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State of West Virginia Division of Environmental Protection

January 26, 2001 DATE: API#: 47-9501696

## Section of Oil and Gas

Rodomud
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Well Operator	's Report of W	ell Work				
Farm name: Hartley Operator Well No.: #1						
LOCATION: Elevation: 918'	Qua	Quadrangle: <u>Pennsboro</u>				
District: Meade	Cou	inty: <u>ጥ</u> չ	/ler			
Latitude: 8650 Feet South of 39	Deg. 2	2Min	30 Sec.	ů.		
Longitude 7125 Feet West of 80	Deg <u>5</u> '	7Min	30_Sec.	j.		
Company: Ohio L&M Co., Inc.						
	Casing &	Used in	Left in well	Cement fill		
Address: 4150 Belden Village Ave.	Tubing	drilling		up Cu. Ft.		
	16"	40'	0	N/A		
NW Sulte 410 Canton, OH 47718 Agent: Jeff Sayger	11 2/4		1.601			
Inspector: Mike Underwood	11-3/4		168'	100 Sks.		
Date Permit Issued: 10-5-2000	8-5/8		1182	225 01-5		
Date Well Work Commenced: 11-15-00	3 3/ 0		1102	225 Sks.		
Date Well Work Completed: 12-15-00	4-1/2		5151	272 Sks.		
Verbal Plugging:				Z7Z DRS.		
Date Permission granted on:				-		
Rotary X Cable Rig						
Total Depth (feet): 5214			Offic	ECEIVED		
Fresh Water Depth (ft.): 107 Damp			Ome	e of Oil & Gas Permitting		
zresii water zeptii (ta). ±07 Baliip						
Salt Water Depth (ft.): 1378 '			AU	\$ 2 7 2001		
out value zepin (i.i.).				1		
Is coal being mined in area (N/Y)? N			Envisor	epartment or		
Coal Depths (ft.): N/A		4.	LIMITON	ental Protection		
	1	'	1			
OPEN FLOW DATA	- <b>4</b>			a. r		
T		· ·				
Producing formation Benson Pay zone depth (ft) 4814-4820						
Gas: Initial open flow MCF/d Oil: Initial open flow 0.0 Bbl/d						
Final open flow 40 MCF/d Final open flow 0.0 Bbl/d After Frac						
Time of open flow between initial and f	final tests	Hou	ırs			
Static rock Pressure 850 psig (surface	e pressure) a	after <u>48</u> Ho	ours	•		
of the second						
Second producing formation Pay zone depth (ft)						
Gas: Initial open flow MCF/d Oil: Initial open flow Bbl/d						
Final open flow MCF/d F	inal open flo	wI	3b1/d			
Time of open flow between initial and f	final tests	Hou	ırs			
Static rock Pressurepsig (surface	e pressu <mark>re)</mark> a	afterHo	ours			
NOTE: ON BACK OF THIS FORM PUT THE F						
INTERVALS, FRACTURING OR STIMULATIN						
LOG WHICH IS A SYSTEMATIC DETAILED			F ALL FORMA	HONS,		
INCLUDING COAL ENCOUNTERED BY THE	METPROKE.		À١	IG 3 1 2001		
Signed:	1/1/1/	1	, a			
By: Martin L. Mille	er					
Date: Jan. 26, 2001		-				

## Completion:

Perforated Benson Sand With 24 Shots From 4814- 4820

Treat Well With 500 Gals. 15% HCl Acid, 760 Bbl. Slick Water 50,000 # 20/40 Sand - N2 Assist

Aveg. Rate - 31 BPM - Aveg. Treat Pressure 3040

ISIP - 1637 5 Min - 1129

HARTLEY#1			Page 2
	30' Sandstone	2682'	- 1754
	Gordon Sandstone	2798'	- 1870
	4 <sup>th</sup> Sandstone	2874'	- 1946
	5 <sup>th</sup> Sandstone	2956'	- 2028
	Warren Sandstone	3370'	- 2442
	Speechley Sandstone	3748'	- 2820
	Balltown Sandstone	3907'	- 2979
	<b>Bradford Sandstone</b>	4390'	- 3462
	Riley Sandstone*	4638'	- 3710
	Benson Sandstone	4808'	- 3880

## STRUCTURAL COMPARISON:

Ohio L&M Co., Inc.

Alexander Sandstone

**Consolidated Gas** 

- 4162

AUG 27 2001

WV Department of **Environmental Protection** 

Hartley #1

- 3880

Ayers #1 - 3859

5090'

## **GEOLOGY:**

Benson Sandstone

Sample analysis indicated very good sandstone development in the Benson, with fair development in the Weir, Gordon and Warren. A good show of gas was encountered in the Benson. Fair hydrocarbon fluorescence was noted in the Gas Sand and Benson Sandstone.

Based upon the open hole logs, the Benson Sandstone at 4810 to 4820' appears to be well developed with good gas saturations. The Gordon and Warren showed fair development.

The Benson Sandstone should be very good product of all the completion attempt on the Gordon and Warren would also be warranted parctived Office of Oil & Gas Permitting

Respectfully submitted,

NATIONAL MINERALS CORPORATION

By: Douglas L. Core, President

December 4, 2000.



WELL: Ohio L & M Co., Inc.#1 Hartley.

LOCATION: Meade District, Tyler County, West Virginia.

PERMIT NUMBER: Tyler-1696.

ELEVATION: 918' Ground 928' KB.

STATUS: Preparing to complete as a gas producer.

CASING: 16" @ 38' 11" @ 168' 8 5/8" @-1182'.

TOTAL DEPTH: 5214' Driller 5228' Logger.

CONTRACTOR: Nexus Drilling Co..

TOOLS: Rotary.

SPUD DATE: 11/16/2000.

COMPLETED DRILLING: 12/2/2000.

FORMATION AT TOTAL DEPTH: Devonian shale.

ELECTRICAL SURVEYS: Gamma Ray- Neutron- Compensated Density-Caliper- Induction- by Allegheny Wireline Services, Inc..

SHOWS: A good show of gas was encountered in the Benson Sandstone. Fair hydrocarbon fluorescence was noted in the Gas Sand and Benson Sandstone. A more detailed description of the above mentioned fluorescence can be found on the attached Formation Evaluation Log.

FORMATION TOPS:	2 <sup>nd</sup> Cow Run Sandstone	1208'	- 280
	Gas Sand	1350'	- 422
	1st Salt Sand	1405'	- 477
	2nd Salt Sand	1526'	- 598
	3rd Salt Sand	1620'	- 692
	Maxon Sandstone	Absent	
	Little Lime	1761'	- 833
	Big Lime (Greenbrier)	1786'	- 858
	Big Injun Sandstone	1876'	- 948
	Squaw Sandstone	1977'	- 1049
	Weir Sandstone	2246'	- 1318
	Berea Sandstone	2510'	- 1582
	Gantz Sandstone	2600'	- 1672

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