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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: 4/25/14
API #: 47-049-02236

Farm name: John Markovich Operator Well No.: Four States Unit A 2H

LOCATION: Elevation: 1,249' Quadrangle: Shinnston 7.5'

District: Lincoln County: Marion
Latitude: 8,930' Feet South of 39 Deg. 30 Min. 00 Sec.
Longitude 11,440' Feet West of 80 Deg. 15 Min. 00 Sec.

Company: XTO Energy Inc

Address: PO Box 1008, Jane Lew, WV 26378	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
	24"	70'	70'	189 cuft
Agent: Gary Beall	13 3/8"	576'	576'	649 cuft
Inspector: Bill Hendershot	9 5/8"	3,098'	3,098'	1297 cuft
Date Permit Issued: 12/17/2012	5 1/2"	11,123'	11,123'	2657 cuft
Date Well Work Commenced: 3/4/2013				
Date Well Work Completed: 1/26/14				
Verbal Plugging:				
Date Permission granted on:				
Rotary ☑ Cable ☐ Rig ☐				
Total Vertical Depth (ft): 7,603'				
Total Measured Depth (ft): 11,771'				
Fresh Water Depth (ft.): 75', 535'				
Salt Water Depth (ft.): None Noted				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 412', 545'				
Void(s) encountered (N/Y) Depth(s) N				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)
Producing formation Marcellus Pay zone depth (ft) 7593' - 7603'
Gas: Initial open flow 0 MCF/d Oil: Initial open flow NA Bbl/d
Final open flow 3908 MCF/d Final open flow NA Bbl/d
Time of open flow between initial and final tests 24 Hours
Static rock Pressure 2307 psig (surface pressure) after 24 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

Received
APR 30 2014
Office of Oil and Gas
WV Dept. of Environmental Protection

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

4-28-14
Date

05/23/2014

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Were core samples taken? Yes_____ No X Were cuttings caught during drilling? Yes X No_____

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list GR, ROP, Directional Survey, Total Gas, Mudlogs

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:

Stg 1 Marcellus; 11078'-11771'; 60 shots; Slick water frac; Avg treating 8179 psi@83 bpm; 237524#s 100 mesh; 791500#s 30/50 mesh; 21717 bbl water

Stg 2 Marcellus; 10827'-11053'; 60 shots; Slick water frac; Avg treating 8665 psi@76 bpm; 113300#s 100 mesh; 339300#s 30/50 mesh; 10132 bbl water

Stg 3 Marcellus; 10521'-10747'; 60 shots; Slick water frac; Avg treating 8772 psi@82 bpm; 114400#s 100 mesh; 341000#s 30/50 mesh; 10033 bbl water

Stg 4 Marcellus; 10215'-10441'; 60 shots; Slick water frac; Avg treating 8770 psi@75 bpm; 113000#s 100 mesh; 336500#s 30/50 mesh; 10100 bbl water

Stg 5.1 Marcellus; 9909'-10135'; 60 shots; Slick water frac; Avg treating 8929 psi@63 bpm; 2200#s 100 mesh; 5100#s 30/50 mesh; 4885 bbl water

See additional page

Plug Back Details Including Plug Type and Depth(s):

Formations Encountered: Top Depth / Bottom Depth

Surface:

See attached

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Stg 5.2 Marcellus; 9909'-10135'; 60 shots; Slick water frac; Avg treating 8436 psi@84 bpm; 114400#s 100 mesh; 336500#s 30/50 mesh; 9038 bbl water
Stg 6 Marcellus; 9631'-9805'; 60 shots; Slick water frac; Avg treating 8465 psi@81 bpm; 113500#s 100 mesh; 334300#s 30/50 mesh; 9950 bbl water
Stg 7 Marcellus; 9297'-9523'; 60 shots; Slick water frac; Avg treating 8254 psi@83 bpm; 111300#s 100 mesh; 355900#s 30/50 mesh; 10313 bbl water
Stg 8 Marcellus; 8991'-9217'; 60 shots; Slick water frac; Avg treating 8155 psi@83 bpm; 111600#s 100 mesh; 339500#s 30/50 mesh; 9931 bbl water
Stg 9 Marcellus; 8612'-8911'; 60 shots; Slick water frac; Avg treating 9121 psi@77 bpm; 112400#s 100 mesh; 339000#s 30/50 mesh; 10014 bbl water
Stg 10 Marcellus; 8379'-8605';60 shots; Slick water frac; Avg treating 8060 psi@79 bpm; 112600#s 100 mesh; 337000#s 30/50 mesh; 9767 bbl water
Stg 11 Marcellus; 8073'-8299'; 60 shots; Slick water frac; Avg treating 7509 psi@78 bpm; 112600#s 100 mesh; 336400#s 30/50 mesh; 9923 bbl water

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Formation Name or Type	Top (MD)	Bottom (MD)
Hard Rock	0	3
Gray Shale	3	110
Gray Shale	110	135
Gray / White Sand	135	200
Gray Shale	200	290
Gray Shale / Sand	290	412
Coal	412	417
Gray Shale	417	470
Gray Sand / Shale	470	545
Fractured Coal Seam	545	548
Sand/Shale	548	680
Sand/Siltstone/Shale	680	2480
Shale/Sand	2480	3240
Shale/Sand/Siltstone	3240	4620
Shale/Siltstone	4620	5910
Shale	5910	6150
Shale/Siltstone	6150	6320
Shale	6320	7514
Tully Limestone	7514	7600
Hamilton Shale	7600	7710
Upper Marcellus Shale	7710	7955
Lower Marcellus Shale	7955	TD

Four States 2H

FORMATION	TVD
BIG LIME*	1873
BIG LIME BASE*	1954
BIG INJUN*	1954
BIG INJUN BASE*	2006
SQUAW*	2034
SQUAW BASE*	2047
BEREA*	2305
BEREA BASE*	2313
GANTZ*	2428
GANTZ BASE*	2445
50FT SAND*	2479
50FT SAND BASE*	2525
30FT SAND*	2592
30FT SAND BASE*	2635
GORDON*	2665
GORDON BASE*	2685
LOWER GORDON*	2796
LOWER GORDON BASE*	2824
4TH SAND*	2860
4TH SAND BASE*	2889
5TH SAND*	2934
5TH SAND BASE*	2959
LOWER SPEECHLEY*	3540
LOWER SPEECHLEY BASE*	3550
UPPER BALLTOWN*	3757
UPPER BALLTOWN BASE*	3800
BALLTOWN*	3830
BALLTOWN BASE*	3925
LOWER BALLTOWN*	3958
LOWER BALLTOWN BASE*	3992
GENESEO SHALE	7314
TULLY LIMESTONE	7360
HAMILTON SHALE	7415
MARCELLUS SHALE	7467
PURCELL LIMESTONE	7580
LOWER MARCELLUS	7584

* Tops projected from offset log due to air drilling and therefore not logging this section

05/23/2014

****CELLS WITH BLUE BACKGROUND ARE THE ONLY CELLS TO BE EDITED****

Fracture Start Date/Time:	12/11/13 0:00
Fracture End Date/Time:	1/26/14 0:00
State:	West Virginia
County:	Marion
API Number:	47-049-02236-0000
Operator Number:	X1210129
Well Name:	Four States A 2H
Federal Well:	No
Longitude:	
Latitude:	
Long/Lat Projection:	NAD27
True Vertical Depth (TVD):	7,598
Total Clean Fluid Volume* (gal):	5,491,752

FracFocus Chemical Disclosure Registry

anga America's Natural Gas Alliance

Additive	Specific Gravity	Additive Quantity	Mass (lbs)	
Water (Clean - Acid - Chems)	1.00	5,491,752	45,828,670	gal
Sand (Proppant) (lbs)	1.00	5,565,600	5,565,600	lb
10% Acid	1.05	0	0	gal
7.5% Acid	1.04	33,646	291,361	gal
Acid Inhibitor, Unihib G	0.93	16	123	gal
Biocide, EC6116A	1.25	523	5,456	gal
Clay Stabilizer, Cla-Chek G	1.08	0	0	gal
Friction Reducer, Unislick ST-50	1.05	3,242	28,272	gal
Scale Inhibitor, ScaleHib A	1.28	529	5,652	gal
Gel Breaker, LEB-10X	1.20	0	0	gal
Unigel 5F	1.00	0	0	lb
Slurry Gel, WGA-7 SLR	1.07	0	0	gal
				gal
			Total Slurry Mass (Lbs)	
			51,725,134	

Ingredients Section:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Mass per Component (LBS)	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	XTO	Carrier/Base Fluid	Water	7732-18-5	100.00%	45,828,670	88.60039%	
Sand (Proppant)	Universal	Proppant	Silica Substrate		100.00%	5,565,600	10.75995%	
Hydrochloric Acid (10%)	PPG Industries	Acidizing	Hydrochloric Acid	7647-01-0	10.00%	0	0.00000%	
			Other - (non-hazardous)		85.00%	0	0.00000%	
Hydrochloric Acid (7.5%)	PPG Industries	Acidizing	Hydrochloric Acid	7647-01-0	7.50%	21,852	0.04225%	
			Other - (non-hazardous)		92.50%	269,509	0.52104%	
Acid Inhibitor, Unihib G	GeoSafe	Acid Inhibitor	Proprietary Blend Surfactants		35.00%	43	0.00008%	
			Short Chained Glycol Ether	112-34-5	50.00%	62	0.00012%	
			Ethoxylated alcohol		35.00%	43	0.00008%	
Biocide, EC6116A	Nalco	Biocide	Dibromoacetonitrile	3252-43-5	5.00%	273	0.00053%	
			2,2-Dibromo-3-nitrilopropionamide	10222-01-2	30.00%	1,637	0.00316%	
			Polyethylene Glycol	25322-68-3	60.00%	3,273	0.00633%	
			Other - (non-hazardous)		5.00%	273	0.00053%	
Clay Stabilizer, Cla-Chek G	Shrieve	Clay Stabilizer	Water	7732-18-5	15.00%	0	0.00000%	
			Other - (non-hazardous)		85.00%	0	0.00000%	
Friction Reducer, Unislick ST-50	CESI Chemical	Friction Reducer	Petroleum distillates, hydrotreated light	64742-47-8	30.00%	8,482	0.01640%	
			Other - (non-hazardous)		70.00%	19,790	0.03826%	
Scale Inhibitor, ScaleHib A	Nalco	Scale Inhibitor	Ethylene Glycol	107-21-1	30.00%	1,696	0.00328%	
			Other - (non-hazardous)		70.00%	3,956	0.00765%	
Gel Breaker, LEB-10X	Universal	Gel Breaker	Ethylene Glycol	107-21-1	40.00%	0	0.00000%	
			Other - (non-hazardous)		60.00%	0	0.00000%	
Unigel 5F	Universal	Gel	Guar Gum	9000-30-0	99.00%	0	0.00000%	
			Other - (non-hazardous)		1.00%	0	0.00000%	
Slurry Gel, WGA-7 SLR	Universal	Gel	Guar Gum	9000-30-0	50.00%	0	0.00000%	
			Petroleum Distillate	64742-47-8	55.00%	0	0.00000%	
			Clay		5.00%	0	0.00000%	
			Surfactant		5.00%	0	0.00000%	
			Buffer		5.00%	0	0.00000%	

*Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

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