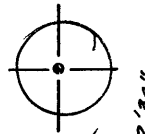


3/9/88

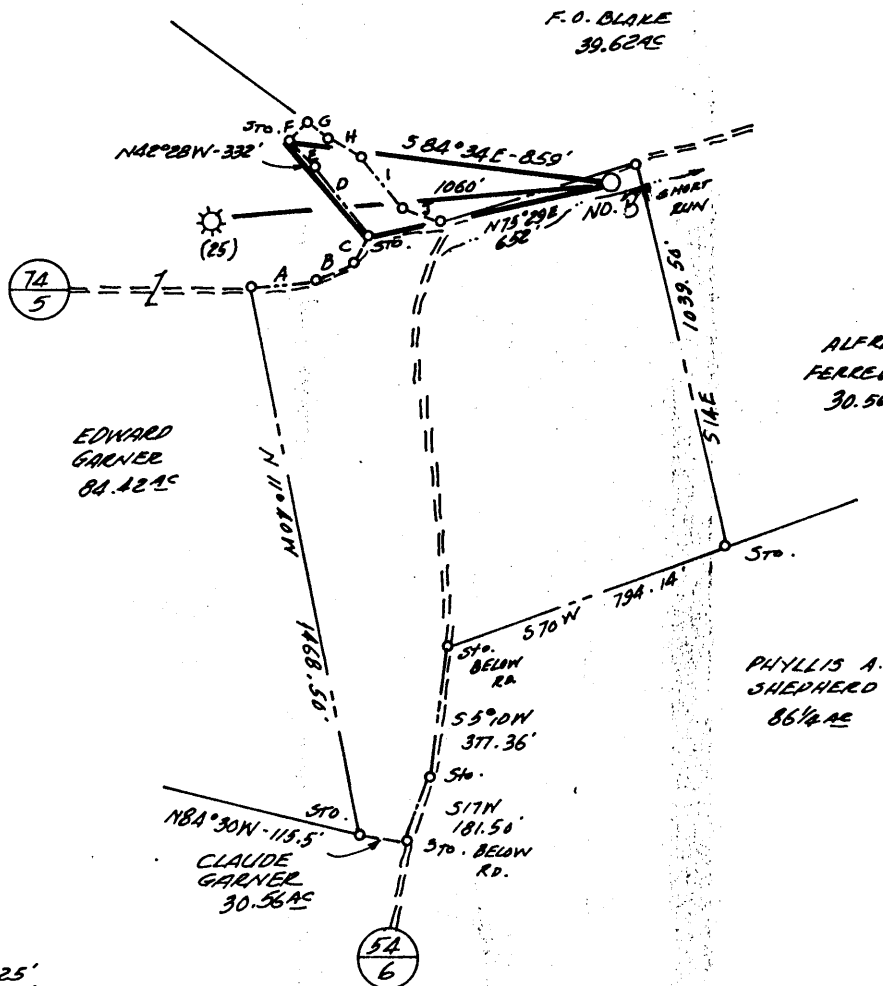
LATITUDE 39°20'00"

0.56S
2.44W



0.56S
0.20W
LONGITUDE 80°52'30"

NORTH

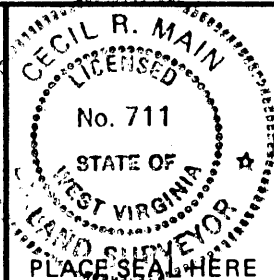


- A N82E 173.25'
- B N59E 108.90'
- C N22 1/2 E 72.60'
- D N39W 237.60'
- E N51 1/4 W 94.38'
- F N33 1/2 E 57.75'
- G S65°20'E 76.56'
- H S65°20'E 99.0'
- I S41 1/2 E 165'
- J S73 1/2 E 107.25'

WELL REF.
55W 107' TO 36" DBI. N.O.
S80°45E 190' TO 8" Syc.

FILE NO. _____
DRAWING NO. _____
SCALE 1" = 500'
MINIMUM DEGREE OF ACCURACY 1 IN 200
PROVEN SOURCE OF ELEVATION API 1146
ELEV. 1218'

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) Cecil R. Main
R.P.E. _____ L.L.S. 711



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION



DATE FEBRUARY 18, 19 88
OPERATOR'S WELL NO. MARSH #3
API WELL NO. 47 - 095 - 1229
STATE COUNTY PERMIT

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS,") PRODUCTION ___ STORAGE X DEEP ___ SHALLOW X
LOCATION: ELEVATION 905' WATER SHED SHORT RUN
DISTRICT CENTERTVILLE COUNTY TYLER
QUADRANGLE PENNSBORO 7.5' 539 133 8 West Union SC
SURFACE OWNER OREAN FERREBEE ACREAGE 30
OIL & GAS ROYALTY OWNER MARSH HEIRS LEASE ACREAGE 30
LEASE NO. _____
PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

MAR 11 1988

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
TARGET FORMATION ALEXANDER ESTIMATED DEPTH 5900'
WELL OPERATOR APPALACHIAN ENERGY DEV. INC. DESIGNATED AGENT GEORGE WILLIAMS
ADDRESS P.O. BOX 902 ADDRESS P.O. BOX 902
BELINGTON, WV 26250 397 Stanley BELINGTON, WV 26250

FORM IV-6 (8-78)

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WR-35

DIVISION OF OIL & GAS
DEPT. OF ENERGY
State of West Virginia
DEPARTMENT OF ENERGY
Oil and Gas Division

Date 4/7/88
Operator's _____
Well No. #3
Farm Marsh
API No. 47 - 095 - 1229

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 ___ / Shallow X /)

LOCATION: Elevation: 905 Watershed Short Run
District: Centerville County Tyler Quadrangle Pennsboro

COMPANY Appalachian Energy Dev., Inc.
ADDRESS Rt 2, Box 499 Grafton, Wv 26354
DESIGNATED AGENT George R. Williams
ADDRESS Rt 2, Box 499 Grafton, Wv 26354
SURFACE OWNER Orean Ferrabee
ADDRESS 159 Orpha Ave., Weirton, Wv 26062
MINERAL RIGHTS OWNER Marsh Heirs
ADDRESS Pennsboro, Wv
OIL AND GAS INSPECTOR FOR THIS WORK Robert Lowther
ADDRESS Middlebourne, Wv
PERMIT ISSUED 3/9/88
DRILLING COMMENCED 3/17/88
DRILLING COMPLETED 3/23/88
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.			
13-10"	30	0	0
9 5/8			
8 5/8	1090	1090	surface
7			
5 1/2			
4 1/2	5139	5139	300 sxs
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Alexander/Benson/Riley See perf Depth detail. feet
Depth of completed well 5300 feet Rotary X / Cable Tools _____
Water strata depth: Fresh 30 feet; Salt 1390 feet
Coal seam depths: none Is coal being mined in the area? no

OPEN FLOW DATA Note: These zones are downhole commingled.
Producing formation Alexander/Benson/Riley Pay zone depth see perf detail feet
Gas: Initial open flow 40 Mcf/d Oil: Initial open flow 0 Bbl/d
Final open flow 820 Mcf/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests 4 hours
Static rock pressure 1710 psig (surface measurement) after 48 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

APR 15 1988

(Continue on reverse side)

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

- 1) Alexander-perf 5070-86 w/18 holes. Frac w/30,000# 20/40 sand in 315 bbls water, using 56,000 SCF N₂. Avg rate-26.4, Avg pr-2548, ISDP-1380.
- 2) Benson-perf 4778-84 w/16 holes. Frac w/ 30,000# 20/40 sand in 317 bbls water, using 55,000 SCF N₂. Avg rate-27.4, Avg Pr-2665, ISDP-1354.
- 3) Riley-perf 4378-4410 w/18 holes. Foam frac w/30,000# 20/40 sand in 636 bbls 75 quality foam. Avg rate-24 BPM, Avg pr-3150, ISDP-1680. Used 480,000 SCF N₂.

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 & shale			0	250	
shale			250	310	1" water @ 71'
sand & shale			310	650	
sand			650	1746	1" water @ 130'
Big Lime			1746	1845	
Big Injun			1845	1950	1" water @ 1390'
shale			1950	2118	
Weir			2118	2230	
shale			2230	2301	
Berea			2301	2305	
shale			2305	4372	
Riley			4372	4412	
shale			4412	4779	
Benson			4779	4785	
shale			4785	5068	
Alexander			5068	5097	
shale			5097	5300	
		total depth		5300	Note: gas tests innaccurate due to soaping of hole.

(Attach separate sheets as necessary)

Appalachian Energy Dev., Inc.

Well Operator

By: *George R. Williams*

Date: 4/7/88

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 coal, encountered in the drilling of a well."

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- 1) Date: March 2, 1988
- 2) Operator's well number
Marsh #3
- 3) API Well No: 47 - 095 - 1229
State - County - Permit

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

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>Orean Ferrebee</u>
Address <u>159 Orpha Ave.</u>
<u>Weirton, WV 26062</u></p> <p>(b) Name _____
Address _____</p> <p>(c) Name _____
Address _____</p> | <p>5) (a) Coal Operator:</p> <p>Name <u>None</u>
Address _____</p> <p>(b) Coal Owner(s) with Declaration</p> <p>Name _____
Address _____</p> <p>Name _____
Address _____</p> <p>(c) Coal Lessee with Declaration</p> <p>Name _____
Address _____</p> |
| <p>6) Inspector <u>Robert Lowther</u>
Address <u>General Delivery</u>
<u>Middlebourne, WV 26149</u>
Telephone (304)-<u>758-4764</u></p> | |

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

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

_____ 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 _____ on the above named parties, by:

- xx Personal Service (Affidavit attached)
- _____ 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 Appalachian Energy Dev., Inc.

By: [Signature]

Its: President

Address P.O. Box 902
Belington, WV 26250

Telephone (304) 265-4147

Subscribed and sworn before me this 3rd day of March, 1988

My commission expires April 13, 1995

Notary Public

Issue: 3/9/88
 exp: 3/9/90

095-1229

FORM WW-2B

Page 2 of 7

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

- 1) Well Operator: ³⁹⁷ Appalachian Energy Dev., Inc. 2325, 1, 538
- 2) Operator's Well Number: Marsh #3 3) Elevation: 905
- 4) Well type: (a) Oil / or Gas XX /
 (b) If Gas: Production XX / Underground Storage /
 Deep / Shallow X /
- 5) Proposed Target Formation(s): Alexander ⁴³⁹
- 6) Proposed Total Depth: 5376 feet
- 7) Approximate fresh water strata depths: 150 ft., 380', 307
- 8) Approximate salt water depths: 1550 ft., 1337
- 9) Approximate coal seam depths: None 882-887, 812-814
- 10) Does land contain coal seams tributary to active mine? Yes / No XX /
^{From 409, 418, 759, 1146}
- 11) Proposed Well Work: ^{new} Drill
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
OK R.A.L. Conductor	11 3/4		42	30	30 ^{CS}	surface as required
Fresh Water						380SR1B-11.3
Coal						380SR1B-11.2.2
Intermediate	8 5/8		23	1055	1055 ^{CS}	surface as required
Production	4 1/2	J55	10.5	5213	5213 ^{380SR1B-11.1}	520 sks or as required
Tubing						
Liners						

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PACKERS : Kind _____
 Sizes _____
 Depths set _____
 DIVISION OF OIL & GAS
 DEPARTMENT OF ENERGY

For Division of Oil and Gas Use Only

1246
 1730
 Fee(s) paid: Well Work Permit Reclamation Fund WPCP
 Plat WW-9 WW-2B Bond 50 Blanket Agent

(Type)