

FILE NO. B-2
 DRAWING NO. M.P.
 SCALE 1"=500'
 MINIMUM DEGREE OF ACCURACY 1/200
 PROVEN SOURCE OF ELEVATION B.M. ELEV. = 854'

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

REFERENCES
 N74-13E 93.49' 10" WHITE OAK
 JK-1178
 S85-53E 121.65' 6" YELLOW POPLAR

PLACE SEAL HERE

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



DATE MARCH 5, 1985
 OPERATOR'S WELL NO. JK-1178
 API WELL NO. 47-017-3454
 STATE WV COUNTY GREENWOOD PERMIT 72

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 1022' WATER SHED DOTSON RUN
 DISTRICT CENTRAL COUNTY DODDRIDGE
 QUADRANGLE PENNSBORO 7.5' 539 West Union (33) 5C 8
 SURFACE OWNER GLEN WALDO ACREAGE 72
 OIL & GAS ROYALTY OWNER GLEN WALDO LEASE ACREAGE 72
 LEASE NO. JK-359
 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 RHINE STREET ESTIMATED DEPTH 5995'
 WELL OPERATOR J & J ENTERPRISES, INC. DESIGNATED AGENT RICHARD REDDECLIFF
 ADDRESS P.O. BOX 48 427 ADDRESS P.O. BOX 48
BUCKHANNON, WV 26201 BUCKHANNON, WV 26201

JUL 29 1985

10-6 Greenwood (89)



Date October 15, 1985
 Operator's JK-1178
 Well No. JK-1178
 Farm Waldo
 API No. 47 - 017 - 3454

RECEIVED
 OCT 17 1985

State of West Virginia
 Department of Mines
 Oil and Gas Division

DIVISION OF OIL & GAS
 DEPT. OF ENERGY

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: 1022 Watershed Dotson Run
 District: Central County Doddridge -- Quadrangle Pennsboro 7.5

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 Glen Waldo
 ADDRESS Box 363, Greenwood, WV 26360
 MINERAL RIGHTS OWNER Same as surface
 ADDRESS
 OIL AND GAS INSPECTOR FOR THIS WORK Mike
Rt. 2, Box 114
Underwood ADDRESS Salem, WV 26426
 PERMIT ISSUED 7/17/85
 DRILLING COMMENCED 9/16/85
 DRILLING COMPLETED 9/22/85
 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 Cord. | | | |
| 13-10" | 204.25 | 204.25 | 100 sks. |
| 9 5/8 | | | |
| 8 5/8 | 1556.55 | 1556.55 | 125 sks. |
| 7 | | | |
| 5 1/2 | | | |
| 4 1/2 | 5949.20 | 5949.20 | 410 sks. |
| 3 | | | |
| 2 | | | |
| Liners used | | | |

GEOLOGICAL TARGET FORMATION Rhine St. Depth feet
 Depth of completed well 5993 feet Rotary x / Cable Tools
 Water strata depth: Fresh 50,1145 feet; Salt 0 feet
 Coal seam depths: None Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 5786-98 feet
 Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d
 Combined Final open flow 603 Mcf/d Final open flow Bbl/d
 Time of open flow between initial and final tests 4 hours
 Static rock pressure 1400 psig (surface measurement) after 96 hours shut in
 (If applicable due to multiple completion--)
 Second producing formation Alexander, Benson & Riley Pay zone depth 4459-72 feet
4850.5-52.5
5139-44
 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

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

Riley: Perforations: 4459-62 (8 holes) 4470-72 (8 holes)
 Fracturing: 254 sks. 20/40 sand:500 gal. acid: 476 Bbls. fluid.
 Benson: Perforations: 4850.5-52.5 (8 holes)
 Fracturing: 350 sks. 20/40 sand: 500 gal. acid: 432 Bbls. fluid.
 Alexander: Perforations:5139-44 (16 holes)
 Fracturing: 400 sks. 20/40 sand:500 gal. acid: 476 Bbls. fluid.
 Devonian Shale: Perforations: 5786-90 (8 holes) 5896-98 (4 holes)
 Fracturing: 350 sks. 20/40 sand: 506 Bbls. fluid.

BOTTOM HOLE PRESSURE Pf=Pwe^{XGLS}

$$t=60 + (0.0075 \times 5949) + 459.7 = 564 \quad X = \frac{1}{53.35 \times 564} = \frac{1}{30089} = 0.000033 \quad Pf=1400 \times 2.72$$


$$(0.000033)(0.661)(5184)(0.9) = 1400 \times 2.72^{0.1} = 1400 \times 1.1$$

Pf=1540 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. | |
| Fill | | | 0 | 10 | Damp @ 50' | |
| Sand, shale & red rock | | | 10 | 55 | | |
| Sand, red rock & shale | | | 55 | 160 | Damp @ 1145' | |
| Sand, shale & red rock | | | 160 | 250 | | |
| Red rock, shale & sand | | | 250 | 460 | Damp @ 1420' | |
| Red rock, shale & sand | | | 460 | 560 | | |
| Red rock, shale & sand | | | 560 | 965 | Gas ck @ 2050 | 20/10-2" w/water 189,000 cu.ft. |
| Sand & shale | | | 965 | 1130 | | |
| Sand & shale | | | 1130 | 1850 | | |
| Lime & shale | | | 1850 | 1860 | Gas ck @ 2359 | 16/10-2" w/water 169,000 cu.ft. |
| Sand & shale | | | 1860 | 1870 | | |
| Big Lime | | | 1870 | 1960 | | |
| Sand & shale | | | 1960 | 2225 | Gas ck @ 3386 | 10/10-2" w/water 133,000 cu.ft. |
| Sand & shale | | | 2225 | 3000 | | |
| Sand & shale | | | 3000 | 4459 | | |
| Riley | | | 4459 | 4472 | Gas ck @ 4661 | 12/10-2" w/water 146,000 cu.ft. |
| Sand & shale | | | 4472 | 4850.5 | | |
| Benson | | | 4850.5 | 4852.5 | | |
| Sand & shale | | | 4852.5 | 5139 | Gas ck @ 4878 | 12/10-2" w/water 146,000 cu.ft. |
| Alexander | | | 5139 | 5144 | | |
| Sand & shale | | | 5144 | 5786 | | |
| Devonian Shale | | | 5786 | 5898 | Gas ck @ 5219 | 10/10-2" w/water 133,000 cu.ft. |
| Sand & shale | | | 5898 | 5993 | | |
| | | | | T.D. | Gas ck @ T.D. | 12/10-2" w/water 146,000 cu.ft. |
| | | | | | | Top Dew @ 2470' |

(Attach separate sheets as necessary)

J&J Enterprises, Inc.
 Well Operator
 By: 
 Robert Dahlin - Geologist
 Date: 10/15/85

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 all encountered in the drilling of a well."



1) Date: June 12, 19 85
 2) Operator's Well No. JK-1178
 3) API Well No. 47 - 017-3454
 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: 1022' Watershed: Dotson Run
 District: Central County: Doddridge Quadrangle: Pennsboro 7.5'
- 6) WELL OPERATOR J & J Enterprises, Inc. ⁴²⁷
 Address P.O. Box 48 ²⁴¹⁵⁰
Buckhannon, WV 26201
- 7) DESIGNATED AGENT Richard Reddecliff
 Address P.O. Box 48
Buckhannon, WV 26201
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED
 Name Mike Underwood
 Address Rt. 2, Box 114
Salem, WV 26426
- 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 _____
 Plug off old formation _____ / Perforate new formation _____
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, Rhine Street ⁴³⁷
- 12) Estimated depth of completed well, 5995' feet
- 13) Approximate strata depths: Fresh, 125' feet; salt, N/A feet.
- 14) Approximate coal seam depths: N/A Is coal being mined in the area? Yes _____ No _____

15) CASING AND TUBING PROGRAM

| CASING OR TUBING TYPE | SPECIFICATIONS | | | | FOOTAGE INTERVALS | | CEMENT FILLUP OR SACKS (Cubic feet) | PACKERS |
|-----------------------|----------------|-------------|----------------|----------|-------------------|--------------|-------------------------------------|------------------------------|
| | Size | Grade | Weight per ft. | New | Used | For drilling | | |
| Conductor | <u>1 3/4</u> | <u>H-40</u> | <u>42</u> | <u>X</u> | | <u>200'</u> | <u>200'</u> | <u>CTS</u> Kinds <u>NEAT</u> |
| Fresh water | <u>8 5/8</u> | <u>ERW</u> | <u>23</u> | <u>X</u> | | <u>1622'</u> | <u>1622'</u> | To Surface |
| Coal | <u>8 5/8</u> | <u>ERW</u> | <u>23</u> | <u>X</u> | | <u>1622'</u> | <u>1622'</u> | To Surface |
| Intermediate | | | | | | | | Sizes |
| Production | <u>4 1/2</u> | <u>J-55</u> | <u>10.5</u> | <u>X</u> | | <u>5995'</u> | <u>5945'</u> | 300 Sacks |
| Tubing | | | | | | | | Depths set |
| Liners | | | | | | | | or as required by rule 15-01 |
| | | | | | | | | Perforations: |
| | | | | | | | | Top Bottom |

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-017-3454 Date July 17 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 July 17, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

| | | | | |
|-----------|------------|--------------|-------------|-----|
| Bond: | Agent: | Plat: | Casing | Fee |
| <u>82</u> | <u>TLB</u> | <u>MM/MH</u> | <u>1989</u> | |

[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