

## Coal Mines in Illinois Kinsman Quadrangle

### Grundy & LaSalle Counties, Illinois

This map accompanies the Coal Mines Directory for the Kinsman Quadrangle. Consult the directory for a complete explanation of the information shown on this map.

#### Mining Method

- Room & Pillar (RP)
- Room & Pillar Basic (RPB)
- Modified Room & Pillar (MRP)
- Room & Pillar Panel (RPP)
- Blind Room & Pillar (BRP)
- Checkerboard Room & Pillar (CRP)
- High Extraction Retreat (HER)
- Longwall (LW)
- Underground, Method Unknown
- Strip Mine
- Auger Mine
- General Area of Mining

#### Source of Mine Outline

- Final Mine Map
- Not Final Mine Map
- Undated Mine Map
- Incomplete Mine Map
- Secondary Source Map

#### Tipple, Shaft, Slope, Drift Locations

- Strip Mine Tipple - Active
- Strip Mine Tipple - Abandoned
- Mine Shaft - Active
- Mine Shaft - Abandoned
- Mine Slope - Active
- Mine Slope - Abandoned
- Mine Drift - Active
- Mine Drift - Abandoned
- Air Shaft
- Uncertain Location
- Uncertain Type of Opening

#### Mine Annotation

(space permitting)  
Company  
Mine Name  
ISGS Index No., Years of Operation

#### DISCLAIMER

These data were compiled and digitized from the best source maps available. Locations of some features may be offset by 500 feet or more due to errors in the original source maps, the compilation process, digitizing or a combination of these factors. Documentation of the source materials used is contained in the directory that accompanies this map. It is the user's responsibility to read this documentation and understand the limitations of the data. Though efforts have been made to compile these data accurately, the Illinois State Geological Survey does not guarantee the validity or the accuracy of these data.

The image of the U.S.G.S. Kinsman Quadrangle used as a base map was projected from the original UTM to Lambert Conformal Conic.

#### Location



Illinois State Geological Survey  
615 E. Peabody Dr.  
Champaign, IL 61820

Mine Outlines Compiled by  
Jennifer M. Obrad  
December 6, 2005

Base Map Produced by the United States Geological Survey  
Compiled from source information from:  
1900-1909 1910-1919 1920-1929 1930-1939 1940-1949 1950-1959 1960-1969 1970-1979 1980-1989 1990-1999 2000-2009 2010-2019 2020-2029 2030-2039 2040-2049 2050-2059 2060-2069 2070-2079 2080-2089 2090-2099 2100-2109 2110-2119 2120-2129 2130-2139 2140-2149 2150-2159 2160-2169 2170-2179 2180-2189 2190-2199 2200-2209 2210-2219 2220-2229 2230-2239 2240-2249 2250-2259 2260-2269 2270-2279 2280-2289 2290-2299 2300-2309 2310-2319 2320-2329 2330-2339 2340-2349 2350-2359 2360-2369 2370-2379 2380-2389 2390-2399 2400-2409 2410-2419 2420-2429 2430-2439 2440-2449 2450-2459 2460-2469 2470-2479 2480-2489 2490-2499 2500-2509 2510-2519 2520-2529 2530-2539 2540-2549 2550-2559 2560-2569 2570-2579 2580-2589 2590-2599 2600-2609 2610-2619 2620-2629 2630-2639 2640-2649 2650-2659 2660-2669 2670-2679 2680-2689 2690-2699 2700-2709 2710-2719 2720-2729 2730-2739 2740-2749 2750-2759 2760-2769 2770-2779 2780-2789 2790-2799 2800-2809 2810-2819 2820-2829 2830-2839 2840-2849 2850-2859 2860-2869 2870-2879 2880-2889 2890-2899 2900-2909 2910-2919 2920-2929 2930-2939 2940-2949 2950-2959 2960-2969 2970-2979 2980-2989 2990-2999 3000-3009 3010-3019 3020-3029 3030-3039 3040-3049 3050-3059 3060-3069 3070-3079 3080-3089 3090-3099 3100-3109 3110-3119 3120-3129 3130-3139 3140-3149 3150-3159 3160-3169 3170-3179 3180-3189 3190-3199 3200-3209 3210-3219 3220-3229 3230-3239 3240-3249 3250-3259 3260-3269 3270-3279 3280-3289 3290-3299 3300-3309 3310-3319 3320-3329 3330-3339 3340-3349 3350-3359 3360-3369 3370-3379 3380-3389 3390-3399 3400-3409 3410-3419 3420-3429 3430-3439 3440-3449 3450-3459 3460-3469 3470-3479 3480-3489 3490-3499 3500-3509 3510-3519 3520-3529 3530-3539 3540-3549 3550-3559 3560-3569 3570-3579 3580-3589 3590-3599 3600-3609 3610-3619 3620-3629 3630-3639 3640-3649 3650-3659 3660-3669 3670-3679 3680-3689 3690-3699 3700-3709 3710-3719 3720-3729 3730-3739 3740-3749 3750-3759 3760-3769 3770-3779 3780-3789 3790-3799 3800-3809 3810-3819 3820-3829 3830-3839 3840-3849 3850-3859 3860-3869 3870-3879 3880-3889 3890-3899 3900-3909 3910-3919 3920-3929 3930-3939 3940-3949 3950-3959 3960-3969 3970-3979 3980-3989 3990-3999 4000-4009 4010-4019 4020-4029 4030-4039 4040-4049 4050-4059 4060-4069 4070-4079 4080-4089 4090-4099 4100-4109 4110-4119 4120-4129 4130-4139 4140-4149 4150-4159 4160-4169 4170-4179 4180-4189 4190-4199 4200-4209 4210-4219 4220-4229 4230-4239 4240-4249 4250-4259 4260-4269 4270-4279 4280-4289 4290-4299 4300-4309 4310-4319 4320-4329 4330-4339 4340-4349 4350-4359 4360-4369 4370-4379 4380-4389 4390-4399 4400-4409 4410-4419 4420-4429 4430-4439 4440-4449 4450-4459 4460-4469 4470-4479 4480-4489 4490-4499 4500-4509 4510-4519 4520-4529 4530-4539 4540-4549 4550-4559 4560-4569 4570-4579 4580-4589 4590-4599 4600-4609 4610-4619 4620-4629 4630-4639 4640-4649 4650-4659 4660-4669 4670-4679 4680-4689 4690-4699 4700-4709 4710-4719 4720-4729 4730-4739 4740-4749 4750-4759 4760-4769 4770-4779 4780-4789 4790-4799 4800-4809 4810-4819 4820-4829 4830-4839 4840-4849 4850-4859 4860-4869 4870-4879 4880-4889 4890-4899 4900-4909 4910-4919 4920-4929 4930-4939 4940-4949 4950-4959 4960-4969 4970-4979 4980-4989 4990-4999 5000-5009 5010-5019 5020-5029 5030-5039 5040-5049 5050-5059 5060-5069 5070-5079 5080-5089 5090-5099 5100-5109 5110-5119 5120-5129 5130-5139 5140-5149 5150-5159 5160-5169 5170-5179 5180-5189 5190-5199 5200-5209 5210-5219 5220-5229 5230-5239 5240-5249 5250-5259 5260-5269 5270-5279 5280-5289 5290-5299 5300-5309 5310-5319 5320-5329 5330-5339 5340-5349 5350-5359 5360-5369 5370-5379 5380-5389 5390-5399 5400-5409 5410-5419 5420-5429 5430-5439 5440-5449 5450-5459 5460-5469 5470-5479 5480-5489 5490-5499 5500-5509 5510-5519 5520-5529 5530-5539 5540-5549 5550-5559 5560-5569 5570-5579 5580-5589 5590-5599 5600-5609 5610-5619 5620-5629 5630-5639 5640-5649 5650-5659 5660-5669 5670-5679 5680-5689 5690-5699 5700-5709 5710-5719 5720-5729 5730-5739 5740-5749 5750-5759 5760-5769 5770-5779 5780-5789 5790-5799 5800-5809 5810-5819 5820-5829 5830-5839 5840-5849 5850-5859 5860-5869 5870-5879 5880-5889 5890-5899 5900-5909 5910-5919 5920-5929 5930-5939 5940-5949 5950-5959 5960-5969 5970-5979 5980-5989 5990-5999 6000-6009 6010-6019 6020-6029 6030-6039 6040-6049 6050-6059 6060-6069 6070-6079 6080-6089 6090-6099 6100-6109 6110-6119 6120-6129 6130-6139 6140-6149 6150-6159 6160-6169 6170-6179 6180-6189 6190-6199 6200-6209 6210-6219 6220-6229 6230-6239 6240-6249 6250-6259 6260-6269 6270-6279 6280-6289 6290-6299 6300-6309 6310-6319 6320-6329 6330-6339 6340-6349 6350-6359 6360-6369 6370-6379 6380-6389 6390-6399 6400-6409 6410-6419 6420-6429 6430-6439 6440-6449 6450-6459 6460-6469 6470-6479 6480-6489 6490-6499 6500-6509 6510-6519 6520-6529 6530-6539 6540-6549 6550-6559 6560-6569 6570-6579 6580-6589 6590-6599 6600-6609 6610-6619 6620-6629 6630-6639 6640-6649 6650-6659 6660-6669 6670-6679 6680-6689 6690-6699 6700-6709 6710-6719 6720-6729 6730-6739 6740-6749 6750-6759 6760-6769 6770-6779 6780-6789 6790-6799 6800-6809 6810-6819 6820-6829 6830-6839 6840-6849 6850-6859 6860-6869 6870-6879 6880-6889 6890-6899 6900-6909 6910-6919 6920-6929 6930-6939 6940-6949 6950-6959 6960-6969 6970-6979 6980-6989 6990-6999 7000-7009 7010-7019 7020-7029 7030-7039 7040-7049 7050-7059 7060-7069 7070-7079 7080-7089 7090-7099 7100-7109 7110-7119 7120-7129 7130-7139 7140-7149 7150-7159 7160-7169 7170-7179 7180-7189 7190-7199 7200-7209 7210-7219 7220-7229 7230-7239 7240-7249 7250-7259 7260-7269 7270-7279 7280-7289 7290-7299 7300-7309 7310-7319 7320-7329 7330-7339 7340-7349 7350-7359 7360-7369 7370-7379 7380-7389 7390-7399 7400-7409 7410-7419 7420-7429 7430-7439 7440-7449 7450-7459 7460-7469 7470-7479 7480-7489 7490-7499 7500-7509 7510-7519 7520-7529 7530-7539 7540-7549 7550-7559 7560-7569 7570-7579 7580-7589 7590-7599 7600-7609 7610-7619 7620-7629 7630-7639 7640-7649 7650-7659 7660-7669 7670-7679 7680-7689 7690-7699 7700-7709 7710-7719 7720-7729 7730-7739 7740-7749 7750-7759 7760-7769 7770-7779 7780-7789 7790-7799 7800-7809 7810-7819 7820-7829 7830-7839 7840-7849 7850-7859 7860-7869 7870-7879 7880-7889 7890-7899 7900-7909 7910-7919 7920-7929 7930-7939 7940-7949 7950-7959 7960-7969 7970-7979 7980-7989 7990-7999 8000-8009 8010-8019 8020-8029 8030-8039 8040-8049 8050-8059 8060-8069 8070-8079 8080-8089 8090-8099 8100-8109 8110-8119 8120-8129 8130-8139 8140-8149 8150-8159 8160-8169 8170-8179 8180-8189 8190-8199 8200-8209 8210-8219 8220-8229 8230-8239 8240-8249 8250-8259 8260-8269 8270-8279 8280-8289 8290-8299 8300-8309 8310-8319 8320-8329 8330-8339 8340-8349 8350-8359 8360-8369 8370-8379 8380-8389 8390-8399 8400-8409 8410-8419 8420-8429 8430-8439 8440-8449 8450-8459 8460-8469 8470-8479 8480-8489 8490-8499 8500-8509 8510-8519 8520-8529 8530-8539 8540-8549 8550-8559 8560-8569 8570-8579 8580-8589 8590-8599 8600-8609 8610-8619 8620-8629 8630-8639 8640-8649 8650-8659 8660-8669 8670-8679 8680-8689 8690-8699 8700-8709 8710-8719 8720-8729 8730-8739 8740-8749 8750-8759 8760-8769 8770-8779 8780-8789 8790-8799 8800-8809 8810-8819 8820-8829 8830-8839 8840-8849 8850-8859 8860-8869 8870-8879 8880-8889 8890-8899 8900-8909 8910-8919 8920-8929 8930-8939 8940-8949 8950-8959 8960-8969 8970-8979 8980-8989 8990-8999 9000-9009 9010-9019 9020-9029 9030-9039 9040-9049 9050-9059 9060-9069 9070-9079 9080-9089 9090-9099 9100-9109 9110-9119 9120-9129 9130-9139 9140-9149 9150-9159 9160-9169 9170-9179 9180-9189 9190-9199 9200-9209 9210-9219 9220-9229 9230-9239 9240-9249 9250-9259 9260-9269 9270-9279 9280-9289 9290-9299 9300-9309 9310-9319 9320-9329 9330-9339 9340-9349 9350-9359 9360-9369 9370-9379 9380-9389 9390-9399 9400-9409 9410-9419 9420-9429 9430-9439 9440-9449 9450-9459 9460-9469 9470-9479 9480-9489 9490-9499 9500-9509 9510-9519 9520-9529 9530-9539 9540-9549 9550-9559 9560-9569 9570-9579 9580-9589 9590-9599 9600-9609 9610-9619 9620-9629 9630-9639 9640-9649 9650-9659 9660-9669 9670-9679 9680-9689 9690-9699 9700-9709 9710-9719 9720-9729 9730-9739 9740-9749 9750-9759 9760-9769 9770-9779 9780-9789 9790-9799 9800-9809 9810-9819 9820-9829 9830-9839 9840-9849 9850-9859 9860-9869 9870-9879 9880-9889 9890-9899 9900-9909 9910-9919 9920-9929 9930-9939 9940-9949 9950-9959 9960-9969 9970-9979 9980-9989 9990-9999 10000-10009 10010-10019 10020-10029 10030-10039 10040-10049 10050-10059 10060-10069 10070-10079 10080-10089 10090-10099 10100-10109 10110-10119 10120-10129 10130-10139 10140-10149 10150-10159 10160-10169 10170-10179 10180-10189 10190-10199 10200-10209 10210-10219 10220-10229 10230-10239 10240-10249 10250-10259 10260-10269 10270-10279 10280-10289 10290-10299 10300-10309 10310-10319 10320-10329 10330-10339 10340-10349 10350-10359 10360-10369 10370-10379 10380-10389 10390-10399 10400-10409 10410-10419 10420-10429 10430-10439 10440-10449 10450-10459 10460-10469 10470-10479 10480-10489 10490-10499 10500-10509 10510-10519 10520-10529 10530-10539 10540-10549 10550-10559 10560-10569 10570-10579 10580-10589 10590-10599 10600-10609 10610-10619 10620-10629 10630-10639 10640-10649 10650-10659 10660-10669 10670-10679 10680-10689 10690-10699 10700-10709 10710-10719 10720-10729 10730-10739 10740-10749 10750-10759 10760-10769 10770-10779 10780-10789 10790-10799 10800-10809 10810-10819 10820-10829 10830-10839 10840-10849 10850-10859 10860-10869 10870-10879 10880-10889 10890-10899 10900-10909 10910-10919 10920-10929 10930-10939 10940-10949 10950-10959 10960-10969 10970-10979 10980-10989 10990-10999 11000-11009 11010-11019 11020-11029 11030-11039 11040-11049 11050-11059 11060-11069 11070-11079 11080-11089 11090-11099 11100-11109 11110-11119 11120-11129 11130-11139 11140-11149 11150-11159 11160-11169 11170-11179 11180-11189 11190-11199 11200-11209 11210-11219 11220-11229 11230-11239 11240-11249 11250-11259 11260-11269 11270-11279 11280-11289 11290-11299 11300-11309 11310-11319 11320-11329 11330-11339 11340-11349 11350-11359 11360-11369 11370-11379 11380-11389 11390-11399 11400-11409 11410-11419 11420-11429 11430-11439 11440-11449 11450-11459 11460-11469 11470-11479 11480-11489 11490-11499 11500-11509 11510-11519 11520-11529 11530-11539 11540-11549 11550-11559 11560-11569 11570-11579 11580-11589 11590-11599 11600-11609 11610-11619 11620-11629 11630-11639 11640-11649 11650-11659 11660-11669 11670-11679 11680-11689 11690-11699 11700-11709 11710-11719 11720-11729 11730-11739 11740-11749 11750-11759 11760-11769 11770-11779 11780-11789 11790-11799 11800-11809 11810-11819 11820-11829 11830-11839 11840-11849 11850-11859 11860-11869 11870-11879 11880-11889 1189



# **DIRECTORY OF COAL MINES IN ILLINOIS 7.5-MINUTE QUADRANGLE SERIES KINSMAN QUADRANGLE GRUNDY & LASALLE COUNTIES**

Jennifer M. Obrad



Department of Natural Resources  
ILLINOIS STATE GEOLOGICAL SURVEY  
2006



**DIRECTORY OF COAL MINES IN ILLINOIS  
7.5-MINUTE QUADRANGLE SERIES  
KINSMAN QUADRANGLE  
GRUNDY & LASALLE COUNTIES**

2006

ILLINOIS STATE GEOLOGICAL SURVEY  
William Shilts, Chief

Natural Resources Building  
615 East Peabody Drive  
Champaign, Illinois 61820

Phone 1-217-244-4610  
Fax 1-217-333-2830

**Cover photo** Track-mounted duckbill loading machine at a Peabody Coal Company mine, ca. 1915.

DISCLAIMER: The accuracy and completeness of mine maps and directories vary with the availability of reliable information. Maps and other information used to compile this mine map and directory were obtained from a variety of sources and the accuracy of some of the original information cannot be verified. Consequently, the Illinois State Geological Survey (ISGS) cannot guarantee the mine maps are free of errors and disclaims any responsibility for damages that may result from actions or decisions based on them.

The ISGS updates the maps and directories periodically, and welcomes any new information or corrections. Please contact the Coal Section of the ISGS at the address shown on the title page of this directory, or telephone (217) 244-4610.

*Printed by authority of the State of Illinois/2006*

## CONTENTS

INTRODUCTION .....	1
MINING IN THE KINSMAN QUADRANGLE .....	1
PART I EXPLANATION OF MAP AND MINE SUMMARY SHEET .....	2
INTERPRETING THE MAP .....	2
Mine Type and Mining Method .....	2
SOURCE MAPS .....	3
POINTS AND LABELS .....	3
INTERPRETING A MINE SUMMARY SHEET .....	6
REFERENCES .....	8
PART II DIRECTORY OF MINES IN THE KINSMAN QUADRANGLE .....	9
MINE SUMMARY SHEETS .....	9
Mine Index 530	
Verona Coal Mining Company, Verona Mine .....	9
Mine Index 2339	
Sunlight Coal Company, Sunlight No. 7 Mine .....	10
INDEX OF MINES IN THE KINSMAN QUADRANGLE .....	11





## **INTRODUCTION**

Coal has been mined in 76 counties of Illinois. More than 4,500 coal mines have operated since commercial mining began in Illinois about 1810; fewer than 30 are currently active. To detail the extent and location of coal mining in Illinois, the Illinois State Geological Survey (ISGS) has compiled maps and directories of known coal mines. The ISGS offers maps at a scale of 1:100,000 and accompanying directories for each county in which coal mining is known to have occurred. Maps at a scale of 1:24,000 and accompanying directories, such as this, are available for selected quadrangles. Contact the ISGS for a list of these quadrangles.

These larger scale maps show the approximate positions of mines in relation to surface features such as roads and water bodies, and indicate the mining method used and the accuracy of the mine boundaries. The maps are useful for locating mine boundaries relative to specific properties and for assessing the potential for subsidence in an area. Mine boundaries compiled from final mine surveys are generally shown within 200 feet of their true position. As a result of poor cartographic quality and inaccuracies in the original mine surveys, boundaries of some older mines may be mislocated on the map by 500 feet or more. Original mine maps should be consulted in situations that require precise delineation of mine boundaries or internal workings of mined areas.

This directory serves as a key to the accompanying mine map and provides basic information on the coal mines in the quadrangle. The directory is composed of two parts. Part I explains the symbols and patterns used on the accompanying map and the summary data presented for each mine. Part II numerically lists the mines in the quadrangle and summarizes the geology and production history of each mine. Total production for the mine, not the portion in the quadrangle, is given.

## **MINING IN THE KINSMAN QUADRANGLE**

Mining in this quadrangle began in 1922 at what was then called the Verona Mine (mine index 2339). This mine closed in 1930, then operating as the Sunlight No. 7 Mine. The Wright Brothers Mine (mine index 530) opened the following year after constructing a slope down to the old workings of the Sunlight No. 7 Mine and also constructing an air shaft in one of the rooms of the abandoned mine. This mine operated north of the old mine, and closed in 1940. Both of these mines worked in the Herrin Coal, which was quite thick in this area, averaging seven feet thick and ranging up to eight feet. With the closing of the Verona Mine (mine index 530) mining in this quadrangle ended.

## PART I EXPLANATION OF MAP AND MINE SUMMARY SHEET

### INTERPRETING THE MAP

The map accompanying this directory shows the location of coal mines known to be present in the quadrangle. The map, corresponding to a U.S. Geological Survey (USGS) 7.5-minute quadrangle, covers an area bounded by lines of latitude and longitude 7.5-minutes apart. In Illinois, a quadrangle is approximately 6.5 miles east to west and 8.5 miles north to south, an area of about 56 square miles. The USGS generally offers one map of mines per quadrangle. In some areas where extensive mining occurred in two or more overlapping seams, separate maps are compiled for mines in each seam to maintain readability of the map.

#### **Mine Type and Mining Method**

The mine type is indicated on the map by pattern color: green represents surface mines; red and yellow represent underground mines. The red patterns are used for areas of underground mining that are documented by a primary or secondary source map. A yellow pattern is used for cases where no map of the mine workings is available, but a general area of mining can be inferred from property maps or production figures. The patterns indicate the main mining methods used in underground mines. The methods are (1) room and pillar and (2) high extraction. The method used gives some indication of the amount and pattern of coal extraction within each mined area, and has some influence on the timing and type of subsidence that can occur over a mine.

The following discussion and illustrations of mining methods are based on Guither et al. (1984).

In room-and-pillar mines, coal is removed from haulage-ways (entries) and selected areas called rooms. Pillars of unmined coal are left between the rooms to support the roof. Depending on the size of rooms and pillars, the amount of coal removed from the production areas will range from 40% to 70%.

**Room and Pillar** - mining is divided into six categories:

- room-and-pillar basic (RPB, fig. 1A), an early method that did not follow a preset mining plan and therefore resulted in very irregular designs;
- modified room and pillar (MRP, fig. 1B);
- room-and-pillar panel (RPP, fig. 1C);
- blind room and pillar (BRP, fig. 1D);
- checkerboard room and pillar (CRP, fig. 1E);
- room and pillar (RP), a classification used when the specific type of room-and-pillar mining is unknown.

Blind and checkerboard are the most common types of room-and-pillar mining used in Illinois today. The knowledge of room-and-pillar mining methods gives a trained engineer information on the nature of subsidence that may occur. A more extensive discussion of subsidence can be found in Bauer et al. (1993).

**High-extraction** These mining methods are subdivided into high-extraction retreat (HER, Fig 1F) and longwall (LW, Fig 1G, 1H). In these methods, much of the coal is removed within well defined areas of the mine. Subsidence of the surface above these areas occurs within weeks. Once the subsidence activity ceases, the potential for further movement over these areas is low; however, subsidence may continue for several years after mining.

High-extraction retreat mining is a form of room-and-pillar mining that extracts most of the coal. Rooms and pillars are developed in the panels, and the pillars are then systematically removed (fig. 1F).

In early (pre-1960) longwall mines, mining advanced in multiple directions from a central shaft (fig. 1G). Large pillars of coal were left around the shaft, but all coal was removed beyond these pillars. Miners placed rock and wooden props and cribs in the mined-out areas to support the mine roof. The overlying rock gradually settled onto these supports, thus producing subsidence at the surface. In post-1959 longwall mines, room-and-pillar methods have been used to develop the main entries of the mine and panel areas. Modern longwall methods extract 100 percent of the coal in the panel areas (fig. 1H).

## SOURCE MAPS

Mine outlines depicted on the map are, whenever possible, based on maps made from original mine surveys. The process of compiling and digitizing the quadrangle map may produce errors of less than 200 feet in the location of mine boundaries. Larger errors of 500 feet or more are possible for mines that have incomplete or inaccurate source maps.

Because of the extreme complexity of some mine maps, detailed features of mined areas have been omitted. The digitized mine boundary includes the exterior boundary of all rooms or entries that were at least 80 feet wide or protruded 500 feet from the main mining area. Unmined areas between mines are shown if they are at least 80 feet wide; unmined blocks of coal within mines are shown if they are at least 400 feet on each side. Original source maps should be consulted when precise information on mine boundaries or interior features is needed.

The mine summary sheet lists the source maps used to determine each mine outline. The completeness of map sources is indicated on the map by a line symbol at the mine boundary. Source maps are organized in five categories.

**Final mine map** The mine outline was digitized from an original map made from mine surveys conducted within a few months after production ceased. The date of the map and the last reported production are listed on the summary sheet.

**Not a final map** The mine is currently active or the mine outline was made from a map based on mine surveys conducted more than a few months before production ceased. This implies the actual mined-out area is probably larger than the outline on the map. The mine summary sheet indicated the dates of source maps and the last reported production, as well as the approximate tonnage mined between these two dates (if the mine is abandoned). The summary sheet also lists the approximate acreage mined since the date of the map and, in some cases, indicates the area where additional mining may have taken place. This latter information is determined by locating on the map the active faces relative to probable boundaries of the mine property.

**Undated map** The source map was undated, so it may or may not be based on a final mine survey. When sufficient data are available, the probable acreage of the mined area is estimated from reported production, average seam thickness and a recovery rate comparable to other mines in the area. This information is listed in the summary sheet for the mine.

**Incomplete map** The source map did not show the entire mine. The summary sheet indicates the missing part of the mine map and the acreage of the unmapped area, which is estimated from the amount of coal known to have been produced from the mine.

**Secondary source map** The original mine map was not found so the outline shown was determined from secondary sources (e.g., outlines from small-scale regional maps published in other reports). The summary sheet describes the secondary sources.

## POINTS AND LABELS

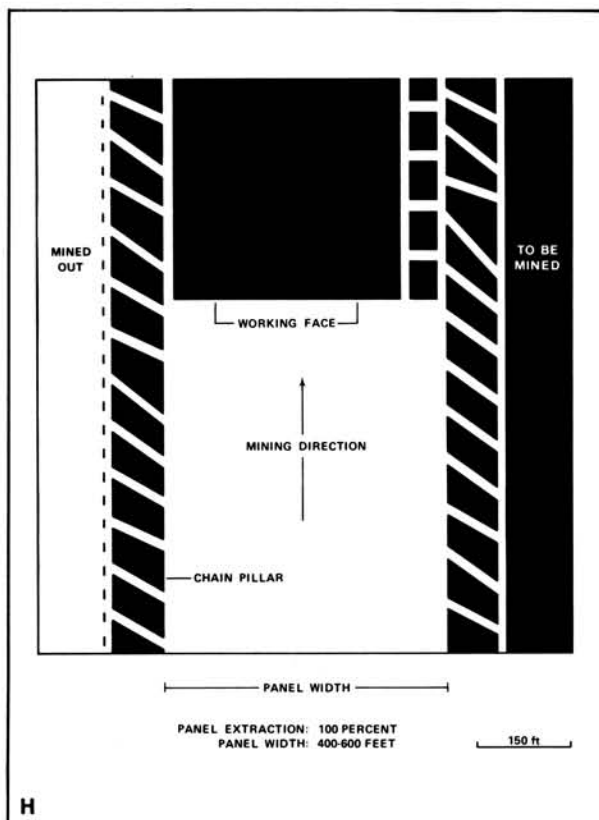
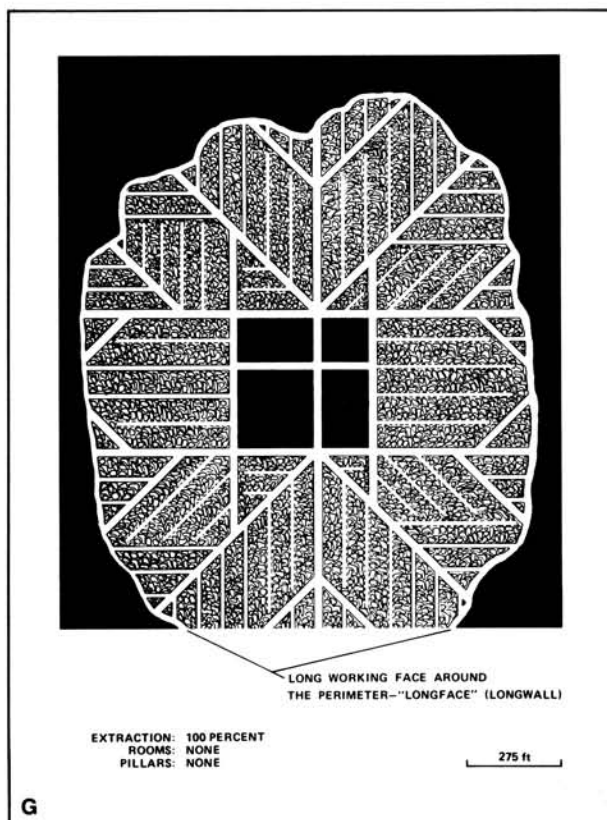
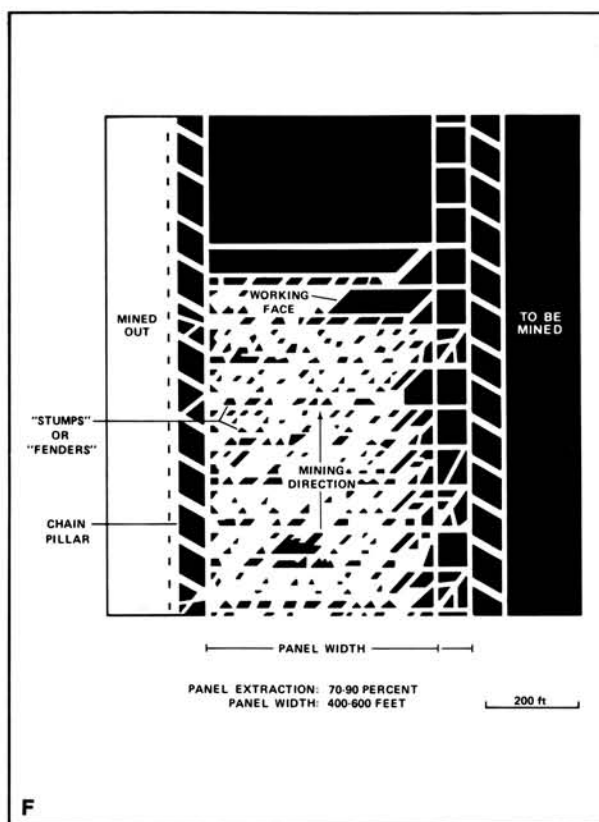
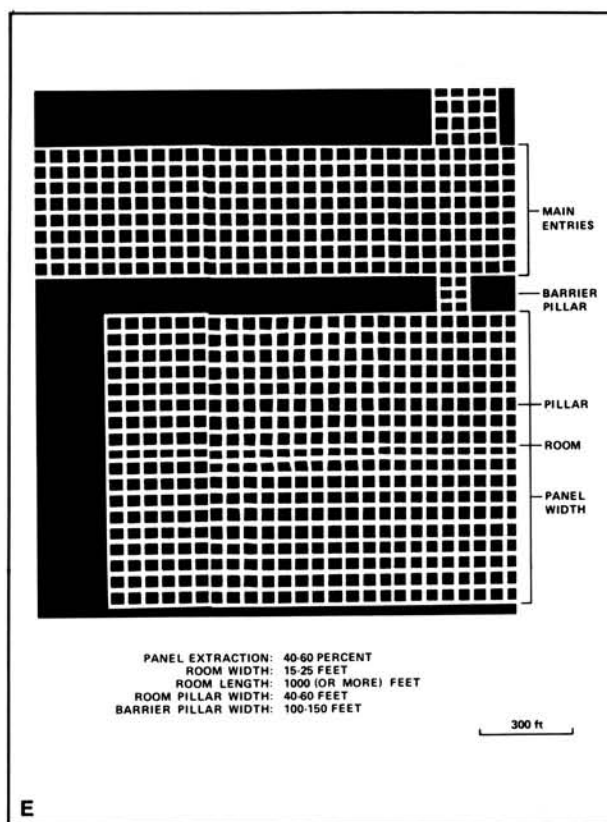
The locations of all known mine openings (shafts, slopes, and drifts) and surface mine tipples are plotted on the map. Tipples are areas where coal was cleaned, stockpiled, and loaded for shipping.

Only openings or tipples are plotted for mines without source maps. If the precise locations of these features are unknown, a special symbol is used to indicate the approximate location of the mine.

Each mine on the map is labeled with the names of the mine and operating company, ISGS mine index number, and years of operation (if known) if space permits. A seam designation is given on maps where more than one seam was mined. For a mine that operated under more than one name, only the most recent name is generally given. When a mine changed names or ownership shortly before closing, an earlier name is listed. All company and mine names are listed on the mine summary sheet in the directory, under the production history segment.



**Figure 1** Mining methods: (A) room-and-pillar basic (RPB), (B) modified room and pillar (MRP), (C) room-and-pillar panel (RPP), (D) blind room and pillar (BRP).



**Figure 1 (cont.)** Mining methods: (E) checkerboard room and pillar (CRP), (F) high extraction retreat (HER), (G) early (pre-1960) longwall, (H) post-1959 longwall



**Figure 2** Generalized stratigraphic section, showing approximate vertical relations of coals in Illinois.

## INTERPRETING A MINE SUMMARY SHEET

The mine summary sheet is arranged numerically by mine index number. Index numbers are shown on the map and in the mine listing. The mine summary sheet provides the following information (if available).

**Company and mine name** The last company or owner of the mine is used, unless no production was recorded for the last owner. In that case, the penultimate owner is listed. Mines often have no specific name; in these cases, the company name is also used as the mine name.

**Type** *Underground* denotes a subsurface mine in which the coal was reached through a shaft, slope, or a drift entry. *Surface* denotes a surface, open pit or strip mine.

**Total mined-out acreage shown** The total acreage of the mined area mapped, including any acreage mined on adjacent quadrangles, is calculated from the digitized outline of the mine. The acreage of large barrier pillars depicted on the map is excluded from the mined-out acreage. Small pillars not digitized are included in the acreage calculation. If the mine outline is not based on a final mine map, the acreage is followed by an estimate of additional acres that may have been mined. The estimate is determined from reported mine production, approximate thickness of the coal, and recovery rates calculated from nearby mines that used similar mining methods.

## SHAFT, SLOPE, DRIFT OR TIPPLE LOCATIONS

**Shaft, slope, drift, or tippie locations** Locations of all known former entry points to underground mines or the location of coal cleaning, tippie, and shipping equipment used by the mine's facility are listed. The location is described in terms of county, township and range (Twp-Rge), section, and location within the section by quarters. NE SW NW, for instance, would describe the location in the northeast quarter of the southwest quarter of the northwest quarter. When sections are irregular in size, the quarters remain the same size and are oriented (or "registered") from the southeast corner of the section. Approximate footage from the section lines (FEL = from east line, FNL = from north line, for example) is given when that information is known; this indicates a surveyed location and is not derived from maps. Entry points are also plotted on the map and coded for the type of entry or tippie. A mine opening may have had many purposes during the life of the mine. Old hoist shafts are often later used for air and escape shafts; this information is included in the directory when known. The tippie for underground mines was generally located near the main shaft or slope. At surface mines, coal was sometimes hauled to a central tippie several miles from the mine pit.

## GEOLOGY

**Seam(s) mined** The name of the coal seam(s) mined is listed, if known. If multiple seams were mined, they are all listed, although the mined-out area for each seam may be shown on separate maps. Figure 2 shows the stratigraphic section of the coal-bearing interval in Illinois, and the vertical relations among the coals.

**Depth** The depth to the top of the seam in the vicinity of the shaft is listed, if known. The depth is determined from notes made by geologists who visited the mine during its operation or from drill hole data in ISGS files. Depth generally varies little over the extent of a mine; however, reported depths for an individual mine may vary. Depth for surface-mined coals varies, and is usually represented as a range.

**Thickness** The approximate thickness of the mined seam is shown, if known. Thickness also comes from notes of geologists who visited the mine during its operation or from borehole data in ISGS files. Minimum, maximum, and average thicknesses are given when this information is available.

**Mining method** The principal mining method used at the mine (figs. 1A-H) is listed. See the mining methods section at the beginning of this directory for a discussion of this parameter.

**Geologic problems reported** Any known geologic problems, such as faults, water seepage, floor heaving, and unstable roof, encountered in the mine are reported. This information is from notes made by ISGS geologists who visited the mine, or from reports by mine inspectors published by the Illinois Department of Mines and Minerals, or from the source map(s). Geologic problems are not reported for active mines.

## PRODUCTION HISTORY

**Production history** Tons of coal produced from the mine by each mine owner are totaled. When the source map used for the mine outline is not a final mine map, the tonnage produced since the date of the map is identified. For mines that extend into adjacent quadrangles, the tonnage reported includes areas mined in adjacent quadrangles.

## SOURCE OF DATA

**Source map** This section lists information about the map(s) used to compile the mine outline and the locations of tipples and mine openings. In some cases more than one source map was used. For example, a map drawn before the mine closed may provide better information on original areas of the mine than a later map. When more than one map was used, the bibliography section explains what information was taken from each source.

**Date** The date of the most recent mine survey listed on the source map is reported.

**Original scale** The original scale of the source map is listed. Many maps are photo-reductions and are no longer at their original scale. The original scale gives some indication of the level of detail of the mine outline and the accuracy of the mine boundary relative to surface features. Generally, the larger the scale, the greater the accuracy and detail of the mine map. Mine outlines taken from source maps at scales smaller than 1:24,000 may be highly generalized and may well be inaccurately located with respect to surface features.

**Digitized scale** The scale of the digitized map is reported. The scale may be different from that of the original source map. In many cases the digitized map was made from a photo-reduction of the original source map, or the source map was not in a condition suitable for digitizing and the mine boundaries were transferred to another base map.

**Map type** Source maps are classified into five categories to indicate the probable completeness of the map. See discussion of source maps in the previous section.

**Annotated bibliography** Sources that provide information about the mine are listed, with the data taken from each source. Some commonly used sources are described below. Full bibliographic references are given for all other sources. Unless otherwise noted, all sources are available for public inspection at the ISGS.

**Coal Reports** Published since 1881, these reports contain tabular data on mine ownership, production, employment, and accidents. Some volumes include short descriptions made by mine inspectors of physical features and conditions in selected mines.

**Directory of Illinois Coal Mines** This source is a compilation of basic data about Illinois coal mines, originally gathered by ISGS staff in the early 1950s. Sources used for this directory are undocumented, but they are primarily Illinois Department of Mines and Minerals annual reports, ISGS mine notes, and coal company officials.

**ENR Document 85/01**, Guither, H. D., J. K. Hines, and R. A. Bauer, 1985 The Economic Effect of Underground Mining Upon Land Used for Illinois Agriculture: Illinois Department of Energy and Natural Resources Document 85/01, 185 p.

**Microfilm map** The U.S. Bureau of Mines maintains a microfilm archive of mine maps. A microfilm file for Illinois is available for public viewing at the ISGS.

*Mine notes* ISGS geologists have visited mines or contacted mine officials throughout the state since the early 1900s. Notes made during these visits range from brief descriptions of the mine location to long narratives (including sketches) of mining conditions and geology.

*Federal Land Bank of St. Louis, Preliminary Reports on Subsidence Investigations* Mining engineers working for the Federal Land Bank of St. Louis mapped areas of subsidence due to coal mining in the early 1930s. These reports often include county maps of mine properties with mined-out areas including shaft locations, as well as subsidence areas.

## **REFERENCES**

Bauer, R. A., B. A. Trent, and P. B. Dumontelle, 1993, Mine Subsidence in Illinois: Facts for the Homeowner Considering Insurance: Illinois State Geological Survey, Environmental Geology Note 144, 16p.

Guither, H. D., J. K. Hines, and R. A. Bauer, 1985, The Economic Effects of Underground Mining Upon Land Used for Illinois Agriculture: Illinois Department of Energy and Natural Resources Document 85/01, 185p.



## PART II DIRECTORY OF MINES IN THE KINSMAN QUADRANGLE

### MINE SUMMARY SHEETS

A summary sheet on the geology and production history of each mine in the Kinsman Quadrangle is provided. The summary is arranged numerically by mine index number, which is shown on the map and in the mine listing. Consult Part I for a complete explanation of the data listed in the summary sheet.

#### Mine Index 530

#### Verona Coal Mining Company, Verona Mine

Type: Underground    Total mined-out acreage shown: 32    Production indicates approximately 10 acres were mined after the map date.

### SHAFT, SLOPE, DRIFT or TIPPLE LOCATIONS

Type	County	Township-Range	Section	Quarters-Footage
Main slope	Grundy	32N 6E	23	NE NE NW
Air shaft	Grundy	32N 6E	23	NE NE NW

### GEOLOGY

Seam(s) Mined	Depth (ft)	Thickness (ft)			Mining Method
		Min	Max	Avg	
Herrin	100		8.0	7.0-7.5	MRP

Geologic Problems Reported: The roof was 15 to 20 feet of light and dark gray shale. Numerous pyrite lenses and nodules were present, at and above the blue band. This pyrite was easily separated from the coal. A good deal of calcite was found in facings, particularly in the upper part of the seam, and also in horizontal sheets. This raised the ash content of the coal. The mine was connected underground to the Sunlight No. 7 Mine (mine index 2339).

### PRODUCTION HISTORY

Company	Mine Name	Years	Production (tons)
Wright Brothers Coal Company	Wright	1931-1933	96,587
Verona Coal Mining Company	Verona	1934-1938	183,181
Verona Coal Mining Company *	Verona	1938-1940	80,564 **
			360,332

\* The ownership changed in 1939, but the mine continued to report under the same name.

\*\* Production after map date

Last reported production: 1940

### SOURCES OF DATA

Source Map	Date	Original Scale	Digitized Scale	Map Type
Microfilm, document 351472	9-27-1938	1:1200	1:2069	Not final

#### Annotated Bibliography (data source, brief description of information)

Coal Reports - Production, ownership, years of operation, seam, thickness.

Directory of Illinois Coal Mines (Grundy County) - Mine names, mine index, ownership, years of operation.

Mine notes (Grundy County) - Mine type, shaft location, depth, thickness, geologic problems.

Microfilm map, document 351472, reel 03136, frame 217 - Slope & shaft locations, mine outline, mining method.

**Mine Index 2339****Sunlight Coal Company, Sunlight No. 7 Mine**

Type: Underground    Total mined-out acreage shown: 356    Production indicates approximately 30 acres were mined after the map date.

**SHAFT, SLOPE, DRIFT or TIPPLE LOCATIONS**

Type	County	Township-Range	Section	Quarters-Footage
Main shaft	Grundy	32N 6E	23	NW SE SE
Air shaft	Grundy	32N 6E	23	SW SE SE

**GEOLOGY**

Seam(s) Mined	Depth (ft)	Thickness (ft)			Mining Method
		Min	Max	Avg	
Herrin	90-100	6.0	8.0	7.0	MRP

Geologic Problems Reported: The roof was a sandy shale. The coal contained slips up to 8 inches wide and filled with a tough clay. The coal also had a band of shale "knobs" that was persistent but not continuous. Entries were abandoned when these two conditions were particularly bad. The light gray underclay of the floor was highly plastic and heaved badly when wet. Two pairs of entries shut down because of heaving.

**PRODUCTION HISTORY**

Company	Mine Name	Years	Production (tons)
Verona Coal Company	Verona	1922-1923	3,100
Leland Coal Company	Leland No. 7	1923-1924	80,144
Verona Coal Company	Verona No. 7	1924-1925	343,618
Sunlight Coal Company	Sunlight No. 7	1925-1929	1,558,837
Sunlight Coal Company	Sunlight No. 7	1929-1930	167,146 *
			2,152,845

\* Production after map date

Last reported production: April 1930

**SOURCES OF DATA**

Source Map	Date	Original Scale	Digitized Scale	Map Type
Microfilm, document 351473	10-5-1929	1:2400	1:5297	Not final

Annotated Bibliography (data source, brief description of information)

Coal Reports - Production, ownership, years of operation, depth.

Directory of Illinois Coal Mines (Grundy County) - Mine names, mine index, ownership, years of operation, seam.

Mine notes (Grundy County) - Mine type, shaft location, seam, thickness, geologic problems.

Microfilm map, document 351473, reel 03136, frames 218-219 - Shaft locations, mine outline, mining method.

## INDEX OF MINES IN THE KINSMAN QUADRANGLE

Leland Coal Company, No. 7 Mine .....	10
Sunlight Coal Company .....	10
Verona Coal Company, No. 7 Mine .....	10
Verona Coal Mining Company .....	9
Wright Brothers Coal Company .....	9



Funding for this project was supplied by the Illinois Department of Transportation.