

## 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	1555	25
Casing	Inner	9.625	8.921	36	LTC	0	1548	0

### 1.2 Equipment / People

Unit Type	Unit	Mileage
Light Duty Pickups	7	140
Bulk Trailer	509	140
Bulk Trailer	E696	140

### 1.3 Timing

Event	Date/Time
Call Out	6/26/2017 11:00
Depart Facility	6/26/2017 11:50
On Location	6/27/2017 01:30
Rig Up Iron	6/27/2017 05:20
Job Started	6/27/2017 06:18
Job Completed	6/27/2017 07:01
Rig Down Iron	6/27/2017 09:30
Depart Location	6/27/2017 11:30

### 1.4 General Job Information

Metrics	Value
Well Fluid Density	8.6 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	116.5 bbls
Rig Circulation Time	0.25 hours
Calculated Displacement	116.41 bbls
Actual Displacement	116 bbls
Total Spacer to Surface	40 bbls
Total CMT to Surface	0 bbls
Well Topped Out	Yes
Top Out Volume	25 bbls

### 1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	120
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	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 (sk)	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		142.00	56.23	1000
1	4	Water	DisplacementFinal	8.33			42.00		113.00	0
1	5	ALTCem S100-12	Topout	12.50	2.22	12.58		64.00	25.00	0

### 1.11 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
1	5	Topout	ALTCem S100-12	AC3-10	Cement	100.00	%
1	5	Topout	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk
1	5	Topout	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB
1	5	Topout	ALTCem S100-12	ADF-11	Defoamer	0.30	%BWOB
1	5	Topout	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	5	Topout	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	6/26/2017	23:00					BJ CREW CALLED OUT ON LOVATION @ 4:00 AM
2	PRE-CONVOY	6/26/2017	23:40					DISSCUSSED HAZARDS OF DRIVING
3	DEPART SHOP	6/27/2017	23:55					BJ CREW LEFT SHOP FOR LOCATION
4	ASSESSMENT OF LOCATION	6/27/2017	01:30					MET WITH CUSTOMER REP WENT OVER JOB DETAILS, AND WHERE TO SPOT EQUIPMENT
5	PRE-RIG UP	6/27/2017	05:15					DISSCUSSED HAZARDS OF RIG UP
6	RIG UP	6/27/2017	05:20					BJ CREW RIGGED UP LOCATION
7	RIG UP COMPLETE	6/27/2017	05:45					RIG UP COMPLETED SAFELY
8	PRE-JOB	6/27/2017	06:00					CONDUCTED STEACS BRIEFING AND SAFETY MEETING WITH BJ AND RIG CREW
9	FILL LINES	6/27/2017	06:18	8.33	2	2		FILLED LINES WITH 2BBL FRESH WATER
10	PRESSURE TEST	6/27/2017	06:20	8.33	1	2		TESTED LINES TO 3000 PSI
11	PUMP SPACER	6/27/2017	06:23	8.33	5	40		PUMPED 40 BBL OF FRESH WATER SPACER
12	PUMP LEAD CEMENT	6/27/2017	06:32	12	5	117		PUMPED 117/BBL OF 12/LB,2.53CUFT/FT,14.85GAL/SK,260/SKS OF LEAD CEMENT
13	PUMP TAIL CEMENT	6/27/2017	06:51	12.5	5	56.2		PUMPED 56.2 BBL OF 12.5/LB,2.22CUFT/FT,12.58GAL/SK,142/SKS OF TAIL CEMENT
14	SHUT DOWN	6/27/2017	07:00					ALL CEMENT PUMPED
15	DROP PLUG	6/27/2017	07:01					TOP PLUG LEFT CEMENTING HEAD
16	DISPLACE	6/27/2017	07:02	8.33	6	116.41		DISPLACED 116.41 BBLS OF FRESH WATER
17	CEMENT TO SURFACE	6/27/2017	07:15					0 BBLS OF CEMENT TO SURFACE
18	SLOW RATE	6/27/2017	07:16					SLOWED RATE TO 2BBL/MIN AT 96 BBL DISPLACED TO BUMP PLUG
19	BUMP PLUG	6/27/2017	07:23					bumped plug at calculated 380 to 900 psi
20	CHECK FLOATS	6/27/2017	07:25					FLOATS HELD .75 BBL BACK
21	RIGGED UP FOR TOP OUT	6/27/2017	08:15					RIGGED UP 1 INCH FOR TOPOUT
22	TOPOUT	6/27/2017	08:38	12.5	1	25		STARTED PUMPING TOPOUT



23	TOPOUT TO SURFACE	6/27/2017	08:49	12.5	1	13		TOPOUT TO SURFACE WITH 12 BBL PUMPED,13 BBL TO SURFACE,9 BBL OF GOOD THICK CEMENT,64 SKS
24	SHUTDOWN	6/27/2017	08:53					SHUT DOWN FROM TOPING OUT CLEANED UP PUMP
25	PRE-RIG DOWN	6/27/2017	09:10					DISSCUSSED HAZARDS OF RIG DOWN
26	RIG DOWN EQUIPMENT	6/27/2017	09:20					BJ CREW RIGGED DOWN
27	RIG DOWN COMPLETE	6/27/2017	09:30					RIG DOWN COMPLETED SAFELY
28	PRE-CONVOY	6/27/2017	10:45					DISSCUSSED HAZARDS OF DRIVING
29	DEPART LOCATION	6/27/2017	11:30					BJ CREW LEFT LOCATION FOR SHOP

### 3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	69 °F	50-80 °F
pH Level	7.5	5.5-8.5
Chlorides	4 mg/L	0-3000 mg/L
Total Alkalinity	250	0-1000
Total Hardness	250 mg/L	0-500 mg/L
Carbonates	0 mg/L	0-100 mg/L
Sulfates	>400 mg/L	0-1500 mg/L
Potassium	450 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

### 4 Pump Diagrams

