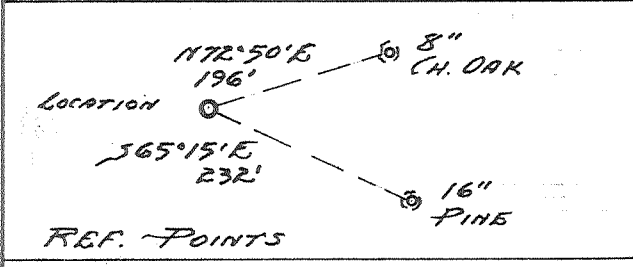
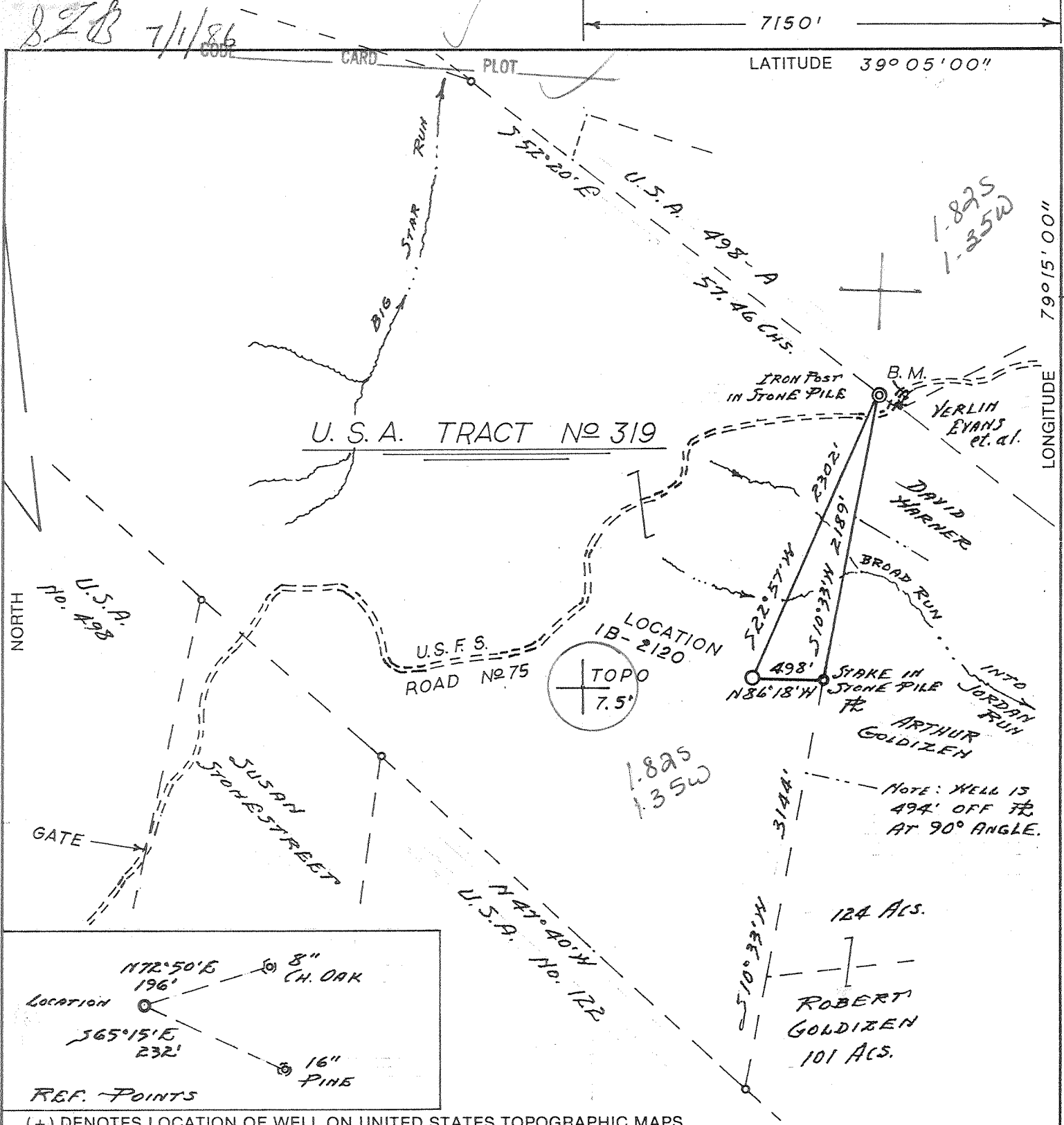


82B 7/1/86



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

FILE NO. U.D.1-4-37  
 DRAWING NO. 86-3  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1 IN 200  
 PROVEN SOURCE OF ELEVATION B.M. S. SIDE ROAD 2300' N.E. OF LOC. EL. 2517

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 MARCH 18, 1986  
 OPERATOR'S WELL NO. 2120  
 API WELL NO. (CNR# 21584-PI)  
47-023-0015  
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION 2510 WATERSHED BROAD RUN OF JORDAN RUN  
 DISTRICT UNION 3 COUNTY GRANT  
 QUADRANGLE BLACKBIRD KNOB 255 034 SE9 Daws

SURFACE OWNER U.S.A. NATIONAL FOREST SERVICE, TR. 319 ACREAGE 800.13  
 OIL & GAS ROYALTY OWNER U.S.A. LEASE ACREAGE 129.83  
 LEASE NO. 522571 AMOCO

PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
 TARGET FORMATION ORISKANY 903 ESTIMATED DEPTH 8000'  
 WELL OPERATOR UNION DRILLING, INC. DESIGNATED AGENT JOSEPH C. PETTEY  
 ADDRESS P. O. DRAWER 40, BUCKHANNON, WV. ADDRESS P. O. DRAWER 40, BUCKHANNON, WV.  
6-6 Jordan Run 26201 (370) deep well 26201

JUL 21 1986

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

COUNTY NAME GRANT  
 PERMIT

IV-35  
(Rev 8-81)

RECEIVED

MAR 02 1987

W. VA. OIL & GAS  
CONSERVATION COMMISSION

State of West Virginia  
Department of Mines  
Oil and Gas Division



Date February 27, 1987  
Operator's  
Well No. 1 - 2120  
Farm U.S.A. #1B  
API No. 47 - 023 - 0015  
TO BE HELD CONFIDENTIAL

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 xx / Shallow \_\_\_ /)

LOCATION: Elevation: 2510' Watershed Broad Run of Jordan Run  
District: Union County Grant Quadrangle Blackbird Knob

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 United States Forest Service

ADDRESS Potomac Ranger Dist., Rt.3, Box 240  
Petersburg, WV 26847

MINERAL RIGHTS OWNER

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK

Donald Ellis ADDRESS 2604 Crab Apple Lane, Fairmont, WV 26554

PERMIT ISSUED 7/16/86

DRILLING COMMENCED 10/21/86

DRILLING COMPLETED 12/8/86

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"	30.00	30.00	
9 5/8	1517.60	1517.60	631 cf
8 5/8			
7			
5 1/2		8323.34	943 cf
4 1/2			
3			
2 3/8" Tubing		8019.00'	
Liners used			

GEOLOGICAL TARGET FORMATION Oriskany Depth 8000' feet

Depth of completed well 8351' feet Rotary xxx / Cable Tools

Water strata depth: Fresh 765' feet; Salt feet

Coal seam depths: none Is coal being mined in the area? no

OPEN FLOW DATA

Producing formation Oriskany Pay zone depth 8135' feet

Gas: Initial open flow 900 Mcf/d Oil: Initial open flow Bbl/d

Final open flow 15 MMCF Mcf/d Final open flow Bbl/d

Time of open flow between initial and final tests 2 hours

Static rock pressure 2546# psig (surface measurement) after 72 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

15,000 Mcf

NOV 10 1987

(Continue on reverse side)

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

Halliburton - 1 stage Frac - 1/7/87

8074/8135 - Oriskany - 218,500# sand, 5000 gal methanol, 2000 gal fluid and  
29 ton liquid CO2

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Red Shale			0	147	
Sand			147	214	
Sand & Shale			214	297	
Red & Gray Shale			297	480	
Sand & Shale			480	872	
Base of Hampshire			872	1114	1" stream water @765'
Pound Sandstone			1115	1218	
Briery Gap Sandstone			1539	1558	
First Sand			2381	2412	
Second Sand			2640	2657	
Harrell Shale			6721	7134	
Tully Horizon			7134	7150	
Upper Marcellus			7522	7542	
Purcell Limestone			7542	7618	
Lower Marcellus			7618	7658	
Tioga Metabentonite			7658	7663	
Needmore			7672	7948	
Oriskany			7948	8162	
Helderberg			8162	8351'	TD Gas Check @TD 4/10ths thru 7" w/w = 900 mcf

(Attach separate sheets as necessary)

Union Drilling, Inc.

Well Operator

By: Joseph C. Petty

Date: Joseph C. Petty, Vice President of Production

2/27/87

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

NOV 10 1988

RECEIVED JUN 30 1986



FORM WW-2(B) FILE COPY (Obverse) 7/85

DIVISION OF OIL & GAS DEPARTMENT OF ENERGY

1) Date: June 17, 1986
2) Operator's Well No. 2120
3) API Well No. 47 -023-0015 State County Permit

\*\*TO BE HELD CONFIDENTIAL

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: 2510, District: Union, County: Grant, Quadrangle: Blackbird Knob
6) WELL OPERATOR Union Drilling, INC CODE: 50550
7) DESIGNATED AGENT Joseph C. Pettey
8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Donald Ellis
9) DRILLING CONTRACTOR: Name Union Drilling, Inc.
10) PROPOSED WELL WORK: Drill XX, Plug off old formation, Redrill, Stimulate XX
11) GEOLOGICAL TARGET FORMATION, Oriskany
12) Estimated depth of completed well, 8000 feet
13) Approximate trata depths: Fresh, 1450 feet; salt, feet.
14) Approximate coal seam depths: Is coal being mined in the area? Yes/No

15) CASING AND TUBING PROGRAM

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, Sizes, Depths set, Perforations: Top, Bottom). Includes handwritten notes like 'By Rule 15.05' and '800 SKS OR AS REQUIRED'.

OFFICE USE ONLY DRILLING PERMIT

Permit number 47-023-0015 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. Notification must be given to the District Oil and Gas Inspector.

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 16, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Table with columns: Bond, Agent, Plat, Casing, Fee, WPCP, S&E, Other. Includes handwritten values like 'AS', 'AS', '46241', 'AS', 'AS'.

Signature of Director, Division 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.