



FILE NO. 62-33  
 DRAWING NO. ~  
 SCALE 1" = 2,000'  
 MINIMUM DEGREE OF ACCURACY 1:21,160  
 PROVEN SOURCE OF ELEVATION Buffalo Mining Co. Datum

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 ENERGY.  
 (SIGNED) George Harry Corn  
 R.P.E. 3999 L.L.S. \_\_\_\_\_

PLACE SEAL HERE

STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENERGY  
 OIL AND GAS DIVISION

DATE Feb. 14, 19 89  
 OPERATOR'S WELL NO. 77, S.N. 117521  
 API WELL NO. \_\_\_\_\_

WELL TYPE: OIL \_\_\_ GAS \_\_\_ LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW \_\_\_

LOCATION: ELEVATION 1682.5 WATERSHED Buffalo Creek  
 DISTRICT Triadelphia 3 COUNTY Logan  
 QUADRANGLE Lorado 445 006 & Bald Knob SC

SURFACE OWNER Pardee Land Company ACREAGE 17,000+  
 OIL & GAS ROYALTY OWNER Pardee Land Company LEASE ACREAGE 18,000  
 LEASE NO. 4107

PROPOSED WORK: DRILL  CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_

TARGET FORMATION Berea ESTIMATED DEPTH 3,797'  
 WELL OPERATOR Ashland Exploration, Inc. DESIGNATED AGENT Forrest Burkett  
 ADDRESS P.O. Box 391 43 ADDRESS P.O. Box 379  
Ashland, Ky. 41114 Brenton, W. Va. 24818

MAR 10 1989

DEEP WELL 66 Man. Oceana (266)

COUNTY NAME  
 PERMIT

FORM WW-6  
 H.T. HALL 4-8673

WR-35  
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10-Mar-89  
 API # 47- 45-01135

State of West Virginia  
 DEPARTMENT OF ENERGY  
 Division of Oil and Gas

DIVISION OF OIL & GAS  
 DEPARTMENT OF ENERGY  
 Well Operator's Report of Well Work

Farm name: PARDEE LAND COMPANY Operator Well No.: 77-S-117521

LOCATION: Elevation: 1682.50 Quadrangle: LORADO

District: TRIADELPHIA County: LOGAN  
 Latitude: 9730 Feet South of 37 Deg. 50Min. 0 Sec.  
 Longitude 5730 Feet West of 81 Deg. 37 Min. 30 Sec.

Company: ASHLAND EXPLORATION, INC.  
 P. O. BOX 391  
 ASHLAND, KY 41114-0000

Agent: FORREST BURKETT

Inspector: TIM BENNETT  
 Permit Issued: 03/10/89  
 Well work Commenced: 6/4/89  
 Well work Completed: 11/16/89

Verbal Plugging  
 Permission granted on:  
 Rotary  Cable Rig  
 Total Depth (feet) 6132  
 Fresh water depths (ft) 4" stream @ 45'  
 & approx. 568'  
 Salt water depths (ft) approx. 2023'

Is coal being mined in area (Y/N)? N  
 Coal Depths (ft): Not noted while drl'g

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
20"	22'	22'	Driven
16"	35'	35'	10.6
11 3/4"	358'	358'	236
8 5/8"	2122'	2122'	675
5 1/2"	6084'	6084'	387
1.9" @ 5930' KB w/AD-1 Pkr @ 3447' KB			
1.9" @ 3411' KB			

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth (ft) 4874-5988  
 Gas: Initial open flow 0/245 MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
 Final open flow 843/139 MCF/d Final open flow \_\_\_\_\_ Bbl/d  
 Time of open flow between initial and final tests 3 Hours  
 Static rock Pressure 740 psig (surface pressure) after 72 Hours  
 Lower Weir 3405-3422  
 Second producing formation Big Lime Pay zone depth (ft) 3152-3168  
 Gas: Initial open flow 245 MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
 Final open flow 552 MCF/d Final open flow \_\_\_\_\_ Bbl/d  
 Time of open flow between initial and final tests 3 Hours  
 Static rock Pressure 550 psig (surface pressure) after 72 Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: ASHLAND EXPLORATION, INC.

By: James L. Stephens James L. Stephens, Engr. Tech.  
 Date: November 30, 1989

DEC 08 1989

<u>FORMATION</u>	<u>TOP</u>	<u>BASE</u>
Sand & Shale	0	1294
Lower Lee Sand	1294	1964
Shales	1964	2169
Avis LS	2169	2205
Shale	2205	2226
Stray Maxton	2226	2302
Sand & Shale	2302	2514
Middle Maxton	2514	2548
Shale	2548	2575
Stray Maxton	2575	2622
Sand & Shale	2622	2663
L. Maxton	2663	2721
Shale	2721	2747
L. Lime	2747	2825
Pencil Cave	2825	2837
Big Lime	2837	3184
Sand & Shale	3184	3285
U. Weir	3285	3316
Shale	3316	3401
L. Weir	3401	3437
Shale	3437	3650
Coffee Shale	3650	3671
Berea	3671	3687
Devonian Shale	3687	6114
Onondaga LS	6114	TD

EST  
 UD 3687  
 H 4833  
 J 5330  
 A 5461  
 Rh 5759

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DIVISION OF OIL & GAS  
 DEPARTMENT OF ENERGY

DTD 6132  
 LTD 6125

DF

WELL TREATMENT

Perf L. Dev. Shale 24H/5810-5988. <sup>Rh</sup> N2 frac using 1,050,000 SCF N2 @ 93,000 SCF/min. BD @ 2490#, ATP 3600#, MTP 3650#, ISIP 2300# & 15 min. 1270#.

Perf U. Dev. Shale 25H/4874-5488. <sup>H J</sup> N2 frac using 1,050,000 SCF N2 @ 98,000 SCF/min & 1000 gal 7 1/2% Fe inh acid. BD @ 2350#, ATP 3250#, MTP 3320#, ISIP 2100#, 15 min 1250#.

Perf L. Weir 35H/3405-3432. <sup>Weir</sup> 75 quality foam frac using 500 gal 17 1/2% Fe inh acid, 60,000# 20/40 sand & 353,000 SCF N2 @ 8900 SCF/min. BD @ 1360#, ATP 1000# @ 27 bpm foam rate, MTP 1360#, ISIP 800#, 15 min 750# & TF 250 bbls.

Perf B. Lime 33H/3152-3168. <sup>BL</sup> - Acidize using 2000 gal 15% fe inh acid, 1000 gal 28% Fe inh acid & 75 bbls. treated wtr for displacement. BD @ 200#, ATP 50# @ 4-5 bpm, MTP 200#, ISIP 0# & TF 171 bbls.

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STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

045-1135  
Issued 3/10/89 Expired 3/10/91

- 1) Well Operator: Ashland Exploration, Inc. *2705, 3, 1445*  
Pardee Land Company
- 2) Operator's Well Number: 77, Serial #117521 3) Elevation: 1682.5
- 4) Well type: (a) Oil  / or Gas  /  
(b) If Gas: Production  / Underground Storage  /  
Deep  / Shallow  /
- 5) Proposed Target Formation(s): Berea
- 6) Proposed Total Depth: 3797'KB feet
- 7) Approximate fresh water strata depths: 568'KB
- 8) Approximate salt water depths: 2023'KB
- 9) Approximate coal seam depths: Upper Alma - Elev. 1475 No. 2 Gas - Elev. 1320  
Peerless - Elev. 1350 (None Worked)
- 10) Does land contain coal seams tributary to active mine? Yes  / No  /
- 11) Proposed Well Work: *Drill & Stimulate New Well*
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor	12 3/4	LS	42.0	30	30	CTS
Fresh Water						} 3805218-11.3 3805218-11.2.2
Coal						
Intermediate	8 5/8	J55	24.0	2073	2073	CTS
Production	4 1/2	J55	10.5	3797	3797	3805218-11.1 As Needed
Liners	2 3/8	J55	4.7			

REMARKS : Kind \_\_\_\_\_  
Sizes \_\_\_\_\_  
Depths set \_\_\_\_\_

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For Division of Oil and Gas Use Only

Fee(s) paid:  Well Work Permit  Reclamation  DEPARTMENT OF ENERGY

Plat  WW-9  WW-2B  Bond 50 Blanket Agent

(Type)

*506502*

*Per*

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DIVISION OF OIL & GAS 3)  
DEPARTMENT OF ENERGY

Date: February 16, 1989  
Operator's well number  
Pardee Land Co. #77, Serial #117521  
API Well No: 47 - 045 - 1135  
State - County - Permit

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

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

- |  |   |
|--|---|
| <p>4) Surface Owner(s) to be served:</p> <p>(a) Name <u>Pardee Land Company</u><br/>Address <u>1510 Two Mellon Bank Center</u><br/><u>Philadelphia, PA 19102</u></p> <p>(b) Name _____<br/>Address _____</p> <p>(c) Name _____<br/>Address _____</p> | <p>5) (a) Coal Operator:</p> <p>Name <u>Buffalo Mining Company</u><br/>Address <u>Box 429</u><br/><u>Lyburn, WV 25632</u></p> <p>(b) Coal Owner(s) with Declaration<br/>Name <u>Same as No. 4(a)</u><br/>Address _____</p> <p>(c) Coal Lessee with Declaration<br/>Name <u>Same as No. 5(a)</u><br/>Address _____</p> |
| <p>6) Inspector <u>Tim Bennett</u><br/>Address <u>525 Tiller St.</u><br/><u>Logan, WV 25601</u><br/>Telephone (304)- <u>792-7075</u></p>   |   |

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

       Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR

  X   Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through 2 on the above named parties, by:

- Personal Service (Affidavit attached)
- X   Certified Mail (Postmarked postal receipt attached)
- Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator Ashland Exploration, Inc.  
 By: J. T. Mellinger  
 Its: Manager Eastern Region  
 Address P.O. Box 391  
Ashland, KY 41114  
 Telephone (606) 329-5450

Subscribed and sworn before me this 16th day of February, 1989

       Notary Public  
My commission expires November 23, 1990