

# HALLIBURTON

iCem<sup>®</sup> Service

## Post Job Report

**ENCANA OIL & GAS (USA) INC**

Date: Monday, May 26, 2014

ENCANA VOGL-McCOY 2A-5 H-E267

Sincerely,  
Mollye Hinds

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## 1.1 Cementing Job Summary

<b>Sold To #:</b> 340078		<b>Ship To #:</b> 3113302		<b>Quote #:</b>		<b>Sales Order #:</b> 0901374152					
<b>Customer:</b> ENCANA OIL & GAS (USA) INC. - EBUS					<b>Customer Rep:</b> BUDDY BURKE						
<b>Well Name:</b> VOGL-MCCOY			<b>Well #:</b> 2A-5 H-E267			<b>API/UWI #:</b> 05-123-37819-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> LONGMONT		<b>County/Parish:</b> WELD			<b>State:</b> COLORADO				
<b>Legal Description:</b> SW NW-5-2N-67W-2603FNL-301FWL											
<b>Contractor:</b>					<b>Rig/Platform Name/Num:</b> H&P 522						
<b>Job BOM:</b> 7522											
<b>Well Type:</b> HORIZONTAL OIL											
<b>Sales Person:</b> HALAMERICA\HB50180					<b>Srvc Supervisor:</b> Joseph Barras						
<b>Job</b>											
<b>Formation Name</b>											
<b>Formation Depth (MD)</b>		<b>Top</b>			<b>Bottom</b>						
<b>Form Type</b>											
<b>Job depth MD</b>											
<b>Water Depth</b>											
<b>Perforation Depth (MD)</b>		<b>From</b>			<b>To</b>						
<b>Well Data</b>											
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>	
Casing		9.625	8.835	20		N-80	0	854	0	854	
Casing		7	6.366	23		N-80	0	7560	0	7130	
Open Hole Section			8.75				854	7560	854	7130	
<b>Tools and Accessories</b>											
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>		
Guide Shoe	7	1		7560		Top Plug	7	1	HES		
Float Shoe	7	1				Bottom Plug	7	1	HES		
Float Collar	7	1				SSR plug set	7	1	HES		
Insert Float	7	1				Plug Container	7	1	HES		
Stage Tool	7	1				Centralizers	7	1	HES		
<b>Miscellaneous Materials</b>											
<b>Gelling Agt</b>		<b>Conc</b>		<b>Surfactant</b>		<b>Conc</b>		<b>Acid Type</b>		<b>Qty</b>	<b>Conc</b>
<b>Treatment Fld</b>		<b>Conc</b>		<b>Inhibitor</b>		<b>Conc</b>		<b>Sand Type</b>		<b>Size</b>	<b>Qty</b>
<b>Fluid Data</b>											
<b>Stage/Plug #: 1</b>											
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>			<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
1	Mud Flush III (Powder)	Mud Flush III			20	bbl	8.4			3.0	
42 gal/bbl		FRESH WATER									

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
2	10 lb/gal Tuned Spacer III	Tuned Spacer III	30	bbl	10	5.86	38	3	
61.01 lbm/bbl		BARITE, BULK (100003681)							
38 gal/bbl		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	Tuned Light B1	TUNED LIGHT (TM)	283	sack	10	2.32		3.5	8.73
8.73 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
4	VariCem B1	VARICEM (TM)	306	sack	13	1.95		4	9.83
9.83 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
5	Displacement		295	bbl	10.5			5	
<b>Cement Left In Pipe</b>		<b>Amount</b>	ft	<b>Reason</b>			Shoe Joint		
<b>Comment</b>									

**1.2 Job Overview**

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		<b>Units</b>	<b>Description</b>
<b>1</b>	Surface temperature at time of job	°F	78
<b>2</b>	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
<b>3</b>	Actual mud density	lb/gal	10.4
<b>4</b>	Actual mud Plastic Viscosity (PV)	cP	
<b>5</b>	Actual mud Yield Point (YP)	lb <sub>f</sub> /100ft <sup>2</sup>	
<b>6</b>	Actual mud 30 min Gel Strength	lb <sub>f</sub> /100ft <sup>2</sup>	
<b>7</b>	Time circulated before job	HH:MM	2:30
<b>8</b>	Mud volume circulated	Bbls	
<b>9</b>	Rate at which well was circulated	Bpm	
<b>10</b>	Pipe movement during hole circulation	Y/N	
<b>11</b>	Rig pressure while circulating	Psi	
<b>12</b>	Time from end mud circulation to start of job	HH:MM	:30
<b>13</b>	Pipe movement during cementing	Y/N	Y
<b>14</b>	Calculated displacement	Bbls	286
<b>15</b>	Job displaced by	Rig/HES	
<b>16</b>	Annular flow before job	Y/N	
<b>17</b>	Annular flow after job	Y/N	
<b>18</b>	Length of rat hole	Ft	
<b>19</b>	Units of gas detected while circulating	Units	0
<b>20</b>	Was lost circulation experienced at any time?	Y/N	N

**1.3 Water Field Test**

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Item	Recorded Test Value	Units	Max. Acceptable Limit	Potential Problems in Exceeding Limit
pH	7.0	----	6.0 - 8.0	Chemicals in the water can cause severe retardation
Chlorides	38	ppm	3000 ppm	Can shorten thickening time of cement
Sulfates		ppm	1500 ppm	Will greatly decrease the strength of cement
Total Hardness		ppm	500 mg/L	High concentrations will accelerate the set of the cement
Calcium	0	ppm	500 ppm	High concentrations will accelerate the set of the cement
Total Alkalinity		ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all (typically occurs @ pH ≥ 8.3).
Bicarbonates		ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all
Potassium		ppm	5000 ppm	High concentrations will shorten the pump time of cement (indicates the presence of chlorides, therefore if Potassium levels are measured as high, so should the chlorides)
Iron	0	ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature	67	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

**Submitted Respectfully by: JOSEPH\_BARRAS**

## 1.4 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Recirc Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	PS Pmp Stg Tot (bbl)	Comment
Event	1	Arrive at Location from Service Center	Arrive at Location from Service Center	5/26/2014	09:15:00	USER						
Event	2	Rig-Up Equipment	Rig-Up Equipment	5/26/2014	09:30:00	USER						
Event	3	Rig-Up Completed	Rig-Up Completed	5/26/2014	11:00:00	USER						
Event	4	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/26/2014	11:37:08	USER	2.22	0.00	0.00	-1.00	0.0	HES AND RIG CREW
Event	5	Start Job	Start Job	5/26/2014	15:16:21	COM4	8.27	8.38	0.00	0.00	0.0	
Event	6	Test Lines	Test Lines	5/26/2014	15:18:33	COM4	8.38	8.34	0.00	65.00	0.0	TO 3500 PSI NO VISIBLE LEAKS
Event	7	Pump Spacer 1	Pump Spacer 1	5/26/2014	15:21:33	COM4	8.31	8.35	0.00	25.00	0.0	20 BBL MUD FLUSH
Event	8	Pump Spacer 1	Pump Spacer 1	5/26/2014	15:28:19	COM4	8.46	11.23	3.20	338.00	0.0	30 BBL TUNED SPACER III @ 10.0 PPG/5.86 YIELD /38 GAL/SK
Event	9	Drop Bottom Plug	Drop Bottom Plug	5/26/2014	15:39:19	COM4	9.75	0.24	3.70	194.00	0.0	PRELOADED
Event	10	Pump Cement	Pump Cement	5/26/2014	15:39:32	COM4	9.05	0.24	3.50	277.00	0.0	117 BBL OF TUNED LIGHT @ 10.0PPG /2.32 YIELD /8.73 GAL/SK
Event	11	Drop Bottom Plug	Drop Bottom Plug	5/26/2014	16:28:16	COM4	9.84	12.73	4.20	638.00	0.0	PRELOADED
Event	12	Pump Tail Cement	Pump Tail Cement	5/26/2014	16:28:32	COM4	12.52	12.72	4.20	584.00	0.0	106 BBL OF VARICEM @ 13.0 PPG /1.95 YIELD/9.83 GAL/SK
Event	13	Shutdown	Shutdown	5/26/2014	16:45:16	COM4						
Event	14	Drop Top Plug	Drop Top Plug	5/26/2014	16:45:17	USER	11.41	-0.01	0.00	61.00	0.0	KNOCKED CAP AND LOADED PLUG
Event	15	Pump Displacement	Pump Displacement	5/26/2014	16:49:32	COM4						RIG MUD @ 10.4 PPG AND CEMENT TO SURFACE @ 270 BBL AWAY/LANDED @987 PSI
Event	16	Bump Plug	Bump Plug	5/26/2014	17:36:48	COM4	8.32	8.72	0.00	1780.00	0.0	1542 PSI
Event	17	Other	Other	5/26/2014	17:42:32	COM4	8.33	8.72	0.00	2601.00	0.0	CASING TEST @ 2500 PSI FOR 15 MIN

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Event	18	End Job	End Job	5/26/2014	17:54:15	COM4					
Event	19	Rig-Down Equipment	Rig-Down Equipment	5/26/2014	18:00:00	USER	8.35	-0.01	0.00	0.00	0.0
Event	20	Return to Service Center from Job	Return to Service Center from Job	5/26/2014	19:30:00	USER					

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2.0 Attachments

2.1 ENCANA VOGL-McCOY 2A-5 H-E267-Custom Results.png

