



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 - 035-21204- -	Project Number	Acres 317
Address 100 Throckmorton St., Suite 1200			Well Farm Name Arrowhead Hunting Club Unit	Well # 3H	Serial #
City Fort Worth	State TX	Zip Code 76102	County Clinton	Municipality Gallagher	
Phone 817 869-4158	Fax 817 869-1458	Email mdennis@rangeresources.com		USGS 7.5 min. quadrangle map Lock Haven	
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. Jersey Shore @ Larrys Creek			PADWIS ID# 4410156	47,393	
2. Montoursville Borough			PADWIS ID# 4175501	46,031	
3. Jersey Shore @ Pine Creek			PADWIS ID# 4410156	1,601,206	
4. LHP Management @ Fishing Creek			SRBC Docket # 20090906	1,058,177	
5.					
6.					
Recycled Water Used					
Other Bass Fluid(s)Components Used					
1. Rainwater in Impoundment					
2.					
Total Base Fluid(s)/Components Used				2,752,807 gallons	
PERFORATION RECORD					
Stage No.	Perforation Date	Stage Perforated From	Stage Perforated To	Perf. Orientation (Vertical, Horizontal, Radial)	Formation
1	7/12/2011	11,071'MD	10,861'MD	Horizontal	Marcellus Shale
2	12/09/2011	10,756'MD	10,546'MD	Horizontal	Marcellus Shale
3	12/10/2011	10,441'MD	10,231'MD	Horizontal	Marcellus Shale
4	12/10/2011	10,126'MD	9,916'MD	Horizontal	Marcellus Shale
5	12/10/2011	9,811'MD	9,601'MD	Horizontal	Marcellus Shale
6	12/10/2011	9,496'MD	9,286'MD	Horizontal	Marcellus Shale
7	12/11/2011	9,181'MD	8,971'MD	Horizontal	Marcellus Shale
8	12/11/2011	8,866'MD	8,656'MD	Horizontal	Marcellus Shale

STIMULATION FLUID ADDITIVES

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	
MX 588-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WFR-61LA	Sodium Chloride	7647-14-5	9.8%	.00524%	.00491%	.00384%	.00578%	.00492%	.00498%	
WFR-61LA	Ammonium Chloride	12125-02-9	7.2%	.00385%	.00361%	.00282%	.00425%	.00362%	.00366%	
WFR-61LA	Petroleum Distillates	64742-48-8	52.7%	.02804%	.02629%	.02054%	.03093%	.02634%	.02666%	
WFR-61LA	Alcohols, C-12-16, Ethoxylated	68551-12-2	6.9%	.00367%	.00344%	.00269%	.00405%	.00345%	.00349%	
35%HCL Acid	Hydrochloric Acid	7647-01-0	35.0%	.08827%	.09463%	.09960%	.11504%	.11123%	.10874%	
WAI-251 LC	Tar Bases, Quinoline Derivs, Benzyl Chloride-Quaternized	72480-70-7	13.0%	.00012%	.00013%	.00014%	.00016%	.00015%	.00015%	
WAI-251 LC	Ethoxylated Nonylphenol	68412-54-4	10.1%	.00009%	.00010%	.00011%	.00012%	.00012%	.00012%	
WAI-251 LC	Cinnamaldehyde	104-55-2	10.2%	.00010%	.00010%	.00011%	.00012%	.00012%	.00012%	
WAI-251 LC	Ethylene Glycol	107-21-1	57.8%	.00054%	.00058%	.00061%	.00070%	.00068%	.00067%	
WAI-251 LC	2-Butoxyethanol	111-76-2	8.3%	.00008%	.00008%	.00009%	.00010%	.00010%	.00010%	
WAI-251 LC	Isopropyl Alcohol	67-63-0	9.5%	.00009%	.00010%	.00010%	.00012%	.00011%	.00011%	
WAI-251 LC	Triethyl Phosphate	78-40-0	7.0%	.00007%	.00007%	.00007%	.00009%	.00008%	.00008%	
WAI-251 LC	N, N-Dimethylformamide	68-12-2	45.1%	.00042%	.00045%	.00047%	.00055%	.00053%	.00052%	
WIC-641L	Citric Acid	77-92-9	56.4%	.00263%	.00282%	.00297%	.00343%	.00332%	.00324%	
BMC B-8650	Glutaraldehyde	111-30-8	48.8%	.00376%	.00376%	.00360%	.00357%	.00359%	.00365%	
BMC B-8650	Methanol	67-56-1	0.7%	.00005%	.00005%	.00005%	.00005%	.00005%	.00005%	
BMC B-8520	4,4-Dimethylloxazolidine	51200-87-4	76.5%	.01501%	.01483%	.01472%	.01421%	.01441%	.01453%	
BMC B-8520	3,4,4-Trimethylloxazolidine	75673-43-7	5.0%	.00098%	.00097%	.00096%	.00093%	.00094%	.00095%	
BMC B-8520	2-Amino-2-methyl-1-propanol	124-68-5	1.0%	.00021%	.00020%	.00020%	.00019%	.00020%	.00020%	
BMC B-8520	Formaldehyde Amine	56652-26-7	0.5%	.00009%	.00009%	.00009%	.00008%	.00009%	.00009%	

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

STIMULATION FLUID ADDITIVES

Descriptive Additive Type	Chemical Component(s) listed on Material Safety 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. 7	Stage No. 8	Stage No.	Stage No.
MIX 588-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WFR-61LA	Sodium Chloride	7647-14-5	9.8%	.00479%	.00393%		
WFR-61LA	Ammonium Chloride	12125-02-9	7.2%	.00352%	.00289%		
WFR-61LA	Petroleum Distillates	64742-48-8	52.7%	.02564%	.02103%		
WFR-61LA	Alcohols, C-12-16, Ethoxylated	68551-12-2	6.9%	.00335%	.00275%		
35%HCL Acid	Hydrochloric Acid	7647-01-0	35.0%	.10305%	.11181%		
WAI-251 LC	Tar Bases, Quinoline Derivs, Benzyl Chloride-Quaternized	72480-70-7	13.0%	.00014%	.00015%		
WAI-251 LC	Ethoxylated Nonylphenol	68412-54-4	10.1%	.00011%	.00012%		
WAI-251 LC	Cinnamaldhyde	104-55-2	10.2%	.00011%	.00012%		
WAI-251 LC	Ethylene Glycol	107-21-1	57.8%	.00063%	.00068%		
WAI-251 LC	2-Butoxyethanol	111-76-2	8.3%	.00009%	.00010%		
WAI-251 LC	Isopropyl Alcohol	67-63-0	9.5%	.00010%	.00011%		
WAI-251 LC	Triethyl Phosphate	78-40-0	7.0%	.00008%	.00008%		
WAI-251 LC	N, N-Dimethylformamide	68-12-2	45.1%	.00049%	.00053%		
WIC-641L	Citric Acid	77-92-9	56.4%	.00307%	.00334%		
BMC B-8650	Glutaraldehyde	111-30-8	48.8%	.00356%	.00361%		
BMC B-8650	Methanol	67-56-1	0.7%	.00005%	.00005%		
BMC B-8520	4,4-Dimethylloxazolidine	51200-87-4	76.5%	.01449%	.01449%		
BMC B-8520	3,4,4-Trimethylloxazolidine	75673-43-7	5.0%	.00095%	.00095%		
BMC B-8520	2-Amino-2-methyl-1-propanol	124-68-5	1.0%	.00020%	.00020%		
BMC B-8520	Formaldehyde Amine	56652-26-7	0.5%	.00009%	.00009%		

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

STIMULATION INFORMATION (WELL)			
Open Flow Production: 0mcf/d @ 24hrs pos treatment	24 Hr. Open Flow Production: 0mcf/d @ 24hrs pos treatment	24 Hr. Shut-in Pressure: N/A @ 24hrs post treatment	Flow Back Date:

STIMULATION INFORMATION (STAGE)

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


Stage No.: 1	Stimulation Date: 12/09/2011	Pump Rate: 71.3
Pressure (psi): 8,297	Shut-in Surface Pressure: 5,464	5 Minute Shut-in Surface Pressure: NA
Propping Agent Type: Sand	Propping Agent Amount: 501,600	Propping Agent Size: 100 mesh/40-70 Mesh
Stage No.: 2	Stimulation Date: 12/09/2011	Pump Rate: 70.0
Pressure (psi): 8,165	Shut-in Surface Pressure: 5,179	5 Minute Shut-in Surface Pressure: NA
Propping Agent Type: Sand	Propping Agent Amount: 500,208	Propping Agent Size: 100 mesh/40-70 Mesh
Stage No.: 3	Stimulation Date: 12/10/2011	Pump Rate: 70.0
Pressure (psi): 7,951	Shut-in Surface Pressure: 4,584	5 Minute Shut-in Surface Pressure: NA
Propping Agent Type: Sand	Propping Agent Amount: 501,700	Propping Agent Size: 100 mesh/40-70 Mesh
Stage No.: 4	Stimulation Date: 12/10/2011	Pump Rate: 72.0
Pressure (psi): 7,938	Shut-in Surface Pressure: 4,895	5 Minute Shut-in Surface Pressure: NA
Propping Agent Type: Sand	Propping Agent Amount: 500,480	Propping Agent Size: 100 mesh/40-70 Mesh
Stage No.: 5	Stimulation Date: 12/10/2011	Pump Rate: 71.1
Pressure (psi): 7,861	Shut-in Surface Pressure: 5,324	5 Minute Shut-in Surface Pressure: NA
Propping Agent Type: Sand	Propping Agent Amount: 493,294	Propping Agent Size: 100 mesh/40-70 Mesh
Stage No.: 6	Stimulation Date: 12/11/2011	Pump Rate: 71.3
Pressure (psi): 8,059	Shut-in Surface Pressure: 5,409	5 Minute Shut-in Surface Pressure: NA
Propping Agent Type: Sand	Propping Agent Amount: 502,180	Propping Agent Size: 100 mesh/40-70 Mesh

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

Name	Name	Name
Weatherford	Multi-Chem	
Address 121 Hillpointe Drive, Suite 300	Address 2905 Southwest Blvd.	Address
City - State - Zip Canonsburg, PA 15317	City - State - Zip San Angelo, Texas 76904	City - State - Zip
Phone 724 745-7050	Phone 325 223-6200	Phone

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..

Well Operator's Signature	DEP USE ONLY	
	Reviewed by:	Date:
Title: Regulatory Analyst	Comments:	
Date: 1/04/2012		

STIMULATION INFORMATION (WELL)			
Open Flow Production: 0mcf/d @ 24hrs pos treatment	24 Hr. Open Flow Production: 0mcf/d @ 24hrs pos treatment	24 Hr. Shut-in Pressure: N/A @ 24hrs post treatment	Flow Back Date:
STIMULATION INFORMATION (STAGE)			
Complete a separate record for each stimulation stage. (Please insert additional copies of this page for additional stages).			
Stage No.: 7	Stimulation Date: 12/11/2011	Pump Rate: 67.0	
Pressure (psi): 7,878	Shut-in Surface Pressure: 4,965	5 Minute Shut-in Surface Pressure: NA	
Propping Agent Type: Sand	Propping Agent Amount: 499,192	Propping Agent Size: 100 mesh/40-70 Mesh	
Stage No.: 8	Stimulation Date: 12/11/2011	Pump Rate: 71.0	
Pressure (psi): 7,479	Shut-in Surface Pressure: 4,934	5 Minute Shut-in Surface Pressure: NA	
Propping Agent Type: Sand	Propping Agent Amount: 501,067	Propping Agent Size: 100 mesh/40-70 Mesh	
Stage No.:	Stimulation Date:	Pump Rate:	
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure:	
Propping Agent Type:	Propping Agent Amount:	Propping Agent Size:	
Stage No.:	Stimulation Date:	Pump Rate:	
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure:	
Propping Agent Type:	Propping Agent Amount:	Propping Agent Size:	
Stage No.:	Stimulation Date:	Pump Rate:	
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure:	
Propping Agent Type:	Propping Agent Amount:	Propping Agent Size:	
Stage No.:	Stimulation Date:	Pump Rate:	
Pressure (psi):	Shut-in Surface Pressure:	5 Minute Shut-in Surface Pressure:	
Propping Agent Type:	Propping Agent Amount:	Propping Agent Size:	
WELL SERVICE COMPANIES (Provide the name, address, and telephone number of all well service companies involved.)			
Name Weatherford	Name Multi-Chem	Name	
Address 121 Hillpointe Drive, Suite 300	Address 2905 Southwest Blvd.	Address	
City - State - Zip Canonsburg, PA 15317	City - State - Zip San Angelo, Texas 76904	City - State - Zip	
Phone 724 745-7050	Phone 325 223-6200	Phone	
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.			
Well Operator's Signature		DEP USE ONLY	
 Title: Regulatory Analyst Date: 1/04/2012	Reviewed by:		Date:
	Comments:		

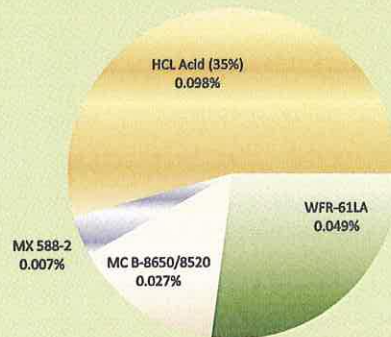
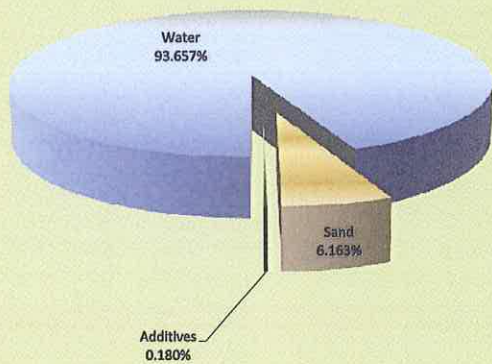


Arrowhead Hunting Club Unit 3-H
Well API: 37-035-21204

Completion Date: 12/09/2011
Township: Gallagher

% 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	2,747,530 gal	93.657%	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	180,787 gal	6.163%	Drinking water filtration, play sand
WFR-61LA	Friction Reducer	Reduces friction between fluid and pipe	Diluted at one-half gallon per 1,000 gallons of water	1,431 gal	0.049%	Water treatment; soil conditioner; some children's toys
MC B-8650/8520	Antimicrobial Agent	Eliminates bacteria in the water that produce corrosive byproducts	Diluted at one-half gallon per 1,000 gallons of water	0,779 gal	0.027%	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	0,204 gal	0.007%	Water treatment, household cleaners, de-icing agent
HCL Acid (35%)	Perf Clean-Up	Dissolves cement and minerals to help initiate fractures	177 gallons per stage if required (non-diluted chemicals)	2,867 gal	0.098%	Swimming pool and household cleaner

Composition of Hydraulic Fracture Fluid (by volume)





Wellname: Arrowhead Hunting Club Unit 3+ WELL API#: 37-035-21204
 Township: Gallagher Completion Date: 12/09/2011

Composition of Components in Marcellus Shale Hydraulic Fracturing Fluid

Common Name & Supplier	Supplier Chemical Name	Common Description	Hazardous Component listed on MSDS	Purpose	MSDS Component Weight % of Chemical	Specific Gravity of Additive	Specific Gravity of Component	Additive Conc (gal/1000 gal)	lbs Hazardous Component	Gallons MSDS Component in Well	Maximum Concentration of MSDS Component of Total Stage Fluid	
											% Vol	% Weight
7.5% HCl Mixture (Weatherford)	35% HCL	Concentrated HCl Acid	HCL	Cleans perforation	35.0%	1.17556	1.17558	189.0	9825.76	2866.87	0.0977%	0.0365%
	WAI-251 LC	Corrosion Inhibitor	Tar bases, quinoline derivs, benzyl chloride-quaternized	Protects casing	13.0%	1.07	1.07	2.0	37.15	4.17	0.0001%	0.0001%
			Ethoxylated Nonylphenol	Protects casing	10.0%	1.07	1.06	2.0	28.58	3.24	0.0001%	0.0001%
			Cinnamaldehyde	Protects casing	10.0%	1.07	1.05	2.0	28.58	3.27	0.0001%	0.0001%
			Ethylene Glycol	Protects casing	60.0%	1.07	1.11	2.0	171.47	18.55	0.0006%	0.0006%
			2-Butoxyethanol	Protects casing	7.0%	1.07	0.9	2.0	20.01	2.67	0.0001%	0.0001%
			Isopropyl alcohol	Protects casing	7.0%	1.07	0.787	2.0	20.01	3.05	0.0001%	0.0001%
			Triethyl Phosphate	Protects casing	7.0%	1.07	1.07	2.0	20.01	2.24	0.0001%	0.0001%
	N, N-Dimethylformamide	Protects casing	40.0%	1.07	0.95	2.0	114.32	14.45	0.0005%	0.0004%		
	WIC-641L	Iron Chelator	Citric Acid	Prevents precipitation	70.0%	1.24	1.54	10.0	1159.18	90.36	0.0031%	0.0043%
TOTAL										0.1026%	0.0424%	
Friction Reducer (Weatherford)	WFR-61LA	Friction Reducer	Sodium Chloride	Reduce friction down casing	10.0%	1.053	1.07	0.5	627.60	70.41	0.0024%	0.0023%
			Ammonium Chloride	Reduce friction down casing	7.0%	1.053	1.02	0.5	439.32	51.71	0.0018%	0.0016%
			Petroleum Distillates	Reduce friction down casing	40.0%	1.053	0.8	0.5	2,510.40	376.71	0.0128%	0.0093%
			Alcohols, C-12-16, Ethoxylated	Reduce friction down casing	7.0%	1.053	1.07	0.5	439.32	49.29	0.0017%	0.0016%
TOTAL										0.0187%	0.0149%	
Scale Inhibitor (Mullchem)	MX 588-2	Scale Inhibitor	No hazardous ingredients	prevents scale deposits	N/A	1.12	1.53	0.1	N/A	N/A	N/A	N/A
Antibacterial Agent (Mullchem)	BMC B-8520	Antibacterial Agent	4,4-Dimethylloxazolidine	eliminates bacteria in water	78.0%	0.9832	1.004	0.205	3579.55	428.01	0.0146%	0.0133%
			3,4,4-Trimethylloxazolodine		5.0%	0.985	0.985	0.205	229.88	28.02	0.0010%	0.0009%
			2-Amino-2-methyl-1-propanol		1.0%	0.985	0.94	0.205	45.98	5.87	0.0002%	0.0002%
			Formaldehyde Amine		0.5%	0.985	1.08	0.205	22.99	2.56	0.0001%	0.0001%
	BMC B-8650	Antibacterial Agent	Glutaraldehyde	eliminates bacteria in water	50.0%	1.103	1.13	0.08	1004.55	80.36	0.0027%	0.0037%
			Methanol		0.5%	1.103	0.786	0.08	10.05	0.80	0.0000%	0.0000%
TOTAL										0.0186%	0.0182%	
SUMMARY										0.140%	0.075%	