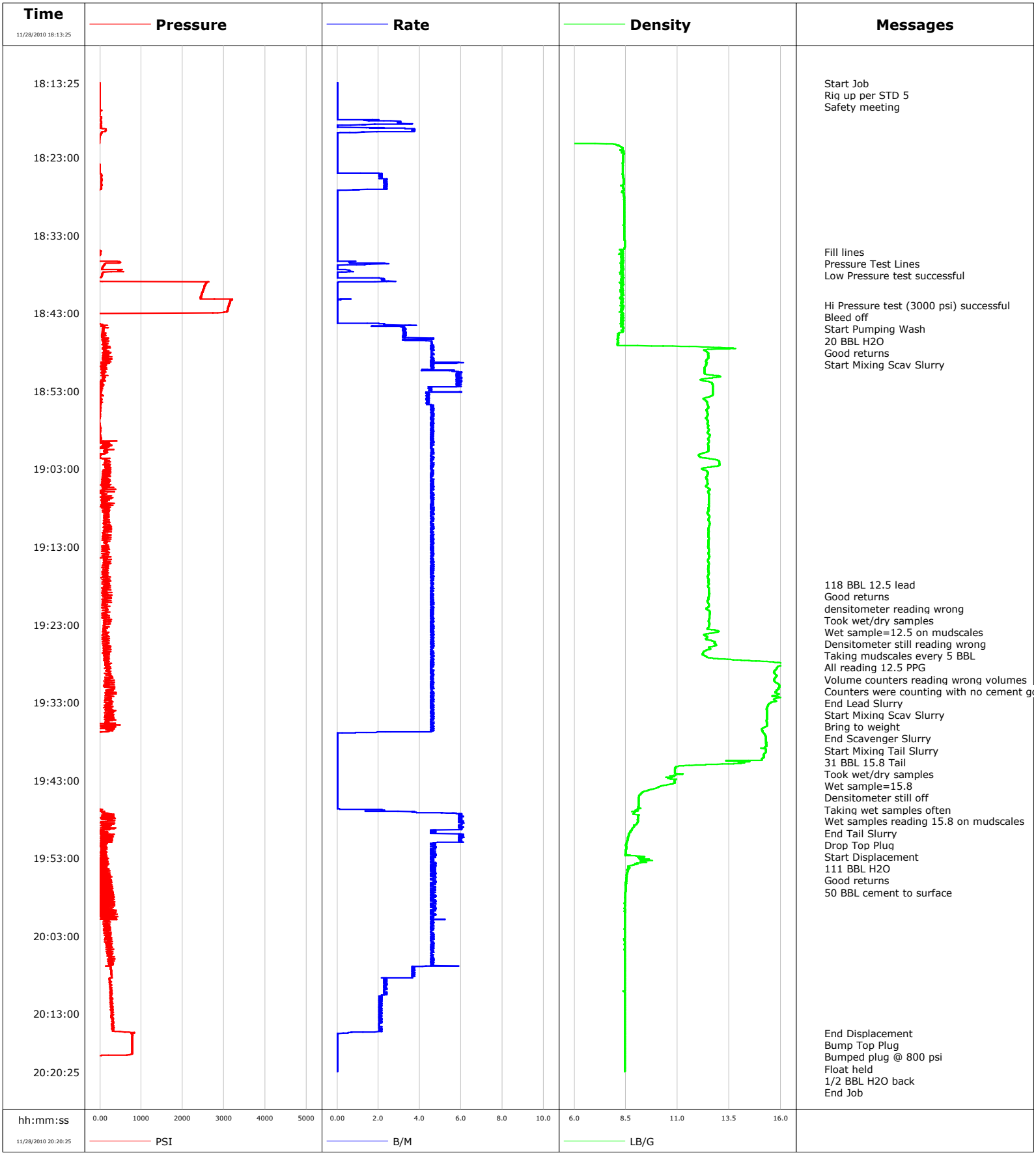
Schlumberger Cementing Job Report

CemCAT v1.3

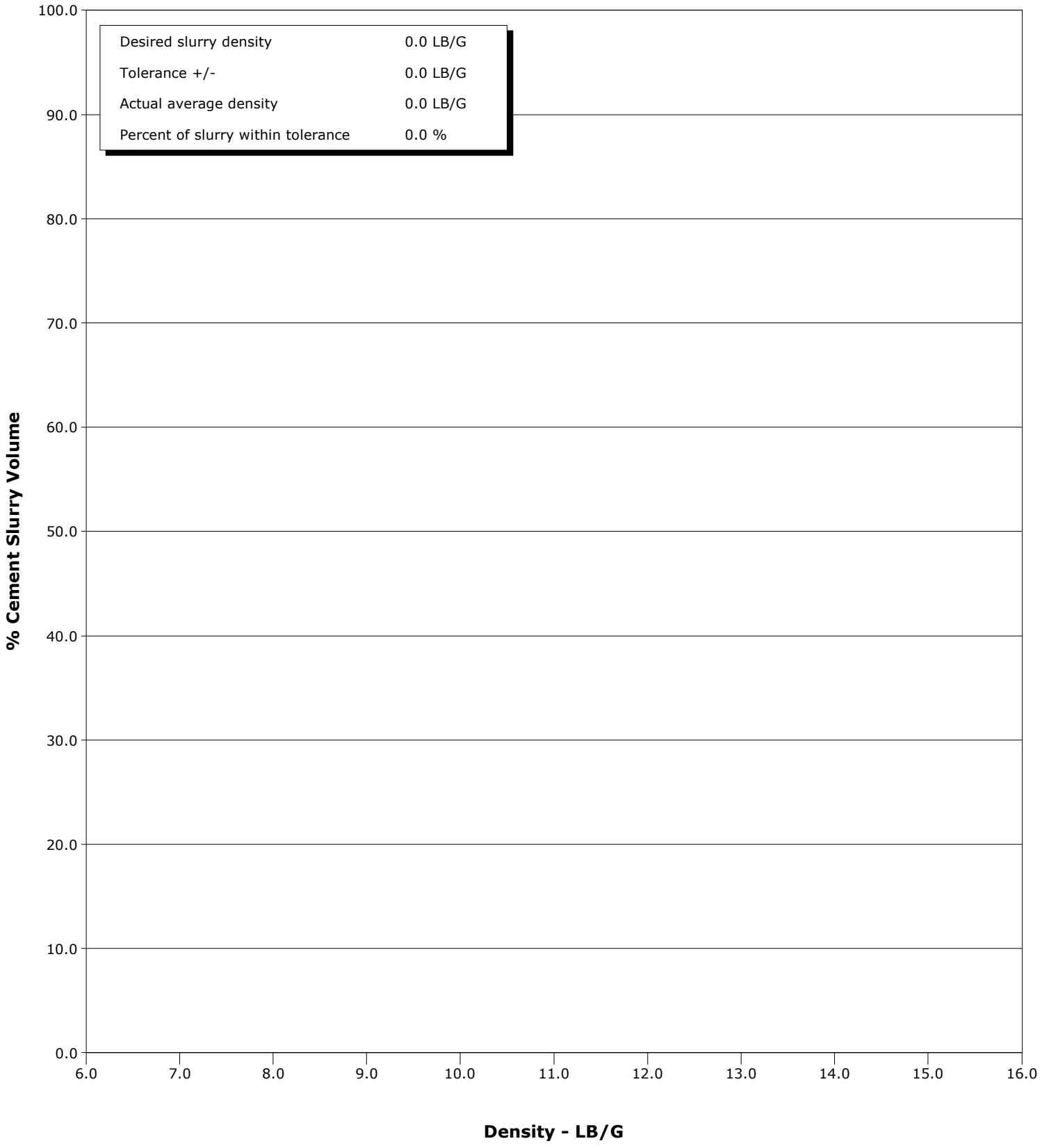
Well	Rose Ranch 23-6C1	**Client**	Encana
Field	Mamm Creek	**SIR No.**	
Engineer	Matt Fair	**Job Type**	9 5/8 Surface
Country	United States	**Job Date**	11-28-2010



Schlumberger Cementing Qa/Qc Density Report

Well	Rose Ranch 23-6C1	**Client**	Encana
Field	Mamm Creek	**SIR No.**	
Engineer	Matt Fair	**Job Type**	9 5/8 Surface
Country	United States	**Job Date**	11-28-2010

- 12/15/1971 16:33:12 to 12/15/1971 22:40:24



Cementing Service Report

Customer	Job Number
Encana	BJ90-00045

Well	Location (legal)	Schlumberger Location	Job Start
Rose Ranch 23-6C1 Rose Ranch 23-6C1			Nov/28/2010

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
Mamm Creek	Shale		12.3 in	1476.0 ft	1476.0 ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
Garfield	Colorado		100 degF	85 degF	

Well Master	API/UWI
0631219211	

Rig Name	Drilled For	Service Via
Nabors M13	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
Bentonite	9.50 lb/gal	

Service Line	Job Type
Cementing	9 5/8 Surface

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
3520 psi	2030 psi	9 5/8

Service Instructions

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
40.0	16.000	65.0	N/A	8RD
1476.0	9.630	36.0	K55	8RD

Tubing/Drill Pipe

Depth,	Size,	Weight,	Grade	Thread

Perforations/Open Hole

Top,	Bottom,		No. of Shots	Total Interval
				Diameter

Treat Down	Displacement	Packer Type	Packer Depth
Casing	111.0 bbl		

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
	115.0 bbl	86.0 bbl	203.0 bbl

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

Lift Pressure	Pipe Rotated	Pipe Reciprocated
730 psi	☐	☐

No. Centralizers	Top Plugs	Bottom Plugs
16	1	0

Cement Head Type
Single

Job Scheduled For	Arrived on Location	Leave Location
Nov/28/2010 13:00	Nov/28/2010 13:00	Nov/28/2010 19:00

Casing Tools		Squeeze Job	
Shoe Type	Guide	Squeeze Type	
Shoe Depth	1476.0 ft	Tool Type	
Stage Tool Type		Tool Depth	
Stage Tool Depth		Tail Pipe Size	
Collar Type	Float	Tail Pipe Depth	
Collar Depth	1430.0 ft	Sqz. Total Vol.	

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
11/28/2010	17:18:55					Started Acquisition
11/28/2010	18:13:25	-5	0.0	0.00	0.0	
11/28/2010	18:13:27					Start Job
11/28/2010	18:13:27	-5	0.0	0.00	0.0	
11/28/2010	18:13:29					Rig up per STD 5
11/28/2010	18:13:29					Safety meeting
11/28/2010	18:13:29	-5	0.0	0.00	0.0	
11/28/2010	18:13:55	-5	0.0	0.00	0.0	
11/28/2010	18:15:35	-4	0.0	0.00	0.0	
11/28/2010	18:17:15	-2	0.0	8.50	0.0	
11/28/2010	18:18:55	-17	0.0	8.48	1.7	
11/28/2010	18:20:35	-13	0.0	8.48	3.7	
11/28/2010	18:22:15	-45	0.0	8.48	3.7	
11/28/2010	18:23:55	-12	0.0	8.46	3.7	
11/28/2010	18:25:35	31	2.2	8.48	4.8	
11/28/2010	18:27:15	-22	0.1	8.47	8.5	
11/28/2010	18:28:55	-48	0.0	8.47	8.5	
11/28/2010	18:30:35	-49	0.0	8.47	8.5	
11/28/2010	18:32:15	-52	0.0	8.47	8.5	
11/28/2010	18:33:55	-52	0.0	8.47	8.5	
11/28/2010	18:35:05					Fill lines

Well	Field	Job Start	Customer	Job Number
Rose Ranch 23-6C1 Rose Ranch 23-6C1	Mamm Creek	Nov/28/2010	Encana	BJ90-00045

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
11/28/2010	18:35:35	-17	0.0	8.47	8.5	
11/28/2010	18:36:18					Pressure Test Lines
11/28/2010	18:36:18	-34	0.0	8.47	0.0	
11/28/2010	18:37:15	55	0.0	8.47	0.5	
11/28/2010	18:37:44					Low Pressure test successful
11/28/2010	18:37:44	92	0.2	8.47	0.7	
11/28/2010	18:38:55	-23	2.5	8.47	1.6	
11/28/2010	18:40:35	2460	0.0	8.47	1.9	
11/28/2010	18:41:59					Hi Pressure test (3000 psi) successful
11/28/2010	18:41:59	3120	0.0	8.47	1.9	
11/28/2010	18:42:15	3105	0.0	8.47	1.9	
11/28/2010	18:43:12					Bleed off
11/28/2010	18:43:12	-42	0.0	8.47	1.9	
11/28/2010	18:43:55	-46	0.0	8.47	0.0	
11/28/2010	18:44:21					Start Pumping Wash
11/28/2010	18:44:21	-27	2.0	8.47	0.0	
11/28/2010	18:44:24					20 BBL H2O
11/28/2010	18:44:24	-8	2.3	8.48	0.1	
11/28/2010	18:44:53					Good returns
11/28/2010	18:44:53	201	3.2	8.47	1.5	
11/28/2010	18:45:35	134	3.2	8.47	3.7	
11/28/2010	18:47:15	96	4.5	8.47	10.4	
11/28/2010	18:48:55	286	4.6	12.17	18.0	
11/28/2010	18:49:08					Start Mixing Scav Slurry
11/28/2010	18:49:08	198	4.7	12.40	19.0	
11/28/2010	18:50:35	149	6.0	3.88	26.0	
11/28/2010	18:52:15	86	5.9	3.88	35.8	
11/28/2010	18:53:55	-10	4.3	3.88	43.6	
11/28/2010	18:55:35	-2	4.6	3.89	51.1	
11/28/2010	18:57:15	-7	4.6	3.88	58.8	
11/28/2010	18:58:55	5	4.6	3.88	66.4	
11/28/2010	19:00:35	154	4.6	12.94	74.1	
11/28/2010	19:02:15	128	4.7	10.00	81.7	
11/28/2010	19:03:55	128	4.5	8.93	89.3	
11/28/2010	19:05:35	63	4.6	9.90	97.0	
11/28/2010	19:07:15	91	4.7	9.98	104.6	
11/28/2010	19:08:55	105	4.6	9.95	112.3	
11/28/2010	19:10:35	213	4.6	10.02	119.9	
11/28/2010	19:12:15	165	4.6	9.66	127.6	
11/28/2010	19:13:55	110	4.6	9.44	135.2	
11/28/2010	19:15:35	136	4.7	9.10	142.9	
11/28/2010	19:17:15	91	4.6	8.46	150.5	
11/28/2010	19:17:53					118 BBL 12.5 lead
11/28/2010	19:17:53					Good returns
11/28/2010	19:17:53					densitometer reading wrong
11/28/2010	19:17:53					Took wet/dry samples
11/28/2010	19:17:53					Wet sample=12.5 on mudscales
11/28/2010	19:17:53					Densitometer still reading wrong
11/28/2010	19:17:53	106	4.6	8.98	153.4	
11/28/2010	19:18:55	46	4.6	9.95	158.2	
11/28/2010	19:20:05					Taking mudscales every 5 BBL
11/28/2010	19:20:05					All reading 12.5 PPG
11/28/2010	19:20:05	183	4.6	9.79	163.5	
11/28/2010	19:20:35	110	4.6	8.79	165.8	

Well	Field	Job Start	Customer	Job Number
Rose Ranch 23-6C1 Rose Ranch 23-6C1	Mamm Creek	Nov/28/2010	Encana	BJ90-00045

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
11/28/2010	19:23:55	116	4.6	10.80	181.1	
11/28/2010	19:24:28					Volume counters reading wrong volumes
11/28/2010	19:24:28	191	4.6	10.02	183.6	
11/28/2010	19:24:52					Counters were counting with no cement going downhole
11/28/2010	19:24:52	189	4.6	9.72	185.5	
11/28/2010	19:25:35	158	4.6	8.84	188.8	
11/28/2010	19:27:15	112	4.6	11.13	196.4	
11/28/2010	19:28:02					End Lead Slurry
11/28/2010	19:28:02	214	4.6	6.65	200.0	
11/28/2010	19:28:04					Start Mixing Scav Slurry
11/28/2010	19:28:04	199	4.6	6.56	200.2	
11/28/2010	19:28:05					Bring to weight
11/28/2010	19:28:05	221	4.5	6.70	200.2	
11/28/2010	19:28:55	202	4.6	8.13	204.0	
11/28/2010	19:29:15					End Scavenger Slurry
11/28/2010	19:29:15	167	4.5	7.38	205.6	
11/28/2010	19:29:16					Start Mixing Tail Slurry
11/28/2010	19:29:16	112	4.7	7.42	205.7	
11/28/2010	19:29:17					31 BBL 15.8 Tail
11/28/2010	19:29:17					Took wet/dry samples
11/28/2010	19:29:17					Wet sample=15.8
11/28/2010	19:29:17					Densitometer still off
11/28/2010	19:29:17					Taking wet samples often
11/28/2010	19:29:17	230	4.6	7.42	205.7	
11/28/2010	19:30:35	154	4.6	6.77	211.7	
11/28/2010	19:31:07					Wet samples reading 15.8 on mudscales
11/28/2010	19:31:07	160	4.7	7.28	214.1	
11/28/2010	19:32:15	290	4.6	6.56	219.3	
11/28/2010	19:33:55	291	4.6	6.36	227.0	
11/28/2010	19:35:35	168	4.6	6.15	234.6	
11/28/2010	19:37:15	-45	0.0	15.88	240.3	
11/28/2010	19:37:25					End Tail Slurry
11/28/2010	19:37:25	-45	0.0	15.95	240.3	
11/28/2010	19:37:28					Drop Top Plug
11/28/2010	19:37:28	-45	0.0	15.78	240.3	
11/28/2010	19:37:29					Start Displacement
11/28/2010	19:37:29	-45	0.0	14.94	240.3	
11/28/2010	19:37:30					111 BBL H2O
11/28/2010	19:37:30					Good returns
11/28/2010	19:37:30					50 BBL cement to surface
11/28/2010	19:37:30	-45	0.0	12.16	240.3	
11/28/2010	19:38:55	-47	0.0	6.47	240.3	
11/28/2010	19:40:35	-46	0.0	14.92	240.3	
11/28/2010	19:42:15	-47	0.0	11.53	240.3	
11/28/2010	19:43:55	-42	0.0	10.51	240.3	
11/28/2010	19:45:35	-46	0.0	10.35	240.3	
11/28/2010	19:47:15	193	5.8	9.95	242.1	
11/28/2010	19:48:55	64	6.0	9.74	252.0	
11/28/2010	19:50:35	25	5.9	8.76	261.3	
11/28/2010	19:52:15	171	4.6	8.69	269.6	
11/28/2010	19:53:55	75	4.8	8.63	277.3	
11/28/2010	19:55:35	260	4.5	8.58	285.0	
11/28/2010	19:57:15	315	4.6	8.57	292.8	
11/28/2010	19:58:55	8	4.5	8.58	300.5	

Well	Field	Job Start	Customer	Job Number
Rose Ranch 23-6C1 Rose Ranch 23-6C1	Mamm Creek	Nov/28/2010	Encana	BJ90-00045

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
11/28/2010	20:02:15	256	4.6	8.57	315.9	
11/28/2010	20:03:55	132	4.6	8.58	323.6	
11/28/2010	20:05:35	297	4.6	8.57	331.2	
11/28/2010	20:07:15	262	3.6	8.57	338.5	
11/28/2010	20:08:55	232	2.3	8.57	343.9	
11/28/2010	20:10:35	256	2.3	8.57	347.7	
11/28/2010	20:12:15	267	2.0	8.57	351.2	
11/28/2010	20:13:55	313	2.2	8.57	354.7	
11/28/2010	20:15:27					End Displacement
11/28/2010	20:15:27	757	0.3	8.57	357.7	
11/28/2010	20:15:28					Bump Top Plug
11/28/2010	20:15:28	760	0.3	8.57	357.7	
11/28/2010	20:15:29					Bumped plug @ 800 psi
11/28/2010	20:15:29					Float held
11/28/2010	20:15:29					1/2 BBL H2O back
11/28/2010	20:15:29	760	0.1	8.57	357.7	
11/28/2010	20:15:35	788	0.0	8.57	357.7	
11/28/2010	20:17:15	784	0.0	8.57	357.7	
11/28/2010	20:18:55	-52	0.0	8.57	357.7	
11/28/2010	20:20:23					End Job
11/28/2010	20:20:23	-51	0.0	8.57	357.7	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
4.2		0.0	6.1	150.0	0.0	19.5	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
3212	-51	292	1000				

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
	149.0 bbl	112.4 bbl	60 degF	X	50.0 bbl
				Washed Thru Perfs ☐	To

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
Vlad Kochetov	Matt Fair	-	X
		-	-

Schlumberger Service Quality Evaluation

Client:	Encana
Field:	Mamm Creek
Rig:	Nabors M13
Well:	Rose Ranch 23-6C1
Service Line:	Cementing
Job Type:	9 5/8 Surface

Service Order #:	
Date:	Nov/28/2010
Operating Time:	0.0
Client Rep:	Encana
Schlumberger Engineer:	Matt Fair
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** [X] **no** [ ]	5
1b	Free of environmental spill or non-compliant discharge	5	**yes** [X] **no** [ ]	5
1c	Free of RIRs	5	**yes** [X] **no** [ ]	5
1d	Wellsite left clean	4	**yes** [X] **no** [ ]	4
			Sub-total	100%
2	**Design / Preparation**			
2a	Program incl. job simulation (CemCADE) & pump schedule / tool hydraulic calcs	3	**yes** [X] **no** [ ]	3
2b	Equipment maintenance schedule completed / Green tagged	2	**yes** [X] **no** [ ]	2
2c	All materials and equipment required for job/contingency checked & on location	2	**yes** [X] **no** [ ]	2
2d	Safety / pre-job meeting conducted with all involved present	2	**yes** [X] **no** [ ]	2
			Sub-total	100%
3	**Execution**			
3a	Lost time < 30 mins	3	**yes** [X] **no** [ ]	3
3b	Equipment pressure tested succesfully	3	**yes** [X] **no** [ ]	3
3c	All key parameters monitored and recorded accurately (Pressure, Rate, Density)	2	**yes** [X] **no** [ ]	2
3d	Plugs / darts released and tested succesfully	2	**yes** [X] **no** [ ]	2
3e	Density variation met expectations	2	**yes** [X] **no** [ ]	2
3f	Personnel performed as per expectations	2	**yes** [X] **no** [ ]	2
3g	Equipment performed as per expectations	2	**yes** [X] **no** [ ]	2
3h	Job pumped per design	3	**yes** [X] **no** [ ]	3
3i	Did job start on time	2	**yes** [X] **no** [ ]	2
3j	Free of Operational failures (screen out, Cementing Example, etc.)	3	**yes** [X] **no** [ ]	3
			Sub-total	100%
4	**Evaluation**			
4a	Main job objective achieved with no consequential non-productive time	10	**yes** [X] **no** [ ]	10
			Sub-total	100%
			Total	100%

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

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