

WR35

State of West Virginia
DEPARTMENT OF ENERGY
Division of Oil and Gas

22-AUG-90
API # 47-61-00936

Division of Energy
SEPT 05 1990
Permitting
Oil and Gas Section

Well Operator's Report of Well Work

FARM NAME: GRISWOLD, FRANK, ET UX Operator Well No.: GRISWOLD #1
LOCATION: Elevation: 1200.00 Quadrangle: MORGANTOWN NORTH.
District: UNION County: MONONGALIA
Latitude: 10,200 Feet South of 39 Deg. 42 Min. 30 Sec.
Longitude: 4,500 Feet West of 79 Deg. 55 Min. 00 Sec.

COMPANY: NOUMENON CORPORATION, a WV
P.O. Box 116
Core, WV 26529-0116

AGENT: STEPHAN K. SHUMAN

Inspector: DONALD ELLIS
Permit Issued: 08/16/89
Well Work Commenced: 08/15/89
Well Work Completed: 08/20/89
Verbal Plugging
Permission granted on: n/a
Rotary x Cable ___ Rig
Total Depth (feet) 1751'
Fresh water depths (ft) 1050,
170, 75
Salt water depths (ft) n/a

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Cu. Ft.
11 3/4"	40'	40'	
7 "	955'	955'	150
4 1/2"	---	1711'	50

Is coal being mined in area (y/n)? n
Coal Depths (ft): 620

OPEN FLOW DATA

Producing Formation Squaw and Big Injun Pay zone depth (ft) 1642'
Gas: Initial open flow 5 MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow 130 MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests 48 Hours
Static rock Pressure 380 psig (surface pressure) after 8 Hours

Second producing Formation All above Pay zone depth (ft) _____
Gas: Initial open flow Above MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow Above MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests Above Hours
Static rock Pressure Above psig (surface pressure) after Above Hours
Note: Above information is a composite of both pay zones.

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

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PERFORATION AND STIMULATION DATA:

The 4 1/2" casing was notched with 4 or 8 cuts at the following intervals:
 Squaw Sand: 1642', 1635', 1620' & 1601'
 Big Injun Sand: 1523', 1510', 1504', 1498', 1476', 1466', & 1461'

The notches were fraced separately unless otherwise indicated -
 See attached exhibit.

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
Sandstone & Shale	Gray	Hrd	0	483	75 Fresh Water
Sandstone	Gray	Med	483	509	170 Fresh Water
Shale	Gray	Med	509	597	
Sandstone & Shale	Gray	Hrd	597	620	
Upper Freeport Cl	Black	Sft	620	625	
Shale	Gray	Sft	625	709	
Sandstone	Gray	Med	709	742	
Sandstone & Shale	Gray	Hrd	742	889	
Homewood Sndstone	Gray	Med	889	1061	1050 Fresh Water
Shale	Gray	Sft	1061	1260	3 Gal/Minute
Little Lime	Gray	Med	1260	1273	
Sandstone & Shale	Gray	Med	1273	1308	
Big Lime	Gray	Hrd	1308	1403	
Big Injun Limest	Tan	Hrd	1403	1532	
Base Big Injun	Gray	Hrd	1532	1600	
Squaw Sandstone	Gray	Med	1600	1643	
Shale	Gray	Med	1643	1670	1665' Gas - Too little
Sandstone <i>Squaw</i>	Gray	Hrd	1670	1708	to measure
Base Squaw & Shle	Gray	Med	1708	1746	
TD Logger			1751		

NOUMENON CORPORATION, a W.VA. CORP.

By: _____

[Signature]

Date: _____

August 24 1990

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Because of the planned sand-frac-notching of the casing at selected intervals using a 4-port notching tool on 1 1/2 inch tubing, a steel line measure was run by John Wahl and the log depth was set to match the steel line total depth.

On August 29 using John Wahl's service rig and two man crew plus Don Taylor the casing and formation was notched using Universal Well Service's pump truck and blender. Notches were made in the Squaw Sand at the following intervals: 1642 feet with four holes; 1635 feet with eight holes; 1620.8 feet with eight holes; 1601 feet with four holes. The Big Injun Sand was notched at the following intervals: 1523 feet with four holes; 1510.5 feet with four holes; 1504 feet with four holes; 1498 feet with four holes; 1476 feet with eight holes; 1466 feet with eight holes; 1461 feet with eight holes.

On August 30, ran two and seven-eighths (2 7/8) inch tubing with a Halliburton packer inside the four and one-half (4 1/2) inch casing in order to frac selected zones. Each notch was fraced separately unless otherwise indicated. 20-40 sand and 10 pound gel system was used throughout.

The first notch (8 holes) at 1461 feet broke at 2250 PSI and was treated with 75 sacks of sand, maximum concentration two pounds per gallon, ATP 2350, AIR 18.4 BPM, HHP 1060, 782 gallons fluid. Flowed back 30 minutes.

Washed down to next notch (8 holes) at 1466 feet; set packer; BDP 2250, ATP 2263, AIR 17.3, HHP 959, flowed back approximately 30 minutes.

Washed down to notch (8 holes) at 1476, set packer and frac. BDP 1850, ATP 2375, AIR 19, HHP 1106, flow back.

Washed down to four (4) hole notch at 1498, could not break down at 4000 PSI.

Washed down to 4 hole notch at 1504, could not break at 4000 PSI, spotted 15% HCL, broke down at 2500 PSI and communicated with notch at 1498 after brief frac. Released packer, reset above 1498 and fraced both notches simultaneously; ATP 2525, AIR 18.3, HHP 1138. Flowed back 30 minutes, released packer.

Washed down to notch (4 holes) at 1523. Did not treat notch at 1510. Set packer above 1523, did not break, spotted acid; BDP 3650 PSI, ATP 2650, AIR 13.8, HHP 900. Allowed to flow back for approximately 20 minutes.

Released packer, pulled tubing up above 1460 feet, set packer and left well open to flow back through tubing overnight.

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7:00 AM August 31 well dead, released packer, washed down to top of first Squaw Sand notch (4 holes) at 1601, spotted 15% HCL acid at notch, set packer; BDP 2250 PSI, ATP 2613 PSI, AIR 17.3, KHP 1108, allowed to flow back approximately 30 minutes, unseated packer.

Washed down to notch (8 holes) at 1620.8, set packer; BDP 3400 PSI, ATP 2613, AIR 17.3, KHP 1108, allowed to flow back for approximately 30 minutes, released packer.

Washed down to notch (8 holes) at 1635; set packer; BDP 3450 PSI, ATP 2650 PSI, AIR 17.8, KHP 1160 PSI, allowed to flow back approximately 30 minutes, released packer.

Washed down to last notch (4 holes) at 1642, spot acid, set packer, communicated with notch above on break-down, released packer, moved up above notch at 1635, reset packer and fraced both notches simultaneously using 205 sacks of sand, 309 barrels water, ATP 2890 PSI, AIR 16.7, KHP 1185, job complete at 12:30 PM.

Allowed to flow back through tubing for approximately 30 minutes then pulled tubing and released rig.

Nowmenon to move on swab unit to swab in four and one-half (4 1/2) inch casing.

The notches with eight holes broke down without acid and treated reasonably well at moderate pressures and anticipated sand concentrations and injection rates. The four hole notches all required the use of acid to assist in the break-down but treated reasonably well with slightly reduced injection rates following break-down.

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DIVISION OF OIL & GAS 3)
DEPARTMENT OF ENERGY

Date: August 1, 1989
Operator's well number
Griswold #1
API Well No: 47 - 061 - 0936
State - County - Permit

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

- | | |
|--|--|
| <p>4) Surface Owner(s) to be served:
 (a) Name <u>Frank C. & Donna Lea Griswold</u>
 Address <u>200 Wedgewood Drive</u>
 <u>Morgantown, WV 26505</u>
 (b) Name _____
 Address _____
 (c) Name _____
 Address _____</p> | <p>5) (a) Coal Operator:
 Name <u>N/A</u>
 Address _____
 (b) Coal Owner(s) with Declaration
 Name <u>N/A</u>
 Address _____
 Name <u>N/A</u>
 Address _____
 (c) Coal Lessee with Declaration
 Name <u>N/A</u>
 Address _____</p> |
| <p>6) Inspector <u>Donald Ellis</u>
 Address <u>2604 Crab Apple Lane</u>
 <u>Fairmont, WV 26554</u>
 Telephone (304)- <u>534-5596</u></p> | |

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

_____ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR
x Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through _____ on the above named parties, by:

- _____ Personal Service (Affidavit attached)
- _____ Certified Mail (Postmarked postal receipt attached)
- _____ Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator Noumenon Corporation
By: [Signature]
Its: President
Address 256 High Street
Morgantown, WV 26505
Telephone (304) 292-8488

Subscribed and sworn before me this 3rd day of August, 1989

[Signature]
My commission expires 10/20/97

OFFICIAL SEAL
Notary Public, State of West Virginia
[Signature]
256 HIGH ST.
MORGANTOWN, W. VA. 26505
My Commission Expires October 23, 1997

- 1) Well Operator: ⁶²⁴ NOUMENON CORPORATION 34710, 7, 493
- 2) Operator's Well Number: Griswold #1 3) Elevation: 1200
- 4) Well type: (a) Oil / or Gas / Issued 8/16/89 Expires 8/16/91
 (b) If Gas: Production / Underground Storage /
 Deep / Shallow
- 5) Proposed Target Formation(s): Big Injun 37)
- 6) Proposed Total Depth: 1900 feet
- 7) Approximate fresh water strata depths: 910 (061-0936)
- 8) Approximate salt water depths: N/A
- 9) Approximate coal seam depths: 630
- 10) Does land contain coal seams tributary to active mine? Yes / No
- 11) Proposed Well Work: Drill and Open Whole Frac
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	
Conductor	10"		32 lb.	40'	--	
Fresh Water						
Coal						
Intermediate	7"	J-55	17 lb.	960'	960'	CTS
Production	<u>Openhole</u>					
Tubing				<u>DR ELLS</u>		
Liners						

PACKERS : Kind _____
 Sizes _____
 Depths set _____

For Division of Oil and Gas Use Only

1 Fee(s) paid: 1 Well Work Permit 1 Reclamation Fund 1 WPCP
1 Plat 1 WW-9 1 WW-2B 1 Bond Blanket Sure Agent
 (Type)

4404
1504