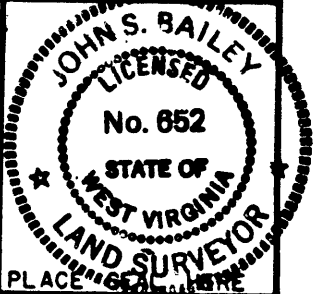


MAGNETIC REFERENCE TIES
 CNGD 1509 TO 24" TWIN
 PIGNUT HY.
 N43°54'E 205.79'
 CNGD 1509 TO 20" YELLOW POP.
 N70°42'E 198.72'

FILE NO. MSES 84-560
 DRAWN BY SARC
 SCALE 1" = 1000'
 MINIMUM DEGREE OF
 ACCURACY 1 PART IN 200
 PROVEN SOURCE OF
 ELEVATION RD. INT. PLEAS. CO. RTS.
 1/6 & 1/8; EL. 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)



DATE NOVEMBER 6 1984
 OPERATOR'S WELL NO. CNGD 1509
 API WELL NO.
47 - 107 - 1340
 STATE COUNTY PERMIT

Department of Mines
 Oil & Gas Division

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS", PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X)
 LOCATION: ELEVATION 993.47' WATER SHED BULL CREEK
 DISTRICT WALKER COUNTY WOOD
 QUADRANGLE WILLOW ISLAND, W. VA. - OH 7.5 1957 (1976) Marietta 15' SEq
 SURFACE OWNER W.J. ELLIOTT ACREAGE 245 AC.
 OIL & GAS ROYALTY OWNER W.J. ELLIOTT LEASE ACREAGE 245 AC.
 LEASE NO. 76360

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 3925'
 WELL OPERATOR CNG DEVELOPMENT COMPANY DESIGNATED AGENT GARY A. NICHOLAS
 ADDRESS ONE PARK RIDGE CENTER ADDRESS RT. 2, BOX 698
PITTSBURGH, PA 15219 BRIDGEPORT, WV 26330

142

IV-35
(Rev 8-81)

RECEIVED

MAR 06 1985



State of West Virginia
Department of Mines
Oil and Gas Division
OIL & GAS DIVISION
DEPT. OF MINES

Date February 19, 1985
Operator's
Well No. CNGD WN 1509
Farm W. J. Elliott
API No. 47 - 107 - 1340

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: 993.47 Watershed Bull Creek
District: Walker County Wood Quadrangle Willow Island

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 W. J. Elliott

ADDRESS Rt. 3 St. Marys, WV 26170

MINERAL RIGHTS OWNER W. J. Elliott

ADDRESS Rt. 3 St. Marys, WV 26170

OIL AND GAS INSPECTOR FOR THIS WORK

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

PERMIT ISSUED 12-17-84

DRILLING COMMENCED 1-24-85

DRILLING COMPLETED 1-29-85

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	267	267	To Surf.
9 5/8			
8 5/8	1547	1547	To Surf.
7			
5 1/2			
4 1/2	4392	4392	225 Poz 290 Thix.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Dev. Shale Depth 4400 feet

Depth of completed well 4397 feet Rotary x / Cable Tools

Water strata depth: Fresh 55 feet; Salt 1334 feet

Coal seam depths: Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Dev. Shale Pay zone depth 3508-3590
2874-2963 feet

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

Final open flow (est.) 100 Mcf/d Final open flow (est.) 50 Bbl/d

Time of open flow between initial and final tests hours

Static rock pressure 250 psig (surface measurement) after hours shut in

(If applicable due to multiple completion--)

Second producing formation Pay zone depth feet

OCT 28 1985

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

Perfco Perforated Shale ^{Huron} 3508-3590; 24 holes (.39)
 Up Dev. 2874-2963; 24 holes (.39)
 Up Dev. 2316-2422; 24 holes (.39)
 B. J. Hughes Nit. Frac 1st Stage - Break 3240, 10 pumps, SCF/min 80,000, Avg. PSI 3180, 500 gal 15% H.C.L., IDIP 2380, 5 min 1960.
 2nd Stage - Break 3980, 11 pumps, SCF/min 88,000, Avg. PSI 3720, 500 gals 15% H.C.L., ISIP 2400, 5 min 2120.
 3rd Stage - Break 2800, 11 pumps, SCF.min 88,000, Avg. PSI 2780, 500 gal 15% H.C.L., ISIP 1940, 5 min 1700

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	Water - 55' 1334'
Sand, Shale & RR			5	1375	
Big Lime & Injun			1375	1485	
Sand & Shale			1485	4397	Huron@TD
<u>LOG TOPS</u> ✓					
Big Injun - Base				1616	
Berea			2014	2009	
Huron				4360	

(Attach separate sheets as necessary)

Well Operator
 By: [Signature]
 Date: February 19, 1985

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



1) Date: November 16, 19 84
 2) Operator's Well No. 1509
 3) API Well No. 47 - 107 - 1340
 State _____ County _____ Permit _____

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: 993.47 Watershed: Bull Creek
 District: Walker County: Wood Quadrangle: Willow Island
- 6) WELL OPERATOR CNG Development Co.
 Address c/o Paul W. Garrett, P.O. Box 15746
Pittsburgh, PA 15244 10110
- 7) DESIGNATED AGENT Mr. Gary Nicholas
 Address Crosswind Corporate Park
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 Co.
 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, 3925 feet
- 13) Approximate trata depths: Fresh, 2245 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		250 - 275	250 - 275	To Surface	By Rule 15.05
Coal									Sizes
Intermediate	8 5/8	X-42	23	X		1520	1520	To Surface	
Production	4 1/2	J-55	10.5	X		3925	3925	200 - 400	Depths set
Tubing	2 3/8	CW-55	4.6	X					By Rule 15.01
Liners									Perforations:
									Top Bottom:

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-107-1340 Date December 17, 19 84

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 17, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>28</u>	Agent: <u>MU</u>	Plat: <u>MU</u>	Casing: <u>MU</u>	Fee: <u>094.72</u>
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Margaret Hass
 Administrator, Office of Oil and Gas

NOTE: Keep one copy of this permit posted at the drilling location.

File

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