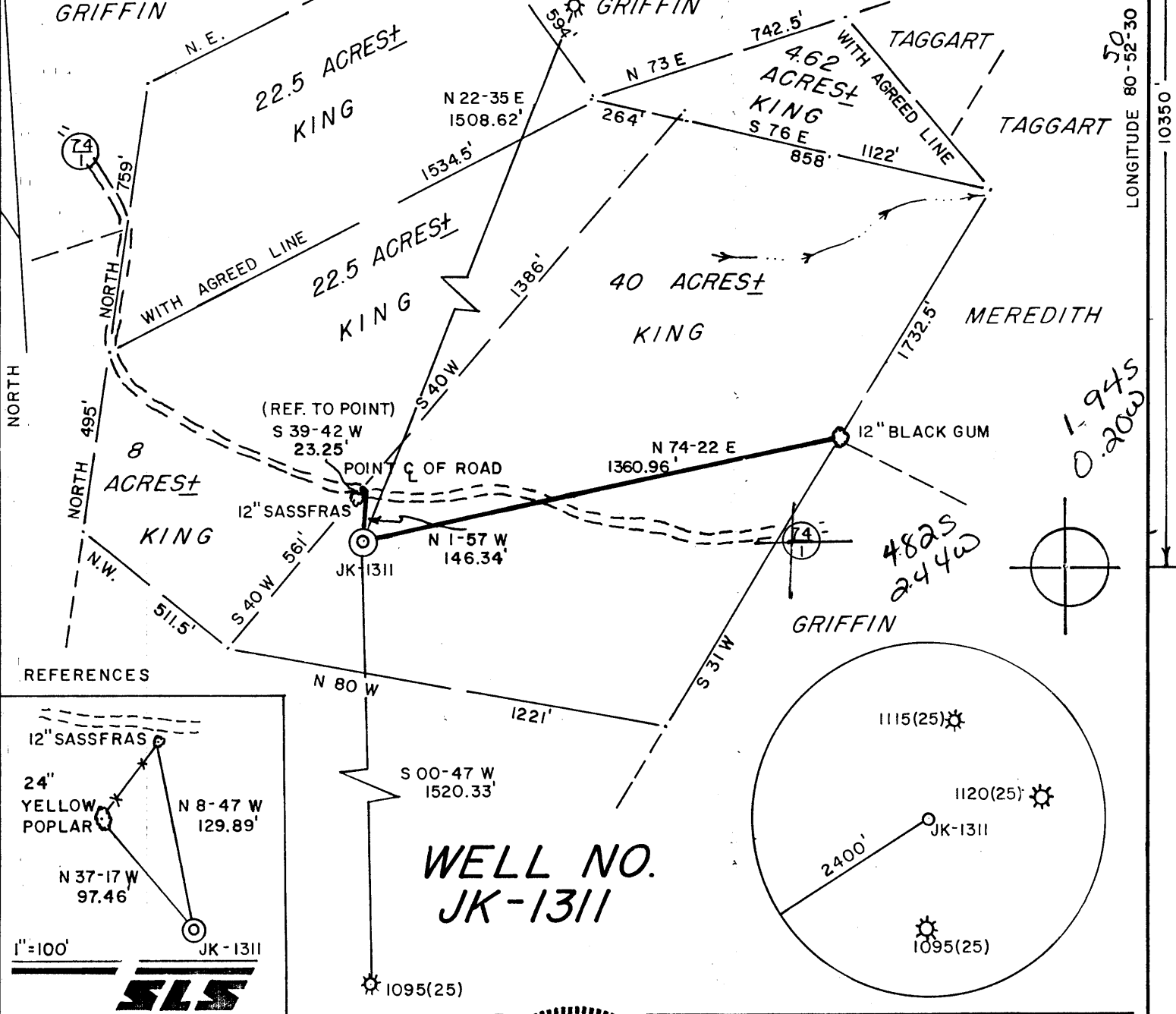


HURST

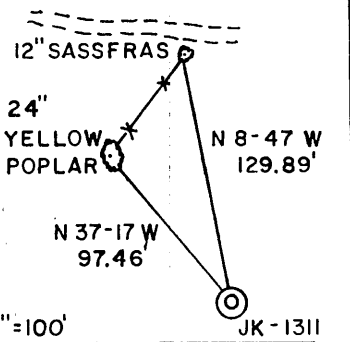
LEASE

LATITUDE 39-22-30

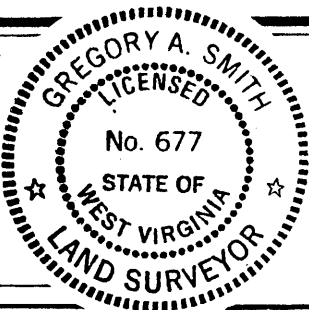
97.62 Ac. ±



REFERENCES



WELL NO. JK-1311



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

DATE JUNE 26, 19 87

OPERATORS WELL NO. JK-1311

API WELL NO. 47 - 095 - 1203
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 1657 (19-12)
PROVEN SOURCE OF ELEVATION TOP OF KNOB SCALE 1" = 400' ELEV. 1199'

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY OIL AND GAS DIVISION



WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1212' WATERSHED BIG RUN OF MIDDLE ISLAND CREEK West Union
DISTRICT CENTERVILLE COUNTY TYLER QUADRANGLE PENNSBORO 7.5'539

SURFACE OWNER THOMAS & MICHELE KING ACREAGE 97.62
ROYALTY OWNER JANICE L. HURST et. al. LEASE ACREAGE 97.62

PROPOSED WORK: LEASE NO. JJ-2181
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION ALEXANDER
ESTIMATED DEPTH 5700 JUL 27 1987

WELL OPERATOR J & J ENTERPRISES INC. 427 DESIGNATED AGENT OLIVER L. HAWKINS III
ADDRESS P.O. BOX 48 BUCKHANNON WV 26201 ADDRESS P.O. BOX 48 BUCKHANNON WV 26201

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

Riley: Perforations: 4700/4731 (14 holes)

Fracking: 350 sks. 20/40 sand: 590,000 scf N2: 530 Bbls. fluid

Benson: Perforations: 5099/5100 (8 holes)

Fracking: 450 sks. 20/40 sand: 500 gal. acid: 767 Bbls. fluid

Pf=Pwe^{xGLS}

$$t=60+(0.0075 \times 5247)+459.7 = 559$$

$$x = \frac{1}{53.35 \times 559} = \frac{1}{29,822} = 0.0000335$$

(0.0000335) (4900) (0.661) (0.9)

$$Pf=1350 \times 2.72$$

(0.098)

$$Pf=1350 \times 2.72 = 1350 \times 1.1$$

Pf=1485

WELL LOG

| FORMATION | COLOR | HARD OR SOFT | TOP FEET | BOTTOM FEET | REMARKS Including indication of all fr and salt water, coal, oil and |
|------------------|-------|--------------|----------|-------------|--|
| Brown Shale | | | 0 | 20 | |
| Red Shale | | | 20 | 230 | 1" stream fresh water @70' |
| Red Rock & Shale | | | 230 | 1880 | Hole damp @1670' |
| Sand & Shale | | | 1880 | 2075 | Gas check @2037' No show |
| Big Lime | | | 2075 | 2150 | Gas check @3606' 30/10ths 2" w/w |
| Big Injun | | | 2150 | 2260 | 231,000 |
| Sand & Shale | | | 2260 | 2430 | |
| Weir | | | 2430 | 2550 | |
| Sand & Shale | | | 2550 | 2616 | |
| Berea | | | 2616 | 2622 | |
| Sand & Shale | | | 2622 | 4695 | Gas check @4620' 20/10ths 2" w/w |
| Riley | | | 4695 | 4735 | 189,000 |
| Sand & Shale | | | 4735 | 5095 | Gas check @4804' 22/10ths 2" w/w |
| Benson | | | 5095 | 5102 | 198,000 |
| Sand & Shale | | | 5102 | 5340 | Gas check @5142' 36/10ths 2" w/w |
| Alexander | | | 5340 | 5410 | 253,000 |
| Sand & Shale | | | 5410 | 5633'TD | Gas check @5449' 30/10ths 2" w/w |
| | | | | | 231,000 |

RECEIVED
DEC 23 1987

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

(Attach separate sheets as necessary)

J & J Enterprises, Inc.
Well Operator

By:

Date: Robert Dahlin - Geologist 12/22/87

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 sand, encountered in the drilling of a well."

RECEIVED JUN 30 1987



1) Date: June 26, 1987
2) Operator's Well No. JK-1311
3) API Well No. 47 State 095 County 1203 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 X
B (If "Gas", Production X / Underground storage / Deep / Shallow X)
5) LOCATION: Elevation: 1212' Watershed: Big Run
District: Centerville / County: Tyler 095 Quadrangle: Pennsboro 7.5' 538
6) WELL OPERATOR J & J Enterprises CODE: 24150 7) DESIGNATED AGENT Oliver Lee Hawkins, III
Address P.O. Box 48 Buckhannon, WV 26201
8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Robert Lowther Address General Delivery Middlebourne, WV 26149
9) DRILLING CONTRACTOR:
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, 185 feet; salt, N/A feet.
14) Approximate coal seam depths: N/A Is coal being mined in the area? Yes / No X

Table with columns: CASING OR TUBING TYPE, SPECIFICATIONS (Size, Grade, Weight per ft., New, Used), FOOTAGE INTERVALS (For drilling, Left in well), CEMENT FILL-UP OR SACKS (Cubic feet), PACKERS (Kinds, Depths set, Perforations: Top, Bottom)

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-095-1203 Date July 23, 1987

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 23, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

10386

Table with columns: Bond, Agent, Plat, Casing, Fee, WFCP, S&E, Other. Includes handwritten signatures and numbers.

NOTE: Keep one copy of this permit posted at the drilling location. Director, Division of Oil and Gas File

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