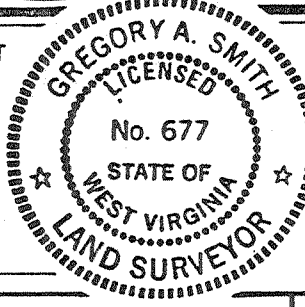


I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY.

L.L.S. Gregory A. Smith
677



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE DECEMBER 13, 19 86
OPERATORS WELL NO. WACO NO. 467 2A
API WELL NO. 47-021-4543
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 1582 (20-38)
PROVEN SOURCE OF ELEVATION TOP OF KNOB 1182' SCALE 1" = 500'

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY OIL AND GAS DIVISION

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

LOCATION: ELEVATION 901' WATERSHED TANNER CREEK DISTRICT DEKALB 2 COUNTY GILMER QUADRANGLE TANNER 7.5' 634
SURFACE OWNER L. FERGUSON HRS. ACREAGE 103.50 050
ROYALTY OWNER L. FERGUSON HRS. LEASE ACREAGE 104 NW

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION BENSON ESTIMATED DEPTH 5100'

WELL OPERATOR WACO OIL & GAS CO. INC. 033 DESIGNATED AGENT STEPHEN HOLLOWAY
ADDRESS P.O. BOX 397 GLENVILLE, WV 26351 ADDRESS P.O. BOX 397 GLENVILLE, WV 26351

FERC

3/15/87

WR-35



State of West Virginia
DEPARTMENT OF ENERGY
Oil and Gas Division

Date Feb. 9, 1987
Operator's
Well No. Waco # 467
Farm Ferguson # 2A
API No. 47 - 021 - 4543

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 x / Underground Storage / Deep / Shallow x /)

LOCATION: Elevation: 901' Watershed Tanner Creek
District: Dekalb County Gilmer Quadrangle Tanner 7.5'

COMPANY Waco Oil & Gas Co. Inc.

ADDRESS P. O. Box 397 Glenville, WV 26351

DESIGNATED AGENT Stephen E. Holloway

ADDRESS P. O. Box 397 Glenville, WV 26351

SURFACE OWNER L. Ferguson Hrs.

ADDRESS Smithville, WV

MINERAL RIGHTS OWNER L. Ferguson Hrs.

ADDRESS Smithville, WV

OIL AND GAS INSPECTOR FOR THIS WORK Craig

Duckworth ADDRESS Gassaway, WV

PERMIT ISSUED December 30, 1986

DRILLING COMMENCED January 22, 1987

DRILLING COMPLETED January 30, 1987

IF APPLICABLE: PLUGGING OF DRY HOLE ON
CONTINUOUS PROGRESSION FROM DRILLING OR
REWORKING. VERBAL PERMISSION OBTAINED
ON

Table with 4 columns: Casing & Tubing, Used in Drilling, Left in Well, Cement fill up Cu. ft. Rows include sizes 20-16 Cond., 13-10", 9 5/8, 8 5/8, 7, 5 1/2, 4 1/2, 3, 2, and Liners used.

GEOLOGICAL TARGET FORMATION Benson Depth 5100 feet

Depth of completed well 6223 feet Rotary x / Cable Tools

Water strata depth: Fresh 140' feet; Salt none feet

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

OPEN FLOW DATA

Producing formation Shale, Elk, Alexander, Benson Pay zone depth see treatment feet

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

Final open flow 1678 Mcf/d Final open flow show Bbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 1590 psig (surface measurement) after 48 hours shut in

(If applicable due to multiple completion--)

Second producing formation Riley, Balltown, Speech Pay zone depth see treatment 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)

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

- 1st Stage: Shale ⁽⁶⁰⁶⁹⁻⁵⁷⁵⁰⁾ = 1000 gal 15% HCl, 40 ton CO₂, 500 MCF N₂
- 2nd Stage: Elk Alexander ⁽⁵³¹⁰⁻⁴⁹⁰⁷⁾ = 650 gal 15% HCl, 50 ton CO₂, 525 MCF N₂
- 3rd Stage: Benson, Riley ⁽⁴⁶⁶⁰⁻⁴¹⁹³⁾ = 500 gal 15% HCl, 50 ton CO₂, 500 MCF N₂
- 4th Stage: Balltown ⁽³⁹⁹⁵⁻³⁵²⁹⁾ = 850 gal 15% HCl, 45 ton CO₂, 550 MCF N₂
- 5th Stage: Speechly ⁽³²⁹⁶⁻³²²⁵⁾ = 500 gal 15% HCl, 15 ton CO₂, 925 MCF N₂

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS	
					Including indication of all fresh and salt water, coal, oil and gas	
Clay			0	10	Fresh H ₂) @ 140'	
Sand & Shale			10	176		
Sand, Shale, & Redrock			176	669		
Sand & Shale			669	1812		
Little Lime			1812	1829		
Shale			1829	1850		
Big Lime			1850	1897		404 2230
Big Injun			1897	1998		83 3350
Sand & Shale			1998	3234		822 4600
Speechly Section			3234	3569		825 4625
Shale			3569	3627		830 5125
Balltown Section			3627	4190		835 6000
Riley Section			4190	4606		
Shale			4606	4656		
Benson			4656	4664		
Shale			4664	4885		
Alexander			4885	4938		
Shale			4938	5047		
Elk Section			5047	5311		
Shale			5311	6157		
Marcellus			6157	6203		
Onondaga			6203	6223	T.D.	

(Attach separate sheets as necessary)

Waco Oil & Gas Co., Inc
 Well Operator
 By: Daniel R. Chapman Geologist
 Date: February 9, 1987

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 coal, encountered in the drilling of a well."

JUL 13 1987

RECEIVED
DEC 19 1986



1) Date: December 15, 1986
 2) Operator's Well No. Waco 467-Ferguson 2A
 3) API Well No. 47 -021- 4543
 State County Permit

STATE OF WEST VIRGINIA

DEPARTMENT OF ENERGY, OIL AND GAS DIVISION

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil / Gas /
 B (If "Gas", Production / Underground storage / Deep / Shallow)
- 5) LOCATION: Elevation: 901' 933 Watershed: Tanner Creek
 District: Dekalb 2 County: Gilmer 021 Quadrangle: Tanner 7.5'
- 6) WELL OPERATOR Waco Oil & Gas CODE: 57800 7) DESIGNATED AGENT Stephen E. Holloway 033
 Address P.O. Box 397 Address P.O. Box 397
Glenville, WV 26351 Glenville, WV 26351
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Craig Duckworth
 Address Box 107, Davisson Rt.
Gassaway, WV 26624
- 9) DRILLING CONTRACTOR: Name J.L. Morris Well Service, Inc.
 Address P.O. Box 397
Glenville, WV 26351
- 10) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stimulate /
 Plug off old formation / Perforate new formation /
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, Benson 435
- 12) Estimated depth of completed well, 5100 feet
- 13) Approximate strata depths: Fresh, 31 feet; salt, none feet.
- 14) Approximate coal seam depths: none Is coal being mined in the area? Yes / No /

15) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor									Kinds
Fresh water									
Coal									Sizes
Intermediate	85/8	ERW	20 #	X		1030	1030	C.T.S.	Per Rule 15.05
Production	41/2	J55	10.5	X			5050	550	Depths set
Tubing									
Liners									Perforations:
									Top Bottom

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-021-4543

December 30 19 86
Date

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. (Refer to No. 8) Prior to the construction of roads, locations and pits for any permitted work. In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

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 December 30, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <u>ASB</u>	Plat: <u>187</u>	Casing: <u>ASB</u>	Fee: <u>1692</u> <u>161</u>	WBCP: <input checked="" type="checkbox"/>	S&E: <input checked="" type="checkbox"/>	Other: <input type="checkbox"/>
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NOTE: Keep one copy of this permit posted at the drilling location.

Director, Division of Oil and Gas

File

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