

18 4/24/87

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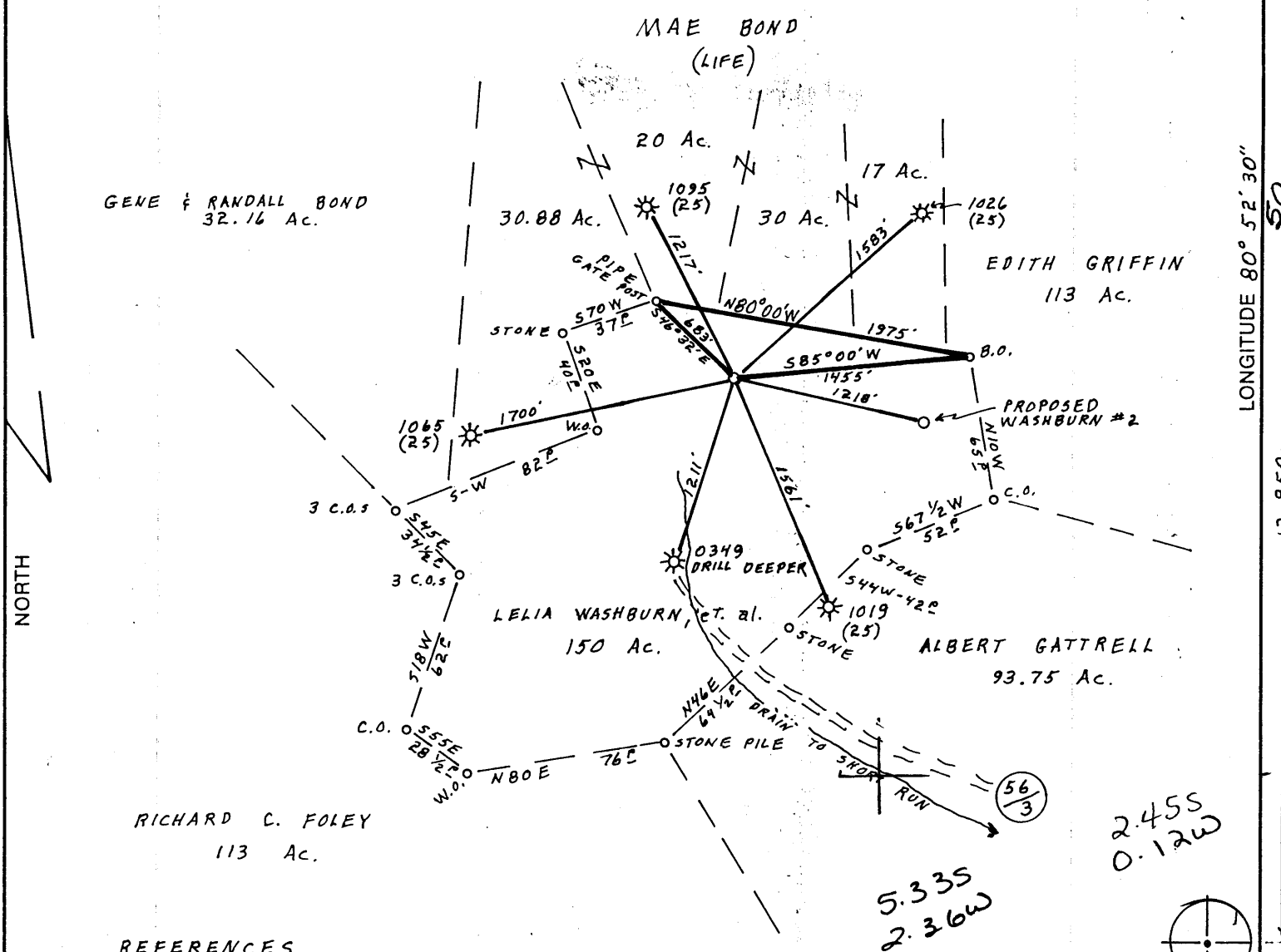
650

LATITUDE 39° 22' 30"

LONGITUDE 80° 52' 30"

12,950

NORTH



2.45S
0.12W

5.33S
2.36W



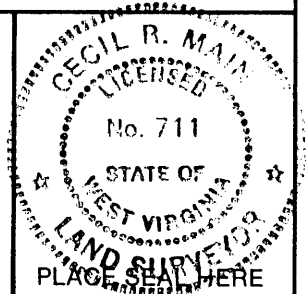
REFERENCES

N 87° 04' E 178' TO DOUBLE ASH
N 23° 08' W 139' TO 8" Hy.

(+) 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 MARCH 7, 1987
 OPERATOR'S WELL NO. WASHBURN #4
 API WELL NO. 47-095-1193
 STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
 LOCATION: ELEVATION 1193 WATERSHED SHORT RUN
 DISTRICT CENTERVILLE 1 COUNTY TYLER
 QUADRANGLE PENNSBORO 7.5' 539 133 5 WestUnion C
 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 902 397 ADDRESS P.O. BOX 902
BELINGTON, W.Va 26250 BELINGTON, W.Va. 26250

6-6 Stanley

(90)

MAR 0 1 1987

FORM IV-6 (8-78)

COUNTY NAME PERMIT



Date September 27, 1987
 Operator's
 Well No. 4
 Farm Washburn
 API No. 47 - 095 - 1193

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State of West Virginia
 DEPARTMENT OF ENERGY
 Oil and Gas Division

DIVISION OF OIL & GAS
 DEPARTMENT OF ENERGY

WELL OPERATOR'S REPORT
 OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

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

LOCATION: Elevation: 1193 Watershed Short Run
 District: Centerville County Tyler Quadrangle Pennsboro 7.5'

COMPANY Appalachian Energy Dev., Inc.

ADDRESS P.O. Box 902 Belington, WV 26250

DESIGNATED AGENT George Williams

ADDRESS RT. 2 Box 499 Grafton, WV 26354

SURFACE OWNER Glenn W. James

ADDRESS 3446 S. Sanford Ave., Stow, OH 44224

MINERAL RIGHTS OWNER Lelia Washburn, et al

ADDRESS 423 58 th St. Vienna, WV 26105

OIL AND GAS INSPECTOR FOR THIS WORK Robert

Lowther ADDRESS Middlebourne, WV

PERMIT ISSUED April 27, 1987

DRILLING COMMENCED Sept., 1 1987

DRILLING COMPLETED Sept., 8, 1987

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"	275	275	140 sks
9 5/8			
8 5/8	1880	1880	422 sks
7			
5 1/2			
4 1/2	5472	5472	280 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Alexander Depth 5381 feet

Depth of completed well 5566 feet Rotary X / Cable Tools _____

Water strata depth: Fresh 693 feet; Salt None feet

Coal seam depths: None Is coal being mined in the area? NO

OPEN FLOW DATA NOTE: These 2 zones are downhole comingled

Producing formation Benson Pay zone depth 5091 feet

Gas: Initial open flow _____ Mcf/d Oil: Initial open flow 0 Bbl/d

Final open flow _____ Mcf/d Final open flow 0 Bbl/d

Time of open flow between initial and final tests 12 hours

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

(If applicable due to multiple completion--)

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Second producing formation Alexander Pay zone depth 5382 feet

Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d

Final open flow 685 Mcf/d Oil: Final open flow 0 Bbl/d

Combined Time of open flow between initial and final tests 4 hours

Static rock pressure 1750 psig (surface measurement) after 48 hours shut in

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

- 1.) Perf Benson 5061-5116 w/ 14 holes. Frac w/40,000# sand, 48000 SCF N₂, 20 # gel in 355 bbls. water. Average rate-29 BPM, Average Pr-2450 psi, ISIP-1800 psi
- 2.) Perf Alexander 5382-5408 w/18 holes. Frac w/26,000 # 20/40 sand, 58,000 SCF N₂, 20# gel in 290 bbls water. Average rate-28 BPM, Average Pr-2700 psi, ISIP 2700 psi.
- 3.) 3 9/16" baffle left in well @ 4896'
- 4.) 3 5/16" baffle left in well @ 5228'

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	269	No water @ 11 3/4 csg point
siltstone			269	620	
sand			620	642	
shale			642	1218	1" stream water @ 693'
sand & shale			1288	1960	
Big Lime			1960	2022	
Big Injun			2022	2110	
sand & shale			2110	2934	
shale			2934	3400	
sand & shale			3400	3510	
shale			3510	4576	gas ck @ 4482'=351 MCF
sand & shale			4576	4690	gas ck @4598'=300 MCF
Riley			4690	4728	gas ck @ 4710'=260 MCF
shale			4728	4992	gas ck @ 4825'=210 MCF
Benson			4992	5114	gas ck @ 5100'=210 MCF
shale			5114	5360	gas ck @ 5285'=316 MCF
Alexander			5360	5408	gas ck @ 5377'=268 MCF
shale			5408	5566	gas ck @ 5566'=350 MCF
Total depth= 5566'					gas ck @ collars in table= 250 MCF

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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

(Attach separate sheets as necessary)

Appalachian Energy Development, Inc.
Well Operator

By: *Margaret Williams*
Date: September 27, 1987

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: 4/22, 19 87
 2) Operator's Well No. Washburn #4
 3) API Well No. 47 095 1193
 State County Permit

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

- 4) WELL TYPE: A Oil / Gas /
 B (If "Gas", Production / Underground storage / Deep / Shallow /)
- 5) LOCATION: Elevation: 1193 Watershed: Short Run
 District: Centerville / County: Tyler 095 Quadrangle: Pennsboro 538
- 6) WELL OPERATOR Appalachian CODE: 2325 7) DESIGNATED AGENT George Williams
 Address Energy Dev., Inc. Address Rt 2 Box 499
Rt 2 Box 499 Grafton, Wv 26354 Grafton, Wv 26354
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Robert Lowther 9) DRILLING CONTRACTOR:
 Address General Delivery Name N/A
Middlebourne, Wv 26149 Address _____
- 10) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stimulate /
 Plug off old formation / Perforate new formation /
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, Alexander
- 12) Estimated depth of completed well, 5500 feet
- 13) Approximate trata depths: Fresh, 710 feet; salt, none feet.
- 14) Approximate coal seam depths: none Is coal being mined in the area? Yes / No /

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	11-3/4		42	x		250	250	Surface	Kinds <u>Per Rule 15.05</u> Sizes
Fresh water									
Coal									
Intermediate	8-5/8		23	x		1643	1643	Surface	Depths set <u>540 SKS OR AS REQUIRED</u> BY RULE 15.01 Perforations:
Production	4 1/2	J55	10.5	x		5490	5490	1000' fill	
Tubing									
Liners									
									Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-095-1193 Date April 27th. 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 April 27, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <input checked="" type="checkbox"/>	Plat: <u>AS</u>	Casing: <u>AS</u>	Fee: <u>511</u>	WDCP: <u>AS</u>	SSE: <u>AS</u>	Other: _____
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NOTE: Keep one copy of this permit posted at the drilling location.

[Signature]
 Director, Division of Oil and Gas File

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

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