Brown Brothers Excavating # 2

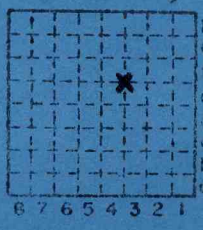
J.J. Track Mining Co. Brown Bros. Excavating

BROWN BROS. EXCAVATING
MINE # 2 (Strip)

Mine Index No. 919
Coal Report No. L-131

SALINE COUNTY

Secs 19, 20 &



(Sheets) COAL PRODUCTION (Sheet)

Period Mo. Day Year	Period Mo. Day Year	Tons
	1971	46 582
	1972	68 533
	1973	54 026
	1974	55 736
	1975	50 891
	1976	49 358
	1977	62 648
	1978	48 851
J. J. TRACK	1979	49 589
BROWN BROS. EXCAVATING	1980	37 230
	1981	56 501
	1982	16 237
	1983	14 160
	1984	3 2 277
	1985	4 779

Exhausted reserves -
abd. 2/85

SUMMARIES

No.	to	No.		
4/71	to	2/85	647	398

Railroad, Wagon, Strip, Idle, Abandoned

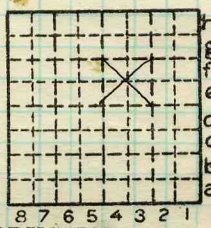
IDENTIFICATION

County No. _____ Coal No. ☐

Coal Report No. L-131

Quad.

County Saline



Sec. 30

T. 10 S.

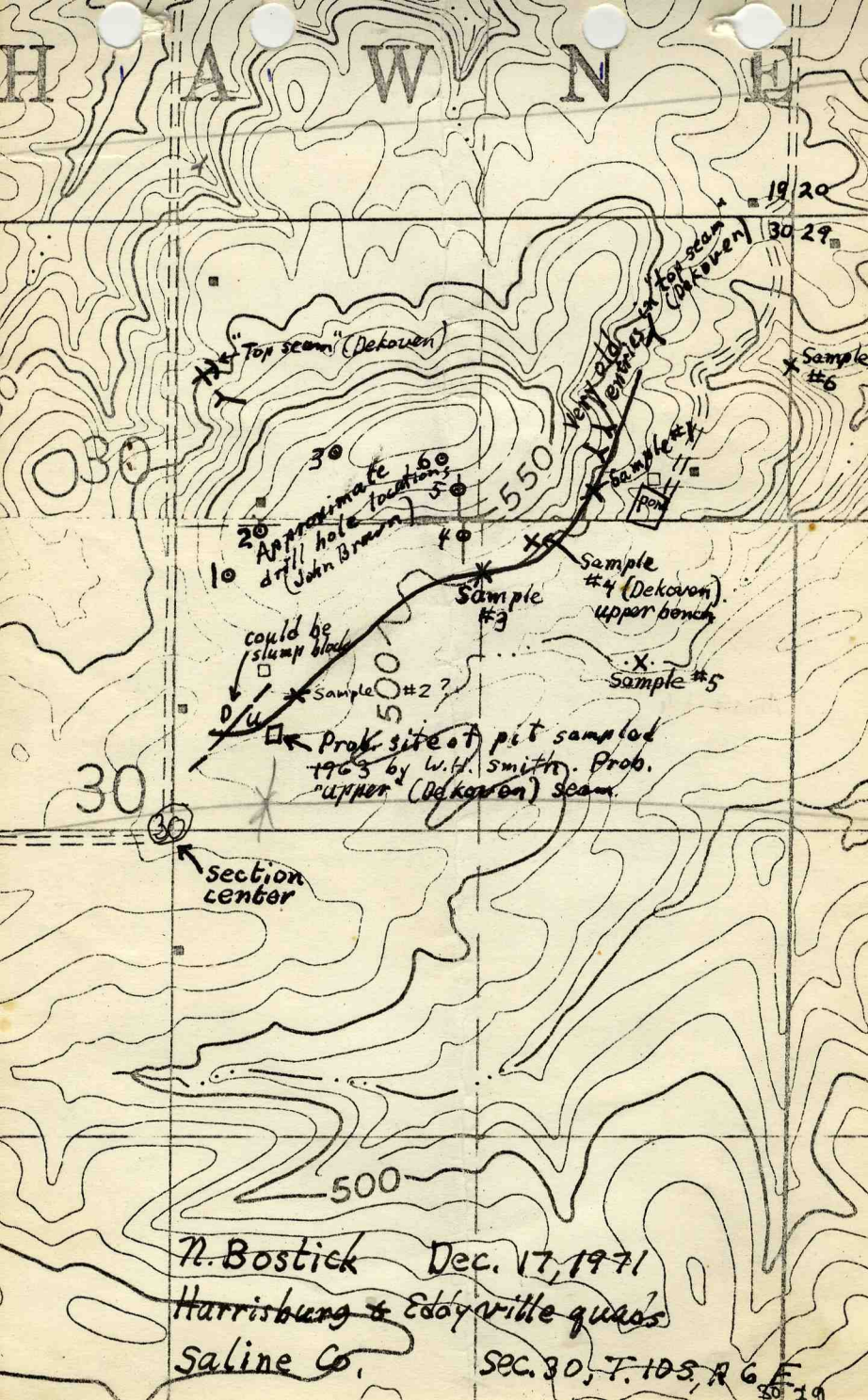
R. 6 E.

Index No. 919

COAL MINE—PRODUCTION

ILLINOIS GEOLOGICAL SURVEY, URBANA

(2732—2M—7-41)


H A W N
19 20
30 29
"Top seam" (Dekoven)
Sample #6
Very old prospect pit
Top seam (Dekoven)
Sample #1
Pond
OBO
30
20
10
Approximate drill hole locations (John Brown)
40
50
550
Sample #4 (Dekoven) upper bench
Sample #3
could be slump block
Sample #2 ?
Sample #5
500
Prob. site of pit sampled 1963 by W.H. Smith. Prob. "upper (Dekoven) seam
30
30
section center
500
N. Bostick Dec. 17, 1971
Harrisburg & Eddyville quads
Saline Co. Sec. 30, T. 10S, R 6E
30 19

ILLINOIS GEOLOGICAL SURVEY, URBANA

Brown Brothers #2 - Drill logs. See map for locations.

#1

Soil 8½'
Sandstone 24'
Slate 28.6'
Coal 30.6' (2½ ft.)
"Fireclay" 40'
Sandstone 50'
Gray shale 60'
Coal 78' (3 ft.)
Fireclay 81'
Blue shale 91'
Hard sandstone 101'

#2

Clay 13'
Light sandstone 22'
Sand rock 26'
Slate 33'
Coal 38 (2 ft.) 35?
Fireclay 37'
White sandstone 49'
Hard sandstone 50'
Blue shale 57'
Black shale 80'
Coal 8[illegible] (3 ft.)
Fireclay 84'
Hard rock 100'
Hard gray rock 121'
Blue shale 122'
Black shale 131'

#3

Coal (2 ft.)
Shale 26'
Coal 78' (5?)
Fireclay 82'
84'

#4

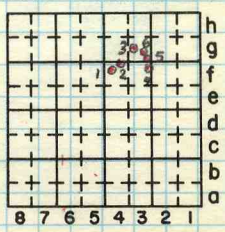
Soil 12'
Hard white red sandstone 19'
Shale 39'
Old works 43'
(coal, but missing)

#5

Clay 12'
Light sand 44'
Shale 50'
Dark shale 63'
Coal 65' (3½ ft.)
Fireclay 68'
Blue slate 73'
Black shale slate 87'
Coal 88½' (4½')
Fireclay 93'
95'

#6

Sand 12'
Damp coal 25'
Fireclay



By N. Bostick Date Dec. 17, 1971

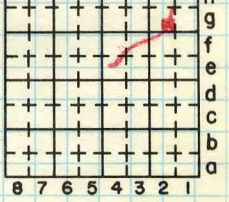
Quadrangle Harrisburg and Eddyville

County Saline Sec. 30 T. 10S R. 6E

Brown Bros. #2 mine ½ mile E of Palestine Church, about 4 miles SW of Mitchellsville.
Contact: John Brown, P. O. Box 288, Harrisburg, Illinois, 62946, 618-252-3232 (evening).
252-3463 (office)

1) Brown finished mining No. 5 Coal remnants in the old strip mines two miles E of Carrier Mills in April, 1971, and the pits are flooded. He expects no more mining there.
2) The present pit at #2 mine (Sec. 30) is the second pit for the mine. Brown expects to make one more pit, at least, from which he will mine both the "main" (lower; Davis) seam and the "upper" (20 ft. above; DeKoven) seam, though the "upper" seam has been partly removed by old entries. The overburden ratio to the main (Davis) seam will be about 6/1, and it looks like a fourth pit could be developed with a ratio of about 8-10/1 to the main (Davis) coal.
3) Sample #1, about 500 ft. from NE end of pit. SE¼, SW¼, NE¼, NE¼, Sec. 30. (Two cans; no exclusions; split and use half for F.C., half for column.)

Overlying coal: 0.2 ft. black, soft, siltstone with abundant pyrite - in part, pyritized brachiopods and possible crinoid fragments. Overlain by hard black shale, 2.5 ft., grading to grayish brown, fine-grained sandstone ababout 6 ft., overlain by interbedded brown sandstone and dark gray silty standstone 6 to 8 ft.



By NHB and KRC Date 12/17/71

Quadrangle Harrisburg and Eddyville

County Saline Sec. 30 T 10 S R 6 E.

thick.

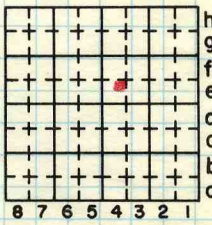
Coal:

0.10'	0.00'-0.10'	Normally bright banded.
0.05'	0.10'-0.15'	Dull coal.
3.45'	0.15'-3.60'	Normally bright banded. Pinkish kaolinite cleat fillings, especially upper 1 ft. Pyrite cleat fillings (vertical) throughout. One pyrite nodule 0.05' ft. thick one pyritized fusain lens 0.05 ft. thick.
0.03'	3.60'-3.63'	Fusain.
1.12'	3.63'-4.75'	Normally bright banded, pyrite cleat fillings, pyritized fusain nodule
4.75'	Underclay at least ½ ft.	Underclay - contact with coal indistinct.

Sample #2 - About 300 ft. NE from SW end of pit, at which fault cut off coal. One sample of two buckets no exclusions. NE¼, SW¼, SW¼, NE¼, Sec. 30.

Immediately over coal if 0.1 ft. black siltstone, very pyritic (in part marine fossils). Overlain by 2.8 ft. black shale, which grades upward to fine-grain brown or buff massive sandstone, which after 4 ft. overlain by 12 ft. of brown sandstone interbedded with gray shale, then underclay 2 ft. then upper coal.

0.10'	0.00'-0.10'	Dull coal.
4.40'	0.10'-4.50'	Normally bright banded, pyrite cleat filling (mostly vertical) no nodules.
4.50'		Underclay, indistinct contact with coal.



By N. Bostick Date Dec. 17/71

Quadrangle Harrisburg

County Saline Sec. 30 T. 10 S. R. 6 E.

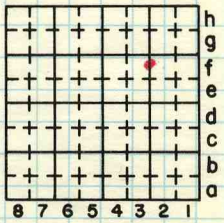
ILLINOIS GEOLOGICAL SURVEY, URBANA

Sample #3 - About 800 ft. NE of SW end of pit, where it intersects fault. W edge of NW¼, NW¼, SE¼, NE¼, Sec. 30. Distance NE from No. 1 to fault is 1500 ft. 350' from sample no. 1 to shovel.

Coal grades upward at top from pyritic bright coal to soft very pyritic claystone with small pyritized marine fossils. Total pyritic zone 0.13'. Overlain by 0.25 soft black claystone, overlain by 2.6' hard gray to black shale, grades at top to buff massive, fine-grained sandstone 5' thick, overlain by 10' black shale with interbeds of buff sandstone.

0.05'	0.00'-0.05'	Coal, very pyritic, fractured.
1.40'	0.05'-1.45'	Normally bright banded, very pyritic, especially on vertical cleats, sparse kaolinite cleat fillings, thin fusain stringers common.
0.03'	1.45'-1.48'	Fusain, soft.
2.48'	1.48'-3.96'	Normally bright banded, less pyritic than upper part, less fusain also, contact with "underclay" distinct.
3.96'		"Underclay" 6" exposed, some Stigmaria.

Sample #3, two buckets; one F.C. (but no exclusions), one channel.



By N. Bostick Date Dec. 17, 1971

Quadrangle Harrisburg

County Saline Sec. 30 T. 10 S. R. 6 E.

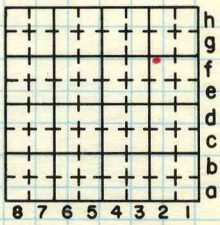
Sample #4 - 180' NE of Sample #3, upper bench 60 ft. wide. "Upper coal" (DeKoven), about 20 ft. above Davis coal. Center NW¼, NW¼, SE¼, NE¼, Sec. 30.

Over coal - Dark gray shale grading upward in 1' to light brown siltstone 2' thick grading into white to buff weathered sandstone.

Coal: (Dekoven)

0.53'	0.00'-0.53'	Normally bright banded.
0.68'	0.53'-0.61'	Fusain, soft, lens, thickens to SW.
0.11'	0.61'-0.72'	Normally bright banded.
1.03'	0.72'-0.75'	Fusain, soft.
1.45'	0.75'-2.20'	Normally bright banded.
0.08'	2.20'-2.28'	Fusain, upper part soft, locally hard, no visible pyrite.
1.07'	2.28'-3.35'	Normally bright banded.
3.35'		"Underclay", ochre stained, hard.

No pyrite visible in coal, vertical cleats yellow-orange stained.



By N. Bostick Date Dec. 17, 1971

Quadrangle Harrisburg

County Saline Sec. 30 T 10S R 6E

Sample #5a

Coal, small column sample, 0.8 ft. thick; ochre-stained underclay. No pyrite in cleats. Overlying is 0.15 ft. gray ms., overlain by 1.5 ft. black, hard, shale, overlain by brown mudstone.

Sample #5b

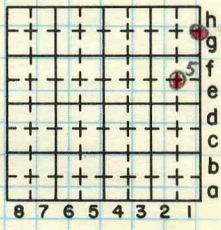
Small column of hard black shale.

Sample #6

Black slate in creek. 2½ ft. thick; overlain by buff, massive sandstone. Underlain by gray, ochre-stained clay. Rough column sample of black shale.

Palynological analysis on sample #5a by Russ Peppers indicates it is probably the Mt. Rorah coal bed. Said to be 40 ft. below Davis Coal, in Peppers' notes. I visited the locality myself on 10/25/84 (see Harrisburg Quad., note 13) and from this and subsequent field mapping determined that the coal is not the Mt. Rorah but the Wise Ridge. Black shale at sample #6 probably equivalent to Seahorne Limestone.

John Nelson
10/29/84.



By NHB and KRC Date Dec. 17/1971

Quadrangle Eddyville

County Saline Sec. 30 T 10S R 6E

FORM 180 W

BROWN BROTHERS EXCAVATING CO. (Strip Mine) SALINE COUNTY

Notes by John Nelson on visit with John Popp, 9/30/77

A small operation in the Davis and DeKoven Coals. We examined the one active pit and two abandoned mining areas. The mine is in a faulted area previously thought to contain no coal. The pits are bounded by faults and there are several faults actually exposed. See sketch map (over).

ACTIVE PIT

Both coal seams are exposed and the Davis Coal was being loaded in the small active pit. The pit is about 300 feet long and 60 feet wide. Due to pit activity and steep highwall, it was not possible to measure a section The following is estimated:

12'	Surface material and bedrock, appears weathered. very poor view.
3'	Coal (DeKoven)
2'	Underclay
15'	Siltstone, medium gray, carbonaceous, micaceous, thick-bedded.
3'	Shale, medium to dark gray
2'	Shale, black, smooth, fissile, well-jointed.
4'	Coal (Davis)

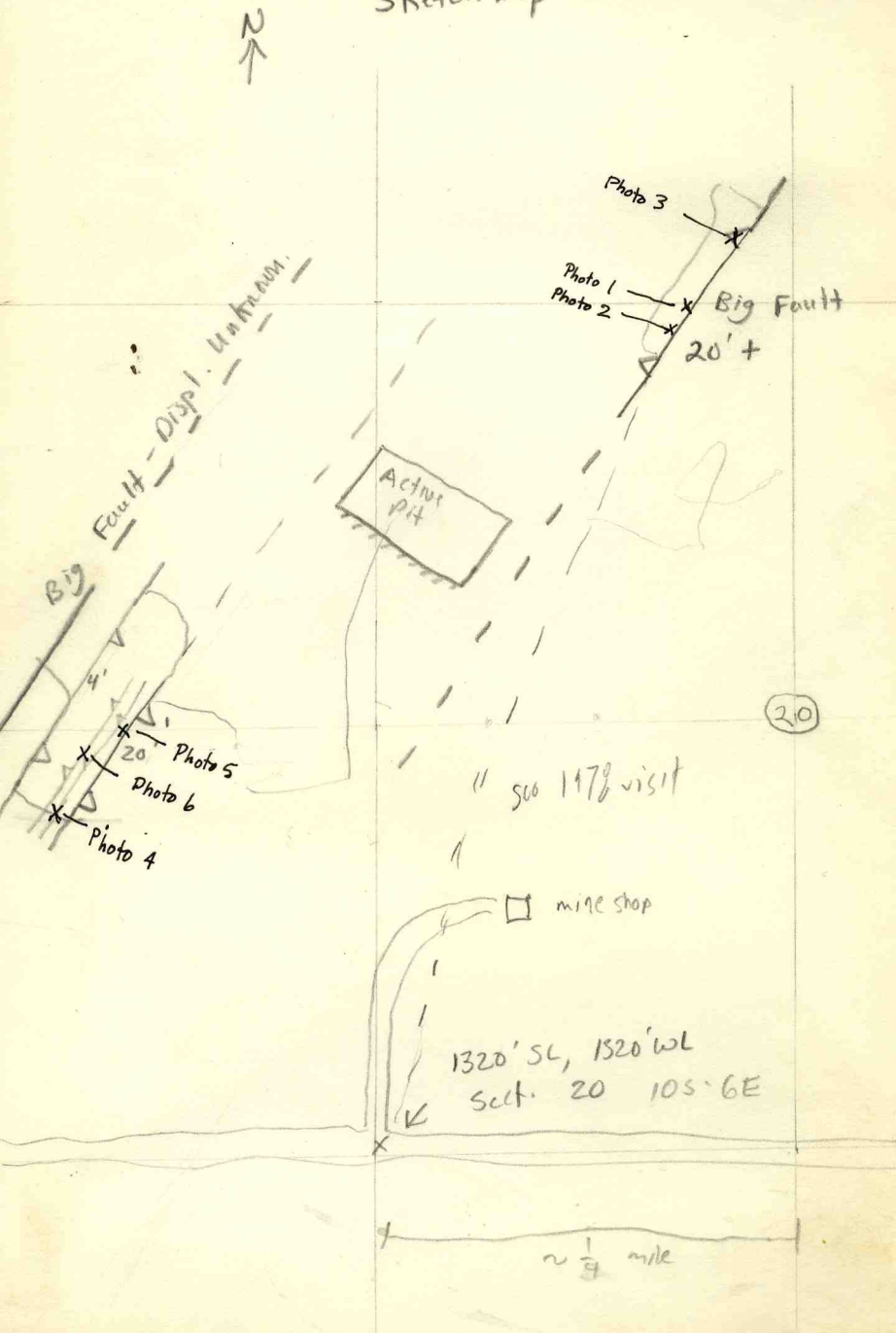
According to Phillip Brown, company owner who took us through the mine, this pit is bounded on northwest and southeast by faults. No evidence of these is directl visible in the pit. We do see several large "feather fractures" up to a foot wide in the interval between the two coal seams. These appear to trend roughly E-W and are most prominent in the siltstone, dying out above and below.

NORTHEAST PIT

This pit is finished and is being filled. The

FORM 180 W

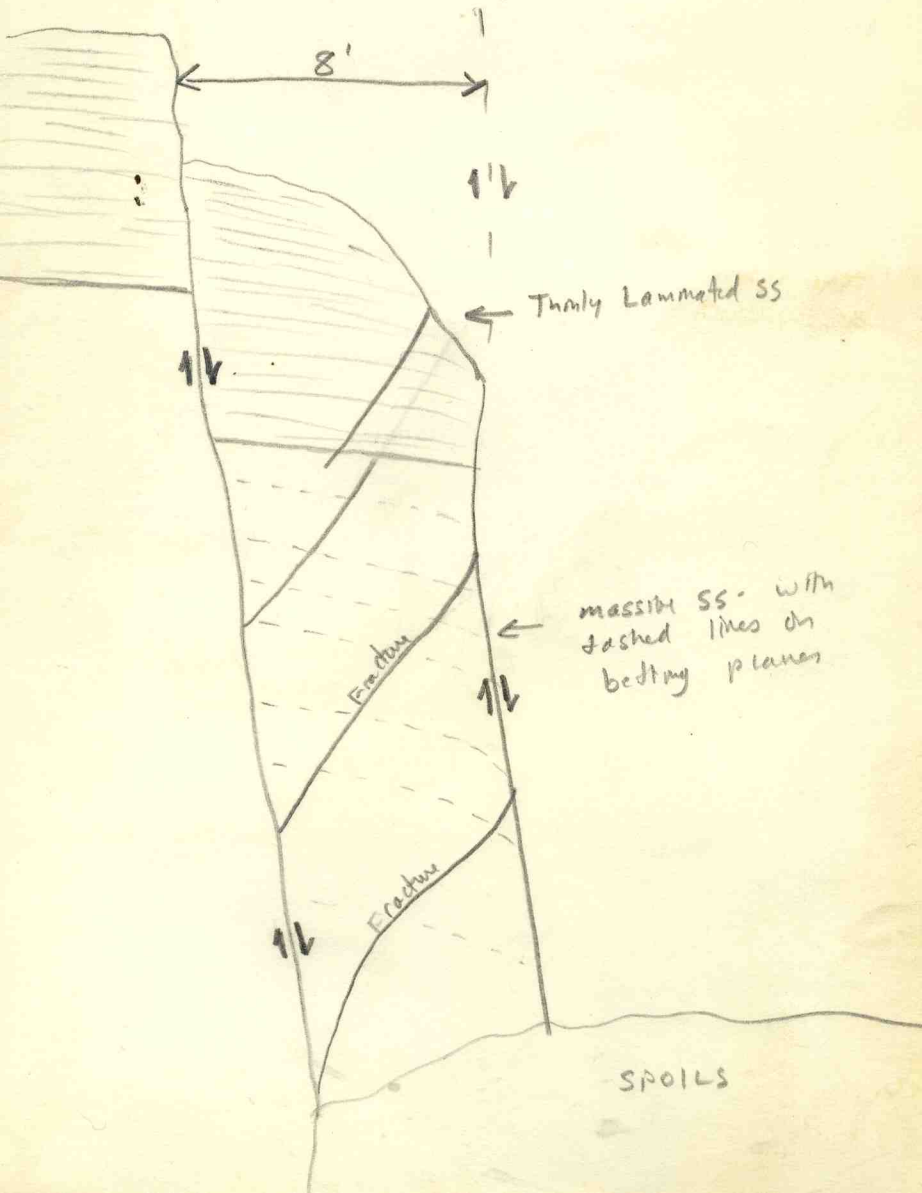
Sketch Map of Mine and Faults



View looking SW parallel with high wall.
Height of wall about 25'

SE

NW



highwall, which trends 055° and faces northwest, is the surface of a large fault beyond which there is no coal.

There is not a single fault, but a set of parallel faults which branch and curve somewhat. The overall trend is 055/80°NW. The vertical slickensides are visible in many places as are sheets of gouge material. Drag folding and antithetic fractures (see sketch, over) indicate that this is a normal fault down to the northwest. Phillip Brown told us the fault has 15-20' of throw but close examination of the outcrop and continued questioning led us to believe the displacement is considerably greater than 20 feet.

At the northeast end of the highwall is a small remnant of the rocks west of the fault, in the area where the coals were mined. This is the measured sectio

? Coal (DeKoven) Mined out, only a few inches near the base preserved.
2.2' Claystone, medium-light gray, firm, sandy, coarsely carbonaceous, grades into:
3.0' Sandstone, light gray, weathers reddish-orange, fine-grained, friable, micaceous, slightly carbonaceous, thick-bedded with discontinuous shaly laminae. Sharp contact:
3.0' Shale, medium-dark gray, moderately firm, poorly bedded, smooth to finely silty, finely carbonaceous.

Covered below this. Davis Coal mined about 15' lower.

This is a section of the rocks east of the fault, on the upthrown side. See John Popp's notes for details

5' Surface, glacial drift.
5-12' Sandstone and sandy shale, thin-bedded.
20' Sandstone, appears massive. Sharp contact:
3.5' Shale, dark gray, smooth, finely carbonaceous.
4.5' Shale, black, smooth, brittle, soft coaly zones-heavily disturbed by faulting.
3.0' Claystone, olive gray, soft
5.0' Claystone, greenish, silty, firm.

The 4.5' black shale we at first though was the Davis Coal but close examination showed only a trace of coal present. According to Phillip Brown this same black shale, as recovered in core drilling, showed up as coal and shale mixed. It is not the Davis Coal and we can see no match-up of beds on opposite sides of the fault. This indicates a fault with throw in excess of 50 feet. This fault, projected to the southwest, passes just SE of the active pit and will soon be met in that pit.

SOUTHWEST PIT

A small inactive pit with only the DeKoven Coal exposed.

The southeast side of this pit is another fault trending 055/75SE bringing the coal against a light gray, fine-grained massive sandstone. The actual fault plane is exposed along a water-filled section of the pit and it can be seen as a zone of shattered rock at the edge of the main highwall, which faces northeast. On this highwall is a wedge of deeply weathered, shattered rock extending down several feet below the glacial drift. This evidently is caused by deep weathering along the fault zone. Another weathered wedge is seen at the other end of the highwall where, according to Phillip Brown, another fault of about 4' throw intersects the highwall. This fault brought the coal down to the southeast but is not otherwise visible.

There are also two faults of 1-2' displacement, down to the northwest, traceable through the floor of the pit to the highwall. The strike of these faults is clearly shown as steps in the floor of the pit. The coal has been removed exposing the underclay. The faults intersevt the highwall as steeply-dipping fractures. Due to lack of persistent marker beds in the highwall it is very difficult to determine displacement there.

The highwall also shows many steeply-dipping fractures with no displacement, dipping both SE and NW.

None of the faults or fractures intersect or offset the glacial drift, indicating there has been no movement

since the Pleistocene.

The floor of the pit contains two open fractures trending 145°, perpendicular to the faulting. These show no displacement but they are wide open, an inch or more in most places except where dirt has fallen in. I was able to sound one to a depth of 3.5' with a ruler. Both of these fractures show frequent right-angle offset of an inch or more, always in a left-lateral direction. The offset portions are also open fractures. This gives the whole fracture a zigzag appearance. The jog portion does not extend away from the main fracture and there is no evidence of any actual movement, strike-slip or otherwise.

The main fault bounding the pit on the SE evidently is a normal fault. We have no direct evidence of the amount of displacement but according to Mr. Brown it is about 20 feet down to the southeast. This fault projected to the northeast passes just northwest of the active pit. We can see that the coal seams are lower in the active pit than in the southwest pit.

According to Mr. Brown there is still another fault of large but unknown displacement just NW of the pit we are in. He found no coal beyond this fault. See sketch map for relationships.

CONCLUSIONS

These faults follow the trend and pattern of the faults in the Flourspar District. We are a little outside the area of Flourspar District faulting and in an area where Survey maps have not shown any faulting. However, it is not unlikely to find faults on this trend here.

The Cottage Grove Fault lies almost 10 miles north of here and trends east-west with numerous subsidiary faults running NW-SE. What we have seen is completely out of place for Cottage Grove faulting.

The Wabash Valley Fault Zone lies northeast of here and most of its main faults run about 030°. Some believe it is a continuation of the Flourspar District faulting

beyond the Shawneetown Fault. We were underground at Peabody Eagle No. 2 just a day before visiting Brown Bros., and at Eagle we saw Wabash Valley faults. Their general appearance was very similar to the faults we have seen today (high-angle normal faults trending roughly NE-SW).

BROWN BROTHERS EXCAVATING COMPANY -- Mine No. 2
Saline County
September 30, 1977

Visit by J. Nelson and J. Popp - notes by Popp

This small operation is owned by John and Phillip Brown and is mining the Davis and DeKoven Coals. Phillip Brown guided us through our visit. The mining operation utilizes two small draglines, two coal trucks, front end loader, dozer and miscellaneous other equipment. See Nelson's notes for more detail.

Highwall Description in Northeast Pit (by Nelson)

5' Surface, soil, glacial drift (?), yellow brown with 1'zone of broken angular sandstone fragments 3.5' from top. Reddish-stained drift below.

5-12' Shale and sandstone, light gray, weathers brown. Shale is silty, carbon aceous with abundant plant debris. Sandstone is thinly laminated, light gray, fine grained, micaceous and carbonaceous; becomes thinner bedded and more laminated downwards. Laterally the sandstone is thick to lenticular bedded. Sharp contact.

20'± Sandstone, light gray, fine grained, hard, micaceous, carbonaceous, thinly laminated along micaceous and carbonaceous streaks. Appears massive from a distance. Channel-like bedding throughout although not cross-bedded. Sharp contact.

3.5'± Shale, dark gray, moderately hard, smooth, fairly well bedded, contains fine pyritized carbonaceous debris and sideritic debris or lenses. Appears to grade into:

4.5' Shale, black, smooth, hard, carbonaceous with coaly zones, crushed and disturbed in the fault zone. Pyritized shell debris. Sharp contact.

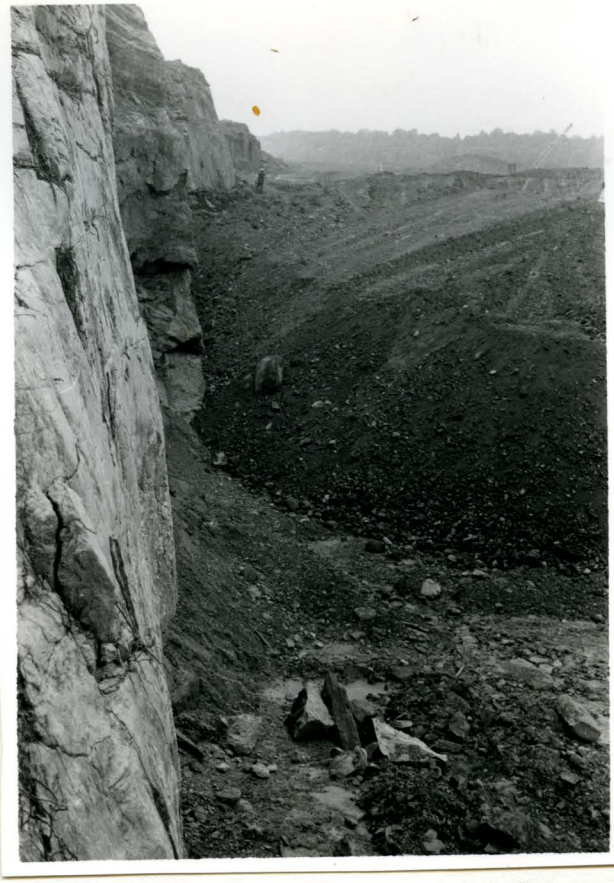
3.0' Claystone, olive gray (weathers light gray), soft, smooth, finely carbonaceous, rooted. Grades into:

5'± Claystone, greenish gray, firmer than above, silty,

End of highwall.

This description is pretty much an approximation based on looking at the rock in the fault plane highwall. See photos on the following pages for views of the fault plane and lithology.

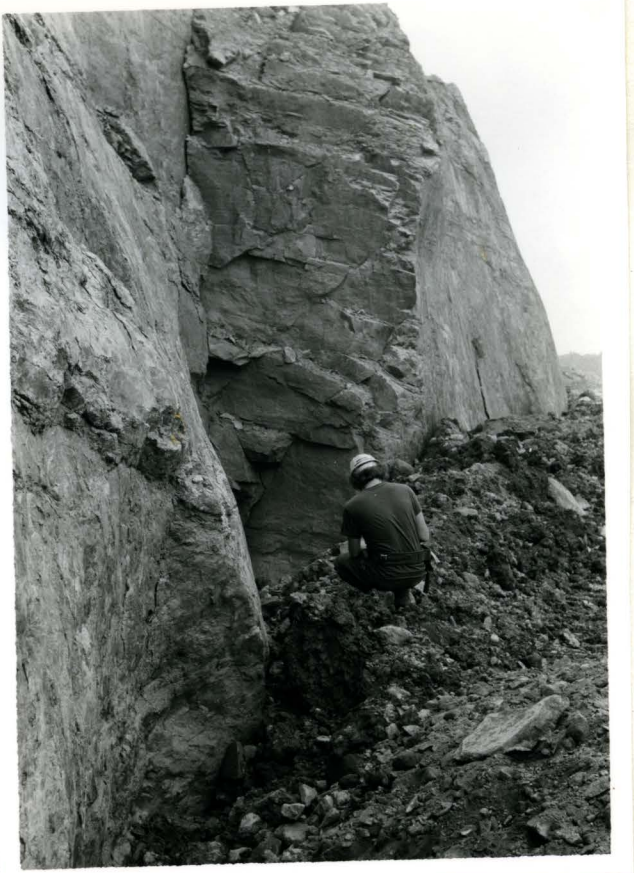
Mr. Brown said that they have drilled beyond this highwall to explore the 4.5' carbondaceous shale zone to see if it became a coal. The shale was found consistently as was an 8" coal above it.



Picture 1

Southwest facing view of fault in the abandoned northeast pit. J. Nelson is standing in the background, and a dragline can be seen in the upper right hand corner. The pit is being filled for reclamation. See sketch map for the location.

9/30/77 J. Popp

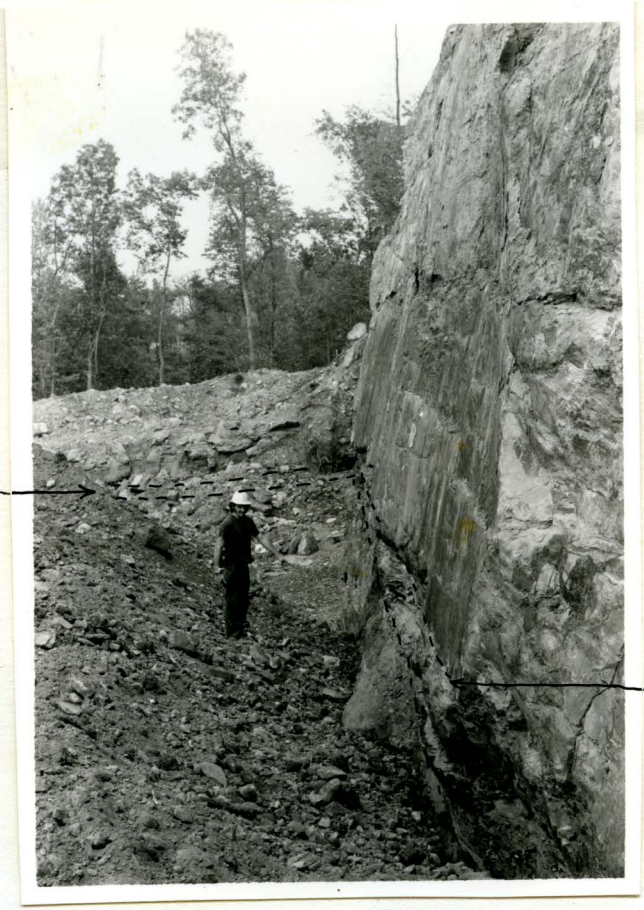


Picture 2

Closeup of the fault scarp in the northeast pit facing southwest. J. Nelson is in the foreground standing on fill while taking notes. See sketch map for lacation.

9/30/77 J. Popp

mn_33-004.tif



Comments on Notes by RJS 2/1/06

Ss may be the "sub Davis" Ss of Eddyville Coal

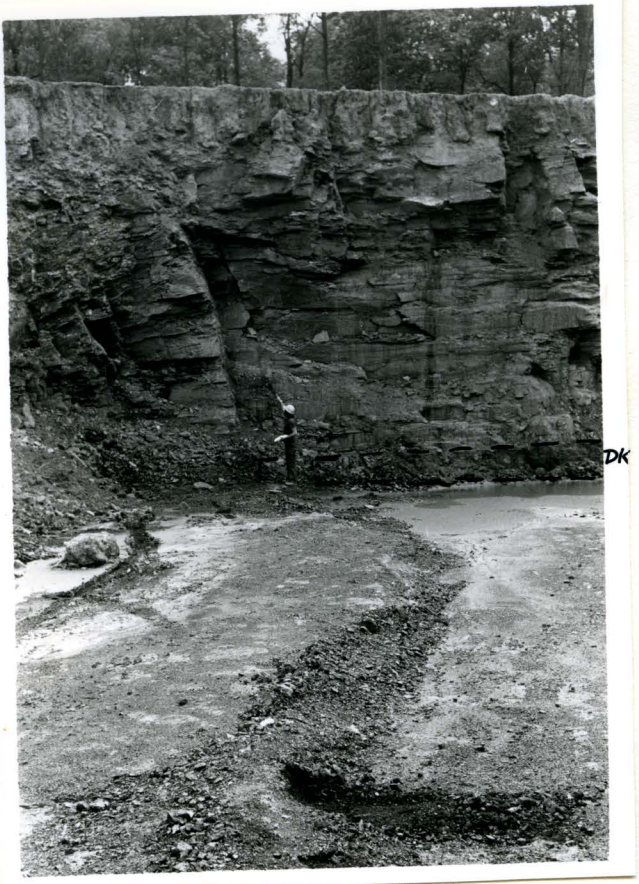
– may be Carter Mills Shale RJS 2/1/06

Picture 3

Northeast facing view of fault plane in the abandoned northeast pit. J. Nelson is pointing to the approximate horizon of the black, carbonaceous shale. In the background the DeKoven Coal (?) is dashed in where it approched the fault. See the sketch map for location

9/30/77 J.Popp

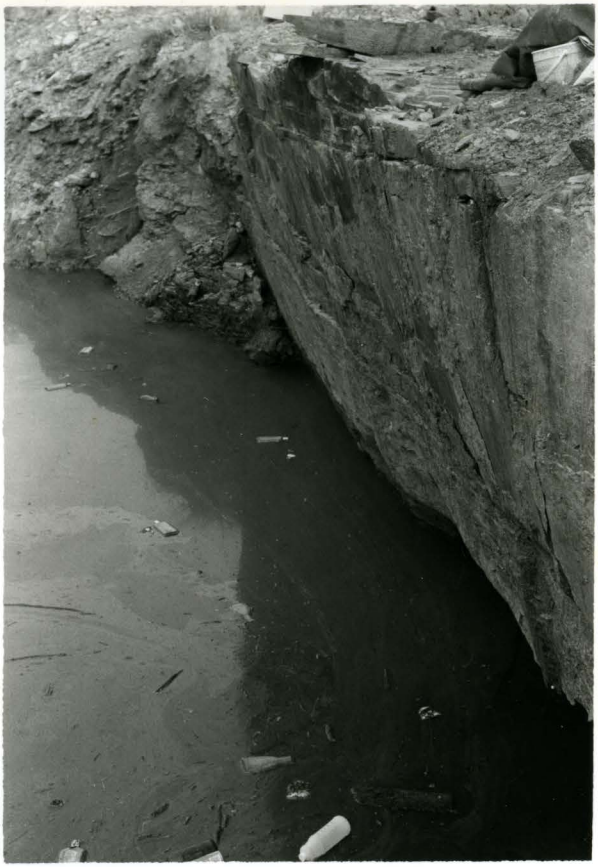
MN_33.005.tif



Picture 4

Idle southwest pit with DeKoven Coal exposed in the highwall. Southwest facing view with J. Nelson pointing to one of the small displacement faults. In the foreground another very small fault has been uncovered; the fault displaced the underclay about 1! See sketch map for lacation.

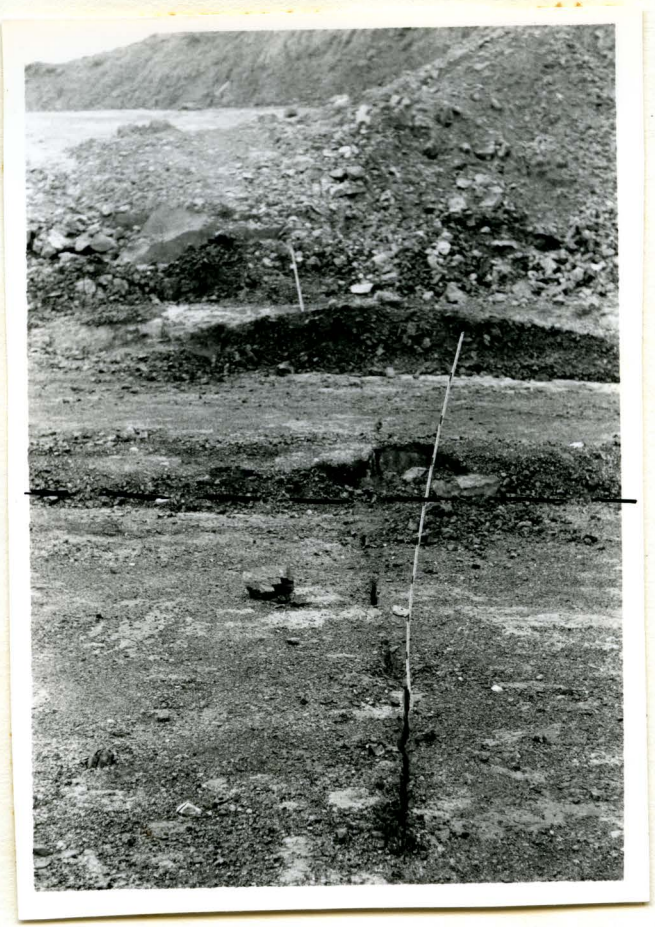
9/30/77 J. Popp



Picture 5

Northeast view of major fault at the southwest pit. Note bottles for scale. See sketch map for location.

9/30/77 J.Popp



Picture 6

One of several open fractures seen in the underclay crossing perpendicular to the faults seen in pictures 4 and 5. The two vertical offsets in the underclay represent small faults. A 6' folding ruler is sticking in the crack. See sketch map for location.

9/30/77 J.Popp

ADDENDUM

John Nelson October 29, 1984.

In surface mapping near the Brown Brothers mine, I found a 3-foot black shale, locally with coal at the base, very consistently 30 to 40 feet below the Davis Coal. The black shale generally is directly overlain by the sub-Davis sandstone but in places up to 10 feet of dark gray shale occur between the black shale and the sandstone. 15 to 20 feet below the black shale is the Stonefort Limestone which overlies the Wise Ridge Coal. The section can be seen in the gully on the steep north-facing slope by the old channel of the Saline River, NE¼ SW¼ NE¼, Section 30. This is only about 600 feet from the fault exposure in the mine as seen 9/30/77.

Russ Jacobson believes the black shale is equivalent to the Seahorne Limestone. – We now call this Levias Mills - RJJ 2/1/06

The fault juxtaposed the DeKoven Coal with the Seahorne black shale; the vertical separation on the fault therefore is approximately 65 feet.

BROWN BROTHERS EXCAVATING CO. SALINE COUNTY, ILL.
Notes by John Nelson January 5, 1978

No coal has been mined since December 6, 1977 because of the U.M.W.A. contract strike, but there is plenty of repair and maintenance activity going on at this mine. This is in contrast to most of the other small stripping operations in southern Illinois, whose owners have padlocked the gates and taken vacations.

On my last visit (9/30/77) three pits were open. Since then the northeast pit has been completely reclaimed, and the highwall with its large fault exposure has been buried. The land has been graded and planted in winter wheat.

There has been no activity in the southwest pit since the last visit. The middle pit has been worked and both coal seams, Davis and DeKoven, are uncovered. See sketch map (over).

Approximate Composite Section

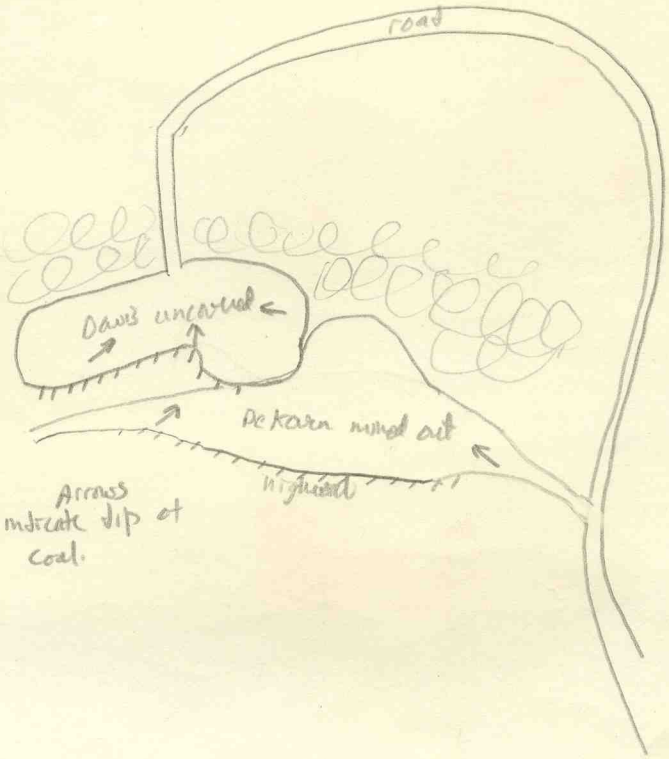
6' Sandstone, light gray, weathered orange-brown, fine-grained, thick-bedded to massive but finely laminated; argillaceous, carbonaceous, contains occasional shaly zones. Prominent widely spaced vertical or steeply dipping curving fractures trending about 060; may be related to faulting. Sharp basal contact. Sandstone appears to cut down to the east, where its base lies only 6 feet above the DeKoven Coal.

15' Shale, variable, medium to dark gray, smooth to silty, finely micaceous, generally poorly bedded, finely carbonaceous, generally iron stained with local bands of siderite nodules. Prominent feather fractures, wide and deeply weathered. Most appear to trend north to northeast but there is no definite pattern. Unit thins eastward beneath sandstone.

3.35' Coal (DeKoven), bright, blocky, cleat trends 160 (face) and 070-085 (butt). No noticeable

N

Reclaimed Land



partings. Abundant pyrite on cleat surfaces.

3.7' Claystone, medium gray, soft, finely carbonaceous, silty toward base, grades into:

12' Siltstone, medium gray, moderately hard, poorly bedded, sandy, micaceous, finely carbonaceous, becomes finer downward grading to massive silty mudstone with prominent high-angle joints and feather fractures, most of which trend about 045. Grades into:

3' Shale, black, hard, smooth, fissile, with moderately distinct joints trending 058 and 160.

Coal (Davis) only top uncovered. Top surface undulates and the coal dips rather steeply toward a low point near the base of the haulage road, as indicated by arrows on sketch map.

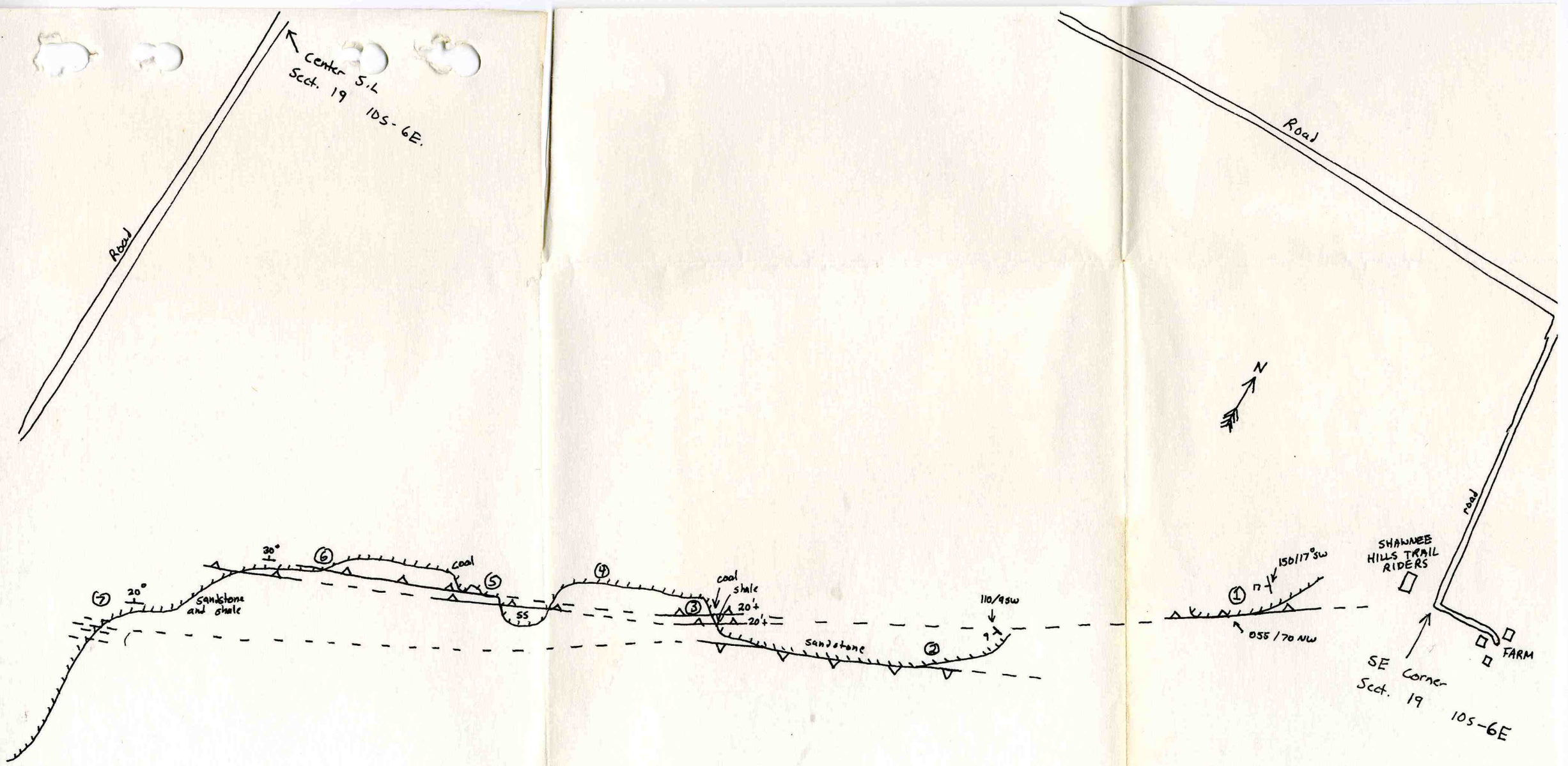
No definite faults presently exposed. Joints and feather fractures may be fault-related, especially those that trend NE-SW. At east end of pit there are possible small faults in the DeKoven Coal, but the coal and associated rocks are so deeply weathered that no accurate determination can be made. One large fault is known to lie just east of the pit (see notes of earlier visit.)

Abandoned Pit

Southwest of the present pit, in Sect. 30, 10S-6E, is an earlier abandoned pit of Brown Brothers Excavating Co. The mined area has been graded and seeded but the final highwall remains, and several major faults are exposed along it. See map (over)

1.) Northwesternmost part of highwall, isolated from the main highwall. Exposed section:

20' Sandstone, very light gray, weathers orange-brown, fine-grained, moderately hard, slightly friable, thin to medium-bedded with prominent


Road
Center S.L
Sect. 19
10S - 6E.
Road
N
road
SHAWNEE HILLS TRAIL RIDERS
FARM
SE Corner
Sect. 19
10S-6E
150/17°SW
055/70 NW
110/9SW
30°
20°
coal
coal
shale
20'+
20'+
sandstone
sandstone and shale
55
17
9
7
1
2
3
4
5
6
7
Highwall
up
down
Fault - triangle on downthrown side
strike and dip of bedding
Number refers to note in text.

small-scale low-angle cross-bedding. Occasional convolute lamination. Unit is reistant to weathering. Very sharp contact:

20' Siltstone, dull gray to buff, soft, poorly bedded, thinly laminated, varies from shale to very fine sandstone, contains zones of carbonaceous debris. Much less reistant to weathering than overlying sandstone.

The above sequence resembles that above the De-Koven Coal in the active pit.

The beds dip very noticeably to the southwest. At one point I measure strike and dip of 150/17 SW. The highwall is about 25 feet high, and because of the dip the northeast part is mostly shale and the southwest end is mostly sandstone.

A very definite fault plane along the highwall face (sandstone) at the southwest end of the highwall. The fault trends 055/70 NW and so the rock face is the hanging wall of the fault. Faint slickensides dipping about 70 NW are visible at one point. Sandstone breccia is found along the northeast part of the exposure, clinging to the face. Several high-angle antithetic and synthetic fractures with no apparent displacement branch off the main fault in the back part of the highwall.

It is impossible to determine amount of displacement on the fault or whether the fault is normal or reverse. There is a presumption that it is a large fault because the company stopped mining at the fault plane.

2.) Northwest part of main highwall which forms a continuous exposure about ½ mile long. Wall is about 40 feet high and consists entirely of resistant, cross-bedded sandstone like that forming the upper half of the highwall at (1).

Beautiful fault plane exposure about 150 feet long for the full height of the wall. Strike and dip vary slightly but the overall trend is about 055/80 SE

thus the rock wall is the footwall of the fault. Direction and amount of throw unknown but again I would presume it is a large fault because the mining stopped against it. No slickensides or breccia noted and no drag. Several antithetic fractures back in the highwall.

The projected line of the fault runs southeast of Location 1 (see map). The fault from Location 1 projects into the flank of the hill northwest of Location 2 where there is no exposure.

3.) Re-entrant on highwall exposes faults (see sketch, over). There are two high-angle faults dipping NW, about 12 feet apart, as shown. Definite drag in soft strata indicates both are normal faults. Cannot match lithologies across either fault, so a minimum displacement of 20 feet is indicated for both.

Numerous high-angle antithetic and synthetic fractures with no displacment are also present.

These two faults possibly are a continuation of the fault seen at Location 1.

4.) Generalized section on highwall northwest of faults:

0-5'	Sandstone, orange-brown, medium bedded, shaly, deeply weathered.
5-10'	Shale and siltstone, gray-brown, soft, thinly laminated, carbonaceous, micaceous. Lenses of cross-bedded sandstone.
0-8'	Sandstone, brownish, fine-grained, hard, thin-bedded to massive, locally cross-bedded, lenticular, highly variable.
3.2'	Shale, chocolate brown with black bands, especially near base, soft, smooth, thinly laminated, carbonaceous, especially near base.
1.5'	Coal, soft, contains abundant clay, cleat closely spaced and poorly developed.
6'	Claystone, gray, soft, plastic, grades into soft light gray silty iron-stained shale.
10'	Covered interval; soft shale ?

Breccia composed of angular blocks of sandstone clinging to fault plane. Location 1, abandoned pit.

mn_33-009.tif

Fault scarp on abandoned strip mine highwall (location 2). Fault plane trends roughly 055/80 SE and shows vertical slickensides.

MN-33-910 #19

High-angle faults exposed on re-entrant of highwall (location 3 in abandoned pit). Sandstone to right contains many antithetic fractures. Shale between two faults is drag-folded, as is thin coal layer to left of faults. Compare with sketch.

Not sure which coal this is, but it is not the Davis or DeKoven. The sequence reminds me of the thin unnamed coal often found about 40 feet above the DeKoven Coal in this area. Coal sampled for spore and pollen analysis. No spore found, too badly weathered.

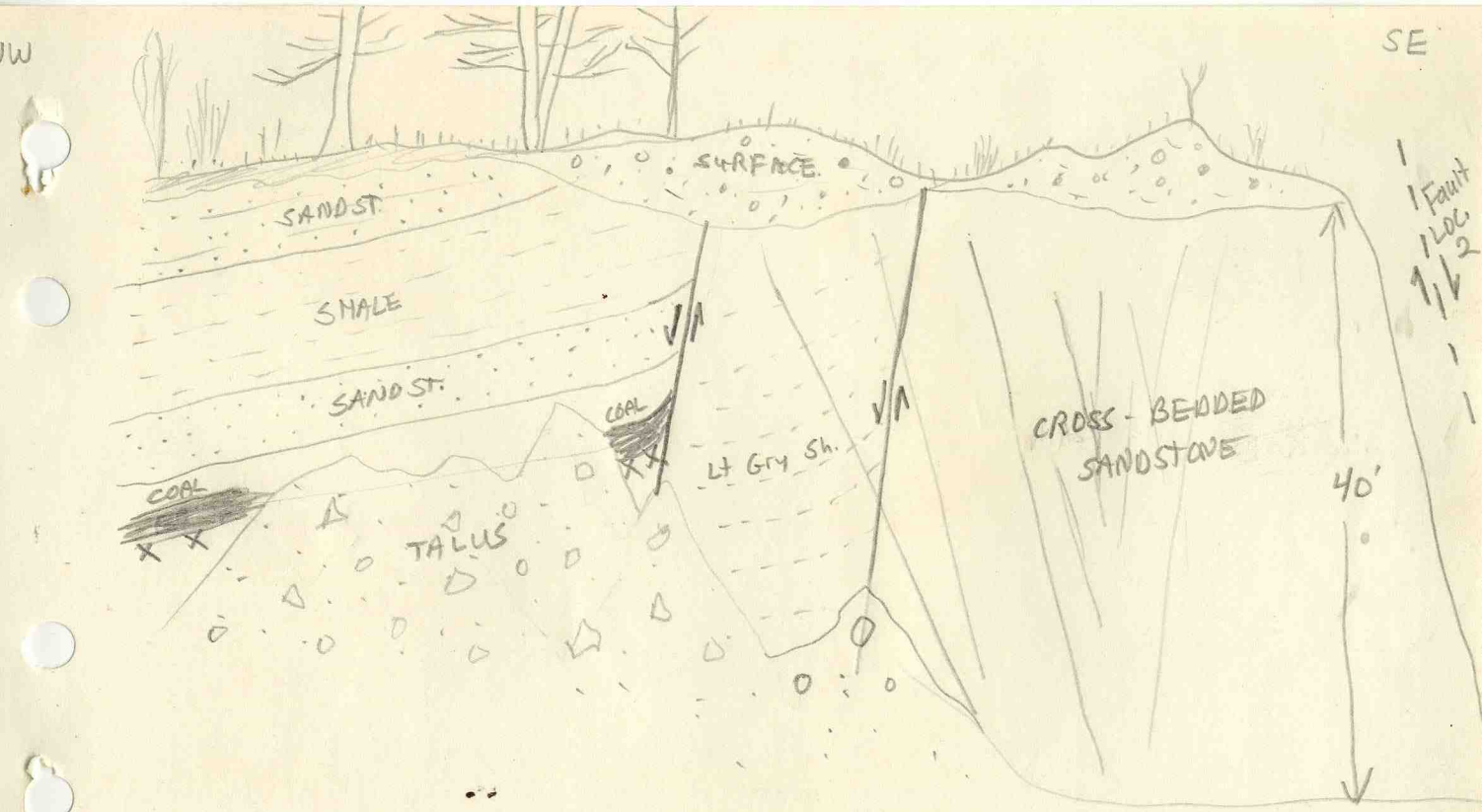
5.) Apparent continuation of faults from Location 3. Fault plane not actually seen, but presence indicated by block of resistant cross-bedded sandstone to southeast and coal sequence to northwest. A jumbled breccia of shale and sandstone lies along the fault zone, but I am not sure how much is due to faulting and how much is mining debris.

Westward the coal bed rises nearly to the top of the highwall and 15-20 feet of the underlying claystone and soft, weak, thinly laminated shale is exposed. The shale is similar to that found between the two faults at Location 3. The fault line as projected from Location 3 to 5 trends about 060.

6.) Highwall begins to curve southward and faults intersect it again (continuation of faults from Locations 3 and 5). Again drag indicates normal faulting. Cannot measure displacement. Soft laminated silty shale lies southeast of the fault (footwall) and the claystone and shale below the thin coal lie northwest of the fault. Trend of fault is 055/70 NW.

Farther southwest along the highwall the beds appear jumbled and generally dip northwest at angles up to 30 degrees. The thin coal bed crops out southeast of the fault but exposures are discontinuous making it difficult to estimate displacement- probably on the order of 10 feet. Faults are nearly parallel with highwall. Still farther southwest, intensely fractured sandstone is seen.

7.) Zone of severely fractured sandstone. Not a clean exposure, no definite faults seen. Possibly this is the continuation of the fault from Location 2. The line from here to Loc. 2 trends 055.


NW
SE
SURFACE
SAND ST.
SHALE
SAND ST.
COAL
COAL
TALUS
Lt Grn Sh.
CROSS - BEDDED SANDSTONE
40'
Fault Loc. 2

Rock sequence here is much like that at Loc. 1, with resistant cross-bedded sandstone overlying weak thin-bedded shale and siltstone. Beds dip to northwest up to 20 degrees.

J.J. TRACK MINING CO. BROWN BROTHERS EXCAVATING
Novemebr 8, 1978
Notes by John Nelson on visit with John Popp.

See sketch map (over) of mining area. The pit is L-shaped with the short arm running east-west and the long arm funning north-south, as shown.

The Davis Coal is exposed only in the east end of the east-west trending part of the pit. A major fault has been struck at the east end of the pit.

The fault plane trends roughly 055/67° NW and has slickensides in dip direction. The Davis Coal and other strata are shattered near the fault and dragged upward, indicating normal movement. The company drilled southeast of the fault and found no coal. This indicates the displacement is at least 60 feet. Probably this is the same fault observed elsewhere on earlier visits.

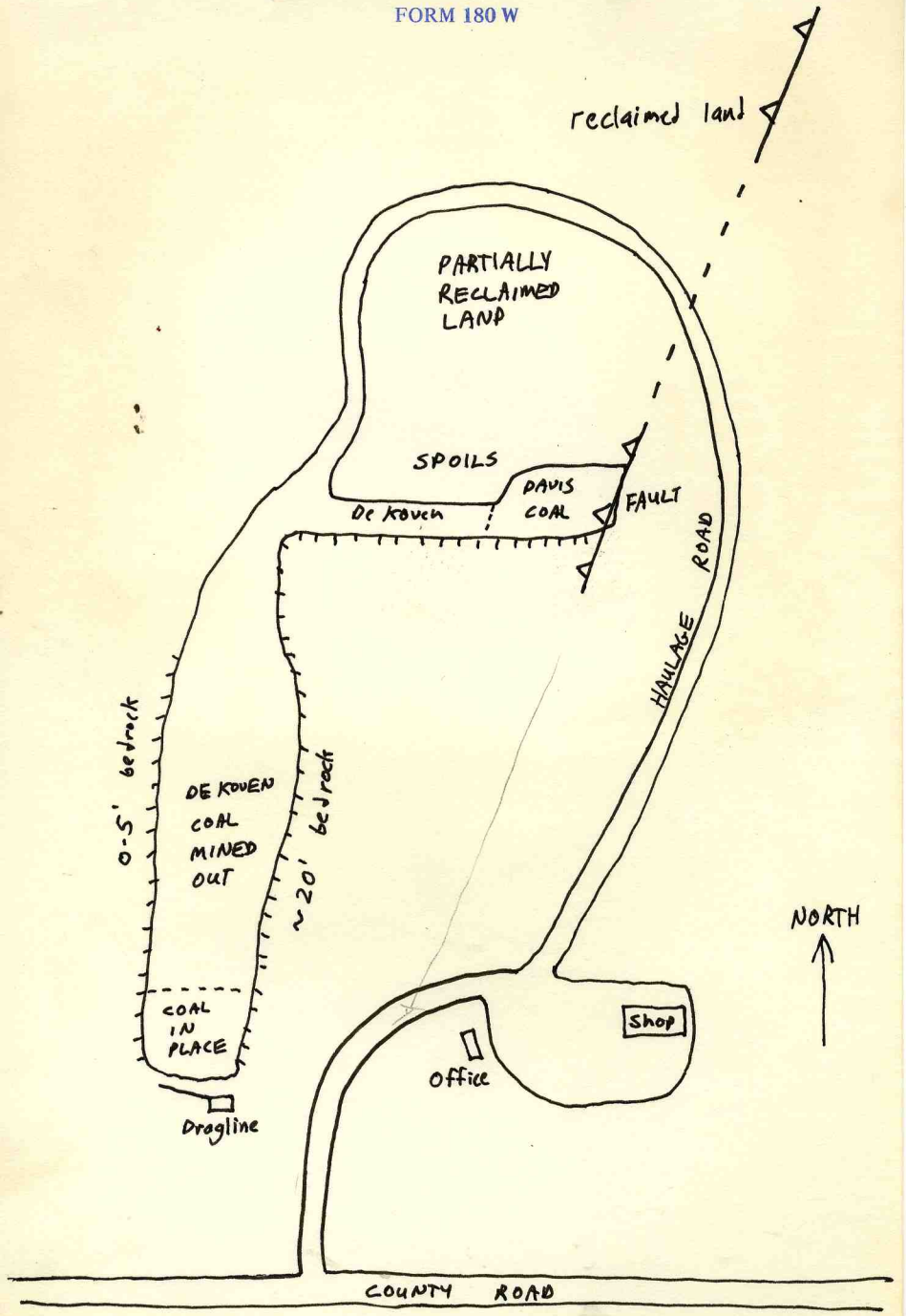
The drag begins 8-10 feet away from the fault plane and many small antithetic fractures are also present near the fault. Slickensides on these also trend in dip direction.

As the mining has stopped along the fault, the exposures of rock on the footwall are poor and we cannot be sure we are actually seeing the footwall, and not gouge along a "slice". Opposite the Davis Coal is a medium gray, hard, and poorly laminated silty shale. We do not see the massive sandstone observed southeast of the fault on earlier visits.

Cleat Directions in Davis Coal

Face	Butt
153°	082°
149°	056°
150°	057°
159°	071°
158°	071°
161°	
159°	
157°	
160°	

FORM 180 W



In the north-south arm of the pit the De Koven Coal has been uncovered and is being extracted. The bench below the De Koven Coal is being drilled and shot to uncover the Davis Coal.

The pit lies along the valley of a small stream. Along the west side of the pit there is little or no bedrock above the coal, but on the east side of the pit the bedrock is about 15 feet thick.

The coal is about 3.2' thick and contains numerous lenses of pyrite and occasional discontinuous bands of hard, grayish-black shale. There is considerable pyrite on cleats and fracture surfaces, but no calcite. Absence of calcite probably relates to absence of limestone in the overburden.

Face Cleats	De Koven Coal	Butt Cleats
020°		125°
018°		128°
018°		118°
018°		093°
010°		086°
000°		

Note that these directions differ considerably from cleat trends in the Davis Coal.

Three small inclined faults or fractures were seen cutting the coal on the east side of the pit. Their trends:

041/77° NE (curving plane, no slickensides)
043/80° NW (slickensides in dip direction)
643/80° NE (curving plane, no slickensides)

No measureable displacement on any of these fractures

Two shale units overlie the De Koven Coal. Lower stratigraphically is a dark gray to black, hard, smooth shale containing abundant pyritized fossil fragments. It varies in thickness from a few inches to about 4 feet. In places it contains a rich and

diverse fauna, including (among those forms we can recognize) Lingula, Orbiculoidea (very large), chonetid brachs, productid brachs, various pelecypods poss. including Pecten, and other fossils not recognized.

Overlying the dark shale is medium gray, silty, sideritic shale, locally overlain by sandstone (compare notes by John Popp.)

The dark gray shale evidently is a marine or brackish-water deposit. It reminds of the dark gray shale which forms lenses above the Herrin Coal in Orient No. 6 and other mines in Franklin and Jefferson Counties.

The coal seam lies nearly level but has a couple of low ridges or humps trending roughly WNW. No other structural disturbances noted.

J. J. Track Coal Company, Inc. (formerly Brown Brothers Excavating Company)
Saline County
November 8, 1978

Notes by Popp on a visit with C. J. Nelson.

We talked with Mr. Gerald Deneal before going into the pit. He had several questions about the geology, raised because of the new Surface Mining Regulations.

First we went into an abandoned pit which had a good exposure of the section and which butted up against a fault. The fault forms the boundary of the mining property. It was described and photoed in another pit previously, and Nelson describes it more here. Total displacement is at least 40 ft.

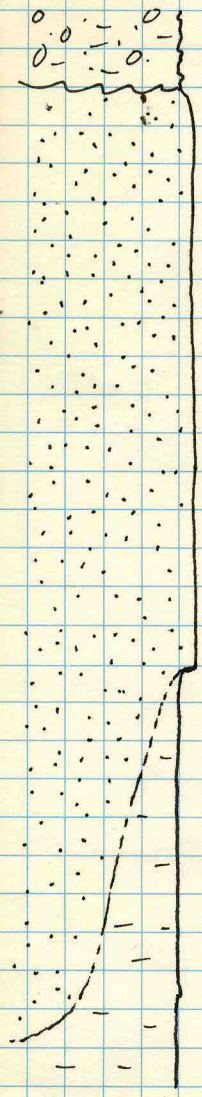
For a description of the units in the highwall, see the description below.

In the new pit to the south of the abandoned pit, we looked at the DeKoven Coal which has just been uncovered. It maintains a persistent 3.2-3.3 ft. thickness. Above it is a dark gray shale that lenses out laterally and is gradational upwards with a medium gray shale. The dark gray shale has a variety of marine organisms preserved in it. A cephalopod was sampled for Russ Jacobson. To the north, the dark gray shale is 4 ft. thick and grades upward from a highly carbonaceous, black shale at the top of the coal to a dark gray shale at the contact with the overlying medium gray shale. This contact is sharp.

The medium gray shale is silty and is similar to the Energy Shale - gray shale. Back to the south where the gray shale unit is directly above the coal its lower portion varies from a medium gray shale with siderite nodules to a smooth dark gray shale with marine fossils. The smooth dark gray shale does not resemble the black shale to the north. (See drawing on next page.)

J. J. TRACK COAL COMPANY
(formerly Brown Brothers Excavating Co.) #2 Mine

SALINE COUNTY
November 8, 1978



Surface, soils

Sandstone, 10-30', thickness varies with erosional contact on lower shale; medium-grained, tan to buff colored. Alternating bands of very thin siltstone that is slightly micaceous and hard. Can't describe this unit thoroughly because it is above us in the highwall.

Joints: 150°
055° - 070°

Shale, 5-20', thickens to the west, medium gray, darkens downward, poorly laminated, very silty, contains numerous sideritic bands and nodules

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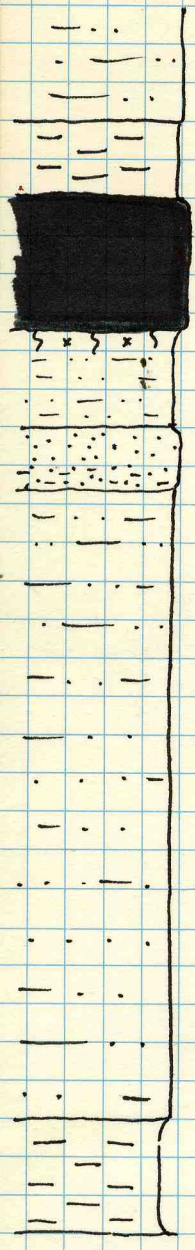

Shale, ~2', dark gray to black, smooth.

DeKoven Coal, 3.3', n.b.b.

Underclay, ~2.5', medium dark gray, with greenish cast, silty to sandy, plant debris, rootlets; grades into:

Sandstone, ~1.6', thickness is variable, medium gray, fine-grained, hard, dense, upper part is massive, lower portion is shaley.

Siltstone, ~16', gray to medium gray, hard, micaceous and carbonaceous, with plant debris in lower portion.

Shale, 3', black, fissile, carbonaceous, poorly preserved shell fragments, some of which are pyritized; lower contact partially grades into:

(continued on next page)

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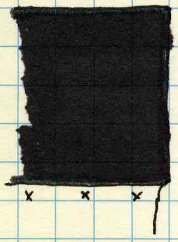


Davis Coal, 4.5', n.b.b., hard, cleat developed at 160° and 80° approximately.

Underclay

J.J. Track Coal Company Inc.

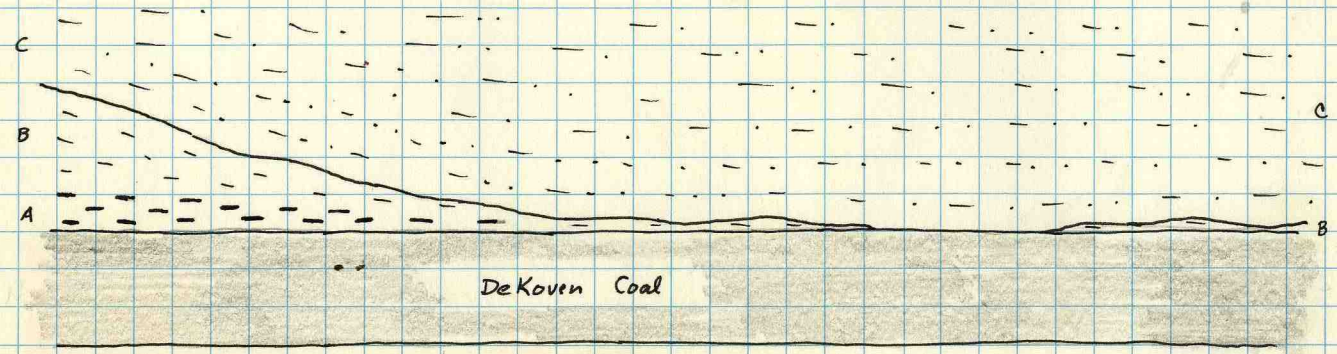
Rocks overlying the DeKoven Coal in the south pit

C - medium gray shale, silty, darkens upwards, has siderite nodules

B - dark gray shale

A - black carbonaceous shale

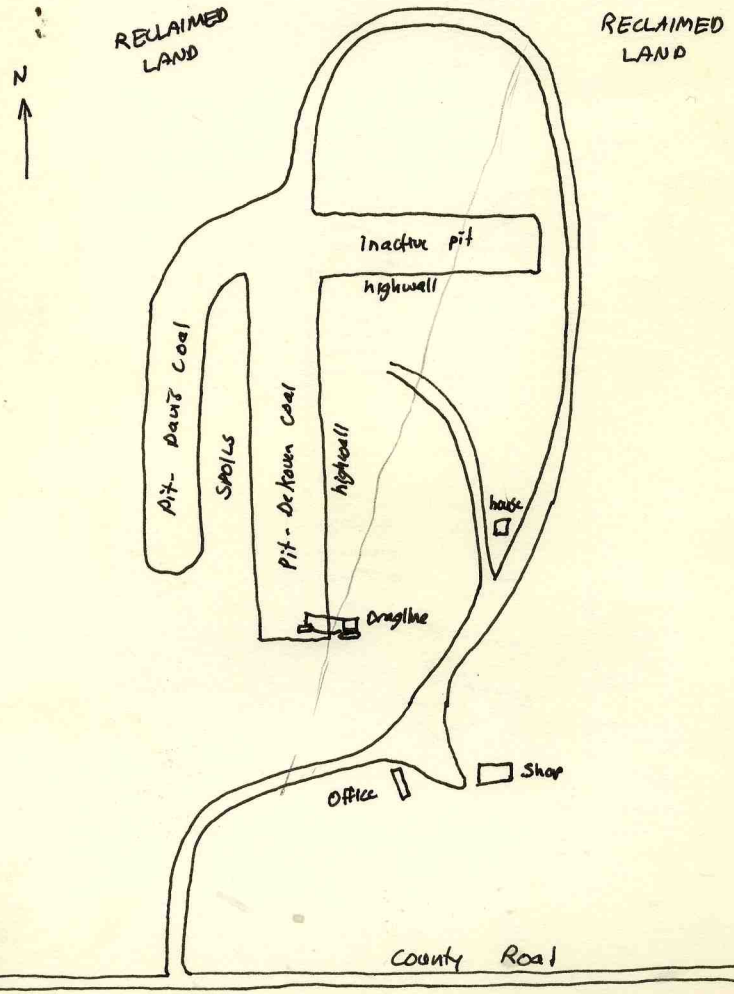
North South



J.J. TRACK BROWN BROS. EXCAVATING SALINE COUNTY
10/30/79

Notes by John Nelson on visit with John Popp and Bob Griffin.

Met John T. Brown and Gerald DeNeal. They told us the pit was very crowded and active and recommended that we not go into it. The layout of the mine has changed little since last visit, and no new faults are exposed. Below is a sketch map of the pit.



J. J. Track - Brown Bros. Excavating Co. Mine - March 25, 1982, Saline County. Notes by John Nelson on visit with Donald K. Lumm.

The active pit trends about N 15° E with the high-wall facing east. It is about 1000 feet long; the south end due west of the office. E½ NW¼ SW¼ Sec. 20, T.10S.-R.6E.

The following section is exposed at the south end of the pit:

Surficial Materials - 3 to 5 feet loess

5'	Shale - Gray and brown, weathered
2½'	Shale - Black, thinly laminated
½'	Coal (Colchester No. 2)
1'	Underclay - Yellow-brown
2'	Underclay - Light gray
30'	Sandstone (Palzo) - Light gray, fine-grained, poorly sorted, feldspathic, micaceous, thinly laminated, cross-bedded. Erosional contact at base.
15-20'	Shale - Dark gray, firm, upper portion very silty, becomes finer downward, smooth and almost black at base, ½" siderite nodules in lower 4 feet.
3.1'	De Koven Coal - Normally bright banded, abundant pyrite. At 1.75-1.95' from top is a layer of dull hard non-banded coal with streaks of vitrain near top, lenses of pyrite at base. Also note lenses of pyrite near base of seam.

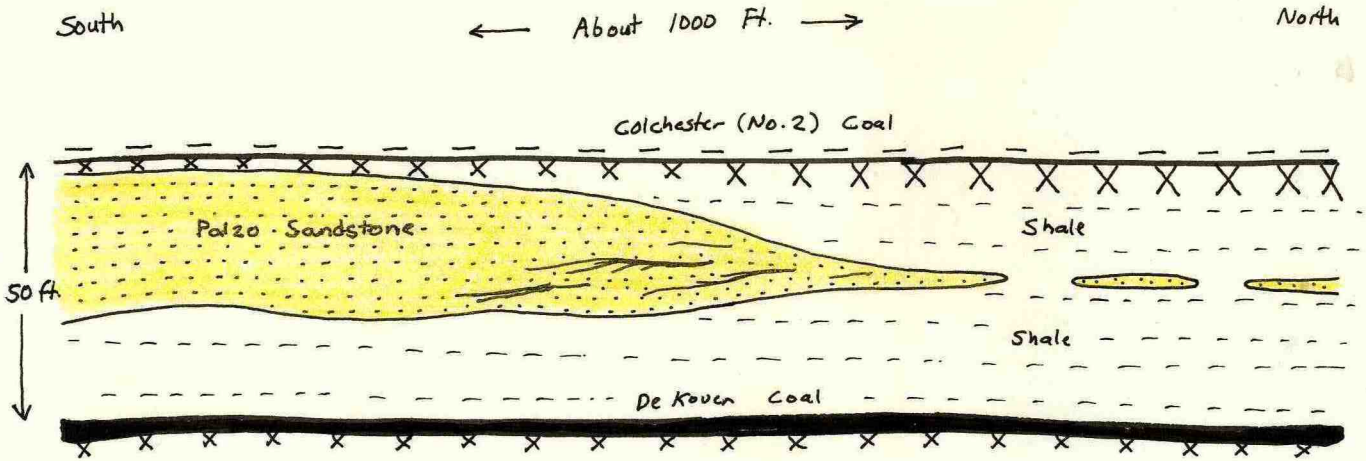
1½-2'	Claystone - Light gray, sandy, rooted.
2'+	Sandstone - Light gray, fine-grained, impure, massive, numerous Stigmaria rootlets.
	Section measured 500' farther north.
3.0'	De Koven Coal - Dull non-banded zone near middle less than 0.1' thick; lenses of pyrite common throughout seam.
1.5'	Claystone - Light-medium gray, sandy, many Stigmaria. Grades into:
1.3'	Sandstone - Light gray, fine-grained, micaceous, argillaceous, massive, many Stigmaria.
2.0'	Sandstone - Similar to above; in thin lenticular beds interlayered with dark gray siltstone and silty shale. Locally burrowed, grades into:
11'	Shale - Dark gray, firm, silty at top, becomes finer and darker downward, almost black at base - sideritic lenses near base.
7'	Siltstone - Medium-dark gray, thick-bedded with
2'+	Shale - Black, hard, fissile.
	Davis Coal not exposed.

The Palzo Sandstone thins northward in the pit, becoming a lenticular bed 2 to 3 feet thick. As it thins the underclay of the No. 2 Coal appears to thicken to more than 10 feet; then shale appearing identical to that below the sandstone appears above the sandstone. Interval from No. 2 to De Koven Coal remains nearly constant, about 50 feet. Sketch shows relationships:

(see next page)

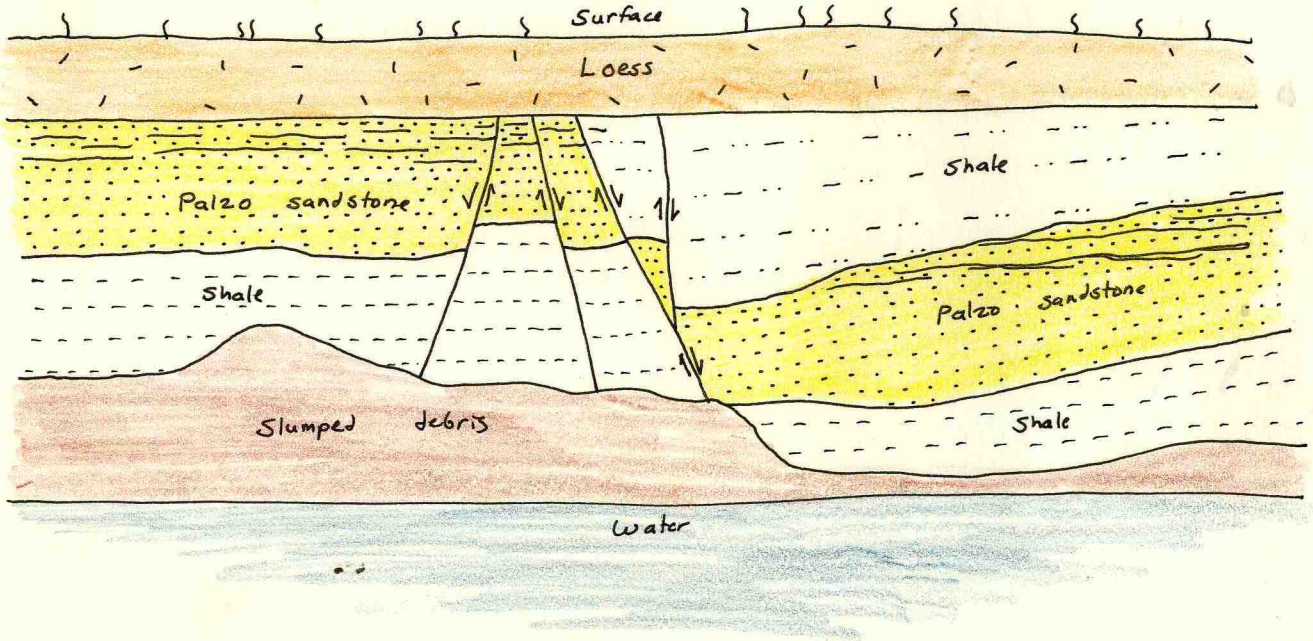
Northwest of the active pit (SE¼ SW¼ NW¼ Sec. 20) is a small partially filled pit with several small faults exposed. The best-exposed fault near the middle of the highwall has about 11 feet of throw with the northwest side downthrown. The fault plane trends N 42° E. The fault plane divides upward. The loess and soil are intact above the fault and most definitely are not displaced. Several smaller faults also are present. All are high-angle normal faults, like all faults I have seen at this mine.

Schematic view of highwall showing facies change in Palzo Sandstone.



Field Sketch of faults in inactive pit

E W



General view looking southwestward in the active pit. No. 2 Coal and Mecca Quarry Shale form dark band near top of highwall; DeKoven Coal is about 1/3 of the way above the floor of the pit. The Palzo Sandstone, about halfway between the two coals, is thick and breaks with rectangular fractures.

Mo 33 813 tip

View of highwall farther north in the mine. Here the Palzo Sandstone, about 15 feet above D.K.'s head, is much thinner than in the previous shot, and is lenticular.

D.K. Lumm is standing directly above the 11-foot fault in the small abandoned pit. The displacement is best shown by offset of the massive Palzo Sandstone which is downthrown on the right-hand side of the photo. The loess is not affected by the fault.

Mn 33 214 tie

J.J. Track - Brown Bros. Excavating Mine.
September 25, 1984. Notes by John Nelson.

Larry Carr, superintendent ?

Active pit located E 1/2, NW 1/4 SW 1/4 and SE 1/4 SW 1/4 NW 1/4, Section 20, T. 10S, R. 6E, Saline County, Harrisburg Quadrangle.

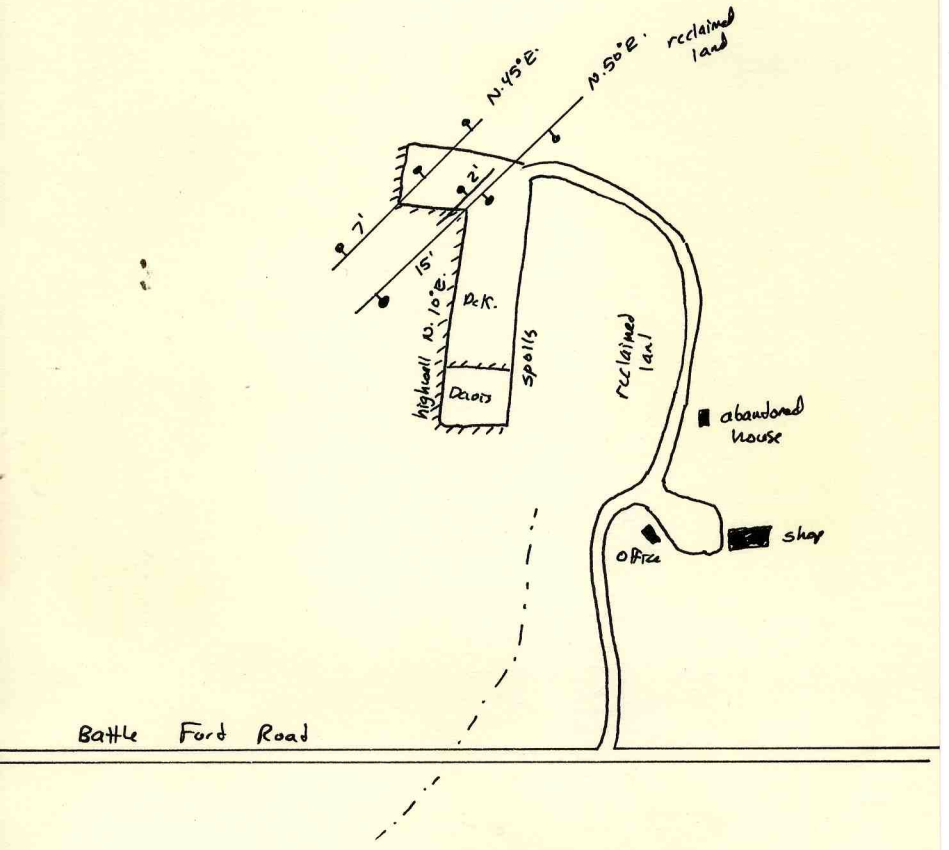
Two faults exposed in active pit as shown on sketch map. Both are high-angle normal faults. The NW one strikes N. 45° E and dips about 80° NW; the NW side downthrown about 7 feet. Sandstone and shale above DeKoven Coal are shattered; gouge zone a little less than a foot wide in Palzo Sandstone, the fault splits downward into several planes, offsetting shale in a series of tilted steps.

Second fault has southeast side downthrown about 15 feet. Trend of fault not well exposed, but a branch of this fault strikes N. 52° E/62° NW and offsets the Dekoven Coal about 2 feet down to the NW. Slickensides on fault plane plunge vertically. This fault is antithetic to and intersects with the main fault upward. Sandstone and shale are shattered but there is very little drag, slight tilting of fractured blocks. All indicate purely normal movement.

Activity in pit does not allow detailed study of subordinate fractures in coal and rock. Noted fractures in coal more or less parallel to faults, and large planar nearly vertical fractures on highwall roughly perpendicular to faults.

Strata on highwall are much the same as on previous visits, so I will not repeat description. As before, the Palzo Sandstone shows considerable variability in thickness and nature of bedding.

Sketch map J.J. Track Mine - Sept. 25, 1984.



In. ditch on roadside

6'

3' Shale, sy- dark gray and weathered yellow-brown, friable

1'6" Shale, black, a few thin coaly streaks, weathered friable

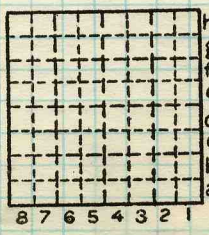
1' + Underclay medium gray, stigmarian with much yellow-brown weathered mottling. Bands of Fe oxide probably after pyrite. & blobs

This "coal" has been worked in 2 old dog holes. S of road and is probably same horizon as that in 21B6 as it is at approximately same elevation. (TM est).

By H.B.S. Date 6/2/54

Quad. 273 Part

County Saline



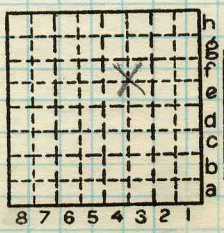
Sec. 20
T. 10 N. S.
R. 6 E. W.
Index No.

(87469—10M—10-49) ILLINOIS GEOLOGICAL SURVEY, URBANA

Below road ~~new~~ near creek bottom 3 old

Abandoned Drift ~~thuels~~ Mines, fairly large, apparently, said to be 3 feet coal, and a 5 feet coal outcrops about 50 feet below in creek but this wasn't seen.

1971. BROWN BROS EXCAVATING C
STRIPPED IN THIS SECTION
INTERMITTANTLY THROUGH 1980



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By H.B.S. Date 6/2/54

Quad. 273 Part

County Saline

(87469—10M—10-49) ILLINOIS GEOLOGICAL SURVEY, URBANA

Outcrop near ~~new~~ top of small hill (N. side) S. of road.

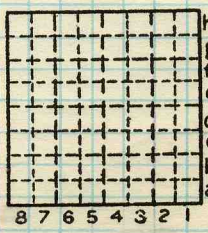
2'	Shale, gray, weathered, friable.
9"	Shale, weathered yellow-brown, friable.
1'6"	Coal, weathered
4"	~~Vel~~ Underclay, gray, slightly weathered, friable, maybe lighter gray in top 2"
2'	Shale, gray, with yellow and brown mottling weathered, friable.
15' +	Shale, weathered, yellow-brown, dip apparently horizon, friable but harder toward base.

This coal was burnt and was "pretty good" - a tunnel, probably short, into the coal caved.

By H.B.S. Date 6/2/54

Quad. 273 Part

County Saline



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