

Recent Compilations of Coal Resource Data for Federal Lands in Illinois

**Janis D. Treworgy
Margaret H. Bargh**

May 1984

**Illinois Department of Energy and Natural Resources
STATE GEOLOGICAL SURVEY DIVISION
Champaign, Illinois**

Prepared for the

**U.S. DEPARTMENT OF INTERIOR
Bureau of Land Management
Washington, D.C.**

Treworgy, Janis D.

Recent compilations of coal resource data on Federal land in Illinois / Janis D. Treworgy and Margaret H. Bargh. — Champaign, IL : Illinois State Geological Survey Division, May 1984.

25 p. ; 28 cm. — (Illinois—Geological Survey. Contract/Grant report ; 1984-1)

Prepared for the U.S. Department of Interior Bureau of Land Management.

1. Coal resources—Illinois. 2. Federal lands—Illinois. I. Bargh, Margaret H. II. Title. III. Series.

Printed by authority of the State of Illinois / 1984 / 50

Recent Compilations of Coal Resource Data for Federal Lands in Illinois

**Janis D. Treworgy
Margaret H. Bargh**

**Contract Report
Contract No. INT BLM AA851-CT1-63
U.S. Department of Interior
Bureau of Land Management
Washington, D.C. 20240**

**ILLINOIS STATE GEOLOGICAL SURVEY
Natural Resources Building
615 East Peabody Drive
Champaign, Illinois 61820**

CONTENTS

	Page
Introduction	1
Part I. Coal Resource Data for Federal Lands in Illinois	1
Methodology	1
Data Sources	1
Computerization of Data	3
Volume of Data	4
Presentation of Coal Resource Data on Federal Lands	4
Tabular Data Set	4
Quadrangle Map Data	9
Geological Cross Sections	9
Chemical Analyses of Coals	12
Part II. Statewide Coal Resource Maps	15
Products Available to the Public	18
Maps and Tables	18
Geological Report	20
Personnel	22
References	23

Figures

Figure	Page
1. Index to quadrangle maps that contain federal land in Illinois.	2
2. West-central area of Illinois showing distribution of datum points.	5
3. East-central area of Illinois showing distribution of datum points.	6
4. Southern area of Illinois showing distribution of datum points.	7
5. Example of key used on mylar overlays for topographic quadrangle maps.	10
6. Location of cross sections sent to BLM.	11
7. Cross section showing correlations of key Pennsylvanian members in Jefferson County, Illinois.	13
8. Cross section showing correlations of key Pennsylvanian members in Montgomery, Bond, and Clinton Counties, Illinois.	14
9. Cross section showing correlations of key Pennsylvanian members in Moultrie and Shelby Counties, Illinois.	16
10. Generalized stratigraphic column of the Pennsylvanian System in Illinois.	19

Tables

Table	Page
1. Examples of tabular data format.	8
2. Example of tabular format for chemical data.	17

Recent Compilations of Coal Resource Data for Federal Lands in Illinois

Introduction

The federal government owns the mineral rights to approximately 211,745 acres of land within the area of coal-bearing strata in Illinois. The Bureau of Land Management (BLM), U.S. Department of the Interior, is responsible for the management of the mineral resources. The surface owners or administrators for these lands are

	Approximate <u>acreage</u>
Military	4,615
U.S. Army Corps of Engineers	111,631
U.S. Forest Service	92,152
Private	3,347

To improve management of these mineral resources, the Bureau of Land Management provided the Illinois State Geological Survey (ISGS) with funds to compile all publicly available coal resource data in the areas of their mineral ownership. For Phase I, data were compiled into both tables and maps for all sixty-seven 7.5-minute topographic quadrangles that contain federal land (fig. 1). (Four 7.5-minute quadrangles were not available; two 15-minute quadrangles, Paxton and Sullivan, were used instead.) Phase II partially supported production of a series of five statewide 4-color coal resource maps for 32 mapped coals in Illinois.

Part I. Coal Resource Data for Federal Lands in Illinois

Methodology

In the first phase of the project, basic coal resource data were tabulated for all coal seams within the 67 quadrangles containing Federal lands. Then the data were plotted on the maps.

Data Sources. Data were compiled from sources available to the public at the Illinois State Geological Survey. No new mapping or correlation of coal seams was undertaken. Sources include

- drill holes
- field notes
- mine notes
- mined-out area maps
- published maps indicating
 - coal subcrops/outcrops
 - base of the Pennsylvanian System
 - sandstone channels within coal seams
 - faulted areas

INDEX TO QUADRANGLES USED IN STUDY OF COAL RESOURCES ON FEDERAL LAND

quad no.	quad name	no. of records
60D	Seneca	43
103C	La Harpe	10
119	Paxton 15 min.	0
129C	Doddsville	116
129D	Industry	32
136A	Camden	59
163A	Mt. Sterling	37
163B	Kellerville	19
168A	New Salem	8
177	Sullivan 15 min.	49
186B	Middlesworth	22
187A	Shelbyville	79
190D	Raymond	3
191B	Palmyra	19
191C	Carlinville W	8
191D	Carlinville E	44
200D	Gillespie South	49
201C	Mt. Olive	33
201D	Sorento North	35
202D	Fillmore	4
217C	Wildcat Lake	2
218A	Mulberry Grove	7
218B	Greenville	15
218C	Beaver Creek	4
219C	Grantfork	1
220D	Marine	2
226D	Lebanon	16
228A	Keyesport	12
228D	Carlyle	6
229B	Boulder	9
230A	Omega	46
242C	Mt. Vernon	34
242D	Opdyke	31
243C	Ashley	13
254A	Waltonville	44
254D	Sesser	36
255A	Spring Garden	20
255B	Ina	32
255C	Rend Lake Dam	29
255D	Ewing	17
265C	Oraville	31
265D	Murphysboro	153
266D	Raddle	6
270A	Pomona	27
270B	Gorham	4
270C	Wolf Lake	0
270D	Cobden	3
271A	Crab Orchard Lake	12
271B	Carbondale	81
271C	Makanda	10
271D	Lick Creek	1
272C	Goreville	8
272D	Creal Springs	59
273A	Harrisburg	197
273B	Carrier Mills	302
273C	Stonefort	43
273D	Eddyville	24
274A	Equality	189
274B	Rudement	164
274C	Herod	3
274D	Karbers Ridge	10
275B	Shawneetown	49
275C	Saline Mines	11
278A	Waltersburg	13
278B	Glendale	1

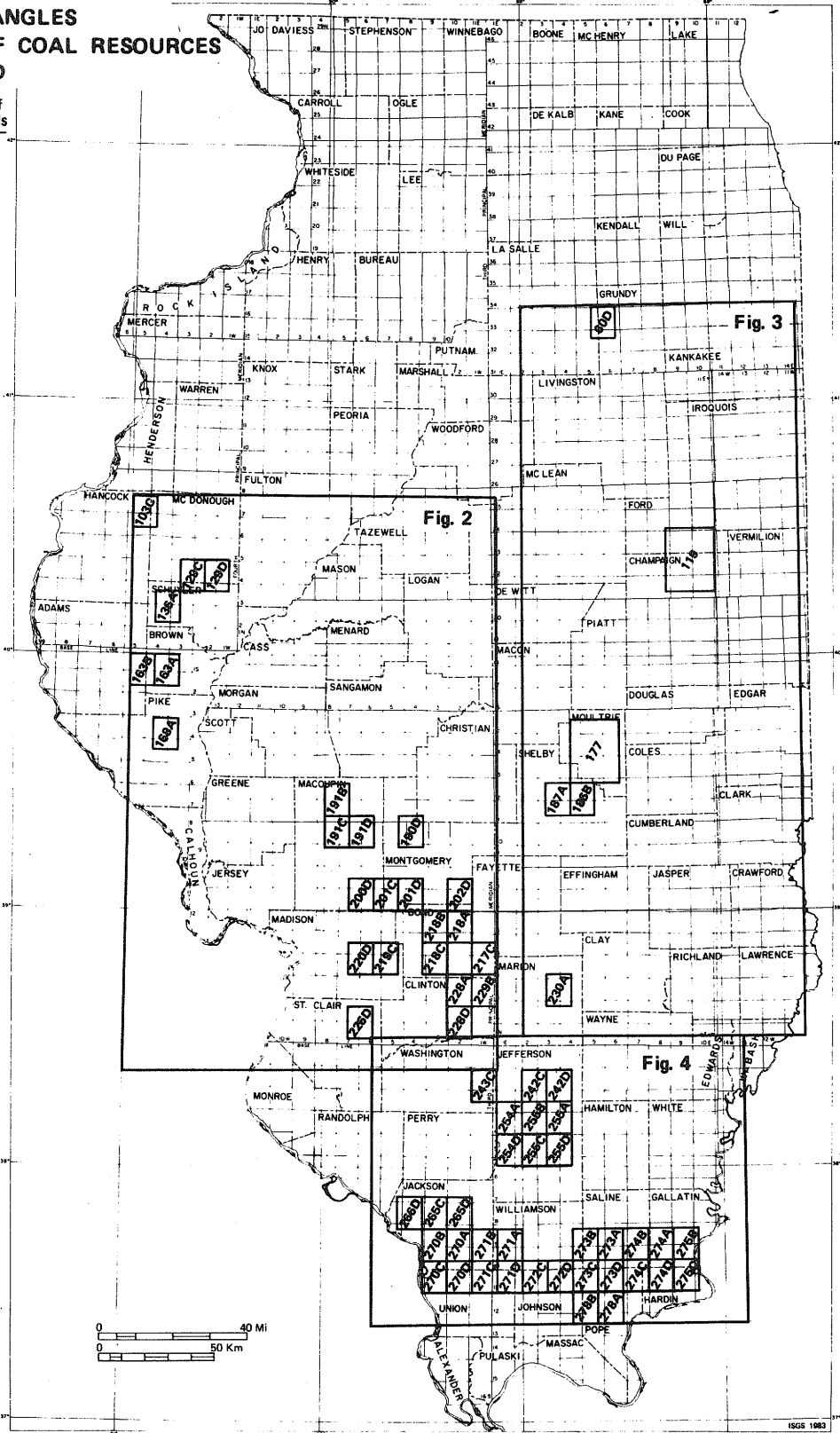


Figure 1. Index to quadrangle maps that contain Federal land in Illinois. Quadrangle number and name and the number of data records collected within each quadrangle are given on the left. Quadrangle numbers are shown on the map within the respective quadrangle boundaries. Areas of figures 2-4 are indicated.

No new drilling was done for this project. Most of the drill holes used were coal tests, completed by private companies over the years. Occasionally logs of water wells and oil and gas tests were used, if the data seemed reliable. Logs of all drill holes used are on open file in the ISGS Geological Records Library.

Field notes record ISGS geologists' visits to rock exposures, including outcrops, roadcuts, and small abandoned strip pits. These notes, which have been collected over the years, are on open file in the ISGS Map Library. Only field notes describing a coal-bearing succession were included in this data set.

Mine notes have been collected over the years by ISGS Coal Section geologists visiting surface and deep mines, both active and inactive. Notes from now inactive mines are on open file in the ISGS Coal Section. Only notes on inactive mines were included in this data set.

The mined-out area boundaries were taken directly from the mined-out area maps, which are produced at a scale of 1:62,500 (1 inch \approx 1 mile) by the ISGS Coal Section. The boundaries are updated to 1980. The accuracy of the boundaries at that small scale is not as great as implied when the boundaries are plotted at the larger scale (1:24,000) of the topographic maps. In some cases, accurate mine maps were not available when the mined-out area maps were compiled, thus the boundaries and locations are only approximate. Also, the surface mine boundaries shown do not always coincide with those on the published topographic maps: surface mine boundaries on the mined-out area maps were derived from aerial photographs, and an attempt was made to show only mined-out areas rather than all disturbed areas. This fact, as well as the scaling problem, may explain most of the discrepancy between our mine outlines and those on the topographic maps. No field checking was done for this project.

The coal subcrop/outcrop lines were taken from published reports; no new mapping was done for this project. The lines were originally drawn on 15-minute topographic maps (1:62,500). Topography shown on newer 7.5-minute topographic maps often significantly differs from the older maps. No attempt was made to adjust the subcrop/outcrop lines to the new topography as that would have required substantial subsurface and field checking; however, coal subcrops/outcrops were adjusted to include all mined-out areas.

The geology of Illinois has been mapped at different times. As a result, the level of detail and locations of faults do not always match in adjacent quadrangles. A list of published reports used for these maps may be found at the end of this report.

Computerization of Data. Information derived from the sources listed was encoded by geologists and entered into an interactive data management system ("Cornerstone") on the ISGS PDP 11/34 computer. Computerization of the file permitted sorting of data records by map ID number (a unique number for each data record), quadrangle, location, or any other field desired. Computer programs were written, including one to convert locations given in latitude and longitude to UTM (universal

transverse Mercator) coordinates. Error-checking programs written specifically for this data set were run to insure the accuracy of the data.

Volume of Data. A total of 2,461 data records were collected (figs. 1-4). The number of records in each quadrangle is given in figure 1. Each record contained a minimum of 30 data fields (pieces of information) and sometimes as many as 90 data fields or more, depending on the number of coal seams reported.

Presentation of Coal Resource Data on Federal Lands

Tabular Data Set. An easy-to-read tabular format (table 1) was used to present the computerized data:

Basic data

- map ID number (unique number for each data record)
- county
- township, range, section, location within section
- latitude and longitude
- UTM coordinates
- surface elevation (ft), precision of elevation
- date of data collection
- type of data (e.g. coal test, outcrop, underground mine)
- type of log (e.g. core, driller's log, electric log)
- total interval logged (total interval described in stratigraphic part of this form)
- source of data (e.g. company, field notes and geologist, mine notes and geologist and mine name)
- comments (additional information)

Stratigraphic data

- elevation of the top of coal (ft)
- formation name
- coal seam name
- coal ID (internal use; no stratigraphic significance)
- thickness (ft)
 - whole coal (includes partings <6 in. thick)
 - clean coal (excludes partings >3/8 in. thick)
 - overburden/interburden (depth to coal for the first coal; interval between coals for the remainder)
- comments (additional information)

The map ID number is a unique number assigned by the geologist to each drill hole, outcrop, and mine note. This number is used in the tabular data file in the computer and on the topographic quadrangle maps adjacent to a plotted point.

The map ID numbering system has a number of options. Below is a breakdown of the elements included in the different types of map ID numbers:

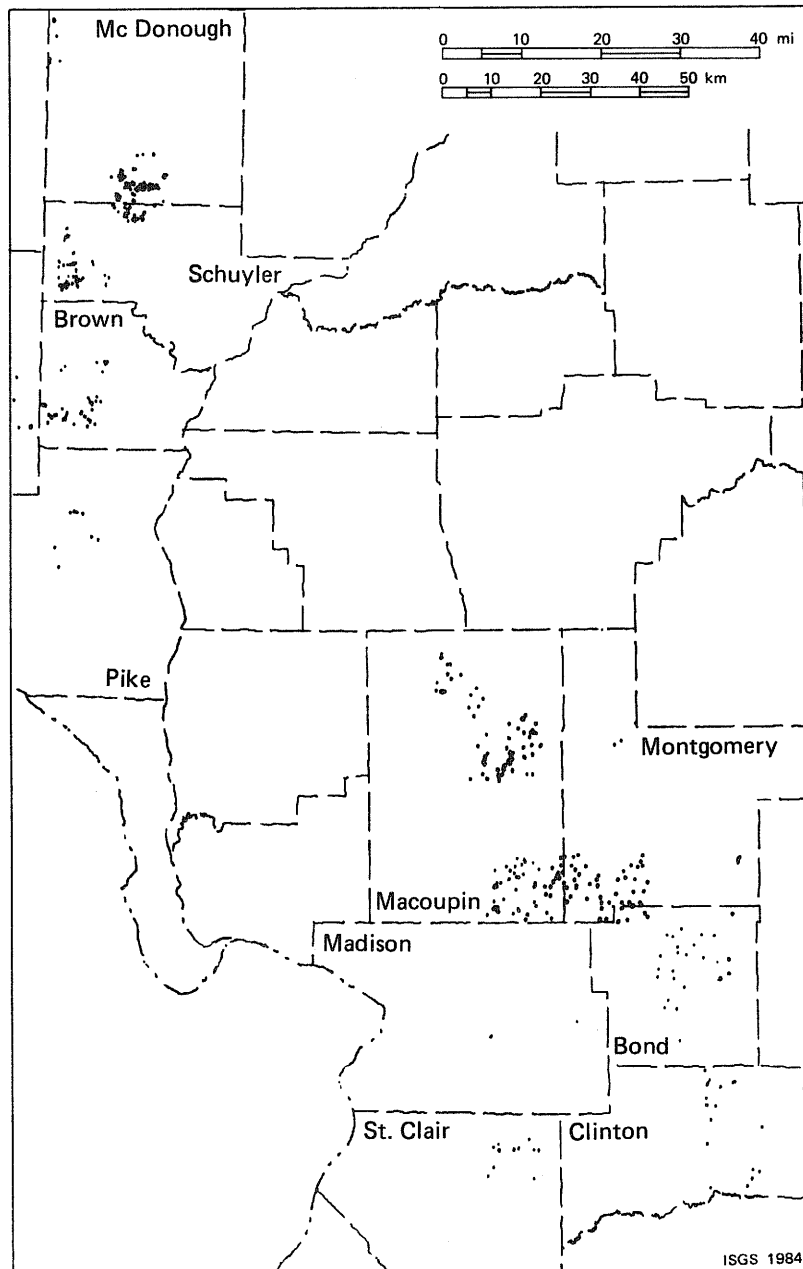


Figure 2. West-central area of Illinois showing distribution of datum points. A total of 562 points were used within this area. Scale is 1:1,500,000. County boundaries are shown.

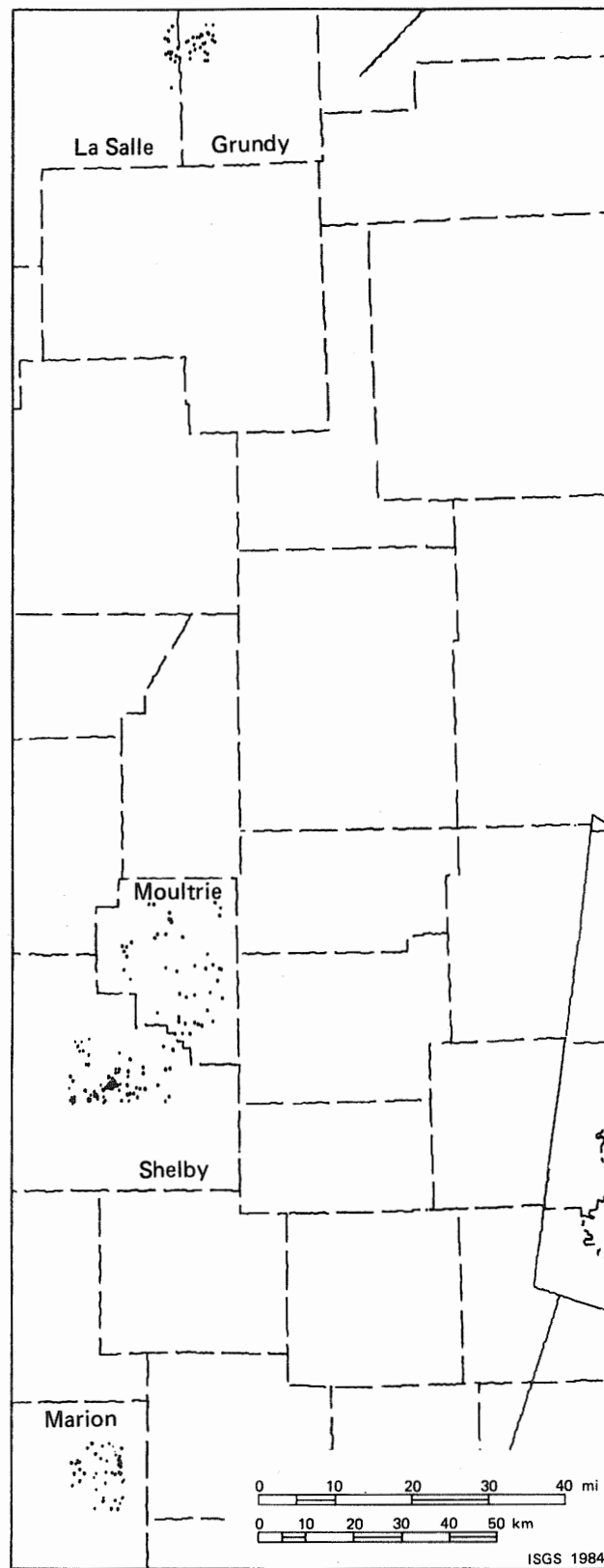


Figure 3. East-central area of Illinois showing distribution of datum points. A total of 240 points were used within this area. Scale is 1:1,500,000. County boundaries are shown.

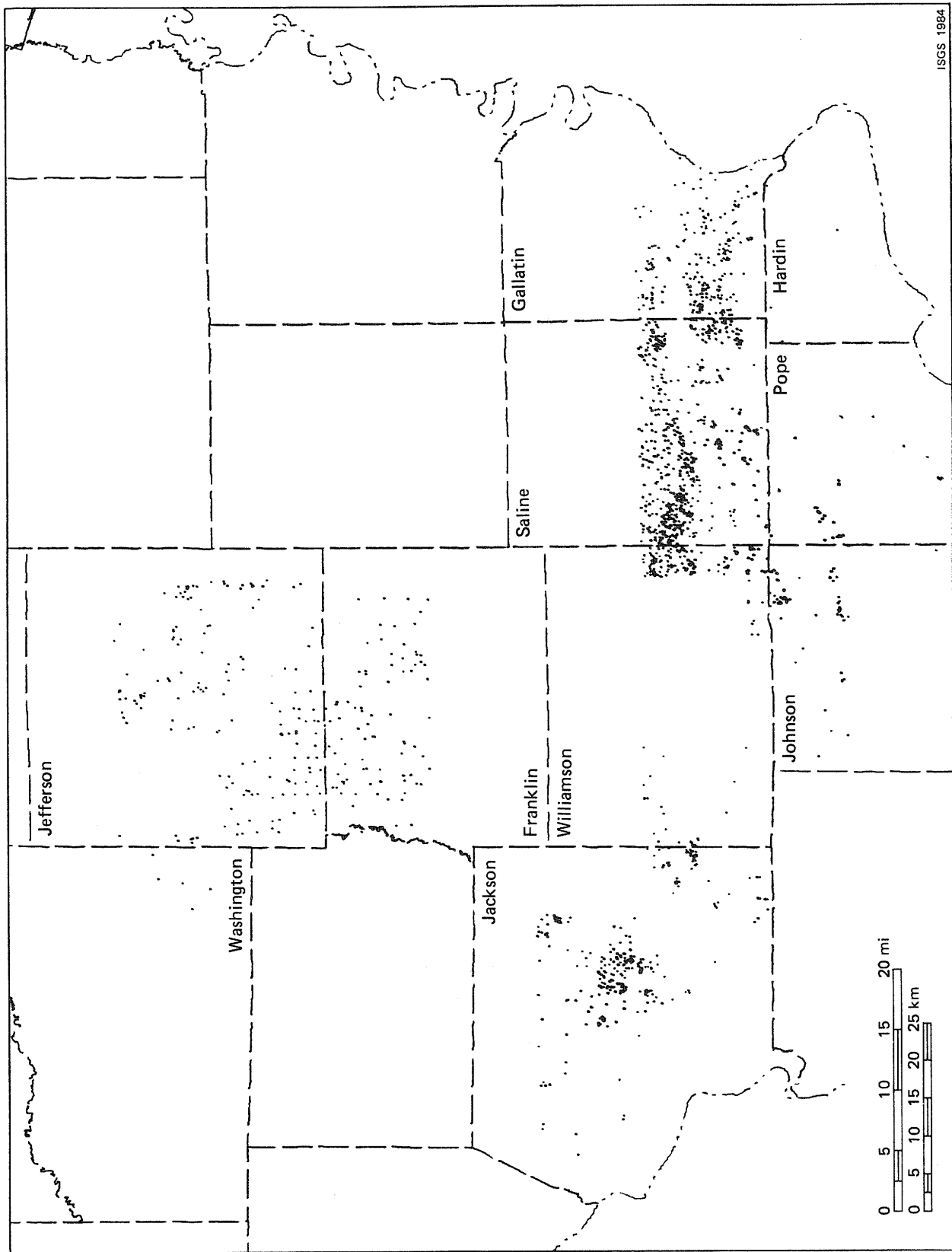


Figure 4. Southern area of Illinois showing distribution of datum points. A total of 1,659 points were used within this area. Scale is 1:750,000. County boundaries are shown.

Coal test

C165000277
 COUNTY: SALINE T 9S - R 6E SECTION: 23 NE 350NL 40WL HARRISBURG 7.5 MINUTE QUADRANGLE
 LAT/LONG: 37-43-47N/88-30-45W UTM: 4176699E 366713N
 SURFACE ELEVATION (FT.): 372.0 PREC.: DATE COLLECTED: 8/ 1/1923
 COAL TEST DRILLERS LOG TOTAL INTERVAL LOGGED (FT.): 467.
 SOURCE: O'GARA C C COMMENT:

ELEVATION TOP (FT.)	FORMATION	COAL SEAM	COAL ID	THICKNESS (FT.)		COMMENT
				WHOLE COAL	CLEAN OVERBURDEN/ COAL INTERBURDEN	
305.2	CARBONDALE	HERRIN	82	4.50	66.80	
233.5	CARBONDALE	BRIAR HILL	83	1.00	67.20	
181.2	CARBONDALE	SPRINGFIELD	84	4.50	51.30	
103.5	CARBONDALE		85	2.00	73.20	
56.7	CARBONDALE			1.00	44.80	
50.0	CARBONDALE			1.00	5.70	
-8.0	CARBONDALE			0.66	57.00	
-42.5	CARBONDALE		86	1.50	33.84	
-53.0	CARBONDALE			1.00	9.00	
-73.0	CARBONDALE	COLCHESTER	87	2.83	19.00	

Field note

F273A040
 COUNTY: SALINE T10S - R 6E SECTION: 30 NE NEENE HARRISBURG 7.5 MINUTE QUADRANGLE
 LAT/LONG: 37-37-39N/88-34-46W UTM: 4165454E 360622N
 SURFACE ELEVATION (FT.): 450.0 PREC.: +/- 10 FT. DATE COLLECTED: 1971
 SURFACE MINE TOTAL INTERVAL LOGGED (FT.): 87.
 SOURCE: FLD NOTES-BOSTICK, BROWN BROS MINE COMMENT: SEVERAL NOTES FOR THIS MINE

ELEVATION TOP (FT.)	FORMATION	COAL SEAM	COAL ID	THICKNESS (FT.)		COMMENT
				WHOLE COAL	CLEAN OVERBURDEN/ COAL INTERBURDEN	
421.5	SPOON	DEKOVEN	264	2.50	28.50	
389.5	SPOON	DAVIS	254	3.00	29.50	

Mine note

M165080101
 COUNTY: SALINE T 9S - R 5E SECTION: 23 SE 1350NL 550WL HARRISBURG 7.5 MINUTE QUADRANGLE
 LAT/LONG: 37-43-12N/88-37-22W UTM: 4175783E 356976N
 SURFACE ELEVATION (FT.): 360.0 PREC.: +/- 10 FT. DATE COLLECTED: 1/10/1964
 UNDERGROUND MINE MEASURED SECTION TOTAL INTERVAL LOGGED (FT.): 5.
 SOURCE: MINE NOTES-GLUSKOTER, SAHARA C C, MINE16 COMMENT:

ELEVATION TOP (FT.)	FORMATION	COAL SEAM	COAL ID	THICKNESS (FT.)		COMMENT
				WHOLE COAL	CLEAN OVERBURDEN/ COAL INTERBURDEN	
	CARBONDALE	SPRINGFIELD	195	4.92	4.78	PYRITE LENSES .10'

Table 1. Examples of tabular data format for three types of data: coal test, field note, and mine note. See text for explanation of contents.

Core Description

Coal Test

Other Drill Holes C county code county #

Example: C 165 000277

Field Notes F map # sequential #

Example: F 273A 040

Mine Notes M county code mine index # sequential #

Example: M 165 0801 01

Map ID numbers for drill holes start with a "C", which is followed by a 3-digit FIPS county code and then a 6-digit unique number (called a county number) assigned by the ISGS Geological Records Library. Map ID numbers for field notes begin with an "F" and include a 4-digit U.S. Geological Survey topographic quadrangle number (fig. 1) and then a 3-digit sequential number assigned by the geologist (beginning with 001). Map ID numbers for mine notes begin with an "M" and include a 3-digit FIPS county code and a 4-digit unique mine index number assigned by the ISGS Coal Section, plus a sequential number (beginning with 01) that is used if more than one mine note is available for a given mine. The 4-digit mine index number appears on the county mined-out area maps prepared by the Coal Section and distributed by the ISGS.

Quadrangle Map Data. Each data record in the tabular data set, including drill holes, field notes, and mine notes, was plotted with its map ID number on a mylar overlay for a 7.5-minute topographic quadrangle map. Fourteen different symbols were used to designate the type of data available at that location (fig. 5). Other data shown on the maps are mined-out areas, coal subcrops/outcrops, base of the Pennsylvanian System, sandstone channels within coal seams, and faulted areas.

It should be emphasized that all data were plotted as indicated by our records, with only minimum adjustments. No field checking or re-mapping was undertaken for this project.

Geological Cross Sections. A number of cross sections available at the ISGS in published and unpublished form show the stratigraphic relations and facies changes of the Pennsylvanian rocks in the areas of the 67 topographic quadrangle maps. A set of these cross sections (fig. 6) was sent to BLM. Three previously unpublished cross sections by Paul Potter are included here (figs. 7-9); they are based on electric logs. The published cross sections included in the BLM set are available in the following ISGS publications:

- Circular 228, Plate 4 - Gallatin, Saline, Williamson Counties
- Circular 260, Plate 2 - Jackson, Perry, Randolph Counties
- Circular 311, Plate 4 - Greene, Macoupin, Madison Counties
- Circular 374, Figure 5 - Adams, Brown, McDonough, Pike, Schuyler,
Warren Counties
- Circular 419, Plate 2 - Grundy, La Salle Counties
- Circular 515, Plate 1 - Shelby County

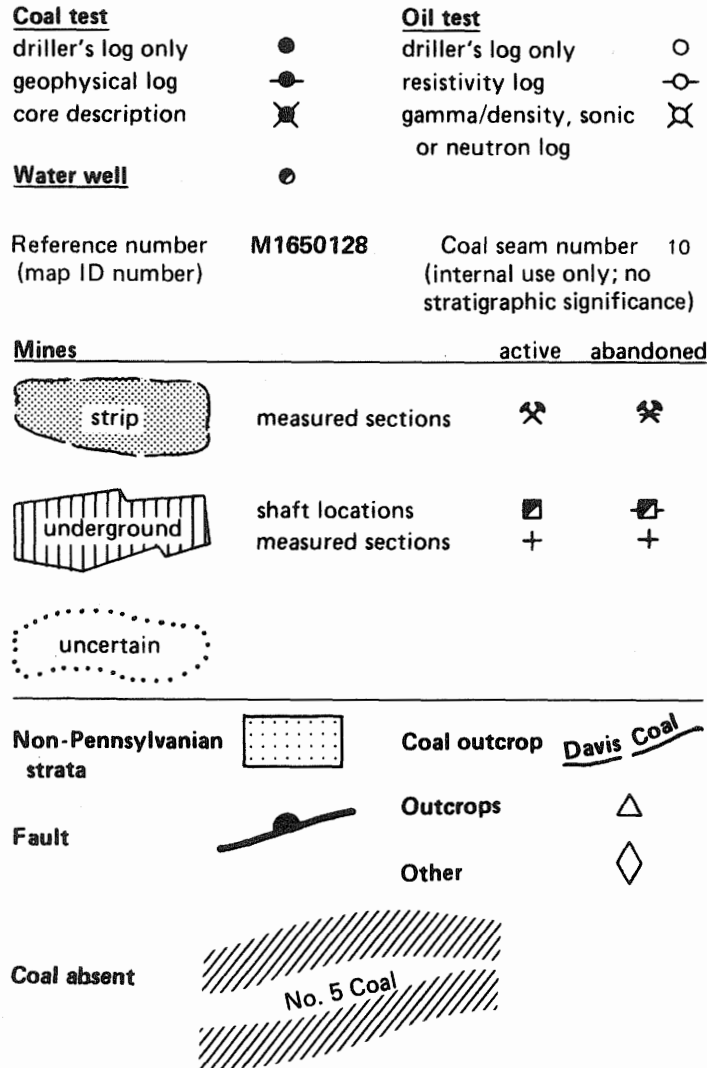


Figure 5. Example of key used on mylar overlays for topographic quadrangle maps.

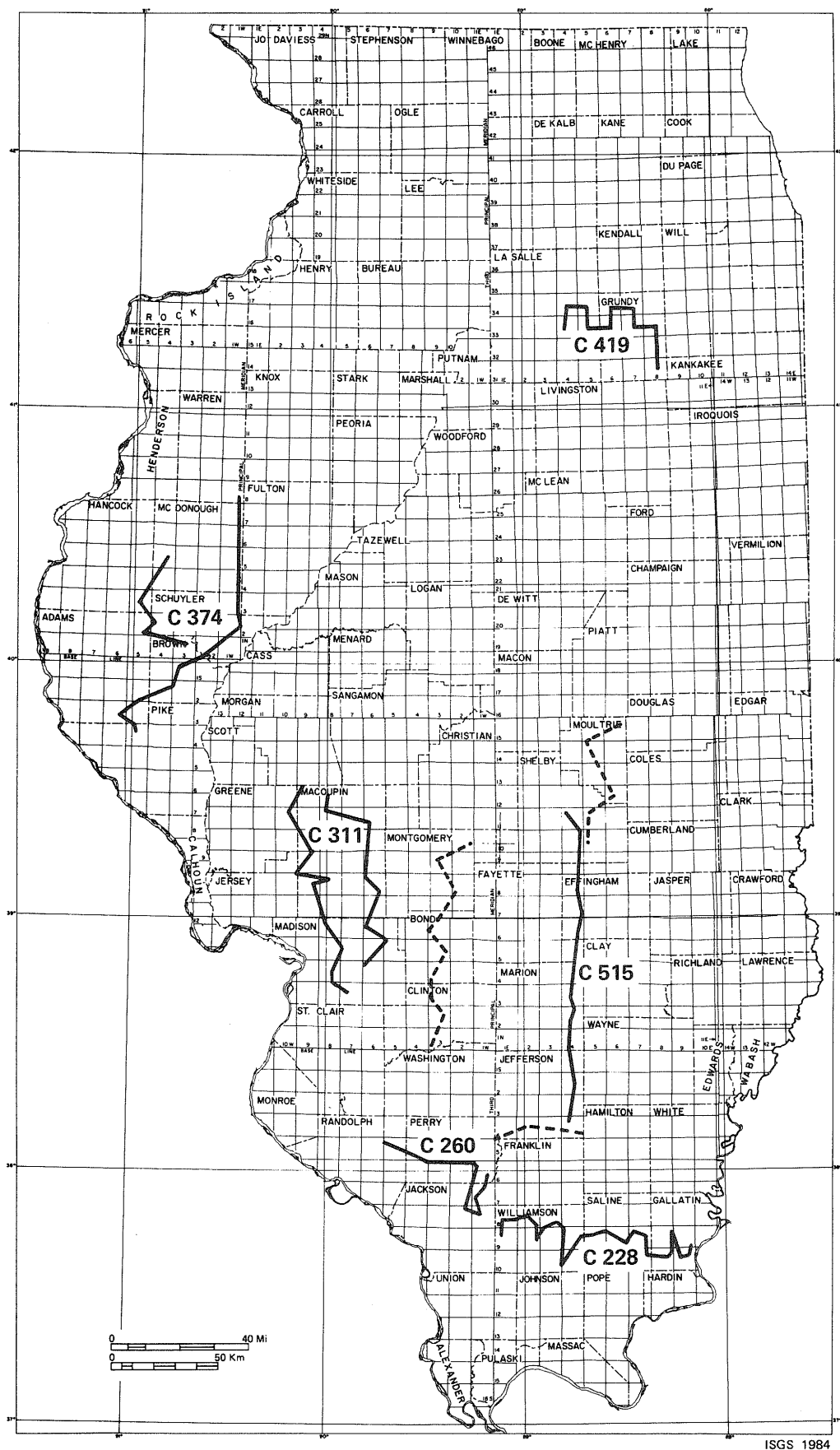


Figure 6. Location of cross sections sent to BLM. Dashed lines indicate previously unpublished sections by Paul Potter that are included as figures 7-9. ISGS Circular numbers are indicated adjacent to lines of published cross sections.

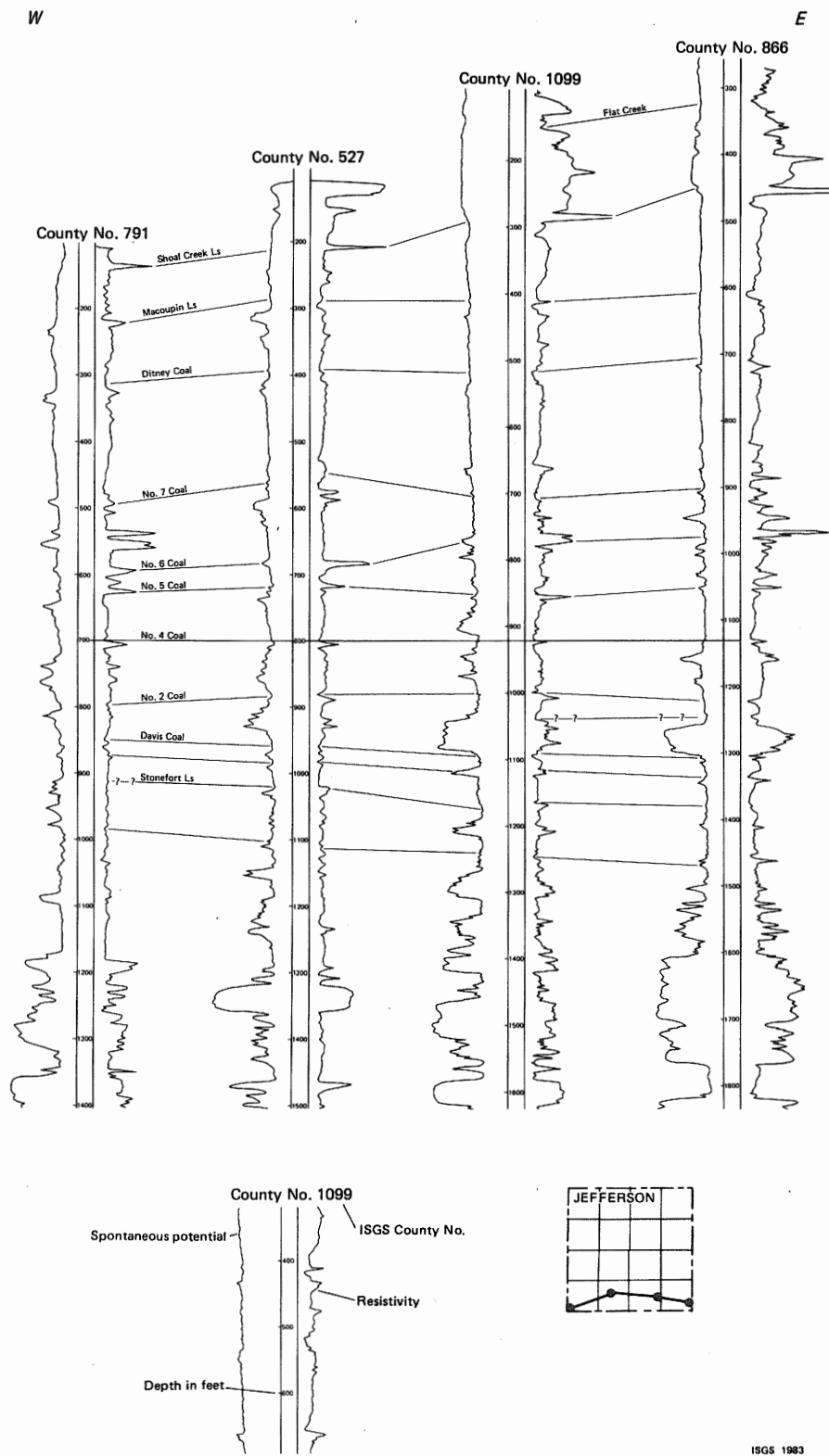


Figure 7. Cross section showing correlations of key Pennsylvanian members in Jefferson County, Illinois. Section by Paul Potter.

These cross sections can be used along with the tabular data to help correlate coal seams within and between quadrangle maps.

Chemical Analyses of Coals. Chemical analyses that have been run by the ISGS Chemical Group on different coals in Illinois were retrieved from the ISGS computerized chemical data file for the counties included in the study area. The following is a list of the counties and coal seams for which publicly available analyses were found:

<u>County, Coal Seam</u>
Franklin
Herrin (No. 6)
Gallatin
Springfield (No. 5)
Willis
Jackson
Herrin (No. 6)
Murphysboro
Jefferson
Opdyke
Johnson
New Burnside
Pope
coal in the lower part of Abbott
Bidwell
Colchester (No. 2)
Reynoldsburg
Saline
Davis
Dekoven
Herrin (No. 6)
Springfield (No. 5)
Shelby
Shelbyville
Williamson
Murphysboro

A total of 167 analyses were retrieved and sent to BLM in tabular form; a sample is shown in table 2. The following is a brief explanation of the various abbreviations used in this table:

- basis: all analyses were reported on an "as received" basis
- mine index: unique ISGS number for mine in which samples taken; "0" means sample was not from a mine
- sample type:
 - FC - face channel; vertical channel of seam excluding impurities >3/8 inches thick
 - CFC - composite of 2 or more face channel samples (usually 3)
 - C - column; vertical channel of seam including impurities
- lab number: unique ISGS chemical laboratory number
- remaining abbreviations refer to chemical properties expressed in units of weight percent:

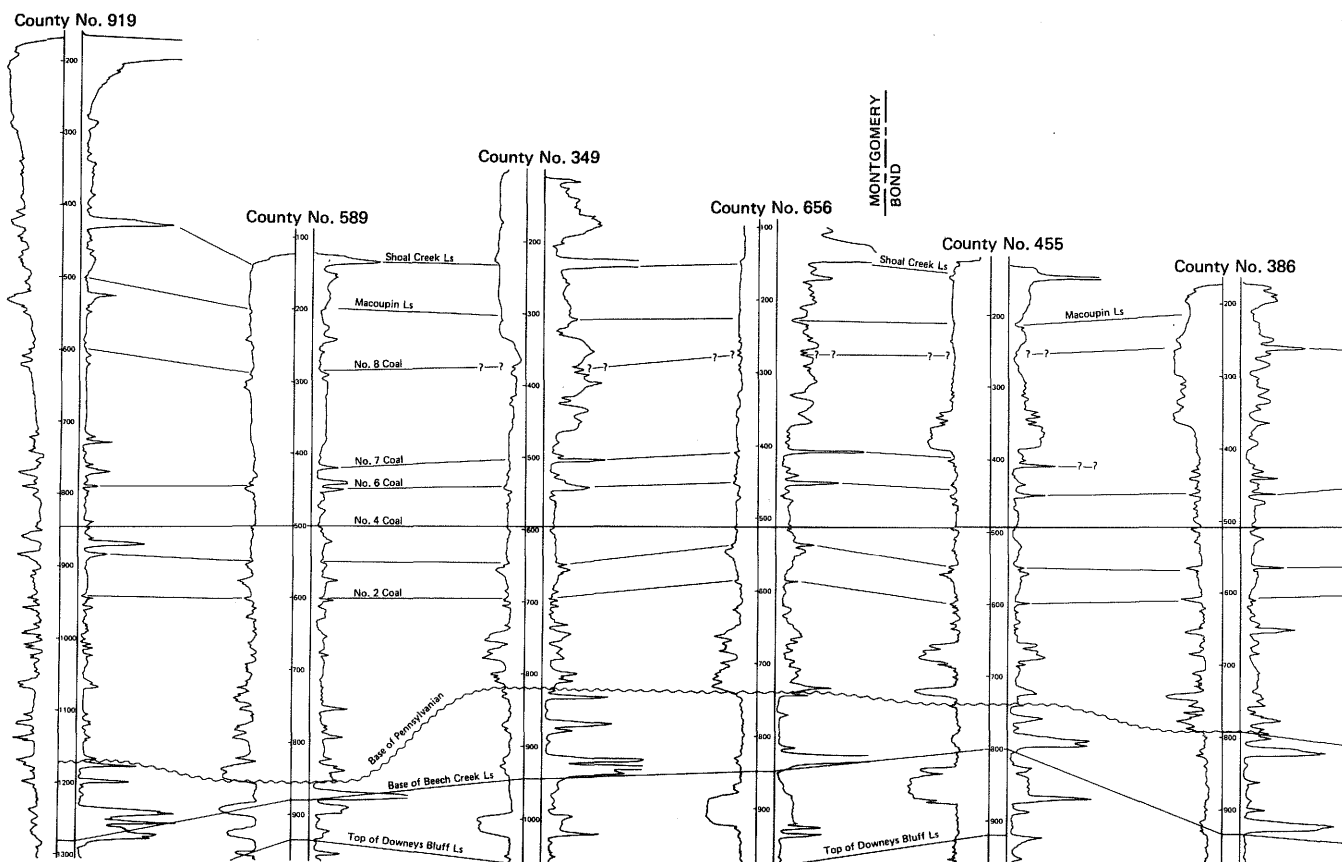
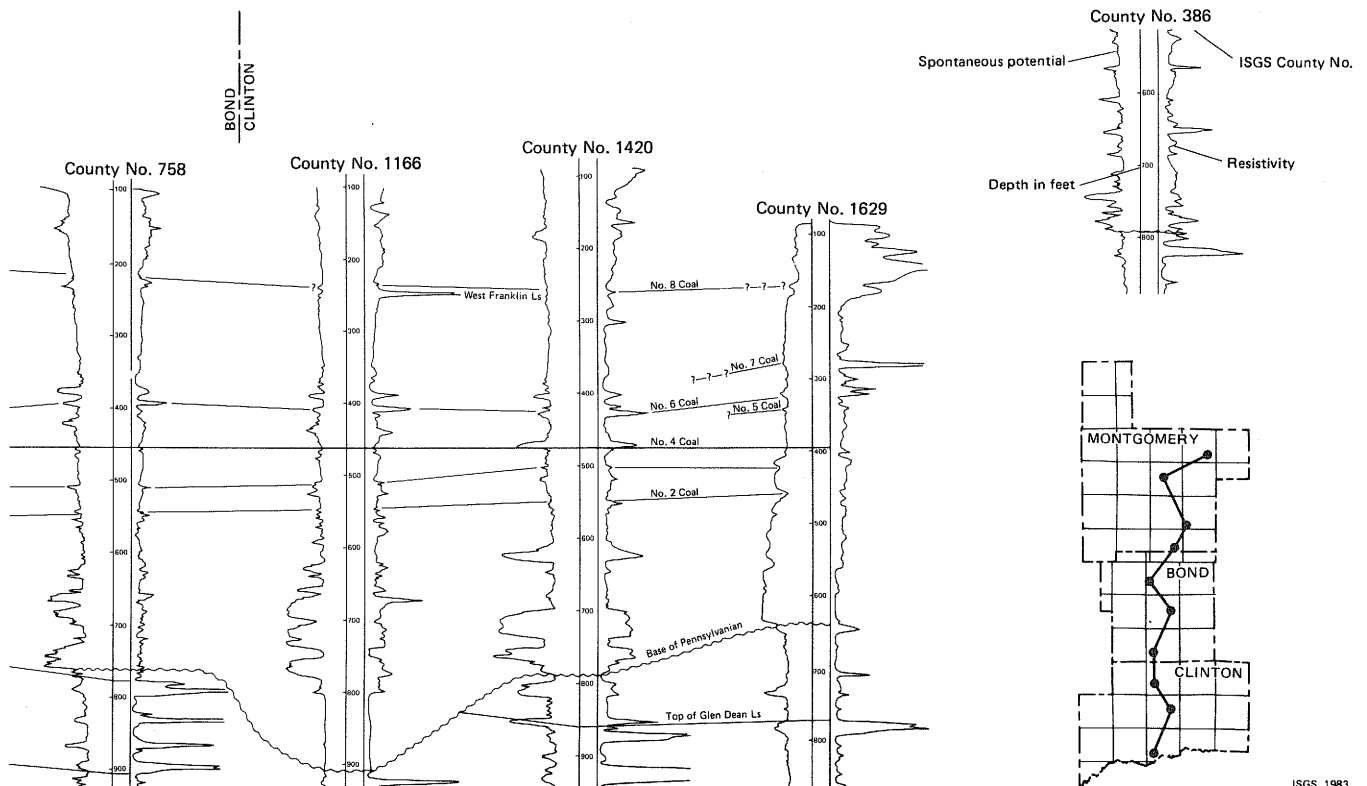


Figure 8. Cross section showing correlations of key Pennsylvanian members in Montgomery, Bond, and Clinton Counties, Illinois. Section by Paul Potter.

MOIS - moisture	TOS - total sulfur
VOL - volatile matter	CL - chlorine
FXC - fixed carbon	BTU - British thermal units/lb
ASH - ash	H - hydrogen
PYS - pyritic sulfur	C - carbon
ORS - organic sulfur	N - nitrogen
SUS - sulfate sulfur	O - oxygen

The chemical analyses should be used with caution. Laboratory techniques and methods of analyzing coal have changed over the years, so some of the older analyses may not be comparable to newer ones. Also the quality of the samples may vary enough to influence the analyses.

The method of sampling will also affect the results: a face channel sample, which excludes impurities >3/8 inches thick, will have lower ash and higher heating values than a column sample of the same coal in the same location. Caution also should be used in extrapolating analytical data of coal over some distance. Geological factors, such as conditions of burial, affect coal quality and must be considered. These factors are discussed in the ENR publication "An Inventory of Coal Resources of Illinois" (p. 13-15).



ISGS 1983

Part II. Statewide Coal Resource Maps

The second phase of this work included compilation of a series of five 4-color statewide coal resource maps at a scale of 1:500,000. The maps show general coal thickness, depth, and tonnage for 32 mapped coal seams in Illinois. Production of these maps has been supported in part by the Bureau of Land Management.

The data were compiled from the most recent published and unpublished maps prepared by members of the ISGS Coal Section. These maps show for the first time the known coal resources, including both deep- and surface-minable coal, for all mapped coals in Illinois in terms of thickness, depth, and tonnage. The maps will be valuable to industry, government, and land and mineral owners for resource assessment and management.

These coal seams are represented on the resource maps:

Map 1

Herrin (No. 6)

Map 2

Springfield (No. 5)

Map 3

Danville (No. 7)

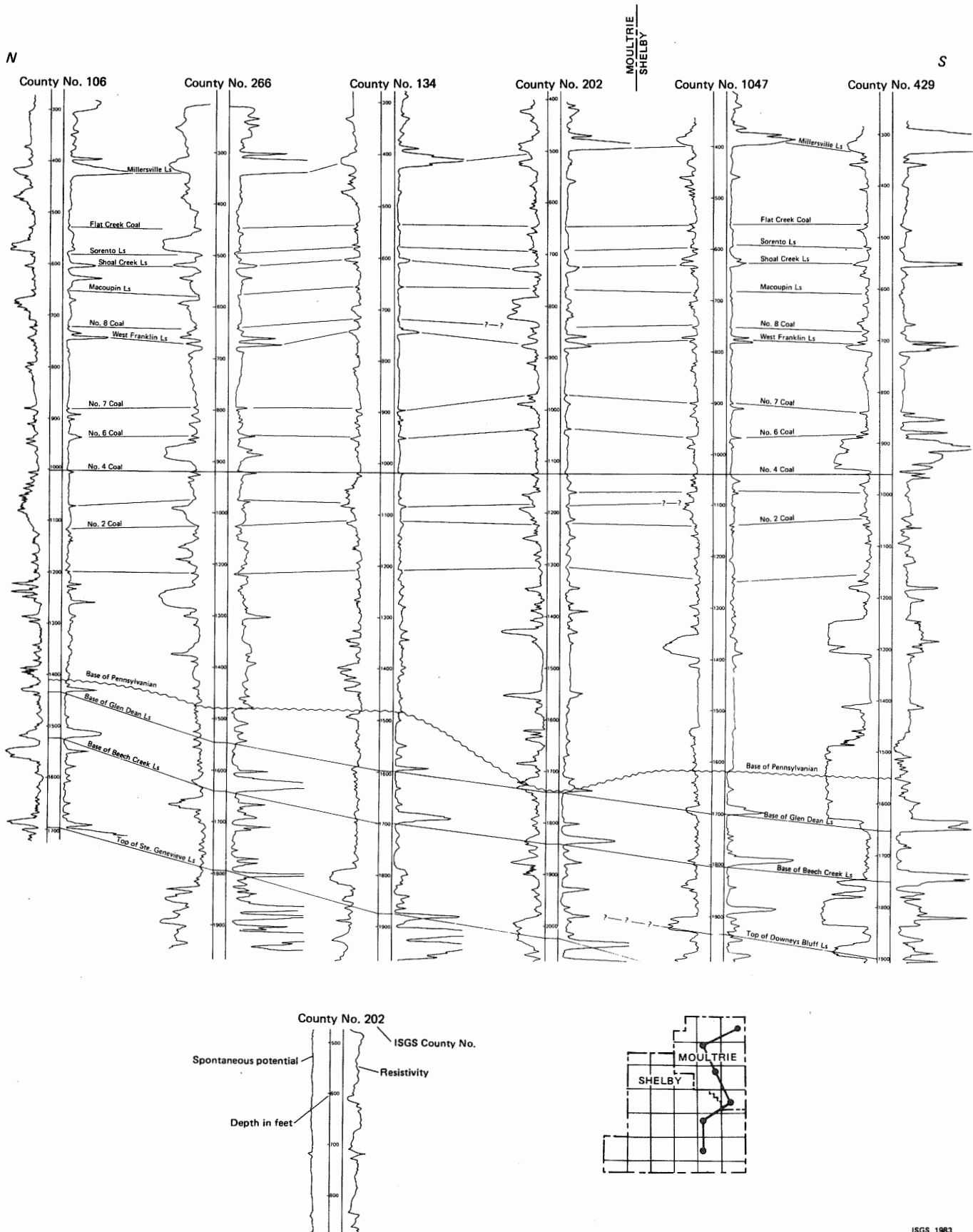


Figure 9. Cross section showing correlations of key Pennsylvanian members in Moultrie and Shelby Counties, Illinois. Section by Paul Potter.

County: Gallatin
Seam : Willis
Basis : As Received

MINE IDX	SMPL TYPE	TKNS (FT)	LAB NO	MOIS	VOL	FXC	ASH	PYS	ORS	SUS	TOS	CL	BTU	H	C	N	O
SWSWSE30 631	10S FC	9E	C 1546	3.2	33.9	53.2	9.5	3.2	.7	.0	4.0		13178				
SWSWSE30 631	10S FC	9E	C 1547	3.6	33.3	53.3	9.7	3.4	.7	.0	4.2		13094				
SWSWSE30 631	10S FC	9E	C 1548	3.5	32.8	52.7	10.9	4.0	.8	.0	4.9		12852				
SWSWSE30 631	10S CFC	9E	C 1549	3.4	33.1	53.2	10.2	3.6	.7	.0	4.5		13069	4.8	71.9	1.2	7.1
631	10S FC	9E	C 8952	3.6	32.4	53.8	10.0				4.3		13007	5.0	72.1	1.2	7.1
631	10S FC	9E	C 8953	3.5	32.7	52.7	11.0				5.3		12856	4.8	70.3	1.2	7.1

Table 2. Example of tabular format for chemical data. See text for explanation of contents.

Map 4

Belle Rive	Jamestown
Bristol Hill	Loudon
Calhoun	Ocone
Colchester (No. 2)	Opdyke
Dekoven	Shelbyville
Friendsville	Trowbridge

Map 5

Assumption	New Burnside
Bell	Reynoldsburg
Davis	Rock Island (No. 1)
Houchin Creek (formerly Sumnum (No. 4))	"Seahorne"
Litchfield	Seelyville
coals near Makanda	Survant (formerly Shawneetown)
Mt. Rorah (formerly Bald Hill)	Wiley
Murphysboro	Willis
	Wise Ridge

These coals, and other key stratigraphic members, are shown in stratigraphic order in figure 10.

For some minor coals, the thickness is too variable and/or data are too sparse to permit mapping of coal thickness and tonnage at the scale of the maps. For these coals the subcrop/outcrop, 150-foot depth line, and any mined-out areas are shown where they have been identified.

Resources are shown on the basis of estimates calculated for ISGS Circular 527 for the deep coals and estimates given in the ISGS surface-minable coal resources series.

Products Available to the Public

Maps and Tables

A set of mylar overlays for all sixty-seven 7.5-minute topographic quadrangle maps used in this study and a set of the tabular data for each quadrangle map are available for public use in the ISGS Map Library. Tabular data are listed in numerical order by map ID number for each quadrangle map. Copies of individual mylar overlays, topographic quadrangle maps, and tabular data sets by quadrangle may be ordered from the ISGS for a fee. Also available for use in the ISGS Map Library is a set of the chemical analysis data.

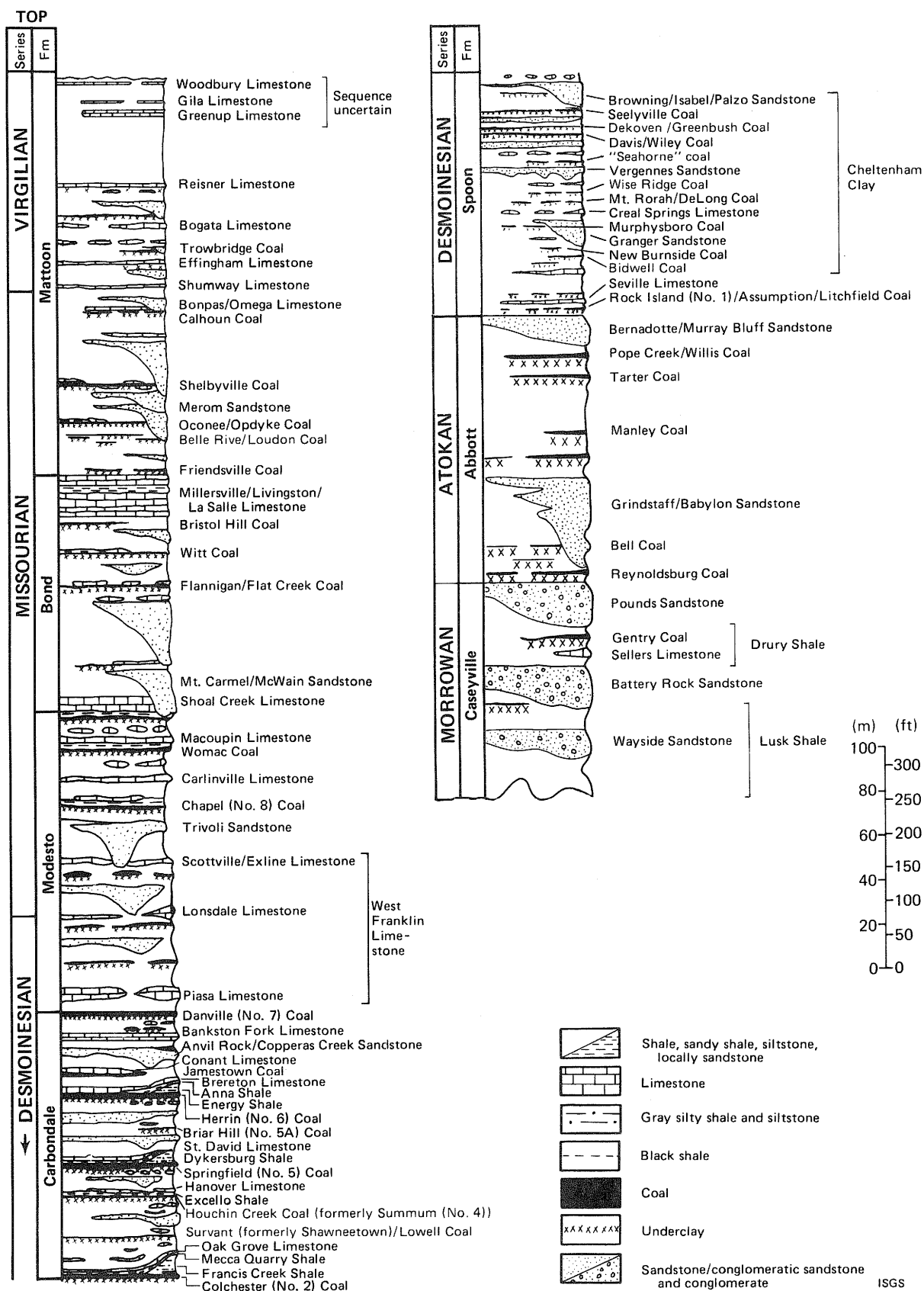


Figure 10. Generalized stratigraphic column of the Pennsylvanian System in Illinois. Coal seams and other key stratigraphic members are shown.

The five statewide coal resource maps are available as a set or individually.* To obtain copies please call or write

Information Office
Illinois State Geological Survey
615 East Peabody Drive
Champaign, IL 61820
Phone: 217/344-1481

Geological Report

As a supplement to the tabular and map data produced on this project, we recommend the recent publication, "Illinois Energy Plan, Volume IV, An Inventory of the Coal Resources of Illinois." The report was written by members of the ISGS Coal Section and published by the Illinois Department of Energy and Natural Resources in 1982. It summarizes much information on coal in Illinois. The contents of this publication include

The Nature and Origin of Coal Seams

Analysis and Quality of Coal

Proximate Analysis

Heating Value

Ultimate Analysis

Sulfur

Chlorine

Coking Quality

Ash Properties

Coal Petrography

Geologic Factors that Affect Coal Quality

Conditions During Peat Accumulation

Conditions During Initial Burial

Conditions of Maximum Burial

Influence of Groundwater

Coal Seams in Illinois

General Description of the Coal-Bearing Rocks

Major Coal Seams of Illinois

Davis and Dekoven

Seelyville

Colchester (No. 2)

Springfield (No. 5)

Herrin (No. 6)

Danville (No. 7)

Other Coal Seams

Reynoldsburg

Bell

Willis

Rock Island (No. 1), Litchfield, and Assumption

*These maps may not become available until fall, 1984.

New Burnside
Murphysboro
Mt. Rorah
Shawneetown (now Survant)
Summum (No. 4) (now Houchin Creek)
Briar Hill (No. 5A)
Jamestown
Chapel (No. 8)
Bristol Hill
Friendsville
Opdyke
Trowbridge and Shelbyville
Calhoun

Coal Resources of Illinois

Geologic Confirmation of Coal Resources;
Economic Feasibility

Resources
Development potential
Mining method

Deep-Minable Coal Resources

Thickness and depth
Location of resources
Quality of resources
Size of mining block
Restricted development potential of deep resources due to
surface features
Restricted development potential of deep resources located
within oil fields
Coal seams containing deep-minable resources

Surface-Minable Coal Resources

Thickness of coal and overburden
Location of resources
Quality of resources
Size of mining block
Restricted development of surface-minable coal due to
surface features
Surface-minable coal resources within oil fields
Coal seams containing surface-minable resources

Additional Resources

History of Underground Mining

History of Surface Mining

Historic Trends of Coal Mining in Illinois

Summary and Perspectives

Principal Sources of Information and Additional Reading

To obtain copies of this publication, please call or write

Energy Plan
Department of Energy and Natural Resources
325 West Adams Street, Room 300
Springfield, IL 62706
Phone: 217/785-2800

Personnel

Colin Treworgy initiated Phase I of this project and was responsible for setting up the data collection process and the data presentation in tabular and quadrangle map formats. For the remaining two years, including all of Phase II, Janis Treworgy managed the project. Margaret Bargh and Janis Treworgy collected all the data and compiled the maps. Aravinda Kar wrote the computer programs for the project. Pamella Foster drafted all the mylar overlays for the topographic quadrangle maps and the statewide coal resource map of the Herrin Coal. Kate Hunter drafted the other four statewide coal resource maps.

References Used in Compiling Quadrangle and Statewide Maps

Illinois State Geological Survey Publications

Bulletins

- B 47. Geology and mineral resources of the Equality-Shawneetown area: Charles Butts. In cooperation with USGS. 1925. 76 p., 3 pls.
- B 78. Movable coal reserves of Illinois: G. H. Cady and others. 1952. 138 p., 8 pls.

Circulars

- C 195. Faults and other structures in southern Illinois--a compilation: H. B. Stonehouse and G. M. Wilson. 1955. 4 p., 1 map.
- C 228. Strippable coal reserves of Illinois. Part 1--Gallatin, Hardin, Johnson, Pope, Saline, and Williamson Counties: W. H. Smith. 1957. 39 p., 4 pls., (pl. 3 available separately).
- C 260. Strippable coal reserves of Illinois. Part 2--Jackson, Monroe, Perry, Randolph, and St. Clair Counties: W. H. Smith. 1958. 35 p., 4 pls. (pl. 1 available separately).
- C 311. Strippable coal reserves of Illinois. Part 3. Madison, Macoupin, Jersey, Greene, Scott, Morgan, and Cass Counties: W. H. Smith. 1961. 40 p., 4 map pls., (pls. 1, 2: coal reserves, pl. 3: coal structure, available separately).
- C 320. Geology of the Pomona Quadrangle, Illinois: G. A. Desborough. 1961. 16 p., 1 map pl. (pl. 1 available separately).
- C 342. Areal geology of the Illinois Fluorspar District. Part 1. Saline Mines, Cave in Rock, Dekoven, and Repton Quadrangles: J. W. Baxter, P. E. Potter, and F. L. Doyle. 1963. 43 p., 2 pls., (pl. 1 available separately).
- C 348. Strippable coal reserves of Illinois. Part 5A--Fulton, Henry, Knox, Peoria, Stark, Tazewell, and parts of Bureau, Marshall, Mercer, and Warren Counties: W. H. Smith and D. J. Berggren. 1963. 59 p., 4 pls.
- C 374. Strippable coal reserves of Illinois. Part 4--Adams, Brown, Calhoun, Hancock, McDonough, Pike, Schuyler, and the southern parts of Henderson and Warren Counties: D. L. Reinertsen. 1964. 32 p., 1 map pl.

Circulars (continued)

- C 385. Areal geology of the Illinois Fluorspar District. Part 2--Karbers Ridge and Rosiclare Quadrangles: J. W. Baxter and G. A. Desborough. 1965. 40 p., (pl. 1 available separately).
- C 413. Areal geology of the Illinois Fluorspar District. Part 3--Herod and Shettlerville Quadrangles: J. W. Baxter, G. A. Desborough, and C. W. Shaw. 1967. 41 p., 2 pls.
- C 419. Strippable coal reserves of Illinois. Part 6--La Salle, Livingston, Grundy, Kankakee, Will, Putnam, and parts of Bureau and Marshall Counties: W. H. Smith. 1968. 29 p., 2 pls.
- C 431. Harrisburg (No. 5) coal reserves of southeastern Illinois: M. E. Hopkins. 1968. 25 p., 2 pls.
- C 439. Strippable coal reserves of Illinois. Part 5B--Mercer, Rock Island, Warren, and parts of Henderson and Henry Counties: T. K. Searight and W. H. Smith. 1969. 22 p., 2 pls.
- C 473. Subsurface geology and coal resources of the Pennsylvanian System in De Witt, McLean, and Piatt Counties, Illinois; K. E. Clegg. 1972. 27 p., 4 pls.
- C 489. Reserves of the Herrin (No. 6) Coal in the Fairfield Basin in southeastern Illinois: G. J. Allgaier and M. E. Hopkins. 1975. 31 p., 2 pls.
- C 509. The Wabash Valley Fault System in southeastern Illinois: H. M. Bristol and J. D. Treworgy. 1979. 24 p.
- C 513. The Rend Lake Fault System in southern Illinois: J. N. Keys and W. J. Nelson. 1980. 23 p.
- C 515. Strippable coal resources of Illinois. Part 8--Central and southeastern counties: R. B. Nance and C. G. Treworgy. 1981. 32 p.
- C 519. Structural features in Illinois--a compendium: J. D. Treworgy. 1981. 22 p.
- C 521. Strippable coal resources of Illinois. Part 7, Vermilion and Edgar Counties: R. J. Jacobson and L. E. Bengal. 1981. 24 p.
- C 522. The Cottage Grove Fault System in southern Illinois: W. J. Nelson and H.-F. Krausse. 1981. 65 p.

Circulars (continued)

- C 527. Deep-minable coal resources of Illinois: C. G. Treworgy and M. H. Bargh. 1982. 65 p.
- C 536. Coal resources of Grundy, La Salle and Livingston Counties: R. J. Jacobson. In preparation.

Miscellaneous

- Cooperative Resources Report 4. Coal and water resources for coal conversion in Illinois: W. H. Smith and J. B. Stall. 1975. 79 p.
- Coal Reserves of Illinois--Harrisburg-Springfield (No. 5) Coal: Compiled by W. H. Smith and L. E. Bengal, assisted by R. J. Jacobson. 1975. Scale, 1:500,000. Plate 2 that accompanies Cooperative Resources Report 4. Available separately.
- Coal Reserves of Illinois--Herrin (No. 6) Coal: Compiled by W. H. Smith and L. E. Bengal, assisted by R. J. Jacobson. 1975. Scale, 1:500,000. Plate 1 that accompanies Cooperative Resources Report 4. Available separately.
- Geologic Map of Illinois: Compiled by H. B. Willman and others. 1967 edition. Scale, 1:500,000.
- Illinois Mineral Notes 80. The Seelyville Coal: a major unexploited seam in Illinois: C. G. Treworgy. 1981. 11 p.
- Illinois Mineral Notes 85. Murphysboro Coal, Jackson and Perry Counties: resources with low to medium sulfur potential: R. J. Jacobson. 1983. 19 p.
- Report of Investigation 71. Geology and oil possibilities of extreme southern Illinois--Union, Johnson, Pope, Hardin, Alexander, Pulaski, and Massac Counties: J. M. Weller. 1940. 71 p., 1 pl.

Publications outside ISGS

- Illinois Academy of Science Transactions v. 50. Faulting in the Pomona area, Jackson County, Illinois: G. A. Desborough. 1957. p. 199-204.
- U.S. Geological Survey, Bulletin 1202-B. Regional structure of the southeast Missouri and Illinois-Kentucky mineral districts: A. V. Heyl, Jr., M. R. Brock, J. L. Jolly, and C. E. Wells. 1965. 20 p.