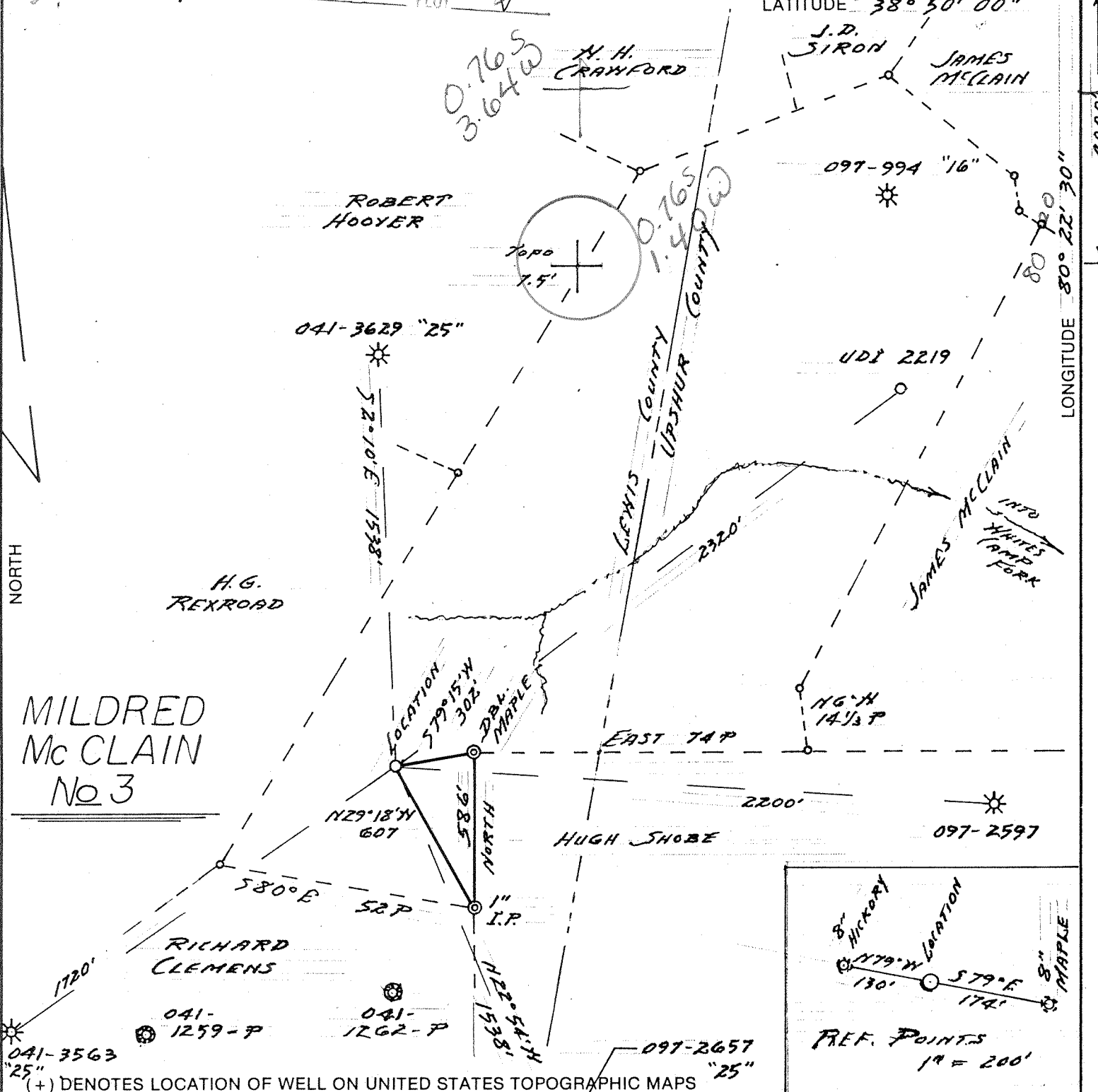


8703 7/1/86



FILE NO. UDL-4-39  
 DRAWING NO. 86-4  
 SCALE 1" = 500'  
 MINIMUM DEGREE OF ACCURACY 1 IN 200  
 PROVEN SOURCE OF ELEVATION Well 097-2657  
EL. = 1680

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) Thomas F. Weaver, Jr.  
 R.P.E. \_\_\_\_\_ L.L.S. 410

PLACE SEAL HERE

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

DATE APRIL 30, 1986  
 OPERATOR'S WELL NO. 3-2452  
 API WELL NO. 47-041-3732

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

LOCATION: ELEVATION 1778 WATER SHED WHITES CAMP FORK  
 DISTRICT COLLINS SETTLEMENT COUNTY LEMIS  
 QUADRANGLE WALKERSVILLE 654 033 508 Crawford

SURFACE OWNER WILLIAM F. SHOBE & DAVID SHOBE ACREAGE 95  
 OIL & GAS ROYALTY OWNER ANNA K. PUCKETT LEASE ACREAGE 95  
 LEASE NO. 62842

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  6-6 Cover Run (259)  
 TARGET FORMATION BENSON ESTIMATED DEPTH 4600' JUL 21 1986  
 WELL OPERATOR UNION-DRILLING, INC. DESIGNATED AGENT JOSEPH C. PETTEY  
 ADDRESS P.O. DRAWER 40 ADDRESS P.O. DRAWER 40  
BUCKHANNON, WV. 26201 893 BUCKHANNON, WV. 26201

COUNTY NAME LEMIS  
 PERMIT \_\_\_\_\_

FORM IV-9 (6-78)

RECEIVED  
DEC 05 1986



IV-35  
(Rev 8-81)

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

State of West Virginia  
Department of Mines  
Oil and Gas Division

Date December 4, 1986  
Operator's  
Well No. 3 - 2452  
Farm Mildred McClain #3  
API No. 47 - 041 - 3732

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 \_\_\_ / Underground Storage \_\_\_ / Deep \_\_\_ / Shallow xx /)

LOCATION: Elevation: 1778' Watershed Whites Camp Fork  
District: Collins Settle County Lewis Quadrangle Walkersville

COMPANY Union Drilling, Inc.  
ADDRESS P.O. Drawer 40, Buckhannon, WV 26201  
DESIGNATED AGENT Joseph C. Pettey  
ADDRESS P.O. Drawer 40, Buckhannon, WV 26201  
SURFACE OWNER William F. Shobe, et.al.  
ADDRESS 44 Sixth St., Buckhannon, WV 26201  
MINERAL RIGHTS OWNER W.L. McClain, et.ux.  
ADDRESS \_\_\_\_\_

OIL AND GAS INSPECTOR FOR THIS WORK  
Stephen Casey ADDRESS Rt.2, Box 232D, Jane Lew, WV 26378

PERMIT ISSUED 7/16/86  
DRILLING COMMENCED 10/21/86  
DRILLING COMPLETED 10/26/86

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"           | 22.50'           | pulled       |                        |
| 9 5/8            |                  |              |                        |
| 8 5/8            | 1016.35'         | 1016.35'     | 321 cf                 |
| 7                |                  |              |                        |
| 5 1/2            |                  |              |                        |
| 4 1/2            |                  | 4320.50'     | 681 cf                 |
| 3                |                  |              |                        |
| 2                |                  |              |                        |
| Liners used      |                  |              |                        |

GEOLOGICAL TARGET FORMATION Benson Depth 4600' feet  
Depth of completed well 4602' feet Rotary xxx / Cable Tools \_\_\_\_\_  
Water strata depth: Fresh 130' feet; Salt \_\_\_\_\_ feet  
Coal seam depths: 424/428, 496/500, 735/740 Is coal being mined in the area? no

OPEN FLOW DATA

Producing formation Bayard, Benson Pay zone depth 4243' feet  
Gas: Initial open flow 30 Mcf/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow 671 Mcf/d Final open flow \_\_\_\_\_ Bbl/d

Time of open flow between initial and final tests 2 hours

Static rock pressure 725# psig (surface measurement) after 24 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 \_\_\_\_\_ 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

(Continue on reverse side) DEC 8 1986

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

Nowco - 2 stage Foam Frac - 11/5/86

2366/72 - Bayard - 45,000# sand, 346 bbls water and 374,000 scf nitrogen

4241/43 - Benson - 45,000# sand, 346 bbls water and 373,000 scf nitrogen

WELL LOG

| FORMATION      | COLOR | HARD OR SOFT | TOP FEET | BOTTOM FEET | REMARKS<br>Including indication of all fresh and salt water, coal, oil and gas |
|----------------|-------|--------------|----------|-------------|--|
| Sand & Shale   |       |              | 0        | 424         | 1/2" stream fresh water @130'  |
| Coal           |       |              | 424      | 428         |  |
| Sand & Shale   |       |              | 428      | 496         |  |
| Coal           |       |              | 496      | 500         |  |
| Sand & Shale   |       |              | 500      | 735         |  |
| Coal           |       |              | 735      | 740         |  |
| Sand & Shale   |       |              | 740      | 1588        |  |
| Blue Monday    |       |              | 1588     | 1630        |  |
| Big Lime       |       |              | 1656     | 1792        |  |
| Injun          |       |              | 1799     | 1866        |  |
| Squaw          |       |              | 1870     | 1894        |  |
| Gantz          |       |              | 1959     | 1980        |  |
| Gordon         |       |              | 2070     | 2089        |  |
| 4th Sand       |       |              | 2135     | 2144        |  |
| 5th Sand       |       |              | 2223     | 2249        |  |
| Bayard         |       |              | 2342     | 2380        |  |
| Elizabeth      |       |              | 2470     | 2479        |  |
| Warren         |       |              | 2591     | 2625        |  |
| Upper Speechly |       |              | 2787     | 2828        |  |
| Speechly       |       |              | 2918     | 2928        |  |
| Balltown       |       |              | 3288     | 3339        |  |
| Bradford       |       |              | 3584     | 3644        |  |
| Riley          |       |              | 3952     | 3959        |  |
| <u>Benson</u>  |       |              | 4217     | 4226        |  |
|                |       |              |          | 4602' TD    | Gas Check @TD 8/10ths thru 1" = 30 mcf   |

(Attach separate sheets as necessary)

Union Drilling, Inc.

Well Operator

By: Joseph C. Pettey

Date: Joseph C. Pettey, Vice President of Production

12/4/86

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 ..., encountered in the drilling of a well."

RECEIVED JUN 30 1986



1) Date: June 17, 1986
2) Operator's Well No. 2452
3) API Well No. 47 State 041 -3732 County Permit

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY, OIL AND GAS DIVISION

APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil / Gas XX
5) LOCATION: Elevation: 1778, Watershed: Whites Camp Fork, District: Collins Settlement, County: Lewis, Quadrangle: Walkersville
6) WELL OPERATOR Union Drilling, Inc. CODE: 50550
7) DESIGNATED AGENT Joseph C. Pettey
8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Stephen Casey
9) DRILLING CONTRACTOR: Name Union Drilling, Inc.
10) PROPOSED WELL WORK: Drill XX / Drill deeper / Redrill / Stimulate XX
11) GEOLOGICAL TARGET FORMATION, Benson
12) Estimated depth of completed well, 4600 feet
13) Approximate strata depths: Fresh, 2634 feet; salt, feet.
14) Approximate coal seam depths: 783 Is coal being mined in the area? Yes / No

Table with 5 main columns: CASING OR TUBING TYPE, SPECIFICATIONS, FOOTAGE INTERVALS, CEMENT FILLUP OR SACKS, PACKERS. Rows include Conductor, Fresh water, Coal, Intermediate, Production, Tubing, Liner.

OFFICE USE ONLY DRILLING PERMIT

Permit number 47-041-3732 Date July 16 1986

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.

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.

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

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

Signature of John W. Johnston, Director, Division of Oil and Gas

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

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL STATE COUNTY PERMIT
LOCATION: ELEVATION 1778 WATER SHED WHITES CAMP FORK
DISTRICT COLLINS SETTLEMENT COUNTY LEWIS
QUADRANGLE WALKERSVILLE 654 033 508 Crawford
SURFACE OWNER WILLIAM F. SHOBE & DAVID SHOBE ACREAGE 95
OIL & GAS ROYALTY OWNER ANNA K. PUCKETT LEASE ACREAGE 95
LEASE NO. 62842

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 6-6 Cove Run (259)
TARGET FORMATION BENSON ESTIMATED DEPTH 4600'
WELL OPERATOR UNION DRILLING, INC. DESIGNATED AGENT JOSEPH C. PETTEY
ADDRESS P.O. DRAWER 40 BUCKHANNON, WV 26201

COUNTY NAME LEWIS PERMIT

JUL 21 1986