



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>37-125-23938</b>	Project Number	Acres <b>441</b>
Address <b>380 Southpointe Blvd. Suite 300</b>			Well Farm Name <b>Sierzega</b>	Well # <b>9H</b>	Serial #
City <b>Canonsburg</b>	State <b>PA</b>	Zip Code <b>15317</b>	County <b>Washington</b>	Municipality <b>Amwell</b>	
Phone <b>724-743-6700</b>	Fax <b>724-743-6790</b>	USGS 7.5 min. quadrangle map <b>Amity</b>			
<b>Check all that apply:</b> <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>12/5/09</b>	Date Drilling Completed <b>4/23/10</b>	Surface Elevation <b>1147 ft.</b>	Total Depth – Driller <b>11296 ft</b>	Total Depth - Logger <b>11296 ft</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"	108#	Thread	40'	Driven	--- 26" 40'	12/5/09
24"	20"	81#	3/26/10	335'	Class A Cement, 369 sx	GS 20" 335'	3/26/10
12-1/4"	9-5/8"	40#	4/3/10	3063'	Uni Block, 1290 sx	GS 9-5/8" 3063'	4/3/10
8-3/4"	5-1/2"	20#	4/23/10	10927'	Extendacem, 960 sx	FS 5-1/2" 10927'	4/23/10
	"				Hall Lite, 465 sx		
					Fraccem 370 sx		

### COMPLETION REPORT

Perforation Record			Stimulation Record						
Date	Interval Perforated From To		Date	Interval Treated	Fluid Type Amount	Propping Agent Type Amount	Average Injection		
10-19-10	10,823' MD 8,097' MD		10-24-10	Marcellus Shale	Slick H2O 91,982bbl	Sand 5,072Klb	63.6 bpm		
Natural Open Flow Too small to measure			Natural Rock Pressure Too small to measure		Hours	Days			
After Treatment Open Flow 0 mcf/d @ 24hrs post 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.**

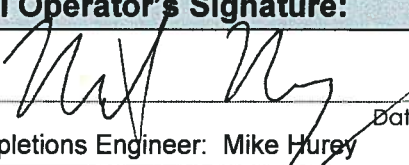
Name <b>Patterson UTI</b>	Name <b>Universal Well Services</b>	Name <b>Frac Tech</b>
Address <b>4501 Lamesa Highway</b>	Address <b>730 Braddock View Dr</b>	Address <b>16858 IH20</b>
City - State - Zip <b>Snyder, TX 79549</b>	City - State - Zip <b>Mt. Braddock, PA 15465</b>	City - State - Zip <b>Cisco, 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#: 37-125-23938

Formation Name or Type	Top (feet)	Bottom (feet)	Gas at (feet)	Oil at (feet)	Water at (fresh / brine; ft.)	Source of Data
Fill	0'	42'				Geophysical Log
Shale	42'	114'				Geophysical Log
Sandy Shale	114'	172'				Geophysical Log
Sand	172'	225'				Geophysical Log
Sandy Shale	225'	350'				Geophysical Log
Shale	350'	430'				Geophysical Log
Sand and Shale	430'	550'				Geophysical Log
Shale	550'	610'				Geophysical Log
Sand and Shale	610'	730'				Geophysical Log
Shale	730'	1150'				Geophysical Log
Sand	1150'	1260'				Geophysical Log
Shale	1260'	1510'				Geophysical Log
Sand	1510'	1580'				Geophysical Log
Shale	1580'	1700'				Geophysical Log
Sand	1700'	2250'				Geophysical Log
Shale	2250'	2580'				Geophysical Log
Sand and Shale	2580'	2700'				Geophysical Log
Shale	2700'	2860'				Geophysical Log
Sand	2860'	2940'				Geophysical Log
Sand and Shale	2940'	3310'				Geophysical Log
Shale	3310'	4020'				Geophysical Log
Sand	4020'	4410'				Geophysical Log
Sandy Shale	4410'	5140'				Geophysical Log
Shale	5140'	5378'				Geophysical Log
Sand and Shale	5378'	5778'				Geophysical Log
Shale	5778'	6450'				Geophysical Log
Sandy Shale	6450'	6570'				Geophysical Log
Shale	6570'	7150'				Geophysical Log
Limestone	7150'	7215'				Geophysical Log
Shale	7215'	7443'				Geophysical Log
Limestone	7443'	7456'				Geophysical Log
Horizontal						
Shale	6230'	7552'				Geophysical Log
Limestone	7552'	7670'				Geophysical Log
Shale	7670'					Geophysical Log
Drillers Total Depth		11296'				Geophysical Log

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

<b>Well Operator's Signature:</b> 	<b>DEP USE ONLY</b>	
	Reviewed by:	Date:
Title: Completions Engineer: Mike Hurey	Date: 11-5-10	Comments:



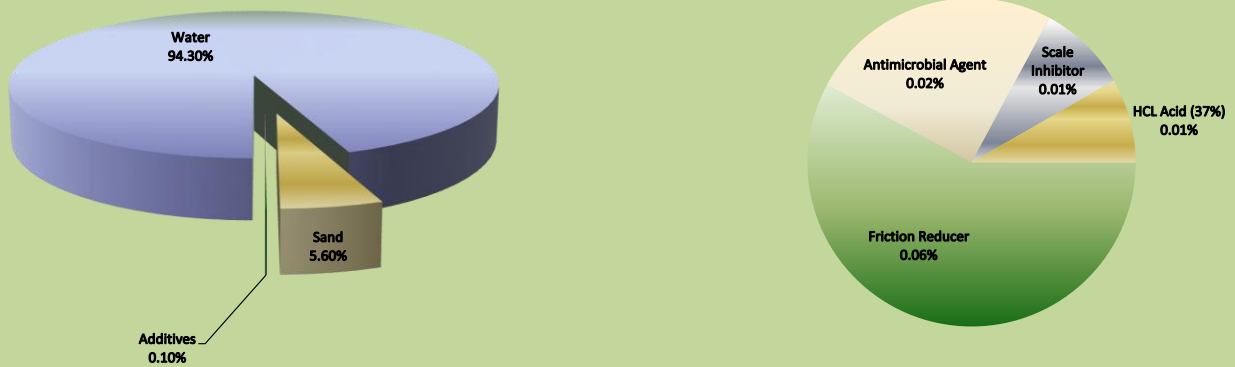
RANGE RESOURCES

Sierzega Unit #9H  
Well API: 37-125-23938

Completion Date: October 19 - 23, 2010  
Township: Amwell

% 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	3,859,243 gal	94.30%	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	229,256 gal	5.60%	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	2,317 gal	0.06%	Water treatment; soil conditioner; some children's toys
MC B-8642/Bioban	Antimicrobial Agent	Eliminates bacteria in the water that produce corrosive byproducts	Diluted at one-half gallon per 1,000 gallons of water	1,005 gal	0.02%	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	354 gal	0.01%	Water treatment, household cleaners, de-icing agent
HCL Acid	Perf Clean-Up	Dissolves cement and minerals to help initiate fractures	139 gallons per stage (non-diluted chemicals)	335 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%	334.59	0.0082%	0.0033%
	CI-100	Corrosion Inhibitor	Methanol	Protects casing	95.0%	10.32	0.0003%	0.0002%
			Propargyl Alcohol	Protects casing	5.0%	0.44	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>0.0084%</b>	<b>0.0035%</b>
Friction Reducer (FracTech)	FRW-200 & FRW-300	Friction Reducer	No hazardous ingredients	Reduce friction down casing	0.0%	N/A	N/A	N/A
Scale Inhibitor (Multichem)	MX 588-2	Scale Inhibitor	No hazardous ingredients	prevents scale deposits	0.0%	N/A	N/A	N/A
Antibacterial Agent (Multichem)	Bioban	Antibacterial Agent	4,4-Dimethyloxazolidine	eliminates bacteria in water	78.0%	552.18	0.0135%	0.0124%
			3,4,4-Trimethyloxazolidine		5.0%	36.14	0.0009%	0.0008%
			2-Amino-2-methyl-1-propanol		1.0%	7.58	0.0002%	0.0002%
			Formaldehyde Amine		0.5%	3.30	0.0001%	0.0001%
	BMC B-8642	Antibacterial Agent	Glutaraldehyde	eliminates bacteria in water	60.0%	124.42	0.0030%	0.0042%
			n-alkyl dimethyl benzyl ammonium chloride		10.0%	20.74	0.0005%	0.0007%
			Ethanol		1.0%	2.07	0.0001%	0.0001%
<b>TOTAL</b>							<b>0.0146%</b>	<b>0.0134%</b>
<b>SUMMARY</b>							<b>by vol %</b>	<b>by weight %</b>
							<b>0.023%</b>	<b>0.017%</b>