

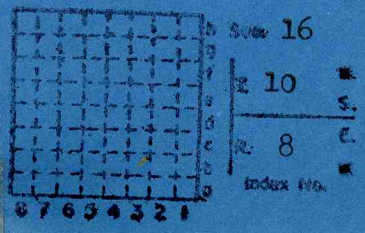
JADER FUEL COMPANY, INC.
MINE NO. 4

Jader Fuel Mine No. 4
Strip mine in the No. 5, 5A, & 6 Coals

Mine Index No. 1004
Coal Report No. S-5

Equality (7.5') Quadrangle
Gallatin County

Mine Index 1004



JADER FUEL #4



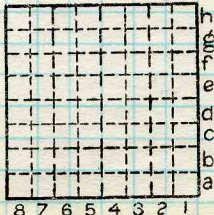
Jader Fuel Comapny - Mine No. 4

Coal Seam	Production Figures Cumulative	Year	Tonnage
		1982	6,279
		1983	90,590
		1984	124,493
		1985	184,114
		1986	414,723
		1987	463,599
		1988	560,180
		1989	531,295
		1990	631,780
	3,552,653	1991	545,600
# 3 4, 5 & 6	3,918,817	1992	366,164
# 5 + 5A	4,182,826	1993	268,009
Spring (w/rook?) & Baird	4,498,948	1994	316,122
Spring & Bakoven		1995	345,934
Davis & Bakoven	5,517,954	1996	673,072
Davis/Bakoven	6,503,655	1997	985,701
Davis/Bakoven	7,384,138	1998	880,483

By Date

Quad. Equality Part 7.5'

County Gallatin



Sec. 16
 T. 10
 S.
 E.
 R. 8
 Index No.



FORM 180 W

Jader Fuel Co.
Mine No. 4

6-11-86
Gallatin County

The purpose of this visit was to collect two channel samples from the Springfield (No. 5) Coal. Notes by S. K. Danner. Accompanied by Don Lumm, I.S.G.S., and Gary Carr, Chief engineer for Jader Fuel.

Mine No. 4 is a surface mine located about 5.5 miles SSE of Equality, on the north side of Eagle Valley. Jader is stripping the No. 5, No. 5A, and No. 6 Coals along an east-west ridge locally known as Green Hill. They are literally removing the top of the ridge as the mine advances from east to west. The No. 6 Coal, where present, is found at shallow depths along the top of the ridge. At present they are beyond the No. 6 crop line, and therefore are mining only the No. 5 and 5A Coals.

Bulldozers, graders, and two draglines are used to remove the overburden. The coal is loaded into 18 wheel coal-haulers and trucked to Shawneetown. Jader subcontracts out for the haulage. There must have been at least two dozen trucks from six different companies hauling coal on the day of our visit.

The highwall consisted of 4.5 to 5.0' of No. 5 Coal overlain by 3 to 4' of black shale, 1±' of limestone, and 30±' of brownish gray shale. The gray shale had a very ragged profile with large slabs jutting out from the highwall. Since the highwall was nearly vertical and contained many loose slabs and blocks, it was very uncomfortable to work around. The coal and overlying strata appeared to dip gently to the north. There were no anomalies or irregularities to be seen in the highwall. All in all, it was a rather ho-hum exposure.



FORM 180 W

Jader Fuel Co.

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Mine No. 4

Channel sample No. 1Lab No. C25020

Location: approximately 710' from NL, 2300' from EL,
Sec. 16, T.10S., R.8E., Gallatin County

Description: (No. 5 Coal)

3.7' Roof Shale: Black; well laminated, smooth; hard;
some finely disseminated pyrite; concre-
tions common, some up to 2' in diameter;
sharp contact with:

4.77' Coal: NBB, black; well-developed cleat; abundant
pyrite facings; also some thick calcite
and kaolinite facings; predominantly clarain
with a vitreous luster and hackly fracture;
vitrain is very thin banded, but abundant.
Coal is badly shattered from blasting.

Floor Claystone: dark gray; firm; many small slicken-
sides; some carbonaceous debris and pyrite
crystals.

Channel sample No. 2Lab No. 25021

Location: 890' from NL, 2300' from EL, Sec. 16, T.10S.,
R.8E., Gallatin County

Description: (No. 5 Coal)

3.0' Shale: black

0.85' Roof shale: medium dark-gray; single, lenticular
bed about 60' long; thinly laminated,
silty; contains some pyritized shell frag-
ments, bed broken from blasting; sharp
contact with:



FORM 180 W

Jader Fuel Co.

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1.13' Coal: NBB; well developed cleat; predominately clarain (80%±); vitrain thin banded; no visible fusain.

.02' Bone coal: moderately soft

3.69' Coal: NBB; similar to above; some pyrite facings; partly shattered and covered with dust.

Floor Claystone: medium-dark gray; firm;

Total thickness of coal: 4.84'

Jader Fuel Co. (Downen Bros.) No. 4 Mine -
Gallatin County, IL John Nelson, Aug. 27, 1986.

Strip mine located approx. $E\frac{1}{2}$ NW $\frac{1}{4}$ and W $\frac{1}{2}$ NE $\frac{1}{4}$, Section 16, T. 10 S., R. 8 E. Now actively mining three seams, Herrin (No. 6), Briar Hill (No. 5-A) Springfield (No. 5). Owner Ed Downen says he has plans to mine Davis and DeKoven coals as well. Two draglines, a medium-sized Bucyrus-Eric bought from Peabody and a smaller dragline for the Herrin Coal; three overburden drills, plus scrapers, dozers, trucks etc.

The coal seams dip to the north here, down the black slope of a cuesta. The Herrin Coal is at the top and they remove 20-30 feet of overburden to get it.

The Briar Hill and Springfield coals then are taken in benches. The whole operation is advancing to the west and the pits are backfilled in order on the east.

The Herrin Coal is barely exposed at the north end of the pit and otherwise is mined out or not yet uncovered. The Herrin Coal is weathered in its exposure and somewhat disturbed by blasing. It is overlain by 12 to 15 feet of light gray, soft poorly bedded silty shale. Above that is thick-bedded highly micaceous, argillaceous sandstone. In the area where the dragline is working nearly all the overburden is sandstone.

Mr. Downen says a fault cut the Herrin Coal near the north end of the pit. The fault runs west or southwest and the north side is said to be from 10 or 12 feet. The fault is not visible now.



FORM 180 W

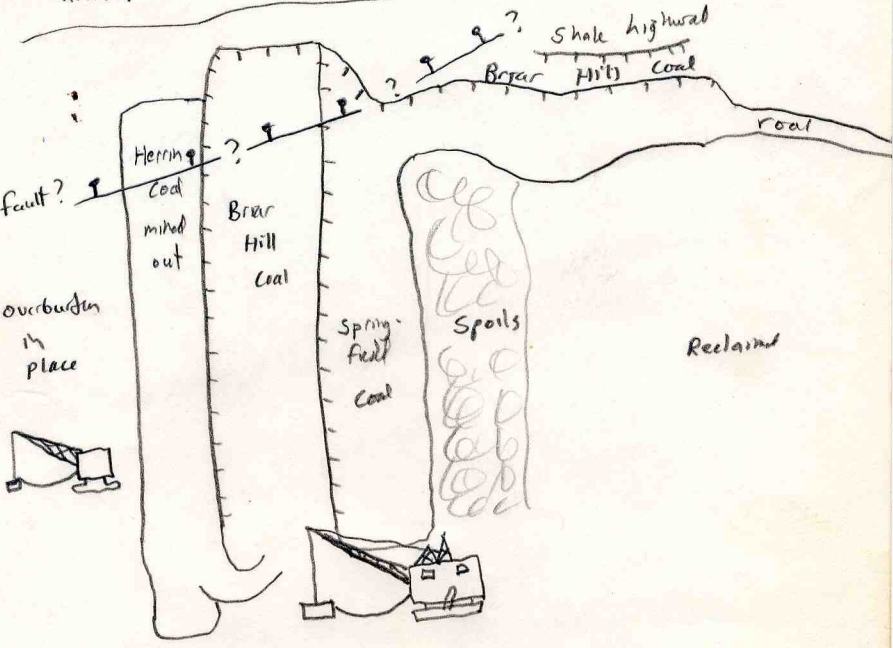
The Springfield Coal is uncovered in a long pit but this cannot be examined because spoils are being dumped across the only present road into the pit. Part of the overburden can be seen along a south-facing highwall to the northeast. The most interesting feature is a very impure, shaly coal up to 12" thick about midway in the section. The dull shaly coal is fairly interlaminated with dark gray shale. There is no trace of rooting in the underlying siltstone. The coal is not present along the entire wall. Probably this coal consists entirely of washed-in peat or plant debris (not an in-situ swamp deposit).

Above the shaly coal and below the Briar Hill is about a 25 foot succession of interbedded medium to dark gray siltstone and silty shale, both interbedded with up to about 2 feet of buff, fine-grained argillaceous sandstone.



woods

hilltop



fault?

overburden
in
place

Herring
Coal
mixed
out

Brear
Hill
Coal

Spring-
field
Coal

Spoils

Reclaimed

Shale high wall
Brear Hill Coal

road



mn. act - gallatin - oi. tj

Jader Fuel Co. mine, looking south. Springfield Coal on floor of pit below dragline dips north, toward camera. On bench at west(right), Briar Hill Coal is being loaded. Herrin Coal is being uncovered farther to the west, out of the picture.

Jader Fuel Co. No. 4 Mine
John Nelson, Nov. 1, 1988
N $\frac{1}{2}$ S $\frac{1}{2}$ SE $\frac{1}{4}$, Section 17, and NW $\frac{1}{4}$ NW $\frac{1}{4}$, Section 16, T.10S.,
R.8E.

Davis and Dekoven pit

See attached map for location of mine.

Dekoven Coal is mined out and interburden to Davis Coal is being drilled due south of Barnett Cemetary. The coal was not examined here as it is largely covered with debris. It is overlain by several inches of soft dark gray shale that contains abundant finely crystalline pyrite, and occasional small ovoid pyrite nodules. Neither plant nor animal fossils observed. Above dark shale is about 30 feet of medium-dark gray well indurated micaceous siltstone. In part of this unit, extremely regular horizontal laminations spaced 1/4" to 1/3" apart are present, best seen where the rock has weathered. They are as regular as glacial lake varves and somewhat resemble varves as they have a thin, dark argillaceous portion followed by a lighter coarser-grained portion. I have seen nearly identical laminations above the Lower Block Coal in Indiana, and Eric Kvale has interpreted the laminae as of tidal origin.

The siltstone grades upward to 10-15 feet of brown, weathered shale and sandstone.

The coal dips noticeably toward the north and there is a sharp undulation near the west end of the exposure. Large planar joints that strike N.42-45°E. and are spaced 5 to 10 feet apart, occur in the laminated siltstone.

The Davis Coal is exposed in the eastern part of the pit, but I did not visit this area because it is crowded with moving equipment.



FORM 180 W

Jader Fuel Co.

-2-

Nelson

The western half of the pit is inactive and a section from just above the Davis Coal to well above the Colchester Coal is exposed. The following estimated section was largely "eyeballed" from below and supplemented by study of fallen material:

- 10' Surficial materials with modern soil. Upper 6-7 feet is yellowish-brown loess that overlies 2-3 feet of darker, orange-brown material, either older loess or colluvium.
- 20' Bedrock, probably shale or siltstone, draped with dirt. Well-jointed like underlying unit.
- 15' Shale, dark gray, well jointed, with light gray bands in upper part and a zone of red-brown nodules 5-6 ft. above base. Fallen blocks of shale, dark gray, well laminated, smooth, finely carbonaceous; parting horizontally laminated with silt; tabular beds and lenses about 1 inch thick of light gray, very fine sandstone, with both horizontal and crossed laminations. Occasional well preserved plant fossils - Calamites, large seed. Red-brown lenses probably dense, sublithographic siderite. Grades into:
- 2' Mecca Quarry Shale, black, fissile.
- 2-6" Colchester Coal, bright banded.
- 2-3' Underclay, olive-gray to yellowish gray.
- 20' Sandstone, siltstone, and shale, light gray, indistinctly bedded. Fallen blocks light to medium gray nonlaminated, well indurated siltstone and very fine rather quartzose sandstone, little mica, beds irregular, a few inches to a foot thick; light greenish-gray silty shale interbedded. Contact indefinite.
- 25' Siltstone, dark gray, uniform texture, faint very regular horizontal laminations (as previously described).



FORM 180 W

Jader Fuel Co.

-3-

Nelson

- 2-4" Shale, dark gray, soft, pyritic.
- 3' Dekoven Coal, pyrite lenses common.
- 2-3' Underclay, olive gray, soft, rooted. Lower part sandy. Grades into:
- 8-10' Sandstone and siltstone interbedded. Sandstone very light to light gray, very fine grained, beds up to 2 feet but most much thinner, beds tabular to elongate lenticular, siltstone dark gray, well laminated, comprises 20 to 50% of interval. Siltstone also occurs as laminae and partings within sandstone; bedding planes thickly coated with coarse carbonaceous debris and mica flakes. Horizontal to wavy laminations, small-scale crossbedding, occasional current ripples. Sandstone diminishes downward. Contact gradational.
- 7' Siltstone, dark gray, upper part sandy and coarsely laminated, lower part finer and less laminated, nearly massive; grades to silty shale at base.

Covered (water and talus). Includes Davis Coal.

The Colchester Coal would crop out at about the 410-foot contour at the west end of the pit.

No faults noted. Dip not evident on highwall. North-east-trending joints common.

Herrin, Briar Hill and Springfield pit

These three coals are being mined in (see map).



FORM 180 W

Jader Fuel Co.

-4-

Nelson

The Herrin Coal is present only near the top of the 440-foot hill and it is about 25 feet below the summit. Part of the coal is weathered to clay at the cropline. This looks like the final cut for this pit. The coal is about $4\frac{1}{2}$ feet thick, and the "blue band" is about 1 foot above the base. Overlying the coal is a few inches of black fissile shale, then about 2 feet of bright orange-brown clay, which probably represents leached-out Brereton Limestone. Next is about 12 feet of light to medium gray shale, smooth at the base and becoming silty upward. This is capped with erosional contact by 10-12 feet of sandstone, which Lumm and I mapped as Gimlet Sandstone. Coal and shale fragments are present near the base of the sandstone, which crops out north of the mined area near the hilltop.

Near the east edge of the Herrin mined area are several large masses of coal heavily replaced by dark gray to brown limestone nodules (coal balls). Two masses are about 8' x 8' x 3' and several others are nearly as large. Evidently they were encountered in the Herrin Coal and bulldozed out of the way. The coal balls range from 1" diameter to about 8" and are sperical to lens-shaped. They represent at least 50% and maybe 75% of the seam. Woody plant material is visible in some.



FORM 180 W

SAMPLE HISTORY

Plant sampled: **Coal Processors, Inc.**Date: **11/10/92**Company: **Jader Fuel
POB 620, Shawneetown, IL 62984**Sample ID: **Jader 4
C32775**Company representative: **Robert Downen, President
Ed Downen, Vice President, 618-269-3101**Mine (source of sample): **No. 4**Collected by: **RRR & RDH**Seam identification: **Herrin**Time of closure: **11:30am**Mining period represented (dates): **11-8-92**Panel(s) & location(s) in mine:
Mine locations (descriptive):**5 mi south and 2 mi east of Equality**

$\frac{1}{4}$ or footage	section twp	rge	
	N $\frac{1}{2}$ 15	10S - 8E	Gallatin Cnty

Type of Preparation Plant:

Baum jigs with cyclones for the fine circuitSampling point:
Belt (describe position in plant)# increments: **16
shovel fulls**

Train

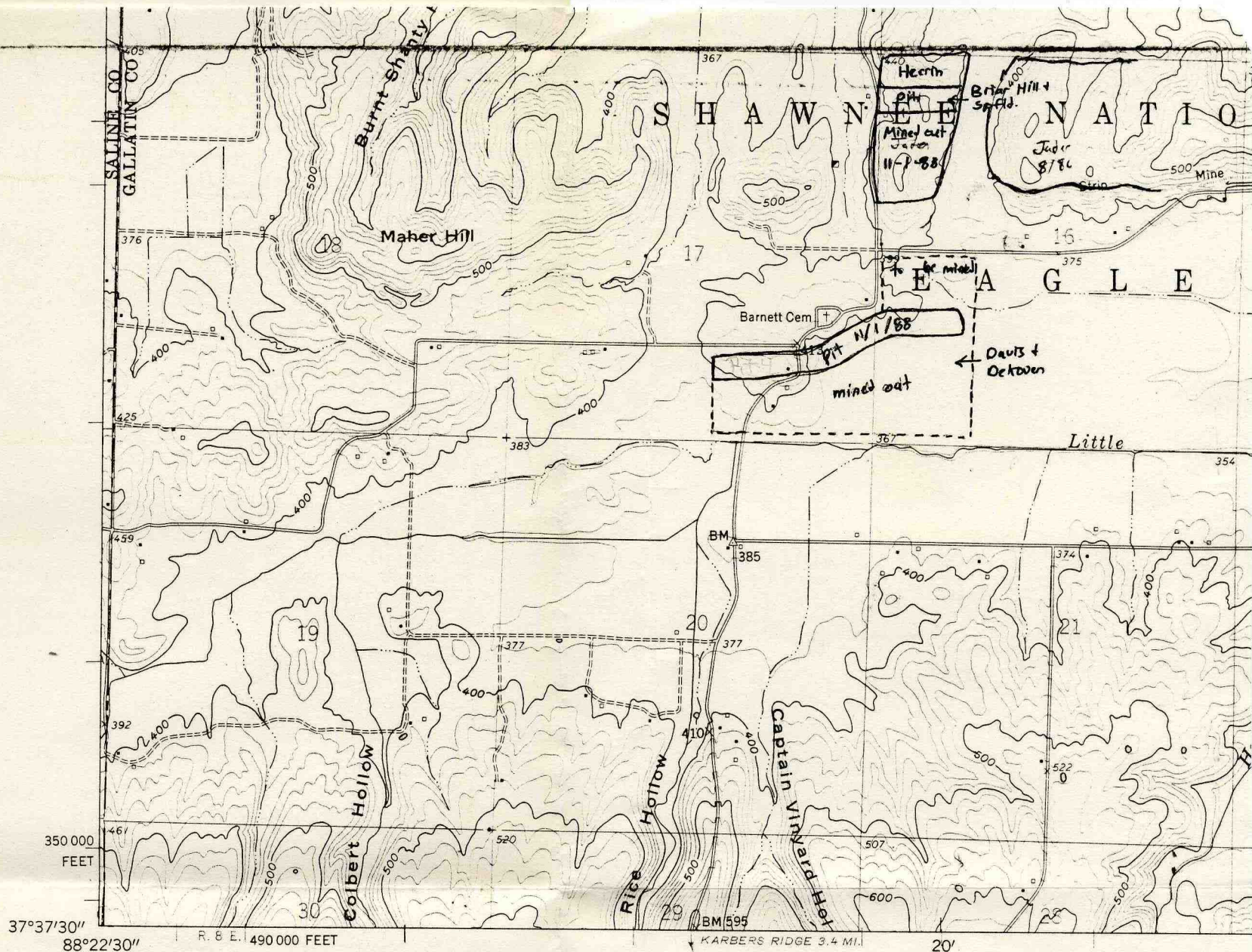
Truck

Company's sampling device (yes / no) **None available**
Type:

Other (describe)

Procedures (describe other aspects):

Manual sampling of stock pile.



(HEROD)

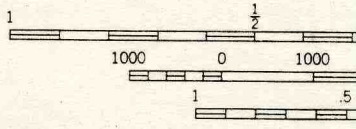
Mapped, edited, and published by the Geological Survey
Control by USGS, USC&GS, and USCE

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1957. Field check 1959

Polyconic projection. 1927 North American datum
10,000 foot grid based on Illinois coordinate system, east zone
1000-meter Universal Transverse Mercator grid ticks,
zone 16, shown in blue

Equality 7 1/2 - minute quad.

TRUE NORTH
MAGNETIC NORTH
4°



APPROXIMATE MEAN
DECLINATION, 1959

THIS MAP COMPL
FOR SALE BY U. S.
AND BY THE S.

8/29/96 Phone call to Al Rice of
Illinois Office of Mines & Minerals;
provided the following information
on Tades Fuel No. 4 Mine

Currently only a small portion
of their production comes out of
a pit in the Springfield Coal in
Ballatine Co.; most of their production
now comes out of the Davis & Dekoven
Coals in a strip pit in Saline Co.;
this is where their future production
will come from primarily.
Tipple located in Ballatine Co.
H. Kumblyer