

# 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
Bulk Trailer	502	Vasquez, Mike	150
Bulk Trailer	E435	Groneman, Josh	150
Cement Chemical	402	Dent, Jerod	150
Cement Pump	101	Casciato, Luke	150

## 1.3 Timing

Event	Date/Time
Call Out	5/22/2017 04:30
Depart Facility	5/22/2017 06:00
On Location	5/22/2017 07:30
Rig Up Iron	5/22/2017 08:00
Job Started	5/22/2017 12:16
Job Completed	5/22/2017 12:32
Rig Down Iron	5/22/2017 14:00
Depart Location	5/22/2017 15:30

## 1.4 General Job Information

Metrics	Value
Well Fluid Density	8.6 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	250 bbls
Rig Circulation Time	1 hours
Calculated Displacement	115.6 bbls
Actual Displacement	114 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	25 bbls
Well Topped Out	No
Top Out Volume	0 bbls

## 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	0.4
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	8.6 lb/gal
Well Fluid Density Out of Well	8.6 lb/gal

## 1.7 Job Details (cont.)

Metrics	Value
BHCT	88 °F
BHST	110 °F

## 1.8 Circulation

Lost Circulation Experienced
No



### 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	5/22/2017	04:30					BJ Crew was called out to Cub Creek Litzenberger 10 surface job.
2	Pre-Convoy Safety Meeting	5/22/2017	05:30					BJ Crew discussed routes as well as, hazards associated with driving such as, traffic, road conditions, and wildlife
3	Depart Facility	5/22/2017	06:00					Crew departs facility, heads to Cub Creek location
4	Arrive on Location	5/22/2017	07:30					Crew arrives on location
5	Assess Location	5/22/2017	07:35					Crew conducted walk around of location to discuss spotting in of equipment
6	Spot In	5/22/2017	07:40					Crew spots in equipment
7	pre-Rig Up Safety Meeting	5/22/2017	07:50					Crew discussed hazards of rig up such as, slips trips and falls, hammer swings, and pinch points.
8	Rig Up	5/22/2017	08:00					Crew rigs up all iron and fittings
9	Other	5/22/2017	11:00					Rig landed (9.625", J55, 36#) casing at 11:20, circulated surface to surface for a total of 250 BBL of WBM for 1 hour, with 300psi
10	Start Job	5/22/2017	12:16					Crew Starts job
11	Fill Lines	5/22/2017	12:20	8.33	2	2	50	Fill lines with 2 BBL of H2O to pressure test
12	Pressure test	5/22/2017	12:21	8.33			3000	Pressure test to 3000 psi, pressure held, no leaks, bled back to truck
13	Pump Spacer	5/22/2017	12:24	8.33	2	10	50	pumped 10 BBL of H2O spacer at 2 BPM to mix tub of cmt
14	Increase Rate	5/22/2017	12:30	8.33	6	10	50	Increased rate to 6 BPM for remaining 10 BBL of H2O spacer with dye, for a total of 20 BBL.
15	Pump Lead	5/22/2017	12:32	12	6	117	200	Mixed and pumped 117 BBL of lead cmt, 12ppg, 200psi
16	Pump Tail	5/22/2017	12:52	12.5	6	56	180	mixed and pumped 56 BBL of tail cmt at 12.5ppg. 6BPM, 180psi
17	Shutdown	5/22/2017	13:02					Shutdown to drop top plug
18	Pump tail	5/22/2017	13:03	12.5	1	1	0	Pumped remaining BBL of tail cmt on top of plug as per customers request.
19	Plug Away	5/22/2017	13:04					Plug left plug container, verified by customer representative.
20	Displacement	5/22/2017	13:09	8.33	4	10	50	Began displacement at 4 BPM washing up on top of plug for 10 BBL



21	Increase Rate	5/22/2017	13:13	8.33	8	95	500	Increased rate to 8 BPM, 500psi
22	Slow Rate	5/22/2017	13:21	8.33	2	9	300	Slowed rate at 105 BBL of displacement pumped, to land top plug.
23	Land Plug	5/22/2017	13:26	8.33	2	114	800	landed plug at 114 BBL displaced. Calculated displacement was 115.6 BBL, landed at 300 psi, bumped 500psi over to 800psi, 25 BBL of cement to surface.
24	Shutdown	5/22/2017	13:27					Shutdown to hold pressure for 3 min.
25	Check Floats	5/22/2017	13:30					Floats held, .5 BBL in return
26	End Job	5/22/2017	13:32					Crew ends job
27	Pre-Rig Down Safety Meeting	5/22/2017	13:40					Crew discussed hazards of rig up such as, slips trips and falls, hammer swings, and pinch points.
28	Rig Down	5/22/2017	14:00					Crew rigs down all iron and fittings
29	Pre-Convoy Safety Meeting	5/22/2017	15:00					BJ Crew discussed routes as well as, hazards associated with driving such as, traffic, road conditions, and wildlife
30	Depart Location	5/22/2017	15:30					Crew departs location, heads to facility.

### 3 Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	60 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	49 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	> 375 mg/L	0-500 mg/L
Carbonates	140 mg/L	0-100 mg/L
Sulfates	< 200 mg/L	0-1500 mg/L
Potassium	450 mg/L	0-3000 mg/L
Iron	5 mg/L	0-300 mg/L

### 4 Pump Diagrams

