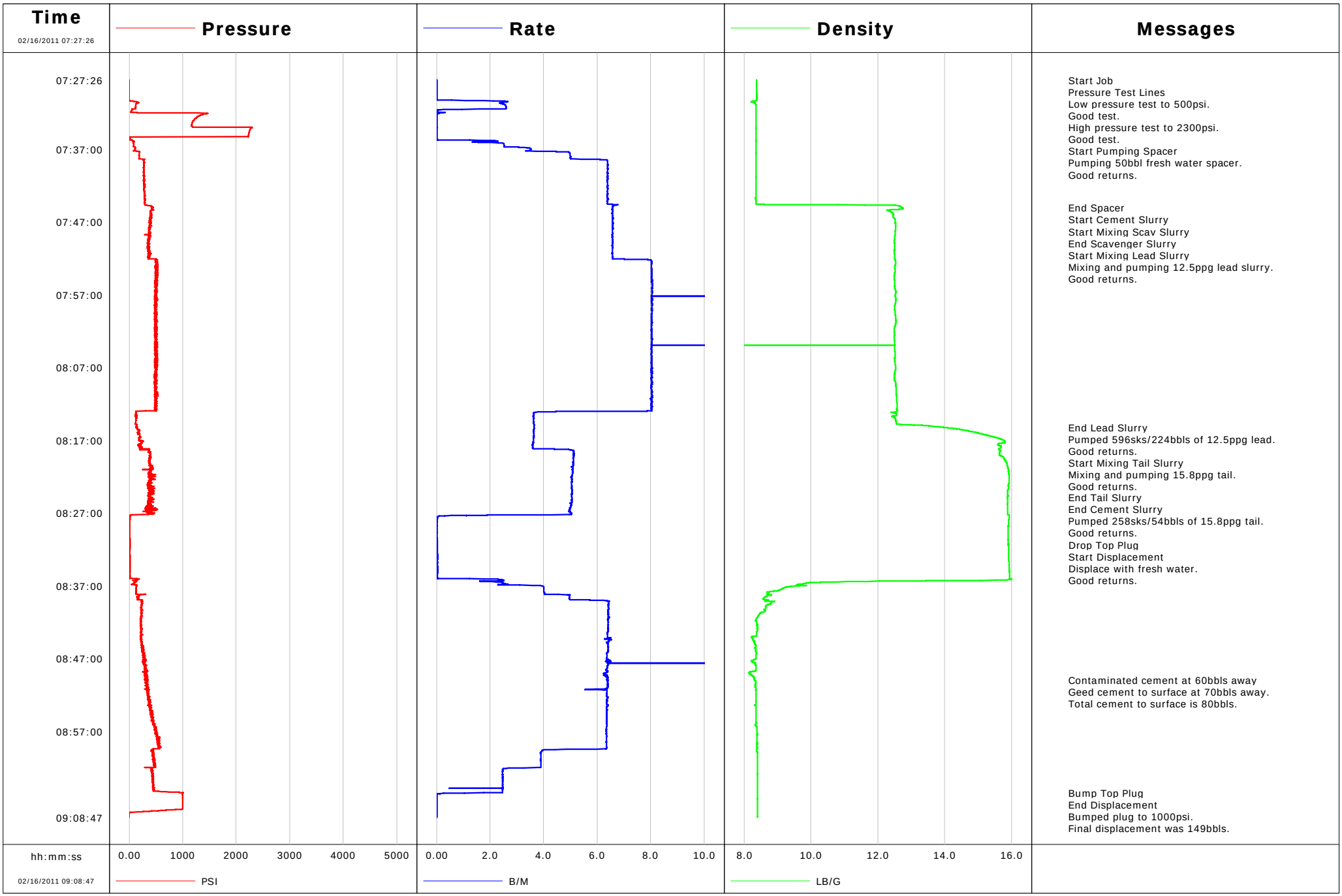
Schlumberger Cementing Job Report

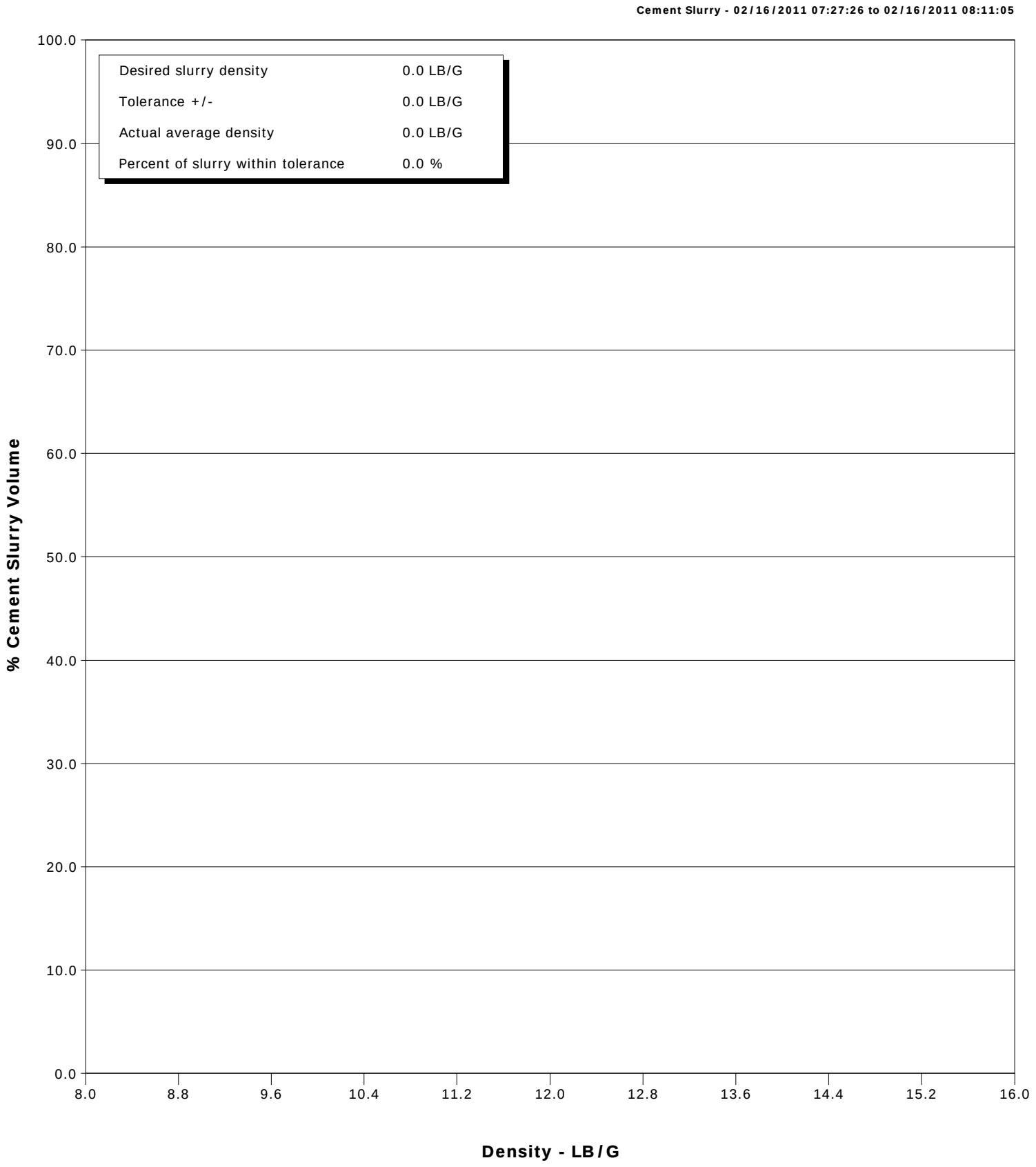
Well	ORCHARD UNIT 18-15H	**Client**	ENCANA
Field	ORCHARD UNIT	**SIR No.**	BAD4-00305
Engineer	JEFF PATTERSON	**Job Type**	10 3/4" SURFACE
Country	United States	**Job Date**	02-16-2011



Schlumberger

Cementing Qa/Qc Density Report

Well	ORCHARD UNIT 18-15H	**Client**	ENCANA
Field	ORCHARD UNIT	**SIR No.**	BAD4-00305
Engineer	JEFF PATTERSON	**Job Type**	10 3/4" SURFACE
Country	United States	**Job Date**	02-16-2011



Schlumberger Cementing Service Report

Customer	Job Number
ENCANA	BAD4-00305

Well	Location (legal)	Schlumberger Location	Job Start
ORCHARD UNIT 18-15H ORCHARD UNIT 18-15H	K20OU	GRAND JUNCTION,COLORADO	Feb/16/2011

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
ORCHARD UNIT	SHALE	0 deg	14.8 in	1563.0 ft	1563.0 ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
GARFIELD	Colorado	psi	100 degF	85 degF	lb/gal
Well Master 0631225413	API/UWI				

Rig Name	Drilled For	Service Via
ENSIGN 119	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

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

Service Line	Job Type
Cementing	10 3/4" SURFACE

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
2500 psi	psi	10 3/4"CEMENTHEAD

Service Instructions

CEMENT 10 3/4" SURFACE CASING WITH 596SKS 12.5PPG LEAD. 258SKS 15.8PPG TAIL. DISPLACE WITH 149BBLS OF WATER.

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
1563.0	10.8	40.5	J55	8RD
0.0	0.0	0.0		

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

Treat Down	Displacement	Packer Type	Packer Depth
Casing	149.3 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	153.4 bbl	161.0 bbl	320.0 bbl

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

Lift Pressure	698 psi

Pipe Rotated	Pipe Reciprocated
☐	☐

No. Centralizers	Top Plugs	Bottom Plugs
	1	

Cement Head Type	Single

Job Scheduled For	Arrived on Location	Leave Location
Feb/16/2011	Feb/16/2011	Feb/16/2011

Casing Tools		Squeeze Job	
Shoe Type	Guide	Squeeze Type	
Shoe Depth	1563.0 ft	Tool Type	
Stage Tool Type		Tool Depth	ft
Stage Tool Depth	ft	Tail Pipe Size	in
Collar Type	Float	Tail Pipe Depth	ft
Collar Depth	1522.0 ft	Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/16/2011	07:27:26	-2	0.0	8.37	0.0	Started Acquisition
02/16/2011	07:27:27	-2	0.0	8.37	0.0	Start Job
02/16/2011	07:27:28	-2	0.0	8.37	0.0	Pressure Test Lines
02/16/2011	07:27:29	-2	0.0	8.37	0.0	Low pressure test to 500psi.
02/16/2011	07:27:30	-2	0.0	8.37	0.0	High pressure test to 2300psi.
02/16/2011	07:27:32	-2	0.0	8.37	0.0	Start Pumping Spacer
02/16/2011	07:27:34	-2	0.0	8.37	0.0	Pumping 50bbl fresh water spacer.
02/16/2011	07:29:06	-4	0.0	8.38	0.0	
02/16/2011	07:30:46	130	2.5	8.35	1.2	
02/16/2011	07:32:26	1299	0.0	8.36	3.1	
02/16/2011	07:34:06	2271	0.0	8.37	3.1	
02/16/2011	07:35:46	56	1.2	8.37	3.1	
02/16/2011	07:37:26	192	5.0	8.36	8.0	
02/16/2011	07:39:06	279	6.4	8.36	17.3	
02/16/2011	07:40:46	274	6.4	8.36	27.9	
02/16/2011	07:42:26	285	6.4	8.36	38.6	
02/16/2011	07:44:06	295	6.4	8.36	49.2	
02/16/2011	07:45:02	424	6.6	12.73	55.3	End Spacer
02/16/2011	07:45:05	435	6.6	12.75	55.6	Start Cement Slurry
02/16/2011	07:45:16	421	6.5	12.63	56.8	End Scavenger Slurry
02/16/2011	07:45:17	421	6.5	12.52	56.9	Start Mixing Lead Slurry

Well	Field	Job Start	Customer	Job Number
ORCHARD UNIT 18-15H ORCHARD UNIT 18-15H	ORCHARD UNIT	Feb/16/2011	ENCANA	BAD4-00305

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/16/2011	07:45:46	421	6.6	12.45	2.5	
02/16/2011	07:47:26	401	6.6	12.54	13.5	
02/16/2011	07:49:06	375	6.6	12.51	24.4	
02/16/2011	07:50:46	355	6.6	12.49	35.4	
02/16/2011	07:52:26	521	8.0	12.53	46.8	
02/16/2011	07:54:06	486	8.0	12.50	60.1	
02/16/2011	07:55:46	480	8.1	12.51	73.5	
02/16/2011	07:57:26	503	8.0	12.53	89.2	
02/16/2011	07:59:06	486	8.0	12.51	102.6	
02/16/2011	08:00:46	483	8.0	12.54	115.9	
02/16/2011	08:02:26	524	8.0	12.50	129.3	
02/16/2011	08:04:06	504	8.0	12.50	145.8	
02/16/2011	08:05:46	503	8.0	12.51	159.2	
02/16/2011	08:07:26	485	8.0	12.52	172.6	
02/16/2011	08:09:06	485	8.0	12.53	185.9	
02/16/2011	08:10:46	478	8.0	12.55	199.3	
02/16/2011	08:12:26	499	8.0	12.57	212.7	
02/16/2011	08:14:06	124	3.6	12.53	221.4	
02/16/2011	08:15:13	130	3.6	13.96	225.4	End Lead Slurry
02/16/2011	08:15:14	130	3.6	13.96	225.5	Pumped 596sks/224bbls of 12.5ppg lead.
02/16/2011	08:15:15	130	3.6	14.02	225.6	Good returns.
02/16/2011	08:15:46	173	3.6	14.73	227.4	
02/16/2011	08:16:55	195	3.6	15.71	231.6	Start Mixing Tail Slurry
02/16/2011	08:16:57	190	3.6	15.73	231.7	Mixing and pumping 15.8ppg tail.
02/16/2011	08:17:26	228	3.6	15.63	233.5	
02/16/2011	08:19:06	385	5.1	15.65	240.8	
02/16/2011	08:20:46	403	5.1	15.88	249.3	
02/16/2011	08:22:26	379	5.0	15.92	257.8	
02/16/2011	08:24:06	419	5.1	15.88	266.2	
02/16/2011	08:24:48	398	5.0	15.87	269.7	End Tail Slurry
02/16/2011	08:24:49	361	5.0	15.87	269.8	End Cement Slurry
02/16/2011	08:24:50	375	5.0	15.87	269.9	Pumped 258sks/54bbls of 15.8ppg tail.
02/16/2011	08:24:51	375	5.0	15.88	270.0	Good returns.
02/16/2011	08:24:53	375	5.1	15.88	270.1	Drop Top Plug
02/16/2011	08:24:54	375	5.0	15.87	270.2	Displace with fresh water.
02/16/2011	08:24:55	441	5.0	15.87	270.3	Good returns.
02/16/2011	08:25:46	358	5.0	15.86	274.6	
02/16/2011	08:27:26	16	0.1	15.92	282.2	
02/16/2011	08:29:06	6	0.0	15.89	282.2	
02/16/2011	08:30:46	12	0.0	15.89	282.2	
02/16/2011	08:32:26	9	0.0	15.91	282.3	
02/16/2011	08:34:06	11	0.0	15.91	282.3	
02/16/2011	08:35:46	9	0.0	15.93	282.4	
02/16/2011	08:37:26	130	4.0	9.12	286.6	
02/16/2011	08:39:06	225	6.4	8.63	294.3	
02/16/2011	08:40:46	217	6.4	8.49	305.0	
02/16/2011	08:42:26	227	6.4	8.39	315.7	
02/16/2011	08:44:06	225	6.4	8.25	326.4	
02/16/2011	08:45:46	245	6.4	8.36	337.0	
02/16/2011	08:47:26	293	6.5	8.23	347.6	
02/16/2011	08:49:06	287	6.3	8.17	364.8	
02/16/2011	08:49:53	291	6.3	8.32	369.8	Contaminated cement at 60bbls away
02/16/2011	08:49:54	318	6.4	8.32	369.9	Total cement to surface is 80bbls.
02/16/2011	08:50:46	336	6.4	8.35	375.4	

Well	Field	Job Start	Customer	Job Number
ORCHARD UNIT 18-15H ORCHARD UNIT 18-15H	ORCHARD UNIT	Feb/16/2011	ENCANA	BAD4-00305

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
02/16/2011	08:54:06	391	6.3	8.36	396.6	
02/16/2011	08:55:46	455	6.4	8.37	407.2	
02/16/2011	08:57:26	515	6.3	8.40	417.7	
02/16/2011	08:59:06	541	6.3	8.40	428.3	
02/16/2011	09:00:46	456	3.9	8.40	435.7	
02/16/2011	09:02:26	445	2.5	8.40	441.6	
02/16/2011	09:04:06	446	2.5	8.40	445.8	
02/16/2011	09:05:27	1007	1.8	8.40	449.0	Bump Top Plug
02/16/2011	09:05:28	1007	1.0	8.40	449.1	End Displacement
02/16/2011	09:05:29	1005	0.5	8.40	449.1	Bumped plug to 1000psi.
02/16/2011	09:05:30	1002	0.5	8.40	449.1	Bleed off pressure.
02/16/2011	09:05:31	1002	0.3	8.40	449.1	Good return s for entire job.
02/16/2011	09:05:46	995	0.0	8.40	449.1	
02/16/2011	09:07:26	995	0.0	8.40	449.1	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
5.5			8.0	278.0	0.0	50.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
2302	-2	386	1000			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
%	278.0 bbl	149.0 bbl	65 degF	X	80.0 bbl
				Washed Thru Perfs	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
DAVID WALL	JEFF PATTERSON	-	X -