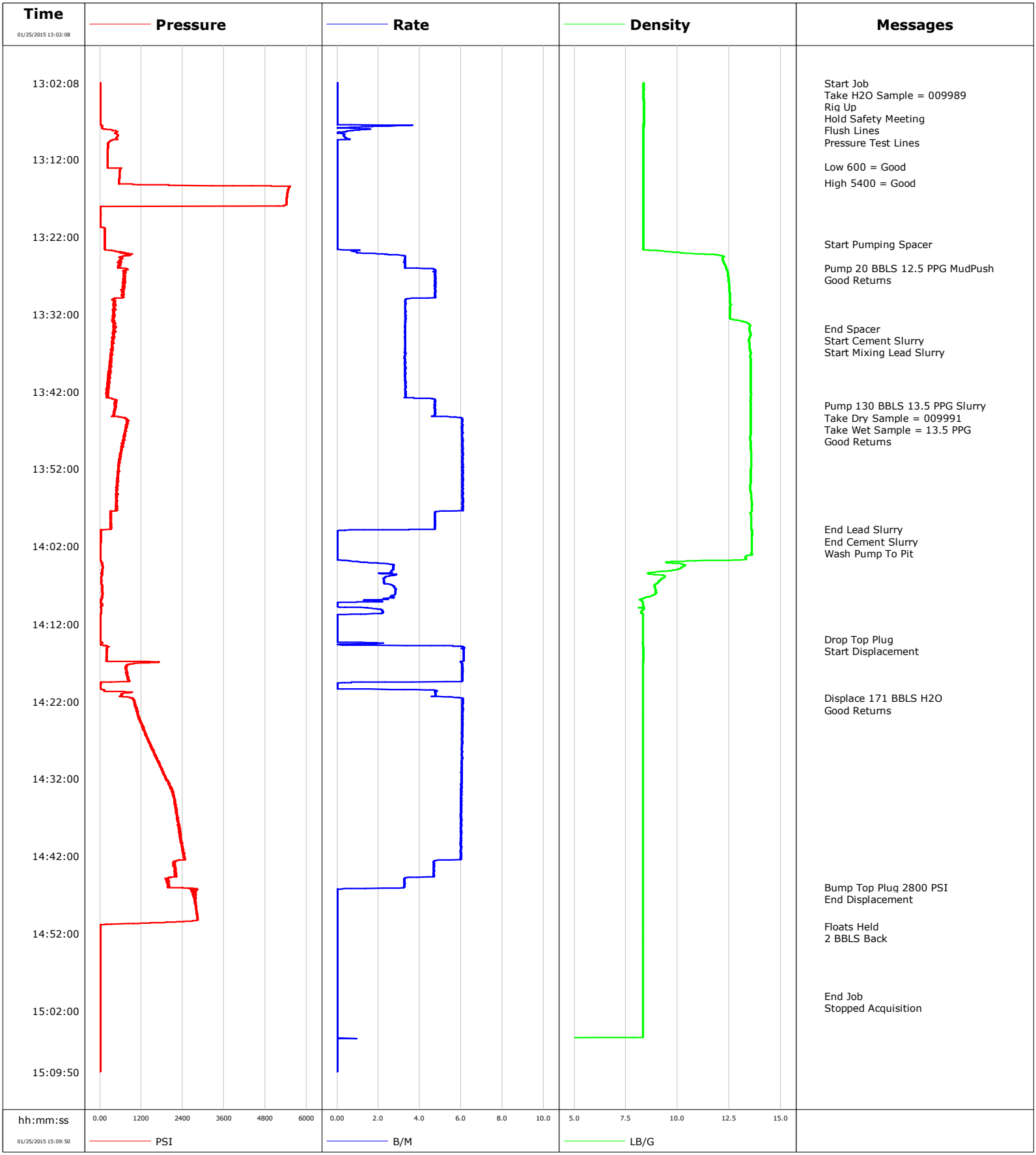
Schlumberger

Cementing Job Report

CemCAT v1.6

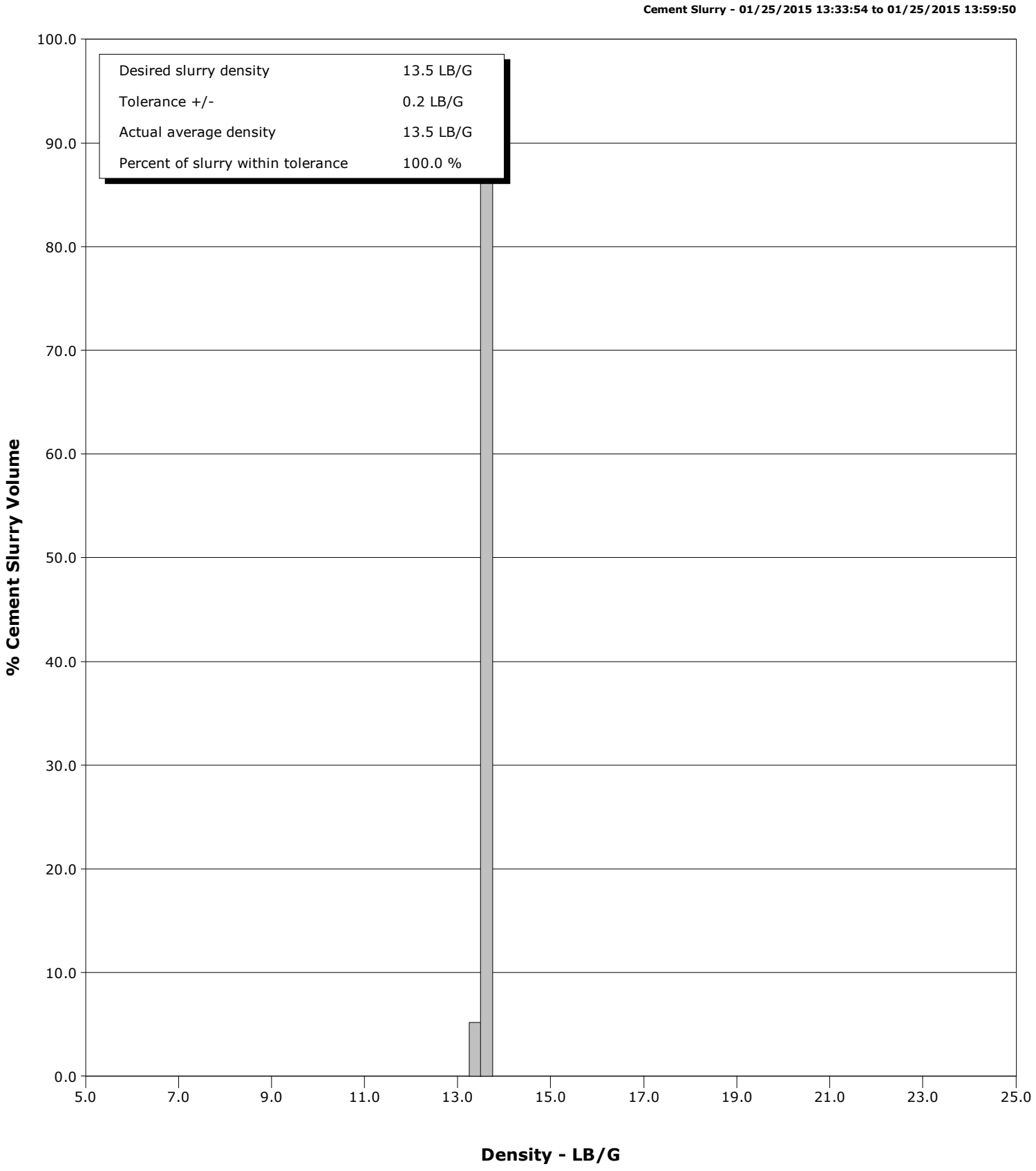
Well	Ruhl 1G-32H	**Client**	Encana
Field	DJ	**SIR No.**	2090809
Engineer	Conley Jensen/ Lyle Hartsfield	**Job Type**	4.5" Production
Country	United States	**Job Date**	01-25-2015



Schlumberger

Cementing Qa/Qc Density Report

Well	Ruhl 1G-32H	**Client**	Encana
Field	DJ	**SIR No.**	2090809
Engineer	Conley Jensen/ Lyle Hartsfield	**Job Type**	4.5" Production
Country	United States	**Job Date**	01-25-2015



Schlumberger Cementing Service Report

Customer	Job Number
Encana	2090809

Well	Location (legal)	Schlumberger Location	Job Start
Ruhl 1G-32H 1G-32H	CWY	CWY	Jan/25/2015

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
DJ	Shale	deg	6.1 in	11517.0 ft	7987.0 ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
Weld	Colorado	psi	215 degF	215 degF	lb/gal

Well Master	API/UWI
0631588862	05123402860000

Rig Name	Drilled For	Service Via
Ensign 135	Oil	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
	lb/gal	cP

Service Line	Job Type
Cementing	4.5" Production

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
7452.0	7.0	26.0	P110	8RD
11480.0	4.5	13.5	P110	8RD

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Service Instructions

Rig Up Hold Safety Meeting
Flush Lines Pressure Test Lines 500/5000PSI
Pump 40 BBLS 12.5 PPG MudPush
Pump 120 BBLS 13.5 PPG Slurry
Wash Pump
Drop Top Plug
Displace 171 BBLS H2O

Treat Down	Displacement	Packer Type	Packer Depth
Casing	171.0 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	171.0 bbl	206.0 bbl	391.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
X	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
9745 psi	X	

No. Centralizers	Top Plugs	Bottom Plugs
	1	

Cement Head Type

Job Scheduled For	Arrived on Location	Leave Location
Jan/25/2015 09:30	Jan/25/2015 09:00	Jan/25/2015

Casing Tools

Shoe Type	Guide
Shoe Depth	11480.0 ft
Stage Tool Type	
Stage Tool Depth	ft
Collar Type	Float
Collar Depth	11476.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
01/25/2015	13:02:08	11	0.0	8.36	0.0	Started Acquisition
01/25/2015	13:02:09	11	0.0	8.36	0.0	Start Job
01/25/2015	13:02:10	10	0.0	8.36	0.0	Take H2O Sample = 009989
01/25/2015	13:02:11	10	0.0	8.36	0.0	Flush Lines
01/25/2015	13:02:13	11	0.0	8.36	0.0	Pressure Test Lines
01/25/2015	13:03:38	7	0.0	8.36	0.0	
01/25/2015	13:05:08	7	0.0	8.36	0.0	
01/25/2015	13:06:38	7	0.0	8.36	0.0	
01/25/2015	13:08:08	131	1.6	8.35	0.8	
01/25/2015	13:09:38	323	0.0	8.34	1.5	
01/25/2015	13:11:08	225	0.0	8.34	1.5	
01/25/2015	13:12:38	220	0.0	8.34	1.5	
01/25/2015	13:13:00	219	0.0	8.34	1.5	Low 600 = Good
01/25/2015	13:14:08	562	0.0	8.34	1.5	
01/25/2015	13:15:00	554	0.0	8.34	1.5	High 5400 = Good
01/25/2015	13:15:38	5495	0.0	8.34	1.5	
01/25/2015	13:17:08	5426	0.0	8.34	1.5	
01/25/2015	13:18:38	13	0.0	8.34	1.5	
01/25/2015	13:20:08	12	0.0	8.34	0.0	
01/25/2015	13:21:38	134	0.0	8.34	0.0	
01/25/2015	13:23:00	134	0.0	8.34	0.0	Start Pumping Spacer

Well	Field	Job Start	Customer	Job Number
Ruhl 1G-32H 1G-32H	DJ	Jan/25/2015	Encana	2090809

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
01/25/2015	13:24:38	616	3.3	12.26	1.6	
01/25/2015	13:26:00	553	3.3	12.33	6.1	Pump 20 BBLS 12.5 PPG MudPush
01/25/2015	13:26:08	779	4.2	12.35	6.6	
01/25/2015	13:27:00	700	4.7	12.44	10.7	Good Returns
01/25/2015	13:27:38	677	4.8	12.47	13.7	
01/25/2015	13:29:08	644	4.8	12.52	20.8	
01/25/2015	13:30:38	450	3.3	12.54	27.0	
01/25/2015	13:32:08	372	3.3	12.54	31.9	
01/25/2015	13:33:38	387	3.3	13.50	1.6	
01/25/2015	13:33:53	398	3.3	13.48	2.4	End Spacer
01/25/2015	13:33:54	393	3.3	13.48	2.5	Start Cement Slurry
01/25/2015	13:33:55	415	3.3	13.48	2.5	Start Mixing Lead Slurry
01/25/2015	13:35:08	366	3.3	13.48	6.5	
01/25/2015	13:36:38	324	3.3	13.50	11.5	
01/25/2015	13:38:08	274	3.3	13.53	16.4	
01/25/2015	13:39:38	253	3.3	13.53	21.3	
01/25/2015	13:41:08	271	3.3	13.53	26.3	
01/25/2015	13:42:38	202	3.3	13.55	31.2	
01/25/2015	13:43:50	460	4.7	13.55	36.5	Pump 130 BBLS 13.5 PPG Slurry
01/25/2015	13:44:08	421	4.7	13.54	37.9	
01/25/2015	13:44:15	443	4.7	13.53	38.5	Take Dry Sample = 009991
01/25/2015	13:44:32	441	4.7	13.53	39.8	Take Wet Sample = 13.5 PPG
01/25/2015	13:44:43	407	4.7	13.53	40.7	Good Returns
01/25/2015	13:45:38	812	6.1	13.53	45.5	
01/25/2015	13:47:08	764	6.0	13.53	54.5	
01/25/2015	13:48:38	639	6.1	13.53	63.6	
01/25/2015	13:50:08	594	6.1	13.56	72.7	
01/25/2015	13:51:38	554	6.1	13.55	81.8	
01/25/2015	13:53:08	496	6.1	13.53	90.9	
01/25/2015	13:54:38	478	6.1	13.52	100.0	
01/25/2015	13:56:08	473	6.1	13.57	109.1	
01/25/2015	13:57:38	309	4.7	13.55	118.0	
01/25/2015	13:59:08	334	4.7	13.56	125.1	
01/25/2015	13:59:49	324	4.4	13.55	128.4	End Lead Slurry
01/25/2015	13:59:50	231	3.5	13.55	128.4	End Cement Slurry
01/25/2015	13:59:51	94	3.5	13.55	128.5	Wash Pump To Pit
01/25/2015	14:00:38	24	0.0	13.60	0.0	
01/25/2015	14:02:08	8	0.0	13.58	0.0	
01/25/2015	14:03:38	8	0.0	13.31	0.0	
01/25/2015	14:05:08	66	2.6	9.70	2.9	
01/25/2015	14:06:38	41	2.3	9.07	6.5	
01/25/2015	14:08:08	73	2.8	8.93	10.6	
01/25/2015	14:09:38	61	0.0	8.33	13.2	
01/25/2015	14:11:08	9	0.0	8.33	15.0	
01/25/2015	14:12:38	8	0.0	8.33	15.0	
01/25/2015	14:14:00	9	0.0	8.33	0.0	Drop Top Plug
01/25/2015	14:14:08	8	0.0	8.33	0.0	
01/25/2015	14:15:38	189	6.1	8.34	5.4	
01/25/2015	14:17:08	975	6.1	8.33	14.6	
01/25/2015	14:18:38	799	6.0	8.33	23.7	
01/25/2015	14:20:08	13	0.0	8.33	29.2	
01/25/2015	14:21:34	919	6.0	8.33	34.4	Displace 171 BBLS H2O
01/25/2015	14:21:38	947	6.1	8.33	34.8	
01/25/2015	14:23:08	1066	6.1	8.33	43.9	

Well	Field	Job Start	Customer	Job Number
Ruhl 1G-32H 1G-32H	DJ	Jan/25/2015	Encana	2090809

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
01/25/2015	14:26:08	1328	6.0	8.33	62.1	
01/25/2015	14:27:38	1481	6.0	8.33	71.2	
01/25/2015	14:29:08	1636	6.0	8.33	80.3	
01/25/2015	14:30:38	1791	6.0	8.33	89.3	
01/25/2015	14:32:08	1948	6.0	8.33	98.4	
01/25/2015	14:33:38	2118	6.0	8.33	107.4	
01/25/2015	14:35:08	2160	6.0	8.33	116.4	
01/25/2015	14:36:38	2215	6.0	8.33	125.4	
01/25/2015	14:38:08	2272	6.0	8.33	134.4	
01/25/2015	14:39:38	2323	6.0	8.33	143.4	
01/25/2015	14:41:08	2416	6.0	8.33	152.4	
01/25/2015	14:42:38	2209	4.7	8.33	161.2	
01/25/2015	14:44:08	2196	4.7	8.33	168.2	
01/25/2015	14:45:38	1988	3.3	8.33	174.0	
01/25/2015	14:46:00	2001	3.2	8.33	175.2	Bump Top Plug 2800 PSI
01/25/2015	14:47:08	2745	0.0	8.33	175.8	
01/25/2015	14:48:38	2792	0.0	8.33	175.8	
01/25/2015	14:50:08	2832	0.0	8.33	175.8	
01/25/2015	14:51:00	12	0.0	8.33	175.8	Floats Held
01/25/2015	14:51:38	13	0.0	8.33	175.8	
01/25/2015	14:53:08	11	0.0	8.33	175.8	
01/25/2015	14:54:38	11	0.0	8.33	175.8	
01/25/2015	14:56:08	11	0.0	8.33	175.8	
01/25/2015	14:57:38	11	0.0	8.33	175.8	
01/25/2015	14:59:08	11	0.0	8.33	175.8	
01/25/2015	15:00:00	11	0.0	8.33	175.8	End Job
01/25/2015	15:00:38	11	0.0	8.33	175.8	
01/25/2015	15:02:08	12	0.0	8.33	175.8	
01/25/2015	15:03:38	10	0.0	8.33	175.8	
01/25/2015	15:05:08	11	0.0	8.33	175.8	
01/25/2015	15:06:38	11	0.0	0.01	175.8	
01/25/2015	15:08:08	11	0.0	0.01	175.8	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
4.7			6.2	356.2	0.0	39.1	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
5519	10	765	2800			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
%	120.0 bbl	190.9 bbl	65 degF	☐	bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
Dennis Elrod	Conley Jensen/ Lyle Hartsfield	☐ -	☒ -

Schlumberger

Service Quality Evaluation

Client:	Encana
Field:	DJ
Rig:	Ensign 135
Well:	Ruhl 1G-32H
Service Line:	Cementing
Job Type:	4.5" Production

Service Order #:	
Date:	Jan/25/2015
Operating Time (hh:mm):	00:00
Client Rep:	Dennis Elrod
Schlumberger Engineer:	Conley Jensen/ Lyle Hartsfield
Schlumberger FSM:	

Main Objective:

To be completed by Company Rep. Please answer Y (Yes) or N (No) and add any comments below.

		Score	Yes / No	Result
1	**HSE**			
1a	Free of lost time injury and compliance with SLB and loc. spec. HSE practice	5	**yes** ☐ **no** ☒	0
1b	Free of environmental spill or non-compliant discharge	5	**yes** ☐ **no** ☒	0
1c	Wellsite left clean	4	**yes** ☐ **no** ☒	0
			Sub-total	0%

2	**Design / Preparation**			
2a	Program incl. job simulation (CemCADE) & pump schedule / tool hydraulic calcs	3	**yes** ☐ **no** ☒	0
2b	Equipment maintenance schedule completed / Green tagged	2	**yes** ☐ **no** ☒	0
2c	All materials and equipment required for job/contingency checked & on location	2	**yes** ☐ **no** ☒	0
2d	Safety / pre-job meeting conducted with all involved present	2	**yes** ☐ **no** ☒	0
			Sub-total	0%

3	**Execution**			
3a	Lost time < 30 mins	3	**yes** ☐ **no** ☒	0
3b	Equipment pressure tested succesfully	3	**yes** ☐ **no** ☒	0
3c	All key parameters monitored and recorded accurately (Pressure, Rate, Density)	2	**yes** ☐ **no** ☒	0
3d	Plugs / darts released and tested succesfully	2	**yes** ☐ **no** ☒	0
3e	Density variation met expectations	2	**yes** ☐ **no** ☒	0
3f	Personnel performed as per expectations	2	**yes** ☐ **no** ☒	0
3g	Equipment performed as per expectations	2	**yes** ☐ **no** ☒	0
3h	Job pumped as per design	3	**yes** ☐ **no** ☒	0
3i	Did job start on time	2	**yes** ☐ **no** ☒	0
3j	Free of Operational failures (screen out, Cementing Example, etc.)	3	**yes** ☐ **no** ☒	0
			Sub-total	0%

4	**Evaluation**			
4a	Main job objective achieved with no consequential non-productive time	10	**yes** ☐ **no** ☒	0
			Sub-total	0%

Total 0%

Comments: (Please include a brief explanation for a "NO" response and summarize any innovations attempted on this well.)

Client:	**Schlumberger:**
Client Signature:	**Schlumberger Signature:**