

JON C. BETTS & KENNETH G. NORTHROP
 TM 25, PAR. 02
 2319-06
 768.2 AC.

WELL SITE
 STATE PLANE WV
 SOUTH ZONE NAD 1927
 N - 445,584.47
 E - 1,821,804.28

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

FILE NO. EQP&AQUARRIER7.DGN
 DRAWING NO. QUARRIER 7
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION OPERATOR'S WELL RECORD

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 ENVIRONMENTAL PROTECTION.
 (SIGNED) [Signature]
 R.P.E. 647 L.I.S. 647

PLACE SEAL HERE

STATE OF WEST VIRGINIA
 DIVISION OF ENVIROMENTAL PROTECTION
 OIL AND GAS DIVISION



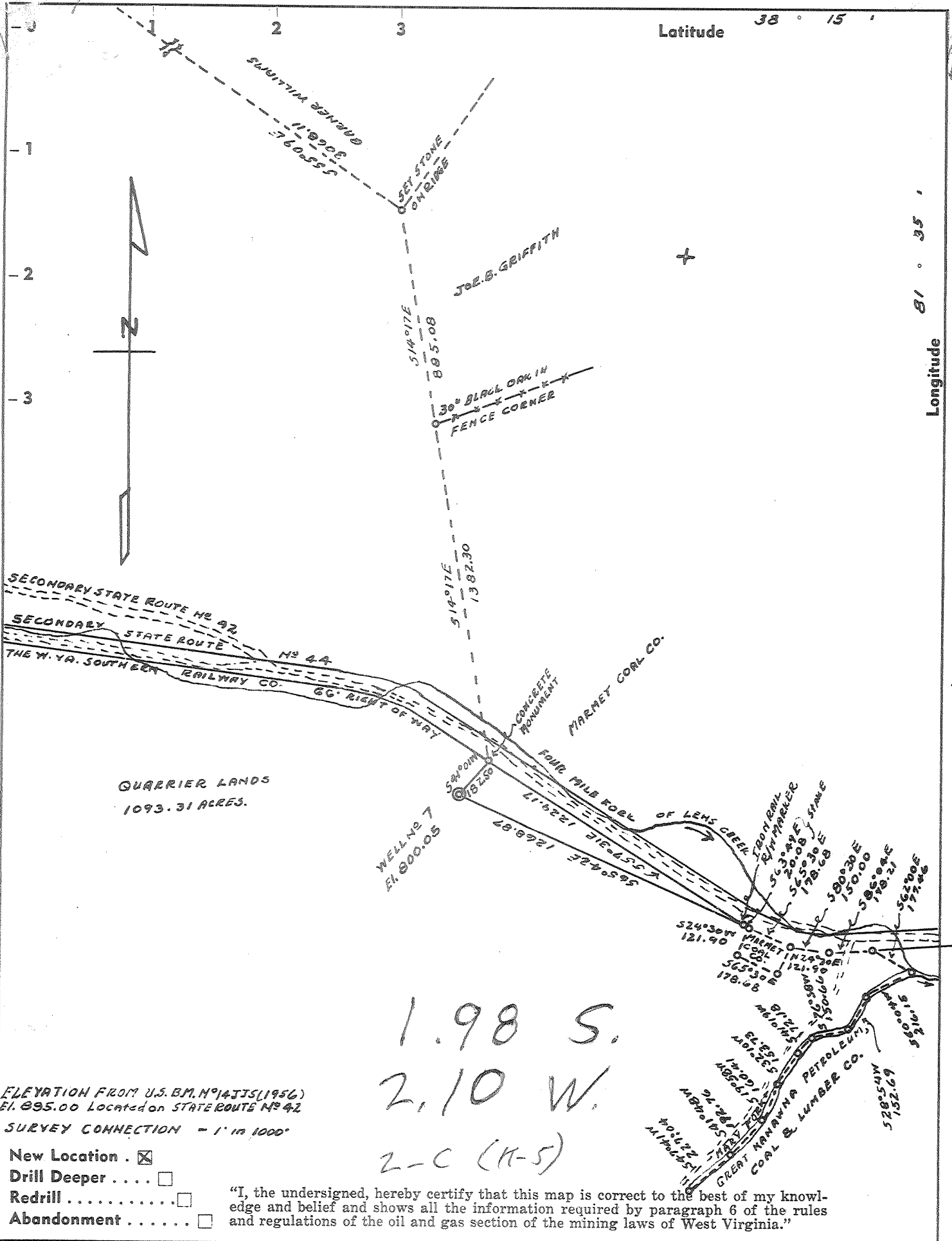
DATE MAY 22, 2003
 OPERATOR'S WELL NO. QUARRIER 7
 API WELL NO. 47 039 2038 P
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS,") PRODUCTION X STORAGE DEEP SHALLOW X
 LOCATION: ELEVATION 8005 WATER SHED FOURMILE FORK OF LENS CREEK
 DISTRICT LOUIDON COUNTY KANAWHA
 QUADRANGLE BELL WY 75'
 SURFACE OWNER JON C. BETTS & KENNETH G. NORTHROP ACREAGE 768.2
 OIL & GAS ROYALTY OWNER S B N, INC. LEASE ACREAGE 1400
 LEASE NO. 048126
 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 X CLEAN OUT AND REPLUG
 TARGET FORMATION ESTIMATED DEPTH
 WELL OPERATOR EQUITABLE PRODUCTION CO. DESIGNATED AGENT RICHARD SMELTZER
 ADDRESS P.O. BOX 2347, CHARLESTON, WV 25328 ADDRESS SAME

JUL 03 2003

FORM WV-6

COUNTY NAME KAN
 PERMIT 2038 P



1.98 S.
2.10 W.
2-C (K-5)

ELEVATION FROM U.S. B.M. N° 14115 (1956)
EL. 895.00 Located on STATE ROUTE N° 42

SURVEY CONNECTION - 1" = 1000'
New Location .
Drill Deeper
Redrill
Abandonment

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Company PAGE BOWER CONSTRUCTION COMPANY.
 Address ROOM 305 NELSON BUILDING, CHARLESTON, W. VA.
 Farm QUARRIER
 Tract _____ Acres 1093.31 Lease No. _____
 Well (Farm) No. 7 Serial No. _____
 Elevation (Spirit Level) 800.05
 Quadrangle PEYTONA - NC
 County KANAWHA District LOUDON
 Engineer Geo. B. Miller
 Engineer's Registration No. 1892
 File No. _____ Drawing No. _____
 Date MARCH 13 1965 Scale 1" = 500'

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON
WELL LOCATION MAP
 FILE NO. KAN-2038

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.

ALLEN BLUEPRINT & SUPPLY CO. No Samples 30-H
 Have some Newburg Cores 5184.5-5200.5 Deep Well 6-6 305



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION 4

Rotary
Spudder
Cable Tools
Storage

Quadrangle Peytona

Permit No. KAN-2038

WELL RECORD

Oil or Gas Well GAS

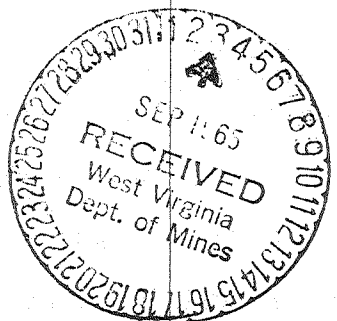
Company PACE BOWER CONSTRUCTION COMPANY
Address 305 Nelson Bldg., Charleston, W. Va.
Farm Russell G. Quarrier Heirs Acres 1093.13
Location (waters) Four Mile Fork of Lens Creek
Well No. 7 Elev. 800.05 G.L.
District Louden County Kanawha 808.05 K.B.
The surface of tract is owned in fee by Lucy S. Quarrier
800 Orchard Street Address Charleston, W. Va.
Mineral rights are owned by _____
Address _____
Drilling commenced 3/14/65
Drilling completed 4/2/65
Date Shot _____ From _____ To _____
With _____
Open Flow _____ /10ths Water in _____ Inch
_____ /10ths Merc. in _____ Inch
Volume _____ Cu. Ft.
Rock Pressure _____ lbs. _____ hrs.
Oil _____ bbls., 1st 24 hrs.
WELL ACIDIZED See Chronological Order
WELL FRACTURED See Chronological Order

| Casing and Tubing | Used in Drilling | Left in Well | Packers |
|-------------------|------------------|--------------|-----------------------|
| Size | | | Kind of Packer |
| 13-3/8-48# | 34' | 34' | G.L. |
| 10 | | | Size of |
| 9-5/8-32#-1350 | 1350-G.L. | | Depth set <u>5140</u> |
| 6 3/4 | | | See Completion |
| 5 3/16 | | | |
| 4-1/2-11.6#-5227 | 5227-G.L. | | Perf. top |
| 2-3/8" | 5140-G.L. | | Perf. bottom |
| Liners Used | | | Perf. top |
| | | | Perf. bottom |

See Chronological Order
CASING CEMENTED _____ SIZE _____ No. Ft. _____ Date _____
13-3/8"-3/14/65; 9-5/8"-3/21/65
4-1/2"-4/3/65
COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES
_____ FEET _____ INCHES
_____ FEET _____ INCHES

RESULT AFTER TREATMENT 980 MCF
ROCK PRESSURE AFTER TREATMENT 2050# - 5/14/65-5/19/65 (5 days)
Fresh Water _____ Feet _____ Salt Water _____ Feet _____

| Formation | Color | Hard or Soft | Top | Bottom | Oil, Gas or Water | Depth | Remarks |
|-----------------------------------------------------------------------|-------|--------------|------|--------|-------------------|-------|----------------------------|
| Lithology based on Gamma Log-log run from K.B. 8' above ground level. | | | | | | | |
| Sand and Shale (Drillers Log) | | | 0 | 185 | | | Hole wet at 170 (Drillers) |
| Sandstone | | | 185 | 220 | | | |
| Shale | | | 220 | 310 | | | |
| Sandstone | | | 310 | 505 | | | |
| Shale | | | 505 | 535 | | | |
| Sandstone | | | 535 | 568 | | | |
| Shale | | | 568 | 574 | | | |
| Sandstone | | | 574 | 775 | | | |
| Siltstone and Shale | | | 775 | 876 | | | |
| Sandstone | | | 876 | 908 | | | |
| Shale | | | 908 | 950 | | | |
| Sandstone | | | 950 | 979 | | | |
| Shale | | | 979 | 1012 | | | |
| Sandstone - <u>Martin</u> | | | 1012 | 1019 | | | |
| Shale | | | 1019 | 1045 | | | |
| Little Lime | | | 1045 | 1122 | | | |
| Big Lime | | | 1122 | 1304 | | | |
| Injun | | | 1304 | 1340 | | | |
| Siltstone and Shale | | | 1340 | 1755 | | | |
| Berea | | | 1755 | 1757 | | | |
| Shale | | | 1757 | 4364 | | | |
| Marcellus | | | 4364 | 4395 | | | |
| Onondaga | | | 4395 | 4498 | | | |
| Criskany | | | 4498 | 4508 | | | |
| Dolomite (<u>Heldreth & Canyon</u>) | | | 4508 | 5185 | | | |



Sulphur Water Zone 5045-5084
High Conductivity-Peaks at 5052 and 5077
Cored from 5160-5212
(5158-5210 Corrected to Log)

(Continued on Attached Sheet)

| Formation | Top | Bottom |
|----------------------------|------|----------------|
| Newburg | 5185 | 5204 |
| Dolomite - <i>McKenzie</i> | 5204 | 5235 |
| Total Depth | | 5235 (Logger) |
| Total Depth | | 5237 (Driller) |

5185
805

4397

Chronological Order of Events:

- 3/14/65-Commenced Drilling
- 3/14/65-Ran 34'-G.L. of 13-3/8"-48# Casing. Cemented with 50 bags of cement and 1 bag of Calcium Chloride.
- 3/21/65-Logged well from 320-1353-Gamma Ray (1" and 5"), Density (12 and 5") (Lane Wells)
- 3/21/65-Ran 1350'-G.L. of 9-5/8"-32.3# Casing. Cemented with 125 cubic feet cement and 300# Calcium Chloride. (Dowell)
- 3/29/65-4/1/65-Cored from 5158-5210. (Oilfield Research)
- 4/2/65-Completed Drilling.
- 4/3/65-Logged Well: Gamma Ray-1"-150-5220 - Density-1" and 5"-4300-5234 (Schlumberger) Gamma Ray-5"-4320-5220 - Induction-1358-1930 - 4250-5229
- 4/3/65-Ran 5227'-G.L. of 4-1/2"-11.6# Casing. Cemented with 120 cubic feet of Litepoz #2 and 400 gallons of Cealment.
- 4/6/65-Ran Cement Bond Log (McCullough) indicating possibility of channel in primary cement job.
- 4/7/65-Perforated 4 holes at 5150 and set cement retainer at 5145. Could not pump into well at 3400 psig; released cementing unit.
- 4/9/65-Perforated from 5186-97 with 4 shots per foot; total of 45 shots with Zamco Glass Jets. (McCullough)
- 4/11/65-Acidized with 1500 gallons mud acid and 750 gallons Dowell XF Acid at average pressure of 3400 psi; injection rate of 2.8 BPM. (Dowell)
- 5/12/65-Re-perforated 4 holes at 5188 and 4 holes at 5194 using 3-3/4" Monoplane. (McCullough)
- 5/12/65-Re-acidized with 500 gallons mud acid. (Dowell)
- 6/28/65-Fractured with 640 BBLs. water frac, 500 gallons Mud Spearhead, 26,000# 20/40 sand and 4000# 12/20 glass beads. Maximum pressure 5200 psi, average pressure 5185 psi, average liquid injection rate 18.9 BPM, adjusted injection rate 19.9 BPM. (Dowell)
- Note: Well did not respond to fracture. After several weeks of testing it was decided to re-acidize to clean critical area of bore hole and check for channel with radio-active tracer.
- 7/15/65-Pumped 1000 gallons of Super Mud Acid with radio-active tracer material. Survey indicated frac job went out top set of perforations and channeled 190 feet up the hole.
- 7/16/65-Squeezed with 60 sacks common cement with flac. Standing pressure of 4200 psi at surface and 6480 psi on perforations.
- 7/27/65-Perforated in acid and pumped in 300 gallons of mud acid at 5400 psi at 4 BPM.
- 7/28/65-Fractured with an additional 1000 gallons mud acid, 570 BBLs. water frac, 5000# sand. Average pressure 5500, injection rate 9 BPM.
- 8/4/65-Abrasijet formation at 5194 since radio-active survey indicated this zone was not treated initially.
- 8/6/65-Pumped into formation with acid. Pressure was too high to start fracturing. Acidized with 2000 gallons mud acid and swabbed back.
- 8/11/65-Attempted to re-jet entire Newburg section with reverse-out jet tool. Jetted approximately 45 minutes and jets wore out. Well cleaned up and no further stimulation attempted.

Production Data:

- 4/13/65-Open 4 hours - 989 MCF-Flow Meter
- 4/14/65-Open 4 hours - 1,007 MCF-Flow Meter
- 4/21/65-Open 4 hours - 901 MCF-Flow Meter
- 4/23/65-Open 6-1/2 hours - 904 MCF-Flow Meter
- 5/14/65-Open 1 hour - 1,388 MCF-Flow Meter
- 5/19/65-Open 1-1/2 hours - 2,524 MCF-Flow Meter
- 5/19/65-Open 2 hours - 2,543 MCF- 2" Side Static Reading
- 5/26/65-Open 3 hours - 2,454 MCF- 2" Side Static Reading
- 8/12/65-Open 4 hours - 713 MCF (38/10 M 2") Flow Meter
- 8/13/65-Open 4 hours - 896 MCF (60/10 M 2") Flow Meter

Final open flow = 980 MCF - Open 8-1/2 hours (Flow Meter)

5 day Rock Pressure = 2050#

