

Cement Post Job Report

Questar - Wexpro Company
2221 Westgate Drive
Rock Springs, WY 82901

Ace Unit #7
05-081-05480
S:34 T:21N R:97W
Moffat, CO

Prepared For:

Mr. Paul Rauzi
Paul.Rauzi@Questar.com
(307) 212-0261

Job Completion Data:

11/30/2015
CallSheet #: 64
Proposal #: 10111

Submitted by:

Lucas Albrighton
(720) 884-6033
lucasalbrighton@altcem.com





Dear Mr. Paul Rauzi,

Thank you for the opportunity to provide cementing services on this well. ALTCem strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact ALTCem at any time.

Sincerely,

Lucas Albrighton

Field Office

1716 East Allison Rd., Cheyenne Wy., 82007
Phone: (307) 638-5585

Sales Office

475 17th St. Suite 460 Denver Co., 80202
Phone: (303) 296-1158



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Job Details & Summary

Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	5.5	4.892	17	0	8183	0
Tubing	Inner	2.375	1.995	4.6	0	7630	0

Equipment / People

Unit Type	Unit	Power Unit	Employee #1	Employee #2
Cement Pump	102	302	Hyde, Zack	
Bulk Trailer	501	301	Orner, Lance	
Bulk Trailer	503	303	Moore, Mike	Montoya, Hector
Cement Auxiliary Equipment		304	Fuentes, Orlando	Green, Scott
Light Duty Pickups	5		Johnson, Chad	Davis, Rod

Timing

Event	Date/Time
Call Out	11/29/2015 08:00
Depart Facility	11/29/2015 09:00
On Location	11/29/2015 14:30
Rig Up Iron	11/29/2015 15:00
Job Started	11/30/2015 07:00
Job Completed	12/3/2015 10:00
Rig Down Iron	12/3/2015 10:30
Depart Location	12/3/2015 13:00

General Job Information

Metrics	Value
Well Fluid Density	8.33 lb/gal
Well Fluid Type	Water
Calculated Displacement	29.5 bbls
Actual Displacement	27 bbls
Total Spacer to Surface	bbls
Total CMT to Surface	15 bbls
Well Topped Out	Yes
Top Out Volume	50 bbls

Job Details

Metrics	Value
Well Full Prior to Job	Yes
Well Fluid Density Into Well	8.4 lb/gal
Well Fluid Density Out of Well	8.4 lb/gal

Job Details (cont.)

Metrics	Value
BHCT	130 °F
BHST	158 °F
Injection #1	1 bpm
Injection #1	2016 psi
Injection #2	bpm
Injection #2	psi



Circulation

Lost Circulation Experienced	Losses into Spacer	Losses into Cement	Losses into Displacement
No	0	0	0

Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft ³ /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sk)	Volume (bbl)	Top (ft)
1	1	Water	Flush	8.33			42.00		10.00	0
1	2	ALTCem Sqz100-X1	Squeeze	15.80	1.15	4.95		75.00	15.33	7535
1	3	Water	DisplacementFinal	8.33			42.00		29.00	0
1	4	Plug Mud	Scavanger	9.00	11.34	80.76		30.00	60.57	5110
1	5	Water`	Flush	8.33			42.00		10.00	0
1	6	ALTCem Plug100-X1	Plug	15.80	1.15	4.98		25.00	5.11	4890
1	7	Water	Displacement	8.33			42.00		19.00	0
1	8	Plug Mud	Scavanger	9.00	11.34	80.76		18.00	36.34	3440
1	9	Water	Flush	8.33			42.00		10.00	0
1	10	ALTCem Plug100-X1	Plug	15.80	1.15	4.98		25.00	5.11	3220
1	11	Water	Displacement	8.33			42.00		13.00	0
1	12	Plug Mud	Scavanger	9.00	11.34	80.76		24.00	48.46	1260
1	13	Water	Flush	8.33			42.00		10.00	0
1	14	ALTCem Plug100-X1	Plug	15.80	1.16	5.04		40.00	8.25	1140
1	15	Water	Displacement	8.33			42.00		5.00	0
1	16	Plug Mud	Scavanger	9.00	11.34	80.76		10.00	20.19	305
1	17	Water	Flush	8.33			42.00		10.00	0
1	18	ALTCem Plug100-X1	Plug	15.80	1.16	5.04		122.00	25.16	1
1	19	Water	DisplacementFinal	8.33			42.00		1.00	0
1	20	ALTCem Plug100-X1	Topout	15.80	1.16	5.04		200.00	41.24	0



Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Squeeze	ALTCem Sqz100-X1	ACG-10	Cement	100.00	%
1	2	Squeeze	ALTCem Sqz100-X1	AFL-10	FluidLoss	0.20	%BWOB
1	2	Squeeze	ALTCem Sqz100-X1	AR-10	Retarder	0.20	%BWOB
1	4	Scavanger	Plug Mud	AFA-10	Extender	100.00	%
1	4	Scavanger	Plug Mud	AVS-50	Viscosifer	15.00	lb/sk
1	6	Plug	ALTCem Plug100-X1	ACG-10	Cement	100.00	%
1	6	Plug	ALTCem Plug100-X1	AR-10	Retarder	0.10	%BWOB
1	8	Scavanger	Plug Mud	AFA-10	Extender	100.00	%
1	8	Scavanger	Plug Mud	AVS-50	Viscosifer	15.00	lb/sk
1	10	Plug	ALTCem Plug100-X1	ACG-10	Cement	100.00	%
1	12	Scavanger	Plug Mud	AFA-10	Extender	100.00	%
1	12	Scavanger	Plug Mud	AVS-50	Viscosifer	15.00	lb/sk
1	14	Plug	ALTCem Plug100-X1	ACG-10	Cement	100.00	%
1	14	Plug	ALTCem Plug100-X1	ACL-10	Accelerator	2.00	%BWOW
1	16	Scavanger	Plug Mud	AFA-10	Extender	100.00	%
1	16	Scavanger	Plug Mud	AVS-50	Viscosifer	15.00	lb/sk
1	18	Plug	ALTCem Plug100-X1	ACG-10	Cement	100.00	%
1	18	Plug	ALTCem Plug100-X1	ACL-10	Accelerator	2.00	%BWOW
1	20	Topout	ALTCem Plug100-X1	ACG-10	Cement	100.00	%
1	20	Topout	ALTCem Plug100-X1	ACL-10	Accelerator	2.00	%BWOW



Job Logs

Line	#	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Annular Pressure (psi)	Comment
1		Arrive On Location	11/30/2015	06:00						
2		Safety Meeting	11/30/2015	08:00						
3		Break Circ.	11/30/2015	08:24		2		98		Pump Well fluid To Break Circ.
4			11/30/2015	08:38		2	21	375		At 21 BBL Away Got returns To Surface
5		Shutdown	11/30/2015	08:45			35	368		Pumped Total of 35 BBL Final PSI 368
6		Pressure Test	11/30/2015	08:47				4350		Pressure Test Lines To 3500 PSI
7		5 Min Psi Test	11/30/2015	08:52				4130		Lost 220 Psi In 5 Min
8		Injection Test	11/30/2015	09:00		1		2016		Start Inj Test At 1 BPM With 2016 PSI
9		Shutdown	11/30/2015	09:12			10	2390		Pumped Totl Of 10 BBL Final Psi 2390
10			11/30/2015	09:15						Recirc Centrifugal Frfoze
11		Pump Cement	11/30/2015	09:47	15.8	2		500		15.8 PPG, 1.15 Yld, 5.0 Gal/Sk, 75 Sks, 8.9 BBL Mix Water
12			11/30/2015	09:54	15.8		15.4			Pumped Total Of 15.4 BBL Of Class G Cement/14.1 Lbs AR-10 / 14.1 Lbs AFL-10
13		Pump Displacement	11/30/2015	09:55		2		8		Start Pumping Well fluid
14		Shut Down	11/30/2015	10:00			9			Spot Cement 5 BBL before Retainer
15		Rig Stings In Retainer	11/30/2015	10:01						
16		Pump Displacement	11/30/2015	10:02		1		890		Pump Rest Of Displacement
17			11/30/2015	10:17		1	24	2490		At 24 BBL Away Psi At 2490 PSI
18		Shut Down	11/30/2015	10:20			27	3000		Pumped Total Of 27 BBL Final Psi 3000
19		Other	11/30/2015	10:21						Rig Stings Out Retainer
20		Pump Well Fluid	11/30/2015	10:22		1	1.5			Left 2.5 BBL Of Cmt On Top Of Retainer
21		Shut Down	11/30/2015	10:23			28.5			Pumped Total Of 28.5 BBL Of Displac.
22		Other	11/30/2015	10:24						Rig Lays Down 6 Joints (183 Ft)
23		Rev Circ.	11/30/2015	10:25		2		480		Start Rev Circ At 2 BPM With 480 Psi
24		Speed Up Rate	11/30/2015	10:39		2.5	9	890		Speed Up Rate To 2.5 BPM With 890 PSI
25		Rev Circ.	11/30/2015	10:48			30			At 30 BBL Away Got CMT To Surface
26			11/30/2015	10:49						Got 1.5 BBL OF CMT To Surface
27		Shut Down	11/30/2015	10:52			40			Pumped Total Of 40 BBL Rev Circ.
28		Blow Down Lines	11/30/2015	11:00						Rig Down & Blow Down Lines
29		Leave Location	11/30/2015	13:00						
30		On Location	12/1/2015	08:00						Rig Up
31		Break Circ.	12/1/2015	11:11		1	3	8		At 3 BBL Away Got Fluid To Surface
32		Shut Down	12/1/2015	11:30			40			Pumped Total Of 40 BBL Of Well Fluid
33		Pump Poz Plug	12/1/2015	11:33	9	3		913		9 PPG, 16.3 SKS, 11.34Yld, 80.8 G/Sk, 33 BBL Poz Mud , 31.3 Mix Water
34		End Of Poz Mud	12/1/2015	11:44	9		33			Pumped Total Of 33 BBL 9# Poz Mud
35		Start Displacement	12/1/2015	11:45		3		918		Start Pumping Well Fluid Displacement
36		Shut Down	12/1/2015	11:54			23.1			End Of Displacement
37		Waiting On Rig	12/1/2015	11:56						Rig Lays Down 44 Joints
38		Break Circ.	12/1/2015	12:34		1.5	3	204		Start Pumping Well Fluid To Break Circ. At 3 BBL Away We Got Returns
39		Shut Down	12/1/2015	12:38			5			Pumped Total Of 5 BBL
40		Pump Cement	12/1/2015	12:41	15.8	2		400		40SKS, 15.8 PPG, 1.15 Yld, 5 G/Sk, 8.1 BBL Of Cement, 4.7 BBL Mix Water
41		End Of Cement	12/1/2015	12:46	15.8		8.1			Pumped Total Of 8.1 BBL Of Cement



42	Start Displacement	12/1/2015	12:47		2		70		Start Displacement With Well Fluid
43	Shut Down	12/1/2015	12:57			22.2			Pumped Total Of 22.2 BBL Well Fluid
44	Waiting On Rig	12/1/2015	13:00						Rig Lays Down 14 Joint - Tubing At 5710'
45	Rev Circ.	12/1/2015	13:19		3	1.5	800		Start Rev Circ. At 1.5 BBL Away Got Fluid To Surface
46		12/1/2015	13:28		3	24.5			At 24.5 BBL Got Cement To Surface Got .5 BBL Of Cement Back
47	Shut Down	12/1/2015	13:31			33			Pumped Total Of 33BBL Of Well Fluid
48		12/1/2015	14:00						Blow Down Lines / Rig Down
49	Leave Location	12/1/2015	16:30						
50		12/30/1899	00:00						
51	Arrive On Location	12/2/2015	06:00						Start and warm-up equipment; Rig-up
52	Other	12/2/2015	07:00						Rig crew & co-man on locn; Start to prime up pump truck. Have freezing problems due to 50 degree water
53	Other	12/2/2015	07:15						Rig RIH w/ tbg to 5,850'
54	Circulate Well	12/2/2015	08:50		2			250	Reverse circulate hole
55	Other	12/2/2015	08:52		3	5		590	
56	Other	12/2/2015	08:56		3	15		750	
57	Other	12/2/2015	08:58		3	20		750	
58	Other	12/2/2015	09:01		3	30		750	
59	Other	12/2/2015	09:05		3	40		750	
60	Shutdown	12/2/2015	09:12			60			
61	Test Casing	12/2/2015	09:13				545		Pressure test against cmt plug
62	Other	12/2/2015	09:20						Bleed off, good test
63	Circulate Well	12/2/2015	09:25						Circulate hole & weight up Poz plug.
64	Other	12/2/2015	09:30				700		Clear bulk hose blockage
65	Other	12/2/2015	09:41		3		700		Pump Poz plug @ 9.0ppg & set from 5850'-5120'
66	Other	12/2/2015	09:51		3	10	660		
67	Shutdown	12/2/2015	09:54			19.5			Stop pumping.
68	Other	12/2/2015	09:55						TOOH w/ 24jts tbg to 5,104'
69	Circulate Well	12/2/2015	10:19		2	5	200		Pump fresh water
70	Pump Cement	12/2/2015	10:22		2	5.1	200		Set 15.8ppg plug from 5,104'-4884' using 25sx cmt. Y-1.15cuft/sk MW-4.98gal/sk
71	Pump Displacement	12/2/2015	10:25		2				Displace plug
72	Shutdown	12/2/2015	10:34			18.8	150		Stop pumping & chk for flow
73	Other	12/2/2015	10:36						TOOH w/ 8jts tbg to 4,855'
74	Circulate Well	12/2/2015	10:47		3			550	Reverse circulate hole
75	Shutdown	12/2/2015	10:56			25			Stop pumping.
76	Other	12/2/2015	11:00		3	33	585		Pump Poz plug @ 9.0ppg & set from 4,855'-3,435'
77	Pump Displacement	12/2/2015	11:12		3		600		Displace plug
78	Shutdown	12/2/2015	11:17			12.9			
79	Other	12/2/2015	11:28						TOOH w/ 47jts tbg to 3,435'
80	Circulate Well	12/2/2015	12:06		2	5	50		Pump fresh water
81	Pump Cement	12/2/2015	12:09		2	5.1	190		Set 15.8ppg plug from 3,435'-3,215' using 25sx cmt. Y-1.15cuft/sk MW-4.98gal/sk
82	Pump Displacement	12/2/2015	12:11		2				Displace plug
83	Shutdown	12/2/2015	12:18			12.4	50		Stop pumping & chk for flow
84	Other	12/2/2015	12:19						TOOH w/ 8jts tbg to 3,195'
85	Circulate Well	12/2/2015	12:28		3		350		Reverse circulate well
86	Shutdown	12/2/2015	12:34			16			Stop pumping & chk for flow



87	Other	12/2/2015	12:35		3	45	400	Pump Poz plug @ 9.0ppg & set from 3,195'-1,259'
88	Pump Displacement	12/2/2015	12:51		3		400	Displace plug
89	Shutdown	12/2/2015	12:53			4.3		Stop pumping & chk for flow
90	Other	12/2/2015	12:55					L/D 64jts tbg & std back 24stds of tbg in derrick
91	Other	12/2/2015	14:10					RIH w/ guns & perforate @ 1,275'
92	Other	12/2/2015	14:45					Rih w/ 24ste jt of tbgds & I sing
93	Circulate Well	12/2/2015	15:15		2	13	75	Break circulation
94	Pump Cement	12/2/2015	15:21		2	8.3	145	Set 15.8ppg plug from 1,275'-920' using 40sx cmt. Y-1.16cuft/sk MW-5.04gal/sk
95	Pump Displacement	12/2/2015	15:25		2	3.5		Displace plug
96	Shutdown	12/2/2015	15:28					Stop pumping & chk for flow
97	Other	12/2/2015	15:31					L/D 15jts tbg to 830'
98	Circulate Well	12/2/2015	15:46		3		175	Reverse circulate well
99	Shutdown	12/2/2015	15:49			7		Stop pumping & chk for flow
100	Other	12/2/2015	15:50					TOOH w/ tbg to surface
101	Other	12/2/2015	16:07					Tbg at surface, S/I well & secure o/night
102	Arrive On Location	12/3/2015	06:00					
103	Other	12/3/2015	06:15					Start equipment
104	Other	12/3/2015	07:00					RIH w/ wireline & tag cmt plug @ 949'
105	Other	12/3/2015	07:12					RIH w/ tbg to 949'
106	Other	12/3/2015	07:30					Tbg on depth
107	Rig Up Iron	12/3/2015	07:35					Rig-up to m/fold & tbg
108	Circulate Well	12/3/2015	07:40		3		250	Break circulation
109	Other	12/3/2015	07:41		3	1.5	250	Returns to surface
110	Other	12/3/2015	07:53		3	20	230	Pump Poz plug @ 9.0ppg & set from 949' to 15'
111	Pump Displacement	12/3/2015	07:58		3	0.6		Displace plug
112	Other	12/3/2015	07:59					TOOH w/ tbg
113	Other	12/3/2015	08:35					Tbg out of hole
114	Other	12/3/2015	08:39					R/u & RIH w/ wireline w/ guns to 305'
115	Other	12/3/2015	08:49					Shoot perms. @ 305'
116	Other	12/3/2015	08:50					POOH w/ wireline
117	Other	12/3/2015	08:53					Wireline @ surface, S/I BOP
118	Circulate Well	12/3/2015	08:55		3		50	Start to circulate well
119	Other	12/3/2015	08:58		3	6	50	Returns to surface
120	Shutdown	12/3/2015	09:10			38.5		Stop pumping, start to weight up cmt
121	Circulate Well	12/3/2015	09:28		2	10	80	Pump fresh water
122	Pump Cement	12/3/2015	09:33		2		55	Mix & pump 15.8ppg cmt w/ 2% CC BWOW. Y-1.16cuft/sk, MW-5.04gal/sk
123	Cement Back to Surface	12/3/2015	09:50		2	35	95	Cement returns @ surface
124	Shutdown	12/3/2015	09:57			50		Stop pumping
125	End Job	12/3/2015	10:00					Wash-up equipment
126	Rig Down Iron	12/3/2015	10:45					Rig down
127	Depart Location	12/3/2015	13:00					

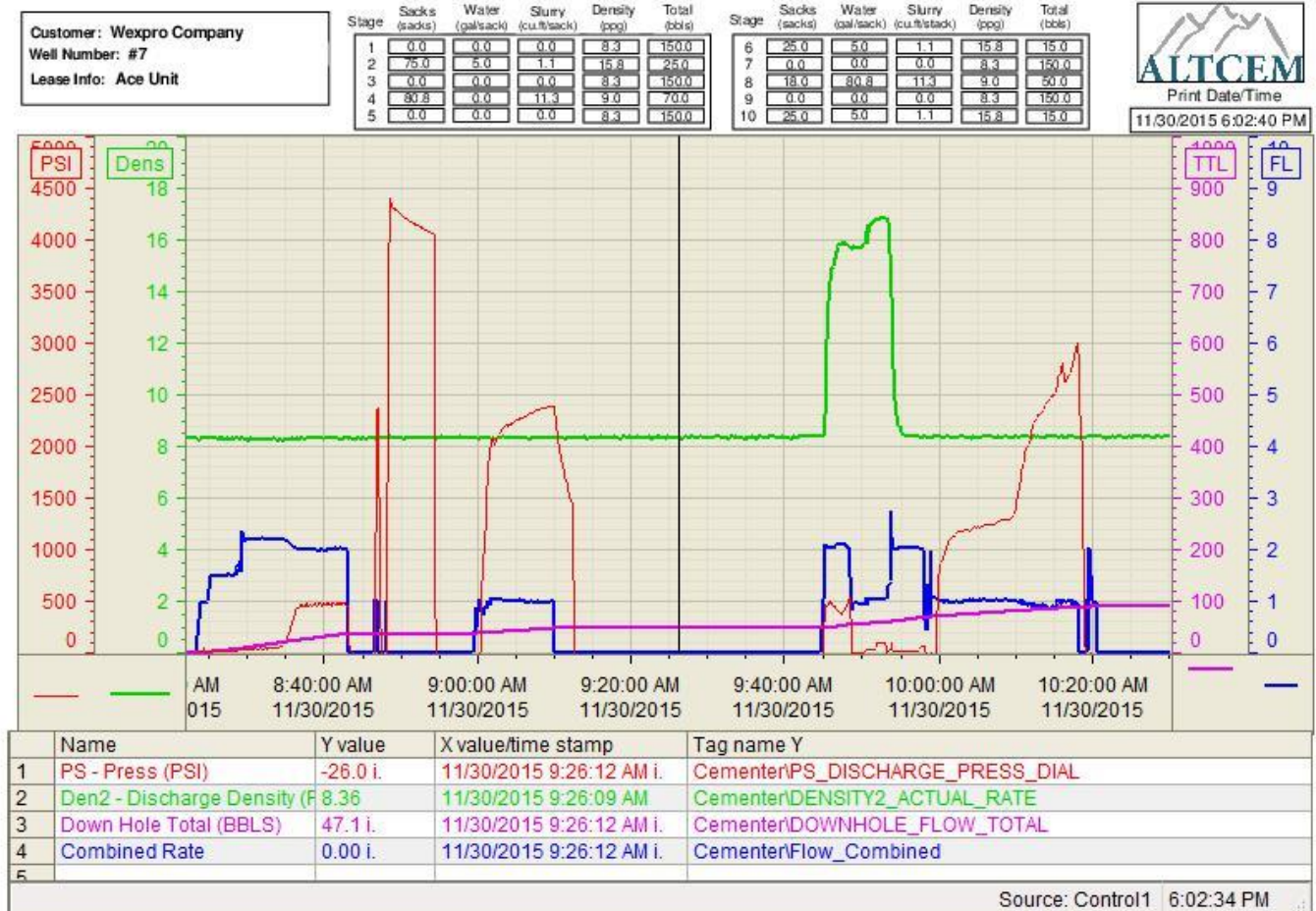


Water Analysis

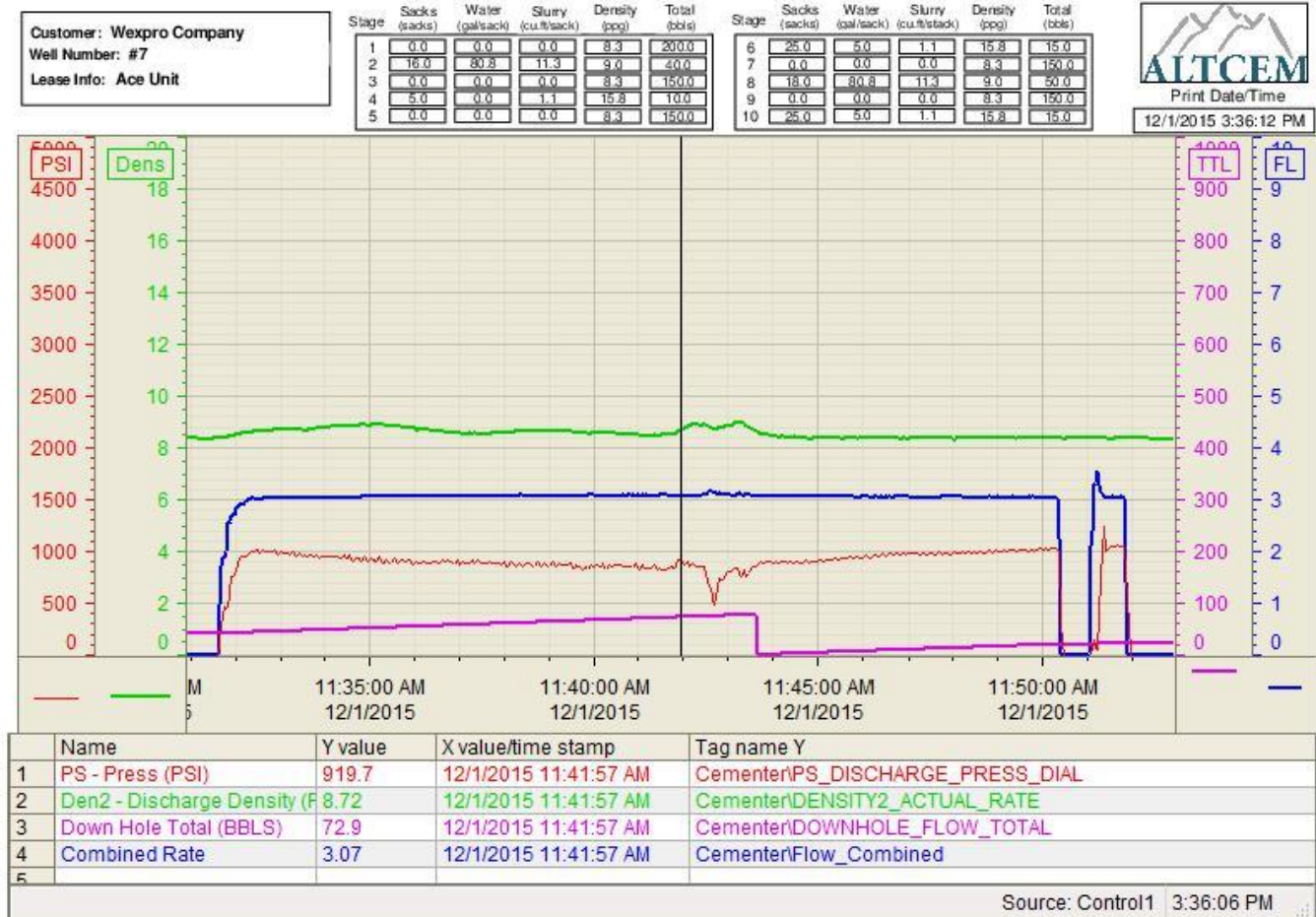
Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	90 °F	50-80 °F
pH Level	8.5	5.5-8.5
Chlorides	272ppm mg/L	0-3000 mg/L
Total Alkalinity	200ppm	0-1000
Total Hardness	25ppm mg/L	0-500 mg/L
Carbonates	215 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	300 mg/L	0-3000 mg/L
Iron	1 mg/L	0-300 mg/L

Pump Diagrams

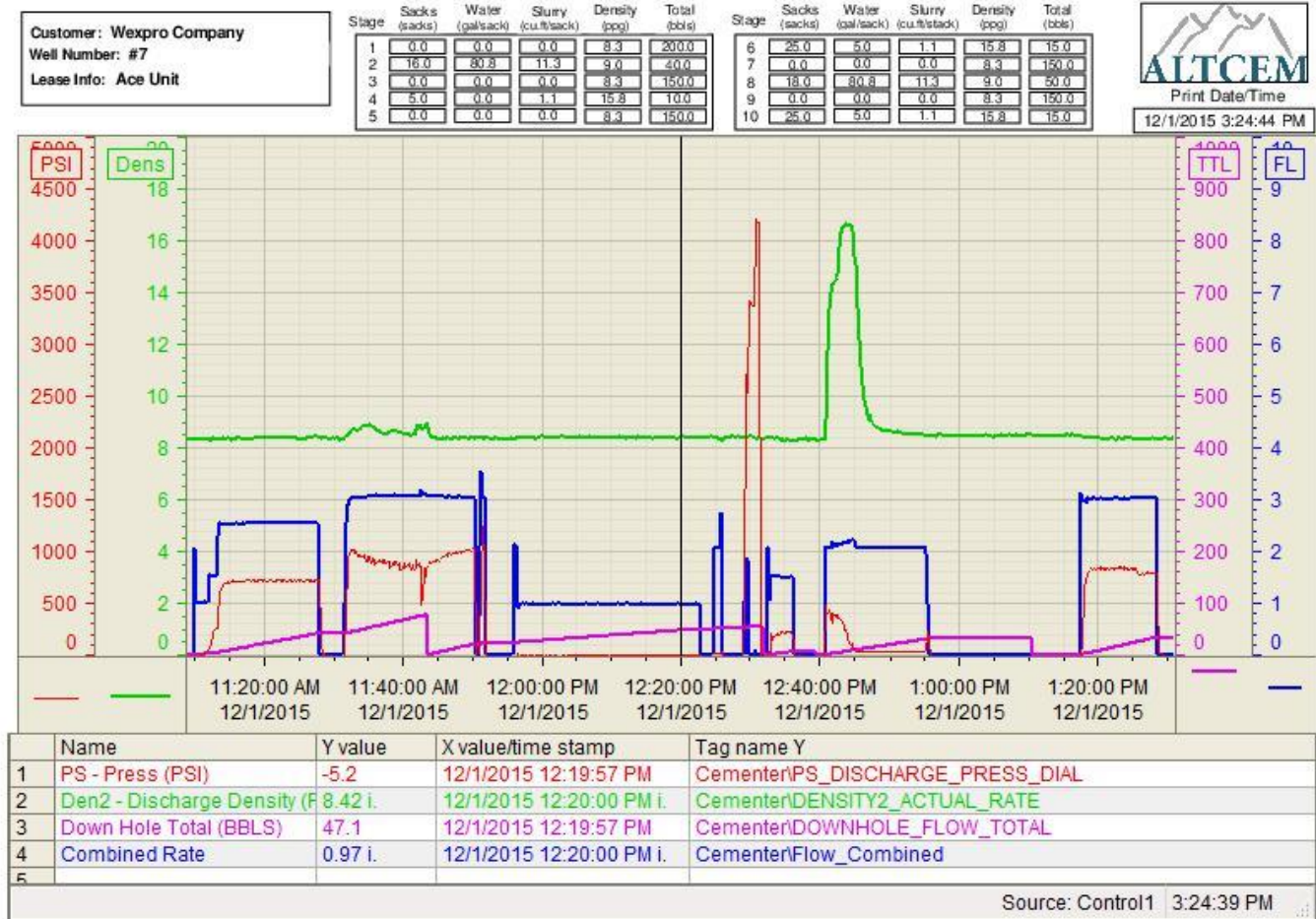
Squeeze Job Chart



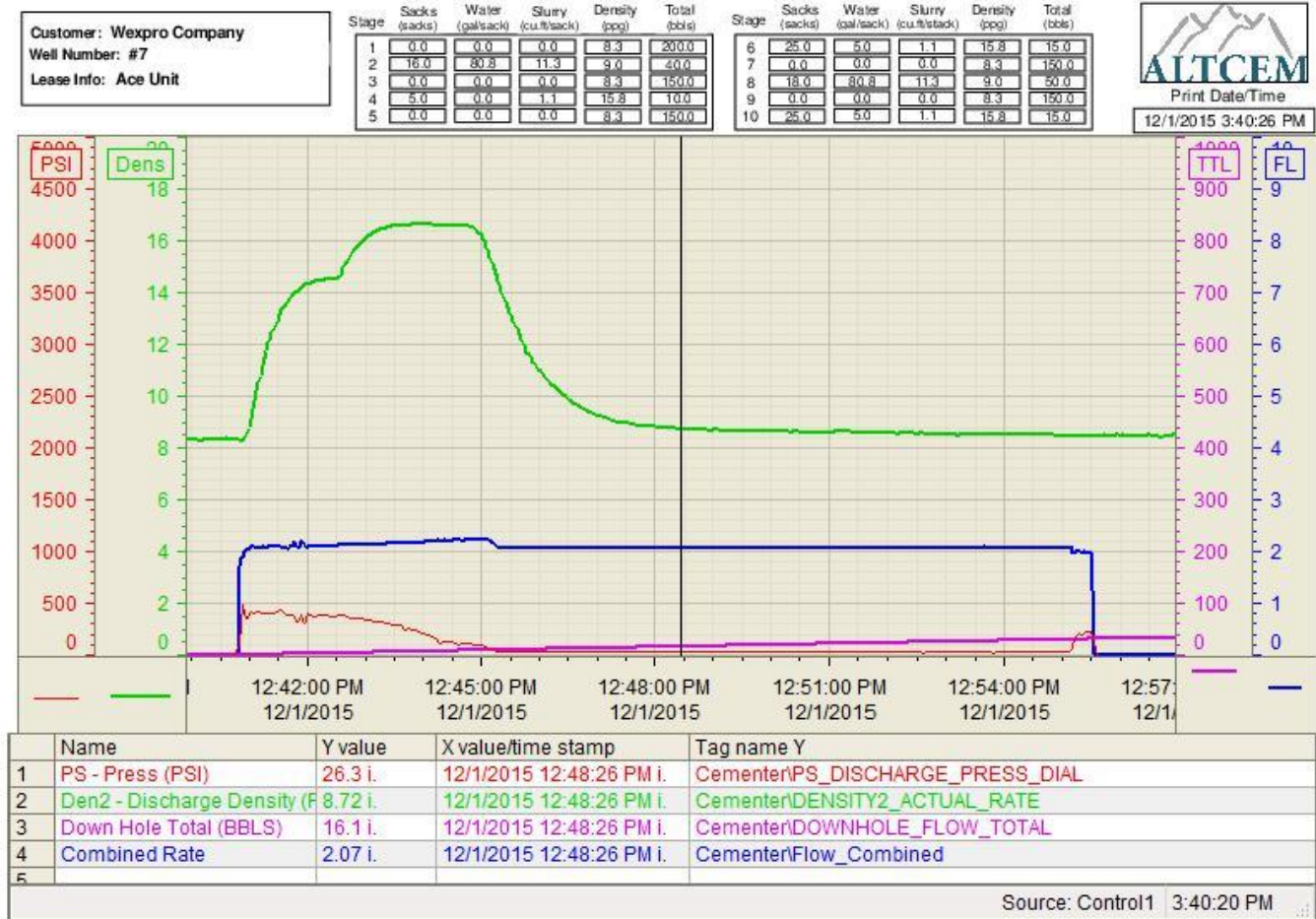
Pozmix Plug #1 Job Chart



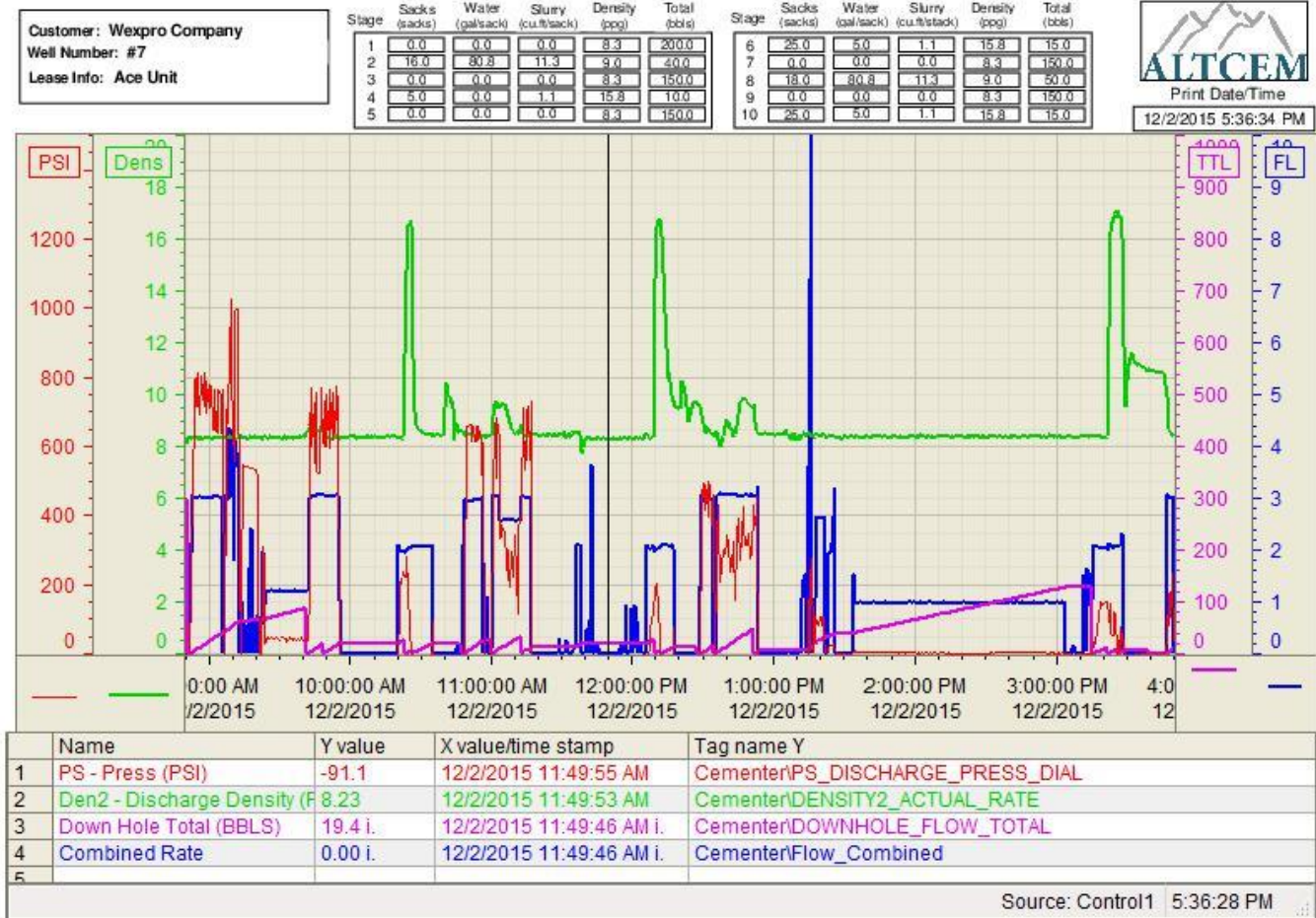
Cement Plug #1 Job Chart



Cement Plug #1 Job Chart (Zoomed In)

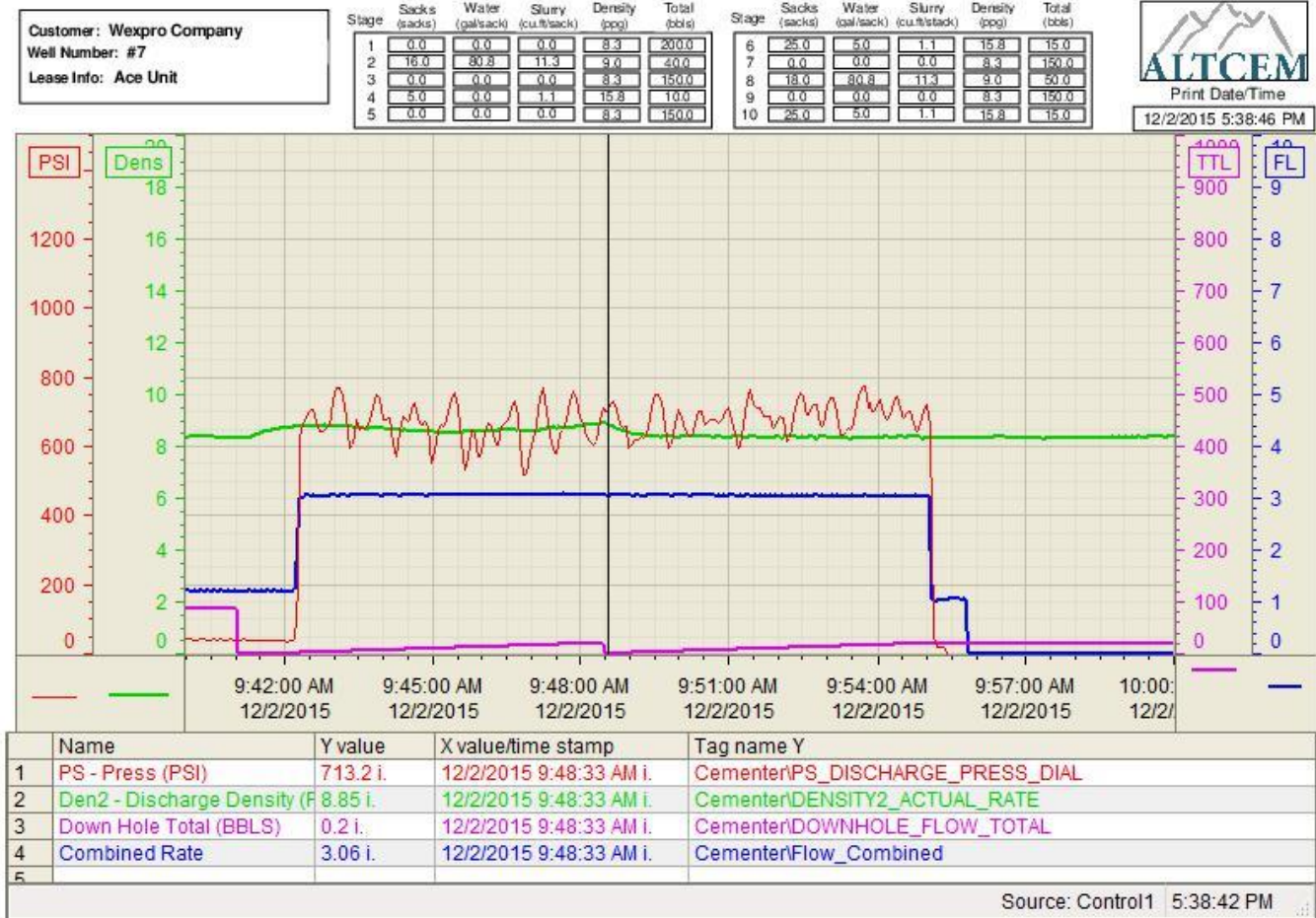


Day 2 Job Chart

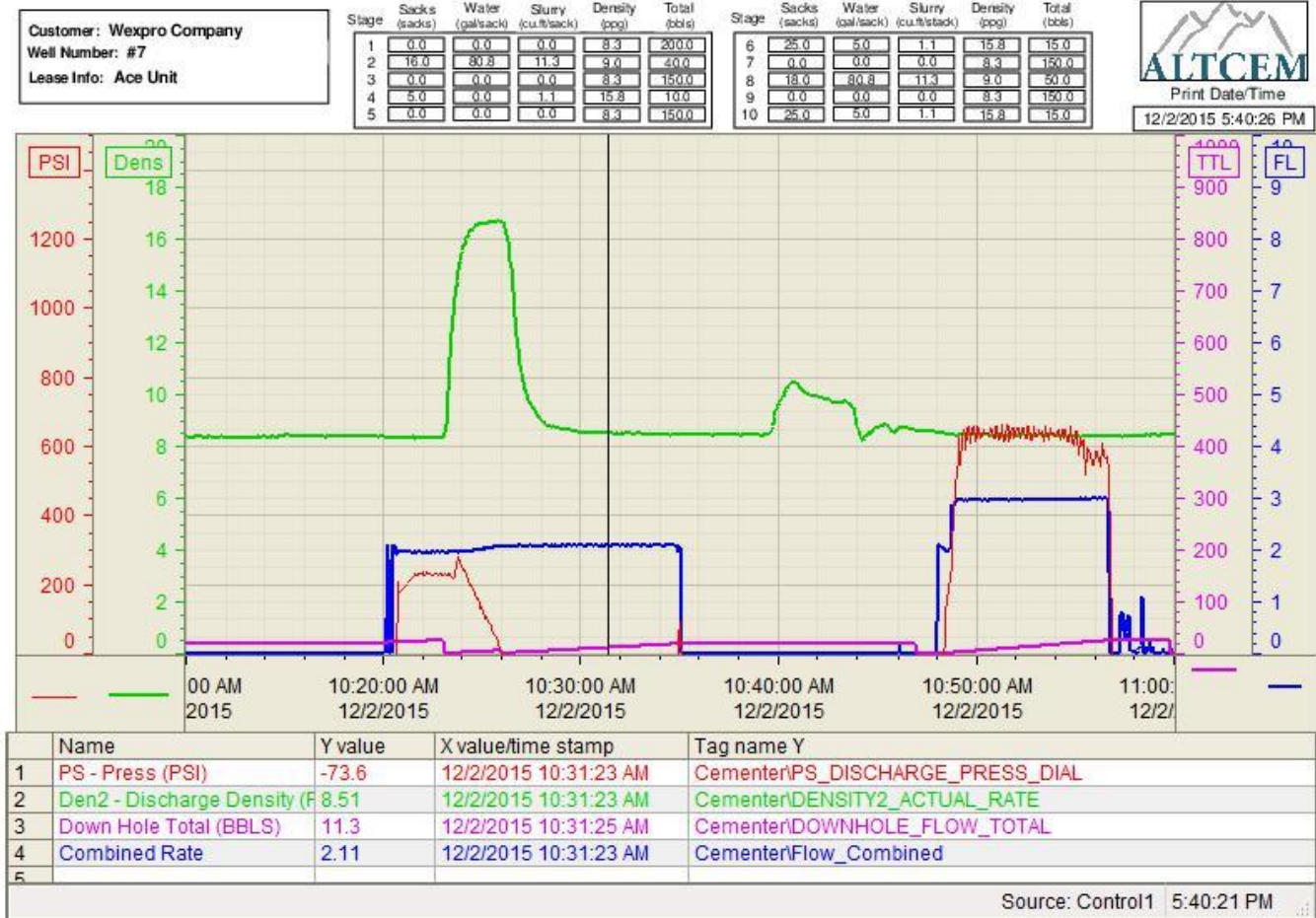




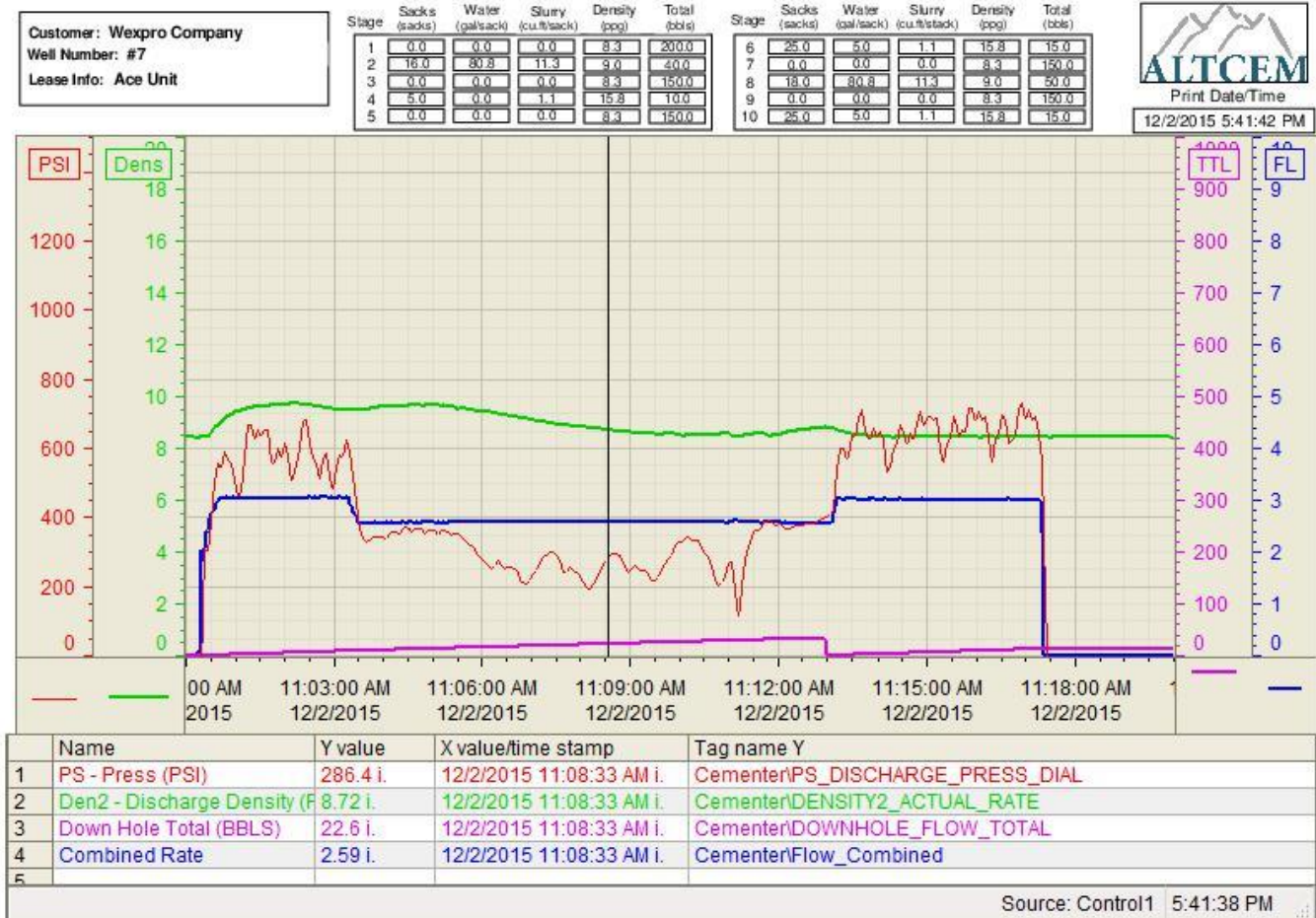
Pozmix Plug #2 Job Chart



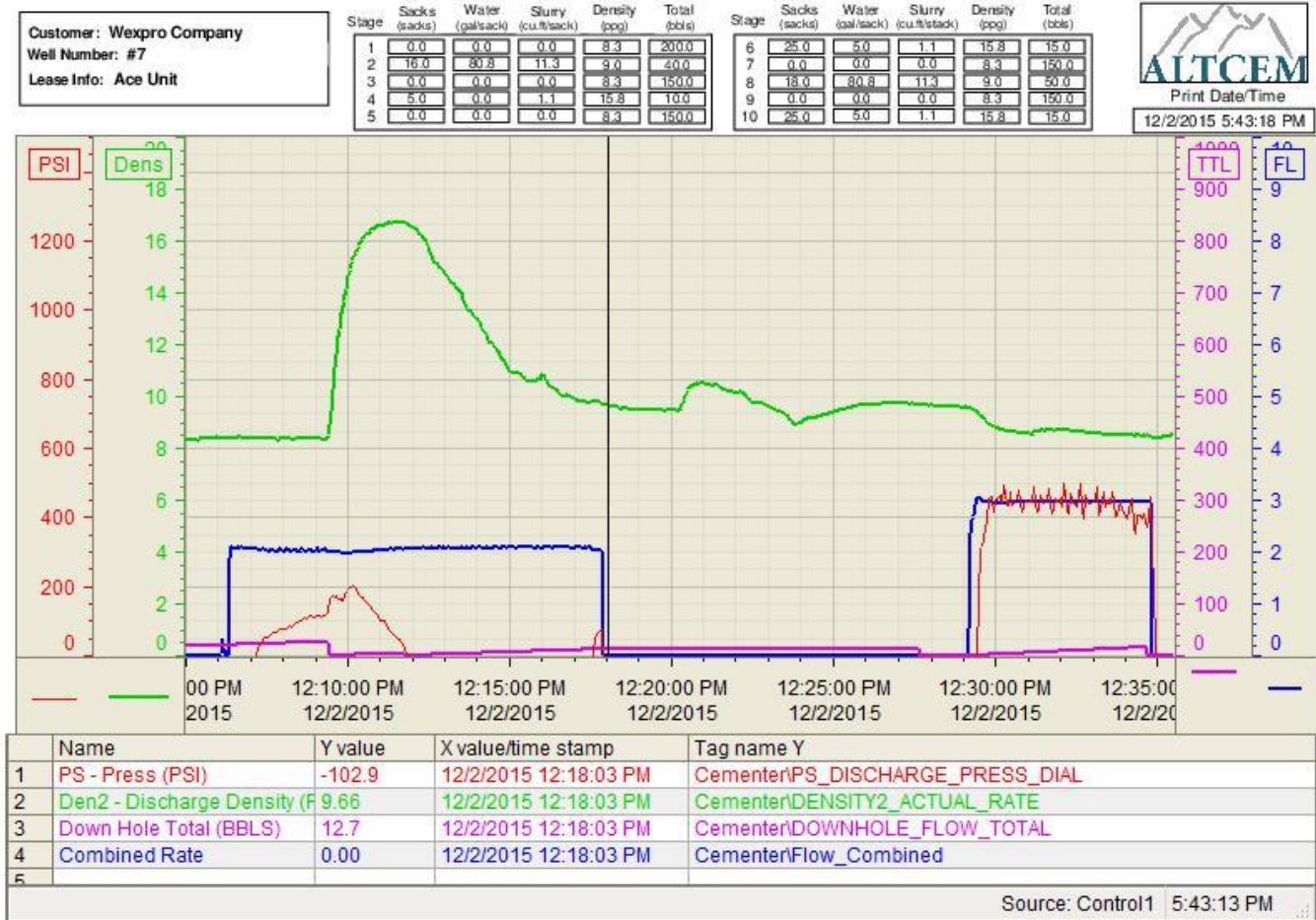
Cement Plug #2 Job Chart



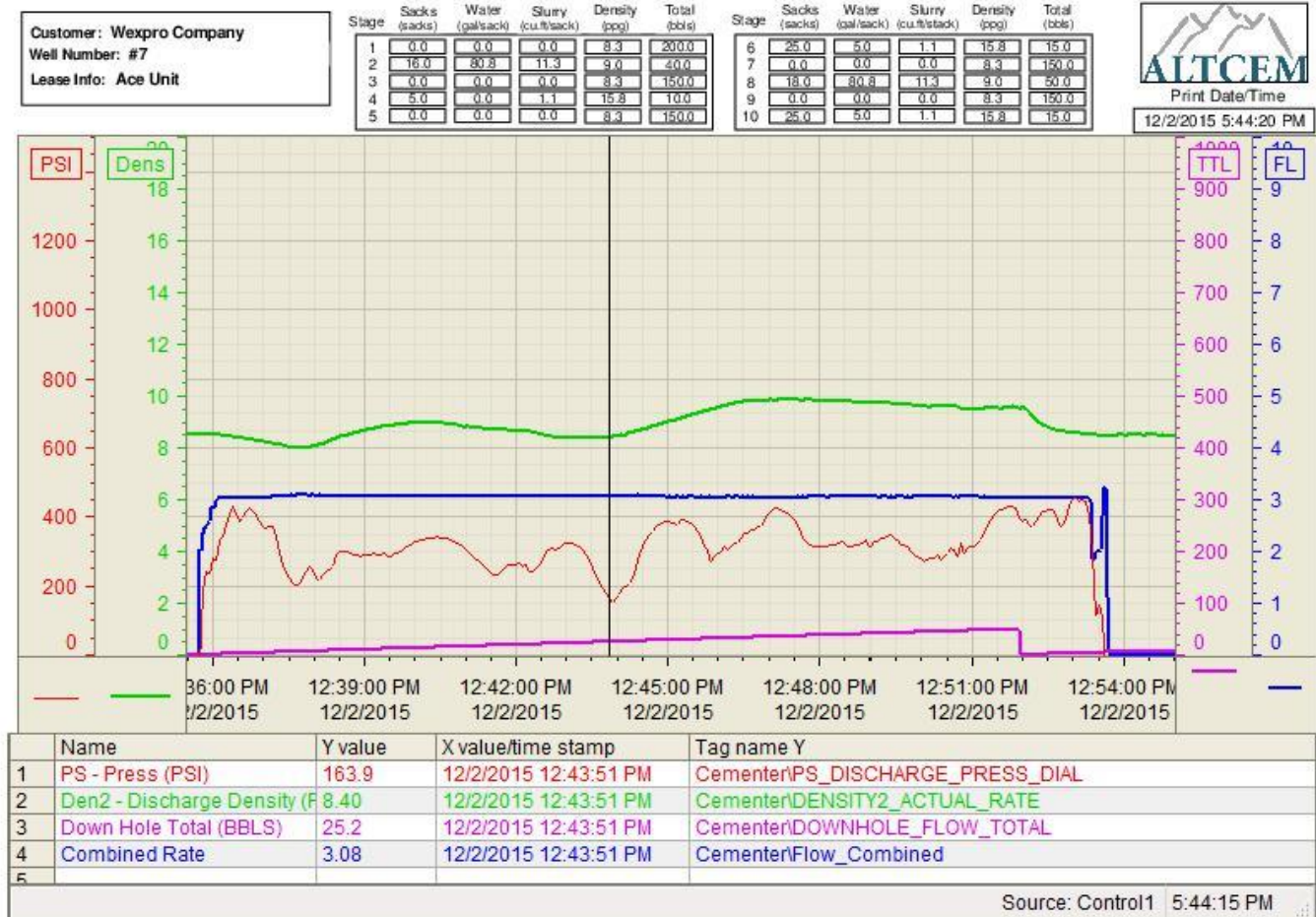
Pozmix Plug #3 Job Chart



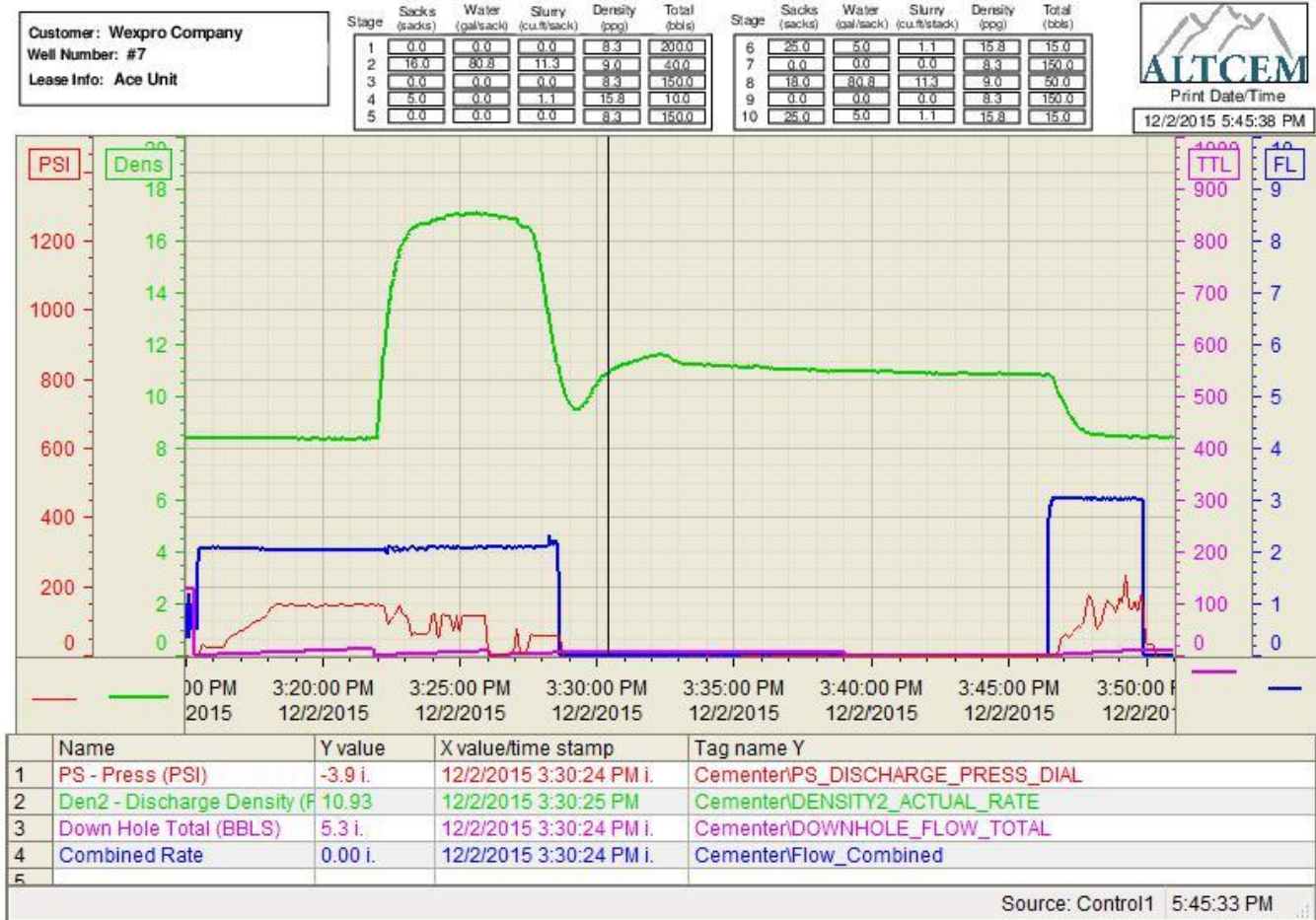
Cement Plug #3 Job Chart



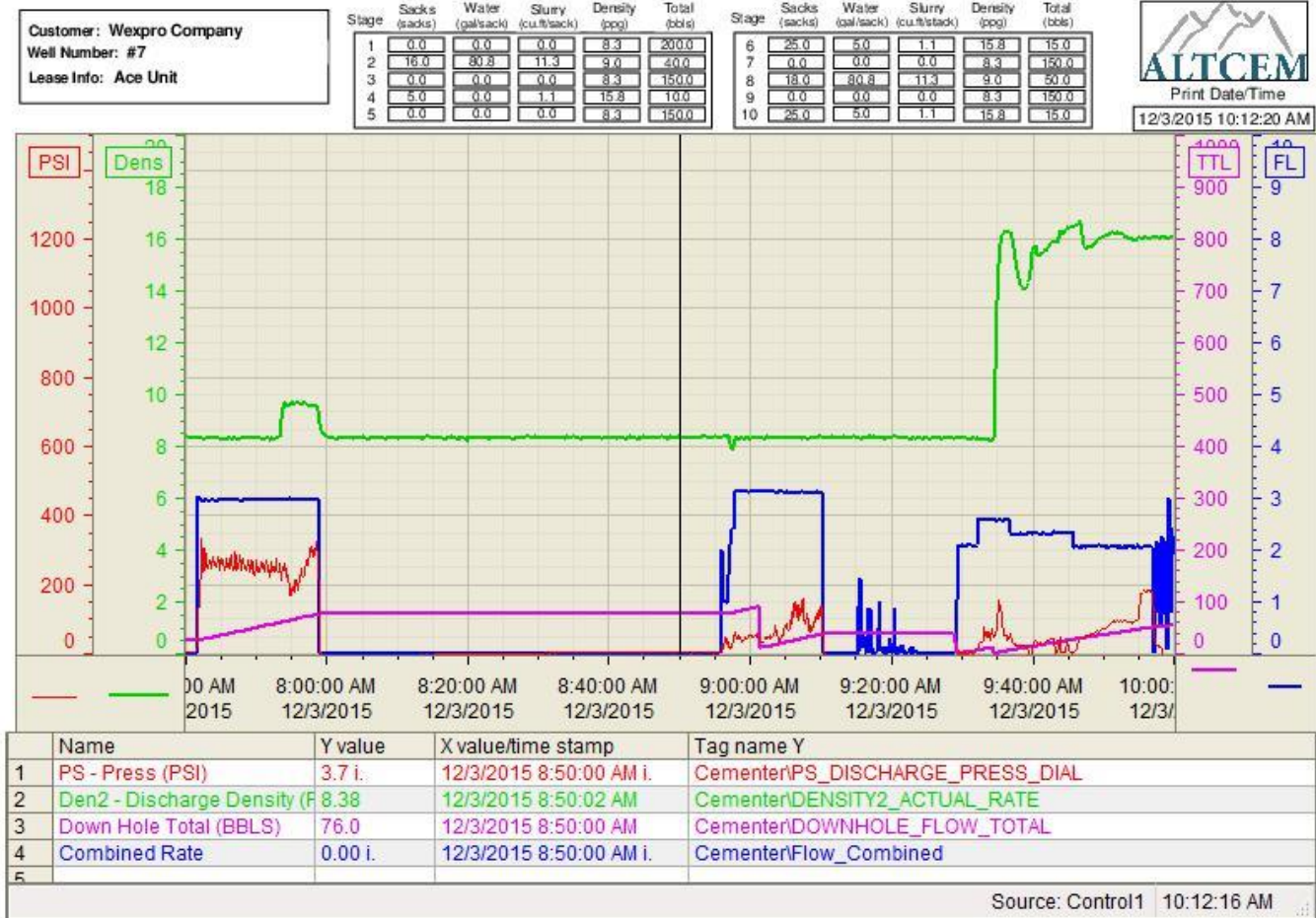
Pozmix Plug #4 Job Chart



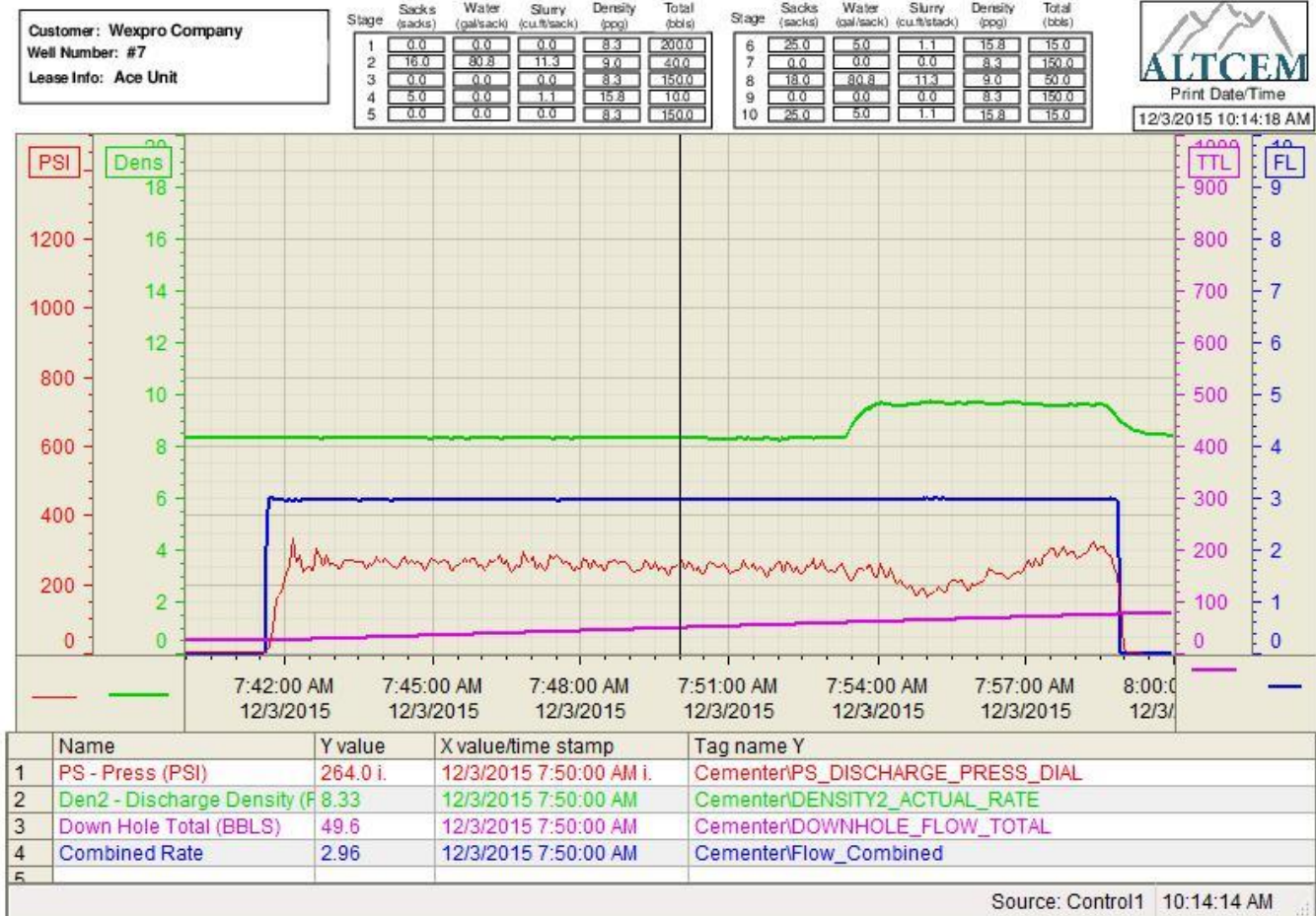
Cement Plug #4 Job Chart



Day 3 Job Chart



Pozmix Plug #5 Job Chart



Cement Plug #5 (Surface Plug) Job Chart

