

Schematic - Current
Well Name: HMU Federal 21-1B (J16W)

API # 05045204090000	Well Type Gas	Business Unit Southern Rockies	SBU South Piceance	Area Mamm Creek	Pad J16W	County/Parish GARFIELD	State CO	Field Name Mamm Creek
Operator Encana Oil & Gas (USA), Inc		Well Status Cased Gas Well	Orig KB El... 7,670.60	Gr Elev (ft) 7,647.64	KB-Grd (ft) 22.97	Total Depth (All) (ftKB) Original Hole - Initial Migration - 10,845.0	Total Depth (TVD) (ftKB) Original Hole - Initial Migration - 10,519.2	PBTD (All) (ftKB) Original Hole - Initial...

Most Recent Job

Job Category Completion	Primary Job Type Original Completion	Secondary Job Type D&C	Start Date 09/12/2012	End Date 09/13/2012
----------------------------	---	---------------------------	--------------------------	------------------------

TD: 10,845.0

Directional - Original Hole - Initial Migration, 12/04/2012 10:13:06 AM

MD (ftKB)	TVD (ftKB)	Incl (°)	DLS	Vertical schematic (actual)
-4.9	-4.9	0.4	DLS (°/100) 0 — 5	
0.0	-3.9	0.4		
21.0	20.0	0.4		2-1; Casing Joints; 9 5/8; 8.921; -4.0-23.0; 27.00
23.0	21.7	0.4		1-2; Tubing Hanger; 4 1/16; 1.940; 20.0-20.8; 0.84
71.9	23.0	0.4		1-3; Nipple; 2.59; 1.995; 20.8-21.5; 0.67
1,655.2	27.9	0.4		2-2; Casing Pup Joint; 9 5/8; 23.0-28.0; 5.00
1,700.5	71.9	0.4		1-1; Casing Joints; 16; 0.0-72.0; 72.00
5,030.8	1,602.8	0.4		2-3; Casing Joints; 9 5/8; 8.921; 28.0-1,653.5; 1,625.55
6,928.1	1,604.4	18.5		2-4; Float Collar; 9 5/8; 1,653.5-1,655.0; 1.50
7,741.8	1,646.0	18.8		2-5; Casing Joints; 9 5/8; 8.921; 1,655.0-1,699.0; 43.96
7,960.0	1,647.3	18.8		2-6; Float Shoe; 9 5/8; 1,699.0-1,700.5; 1.50
8,226.0	1,660.9	18.6		3-1; Casing Joints; 4 1/2; 4.000; -5.0-7,719.8; 7,724.76
8,456.0	4,812.7	14.9		1-4; Tubing; 2 3/8; 1.995; 21.5-10,361.6; 10,340.11
8,722.1	6,040.9	4.9		
8,757.5	6,616.5	2.4		3-2; Marker Joint; 4 1/2; 4.000; 7,719.8-7,741.9; 22.13
8,978.0	7,394.9	0.9		Perf; 7,960.0-8,185.0; 07/30/2012
9,192.9	7,416.8	0.6		3-3; Casing Joints; 4 1/2; 4.000; 7,741.9-8,735.6; 993.68
9,524.9	7,608.7	1.0		Perf; 8,226.0-8,427.0; 07/30/2012
9,865.2	7,634.6	1.0		Perf; 8,456.0-8,693.0; 07/29/2012
10,361.5	7,859.6	0.4		3-4; Marker Joint; 4 1/2; 4.000; 8,735.6-8,757.5; 21.93
10,395.7	7,900.6	0.7		Perf; 8,722.0-8,947.0; 07/29/2012
10,398.0	8,101.3	0.6		Perf; 8,978.0-9,193.0; 07/28/2012
10,560.0	8,130.5	0.2		Perf; 9,242.0-9,525.0
10,730.0	8,367.4	1.0		Perf; 9,588.0-9,865.0; 07/27/2012
10,741.5	8,396.6	1.1		3-5; Casing Joints; 4 1/2; 4.000; 8,757.5-10,741.4; 1,983.89
10,785.4	8,410.0	1.5		1-5; Profile Nipple; 3 1/16; 1.810; 10,361.6-10,362.6; 0.97
10,845.1	8,432.0	1.4		1-6; Tubing; 2 3/8; 1.995; 10,362.6-10,395.7; 33.08
	8,621.3	1.5		1-7; Wireline Guide; 3 1/8; 1.995; 10,395.7-10,396.6; 0.92
	8,652.5	1.5		Perf; 10,398.0-10,527.0; 07/25/2012
	8,666.4	1.5		Perf; 10,560.0-10,663.0; 07/04/2012
	8,867.4	1.4		3-6; Float Collar; 4 1/2; 4.000; 10,741.4-10,742.4; 1.00
	8,916.6	1.4		3-7; Shoe Joint; 4 1/2; 4.000; 10,742.4-10,785.6; 43.19
	9,199.4	1.4		3-8; Float Shoe; 4 1/2; 4.000; 10,785.6-10,786.6; 1.00
	9,262.4			
	9,539.5			
	9,622.6			
	10,035.9			
	10,036.9			
	10,070.0			
	10,071.0			
	10,072.3			
	10,201.2			
	10,234.4			
	10,337.3			
	10,404.3			
	10,406.2			
	10,415.7			
	10,416.7			
	10,459.7			
	10,460.7			
	10,519.4			