



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

DEP USE ONLY	
Site ID	Primary Fac ID
Client Id	Subfacility Id

Well Record and Completion Report

Well Operator Range Resources - Appalachia, LLC		DEP ID# 141142	Well API # (Permit / Reg) 37125-23785	Project Number	Acres 586
Address 380 Southpointe Blvd, Suite 300			Well Farm Name Baker Carol	Well # 4H	Serial #
City Canonsburg	State PA	Zip Code 15317	County Washington	Municipality Chartiers Township	
Phone 724-743-6700	Fax 724-743-6790	USGS 7.5 min. quadrangle map Washington West			

Check all that apply: Original Well Record Original Completion Report Amended Well Record Amended Completion Report

WELL RECORD Also complete the 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 7/21/09	Date Drilling Completed 2/8/2010	Surface Elevation 1250 ft.	Total Depth - Driller 9700 ft.	Total Depth - Logger 9700 ft.			
Casing and Tubing		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"	106#	Thread	40'	Driven	--- 26" 40'	7/21/09
24"	20"	81.3#	Thread	251'	Class A, 290 sx	GS 20" 251'	7/24/09
17-1/2"	13-3/8"	48#	Thread	383'	Class A s/GB, 318 sx	GS 13-3/8" 383'	7/26/09
12-1/4"	9-5/8"	36#	Thread	1837'	Class A w/GS, 600 sx	GS 9-5/8" 1837'	7/29/09
8-3/4"	5-1/2"	20#	Thread	9700"	Extendacem, 930 sx	FS 5-1/2" 9700'	2/8/2010
Hal Light, 300 sx, Fracem 330 sx							

COMPLETION REPORT

Perforation Record			Stimulation Record						
Date	Interval Perforated From	To	Date	Interval Treated	Fluid Type	Amount	Propping Agent Type	Amount	Average Injection Rate
7/27/10	9,549'	6,949'	8/4/10	Marcellus Shale	Water	90,660 bbl	Sand	4,565,030	70.1 bpm

Natural Open Flow	Too small to measure	Natural Rock Pressure	Too small to measure
After Treatment Open Flow	Due to length of the flow-back period, this information is not available but will be provided confidentially to the DEP upon request	After Treatment Rock Pressure	Due to length of the flow-back period, this information is not available but will be provided confidentially to the DEP upon request

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

Name Patterson UTI	Name Universal Well Services	Name Halliburton Services
Address 4501 Lamesa Highway	Address 730 Braddock View Dr	Address P.O. Box 203143

City - State - Zip Snyder, TX 79549	City - State - Zip Mt. Braddock, PA 15465	City - State - Zip Houston, TX 77216
Phone 325-574-6300	Phone 724-430-6201	Phone 281-871-4663

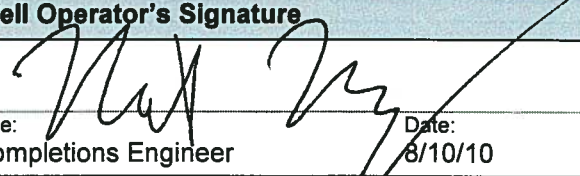
LOG OF FORMATIONS

Well API#: **37-125-23785-**_____

(If you will need more space than this page, please photocopy the blank form before filling it in.)

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
Sandy Shale	30'	100'				Drillers Log
Sand	100'	180'				Drillers Log
White Sand	180'	270'				Drillers Log
Sandy shale	270'	565'				Drillers Log
Red Rock	565'	615'				Drillers Log
Shale	615'	690'				Drillers Log
Red Rock	690'	750'				Drillers Log
Shale	750'	840'				Drillers Log
Sandy Shale	840'	1461'				Drillers Log
Sand	1461'	1680'				Drillers Log
Sandy Shale	1680'	1880'				Drillers Log
Sand	1880'	2220'				Drillers Log
Sandy Shale	2220'	2430'				Drillers Log
Sand	2430'	2580'				Drillers Log
Sandy Shale	2580'	2940'				Drillers Log
Sand	2940'	3180'				Drillers Log
Sandy Shale	3180'	3300'				Drillers Log
Sand	3300'	3450'				Drillers Log
Sandy Shale	3450'	3891'				Drillers Log
Shale	3891'	6336'				Drillers Log
Limestone	6336'	6376'				Drillers Log
Shale	6376'	6585'				Drillers Log
Limestone	6585'	6590'				Drillers Log
Horizontal Shale	5800'	6450'				Drillers Log
Limestone	6450'	6537'				Drillers Log
Shale	6537'					Drillers Log
Drillers Total Depth		9700'				Drillers Log

I do hereby certify to the best of my knowledge, information and belief that the well identified on this Well Record and Completion Report has been properly cased and cemented in accordance with the requirements of 25 Pa. Code Chapter 78 and any conditions contained in the permit for this well. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

<p>Well Operator's Signature</p> 	<p>DEP USE ONLY</p>
<p>Title: Completions Engineer</p>	<p>Reviewed by: _____ Date: _____</p> <p>Comments: _____</p>
<p>Date: 8/10/10</p>	



RANGE RESOURCES

Baker Unit #4H

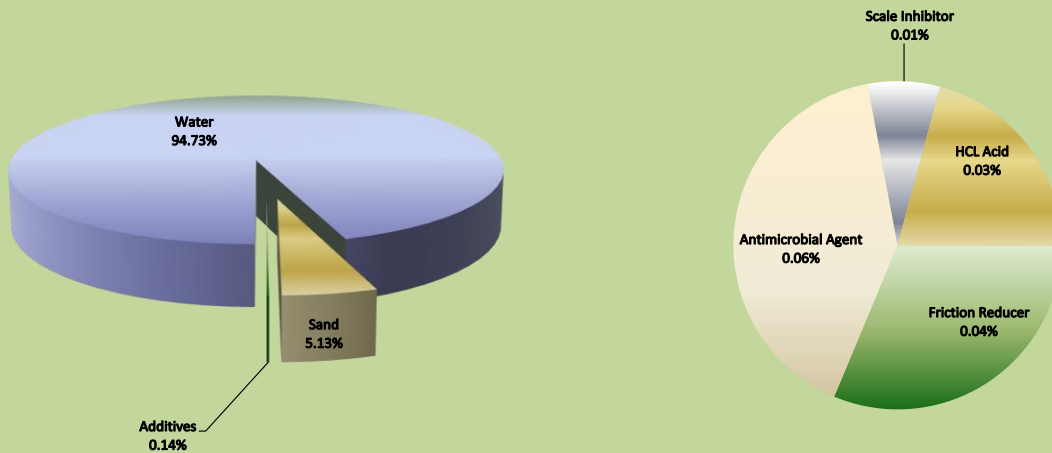
Completion Date: 7/27 - 8/4/10

Township: CHARTIERS

% 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, consisting of about 4 million gallons per well	3,807,720 gal	94.73%	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	206,339 gal	5.13%	Drinking water filtration, play sand
FRW-300	Friction Reducer	Reduces friction between fluid and pipe	Diluted at one-half gallon per 1,000 gallons of water	1,695 gal	0.04%	Water treatment; soil conditioner; some children's toys
MC B-8642	Antimicrobial Agent	Eliminates bacteria in the water that produce corrosive byproducts	Diluted at one-half gallon per 1,000 gallons of water	2,211 gal	0.06%	Water treatment, disinfectant; sterilize medical and dental equipment and surfaces
MC S-2510T	Scale Inhibitor	Prevents scaling in pipe	Diluted at one-tenth gallon per 1,000 gallons of water	386 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)	1133 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	Hazardous Component Weight % of Chemical	Component loading gal/1000 gal	Gal Hazardous Component / stage	Maximum Concentration of Hazardous Component of Total Stage Fluid	
								% Vol	% Weight
7.5% HCl Mixture (FracTech)	37% HCL	concentrated HCl Acid	HCL	Cleans perforation	37.0%	183.0	135.42	0.0327%	0.0387%
	CI-100	Corrosion Inhibitor	Methanol	Protects casing	95.0%	2.0	3.80	0.0009%	0.0008%
			Propargyl Alcohol	Protects casing	5.0%	2.0	0.20	0.00005%	0.00004%
	NE100	Non- Emulsifer	No hazardous ingredients	Prevents emulsions	0.0%	1.0	-	N/A	N/A
FE100L	Iron Chelator	No hazardous ingredients	Prevents precipitation	0.0%	3.0	-	N/A	N/A	
							TOTAL	0.0337%	0.0396%

*Total acid mixture volume is 2,000 gallons per frac stage

Friction Reducer (FracTech)	FRW-300	Friction Reducer	No hazardous ingredients	Reduce friction down casing	0.0%	0.5	-	N/A	N/A
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Scale Inhibitor (Multichem)	MC MS S-2510T	Scale Inhibitor	Sodium hydroxide	prevents scale deposits in pipe and perforations	5.0%	0.1	2.03	0.0005%	0.0005%
			Ethylene Glycol		60.0%	0.1	24.36	0.0059%	0.0066%
							TOTAL	0.0064%	0.0071%

Antibacterial Agent (Multichem)	BMC B-8642	Antibacterial Agent	Glutaraldehyde	eliminates bacteria in water	60.0%	0.5	121.80	0.0294%	0.0324%
			n-alkyl dimethyl benzyl ammonium chloride		10.0%	0.5	20.30	0.0049%	0.0054%
			Ethanol		1.0%	0.5	2.03	0.0005%	0.0005%
							TOTAL	0.0348%	0.0384%

SUMMARY	by vol %	by weight %
	0.075%	0.085%