

1 Job Details & Summary

1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	9.625	8.921	36	n/a	0	1524	0
Open Hole	Outer	n/a	8.5	n/a	n/a	1535	11828	18
Casing	Inner	5.5	4.892	17	n/a	0	11817	0

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Bulk Trailer	504	Rinehart, Anthony		154
Silo	657			
Silo	658			
Light Duty Pickups	6	Hyde, Zack	Bell, Wesley	154
Cement Pump	103	Chaparro, Hector	Beal, Scott	154

1.3 Timing

Event	Date/Time
Call Out	7/6/2017 01:00
Depart Facility	7/6/2017 03:00
On Location	7/6/2017 04:00
Rig Up Iron	7/6/2017 04:30
Job Started	7/6/2017 08:31
Job Completed	7/6/2017 12:02
Rig Down Iron	7/6/2017 12:15
Depart Location	7/6/2017 13:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	10.4 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	n/a bbls
Rig Circulation Time	3 hours
Calculated Displacement	273 bbls
Actual Displacement	278 bbls
Total Spacer to Surface	40 bbls
Total CMT to Surface	60 bbls

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	11
Yield Point	8
10 sec. SGS	3
10 min. SGS	8
30 min. SGS	11
Filtrate	5.3
Flow Line Temp.	120

1.6 Job Details

Metrics	Value
Flare Prior to Job	Yes
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	Yes
Well Fluid Density Into Well	10.4 lb/gal
Well Fluid Density Out of Well	10.4 lb/gal

1.7 Job Details (cont.)

Metrics	Value
BHCT	220 °F
BHST	220 °F

1.8 Circulation

Lost Circulation Experienced
no

1.9 Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft ³ /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Top (ft)
1	1	Water	Flush	8.33			42.00		40.00	0
1	2	CD Spacer	Spacer	11.00			33.78		40.00	0
1	3	ALTCem P100-X2	Lead	12.50	2.06	11.77		200.00	73.47	1
1	4	ALTCem P100-X2	Lead	12.50	2.07	11.81		660.00	243.32	1534
1	5	ALTCem P50-X1	Tail	13.50	1.47	7.43		960.00	252.13	6588
1	6	Water & MMCR	Displacement	8.33			41.90		10.00	11420
1	7	Water w/ Clay Protection and Biocide	DisplacementFinal	8.33			41.91		263.00	0

1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom	Start (gal)	End (gal)	Used (gal)
1	2	Spacer	CD Spacer	ASR-20	StrengthRetgression	179.59	lb/bbl			
1	2	Spacer	CD Spacer	AVS-10	Viscosifier	1.00	lb/bbl			
1	3	Lead	ALTCem P100-X2	AC3-10	Cement	100.00	%			
1	3	Lead	ALTCem P100-X2	ADF-11	Defoamer	0.30	%BWOB			
1	3	Lead	ALTCem P100-X2	AFL-10	FluidLoss	0.30	%BWOB			
1	3	Lead	ALTCem P100-X2	AR-31	Retarder	0.16	%BWOB			
1	3	Lead	ALTCem P100-X2	AVS-20	Viscosifier	0.10	%BWOB			
1	3	Lead	ALTCem P100-X2	ADF-20	Defoamer	0.00		10	8	2
1	4	Lead	ALTCem P100-X2	AC3-10	Cement	100.00	%			
1	4	Lead	ALTCem P100-X2	ABX-30	BondEnhancer	0.40	%BWOB			
1	4	Lead	ALTCem P100-X2	ADF-11	Defoamer	0.30	%BWOB			
1	4	Lead	ALTCem P100-X2	AFL-10	FluidLoss	0.30	%BWOB			
1	4	Lead	ALTCem P100-X2	AR-31	Retarder	0.16	%BWOB			
1	4	Lead	ALTCem P100-X2	AVS-20	Viscosifier	0.10	%BWOB			



1	4	Lead	ALTCem P100-X2	ADF-20	Defoamer	0.00		8	4	4
1	5	Tail	ALTCem P50-X1	ACG-10	Cement	50.00	%			
1	5	Tail	ALTCem P50-X1	AFA-10	Extender	50.00	%			
1	5	Tail	ALTCem P50-X1	ADF-11	Defoamer	0.30	%BWOB			
1	5	Tail	ALTCem P50-X1	AFL-50	FluidLoss	0.20	%BWOB			
1	5	Tail	ALTCem P50-X1	AR-20	Retarder	0.10	%BWOB			
1	5	Tail	ALTCem P50-X1	AVS-10	Viscosifier	0.10	%BWOB			
1	5	Tail	ALTCem P50-X1	AVS-50	Viscosifier	2.00	%BWOB			
1	5	Tail	ALTCem P50-X1	ADF-20	Defoamer	0.00		4	0	4
1	6	Displacement	Water & MMCR	AR-61	Retarder	0.10	gal/bbl	1	0	1
1	7	DisplacementFinal	Water w/ Clay Protection and Biocide	ASF-50	ClayProtection	0.08	gal/bbl	22	0	22
1	7	DisplacementFinal	Water w/ Clay Protection and Biocide	Biocide	Other	0.01	gal/bbl	3	0	3

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	Callout	7/6/2017	01:00					Crew gets called out to be on location at 7:30
2	Depart yard	7/6/2017	03:00					Crew leaves yard
3	Arrive On Location	7/6/2017	04:00					Crew arrived on location at 0400 , requested time on location was 07:30
4	Rig up	7/6/2017	04:30					Crew rigs up iron and hoses
5	Waiting	7/6/2017	05:00					Crew waits for rig to finish circulating
6	Safety Meeting	7/6/2017	08:00					Crew has safety meeting with rig crew and company man discussing the job procedure
7	Fill lines	7/6/2017	08:31	8.33	0.5	2	200	Fill lines
8	Pressure Test Lines	7/6/2017	08:34	8.33	0.5	0.5	4500	We pressure tested twice due to a leak the first pressure test
9	Water Spacer	7/6/2017	08:40	8.33	5	40	350	Pump 40 bbls of fresh water at 5bpm
10	CD Spacer	7/6/2017	08:52	11	5	40	350	Pumped 40 bbls of CD spacer at 11ppg 5bpm
11	Lead 1	7/6/2017	09:00	12.5	6	72.5	300	Pumped 72.5 bbls of lead 1 at 12.5ppg 6bpm(200sks,2.06yld,11.77gal/sk)
12	Lead 2	7/6/2017	09:14	12.5	6	243	200	Pumped 243 bbls of lead 2 at 12.5ppg 6bpm(660sks,2.07yld, 11.81gal/sk) Slowed rate to 5bpm to hold density for the last of lead
13	Tail	7/6/2017	09:54	13.5	6		200	Pumped 251 bbls of Tail at 13.5ppg 6bpm(960sks,1.47yld, 7.43gal/sk)
14	Wash lines	7/6/2017	10:43	8.33	3	10	40	Wash pumps and lines
15	Drop bottom plug	7/6/2017	10:46	8.33	4	10	0	Drop bottom plug with 1 gal of AR-61 10bbls at 4bpm
16	Drop top plug	7/6/2017	10:48					Drop top plug
17	50	7/6/2017	10:58	8.33	8	50	700	50 Bbls away with biocide and ASF-50
18	100	7/6/2017	11:04	8.33	8	100	1000	100 Bbls away with biocide and ASF-50
19	150	7/6/2017	11:10	8.33	8	150	1750	150 Bbls away with biocide and ASF-50
20	200	7/6/2017	11:17	8.33	8	200	2500	200 Bbls away with biocide and ASF-50, Spacer to surface at 170 away
21	250	7/6/2017	11:27	8.33	8	250	2400	250 Bbls away with biocide and ASF-50, Cement to surface at 210 bbls away, total cement to surface 60 bbls
22	260	7/6/2017	11:32	8.33	2	10	1900	260 away slowed rate to 2 bpm for the last 20 bbls



23	278	7/6/2017	11:39	8.33	2	10	3000	278 Bbls away bumped bottom plug brought it up to 3000 then burst
24	288	7/6/2017	11:41	8.33	2	10	1900	288 away landed top plug at 1900psi brought it up to 2400 psi for 5 minutes
25	Floats didn't hold	7/6/2017	11:47					Floats didn't hold
26	Pressure up	7/6/2017	11:55					Floats didn't hold
27	Pressure up	7/6/2017	12:01					Left plug container on casing with 1800psi
28	Job complete	7/6/2017	12:02					
29	Depart location	7/6/2017	13:00					

3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	70 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	60 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	0 mg/L	0-500 mg/L
Carbonates	mg/L	0-100 mg/L
Sulfates	mg/L	0-1500 mg/L
Potassium	mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

4 Pump Diagrams

