

**ENCANA OIL & GAS (USA) INC. - EBUS  
DO NOT MAIL-3601 N STAGECOACH RD  
LONGMONT, Colorado**

Chavez  
Chavez 4A-4H

Ensign/124

## **Post Job Summary**

# **Cement Intermediate Casing**

Date Prepared: 07/01/2012  
Version: 1

Service Supervisor: SNYDER, JONATHAN

Submitted by: BORDEN, RYAN

**HALLIBURTON**

# HALLIBURTON

## Wellbore Geometry

Job Tubulars					MD		TVD		Excess %	Shoe Joint Length ft
Type	Description	Size in	ID in	Wt lbm/ft	Top ft	Bottom ft	Top ft	Bottom ft		
Open Hole Section	Open Hole Section		8.750		970.00	7,449.00	970.00	7,449.00		
Casing	Intermediate Casing	7.00	6.276	26.00	0.00	7,449.00	0.00	7,449.00		42.00
Casing	Surface Casing	9.63	8.921	36.00	0.00	970.00	0.00	970.00		

## Pumping Schedule

Stage /Plug #	Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Avg Rate bbl/min	Surface Volume	Downhole Volume
1	1	Spacer	TUNED SPACER III	9.80	6.00	50.0 bbl	50.0 bbl
1	2	Cement Slurry	Tuned Light 10#	9.05	5.00	350.0 sacks	350.0 sacks
1	3	Cement Slurry	Varicem 12#	12.00	6.00	140.0 sacks	140.0 sacks
1	4	Cement Slurry	Varicem 13#	13.00	6.00	90.0 sacks	90.0 sacks
1	5	Spacer	ClayWeb III	8.34	6.00		268 bbl

# HALLIBURTON

## Job Summary

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### Job Information

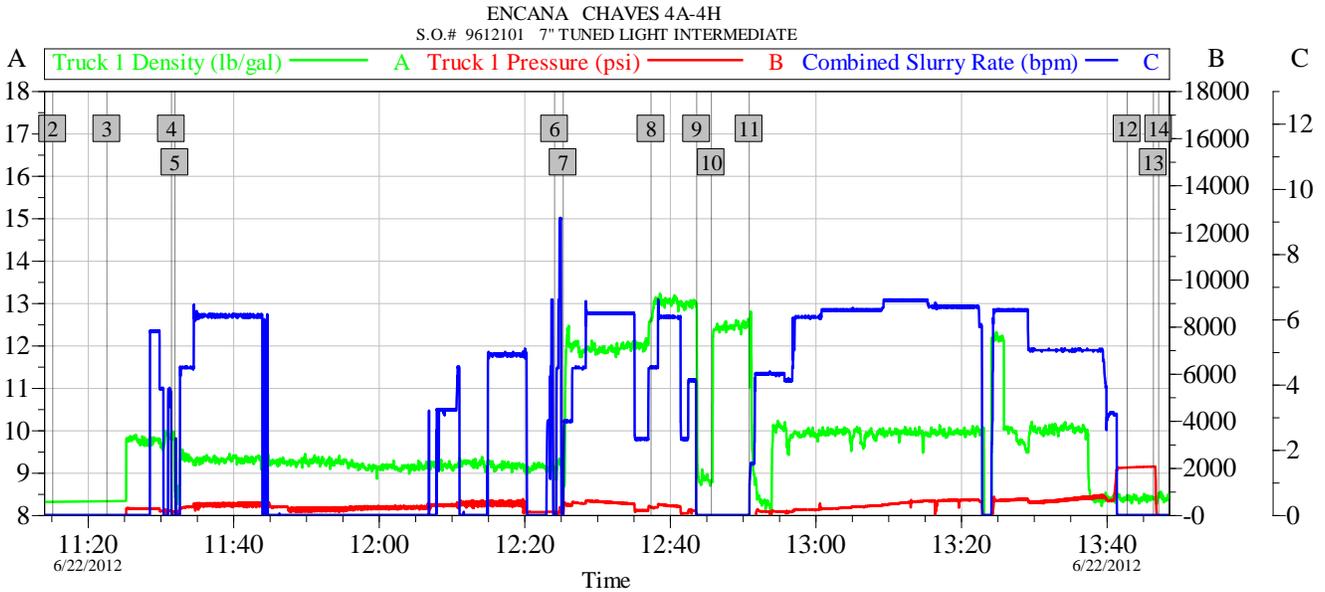
<b>Job Start Date</b>	6/22/2012 11:15:00 AM	<b>Rate at Which Well was Circulated</b>	5.000 bbl/min
<b>Job MD</b>	8,396.0 ft	<b>Pipe Movement During Hole Circulation</b>	None
<b>Job TVD</b>	7,321.0 ft	<b>Time From End Mud Circ. to Job Start</b>	20.00 minute
<b>Height of Plug Container/Swage Above Rig Floor</b>	6.0 ft	<b>Pipe Movement During Cementing</b>	Reciprocated
<b>Surface Temperature at Time of Job</b>	75 degF	<b>Calculated Displacement</b>	276.00 bbl
<b>Mud Type</b>	Water Based Mud	<b>Amount of Cement Returns</b>	38.00 bbl
<b>Actual Mud Density</b>	10 lbm/gal	<b>Job Displaced by (rig/halco)</b>	Cement Unit HP Pumps
<b>Time Circulated before job</b>	2.00 hour(s)	<b>Length of Rat Hole</b>	21.00 ft

### Cementing Equipment

<b>Pipe Centralization</b>	Unknown	<b>Brand of Plug set used?</b>	HALLIBURTON
<b>Did Float Equipment Hold?</b>	Yes	<b>Did Plugs Bump?</b>	Unknown
<b>Plug set used?</b>	Yes	<b>Calculated Pressure to Bump Plugs</b>	1,026.0 psig

# HALLIBURTON

## Data Acquisition



Global Event Log							
Intersection	TID	TIP	Intersection	TID	TIP		
2 Start Job	11:15:13	8.312	-39.14	3 Pump Tuned Spacer @ 9.8 #	11:22:39	8.325	-38.95
4 Drop Bottom Plug	11:31:31	9.835	194.0	5 Pump Tuned Light @ 10 #	11:32:01	8.567	127.8
6 Drop Bottom Plug	12:24:10	9.087	141.0	7 Pump Lead Cement @ 12 #	12:25:21	9.286	93.56
8 Pump Tail Cement @13 #	12:37:25	12.61	318.9	9 Shutdown	12:43:41	12.87	-48.75
10 Drop Top Plug	12:45:42	8.778	-67.94	11 Pump Displacement	12:50:54	12.52	-71.08
12 Bump Plug	13:42:51	8.414	2014	13 Check Floats	13:46:27	8.371	2056
14 End Job	13:47:11	8.471	-122.2				

Customer:	ENCANA	Job Date:	22-Jun-2012	Sales Order #:	9612101
Well Description:	CHAVES 4A-4H	UWI:	05-123-35476		
SERVICE SUPERVISOR	JONATHAN SNYDER	SERVICE OPERATOR	JAMES WILEY		

OptiCem v6.4.9  
22-Jun-12 14:03

## Service Supervisor Reports

### Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump	Pressure (psig)	Comments
06/22/2012 07:00		Arrive at Location from Service Center					ARRIVED AND CONDUCTED A HAZARD HUNT AND FOUND NO HAZARDS THAT CONFLICT WITH US RIGGING UP EQUIPMENT.
06/22/2012 10:45		Pre-Job Safety Meeting					HELD SAFETY MEETING WITH ALL EMPLOYEES AND ALL THIRD PARTY PERSONEL PRIOR TO PUMPING THE CEMENT JOB.
06/22/2012 11:15		Start Job					
06/22/2012 11:22		Pump Spacer 1	6	50		274.0	TUNED SPACER MIXED @ 9.8 PPG W/ RIG WATER
06/22/2012 11:31		Drop Bottom Plug					PLUG PRELOADED, DROPPED PLUG IN THE LAST 2 BBLS OF TUNED SPACER
06/22/2012 11:32		Pump Cement	6	145		450.0	350 SKS TUNED LIGHT CEMENT MIXED @ 10 PPG W/ RIG WATER
06/22/2012 12:24		Drop Bottom Plug					PLUG PRELOADED, DROPPED PLUG IN THE LAST 2 BBLS OF TUNED LIGHT CEMENT
06/22/2012 12:25		Pump Lead Cement	6	62		520.0	140 SKS VARICEM B1 MIXED @ 12 PPG W/ RIG WATER
06/22/2012 12:37		Pump Tail Cement	6	31		450.0	90 SKS VARICEM B1 MIXED @ 13 PPG W/ RIG WATER
06/22/2012 12:43		Shutdown					
06/22/2012 12:45		Drop Top Plug					DROPPED PLUG PRIOR TO PUMPING DISPLACEMENT. WE CLEANED PUMPS AND LINES ON TOP OF THE PLUG WITH THE FIRST 10 BBLS OF DISPLACEMENT.
06/22/2012 12:50		Pump Displacement	6	268		608.0	FIRST 10 BBLS CLEANED UP THE MIXING TUBS ON TOP OF THE PLUG, THEN PUMPED 246 BBLS OF MUD SUPPLIED BY THE RIG, THEN 20 MORE BBLS OF WATER TO ENSURE OUR LINES WERE CLEAR OF MUD AND THE STAND PIPE FOR THE RIG.
06/22/2012 13:04		Test Lines					PRESSURE TEST DID NOT HOLD BUT WE VISUALLY INSPECTED THE LINES AND FOUND NO VISIBLE LEAKS. WE ALSO MADE SURE NO ONE WAS AROUND THE LINES THROUGHOUT THE JOB.
06/22/2012 13:42		Bump Plug	3			700.0	
06/22/2012 13:46		Check Floats				2056.0	FLOATS HELD, GOOD RETURNS THROUGHOUT THE JOB. WE GOT 1 BBL OF WATER BACK INTO OUR DISPLACEMENT TANKS WHEN WE CHECKED FLOATS.
06/22/2012 13:47		End Job					
06/22/2012 13:55		Pre-Rig Down Safety Meeting					HELD SAFETY MEETING WITH ALL EMPLOYEES PRIOR TO RIGGING DOWN AND DISCUSSED ALL HAZARDS WHILE RIGGING DOWN EQUIPMENT.
06/22/2012 15:00		Depart Location for Service Center or Other Site					HELD SAFETY MEETING PRIOR TO LEAVING LOCATION AND DISCUSSED ALL POTENTIAL HAZARDS WHILE DRIVING BACK TO THE SERVICE CENTER.

**The Road to Excellence Starts with Safety**

<b>Sold To #:</b> 340078	<b>Ship To #:</b> 2933728	<b>Quote #:</b>	<b>Sales Order #:</b> 9612101
<b>Customer:</b> ENCANA OIL & GAS (USA) INC. - EBUS		<b>Customer Rep:</b>	
<b>Well Name:</b> Chavez		<b>Well #:</b> 4A-4H	<b>API/UWI #:</b> 05-123-35476
<b>Field:</b> WATTENBERG	<b>City (SAP):</b> HUDSON	<b>County/Parish:</b> Weld	<b>State:</b> Colorado
<b>Contractor:</b> Ensign		<b>Rig/Platform Name/Num:</b> 124	
<b>Job Purpose:</b> Cement Intermediate Casing			
<b>Well Type:</b> Development Well		<b>Job Type:</b> Cement Intermediate Casing	
<b>Sales Person:</b> AARON, WESLEY		<b>Srvc Supervisor:</b> SNYDER, JONATHAN	<b>MBU ID Emp #:</b> 435616

**Job Personnel**

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
BARNES, BRIAN L	8.0	485204	BARTOSEK, KEVIN	8.0	516167	KUNERT, RANDY Joe	8.0	477850
PLIENESS, RYAN Charles	8.0	490745	SANFORD, DALE A	8.0	219527	SANSONI, NICHOLAS Sterling J	8.0	502962
SMITH, AARON David	8.0	518187	SNYDER, JONATHAN Leroy	8.0	435616	WILEY, JAMES A	8.0	440080

**Equipment**

HES Unit #	Distance-1 way						
10248062C	12 mile	10824253C	12 mile	11064535	12 mile	11518550	12 mile
11542577	12 mile	11562546C	12 mile	11606995	12 mile	11645063	12 mile
11748359	12 mile	11764052	12 mile	11764054C	12 mile	11764737	12 mile
NA	12 mile						

**Job Hours**

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours

**TOTAL** *Total is the sum of each column separately*

**Job**

**Job Times**

Formation Name	Formation Depth (MD)	Top	Bottom	Called Out	Date	Time	Time Zone
					22 - Jun - 2012	04:00	MST
<b>Form Type</b>			<b>BHST</b>	<b>On Location</b>	22 - Jun - 2012	07:00	MST
<b>Job depth MD</b>	8396. ft		<b>Job Depth TVD</b>	7321. ft	<b>Job Started</b>	22 - Jun - 2012	11:15
<b>Water Depth</b>			<b>Wk Ht Above Floor</b>	6. ft	<b>Job Completed</b>	22 - Jun - 2012	13:47
<b>Perforation Depth (MD)</b>	<i>From</i>		<i>To</i>		<b>Departed Loc</b>	22 - Jun - 2012	15:00

**Well Data**

Description	New / Used	Max pressure psig	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Open Hole Section				8.75				970.	7449.	970.	7449.
Intermediate Casing	Unknown		7.	6.276	26.		P-110	.	7449.	.	7449.
Surface Casing	Used		9.625	8.921	36.		K-55	.	970.	.	970.

**Tools and Accessories**

Type	Size	Qty	Make	Depth	Type	Size	Qty	Make	Depth	Type	Size	Qty	Make
Guide Shoe					Packer					Top Plug			

Float Shoe					Bridge Plug					Bottom Plug			
Float Collar					Retainer					SSR plug set			
Insert Float										Plug Container			
Stage Tool										Centralizers			

Miscellaneous Materials													
Gelling Agt		Conc		Surfactant		Conc		Acid Type		Qty		Conc	%
Treatment Fld		Conc		Inhibitor		Conc		Sand Type		Size		Qty	

Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density lbm/gal	Yield ft3/sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk	
1	TUNED SPACER III	TUNED SPACER III - SBM (483826)	50.00	bbl	9.8	5.78	38.63	4.0		
	39.07 gal/bbl	FRESH WATER								
	30.27 lbm/bbl	BARITE, 100 LB SK (100003680)								
2	Tuned Light 10#	TUNED LIGHT (TM) SYSTEM (452984)	350.0	sacks	9.05	2.33	8.83	4.0	8.83	
	8.83 Gal	FRESH WATER								
3	Varicem 12#	VARICEM (TM) CEMENT (452009)	140.0	sacks	12.	2.49	13.92	4.0	13.92	
	13.92 Gal	FRESH WATER								
4	Varicem 13#	VARICEM (TM) CEMENT (452009)	90.0	sacks	13.	1.96	11.92	4.0	11.92	
	11.92 Gal	FRESH WATER								
5	ClayWeb III			bbl	8.34	.0	.0	.0		
	0.2 gal/Mgal	CLA-WEB - TOTE (101985045)								

Calculated Values		Pressures		Volumes					
Displacement		Shut In: Instant		Lost Returns		Cement Slurry		Pad	
Top Of Cement		5 Min		Cement Returns		Actual Displacement		Treatment	
Frac Gradient		15 Min		Spacers		Load and Breakdown		Total Job	

Rates										
Circulating		Mixing		Displacement		Avg. Job				
Cement Left In Pipe	Amount	42 ft	Reason	Shoe Joint						
Frac Ring # 1 @	ID	Frac ring # 2 @	ID	Frac Ring # 3 @	ID	Frac Ring # 4 @	ID			

The Information Stated Herein Is Correct	Customer Representative Signature
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