



FILE NO. 6-74  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 600'  
 MINIMUM DEGREE OF ACCURACY 1/200  
 PROVEN SOURCE OF ELEVATION BENCH MARK  
ELEV. 609'

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) Gregory A. Smith  
 R.P.E. \_\_\_\_\_ L.L.S. 677



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 FORM IV-6 (8-78)

DATE JUNE 17, 1982  
 OPERATOR'S WELL NO. 1  
 API WELL NO. 47-105-0982  
 STATE WEST VIRGINIA COUNTY WIRT PERMIT 0982

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
 (IF "GAS,") PRODUCTION  STORAGE  DEEP  SHALLOW   
 LOCATION: ELEVATION 646' WATER SHED LEE RUN  
 DISTRICT NEWARK COUNTY WIRT  
 QUADRANGLE ELIZABETH 7.5' + 15' C

SURFACE OWNER J. H. HALE ACREAGE 234  
 OIL & GAS ROYALTY OWNER J.H. HALE et. al. LEASE ACREAGE 234  
 LEASE NO. \_\_\_\_\_

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 MARCELLUS ESTIMATED DEPTH 4850' - DEEPWELL - 7/6/1982  
 WELL OPERATOR RIMROCK PROD. CORP. DESIGNATED AGENT ROBERT MURDOCK  
 ADDRESS 4424-B EMERSON AVE. PARKERSBURG W. V. 26101 ADDRESS 4424-B EMERSON AVE. PARKERSBURG W. V. 26101



-35  
v 8-81)

Date August 19, 1982  
Operator's  
Well No. Hale #1  
Farm Hale  
API No. 47 - 105 - 0982

State of West Virginia  
Department of Mines  
Oil and Gas Division

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

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

LOCATION: Elevation: 646 Watershed Lee Run  
District: Newark County Wirt Quadrangle Elizabeth 7.5

COMPANY Rimrock Production Corporation  
ADDRESS 4424 "B" Emerson Avenue, Parkersburg, WV 26104  
DESIGNATED AGENT Robert L. Murdock  
ADDRESS 4424 "B" Emerson Avenue, Parkersburg, WV 26104  
SURFACE OWNER John Hale  
ADDRESS Rt. 3 Elizabeth, WV  
GENERAL RIGHTS OWNER John Hale  
ADDRESS Rt. 3 Elizabeth, WV  
LAND AND GAS INSPECTOR FOR THIS WORK Deo Mace  
ADDRESS Rt. 1 Box 5, Sandridge, WV

Casing Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"			
9 5/8	240	240	cts
8 5/8			
7	2185	2185	130 sks
5 1/2			
4 1/2	5270	5270	260 sks
3			
2			
Liners used			

PERMIT ISSUED     
DRILLING COMMENCED July 23, 1982  
DRILLING COMPLETED July 29, 1982

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

GEOLOGICAL TARGET FORMATION Devonian Shale Depth 2197-5400 feet  
Depth of completed well 5400 feet Rotary X / Cable Tools     
Water strata depth: Fresh 310 feet; Salt 550 feet  
Coal seam depths: NONE Is coal being mined in the area? NO

OPEN FLOW DATA  
Producing formation Devonian Shale Pay zone depth 2650-5220 feet *see verb*  
Gas: Initial open flow 311 Mcf/d Oil: Initial open flow 0 Bbl/d  
Final open flow 108 Mcf/d Final open flow 10 Bbl/d  
Time of open flow between initial and final tests 24 hours

Static rock pressure 850 psig (surface measurement) after 24 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

007 18 1982

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

Stage 1 4630-5220 78 holes  
800,000 SCF N<sub>2</sub> ~~Huron~~ - Jawa - Angola - Rhinestreet to Genesee

Stage 2 3840-4506 20 holes  
770,000 SCF N<sub>2</sub> ~~Huron~~ - Jawa - Angola

Stage 3 2650-3770 28 holes  
800,000 SCF N<sub>2</sub> upper Devonian undiv. to Huron

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Soil			0	15	
Sandstone and Shale			15	50	
Sandstone			50	100	
Sandstone and Siltstone			100	200	
Sandstone and Siltstone			200	300	
Sandstone, Shale and Lime			300	400	
Sandstone and Shale			400	500	
Sandy siltstone and Sandstone			500	600	
Sandy Siltstone			600	700	
Sandstone and Siltstone			700	800	
Sandstone and Siltstone			800	900	
Siltstone			900	1000	
Sandstone and Siltstone			1000	1100	
Sandstone and Siltstone			1100	1200	
Sandstone and Siltstone			1200	1300	
Sandstone, Siltstone, & Lime			1300	1400	
Siltstone and Sandstone			1400	1500	
Sandstone and Siltstone			1500	1600	
Limy Sand			1600	1700	
Limy Sand			1700	1800	

(Attach separate sheets as necessary)

Rimrock Production Corporation  
Well Operator

By: \_\_\_\_\_  
Date: \_\_\_\_\_

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."

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

Wurt 982

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS		
					Including indication of all fresh and salt water, coal, oil and gas		
Squaw Sand			1802	1824			
Sandy Siltstone			1824	1900			
Sandy Siltstone			1900	2000			
Sandy Siltstone			2006	2100			
Sandy Siltstone			2100	2138			
Sandstone			2138	2140			
Sany Siltstone			2140	2184			
Coffeee Shale			2184	2196			
Berea Sandstone			2196	2200			
Siltstone			2200	2300			
Siltstone			2300	2400			
Siltstone			2400	2500	2650	3840	4630
Siltstone			2500	2600	2200	2200	2200
Siltstone			2600	2700	450	1640	2430
Siltstone			2700	2800	Up. Dew.	Huron	Jawa
Siltstone			2800	2900	undiv.		argata
Siltstone			2900	3000	5400		
Siltstone			3000	3100	2200		
Siltstone			3100	3200	3200-TD.		
Siltstone			3200	3300			
Siltstone			3300	3400			
Siltstone			3400	3500			
Siltstone			3500	3600			
Siltstone			3600	3700			
Siltstone			3700	3800			
Siltstone			3800	3900			
Siltstone			3900	4000			
Siltstone			4000	4100			
Siltstone			4100	4200			
Siltstone and Shale			4200	4300			
Siltstone			4300	4400			
Siltstone			4400	4500			
Siltstone			4500	4600			
Siltstone and Shale			4600	4700			
Siltstone and Shale			4700	4800			
Siltstone and Shale			4800	4900			

(Attach separate sheets as necessary)

Rimrock Productions Corporation  
Well Operator

By: \_\_\_\_\_

Date: \_\_\_\_\_

OCT 18 1982

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

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

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Shale			4900	5000	
Siltstone and Shale			5000	5100	
Marcellus Shale			5110	5290	
Ononadaga			5290	<u>5400</u>	
				T.D.	

~~5400~~  
646  
4754 - ~~subsea~~

5290  
646  
4644 - subsea top Onon.

(Attach separate sheets as necessary)

- 1825 b Blm
- 80-2195 Sanbury
- 70-4290 Huron
- 290-4815 Java-Angela
- 815-5010 Rhinestreet
- 010-5140 Songea
- 190-5242 Genesee
- 242-TD Onondaga

Well Operator

By: \_\_\_\_\_

Date: \_\_\_\_\_

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."



Date: June 22, 19 82  
Operator's Well No. Hok #1  
API Well No. 47 105 0982  
State County Permit

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

WELL TYPE: Oil  / Gas   
(If "Gas", Production  / Underground storage  / Deep  / Shallow  )  
LOCATION: Elevation: 646 Watershed: Lee Run  
District: Grant County: Wirt Quadrangle: Elizabeth 7.5  
WELL OPERATOR Pimrock Production Corp. DESIGNATED AGENT Robert L. Murdock  
Address 4424 B Emerson Avenue Address 4424 B Emerson Avenue  
Parkersburg, W.Va. 26104 Parkersburg, W.Va. 26104

OIL & GAS ROYALTY OWNER John W. Hale  
Address Rt. 3  
Elizabeth WV 26143  
Acreage 2.34  
SURFACE OWNER John Hale  
Address Rt. 3  
Elizabeth WV 26143  
Acreage 2.34

COAL OPERATOR none  
Address \_\_\_\_\_  
COAL OWNER(S) WITH DECLARATION ON RECORD:  
Name none  
Address \_\_\_\_\_  
Name \_\_\_\_\_ JUN 22 1982  
Address \_\_\_\_\_  
OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

FIELD SALE (IF MADE) TO:  
Address unknown

COAL LESSEE WITH DECLARATION ON RECORD:  
Name none  
Address \_\_\_\_\_

OIL & GAS INSPECTOR TO BE NOTIFIED  
Name Richard J. Morris  
Address Box 372  
Grantsville W.Va. 26147

The undersigned well operator is entitled to operate for oil or gas purposes at the above location under a deed \_\_\_\_\_ / lease \_\_\_\_\_  
assignment  / other contract \_\_\_\_\_ dated April 12, 19 82, to the undersigned well operator from Interstate Energy, Inc.

(If said deed, lease, or other contract has been recorded:)  
Recorded on April 15, 19 82, in the office of the Clerk of the County Commission of Wirt County, West Va., in Lease Book 164 at page 533. A permit is requested as follows:

PROPOSED WORK: Drill  / Drill deeper \_\_\_\_\_ / Redrill \_\_\_\_\_ / Fracture or stimulate \_\_\_\_\_ /  
Plug off old formation \_\_\_\_\_ / Perforate new formation \_\_\_\_\_ /  
Other physical change in well (specify) \_\_\_\_\_  
—planned as shown on the work order on the reverse side hereof.

The above named coal operator, coal owner(s), and coal lessee are hereby notified that any objection they wish to make or are required to make by Code §22-4-3 must be filed with the Department of Mines within fifteen (15) days after the receipt of this Application by the Department.

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.

PLEASE SUBMIT COPIES OF ALL GEOPHYSICAL LOGS DIRECTLY TO:  
WEST VIRGINIA OIL AND GAS CONSERVATION COMMISSION  
1615 WASHINGTON STREET EAST CHARLESTON, WV 25311  
TELEPHONE: (304) 348-3092

BLANKET BOND

Pimrock Production Corp.  
Well Operator  
By Robert L. Murdock  
Its Agent

(12-81)

THIS IS AN ESTIMATE ONLY: ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-35 UPON COMPLETION

DRILLING CONTRACTOR (IF KNOWN) unknown

Address \_\_\_\_\_

GEOLOGICAL TARGET FORMATION, Elle

Estimated depth of completed well, 5500 feet Rotary X / Cable tools \_\_\_\_\_ /

Approximate water strata depths: Fresh, 150 feet; salt, 0 feet.

Approximate coal seam depths: NONE Is coal being mined in the area? Yes \_\_\_\_\_ / No X /

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS			New	Used	FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft			For drilling	Left in well		
Conductor	11 3/4	cw	45 #	X		250	250	CTS	Kinds
Fresh Water	8 5/8	erw	23 #	X		1200	1200	350 sks	Baker
Coal									Sizes
Intermediate									
Production	4 1/2	erw	10.5 #	X		0	5500	750 sks	Depths set 4000'
Tubing	2 3/8	cw	4.7 #	X		0	4000	0	
Liners									Perforations: est. DEPTH
									Top 3000 Bottom 5400

NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code § 22-4-2, (iii) Form IV-9, "Reclamation Plan", applicable to the reclamation required by Code § 22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code § 22-4-12a, and (v) if applicable, the consent required by Code § 22-4-8a from the owner of any water well or dwelling within 200 feet of the proposed well.

A separate Form IV-2 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.

THIS PERMIT MUST BE POSTED AT THE WELL SITE.

ALL PROVISIONS BEING IN ACCORDANCE WITH CHAPTER 22, ARTICLE 4 OF THE W. VA. CODE, THE LOCATION IS HEREBY

APPROVED FOR drilling THIS PERMIT SHALL EXPIRE 3-1-83

IF OPERATIONS HAVE NOT COMMENCED BY \_\_\_\_\_ BY [Signature]

[Signature]

The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code 22-4-20, if the permit is to be issued within fifteen (15) days of receipt thereof.

WAIVER

The undersigned coal operator \_\_\_\_\_ / owner \_\_\_\_\_ / lessee \_\_\_\_\_ / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date \_\_\_\_\_, 19 \_\_\_\_\_

By \_\_\_\_\_

Its \_\_\_\_\_