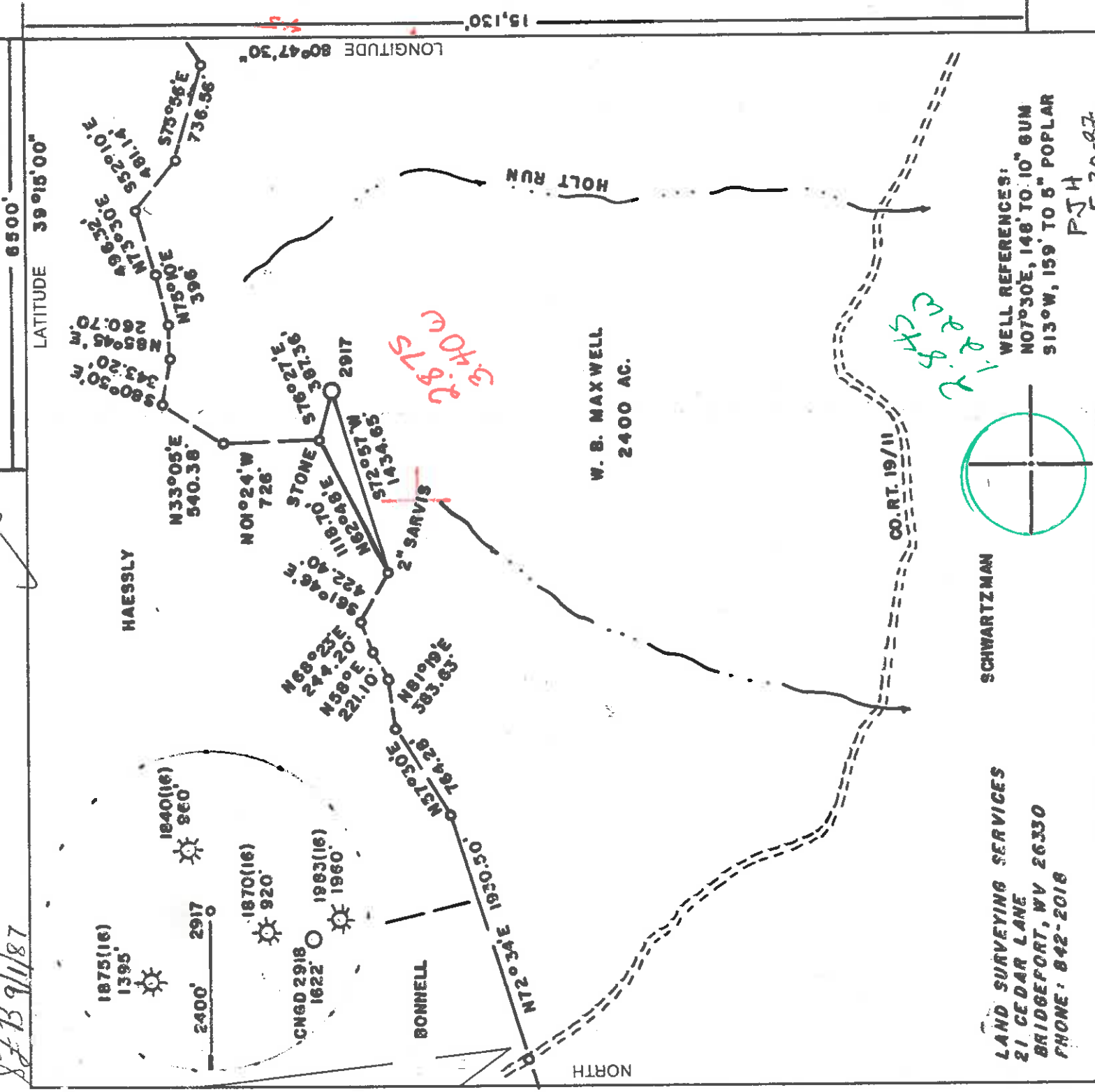
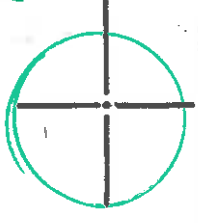


8/11/87



LAND SURVEYING SERVICES  
 21 CEDAR LANE  
 BRIDGEPORT, WV 26330  
 PHONE: 842-2018

SCHWARTZMAN



WELL REFERENCES:  
 N07°30'E, 148' TO 10" GUM  
 S13°W, 159' TO 5" POPLAR

PJH  
 5-20-87

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

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1 in 200  
 PROVEN SOURCE OF ELEVATION TOP OF KNOB 500' W. OF LOCATION ELEV. - 1384'

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.  
 (SIGNED) \_\_\_\_\_  
 R.P.E. \_\_\_\_\_ L.L.S. \_\_\_\_\_ 674  
 STEPHEN D. LOSH

PLACE SEAL HERE



STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENERGY  
 OIL AND GAS DIVISION

DATE APRIL 24 19 87  
 OPERATOR'S WELL NO. 2917  
 API WELL NO. 47 017 3587

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
 (IF "GAS,") PRODUCTION  STORAGE  DEEP  SHALLOW   
 LOCATION: ELEVATION 1187' WATER SHED HOLT RUN  
 DISTRICT SOUTHWEST 7 COUNTY DODDRIDGE  
 QUADRANGLE OXFORD 7.5 min. 526 058 ALES Holbrook  
 SURFACE OWNER BEATRICE H. SCHWARTZMAN ACREAGE 4389.21  
 OIL & GAS ROYALTY OWNER W. B. MAXWELL LEASE ACREAGE 2400

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_  
 LEASE NO. COTC 41998

PLUG AND ABANDON  CLEAN OUT AND REPLUG \_\_\_\_\_  
 TARGET FORMATION DEVONIAN SHALE ESTIMATED DEPTH 5345'  
 WELL OPERATOR CNG DEVELOPMENT COMPANY DESIGNATED AGENT GARY A. NICHOLAS  
 ADDRESS ONE PARK RIDGE CENTER RT. 2, BOX 698 BRIDGEPORT, WV 26330

PERMIT SEP 21 1987

COUNTY NAME

PERMIT

6-6 Straight Fork - Bluestone Creek (133)



Date February 12, 1988  
 Operator's Well No. 2917  
 Farm W. B. Maxwell  
 API No. 47 - '017 - 3587

**RECEIVED**  
 FEB 22 1988  
 State of West Virginia  
 Department of Mines  
 Oil and Gas Division

DIVISION OF OIL & GAS WELL OPERATOR'S REPORT  
 DEPARTMENT OF ENERGY 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: 1187 Watershed Holt Run  
 District: Southwest County Doddridge Quadrangle Oxford

COMPANY CNG Development Company  
 ADDRESS P.O. Box 15746  
Pittsburgh, PA 15244  
 DESIGNATED AGENT Gary A. Nicholas  
 ADDRESS Rt. 2 Box 698  
Bridgeton, WV 26330  
 SURFACE OWNER Beatrice H. Schwartzman  
 ADDRESS 2520 - 30th St., NW  
Washington, DC 20008  
 MINERAL RIGHTS OWNER W. B. Maxwell  
 ADDRESS Union Nat'l Bank A/I/F W. B. Maxwell Hrs.  
P.O. Box 1450, Clarksburg, WV 26301

OIL AND GAS INSPECTOR FOR THIS WORK

Mike Underwood ADDRESS Rt. 2, Box 114  
Salem, WV 26426  
 PERMIT ISSUED September 14, 1987  
 DRILLING COMMENCED Jan. 12, 1988  
 DRILLING COMPLETED Jan. 16, 1988

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 Cord.			
13-10"	35	35	To Surf.
9 5/8			
8 5/8	1384	1384	To Surf.
7			
5 1/2			
4 1/2	5377	5377	475 sks
3			
2	5166	5166	----
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Shale Depth 5345 feet  
 Depth of completed well 5367 feet Rotary X / Cable Tools \_\_\_\_\_  
 Water strata depth: Fresh \_\_\_\_\_ feet; Salt \_\_\_\_\_ feet  
 Coal seam depths: \_\_\_\_\_ Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Alexander Pay zone depth 5141-5196 feet  
 Gas: Initial open flow \_\_\_\_\_ Mcf/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
 Final open flow 471 Mcf/d Final open flow \_\_\_\_\_ Bbl/d

Time of open flow between initial and final tests 4 hours  
 Static rock pressure 220 psig (surface measurement) after 220 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)  
 FEB 29 1988

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

McCullough Ran Corrilog & CBL Semogram. Perforate the Alexander 5190 - 5196, 8 holes; 5184 - 5188, 4 holes; 5175 - 5179, 4 holes; 5163 - 5170, 8 holes; 5141 - 5154, 8 holes; Total 32 holes (.39) HSC  
Dowell Sch. Foam Frac (700) Alexander 1-Break 1500, Avg TPST 2753, Avg Rate 20 BPM, HHP used 1012, ISI 1700, 5 min 1350, used 700 gals 15% FE Acid & 60 Perf. Balls. Did not get ballout @ 1000# 10 BPM, used 5000# 80/100 Sand, 58,000# 20/40 and 57,000# 16/30 Sand, Max. Sand Conc. 15# per gal.

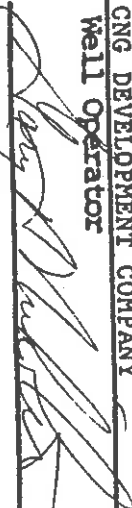
WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
Fill			0	14	Damp @ 1690' 1975'
Clay, Shale, Sand & RR			14	1854	
L. Lime			1854	1882	
Shale			1882	1890	
B. Lime			1890	1960	No show of coal
Injun			1960	2012	
Sand & Shale			2012	4195	
Bradford			4195	4220	
Sand & Shale			4220	5367	
<b>LOG TOPS</b>					
Big Lime			1888	1955	
Big Injun			1955	2084	
Weir			1990	2310	
Berea			2390	2394	
Warren			3200	3310	
U. Speechley			3330	3414	
Speechley			3638	-	
Balltown			4020	4080	
Bradford			4440	4486	
Riley			4800	4822	
Benson			4878	4934	
Alexander			5074	5203	

**RECEIVED**  
FEB 22 1988  
DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

(Attach separate sheets as necessary)

CNG DEVELOPMENT COMPANY  
Well Operator

By:   
Date: February 12, 1988

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 sand, encountered in the drilling of a well."

7/85 RECEIVED AUG 28 1987

- 1) Date: Aug. 21, 1987
- 2) Operator's Well No. CNGD 2917
- 3) API Well No. 47 State 017 County 3587 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  Undergrnd storage  Deep  Shallow
- 5) LOCATION: Elevation: 1187 Watershed: Holt Run District: Southwest County: Doddridge Quadrangle: Oxford 525
- 6) WELL OPERATOR: CNG Development Co. CODE: 10110 7) DESIGNATED AGENT Gary Nicholas Address c/o Cheryl S. Hartle 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: Name Sam Jack Drilling Co. Address Route 2, Box 114 Address P.O. Box 48 Salem, WV 26426 Address Buckhannon, WV 26201

- 10) PROPOSED WELL WORK: Drill  deeper  Plug off old formation  Perforate new formation  Stimulate  Other physical change in well (specify) \_\_\_\_\_
- 11) GEOLOGICAL TARGET FORMATION, Alexander
- 12) Estimated depth of completed well, 5345 feet
- 13) Approximate true depths: Fresh, 350 feet; salt, - feet.
- 14) Approximate coal seam depths: - feet. 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		
Conductor							
Fresh water	11-3/4	H-40	42	X		40	To surface
Coal							By rule <u>38 CSR 18-11.3</u>
Intermediate	8-5/8	X-42	23	X		1400	By rule <u>38 CSR 18-11.3</u>
Production	4-1/2	J-55	10.5	X		5345	By rule <u>38 CSR 18-11.1</u>
Tubing	1-1/2	CN-55	2.75	X		200 - 400	Depths set <u>38 CSR 18-11.1</u>
Liners							By rule <u>38 CSR 18-11.1</u>
							Perforations:
							Top
							Bottom

OFFICE USE ONLY  
DRILLING PERMIT

Permit number 47-017-3587 Date September 14 19 87

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 September 14, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <u>[Signature]</u>	Fee: <u>228</u>	Other: <u>[Signature]</u>
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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

10740

