

FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 2000'
 MINIMUM DEGREE OF ACCURACY 1 in 11500
 PROVEN SOURCE OF ELEVATION USGS BM "a" cut on rock Elev 1126.2

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF MINES.
 (SIGNED) Stephen N. Parks
 R.P.E. 8982 L.L.S. _____

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



DATE March 9, 1983
 OPERATOR'S WELL NO. 80-Ser 097011
 API WELL NO. _____
47 - 019 - 0517
 STATE COUNTY PERMIT
Fracture

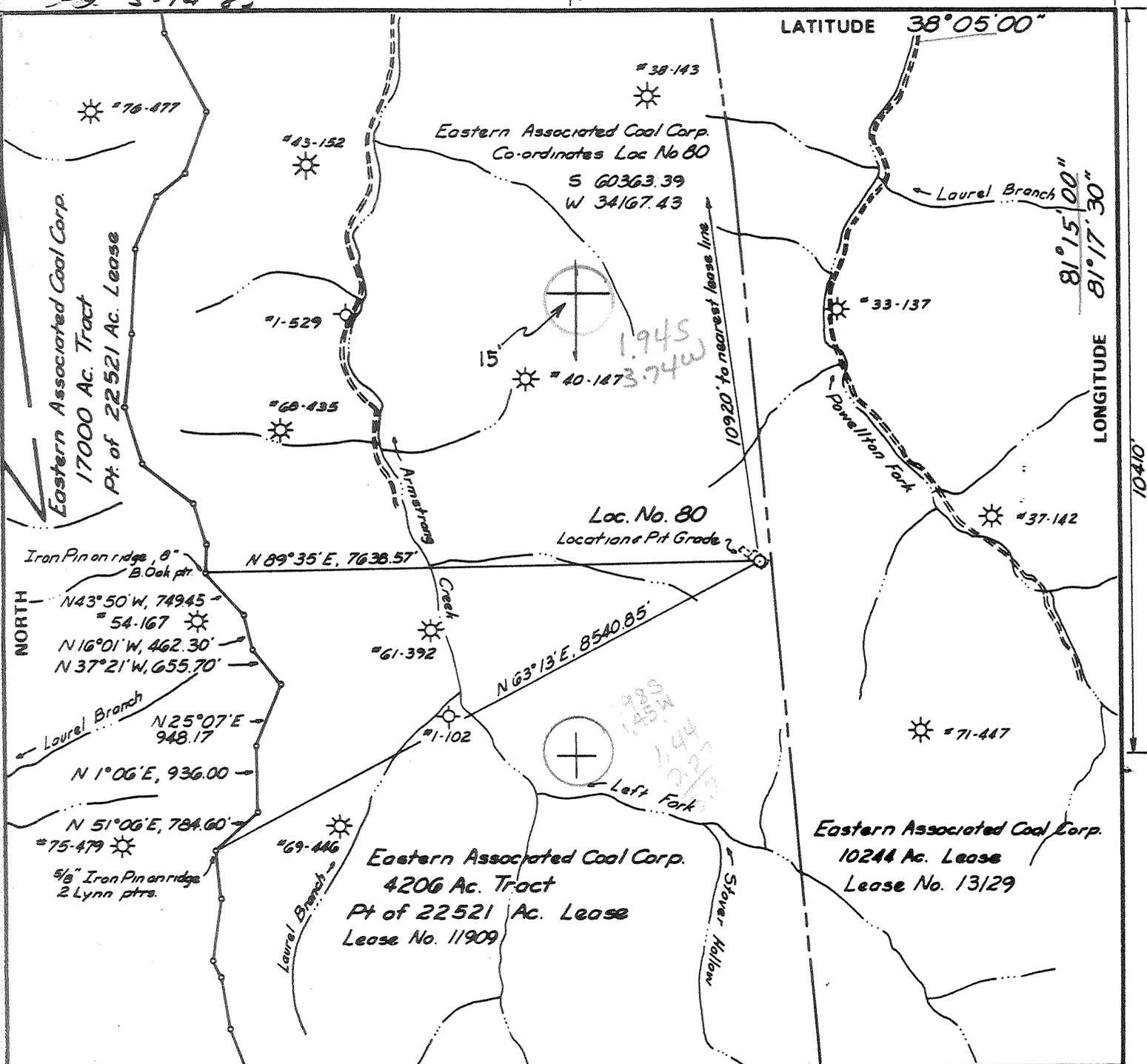
STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP X SHALLOW ___
 LOCATION: ELEVATION 2280.5 WATER SHED Armstrong Creek of Kanawha River
 DISTRICT Valley COUNTY Fayette
 QUADRANGLE Powellton 557
 SURFACE OWNER Eastern Associated Coal Corp ACREAGE 20,000 ±
 OIL & GAS ROYALTY OWNER Eastern Associated Coal Corp LEASE ACREAGE 22,521
 LEASE NO. 11909
 PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
 PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION Onondaga Lime ESTIMATED DEPTH 7055'
 WELL OPERATOR Ashland Exploration Inc. DESIGNATED AGENT Forrest Burkett
 ADDRESS P.O. Box 391 Ashland Ky 41114 ADDRESS P.O. Box 156 Brenton WV 24818

DEEP WELL OWWD 6-6 Burnwell (262)

3-14-83

7580'



FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 2000'
 MINIMUM DEGREE OF ACCURACY 1 in 11500
 PROVEN SOURCE OF ELEVATION USGS BM "a" cut on rock Elev 1126.2

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF MINES.
 (SIGNED) Stephen N. Paiko
 R.P.E. 8982 L.L.S. _____

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

DATE March 9, 1983
 OPERATOR'S WELL NO. 80-5er-097011
 API WELL NO. _____
47 - 019 - 0517
 STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP X SHALLOW ___
 LOCATION: ELEVATION 2280.5 WATER SHED Armstrong Creek of Kanawha River
 DISTRICT Valley COUNTY Fayette
 QUADRANGLE Powellton Montgomery 15' SE
 SURFACE OWNER Eastern Associated Coal Corp ACREAGE 20,000±
 OIL & GAS ROYALTY OWNER Eastern Associated Coal Corp LEASE ACREAGE 22,521
 LEASE NO. 11909
 PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION Onondaga Lime ESTIMATED DEPTH 7055'
 WELL OPERATOR Ashland Exploration Inc. DESIGNATED AGENT Forrest Burkett
 ADDRESS P.O. Box 391 Ashland Ky 41114 ADDRESS P.O. Box 156 Brenton WV 24818
DEEP WELL 66 Burnwell (262)/owoo-6-6

MAR 28 1983

FAY. 0517

262



IV-3
(Rev) **RECEIVED**

JUN 28 1985

OIL & GAS DIVISION
DEPT. OF MINES

State of West Virginia
Department of Mines
Oil and Gas Division

Date 6/25/85
Operator's
Well No. 80
Farm Eastern Associated Coal Corp
API No. 47 - 019 - 0517-FRAC

WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil / Gas X / Liquid Injection / Waste Disposal /
(If "Gas," Production X / Underground Storage / Deep X / Shallow /)

LOCATION: Elevation: 2280.5' Watershed Armstrong Creek of Kanawha River
District: Valley County Fayette Quadrangle Powellton

COMPANY Ashland Exploration, Inc.
ADDRESS P. O. Box 391, Ashland, KY 41114
DESIGNATED AGENT Forrest Burkett
ADDRESS P. O. Box 379, Brenton, WV 24818
SURFACE OWNER Eastern Associated Coal Corp.
ADDRESS One PPG Place, Pittsburgh, PA 15219
MINERAL RIGHTS OWNER Eastern Assoc. Coal Corp.
ADDRESS One PPG Place, Pittsburgh, PA 15219
OIL AND GAS INSPECTOR FOR THIS WORK Rodney
Dillon ADDRESS Box 30, Scarbro, WV 25917

PERMIT ISSUED 2/20/85
RECOMPLETION
DRILLING COMMENCED 5/13/85
RECOMPLETION
DRILLING COMPLETED 6/8/85

IF APPLICABLE: PLUGGING OF DRY HOLE ON
CONTINUOUS PROGRESSION FROM DRILLING OR
REWORKING. VERBAL PERMISSION OBTAINED
ON

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.	35'	35'	25 sks
13-10"			
9 5/8			
8 5/8	2190'	2190'	750 sks
7			
5 1/2			
4 1/2	6363'	6363'	350 sks
3			
2		3369'	
Liners used			

GEOLOGICAL TARGET FORMATION Onondaga Limestone Depth 7125 feet
Depth of completed well 7125 feet Rotary X / Cable Tools
Water strata depth: Fresh 65 feet; Salt 1610 feet
Coal seam depths: NONE Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation U. Weir & L. Maxton Pay zone depth 3359-3371
2847-2858 feet
Gas: Initial open flow show Mcf/d Oil: Initial open flow Bbl/d
Final open flow 933 Mcf/d Final open flow Bbl/d

Time of open flow between initial and final tests 3 hours

Static rock pressure 510 psig (surface measurement) after 72 hours shut in
(If applicable due to multiple completion--)

Second producing formation Pay zone depth feet
Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d
Final open flow Mcf/d Oil: Final open flow Bbl/d

Time of open flow between initial and final tests hours

Static rock pressure psig (surface measurement) after hours shut in

(Continue on reverse side)

JUL 08 1985

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Isolate Dev. Shale production w/a "NC" Bridge Plug @ 3720' KB

Perf U. Weir 20H/3359-3371 - 75 Q foam frac using 30,000# 20/50 sand, 500 gal 15% HCl, 237,000 SCF N₂, 170 bbl TL&FW, 120 bbl TSLF. BD @ 3000#, ATP 3100# @ 12 B/M. ISIP 1100#, 15 min 800#.

Perf L. Maxton 20H/2847-2858. Spot 500 gal 15% HCl. 75 Q foam frac using 20,000# 20/40 sand, 175,000 SCF N₂, 135 bbl. TL&AW, 102 bbl TSLF. BD @ 1500#, ATP 2900#, MTP 3380#, ISIP 2000#, ATR 6,700 SCF N₂/min.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Reported on original report dated 8/22/84					

(Attach separate sheets as necessary)

ASHLAND EXPLORATION, INC.

Well Operator

By: Deborah A. Thina

Date: June 25, 1985

Note: Regulation 2.02(i) provides as follows:
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including (and), encountered in the drilling of a well."

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.
 Plug back 7125-6752 w/75 sks CI "A". Open hole N₂ frac lower section of Dev. Shale 6363-6752 using 1,000,000 SCF N₂. BD @ 3350#, ATP 3800# @ 60,000 SCF/min. MTP 3800#, ISIP 3000#, 15 min 2650#.

Perf Upper Section Dev. Shale 20H/5550-5580. Dump 250 gal 15% HCl. N₂ frac upper section Dev. Shale 5550-5580 using 1,080,000 SCF N₂. BD @ 2900#, ATP 3625# @ 60,000 SCF/min, MTP 3650#, ISIP 2400#, 15 min SI 2100#.

400

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Sand			0	242	Wtr @ 60'
Shale			242	260	
Sand & Shale			260	443	
Sand			443	536	
Shale			536	564	
Shale & Sand			564	894	
Shale			894	969	
Sand & Shale			969	1295	
Sand			1295	1503	
Shale & Sand			1503	1604	
282 Lower Salt Sand			1604	2137	Salt wtr @ 1610
Shale			2137	2297	
Avis LS			2297	2325	
Shale & Sand			2325	2845	
375 L. Maxton			2845	2861	
Shale			2861	2866	
L. Lime			2866	2936	
Pencil Cave			2936	2959	
345 Big Lime			2959	3266	Gas
Shale			3266	3268	
345 Injun			3268	3293	Gas w/high water saturation
Shale			3293	3330	
387 Upper Weir			3330	3374	
Shale			3374	3424	
Lower Weir			3424	3712	
Coffee Shale			3712	3736	
395 Berea			3736	3776	
Devonian Shale			3776	3950	
419 Gordon			3950	3972	
Devonian Shale			3972	7022	Gas
461 Onondaga LS			7022	TD	
DTD 7125					
LTD 7125					

5550
3776
1974

6752
3776
2974

from nearby wells:
 400 3776
 4880
 5780
 5980
 6300
 6630

(Attach separate sheets as necessary)

ASHLAND EXPLORATION, INC.

Well Operator

By: Clayton A. King

Date: Engineering Technician

Note: Regulation 2.02(i) provides as follows:
 "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including encountered in the drilling of a well."



1) Date: December 22, 1983
 2) Operator's Eastern Associated Coal Corp.
 Well No. No. 80, Serial No. 097011
 3) API Well No. 47 - 019 - 0517-Ren
 State County Permit

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES, OIL AND GAS DIVISION
 APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil / Gas X /
 B (If "Gas", Production X / Underground storage / Deep X / Shallow)
 5) LOCATION: Elevation: 2280.5 Watershed: Armstrong Creek of Kanawha River
 District: Valley County: Fayette Quadrangle: Powellton
 6) WELL OPERATOR Ashland Exploration, Inc. 7) DESIGNATED AGENT Forrest Burkett
 Address P.O. Box 391 Address Box 156
Ashland, KY 41114 Brenton, WV 24818
 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Rue Schoolcraft Name Ray Resources Drilling Company
 Address P.O. Box 706 Address 2101 Washington St., East
Pineville, WV 24874 Charleston, WV 25311
 10) PROPOSED WELL WORK: Drill X / Drill deeper / Redrill / Stimulate
 Plug off old formation / Perforate new formation
 Other physical change in well (specify)
 11) GEOLOGICAL TARGET FORMATION, Onondaga Lime
 12) Estimated depth of completed well, 7055 feet top of
 13) Approximate strata depths: Fresh, feet; salt, salt sand feet. OIL & GAS DIVISION
 14) Approximate coal seam depths: 270', 320', 470', 670', Is coal being mined in the area? Yes X
 15) CASING AND TUBING PROGRAM 700' (open mine) 820' DEPT. OF MINES

RECEIVED
 DEC 27 1983
 OIL & GAS DIVISION
 DEPT. OF MINES

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor	13 3/8	H-40	48	X		30	30	15 sks	Kinds
Fresh water									
Coal	9 5/8	K-55	32	X		750	750	Circulate	<u>NEAT</u>
Intermediate	7	K-55	20	X		2160	2160	100 sks	
Production	4 1/2	K-55	10.5	X		7055	7055	As Required	Depths set
Tubing									
Liners									Perforations: Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-019-0517-Ren Date January 13, 1984

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. Notification must be given to the District Oil and Gas Inspector, (Refer to No. 8) Prior to the construction of roads, locations and pits for any permitted work. In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

The permitted work is as described in the Notice and Application, plat, and reclamation plan, subject to any modifications and conditions specified on the reverse hereof.
 Permit expires January 13, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
<u> </u>	<u> </u>	<u>MH</u>	<u>MH</u>	<u>000</u> <u>155</u>

[Signature]
 Administrator, Office of Oil and Gas

FILE COPY
RECEIVED

JAN 21 1985



- 1) Date: January 17, 1985
 2) Operator's Eastern Associated Coal Corp.
 Well No. 80, Serial No. 097011
 3) API Well No. 47 - 019 - 0517-~~FRAC~~ **FRAC**
 State County Permit

**OIL & GAS DIV.
DEPT. OF MINES**

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES, OIL AND GAS DIVISION
APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil _____ / Gas X /
 B (If "Gas", Production X / Underground storage _____ / Deep X / Shallow _____)
 5) LOCATION: Elevation: 2280.5' Watershed: Armstrong Creek of Kanawha River
 District: Valley County: Fayette Quadrangle: Powellton
 6) WELL OPERATOR Ashland Exploration, Inc. 2750 7) DESIGNATED AGENT Forrest Burkett
 Address P.O. Box 391 Address P.O. Box 379
Ashland, KY 41114 Brenton, WV 24818
 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Rodney G. Dillon Name Tri-State Well Service
 Address P.O. Box 30 Address P.O. Box 299
Scarbro, WV 25917 Bridgeport, WV 26330
 10) PROPOSED WELL WORK: Drill _____ / Drill deeper _____ / Redrill _____ / Stimulate X /
 Plug off old formation _____ / Perforate new formation X /
 Other physical change in well (specify) _____
 11) GEOLOGICAL TARGET FORMATION, Onondaga Limestone
 12) ~~Estimated~~ depth of completed well, 7125 feet
 13) Approximate trata depths: Fresh, 65 feet; salt, 1610 feet.
 14) Approximate coal seam depths: None Is coal being mined in the area? Yes _____ / No X /

15) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor	16	H-40	65.0	X		35	35	25 sks.	Kinds
Fresh water									
Coal									Sizes
Intermediate	8 5/8	J-55	24.0	X		2190	2190	750 sks.	
Production	4 1/2	J-55	10.5	X		6363	6363	350 sks.	Depths set
Tubing									
Liners									Perforations: <u>D. Shale</u> Top <u>5550</u> Bottom <u>5580</u>

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-019-0517-FRAC

February 20, 1985
Date

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. Notification must be given to the District Oil and Gas Inspector, (Refer to No. 8) Prior to the construction of roads, locations and pits for any permitted work. In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

The permitted work is as described in the Notice and Application, plat, and reclamation plan, subject to any modifications and conditions specified on the reverse hereof.

Permit expires February 20, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>10</u>	Agent: <u>MH</u>	Plat: <u>MH</u>	Casing: <u>MH</u>	Fee: <u>509.498</u>
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Margaret J. Hesse
Administrator, Office of Oil and Gas

NOTE: Keep one copy of this permit posted at the drilling location.

File

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.



1) Date: March 11, 1983
 2) Operator's Well No. 80, Serial No. 097011
 3) API Well No. 47 - 019 0517
 State County Permit

DRILLING CONTRACTOR:

Ray Resources Drilling Co.
2101 Washington St. East
Charleston, WV 25311

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES, OIL AND GAS DIVISION

OIL AND GAS WELL PERMIT APPLICATION

- 4) WELL TYPE: A Oil / Gas X /
 B (If "Gas", Production / Underground storage / Deep X / Shallow)
- 5) LOCATION: Elevation: 2260.5 Watershed: Armstrong Creek of Kanawha River
 District: Valley County: Wayne Quadrangle: Powellton
- 6) WELL OPERATOR: Ashland Exploration, Inc. 11) DESIGNATED AGENT: Forrest Burkett
 Address: P. O. Box 391 Address: Box 136
Ashland, KY 41114 Brenton, WV 24610
- 7) OIL & GAS ROYALTY OWNER: Eastern Associated Coal Corp. 12) COAL OPERATOR: None
 Address: 1701 Koppers Building Address:
Pittsburgh, PA 15219
22,521
- 8) SURFACE OWNER: Eastern Associated Coal Corp. 13) COAL OWNER(S) WITH DECLARATION ON RECORD:
 Address: 1701 Koppers Building Name: Eastern Associated Coal Corp.
Pittsburgh, PA 15219 Address: 1701 Koppers Building
20,602 Address: Pittsburgh, PA 15219
- 9) FIELD SALE (IF MADE) TO: Name:
 Address:
- 10) OIL & GAS INSPECTOR TO BE NOTIFIED: Name: P. Craig Duckworth
 Address: P. O. Box 454
Mt. Lookout, WV 26678
- 14) COAL LESSEE WITH DECLARATION ON RECORD:
 Name:
 Address: 4701 MacCorkle Ave., SE
Charleston, WV 25304
- 15) PROPOSED WORK: Drill X / Drill deeper / Redrill / Fracture or stimulate X /
 Plug off old formation / Perforate new formation /
 Other physical change in well (specify)
- 16) GEOLOGICAL TARGET FORMATION, Shoemaker Line
 17) Estimated depth of completed well, 7055 feet top of salt sand
 18) Approximate water strata depths: Fresh, 270', 320', 470', 670' feet; salt, feet.
 19) Approximate coal seam depths: 700' (open mine) 820' Is coal being mined in the area? Yes / No X

20) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor	3 5/8	K-40	45	X		50	50	15 Sks	Kinds
Fresh water									
Coal	3 5/8	K-55	32	X		750	750	Circulate	Sizes
Intermediate	7	K-55	20	X		2160	2160	100 Sks	
Production	4 1/2	K-55	10.5	X		7055	7055	As Required	Depths set
Tubing									
Liners									Perforations: Top Bottom

21) EXTRACTION RIGHTS

- Check and provide one of the following:
 Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil or gas.
 The requirement of Code 22-4-1-(c) (1) through (4). (See reverse side for specifics.)

22) ROYALTY PROVISIONS

Is the right to extract, produce or market the oil or gas based upon a lease or other continuing contract or contracts providing for flat well royalty or any similar provision for compensation to the owner of the oil or gas in place which is not inherently related to the volume of oil or gas so extracted, produced or marketed? Yes No

If the answer above is No, nothing additional is needed. If the answer is Yes, you may use Affidavit Form IV-60.

23) Required Copies (See reverse side.)

24) Copies of this Permit Application and the enclosed plat and reclamation plan have been mailed by registered mail or delivered by hand to the above named coal operator, coal owner(s), and coal lessee on or before the day of the mailing or delivery of this Permit Application to the Department of Mines at Charleston, West Virginia.

Notary: Deke W. Donta
 My Commission Expires November 23, 1986

Signed: Forrest Burkett
 Its: Regional Civil Engineer

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-019-0517 Date March 20, 1983

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. **Notification must be given to the District Oil and Gas Inspector. (Refer to No. 10) Prior to the construction of roads, locations and pits for any permitted work.** In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

Permit expires November 20, 1983 unless drilling is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing:	Fee:
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Administrator, Office of Oil and Gas