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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

State of West Virginia

Department of Mines

Oil and Gas Division

Date April 17, 1986

Operator's

Well No. CNGD WN 2284

Farm Walter S. Stevens

API No. 47 - 017 - 3492

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: 1240 Watershed Trough Fork
District: Union County Doddridge Quadrangle Greenbrier

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 Belinda S. Westfall

ADDRESS Rt. 2 Box 188A
Bristol, WV 26332

MINERAL RIGHTS OWNER Mrs. Orphia Stephens, et al

ADDRESS Rt. 2
Salem, WV 26426

OIL AND GAS INSPECTOR FOR THIS WORK

Mike Underwood ADDRESS Rt. 2 Box 114
Salem, WV 26426

PERMIT ISSUED Jan. 10, 1986

DRILLING COMMENCED April 1, 1986

DRILLING COMPLETED April 7, 1986

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

Casing Tubing	Used in Drilling in Well	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"	250	250	To Surf.
9 5/8			
8 5/8	1,431	1,431	To Surf.
7			
5 1/2			
4 1/2	5,513	5,513	640 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Alexander Depth 5600 feet

Depth of completed well 5621 feet Rotary X / Cable Tools

Water strata depth: Fresh 100 feet; Salt 50 feet

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

OPEN FLOW DATA

Alexander
Benson

Producing formation Speechley/U. Speechley Pay zone depth 5359-67
3869-74 feet

Gas: Initial open flow Mcf/d Oil: Initial open flow Hbl/d
Final open flow 919 Mcf/d Final open flow Hbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 1350 psig (surface measurement) after 17 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 Hbl/d

Final open flow Mcf/d Oil: Final open flow Hbl/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)

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

Perforate Alexander 5359-67, 24 holes, .39, TD @ 5450'; Benson 5021-30, 27 holes, .39, 3-5/16" @ 5078'; Speechley 3869-74, 7 holes, U. Speechley 3628-31, 8 holes, total 15 holes, .39, 3-9/16" @ 3918'. Dowell Schlumber 75Q Foam Frac - 1st Stage - Gel 20, J-347, Break 2200 psi w/water, Break Rate 16 BPM, Ave Tr. Pr. 3700 psi, Max. Tr. Pr. 4000 psi*, Ave Rate 20 BPM, 20/40 Sand approximately 30,000# in place* Max Conc. 3 then 2, Total Fluid 950 bbl, SL Fluid 720 bbl, ISIP 1700 prejob w/water, BHTP 4000 psi, Nit. 1,092,800 SCF. 2nd Stage - Gel 20, Break broke when perforated 3000, Break Rate 17.5 BPM, Ave. Tr. Pr. 2950 psi, Max.Tr.Pr. 3000 psi, Ave Rate 20 BPM, 45,000# 20/40 Sand, Max Conc. 3, Total Fluid 590 bbl, SL Fluid 411 bbl, ISIP 1500 prejob w/water, BHTP 3700 psi, Nit. 543,000 SCF. 3rd Stage - Gel 20, Break 2450, Break Rate 15 BPM water & 20 M SCF/M N₂, Ave. Tr. Pr. 2900 psi, Max. Tr. Pr. 3050 psi, Ave Rate 30 BPM, 40,000# 20/40 Sand, Max. Conc. 3, Total Fluid 541 bbl, SL Fluid 382 bbl, ISIP 1400 prejob w/water, ISIP 1500 post job w/water, BHTP 3100 psi, Nit. 448,000 SCF. *Screened Alexander off on 3#/gal. Blew well back, Frac Alex. again w/25,000# 20/40 Sand.

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 & Soil			0	8	1/2" water @ 50' 1" water @ 100'
Sand, Shale & RR			8	2070	
L. Lime			2070	2095	
Shale			2095	2110	
B. Lime			2110	2210	
Injun			2210	2300	
Sand & Shale			2300	5621 ^{TD}	
ELECTRIC LOG TOPS ✓					
Big Lime			2122	2210	
Big Injun ^{GER}			2210	2260	
Berea			2534	2547	
Gordon Stray			2728	2748	
Gordon			2798	2820	
4th Sand			2840	2866	
Warren			3380	3418	
U. Speechley			3626	3632	
Speechley			3866	3880	
Benson			5018	5090	
Leopold			5218	5240	
Alexander			5292	5389	

(Attach separate sheets as necessary)

CNG DEVELOPMENT COMPANY
Well Operator

By: 

Date: April 17, 1986

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 ^(NGL), encountered in the drilling of a well."



1) Date: December 10, 1985
 2) Operator's Well No.: 2284
 3) API Well No.: 47-017-3492
 State _____ County _____ Permit _____

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

4) WELL TYPE: A Oil Gas
 B (If "Gas", Production 1240 / Undergrnd storage / Deep / Shallow /
 5) LOCATION: Elevation: _____ Watershed: Trough Fork
 District: Union / County: Doddridge / Quadrange: Greenbrier
 6) WELL OPERATOR CNG Development Co CODE: 18110 / 7) DESIGNATED AGENT 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 Mike Underwood / 9) DRILLING CONTRACTOR:
 Address Route 2, Box 114 / Name Sam Jack Drilling Co.
Salem, WV 26426 / Address P.O. Box 48
Buckhannon, WV 26201

10) PROPOSED WELL WORK: Drill / deeper / Redrill / Stimulate
 Plug off old formation / Perforate new formation
 Other physical change in well (specify) _____
 11) GEOLOGICAL TARGET FORMATION, Alexander 439
 12) Estimated depth of completed well, _____ feet
 13) Approximate traata depths: Fresh, 740 feet; salt, _____ feet.
 14) Approximate coal seam depths: _____ feet; Is coal being mined in the area? Yes No

CASING OR TUBING TYPE	SPECIFICATIONS		FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS						
	Size	Grade	Weight per ft.	Used			For drilling	Left in well	Kinds			
Conductor	11-3/4	H-40	42	X								
Fresh water												
Coal												
Intermediate	8-5/8	X-42	23	X	1050	1050						
Production	4-1/2	J-55	10.5	X	5600	5600						
Tubing	1-1/2	CN-55	2.75	X								
Lin...												

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-017-3492 / Date January 10 19 86

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

Bond:	Agent:	Plat:	Casing	Fee	WPCP	S&E	Other
	<u>KLB</u>	<u>DS</u>	<u>MH 12281</u>		<u>DS</u>	<u>DS</u>	

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

[Signature]
 Director, Division of Oil and Gas

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

File

