

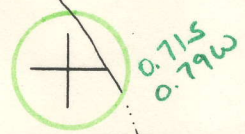
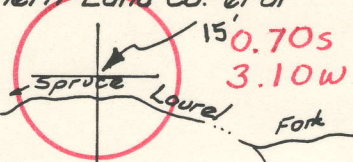
M.A. 11/10/82

Plot Card CSD

4190'

LATITUDE 37° 50' 00"

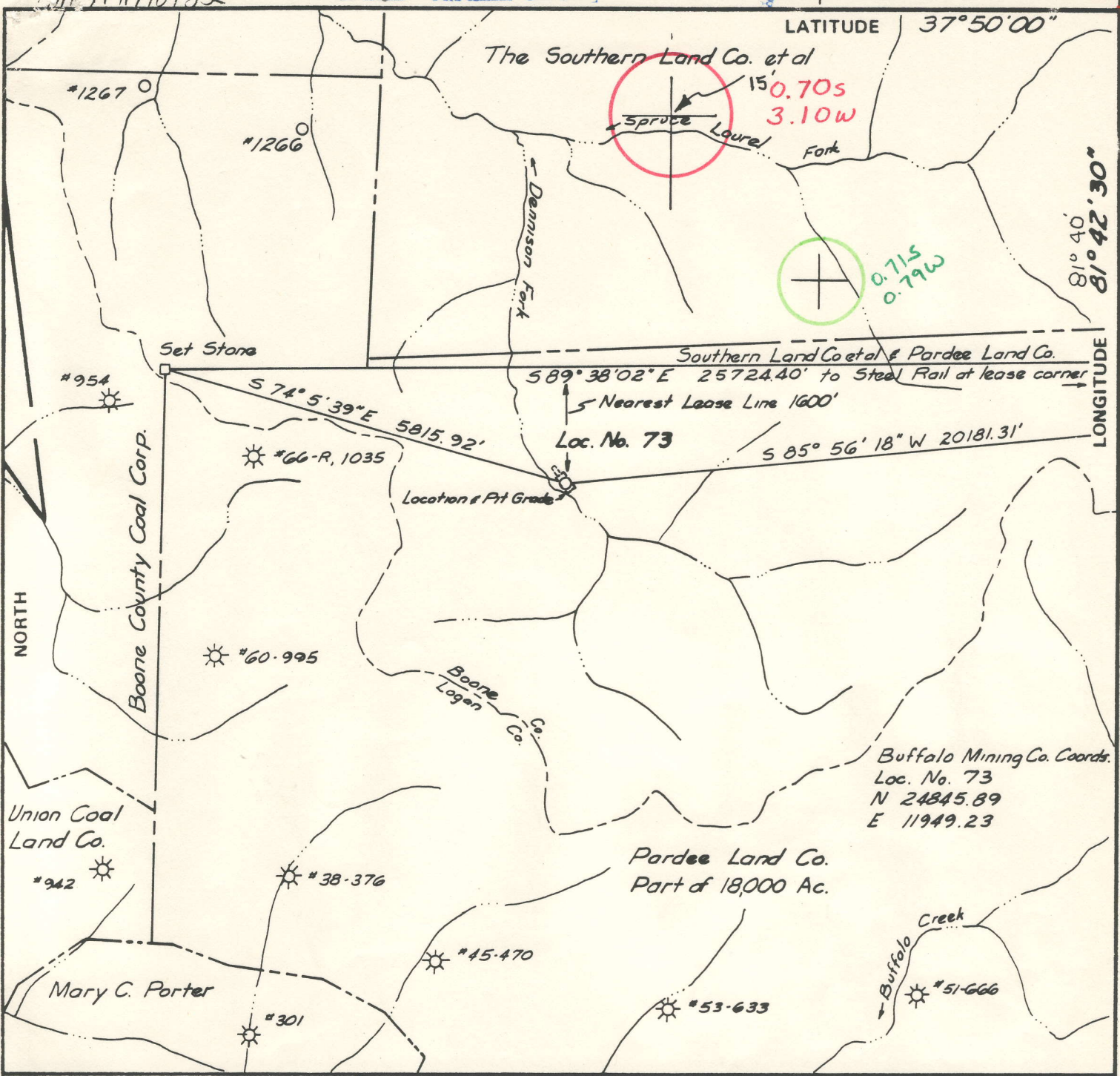
The Southern Land Co. et al



3790'

81° 40' 81° 42' 30"

LONGITUDE



FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY 1 in 14800  
 PROVEN SOURCE OF ELEVATION USGS BM Metal Plate in Conc Block up Spruce Laurel Elev 1300.9

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)



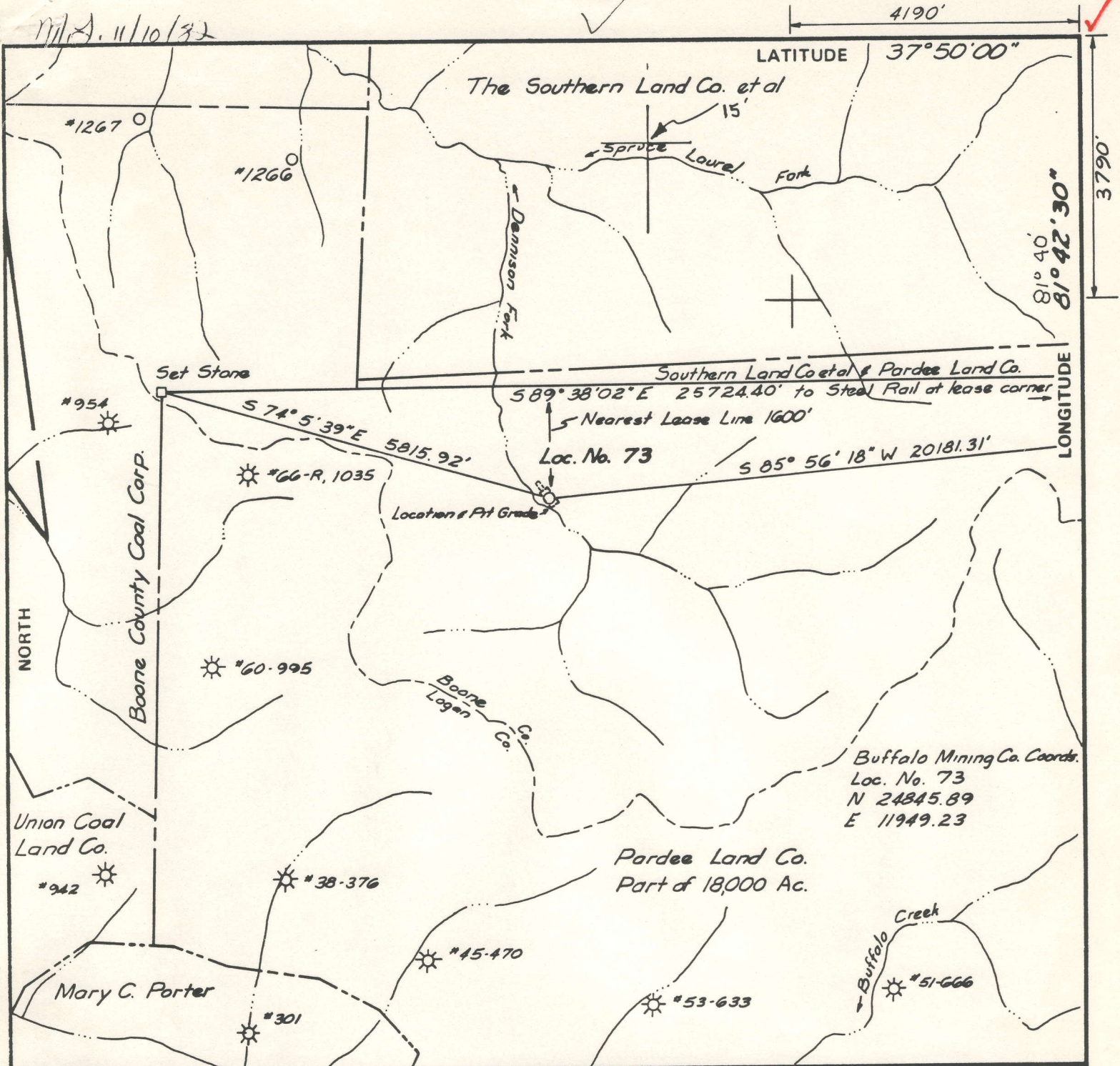
DATE Oct 26, 19 82  
 OPERATOR'S WELL NO. 73 - Ser 096311  
 API WELL NO. 47 - 005 - 1412  
 STATE COUNTY PERMIT

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 1631.0 WATER SHED Dennison Fork of Spruce Laurel Fork of Little Coal River  
 DISTRICT Washington COUNTY Boone  
 QUADRANGLE Lorado - Bald Knob 15' SW  
 SURFACE OWNER Pardee Land Co. ACREAGE 17,000 +  
 OIL & GAS ROYALTY OWNER Pardee Land Co LEASE ACREAGE 18000  
 LEASE NO. 4107  
 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 5976  
 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

NOV 22 1982



FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY 1 in 14800  
 PROVEN SOURCE OF ELEVATION USGS BM Metal Plate in Conc Block up Spruce Laurel Elev 1300.9

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 A. 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 Oct 26, 1982  
 OPERATOR'S WELL NO. 73 - Ser #096311  
 API WELL NO. \_\_\_\_\_  
47 - 005 - 1412-Frac.  
 STATE COUNTY PERMIT

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 1631.0 WATER SHED Dennison Fork of Spruce Laurel Fork of Little Coal River  
 DISTRICT Washington COUNTY Boone  
 QUADRANGLE Lorado  
 SURFACE OWNER Pardee Land Co. ACREAGE 17,000 +  
 OIL & GAS ROYALTY OWNER Pardee Land Co LEASE ACREAGE 18000  
 LEASE NO. 4107  
 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 Orondaga Lime ESTIMATED DEPTH 5976  
 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

Boone - 1412



WR-35

State of West Virginia DEPARTMENT OF ENERGY Oil and Gas Division

Date January 28, 1986 Operator's Well No. 73 Farm Pardee Land Co. API No. 47 - 005 - 1412 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: 1631' G Watershed Dennison Fork of Spruce Laurel Fork of District: Washington County Boone Quadrangle Little Coal River Lorado

COMPANY Ashland Exploration, Inc. ADDRESS P. O. Box 391, Ashland, KY 41114 DESIGNATED AGENT Forrest Burkett ADDRESS Box 156, Brenton, WV 24818 SURFACE OWNER Pardee Land Co. ADDRESS 1512 Two Girard Plaza, Philadelphia, PA 19102 MINERAL RIGHTS OWNER Pardee Land Co. ADDRESS 1512 Two Girard Plaze, Philadelphia, PA 19102 OIL AND GAS INSPECTOR FOR THIS WORK Jerry Holcomb ADDRESS Rt. 7 Box 28, Hamlin, WV 25523 PERMIT ISSUED Dec. 14, 1984 RECOMPLETION DRILLING COMMENCED Dec. 10, 1985 RECOMPLETION DRILLING COMPLETED Jan. 18, 1986

Table with 4 columns: Casing Tubing, Used in Drilling, Left in Well, Cement fill up Cu. ft. Rows include sizes 20-16 Cond., 13-10", 9 5/8, 8 5/8, 7, 5 1/2, 4 1/2, 3, 2, and Liners used.

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

GEOLOGICAL TARGET FORMATION Devonian Shale, Berea, Maxton Depth 5967' feet Depth of completed well 5967 feet Rotary X / Cable Tools Water strata depth: Fresh 90 feet; Salt 1506 feet Coal seam depths: open mine @ 350' Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 5123-5740 feet Gas: Initial open flow show Mcf/d Oil: Initial open flow Bbl/d Final open flow 220 Mcf/d Oil: Final open flow Bbl/d Time of open flow between initial and final tests 3 hours Static rock pressure 280 psig (surface measurement) after 72 hours shut in (If applicable due to multiple completion--)

Second producing formation Berea & Maxton Pay zone depth 3610-3620 2664-2672 feet Gas: Initial open flow show Mcf/d Oil: Initial open flow Bbl/d Final open flow \*\*0 Mcf/d Oil: Final open flow Bbl/d Time of open flow between initial and final tests 3 hours Static rock pressure 620 psig (surface measurement) after 72 hours shut in

\*\* most likely watered off from Maxton

FEB 10 1986 (Continue on reverse side)

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

Perf L. Dev. Shale 30H/5720-5740 - <sup>rhinest</sup>N<sub>2</sub> frac using 300 gal 15% HCl & 500,000 SCF N<sub>2</sub> @ 47,000 SCF/min. BD @ 3000#, ATP 5400#, ISIP 5800#, 15 min 2100#.

Perf Berea 20H/3610-3620 - 75 Q foam frac using 500 gal 15% HCl, 30,000# 20/40 sd, 338,600 SCF N<sub>2</sub> @ 96,000 SCF/min. BD @ 1850#, ATP 1634# @ 23.2 B/M foam, ISIP 940#, 15 min 675#, TF 196 bbl.

Perf L. Maxton 20H/2664-2672 - Acidize w/2000 gal 15% HCl. BD @ 2000#, ATP 2700# @ 5.3 B/M, ISIP 2250#, TF 89 bbl. 75 Q foam frac using 513,000 SCF N<sub>2</sub> & 20,000# 20/40 sand. BD @ 2000#, ATP 3950# @ 20 B/M foam, MTP 4040#, ISIP 3450#, TF 77 bbl.

**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 form dated 5/23/83					

(Attach separate sheets as necessary)

ASHLAND EXPLORATION, INC.

Well Operator

By: Steve A. Thoma Engineering Technician  
Date: January 28, 1986

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 the drilling of a well."



IV-35  
(Rev 8-81)

Date 5/23/83  
Operator's  
Well No. 73  
Farm Pardee Land Co.  
API No. 47 - 005 - 1412

JUN 06 1983

State of West Virginia  
Department of Mines  
Oil and Gas Division

WELL OPERATOR'S REPORT  
OF  
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE MAY 25 1983

WELL TYPE: Oil    / Gas X / Liquid Injection    / Waste Disposal    / OIL & GAS DIVISION  
(If "Gas," Production X / Underground Storage    / Deep X DEPT. OF MINE  
1641 K

LOCATION: Elevation: 1631 G Watershed Dennison Fork of Spruce Laurel Fork of  
District: Washington County Boone Quadrangle Lorado Little Coat River

COMPANY Ashland Exploration, Inc.  
ADDRESS P. O. Box 391, Ashland, Ky. 41114  
DESIGNATED AGENT Forrest Burkett  
ADDRESS P. O. Box 156, Brenton, WV 24818  
SURFACE OWNER Pardee Land Co.  
ADDRESS 1512 Two Girard Plaza, Philadelphia, PA 19102  
MINERAL RIGHTS OWNER Pardee Land Co.  
ADDRESS 1512 Two Girard Plaza, Philadelphia, PA 19102  
OIL AND GAS INSPECTOR FOR THIS WORK Arthur  
St. Clair ADDRESS Box 157, Brenton, WV 24818  
PERMIT ISSUED 11/8/82  
DRILLING COMMENCED 1/19/83  
DRILLING COMPLETED 1/31/83

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.	38'	38'	15 sks
13-10"	438'	438'	244 sks
9 5/8			
8 5/8	2367'	2367'	425 sks
7			
5 1/2			
4 1/2	5958'	5958'	326 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Onondaga Limestone Depth 5976 feet  
Depth of completed well 5967 feet Rotary X / Cable Tools     
Water strata depth: Fresh 90 feet; Salt 1506 feet  
Coal seam depths: NONE Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Huron Devonian Shale Pay zone depth 5123-5153 feet  
Gas: Initial open flow 984 Mcf/d Oil: Initial open flow    Bbl/d  
Final open flow 660 Mcf/d Final open flow    Bbl/d  
Time of open flow between initial and final tests 3 hours  
Static rock pressure 887 psig (surface measurement) after 36 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)

Boone - 1412

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

Perforated Devonian Shale 18H/5123-5153 - dump 750 gal 15% HCl - load hole w/N<sub>2</sub>. Gas frac Devonian Shale w/1,392 MCFN<sub>2</sub> & 3020# sand. BD @ 2670#, ATP 2650# @ 52 B/M. ISIP 4490#, 5 min 2950#, 15 min 2600#

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	200	Fresh wtr @90'
Shale			200	326	
Sand			326	650	
Shale			650	724	
Sand			724	753	
Shale			753	974	
Sand			974	1051	
Shale			1051	1086	
Sand			1086	1302	
Shale & Sand			1302	1433	
Salt Sand			1433	2049	Salt wtr @ 1506
Shale			2049	2130	
Sand			2130	2168	
Shale			2168	2242	
U. Maxton			2242	2367	
Shale			2367	2391	
M. Maxton			2391	2521	
Shale			2521	2633	
L. Maxton			2633	2674	
Shale			2674	2697	
Little Lime			2697	2762	
Pencil Cave			2762	2776	
Big Lime - el.			2776	3114	
Shale			3114	3184	
Upper Weir			3184	3263	
Shale			3263	3568	
Coffee Shale			3568	3588	
Berea ✓ el.			3588	3620	
Devonian Shale			3620	5953	
Onondaga LS			5953	TD	

5123  
3620  
1503

LTD 5961  
DTD 5967

From el. log:	top	thickness
Berea	3588	32
Upv Dev undiff.	3620	1434
Lwr Huron	5054	174
Jawra	5228	159
Angola	5387	277
Richstreet	5664	2

(Attach separate sheets as necessary)

ASHLAND EXPLORATION, INC.

Well Operator

By: Chuck S. Nina

Date: May 23, 1983

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: November 5, 1982  
 2) Operator's Well No. 73. Serial No. 096311  
 3) API Well No. 47-005-1412 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 X / Underground storage            / Deep X / Shallow           )
- 5) LOCATION: Elevation: 1631.0 Watershed: Dennison Fork of Spruce Laurel Fork of Little  
 District: Washington County: Boone Quadrangle: Lorado Coal River
- 6) WELL OPERATOR Ashland Exploration, Inc. 11) DESIGNATED AGENT Forrest Burkett  
 Address P. O. Box 391 Address P. O. Box 156  
Ashland, KY 41114 Brenton, WV 24818
- 7) OIL & GAS ROYALTY OWNER Pardee Land Company 12) COAL OPERATOR Buffalo Mining Company  
 Address 1512 Two Girard Plaza Address Lyburn, WV 25632  
Philadelphia, PA 19102
- 8) SURFACE OWNER Pardee Land Company 13) COAL OWNER(S) WITH DECLARATION ON RECORD:  
 Address 1512 Two Girard Plaza Name Pardee Land Company  
Philadelphia, PA 19102 Address 1512 Two Girard Plaza  
 Acreage 17,000 Philadelphia, PA 19102
- 9) FIELD SALE (IF MADE) TO: Name             
 Address
- 10) OIL & GAS INSPECTOR TO BE NOTIFIED 14) COAL LESSEE WITH DECLARATION ON RECORD:  
 Name Arthur St. Clair Name Buffalo Mining Company  
 Address Box 157 Address Lyburn, WV 25632  
Brenton, WV 24818
- 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, Onondaga Limestone
- 17) Estimated depth of completed well, 5976 feet
- 18) Approximate water strata depths: Fresh,            feet; salt, top of salt feet.
- 19) Approximate coal seam depths: 245', 385' (possible open mine) 515', 575', 605' Is coal being mined in the area? Yes            / No X /
- 20) CASING AND TUBING PROGRAM

RECEIVED

NOV 08 1982

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		40	40	20 sks	Kinds	
Fresh water										
Coal	11 3/4	H-40	42	X		435	435	Circulate	Sizes	
Intermediate	8 5/8	K-55	24	X		2096	2096	Circulate		
Production	4 1/2	K-55	10.5	X		5976	5976	As Needed	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: [Signature] Signed: John H. Burkett  
 My Commission Expires 2024 01 14 82 Its: Regional Civil Engineer

**OFFICE USE ONLY**

**DRILLING PERMIT**

Permit number 47-005-1412 Date November 17, 1982

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 July 17, 1983 unless drilling is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee

Administrator, Office of Oil and Gas



1) Date: October 19, 19 84  
 2) Operator's Pardee Land Co.  
 Well No. 73, Serial No. 096311  
 3) API Well No. 47 - 005 - 1412-FRAC  
 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: 1631.0' Watershed: Dennison Fork of Spruce Laurel Fork of Little  
 District: Washington County: Boone Quadrangle: Lorado Coal River
- 6) WELL OPERATOR Ashland Exploration, Inc. 7) DESIGNATED AGENT Forrest Burkett  
 Address P.O. Box 391 Address P.O. Box 156  
Ashland, KY 41114 280 Brenton, WV 24818
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:  
 Name Arthur St. Clair 304/732-6227 Name Tri-State Well Service  
 Address P.O. Box 157 JERRY HOLCOMB Address Box 299, 1 Berea Plaza  
Brenton, WV 24818 824-3337 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, Devonian Shale, Berea, Maxton
- 12) ~~Estimated~~ depth of completed well, 5967 feet
- 13) Approximate trata depths: Fresh, 90 feet; salt, 1506 feet. 00788 1984
- 14) Approximate coal seam depths: Open Mine 350' Is coal being mined in the area? Yes                      / No X /
- 15) CASING AND TUBING PROGRAM

RECEIVED

CASING OR TUBING TYPE	SPECIFICATIONS				FOOTAGE INTERVALS		CEMENT FILL UP OR SACKS (Cubic feet)	GAS DIVISIONS OF MINES
	Size	Grade	Weight per ft.	New	Used	For drilling		
Conductor	20	H-40	90	X		38	38	15 sks, Kinds
Fresh water								
Coal	11 3/4	H-40	42	X		438	438	240 sks, Sizes
Intermediate	8 5/8	J-55	24	X		2367	2367	425 sks,
Production	4 1/2	K-55	11.6	X		5958	5958	326 sks, Depths set
Tubing								
Liners								Perforations: Top Bottom

OFFICE USE ONLY  
 DRILLING PERMIT

Permit number 47 005-1412-FRAC Date December 14, 19 84

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 December 14, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
<u>10</u>	<u>JS</u>	<u>MH</u>	<u>MH</u>	<u>586236</u>

*Margaret J. Hasser*  
 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.