

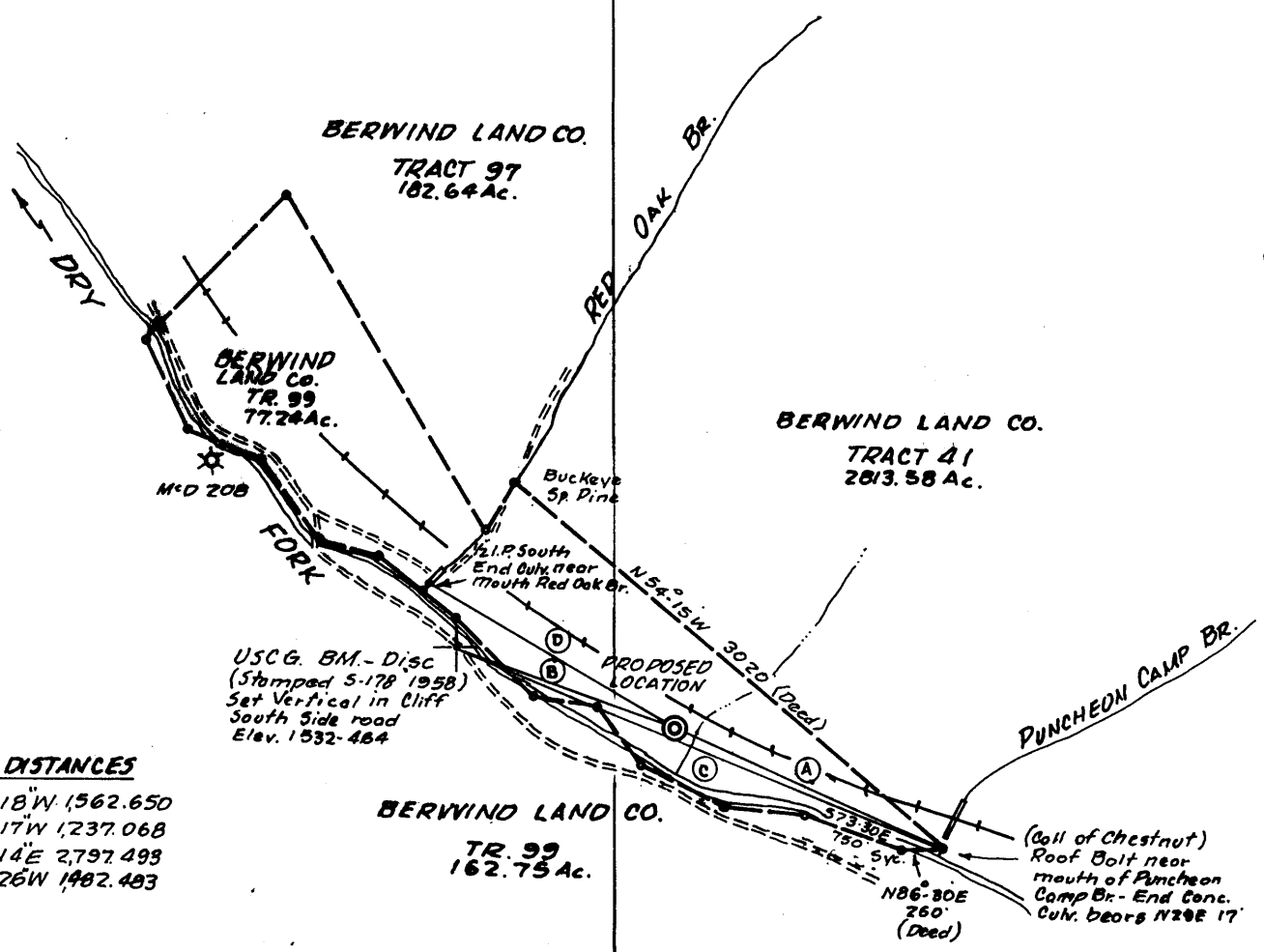
7,400

LATITUDE 37°-17'-30"

LONGITUDE 81°-37'-30"

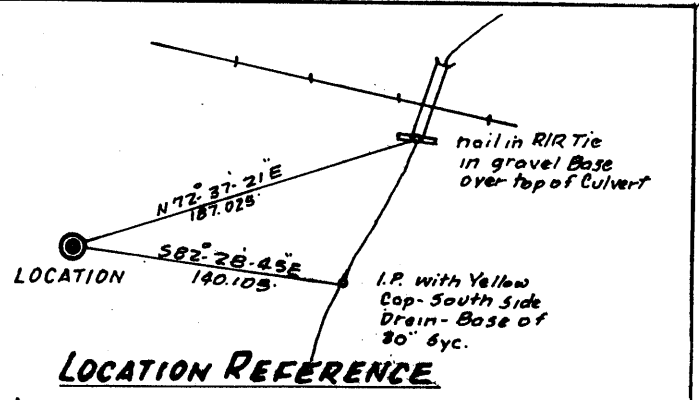
12,400

NORTH



**BEARINGS & DISTANCES**

- Ⓐ N 65° 54' 18" W 1562.650
- Ⓑ N 70° 30' 17" W 1237.068
- Ⓒ S 67° 56' 14" E 2797.498
- Ⓓ N 60° 03' 26" W 1482.483



**LOCATION REFERENCE**

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

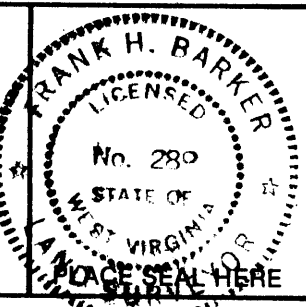
2.365  
1.40W

5.245  
3.69W  
walchsc

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 1000 FT.  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION USCG BM 5-178 1958  
Shown Above  
ELEV. 1532-464

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 ENERGY.

(SIGNED) Frank H. Barker  
 R.P.E. \_\_\_\_\_ L.L.S. 289



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



DATE SEPT. 25 1998  
 OPERATOR'S WELL NO. BERWIND NO 1  
 API WELL NO. 47 47 1102  
 STATE COUNTY PERMIT

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION: ELEVATION 1500.63 WATER SHED DRY FORK  
 DISTRICT BIG CREEK 2 COUNTY MC DOWELL  
 QUADRANGLE WAR

SURFACE OWNER BERWIND LAND CO. ACREAGE 77.24  
 OIL & GAS ROYALTY OWNER BERWIND LAND CO. LEASE ACREAGE 77.24  
 LEASE NO. \_\_\_\_\_

PROPOSED WORK: DRILL X 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 GORDON ESTIMATED DEPTH 5,100'  
 WELL OPERATOR WACO OIL & GAS CO. DESIGNATED AGENT STEVE HOLLOWAY  
 ADDRESS P.O. BOX 397 933 ADDRESS P.O. BOX 397  
GLENVILLE, WV 26351 GLENVILLE, WV 26351

DEC 14 1998

COUNTY NAME

PERMIT

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**FEB 13 92**

Division of Energy  
Oil and Gas Section

State of West Virginia  
DEPARTMENT OF ENERGY  
Division of Oil and Gas

Reviewed TMG

Well Operator's Report of Well Work

Recorded \_\_\_\_\_

Farm name: BERWIND LAND CO

Operator Well No.: BERWIND 1

LOCATION: Elevation: 1500.63 Quadrangle: WAR

District: BIG CREEK County: MCDOWELL  
Latitude: 12400 Feet South of 37 Deg. 17Min. 30 Sec.  
Longitude 7400 Feet West of 81 Deg. 37 Min. 30 Sec.

Company: WACO OIL & GAS CO., INC.  
1297 N. LEWIS ST.  
GLENVILLE, WV 26351-0000

Agent: STEPHEN E. HOLLOWAY

Inspector: TIM BENNETT  
Permit Issued: 12/13/90  
Well work Commenced: 07/29/91  
Well work Completed: 08/20/91  
Verbal Plugging  
Permission granted on: N/A  
Rotary X Cable N/A Rig  
Total Depth (feet) 4415  
Fresh water depths (ft) 40, 200

Salt water depths (ft) \_\_\_\_\_  
None Reported

Is coal being mined in area (Y/N)? N  
Coal Depths (ft): None Reported

Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Size			
11-3/4"	166	166	118
8-5/8"	892	892	295
4-1/2"	0	4,360	236

OPEN FLOW DATA

Producing formation Gordon and Berea Pay zone depth (ft) 4050-4180  
Gas: Initial open flow show MCF/d Oil: Initial open flow None Bbl/d  
Final open flow 1800 MCF/d Final open flow None Bbl/d  
Time of open flow between initial and final tests 48 Hours  
Static rock Pressure 330 psig (surface pressure) after 24 Hours

Second producing formation \_\_\_\_\_ Pay zone depth (ft) \_\_\_\_\_  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: WACO OIL & GAS CO., INC.

By: Sally K. Day  
Date: February 11, 1992

FEB 21 1992

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

1st Stage: Gordon 4169-4182 - 9 holes, 500 gals 15% HCL,  
75 Q Foam made up of 117 Bbl. H<sub>2</sub>O and 360,000 scf N<sub>2</sub>  
with 40,000 Lb. 20/40 sand

2nd Stage: Berea 4075-4080 - 8 holes, 500 gals 15% HCL,  
75 Q Foam made up of 156 Bbls. H<sub>2</sub>O and 404,000 scf N<sub>2</sub>  
with 47,700 Lb. 20/40 sand

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Soil			0	4	
Sandstone			4	70	H <sub>2</sub> O at 40'
Shale			70	97	
Sandstone			97	146	
Shale			146	160	
Sandstone			160	240	H <sub>2</sub> O at 200'
Snad and Shale			240	958	
Ravencliff			958	1110	
Sand and Shale			1110	2100	
Maxon			2100	2145	
Sand and Shale			2145	2732	
Big Lime			2732	3254	
Big Injun			3254	3410	
Shale			3410	3538	
Weir			3538	3684	
Shale			3684	4007	
Coffee Shale			4007	4026	
Berea			4026	4070	
Shale			4070	4120	
Gordon			4120	4180	
Shale			4180	4415	T.D. 409

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Division of Energy

047-110  
Issued 12/13/90

FORM WW-2B

DEC 12 90

Page \_\_\_ of \_\_\_

Expires 12/13/92

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS  
Oil and Gas Section WELL WORK PERMIT APPLICATION

- 1) Well Operator: Waco Oil and Gas Company, Inc. 51800(2) 656
- 2) Operator's Well Number: Berwind #1 3) Elevation: 1500.63
- 4) Well type: (a) Oil \_\_\_ / or Gas X /  
(b) If Gas: Production X / Underground Storage \_\_\_ /  
Deep \_\_\_ / Shallow X /
- 5) Proposed Target Formation(s): Gordon 419
- 6) Proposed Total Depth: 5100 feet
- 7) Approximate fresh water strata depths: 120
- 8) Approximate salt water depths: 2025
- 9) Approximate coal seam depths: 250
- 10) Does land contain coal seams tributary to active mine? Yes \_\_\_ / No \_\_\_
- 11) Proposed Well Work: Drill and stimulate new well
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor						
Fresh Water	11-3/4"	H	42	150	150	C. T. S.
Coal	8-5/8"	J	20	900	900	
Intermediate						
Production	4-1/2"	J	10.5	5,000	5,000	200 Cu.Ft.
Tubing						
Liners						

PACKERS : Kind \_\_\_\_\_  
Sizes \_\_\_\_\_  
Depths set \_\_\_\_\_

For Division of Oil and Gas Use Only

Fee(s) paid:     Well Work Permit     Reclamation Fund     WPCP  
 Plat     WW-9     WW-2B     Bond Security     Agent

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095  
38

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Permitting  
Oil and Gas Section

Page 1 of \_\_\_\_\_  
Form WW2-A  
(09/87)

1) Date: November 7, 1990  
2) Operator's well number  
Berwind #1  
3) API Well No: 47 - 047 - 1102  
State - County - Permit

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

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner(s) to be served:  
(a) Name Berwind Land Co.  
Address 1050 One Valley Square  
Charleston, WV 25301  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_

5) (a) Coal Operator:  
Name N/A  
Address \_\_\_\_\_  
(b) Coal Owner(s) with Declaration  
Name Berwind Lands Co.  
Address 1050 One Valley Square  
Charleston, WV 25301  
Name \_\_\_\_\_  
Address \_\_\_\_\_

6) Inspector Tim Bennett  
Address Rt. 2, Box 61-B  
Chapmanville, WV 25508  
Telephone (304)- 855-7705

(c) Coal Lessee with Declaration  
Name \_\_\_\_\_  
Address \_\_\_\_\_

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

\_\_\_\_\_ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR

X Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through \_\_\_\_\_ on the above named parties, by:

- X Personal Service (Affidavit attached)
- \_\_\_\_\_ Certified Mail (Postmarked postal receipt attached)
- \_\_\_\_\_ Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator Waco Oil and Gas Company, Inc.  
By: Stephen E. Holloway Stephen E. Holloway  
Its: Agent  
Address P. O. Box 397  
Glenville, WV 26351  
Telephone (304) 462-5347

Subscribed and sworn before me this 7th day of November, 1990

[Signature]  
My commission expires July 1996 Notary Public