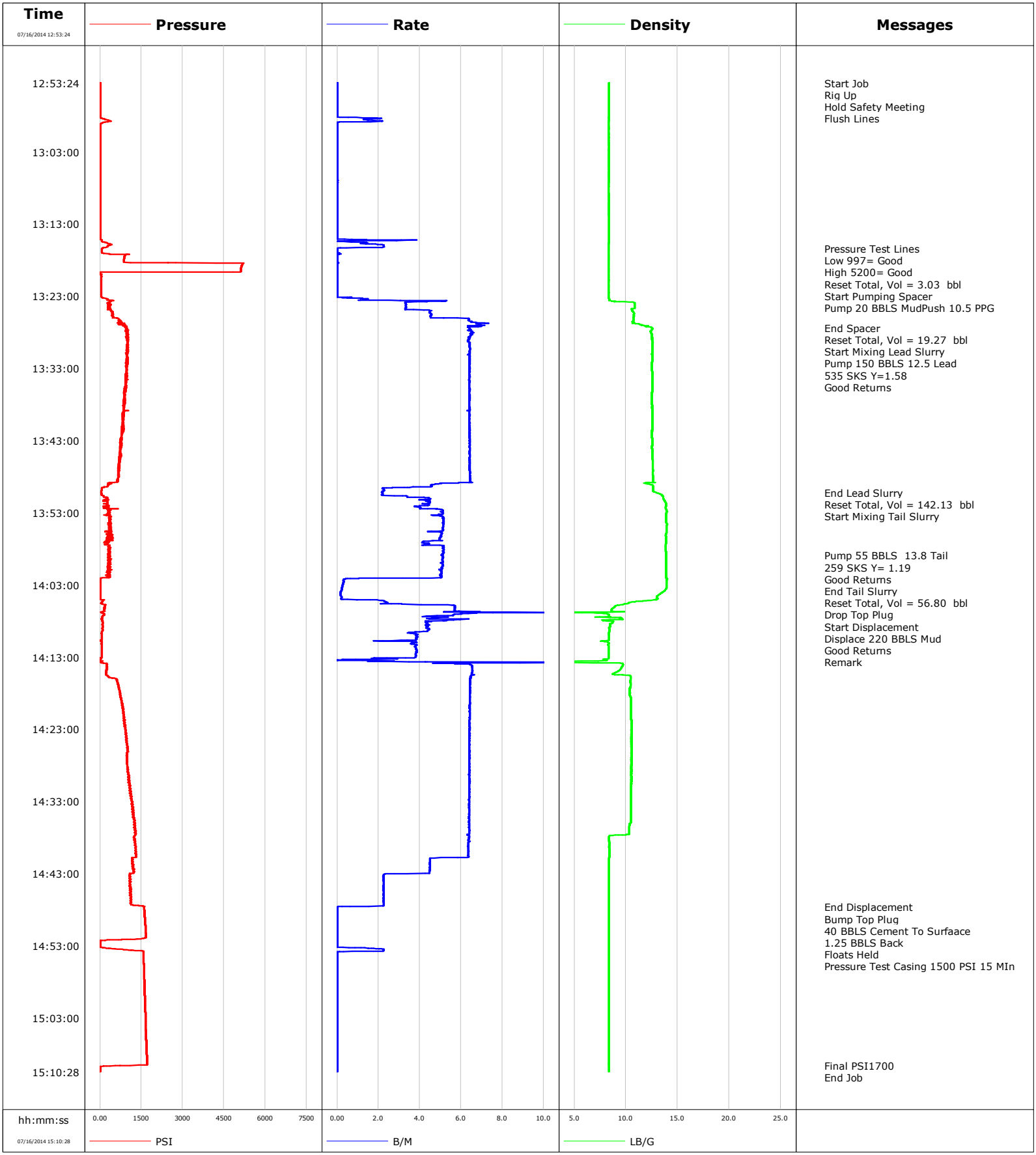
Schlumberger Cementing Job Report

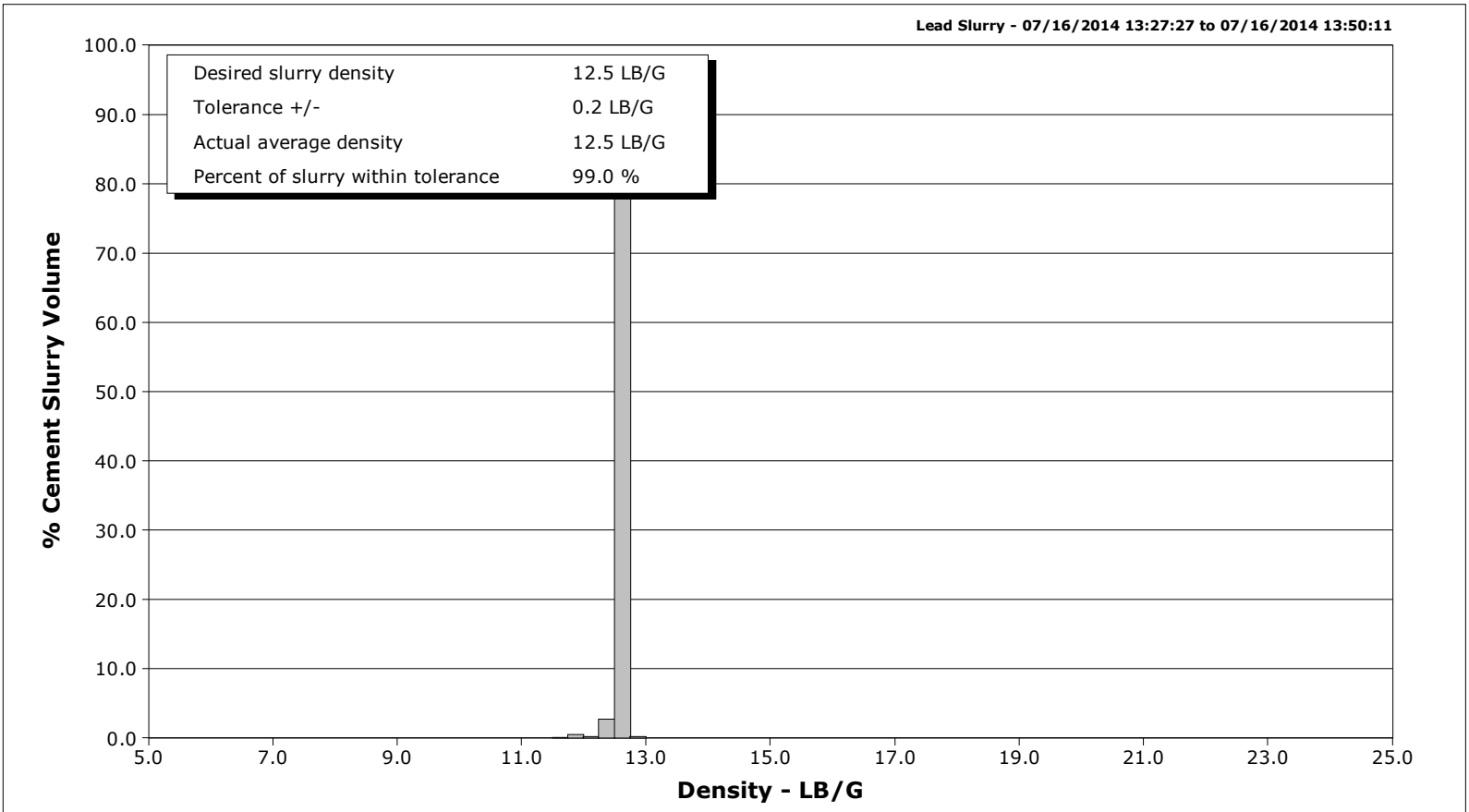
Well	Horsetail 30F-3107	**Client**	Whiting Oil Gas
Field	Wildcat	**SIR No.**	1995177
Engineer	Chris Valerio/TJ Morrow	**Job Type**	7IN Intermediate
Country	United States	**Job Date**	07-16-2014

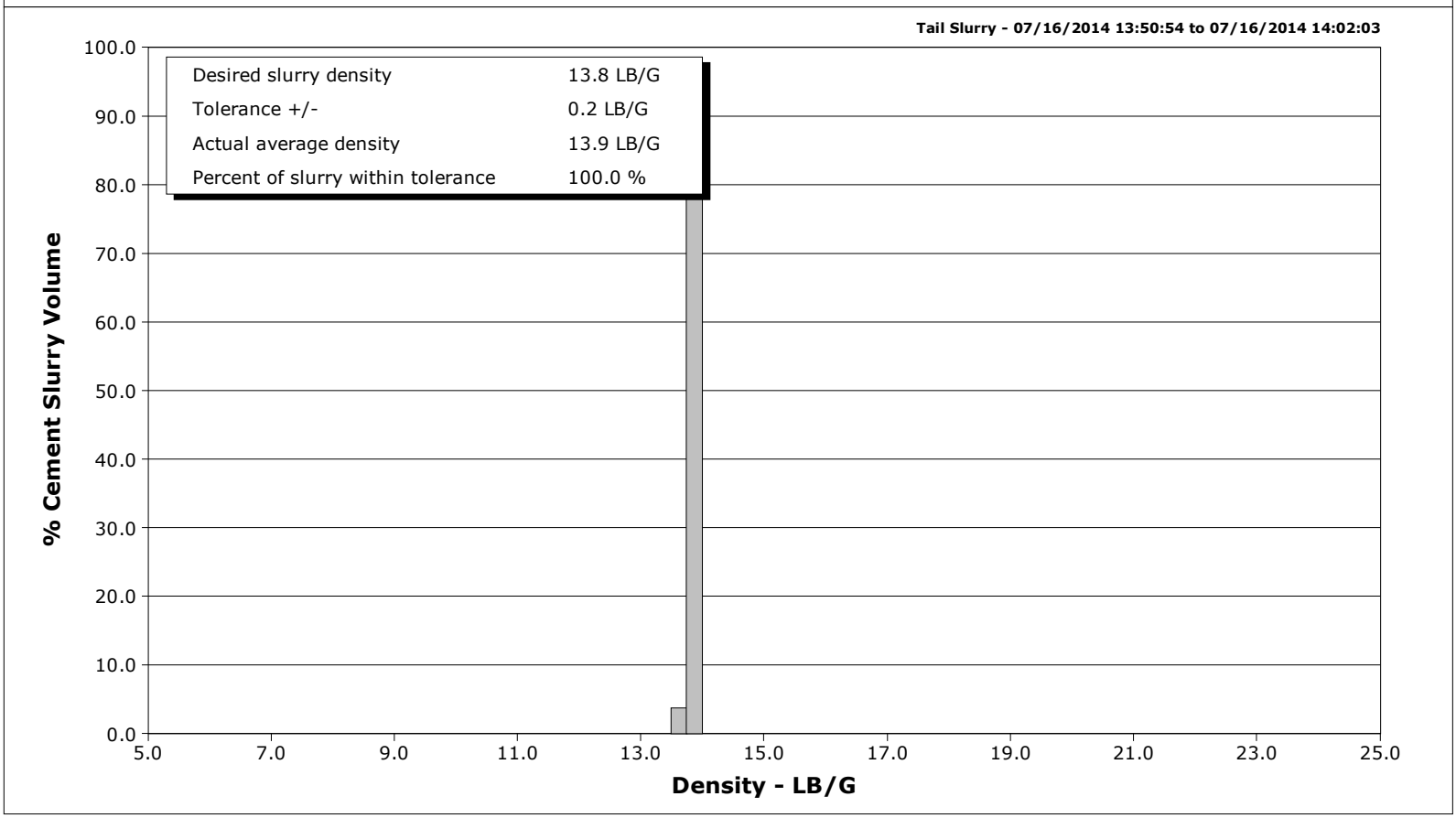


Schlumberger

Cementing Qa/Qc Density Report

Well	Horsetail 30F-3107	**Client**	Whiting Oil Gas
Field	Wildcat	**SIR No.**	1995177
Engineer	Chris Valerio/TJ Morrow	**Job Type**	7IN Intermediate
Country	United States	**Job Date**	07-16-2014





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Cementing Service Report

Customer	Job Number
Whiting Oil & Gas	1995177

Well	Location (legal)	Schlumberger Location	Job Start
Horsetail 30F-3107 Horsetail 30F-3107	SENW 30-T10N-R57W	Cheyenne WY	Jul/16/2014

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
Wildcat	Shale	deg	8.8 in	5940.0 ft	5534.0 ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
Weld	Colorado	psi	185 degF	149 degF	lb/gal

Well Master	API/UWI
0631546515	

Rig Name	Drilled For	Service Via
Xtreme 18	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
Other	9.60 lb/gal	cP

Service Line	Job Type
Cementing	7IN Intermediate

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
5000 psi	5000 psi	Single Cement head

Service Instructions

RIg Up
Hold Safety Meeting
Flush Lines
Pressure Test
Pump 20 BBLS 10.5 MudPush
Pump 150 BBLS 12.5 Lead
Pump 55 BBLS 13.8 Tail
Drop Top Plug
Displace 220 BBLS Mud

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
5973.0	7.0	29.0	N/A	8RD
1610.0	9.6	36.0	J55	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

Treat Down	Displacement	Packer Type	Packer Depth
Casing	220.0 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	221.6 bbl	165.0 bbl	117.0 bbl

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

Lift Pressure	Pipe Rotated	Pipe Reciprocated
4501 psi	☐	☐

No. Centralizers	Top Plugs	Bottom Plugs
	1	

Cement Head Type
Single

Job Scheduled For	Arrived on Location	Leave Location
Jul/16/2014 08:00	Jul/16/2014 08:00	Jul/16/2014 16:00

Casing Tools

Shoe Type	Guide
Shoe Depth	5973.0 ft
Stage Tool Type	
Stage Tool Depth	ft
Collar Type	Float
Collar Depth	5928.0 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
07/16/2014	12:53:24	6	0.0	8.34	0.0	Started Acquisition
07/16/2014	12:53:27	6	0.0	8.34	0.0	Start Job
07/16/2014	12:53:41	6	0.0	8.34	0.0	Rig Up
07/16/2014	12:58:24	93	2.1	8.34	0.3	
07/16/2014	13:03:24	0	0.0	8.33	1.1	
07/16/2014	13:08:24	1	0.0	8.33	1.1	
07/16/2014	13:13:24	0	0.0	8.34	1.1	
07/16/2014	13:16:23	74	0.0	8.33	3.0	Pressure Test Lines
07/16/2014	13:16:25	70	0.0	8.33	3.0	Low 997= Good
07/16/2014	13:18:24	4242	0.1	8.33	3.0	
07/16/2014	13:20:11	41	0.0	8.33	3.0	Reset Total, Vol = 3.03 bbl
07/16/2014	13:20:15	40	0.0	8.33	3.0	Start Pumping Spacer
07/16/2014	13:23:24	281	1.5	8.39	3.3	
07/16/2014	13:23:37	500	3.1	8.38	3.6	Pump 20 BBLS MudPush 10.5 PPG
07/16/2014	13:27:22	956	6.4	12.49	22.1	End Spacer
07/16/2014	13:27:24	954	6.4	12.53	22.3	Reset Total, Vol = 19.27 bbl
07/16/2014	13:27:27	977	6.4	12.55	22.6	Start Mixing Lead Slurry
07/16/2014	13:28:24	972	6.5	12.50	28.8	
07/16/2014	13:30:39	1021	6.4	12.55	43.2	Pump 150 BBLS 12.5 Lead
07/16/2014	13:31:14	992	6.4	12.55	46.9	530 SKS Y=1.58
07/16/2014	13:32:25	948	6.4	12.52	54.5	Good Returns

Well	Field	Job Start	Customer	Job Number
Horsetail 30F-3107 Horsetail 30F-3107	Wildcat	Jul/16/2014	Whiting Oil & Gas	1995177

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
07/16/2014	13:43:24	732	6.4	12.53	124.8	
07/16/2014	13:48:24	657	6.4	12.65	156.9	
07/16/2014	13:50:11	51	2.2	12.86	164.4	End Lead Slurry
07/16/2014	13:50:13	46	2.2	12.93	164.4	Reset Total, Vol = 142.13 bbl
07/16/2014	13:50:54	279	4.2	13.61	166.3	Start Mixing Tail Slurry
07/16/2014	13:53:24	237	4.7	13.88	177.7	
07/16/2014	13:58:24	349	5.1	13.87	202.6	
07/16/2014	13:58:56	345	5.1	13.88	205.3	Pump 55 BBLS 13.8 Tail
07/16/2014	14:00:35	304	5.1	13.89	213.7	Good Returns
07/16/2014	14:02:03	37	4.6	13.90	221.1	End Tail Slurry
07/16/2014	14:02:06	19	1.1	13.97	221.2	Reset Total, Vol = 56.80 bbl
07/16/2014	14:02:24	15	0.3	13.94	221.4	Drop Top Plug
07/16/2014	14:02:25	14	0.3	13.93	221.4	Start Displacement
07/16/2014	14:02:27	15	0.3	13.93	221.4	Displace 220 BBLS Mud
07/16/2014	14:03:24	5	0.2	13.92	221.6	
07/16/2014	14:08:24	92	4.3	8.45	238.1	
07/16/2014	14:13:24	4	0.0	8.00	256.9	
07/16/2014	14:18:24	757	6.4	10.38	288.3	
07/16/2014	14:23:24	920	6.4	10.53	320.4	
07/16/2014	14:28:24	997	6.4	10.52	352.4	
07/16/2014	14:33:24	1188	6.4	10.52	384.4	
07/16/2014	14:38:24	1251	6.4	8.38	416.3	
07/16/2014	14:43:24	1082	2.2	8.34	442.3	
07/16/2014	14:47:37	1597	0.0	8.34	451.6	End Displacement
07/16/2014	14:47:38	1596	0.0	8.34	451.6	Bump Top Plug
07/16/2014	14:47:41	1602	0.0	8.34	451.6	40 BBLS Cement To Surfaace
07/16/2014	14:48:24	1612	0.0	8.34	451.6	
07/16/2014	14:52:46	7	0.0	8.34	451.6	Pressure Test Casing 1500 PSI 15 MIn
07/16/2014	14:53:24	456	1.9	8.34	451.8	
07/16/2014	14:58:24	1613	0.0	8.34	452.7	
07/16/2014	15:03:24	1652	0.0	8.34	452.7	
07/16/2014	15:08:24	1699	0.0	8.34	452.7	
07/16/2014	15:09:36	731	0.0	8.33	452.7	Final PSI1700

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
5.1			8.0	205.0	20.0	0.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
1700	5	738	1565			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
%	205.0 bbl	219.0 bbl	60 degF	X	40.0 bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
Brady Sharp	Chris Valerio/TJ Morrow	☐ -	X -