



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

## Completion Report

DEP USE ONLY	
Site ID	Primary Fac ID
Client	Subfacility Id

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) 37-125-23891-00		Project Number	Acres 987
Address 380 Southpointe Blvd, Suite 300			Well Farm Name Drugmand		Well # 5H	Serial #
City Canonsburg	State PA	Zip Code 15317	County Washington		Municipality Mount Pleasant	
Phone 724-743-6700	Fax 724-743-6490	Email		USGS 7.5 min. quadrangle map Midway		
Check the appropriate submission: <input checked="" type="checkbox"/> Original Completion Report <input type="checkbox"/> 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		1,360,086	
2.						
3.						
4.						
5.						
6.						
Recycled Water Used					2,076,312	
Other Base Fluid(s) Components Used						
1.						
2.						
Total Base Fluid(s)/Components Used					3,436,398	
PERFORATION RECORD						
Stage No.	Perforation Date	Stage Perforated From	Stage Perforated To	Perf. Orientation (Vertical, Horizontal, Radial)	Formation	
1	3-14-2011	11,441'MD	11,150'MD	Horizontal	Marcellus Shale	
2	3-15-2011	11,053'MD	10,762'MD	Horizontal	Marcellus Shale	
3	3-15-2011	10,665'MD	10,374'MD	Horizontal	Marcellus Shale	
4	3-17-2011	10,277'MD	9,986'MD	Horizontal	Marcellus Shale	
5	3-18-2011	9,889'MD	9,598'MD	Horizontal	Marcellus Shale	
6	3-18-2011	9,501'MD	9,210'MD	Horizontal	Marcellus Shale	
7	3-18-2011	9,113'MD	8,822'MD	Horizontal	Marcellus Shale	
8	3-21-2011	8,725'MD	8,434'MD	Horizontal	Marcellus Shale	
9	3-21-2011	8,337'MD	8,046'MD	Horizontal	Marcellus Shale	
10	3-22-2011	7,949'MD	7,658'MD	Horizontal	Marcellus Shale	
11	3-22-2011	7,561'MD	7,270'MD	Horizontal	Marcellus Shale	
12						





**STIMULATION INFORMATION (WELL)**

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

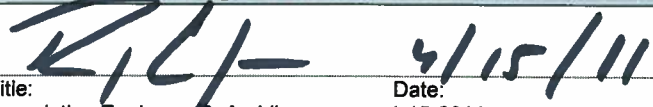
Complete a separate record for each stimulation stage. (Please insert additional copies of this page for additional stages).

<b>Stage No.:</b> 1	Stimulation Date: 3-15-2011	Pump Rate: 68.9
Pressure (psi): 7,118	Shut-in Surface Pressure: 3,425	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 409,056	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 2	Stimulation Date: 3-15-2011	Pump Rate: 68.2
Pressure (psi): 6,443	Shut-in Surface Pressure: 3,619	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 404,181	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 3	Stimulation Date: 3-16-2011	Pump Rate: 68.7
Pressure (psi): 6,702	Shut-in Surface Pressure: 3,674	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 404,390	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 4	Stimulation Date: 3-18-2011	Pump Rate: 70.8
Pressure (psi): 6,917	Shut-in Surface Pressure: 3,881	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 404,962	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 5	Stimulation Date: 3-18-2011	Pump Rate: 70.5
Pressure (psi): 7,430	Shut-in Surface Pressure: 4,021	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 401,042	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 6	Stimulation Date: 3-18-2011	Pump Rate: 70.4
Pressure (psi): 6,866	Shut-in Surface Pressure: 3,911	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 403,597	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 7	Stimulation Date: 3-21-2011	Pump Rate: 70.3
Pressure (psi): 6,477	Shut-in Surface Pressure: 3,944	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 404,807	Propping Agent Size: 100 Mesh 30/50 Mesh

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

Name	Name	Name
Frac Tech	Multi-Chem	Universal Well Servi ces
Address 16858 IH20	Address 200 Detroit Street	Address 730 Braddock View Drive
City - State- Zip Cisco, TX 76437	City - State - Zip Washington, PA	City - State - Zip Mt Braddock, PA 15465
Phone 817-850-1008	Phone 325-486-7489	Phone 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, R. Archibeque	Comments: _____
Date: 4-15-2011	

**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: 3-21-2011	Pump Rate: 69.3
Pressure (psi): 7,201	Shut-in Surface Pressure: 4,152	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 403,485	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 9	Stimulation Date: 3-22-2011	Pump Rate: 69.8
Pressure (psi): 6,852	Shut-in Surface Pressure: 3,954	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 408,066	Propping Agent Size: 100 Mesh 30/50 Mesh
<b>Stage No.:</b> 10	Stimulation Date: 3-22-2011	Pump Rate: 69.7
Pressure (psi): 6,983	Shut-in Surface Pressure: 3,917	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> 11	Stimulation Date: 3-23-2011	Pump Rate: 70.8
Pressure (psi): 6,732	Shut-in Surface Pressure: 4,082	5 Minute Shut-in Surface Pressure: N/A
Propping Agent Type: Sand	Propping Agent Amount: 403,664	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



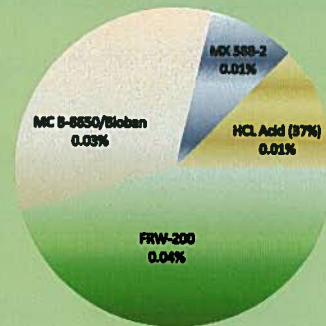
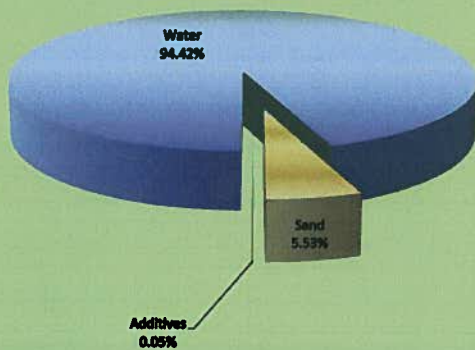
RANGE RESOURCES

Drugmand Unit #5H  
Well API: 37-125-23891

Completion Date: March 23rd, 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	3,434,399 gal	94.21%	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 8% of the fluid	201,073 gal	5.52%	Drinking water filtration, play sand
FRW-200	Friction Reducer	Reduces friction between fluid and pipe	Diluted at one-half gallon per 1,000 gallons of water	1,336 gal	0.04%	Water treatment, soil conditioner, some children's toys
MC B-8850/Bioban	Antimicrobial Agent	Eliminates bacteria in the water that produce corrosive byproducts	Diluted at one-half gallon per 1,000 gallons of water	0,973 gai	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	0,257 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)	0,374 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%	373.64	0.0102%	0.0041%
	CI-100	Corrosion Inhibitor	Methanol	Protects casing	85.0%	18.51	0.0005%	0.0004%
			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	
						<b>TOTAL</b>	<b>0.0108%</b>	<b>0.0045%</b>

Friction Reducer (FracTech)	FRW-200	Friction Reducer	No hazardous ingredients	Reduce friction down casing	0.0%	N/A	N/A	N/A
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Scale Inhibitor (Multichem)	MX 588-2	Scale Inhibitor	No hazardous ingredients	prevents scale deposits	0.0%	N/A	N/A	N/A
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Antibacterial Agent (Multichem)	CS-1135	Antibacterial Agent	4,4-Dimethylloxazolidine	eliminates bacteria in water	78.0%	536.77	0.0147%	0.0135%
			3,4,4-Trimethylloxazolidine		5.0%	35.14	0.0010%	0.0009%
			2-Amino-2-methyl-1-propanol		1.0%	7.36	0.0002%	0.0002%
			Formaldehyde Amine		0.5%	3.20	0.0001%	0.0001%
	BMC B-8650	Antibacterial Agent	Glutaraldehyde	eliminates bacteria in water	50.0%	99.33	0.0027%	0.0037%
			Methanol		0.5%	0.99	0.0000%	0.0000%
						<b>TOTAL</b>	<b>0.0187%</b>	<b>0.0188%</b>

SUMMARY	by vol %	by weight %
		0.130%