



Caerus Operating LLC

TWO-STAGE/MULTI-STAGE CEMENT POST JOB REPORT

BJU B26 FED 21D-26-496 05-045-24438
S:26 T:4S R:96W Garfield CO

CallSheet #: 82362
Proposal #: 61318



TWO-STAGE/MULTI-STAGE CEMENT Post Job Report

Attention: Mr. Cole Walton | (720) 880-6325 | cwalton@caerusoilandgas.com
Caerus Operating LLC
1001 17TH STREET | DENVER, CO 80202

Dear Mr. Cole Walton,

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

Sincerely,

Holly Mbugua

Field Engineer II | (720) 505-1300 | holly.mbugua@americancementing.com

Field Office 28730 US-6, Rifle, CO 81650
Phone: (970) 657-1157

Job Details & Summary

Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	20	19.5	53	n/a	0	100	0
Open Hole	Outer	n/a	14.75	n/a	n/a	100	2500	25
Open Hole	Outer	n/a	14.75	n/a	n/a	2500	3030	0
Casing	Inner	9.625	8.921	36	n/a	0	3010.1	0

Equipment / People

Unit Type	Unit	Power Unit	Employee #1	Employee #2
Field Storage Silo	FSS(CTS)-468			
Field Storage Silo	FSS(CTS)-469			
AS Cement Trailer Float	CTF-558	TRH(TRB)-769	Wall, Lynn	
AS Cement Trailer Float	CTF-9299	TRH(TRB)-769	Wall, Lynn	
Cement Trailer Float	CTF-579	TRC(TRB)-090	Morales, Adrian	Burton, Devin
Light Duty Vehicles	LDV-083		Putnam, Gage	
Cement Pump Float	CPF-053	TRH-1140	Kirchenwitz, Jacob	

Timing

Event	Date/Time
Call Out	7/11/2022 20:00
Depart Facility	7/12/2022 00:30
On Location	7/12/2022 02:00
Rig Up Iron	7/12/2022 02:15
Job Started	7/12/2022 08:34
Job Completed	7/12/2022 22:09
Rig Down Iron	7/12/2022 22:30
Depart Location	7/12/2022 23:30

General Job Information

Metrics	Value
Well Fluid Density	9.3 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	300 bbls
Rig Circulation Time	0.5 hours
Calculated Displacement	226.8/69 bbls
Actual Displacement	226.8/69 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	2 bbls
Well Topped Out	Yes
Top Out Volume	48.9 bbls

Job Details

Metrics	Value
Flare Prior to Job	No
Flare Prior to Job	0 units
Flare During Job	No
Flare During Job	0 units
Flare at End of Job	No
Flare at End of Job	0 units
Well Full Prior to Job	Yes
Well Fluid Density Into Well	9.3 lb/gal
Well Fluid Density Out of Well	9.3 lb/gal

Job Details (cont.)

Metrics	Value
BHCT	87 °F
BHST	123 °F

Water Analysis

Metrics	Value	Recommended
Water Source	Flat Tank	
Temperature	60 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	72 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	80 mg/L	0-500 mg/L
Carbonates	NA mg/L	0-100 mg/L
Sulfates	200 mg/L	0-1500 mg/L
Potassium	450 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

Circulation

Lost Circulation Experienced	Losses into Spacer	Losses into Cement	Losses into Displacement
Yes	0	0	0

Circulation Details

No returns during first stage until 215 bbls into displacement, then returns for remainder of stage. Partial returns for entire second stage, no cement to surface for either stage.

Job Execution Information

Fluid	Product	Function	Density (lb/gal)	Yield (ft ³ /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Designed Top (ft)
1	Water	Flush	8.34			42.00		40.00	686
2	Stage-1 Lead	Lead	12.00	2.52	14.80		524.00	235.42	950
3	Stage-1 Tail	Tail	12.50	2.23	12.56		161.00	63.94	2500
4	Water	DisplacementFinal	8.34			42.00		226.80	0
1	Water	Flush	8.34			42.00		40.00	0
2	Stage-2 Primary	Primary	12.00	2.55	14.95		346.00	157.14	0
3	Water	DisplacementFinal	8.34			42.00		69.00	0

Job Fluid Details

Fluid	Type	Fluid	Product	Function	Conc.	Uom
2	Lead	Stage-1 Lead	ASTM TYPE I/II	Cement	100.00	%
2	Lead	Stage-1 Lead	A-10	Accelerator	5.00	%BWOB
2	Lead	Stage-1 Lead	A-2	Accelerator	3.00	lb/sk
2	Lead	Stage-1 Lead	FP-24	Defoamer	0.30	%BWOB
2	Lead	Stage-1 Lead	IntegraSeal PHENO	LostCirculation	0.50	lb/sk
2	Lead	Stage-1 Lead	IntegraSeal POLI	LostCirculation	0.25	lb/sk
2	Lead	Stage-1 Lead	R-7C	Retarder	0.30	%BWOB
2	Lead	Stage-1 Lead	STATIC FREE	Other	0.01	lb/sk
3	Tail	Stage-1 Tail	ASTM TYPE I/II	Cement	100.00	%
3	Tail	Stage-1 Tail	A-10	Accelerator	5.00	%BWOB
3	Tail	Stage-1 Tail	A-2	Accelerator	2.00	lb/sk
3	Tail	Stage-1 Tail	A-7P	Accelerator	2.00	lb/sk
3	Tail	Stage-1 Tail	FP-24	Defoamer	0.30	%BWOB
3	Tail	Stage-1 Tail	IntegraSeal PHENO	LostCirculation	0.50	lb/sk
3	Tail	Stage-1 Tail	IntegraSeal POLI	LostCirculation	0.25	lb/sk
3	Tail	Stage-1 Tail	STATIC FREE	Other	0.01	lb/sk
2	Primary	Stage-2 Primary	ASTM TYPE I/II	Cement	100.00	%
2	Primary	Stage-2 Primary	A-10	Accelerator	5.00	%BWOB
2	Primary	Stage-2 Primary	A-2	Accelerator	3.00	lb/sk
2	Primary	Stage-2 Primary	A-7P	Accelerator	2.00	lb/sk
2	Primary	Stage-2 Primary	FP-24	Defoamer	0.30	%BWOB
2	Primary	Stage-2 Primary	IntegraSeal POLI	LostCirculation	0.25	lb/sk
2	Primary	Stage-2 Primary	STATIC FREE	Other	0.01	lb/sk

Job Logs

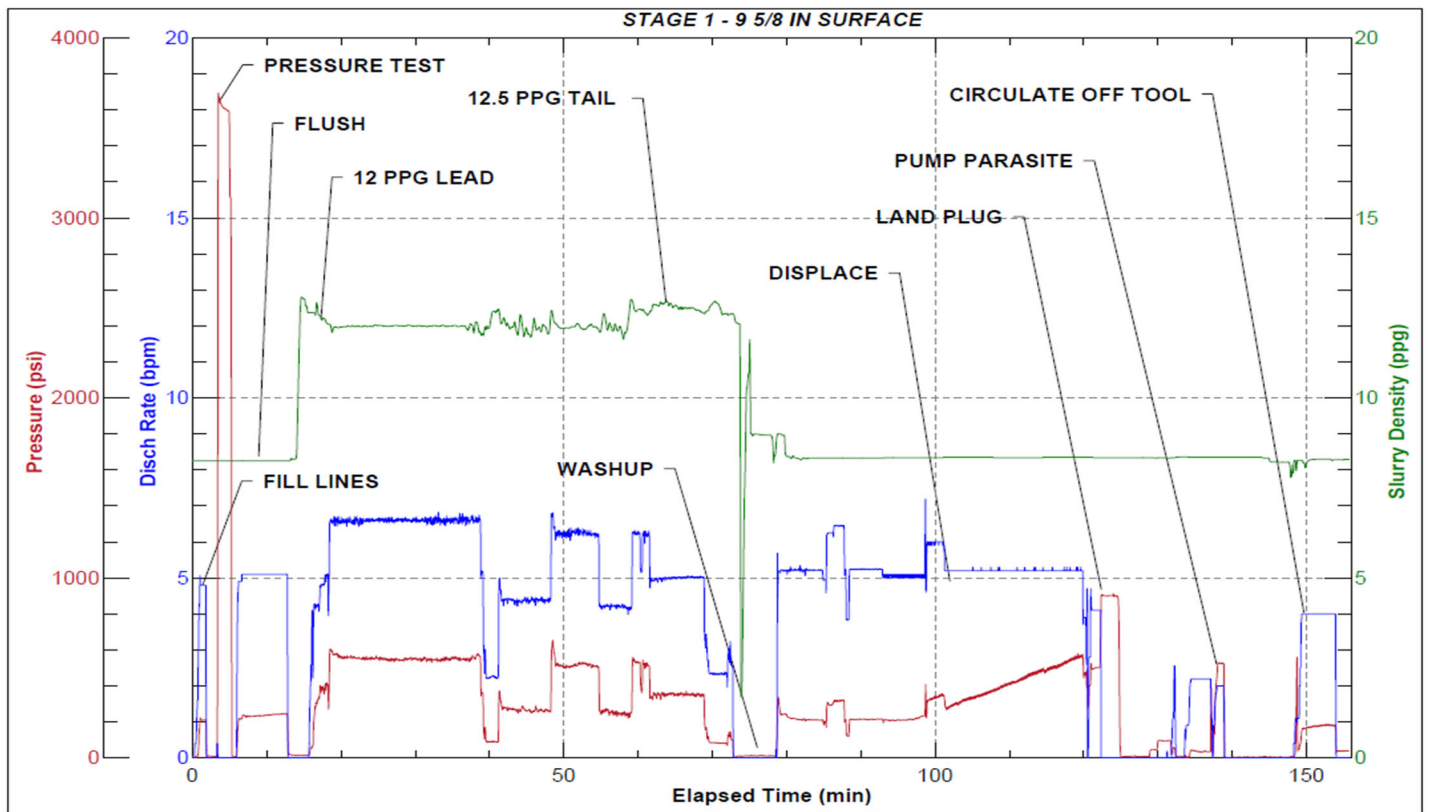
Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Callout	7/11/2022	20:00					CREW CALLED OUT FOR AN ON-LOCATION TIME OF 06:00 7/12/22
2	Depart Location	7/12/2022	00:30					AC CREW DEPART RCO YARD FOR LOCATION
3	Arrive On Location	7/12/2022	02:00					AC CREW ARRIVES AT CUSTOMER LOCATION
4	Rig Up Iron	7/12/2022	02:15					RIG UP ALL IRON AND HOSES
5	Waiting	7/12/2022	06:00					WAITING FOR RIG TO FINISH RUNNING CASING
6	Safety Meeting	7/12/2022	08:17					JSA PRE JOB SAFETY MEETING WITH AC CREW, RIG HANDS, AND CUSTOMER REP
7	Fill Lines	7/12/2022	08:34	8.34	5	5	211	BEGIN STAGE 1. FILL LINES WITH 5 BBLS FRESH WATER. NO RETURNS
8	Pressure Test Lines	7/12/2022	08:37				3600	PRESSURE TEST LINES TO 3000 PSI
9	Other	7/12/2022	08:40	8.34	5	35	230	PUMP 35 BBLS FRESH WATER FLUSH
10	Pump Lead Cement	7/12/2022	08:50	12	4.5	0	316	BEGIN PUMPING LEAD CEMENT. DENSITY VERIFIED WITH PRESSURIZED MUD SCALE
11	Pump Lead Cement	7/12/2022	08:58	12	6.5	50	563	50 BBLS LEAD CEMENT PUMPED
12	Pump Lead Cement	7/12/2022	09:06	12	6.5	50	553	100 BBLS LEAD CEMENT PUMPED
13	Pump Lead Cement	7/12/2022	09:15	12	4.5	50	267	150 BBLS LEAD CEMENT PUMPED
14	Pump Lead Cement	7/12/2022	09:25	12	6	50	513	200 BBLS LEAD CEMENT PUMPED
15	Pump Lead Cement	7/12/2022	09:33	12	4.5	35.4	247	235.4 BBLS LEAD CEMENT PUMPED
16	Pump Tail Cement	7/12/2022	09:33	12.5	4	0	253	BEGIN PUMPING TAIL CEMENT. DENSITY VERIFIED WITH PRESSURIZED MUD SCALE
17	Pump Tail Cement	7/12/2022	09:43	12.5	5	50	341	50 BBLS TAIL CEMENT PUMPED
18	Pump Tail Cement	7/12/2022	09:47	12.5	3	13.9	242	63.9 BBLS TAIL CEMENT PUMPED
19	Clean Pumps and Lines	7/12/2022	09:47					SHUT DOWN, WASHUP PUMP, LOAD PLUG
20	Drop Top Plug	7/12/2022	09:53	8.34	5	0	334	DROP PLUG, WITNESSED BY CUSTOMER REP. BEGIN FRESH WATER DISPLACEMENT, WASHED UP ON TOP OF PLUG
21	Pump Displacement	7/12/2022	10:02	8.34	5.3	50	215	50 BBLS FRESH WATER DISPLACEMENT PUMPED
22	Pump Displacement	7/12/2022	10:12	8.34	5	50	233	100 BBLS FRESH WATER DISPLACEMENT PUMPED
23	Pump Displacement	7/12/2022	10:21	8.34	5.2	50	374	150 BBLS FRESH WATER DISPLACEMENT PUMPED
24	Pump Displacement	7/12/2022	10:31	8.34	5.2	50	510	200 BBLS FRESH WATER DISPLACEMENT PUMPED
25	Pump Displacement	7/12/2022	10:36	8.34	4	26.8	505	226.8 BBLS FRESH WATER DISPLACEMENT PUMPED, GAINED RETURNS AT 215 BBLS INTO DISPLACEMENT
26	Land Plug	7/12/2022	10:36				982	LAND PLUG, FCP - 505 PSI, BUMPED TO 982 PSI
27	Check Floats	7/12/2022	10:39					CHECK FLOATS, FLOATS HELD. 0.75 BBLS BACK
28	Other	7/12/2022	10:47	8.34	2	10	540	PUMP 10 BBLS SUGAR WATER DOWN PARASITE LINE, BURST PLUG AT 7 BBLS
29	Drop Opening Plug	7/12/2022	10:55					DROP DV TOOL OPENING BOMB.
30	Circulate Well	7/12/2022	11:05	8.34	1	0	570	SHIFT DV TOOL, BEGIN CIRCULATING OFF DV TOOL

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
31	Circulate Well	7/12/2022	11:06	8.34	4	20	433	CIRCULATE 20 BBLS THROUGH DV TOOL, GOOD RETURNS.
32	Waiting	7/12/2022	11:10					SHUT DOWN. WAIT WHILE RIG CIRCULATES THROUGH DV TOOL. NO CEMENT CIRCULATED TO SURFACE
33	Other	7/12/2022	12:56	8.34	5	40	225	BEGIN STAGE 2, PUMP 40 BBLS FRESH WATER, PARTIAL RETURNS
34	Pump Cement	7/12/2022	13:04	12	5	0	220	BEGIN PUMPING PRIMARY CEMENT, DENSITY VERIFIED WITH PRESSURIZED MUD SCALE
35	Pump Cement	7/12/2022	13:15	12	5.2	50	346	50 BBLS PRIMARY CEMENT PUMPED
36	Pump Cement	7/12/2022	13:23	12	5.6	50	406	100 BBLS PRIMARY CEMENT PUMPED
37	Pump Cement	7/12/2022	13:38	12	3.8	57.1	282	157.1 BBLS PRIMARY CEMENT PUMPED
38	Clean Pumps and Lines	7/12/2022	13:38					SHUT DOWN, WASHUP PUMP
39	Drop Top Plug	7/12/2022	13:42	8.34	5	0	180	DROP PLUG, WITNESSED BY CUSTOMER REP. BEGIN FRESH WATER DISPLACEMENT, WASHED UP ON TOP OF PLUG
40	Pump Displacement	7/12/2022	13:52	8.34	5.5	50	373	50 BBLS FRESH WATER DISPLACEMENT PUMPED
41	Pump Displacement	7/12/2022	13:57	8.34	3.6	19	285	69 BBLS FRESH WATER DISPLACEMENT PUMPED
42	Land Plug	7/12/2022	13:57				1981	LAND PLUG, FCP - 285 PSI, BUMPED TO 1981 PSI. PARTIAL RETURNS, NO CEMENT TO SURFACE
43	Check Floats	7/12/2022	14:01					CHECK FLOATS, FLOATS HELD. 1 BBL BACK
44	Waiting	7/12/2022	14:15					WAITING TO TOP OUT
45	Pump Cement	7/12/2022	16:35	15.8	2	30.8	105	PUMP 30.8 BBLS TOP OUT CEMENT DOWN ANNULUS, NO CEMENT TO SURFACE, WASH UP PUMP AND LINES
46	Waiting	7/12/2022	17:14					WAITING ON MORE TOP OUT CEMENT TO BE DELIVERED
47	Other	7/12/2022	21:28					BULK TRUCK WITH TOP OUT CEMENT ARRIVES ON LOCATION
48	Pump Cement	7/12/2022	21:57	15.8	1.6	18.1	101	PUMP 18.1 BBLS TOP OUT CEMENT, CEMENT TO SURFACE AT 16 BBLS. 2 BBLS TO SURFACE. 48.9 TOTAL BBLS TOP OUT PUMPED
49	Clean Pumps and Lines	7/12/2022	22:09					SHUT DOWN, WASHUP PUMP AND LINES
50	Rig Down Iron	7/12/2022	22:30					RIG DOWN ALL IRON AND HOSES
51	Depart Location	7/12/2022	23:30					AC CREW DEPARTS LOCATION

Pump Diagrams



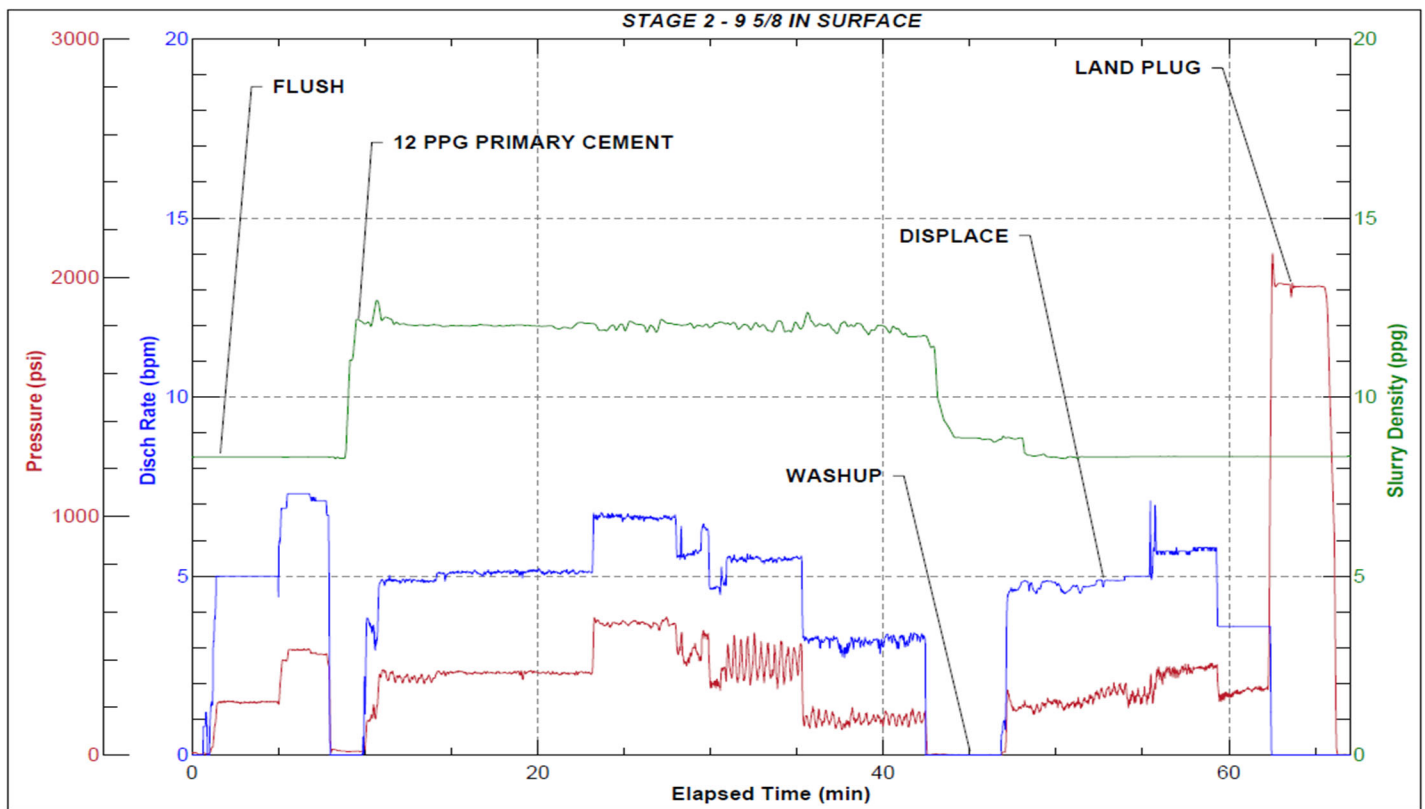
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Customer: Caerus
Well Name: BJU B26 FED 21D-26-496



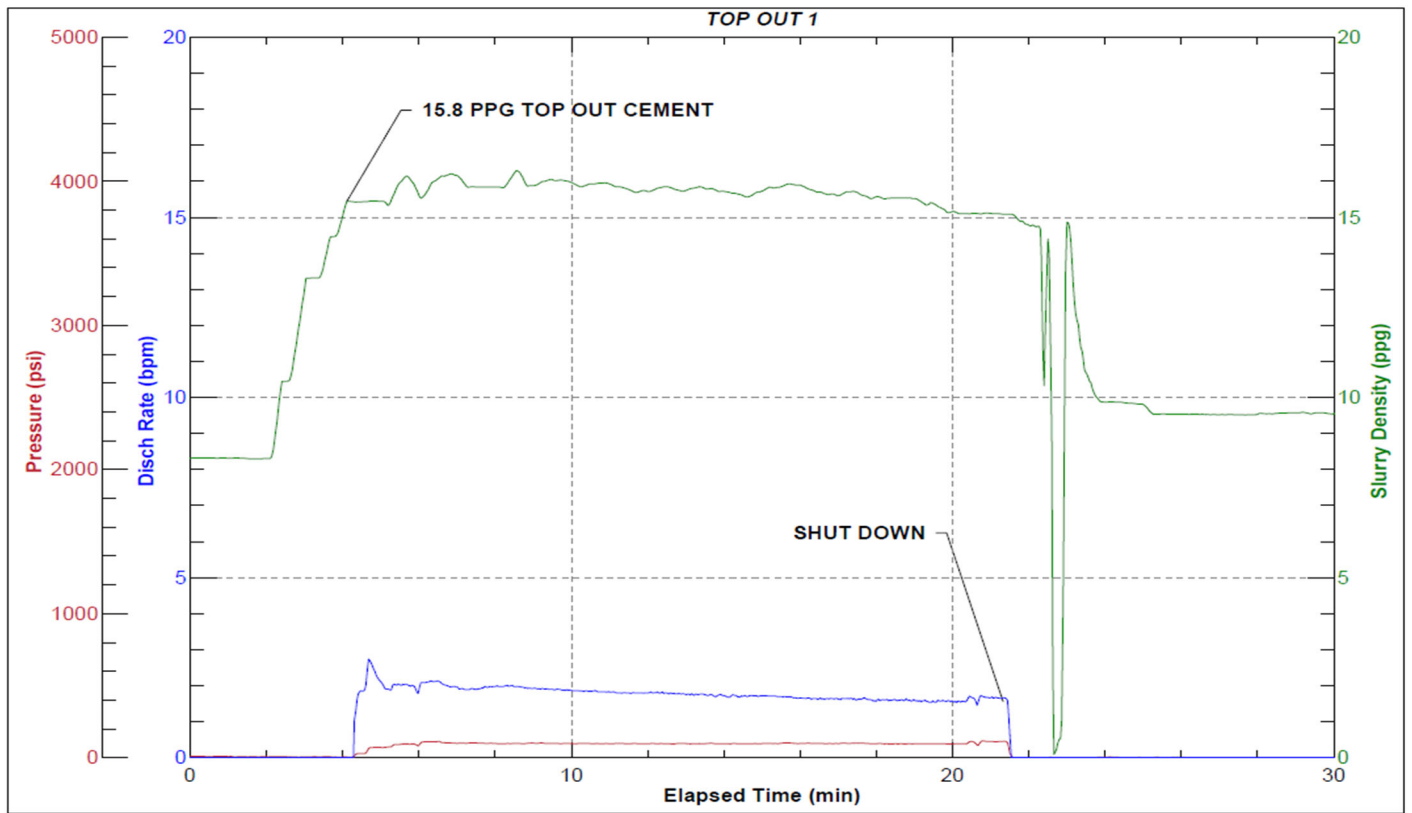
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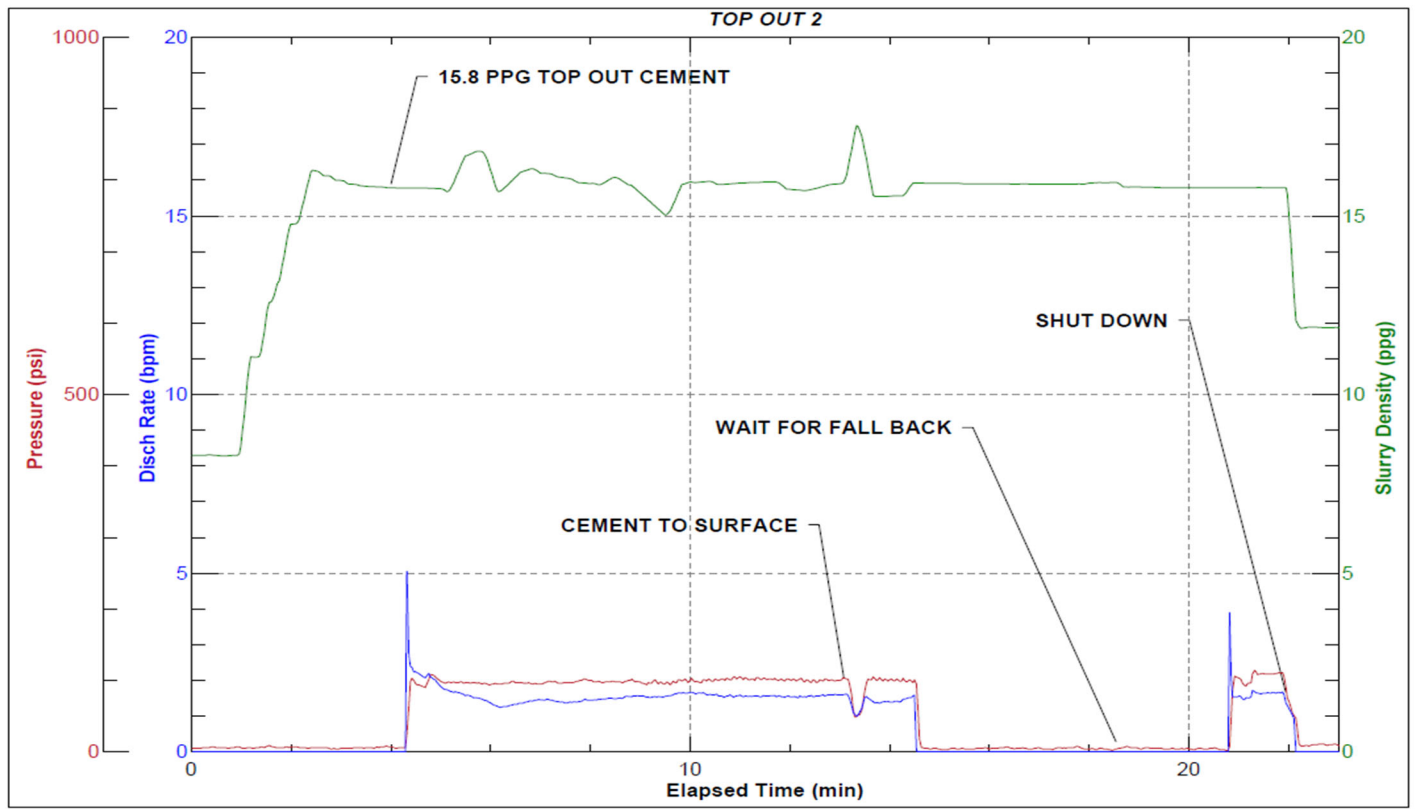
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