



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

DEP USE ONLY	
Site Id	Primary Facility Id
Client Id	Sub-facility Id

## WELL RECORD AND COMPLETION REPORT

Well Operator <b>Range Resources – Appalachia, LLC</b>		DEP ID# <b>141142</b>	Well API # (Permit / Reg) <b>37-125-23886</b>	Project Number	Acres <b>686</b>
Address <b>380 Southpointe Blvd. Suite 300</b>			Well Farm Name <b>Miller John Unit</b>	Well # <b>6H</b>	Serial #
City <b>Canonsburg</b>	State <b>PA</b>	Zip Code <b>15317</b>	County <b>Washington</b>	Municipality <b>Canton</b>	
Phone <b>724-743-6700</b>	Fax <b>724-743-6790</b>	USGS 7.5 min. quadrangle map <b>Washington West</b>			
Check all that apply: <input checked="" type="checkbox"/> Original Well Record <input checked="" type="checkbox"/> Original Completion Report <input type="checkbox"/> Amended Well Record <input type="checkbox"/> Amended Completion Report					

### WELL RECORD Also complete Log of Formations on back (page 2)

Well Type	<input checked="" type="checkbox"/> Gas	<input type="checkbox"/> Oil	<input type="checkbox"/> Combination Oil & Gas	<input type="checkbox"/> Injection	<input type="checkbox"/> Storage	<input type="checkbox"/> Disposal	
Drilling Method	<input type="checkbox"/> Rotary – Air	<input checked="" type="checkbox"/> Rotary – Mud	<input type="checkbox"/> Cable Tool				
Date Drilling Started <b>1/4/2010</b>	Date Drilling Completed <b>8/17/2010</b>	Surface Elevation <b>1238 ft.</b>	Total Depth – Driller <b>11128 ft</b>	Total Depth - Logger <b>11128ft</b>			
<b>Casing and Tubing</b>		Cement returned on surface casing? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Cement returned on coal protective casing? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A					
Hole Size	Pipe Size	Wt.	Thread / Weld	Amount in Well (ft)	Material Behind Pipe Type and Amount	Packer / Hardware / Centralizers Type      Size      Depth	Date Run
30"	26"	96#	Thread	40'	Driven	----      26"      40'	1/4/10
17-1/2"	13-3/8"	48#	Thread	435'	Class A GB, 345 sx	GS      13-3/8"      435'	2/14/10
12-1/4"	9-5/8"	36#	Thread	2020'	Class A GB, 685 sx	GS      9-5/8"      2020'	2/17/10
8-3/4"	5-1/2"	20#	Thread	11128'	Extendacem 920 sx	FS      5-1/2"      11128'	8/17/10
Hal light, 320 sx, Fracem 470 sx							

### COMPLETION REPORT

Perforation Record			Stimulation Record						
Date	Interval Perforated From      To		Date	Interval Treated	Fluid Type      Amount	Propping Agent Type      Amount	Average Injection		
11-14-2010	10,969' MD      6,951' MD		11-20-2010	Marcellus Shale	Slick H2O 106,387 bbl	Sand 5,936 Klb	59.5 bpm		
Natural Open Flow      Too small to measure			Natural Rock Pressure      Too small to measure						
After Treatment Open Flow      Omcf/d @ 24hrs pos treatment			After Treatment Rock Pressure      N/A @ 24hrs post treatment      Hours      Days						

#### Well Service Companies -- Provide the name, address, and phone number of all well service companies involved.

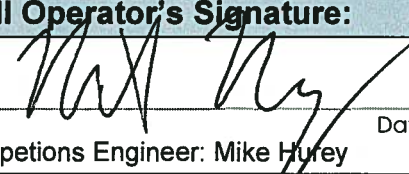
Name <b>Patterson UTI</b>	Name <b>Universal Well Services</b>	Name <b>Frac Tech</b>
Address <b>4501 Lamesa Highway</b>	Address <b>730 Braddock View Dr</b>	Address <b>16858 IH20</b>
City - State - Zip <b>Snyder, TX 79549</b>	City - State - Zip <b>Mt Braddock, PA 15465</b>	City - State - Zip <b>Cisco, TX 76437</b>
Phone <b>325-574-6300</b>	Phone <b>724-430-6201</b>	Phone <b>817-850-1008</b>

## LOG OF FORMATIONS

Well API#: 37-125-23886

Formation Name or Type	Top (feet)	Bottom (feet)	Gas at (feet)	Oil at (feet)	Water at (fresh / brine; ft.)	Source of Data
Fill	0'	30'				Drillers Log
Shale	30'	90'				Drillers Log
Sandy Shale	90'	180'				Drillers Log
Sand	180'	273'				Drillers Log
Gray Shale	273'	365'				Drillers Log
Sandston/Coal (403-410)	365'	428'				Drillers Log
Sandstone	428'	459'				Drillers Log
Shale	459'	523'				Drillers Log
Redrock	523'	625'				Drillers Log
Redrock and Shale	625'	880'				Drillers Log
Shale	880'	1007'				Drillers Log
Sandstone	1007'	1039'				Drillers Log
Shale	1039'	1480'				Drillers Log
Shale/Redrock	1480'	1519'				Drillers Log
Sandstone	1519'	1576'				Drillers Log
Redrock/Sandstone	1576'	1638'				Drillers Log
Sandstone	1638'	1669'				Drillers Log
Redrock and Sandstone	1669'	1864'				Drillers Log
Shale and Redrock	1864'	1927'				Drillers Log
Shale	1927'	2139'				Drillers Log
Sand	2139'	2234'				Drillers Log
Sand/shale	2234'	2296'				Drillers Log
Shale	2296'	2389'				Drillers Log
Sand and Shale	2389'	2522'				Drillers Log
Shale	2522'	4250'				Drillers Log
Shale and Sand	4250'	4400'				Drillers Log
Shale	4400'	5030'				Drillers Log
Shale and Sand	5030'	5091'				Drillers Log
Shale	5091'	5627'				Drillers Log
Shale and Sand	5627'	6070'				Drillers Log
Shale	6070'	6322'				Drillers Log
Shale and Sand	6322'	6425'				Drillers Log
Shale	6425'	6488'				Drillers Log
Limestone	6488'	6520'				Drillers Log
Shale	6520'	6680'				Drillers Log
Limestone	6680'	6685'				Drillers Log
Horizontal						
Shale	5080'	6580'				
Limestone	6580'	6700'				
Shale	6700'					
Drillers Total Depth		11128'				

*Please delete empty rows if necessary to make all of page 2 fit on one page.*

<b>Well Operator's Signature:</b> 	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="background-color: #e0e0e0;"><b>DEP USE ONLY</b></td> </tr> <tr> <td style="width: 70%;">Reviewed by:</td> <td style="width: 30%;">Date:</td> </tr> <tr> <td colspan="2">Comments:</td> </tr> </table>	<b>DEP USE ONLY</b>		Reviewed by:	Date:	Comments:	
<b>DEP USE ONLY</b>							
Reviewed by:	Date:						
Comments:							
Title: Competitions Engineer: Mike Hurey Date: 12-14-2010							



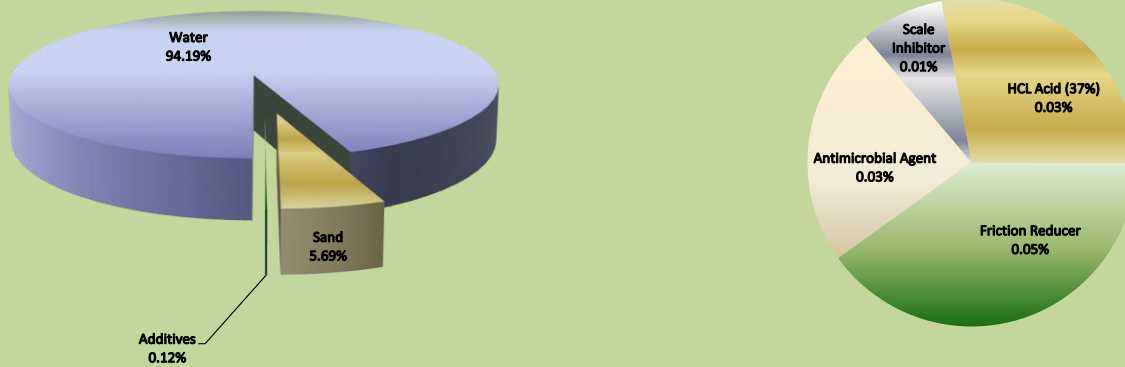
RANGE RESOURCES

John Miller Unit #6H  
Well API: 37-125-23886

Completion Date: November 14 - 20, 2010  
Township: Canton

% Composition of Hydraulic Fracture Fluid (by volume)						
Product Name	Additive	Purpose	Use and Dillution	Volume	Overall %	Common Uses
Water	Carrier Fluid	Creates fracture network in shale and carry proppant to the formation	Primary constituent	4,462,860 gal	94.19%	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	269,703 gal	5.69%	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	2,157 gal	0.05%	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	1,278 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	445 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)	1507 gal	0.03%	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	November 14 - 20, 2010	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%	1506.51	0.0318%	0.0127%	
	CI-100	Corrosion Inhibitor	Methanol	Protects casing	95.0%	17.54	0.0004%	0.0003%	
			Propargyl Alcohol	Protects casing	5.0%	0.75	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>0.0322%</b>	<b>0.0130%</b>

<b>Friction Reducer (FracTech)</b>	FRW-200	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>	Bioban	Antibacterial Agent	4,4-Dimethyloxazolidine	eliminates bacteria in water	78.0%	702.17	0.0148%	0.0136%	
			3,4,4-Trimethyloxazolodine		5.0%	45.96	0.0010%	0.0009%	
			2-Amino-2-methyl-1-propanol		1.0%	9.63	0.0002%	0.0002%	
			Formaldehyde Amine		0.5%	4.19	0.0001%	0.0001%	
	BMC B-8650	Antibacterial Agent	Glutaraldehyde	eliminates bacteria in water	50.0%	131.84	0.0028%	0.0038%	
			Methanol		0.5%	1.32	0.0000%	0.0000%	
<b>TOTAL</b>								<b>0.0189%</b>	<b>0.0186%</b>

<b>SUMMARY</b>	by vol %	by weight %
	<b>0.051%</b>	<b>0.032%</b>