I. No. 1 Entry near Survey point 13466. Fractures are rare, small and discontinuous although both the E-W joints and NNE normal faults are still present. The basal portion of the roof shale (all that can be seen) has prominent dark gray laminations, with fine plant debris concentrated along bedding planes. Laminations are very fine and parallel.

No "kink zones" are present.

J. No. 1 Entry, northwest of upcast shaft (between Survey points 108 and 12852). Small normal faults striking NNE again are numerous, and have displacements up to about 0.7 feet. Unlike faults observed west of here, some of these faults are downthrown to the west. They dip 60° or more and displace entire coal seam and roof.

K. One entry west and 2 to 3 entries north of upcast shaft - Normal fault, strike N.25-30°E, dip 70-90° west, displacement 1.5-1.7 feet down to west. Striations on fault plane vertical or nearly so; little or no gouge, slight drag locally. Many parallel antithetic and synthetic fractures form a zone about 5 feet wide, unstable roof along the fault but no water seepage at present.

This fault can be traced several hundred feet southward and disappears into sealed portion of mine.

L. 100 feet west of upcast shaft, roof has been cut down. A normal fault trending N-S cuts the entire coal seam and displaces the top of the coal about 0.1 ft. The fault is seen to die out less than a foot above the top of the coal.

This suggests that many of the small faults are lithologically controlled - generated within coal, the most brittle lithology.

M. Overcast across E-W belt entry, due north of upcast shaft. Fault of Note K crosses intersection diagonally. Here it can be traced as a zone of sheared shale across the top of the cut, 6 to 8 feet above the coal. Displacement in coal is only a few inches, yet this fault extends well up into the roof.

N. Intake-air entry north of large barrier pillar, near Survey point 1000. Immediate roof shale is darker gray than usual, quite sideritic, and contains fairly regular vertical joints that strike east-west and are spaced a few inches to about a foot apart. No NNE-trending faults in this area.

O. No. 6 Entry, at top of incline in fault zone. A normal fault is exposed at the edge of the archway. The west side is downthrown, probably 10 to 20 feet. Olive-gray silty, poorly laminated mudstone west of the fault abuts coal east of the fault. Strong drag is developed on both sides of the fault and there are narrow wedges of crushed shale along the fault plane.

This is probably not the main fault, but close to it.

P. Face of No. 7 Entry stubbed into fault zone - probably same fault as Note O. The fault strikes about N.30°E. and dips nearly vertical (excellent exposure in large roof fall). It is normal with the west side downthrown. It shows strong drag on both sides, and a zone of crushed shale along the fault is an inch to more than a foot wide.

In the upper part of the fault zone interbedded sandstone-siltstone, probably from the upper part of the Dykersburg Shale, can be seen. The sandstone is very

P. (Continued)

light gray, very fine grained and highly micaceous; shale medium gray. The layers are slightly uneven and mostly ¼ to 1 inch thick.

A little water is dripping, and possibly petroleum - note oil-stained rock at top of fall.

Q. Face of No. 8 Entry (northernmost) butted into fault zone.

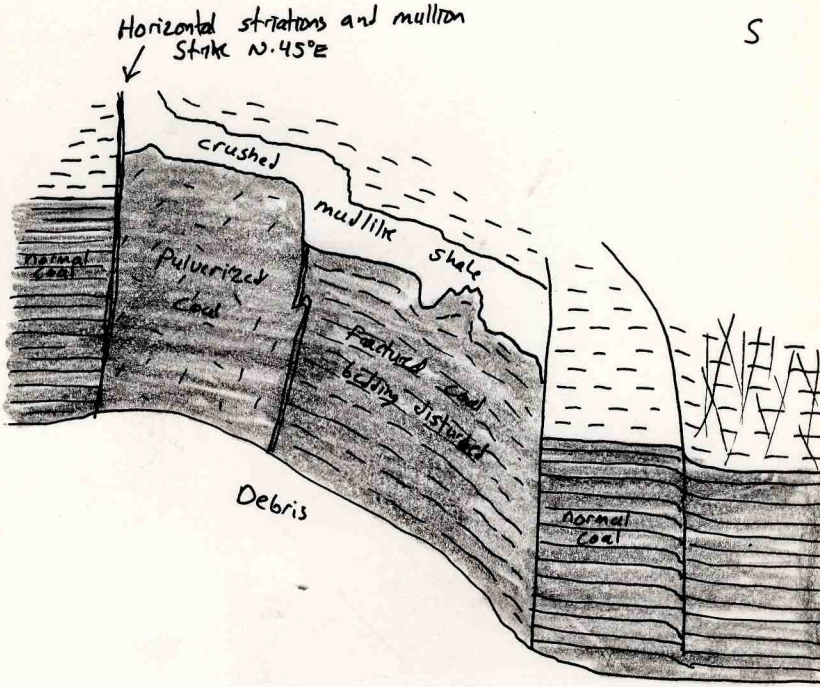
This entry shows a greatly different structural pattern, involving strike slip faulting. See sketch. The coal is upthrown along a series of step-faults toward the face of the entry. The fault closest to the face has prominent horizontal slickensides and mullion. This fault strikes N.45°E and is nearly vertical. Northwest of it the coal and shale are more or less horizontal and slightly fractured. Southeast of it is a broad zone where the coal and the overlying shale are pulverized, yet overlain by only slightly fractured shale.

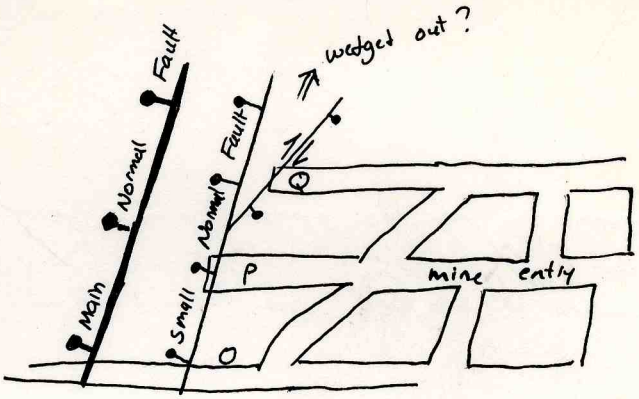
The map pattern indicates that this face has not yet reached the large normal fault. The strike-slip fault should intersect the normal fault within the coal pillar between Notes P and Q.

Strike-slip faulting like this is unexpected and for the moment I have no explanation.

FORM 180 W

LOCATION Q





May 19, 1986
Interpretation

The sketch map above shows a possible explanation for the strike-slip fault on Location Q- assuming that the Wabash Valley Fault System is purely an extensional fault zone and did not undergo regional wrenching stress.

The fault at Q strikes about N. 45 E. and so should intersect the normal fault of locations O and P about as shown. The main New Harmony fault is west of both. Thus there is a wedge-shaped block of rock between the small normal fault and the fault at Location Q. The fault planes also should converge upward. Movement along the normal faults may have wedged the triangular mass of rock northward, with strike-slip movement.

If this idea is true the fault exposed at Q should be right-lateral, while the normal fault due west of Q, just ahead of the face, should show a component of left-lateral slip. The theory cannot be tested unless Entry Q is mined ahead, through the normal faults.

AMAX Coal Corp. Wabash Mine - Wabash County, IL. October 8, 1987. Notes by John Nelson on visit with Bill DiMichele (Smithsonian Institute, paleobotanist), Debbie Willard (University of Illinois, paleobotanist) and Larry Klobuka (AMAX, engineer). combined notes

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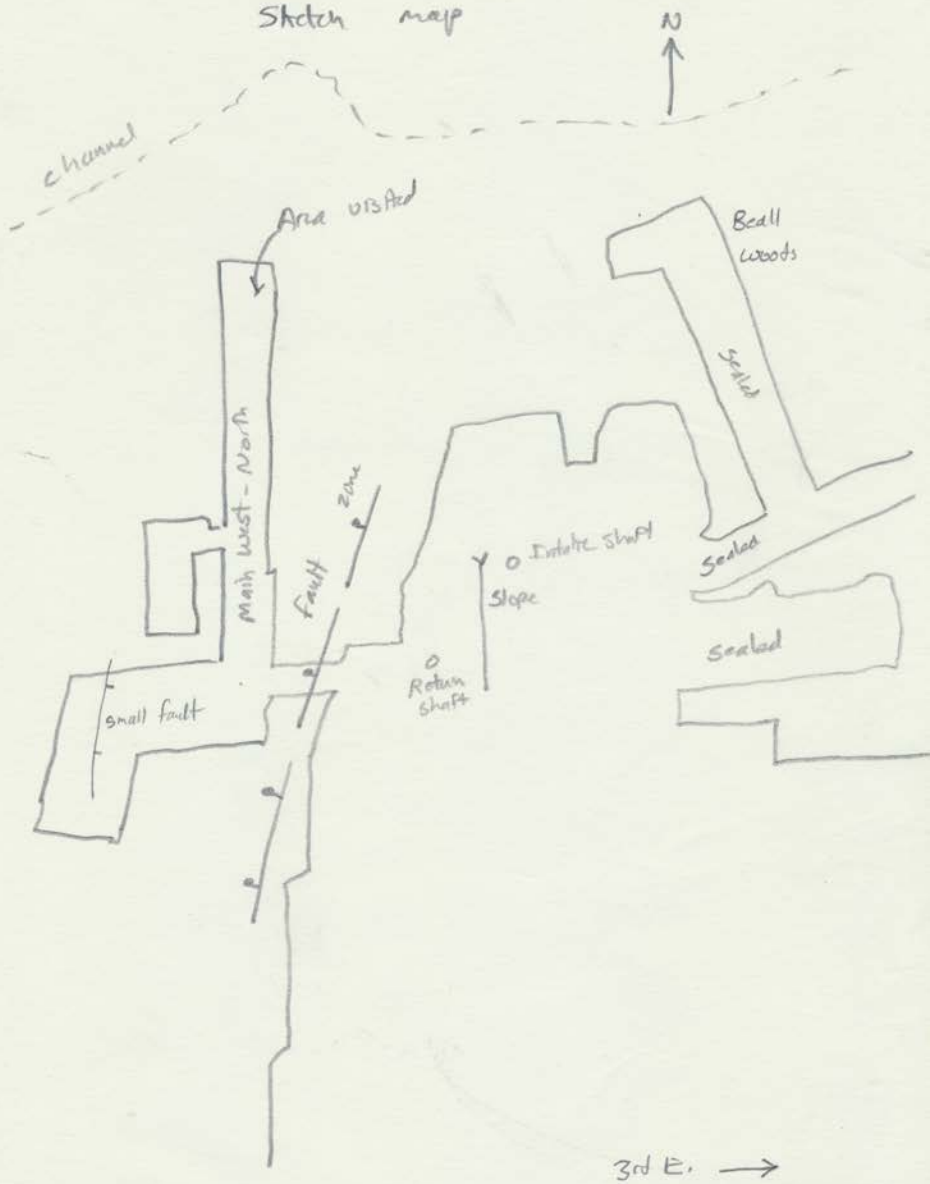
Visit to northwest part of mine, west of New Harmony Fault Zone and north of crossing - Main West North entries. These entries are approaching the Galatia Channel, which runs approximately east-west at this point. No split coal or other trouble reported here thus far, although splits are indicated by drilling farther north. A more interesting area, which we unfortunately will not visit today, is in the 3rd Main East off the Main South, in the southeast part of the mine. Here also the Channel is nearby, and many "rolls" are present (according to Larry).

Beale Woods area, in northeast part of mine, is worked out and sealed.

Location: Main West North, crosscut 59 between travelway and belt entry. Coal is about 7 ft. thick and nearly horizontal, no notable partings. Roof is medium-dark gray silty mudstone, weakly laminated, with abundant plant fossils at base. One large beautifully preserved Pecopteris found: many flat-lying logs and bark fragments, and a few stumps in situ, with coalified bark. Also calamites and Neuropteris fronds. No jointing present in roof.

Location 1 (on map). Measured coal 7.0 ft. thick; normally bright banded, cleat weakly developed, no shale partings; discontinuous pyrite laminae and moderately dull coal bands in upper 1 foot or so. Roof is medium-dark silty mudstone, as at last note; fossil logs and stems very abundant - often many crisscrossing. These are mostly if not entirely Sigillaria. Many trunks up to 3 ft. across, one is 40 ft. long. The


Sketch map
N
channel
Area visited
Beall woods
sealed
Main West - North
Fault
zone
Intake Shaft
Slope
sealed
sealed
small fault
Return shaft
3rd E.

mudstone is competent and unjointed; only the basal few inches are visible. Coal-roof contact is level or slightly undulating.

Debbie collects a column sample here (Sample AW-1).

Below the coal is an interval of interlaminated shale and coal at least 1.6 feet thick, the base concealed. The shale is dark gray to black, smooth, and loaded with very fine coaly laminae parallel to bedding. Coal laminae are mainly vitrain, up to 0.05' thick. All laminae are quite regular and parallel. The shale is full of pteridosperm stems.

The Sigillaria trunks are abundant in the roof at least 100 ft. ~~east~~ north and ~~west~~ South of location 1. This appears to be a slight irregular swale or depression in the coal. ~~East~~ North ward as the coal rises, the Sigillaria become less common. In the swale faint current ripples (?) are locally present in the roof, and thin discontinuous laminae of light gray siltstone are present.

In crosscut 76 between the track and belt entry we found Lepidodendron and Calamites stems and Neuropteris pinnules in addition to Sigillaria stems.

Location: Crosscut 73 (off map) and adjacent part of travel entry - plant fossils become much less abundant just north of this crosscut, and the flora changes from dominantly Sigillaria to a mixed assemblage of Calamites and pteridosperms with occasional Sigillaria and other lycopods. East of entry 3 (from east) the Sigillaria return - see sketch map.

Otherwise no noticeable change in the coal or roof shale here from Loc. 1. Bill DiMichele thinks the area of dense Sigillaria was lower and swampier than

the area of mixed flora, although the present topography of the coal does not support this idea very well.

Continued mapping discloses that Sigillaria are confined to very definite areas, outside of which mixed flora (mostly pteridosperms, calamites and non-Sigillaria lycopods) are found. One might suppose that water currents might have sorted the plant debris. This is unlikely for two reasons (1) the sedimentary structures, parallel laminations and occasional current ripples, do not indicate strong currents, and (2) the Sigillaria regions contain large and small specimens in abundance, while "mixed" areas contain numerous large logs not Sigillaria. Thus we conclude the distribution of fossils probably represents original ecozones in the coal swamp.

Location 2 (see map): Typical area of "mixed" flora - many calamites, Asolanus, a lycopod cone probably Lepidostrobus, various pteridosperm parts. About 50 feet west we come back into abundant Sigillaria, although not as abundant or pure as near Location 1.

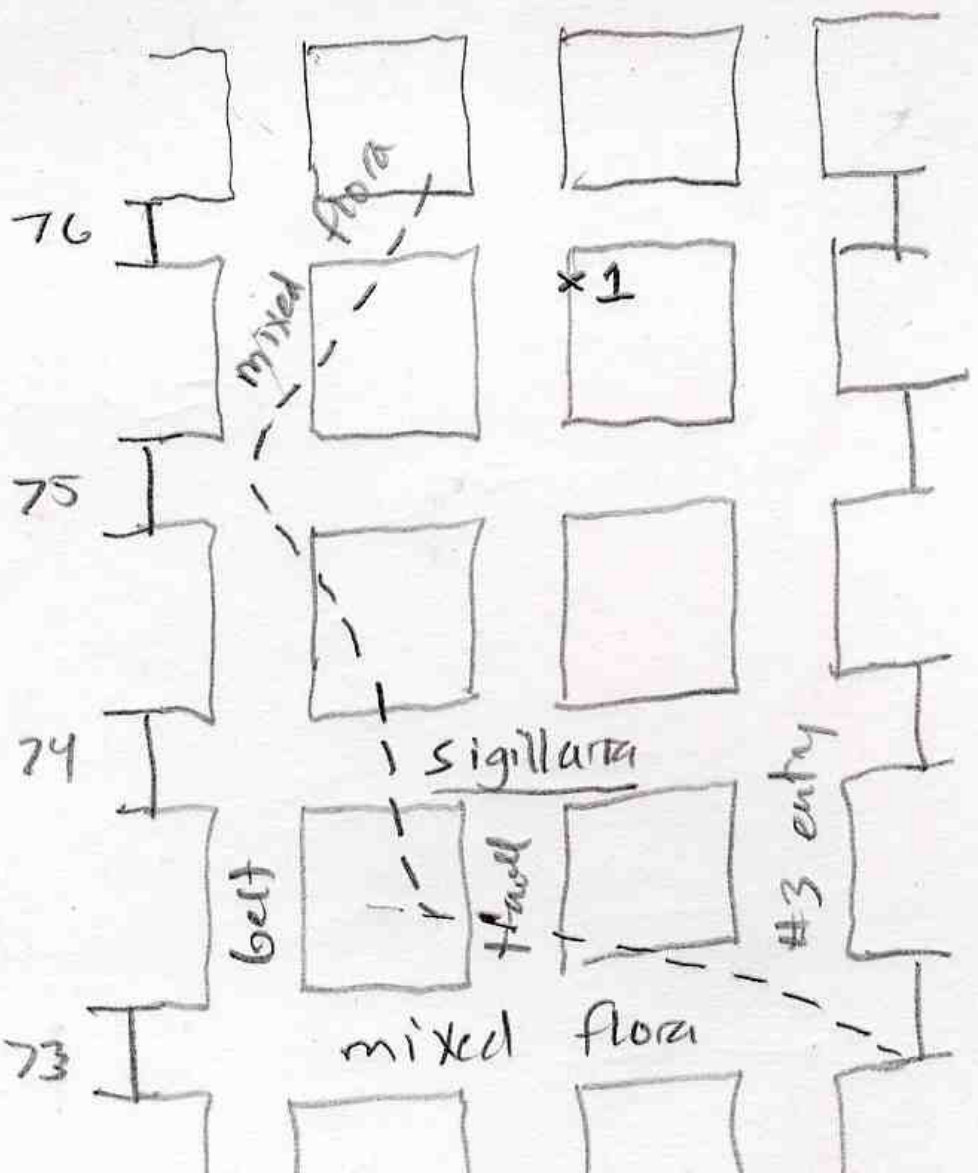
As a general note, no joints or other structural features have been seen anywhere. Also no kink zones were seen, but in a few places minor sagging or "cutters" are developing along the rib lines in the N-S entries.

Location 3. Debbie collected column sample no. AW-2.

Location 4. This is an area of "mixed" roof flora, but somewhat different from Loc. 2. Many large lycopod trunks (not Sigillaria) including Lepidodentron or Diaphorodendron; and some calamites and pteridosperms. The difference here is greater abundance of lycopods.

Sketch map of Sigillaria vs. mixed flora for area south of edge of company map.

N ↑

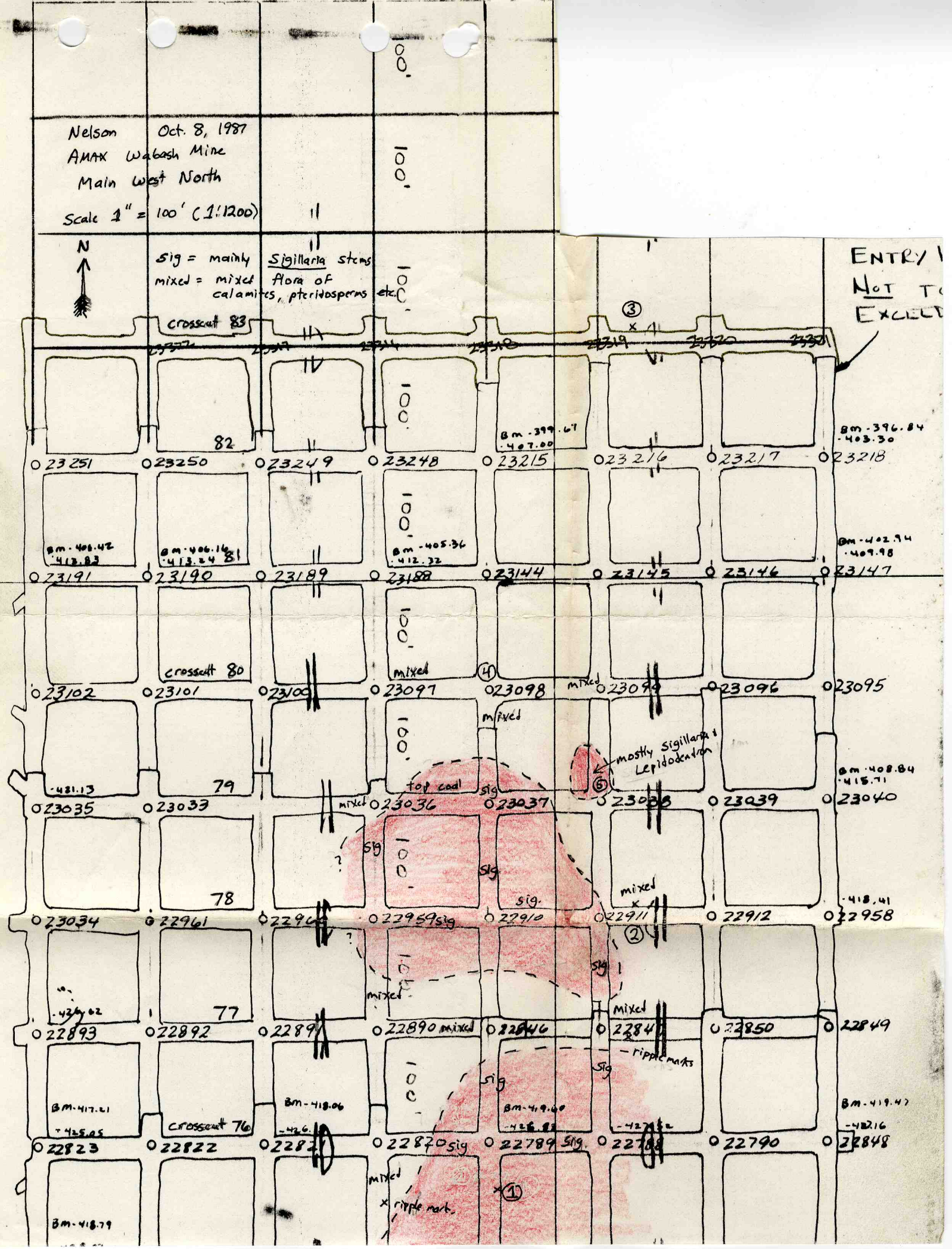


In this area the interbedded coal/shale at the base of the seam is not exposed - the miners avoid it because of the shale.

Location 5: A small "pod", about 20-30 feet across, of abundant Sigillaria mixed in with Lepidodendron. To the east and south, increasing calamites and pteridosperms are seen, but the borders of the Sigillaria area are fuzzy.

Not observed anywhere in the map area are several common plant types such as Sphenophyllum or pteridosperm foliage or fern foliage.

Location: Crosscut 61 between belt and travel entry, south rib (not on map). Debbie takes column sample AW-3.


Nelson Oct. 8, 1987
AMAX Wabash Mine
Main West North
Scale 1" = 100' (1:1200)
N
sig = mainly Sigillaria stems
mixed = mixed flora of calamites, pteridosperms etc.
ENTRY
NOT T
EXCEL
crosscut 83
crosscut 80
crosscut 76
82
81
79
78
77
23251
23250
23249
23248
23215
23216
23217
23218
23191
23190
23189
23188
23144
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23102
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22961
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22910
22911
22912
22958
22893
22892
22891
22890
22846
22845
22850
22849
22823
22822
22821
22870
22789
22788
22790
22848
mixed
top coal
sig
mostly Sigillaria & Lepidodendron
ripple marks
ripple mark
Bm-399.67
-407.00
Bm-396.84
-403.30
Bm-406.42
-413.83
Bm-406.16
-413.24
Bm-405.36
-412.32
Bm-402.94
-409.98
-431.13
Bm-408.84
-415.71
-418.41
Bm-417.21
-425.85
Bm-418.06
Bm-419.60
Bm-419.47
-422.16
Bm-418.79

Amax's Wabash undergoes changes

Changes are afoot at one of the biggest underground coal mines in the Midwest—Amax Coal Co.'s 815-employee Wabash mine located near Keensburg, Ill. In December the work force was reduced by 15% and the company said it is looking for other ways to be competitive.

"Over the past year, the coal industry has become more competitive nationwide, and the Wabash mine must now take decisive steps to reduce costs and to remain a competitive producer particularly among those located in the Illinois Coal Basin," said Bert Hall, general mine manager at Wabash.

While Wabash is fortunate to have a long-term sales contract with PSI Energy in neighboring Indiana, "we must continually analyze anticipated mining costs, operational procedures, mining methods and contract needs to ensure the operation remains a stable source of supply to present and future customers," Hall added.

Amax officials declined to reveal, however, other changes that may be implemented at Wabash.

The 90 miners affected by the cutback will be eligible to apply for assistance from the United Mine Workers of America/Bituminous Coal Operators Association Training and Education Fund established under the 1988 national agreement. Amax said it has paid more than $320,000 into the fund which provides financial and other assistance to unemployed UMWA coal miners and their families to help them in securing employment.

Amax said the Wabash work force reduction is consistent with its overall move toward operating more efficient mining operations nationwide. In 1982, Amax Coal produced 38.9 million tons of coal and employed 4,300 people. In 1989, the company produced 38.3 million tons and employed 2,900 people. □

no map

ISGS Mine Notes - AMAX "Wabash" - Wabash Co.

Visit: March 1, 1991 by Phil DeMaris, Mark Phillips and V. K. Singh of SIU-C, escorted by Larry Klobuka, Mine Manager

Coverage: Introduction
Mains West - South Area
No. 2 portal - thick u/clay area
Samples: Set C begun

Introduction

This is the 4th mine visited this contract year on the IMSRP-support ground stability project headed by Paul Chugh (SIU-C). Because of scheduling difficulties we went underground on the midnight shift.

Entries are marked with blue reflectors for intake air, yellow for return and red for track and belt (neutral). Primary escapeway is intake (blue); secondary escapeway is neutral (red).

We started with the North portal which accesses area of large fault and western workings. Dykersburg Shale is 40-60′ thick in this area. Beyond the fault the West Mains branch North and South; we examined the Mains West-South area.

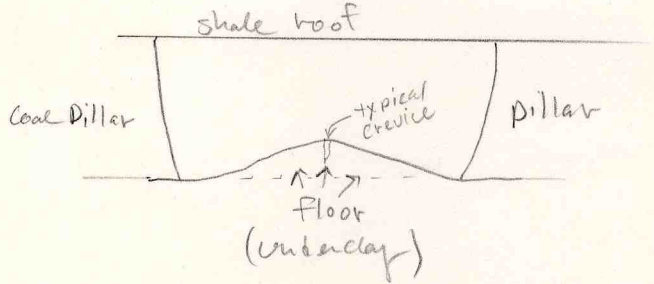
Mains West-South area

A. We went south to 1st E. panel off Main West-South. Panel is not regularly worked; mining was 9 months old where we parked. Here they used 8′ point anchor bolts with 8" plates. Sporadic cutter roof running N.13/14° E. tends to run preferentially on the W. side of entries; vertical extent varies. Roof shale (Dykersburg) is faintly bedded silty shale which breaks

across microbedding, giving a slatey appearance. Unit appears fairly competent where not deformed. Springfield Coal is 6.85′ thick. Small sample of Dykersburg (-C-1). (Site 1901)

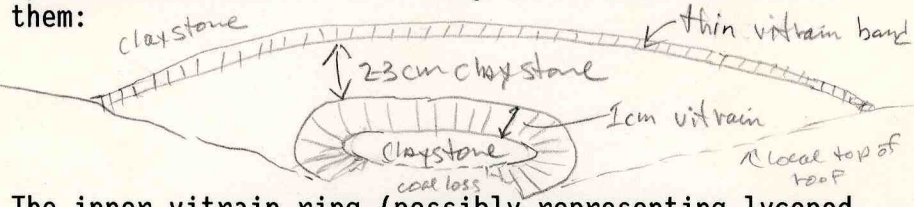
B. 2nd E. panel off Main West-South. Partial pillar extraction was practiced in this panel in the pat, and some squeezing problems were encountered. Examination of immediate roof contact shows bottom 0.05′ heavily weathered by sulfates; the next 0.30′ of shale contains scattered plant debris, and above that level plant fossils are uncommon. Here they used a 5′ grouted 3/4" bolt distinguished by the "donut" plate from point anchor bolts. A few upright tree trunks were seen; most are partly or substantially collapsed into the center. some plant material (vitrainized) lies in bottom of shale at slight angle to top of coal; this is upright plant material which fell after mud accumulation began.

Cut sumps in the area are dry-only locally damp areas remain. Area near slabbing of pillars shows squeezing--we did not see, slabbed area or maximum squeezing. What we did see was mid-entry squeezes with 1½′ relief above normal floor line:



Floor ridge crevices were up to 0.1′ wide. Pillars in this area were on 100′ centers before slabbing.

I examined coal and immediate roof in the squeeze area. Coal is weathered and shows a lot of sulfate in top 1.05′. Interesting plant structure in roof was also seen. Partly compressed tree trunk in roof showed two cylinders of vitrain with clay in between and inside them:



The inner vitrain ring (possibly representing lycopod inner wood) is 1 cm thick radially and is rolled around an axial clay body 7 to 8 cm. long (after compression) in the center of the tree axis. 2-3 cm. outside of the inner ring (also separated by claystone) is a thin vitrain ring (about 1′ width seen) which may represent more lycopod secondary tissue or thin periderm. Thus, the clay got into a partly decayed tree; the position of the tree when infilling occurred is unknown. (Site 1902)

C. Out on mains at 111-112 c/c is a roof fall about 6½′ high and 19.5′ wide (entry width). Conventional 6′ bolts were used first, and fall went to the bolt position. 5′ resin bolts were used after cleanup. Fossil foliage Pecopteris sp. (partial pinna) is seen at 6.4′ above coal but other plant material is rare at that position. Bottom 6′ of Dykersburg is fairly uniformly banded, with only a few bedding planes with plant debris. (Site 1903, Fall #1)

D. Large fall at 109 c/c, estimated at 8′ high and 80′ long. (Site 1902, Fall #2)

E. Fall at 92 c/c on Travelway is 81′ long, 7′ high at max. and 20′ wide. Cutter roof on one side eventually produced tension failure on opposite side. Failure plane shows ragged, angular faces. Dykersburg here is very light gray and faintly banded. (Site 1903, Fall #3).

As before there is a basal 0.4′ plant compression zone at base and here only 3 other positions where plant debris are seen on bedding planes in the bottom one foot of shale. All fallen trees and most macro debris are in bottom 0.4′. Compression zone also has small siderite finger-sized concretions, which lie subhorizontal here. Dykersburg Shale is noticeably silty only subparallel (to bedding--it is not obvious perpendicular to bedding. Top 1′ of coal appears to have lots of clay laminae. block of Springfield Coal representing 0.17′ to 0.30′ down from top of seam was collected (-C-2).

F. Fall at 80-81 c/c one entry off travelway. Fall was 6.3′ high and 61′ long (Phillips); the area was previously bolted with 6′ conventional bolts. Average standup time after mining for falls in this area was 26 months. They had 38 reportable in the mine in 1989 and 26 were in this area (IMSHA considered this a problem needing resolution). This fall was rebolted with 6′ point anchor bolts and is stable. On one side of the fall I saw an oddly large (siderite?) concretion in the Dykersburg. This conc. was egg-shaped, 2′ in long dimension; long axis oriented toward vertical. Base of conc. was 1/2′ above top of coal and does not seem to be related to any concretion band position, any visible plant debris or any vitrain stringers. No time for further investigation. (Site 1903, Fall #4)

G. Fault exposure in Main West. High angle fault shows about 8′ throw and nice drag illustration. Drag has rotated last 2′ of shale through 70° maximum near the plane. Photogenic. (Site 1904)

H. 1st E. panel off Mains W-N was visited at 3:00 a.m. Signs of heaving start at the red metal door. Roof is totally unaffected. Heave is 1-2′ in center of entry in area of 5th to 6th c/c or room. (Site 105)

I. Quick examination of large fault with about 100′ throw. On #7 entry strike is N.12°E. and dip about 78°. Wet, friable sandstone is on upthrown face. (Phillips). Exposure on #8 entry is similar. Both exposures show polishing on shale bedding planes near the main fault plane that appear like ripples. This suggests multiple readjustments of strata adjacent to the main plane.

No. 2 portal-thick u/clay area

J. We came out and went into No. 2 portal at 4:50 a.m. and reached 2nd E. panel/1st S./4th E. at 5:15 a.m. Within the panel we turned at 24 c/c or room into an area of soft, thick underclay. Underclay in area is 6-8′ thick (known from drill hole data). Pillar rashing is common in area and this is believed to be related to thick underclay; no heaving is seen.

This area is effected by rules set by Paul Ehret for non-subsidence mining permits. They cannot "second mine" areas with underclay >5′ with this type of permit.

The company did drilling in mine as well as surface drilling to delineate thick underclay area. The 5′ thickness does a pretty good job of predicting rashing problems according to L.K.

A large fall with minimum 8′ height, about 20′ wide and nearly 2 c/c long (prob. 120′ long) was seen in thick Dykersburg. Fall extends to pillar edgeline now and could progress into crosscut where seen. (Site 1906, Fall #5)

p.6 of 6
no map

Samples: Set "C", begun

WB-C-1 (A) Dykersburg Shale, small block
WB-C-2 (E) Block of Springfield Coal, oriented, representing 0.17 to 0.30' from top of seam. Weathered slightly yellowish green. Has a few thin (1 mm) vitrain bands punctuating dull-banded matrix.

Copies to: Phillips/Singh
Chugh
Klobuka
File

mde:pjd\MNotes24

Promised map had not arrived by 7/1991.

Amax Coal cuts workforce by 30% at Wabash Mine

A decision by an Indiana utility to accept lower amounts of coal caused Amax Coal Industries to reduce production at its Wabash Mine by 30% and reduce the mine's workforce by about 290 hourly workers.

Indianapolis, IN-based Amax Coal said PSI Energy "refused to accept previously agreed upon contractual shipments from the Wabash Mine." That decision forced the coal company to reduce production and implement manpower cutbacks. Amax Coal has taken its case to an arbitrator for a ruling. The company hopes to have a decision later this year.

Following the workforce reduction, the Wabash Mine will employ about 385 people. Operational plans will be changed to reflect that reduction. In 1991, the mine produced about 3.3 Mt (3.7 million st) of coal.

In the meantime, Amax Coal's Cannelton Inc. subsidiary said it has purchased an additional 30.3 km^2 (7500 acres) of coal lands from the Appalachian Land Co. The purchase adds about 32 Mt (35 million st) of recoverable, low-sulfur coal to Cannelton's reserves.

The acreage is known as the Bell's Creek properties and is adjacent to Cannelton's Kanawha Division in Cannelton, WV. Portions of the reserve could be mined from existing operations at the Kanawha Division. ♦

Mining Engineering

OCTOBER 1992 1209

h g f e d c b a
8 7 6 5 4 3 2 1

By _____ Date _____

Quadrangle _____ Sec. _____ T _____ R _____

County _____

Last week, Cyprus Amax announced 51 "permanent terminations" — 36 hourly and 15 salaried personnel — at its big Wabash underground mine near Keensburg IL. A Cyprus Amax spokesperson in Colorado said the cutback, the first in several years at Wabash, was part of the company's "overall aggressive plan to reduce mining costs and to make all properties more competitive." Wabash, he added, "has to get its costs down."

The reduction, effective May 26, left Wabash with about 640 union and salaried employees. The mine's capacity is 3.5-4 million t/y with most of the coal sold to PSI Energy's 3,145 Mw Gibson Generating Station near Princeton IN.

FORM 180 W

SAMPLE HISTORY

Plant sampled: **Wabash Preparation Plant** Date: **Nov. 11, 1992**
Company: **Amax Coal Company** . . . . . Sample ID: **Wabash C32793**

Company representative: **Mike Shackeford, Gen Mgr Prep.& Quality,**
20 NW First St, Evansville, IN 47706
812-421-3989
Mark Brines - Project Engineer/Production Quality
(618) 298-2394
Earl Quiesenbery - Prep Plant Manager
Greg Ferguson - Lab Technician Wayne Franks

Mine (source of sample): **Wabash** Collected by: **WTF**

Seam identification: **Springfield** Time of closure:

Mining period represented (dates):

Panel(s) & location(s) in mine:
Mine/Plant locations (descriptive): **located on the Keensburg Quadrangle**
¼ or footage **Section 10 Twp 2S Rge 13W** Wabash

Type of Preparation Plant: **Built by Allen and Garcia Company, Chicago Illinois. Current plant designed to process 250 tons per hour, average of 3 percent loss at plant. A new 27 million dollar preparation plant is currently being built by Robert & Schaefer, estimated completion date of June 1993.**

Sampling point: # increments:

Belt (describe position in plant)

Train Ship steam coal to PSI Gibson Station Truck

Company's sampling device (yes)
Type: **primary sampler "Tema"**

Other (describe) **Gamma Metrics Inc. Installed spring of 1991, automatically calculates BTU, Sulfur, Ash, Moisture, etc. from stream of coal passing by analyzer.**

Procedures (describe other aspects):

Additional Data:

CYPRUS AMAX, PSI TO REWORK CONTRACT; WABASH MINE'S LIFE EXTENDED BY YEARS

Cyprus Amax Coal Co. and PSI Energy have agreed on a revised contract that will reduce the price of high-sulfur coal from the Wabash underground mine but secure the mine's future well into the next century, perhaps paving the way for installation of a longwall mining system to boost productivity and trim operating costs.

Neither Cyprus Amax nor PSI would disclose details of their agreement in principle, noting a replacement contract is expected to become final in the next few weeks.

But sources confirmed the revised accord, which would replace an existing contract signed in 1970 and set to expire at the end of 2002, "is with the Wabash mine," meaning Cyprus Amax is not expected to switch to other company mines to continue supplying PSI's 3,145 Mw Gibson Generating Station near Princeton IN.

One source said the revised pact contains a clause also found in the current agreement that allows Cyprus Amax to substitute some coal if Wabash coal specifications do not meet Gibson's requirements. Wabash has been supplying about 3.6 million t/y to the big power plant, and that amount is not expected to change much under the revised contract.

Both companies also were mum on price, although they noted the agreement calls for a reduction in price through 1999. Starting in 2000, the price can be adjusted annually to reflect changes in market conditions.

One industry source noted that Cyprus Amax "had a hell of a good price down there at Wabash," in the $35/t range.

Several sources said the agreement could lead Cyprus Amax to finally install a longwall it has been considering for several years. They were divided, however, on whether a longwall would mine reserves in Indiana or in Illinois. At present, about one-third of Wabash's production comes from reserves located in Indiana.

Jerry Cross, Illinois secretary-treasurer of the United Mine Workers of America, observed that from what he knew about the agreement, "it's a great thing for the Wabash mine."

From Coal Week, v. 21, no. 29, Jy 17, 1995

NEW SHAFT STARTED AT WABASH; CYPRUS AMAX INVEST IN IL MINE'S FUTURE

Cyprus Amax Minerals last week broke ground for a new 18-foot shaft at its Wabash mine in Illinois, a project that will allow Wabash to develop its western reserves and eventually to install a longwall mining system at the mine.

Art Palm, who heads Cyprus Amax' midwestern operations from Wabash, told *Coal Week* that the new shaft will be used initially for ventilation only, though an elevator could be installed later to transport miners to and from the surface. He said the current works at Wabash are about six miles from the portal and there is a fault between, which strains the mine's ventilation system.

The new shaft will allow Wabash to finish production in its southern reserves and allow the mine to start production in its western section. The mine will continue to produce 2.7 lbs. SO2/ mmBtu coal from the Illinois No. 5 seam, Palm said.

As part of Cyprus Amax' commitment to continued mining at Wabash, the company is preparing to install the second and third continuous belt haulage systems underground. Wabash currently has nine continuous miner sections, with only one continuous haulage system and a number of diesel-powered haulage cars. With the introduction of the two new continuous haulage systems, Cyprus will reduce the number of miner sections to six or seven, Palm said.

The development will allow Wabash to prepare the western segment for a possible shift to longwall mining sometime between mid-1997 and mid-1998, Palm said.

Cyprus Amax holds a newly reworked contract with PSI Energy to supply coal to the Gibson power station which extends the agreement tthough 2010 but requires annual price reductions through 2000. However, Cyprus Amax gained some flexibility in the contract as well and has begun to make changes to the mine's plan. With ground breaking on the new shaft, "you're starting to see the overall modernization and upgrading of the mine with an eventual switch to a longwall," Palm said.

He said the basic plan is to continue to move coal to the surface using the current slope. Cyprus is also evaluating a high-angle conveyor system to move coal up a shaft, he said.

By____

Quadra

County Coal Week Oct 16, 1995 Sec____ T____ R____

V21 No 42

Visit to AMAX Coal Company's Wabash Mine
June 13, 1996

Colin Treworgy & Heinz Damberger

Marvin Thompson, the geologist for the Wabash Mine, gave us a tour of some of the geologic features of the mine. Marvin has worked for AMAX for more than 20 years and has been based at the mine for about two years. We entered the mine at Portal 1 (also referred to as the north portal) and visited two working sections west of the New Harmony Fault. The mine produces from the Springfield Coal on the southern edge of the Galatia channel. In the area of the mine, the coal is commonly 5 to more than 9 feet thick. The upper half of the seam is significantly stronger than the lower half. Significant rashing of the lower half of almost every pillar was observed in all areas of the mine that we visited.

Mining methods. The mine currently operates seven sections of continuous miners. Some consideration is being given to installing a longwall panel. Miners currently enter the mine from the original Portal 1 located at Keensburg or Portal 2 located two miles to the south. A new air shaft is being constructed about three miles southwest of Keensburg just

east of State Highway 1. Although only being developed as an air shaft at this time, the shaft may in the future be used as a third portal. Transportation throughout the mine is by diesel-powered vehicles.

Oil wells. Oil wells are a problem for mining in this area and cause some loss of reserves. Most wells are drilled on 660-foot centers. If the location of the hole is well documented, MSHA will allow AMAX to mine as close to the well as 50 feet. By carefully planning the position of entries and panels, the amount of reserves left unmined because of oil wells is kept to a minimum. Marvin did not know the exact amount of coal lost, but guessed that it was only a few percent. The wells will be a more significant challenge to longwall mining.

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June 13, 1996 (continued)

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611 Could Lose Jobs At Mine In Illinois

Cyprus Amax May Close Wabash, Sell Contract To Another Firm

2/5/97 3rd

By Robert Steyer
Of the Post-Dispatch Staff

One of Illinois' biggest coal mines may shut down in 60 days, costing the jobs of 611 people.

The owner, Cyprus Amax Minerals Corp., says it can make more money selling the Wabash Mine's customer contract to another mining company.

Cyprus Amax held out some hope of keeping open the mine in Keensburg, 140 miles east of St. Louis. But even if the mine remains open, most workers will lose their jobs because Cyprus Amax will cut production sharply.

The decision announced late Monday represents another major blow to Illinois' sagging coal industry.

In the last 10 years, annual production has dropped by 20 percent to an estimated 48.8 million tons. Employment has plunged by 61 percent to 4,794.

"Wabash was a high-cost mine," D. Michael Rounds, a spokesman for Cyprus Amax, said Tuesday. "We tried to get productivity up. We tried to get costs down. It hasn't happened." He wouldn't discuss details of the problems.

The Wabash Mine has plenty of reserves, and it is under contract to an Indiana utility to provide 3.6 million tons a year until 2010.

Two years ago, Cyprus Amax and the utility renegotiated their contract, reducing the price per ton and extending the contract by eight years. The mine has been supplying coal since 1974 to PSI Energy in Evansville, Ind. The mine's sole customer is PSI's power plant near Princeton, Ind.

Cyprus Amax, based in Englewood, Colo., decided to take advantage of a clause in its contract, letting it sell its supply contract to another company.

Cyprus Amax wouldn't identify the company or discuss the contract's price. Cyprus Amax noted that the two parties had only signed a preliminary agreement.

Many coal industry observers believe Cyprus Amax is selling its supply contract to a nonunion company.

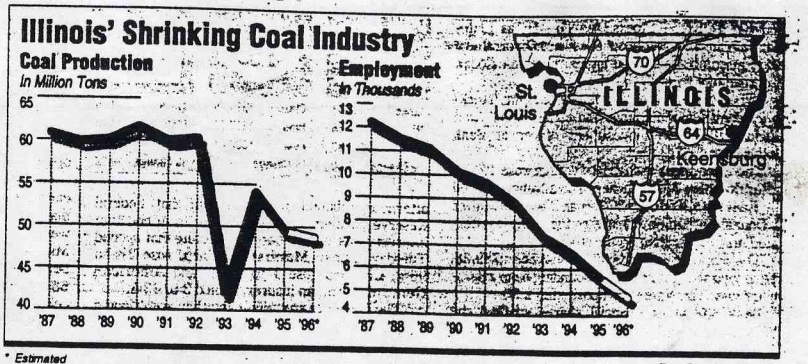
"We knew the contract was in play for quite some time," said Joe Angleton, president of the United Mine Workers of America (UMWA) district that includes Illinois. "The money was more important to the parent company than running this coal mine."

The Wabash Mine has 485 UMWA workers among its 611 employees. It is the second-largest Illinois mine in employment and third-largest in production.

Cyprus Amax stopped short of forecasting a permanent mine closing. But it issued a notice — required by federal law — telling workers that layoffs would occur within 60 days due to "significant business changes."

Cyprus Amax said it might keep the mine

See MINE, Page 5



St. Louis Post Dispatch 2/5/97

Mine

From page one

Cyprus Amax said it might keep the mine open depending on its success in finding "spot market" customers. Spot market deals are short-term contracts for small amounts of coal.

"The company indicated that if it can compete in the spot market, it might seal off half the mine and run a smaller operation," Angleton said. "They haven't met with us yet."

The Wabash Mine announcement reminds Angleton and others of a situation last summer when Exxon Corp. abruptly closed its Monterey Coal No. 2 mine, in Albers, Ill., sending 395 miners to the unemployment rolls.

Exxon also had a long-term supply contract with PSI Energy, the Indiana utility. Exxon agreed to cancel the contract, then assigned it to a private, nonunion coal company.

PSI paid the private company — Black Beauty Coal, of Evansville, Ind. — $150 million. Black Beauty then paid Exxon an undisclosed amount.

The deals are different, said Angeline Protogere, a spokeswoman for PSI.

Cyprus Amax can assign the Wabash Mine contract to another company, according to its agreement with PSI. "We have to agree that the contract is comparable — or somewhat better — in price and coal quality," she said.

If Cyprus Amax closes the Wabash Mine, it will exit Illinois' coalfields. Last August, it shut its Delta Mine, near Harrisburg, putting 169 people out of work.

3/4/97 Marvin Thompson, Geologist for Amax at Wabash Mine, said that mine would probably continue to operate, but at much reduced scale: ~2 units, 3 shifts & per day; will try to sell in spot market.

Will reduce employment significantly, including him; he will take advantage of a severance package the company is offering. Will quit as of 4/3/97.

Coal Age, March '97. Cyprus Amax blamed "poor mining conditions and lower realizations" at the Wabash Mine, among others, for earning slip in '96 ($90 mill. vs. last year's $130 mill.).

3/4/97 Phone Conversation with Mayor Thompson see sketch on yellow paper below

New shaft was completed a couple of months ago. They encountered significant water flux at level of Mt. Carmel Gs.; decided to try to capture most water from behind shaft walls and pump it out instead of letting it enter the mine. They put in a "ring" around the shaft, then drilled hole precisely to intercept "ring" (got specialized company, used gyro to survey hole precisely). Have been pumping 40 g/min for about ½ yr. now, steadily, no significant change over time. Are using the water, it is of drinking quality, about 200 ft. depth.

He mentioned that most locals are switching to Mt. Carmel Gs. to obtain water at their homes because near surface

water is increasingly contaminated by fertilizer run-off & herbicides/insecticides. Small(er) diameter holes pump about 20g/min, enough for single home.

Coal Age
Sept. 1997

Cyprus Amax agreed to assign the 14 years remaining on its 3.6 million-tons-per-year PSI contract to another coal producer, Black Beauty Coal Co. Almost overnight, Wabash's work force plummeted from a total of more than 400 to about 125.

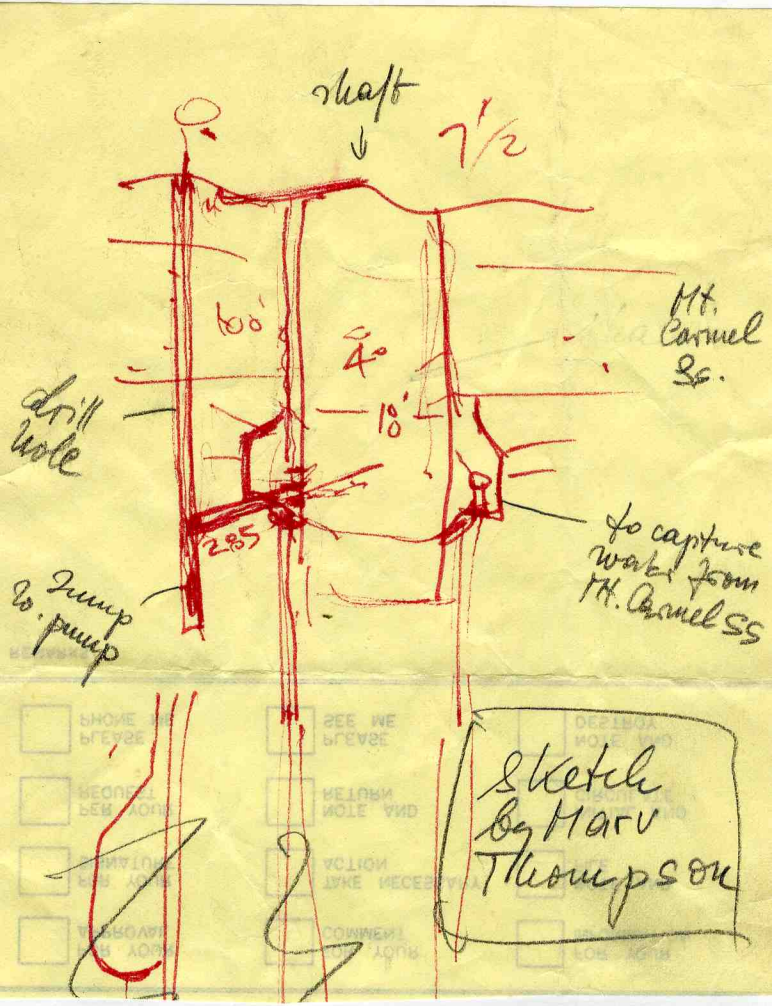
"Wabash is hanging on," the UMWA official said. "The work force is doing good and the company is trying to get more contracts." Wabash is still shipping coal to PSI's 3,145-megawatt Gibson Generating Station.

Cyprus Amax spokesman Mike Rounds said the Colorado-based company is "hopeful we can keep (Wabash) running through the end of the year. Our goal would be to keep it open indefinitely."

Meanwhile, on the other side of the state near the Illinois-Indiana border, both company and union officials are cautiously optimistic about the future of Cyprus Amax's Wabash mine.

KERR-MCGEE'S INCOME SLIDES

Kerr-McGee Corp. reported net income of $42 million for the second quarter of 1997, a decline of 18% from the 1996 second quar-


shaft
7 1/2
60'
40'
10'
drill hole
Mt. Carmel Sc.
285
Jump to pump
to capture water from Mt. Carmel SS
Sketch by Mary Thompson

CYPRUS AMAX DOWNSIZES WABASH

Cyprus Amax Coal Co.'s Wabash underground mine near Keensburg, Ill., underwent a major downsizing in April but the company said it hopes to survive as a slimmed-down producer of high-sulfur coal for the spot market.

Wabash's fate was sealed earlier this year when Cyprus Amax assigned the mine's contract with PSI Energy to Black Beauty Coal Co. of Evansville, Ind. The agreement had almost 14 years to run at the rate of 3.6 million tons per year. All the coal has been sold to PSI's 3,145-megawatt Gibson Generating Station near Princeton, Ind.

With the mine's long-term contract gone, Cyprus Amax in mid-April laid off 454 Wabash employees, about four-fifths of the mine's total. About 111 workers remain on the payroll. Cyprus Amax hopes to avoid closing the mine altogether.

"We are actively seeking spot market sales," said Mike Rounds, spokesman for the Colorado-based company. "That has been the plan all along."

Rounds acknowledged the odds are slim that Wabash ever will return to its former production or staffing levels. Indeed, the pink-slipped employees are not expected to return, he said. Cyprus Amax hopes to save some jobs with a reconfigured strategy aimed at the spot market, Rounds added.

Wabash's hourly employees are members of the United Mine Workers of America (UMWA), and union officials are guardedly optimistic about the mine's chances for survival. Joseph Angleton, UMWA District 12 president, agreed the company is beating the bushes in search of spot sales and is responding to utility solicitations for high-sulfur coal.

UMWA officials said attempts had been made by union miners and Wabash management to cut production costs and boost productivity in recent months, although they ran out of time when the PSI contract was sold to Black Beauty. In exchange for the contract, Cyprus Amax was expected to receive an undisclosed large cash payment and future payments.

WABASH COAL MINE PROVES RESILIENT AFTER DOWNSIZING

Despite predictions that the Wabash IL coal mine would close within months of losing a major contract a year ago, the mine is still operating and has even improved its competitiveness.

A year ago, the Wabash mine's operator, Cyprus Amax Minerals, disclosed its Amax Coal subsidiary was assigning the remaining 13-plus years of a 3.6 million t/y Wabash contract with PSI Energy to Black Beauty Resources. The Cyprus/Amax bombshell led to dire predictions. "A black day for Illinois coal," a United Mine Workers of America official said at the time (2-10-97 *Coal Week*).

Many observers predicted that Wabash, located in the high-sulfur coal region of southern IL near Keensburg, would close within several months.

But though its work force and production have been reduced significantly, Wabash appears to have the makings of a coalfield turnaround success story, union and company officials agree.

"They've been doing just unbelievably good," Joseph Angleton, UMWA District 12 president, said of the Wabash miners. Because the scaled-down mine has been able to trim costs, and thereby cut the price of its coal, it is able to stay alive on the spot market.

Angleton predicted Wabash could produce between 1.2-1.5 million tons in 1998, with most of the coal being sold to its old customer—PSI Energy, a subsidiary of Cincinnati-based Cinergy Corp.

A Cyprus Amax spokesman in Colorado offered a cautiously optimistic assessment about Wabash. "The mine is doing well," said Michael Rounds. "As far as sales, things are looking better," he added.

From Coal Week, 2/16/98

1/26/99 Phone conversation with Jeff Gregg

Mine has contract with PSI to supply ~ 1.25 mill. tons/yr; to expire by end of 1999. Not sure what future holds beyond that date.

They are currently running only 2 units; portal 2 area has been sealed, stay away from areas with large parting in NW. Mine almost entirely on IL side; plan to go under Wabash R. in near future to mine a small reserve under Indiana.

Cyprus Amax is trying to sell Wabash mine to parties with remaining coal operations; they are being visited by potential buyers.

Visit to AMAX Coal Company's Wabash Mine
June 13, 1996

Colin Treworgy & Heinz Damberger

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Portal #2 Wabash Mine

Colin Treworgy (5'9") stands by the Springfield coal (about 6 feet thick) examining a parting.

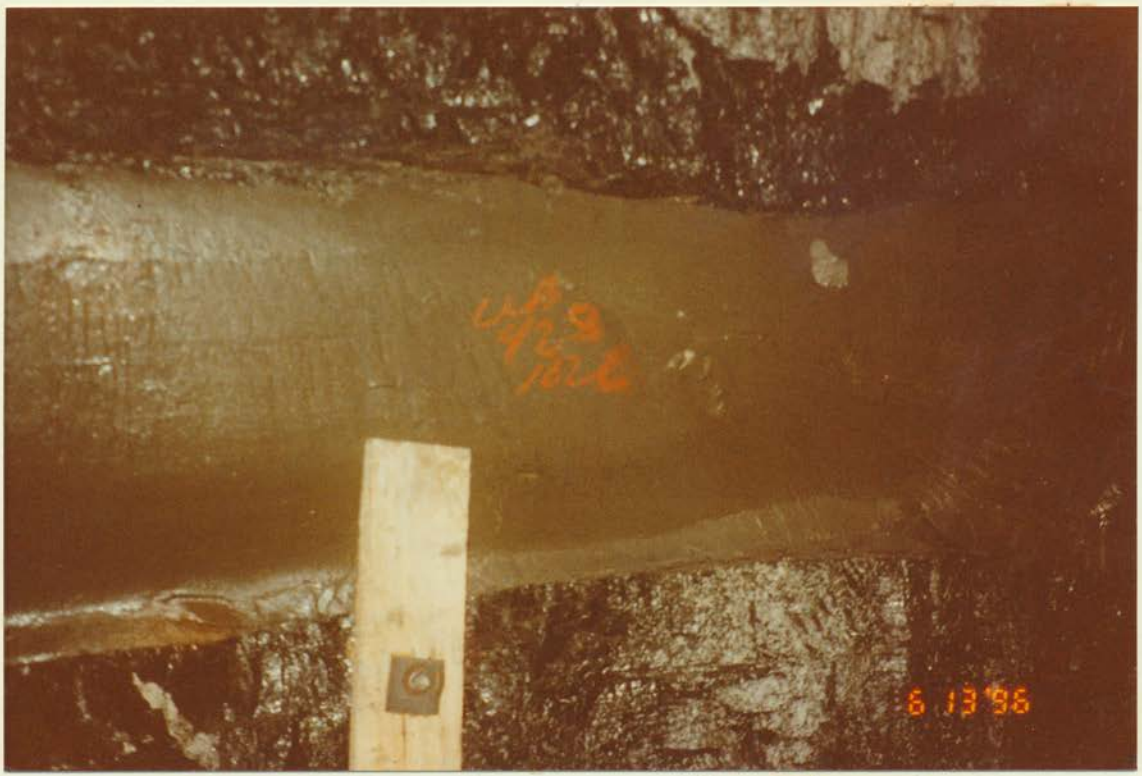
Wabash Mine

A closer view of the parting and thin bench of coal. Note sharp contact between coal and parting material. Wabash Mine
Note: the lateral extent of the parting is obscured by Rock dust

Colin Treworgy examines a parting in the Springfield Coal, Wabash Mine. Note the thin bench of coal within the parting. The parting is continuous to the left and right, but has been obscured by rock dust

Parting at another location nearby. Note coal stringers

Marvin Thompson examines a large parting in the Springfield Coal. The roof bolt had been installed in the rib to prevent the parting from falling. There did not work about 1 foot of the



Close-up of parting shown in previous photo w/ Marv Thompson.

Close-up of parting in previous photo

Mine: AMAX Wabash
2-13-80
Section: BWN

Intersection: 6925

Roof: primarily grey shale w/ some TC.
No noticable jointing; occassional E-W post mining fractures.

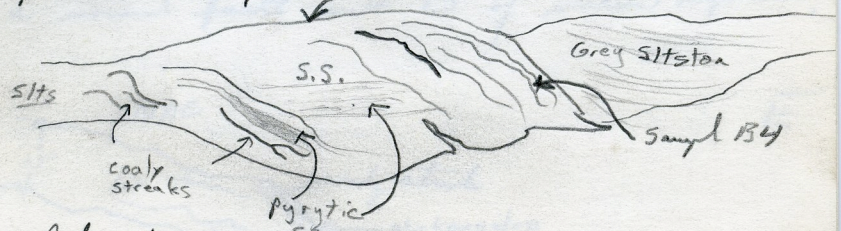
Rib at North corner of intersection consists of ≈12' of coal separated by 8" band of fine grey sandstone. SS generally shows faint bedding w/ 1/2" beds. At corner, band is ≈ 6' below shale roof & tends to climbs gradually in a slight undulating fashion as you proceed NE along entry rib. Pinches out ≈ 3' below shale some 30' beyond corner. Sample B-1 taken at corner.

NW corner of 6925

Less Than 1/2" of SS remains. Is interfingered w/ grey shale partings (2), each 1 to 2" thick parting also contain pseudo coal ball (sample A) Partings separated by 3" of NBC. Note 1" band of fusain below lower parting.
Approx 5' below shale roof are several 1/4" to 1/2" bands of bright gold pyrite. Unusual!

South corner of 6925

S.S pod shows distinct, deformed bedding planes. Sample B283



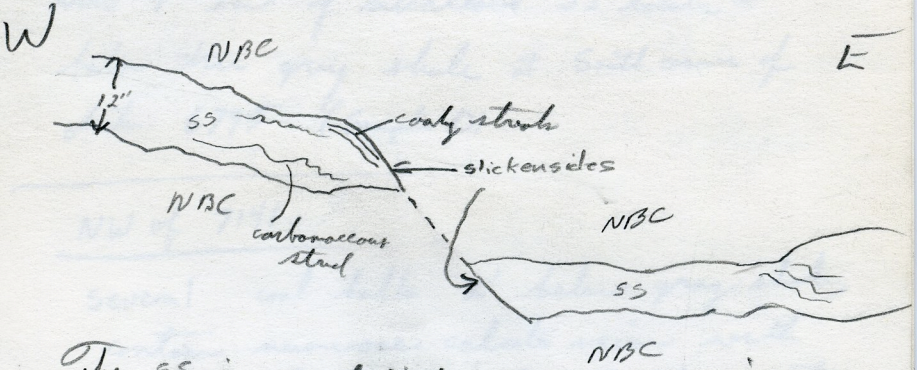
Pod shows 2 distinct pyritic bands, one running with bedding and one running ≈ 30° across bedding.

Pod tapers at both ends & gradates into a competent grey siltstone

Note pod lies ≈ 4' below shale roof. at one end siltstone tapers off ≈ 4' west of pod. at other end of pod, siltstone tapers to a 1/2 to 2" band that undulates downward gradually. Note clean contacts (No fusion) at intersection 6795, the slts. band is replaced by sandy, siltstone blebs of a very non compact nature

Crosscut east of 6725:

≈ 24' from the west corner the SS encounters a normal fault with 1.5' of vertical displacement.



The SS is a relatively clean sand with very indistinct bedding planes. Occasional carbonaceous streaks throughout and 1/4" to 1/2" coal streaks in top 3". Rare coal runners in lower portion. SS is still fine grain

Similar displacement is manefested across xcut in NW wall, except SS becomes more of a Slts.

Coal tends to undulate gently in the xcut

Entry SW of 6795

Irregular band of coal balls in both ribs ± 4-5" below true grey shale

Note 4" band of micaceous SS located 6' below true grey shale at South corner of Entry 6795 (Sample D)

NW of 7141

Several coal balls 2' below gray shale, contain numerous calcite veins with patches of fusain. Also highly pyritic.

Face East of 7141

2' below grey shale, band of coal balls containing large quantity of fusain. Fusain in bands, lenses, & pods.

Also band of SS, 4" to 1.5' thick running across face. Again dense, well cemented & fine grained

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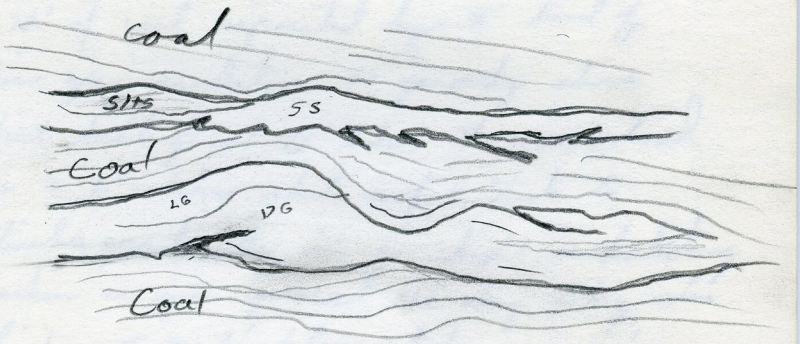
South corner of 7141:

2 bands of SS; lower nodular band with pods 8" thick & 1' long w/ coal fingers on top & bottom. (coal)

upper bond is separated from lower by as little as 2", & up to 8" of NBC

upper bond is a mixture of SS & Slts interfingering w/ streamers of coal. Contain some finely disseminated pyrite

Coal either butts into SS or drapes over it



Sample D3