

# HALLIBURTON

iCem<sup>®</sup> Service

## Post Job Report

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

Date: Sunday, June 01, 2014

**2A-5 H-E267**

Encana Production Vogl-McCoy #2A-5 H-E267

Sincerely,  
**Matt Bulinski**

## Table of Contents

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1.1	Cementing Job Summary	3
	4	
1.2	Job Overview	5
1.3	Water Field Test	6
1.4	Job Event Log	7
2.0	Custom Graphs	Error! Bookmark not defined.
2.1	Custom Graph	9

### Job Times

	Date	Time	Time Zone
<b>Requested Time On Location</b>	6-1-14	09:30	
<b>Called Out</b>	6-1-14	06:30	
<b>On Location</b>	6-1-14	08:45	
<b>Job Started</b>	6-1-14	12:54	
<b>Job Completed</b>	6-1-14	14:39	
<b>Departed Location</b>	6-1-14	16:00	

## 1.1 Cementing Job Summary

**HALLIBURTON**

Call for service

Saturday, May 31, 2014 2:52:40 AM

The Road to Excellence Starts with Safety											
Sold To #: 340078	Ship To #: 3113302	Primary Sales Order #: 0901394674									
Customer: ENCANA OIL & GAS (USA) INC. - EBUS			Job Purpose: 7523 CMT PRODUCTION CASING BOM								
Well Name: VOGL-MCCOY		Well #: 2A-5 H-E267	API/UWI #: 05-123-37819-00								
Field: WATTENBERG	City: LONGMONT	Country/Parish: WELD	State/Prov: COLORADO								
Legal Description:											
Rig Name & Number/ Phone Number: H&P 522/970-812-4791				Location: LAND							
myCem id# :	Job Criticality Status: GREEN		IFacts Request id#:								
Contacts											
Type	Name	Email	Phone								
Account Rep	Allison Cormier	Allison.Cormier@halliburton.com	+13077054802								
Service Coordinator	Jonathan Snyder	Jonathan.Snyder@Halliburton.com	+17203830979								
Company Man											
PPE, Safety Huddles, JSA's, HOC & Near Miss Reporting, BBP Observations											
Distance/Mileage(1 way) Svcs: 75 mile		Distance/Mileage(1 way) Mtls: 75 mile									
		Rqstd Job Start Date/Time: 05/31/2014									
HSE Information											
H2S Present: Unknown		CO2 Present: Unknown									
<b>Drive Safely. Lights On for Safety. Wear Seat Belts. Observe all HES / Customer Safety Policies.</b>											
Directions:											
CR 8 WEST TO HWY 85, NORTH TO HWY 52, WEST TO CR 19, NORTH TO CR 24, WEST TO CR 15, NORTH 0.5 MILES AND GO EAST INTO LOCATION											
Instruction											
Job Info / Well Data											
Job Depth (MD) ft	Job Depth (TVD) ft	Well Fluid Type	Well Fluid Weight lbm/gal	Displacement Fluid	Displ Fluid Weight lbm/gal						
11600	7100	Water Based Mud	9	Fresh Water	8.3						
BHST degF	BRCT degF	Log Temp degF		Time Since Circ Stopped HH:MM:SS							
Job Tubulars/Tools											
Description	Size in	Weight lbm/ft	ID in	Thread	Grade	Top MD ft	Btm MD ft	Top TVD ft	Btm TVD ft	Shoe Jnt ft	% Excess
Intermediate Casing	7	23	6.366		N-80	0	7360	0	7100		
Production Open Hole			6.125			7500	11600				20
Production Casing	4.5	13.5	3.92		P-110	0	11600	0	7100		

Call For Service

05/31/2014 14:52:40

**HALLIBURTON**

Page 1 of 5

Mud conditioning plan										
The condition of the drilling fluid is one of the most important variables in achieving a cement barrier. Prior to cementing, circulate the mud at the planned highest displacement rate for the cement job for at least 2 bottoms-up until the well is clean, mud is free of gas and pump pressures have stabilized.										
Materials										
Stage/Plug #: 1										
Fluid #	Fluid Name	Package/SBM/Material Name	Rqstd Del Qty	UOM	Density lbm/gal	Yield ft <sup>3</sup> /sack	Water Req Gal/sack	Rate bbl/min	Total Mix Fluid Gal/sack	Surface Batch Mixing Time
1	13 lb/gal Tuned Spacer III		40	bbl	13	8.93	33.9	2		
235.92 lbm/bbl		Barite								
iFacts Testid #										
Fluid #	Fluid Name	Package/SBM/Material Name	Rqstd Del Qty	UOM	Density lbm/gal	Yield ft <sup>3</sup> /sack	Water Req Gal/sack	Rate bbl/min	Total Mix Fluid Gal/sack	Surface Batch Mixing Time hr
2	ExpandaCem B2	EXPANDACEM (TM) SYSTEM	569	sack	13.8	1.67	7.7	4	7.7	
iFacts Testid #										
Fluid #	Fluid Name	Package/SBM/Material Name	Rqstd Del Qty	UOM	Density lbm/gal	Yield ft <sup>3</sup> /sack	Water Req Gal/sack	Rate bbl/min	Total Mix Fluid Gal/sack	Surface Batch Mixing Time
3	Fresh Water		179.1	bbl	8.3			6		
iFacts Testid #										
Caution: Displacement quantities and densities are estimates ONLY! Do not use them for the actual job.										
Packaged Materials										
SAP #	Material		Qty	UOM	Comments					
	FRESH WATER		5735.7	Gal						

**1.2 Job Overview**

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		<b>Units</b>	<b>Description</b>
<b>1</b>	Surface temperature at time of job	°F	75
<b>2</b>	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
<b>3</b>	Actual mud density	lb/gal	10.55
<b>4</b>	Actual mud Plastic Viscosity (PV)	cP	18
<b>5</b>	Actual mud Yield Point (YP)	lb <sub>f</sub> /100ft <sup>2</sup>	18
<b>6</b>	Actual mud 30 min Gel Strength	lb <sub>f</sub> /100ft <sup>2</sup>	32
<b>7</b>	Time circulated before job	HH:MM	2hr
<b>8</b>	Mud volume circulated	Bbls	338
<b>9</b>	Rate at which well was circulated	Bpm	6
<b>10</b>	Pipe movement during hole circulation	Y/N	Y
<b>11</b>	Rig pressure while circulating	Psi	
<b>12</b>	Time from end mud circulation to start of job	HH:MM	15mins
<b>13</b>	Pipe movement during cementing	Y/N	Y
<b>14</b>	Calculated displacement	Bbls	220
<b>15</b>	Job displaced by	Rig/HES	HES
<b>16</b>	Annular flow before job	Y/N	Y
<b>17</b>	Annular flow after job	Y/N	N
<b>18</b>	Length of rat hole	Ft	
<b>19</b>	Units of gas detected while circulating	Units	
<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	6.5	----	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		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	1	ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature	65	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

**Submitted Respectfully by:** \_\_\_\_\_ **Matt Bulinski** \_\_\_\_\_

## 1.4 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	PS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comment
Event	1	Depart Yard Safety Meeting	Depart Yard Safety Meeting	6/1/2014	07:00:00	USER				JSA on Job Materials, pre-tripping trucks, and driving to location
Event	2	Arrive At Loc	Arrive At Loc	6/1/2014	08:45:00	USER				Arrived 45mins early and rig is on schedule 1400' from bottom. Finished running Csg at 10:45
Event	3	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	6/1/2014	09:00:00	USER				JSA on Hazard Hunt, rigging up bulk trucks, and iron to rig
Event	4	Rig-Up Equipment	Rig-Down Equipment	6/1/2014	09:15:00	USER				
Event	5	Rig-Up Completed	Rig-Up Completed	6/1/2014	10:00:00	USER				
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	6/1/2014	11:00:00	USER	8.23	6.00	0.00	JSA with Company Man, Rig hands, Black Hawk, Tool Hand, and HES on finish rig up to rig and pump schedule
Event	7	Start Job	Start Job	6/1/2014	12:54:09	COM5	-12.09	1.00	0.00	
Event	8	Test Lines	Test Lines	6/1/2014	13:02:34	COM5	8.34	445.00	0.00	5300psi Pressure Test Lines, Held Solid
Event	9	Pump Spacer 1	Pump Spacer 1	6/1/2014	13:09:04	COM5	12.67	896.00	2.00	40bbl Tuned Spacer 13ppg, 8.93yield, 33.9gal/sk, Mixed with rig water and # verify by pressurized mud scales. Avg 5bbl/min with 870psi
Event	10	Pump Cement	Pump Cement	6/1/2014	13:18:06	COM5	13.69	601.00	4.00	569sks Expandacem cmt, 13.8ppg, 1.67yield, 7.7gal/sk, Mixed with rig water and # verify by pressurized mud scales. Avg 6bbl/min with 500psi
Event	11	Pump Spacer 1	Pump Spacer 1	6/1/2014	13:50:04	COM5	13.78	238.00	3.70	3bbls MMCR at 3bbl/min 200psi

Event	12	Shutdown	Shutdown	6/1/2014	13:50:57	COM5	8.20	91.00	3.80	Shutdown
Event	13	Clean Lines	Clean Lines	6/1/2014	13:52:04	COM5	-12.21	12.00	1.20	Wash 10bbls Clean water through lines
Event	14	Drop Top Plug	Drop Top Plug	6/1/2014	13:55:57	COM5	8.14	7.00	0.00	Black Hawk drop latch Plug
Event	15	Pump Spacer 1	Pump Spacer 1	6/1/2014	13:57:16	USER	8.14	8.00	1.20	Pump 1bbl MMCR flush plug out
Event	16	Shutdown	Shutdown	6/1/2014	13:57:35	USER	8.22	74.00	0.00	Black Hawk drop wiper balls
Event	17	Pump Displacement	Pump Displacement	6/1/2014	13:58:18	COM5	8.16	15.00	0.00	200bbls Brine water displacment with last 20bbls Fresh water. Avg 7bbl/min with 1500psi
Event	18	Bump Plug	Bump Plug	6/1/2014	14:36:29	COM5	8.24	1782.00	3.40	Slowed down last 10bbls to 3bbl/min to bump.. Plug landed at 1695psi and brought to 2405psi for 2mins. Floats Held
Event	19	End Job	End Job	6/1/2014	14:39:32	COM5	8.30	14.00	0.00	
Event	20	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	6/1/2014	14:40:00	USER	8.15	6.00	0.00	JSA with rig hands, Black Hawk, and HES hands on rigging down Iron from Head, rig, and bulk trucks
Event	21	Rig-Down Equipment	Rig-Down Equipment	6/1/2014	15:00:00	USER				
Event	22	Rig-Down Completed	Rig-Down Completed	6/1/2014	16:00:00	USER				
Event	23	Safety Meeting - Departing Location	Safety Meeting - Departing Location	6/1/2014	16:02:00	USER				JSA on Location clean up, pre-tripping trucks, and driving back to Brighton yard

2.0 Real Time

2.1 Graph

