFACE ELEVATION (FT.): 630.0 LOGGED (FT.): 435.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. CI-80-14-1 WELL TYPE: Coal Test

COMMENT: GAMMA, DENS. AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
630.0			UNCONSOLIDATED	75.0	0.0
555.0	BOND		UNCLASSIFIED	42.0	75.0
513.0	BOND		COAL	3.5	117.0
509.5	BOND	CARTHAGE	LIMESTONE	6.5	120.5
503.0	MODESTO		UNCLASSIFIED	10.5	127.0
492.5	MODESTO	MACOUPIN	LIMESTONE	5.5	137.5
487.0	MODESTO		UNCLASSIFIED	70.0	143.0
417.0	MODESTO		COAL	2.0	213.0
415.0	MODESTO		UNCLASSIFIED	10.0	215.0
405.0	MODESTO	WEST FRANKLIN	LIMESTONE	8.0	225.0
397.0	MODESTO		UNCLASSIFIED	84.0	233.0
313.0	CARBONDALE	DANVILLE	COAL	2.0	317.0
311.0	CARBONDALE		UNCLASSIFIED	23.0	319.0
288.0	CARBONDALE	HERRIN	COAL	2.5	342.0
285.5	CARBONDALE		UNCLASSIFIED	29.5	344.5
256.0	CARBONDALE		LIMESTONE	6.0	374.0
250.0	CARBONDALE		UNCLASSIFIED	19.0	380.0
231.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	399.0
227.5	CARBONDALE	SPRINGFIELD	COAL	5.0	402.5
222.5	CARBONDALE		UNCLASSIFIED	19.0	407.5
203.5	CARBONDALE	EXCELLO	BLACK SHALE	3.5	426.5
200.0	CARBONDALE		UNCLASSIFIED	5.0	430.0

MAPID: 10721117000C VERSION: 1 PROJECT: NCRDS88

COUNTY: LOGAN TWP/RNG: 20N 1W SECTION: 22 QUARTERS/FOOTAGES: 2514' S line, 2097' E line

QUADRANGLE: WAYNESVILLE WEST LONGITUDE: -89.191716 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 40.171568 DATE COLLECTED: 7 / 11 / 1980

SURFACE ELEVATION (FT.): 632.0 LOGGED (FT.): 404.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. CI80-22-17 WELL TYPE: Coal Test

COMMENT: GAMMA, DENS. AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
632.0			UNCONSOLIDATED	267.0	0.0
365.0			UNCLASSIFIED	36.0	267.0
329.0	CARBONDALE	DANVILLE	COAL	2.5	303.0
326.5	CARBONDALE		UNCLASSIFIED	9.5	305.5
317.0	CARBONDALE		LIMESTONE	2.5	315.0
314.5	CARBONDALE		UNCLASSIFIED	11.5	317.5
303.0	CARBONDALE	HERRIN	COAL	2.5	329.0
300.5	CARBONDALE		UNCLASSIFIED	54.5	331.5
246.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.5	386.0
241.5	CARBONDALE	SPRINGFIELD	COAL	4.5	390.5
237.0	CARBONDALE		UNCLASSIFIED	9.0	395.0

MAPID: 10721118000C VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN TWP/RNG: 20N 1W SECTION: 32 QUARTERS/FOOTAGES: 45' N line, 2460' E line
QUADRANGLE: WAYNESVILLE WEST LONGITUDE: -89.230418 GEOLOGIST: R. SMITH
CONFIDENTIAL: N LATITUDE: 40.149738 DATE COLLECTED: 7 / 11 / 1980
SURFACE ELEVATION (FT.): 622.0 LOGGED (FT.): 377.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL CORP. CI-80-32-3 WELL TYPE: Coal Test
COMMENT: GAMMA, DENS., AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
622.0			UNCONSOLIDATED	109.5	0.0
512.5	BOND	CARTHAGE	LIMESTONE	6.5	109.5
506.0	MODESTO	NEW HAVEN	BLACK SHALE	3.0	116.0
503.0	MODESTO		UNCLASSIFIED	11.0	119.0
492.0	MODESTO	MACOUPIN	LIMESTONE	6.0	130.0
486.0	MODESTO		UNCLASSIFIED	28.5	136.0
457.5	MODESTO		COAL	2.0	164.5
455.5	MODESTO		UNCLASSIFIED	40.5	166.5
415.0	MODESTO		BLACK SHALE	2.0	207.0
413.0	MODESTO		COAL	2.0	209.0
411.0	MODESTO		UNCLASSIFIED	40.0	211.0
371.0	MODESTO	WEST FRANKLIN	LIMESTONE	4.0	251.0
367.0	MODESTO		DARK SHALE	3.0	255.0
364.0	MODESTO		UNCLASSIFIED	54.0	258.0
310.0	CARBONDALE		UNCLASSIFIED	20.3	312.0
289.7	CARBONDALE	HERRIN	COAL	5.5	332.3
284.2	CARBONDALE		UNCLASSIFIED	27.3	337.8
257.0	CARBONDALE	SPRINGFIELD	COAL	2.5	365.0
254.5	CARBONDALE		UNCLASSIFIED	9.5	367.5

MAPID: 10721120000C VERSION: 1 PROJECT: NCRDS88

COUNTY: LOGAN TWP/RNG: 20N 2W SECTION: 15 QUARTERS/FOOTAGES: 1425' N line, 2328' E line

QUADRANGLE: LINCOLN EAST LONGITUDE: -89.300499 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 40.18971 DATE COLLECTED: 7 / 10 / 1980

SURFACE ELEVATION (FT.): 607.0 LOGGED (FT.): 356.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL CORP. CI80-15-4B WELL TYPE: Coal Test

COMMENT: GAMMA, DENS. AND RESIST. LOGS

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
607.0			UNCONSOLIDATED	222.0	0.0
385.0	MODESTO		UNCLASSIFIED	11.5	222.0
373.5	CARBONDALE	DANVILLE	COAL	2.0	233.5
371.5	CARBONDALE		UNCLASSIFIED	29.5	235.5
342.0	CARBONDALE	HERRIN	COAL	5.0	265.0
337.0	CARBONDALE		UNCLASSIFIED	48.0	270.0
289.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	318.0
287.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	319.5
284.0	CARBONDALE	SPRINGFIELD	COAL	5.5	323.0
278.5	CARBONDALE		UNCLASSIFIED	13.2	328.5
265.3	CARBONDALE	EXCELLO	BLACK SHALE	2.8	341.7
262.5	CARBONDALE		UNCLASSIFIED	11.5	344.5

MAPID: 10700004000C VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN

TWP/RNG: 20N 2W

SECTION: 32

QUARTERS/FOOTAGES: SW SW NW

QUADRANGLE: LINCOLN EAST

LONGITUDE: -89.347562

GEOLOGIST: R. SMITH

CONFIDENTIAL: N

LATITUDE: 40.143822

DATE COLLECTED:

SURFACE ELEVATION (FT.): 590.0

LOGGED (FT.): 271.8

LOG TYPE: Drillers Log

SOURCE: CITIZENS COAL MINING CO

WELL TYPE: Coal Test

COMMENT: LOCATION UNSURE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
590.0			UNCONSOLIDATED	92.8	0.0	
497.2	MODESTO		LIMESTONE	20.0	92.8	"BASTARD" LIME ROCK
477.2	MODESTO		BLACK SHALE	1.4	112.8	
475.7	MODESTO		CLAYSTONE	16.0	114.3	
459.7	MODESTO		UNCLASSIFIED	12.0	130.3	CONGLOMERATE ROCK
447.7	MODESTO		BROWN SHALE	30.0	142.3	
417.7	MODESTO		BLACK SHALE	4.0	172.3	
413.7	CARBONDALE	DANVILLE	COAL	1.4	176.3	
412.3	CARBONDALE		UNDERCLAY	10.0	177.7	
402.3	CARBONDALE	ANVIL ROCK	SANDSTONE	22.0	187.7	
380.3	CARBONDALE	ANNA	BLACK SHALE	1.0	209.7	
379.3	CARBONDALE	HERRIN	COAL	1.0	210.7	
378.3	CARBONDALE		UNDERCLAY	3.4	211.7	
374.9	CARBONDALE		SANDSTONE	18.0	215.1	
356.9	CARBONDALE		SHALE	3.0	233.1	"SOAPSTONE"
353.9	CARBONDALE		UNCLASSIFIED	7.0	236.1	ROCK
346.9	CARBONDALE		BLUE SHALE	18.0	243.1	
328.9	CARBONDALE	ST. DAVID	LIMESTONE	1.5	261.1	
327.4	CARBONDALE	TURNER MINE	BLACK SHALE	3.3	262.6	
324.1	CARBONDALE	SPRINGFIELD	COAL	5.9	265.9	

MAPID: 10700421000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 7

QUARTERS/FOOTAGES: NW NW

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.483186

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.206906

DATE COLLECTED: 6 / 2 / 1969

SURFACE ELEVATION (FT.): 545.0

LOGGED (FT.): 180.0

LOG TYPE: Drillers Log

SOURCE: PAUL WEIR COAL CO W-3

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
373.8	CARBONDALE	SPRINGFIELD	COAL	6.4	171.2	

MAPID: 10720863000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 9

QUARTERS/FOOTAGES: 992' N line, 1700' E line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.431308

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.20578

DATE COLLECTED: 8 / 3 / 1978

SURFACE ELEVATION (FT.): 573.0

LOGGED (FT.): 270.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
382.0	CARBONDALE	HERRIN	COAL	5.0	191.0	
324.5	CARBONDALE	SPRINGFIELD	COAL	6.0	248.5	

MAPID: 10720863000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 9 QUARTERS/FOOTAGES: 992' N line, 1700' E line
 QUADRANGLE: LINCOLN WEST LONGITUDE: -89.431308 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.20578 DATE COLLECTED: 8 / 3 / 1978
 SURFACE ELEVATION (FT.): 573.0 LOGGED (FT.): 270.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
573.0			CLAY	27.0	0.0	
546.0			SAND & GRAVEL	39.0	27.0	
507.0			CLAY, SAND & GRAVEL	13.0	66.0	
494.0			SAND & GRAVEL	3.0	79.0	
491.0			CLAY, SAND & GRAVEL	10.0	82.0	
481.0	MODESTO		SHALE	21.5	92.0	
459.5	MODESTO		SHALE	41.0	113.5	
418.5	MODESTO		BLACK SHALE	2.5	154.5	
416.0	CARBONDALE	DANVILLE	COAL	1.5	157.0	
414.5	CARBONDALE		SHALE	11.5	158.5	
403.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	170.0	
401.0	CARBONDALE	ANVIL ROCK	SANDSTONE	1.5	172.0	
399.5	CARBONDALE		SHALE	10.5	173.5	
389.0	CARBONDALE	BRERETON	LIMESTONE	3.2	184.0	
385.8	CARBONDALE		SHALE	1.0	187.2	
384.8	CARBONDALE	HERRIN	COAL	3.3	188.2	
381.5	CARBONDALE		SHALE	7.5	191.5	
374.0	CARBONDALE		LIMESTONE	3.5	199.0	
370.5	CARBONDALE		SHALE	12.5	202.5	
358.0	CARBONDALE		SANDSTONE	3.5	215.0	
354.5	CARBONDALE		SHALE	24.0	218.5	
330.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	242.5	CORE #1 247-255.5
329.5	CARBONDALE	TURNER MINE	BLACK SHALE	5.0	243.5	BONY
324.5	CARBONDALE	SPRINGFIELD	COAL	6.0	248.5	
318.5	CARBONDALE		SHALE	1.0	254.5	
317.5	CARBONDALE		SHALE	14.0	255.5	
303.5	CARBONDALE		LIMESTONE	0.5	269.5	

MAPID: 10720919000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 10

QUARTERS/FOOTAGES: 2610' S line, 2586' W line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.415884

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.20125

DATE COLLECTED: 7 / 13 / 1979

SURFACE ELEVATION (FT.): 580.0

LOGGED (FT.): 270.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
424.0	CARBONDALE	DANVILLE	COAL	1.5	156.0	
389.0	CARBONDALE	HERRIN	COAL	5.0	191.0	
330.3	CARBONDALE	SPRINGFIELD	COAL	5.7	249.7	

MAPID: 10720919000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 10 **QUARTERS/FOOTAGES:** 2610' S line, 2586' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.415884 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.20125 **DATE COLLECTED:** 7 / 13 / 1979
SURFACE ELEVATION (FT.): 580.0 **LOGGED (FT.):** 270.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
580.0			SOIL	4.0	0.0
576.0			CLAY	16.0	4.0
560.0			CLAY, SAND & GRAVEL	68.0	20.0
492.0			CLAY	36.0	88.0
452.0	MODESTO		SHALE	27.5	128.0
424.5	MODESTO		BLACK SHALE	1.5	155.5
423.0	CARBONDALE	DANVILLE	COAL	1.5	157.0
421.5	CARBONDALE		SHALE	17.0	158.5
404.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	175.5
403.0	CARBONDALE	ANVIL ROCK	SANDSTONE	1.0	177.0
402.0	CARBONDALE		SHALE	9.7	178.0
392.3	CARBONDALE	BRERETON	LIMESTONE	3.3	187.7
389.0	CARBONDALE	HERRIN	COAL	3.5	191.0
385.5	CARBONDALE		SHALE	15.5	194.5
370.0	CARBONDALE		SHALE	35.0	210.0
335.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	245.0
334.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.7	246.0
330.3	CARBONDALE	SPRINGFIELD	COAL	5.8	249.7
324.5	CARBONDALE		SHALE	0.1	255.5
324.4	CARBONDALE		SHALE	0.4	255.6
324.0	CARBONDALE		SHALE	1.3	256.0
322.7	CARBONDALE		CORE LOSS	0.2	257.3
322.5	CARBONDALE		SHALE	4.0	257.5
318.5	CARBONDALE		LIMESTONE	1.0	261.5
317.5	CARBONDALE		SHALE	7.5	262.5

MAPID: 10720920000C VERSION: 1 PROJECT: EIA-DOE
COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 11 QUARTERS/FOOTAGES: 2610' S line, 2570' W line
QUADRANGLE: LINCOLN WEST LONGITUDE: -89.397213 GEOLOGIST: PRUSSEN
CONFIDENTIAL: N LATITUDE: 40.201241 DATE COLLECTED: 7 / 18 / 1979
SURFACE ELEVATION (FT.): 593.0 LOGGED (FT.): 268.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL WELL TYPE: Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
440.5	CARBONDALE	DANVILLE	COAL	1.5	152.5
408.7	CARBONDALE	HERRIN	COAL	5.7	184.3
347.5	CARBONDALE	SPRINGFIELD	COAL	6.0	245.5

MAPID: 10720920000C VERSION: 2 PROJECT: ISGS88
COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 11 QUARTERS/FOOTAGES: 2610' S line, 2570' W line
QUADRANGLE: LINCOLN WEST LONGITUDE: -89.397213 GEOLOGIST: SROKA
CONFIDENTIAL: N LATITUDE: 40.201241 DATE COLLECTED: 7 / 18 / 1979
SURFACE ELEVATION (FT.): 593.0 LOGGED (FT.): 268.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL WELL TYPE: Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
593.0			CLAY	34.0	0.0
559.0			SAND & GRAVEL	6.0	34.0
553.0			SANDY CLAY	32.0	40.0
524.0	MODESTO		SHALE	77.5	69.0
446.5	MODESTO		BLACK SHALE	3.5	146.5
443.0	CARBONDALE	DANVILLE	COAL	2.0	150.0
441.0	CARBONDALE		SHALE	30.5	152.0
410.5	CARBONDALE	BRERETON	LIMESTONE	2.5	182.5
408.0	CARBONDALE	HERRIN	COAL	5.0	185.0
403.0	CARBONDALE		SHALE	7.5	190.0
395.5	CARBONDALE		LIMESTONE	2.0	197.5
393.5	CARBONDALE		SHALE	41.0	199.5
352.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	240.5
351.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.5	242.0
347.5	CARBONDALE	SPRINGFIELD	COAL	6.0	245.5
341.5	CARBONDALE		SHALE	0.6	251.5
341.0	CARBONDALE		SHALE	6.0	252.0
335.0	CARBONDALE		SHALE	10.0	258.0

MAPID: 10720921000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 12

QUARTERS/FOOTAGES: 1524' N line, 20' E line

QUADRANGLE: LINCOLN EAST

LONGITUDE: -89.368743

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.204311

DATE COLLECTED: 7 / 17 / 1979

SURFACE ELEVATION (FT.): 580.0

LOGGED (FT.): 280.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
373.5	CARBONDALE	HERRIN	COAL	3.5	206.5	
324.1	CARBONDALE	SPRINGFIELD	COAL	2.7	255.9	
319.2	CARBONDALE	SPRINGFIELD	COAL	0.5	260.8	

MAPID: 10720921000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 12 QUARTERS/FOOTAGES: 1524' N line, 20' E line
 QUADRANGLE: LINCOLN EAST LONGITUDE: -89.368743 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.204311 DATE COLLECTED: 7 / 17 / 1979
 SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
580.0			SANDY CLAY	8.0	0.0
572.0			SAND & GRAVEL	4.0	8.0
568.0			SAND & GRAVEL	14.0	12.0
554.0			SAND & GRAVEL	80.0	26.0
474.0			SANDY CLAY	10.0	106.0
464.0			SAND & GRAVEL	4.0	116.0
460.0			GRAVEL	16.0	120.0
444.0			SMUT	2.0	136.0
442.0			CLAY	29.5	138.0
412.5	MODESTO		SHALE	4.5	167.5
408.0	CARBONDALE	DANVILLE	COAL	1.0	172.0
407.0	CARBONDALE		SHALE	33.0	173.0
374.0	CARBONDALE	ANNA	BLACK SHALE	1.2	206.0
372.8	CARBONDALE	HERRIN	COAL	2.3	207.2
370.5	CARBONDALE		SHALE	3.5	209.5
367.0	CARBONDALE		LIMESTONE	1.0	213.0
366.0	CARBONDALE		SHALE	3.5	214.0
362.5	CARBONDALE		SANDSTONE	3.0	217.5
359.5	CARBONDALE		SHALE	15.0	220.5
344.5	CARBONDALE		SHALE	16.0	235.5
328.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	251.5
327.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.9	253.0
324.1	CARBONDALE	SPRINGFIELD	COAL	2.5	255.9
321.7	CARBONDALE	SPRINGFIELD	CLAYSTONE	2.5	258.3
319.2	CARBONDALE	SPRINGFIELD	COAL	0.5	260.8
318.7	CARBONDALE		SHALE	0.6	261.3
318.1	CARBONDALE		SHALE	5.6	261.9
312.5	CARBONDALE		LIMESTONE	2.0	267.5
310.5	CARBONDALE		SHALE	10.5	269.5

MAPID: 10720864000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 13

QUARTERS/FOOTAGES: 63' N line, 2623' E line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.377903

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.193813

DATE COLLECTED: 8 / 4 / 1978

SURFACE ELEVATION (FT.): 582.0

LOGGED (FT.): 265.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
428.0	CARBONDALE	DANVILLE	COAL	1.5	154.0	
391.5	CARBONDALE	HERRIN	COAL	3.2	190.5	
339.2	CARBONDALE	SPRINGFIELD	COAL	5.7	242.8	

MAPID: 10720864000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 13 **QUARTERS/FOOTAGES:** 63' N line, 2623' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.377903 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.193813 **DATE COLLECTED:** 8 / 4 / 1978
SURFACE ELEVATION (FT.): 582.0 **LOGGED (FT.):** 265.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
582.0			CLAY	30.0	0.0	
552.0			SAND & GRAVEL	2.0	30.0	
550.0			SANDY CLAY	8.0	32.0	
542.0			SAND & GRAVEL	13.0	40.0	
529.0			SANDY CLAY	7.0	53.0	
522.0			SAND & GRAVEL	15.0	60.0	
507.0			SANDY CLAY	4.5	75.0	
502.5			SAND & GRAVEL	1.0	79.5	
501.5			CLAY, SAND & GRAVEL	11.5	80.5	
490.0			SAND & GRAVEL	4.0	92.0	
486.0			CLAY	57.0	96.0	
441.0	MODESTO		SHALE	12.0	141.0	
429.0	MODESTO		BLACK SHALE	3.0	153.0	
426.0	CARBONDALE	DANVILLE	COAL	1.5	156.0	
424.5	CARBONDALE		SHALE	11.5	157.5	DRILL LOG INDICATES LS
413.0	CARBONDALE		LIMESTONE	1.0	169.0	
412.0	CARBONDALE		SHALE	6.0	170.0	
406.0	CARBONDALE	ANVIL ROCK	SANDSTONE	3.5	176.0	
402.5	CARBONDALE		SHALE	9.5	179.5	
393.0	CARBONDALE	BRERETON	LIMESTONE	5.0	189.0	
388.0	CARBONDALE	HERRIN	COAL	3.0	194.0	
385.0	CARBONDALE		UNDERCLAY	9.0	197.0	
376.0	CARBONDALE		LIMESTONE	4.0	206.0	
372.0	CARBONDALE		SHALE	29.0	210.0	
343.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	239.0	
341.5	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	240.5	CORE #1 242.5-249.5
339.5	CARBONDALE	SPRINGFIELD	COAL	6.0	242.5	
333.5	CARBONDALE		UNDERCLAY	0.2	248.5	
333.3	CARBONDALE		CORE LOSS	0.9	248.7	
332.5	CARBONDALE		SHALE	15.5	249.5	

MAPID: 10721129000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 13 **QUARTERS/FOOTAGES:** 298' N line, 1351' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.382467 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.19318 **DATE COLLECTED:** 4 / 25 / 1977
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 250.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
443.0	CARBONDALE	DANVILLE	COAL	1.0	152.0
407.5	CARBONDALE	HERRIN	COAL	4.5	187.5
358.0	CARBONDALE	SPRINGFIELD	COAL	5.2	237.0

MAPID: 10721129000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 13 **QUARTERS/FOOTAGES:** 298' N line, 1351' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.382467 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.19318 **DATE COLLECTED:** 4 / 25 / 1977
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 250.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
595.0			CLAY	10.0	0.0
585.0			CLAY, SAND & GRAVEL	46.0	10.0
539.0			SAND	29.0	56.0
510.0			CLAY, SAND & GRAVEL	9.0	85.0
501.0			SILTY CLAY	31.0	94.0
470.0	MODESTO		SHALE	25.0	125.0
445.0	MODESTO		BLACK SHALE	2.0	150.0
443.0	CARBONDALE	DANVILLE	COAL	1.0	152.0
442.0	CARBONDALE		CLAYSTONE & SHALE	6.0	153.0
436.0	CARBONDALE		SHALE	6.5	159.0
429.5	CARBONDALE	ANVIL ROCK	SANDSTONE	11.0	165.5
418.5	CARBONDALE		SHALE	4.5	176.5
414.0	CARBONDALE		SHALE	6.5	181.0
407.5	CARBONDALE	HERRIN	COAL	4.5	187.5
403.0	CARBONDALE		SHALE	41.0	192.0
362.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	233.0
361.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.1	234.0
358.0	CARBONDALE	SPRINGFIELD	COAL	5.2	237.0
352.8	CARBONDALE		UNDERCLAY	0.4	242.2
352.5	CARBONDALE		CORE LOSS	0.5	242.5
352.0	CARBONDALE		UNDERCLAY	5.9	243.0
346.1	CARBONDALE		LIMESTONE	1.1	248.9
345.1	CARBONDALE		CORE LOSS	0.1	249.9

MAPID: 10720922000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 14 **QUARTERS/FOOTAGES:** 65' S line, 135' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.387588 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.179657 **DATE COLLECTED:** 7 / 17 / 1979
SURFACE ELEVATION (FT.): 570.0 **LOGGED (FT.):** 250.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
425.5	CARBONDALE	DANVILLE	COAL	2.0	144.5
396.0	CARBONDALE	HERRIN	COAL	3.5	174.0
344.0	CARBONDALE	SPRINGFIELD	COAL	6.0	226.0

MAPID: 10720922000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 14 **QUARTERS/FOOTAGES:** 65' S line, 135' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.387588 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.179657 **DATE COLLECTED:** 7 / 17 / 1979
SURFACE ELEVATION (FT.): 570.0 **LOGGED (FT.):** 250.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
570.0			CLAY	6.0	0.0
564.0			SAND & GRAVEL	52.0	6.0
512.0			CLAY	54.0	58.0
458.0	MODESTO		SHALE	29.0	112.0
429.0	MODESTO		BLACK SHALE	3.5	141.0
425.5	CARBONDALE	DANVILLE	COAL	1.5	144.5
424.0	CARBONDALE		SHALE	15.0	146.0
409.0	CARBONDALE	ANVIL ROCK	SANDSTONE	1.5	161.0
407.5	CARBONDALE		SHALE	9.5	162.5
398.0	CARBONDALE	ANNA	BLACK SHALE	2.5	172.0
395.5	CARBONDALE	HERRIN	COAL	4.0	174.5
391.5	CARBONDALE		SHALE	5.0	178.5
386.5	CARBONDALE		LIMESTONE	1.5	183.5
385.0	CARBONDALE		SHALE	8.0	185.0
377.0	CARBONDALE		LIMESTONE	2.0	193.0
375.0	CARBONDALE		SHALE	28.0	195.0
347.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	223.0
346.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	224.0
344.0	CARBONDALE	SPRINGFIELD	COAL	6.0	226.0
338.1	CARBONDALE		SHALE	12.1	231.9
326.0	CARBONDALE	EXCELLO	BLACK SHALE	1.0	244.0
325.0	CARBONDALE		SHALE	3.0	245.0
322.0	CARBONDALE		SHALE	2.0	248.0

MAPID: 10721130000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 14 **QUARTERS/FOOTAGES:** 76' S line, 464' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.388772 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.179697 **DATE COLLECTED:** 4 / 22 / 1977
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
401.0	CARBONDALE	DANVILLE	COAL	1.6	174.0
369.0	CARBONDALE	HERRIN	COAL	3.5	206.0
312.7	CARBONDALE	SPRINGFIELD	COAL	6.1	262.3

MAPID: 10721130000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 14 **QUARTERS/FOOTAGES:** 76' S line, 464' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.388772 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.179697 **DATE COLLECTED:** 4 / 22 / 1977
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
575.0			CLAY	21.0	0.0
554.0			CLAY, SAND & GRAVEL	58.0	21.0
496.0	MODESTO		LIMESTONE	8.5	79.0
487.5	MODESTO		BLACK SHALE	1.5	87.5
486.0	MODESTO		SHALE	36.0	89.0
450.0	MODESTO		SHALE	47.5	125.0
402.5	MODESTO		BLACK SHALE	2.5	172.5
400.0	CARBONDALE	DANVILLE	COAL	1.0	175.0
399.0	CARBONDALE		SHALE	14.0	176.0
385.0	CARBONDALE	ANVIL ROCK	SANDSTONE	8.0	190.0
377.0	CARBONDALE		SHALE	5.5	198.0
371.5	CARBONDALE	ANNA	BLACK SHALE	3.0	203.5
368.5	CARBONDALE	HERRIN	COAL	3.5	206.5
365.0	CARBONDALE		SHALE	5.5	210.0
359.5	CARBONDALE		SILTSTONE	5.5	215.5
354.0	CARBONDALE		SHALE	37.0	221.0
317.0	CARBONDALE	ST. DAVID	LIMESTONE	0.5	258.0
316.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.8	258.5
312.7	CARBONDALE	SPRINGFIELD	COAL	6.1	262.3
306.6	CARBONDALE		UNDERCLAY	2.5	268.4
304.2	CARBONDALE		CORE LOSS	0.2	270.8
304.0	CARBONDALE		CLAYSTONE & SHALE	9.0	271.0

MAPID: 10720923000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 15

QUARTERS/FOOTAGES: 2605' S line, 1329' E line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.410929

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.186789

DATE COLLECTED: 7 / 12 / 1979

SURFACE ELEVATION (FT.): 582.0

LOGGED (FT.): 290.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
407.5	CARBONDALE	DANVILLE	COAL	1.5	174.5	
374.5	CARBONDALE	HERRIN	COAL	4.0	207.5	
315.0	CARBONDALE	SPRINGFIELD	COAL	6.5	267.0	

MAPID: 10720923000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 15 QUARTERS/FOOTAGES: 2605' S line, 1329' E line

QUADRANGLE: LINCOLN WEST LONGITUDE: -89.410929 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.186789 DATE COLLECTED: 7 / 12 / 1979

SURFACE ELEVATION (FT.): 582.0 LOGGED (FT.): 290.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
582.0			SOIL	4.0	0.0
578.0			CLAY, SAND & GRAVEL	58.0	4.0
514.0	MODESTO	WEST FRANKLIN	LIMESTONE	11.0	68.0
503.0	MODESTO		SHALE	31.0	79.0
472.0	MODESTO		SHALE	58.0	110.0
414.0	MODESTO		SHALE	2.5	168.0
411.5	MODESTO		BLACK SHALE	1.7	170.5
409.8	CARBONDALE	DANVILLE	COAL	1.8	172.2
408.0	CARBONDALE		SHALE	16.0	174.0
392.0	CARBONDALE		SHALE	10.0	190.0
382.0	CARBONDALE		SHALE	6.0	200.0
376.0	CARBONDALE	ANNA	BLACK SHALE	1.0	206.0
375.0	CARBONDALE	HERRIN	COAL	2.0	207.0
373.0	CARBONDALE		SHALE	7.0	209.0
366.0	CARBONDALE		LIMESTONE	4.0	216.0
362.0	CARBONDALE		SHALE	25.0	220.0
337.0	CARBONDALE		SHALE	9.8	245.0
327.2	CARBONDALE		CORE LOSS	0.3	254.8
327.0	CARBONDALE		SHALE	0.2	255.0
326.8	CARBONDALE		SHALE	3.8	255.2
323.1	CARBONDALE		SHALE	0.1	258.9
323.0	CARBONDALE		SHALE	2.0	259.0
321.0	CARBONDALE		SHALE	1.0	261.0
320.0	CARBONDALE	ST. DAVID	LIMESTONE	1.4	262.0
318.6	CARBONDALE	TURNER MINE	BLACK SHALE	3.6	263.4
315.0	CARBONDALE	SPRINGFIELD	COAL	6.5	267.0
308.5	CARBONDALE		SHALE	0.2	273.5
308.4	CARBONDALE		CLAYSTONE	0.3	273.6
308.1	CARBONDALE		SHALE	1.2	273.9
307.0	CARBONDALE		LIMESTONE	0.8	275.0
306.2	CARBONDALE		SHALE	4.5	275.8
301.7	CARBONDALE		SHALE	3.8	280.3
297.9	CARBONDALE	HOUCHIN CREEK	BLACK SHALE	0.6	284.1
297.3			CORE LOSS	0.3	284.7
297.0			BLACK SHALE	0.2	285.0
296.8			SHALE	1.2	285.2
295.7			SHALE	3.7	286.3

MAPID: 10721131000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 15

QUARTERS/FOOTAGES: 40' N line, 37' W line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.425105

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.193935

DATE COLLECTED: 4 / 20 / 1977

SURFACE ELEVATION (FT.): 575.0

LOGGED (FT.): 273.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.0	CARBONDALE	DANVILLE	COAL	1.0	167.0	
377.0	CARBONDALE	HERRIN	COAL	3.5	198.0	
312.3	CARBONDALE	SPRINGFIELD	COAL	5.7	262.7	

MAPID: 10721131000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 15 **QUARTERS/FOOTAGES:** 40' N line, 37' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.425105 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.193935 **DATE COLLECTED:** 4 / 20 / 1977
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 273.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
575.0			CLAY	1.0	0.0
574.0			SILTY CLAY	19.0	1.0
555.0			CLAY, SAND & GRAVEL	16.0	20.0
539.0			SAND & GRAVEL	22.0	36.0
517.0			CLAY	5.0	58.0
512.0	MODESTO	WEST FRANKLIN	LIMESTONE	10.0	63.0
502.0	MODESTO		BLACK SHALE	2.0	73.0
500.0	MODESTO		SHALE	46.0	75.0
454.0	MODESTO		SHALE	40.0	121.0
414.0	MODESTO		BLACK SHALE	5.0	161.0
409.0	CARBONDALE	DANVILLE	COAL	1.5	166.0
407.5	CARBONDALE		CLAYSTONE & SHALE	14.5	167.5
393.0	CARBONDALE		SHALE	4.0	182.0
389.0	CARBONDALE		SHALE	5.0	186.0
384.0	CARBONDALE		SHALE	7.0	191.0
377.0	CARBONDALE	HERRIN	COAL	4.0	198.0
373.0	CARBONDALE		SHALE	10.5	202.0
362.5	CARBONDALE		SHALE	3.5	212.5
359.0	CARBONDALE		SHALE	40.2	216.0
318.8	CARBONDALE		CORE LOSS	0.5	256.2
318.3	CARBONDALE		SHALE	0.6	256.7
317.7	CARBONDALE	ST. DAVID	LIMESTONE	1.3	257.3
316.4	CARBONDALE	TURNER MINE	BLACK SHALE	4.3	258.6
312.3	CARBONDALE	SPRINGFIELD	COAL	5.7	262.7
306.6	CARBONDALE		UNDERCLAY	5.0	268.4
301.6	CARBONDALE		CORE LOSS	0.1	273.4

MAPID: 10720924000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 16 **QUARTERS/FOOTAGES:** 1968' N line, 2425' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.433873 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.188629 **DATE COLLECTED:** 7 / 18 / 1979
SURFACE ELEVATION (FT.): 578.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
380.5	CARBONDALE	HERRIN	COAL	2.5	197.5
322.9	CARBONDALE	SPRINGFIELD	COAL	6.3	255.1

MAPID: 10720924000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 16 **QUARTERS/FOOTAGES:** 1968' N line, 2425' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.433873 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.188629 **DATE COLLECTED:** 7 / 18 / 1979
SURFACE ELEVATION (FT.): 578.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
578.0			CLAY	9.0	0.0
569.0			SAND & GRAVEL	3.0	9.0
566.0			SANDY CLAY	46.0	12.0
520.0			SAND & GRAVEL	10.0	58.0
508.0	MODESTO		SHALE	82.0	70.0
426.0	MODESTO		SHALE	5.5	152.0
420.5	CARBONDALE	DANVILLE	COAL	1.5	157.5
419.0	CARBONDALE		SHALE	7.5	159.0
411.5	CARBONDALE	BANKSTON FORK	LIMESTONE	4.0	166.5
407.5	CARBONDALE		SHALE	9.5	170.5
398.0	CARBONDALE		SILTSTONE	5.0	180.0
393.0	CARBONDALE	ANVIL ROCK	SANDSTONE	11.0	185.0
382.0	CARBONDALE	ANNA	BLACK SHALE	2.0	196.0
380.0	CARBONDALE	HERRIN	COAL	1.5	198.0
378.5	CARBONDALE		SHALE	47.5	199.5
331.0	CARBONDALE	ST. DAVID	LIMESTONE	3.8	247.0
327.2	CARBONDALE	TURNER MINE	BLACK SHALE	4.3	250.8
322.9	CARBONDALE	SPRINGFIELD	COAL	6.3	255.1
316.6	CARBONDALE		CORE LOSS	0.2	261.4
316.5	CARBONDALE		SHALE	8.5	261.5
308.0	CARBONDALE	EXCELLO	BLACK SHALE	5.0	270.0
303.0	CARBONDALE		LIMESTONE	5.0	275.0

MAPID: 10721132000C VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 17 QUARTERS/FOOTAGES: 56' N line, 47' W line
QUADRANGLE: LINCOLN WEST LONGITUDE: -89.462735 GEOLOGIST: PRUSSEN
CONFIDENTIAL: N LATITUDE: 40.194194 DATE COLLECTED: 4 / 26 / 1977
SURFACE ELEVATION (FT.): 569.0 LOGGED (FT.): 240.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL WELL TYPE: Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
415.0	CARBONDALE	HERRIN	COAL	3.5	154.0
352.0	CARBONDALE	SPRINGFIELD	COAL	6.1	217.0

MAPID: 10721132000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 17 QUARTERS/FOOTAGES: 56' N line, 47' W line
QUADRANGLE: LINCOLN WEST LONGITUDE: -89.462735 GEOLOGIST: SROKA
CONFIDENTIAL: N LATITUDE: 40.194194 DATE COLLECTED: 4 / 26 / 1977
SURFACE ELEVATION (FT.): 569.0 LOGGED (FT.): 240.0 LOG TYPE: Multiple log types
SOURCE: MOBIL OIL WELL TYPE: Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
569.0			CLAY	1.0	0.0
568.0			SILTY CLAY	17.0	1.0
551.0			CLAY	3.0	18.0
548.0			SAND & GRAVEL	11.0	21.0
537.0			CLAY, SAND & GRAVEL	22.0	32.0
515.0			SAND & GRAVEL	19.0	54.0
496.0	MODESTO		SHALE	45.0	73.0
451.0	MODESTO		SHALE	3.0	118.0
448.0	MODESTO		BLACK SHALE	3.0	121.0
445.0	CARBONDALE	DANVILLE	COAL	2.5	124.0
442.5	CARBONDALE		SHALE	6.0	126.5
436.5	CARBONDALE	BANKSTON FORK	LIMESTONE	1.5	132.5
435.0	CARBONDALE		SHALE	20.0	134.0
415.0	CARBONDALE	HERRIN	COAL	3.5	154.0
411.5	CARBONDALE		UNDERCLAY	2.5	157.5
409.0	CARBONDALE		SHALE	46.5	160.0
362.5	CARBONDALE		SHALE	4.0	206.5
358.5	CARBONDALE	ST. DAVID	LIMESTONE	2.6	210.5
355.9	CARBONDALE	TURNER MINE	BLACK SHALE	3.9	213.1
352.0	CARBONDALE	SPRINGFIELD	COAL	6.1	217.0
345.9	CARBONDALE		UNDERCLAY	3.9	223.1
342.0	CARBONDALE		SHALE	10.0	227.0
332.0	CARBONDALE		LIMESTONE	3.0	237.0

MAPID: 10721133000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 17

QUARTERS/FOOTAGES: 70' S line, 2629' E line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.453291

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.179907

DATE COLLECTED: 4 / 28 / 1977

SURFACE ELEVATION (FT.): 593.0

LOGGED (FT.): 280.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
426.7	CARBONDALE	DANVILLE	COAL	1.9	166.3	
396.5	CARBONDALE	HERRIN	COAL	3.1	196.5	
336.2	CARBONDALE	SPRINGFIELD	COAL	6.1	256.8	

MAPID: 10721133000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 17 QUARTERS/FOOTAGES: 70' S line, 2629' E line
 QUADRANGLE: LINCOLN WEST LONGITUDE: -89.453291 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.179907 DATE COLLECTED: 4 / 28 / 1977
 SURFACE ELEVATION (FT.): 593.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
593.0			SOIL	1.0	0.0
592.0			CLAY, SAND & GRAVEL	58.0	1.0
534.0			CLAY	8.0	59.0
526.0	MODESTO	WEST FRANKLIN	LIMESTONE	8.5	67.0
517.5	MODESTO		BLACK SHALE	2.0	75.5
515.5	MODESTO		SHALE	13.5	77.5
502.0	MODESTO		SHALE	9.0	91.0
493.0	MODESTO		SHALE	5.0	100.0
488.0	MODESTO		SHALE	10.5	105.0
477.5	MODESTO		SHALE	48.0	115.5
429.5	MODESTO		BLACK SHALE	2.8	163.5
426.7	CARBONDALE	DANVILLE	COAL	1.9	166.3
424.8	CARBONDALE		SHALE	11.8	168.2
413.0	CARBONDALE		SHALE	13.5	180.0
399.5	CARBONDALE	BRERETON	LIMESTONE	1.5	193.5
398.0	CARBONDALE		SHALE	1.0	195.0
397.0	CARBONDALE	HERRIN	COAL	3.6	196.0
393.4	CARBONDALE		SHALE	4.9	199.6
388.5	CARBONDALE		LIMESTONE	2.5	204.5
386.0	CARBONDALE		SHALE	43.5	207.0
342.5	CARBONDALE	ST. DAVID	LIMESTONE	3.1	250.5
339.4	CARBONDALE	TURNER MINE	BLACK SHALE	3.2	253.6
336.2	CARBONDALE	SPRINGFIELD	COAL	6.1	256.8
330.1	CARBONDALE		UNDERCLAY	8.7	262.9
321.5	CARBONDALE	HOUCHIN CREEK	COAL	1.5	271.5
320.0	CARBONDALE		CLAYSTONE & SHALE	7.0	273.0

MAPID: 10720865000C **VERSION:** 1 **PROJECT:** LUMP
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 18 **QUARTERS/FOOTAGES:** 27' N line, 60' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.485661 **GEOLOGIST:** NORTH
CONFIDENTIAL: N **LATITUDE:** 40.194174 **DATE COLLECTED:** 8 / 1 / 1978
SURFACE ELEVATION (FT.): 560.0 **LOGGED (FT.):** 160.0 **LOG TYPE:** Drillers Log
SOURCE: MOBIL OIL CORP. 51-78-5 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
560.0	PLEISTOCENE		CLAY	17.0	0.0	
543.0	PLEISTOCENE		CLAY	14.0	17.0	WITH SAND AND GRAVEL
529.0	PLEISTOCENE		SAND & GRAVEL	26.5	31.0	
502.5	PLEISTOCENE		CLAY	16.5	57.5	WITH SAND AND GRAVEL
486.0	PLEISTOCENE		SAND & GRAVEL	70.0	74.0	WITH BOULDERS
416.0	CARBONDALE		LIMESTONE	2.0	144.0	
414.0	CARBONDALE		SANDY SHALE	11.0	146.0	
403.0	CARBONDALE		SANDSTONE	3.0	157.0	

MAPID: 10720865000C **VERSION:** 2 **PROJECT:** LUMP
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 18 **QUARTERS/FOOTAGES:** 27' N line, 60' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.485661 **GEOLOGIST:** J. MCBETH
CONFIDENTIAL: N **LATITUDE:** 40.194174 **DATE COLLECTED:** 8 / 1 / 1978
SURFACE ELEVATION (FT.): 560.0 **LOGGED (FT.):** 160.0 **LOG TYPE:** Drillers Log
SOURCE: MOBIL OIL CORP. 51-78-5 **WELL TYPE:** Coal Test
COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
560.0	PLEISTOCENE		CLAY	17.0	0.0	
543.0	PLEISTOCENE		CLAY	14.0	17.0	W/ SAND & GRAVEL
529.0	PLEISTOCENE		SAND & GRAVEL	26.5	31.0	
502.5	PLEISTOCENE		CLAY	16.5	57.5	W/ SAND & GRAVEL
486.0	PLEISTOCENE		SAND & GRAVEL	70.0	74.0	& BOULDERS
416.0	CARBONDALE		LIMESTONE	2.0	144.0	
414.0	CARBONDALE		SANDY SHALE	11.0	146.0	
403.0	CARBONDALE		SANDSTONE	3.0	157.0	

MAPID: 10720925000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 18 **QUARTERS/FOOTAGES:** 48' S line, 42' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.485524 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.179717 **DATE COLLECTED:** 7 / 18 / 1979
SURFACE ELEVATION (FT.): 570.0 **LOGGED (FT.):** 215.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
378.3	CARBONDALE	SPRINGFIELD	COAL	6.1	191.7

MAPID: 10720925000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 18 **QUARTERS/FOOTAGES:** 48' S line, 42' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.485524 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.179717 **DATE COLLECTED:** 7 / 18 / 1979
SURFACE ELEVATION (FT.): 570.0 **LOGGED (FT.):** 215.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
570.0			CLAY, SAND & GRAVEL	12.0	0.0
558.0			CLAY	25.0	12.0
533.0			SAND & GRAVEL	1.5	37.0
531.5			CLAY	9.5	38.5
522.0			SILT, SAND & GRAVEL	12.0	48.0
510.0			CLAY	10.0	60.0
500.0	MODESTO		SHALE	30.0	70.0
470.0	MODESTO		BLACK SHALE	3.5	100.0
466.5	CARBONDALE	DANVILLE	COAL	1.5	103.5
465.0	CARBONDALE		SHALE	8.5	105.0
456.5	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	113.5
454.5	CARBONDALE		SHALE	15.5	115.5
439.0	CARBONDALE	HERRIN	COAL	1.7	131.0
437.3	CARBONDALE		SHALE	1.3	132.7
436.0	CARBONDALE		SANDSTONE	3.0	134.0
433.0	CARBONDALE		SHALE	40.0	137.0
393.0	CARBONDALE		SHALE	11.0	177.0
382.0	CARBONDALE	ST. DAVID	LIMESTONE	1.2	188.0
380.8	CARBONDALE	TURNER MINE	BLACK SHALE	2.8	189.2
378.0	CARBONDALE	SPRINGFIELD	COAL	5.8	192.0
372.2	CARBONDALE		SHALE	6.7	197.8
365.5	CARBONDALE		LIMESTONE	0.5	204.5
365.0	CARBONDALE		SHALE	7.5	205.0
357.5	CARBONDALE		SHALE	2.5	212.5

MAPID: 10720926000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 18 **QUARTERS/FOOTAGES:** 2633' S line, 231' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.463599 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.187116 **DATE COLLECTED:** 7 / 20 / 1979
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 260.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
430.0	CARBONDALE	DANVILLE	COAL	1.3	145.0
401.3	CARBONDALE	HERRIN	COAL	3.3	173.7
339.8	CARBONDALE	SPRINGFIELD	COAL	6.1	235.2

MAPID: 10720926000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 18 **QUARTERS/FOOTAGES:** 2633' S line, 231' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.463599 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.187116 **DATE COLLECTED:** 7 / 20 / 1979
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 260.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
575.0			CLAY	18.0	0.0
557.0			SANDY CLAY	41.0	18.0
516.0			SAND & GRAVEL	29.0	59.0
487.0	MODESTO		SHALE	54.0	88.0
433.0	MODESTO		BLACK SHALE	2.0	142.0
431.0	CARBONDALE	DANVILLE	COAL	1.5	144.0
429.5	CARBONDALE		SHALE	11.0	145.5
418.5	CARBONDALE		SHALE	13.5	156.5
405.0	CARBONDALE	BRERETON	LIMESTONE	3.0	170.0
402.0	CARBONDALE		SHALE	0.5	173.0
401.5	CARBONDALE	HERRIN	COAL	3.0	173.5
398.5	CARBONDALE		SHALE	54.0	176.5
344.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	230.5
343.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.7	231.5
339.8	CARBONDALE	SPRINGFIELD	COAL	6.1	235.2
333.7	CARBONDALE		SHALE	14.2	241.3
319.5	CARBONDALE		SHALE	4.5	255.5

MAPID: 10721134000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 19

QUARTERS/FOOTAGES: 33' N line, 2617' E line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.472039

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.179656

DATE COLLECTED: 5 / 12 / 1977

SURFACE ELEVATION (FT.): 580.0

LOGGED (FT.): 240.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
460.5	CARBONDALE	DANVILLE	COAL	1.1	119.5	
429.8	CARBONDALE	HERRIN	COAL	1.8	150.2	
368.6	CARBONDALE	SPRINGFIELD	COAL	6.0	211.4	

MAPID: 10721134000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 19 **QUARTERS/FOOTAGES:** 33' N line, 2617' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.472039 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.179656 **DATE COLLECTED:** 5 / 12 / 1977
SURFACE ELEVATION (FT.): 580.0 **LOGGED (FT.):** 240.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
580.0			CLAY	1.0	0.0
579.0			CLAY	17.0	1.0
562.0			CLAY, SAND & GRAVEL	10.0	18.0
552.0			CLAY	16.0	28.0
536.0	MODESTO		SHALE	22.0	44.0
514.0	MODESTO		SHALE	5.0	66.0
509.0	MODESTO		SHALE	43.0	71.0
466.0	MODESTO		SHALE	5.0	114.0
461.0	CARBONDALE	DANVILLE	COAL	1.0	119.0
460.0	CARBONDALE		SHALE	11.0	120.0
449.0	CARBONDALE		SHALE	9.0	131.0
440.0	CARBONDALE	ANVIL ROCK	SANDSTONE	2.5	140.0
437.5	CARBONDALE		SHALE	4.0	142.5
433.5	CARBONDALE		SHALE	3.0	146.5
430.5	CARBONDALE	HERRIN	COAL	2.5	149.5
428.0	CARBONDALE		UNDERCLAY	1.2	152.0
426.8	CARBONDALE		CORE LOSS	0.3	153.2
426.6	CARBONDALE		SHALE	52.6	153.4
374.0	CARBONDALE	ST. DAVID	LIMESTONE	1.2	206.0
372.8	CARBONDALE	TURNER MINE	BLACK SHALE	4.3	207.2
368.6	CARBONDALE	SPRINGFIELD	COAL	6.0	211.4
362.6	CARBONDALE		UNDERCLAY	5.6	217.4
357.0	CARBONDALE	HANOVER	LIMESTONE	1.0	223.0
356.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	224.0
354.0	CARBONDALE		SHALE	14.0	226.0

MAPID: 10721182000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 20

QUARTERS/FOOTAGES: 1206' S line, 1302' W line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.457749

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.168542

DATE COLLECTED: 5 / 12 / 1977

SURFACE ELEVATION (FT.): 575.0

LOGGED (FT.): 260.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
438.0	CARBONDALE	DANVILLE	COAL	1.5	137.0	
409.2	CARBONDALE	HERRIN	COAL	4.2	165.8	
341.0	CARBONDALE	SPRINGFIELD	COAL	6.1	234.0	

MAPID: 10721182000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 20 **QUARTERS/FOOTAGES:** 1206' S line, 1302' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.457749 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.168542 **DATE COLLECTED:** 5 / 12 / 1977
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 260.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
575.0			CLAY	1.0	0.0
574.0			SILTY CLAY	17.0	1.0
557.0			CLAY, SAND & GRAVEL	30.2	18.0
527.0	MODESTO	WEST FRANKLIN	LIMESTONE	10.0	48.0
517.0	MODESTO		BLACK SHALE	1.5	58.0
515.5	MODESTO		SHALE	20.5	59.5
495.0	MODESTO		SHALE	19.5	80.0
475.5	MODESTO		SHALE	7.5	99.5
468.0	MODESTO		SHALE	29.0	107.0
439.0	MODESTO		BLACK SHALE	1.0	136.0
438.0	CARBONDALE	DANVILLE	COAL	1.5	137.0
436.5	CARBONDALE		CLAYSTONE & SHALE	9.5	138.5
427.0	CARBONDALE	ANVIL ROCK	SANDSTONE	6.0	148.0
421.0	CARBONDALE		SHALE	11.8	154.0
409.2	CARBONDALE	HERRIN	COAL	4.2	165.8
405.0	CARBONDALE		UNDERCLAY	2.5	170.0
402.5	CARBONDALE		LIMESTONE	1.5	172.5
401.0	CARBONDALE		SHALE	51.7	174.0
349.3	CARBONDALE	ST. DAVID	LIMESTONE	3.3	225.7
346.0	CARBONDALE	ST. DAVID	SHALE	2.0	229.0
344.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	231.0
342.0	CARBONDALE	SPRINGFIELD	COAL	8.0	233.0
334.0	CARBONDALE		CLAYSTONE & SILTSTONE	2.0	241.0
332.0	CARBONDALE		SHALE	3.0	243.0
329.0	CARBONDALE	EXCELLO	BLACK SHALE	2.5	246.0
326.5	CARBONDALE	HOUCHIN CREEK	COAL	0.5	248.5
326.0	CARBONDALE		SHALE	3.0	249.0
323.0	CARBONDALE		SHALE	8.0	252.0

MAPID: 10720927000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 21

QUARTERS/FOOTAGES: 2601' N line, 1056' E line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.428585

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.172369

DATE COLLECTED: 7 / 11 / 1979

SURFACE ELEVATION (FT.): 575.0

LOGGED (FT.): 280.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
408.0	CARBONDALE	DANVILLE	COAL	2.0	167.0	
379.0	CARBONDALE	HERRIN	COAL	4.5	196.0	
318.3	CARBONDALE	SPRINGFIELD	COAL	5.9	256.7	

MAPID: 10720927000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 21 QUARTERS/FOOTAGES: 2601' N line, 1056' E line

QUADRANGLE: LINCOLN WEST LONGITUDE: -89.428585 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.172369 DATE COLLECTED: 7 / 11 / 1979

SURFACE ELEVATION (FT.): 575.0 LOGGED (FT.): 280.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
575.0			SOIL	4.0	0.0
571.0			CLAY	3.0	4.0
568.0			CLAY, SAND & GRAVEL	40.5	7.0
527.5			SAND & GRAVEL	2.5	47.5
525.0	MODESTO		BLACK SHALE	2.5	50.0
522.5	MODESTO	CHAPEL	COAL	2.0	52.5
520.5	MODESTO		SHALE	16.0	54.5
504.5	MODESTO	WEST FRANKLIN	LIMESTONE	9.5	70.5
495.0	MODESTO		BLACK SHALE	1.0	80.0
494.0	MODESTO		SHALE	3.5	81.0
490.5	MODESTO		SHALE	9.5	84.5
481.0	MODESTO	PIASA	LIMESTONE	5.5	94.0
475.5	MODESTO		SHALE	5.5	99.5
470.0	MODESTO		SHALE	6.0	105.0
464.0	MODESTO		SHALE	49.0	111.0
415.0	MODESTO		BLACK SHALE	5.0	160.0
410.0	CARBONDALE	DANVILLE	COAL	1.5	165.0
408.5	CARBONDALE		SHALE	14.0	166.5
394.5	CARBONDALE	ANVIL ROCK	SANDSTONE	3.5	180.5
391.0	CARBONDALE		SHALE	11.5	184.0
379.5	CARBONDALE	HERRIN	COAL	4.5	195.5
375.0	CARBONDALE		SHALE	4.5	200.0
370.5	CARBONDALE		SHALE	25.5	204.5
345.0	CARBONDALE		SHALE	20.0	230.0
325.0	CARBONDALE	ST. DAVID	LIMESTONE	2.0	250.0
323.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.7	252.0
318.3	CARBONDALE	SPRINGFIELD	COAL	5.9	256.7
312.4	CARBONDALE		UNDERCLAY	0.7	262.6
311.7	CARBONDALE		SHALE	1.4	263.3
310.3	CARBONDALE		CORE LOSS	0.3	264.7
310.0	CARBONDALE		SHALE	12.5	265.0
297.5	CARBONDALE		SHALE	2.5	277.5

MAPID: 10720887000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 23

QUARTERS/FOOTAGES: 2600' S line, 64' W line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.405659

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.172154

DATE COLLECTED: 4 / 19 / 1977

SURFACE ELEVATION (FT.): 560.0

LOGGED (FT.): 300.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
429.0	CARBONDALE	DANVILLE	COAL	5.4	131.0	
335.4	CARBONDALE	SPRINGFIELD	COAL	5.4	224.6	

MAPID: 10720887000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 23 QUARTERS/FOOTAGES: 2600' S line, 64' W line
 QUADRANGLE: LINCOLN WEST LONGITUDE: -89.405659 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.172154 DATE COLLECTED: 4 / 19 / 1977
 SURFACE ELEVATION (FT.): 560.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
560.0			CLAY	10.0	0.0	
550.0			CLAY, SAND & GRAVEL	9.0	10.0	
541.0			SAND & GRAVEL	18.0	19.0	
523.0	MODESTO	WEST FRANKLIN	LIMESTONE	12.0	37.0	
511.0	MODESTO		BLACK SHALE	2.0	49.0	
509.0	MODESTO		SHALE	8.0	51.0	
501.0	MODESTO		LIMESTONE	4.0	59.0	
497.0	MODESTO		SHALE	8.0	63.0	
489.0	MODESTO		SHALE	55.0	71.0	
434.0	MODESTO		BLACK SHALE	1.5	126.0	
432.5	MODESTO		SHALE	3.0	127.5	
429.5	CARBONDALE	DANVILLE	COAL	1.5	130.5	
428.0	CARBONDALE		SHALE	25.5	132.0	
402.5	CARBONDALE		SHALE	1.0	157.5	
401.5	CARBONDALE	ANVIL ROCK	SANDSTONE	24.5	158.5	
385.0	CARBONDALE	HERRIN	COAL	0.0	175.0	
377.0	CARBONDALE		SHALE	30.0	183.0	
347.0	CARBONDALE		SHALE	6.7	213.0	
340.3	CARBONDALE	ST. DAVID	LIMESTONE	0.8	219.7	WITH LS STREAKS
339.6	CARBONDALE	TURNER MINE	BLACK SHALE	3.9	220.4	SILTY 158.5-177
335.7	CARBONDALE		CORE LOSS	0.3	224.3	HERRIN COAL ERODED BY CHANNEL
335.4	CARBONDALE	SPRINGFIELD	COAL	5.6	224.6	
329.8	CARBONDALE		UNDERCLAY	5.3	230.2	NODULES; CORE #1 215- 224.6
324.5	CARBONDALE		LIMESTONE	3.9	235.5	
320.5	CARBONDALE	EXCELLO	BLACK SHALE	2.5	239.5	
318.0	CARBONDALE		SHALE	3.0	242.0	
315.0	CARBONDALE		SHALE	9.0	245.0	CORE #2 224.6-232.80
306.0	CARBONDALE		SHALE	7.0	254.0	
299.0	CARBONDALE		SHALE	39.0	261.0	

MAPID: 10721135000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 24

QUARTERS/FOOTAGES: 693' S line, 1538' E line

QUADRANGLE: LINCOLN EAST

LONGITUDE: -89.373641

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.166805

DATE COLLECTED: 4 / 29 / 1977

SURFACE ELEVATION (FT.): 590.0

LOGGED (FT.): 270.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
423.0	CARBONDALE	DANVILLE	COAL	1.0	167.0	
395.7	CARBONDALE	HERRIN	COAL	4.2	194.3	
345.4	CARBONDALE	SPRINGFIELD	COAL	4.6	244.6	

MAPID: 10721135000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 24 **QUARTERS/FOOTAGES:** 693' S line, 1538' E line
QUADRANGLE: LINCOLN EAST **LONGITUDE:** -89.373641 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.166805 **DATE COLLECTED:** 4 / 29 / 1977
SURFACE ELEVATION (FT.): 590.0 **LOGGED (FT.):** 270.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
590.0			SANDY CLAY	26.0	0.0
564.0			CLAY	26.0	26.0
538.0			CLAY, SAND & GRAVEL	40.0	52.0
498.0	MODESTO	WEST FRANKLIN	LIMESTONE	11.5	92.0
486.5	MODESTO		BLACK SHALE	2.5	103.5
484.0	MODESTO		SHALE	2.0	106.0
482.0	MODESTO		SHALE	8.0	108.0
474.0	MODESTO		SHALE	6.0	116.0
468.0	MODESTO		LIMESTONE	1.0	122.0
467.0	MODESTO		SHALE	4.0	123.0
463.0	MODESTO		SHALE	33.0	127.0
430.0	MODESTO		SILTSTONE	2.0	160.0
428.0	MODESTO		BLACK SHALE	5.0	162.0
423.0	CARBONDALE	DANVILLE	COAL	1.0	167.0
422.0	CARBONDALE		SHALE	8.0	168.0
414.0	CARBONDALE		SHALE	4.0	176.0
410.0	CARBONDALE		SHALE	8.5	180.0
401.5	CARBONDALE		SHALE	1.0	188.5
400.5	CARBONDALE	BRERETON	LIMESTONE	4.8	189.5
395.7	CARBONDALE	HERRIN	COAL	4.2	194.3
391.5	CARBONDALE		SHALE	9.5	198.5
382.0	CARBONDALE		SHALE	4.0	208.0
378.0	CARBONDALE		SHALE	28.0	212.0
350.0	CARBONDALE	TURNER MINE	BLACK SHALE	4.6	240.0
345.4	CARBONDALE	SPRINGFIELD	COAL	4.6	244.6
340.8	CARBONDALE		UNDERCLAY	2.1	249.2
338.7	CARBONDALE		LIMESTONE	0.2	251.3
338.5	CARBONDALE		CORE LOSS	1.0	251.5
337.5	CARBONDALE		SHALE	5.0	252.5
332.5	CARBONDALE	HOUCHIN CREEK	SHALE	2.5	257.5
330.0	CARBONDALE		SHALE	5.0	260.0
325.0	CARBONDALE		SHALE	5.0	265.0

MAPID: 10721179000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 24

QUARTERS/FOOTAGES: 90' S line, 2550' E line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.377259

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.165151

DATE COLLECTED: 7 / 16 / 1979

SURFACE ELEVATION (FT.): 580.0

LOGGED (FT.): 250.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
433.5	CARBONDALE	DANVILLE	COAL	1.5	146.5	
403.0	CARBONDALE	HERRIN	COAL	4.0	177.0	
351.9	CARBONDALE	SPRINGFIELD	COAL	4.9	228.1	

MAPID: 10721179000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 24 **QUARTERS/FOOTAGES:** 90' S line, 2550' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.377259 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.165151 **DATE COLLECTED:** 7 / 16 / 1979
SURFACE ELEVATION (FT.): 580.0 **LOGGED (FT.):** 250.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
580.0			CLAY	7.0	0.0
573.0			SAND & GRAVEL	2.0	7.0
571.0			CLAY	35.0	9.0
536.0			SILT & SAND	13.0	44.0
523.0			CLAYSTONE	19.0	57.0
504.0	MODESTO	WEST FRANKLIN	LIMESTONE	6.0	76.0
498.0	MODESTO		BLACK SHALE	2.0	82.0
496.0	MODESTO		SHALE	6.0	84.0
490.0	MODESTO		SHALE	4.5	90.0
485.5	MODESTO		SANDSTONE	3.0	94.5
482.5	MODESTO		SHALE	14.5	97.5
468.0	MODESTO		SHALE	6.0	112.0
462.0	MODESTO		SHALE	26.5	118.0
435.5	MODESTO		BLACK SHALE	2.5	144.5
433.0	CARBONDALE	DANVILLE	COAL	1.5	147.0
431.5	CARBONDALE		SHALE	12.5	148.5
419.0	CARBONDALE	ANVIL ROCK	SANDSTONE	16.0	161.0
403.0	CARBONDALE	BRERETON	LIMESTONE	1.5	177.0
401.5	CARBONDALE	HERRIN	COAL	3.0	178.5
398.5	CARBONDALE		SHALE	7.5	181.5
391.0	CARBONDALE		SHALE	12.0	189.0
379.0	CARBONDALE		SANDSTONE	4.0	201.0
375.0	CARBONDALE		SHALE	10.0	205.0
365.0	CARBONDALE		SHALE	4.0	215.0
361.0	CARBONDALE		SHALE	5.5	219.0
355.5	CARBONDALE	ST. DAVID	LIMESTONE	1.6	224.5
353.9	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	226.1
351.9	CARBONDALE	SPRINGFIELD	COAL	4.9	228.1
347.0	CARBONDALE		SHALE	1.8	233.0
345.2	CARBONDALE		CORE LOSS	0.2	234.8
345.0	CARBONDALE		SHALE	15.0	235.0

MAPID: 10720866000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 26

QUARTERS/FOOTAGES: 1375' N line, 40' W line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.405555

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.161184

DATE COLLECTED: 8 / 7 / 1978

SURFACE ELEVATION (FT.): 565.0

LOGGED (FT.): 280.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
398.0	CARBONDALE	DANVILLE	COAL	1.5	167.0	
366.0	CARBONDALE	HERRIN	COAL	4.0	199.0	
304.6	CARBONDALE	SPRINGFIELD	COAL	6.0	260.4	

MAPID: 10720866000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 26 **QUARTERS/FOOTAGES:** 1375' N line, 40' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.405555 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.161184 **DATE COLLECTED:** 8 / 7 / 1978
SURFACE ELEVATION (FT.): 565.0 **LOGGED (FT.):** 280.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
565.0			SANDY CLAY	10.0	0.0	
555.0			SAND & GRAVEL	2.0	10.0	
553.0			SANDY CLAY	3.0	12.0	
550.0			SAND & GRAVEL	45.0	15.0	
505.0			CLAY	12.0	60.0	
493.0	MODESTO		SHALE	15.0	72.0	
478.0	MODESTO	WEST FRANKLIN	LIMESTONE	10.0	87.0	
468.0	MODESTO		BLACK SHALE	2.0	97.0	
466.0	MODESTO		SHALE	8.5	99.0	
457.5	MODESTO		LIMESTONE	4.0	107.5	
453.5	MODESTO		SHALE	5.5	111.5	
448.0	MODESTO		LIMESTONE	1.5	117.0	
446.5	MODESTO		SHALE	12.5	118.5	
434.0	MODESTO		SHALE	5.0	131.0	
429.0	MODESTO		SHALE	29.5	136.0	
399.5	MODESTO		BLACK SHALE	1.5	165.5	
398.0	CARBONDALE	DANVILLE	COAL	1.0	167.0	
397.0	CARBONDALE		SHALE	28.0	168.0	SHALEY BASE
369.0	CARBONDALE	BRERETON	LIMESTONE	4.8	196.0	
364.2	CARBONDALE	HERRIN	COAL	4.0	200.8	WITH SS LENSES
360.2	CARBONDALE		SHALE	44.2	204.8	
316.0	CARBONDALE		SHALE	7.0	249.0	
309.0	CARBONDALE	ST. DAVID	LIMESTONE	1.0	256.0	CORE #1 259-267.5
308.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.4	257.0	
304.6	CARBONDALE	SPRINGFIELD	COAL	6.0	260.4	
298.6	CARBONDALE		UNDERCLAY	1.0	266.4	
297.6	CARBONDALE		CORE LOSS	0.1	267.4	WITH LS NODULES; MAYBE BKSH AT 274.5
297.5	CARBONDALE		SHALE	12.5	267.5	

MAPID: 10700026000C VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 27 QUARTERS/FOOTAGES:

QUADRANGLE: LINCOLN WEST LONGITUDE: -89.415073

GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 40.157783

DATE COLLECTED: 0 / 0 / 1938

SURFACE ELEVATION (FT.): LOGGED (FT.): 284.8

LOG TYPE: Drillers Log

SOURCE: BLISS COAL MINING CO.

WELL TYPE: Coal Test

COMMENT: LOG OF SHAFT, NW SE NEAR CENTER LINE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNCONSOLIDATED	108.0	0.0	
-	MODESTO		LIMESTONE	52.0	108.0	
-	MODESTO		SHALE	20.0	160.0	SOAPSTONE
-	MODESTO		SHALE	3.0	180.0	SLATE
-	CARBONDALE	DANVILLE	COAL	2.0	183.0	
-	CARBONDALE	ANVIL ROCK	SANDSTONE	24.0	185.0	
-	CARBONDALE		SHALE	4.0	209.0	SLATE
-	CARBONDALE	HERRIN	COAL	6.9	213.0	
-	CARBONDALE		UNDERCLAY	4.0	219.9	
-	CARBONDALE		SHALE	12.0	223.9	SOAPSTONE
-	CARBONDALE		SANDSTONE	29.0	235.9	
-	CARBONDALE	ST. DAVID	LIMESTONE	3.0	264.9	
-	CARBONDALE	TURNER MINE	SHALE	2.5	267.9	SLATE
-	CARBONDALE		LIMESTONE	0.7	270.4	CONCRETION?
-	CARBONDALE	SPRINGFIELD	COAL	6.0	271.1	
-	CARBONDALE		UNDERCLAY	4.0	277.1	
-	CARBONDALE	EXCELLO	BLACK SHALE	3.5	281.1	
-	CARBONDALE	HOUCHIN CREEK	COAL	0.3	284.6	

MAPID: 10700028000C VERSION: 1 PROJECT: NCRDS88

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 27 QUARTERS/FOOTAGES:

QUADRANGLE: LINCOLN WEST LONGITUDE: -89.415073 GEOLOGIST: R. SMITH

CONFIDENTIAL: N LATITUDE: 40.157783 DATE COLLECTED: 0 / 0 / 1933

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

SOURCE: LINCOLN MINING CO. WELL TYPE: Coal Test

COMMENT: 600' WEST OF SHAFT

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNCONSOLIDATED	101.5	0.0	
-	CARBONDALE		RED SHALE	12.5	101.5	
-	CARBONDALE		SHALE	91.0	114.0	SOAPSTONE
-	CARBONDALE	HERRIN	COAL	2.5	205.0	
-	CARBONDALE		UNDERCLAY	3.5	207.5	
-	CARBONDALE		UNCLASSIFIED	2.0	211.0	ROCK
-	CARBONDALE		SHALE	45.0	213.0	SOAPSTONE
-	CARBONDALE	ST. DAVID	LIMESTONE	1.2	258.0	
-	CARBONDALE	TURNER MINE	SHALE	2.8	259.2	SLATE
-	CARBONDALE	SPRINGFIELD	COAL	6.0	262.0	

MAPID: 10720929000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 27 QUARTERS/FOOTAGES: 75' S line, 350' W line

QUADRANGLE: LINCOLN WEST LONGITUDE: -89.423188 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.150744 DATE COLLECTED: 7 / 16 / 1979

SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 320.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
377.5	CARBONDALE	DANVILLE	COAL	1.5	207.5	
345.0	CARBONDALE	HERRIN	COAL	3.0	240.0	
284.7	CARBONDALE	SPRINGFIELD	COAL	5.7	300.3	

MAPID: 10720929000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 27 **QUARTERS/FOOTAGES:** 75' S line, 350' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.423188 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.150744 **DATE COLLECTED:** 7 / 16 / 1979
SURFACE ELEVATION (FT.): 585.0 **LOGGED (FT.):** 320.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
585.0			CLAY	32.0	0.0	
553.0			SAND & GRAVEL	6.0	32.0	
547.0			CLAY	14.0	38.0	
533.0	MODESTO		SHALE	31.0	52.0	
502.0	MODESTO		BLACK SHALE	5.5	83.0	
496.5	MODESTO		SHALE	20.0	88.5	
476.5	MODESTO	CHAPEL	BLACK SHALE	5.0	108.5	UNCERTAIN CORRELATION
471.5	MODESTO		SHALE	3.5	113.5	
468.0	MODESTO		SHALE	13.0	117.0	
455.0	MODESTO	WEST FRANKLIN	LIMESTONE	12.5	130.0	
442.5	MODESTO		BLACK SHALE	2.0	142.5	
440.5	MODESTO		SHALE	5.5	144.5	
435.0	MODESTO		SHALE	5.5	150.0	
429.5	MODESTO		LIMESTONE	1.5	155.5	
428.0	MODESTO		SHALE	17.0	157.0	
411.0	MODESTO		SHALE	9.0	174.0	
402.0	MODESTO		SHALE	22.0	183.0	
380.0	MODESTO		BLACK SHALE	3.5	205.0	
376.5	CARBONDALE	DANVILLE	COAL	1.5	208.5	
375.0	CARBONDALE		SHALE	8.0	210.0	
367.0	CARBONDALE		SHALE	5.5	218.0	
361.5	CARBONDALE		SHALE	16.0	223.5	
345.5	CARBONDALE	BRERETON	LIMESTONE	1.5	239.5	
344.0	CARBONDALE	HERRIN	COAL	2.0	241.0	
342.0	CARBONDALE		SHALE	2.0	243.0	
340.0	CARBONDALE		LIMESTONE	10.5	245.0	
329.5	CARBONDALE		SHALE	7.0	255.5	
322.5	CARBONDALE		SHALE	8.5	262.5	
314.0	CARBONDALE		SHALE	24.2	271.0	
289.8	CARBONDALE	ST. DAVID	LIMESTONE	1.8	295.2	
288.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.3	297.0	
284.7	CARBONDALE	SPRINGFIELD	COAL	6.0	300.3	
278.7	CARBONDALE		SHALE	5.3	306.3	
273.5	CARBONDALE		LIMESTONE	3.0	311.5	
270.5	CARBONDALE		SHALE	3.5	314.5	
267.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	318.0	

MAPID: 10720867000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 28

QUARTERS/FOOTAGES: 2000' N line, 640' W line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.441248

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.159569

DATE COLLECTED: 8 / 3 / 1978

SURFACE ELEVATION (FT.): 562.0

LOGGED (FT.): 250.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
397.0	CARBONDALE	HERRIN	COAL	3.4	165.0	
332.7	CARBONDALE	SPRINGFIELD	COAL	6.0	229.3	

MAPID: 10720867000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 28 **QUARTERS/FOOTAGES:** 2000' N line, 640' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.441248 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.159569 **DATE COLLECTED:** 8 / 3 / 1978
SURFACE ELEVATION (FT.): 562.0 **LOGGED (FT.):** 250.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
562.0			CLAY	8.0	0.0	W/ THIN CLAY STREAKS
554.0			SAND & GRAVEL	47.0	8.0	
506.0	MODESTO	WEST FRANKLIN	LIMESTONE	7.5	56.0	
498.5	MODESTO		BLACK SHALE	2.0	63.5	
496.5	MODESTO		SHALE	1.5	65.5	
495.0	MODESTO		SHALE	4.0	67.0	
491.0	MODESTO		SHALE	6.0	71.0	
485.0	MODESTO		SHALE	19.0	77.0	
466.0	MODESTO		LIMESTONE	1.0	96.0	
465.0	MODESTO		SHALE	4.0	97.0	
461.0	MODESTO		SHALE	4.5	101.0	
456.5	MODESTO		SHALE	28.5	105.5	
428.0	MODESTO	DANVILLE	BLACK SHALE	1.5	134.0	
426.5	CARBONDALE		COAL	1.5	135.5	
425.0	CARBONDALE		SHALE	8.0	137.0	
417.0	CARBONDALE	ANVIL ROCK	SANDSTONE	3.5	145.0	
413.5	CARBONDALE		SHALE	11.0	148.5	
402.5	CARBONDALE		SHALE	4.5	159.5	
398.0	CARBONDALE	ANNA	BLACK SHALE	1.0	164.0	
397.0	CARBONDALE	HERRIN	COAL	3.4	165.0	CORE #1 165-170
393.6	CARBONDALE		UNDERCLAY	1.5	168.4	
392.1	CARBONDALE		CORE LOSS	0.1	169.9	
392.0	CARBONDALE		SHALE	0.5	170.0	
391.5	CARBONDALE		LIMESTONE	3.0	170.5	
388.5	CARBONDALE	ST. DAVID	SHALE	6.0	173.5	
382.5	CARBONDALE		SANDSTONE	4.5	179.5	
378.0	CARBONDALE		SHALE	21.0	184.0	
357.0	CARBONDALE		SHALE	18.0	205.0	
339.0	CARBONDALE		LIMESTONE	1.5	223.0	
337.5	CARBONDALE		BLACK SHALE	4.8	224.5	
332.7	CARBONDALE		COAL	6.0	229.3	CORE #2 225-235.50
326.7	CARBONDALE		CLAYSTONE & SHALE	0.1	235.3	
326.7	CARBONDALE		CORE LOSS	0.2	235.3	
326.5	CARBONDALE		SHALE	7.5	235.5	
319.0	CARBONDALE	SPRINGFIELD	BLACK SHALE	1.5	243.0	OFF GAMMA
317.5	CARBONDALE		SHALE	5.5	244.5	

MAPID: 10720930000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 30

QUARTERS/FOOTAGES: 2525' S line, 130' E line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.462776

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.157801

DATE COLLECTED: 7 / 23 / 1979

SURFACE ELEVATION (FT.): 582.0

LOGGED (FT.): 265.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
432.5	CARBONDALE	DANVILLE	COAL	1.5	149.5	
402.2	CARBONDALE	HERRIN	COAL	4.7	179.8	
337.5	CARBONDALE	SPRINGFIELD	COAL	6.4	244.5	

MAPID: 10720930000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 30 **QUARTERS/FOOTAGES:** 2525' S line, 130' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.462776 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.157801 **DATE COLLECTED:** 7 / 23 / 1979
SURFACE ELEVATION (FT.): 582.0 **LOGGED (FT.):** 265.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
582.0			CLAY	36.0	0.0
546.0			SILT	19.0	36.0
526.0	MODESTO		SHALE	9.0	56.0
517.0	MODESTO	WEST FRANKLIN	LIMESTONE	10.5	65.0
506.5	MODESTO		BLACK SHALE	1.0	75.5
505.5	MODESTO		SHALE	19.5	76.5
486.0	MODESTO		LIMESTONE	1.5	96.0
484.5	MODESTO		SHALE	10.0	97.5
474.5	MODESTO		LIMESTONE	1.0	107.5
473.5	MODESTO		SHALE	5.5	108.5
468.0	MODESTO		SHALE	10.0	114.0
458.0	MODESTO		SHALE	23.5	124.0
434.5	MODESTO		BLACK SHALE	3.0	147.5
431.5	CARBONDALE	DANVILLE	COAL	1.5	150.5
430.0	CARBONDALE		SHALE	11.0	152.0
419.0	CARBONDALE		SHALE	3.5	163.0
415.5	CARBONDALE	ANVIL ROCK	SANDSTONE	13.5	166.5
402.0	CARBONDALE	HERRIN	COAL	4.5	180.0
397.5	CARBONDALE		SHALE	6.0	184.5
391.5	CARBONDALE		LIMESTONE	1.5	190.5
390.0	CARBONDALE		SHALE	4.5	192.0
385.5	CARBONDALE		SHALE	20.5	196.5
365.0	CARBONDALE		SHALE	22.8	217.0
342.2	CARBONDALE	ST. DAVID	LIMESTONE	1.8	239.8
340.4	CARBONDALE	TURNER MINE	BLACK SHALE	2.9	241.6
337.5	CARBONDALE	SPRINGFIELD	COAL	6.4	244.5
331.1	CARBONDALE		SHALE	0.3	250.9
330.8	CARBONDALE		CORE LOSS	0.3	251.2
330.5	CARBONDALE		SHALE	7.0	251.5
323.5	CARBONDALE	EXCELLO	BLACK SHALE	2.0	258.5
321.5	CARBONDALE	HOUCHIN CREEK	COAL	0.5	260.5
321.0	CARBONDALE		SHALE	4.0	261.0

MAPID: 10700024000C VERSION: 1

PROJECT: NCRDS88

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 31

QUARTERS/FOOTAGES: NE NW SW

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.480828

GEOLOGIST: R. SMITH

CONFIDENTIAL: N

LATITUDE: 40.14255

DATE COLLECTED: 7 / 0 / 1949

SURFACE ELEVATION (FT.):

LOGGED (FT.): 226.5

LOG TYPE: Drillers Log

SOURCE: A.M. PARK

WELL TYPE: Diamond Drill

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
-			UNCONSOLIDATED	22.0	0.0	
-	MODESTO	CHAPEL	COAL	1.8	22.0	UNCERTAIN CORRELATION
-	MODESTO		UNDERCLAY	6.2	23.8	
-	MODESTO		CORE LOSS	6.0	30.0	
-	MODESTO		SANDSTONE/SHALE	0.8	36.0	
-	MODESTO		GRAY SHALE	5.8	36.8	
-	MODESTO		CORE LOSS	1.3	42.5	
-	MODESTO		GRAY SHALE	1.8	43.8	
-	MODESTO		LIMESTONE	1.9	45.6	
-	MODESTO		SILTSTONE	1.2	47.5	
-	MODESTO		LIMESTONE	8.8	48.7	
-	MODESTO		DARK SHALE & BLACK SHALE	1.4	57.5	
-	MODESTO		BLACK SHALE	0.1	58.9	
-	MODESTO		LIMESTONE	0.1	59.0	
-	MODESTO		CLAYSTONE & SHALE	1.4	59.1	
-	MODESTO		SHALE	16.0	60.5	
-	MODESTO		SANDSTONE	4.1	76.5	
-	MODESTO		SILTSTONE	6.0	80.6	
-	MODESTO		GRAY SHALE	4.4	86.6	
-	MODESTO		CORE LOSS	0.8	91.0	
-	MODESTO		GRAY SHALE	6.3	91.8	
-	MODESTO		CORE LOSS	0.7	98.0	
-	MODESTO		SHALE	1.4	98.7	
-	MODESTO	PIASA	UNCLASSIFIED	0.3	100.1	SEPTURIAN CONCRETION
-	MODESTO		LIMESTONE	0.6	100.4	
-	MODESTO		SHALE	5.0	101.0	CORRELATION UNCERTAIN
-	MODESTO		CORE LOSS	0.3	106.0	
-	MODESTO		SHALE	14.1	106.3	
-	MODESTO		LIMESTONE	0.3	120.3	
-	MODESTO		GRAY SHALE	5.4	120.7	
-	MODESTO		BLACK SHALE	3.1	126.1	
-	MODESTO		CORE LOSS	0.8	129.2	
-	MODESTO		LIMESTONE	0.3	130.0	
-	CARBONDALE	DANVILLE	COAL	1.3	130.3	
-	CARBONDALE		UNDERCLAY	6.9	131.5	
-	CARBONDALE		GRAY SHALE	1.6	138.4	
-	CARBONDALE	ANVIL ROCK	SANDSTONE	6.0	140.0	
-	CARBONDALE		GRAY SHALE	11.7	146.0	

-	CARBONDALE	HERRIN	COAL	2.1	157.7	
-	CARBONDALE		UNDERCLAY	3.6	159.8	
-	CARBONDALE		GRAY SHALE	1.3	163.3	
-	CARBONDALE		SANDSTONE	6.5	164.6	
-	CARBONDALE		SHALE & SANDSTONE	3.9	171.1	
-	CARBONDALE		CORE LOSS	2.5	175.0	
-	CARBONDALE		SHALE & SANDSTONE	3.0	177.5	
-	CARBONDALE		SANDSTONE	13.6	180.5	
-	CARBONDALE		SANDSTONE/SILTSTONE	2.4	194.1	
-	CARBONDALE		SILTSTONE/SANDSTONE	5.1	196.5	
-	CARBONDALE		GRAY SHALE	14.4	201.6	
-	CARBONDALE	ST. DAVID	LIMESTONE	1.3	216.0	
-	CARBONDALE	TURNER MINE	BLACK SHALE	2.2	217.3	FISH SCALES
-	CARBONDALE	TURNER MINE	UNCLASSIFIED	0.9	219.5	CONCRETION
-	CARBONDALE	TURNER MINE	BLACK SHALE	0.1	220.4	
-	CARBONDALE	SPRINGFIELD	COAL	6.0	220.5	

MAPID: 10721136000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 31 **QUARTERS/FOOTAGES:** 2319' S line, 1580' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.467772 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.142671 **DATE COLLECTED:** 5 / 3 / 1977
SURFACE ELEVATION (FT.): 580.0 **LOGGED (FT.):** 260.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
548.0	MODESTO	CHAPEL	COAL	1.0	32.0
443.5	CARBONDALE	DANVILLE	COAL	1.5	136.5
414.5	CARBONDALE	HERRIN	COAL	3.1	165.5
351.9	CARBONDALE	SPRINGFIELD	COAL	6.0	228.1

MAPID: 10721136000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 31 QUARTERS/FOOTAGES: 2319' S line, 1580' E line

QUADRANGLE: LINCOLN WEST LONGITUDE: -89.467772 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.142671 DATE COLLECTED: 5 / 3 / 1977

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 260.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
580.0			CLAY	26.0	0.0
554.0	MODESTO		SHALE	4.0	26.0
550.0	MODESTO		BLACK SHALE	2.0	30.0
548.0	MODESTO	CHAPEL	COAL	1.0	32.0
547.0	MODESTO		SHALE	21.0	33.0
526.0	MODESTO	WEST FRANKLIN	LIMESTONE	11.0	54.0
515.0	MODESTO		BLACK SHALE	2.5	65.0
512.5	MODESTO		SHALE	1.5	67.5
511.0	MODESTO		SHALE	17.5	69.0
493.5	MODESTO		LIMESTONE W/ SHALE	18.5	86.5
475.0	MODESTO		SHALE	7.0	105.0
468.0	MODESTO		SHALE	23.0	112.0
445.0	MODESTO		BLACK SHALE	2.0	135.0
443.0	CARBONDALE	DANVILLE	COAL	1.5	137.0
441.5	CARBONDALE		SHALE	11.5	138.5
430.0	CARBONDALE	ANVIL ROCK	SANDSTONE	2.5	150.0
427.5	CARBONDALE		SHALE	2.5	152.5
425.0	CARBONDALE		SHALE	10.5	155.0
414.5	CARBONDALE	HERRIN	COAL	3.1	165.5
411.4	CARBONDALE		SHALE	4.9	168.6
406.5	CARBONDALE		LIMESTONE	1.5	173.5
405.0	CARBONDALE		SHALE	11.0	175.0
394.0	CARBONDALE		SHALE	15.5	186.0
378.5	CARBONDALE		SANDSTONE	3.5	201.5
375.0	CARBONDALE		SHALE	19.5	205.0
355.5	CARBONDALE	ST. DAVID	LIMESTONE	0.9	224.5
354.6	CARBONDALE	TURNER MINE	BLACK SHALE	2.7	225.4
351.9	CARBONDALE	SPRINGFIELD	COAL	6.0	228.1
345.9	CARBONDALE		UNDERCLAY	3.9	234.1
342.0	CARBONDALE		SHALE	4.0	238.0
338.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	242.0
336.0	CARBONDALE		SHALE	3.2	244.0
332.8	CARBONDALE		LIMESTONE	7.8	247.2
325.0	CARBONDALE		SHALE	5.0	255.0

MAPID: 10720938000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 32

QUARTERS/FOOTAGES: 106' S line, 75' W line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.461701

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.136571

DATE COLLECTED: 8 / 22 / 1979

SURFACE ELEVATION (FT.): 545.0

LOGGED (FT.): 220.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
410.5	CARBONDALE	HERRIN	COAL	0.5	134.5	
355.4	CARBONDALE	SPRINGFIELD	COAL	6.1	189.6	

MAPID: 10720938000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 32 **QUARTERS/FOOTAGES:** 106' S line, 75' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.461701 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.136571 **DATE COLLECTED:** 8 / 22 / 1979
SURFACE ELEVATION (FT.): 545.0 **LOGGED (FT.):** 220.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
545.0			CLAY	6.0	0.0
539.0			SAND & GRAVEL	6.0	6.0
533.0			CLAY	2.0	12.0
531.0			SAND & GRAVEL	3.0	14.0
528.0	MODESTO	WEST FRANKLIN	LIMESTONE	11.5	17.0
516.5	MODESTO		SHALE	9.5	28.5
507.0	MODESTO		SHALE	12.0	38.0
495.0	MODESTO		SHALE	24.0	50.0
471.0	MODESTO		SHALE	7.5	74.0
463.5	MODESTO		SHALE	15.5	81.5
448.0	MODESTO		BLACK SHALE	1.0	97.0
447.0	CARBONDALE	DANVILLE	COAL	0.0	98.0
447.0	CARBONDALE		SHALE	15.0	98.0
432.0	CARBONDALE		LIMESTONE	1.0	113.0
431.0	CARBONDALE		SHALE	19.5	114.0
411.5	CARBONDALE	HERRIN	COAL	1.0	133.5
410.5	CARBONDALE		SHALE	45.5	134.5
365.0	CARBONDALE		SHALE	4.6	180.0
360.4	CARBONDALE	ST. DAVID	LIMESTONE	1.6	184.6
358.8	CARBONDALE	TURNER MINE	BLACK SHALE	3.4	186.2
355.4	CARBONDALE	SPRINGFIELD	COAL	6.1	189.6
349.3	CARBONDALE		SHALE	0.3	195.7
349.0	CARBONDALE		SHALE	9.0	196.0
340.0	CARBONDALE	EXCELLO	BLACK SHALE	0.5	205.0
339.5	CARBONDALE		SHALE	14.5	205.5

MAPID: 10721183000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 32 **QUARTERS/FOOTAGES:** 2412' N line, 2617' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.452722 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.144098 **DATE COLLECTED:** 5 / 3 / 1977
SURFACE ELEVATION (FT.): 542.0 **LOGGED (FT.):** 230.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
433.0	CARBONDALE	DANVILLE	COAL	1.1	109.0
404.5	CARBONDALE	HERRIN	COAL	1.0	137.5
343.8	CARBONDALE	SPRINGFIELD	COAL	5.9	198.2

MAPID: 10721183000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 32 **QUARTERS/FOOTAGES:** 2412' N line, 2617' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.452722 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.144098 **DATE COLLECTED:** 5 / 3 / 1977
SURFACE ELEVATION (FT.): 542.0 **LOGGED (FT.):** 230.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
542.0			SAND & GRAVEL	64.0	0.0
478.0	MODESTO		SHALE	21.0	64.0
457.0	MODESTO		SHALE	19.0	85.0
438.0	MODESTO		BLACK SHALE	5.0	104.0
433.0	CARBONDALE	DANVILLE	COAL	1.0	109.0
432.0	CARBONDALE		SHALE	10.5	110.0
421.5	CARBONDALE		SHALE	3.5	120.5
418.0	CARBONDALE		SHALE	12.5	124.0
405.5	CARBONDALE	HERRIN	COAL	3.0	136.5
402.5	CARBONDALE		SHALE	4.0	139.5
398.5	CARBONDALE		SANDSTONE	3.5	143.5
395.0	CARBONDALE		SHALE	34.0	147.0
361.0	CARBONDALE		SHALE	12.1	181.0
348.9	CARBONDALE	ST. DAVID	LIMESTONE	1.0	193.1
347.9	CARBONDALE	TURNER MINE	BLACK SHALE	4.1	194.1
343.8	CARBONDALE	SPRINGFIELD	COAL	5.9	198.2
337.9	CARBONDALE		CLAYSTONE & SHALE	3.9	204.1
334.0	CARBONDALE	EXCELLO	BLACK SHALE	1.0	208.0
333.0	CARBONDALE		SHALE	21.0	209.0

MAPID: 10721137000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 33

QUARTERS/FOOTAGES: 27' S line, 2567' E line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.433545

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.136185

DATE COLLECTED: 5 / 19 / 1977

SURFACE ELEVATION (FT.): 545.0

LOGGED (FT.): 245.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
411.0	CARBONDALE	DANVILLE	COAL	2.0	134.0	
382.0	CARBONDALE	HERRIN	COAL	2.5	163.0	
319.1	CARBONDALE	SPRINGFIELD	COAL	5.2	225.9	

MAPID: 10721137000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 3W **SECTION:** 33 **QUARTERS/FOOTAGES:** 27' S line, 2567' E line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.433545 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.136185 **DATE COLLECTED:** 5 / 19 / 1977
SURFACE ELEVATION (FT.): 545.0 **LOGGED (FT.):** 245.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
545.0			CLAY	8.0	0.0
537.0			SAND & GRAVEL	28.0	8.0
509.0	MODESTO		SHALE	14.0	36.0
495.0	MODESTO		SHALE	8.5	50.0
486.5	MODESTO	WEST FRANKLIN	LIMESTONE	14.5	58.5
472.0	MODESTO		BLACK SHALE	1.5	73.0
470.5	MODESTO		SHALE	12.0	74.5
458.5	MODESTO		LIMESTONE	4.5	86.5
454.0	MODESTO		SHALE	12.0	91.0
442.0	MODESTO		SHALE	8.0	103.0
434.0	MODESTO		SHALE	19.0	111.0
415.0	MODESTO		BLACK SHALE	4.0	130.0
411.0	CARBONDALE	DANVILLE	COAL	2.0	134.0
409.0	CARBONDALE		SHALE	3.5	136.0
405.5	CARBONDALE		SHALE	10.5	139.5
395.0	CARBONDALE		SHALE	13.0	150.0
382.0	CARBONDALE	HERRIN	COAL	2.2	163.0
379.8	CARBONDALE		SHALE	2.8	165.2
377.0	CARBONDALE		SHALE	41.0	168.0
336.0	CARBONDALE		SANDSTONE	4.5	209.0
331.5	CARBONDALE		SHALE	5.5	213.5
326.0	CARBONDALE	ST. DAVID	LIMESTONE	2.5	219.0
323.5	CARBONDALE	TURNER MINE	BLACK SHALE	4.5	221.5
319.1	CARBONDALE	SPRINGFIELD	COAL	5.2	225.9
313.9	CARBONDALE		UNDERCLAY	10.9	231.1
303.0	CARBONDALE	EXCELLO	BLACK SHALE	3.0	242.0

MAPID: 10721138000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 34

QUARTERS/FOOTAGES: 123' N line, 369' E line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.406829

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.150274

DATE COLLECTED: 5 / 17 / 1977

SURFACE ELEVATION (FT.): 608.0

LOGGED (FT.): 320.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
369.0	CARBONDALE	HERRIN	COAL	5.0	239.0	
313.8	CARBONDALE	SPRINGFIELD	COAL	5.3	294.2	

MAPID: 10721138000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 34 QUARTERS/FOOTAGES: 123' N line, 369' E line
 QUADRANGLE: LINCOLN WEST LONGITUDE: -89.406829 GEOLOGIST: SROKA
 CONFIDENTIAL: N LATITUDE: 40.150274 DATE COLLECTED: 5 / 17 / 1977
 SURFACE ELEVATION (FT.): 608.0 LOGGED (FT.): 320.0 LOG TYPE: Multiple log types
 SOURCE: MOBIL OIL WELL TYPE: Coal Test
 COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
608.0			CLAY	35.0	0.0
573.0			SAND	30.0	35.0
543.0			SAND & GRAVEL	19.0	65.0
524.0			CLAY, SAND & GRAVEL	28.0	84.0
498.0	MODESTO		SHALE	23.0	110.0
475.0	MODESTO	WEST FRANKLIN	LIMESTONE	13.0	133.0
462.0	MODESTO		BLACK SHALE	2.0	146.0
460.0	MODESTO		SHALE	8.5	148.0
451.5	MODESTO		LIMESTONE	3.5	156.5
448.0	MODESTO		SHALE	46.0	160.0
402.0	MODESTO		BLACK SHALE	2.0	206.0
400.0	CARBONDALE	DANVILLE	COAL	1.5	208.0
398.5	CARBONDALE		SHALE	12.5	209.5
386.0	CARBONDALE	ANVIL ROCK	SANDSTONE	8.0	222.0
378.0	CARBONDALE		SHALE	4.0	230.0
374.0	CARBONDALE	BRERETON	LIMESTONE	5.7	234.0
368.3	CARBONDALE	HERRIN	COAL	4.9	239.7
363.4	CARBONDALE		UNDERCLAY	0.4	244.6
363.0	CARBONDALE		CORE LOSS	0.6	245.0
362.5	CARBONDALE		SHALE	31.0	245.5
331.5	CARBONDALE		SANDSTONE	3.0	276.5
328.5	CARBONDALE		SHALE	9.0	279.5
319.5	CARBONDALE	ST. DAVID	LIMESTONE	2.0	288.5
317.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.7	290.5
313.8	CARBONDALE	SPRINGFIELD	COAL	5.3	294.2
308.5	CARBONDALE		UNDERCLAY	0.4	299.5
308.0	CARBONDALE		CORE LOSS	20.0	300.0

MAPID: 10720868000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 3W

SECTION: 35

QUARTERS/FOOTAGES: 350' N line, 1600' E line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.392412

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.149538

DATE COLLECTED: 8 / 3 / 1978

SURFACE ELEVATION (FT.): 583.0

LOGGED (FT.): 300.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
361.0	CARBONDALE	HERRIN	COAL	3.5	222.0	
308.2	CARBONDALE	SPRINGFIELD	COAL	5.2	274.8	

MAPID: 10720868000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 20N 3W SECTION: 35 QUARTERS/FOOTAGES: 350' N line, 1600' E line

QUADRANGLE: LINCOLN WEST LONGITUDE: -89.392412 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.149538 DATE COLLECTED: 8 / 3 / 1978

SURFACE ELEVATION (FT.): 583.0 LOGGED (FT.): 300.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
583.0			CLAY	24.0	0.0	
559.0			SAND & GRAVEL	2.0	24.0	
557.0			CLAY, SAND & GRAVEL	32.0	26.0	
525.0			SAND & GRAVEL	22.0	58.0	
503.0			CLAY	16.0	80.0	
487.0	MODESTO		SHALE	13.0	96.0	
474.0	MODESTO	WEST FRANKLIN	LIMESTONE	21.0	109.0	
453.0	MODESTO		BLACK SHALE	2.0	130.0	
451.0	MODESTO		SHALE	10.5	132.0	
440.5	MODESTO		LIMESTONE	1.5	142.5	
439.0	MODESTO		SHALE	4.5	144.0	ALTERNATING GRAY/BRN SH
434.5	MODESTO		SHALE	41.5	148.5	DANVILLE #7 COAL NOT PRESENT
393.0	CARBONDALE	DANVILLE	COAL	0.0	190.0	TOP OF CARBONDALE IN THIS INTERVAL
393.0	CARBONDALE		SHALE	8.0	190.0	
385.0	CARBONDALE		SHALE	5.0	198.0	
380.0	CARBONDALE	ANVIL ROCK	SANDSTONE	3.0	203.0	
377.0	CARBONDALE	ANVIL ROCK	SANDSTONE	8.0	206.0	
369.0	CARBONDALE		SHALE	5.5	214.0	OFF DRILL LOG
363.5	CARBONDALE	BRERETON	LIMESTONE	1.0	219.5	OFF DRILL LOG
362.5	CARBONDALE	ANNA	BLACK SHALE	1.5	220.5	
361.0	CARBONDALE	HERRIN	COAL	3.0	222.0	
358.0	CARBONDALE		SHALE	4.5	225.0	
353.5	CARBONDALE		LIMESTONE	3.0	229.5	
350.5	CARBONDALE		SHALE	9.5	232.5	
341.0	CARBONDALE		SHALE	5.0	242.0	
336.0	CARBONDALE		SHALE	3.0	247.0	
333.0	CARBONDALE		SHALE	12.0	250.0	
321.0	CARBONDALE		SHALE	8.0	262.0	
313.0	CARBONDALE	ST. DAVID	LIMESTONE	1.5	270.0	CORE #1 272-282
311.5	CARBONDALE	TURNER MINE	BLACK SHALE	3.3	271.5	
308.2	CARBONDALE	SPRINGFIELD	COAL	5.2	274.8	
303.0	CARBONDALE		UNDERCLAY	1.8	280.0	
301.2	CARBONDALE		CORE LOSS	0.3	281.8	
301.0	CARBONDALE		SHALE	6.5	282.0	
294.5	CARBONDALE	EXCELLO	BLACK SHALE	2.5	288.5	
292.0	CARBONDALE		SHALE	9.0	291.0	

MAPID: 10700420000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 4W

SECTION: 9

QUARTERS/FOOTAGES: NW NW

QUADRANGLE: NEW HOLLAND

LONGITUDE: -89.559478

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.206846

DATE COLLECTED: 6 / 2 / 1969

SURFACE ELEVATION (FT.): 540.0

LOGGED (FT.): 199.0

LOG TYPE: Drillers Log

SOURCE: PAUL WEIR COAL CO

W-4

WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			UNCLASSIFIED	0.0	TD 199' - NO COAL PICKS

MAPID: 10721139000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 4W

SECTION: 12

QUARTERS/FOOTAGES: 1332' S line, 436' W line

QUADRANGLE: NEW HOLLAND

LONGITUDE: -89.50342

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.198053

DATE COLLECTED: 5 / 10 / 1977

SURFACE ELEVATION (FT.): 542.0

LOGGED (FT.): 240.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			UNCLASSIFIED	0.0	NO #5 PRESENT,CUT OUT BY GLACIAL EROSION

MAPID: 10721139000C

VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN

TWP/RNG: 20N 4W

SECTION: 12

QUARTERS/FOOTAGES: 1332' S line, 436' W line

QUADRANGLE: NEW HOLLAND

LONGITUDE: -89.50342

GEOLOGIST: SROKA

CONFIDENTIAL: N

LATITUDE: 40.198053

DATE COLLECTED: 5 / 10 / 1977

SURFACE ELEVATION (FT.): 542.0

LOGGED (FT.): 240.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
542.0			CLAY	1.0	0.0
541.0			SAND	9.0	1.0
532.0			SAND & GRAVEL	105.0	10.0
427.0			CLAY, SAND & GRAVEL	71.0	115.0
-	CARBONDALE	DANVILLE	COAL	0.0	
-	CARBONDALE	HERRIN	COAL	0.0	
-	CARBONDALE	SPRINGFIELD	COAL	0.0	
356.0	CARBONDALE		SHALE	19.0	186.0
337.0	CARBONDALE		SHALE	35.0	205.0

MAPID: 10720869000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 14 **QUARTERS/FOOTAGES:** 2150' N line, 625' E line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.507086 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.188452 **DATE COLLECTED:** 8 / 2 / 1978
SURFACE ELEVATION (FT.): 532.0 **LOGGED (FT.):** 220.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
380.0	CARBONDALE	SPRINGFIELD	COAL WITH SHALE	5.0	152.0	ALSO SHOW BLK SH IN THIS UNIT

MAPID: 10720869000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 14 **QUARTERS/FOOTAGES:** 2150' N line, 625' E line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.507086 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.188452 **DATE COLLECTED:** 8 / 2 / 1978
SURFACE ELEVATION (FT.): 532.0 **LOGGED (FT.):** 220.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
532.0			CLAY	12.0	0.0	
520.0			SAND & GRAVEL	2.0	12.0	
518.0			SAND & GRAVEL	4.0	14.0	W/ CLAY
514.0			SAND & GRAVEL	62.0	18.0	
452.0			CLAY	32.0	80.0	
420.0			SAND & GRAVEL	7.0	112.0	
413.0			CLAY, SAND & GRAVEL	33.0	119.0	
470.0	CARBONDALE	DANVILLE	COAL	0.0	62.0	DANVILLE #7 COAL ERODED
440.0	CARBONDALE	HERRIN	COAL	0.0	92.0	HERRIN #6 COAL ERODED
379.0	CARBONDALE	TURNER MINE	BLACK SHALE	2.0	153.0	
377.0	CARBONDALE	SPRINGFIELD	COAL	6.0	155.0	
371.0	CARBONDALE		UNDERCLAY	6.5	161.0	
364.5	CARBONDALE	EXCELLO	BLACK SHALE	2.5	167.5	
362.0	CARBONDALE		SHALE	12.0	170.0	
350.0	CARBONDALE		SHALE	18.0	182.0	
332.0	CARBONDALE		SHALE	20.0	200.0	

MAPID: 10720931000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 14 **QUARTERS/FOOTAGES:** 65' S line, 50' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.523484 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.179997 **DATE COLLECTED:** 7 / 19 / 1979
SURFACE ELEVATION (FT.): 535.0 **LOGGED (FT.):** 180.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
383.1	CARBONDALE	SPRINGFIELD	COAL	6.3	151.9

MAPID: 10720931000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 14 **QUARTERS/FOOTAGES:** 65' S line, 50' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.523484 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.179997 **DATE COLLECTED:** 7 / 19 / 1979
SURFACE ELEVATION (FT.): 535.0 **LOGGED (FT.):** 180.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
535.0			SANDY CLAY	6.0	0.0
529.0			SAND & GRAVEL	4.0	6.0
525.0			CLAY	58.0	10.0
467.0			SILT, SAND & GRAVEL	11.0	68.0
456.0			SAND & GRAVEL	2.0	79.0
454.0			SILT & SAND	43.0	81.0
476.1	CARBONDALE	DANVILLE	COAL	0.0	58.9
446.1	CARBONDALE	HERRIN	COAL	0.0	88.9
411.0	CARBONDALE		SHALE	14.0	124.0
397.0	CARBONDALE		SHALE	11.5	138.0
385.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	149.5
384.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.4	150.5
383.1	CARBONDALE	SPRINGFIELD	COAL	6.3	151.9
376.8	CARBONDALE		SHALE	0.5	158.2
376.3	CARBONDALE		CORE LOSS	0.3	158.7
376.0	CARBONDALE		SHALE	8.5	159.0
367.5	CARBONDALE	EXCELLO	BLACK SHALE	1.5	167.5
366.0	CARBONDALE		SHALE	5.0	169.0
361.0	CARBONDALE		SHALE	6.0	174.0

MAPID: 10721140000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 14 **QUARTERS/FOOTAGES:** 2596' S line, 1357' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.51882 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.186991 **DATE COLLECTED:** 5 / 11 / 1977
SURFACE ELEVATION (FT.): 540.0 **LOGGED (FT.):** 200.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
370.5	CARBONDALE	SPRINGFIELD	COAL	4.7	169.5	

MAPID: 10721140000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 14 **QUARTERS/FOOTAGES:** 2596' S line, 1357' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.51882 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.186991 **DATE COLLECTED:** 5 / 11 / 1977
SURFACE ELEVATION (FT.): 540.0 **LOGGED (FT.):** 200.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILLERS LOG

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
540.0			CLAY	10.0	0.0	
530.0			SAND & GRAVEL	65.0	10.0	
465.0			CLAY, SAND & GRAVEL	5.0	75.0	
460.0			SAND & GRAVEL	5.0	80.0	
455.0			CLAY, SAND & GRAVEL	9.0	85.0	
446.0			SAND & GRAVEL	26.0	94.0	
420.0			CLAY, SAND & GRAVEL	47.0	120.0	
466.0	CARBONDALE	DANVILLE	COAL	0.0	74.0	
436.0	CARBONDALE	HERRIN	COAL	0.0	104.0	
374.0	CARBONDALE	TURNER MINE	BLACK SHALE	1.5	166.0	
372.5	CARBONDALE	SPRINGFIELD	COAL	6.5	167.5	
366.0	CARBONDALE		UNDERCLAY	7.0	174.0	
359.0	CARBONDALE	EXCELLO	BLACK SHALE	2.5	181.0	
356.5	CARBONDALE		SHALE	5.5	183.5	
351.0	CARBONDALE		LIMESTONE	1.0	189.0	
350.0	CARBONDALE		SHALE	10.0	190.0	

MAPID: 10720870000C VERSION: 1 PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 20N 4W SECTION: 15 QUARTERS/FOOTAGES: 1995' N line, 35' E line

QUADRANGLE: NEW HOLLAND LONGITUDE: -89.52384 GEOLOGIST: NORTH

CONFIDENTIAL: N LATITUDE: 40.188847 DATE COLLECTED: 8 / 1 / 1978

SURFACE ELEVATION (FT.): 540.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log

SOURCE: MOBIL OIL CORP. 51-78-8 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
540.0	PLEISTOCENE		CLAY	8.0	0.0
532.0	PLEISTOCENE		SAND & GRAVEL	10.0	8.0
522.0	PLEISTOCENE		CLAY	14.0	18.0
508.0	PLEISTOCENE		SAND & GRAVEL	28.0	32.0

MAPID: 10720870000C VERSION: 2 PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 20N 4W SECTION: 15 QUARTERS/FOOTAGES: 1995' N line, 35' E line

QUADRANGLE: NEW HOLLAND LONGITUDE: -89.52384 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 40.188847 DATE COLLECTED: 8 / 1 / 1978

SURFACE ELEVATION (FT.): 540.0 LOGGED (FT.): 60.0 LOG TYPE: Drillers Log

SOURCE: MOBIL OIL CORP. 51-78-8 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
540.0	PLEISTOCENE		CLAY	8.0	0.0
532.0	PLEISTOCENE		SAND & GRAVEL	10.0	8.0
522.0	PLEISTOCENE		CLAY	14.0	18.0
508.0	PLEISTOCENE		SAND & GRAVEL	28.0	32.0

MAPID: 10720871000C VERSION: 1 PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 20N 4W SECTION: 15 QUARTERS/FOOTAGES: 60' S line, 1312' W line

QUADRANGLE: NEW HOLLAND LONGITUDE: -89.537814 GEOLOGIST: MCBETH

CONFIDENTIAL: N LATITUDE: 40.179872 DATE COLLECTED: 8 / 2 / 1978

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 200.0 LOG TYPE: Drillers Log

SOURCE: MOBIL OIL CORP. 51-78-15 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0	PLEISTOCENE		CLAY	38.0	0.0	
512.0	PLEISTOCENE		SAND & GRAVEL	48.0	38.0	
464.0	PLEISTOCENE		SANDY CLAY	14.0	86.0	
450.0	PLEISTOCENE		SAND & GRAVEL	80.0	100.0	
370.0	CARBONDALE		COAL	2.5	180.0	TOP ERODED; PROBABLY #5 OR #4 SEAM
367.5	CARBONDALE		UNDERCLAY	10.5	182.5	
357.0	CARBONDALE		LIMESTONE	3.0	193.0	
354.0	CARBONDALE		GRAY SHALE	4.0	196.0	

MAPID: 10720871000C VERSION: 2 PROJECT: LUMP

COUNTY: LOGAN TWP/RNG: 20N 4W SECTION: 15 QUARTERS/FOOTAGES: 60' S line, 1312' W line

QUADRANGLE: NEW HOLLAND LONGITUDE: -89.537814 GEOLOGIST: J. MCBETH

CONFIDENTIAL: N LATITUDE: 40.179872 DATE COLLECTED: 8 / 2 / 1978

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 200.0 LOG TYPE: Drillers Log

SOURCE: MOBIL OIL CORP. 51-78-15 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0	PLEISTOCENE		CLAY	38.0	0.0	
512.0	PLEISTOCENE		SAND & GRAVEL	48.0	38.0	
464.0	PLEISTOCENE		SANDY CLAY	14.0	86.0	
450.0	PLEISTOCENE		SAND & GRAVEL	82.0	100.0	
368.0	CARBONDALE		COAL	0.5	182.0	
367.5	CARBONDALE		UNDERCLAY	10.5	182.5	
357.0	CARBONDALE		LIMESTONE	3.0	193.0	
354.0	CARBONDALE		GRAY SHALE	4.0	196.0	

MAPID: 10720872000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 22 **QUARTERS/FOOTAGES:** 1340' S line, 480' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.540589 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.168905 **DATE COLLECTED:** 9 / 14 / 1978
SURFACE ELEVATION (FT.): 535.0 **LOGGED (FT.):** 172.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
389.6	CARBONDALE	SPRINGFIELD	COAL	5.6	145.4	

MAPID: 10720872000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 22 **QUARTERS/FOOTAGES:** 1340' S line, 480' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.540589 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.168905 **DATE COLLECTED:** 9 / 14 / 1978
SURFACE ELEVATION (FT.): 535.0 **LOGGED (FT.):** 172.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
535.0			CLAY	1.0	0.0	
534.0			SAND & GRAVEL	19.0	1.0	
515.0			CLAY	18.0	20.0	
497.0			SAND & GRAVEL	22.0	38.0	
475.0			CLAY, SAND & GRAVEL	51.0	60.0	
483.0	CARBONDALE	DANVILLE	COAL	0.0	52.0	DANVILLE #7 COAL ERODED
453.0	CARBONDALE	HERRIN	COAL	0.0	82.0	HERRIN #6 COAL ERODED
424.0	CARBONDALE		SHALE	9.0	111.0	
415.0	CARBONDALE		SHALE	22.2	120.0	
392.8	CARBONDALE		BLACK SHALE	2.8	142.2	
390.0	CARBONDALE	TURNER MINE	BLACK SHALE	0.4	145.0	CORE #1 145-152
389.6	CARBONDALE	SPRINGFIELD	COAL	5.6	145.4	
383.9	CARBONDALE		SHALE	5.0	151.1	
379.0	CARBONDALE		LIMESTONE	1.0	156.0	
378.0	CARBONDALE		SHALE	15.0	157.0	

MAPID: 10720873000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 4W

SECTION: 23

QUARTERS/FOOTAGES: 2510' S line, 2630' E line

QUADRANGLE: NEW HOLLAND

LONGITUDE: -89.514028

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.172261

DATE COLLECTED: 8 / 1 / 1978

SURFACE ELEVATION (FT.): 550.0

LOGGED (FT.): 220.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
447.5	CARBONDALE	DANVILLE	COAL	1.3	102.5	
418.0	CARBONDALE	HERRIN	COAL	2.0	132.0	
353.7	CARBONDALE	SPRINGFIELD	COAL	5.7	196.3	

MAPID: 10720873000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 20N 4W SECTION: 23 QUARTERS/FOOTAGES: 2510' S line, 2630' E line

QUADRANGLE: NEW HOLLAND LONGITUDE: -89.514028 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.172261 DATE COLLECTED: 8 / 1 / 1978

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 220.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
550.0			CLAY	35.0	0.0	
515.0	MODESTO		SHALE	32.0	35.0	
483.0	MODESTO		SHALE	3.5	67.0	
479.5	MODESTO		SHALE	29.5	70.5	
450.0	MODESTO		BLACK SHALE	2.5	100.0	
447.5	CARBONDALE	DANVILLE	COAL	1.0	102.5	
446.5	CARBONDALE		SHALE	8.5	103.5	
438.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.0	112.0	UNCERTAIN CORRELATION
436.0	CARBONDALE		SHALE	4.0	114.0	
432.0	CARBONDALE		LIMESTONE	2.0	118.0	
430.0	CARBONDALE		SHALE	7.5	120.0	
422.5	CARBONDALE	BRERETON	LIMESTONE	3.5	127.5	
419.0	CARBONDALE		SHALE	1.5	131.0	
417.5	CARBONDALE	HERRIN	COAL	2.0	132.5	
415.5	CARBONDALE		SHALE	10.0	134.5	
405.5	CARBONDALE		LIMESTONE	1.5	144.5	
404.0	CARBONDALE		SHALE	45.5	146.0	
358.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	191.5	CORE #1 192.5-202.5
357.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.3	193.0	
353.7	CARBONDALE	SPRINGFIELD	COAL	5.7	196.3	"HORSEBACK"
348.0	CARBONDALE		SHALE	0.6	202.0	
347.5	CARBONDALE		SHALE	5.0	202.5	
342.5	CARBONDALE	EXCELLO	BLACK SHALE	3.5	207.5	
339.0	CARBONDALE		SHALE	5.0	211.0	
334.0	CARBONDALE		LIMESTONE	4.0	216.0	

MAPID: 10720932000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 51' S line, 1120' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.500426 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.165476 **DATE COLLECTED:** 7 / 22 / 1979
SURFACE ELEVATION (FT.): 570.0 **LOGGED (FT.):** 245.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
442.0	CARBONDALE	DANVILLE	COAL	2.0	128.0
414.0	CARBONDALE	HERRIN	COAL	4.8	156.0
345.9	CARBONDALE	SPRINGFIELD	COAL	6.2	224.1

MAPID: 10720932000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 51' S line, 1120' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.500426 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.165476 **DATE COLLECTED:** 7 / 22 / 1979
SURFACE ELEVATION (FT.): 570.0 **LOGGED (FT.):** 245.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
570.0			CLAY	8.0	0.0
562.0			SAND & GRAVEL	5.0	8.0
557.0			CLAY	23.0	13.0
535.0	MODESTO	WEST FRANKLIN	LIMESTONE	13.5	35.0
521.5	MODESTO		BLACK SHALE	1.5	48.5
520.0	MODESTO		SHALE	9.0	50.0
511.0	MODESTO		SHALE	22.0	59.0
489.0	MODESTO		LIMESTONE	2.0	81.0
487.0	MODESTO		SHALE	11.0	83.0
476.0	MODESTO		SHALE	33.0	94.0
443.0	CARBONDALE	DANVILLE	COAL	1.5	127.0
441.5	CARBONDALE		SHALE	14.5	128.5
427.0	CARBONDALE	ANVIL ROCK	SILTSTONE	7.0	143.0
420.0	CARBONDALE		SHALE	5.0	150.0
415.0	CARBONDALE	HERRIN	COAL	4.5	155.0
410.5	CARBONDALE		SHALE	3.5	159.5
407.0	CARBONDALE		SHALE	22.0	163.0
385.0	CARBONDALE		SHALE	16.0	185.0
369.0	CARBONDALE		SHALE	17.9	201.0
351.1	CARBONDALE	ST. DAVID	LIMESTONE	1.9	218.9
349.2	CARBONDALE	TURNER MINE	BLACK SHALE	3.3	220.8
345.9	CARBONDALE	SPRINGFIELD	COAL	6.2	224.1
339.7	CARBONDALE		SHALE	14.8	230.3

MAPID: 10720933000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 25' N line, 55' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.504495 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.17979 **DATE COLLECTED:** 7 / 19 / 1979
SURFACE ELEVATION (FT.): 548.0 **LOGGED (FT.):** 200.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
437.5	CARBONDALE	HERRIN	COAL	3.5	110.5
374.9	CARBONDALE	SPRINGFIELD	COAL	5.9	173.1

MAPID: 10720933000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 24 **QUARTERS/FOOTAGES:** 25' N line, 55' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.504495 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.17979 **DATE COLLECTED:** 7 / 19 / 1979
SURFACE ELEVATION (FT.): 548.0 **LOGGED (FT.):** 200.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
548.0			SANDY CLAY	20.0	0.0
528.0			SANDY CLAY	13.0	20.0
515.0			SAND & GRAVEL	16.0	33.0
499.0			SANDY CLAY	22.0	49.0
477.0			SAND & GRAVEL	24.0	71.0
465.5	CARBONDALE	DANVILLE	COAL	0.0	82.5
453.0	CARBONDALE		SHALE	11.5	95.0
441.5	CARBONDALE	BRERETON	LIMESTONE	4.2	106.5
437.3	CARBONDALE		SHALE	0.8	110.7
436.5	CARBONDALE	HERRIN	COAL	3.0	111.5
433.5	CARBONDALE		SHALE	7.5	114.5
426.0	CARBONDALE		LIMESTONE	2.0	122.0
424.0	CARBONDALE		SHALE	45.3	124.0
378.7	CARBONDALE	ST. DAVID	LIMESTONE	1.1	169.3
377.6	CARBONDALE	TURNER MINE	BLACK SHALE	2.7	170.4
374.9	CARBONDALE	SPRINGFIELD	COAL	5.9	173.1
369.1	CARBONDALE		SHALE	7.1	178.9
362.0	CARBONDALE	EXCELLO	BLACK SHALE	2.5	186.0
359.5	CARBONDALE		SHALE	11.5	188.5

MAPID: 10700418000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 20N 4W SECTION: 25 QUARTERS/FOOTAGES: SE NE

QUADRANGLE: LINCOLN WEST LONGITUDE: -89.487783 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.159868 DATE COLLECTED: 6 / 2 / 1969

SURFACE ELEVATION (FT.): 580.0 LOGGED (FT.): 435.0 LOG TYPE: Drillers Log

SOURCE: PAUL WEIR COAL CO W-1 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
437.5	CARBONDALE	DANVILLE	COAL	1.3	142.5	
412.9	CARBONDALE	HERRIN	COAL	3.9	167.1	
344.5	CARBONDALE	SPRINGFIELD	COAL	5.8	235.5	
266.6	CARBONDALE	HOUCHIN CREEK	COAL	1.3	313.4	LOGBOOK SAYS "#4?"
212.2	CARBONDALE	COLCHESTER	COAL	3.1	367.8	

MAPID: 10721141000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 20N 4W SECTION: 25 QUARTERS/FOOTAGES: 59' S line, 34' W line

QUADRANGLE: NEW HOLLAND LONGITUDE: -89.504047 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.151002 DATE COLLECTED: 5 / 20 / 1977

SURFACE ELEVATION (FT.): 575.0 LOGGED (FT.): 235.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
421.2	CARBONDALE	HERRIN	COAL	2.5	153.8	
361.1	CARBONDALE	SPRINGFIELD	COAL	6.4	213.9	

MAPID: 10721141000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 25 **QUARTERS/FOOTAGES:** 59' S line, 34' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.504047 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.151002 **DATE COLLECTED:** 5 / 20 / 1977
SURFACE ELEVATION (FT.): 575.0 **LOGGED (FT.):** 235.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
575.0			CLAY	18.0	0.0
557.0			CLAY, SAND & GRAVEL	19.0	18.0
538.0	MODESTO	WEST FRANKLIN	LIMESTONE	15.5	37.0
522.5	MODESTO		BLACK SHALE	2.0	52.5
520.5	MODESTO		SHALE	12.0	54.5
508.5	MODESTO		SHALE	26.5	66.5
482.0	MODESTO		SHALE	10.0	93.0
472.0	MODESTO		SHALE	19.0	103.0
453.0	MODESTO		BLACK SHALE	3.0	122.0
450.0	CARBONDALE	DANVILLE	COAL	1.0	125.0
449.0	CARBONDALE		SHALE	11.5	126.0
437.5	CARBONDALE		SHALE	11.0	137.5
426.5	CARBONDALE	BRERETON	LIMESTONE	4.0	148.5
422.5	CARBONDALE	ANNA	BLACK SHALE	1.0	152.5
421.5	CARBONDALE	HERRIN	COAL	3.0	153.5
418.5	CARBONDALE		SHALE	10.0	156.5
408.5	CARBONDALE		LIMESTONE	4.0	166.5
404.5	CARBONDALE		SHALE	25.5	170.5
379.0	CARBONDALE		SHALE	3.0	196.0
376.0	CARBONDALE		SHALE	9.5	199.0
366.5	CARBONDALE	ST. DAVID	LIMESTONE	2.4	208.5
364.1	CARBONDALE	TURNER MINE	BLACK SHALE	3.1	210.9
361.1	CARBONDALE	SPRINGFIELD	COAL	6.4	213.9
354.7	CARBONDALE		UNDERCLAY	2.4	220.3
352.3	CARBONDALE		CORE LOSS	0.2	222.7
352.1	CARBONDALE		SHALE	7.1	222.9
345.0	CARBONDALE		BLACK SHALE	2.0	230.0
343.0	CARBONDALE		SHALE	3.0	232.0

MAPID: 10720934000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 4W

SECTION: 26

QUARTERS/FOOTAGES: 2604' S line, 39' W line

QUADRANGLE: NEW HOLLAND

LONGITUDE: -89.52311

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.157854

DATE COLLECTED: 7 / 24 / 1979

SURFACE ELEVATION (FT.): 549.0

LOGGED (FT.): 216.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
418.5	CARBONDALE	HERRIN	COAL	3.0	130.5	
353.9	CARBONDALE	SPRINGFIELD	COAL	5.5	195.1	

MAPID: 10720934000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** 2604' S line, 39' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.52311 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.157854 **DATE COLLECTED:** 7 / 24 / 1979
SURFACE ELEVATION (FT.): 549.0 **LOGGED (FT.):** 216.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
549.0			CLAY	7.0	0.0
542.0			SAND & GRAVEL	7.0	7.0
535.0			CLAY	18.0	14.0
517.0			SAND & GRAVEL	6.0	32.0
511.0			CLAY, SAND & GRAVEL	29.0	38.0
482.0	MODESTO		SHALE	32.5	67.0
449.5	MODESTO		BLACK SHALE	2.5	99.5
447.0	CARBONDALE	DANVILLE	COAL	1.0	102.0
446.0	CARBONDALE		SHALE	14.5	103.0
431.5	CARBONDALE	ANVIL ROCK	SANDSTONE	4.0	117.5
427.5	CARBONDALE		SHALE	5.5	121.5
422.0	CARBONDALE	BRERETON	LIMESTONE	3.5	127.0
418.5	CARBONDALE	ANNA	BLACK SHALE	1.0	130.5
417.5	CARBONDALE	HERRIN	COAL	1.5	131.5
416.0	CARBONDALE		SHALE	7.0	133.0
409.0	CARBONDALE		LIMESTONE	3.5	140.0
405.5	CARBONDALE		SHALE	47.5	143.5
357.9	CARBONDALE		SHALE	0.6	191.1
357.3	CARBONDALE	ST. DAVID	LIMESTONE	0.4	191.7
356.9	CARBONDALE	TURNER MINE	BLACK SHALE	3.0	192.1
353.9	CARBONDALE	SPRINGFIELD	COAL	5.4	195.1
348.5	CARBONDALE		SHALE	4.3	200.5
344.2	CARBONDALE		LIMESTONE	2.0	204.8
342.2	CARBONDALE	EXCELLO	SHALE	2.9	206.8
339.3	CARBONDALE		CORE LOSS	0.3	209.7
339.0	CARBONDALE		SHALE	2.0	210.0
337.0	CARBONDALE		SHALE	2.0	212.0
335.0	CARBONDALE		SHALE	1.5	214.0
333.5	CARBONDALE		CORE LOSS	0.5	215.5

MAPID: 10721184000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 4W

SECTION: 26

QUARTERS/FOOTAGES: 139' N line, 1152' W line

QUADRANGLE: NEW HOLLAND

LONGITUDE: -89.51921

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.164947

DATE COLLECTED: 5 / 11 / 1977

SURFACE ELEVATION (FT.): 552.0

LOGGED (FT.): 210.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
457.5	CARBONDALE	DANVILLE	COAL	0.7	94.5	
430.0	CARBONDALE	HERRIN	COAL	3.4	122.0	
367.3	CARBONDALE	SPRINGFIELD	COAL	6.0	184.7	

MAPID: 10721184000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 26 **QUARTERS/FOOTAGES:** 139' N line, 1152' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.51921 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.164947 **DATE COLLECTED:** 5 / 11 / 1977
SURFACE ELEVATION (FT.): 552.0 **LOGGED (FT.):** 210.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
552.0			CLAY	35.0	0.0
517.0	MODESTO		SHALE	9.0	35.0
508.0	MODESTO		SHALE	14.0	44.0
494.0	MODESTO		SHALE	3.0	58.0
491.0	MODESTO		SHALE	29.0	61.0
462.0	MODESTO		BLACK SHALE	4.5	90.0
457.5	CARBONDALE	DANVILLE	COAL	0.5	94.5
457.0	CARBONDALE		SHALE	9.8	95.0
447.2	CARBONDALE		SHALE	9.2	104.8
438.0	CARBONDALE		SHALE	8.0	114.0
430.0	CARBONDALE	HERRIN	COAL	3.4	122.0
426.6	CARBONDALE		SHALE	7.6	125.4
419.0	CARBONDALE		SHALE	17.0	133.0
402.0	CARBONDALE		SHALE	3.0	150.0
399.0	CARBONDALE		SHALE	26.5	153.0
372.5	CARBONDALE		SHALE	1.0	179.5
371.5	CARBONDALE	ST. DAVID	LIMESTONE	1.0	180.5
370.5	CARBONDALE	TURNER MINE	BLACK SHALE	1.7	181.5
368.8	CARBONDALE	SPRINGFIELD	COAL	8.0	183.2
360.8	CARBONDALE		UNDERCLAY	2.7	191.2
358.1	CARBONDALE		CORE LOSS	0.3	193.9
357.8	CARBONDALE		SHALE	1.8	194.2
356.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	196.0
354.0	CARBONDALE		SHALE	6.8	198.0
347.2	CARBONDALE		LIMESTONE	0.7	204.8
346.5	CARBONDALE		SHALE	4.5	205.5

MAPID: 10700422000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 20N 4W SECTION: 28 QUARTERS/FOOTAGES: NE NE NE SW

QUADRANGLE: NEW HOLLAND LONGITUDE: -89.552163 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.157412 DATE COLLECTED: 6 / 2 / 1969

SURFACE ELEVATION (FT.): 525.0 LOGGED (FT.): 160.0 LOG TYPE: Drillers Log

SOURCE: PAUL WEIR COAL CO W-2 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
378.1	CARBONDALE	SPRINGFIELD	COAL	6.3	146.9	

MAPID: 10720874000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 20N 4W SECTION: 28 QUARTERS/FOOTAGES: 2410' S line, 60' E line

QUADRANGLE: NEW HOLLAND LONGITUDE: -89.542373 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.157278 DATE COLLECTED: 8 / 1 / 1978

SURFACE ELEVATION (FT.): 535.0 LOGGED (FT.): 200.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
457.0	CARBONDALE	DANVILLE	COAL	1.0	78.0	
432.5	CARBONDALE	HERRIN	COAL	1.0	102.5	
368.9	CARBONDALE	SPRINGFIELD	COAL	5.7	166.1	

MAPID: 10720874000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 28 **QUARTERS/FOOTAGES:** 2410' S line, 60' E line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.542373 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.157278 **DATE COLLECTED:** 8 / 1 / 1978
SURFACE ELEVATION (FT.): 535.0 **LOGGED (FT.):** 200.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
535.0			CLAY, SAND & GRAVEL	16.0	0.0	
519.0			CLAY	53.0	16.0	W/ SCATTERED SAND & GRAVEL STREAKS
466.0	MODESTO		SHALE	4.0	69.0	
462.0	MODESTO		SHALE	5.0	73.0	MAYBE BLACK
457.0	MODESTO		BLACK SHALE	1.0	78.0	
456.0	CARBONDALE	DANVILLE	COAL	1.5	79.0	
454.5	CARBONDALE		SHALE	10.0	80.5	
444.5	CARBONDALE		SHALE	3.5	90.5	
441.0	CARBONDALE		SHALE	5.0	94.0	
436.0	CARBONDALE	BRERETON	LIMESTONE	4.0	99.0	
432.0	CARBONDALE	HERRIN	COAL	1.0	103.0	
431.0	CARBONDALE		SHALE	25.0	104.0	CALCAREOUS NEAR TOP
406.0	CARBONDALE		SANDSTONE	9.0	129.0	
397.0	CARBONDALE		SHALE	23.5	138.0	
373.5	CARBONDALE	ST. DAVID	LIMESTONE	1.5	161.5	
372.0	CARBONDALE	TURNER MINE	BLACK SHALE	3.1	163.0	CORE #1 163-173
368.9	CARBONDALE	SPRINGFIELD	COAL	5.7	166.1	
363.2	CARBONDALE		SHALE	1.2	171.8	DRILL LOG INDICATES DRK.GRAY-BLACK SH
362.0	CARBONDALE		SHALE	4.5	173.0	
357.5	CARBONDALE	EXCELLO	BLACK SHALE	3.0	177.5	
354.5	CARBONDALE		SHALE	19.5	180.5	

MAPID: 10721142000C **VERSION:** 1 **PROJECT:** EIA-DOE
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 33 **QUARTERS/FOOTAGES:** 2466' N line, 152' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.560276 **GEOLOGIST:** PRUSSEN
CONFIDENTIAL: N **LATITUDE:** 40.143781 **DATE COLLECTED:** 5 / 24 / 1977
SURFACE ELEVATION (FT.): 555.0 **LOGGED (FT.):** 200.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
458.0	CARBONDALE	DANVILLE	COAL	2.0	97.0	
382.3	CARBONDALE	SPRINGFIELD	COAL	5.8	172.7	

MAPID: 10721142000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 33 **QUARTERS/FOOTAGES:** 2466' N line, 152' W line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.560276 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.143781 **DATE COLLECTED:** 5 / 24 / 1977
SURFACE ELEVATION (FT.): 555.0 **LOGGED (FT.):** 200.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
555.0			CLAY	27.0	0.0
529.0	MODESTO		SHALE	8.0	26.0
521.0	MODESTO		SHALE	58.0	34.0
463.0	MODESTO		BLACK SHALE	4.5	92.0
458.5	CARBONDALE	DANVILLE	COAL	1.5	96.5
457.0	CARBONDALE		SHALE	13.0	98.0
444.0	CARBONDALE		SHALE	1.5	111.0
442.5	CARBONDALE	BRERETON	LIMESTONE	3.5	112.5
439.0	CARBONDALE	ANNA	BLACK SHALE	0.5	116.0
438.5	CARBONDALE	HERRIN	COAL	1.0	116.5
437.5	CARBONDALE		SHALE	6.5	117.5
431.0	CARBONDALE		SHALE	3.0	124.0
428.0	CARBONDALE		SHALE	3.5	127.0
424.5	CARBONDALE		SHALE	7.5	130.5
417.0	CARBONDALE		SHALE	3.0	138.0
414.0	CARBONDALE		SHALE	26.5	141.0
387.5	CARBONDALE	ST. DAVID	LIMESTONE	2.1	167.5
385.4	CARBONDALE	TURNER MINE	BLACK SHALE	3.1	169.6
382.3	CARBONDALE	SPRINGFIELD	COAL	5.8	172.7
376.5	CARBONDALE		UNDERCLAY	3.0	178.5
373.6	CARBONDALE		SHALE	2.1	181.4
371.5	CARBONDALE	EXCELLO	BLACK SHALE	3.5	183.5
368.0	CARBONDALE	HOUCHIN CREEK	COAL	1.0	187.0
367.0	CARBONDALE		SHALE	2.0	188.0
365.0	CARBONDALE		SHALE	10.0	190.0

MAPID: 10721185000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 4W

SECTION: 33

QUARTERS/FOOTAGES: 2247' N line, 2589' E line

QUADRANGLE: NEW HOLLAND

LONGITUDE: -89.551258

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.144406

DATE COLLECTED: 5 / 23 / 1977

SURFACE ELEVATION (FT.): 570.0

LOGGED (FT.): 230.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
451.5	CARBONDALE	DANVILLE	COAL	1.7	118.5	
369.7	CARBONDALE	SPRINGFIELD	COAL	5.8	200.3	

MAPID: 10721185000C VERSION: 2

PROJECT: ISGS88

COUNTY: LOGAN TWP/RNG: 20N 4W SECTION: 33 QUARTERS/FOOTAGES: 2247' N line, 2589' E line

QUADRANGLE: NEW HOLLAND LONGITUDE: -89.551258 GEOLOGIST: SROKA

CONFIDENTIAL: N LATITUDE: 40.144406 DATE COLLECTED: 5 / 23 / 1977

SURFACE ELEVATION (FT.): 570.0 LOGGED (FT.): 230.0 LOG TYPE: Multiple log types

SOURCE: MOBIL OIL WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
570.0			CLAY	17.0	0.0
553.0	MODESTO	WEST FRANKLIN	LIMESTONE	10.5	17.0
542.5	MODESTO		BLACK SHALE	1.0	27.5
541.5	MODESTO		SHALE	4.5	28.5
537.0	MODESTO		SHALE	10.0	33.0
527.0	MODESTO		SHALE	70.0	43.0
457.0	MODESTO		BLACK SHALE	6.0	113.0
451.0	CARBONDALE	DANVILLE	COAL	1.2	119.0
449.8	CARBONDALE		SHALE	10.8	120.2
439.0	CARBONDALE	BANKSTON FORK	LIMESTONE	2.5	131.0
436.5	CARBONDALE		SHALE	6.5	133.5
430.0	CARBONDALE	BRERETON	LIMESTONE	1.5	140.0
428.5	CARBONDALE	HERRIN	BLACK SHALE	1.0	141.5
427.5	CARBONDALE		SHALE	2.5	142.5
425.0	CARBONDALE		SHALE	8.0	145.0
417.0	CARBONDALE		SHALE	7.0	153.0
410.0	CARBONDALE		SANDSTONE	12.0	160.0
398.0	CARBONDALE		SHALE	23.5	172.0
374.5	CARBONDALE		SHALE	1.0	195.5
373.5	CARBONDALE	ST. DAVID	LIMESTONE	1.1	196.5
372.4	CARBONDALE		SILTSTONE	1.1	197.6
371.3	CARBONDALE		SHALE	0.4	198.7
370.9	CARBONDALE	TURNER MINE	BLACK SHALE	1.2	199.1
369.7	CARBONDALE	SPRINGFIELD	COAL	5.8	200.3
363.9	CARBONDALE		UNDERCLAY	0.9	206.1
363.0	CARBONDALE		CORE LOSS	0.1	207.0
363.0	CARBONDALE		SHALE	7.0	207.0
356.0	CARBONDALE	EXCELLO	BLACK SHALE	2.0	214.0
354.0	CARBONDALE		SHALE	14.0	216.0

MAPID: 10721143000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 4W

SECTION: 34

QUARTERS/FOOTAGES: 2403' N line, 215' E line

QUADRANGLE: NEW HOLLAND

LONGITUDE: -89.523792

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.144037

DATE COLLECTED: 5 / 10 / 1977

SURFACE ELEVATION (FT.): 574.0

LOGGED (FT.): 250.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
446.0	CARBONDALE	DANVILLE	COAL	1.6	128.0	
419.0	CARBONDALE	HERRIN	COAL	1.2	155.0	
354.7	CARBONDALE	SPRINGFIELD	COAL	6.4	219.3	

MAPID: 10721143000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 34 **QUARTERS/FOOTAGES:** 2403' N line, 215' E line
QUADRANGLE: NEW HOLLAND **LONGITUDE:** -89.523792 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.144037 **DATE COLLECTED:** 5 / 10 / 1977
SURFACE ELEVATION (FT.): 574.0 **LOGGED (FT.):** 250.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
574.0			CLAY, SAND & SILTSTONE	20.0	0.0
554.0			CLAY, SAND & GRAVEL	20.0	20.0
534.0	MODESTO	WEST FRANKLIN	LIMESTONE	14.5	40.0
519.5	MODESTO		BLACK SHALE	1.5	54.5
518.0	MODESTO		SHALE	12.5	56.0
505.5	MODESTO		SHALE	5.5	68.5
500.0	MODESTO		SHALE	15.5	74.0
484.5	MODESTO		SHALE	1.5	89.5
483.0	MODESTO		SHALE	11.0	91.0
472.0	MODESTO		SHALE	22.0	102.0
450.0	MODESTO		BLACK SHALE	4.0	124.0
446.0	CARBONDALE	DANVILLE	COAL	1.0	128.0
445.0	CARBONDALE		SHALE	8.0	129.0
437.0	CARBONDALE	BANKSTON FORK	LIMESTONE	1.0	137.0
436.0	CARBONDALE		SHALE	11.5	138.0
424.5	CARBONDALE	BRERETON	LIMESTONE	4.5	149.5
420.0	CARBONDALE	ANNA	BLACK SHALE	2.0	154.0
418.0	CARBONDALE	HERRIN	COAL	1.0	156.0
417.0	CARBONDALE		SHALE	45.5	157.0
371.5	CARBONDALE		SHALE	12.0	202.5
359.5	CARBONDALE	ST. DAVID	LIMESTONE	1.7	214.5
357.8	CARBONDALE	TURNER MINE	BLACK SHALE	3.1	216.2
354.7	CARBONDALE	SPRINGFIELD	COAL	6.4	219.3
348.3	CARBONDALE		UNDERCLAY	3.0	225.7
345.3	CARBONDALE		SHALE	2.3	228.7
343.0	CARBONDALE	EXCELLO	BLACK SHALE	3.8	231.0
339.2	CARBONDALE		SHALE	15.2	234.8

MAPID: 10720935000C

VERSION: 1

PROJECT: EIA-DOE

COUNTY: LOGAN

TWP/RNG: 20N 4W

SECTION: 36

QUARTERS/FOOTAGES: 2570' S line, 2620' W line

QUADRANGLE: LINCOLN WEST

LONGITUDE: -89.494665

GEOLOGIST: PRUSSEN

CONFIDENTIAL: N

LATITUDE: 40.143358

DATE COLLECTED: 7 / 25 / 1979

SURFACE ELEVATION (FT.): 595.0

LOGGED (FT.): 270.0

LOG TYPE: Multiple log types

SOURCE: MOBIL OIL

WELL TYPE: Coal Test

COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
405.5	CARBONDALE	HERRIN	COAL	3.0	189.5	
346.2	CARBONDALE	SPRINGFIELD	COAL	6.1	248.8	

MAPID: 10720935000C **VERSION:** 2 **PROJECT:** ISGS88
COUNTY: LOGAN **TWP/RNG:** 20N 4W **SECTION:** 36 **QUARTERS/FOOTAGES:** 2570' S line, 2620' W line
QUADRANGLE: LINCOLN WEST **LONGITUDE:** -89.494665 **GEOLOGIST:** SROKA
CONFIDENTIAL: N **LATITUDE:** 40.143358 **DATE COLLECTED:** 7 / 25 / 1979
SURFACE ELEVATION (FT.): 595.0 **LOGGED (FT.):** 270.0 **LOG TYPE:** Multiple log types
SOURCE: MOBIL OIL **WELL TYPE:** Coal Test
COMMENT: GAMMA, RESIST, DENS, DRILL LOG, CORE

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)	
				UNIT	OVERBURDEN COMMENT
595.0			CLAY	12.0	0.0
583.0			SILTY CLAY	13.0	12.0
570.0			SANDY CLAY	13.0	25.0
556.0	MODESTO		SHALE	16.0	39.0
540.0	MODESTO		BLACK SHALE	2.5	55.0
537.5	MODESTO	CHAPEL	COAL	2.0	57.5
535.5	MODESTO		SHALE	13.0	59.5
522.5	MODESTO	WEST FRANKLIN	LIMESTONE	18.0	72.5
504.5	MODESTO		BLACK SHALE	2.0	90.5
502.5	MODESTO		SHALE	14.5	92.5
488.0	MODESTO	PIASA	LIMESTONE	2.5	107.0
485.5	MODESTO		UNCLASSIFIED	47.5	109.5
438.0	MODESTO		BLACK SHALE	5.0	157.0
433.0	CARBONDALE	DANVILLE	COAL	1.0	162.0
432.0	CARBONDALE		UNCLASSIFIED	11.0	163.0
421.0	CARBONDALE	ANVIL ROCK	SANDSTONE	11.0	174.0
410.0	CARBONDALE	BRERETON	LIMESTONE	5.5	185.0
404.5	CARBONDALE	HERRIN	COAL	4.0	190.5
400.5	CARBONDALE		SHALE	1.5	194.5
399.0	CARBONDALE		LIMESTONE	1.0	196.0
398.0	CARBONDALE		SHALE	35.5	197.0
362.5	CARBONDALE		SHALE	12.1	232.5
350.4	CARBONDALE	ST. DAVID	LIMESTONE	1.6	244.6
348.8	CARBONDALE	TURNER MINE	BLACK SHALE	2.7	246.2
346.1	CARBONDALE	SPRINGFIELD	COAL	6.0	248.9
340.1	CARBONDALE		SHALE	0.5	254.9
339.7	CARBONDALE		CORE LOSS	0.2	255.3
339.5	CARBONDALE		SHALE	6.5	255.5
333.0	CARBONDALE		LIMESTONE	0.5	262.0
332.5	CARBONDALE		SHALE	7.5	262.5

MAPID: 10720772000C VERSION: 1 PROJECT: AVAIL
COUNTY: LOGAN TWP/RNG: 21N 1W SECTION: 14 QUARTERS/FOOTAGES: 420' N line, 936' E line of NE
QUADRANGLE: MCLEAN LONGITUDE: -89.171212 GEOLOGIST: CHENOWETH
CONFIDENTIAL: N LATITUDE: 40.281785 DATE COLLECTED: 9 / 29 / 1975
SURFACE ELEVATION (FT.): 675.0 LOGGED (FT.): 484.0 LOG TYPE: Electric Log
SOURCE: HYDROCARBON SURVEY 75-C-4 WELL TYPE: Coal Test
COMMENT: LAMBERT 30911281 2640460

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
339.8	CARBONDALE	HERRIN	COAL	3.0	335.2	
256.6	CARBONDALE	SPRINGFIELD	COAL	4.4	418.4	

MAPID: 10720773000C VERSION: 1 PROJECT: AVAIL
COUNTY: LOGAN TWP/RNG: 21N 1W SECTION: 21 QUARTERS/FOOTAGES: 51' S line, 530' E line of SW
QUADRANGLE: MCLEAN LONGITUDE: -89.216393 GEOLOGIST: CHENOWETH
CONFIDENTIAL: N LATITUDE: 40.2524 DATE COLLECTED: 9 / 27 / 1975
SURFACE ELEVATION (FT.): 720.0 LOGGED (FT.): 477.0 LOG TYPE: Electric Log
SOURCE: HYDROCARBON SURVEY 75-C-3 WELL TYPE: Coal Test
COMMENT: LAMBERT 3078768 2630193

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
344.3	CARBONDALE	DANVILLE	COAL	1.9	375.7	
322.0	CARBONDALE	HERRIN	COAL	4.0	398.0	
262.4	CARBONDALE	SPRINGFIELD	COAL	4.0	457.6	

MAPID: 10720775000C VERSION: 1 PROJECT: AVAIL
COUNTY: LOGAN TWP/RNG: 21N 2W SECTION: 4 QUARTERS/FOOTAGES: 60' N line, 39' W line of NE NE
QUADRANGLE: ARMINGTON LONGITUDE: -89.32473 GEOLOGIST: CHENOWETH
CONFIDENTIAL: N LATITUDE: 40.309939 DATE COLLECTED: 9 / 24 / 1975
SURFACE ELEVATION (FT.): 624.0 LOGGED (FT.): 420.0 LOG TYPE: Electric Log
SOURCE: HYDROCARBON SURVEY 75-C-2 WELL TYPE: Coal Test
COMMENT: LAMBERT 3048648 2650867

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.)		COMMENT
				UNIT	OVERBURDEN	
339.6	CARBONDALE	HERRIN	COAL	4.0	284.4	CORRELATION UNCERTAIN
285.6	CARBONDALE	SPRINGFIELD	COAL	5.0	338.4	

MAPID: 10700417000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 21N 3W SECTION: 29 QUARTERS/FOOTAGES: NE SE

QUADRANGLE: LINCOLN WEST LONGITUDE: -89.453276 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.240412 DATE COLLECTED: 6 / 2 / 1969

SURFACE ELEVATION (FT.): 585.0 LOGGED (FT.): 229.0 LOG TYPE: Drillers Log

SOURCE: PAUL WEIR COAL CO W-6 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			UNCLASSIFIED	0.0	TD 229' - NO COAL PICKS

MAPID: 10700419000C VERSION: 1 PROJECT: EIA-DOE

COUNTY: LOGAN TWP/RNG: 21N 4W SECTION: 26 QUARTERS/FOOTAGES: SE SW

QUADRANGLE: NEW HOLLAND LONGITUDE: -89.518207 GEOLOGIST: PRUSSEN

CONFIDENTIAL: N LATITUDE: 40.235743 DATE COLLECTED: 6 / 2 / 1969

SURFACE ELEVATION (FT.): 550.0 LOGGED (FT.): 199.0 LOG TYPE: Drillers Log

SOURCE: PAUL WEIR COAL CO W-5 WELL TYPE: Coal Test

COMMENT:

ELEVATION TOP (FT.)	FORMATION	MEMBER	LITHOLOGY	THICKNESS (FT.) UNIT OVERBURDEN	COMMENT
-			UNCLASSIFIED	0.0	TD 199' - NO COAL PICKS