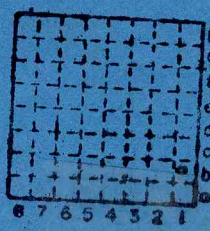
SAHARA COAL CO.

Sahara Coal Co. Mine No. 22

Underground Mine

HERRIN

Drift mine



Sec. 22

T. 9 N.

S.

R. 5 E.

Index No.

Mine Index 99B

SALINE COUNTY

MOORE'S MODERN METHODS

(Sheets) COAL PRODUCTION (Sheet)

Period Mo. Day Year Mo. Day Year		Tons	
SAHARA COAL CO.	1980	70	213
	1981	71	253
MINE NO. 22	1982	68	887
	1983	105	202
	1984	62	981
	1985	44	013
	1986	none	

SUMMARIES

No. to No.

Railroad, Wagon, Strip, Idle, Abandoned

DRIFT

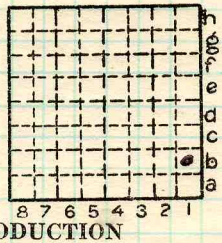
IDENTIFICATION

County No._____ Coal No. ☐ 6

Coal Report No._____

Quad.

County Saline



Sec. 22

T. 9 N. S.

R. 5 E. W.

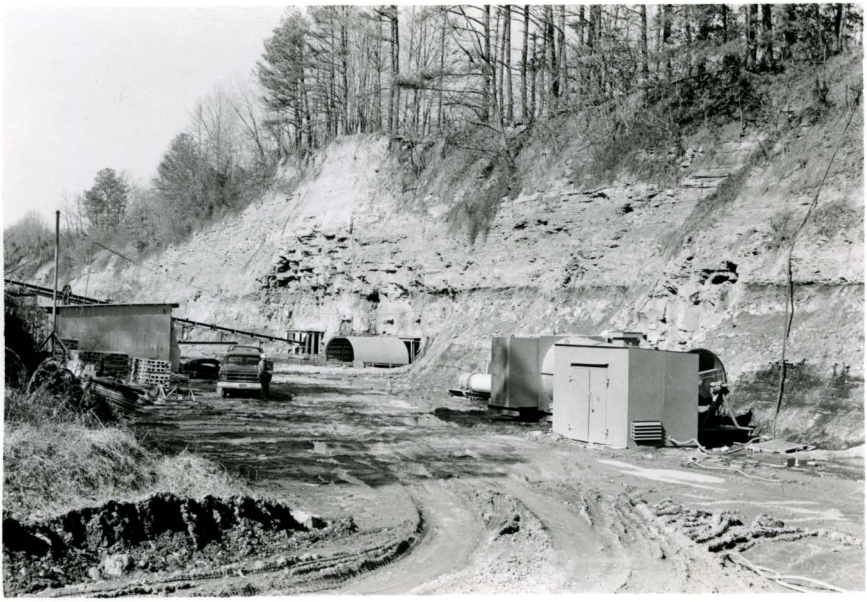
Index No.

COAL MINE—PRODUCTION

ILLINOIS GEOLOGICAL SURVEY, URBANA

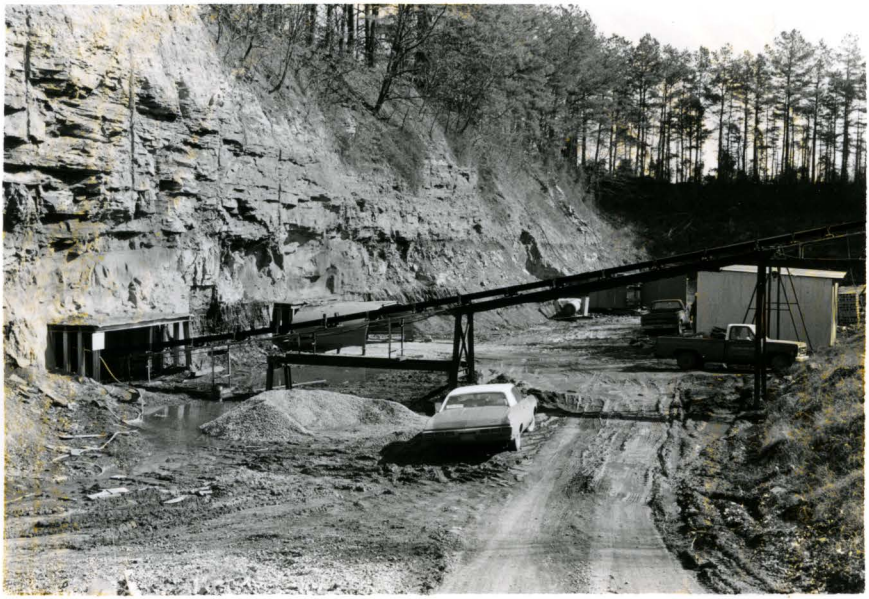
(2732—2M—7-41)

2



View looking westward along highwall at portal of Sahara No. 22. At right is fan at intake drift. Near center is travel entry, with tin roof. Just beyond it the conveyor belt leaving the mine can be seen.

Closer view of portals of travel entry (right) and belt entry.



View looking eastward along highwall with belt entry at left.

Margin of a lens of Energy Shale in Sahara Mine No. 22. Base of the black Anna Shale is at top of ruler. To left of ruler stringers of coal splay into the Energy Shale.

SAHARA COAL COMPANY MINE NO. 22 SALINE COUNTY

February 26, 1981

Notes by John Nelson on visit with Steve Danner, accompanied by Tom Fox from Sahara.

This is a new mine that has been operating for a little more than a year as of the time of our visit. It is a drift mine; the portals are along the highwall of an old strip mine. The portal of the belt entry is located 1290' from the south line, 490' from the east line of Section 22, T. 9S- R. 5E.

Sahara No. 22 is a one-unit mine with a ripper-type continuous miner, shuttle cars, and conveyor belt haulage for coal, trackless haulage for men and materials. The present workings consist of six parallel entries driven due north from the portals. The faces are approximately 2900 feet inby the mouth of the mine.

The Herrin (No. 6) Coal is being mined. Sahara No. 22 , according to plans, will remain a one-unit mine throughout its life and will recover approximately 400 acres of coal.

Purpose of our visit was to make general geologic observations and to collect two face-channel samples of coal.

SAMPLE 1 C21402

Face of travelway (3rd entry from east) inby crosscut 48, about 2900 feet inby the mouth of the mine. 1120' from north line, 360' from east line, Section 22. Coal is wet and has thin coating of mud.

loc

Roof- Limestone (Brereton), gray, fine-grained, hard and dense, only base exposed. Water seeping along fractures which trend N 80 E.

2.1' Shale (Anna), black, hard, smooth, fissile, has thin coaly streaks near base, and joints trending N 80 E. Carbonate nodules near base. Sharp even contact to coal. Shale was sampled.

0.80' Coal, N.B.B., hard, vitrain about 30%, thin-banded, max. thickness about 0.015'; attrital coal 60-70%, generally thin-banded, thickest band 0.03'; fusain disseminated and as thin laminae. Generally poor cleat development, no visible calcite, some pyrite on cleat.

0.03' Fusain, moderately soft, slightly mineralized, probably pyritic.

0.39' Coal, N.B.B., similar to above, contains 0.03' band of dull coal at center of unit. Some calcite on cleat.

0.04' Fusain, soft, discontinuous band or lens.

0.80' Coal, N.B.B., sim. to above with much more calcite and a pyritic "goat beard", appears to contain more vitrain and fusain but less attrital coal than unit above.

0.08' Fusain, soft, non-mineralized, lenticular.

0.55' Coal, N.B.B., similar to above, approx. 30% vitrain; fusain and calcite prevalent. Some kaolinite on cleat. Improved cleat development.

0.03' Pyrite, silvery-gray, hard, dense, fine-grained, varies in thickness. Fairly sharp but uneven contacts, appears to be continuous. EXCLUDED from sample.

0.71' Coal, N.B.B., sim. to above, several bands and small lenses of fusain and several thin shaly partings in lower half. Calcite, pyrite and kaolinite on cleat.

0.03' Shale, light to medium gray-brown, hard, fairly continuous but varies in thickness. EXCLUDED from sample.

0.08' Coal, N.BB., sim. to above.

0.07' Shale, medium gray, slightly silty, hard, varies in thickness, continuous. EXCLUDED from sample.

0.36' Coal, N.B.B., sim. to above.

0.05' Shale, medium gray, hard, varies in thickness, continuous band with sharp contacts. EXCLUDED from sample.

0.11' Coal, N.B.B., sim. to above.

0.05' Shale, medium gray, hard, silty, discontinuous EXCLUDED from sample.

0.85' Coal, N.B.B., sim. to above, much pyrite on cleat, and on vertical fractures; calcite and kaolinite also on cleat. Concentration of vitrain along upper contact. Sharp contact:

Floor- Claystone, medium gray, moderately hard, silty contains small lenses of hard pyrite, not very carbonaceous. No visible fossils, a few slickensides.

5.03' total thickness of seam (including bands excluded from sample)

SAMPLE 2 (C21403)

Face of easternmost entry inby Crosscut 48. 1125' from north line, 260' from east line, Section 22. Little dust on coal- channel cleaned before sampling.

Roof- Limestone (Brereton), gray, fine-grained, hard and dense, semi-crystalline. No fractures noted. Only base exposed.

1.2' Shale (Anna), dark gray, hard, smooth, not laminated or distinctly fissile; contains thin stringers of coal in lower portion. Pyrite in small vertical fractures immediately above coal. Fairly uniform shale; very sharp even contact. Shale was sampled.

0.68' Coal, N.B.B., hard, moderate concentrations of vitrain, thinly banded, max. 0.02', average less than 0.01'; attrital coal 50-60%, also thinly banded; fusain in thin bands and laminae. Overall lustre resinous, cleat moderately poor. Some calcite on cleat, more pyrite on

cleat and in vertical facings. Band of dull coal 0.02' thick at base.

0.04' Shale, medium grayish-brown, smooth, moderately soft, contains stringers of coal, varies in thickness, occasional lenses of pyrite. Appears continuous. EXCLUDED from sample.

0.98' Coal, N.B.B., sim. to above, more calcite and less pyrite on cleat, lustre less resinous than above.

0.06' Fusain, soft, not mineralized, varies in thickness, continuous band.

0.35' Coal, N.B.B., sim. to above, vitrain increases downward.

0.04' Fusain, soft, relatively pure, discontinuous.

1.08' Coal, N.B.B., sim. to above, contains pyrite as "goat beards" and as small nodules and also disseminated. Less calcite than above. Lower half of unit appears somewhat bony.

0.16' Shale (Blue band ?), medium brownish-gray, moderately soft, smooth, contains laminations and stringers of pyrite. Varies in thickness, irregular contacts with coal. Contains single band of bright coal near middle. EXCLUDED from sample.

1.31' Coal, N.B.B., medium gray, moderately soft, silty, no visible carbonaceous material, no fossils; occasional slickensides.

4.70' total thickness of seam including bands not sampled.

Composited sample (CFC) = C 21404

The normal roof in this mine is Anna Shale overlain by Brereton Limestone, or limestone directly on the coal. The limestone has a smooth lower surface in most places but locally there are small protrusion or "bosses" into the coal. The "clod" at the base is thin and flaky. The floor is said to be about 30 inches of claystone underlain by hard rock, probably limestone. The latter was not observed.

Lenses of Energy Shale occur in the roof and cause trouble in mining. One was observed near the faces in Entries 1, 2, and 3 between Crosscuts 45 and 47. The lens has abrupt margins (hidden by rock dust) and thickens to maybe 8 feet near the center. The Anna Shale and limestone ride up over the Energy Shale, though M.D. Brantley (who has a copy of I.M.N. 72, the "roof study") told us that the limestone tends to be missing above the gray shale. Nearly the full thickness of Energy Shale was mined with the coal, and bottom coal was left in place; this to avoid miring the equipment in soft muddy bottoms. Quite a bit of water is coming out of fractures in the roof. This is a shallow mine.

The Energy Shale here, as in many other mines, is medium to dark gray, poorly bedded, faintly laminated to non-laminated, smooth, slightly carbonaceous and is sensitive to moisture; although this mine is young enough that slaking has not yet taken its toll.

Another lens of Energy Shale was seen in Entry 2 (east side of mine) between Crosscuts 34 and 39. Again the shale was mined with the coal and much bottom coal was left. The easternmost entry (Entry 1) was not mined at all beneath the gray shale.

At the southern margin of this lens is a clean exposure showing that the upper layers of the No. 6 Coal split away from the main seam and ride up over the Energy Shale for a short distance. The coal "rider" follows the contact between the Anna and Energy Shales. This shows that the Energy Shale was deposited contemporaneously with the upper layers of the peat. Farther into the lens, a thin (0.2') layer of argillaceous, coarsely fossiliferous, pyritic "bastard limestone" occurs at the top of the Energy Shale just below the Anna Shale.

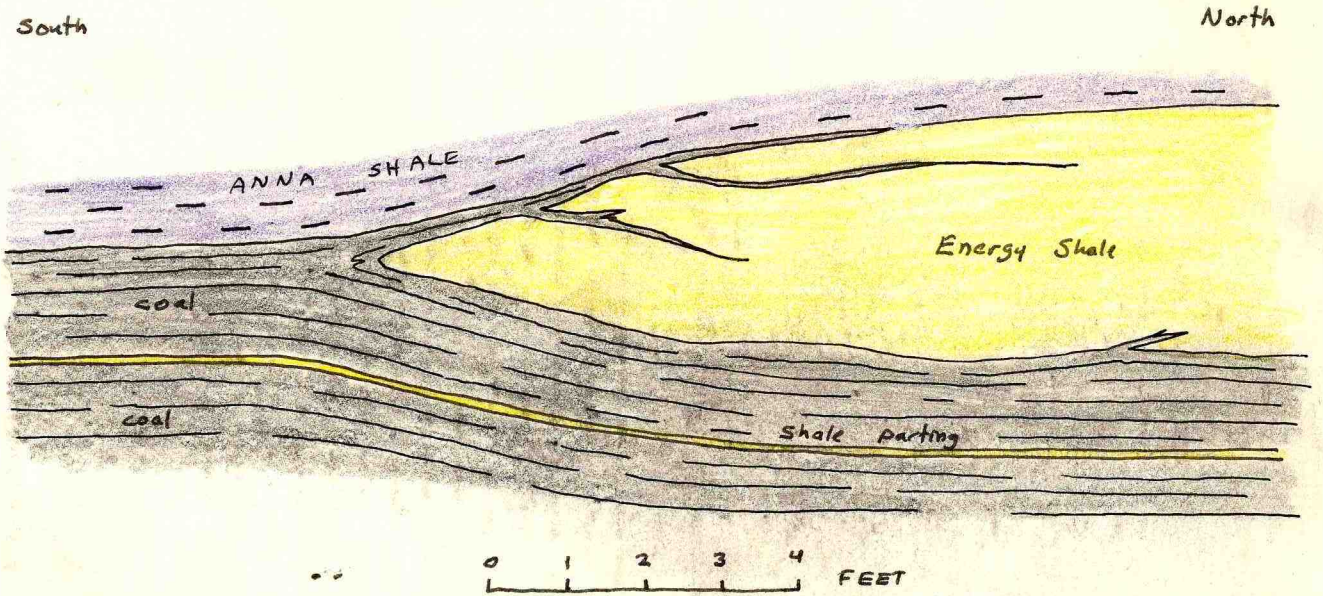
The 6th Entry (westernmost) also was not mined beneath a lens of Energy Shale, between Crosscuts 15 and 19. Again the coal is seen to split and overlap the margins of the lens of gray shale (see sketch). The shale contains lenses of hard pyritic limestone up to 0.5' long and 0.2' thick.

The shale weathers to its characteristic yellowish or orange-brown cast in this area.

A fairly persistent layer of shale about 0.1' thick occurs in the coal about one foot below the top of the seam (see sketch).

It seems to me that Sahara is taking rather extreme measures to avoid roof troubles under the lenses of Energy Shale. We must hope that they do not encounter too many of these lenses; otherwise they will have to leave a lot of coal in the ground. In most other mines no effort is made to change mining plans beneath gray shale as opposed to Anna Shale, but those mines take their licks in the form of roof falls.

From the way these areas of gray shale were described before we saw them we thought this mine might have encountered masses of coal balls such as have plagued Sahara No 6 (surface mine). However, we saw no coal balls during our visit.



Sketch showing splitting of coal at edge of lens of Energy Shale on west rib of Entry 6, at crosscut 15, Sahara No. 22.

SAHARA COAL COMPANY - MINE NO. 22 - SALINE COUNTY
Highwall drift mine in Herrin (No. 6) Coal. Portal in NE¼ SE¼ SE¼ Section 22, T. 9S, R. 5E. Notes by John Nelson on visit with Steve Danner, D.K. Lumm and Terry Guest (Sahara). Carl Griffiths is mine superintendent. June 9, 1982

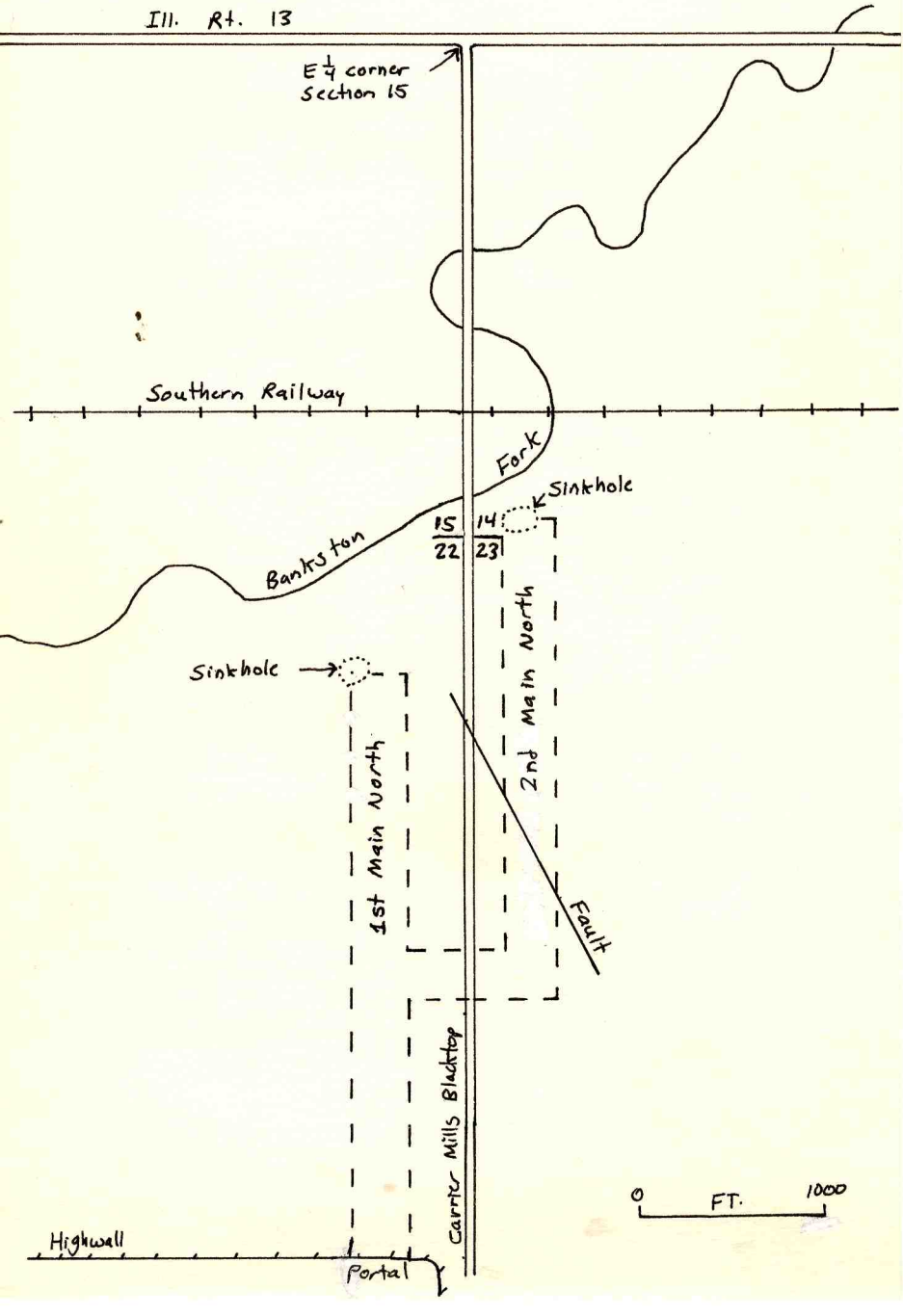
The initial workings of the mine were the 1st Main North Entries, driven due north from the portal. According to Sahara personnel, these entries were halted about 3100 feet north of the portal when the roof collapsed of the left-hand entries, bringing great volumes of mud and water into the mine and causing immediate subsidence at the surface. The subsided area is a pit or sinkhole about 50 feet in diameter in the middle of a cornfield and it is visible from the Carrier Mills blacktop. Drilling in this area showed practically no bedrock above the coal. Apparently they mined into a buried Pleistocene valley.

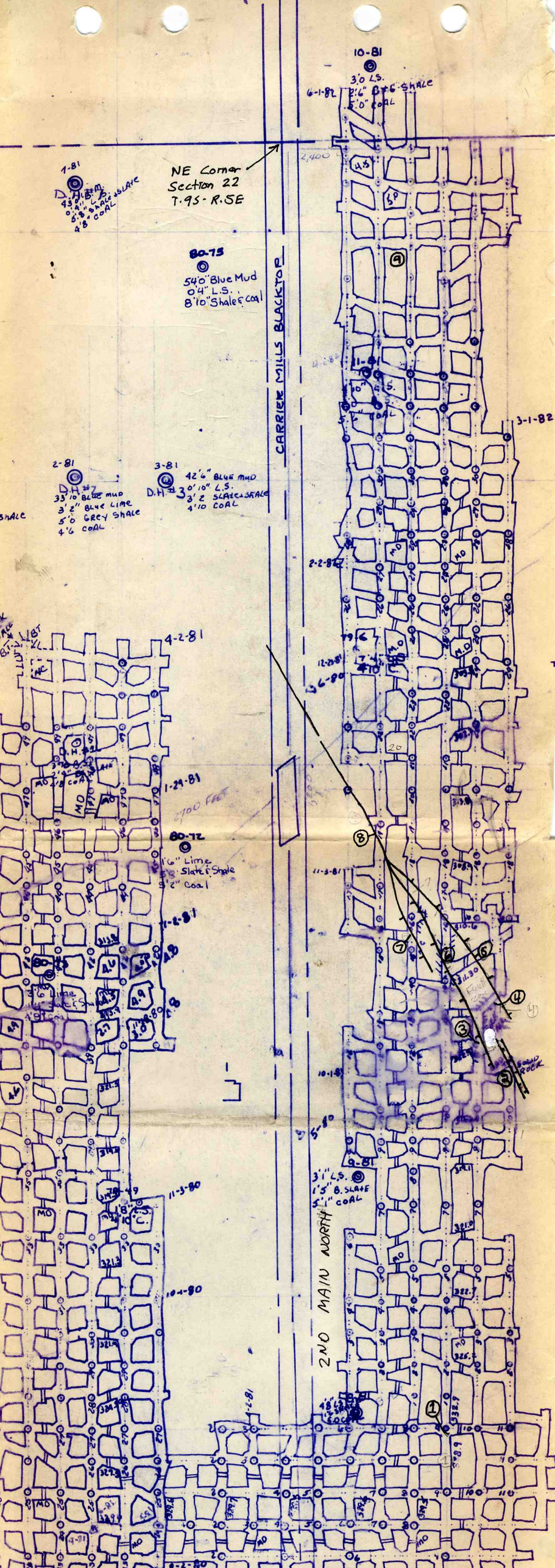
The equipment was pulled back from the face and the 2nd Main North Entries started east of the 1st Mains, as shown on the maps (included here). Just last week Sahara suffered a repeat of the incident that affected the 1st Main North. Again a sinkhole formed at the surface, and again the faces were flooded. The equipment has been withdrawn and Sahara now is planning to mine to the west. The 2nd Main North now is full of water to five crosscuts back from the face where the roof collapse occured.

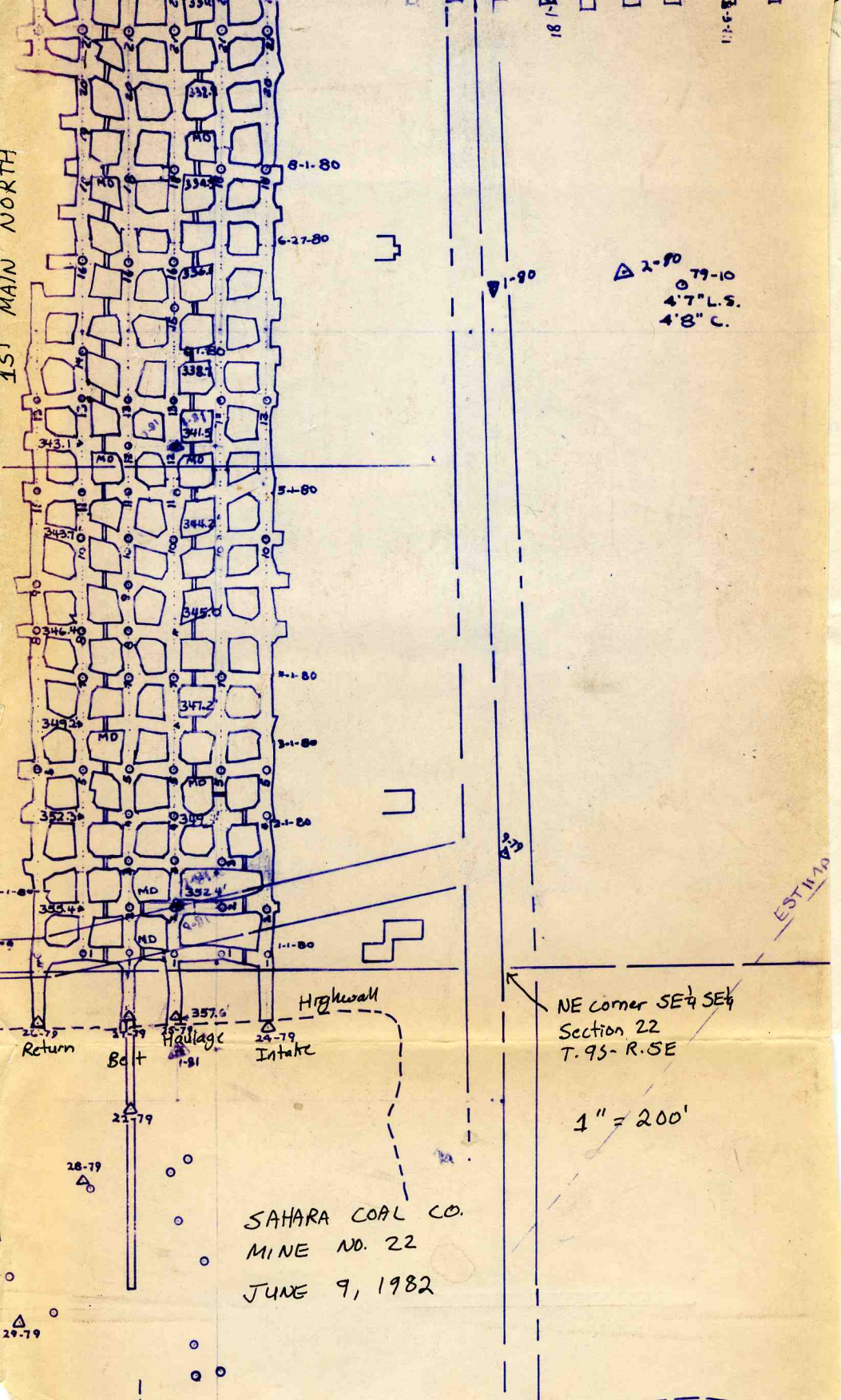
As shown on the sketch map, both of the subsided areas are close to Bankston Fork. The total overburden here is less than 60 feet and most of this is "blue mud".

We went into the 2nd Main North to examine areas that were described to us as having rock in the coal, or solid rock faces, or splitting of the seam. The descriptions were contradictary and we did not really know what to expect.

Sahara Coal Co. Mine No. 22

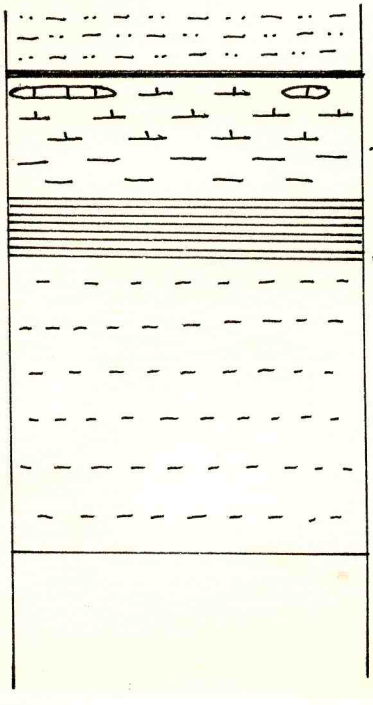



10-81
3'0 L.S.
2'6" B.S. & SHALE
5'0" COAL
6-1-82
NE Corner
Section 22
T.9S - R.5E
1-81
D.H.#1
43'9" L.S.
0'4" SHALE & SLATE
5'8" SHALE & SLATE
4'8" COAL
80-75
54'0" Blue Mud
0'4" L.S.
8'10" Shale & Coal
CARRIER MILLS BLACKTOP
11-81
3-1-82
2-81
D.H.#2
33'10" BLUE MUD
3'2" BLUE LIME
5'0 GREY SHALE
4'6 COAL
3-81
D.H.#3
42'6" BLUE MUD
0'10" L.S.
3'2 SLATE & SHALE
4'10 COAL
2-2-82
4-2-81
1-29-81
80-72
1'6" Lime
3'8" Slate & Shale
9'2" Coal
11-2-81
11-3-81
10-1-81
9-81
3'1" L.S.
1'5" B. SLATE
5'1" COAL
11-3-80
10-1-80
2ND MAIN NORTH
2700 FEET
2,400
BOND ROCK


1ST MAIN NORTH
8-1-80
6-27-80
5-1-80
3-1-80
2-1-80
1-1-80
MD
332.1
334.5
336.1
338.1
341.5
343.1
344.2
345.0
346.4
347.2
349.2
352.3
352.4
355.4
357.6
1-90
2-90
79-10
4'7" L.S.
4'8" C.
Highwall
Haulage
Return
Belt
Intake
20-79
21-79
22-79
24-79
28-79
29-79
1-81
NE corner SE¼ SE¼
Section 22
T. 9S- R. 5E
1" = 200'
SAHARA COAL CO.
MINE NO. 22
JUNE 9, 1982

1.) No 3 Entry (haul road) of 2nd Main North near Crosscut 3: Large lens-shaped body of Energy Shale forms the immediate roof of the coal. The shale is so difficult to hold in the roof that the miners chose to mine the shale, leaving the coal in the floor. Thus the entry rises abruptly through the lens of shale. This condition, which we saw on earlier visit last year, sometimes is reported as "rock in the coal".

The section of strata exposed here is shown below. The Brereton Limestone pinches out above the thick Energy Shale. The Anna Shale is black, hard, and fissile, containing numerous thin parallel laminations of coal in the lower part. The contact of the Anna Shale to the Energy Shale is sharp. Above the Anna Shale is about a foot of dark gray calcareous shale, with coal streaks and lenses of brownish limestone. The Jamestown Coal, about 3 inches thick, overlies this. The highest unit exposed is medium-dark gray micaceous siltstone containing abundant well-preserved plant compressions.



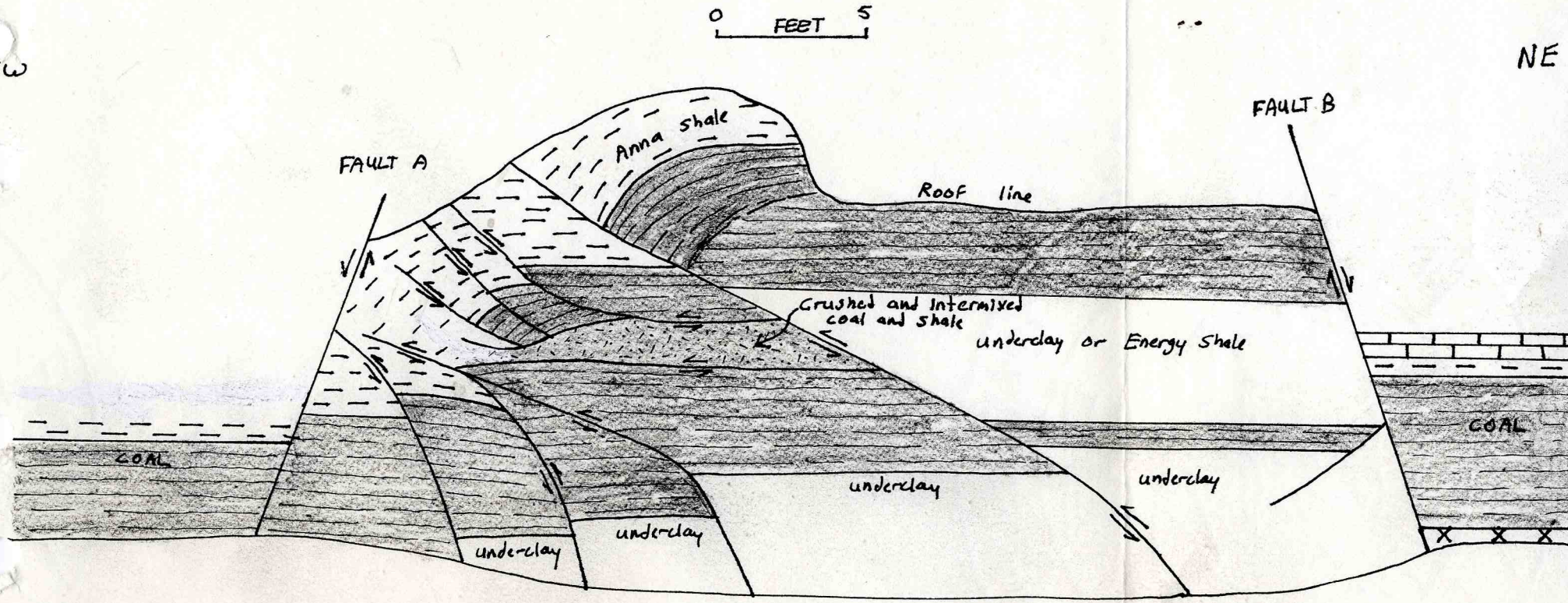
2.) Right-hand entry (No. 1) near Crosscut 12: fault. At least two faults are present. The rough sketch below shows the basic structure. On the southwest is a high-angle normal fault striking N 30 W with the northeast side downthrown about 2 feet. The coal on the downthrown side is broken, and the limestone above the coal is thoroughly fractured, with calcite filling the openings. About 5 feet northeast of the normal fault is a second fault with a vertical, undulating plane. Beyond this fault is greenish-gray claystone containing nodules of brownish limestone. This rock probably underlies the coal and so the fault is upthrown at least 5 feet to the northeast. Two directions of slickensides are visible on this fault. One set plunges 58 degreees and the other, 20 degrees from horizontal. These striations, and the undulating surface of the fault, signify strike-slip or oblique-slip movement. The fault must be a subsidiary fault of the Cottage Grove Fault System.

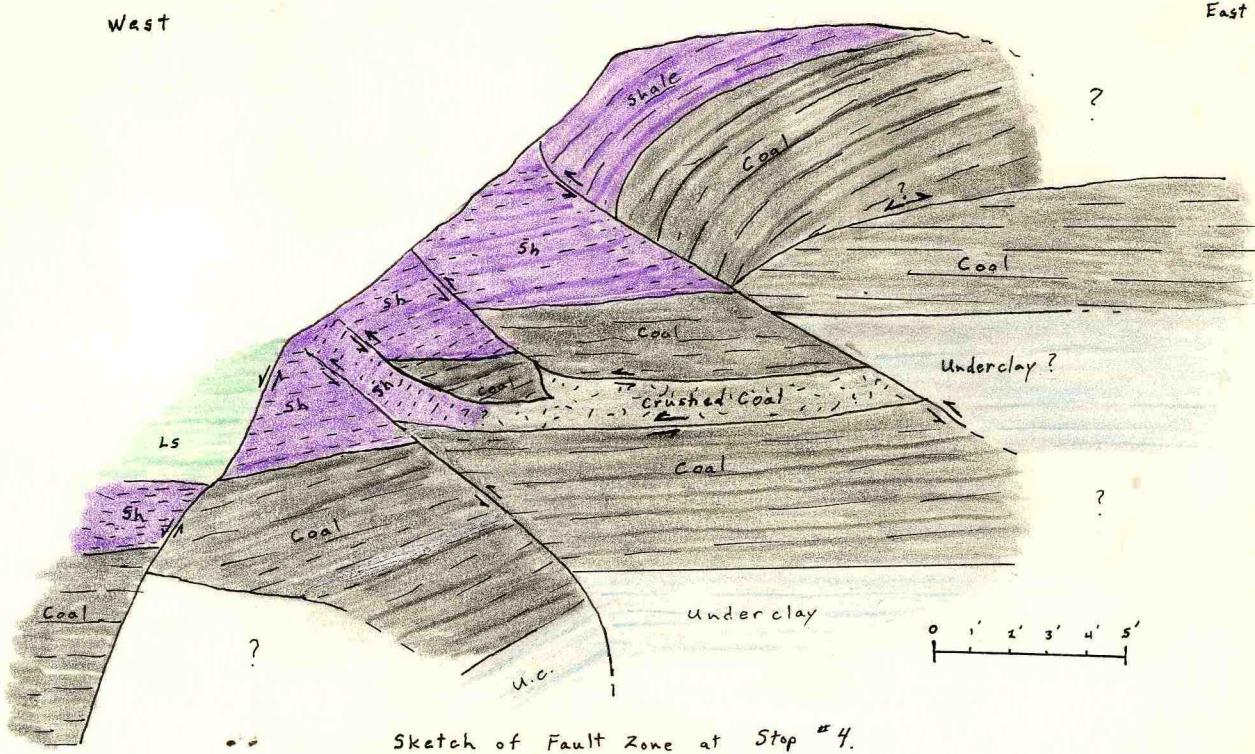
3.) No 2 Entry at Crosscut 13: high-angle normal fault trending N 30 W and having the southwest side downthrown about the thickness of the seam (5 feet). This fault is not the same as the one at Stop 2, and evidently curves sharply or dies out within the coal pillar between here and Stop 2. A large roof fall, and deep water in the entry, block access to the fault northward.

4.) Angled crosscut No. 15 between the No. 1 and No. 2 Entries: cross-sectional view of the entire fault zone (see sketch, over). The structure is amazingly complicated and it is impossible to do justice to it with a sketch. Many small faults and structures had to be left out of the drawing.

Basically there is a horst, about 30 feet wide, bounded by two high-angle normal faults (Faults A and B in the drawing). Fault A probably is the fault exposed at Stop 3. Faults A and B both trend roughly N. 30 W and dip steeply (almost vertically).

Cross-section of fault zone at Stop 4.

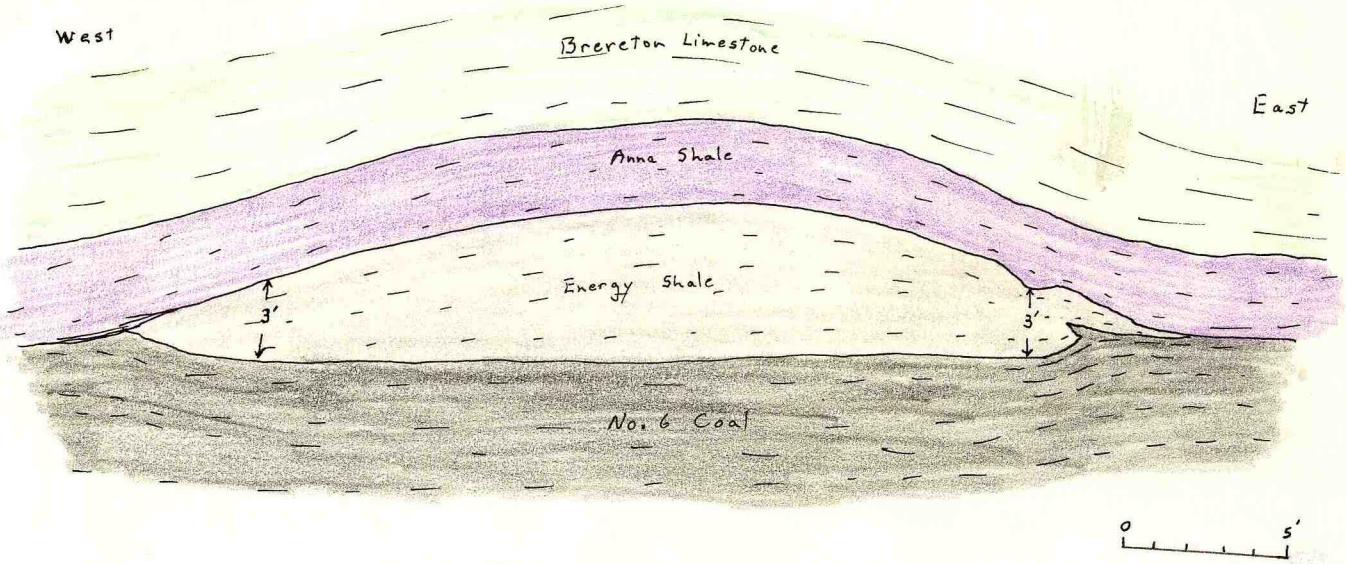




Sketch of Fault Zone at Stop #4.

Sahara Mine No. 22
Herrin (No. 6) Coal

S.K. Danner
6-9-82



Sketch of Lens of Energy shale
30' east of Stop #5

Sahara Mine No. 22
6-9-82
(#1)

Within the horst is a great series of overlapping reverse faults and thrust faults whose dips vary from horizontal to nearly vertical. All of the larger faults dip toward the northeast but some small ones dip to the southwest. In places the strata have been strongly folded, by drag, and in some zones of horizontal movement coal and shale have been pulverized and intermixed. From the sketch it is apparent that sveral episodes of movement occured, with older faults being truncated and offset by younger faults. I did not take the time to work out the sequence of events because this is rather a dangerous area.

My interpretation, based on my understanding of the mechanics of faulting in the Cottage Grove Fault System, is that the first action probably was normal faulting on Faults A and B. Continued movement along the main (master) faults of the Cottage Grove, north of the mine, then induced strike-slip movements on Faults A and B. These movements were such as to place the wedge-shaped block between the two faults under horizontal compression, with maximum compression perpendicular to Faults A and B. The compressive stresses resulted in thrust faulting and horizontal movements along the layers of the bedded rocks and coal.

5.) Just east of mandoor in Crosscut 15 between Entries 2 and 3: excellent exposure of fault. This fault is probably Fault B from Stop 4. Its trend is N 30 W/75 NE and the coal northeast of the fault is downthrown 2 to 3 feet. Thus it is a normal fault geometrically; however the indications of major strike-slip movement are very compelling. The fault zone is a few inches wide at the floor and widens upward to about 2 feet at the roof. Narrow crumpled and contorted slices of coal, clay, and shale are found within the fault zone. In particular, a large slice of coal is found at the roof line above the top of the seam on either side of the fault zone. Also on the south rib, the coal immediately northeast

of the fault is overlain by Energy Shale, but the coal southwest of the fault is topped by Anna Shale. I have observed very similar patterns of faulting in the northeastern part of Sahara No. 21. See, for example, the sketch on the cover of Circular 522.

6.) No. 3 Entry (haul road) at Crosscut 15: fault trending N 30 W/75 SW with the southwest side downthrown about 3 feet. This is probably Fault a from Stop 4. The intense thrust faulting observed at Stop 4 is not apparent here; the view is somewhat obscured by rock dust, but there are no large thrusts; only a couple reverse faults with 1 to 2 feet of vertical offset. Fault B crosses the entry near Crosscut 16. Its structure appears to be complicated but cribbing, rock dust and mud prevent any detailed description.

7.) No. 4 (belt) entry near Crosscut 16: high-angle normal fault with the southwest side downthrown about 3 feet lies southwest of Fault A. This new fault must die out between here and No 3 Entry. The main fault zone, farther north in the entry, is hidden by cribbing and arches. Water is pouring out of the fault and must be pumped continuously.

8.) No. 5 Entry, according to the miner operator, had no faults, but there is definitely a fault here. It is a single fault trending N 27 W and dipping steeply northeast, and having little or no vertical component of slip. The fault zone is dry and there has been no roof failure except for minor droppage of crushed clay and coal out of the actual fault zone, which is about a foot wide. Multiple directions of slickensides are present, and narrow upthrust slices or slivers of coal are seen in the roof within the fault zone. The structure is similar to that at Stop 5. It is apparent that Faults A and B here have merged into a single break which must have a large component of strike-slip motion.

9.) Visit to faces of 2nd Main North - our progress is blocked by deep water at Crosscut 36. There are no indications here of faults or other geologic anomolies and we must assume that Sahara's interpretation of the problem is correct - they mined under a buried Pleistocene channel.

Examination of Sahara's maps reveals that the fault in Sahara No. 22 is the same fault that was encountered in the No. 5 Coals betweenSahara Mines No. 5 and No. 16. The fault in the No. 5 Coal, like the fault in Sahara No. 22, appears to split into a number of parallel branhes toward the southeast. This fault lies on the southwest side of a broad fault zone, nearly half a mile wide, containing numerous parallel faults. If Sahara No. 22 works farther to the northeast they will encounter additional faults, but if they confine their operations to the south and west they should be able to avoid any more large faults.

From What I can tell, Sahara simply did not do enough exploratory drilling before developing this mine. It is difficult to believe that, in this day and age, a coal company would blunder into a buried Pleistocene valley. Mine No. 22 was opened on rather short notice and was intended to make up for some of the lost production from Sahara No. 6 (the surface mine). With No. 6 now in imminent danger of closing, due to inability to obtain the proper permits, and No. 21 due to close within a year, even greater burden will be thrown upon Mine No. 22 to keep up production. Sahara will have to delineate these buried valleys and avoid them, and will do well to devise some way of mining the coal out from under the edges of the Energy Shale.

An additional note - Sahara is commencing work to re-open Mine No. 7 in the Herrin (No. 6) Coal. The old workings were in the No. 5 Coal. The original

slope is being cleared so that mining can begin. Mine No. 7 had numerous faults and these will undoubtedly affect the No. 6 Coal. Another interesting problem is likely to be subsidence of the underlying works.

There are also plans to open a brand new mine north of Highway 13 (I do not have the exact location). This is scheduled to be a two-seam operation, in both No. 5 and No. 6 Coals.

Notes by D. K. Lumm, ISGS.
Wednesday, June 9, 1982 Weather: Pt. Cdy, humid, 70-85°F

Visit to the Sahara #22 Mine, a 1½-year old drift mine in the Herrin (No. 6) Coal, portal located in the NE/4 SE/4 SE/4, Section 22, 9S., 5E., Saline County, IL. The entrance to the drift is in a box cut some 50 feet deep which exposes the Herrin Coal, the Anna Shale, and the Anvil Rock Sandstone. The mine employs continuous mining methods without pulling pillars. The mine workings are proceeding due northward. The mining of the 1st Main North was discontinued nearly a year ago because of a large influx of "blue mud" (Pleistocene lacustrine deposits) which followed a roof fall. The 2nd Main North entry was mined east of the 1st Main North in response to that problem (see maps).

A similar roof fall and influx of mud and water occured at the working face of the 2nd Main North entry; less than a month ago. Sahara has pulled out their mining equipment and plans to seal off this entryway.

It is evident that the workings in the 1st and 2nd Main North have encountered a buried Pleistocene Valley. Drill holes report great thicknesses of blue mud.

The Galatia Channel, a clastic filled channel which was contenporaneous with the deposition of the Springfield (No. 5) Coal is located 4 miles east of the #22 Mine.

The Cottage Grove Fault System is about 3 miles north of the #22 Mine portal and has SE trending faults which branch from the master fault; these faults are projected to encounter the #22 Mine workings.

Our guide for this visit is Mr. Terry Guest, a Sahara employee.

In Mine Tour.

Stop 1. No. 3 Entry (haul road) of 2nd Main North near Crosscut 3.

The Energy Shale has been mined to accomodate a roll in the No. 6 Coal. The shale is medium gray to dark gray and partly silty. The roof consists of a thin band of "bastard" limestone and is locally 0.5 inches thick; a thin band of Jamestown Coal 1.0 inches thick overlies the "bastard" limestone; a medium gray micaceous siltstone containing carbonaceous debris is present at the very top of the roof (Lawson Shale).

Stop 2. Right hand entry (No. 1) near Crosscut 12. 2nd Main North.

At least two faults are present. One is a high-angle normal fault which trends N 30 W. The Herrin (No. 6) Coal is downthrown to the NE by approximately 2 feet. A second fault, possibly a strike-slip, has a nearly verticle plain. Slickensides are present on claystone, two directio-s of which were recorded on the dip plant; 58 degrees and 20 degrees from the horizontal.

Stop 3. No. 2 Entry at Crosscut 13. See notes by W. J. Nelson.

Stop 4. Angled crosscut No. 15 between the No. 1 and No. 2 Entries.

This is the location which was reported to have "rock in the coal." A much more complex problem exists. Above the arch in this angled crosscut is a series of thrust and reverse faults within a 30 foot wide zone. These faults have displacements of a few inches to about 3 feet. The trend of these faults is to the NW; the dips onthese faults is to the NW; the dips on the fault surfaces varies from

near horizontal to near verticle. The fault zone is well defined by high angle normal faults on either side. See sketch by Nelson.

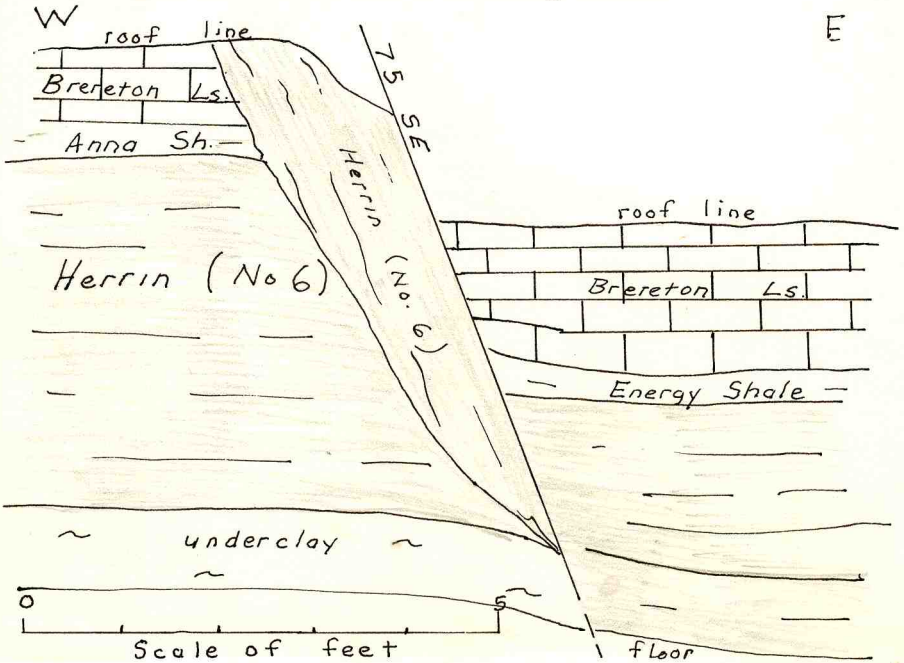
Direct measurements and observations of the structures and lithologies could not be made for safety's sake; a significant roof fall with broken debris draping the arch made for dangerous conditions.

See additional notes by Nelson and Danner.

Stop 5 East of mandoor in Crosscut 15 between entries 2 and 3:

High angle normal fault trending N 30 W. with the downthrown side to the NE. There is approximately 3 feet of offset. The fault zone thickens from a few inches at the base to nearly two feet near the roof line. Nelson suggests the possibility of a strike-slip component on this basis. See his notes on this subject.

Cross Section View of south facing rib of crosscut is between Entries 2 and 3 looking north.



Stops 6-9

See notes by Nelson and Danner

Summary of visit.

The Sahara #22 Mine contains two unique and apparently unrelated structural anomalies. During the late or post Pennsylvanian and pre Pleistocene right lateral wrench faulting of the Cottage Grove Fault System and associated subsidiary faults developed and remained active for an unknown time span (they may well be active today). The NW trending horst and associated thrust and reverse faults in the 2nd Main North of Sahara #22 Mine are the products of a sequence of events. The most probable sequence began with NE-SW crustal extention locally resulting in a set of high angle normal faults.

MOORE'S MODERN METHODS

FORM 180 W

SAMPLE HISTORY

Plant sampled: **Sahara Prep Plant for Mines No. 6 & 21** Date: **Oct. 16, 1992**

Company: **Sahara Coal Company Inc.** Sample ID: **SAHARA 6 C32664**
Robert C. Gullic, Gen Mgr, POB 330, Harrisburg, IL 62946 **SAHARA 21 C32663**
Company representative: **Carl Griffiths - Superintendent Mine No. 6**
Dave Arnold - Plant Manager

Mine (source of sample): **individual stock piles for Mine No. 6 & 21**
Collected by: W. Frankie & R.R. Ruch
assisted by Don Gulley of Sahara

Seam identification: Mine No. 6 = No. 6 Coal Seam
Mine No. 21 = No. 5 Coal Seam

Mining period represented (dates): **Both stock piles contain coals that are a couple of days old, and some coal from each of the mines was deposited onto stock pile on 10/15/92.**

Panel(s) & location(s) in mine: sample from Mine No. 21 is located in northwest 1/4 of mine. sample from mine No. 6 is located close to and south of route 13, East of Carrier Mills blacktop ,and south and slightly east of Light House Church.

Mine/Prep Plant location (descriptive): **From route 13 turn south on to Carrier Mills blacktop , turn right onto county road "225 east", travel west and turn right on county road "700 north", prep plant is located a few hundred feet straight ahead.**

¼ or footage Section **28** Twp **9S** Rge **5E**

Salvie

Type of Preparation Plant: **Built by Roberts and Schaefer in 1969, heavy media plant (use magnetite), plant capacity 1,000 tons per hour. Raw coal feed 3" x 0 , 3' x 3/4" from heavy media vessel, 3/4" x 10m from heavy media cyclone, 10m x 0 from water only cyclone.**

Sampling point: stock piles # increments **20 from each stock pile**
Belt (describe position in plant)
Train Truck
Company's sampling device (**no**)
Type:
Other (describe) **sample from No. 5 coal stock pile consists of "special stoker coal" size 1 1/2 x 1/4" the 10m x 0 coal was removed.**
Sample from No. 6 coal stock pile is a steam coal product

Procedures (describe other aspects): **for both stock piles**
Collected sample by circling around stock pile 2 times, samples taken 3 to 5 feet above bottom of pile, removed top layer of coal at each sample location prior to sampling. This sample may not be representative of some of the fine size coal because of natural sifting of coal particle size within the stock pile.

Additional Data: **Phoenix Mining Co. sells their coal from the Corinth Mine No. 1 to Sahara for blending to lower sulfur content.**