

## 1 Job Details & Summary

### 1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Open Hole	Outer	n/a	13.5	n/a	n/a	0	1552	25
Casing	Inner	9.625	8.921	36	LTC	0	1542	0

### 1.2 Equipment / People

Unit Type	Unit	Employee #1	Mileage
Cement Pump	101	Casciato, Luke	150
Cement Chemical	403	Dent, Jerod	150
Bulk Trailer	E435	Vasquez, Mike	150
Bulk Trailer	502	Vasquez, Mike	150

### 1.3 Timing

Event	Date/Time
Call Out	5/18/2017 01:30
Depart Facility	5/18/2017 04:00
On Location	5/18/2017 05:00
Rig Up Iron	5/18/2017 09:00
Job Started	5/18/2017 09:50
Job Completed	5/18/2017 11:07
Rig Down Iron	5/18/2017 11:15
Depart Location	5/18/2017 13:00

### 1.4 General Job Information

Metrics	Value
Well Fluid Density	9.8 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	200 bbls
Rig Circulation Time	1 hours
Calculated Displacement	115.7 bbls
Actual Displacement	115 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	28 bbls
Well Topped Out	No

### 1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	1
Yield Point	4
10 sec. SGS	1
10 min. SGS	2
30 min. SGS	3
Filtrate	80
Flow Line Temp.	70

### 1.6 Job Details

Metrics	Value
Flare Prior to Job	No
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	Yes
Well Fluid Density Into Well	9.8 lb/gal
Well Fluid Density Out of Well	9.8 lb/gal

### 1.7 Job Details (cont.)

Metrics	Value
BHCT	88 °F
BHST	110 °F



### 1.8 Circulation

Lost Circulation Experienced
No

Circulation Details:

### 1.9 Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft <sup>3</sup> /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Top (ft)
1	1	Water	Flush	8.33			42.00		20.00	0
1	2	ALTCem S100-12	Lead	12.00	2.53	14.85		260.00	116.99	0
1	3	ALTCem S100-12	Tail	12.50	2.22	12.58		146.00	57.82	1045
1	4	Water	DisplacementFinal	8.33			42.00		117.00	0

### 1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Lead	ALTCem S100-12	AC3-10	Cement	100.00	%
1	2	Lead	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk
1	2	Lead	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB
1	2	Lead	ALTCem S100-12	ADF-11	Defoamer	0.30	%BWOB
1	2	Lead	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	2	Lead	ALTCem S100-12	AXE-30	Extender	2.00	lb/sk
1	3	Tail	ALTCem S100-12	AC3-10	Cement	100.00	%
1	3	Tail	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk
1	3	Tail	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB
1	3	Tail	ALTCem S100-12	ADF-11	Defoamer	0.30	%BWOB
1	3	Tail	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	3	Tail	ALTCem S100-12	AXE-30	Extender	2.00	lb/sk



## 2 Job Logs

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Call Out	5/18/2017	01:30					Crew was called out
2	Pre Convoy Safety Meeting	5/18/2017	03:30					BJ Crew discussed road conditions, as well as hazards such as slick roads, poor visibility, and wildlife.
3	Depart Facility	5/18/2017	04:00					BJ crew departs facility to head to location
4	Arrive on Location	5/18/2017	05:00					BJ Crew arrives on location
5	Assess Location	5/18/2017	05:15					BJ Crew did walk around to determine and understand where equipment was to be spotted in
6	Pre Rig up Safety meeting	5/18/2017	08:30					BJ Crew discussed hazards of rig up such as, hammer swings, pinch points, and slips trips and falls.
7	Rig UP	5/18/2017	09:00					BJ Crew Rigs up all iron and fittings for rig floor and ground
8	Other	5/18/2017	09:15					9.625in 36# J55 Casing set at 1542', landed casing at 10:00, circulated at 10 bpm 150psi
9	Safety Meeting	5/18/2017	09:30					BJ Crew, Rig Crew, Company representative, discussed job procedure, as well as all hazards associated such as, over head loads, red zones, and muster areas.
10	Start Job	5/18/2017	09:50					BJ Services begins cmt job
11	Fill Lines	5/18/2017	09:53	8.33	2	2		Pumped 2 BBL of H2O to fill lines
12	pressure test	5/18/2017	09:56	8.33			3000	pressure tested lines to 3000psi, pressure held, bled back to truck.
13	pump spacer	5/18/2017	10:00	8.33	6	20	100	pumped 20 bbl H2O spacer with dye.
14	pump lead	5/18/2017	10:09	12	6	117	120	pumped 117bbl lead cmt at 12.0ppg, full returns throughout lead
15	Pump Tail	5/18/2017	10:28	12.5	6	57	220	pumped tail cmt at 12.5ppg, full returns through tail.
16	Shutdown	5/18/2017	10:32					shutdown pumps in order to drop top plug
17	Drop Plug	5/18/2017	10:34	8.33	2		50	dropped top plug, verified by company representative
18	Begin Displacement	5/18/2017	10:35	8.33	8	100	450	pumped 100 bbl of H2O displacement, full returns throughout, 450 psi
19	Slowed Rate	5/18/2017	10:52	8.33	2	15	300	slowed rate at 100 bbl away in order to land plug



20	Landed Plug	5/18/2017	11:03	8.33	2		850	landed plug, actual displacement was 115. calculated displacement was 115.7. final circulating pressure was 300psi, landed at 350, took pressure 500 over to 850 psi shut down.
21	Shutdown	5/18/2017	11:03					shut down and held pressure for 3 Minutes.
22	Check Floats	5/18/2017	11:07	8.33			850	floats held, received .5 BBL in return.
23	Pre-Rig Down Safety Meeting	5/18/2017	11:10					BJ Crew discussed hazards of rig down such as, slips trips and falls, pinch points, ect.
24	Rig Down	5/18/2017	11:15					BJ Crew Rigs down all iron on ground and rig floor.
25	Pre-Convoy Meeting	5/18/2017	12:30					BJ Crew discussed Routes, road conditions, and did a walk around of equipment.
26	Depart Location	5/18/2017	13:00					BJ crew departs facility to head to location

### 3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	60 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	29 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	>375 mg/L	0-500 mg/L
Carbonates	0 mg/L	0-100 mg/L
Sulfates	>200 mg/L	0-1500 mg/L
Potassium	1000 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

### 4 Pump Diagrams

