



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OIL AND GAS MANAGEMENT PROGRAM

DEP USE ONLY	
Site ID	Primary Fac ID
Client	Subfacility Id

## Completion Report

### Well Information

If you are submitting this Completion Report attached to the Well Record, you only need to enter the well API # in this section.

Well Operator Range Resources-Appalachia, LLC	DEP ID# 141142	Well API # (Permit / Reg) 37 - 12523889-0-0	Project Number	Acres 987
Address 380 Southpointe Blvd, Suite 300		Well Farm Name Drugmand Unit	Well # 2H	Serial #
City Canonsburg	State PA	Zip Code 15317	County Washington	
Municipality Mt. Pleasant		USGS 7.5 min. quadrangle map Midway		
Phone 724-743-6700	Fax 724-743-6490	Email		

Check the appropriate submission:  Original Completion Report  Amended Completion Report

### STIMULATION BASE FLUID

List Water Management Plan Approved Water Source(s) that were used	Water Management Plan ID No.	Volume (Gallons)
1. PA American Water Co Pgh/McMurray Ft Cherry Rd	Source 13	898,968
2.		
3.		
4.		
5.		
6.		
<b>Recycled Water Used</b>		<b>1,706,250</b>
<b>Other Base Fluid(s)/Components Used</b>		
1.		
2.		
<b>Total Base Fluid(s)/Components Used</b>		

### PERFORATION RECORD

Stage No.	Perforation Date	Stage Perforated From	Stage Perforated To	Perf. Orientation (Vertical, Horizontal, Radial)	Formation
1	3-2-2011	10,167'MD	9,867'MD	Horizontal	Marcellus Shale
2	3-4-2011	9,767'MD	9,467'MD	Horizontal	Marcellus Shale
3	3-4-2011	9,367'MD	9,067'MD	Horizontal	Marcellus Shale
4	3-8-2011	8,967'MD	8,667'MD	Horizontal	Marcellus Shale
5	3-9-2011	8,567'MD	8,267'MD	Horizontal	Marcellus Shale
6	3-10-2011	8,167'MD	7,867'MD	Horizontal	Marcellus Shale
7	3-10-2011	7,767'MD	7,467'MD	Horizontal	Marcellus Shale
8	3-11-2011	7,367'MD	7,067'MD	Horizontal	Marcellus Shale

**STIMULATION FLUID ADDITIVES**

Note: Trade secret or confidential proprietary information should be clearly identified as such and should be submitted on a separate sheet attached to this report.

Descriptive Additive Type	Chemical Component(s) listed on Material Safety Data Sheet of the Additive	CAS No. of Chemical Component	Chemical Component % By Volume in Additive	Chemical Component % By Volume used in Each Stage					
				Stage No. 1	Stage No. 2	Stage No. 3	Stage No. 4	Stage No. 5	Stage No. 6
FR-200W	N/A	N/A	N/A	0.0311%	0.0456%	0.0000%	0.0312%	0.0270%	0.0277%
FR-300W	N/A	N/A	N/A	0.0000%	0.0000%	0.0507%	0.0000%	0.0000%	0.0000%
MX 588-2	N/A	N/A	N/A	0.0099%	0.0090%	0.0072%	0.0073%	0.0071%	0.0074%
NE100	N/A	N/A	N/A	0.0003%	0.0000%	0.0003%	0.0003%	0.0003%	0.0003%
FE100L	N/A	N/A	N/A	0.0009%	0.0000%	0.0009%	0.0009%	0.0009%	0.0009%
37% HCL	HCL	7647-01-0	37.0%	0.0530%	0.0000%	0.0535%	0.0542%	0.0526%	0.0522%
Cl-100	Methanol	67-56-1	92.5%	0.0006%	0.0000%	0.0006%	0.0006%	0.0005%	0.0005%
Cl-100	Propargyl Alcohol	107-19-7	4.4%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
BMC B-8650	Glutaraldehyde	111-30-8	48.8%	0.0037%	0.0034%	0.0037%	0.0037%	0.0036%	0.0037%
BMC B-8650	Methanol	67-56-1	0.7%	0.0001%	0.0000%	0.0001%	0.0001%	0.0001%	0.0001%
CS-1135	4,4-Dimethyloxazolidine	51200-87-4	76.5%	0.0150%	0.0140%	0.0152%	0.0150%	0.0146%	0.0151%
CS-1135	3,4,4-Trimethyloxazolodine	75673-43-7	5.0%	0.0010%	0.0009%	0.0010%	0.0010%	0.0010%	0.0010%
CS-1135	2-Amino-2-methyl-1-propanol	124-68-5	1.0%	0.0002%	0.0002%	0.0002%	0.0002%	0.0002%	0.0002%
CS-1135	Formaldehyde Amine	56652-26-7	0.5%	0.0001%	0.0001%	0.0001%	0.0001%	0.0001%	0.0001%

Please insert additional copies of this page if additional rows/stages are needed.



**STIMULATION INFORMATION (WELL)**

Open Flow Production: Omcf/d @ 24hrs pos treatment	24 Hr. Open Flow Production: Omcf/d @ 24hrs pos treatment	24 Hr. Shut-in Pressure: N/A @ 24hrs post treatment	Flow Back Date:
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**STIMULATION INFORMATION (STAGE)**

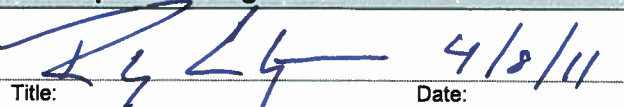
Complete a separate record for each stimulation stage. (Please insert additional copies of this page for additional stages).

<b>Stage No.:</b> 1	Stimulation Date: 3-2-2011	Pump Rate: 67.4
Pressure (psi): 7,778	Shut-in Surface Pressure: 3,693	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 405,269	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 2	Stimulation Date: 3-4-2011	Pump Rate: 66.9
Pressure (psi): 7,338	Shut-in Surface Pressure: 3,680	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 407,587	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 3	Stimulation Date: 3-7-2011	Pump Rate: 68.0
Pressure (psi): 6,793	Shut-in Surface Pressure: 3,643	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 402,244	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 4	Stimulation Date: 3-9-2011	Pump Rate: 69.5
Pressure (psi): 6,789	Shut-in Surface Pressure: 3,904	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 385,631	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 5	Stimulation Date: 3-9-2011	Pump Rate: 70.0
Pressure (psi): 6,947	Shut-in Surface Pressure: 3,847	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 404,526	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 6	Stimulation Date: 3-10-2011	Pump Rate: 69.6
Pressure (psi): 6,769	Shut-in Surface Pressure: 3,823	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 416,315	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 7	Stimulation Date: 3-12-2011	Pump Rate: 70.3
Pressure (psi): 6,489	Shut-in Surface Pressure: 3,913	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 404,295	Propping Agent Size: 100 Mesh 30/50 Mesh

**WELL SERVICE COMPANIES (Provide the name, address, and telephone number of all well service companies involved.)**

<b>Name</b> Frac Tech	<b>Name</b> Multi-Chem	<b>Name</b> Universal Well Servi ces
<b>Address</b> 16858 IH20	<b>Address</b> 200 Detroit Street	<b>Address</b> 730 Braddock View Drive
<b>City - State- Zip</b> Ciscok, TX 76437	<b>City - State - Zip</b> Washington, PA 15301	<b>City - State - Zip</b> Mt Braddock, PA 15465
<b>Phone</b> 817-850-1008	<b>Phone</b> 325-486-7489	<b>Phone</b> 724-430-6201

*I do hereby certify to the best of my knowledge, information and belief that the information contained on this Completion Report is true and correct. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.*

<b>Well Operator's Signature</b>	<b>DEP USE ONLY</b>
	Reviewed by: _____ Date: _____
Title: Completion Engineer: _____	Comments: _____
Date: 4/8/2011	

**STIMULATION INFORMATION (STAGE- Continued)**

Complete a separate record for each stimulation stage. (Please insert additional copies of this page for additional stages).

<b>Stage No.:</b> 8	Stimulation Date: 3-12-2011	Pump Rate: 62.5
Pressure (psi): 6,148	Shut-in Surface Pressure: 4,097	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 401,276	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 9	Stimulation Date:	Pump Rate:
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 301,506	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 10	Stimulation Date:	Pump Rate:
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount:	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 11	Stimulation Date:	Pump Rate:
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount:	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 12	Stimulation Date:	Pump Rate:
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount:	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 13	Stimulation Date:	Pump Rate:
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount:	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 14	Stimulation Date:	Pump Rate:
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount:	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 15	Stimulation Date:	Pump Rate:
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount:	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 16	Stimulation Date:	Pump Rate:
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount:	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 17	Stimulation Date:	Pump Rate:
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount:	Propping Agent Size: 100 Mesh 30/50 Mesh

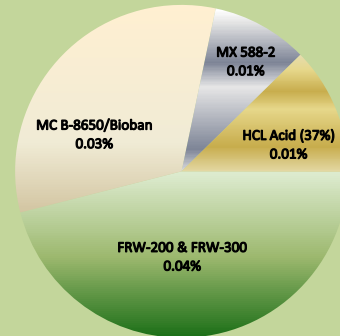
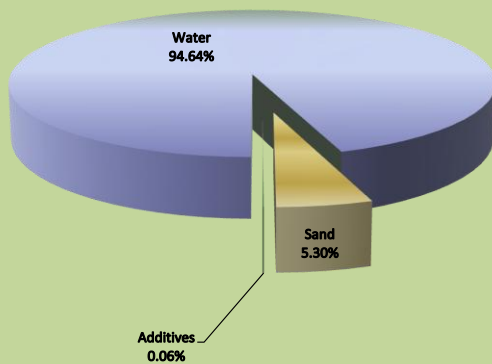


**Drugmand Unit #2H**  
**Well API: 37-125-23889**

**Completion Date: March 12th, 2011**  
**Township: Somerset**

% Composition of Hydraulic Fracture Fluid (by volume)						
Product Name	Additive	Purpose	Use and Dilution	Volume	Overall %	Common Uses
Water	Carrier Fluid	Creates fracture network in shale and carry proppant to the formation	Primary constituent	2,603,653 gal	94.38%	Water is the most abundant molecule on the Earth's surface
Sand	Sand	Allows fractures to remain open so gas can escape	Second most common constituent, making up almost 6% of the fluid	145,867 gal	5.29%	Drinking water filtration, play sand
FRW-200 & FRW-300	Friction Reducer	Reduces friction between fluid and pipe	Diluted at one-half gallon per 1,000 gallons of water	1,056 gal	0.04%	Water treatment; soil conditioner; some children's toys
MC B-8650/Bioban	Antimicrobial Agent	Eliminates bacteria in the water that produce corrosive byproducts	Diluted at one-half gallon per 1,000 gallons of water	0,741 gal	0.03%	Water treatment, disinfectant; sterilize medical and dental equipment and surfaces
MX 588-2	Scale Inhibitor	Prevents scaling in pipe	Diluted at one-tenth gallon per 1,000 gallons of water	0,215 gal	0.01%	Water treatment, household cleaners, de-icing agent
HCL Acid (37%)	Perf Clean-Up	Dissolves cement and minerals to help initiate fractures	177 gallons per stage if required (non-diluted chemicals)	0,285 gal	0.01%	Swimming pool and household cleaner

**Composition of Hydraulic Fracture Fluid (by volume)**





## Composition of Components in Marcellus Shale Hydraulic Fracturing Fluid

**RANGE RESOURCES**

Common Name & Supplier	Supplier Chemical Name	Common Description	Hazardous Component listed on MSDS	Purpose	MSDS Component Weight % of Chemical	Gallons MSDS Component in Well	Maximum Concentration of MSDS Component of Total Stage Fluid		
							% Vol	% Weight	
7.5% HCl Mixture (FracTech)	37% HCL	concentrated HCl Acid	HCL	Cleans perforation	37.0%	284.55	0.0103%	0.0042%	
	CI-100	Corrosion Inhibitor	Methanol	Protects casing	85.0%	12.95	0.0005%	0.0003%	
			Propargyl Alcohol	Protects casing	5.0%	0.03	0.0000%	0.0000%	
	NE100	Non- Emulsifer	No hazardous ingredients	Prevents emulsions	0.0%	N/A	N/A	N/A	
FE100L	Iron Chelator	No hazardous ingredients	Prevents precipitation	0.0%	N/A	N/A	N/A	N/A	
<b>TOTAL</b>								<b>0.0108%</b>	<b>0.0045%</b>

<b>Friction Reducer (FracTech)</b>	RW-200 & FRW-30	Friction Reducer	No hazardous ingredients	Reduce friction down casing	0.0%	N/A	N/A	N/A
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<b>Scale Inhibitor (Multichem)</b>	MX 588-2	Scale Inhibitor	No hazardous ingredients	prevents scale deposits	0.0%	N/A	N/A	N/A
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<b>Antibacterial Agent (Multichem)</b>	CS-1135	Antibacterial Agent	4,4-Dimethyloxazolidine	eliminates bacteria in water	78.0%	408.78	0.0148%	0.0137%	
			3,4,4-Trimethyloxazolodine		5.0%	26.76	0.0010%	0.0009%	
			2-Amino-2-methyl-1-propanol		1.0%	5.61	0.0002%	0.0002%	
			Formaldehyde Amine		0.5%	2.44	0.0001%	0.0001%	
	BMC B-8650	Antibacterial Agent	Glutaraldehyde	eliminates bacteria in water	50.0%	75.65	0.0027%	0.0038%	
			Methanol		0.5%	0.76	0.0000%	0.0000%	
<b>TOTAL</b>								<b>0.0188%</b>	<b>0.0186%</b>

<b>SUMMARY</b>	by vol %	by weight %
	<b>0.163%</b>	<b>0.146%</b>