

FILE NO. MSES84-492

DRAWING NO. _____

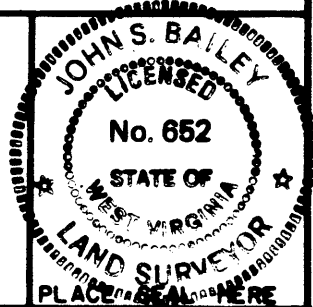
SCALE 1" = 500'

MINIMUM DEGREE OF ACCURACY 1" IN 200

PROVEN SOURCE OF ELEVATION INT. CO. RT. 1/6 81/8 FL. 823'

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) John S. Bailey
R. P. E. _____ L. L. S. 652



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

FORM IV-6
(8-78)



Department of Mines
Oil & Gas Division

DATE SEPTEMBER 7, 19 84
OPERATOR'S WELL NO. CNGD 1343
API WELL NO. 47-107-1346
STATE COUNTY PERMIT

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

LOCATION: ELEVATION 1083.6 WATER SHED BULL CREEK

DISTRICT WALKER 9 COUNTY WOOD

QUADRANGLE 600 SCHULTZ 7.5' 1961 (1975) St. Mary 15' SW7

SURFACE OWNER CARL R. CUMBERLEDGE, ET. UX. ACREAGE 77.66

OIL & GAS ROYALTY OWNER CARL R. CUMBERLEDGE, ET. AL. LEASE ACREAGE 77

LEASE NO. DV-732

PROPOSED WORK: DRILL X CONVERT _____ DRILL DEEPER _____ RE-DRILL _____ 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 4850'

WELL OPERATOR CNG DEVELOPMENT CORP. DESIGNATED AGENT GARY A. NICHOLAS

ADDRESS ONE PARK RIDGE CENTER ADDRESS CROSSWIND CORPORATE PARK

142 P.O. BOX 15746
PITTSBURGH, PA 15244

ROUTE 2 BOX 698
BRIDGEPORT, WV 26330

JAN 21 1985

IV-35
(Rev 8-81)



Date May 14, 1985
Operator's
Well No. CNGD WN 1343
Farm Cumberledge
API No. 47 - 107 - 1346

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OIL & GAS DIVISION
DEPT. OF MINES

State of West Virginia
Department of Mines
Oil and Gas Division

WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil X / Gas / Liquid Injection / Waste Disposal /
(If "Gas," Production / Underground Storage / Deep / Shallow /)

LOCATION: Elevation: 1083.6 Watershed Bull Creek
District: Walker County Wood Quadrangle Schultz 7.5'

COMPANY CNG Development Company

ADDRESS P. O. Box 15746
Pittsburgh, PA 15244

DESIGNATED AGENT Gary A. Nicholas

ADDRESS Rt. 2 Box 698
Bridgeport, WV 26330

SURFACE OWNER Carl R. Cumberledge, et al

ADDRESS Rt. 1 Box 162
Little Hocking, OH 45742

MINERAL RIGHTS OWNER Carl R. Cumberledge et al

ADDRESS Rt. 1 Box 162
Little Hocking, OH 45742

OIL AND GAS INSPECTOR FOR THIS WORK

Glen Robinson ADDRESS Rt. 1 #6 Mt. Pleas. Est
Mineralwells, WV 26150

PERMIT ISSUED 1-10-85

DRILLING COMMENCED 3-4-85

DRILLING COMPLETED 3-5-85

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 Cond.			
11-3/4" 11-3/4"	551	551	To Surf
9 5/8			
8 5/8	1967	1967	To Surf
7			
5 1/2			
4 1/2	4376	4376	290 Thix 130 50/50
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Shale Depth 4850 feet

Depth of completed well 4405 feet Rotary X / Cable Tools

Water strata depth: Fresh 138 feet; Salt 1660 feet

Coal seam depths: 1240 - 1245
1315 - 1320
1515 - 1520 Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Shale Pay zone depth 4170 - 4300
Shale 3716 - 3883 feet

Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d
Final open flow est. (125) Mcf/d Final open flow (20) Bbl/d

Time of open flow between initial and final tests hours

Static rock pressure 600 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

(Continue on reverse side)

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

Perfco Perforated Shale 4170 - 4300: } ^{Huron} 24 holes (.39)
 Shale 3716 - 3883: } 25 holes (.39)

B. J. Hughes Frac 1st stage - Break 3360, 11 pumps, Avg Rate (SCF/min) 88,000,
 Avg. psi 3440, 500 gal 15% HCL, ISIP 2420, 5 min 2240, Total Nitrogen (SCF) 800,000
 2nd Stage - Break 3540, 11 pumps, Avg Rate (SCF/min) 88,000,
 Avg. psi 2940, 500 gal 15% HCL, ISIP 1920, 5 min 1800, Total Nitrogen (SCF) 800,000
 3rd Stage - 500 gal 15% HCL

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	
Sand, Shale & RR			10	1240	
Coal			1240	1245	
Shale			1245	1315	
Coal			1315	1320	
Sand & Shale			1320	1515	
Coal			1515	1520	
Sand, Shale			1520	1745	
Lime			1745	1810	
Injun Sand			1810	1845	
Sand, & Shale			1845	4405	
				TD	Huron @ TD
<u>LOG TOPS</u>					
Big Lime			1750	1800	
Big Injun			1810	1845	
Weir			2048	2140	
Berea			2350	2356	
50'			2424	2438	
Gordon			2588	2614	
5th			2766	2791	

(Attach separate sheets as necessary)

CNG DEVELOPMENT COMPANY

Well Operator

By: *[Signature]*

Date: 5-13-85

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."

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JAN 5 1984



1) Date: November 12, 19 84
 2) Operator's Well No. 1343
 3) API Well No. 47 - 107 - 1346
 State _____ County _____ Permit _____

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

- 4) WELL TYPE: A Oil / Gas _____
 B (If "Gas", Production _____ / Underground storage _____ / Deep _____ / Shallow _____)
- 5) LOCATION: Elevation: 1083.6' Watershed: Bull Creek
 District: Walker County: Wood Quadrangle: Schultz 7.5'
- 6) WELL OPERATOR CNG Development Company 10110 7) DESIGNATED AGENT Mr. Gary Nicholas
 Address c/o Paul W. Garrett, P.O. Box 15746 Address Crosswind Corporate Park
Pittsburgh, PA 15244 Rt. 2, Box 698, Bridgeport, WV 26330
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Mr. Glen P. Robinson
 Address Rt. 1, #6 Mt. Pleasant Estate
Mineralwells, WV 26150
- 9) DRILLING CONTRACTOR: Name Sam Jack Drilling Company
 Address P. O. Box 48
Buckhannon, WV 26201
- 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, Devonian Shale
- 12) Estimated depth of completed well, 4850 feet
- 13) Approximate trata depths: Fresh, - 2635 feet; salt, - feet.
- 14) Approximate coal seam depths: - 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	16					20-30			Kinds
Fresh water	11-3/4	H-40	42	X		665-250	665-250	To surface	By Rule 15.05
Coal									Sizes
Intermediate	8-5/8	X-42	23	X		1950	1950	To surface	
Production	4-1/2	J-55	10.5	X		4850	4850	200-400 sks	Depths set
Tubing	1-1/2	CN-55	2.75	X					By Rule 15.01
Liners									Perforations:
									Top Bottom

**OFFICE USE ONLY
 DRILLING PERMIT**

Permit number 47-107-1346

January 10, 19 85
 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 January 10, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
<u>28</u>	<u>MH</u>	<u>MU</u>	<u>MU</u>	<u>004-966</u>

Margaret J. Hass
 Administrator, Office 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.

File