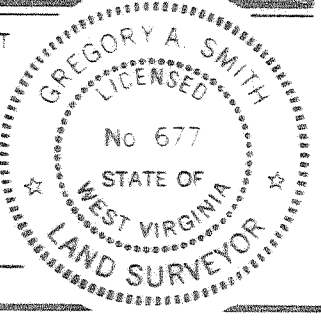


(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 DATE JANUARY 3, 1986
 OPERATORS WELL NO. WACO NO. 421
 API WELL NO. GAINER 'E' NO. 1
47 - 021 - 4457
 STATE COUNTY PERMIT

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. 677 Gregory A. Smith



MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 17-85
 PROVEN SOURCE OF ELEVATION JUNCTION OF ROAD AND BRIDGE ELEV=709' 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 708' WATERSHED TANNER CREEK 634 050
 DISTRICT DE KALE 2 COUNTY GILMER QUADRANGLE TANNER 7.5' NW
 SURFACE OWNER GAINER ENTERPRISES, INC. ACREAGE 50 of 1020.72
 OIL & GAS ROYALTY OWNER GAINER ENTERPRISES, INC. LEASE ACREAGE 50
 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 4925' 24 1986

WELL OPERATOR WACO OIL & GAS CO. INC. 933 DESIGNATED AGENT STEPHEN HOLLOWAY
 ADDRESS P.O. BOX 397, GLENVILLE, WV. 26351 ADDRESS P.O. BOX 397, GLENVILLE, WV. 26351

COUNTY NAME DE KALE
 PERMIT 4157



Date Jan. 6, 1987

Operator's Well No. Waco #421

Farm Gainer "E" # 1

API No. 47 - 021 - 4457

State of West Virginia

DEPARTMENT OF ENERGY

Oil and Gas Division

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: 708' Watershed Tanner Creek District: Dekalb County Gilmer Quadrangle Tanner

COMPANY Waco Oil & Gas Co., Inc. ADDRESS P.O.Box 397,Glennville,WV 26351 DESIGNATED AGENT Stephen E. Holloway ADDRESS P.O.Box 397, Glennville, WV 26351 SURFACE OWNER Gainer Enterprises, Inc. ADDRESS Charleston, WV MINERAL RIGHTS OWNER Same ADDRESS OIL AND GAS INSPECTOR FOR THIS WORK Craig Duckworth ADDRESS Gassaway,WV PERMIT ISSUED March 18, 1986 DRILLING COMMENCED December 1, 1986 DRILLING COMPLETED December 6, 1986 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 Cord, 13-10", 9 5/8, 8 5/8 (752), 7, 5 1/2, 4 1/2 (5888), 3, 2, and Liners used.

GEOLOGICAL TARGET FORMATION Benson Depth 4925 feet Depth of completed well 5946' feet Rotary X / Cable Tools Water strata depth: Fresh 52',200' feet; Salt 1485' feet Coal seam depths: None Is coal being mined in the area? No

OPEN FLOW DATA Producing formation Shale Elk Alexander Pay zone depth See Treatment feet Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d Final open flow 1237 Mcf/d Final open flow Shown Bbl/d Time of open flow between initial and final tests 4 hours Static rock pressure 1550 psig (surface measurement) after 48 hours shut in (If applicable due to multiple completion-- speechley) Second producing formation Riley balltown 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

APR 20 1987

(Continue on reverse side)

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

- 1st Stage: Shale (5772-5446) 500 gal. 15% HCL 30ton co₂, 250 mcf N₂
- 2nd Stage: Elk, alexander (4776-4526) 500 gal 15% HCL, 30 ton co₂, 400 mcf N₂
- 3rd Stage: Riley (4294-4022) 500 Gal 15% HCL, 40 ton co₂, 670 mcf N₂
- 4th Stage: Balltown (3683-3214) 1000 gal 15% HCL, 73 ton co₂, 820 mcf N₂
- 5th Satge: Speechly (2965-2938) 500 Gal. 15% HCL, 27 ton co₂, 692 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	5	
Sand and shale			5	203	1" Fresh H ₂ o @ 52'
Sand, shale & redrock			203	650	1 1/2" Fresh H ₂ O @ 200'
Sand & shale			650	1260	
Redrock			1260	1275	
Sand & shale			1275	1510	Hole damp @ 1485'
Little lime			1510	1534	
Blue monday			1534	1566	
Big lime			1566	1680	
Big injun			1680	1706	
Sand & shale			1706	2932	
Speechly section			2932	3258	
Shale			3258	3317	
Balltown section			3317	3875	
Riley section			3875	4295	
Shale			4295	4353	
Benson			4353	4360	
Shale			4360	4590	
Alexander			4590	4641	
Shale			4641	4768	
Elk Section			4768	5004	
Shale			5004	5864	
Marcellus shale			5864	5926	
Onondaga Limestone			5926	5946	T. D.

404 1956
 813 3031
 822 4356
 825 4606
 830 4906

(Attach separate sheets as necessary)

Waco Oil & Gas co., Inc.

Well Operator

By: Daniel R. Chapman, Geologist

Date: January 6, 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 ... encountered in the drilling of a well."

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MAR 11 1986



1) Date: February 27, 1986
 2) Operator's Well No. Waco #421-Gainer E-#1
 3) API Well No. 47 - 021 - 4457
 State _____ County _____ Permit _____

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

- 4) WELL TYPE: A Oil _____ / Gas X /
 B (If "Gas", Production X / Underground storage _____ / Deep _____ / Shallow X /)
- 5) LOCATION: Elevation: 708' / Watershed: Tanner Creek
 District: DeKalb 023 / County: Gilmer / Quadrangle: Tanner 7.5
- 6) WELL OPERATOR WACO OIL & GAS CO. CODE: 51800 7) DESIGNATED AGENT Stephen E. Holloway
 Address PO Box 397 / Address PO Box 397
Glenville, WV 26351 / Glenville, WV 26351
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Craig Duckworth / Name I.L. Morris Well Service, Inc.
 Address Box 107, Davisson Rt. / Address PO Box 397
Gassaway, WV 26624 / Glenville, WV 26351
- 10) PROPOSED WELL WORK: Drill X / Drill deeper _____ / Redrill _____ / Stimulate X /
 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, 4925 feet
 13) Approximate strata depths: Fresh, _____ feet; salt, _____ feet.
 14) Approximate coal seam depths: None Is coal being mined in the area? Yes _____ / No X /
- 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									Sizes
Coal									Depths set
Intermediate	8 5/8	ERW	20#	X		750	750	215 sks.	C.T.S. Per Rule 150S
Production	4 1/2	J-55	10.5#	X			5000	625 sks.	
Tubing									Perforations
Lin...									Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-021-4457 Date March 18, 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. (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 March 18, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>✓</u>	Agent: <u>AS</u>	Plat: <u>AS</u>	Casing: <u>AS</u>	Fee: <u>15-73</u>	WPCP: <u>AS</u>	S&E: <u>AS</u>	Other: _____
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John H. Johnston by Margaret J. Hass
 Director, Division of Oil and Gas
 File

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.