

FILE NO. 346 01
 DRAWING NO. 85-60
 SCALE 1" =
 MINIMUM DEGREE OF ACCURACY 1 in 200
 PROVEN SOURCE OF ELEVATION USGS BM Knottsville, 1483', USGS Thornton Quad.

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) Rayford S. Ostermiller
 R.P.E. _____ L.L.S. 555
Buckhannon, W. Va.

PLACE SEAL HERE

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

DATE May 17, 1985
 OPERATOR'S WELL NO. J 1221
 API WELL NO. _____

WELL TYPE: OIL _____ GAS _____ LIQUID INJECTION _____ WASTE DISPOSAL _____
 (IF "GAS,") PRODUCTION _____ STORAGE _____ DEEP _____ SHALLOW _____
 LOCATION: ELEVATION 1510' WATER SHED Swamp Run
 DISTRICT Knottsville 6 COUNTY Taylor
 QUADRANGLE Thornton 638 122 SW 7

SURFACE OWNER Mabel L. Boyles et al ACREAGE 62.33
 OIL & GAS ROYALTY OWNER Mark D. Boyles and others LEASE ACREAGE 79
 LEASE NO. 1952

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 Haverty ESTIMATED DEPTH 5700'
 WELL OPERATOR Std Enterprises, Inc. DESIGNATED AGENT Richard Reddecliff
 ADDRESS PO Box 48 ADDRESS PO Box 48
Buckhannon, W. Va. 26201 Buckhannon, W. Va. 26201

6-6 Hiram (364)

JUN 10 1985

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

COUNTY NAME
 PERMIT



IV-35
Rev 8-81) OCT 04 1985

State of West Virginia
Department of Mines
Oil and Gas Division

Date October 3, 1985
Operator's
Well No. J -1221
Farm Mable Boyles
API No. 47 - 091 - 0506

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: 1510 Watershed Swamp Run
District: Knottsville County Taylor Quadrangle Thornton

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 Mabel Boyles and others
ADDRESS Rt. # 1, Box 270
Thornton, WV 26440
MINERAL RIGHTS OWNER Same as surface
ADDRESS
OIL AND GAS INSPECTOR FOR THIS WORK Donald
Ellis ADDRESS 2604 Crab Apple Lane
Fairmont, WV 26554
PERMIT ISSUED 6/3/85
DRILLING COMMENCED 7/22/85
DRILLING COMPLETED 7/22/85
IF APPLICABLE: PLUGGING OF DRY HOLE ON
CONTINUOUS PROGRESSION FROM DRILLING OR
REWORKING. VERBAL PERMISSION OBTAINED
CN

Casing Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cord.			
13-10"	30	0	0
9 5/8			
8 5/8	966.25	966.25	265 sks.
7			
5 1/2			
4 1/2	5123.15	5123.15	410 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Haverty Depth 5450-5500 feet
Depth of completed well 5750 feet Rotary x / Cable Tools
Water strata depth: Fresh 70,250⁴⁶⁵ feet; Salt 0 feet
Coal seam depths: 47-48 Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation 4th Elk Pay zone depth 4951-5020 feet
Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d
Combined Final open flow 231 Mcf/d Final open flow Bbl/d
Time of open flow between initial and final tests 4 hours
Static rock pressure 1200 psig (surface measurement) after 96 hours shut in
(If applicable due to multiple completion--)
Second producing formation 3rd. Elk, 1st & 2nd Riley Pay zone depth 3786-89⁴⁷¹⁶⁻²⁰
3916-32 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

OCT 21 1985
(Continue on reverse side)

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

4th ELk: Perforations: 4951-53 (8 holes) 5013-13.5 (3 holes) 5019-20 (4 holes)
Fracturing: 300 sks. 20/40 sand: 511 Bbls. fluid. Foam frac.

3rd. ELk: Perforations: 4716-20 (12 holes)
Fracturing: 300 sks. 20/40 sand: 500 gal. acid: 509 Bbls. fluid.

1st. Riley: Perforations: 3916-18 (7 holes) 3930-32 (7 holes)
Fracturing: 275 sks. 20/40 sand: 500 gal. acid: 433 Bbls. fluid.

2nd Riley: Perforations: 3786-89 (12 holes)
Fracturing: 300 sks. 20/40 sand: 500 gal. acid: 431 Bbls. fluid.

BOTTOM HOLE PRESSURE $P_f = P_{we} \times \frac{XGLS}{1} \times \frac{1}{1}$
 $t = 60 + (0.0075 \times 5123) + 459.7 = 558$ $X = 53.35 \times 558 = 29776$ $= 0.000034$ $P_f = 1200 \times 2.72^{(0.000034)}$
 $(0.620)(4400)(0.9) = 1200 \times 2.72^{0.08} = 1200 \times 1.08$

Pf= 1296 psi

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas.
K.B. & Ground Level			0	10	
Sand			10	47	½" stream @ 70'
Coal			47	48	½" stream @ 250'
Sand & shale			48	290	
Sand, shale & white sand			290	650	1" stream @ 465'
Sand, shale & red rock			650	910	
Sand & shale			910	1145	Gas ck @ 1386 40/10-½" w/water 400,000 cu.ft.
Big Lime & INjun			1145	1350	
Shale & red rock			1350	1410	
Sand			1410	2085	Gas ck @ 1514 40/10-½" w/water 400,000 cu.ft.
Sand, shale & red rock			2085	2395	
Sand & shale			2395	2940	
Sand & shale			2940	3010	Gas ck @ 2305 40/10-½" w/water 400,000 cu.ft.
Sand & shale			3010	3786	
2nd Riley			3786	3789	
Sand & shale			3789	3916	Gas ck @ 3033 28/10-½" w/water 328,000 cu.ft.
1st Riley			3916	3932	
Sand & shale			3932	4080	
Benson			4080	4090	Gas ck @ 3442 28/10-½" w/water 328 cu.ft.
Sand & shale			4090	4716	
3rd ELk			4716	4720	
Sand & shale			4720	4951	Gas ck @ 3920 14/10-½" w/water 233,000 cu.ft.
4th ELk			4951	5020	
Sand & shale			5020	5210	
Brown sand			5210	5210	Gas ck @ 4143 20/10-½" w/water 277,000 cu.ft.
Sand & shale			5210	5450	
Haverty			5450	5510	
Sand & shale			5510	5750	Gas ck @ 4868 22/10-½" w/water 291,000 cu.ft.
				T.D.	
				Brallier @ T.D.	Gas ck @ 5089 20/10-½" w/water 277,000 cu.ft.
					Gas ck @ 5564 28/10-½" w/water 328,000 cu.ft.
					Gas ck @ drill collars 16/10-½" w/water 248,000 cu.ft.

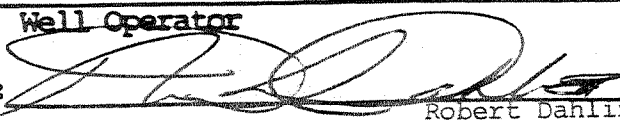
from nearby log 2
Top Dev 1 1200'

(Attach separate sheets as necessary)

J&J Enterprises, Inc.

Well Operator

By:



Robert Dahlin-Geologist

Date:

10/3/85

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."



1) Date: May 17, 19 85
 2) Operator's Well No. J 1221
 3) API Well No. 47 State 091 County -0506 Permit

RECEIVED

MAY 22 1985

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

OIL & GAS DIVISION
DEPT. OF MINES

- 4) WELL TYPE: A Oil Gas /
 B (If "Gas", Production / Underground storage / Deep / Shallow)
- 5) LOCATION: Elevation: 1510' Watershed: Swamp Run
 District: Knottsville 6 County: Taylor Quadrangle: Thornton 637
- 6) WELL OPERATOR J&J Enterprises, Inc. 7) DESIGNATED AGENT Richard Reddecliff
 Address PO Box 48 24150 Address PO Box 48
Buckhannon, WV 26201 Buckhannon, WV 26201
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Donald Ellis Name SW Jack Drilling Co.
 Address 2604 Crab Apple Lane Address PO Box 48
Fairmont, WV 26554 Buckhannon, WV 26201
- 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, Haverty 437
- 12) Estimated depth of completed well, 5800 feet
 13) Approximate trata depths: Fresh, 65 feet; salt, 0 feet.
 14) Approximate coal seam depths: 120 to 450 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	H-40	42	X		30	0	0 sks	Kinds
Fresh water	8 5/8	ERW	23	X		1000	1000	to surface	as required by
Coal	8 5/8	ERW	23	X		1000	1000	to surface	Size Rule 15.05
Intermediate									
Production	4 1/2	J-55	10.5	X		5750	5750	450 sks	Depth set required by
Tubing									Rule 15.01
Liners									Perforations:
									Top Bottom

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-091-0506 Date June 3 19 85

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 June 3, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
<u>82</u>	<u>AIB</u>	<u>MH</u>	<u>MH</u>	<u>1967</u>

Margaret J. Hasse
 Administrator, Office of Oil and Gas

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