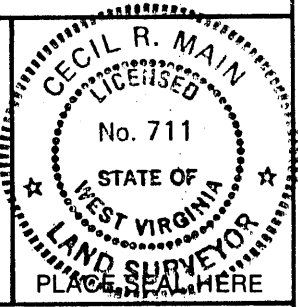


REFERENCES
 S13°00'E 153' TO 10" C.O.
 N83°18'E 142' TO 5" HICKORY

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1 PART IN 200'
 PROVEN SOURCE OF ELEVATION WELL API # 0349
ELEV 1025'

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 2, 1987
 OPERATOR'S WELL NO. WASHBURN #2
 API WELL NO. 47-095-1173

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

LOCATION: ELEVATION 1071' WATERSHED SHORT RUN
 DISTRICT CENTERVILLE COUNTY TYLER
 QUADRANGLE WEST UNION 7.5' 671 133 05

SURFACE OWNER GLENN W. JAMES ACREAGE 146
 OIL & GAS ROYALTY OWNER LELIA WASHBURN, et. al. LEASE ACREAGE 150
 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) _____

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION ALEXANDER ESTIMATED DEPTH 5600'
 WELL OPERATOR APPALACHIAN ENERGY DEV., INC. DESIGNATED AGENT GEORGE WILLIAMS
 ADDRESS P.O. BOX 902 ADDRESS P.O. BOX 902
BELINGTON, W. VA. BELINGTON, W. VA.

MAR 09 1987

FORM IV-6 (8-78)
 H.T. HALL

COUNTY NAME
 PERMIT

6-6 Stanley (90)



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IV-35
(Rev 8-81)

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY
Date August 11, 1987
Operator's
Well No. 2
Farm Lelia Washburn et al
API No. 47 - 095 - 1173

State of West Virginia
Department of Mines
Oil and Gas Division

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: 1071' Watershed Short Run
District: Centerville County Tyler Quadrangle West Union 7.5'

COMPANY Appalachian Energy Development
ADDRESS Rt. 2, Box 499, Grafton, WV 26354
DESIGNATED AGENT George William
ADDRESS same
SURFACE OWNER Glenn W. James
ADDRESS _____
MINERAL RIGHTS OWNER Lelia Washburn, et al
ADDRESS _____
OIL AND GAS INSPECTOR FOR THIS WORK Robert
Lowther General Delivery
ADDRESS Middlebourne, WV 26149
PERMIT ISSUED March 2, 1987
DRILLING COMMENCED 5/28/87
DRILLING COMPLETED 6/4/87
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"	244'	244'	
9 5/8			
8 5/8	1483'	1483'	419 CF
7			
5 1/2			
4 1/2	—	5310'	339 CF
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Alexander Depth 5240-5262 feet
Depth of completed well 5600 feet; Rotary X / Cable Tools _____
Water strata depth: Fresh reported feet; Salt 535 feet
Coal seam depths: none reported Is coal being mined in the area? no

OPEN FLOW DATA
Producing formation Riley, Benson, Alexander Pay zone depth 5240 - 5262 feet
Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow (150) (est) Mcf/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ hours
Static rock pressure 1675 psig (surface measurement) after _____ 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 22 1988

(Continue on reverse side)

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

FIRST STAGE: Alexander 5240 - 5262' (14 holes), 70 quality foam frac w/40,000# 20/40 Sand
 BKDN: 2900 psi, ATP 3175 psi, ISIP 1475 psi, AIR 20 BPM (foam)
 Totals: N₂ - 437,500 Scf, H₂O - 147 Bbls

SECOND STAGE: Benson 4934 - 4949' (18 holes), 70 quality foam frac w/40,000# 20/40 sand
 BKDN: 1775 psi, ATP 3200 psi, ISIP 1400 psi, AIR 20 BPM (foam)
 Totals: N₂ - 437,500 Scf H₂O, 192 Bbls

THIRD STAGE: Riley 4547 - 4579', (20 holes), 70 quality foam frac w/35,000# 20/40 sand
 BKDN: 1000 psi, ATP 3050 psi, ISIP 1575 psi, AIR 20 BPM (foam)
 Totals: N₂ - 637,000 Scf, H₂O - 200 Bbls

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
FOLLOWING DEPTHS TAKEN FROM GAMMA RAY LOG:					
No record			0	1510	<div data-bbox="1037 978 1428 1117" data-label="Text"> <p>RECEIVED APR 20 1988</p> </div> <div data-bbox="1053 1143 1412 1218" data-label="Text"> <p>DIVISION OF OIL & GAS DEPARTMENT OF ENERGY</p> </div>
sand			1510	1563	
san			1563	1741	
sand			1741	1795	
siltstone and shale			1795	1915	
Big Lime			1915	1986	
Keener			1986	2058	
Big Injun			2058	2117	
shale & siltstone			2117	2280	
Weir			2280	2397	
siltstone & sanle			2397	2449	
Sunberry shale			2449	2460	
Berea			2460	2470	
shale & siltstone			2470	4547	
Riley			4547	4581	
shale & siltstone			4581	4937	
Benson			4937	4951	
shale			4951	5240	
✓ Alexander			5240	5264	
shale			5264	5490	
				Driller's TD 5600'	
				Logges's TD 5501'	

(Attach separate sheets as necessary)

Appalachian Energy Development

Well Operator

By: Andrew D. Wagoner, Consultant
 Date: 8/11/87

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."

FORM WW-2(B) FILE COPY
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1) Date: February 20, 19 87
 2) Operator's Well No. Washburn # 2
 3) API Well No. 47 095 1173
 State County Permit

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

- 4) WELL TYPE: A Oil _____ / Gas XX /
 B (If "Gas", Production XX / Underground storage _____ / Deep _____ / Shallow XX /)
- 5) LOCATION: Elevation: 1071' Watershed: Short Run
 District: Centerville 1397 County: Tyler 095 Quadrangle: West Union 7.5' 670
- 6) WELL OPERATOR Appalachian Energy CODE: 2325 7) DESIGNATED AGENT George R. Williams
 Address Development, Inc. Address Rt. 2, Box 499
Route 2, Box 499 Grafton, WV 26354
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Robert Lowther Name _____
 Address General Delivery Address _____
Middlebourne, WV 26149
- 10) PROPOSED WELL WORK: Drill XXX / Drill deeper _____ / Redrill _____ / Stimulate XX /
 Plug off old formation _____ / Perforate new formation _____
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, Alexander 439
- 12) Estimated depth of completed well, 5600' feet
- 13) Approximate strata depths: Fresh, NA feet; salt, NA feet.
- 14) Approximate coal seam depths: NA Is coal being mined in the area? Yes _____ / No XXX /

15) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	Size	SPECIFICATIONS		Weight per ft.		FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS	
		Grade		New	Used	For drilling	Left in well		Kinds	Sizes
Conductor	1 3/4"			X		30'				
Fresh water										
Coal										
Intermediate	3 5/8"			X		1200'	1200'	Cement to Surface	<i>by rule 15.05</i>	
Production	4 1/2"			X			5600'	As Required	Depths set	
Tubing								by Rule 15.01		
Liners									Perforations:	
									Top	Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-095-1173 Date March 2 19 87

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 March 2, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

9729

Bond: <input checked="" type="checkbox"/>	Agent: <input checked="" type="checkbox"/>	Plat: <u>MH</u>	Casing: <u>MH</u>	Fee: <u>442</u> <u>178</u>	WPCP: <input checked="" type="checkbox"/>	S&E: <u>MH</u>	Other: <input type="checkbox"/>
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John H. Johnston
 Director, Division of Oil and Gas
by Margaret J. Hason File

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

See the reverse side of the APPLICANTS COPY for instructions to the well operator