

**REFERENCES**

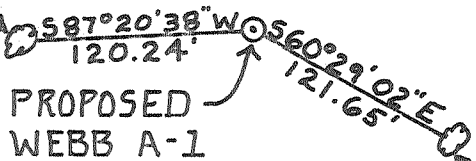
SCALE: 1"=100'

LATITUDE 37° 50' 00"

NOTES:

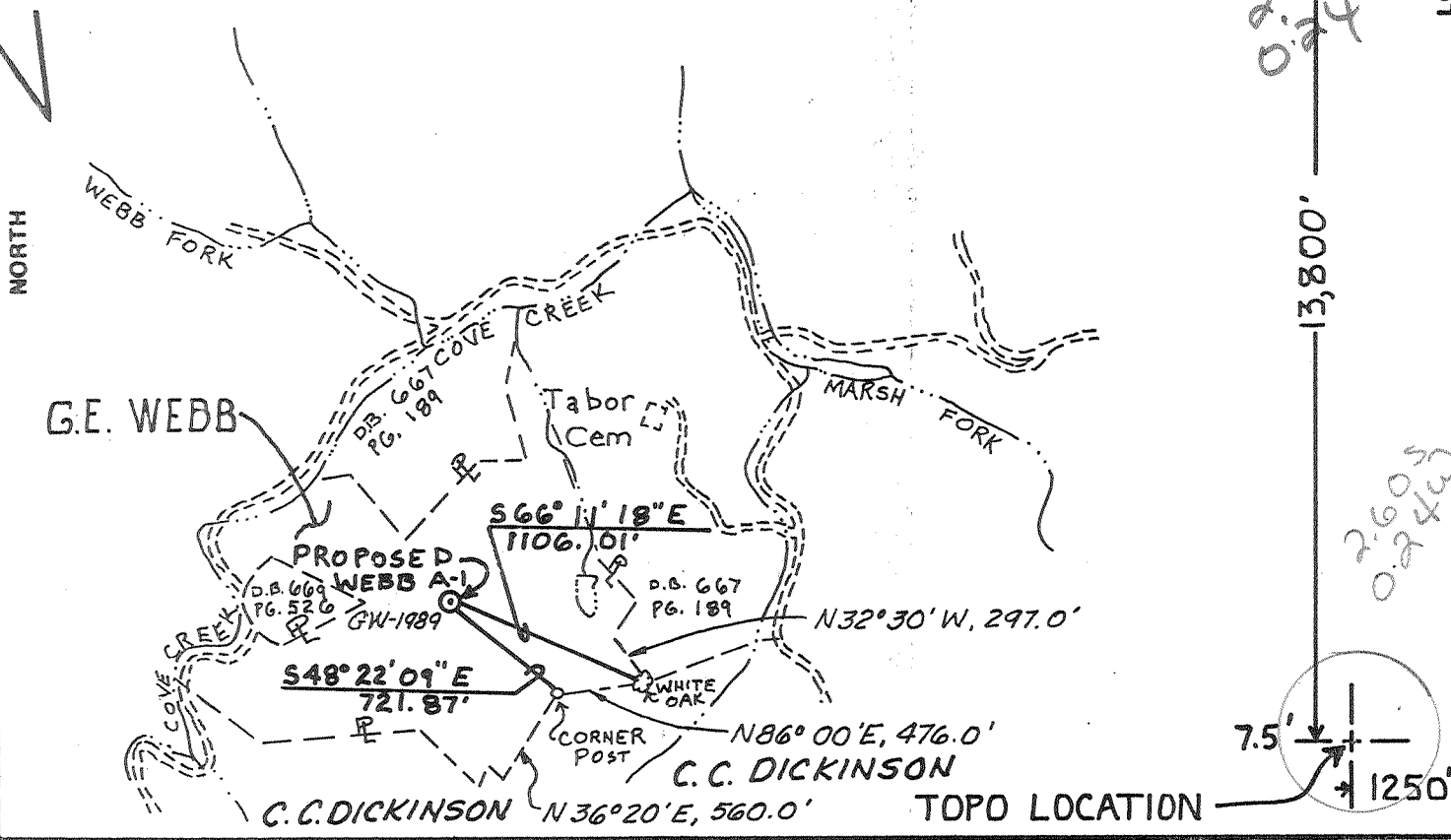
1. BEARINGS AND DISTANCES TO PROPERTY CORNERS CALCULATED.
2. NO KNOWN WELLS WITHIN 1000' OF PROPOSED WELL.
3. GERTRUDE & RAY WEBB, LESSOR  
CITIES SERVICE CORP., LESSEE

8" BLACK OAK



30" MAPLE

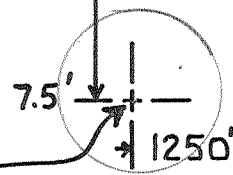
LONGITUDE 81° 25' 00"



260  
0.24

13,800'

260  
0.24



FILE NO. \_\_\_\_\_  
DRAWING NO. \_\_\_\_\_  
SCALE 1"=1000'  
MINIMUM DEGREE OF ACCURACY 1 IN 2500  
PROVEN SOURCE OF ELEVATION USGS ELEV. @ RD. INTERSECTION = 1766.0

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) Ralph E. Norman  
R.P.E. 9682 L.L.S. \_\_\_\_\_

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
FORM IV-6 (8-78)



DATE 14 MARCH, 1988  
OPERATOR'S WELL NO. WEBB A-1  
API WELL NO. G.W. 1989  
47 081 - 0817  
STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW \_\_\_  
LOCATION: ELEVATION 1883.49 WATER SHED COVE CREEK  
DISTRICT TRAP HILL T COUNTY RALEIGH  
QUADRANGLE ARNETT W.VA. 7 1/2' 218 036 7 Eccles SW  
SURFACE OWNER G.E. WEBB, ET AL (CONSOLIDATED) ACREAGE 86.72  
OIL & GAS ROYALTY OWNER GERTRUDE & RAY WEBB LEASE ACREAGE 86.72 PART OF 173.44 AC.  
LEASE NO. 6-4714566

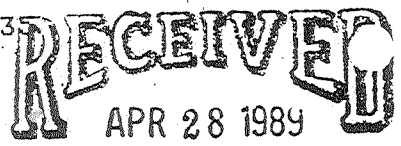
PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_ PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
TARGET FORMATION DEVONIAN SHALE ESTIMATED DEPTH 6200'  
WELL OPERATOR CITIES SERVICE OIL & GAS CORP. DESIGNATED AGENT PAUL D. PHILLIPS  
ADDRESS P.O. BOX 873 ADDRESS P.O. BOX 873  
CHARLESTON, W.VA. 25323 CHARLESTON, W.VA. 25323

APR 29 1988

DEEP WELL 3-3 McGraw (248) DPD - eh. c Gordon

WR-3



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

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY  
Well Operator's Report of Well Work

Farm name: WEBB, TERRY J. Operator Well No.: A-1, GW-1989

LOCATION: Elevation: 1883.49 Quadrangle: ARNETT

District: TRAP HILL County: RALEIGH  
Latitude: 13800 Feet South of 37 Des. 50Min. 0 Sec.  
Longitude 1250 Feet West of 81 Des. 25 Min. 0 Sec.

Company: CITIES SERVICE OIL & GAS  
P. O. BOX 873  
CHARLESTON, WV

Agent: PAUL D. PHILLIPS

Inspector: RODNEY G. DILLON  
Permit Issued: 04/30/88  
Well work Commenced: 7-8-88  
Well work Completed: 4-17-89  
Verbal Plugging *TD on 8/14/88*  
Permission granted on: \_\_\_\_\_  
Rotary  Cable \_\_\_\_\_ Ris \_\_\_\_\_  
Total Depth (feet) 6459'  
Fresh water depths (ft) 48', 636-640'  
Salt water depths (ft) 850', 2600'  
Is coal being mined in area (Y/N)? N  
Coal Depths (ft): 515-518, 570-571'

Size	Used in	Left	Cement
Conductor			Fill Up
20"	25'	25'	Surface
Fresh Wtr			
9.625"	809'	809'	Surface
Intermediate			
7"	2402'	2402'	Surface
Production			
4.5"	6444'	6444'	469 cuft
Tubing			
2.375"		6151'	

OPEN FLOW DATA

Rhinestreet, Lower Huron,  
Upper Devonian/Gordon Pay zone depth (ft) 3561-6131'

Producing formation \_\_\_\_\_ Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow 95 MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests 9 Hours  
Static rock Pressure 255 psig (surface pressure) after 14 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.

Delbert G. Oliver, Appalachian Project Manager

For: CITIES SERVICE OIL & GAS CORP.

MAY 5 1989

By: *Delbert G. Oliver*  
Date: 26 APRIL 89

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

Formation

Rhinestreet Perforated 5651-6131' (70 holes). Frac'd w/ 50,000# sand, 96 BLW, 690 MCF N2.

Lower Huron Perforated 4404-4935' (68 holes). Frac'd w/ 50,000# sand, 99 BLW, 475 MCF N2.

Upper Devonian/Gordon Perforated 3561-3569' (33 holes). Frac'd w/ 30,000# sand, 73 BLW, 414 MCF N2.

WELL LOG

Formation

	<u>Top (Ft)</u>	<u>Bottom (Ft)</u>
Sand	0	133
Siltstone	133	372
Sand	372	460
Siltstone	460	515
Coal	515	518
Siltstone	518	570
Coal	570	571
Siltstone	571	605
Sand	605	730
Siltstone	730	876
Sand	876	918
Siltstone	918	1524
Ravencliff	1524	1552
Wis Limestone	1552	1576
Siltstone	1576	1976
Middle Maxton	1976	2058
Siltstone	2058	2188
Lower Maxton	2188	2260
Siltstone	2260	2281
Little Lime	2281	2352
Pencil Cave	2352	2396
Big Lime	2396	2820
Siltstone	2820	2925
Shale	2925	2950
Veir	2950	3039
Shale	3039	3337
Unbury	3337	3356
Devonian Shale	3356	3555
Gordon	3555	3591
Devonian Shale	3591	4405
Lower Huron	4405	5221
Sava	5221	5717
Rhinestreet	5717	6375
Marcellus	6375	6450
Wondaga	6450	

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APR 28 1989

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

6899

6459

6459  
3591

2858

Geophysical

MAY 5 1989

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

081-0817 Issued 4/30/88  
Expired 4/30/89

9000, 7, 218

- 1) Well Operator: OXY USA INC (Formerly Cities Service Oil & Gas Corp.)
- 2) Operator's Well Number: Webb A-1, GW-1989 3) Elevation: 1883.49
- 4) Well type: (a) Oil  / or Gas  /  
(b) If Gas: Production  / Underground Storage  /  
Deep  / Shallow  /
- 5) Proposed Target Formation(s): Devonian Shale 441
- 6) Proposed Total Depth: 6510 feet
- 7) Approximate fresh water strata depths: 96', 117', 519', 621', 885'
- 8) Approximate salt water depths: 2008'
- 9) Approximate coal seam depths: 406', 500' 885'-889', 933'-939'
- 10) Does land contain coal seams tributary to active mine? Yes  / No  /
- 11) Proposed Well Work:
- 12) DEVONIAN SHALE DRILLING WELL

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor	16	H-40	52	40	40	Surface
Fresh Water	9-5/8	H-40	32	700	700	Surface
Coal						38CSR18-11-3 38CSR18-11-2 2
Intermediate	7	K-55	23	2430	2430	Surface
Production	4-1/2	K-55	11.6	6510	6510	38CSR18-11-1 400 cu ft
Tubing	2-3/8	EUE	4.7	6510	6510	
Liners						

**RECEIVED**  
APR 14 1988

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

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

For Division of Oil and Gas Use Only

6399 30059

Fee(s) paid: JS Well Work Permit JS Reclamation Fund JS WPCP  
JS Plat JS WW-9 JS WW-2B JS Bond 503 blanket JS Agent  
(Type)

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

9000, 7, 218

- 1) Well Operator: OXY USA INC (Formerly Cities Service Oil & Gas Corp.)
- 2) Operator's Well Number: Webb A-1, GW-1989 3) Elevation: 1883.49
- 4) Well type: (a) Oil    / or Gas X /  
(b) If Gas: Production X / Underground Storage    /  
Deep    / Shallow X /
- 5) Proposed Target Formation(s): Devonian Shale 441
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- 7) Approximate fresh water strata depths: 96', 117', 519', 621', 885'  
*Remkul 101, 200, 797*
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- 9) Approximate coal seam depths: 406', 500' 885'-889', 933'-939'
- 10) Does land contain coal seams tributary to active mine? Yes    / No X /
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CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	
Conductor	16	H-40	52	40	40	Surface
Fresh Water	9-5/8	H-40	32	700	700	Surface
Coal						380SR18-11.3 380SR18-11.2
Intermediate	7	K-55	23	2430	2430	Surface
Production	4-1/2	K-55	11.6	6510	6510	380SR18-11.1 400 cu ft
Tubing	2-3/8	EUE	4.7	6510	6510	
Liners						

**RECEIVED**  
APR 14 1988

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

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

For Division of Oil and Gas Use Only

30054  
 Fee(s) paid:    Well Work Permit    Reclamation Fund    WPCP  
 Plat    WW-9    WW-2B    Bond 503 blanket    Agent

6849