

Ohio Department of Natural Resource
 Division of Oil & Gas Resources Management
 2045 Morse Rd, Building F2
 Columbus, Ohio 43229

Stimulation Report

API # 34-059-24370-00-00 RED HILL FARM MDS GR 3H Owner 9193 AMERICAN ENERGY UTICA LLC

Stage: 9 Inspector DOUGLAS BENNETT

Stim Form	POINT PLEASANT F	Type Treat	Hydro frac	Meas BD Press	7771	Frac Wit	<input checked="" type="checkbox"/>
Top Stim	14495	Units	Barrels	Meas Treat Press	8665	BOP Wit	<input type="checkbox"/>
Bot Stim	14616	VOL:	6174	Meas Init Shut-In Press	4647	Record Recd	<input checked="" type="checkbox"/>
Stim In	Cased Hole	Lbs Prop	250626	5 Min Shut-In Press	4235	Invoice Recd	<input type="checkbox"/>
Dt Stim	6/15/2015	AvgRate	80.3			P-R Graph Recd	<input checked="" type="checkbox"/>

Frac Co Frac Tech Services

Comments
 30 total perforations from 14616 feet to 14495 feet
 39041lbs of 100 mesh white
 21178lbs of 30/50 white

Chemical	Volume	Units	Percent	Comment
7.5% HCL	3000	Gal	0%	
CI-150	3	Gal	0%	
CS-250 SI	60	Gal	0%	
FE-200L	15	Gal	0%	
FRW-200	230	Gal	0%	
ICI-3240	60	Gal	0%	
NE-100	120	Gal	0%	
	0		0%	

Post Job Report
AMERICAN ENERGY - UTICA
Red Hill Farm MDS GR 3H
Stage : 9 OF 54
HARRISON, OH



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Engineering Manager:

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Job Summary

Well Information

TVD:	7,301	Top Perf:	14,495
No. Of Perfs:	30		
Casing		Tubing	
5.50" 20.00#		N/A	

Pressures, Rates and Volumes

	Proposed	Actual	Max	Min
STP	9,046 psi	8,665 psi	9,173 psi	7,626 psi
Rate	80.0 bpm	80.3 bpm	92.8 bpm	25.6 bpm

	Proposed	Actual		
Clean Volume	5,772 bbls	5,903 bbls		
Slurry Volume	6,042 bbls	6,174 bbls		
Flush Volume	357 bbls	327 bbls		

	Proposed	Start	End
Frac Pumps on Location	10	14	14

Open Well:	Start Time	07:44	Pressure	2,955 psi
	Ball Seat	393 bbls	Break Down	7,771 psi
Stage Complete:	Initial ISIP:	4,647 psi	Initial F.G.:	1.07 psi/ft
	End Time	09:16	Job Time	01:30
	Final ISIP	4,647 psi	Final F.G.	1.07 psi/ft
	HHP	17,054	5 Min:	4,235 psi
	Proppant Min:	0.00	10 Min:	N/A
	Proppant Max:	2.00	15 Min:	N/A

Material Volume

Material	Proposed	Calculated	Actual	Variance
100 Mesh White	40,000	38,941	39,041	0%
30/50 White	210,000	211,785	211,785	0%
Total Proppants	250,000	250,726	250,826	0%

Material	Proposed	Calculated	Actual	Variance
0.1%-7.5% HCL	3,000	2,982	3,000	1%
CI-150	3	3	3	0%
CS-250 SI	60	60	60	0%
FE-200L	15	15	15	0%
FRW-200	180	233	230	-1%
ICI-3240	60	60	60	0%
NE-100	0	120	120	0%
NE-100W	120	0	0	0

Comments:

Pumpdown Information:
Total Bbls: 285
Max Pressure (psi): 5904
Max Rate (bpm): 16.4



Treatment Report

Date:	6/15/2015	District:	Washington County, PA	Quote No:	051815_035725QF	API:	34-059-24370
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MIL Time	STP	Slurry BPM	Stage Clean (bbbls)	Cumulative Clean (bbbls)	Stage Slurry (bbbls)	Cumulative Slurry (bbbls)	Stage Proppant (lbs)	Cumulative Proppant (lbs)	Description	Proppant	PPA
07:44	2,955	0.0	0	0	0	0	0	0	Freshwater Open Well		0.00
07:45	4,208	5.4	15	15	15	15	0	0	Freshwater Load		0.00
07:47	7,435	25.3	71	86	71	86	0	0	7.5% HCL Acid Acid		0.00
07:54	7,407	25.8	207	293	207	293	0	0	Slickwater Load		0.00
08:03	7,771	24.7	4	297	4	297	0	0	Slickwater Breakdown		0.00
08:03	7,626	25.6	214	511	215	512	899	899	Slickwater Proppant	100 Mesh White	0.10
08:08	8,812	60.0	214	725	216	728	2,247	3,146	Slickwater Proppant	100 Mesh White	0.25
08:12	9,083	65.2	255	980	261	989	5,355	8,501	Slickwater Proppant	100 Mesh White	0.50
08:16	8,970	69.8	429	1,409	444	1,433	13,514	22,015	Slickwater Proppant	100 Mesh White	0.75
08:22	9,030	77.4	403	1,812	421	1,854	16,926	38,941	Slickwater Proppant	100 Mesh White	1.00
08:29	9,024	77.5	876	2,688	916	2,770	36,792	75,733	Slickwater Proppant	30/50 White	1.00
08:39	8,321	91.1	1,000	3,688	1,057	3,827	52,500	128,233	Slickwater Proppant	30/50 White	1.25
08:50	8,563	91.0	1,001	4,689	1,069	4,896	63,063	191,296	Slickwater Proppant	30/50 White	1.50
09:01	8,517	90.5	500	5,189	540	5,436	36,750	228,046	Slickwater Proppant	30/50 White	1.75
09:09	8,382	90.8	270	5,459	294	5,730	22,680	250,726	Slickwater Proppant	30/50 White	2.00
09:11	8,277	90.7	117	5,576	117	5,847	0	250,726	Slickwater Clean screws		0.00
09:13	8,414	90.7	220	5,796	220	6,067	0	250,726	Slickwater Flush		0.00
09:15	8,779	77.6	107	5,903	107	6,174	0	250,726	Freshwater Flush		0.00
09:16	4,647	0.0	0	5,903	0	6,174	0	250,726	Freshwater Shutdown		0.00

Total JobTime (HH:MM): 01:32

Min STP:	7,626 psi	Max STP:	9,173 psi	Average STP:	8,665 psi	5 Min:	4,235 psi
Min Rate:	25.6 bpm	Max Rate:	92.8 bpm	Average Rate:	80.3 bpm	10 Min:	0 psi
Initial ISIP:	4,647 psi	Initial F.G.:	1.07 psi/ft	Average HHP:	17,054	15 Min:	0 psi
Final ISIP:	4,647 psi	Final F.G.:	1.07 psi/ft	Customer Representative:		Malcolm Trahan	
FTSI Representative:		Etuate Varea & Jason McCoskey					

Comments:

The proppant values contained in this report are calculated based on actual barrel counts and target densities. Actual total proppant usage is 250,826 lbs. Charge time is 1 hour(s) 30 minute(s). All chemicals and proppant ran as documented.

Min/Max/Avg were taken from sand stages. All chem changes from proposed were made per AEU representative request.

1 Minute Shutdown (psi): 4492
2 Minute Shutdown (psi): 4404
5 Minute Shutdown (psi): 4235

Chemical Changes:

Chemical Name	Chemical Loading	Cumulative Clean
FRW-200	1.00	2,688

FTS International
1432 Route 519
Eighty Four, PA 15330



3405924370000

Customer: American Energy - Utica

Well: Red Hill Farm Mds Gr 3H

Stage: 9

Job End Date: 06/15/2015

FRW-200	1.25	5,189
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Primary Plot

