

Availability of the Springfield Coal for Mining in Illinois

Map Summary of Illinois Minerals 118

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2000

Underground Mining

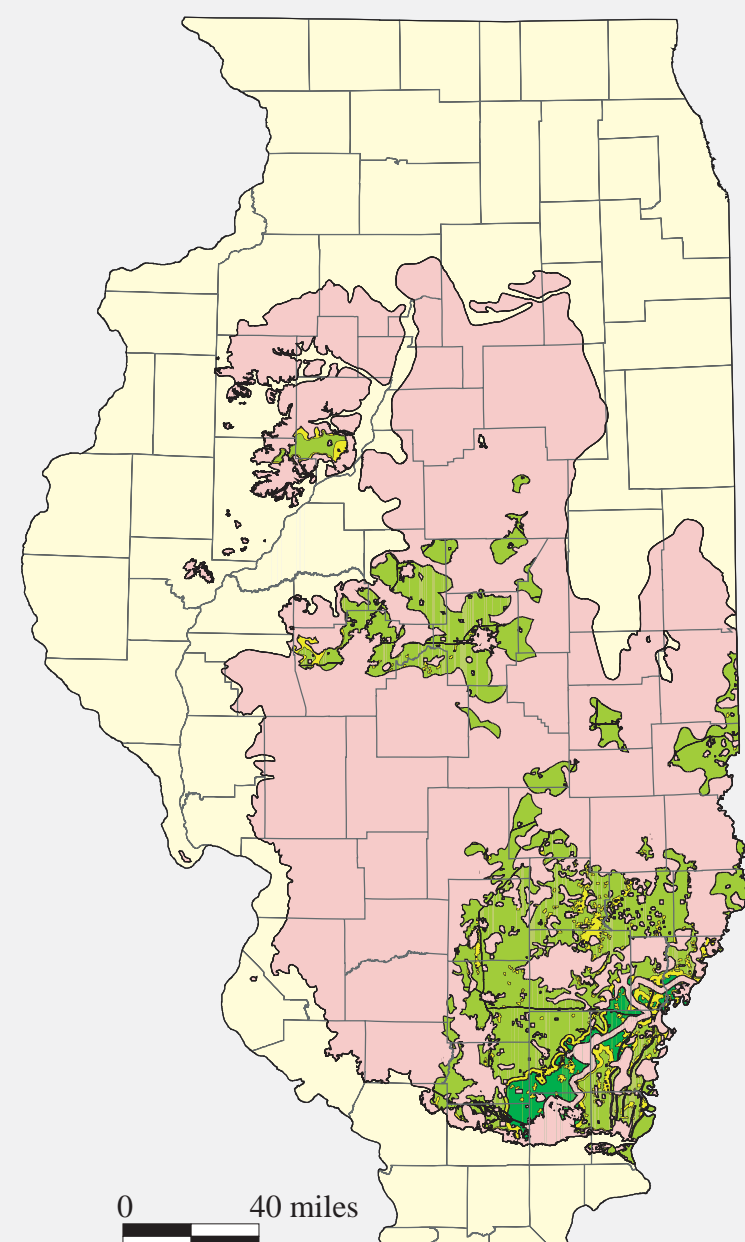
Most of the resources of Springfield Coal will have to be mined by underground methods. The available resources are primarily located in the central and southeastern portions of the state and are well suited for high-efficiency longwall mining. The resources are relatively flat-lying, have a consistent seam thickness over large areas; are relatively free of faults, channels, or other geologic anomalies; are located predominantly in rural areas free from oil wells and other surface development; and occur in minable blocks of hundreds of millions of tons. To avoid high mining costs resulting from unfavorable geologic conditions, companies using underground mines should avoid areas of thick drift and thin bedrock cover, areas in close proximity to the Galatia Channel and faults, areas of closely spaced oil wells, and areas in the transition zone at the edge of the Dykersburg Shale.

Acknowledgments

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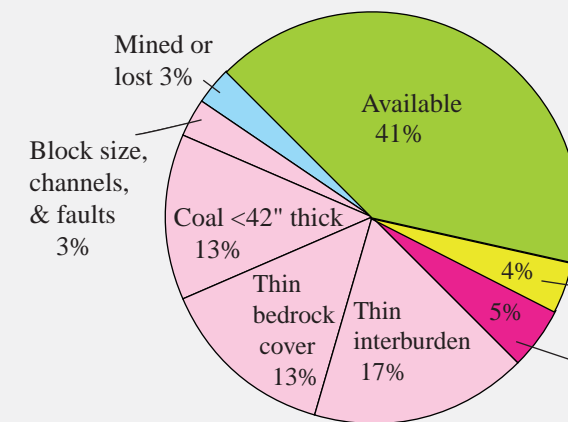
0 40 miles

Available low to medium-sulfur coal
Available high-sulfur coal
Available with potential restrictions
Technological or land use restriction or mined out

Location of resources available for underground mining

Resources available for underground mining, millions of tons and percent of original resources

Original	62,995	(3)
Mined (percent of original)	1,764	(3)
Remaining (percent of original)	61,231	(97)
Available	26,109	(41)
Available with potential restrictions	2,708	(4)
Oil wells	1,326	(2)
Transitional roof	954	(2)
Bedrock 75 to 100 ft thick	352	(1)
Potential land use conflict	77	(0)
Land use restriction	2,979	(5)
Towns	1,765	(3)
Public lands	463	(1)
Oil wells	457	(1)
Abandoned mines	190	(0)
Interstate highways	100	(0)
Major airports	5	(0)
Dams	<1	(0)
Technological restrictions	29,436	(47)
Thin interburden	10,088	(17)
Seam <42 inches thick	8,354	(13)
Thin bedrock cover	8,131	(13)
Block size	1,306	(2)
Nine channel	617	(1)
Faulted	339	(0)

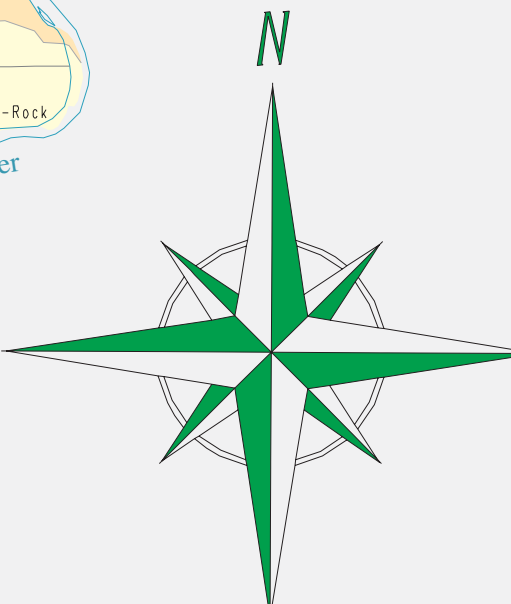


Available for underground mining, percent of original resources

Factors influencing the availability of coal for underground mining

COAL THICKNESS	MINED AREAS	LAND USE RESTRICTIONS
Greater than 66 inches	Mined area: surface	Town restrictive to mining
42 to 66 inches	Mined area: underground	Land use restriction (see table above)
28 to 42 inches	Active mine	Greater than 7 oil wells/40 acres
Less than 28 inches		Interstate
Split coal		
Insufficient data	SURFACE FEATURES	TECHNOLOGICAL RESTRICTIONS
Sandstone channel	Stream or small river	Thin interburden *
	Large river, lake	Bedrock overburden thickness less than 40 feet
COAL DEPTH		Bedrock overburden thickness 40 to 75 feet
200 feet		Bedrock to unconsolidated overburden ratio 0 to 0.5
500 feet	POTENTIAL RESTRICTIONS	Bedrock to unconsolidated overburden ratio 0.5 to 1.0
1000 feet	Potential land use conflict	Area affected by faults/dikes
OTHER GEOLOGIC FACTORS	4 to 7 oil wells/40 acres	Mining block too small
Rocks of Pennsylvanian System eroded	Bedrock overburden thickness 75 to 100 feet	Within 0.5 mile of Galatia Channel
Extent of rocks of Pennsylvanian System	Transition between the Dykersburg Shale and Turner Mine Shale/St. David Limestone	
Low- to medium-sulfur coal		

* Interburden between the Herin and Springfield Coals less than 40 feet and Herin mined or thicker than Springfield



Scale 1:500,000

0 40 miles
0 40 kilometers

Base map compiled by the Illinois State Geological Survey from digital data provided by the U.S. Geological Survey, the Illinois Department of Transportation, and the Illinois State Geological Survey.
1927 North American datum.
Lambert conformal conic projection based on standard parallels 33° and 45°.
Railroads updated to 1995.
Mined areas updated to January 1999.