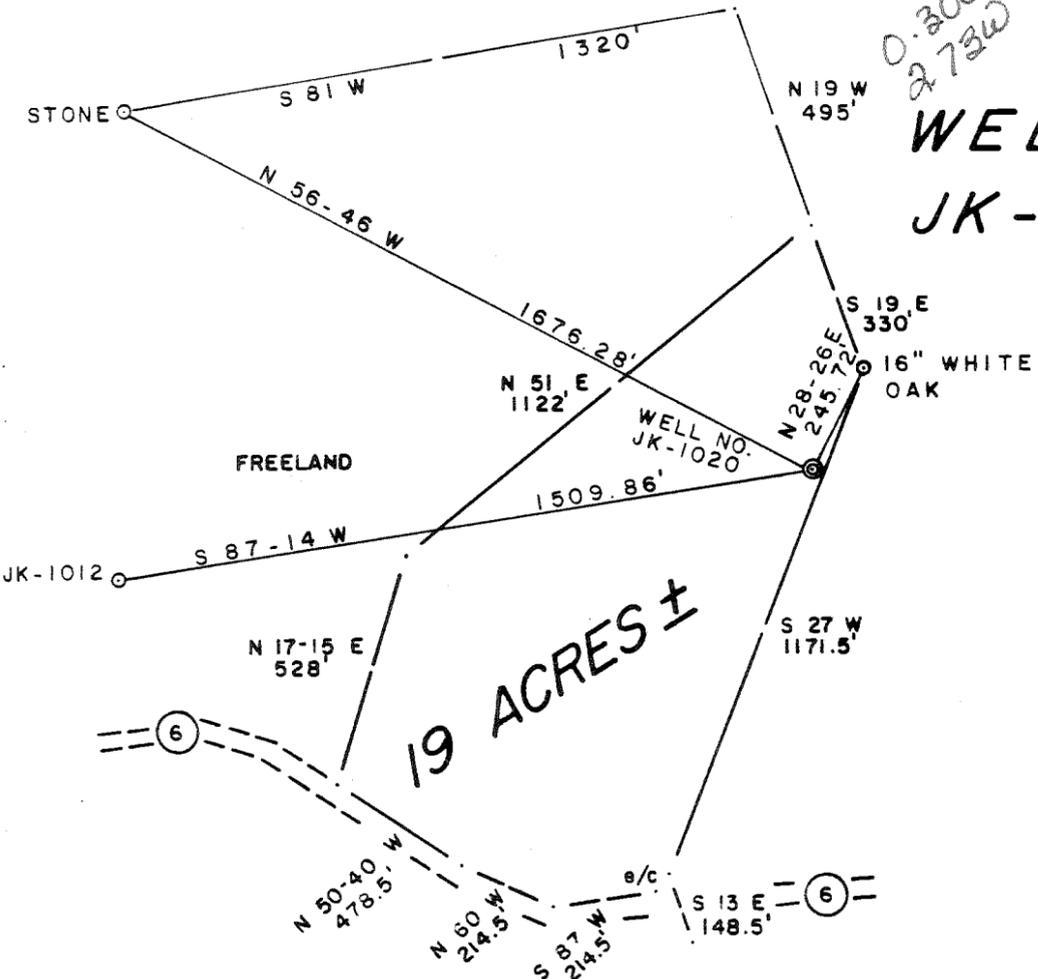


# FREELAND LEASE

WELL NO.  
JK-1020

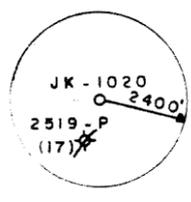
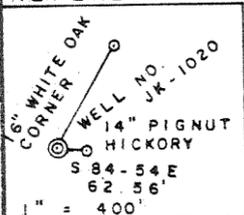
LONGITUDE 80° 57' 30"

NORTH



19 ACRES ±

REFERENCES



FILE NO. 13-53  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 400'  
 MINIMUM DEGREE OF ACCURACY 1 / 200  
 PROVEN SOURCE OF ELEVATION TOP OF KNOB  
 ELEV. 1211'

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

PLACE SEAL HERE

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



DATE JUNE 11, 1984  
 OPERATOR'S WELL NO. JK-1020  
 API WELL NO. \_\_\_\_\_  
47-085-7027  
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION ELEVATION 1182' WATER SHED BONDS CREEK  
 DISTRICT CLAY COUNTY RITCHIE  
 QUADRANGLE PENNSBORO 7.5' West Union 133 SW7  
 SURFACE OWNER ELDON G. FREELAND et. al. ACREAGE 18.25  
 OIL & GAS ROYALTY OWNER ELDON G. FREELAND et. al. LEASE ACREAGE 19  
 LEASE NO. JJ-1541  
 PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
 TARGET FORMATION ALEXANDER ESTIMATED DEPTH 5700'  
 WELL OPERATOR J & J ENTERPRISES INC. DESIGNATED AGENT RICHARD M. REDDECLIFF  
 ADDRESS P.O. BOX 48 ADDRESS P.O. BOX 48  
BUCKHANNON, WV. 26201 BUCKHANNON, WV. 26201

JUL 9 1984

6-6

Pennsboro-Tollgate

(88)

RECEIVED  
OCT 30 1984



OIL & GAS DIVISION  
DEPT. OF MINES State of West Virginia  
Department of Mines  
Oil and Gas Division

Date October 26, 1984  
Operator's \_\_\_\_\_  
Well No. JK-1020  
Farm Freeland  
API No. 47 - 085 - 7027

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: 1182 Watershed Bonds Creek  
District: Clay County Ritchie Quadrangle Pennsboro

COMPANY J&J Enterprises, Inc.

ADDRESS P.O. Box 48, Buckhannon, WV 26201

DESIGNATED AGENT Richard Reddecliff

ADDRESS P.O. Box 48, Buckhannon, WV 26201

SURFACE OWNER Eldon & Larry Freeland

ADDRESS 1703 Wayne Ave., Baltimore, Md. 21234

MINERAL RIGHTS OWNER Same as surface

ADDRESS \_\_\_\_\_

OIL AND GAS INSPECTOR FOR THIS WORK Samuel

Hersman ADDRESS P.O. Box 66, Smithville, WV 26178

PERMIT ISSUED 7/5/84

DRILLING COMMENCED 9/19/84

DRILLING COMPLETED 9/25/84

IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSSION OBTAINED ON \_\_\_\_\_

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"	31	0	0 sks.
9 5/8			
8 5/8	1504.20	1504.20	265 sks.
7			
5 1/2			
4 1/2	5944.65	5944.65	375 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Alexander Depth 5295-5305 feet

Depth of completed well 5995 feet Rotary x / Cable Tools \_\_\_\_\_

Water strata depth: Fresh 235,1345 feet; Salt 0 feet

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

OPEN FLOW DATA

Producing formation Benson Pay zone depth 5009-11 feet

Gas: Initial open flow \_\_\_\_\_ Mcf/d Oil: Initial open flow \_\_\_\_\_ Ebl/d

Final open flow 467 Mcf/d Final open flow \_\_\_\_\_ Ebl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 1550 psig (surface measurement) after 96 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 \_\_\_\_\_ Ebl/d

Final open flow \_\_\_\_\_ Mcf/d Oil: Final open flow \_\_\_\_\_ Ebl/d

Time of open flow between initial and final tests \_\_\_\_\_ hours

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

(Continue on reverse side)

NOV 26 1984

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

Benson: Perforations: 5009-11 (8 holes)

Fracturing: Foam frac: 350 sks. 20/40 sand:500 gal. acid: 187 Bbls. fluid: 640,000  
STC N<sup>2</sup>

BOTTOM HOLE PRESSURE Pf=Pwe XGLS

$$t=60 + (0.0075 \times 5945) + 459.7 = 564 \quad X = \frac{1}{53.35} \times 564 = \frac{1}{30105} = 0.000033 \quad Pf = 1550 \times 2.72^{(0.000033)}$$

$$(0.771)(5010)(0.9) = 1550 \times 2.72^{0.1} = 1550 \times 1.1$$

Pf= 1705 psi

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fr and salt water, coal, oil and
Red rock & shale			0	45	
Sandy shale & sand			45	235	
Sand, sandy shale & red rock			235	505	Damp @ 235
Red rock, shale & sand			505	1000	
Sand, shale & white sand			1000	1630	Damp @ 1345
Sandy shale & sand			1630	1975	
Little Lime			1975	1980	Gas ck @ 2229 4/10-1" w/wat 15,041 cu.ft.
Sand & shale			1980	2005	
Big Lime & Injun			2005	2200	
Sand & shale			2200	2955	Gas ck @ 2544 4/10-1" w/wate 15,041 cu.ft.
Sand & sandy shale			2955	3615	
Shale & sandy shale			3615	4110	
Sand & shale			4110	4650	Gas ck @ 3628 10/10-1"w/ water 23,314 cu.ft.
Riley			4650	4675	
Shale			4675	5009	
Benson			5009	5030	
Shale			5030	5295	Gas ck @ 4692 4/10-1" w/wate 15,041 cu.ft.
Alexander			5295	5305	
Sandy shale			5305	5525	
Shale			5525	<u>5995</u>	Gas ck @ 5107 10/10-1" w/ Water 23,314 cu.ft.
<i>Rhinestreet @ TD</i>					T.D.
				<i>5995 1182 4813</i>	Gas ck @ Drill collars 18/10-1" w/water 31,950 cu.ft.

(Attach separate sheets as necessary)

J&J Enterprises, Inc.

Well Operator

By:

Robert Dahlin-Geologist

Date:

10/26/84

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 any encountered in the drilling of a well."



1) Date: JUNE 15, 1984  
 2) Operator's Well No. JK-1020  
 3) API Well No. 47 - 085 - 7027  
 State \_\_\_\_\_ County \_\_\_\_\_ Permit \_\_\_\_\_

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

- 4) WELL TYPE: A Oil \_\_\_\_\_ / Gas X /  
 B (If "Gas", Production X / Underground storage \_\_\_\_\_ / Deep \_\_\_\_\_ / Shallow X /)
- 5) LOCATION: Elevation: 1182' Watershed: BONDS CREEK (LKH 10R)  
 District: CLAY County: RITCHIE Quadrangle: PENNSBORO 7.5'
- 6) WELL OPERATOR J & J ENTERPRISES, INC.  
 Address P.O. BOX 48  
BUCKHANNON, WV 26201
- 7) DESIGNATED AGENT RICHARD M. REDDECLIFF  
 Address P.O. BOX 48  
BUCKHANNON, WV 26201
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED  
 Name SAMUEL N. HERSMAN  
 Address P.O. BOX 66  
SMITHVILLE, WV 26178
- 9) DRILLING CONTRACTOR:  
 Name S.W. JACK DRILLING CO.  
 Address P.O. BOX 48  
BUCKHANNON, WV 26201
- 10) PROPOSED WELL WORK: Drill X / Drill deeper \_\_\_\_\_ / Redrill \_\_\_\_\_ / Stimulate X  
 Plug off old formation \_\_\_\_\_ / Perforate new formation \_\_\_\_\_  
 Other physical change in well (specify) \_\_\_\_\_
- 11) GEOLOGICAL TARGET FORMATION, ALEXANDER  
 12) Estimated depth of completed well, 5700' feet  
 13) Approximate strata depths: Fresh, 125' feet; salt, N/A feet.  
 14) Approximate coal seam depths: NONE Is coal being mined in the area? Yes \_\_\_\_\_

**RECEIVED**  
 JUN 26 1984  
 OIL & GAS DIVISION  
 DEPT. OF MINES

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		
Conductor	11 3/4	P-40	42	X		30	0	0 Sacks Kinds
Fresh water	8 5/8	ERW	23	X		1282'	1282'	To surface NEAT
Coal	8 5/8	ERW	23	X		1282'	1282'	To surface Sizes
Intermediate								
Production	4 1/2	J-55	10.5	X		5600'	5600'	300 Sacks Depths set
Tubing								or as required by Rule 15-01
Liners								Perforations: Top Bottom

OFFICE USE ONLY  
 DRILLING PERMIT

Permit number 47-085-7027 Date July 5, 19 84

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 July 5, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <b>BLANKET</b>	Agent: <u>[Signature]</u>	Plat: <u>[Signature]</u>	Casing <u>[Signature]</u>	Fee <u>1738</u>
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[Signature]  
 Administrator, Office of Oil and Gas

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

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

File