

WR-35  
Rev (9-11)

State of West Virginia  
Department of Environmental Protection  
Office of Oil and Gas  
Well Operator's Report of Well Work

Date: 9/16/2013  
API: 47-021-05742  
05752  
*[Signature]*

Farm Name: : Kenneth Meadows, ET AL Operator Well No: NORM-1G-HS

LOCATION: Normantown Elevation: 810.00 Quadrangle: Normantown 1

District: Center County: GILMER  
Latitude: \_\_\_\_\_ Feet South of Deg. Min. Sec. 38.84862200  
Longitude: \_\_\_\_\_ Feet South of Deg. Min. Sec. -80.94565300

Company: CNX Gas Company LLC	Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. Ft.
Address: 200 Evergreene Drive Waynesburg, PA 15370	20	58.0	58.0	Cemented In
Agent: Steven Haught	13 3/8	462.0	462.0	414 sxs (90bbbls) 15bbbls return
Inspector: Bill Hendershot	9 5/8	2,040.0	2,040.0	687 sxs (154bbbls) 1/2 bbbls return
Date Permit Issued: 7/24/2012	7	5,763.0	5,763.0	978 sxs cement
Date Well Work Commenced: 8/21/2012	4-1/2 liner	12,750	12,750	540 sxs (132.5bbbls) - full returns, 50bbbls spacer return, Estimated TOC @ 5622'
Date Well Work 9/6/2013				
Verbal Plugging:				
Date Permission granted on: 8/21/2012				
Rotary Cable Rig X				
Total Vertical Depth (ft): 6,004.4				
Total Measured Depth (ft): 12,772.0				
Fresh Water Depth (ft): 192'				
Salt Water Depth (ft): 1482'				
Is coal being mined in the area (N/Y)? N				
Coal Depths (ft.): 332'				
Void(s) encountered (N/Y) Depth(s) N/A				

**OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)**

Producing formation: Marcellus Pay zone depth (ft) N/A

Gas: Initial open flow N/A MCF/d Oil: Initial open flow N/A Bbl/d  
Final open flow N/A MCF/d Final open flow N/A Bbl/d  
Time of open flow between initial and final tests N/A Hours  
Static rock Pressure N/A psig (surface pressure) after N/A Hours

Second producing formation \_\_\_\_\_ Pay zone depth (ft) \_\_\_\_\_

Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the 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.

*[Signature]*  
Signature  
Date  
3/7/14  
1-29-14

Were core samples taken? Yes  No

Were cuttings caught during drilling? Yes  No  21-05752

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list: Bond Log, Gamma Ray Log, OH Log

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**NOTE: IN THE AREA BELOW 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 THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.**

Perforated Intervals, Fracturing or Stimulating: Please See Attached

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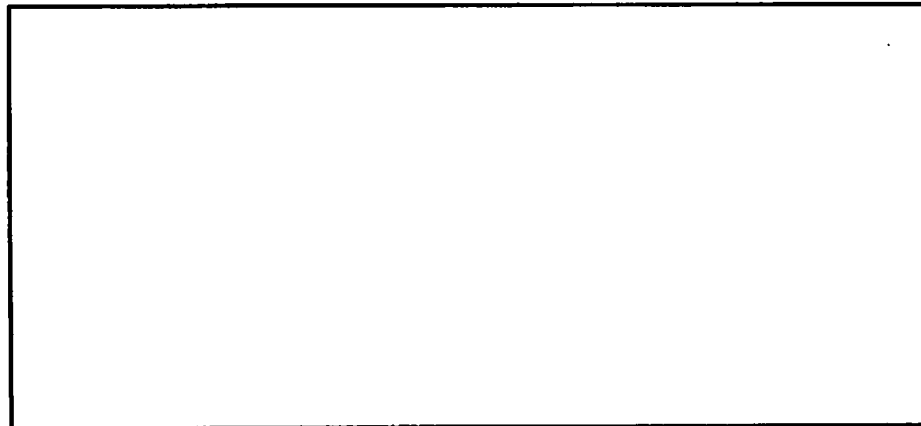
Plug Back Details including Plug Type and Depth(s): Please see Attached

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Surface:

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Formations Encountered: PLEASE SEE ATTACHED



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Date	Stage #	Formation	Frac Type	Top Perf	Bottom Perf	# of Perfs	BD Press (psi)	ATP (psi)	Avg Rate (bpm)	ISIP (psi)	Frac Gradient	Sand (lbs)	Acid (gals)	Water (gals)
7/18/2013	1	Marcellus	Slickwater	12,376	12,617	48	6914	7408	35	4740	1.22	56750	6000	302,040
7/19/2013	1RP	Marcellus	Slickwater	12364	12424	30	6839	7407	27	6008	1.44	527	6000	147,903
7/20/2013	1C	Marcellus	Slickwater	12076	12327	40	5611	6609	55.6	3263	0.98	274718	3000	608,739
7/28/2013	2	Marcellus	Slickwater	11776	12027	40	4128	6646	57.2	3628	1.04	364385	3000	503,088
7/29/2013	3	Marcellus	Slickwater	11476	11727	40	5325	6947	47	5508	1.36	239456	6000	581,233
7/29/2013	4	Marcellus	Slickwater	11176	11427	40	6599	7218	53.6	5648	1.38	434370	3000	516,512
7/30/2013	5	Marcellus	Slickwater	10876	11127	40	7131	7332	57.28	4249	1.15	436833	3000	492,625
7/30/2013	6	Marcellus	Slickwater	10576	10827	40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11,340

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Stage #	Plug Type	Plug Depth
1	No Plug	No Plug
1RP	No Plug	No Plug
1C	No Plug	No Plug
2	Composite Flow Through Plug	12034
3	Composite Flow Through Plug	11750
4	Composite Flow Through Plug	11450
5	Composite Flow Through Plug	11150
6	Composite Flow Through Plug	10850

Pump 33 bbl Sealbond preflush and follow with 55bbl, 17.0ppg, Class H cement, Install Nerf Ball and Displace Cement with 9 bbls Sealbond Spacer then follow with 83 bbls 9.4 ppg drilling mud. Pull 7 stands to 5,550'. While attempting to circulate a full circulation after pulling 7 stands to 5,550', pumped 2,160 strokes and started loosening mud. Lost 45 bbls and reduced pump speed to 40 spm, continued to loose mud, 16 more bbls. Shut pump down. Broke Top Drive out and mud was U-Tubing, screwed top drive back in, started pump at 40 spm and never regained circ. Lost another 17bbls. RU cementers to set top kick plug Pump 40 bbls, 9.5ppg sealbond preflush and follow with 96bbls, 17.0ppg Class H cement (546 sx) install Nerf Ball and displace cement with 6bbls 9.5ppg sealbond spacer then follow with 70bbls 9.4 ppg drilling mud. Circulate Surface to Surface 4000 strokes.

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Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Sandstone and Shale, Undif.	0	472	0	472	
Shale	472	533	472	533	
Sandstone	533	656	533	656	
Shale	656	723	656	723	
Sandstone	723	769	723	769	
Shale	769	788	769	788	
Sandstone	788	906	788	906	
Shale	906	955	906	955	
Sandstone	955	989	955	989	
Shale	989	1105	989	1105	
Sandstone	1105	1150	1105	1150	
Shale	1150	1270	1150	1270	
Sandstone	1270	1305	1270	1305	
Shale	1305	1463	1305	1463	
Big Lime	1463	1720	1463	1720	
Shale	1720	1910	1720	1910	
Weir	1910	1962	1910	1962	
Upper Devonian Undif.	1962	3197	1962	3197	
Lower Huron	3197	4346	3197	4346	
Benson	4346	4366	4346	4632	
Angola	4632	4703	4632	4703	
Alexander	4703	4797	4703	4900	
Rheinstreet	4899	5496	4900	5506	
Sycamore	5496	5528	5506	5541	
Cashaqua	5528	5762	5541	5826	
Middlesex	5762	5804	5826	5882	
West River	5804	5869	5882	5991	
Burkett	5869	5895	5991	6052	
Tully Limestone	5895	5897	6052	6057	
Hamilton	5897	5899	6057	6063	
Marcellus	5899	5947	6063	not encountered	Gas
Onondaga	5947	5952	not encountered	not encountered	
Huntersville	5952	not encountered	not encountered	not encountered	

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## Hydraulic Fracturing Fluid Composition

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Fresh Water	Operator				100.00%	93.86207%	Density = 8.340
HYDROCHLORIC ACID 5-10%	Halliburton		Hydrochloric acid	7647-01-0	10.00%	0.07269%	
SAND - COMMON WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00%	2.58225%	
PREMIUM WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00%	2.67564%	
LGC-36 UC	Halliburton	Liquid Gel Concentrate	Guar gum	9000-30-0	60.00%	0.01284%	
			Naphtha, hydrotreated heavy	64742-48-9	60.00%	0.01284%	
BE-9	Halliburton	Biocide	Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00%	0.00324%	
FR-68	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00%	0.01211%	
Scalechek® LP-65 Scale Inhibitor	Halliburton	Scale Inhibitor	Ammonium chloride	12125-02-9	10.00%	0.00180%	
LCA-1	Halliburton	Solvent	Paraffinic solvent	Confidential Business Information	100.00%	0.00270%	
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor	Methanol	67-58-1	60.00%	0.00037%	
			Propargyl alcohol	107-19-7	10.00%	0.00006%	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive	Acetic acid	64-19-7	60.00%	0.00226%	
			Acetic anhydride	108-24-7	100.00%	0.00377%	
LoSurf-300D	Halliburton	Non-ionic Surfactant	1,2,4 Trimethylbenzene	95-83-6	1.00%	0.00001%	
			Ethanol	64-17-5	60.00%	0.00076%	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00%	0.00038%	
			Naphthalene	91-20-3	5.00%	0.00006%	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00%	0.00006%	
SP BREAKER	Halliburton	Breaker	Sodium persulfate	7775-27-1	100.00%	0.00140%	
WG-36 GELLING AGENT	Halliburton	Gelling Agent	Guar gum	9000-30-0	100.00%	0.03120%	

Ingredients listed below this line are part of the fluid composition provided by Halliburton which do not appear on the Material Safety

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			Alcohols, C12-16, ethoxylated	68551-12-2		
			Alcohols, C14-C15, ethoxylated	68951-67-7		
			Ammonium chloride	12125-02-9		
			Bentonite, benzyl(hydrogenated tallow alkyl) dimethylammonium stearate complex	121888-68-4		
			Crystalline silica, quartz	14808-60-7		
			Fatty acid tall oil amide	Confidential Business Information		
			Fatty acids, tall oil	Confidential Business Information		
			Fatty alcohol polyglycol ether surfactant	9043-30-5		
			Formaldehyde	50-00-0		
			Olefins	Confidential Business Information		
			Olefins	Confidential Business Information		
			Olefins	Confidential Business Information		
			Olefins	Confidential Business Information		
			Organic phosphonate	Confidential Business Information		
			Oxyalkylated phenolic resin	Confidential Business Information		
			Oxyalkylated phenolic resin	Confidential Business Information		
			Polyacrylamide copolymer	Confidential Business Information		
			Quaternary ammonium compounds, bis(hydrogenated tallow alkyl) dimethyl, salts with bentonite	68953-58-2		
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1		
			Silica gel	112926-00-8		

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			Sodium chloride	7647-14-5			
			Sodium sulfate	7757-82-6			
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6			
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8			
			Surfactant mixture	Confidential Business Information			
			Surfactant mixture	Confidential Business Information			
			Water	7732-18-5			