



Caerus Operating LLC

TWO-STAGE/MULTI-STAGE CEMENT POST JOB REPORT

BJU B26 FED #21C-27-496 05-045-24451
S:26 T:4S R:96W Garfield CO

CallSheet #: 83481
Proposal #: 63307



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,

Krystal Schell

Field Engineer I | (719) 992-1830 | krystal.schell@americacementing.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	3038	0
Casing	Inner	9.625	8.921	36	n/a	0	3038	0

Equipment / People

Unit Type	Unit	Power Unit	Employee #1	Employee #2
Field Storage Silo	FSS-469			
Field Storage Silo	FSS-468			
Cement Trailer Float	CTF-254	TRC-054	Richey, Steven	Lough, Christopher
Cement Pump Float	CPF-012	TRH-964	Carrasco, Joel	
Light Duty Vehicles	LDV-082		Kelsey, John	

Timing

Event	Date/Time
Call Out	9/15/2022 02:30
Depart Facility	9/15/2022 07:00
On Location	9/15/2022 08:30
Rig Up Iron	9/15/2022 09:00
Job Started	9/15/2022 10:52
Job Completed	9/16/2022 08:30
Rig Down Iron	9/16/2022 09:30
Depart Location	9/16/2022 11:00

General Job Information

Metrics	Value
Well Fluid Density	9.2 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	100 bbls
Rig Circulation Time	0.25 hours
Calculated Displacement	227.8 / 64 bbls
Actual Displacement	227.8 / 64 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	1.5 bbls
Well Topped Out	Yes
Top Out Volume	183 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	9.2 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	0 mg/L	0-3000 mg/L
Total Alkalinity	180	0-1000
Total Hardness	450 mg/L	0-500 mg/L
Carbonates	0 mg/L	0-100 mg/L
Sulfates	200 mg/L	0-1500 mg/L
Potassium	0 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 INITIALLY OR THROUGHOUT THE FIRST STAGE. WE RECEIVED RETURNS @ THE START OF 2ND STAGE AND LOST THEM AGAIN @ 105 AWAY ON PRIMARY CEMENT. THE 1ST TOPOUT JOB GOT 0.5 BBLS OF CEMENT TO SURFACE AND THE 5TH TOPOUT JOB GOT 1 BBL TO SURFACE.

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		20.00	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		227.80	0
1	Water	Flush	8.34			42.00		20.00	0
2	Stage-2 Primary	Primary	12.00	2.55	14.95		346.00	157.14	0
3	Water	DisplacementFinal	8.34			42.00		64.00	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

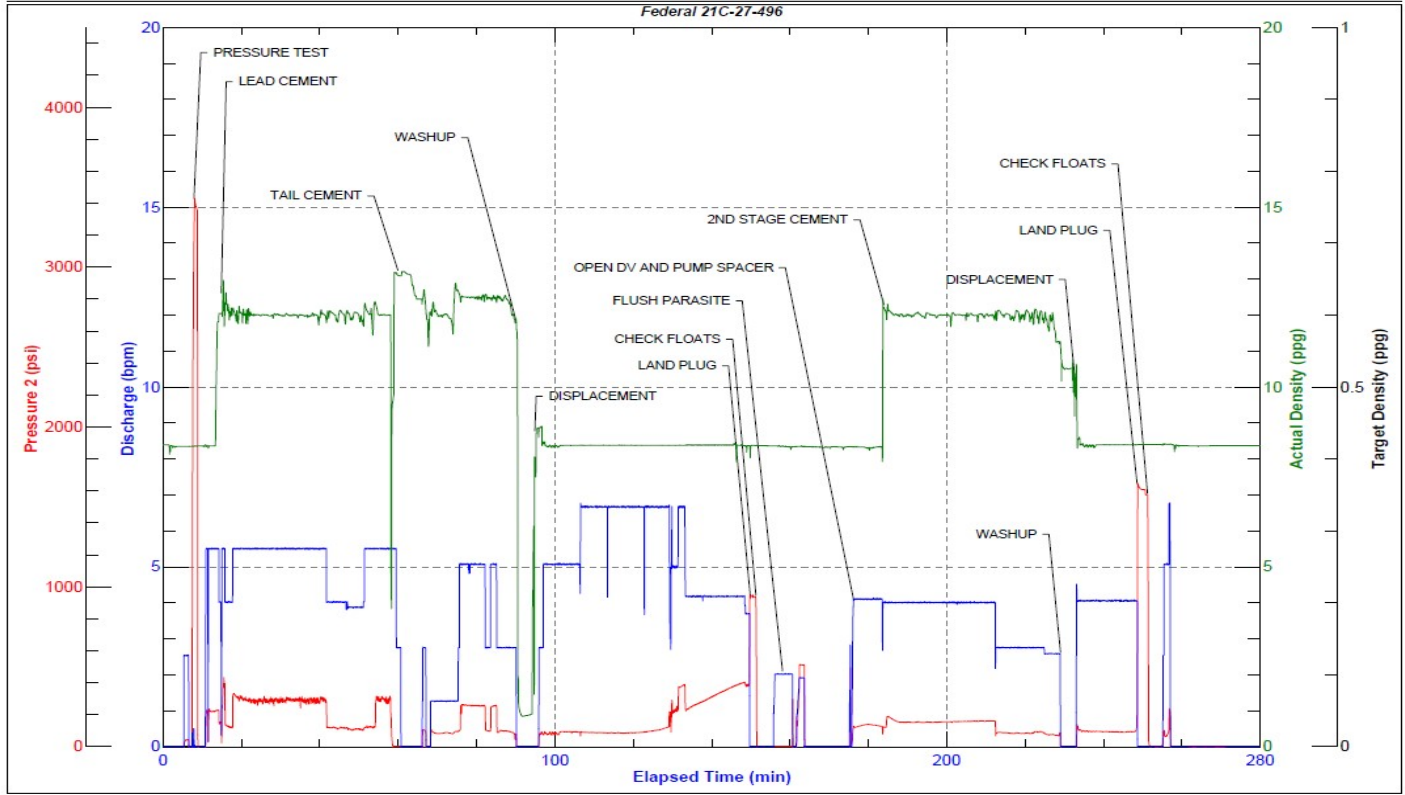
Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	CALLOUT	9/15/2022	02:30					CREW CALLED TO PREPARE FOR A 2-STAGE SURFACE CEMENT JOB. RTS IS 08:30
2	SAFETY MEETING	9/15/2022	06:45					JOURNEY MANAGEMENT MEETING
3	DEPART YARD	9/15/2022	07:00					CREW DEPARTS RIFLE, CO YARD FOR LOCATION
4	ARRIVE ON LOCATION	9/15/2022	08:30					CREW ARRIVES ON LOCATION, VERIFY ALL PROPER EQUIPMENT, PRODUCTS AND JOB PROCEDURES WITH CUSTOMER
5	SAFETY MEETING	9/15/2022	08:40					RIG UP MEETING
6	SPOT UNITS	9/15/2022	08:50					SPOT ALL EQUIPMENT FOR RIG UP
7	RIG UP	9/15/2022	09:00					RIG UP ALL EQUIPMENT
8	STANDBY	9/15/2022	09:30					CREW ON STANDBY WHILE RIG RUNS CASING
9	SAFETY MEETING	9/15/2022	10:45					PRE JOB MEETING WITH ALL CREWS INVOLVED
10	LOAD LINES	9/15/2022	10:52	8.34	2.5	3	53	LOAD LINES WITH 3 BBLS FRESH
11	PRESSURE TEST	9/15/2022	10:54	8.34	1	1	3520	PRESSURE TEST PUMP AND LINES TO CEMENT HEAD
12	SPACER	9/15/2022	10:57	8.34	5.5	20	30	20 BBLS FRESH SPACER
13	LEAD CEMENT	9/15/2022	11:03	12	4	10	150	235 BBLS Lead CMT – 12 # 2.52 Y 14.8 MW 524 sks 10 BBLS AWAY
14	LEAD CEMENT	9/15/2022	11:11	12	5.5	40	320	50 BBLS AWAY
15	LEAD CEMENT	9/15/2022	11:21	12	5.5	50	313	100 BBLS AWAY
16	LEAD CEMENT	9/15/2022	11:31	12	5.5	50	312	150 BBLS AWAY
17	LEAD CEMENT	9/15/2022	11:41	12	5.5	50	322	200 BBLS AWAY
18	LEAD CEMENT	9/15/2022	12:00	12	1.3	35	100	235 BBLS AWAY SWAP TO TAIL CEMENT
19	TAIL CEMENT	9/15/2022	12:01	12.5	5	10	342	64 BBLS Tail CMT – 12.5 # 2.23 Y 12.6 MW 161 sks 10 BBLS AWAY
20	TAIL CEMENT	9/15/2022	12:14	12.5	5	54	320	64 BBLS AWAY SHUTDOWN FOR WASHUP AND LOAD PLUG
21	WASHUP	9/15/2022	12:15					WASHUP PUMP MIX SYSTEM
22	DISPLACEMENT	9/15/2022	12:22	8.34	2.7	10	100	SEND PLUG AND BEGIN DISPLACEMENT 10 BBLS AWAY
23	DISPLACEMENT	9/15/2022	12:35	8.34	6.6	40	162	50 BBLS AWAY
24	DISPLACEMENT	9/15/2022	12:47	8.34	4.1	50	160	100 BBLS AWAY, RECEIVED RETURNS AT 135 BBLS AWAY AT 6.3 BPM AND 500 PSI
25	DISPLACEMENT	9/15/2022	13:00	8.34	4.1	50	282	150 BBLS AWAY
26	DISPLACEMENT	9/15/2022	13:11	8.34	4.1	50	405	200 BBLS AWAY
27	LAND PLUG	9/15/2022	13:15	8.34	3.7	27.8	482	227.8 BBLS AWAY LAND PLUG UP TO 960 PSI
28	CHECK FLOATS	9/15/2022	13:17					CHECK FLOATS, FLOATS HELD WITH 1 BBLS BACK
29	PARASITE	9/15/2022	13:22	8.34	2	10	307	PUMP 10 BBLS SUGAR WATER DOWN PARASITE LINE, BROKE OVER AT 7 BBLS AWAY
30	DROP DV PLUG	9/15/2022	13:30					DROP DV PLUG AND WAIT 10 MINS
31	OPEN DV	9/15/2022	13:41	8.34	2	10	535	OPEN DV TOOL AND CIRCULATE WELL GAINED RETURNS AT 10 BBLS AWAY
32	Begin Stage 2	9/15/2022	13:44					BEGIN PUMPING STAGE 2
33	SPACER	9/15/2022	13:45	8.34	4	20	159	BEGIN PUMPING STAGE 2 SPACER 20 BBLS FRESH
34	CEMENT	9/15/2022	13:49	12	4	10	213	157 BBLS Primary CMT – 12 # 2.55 Y 14.9 MW 346 sks 10 BBLS AWAY
35	CEMENT	9/15/2022	14:03	12	4	40	172	50 BBLS AWAY

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
36	CEMENT	9/15/2022	14:15	12	4	50	172	100 BBLS AWAY Lost RETURNS AT 105 BBLS AWAY
37	CEMENT	9/15/2022	14:33	12	3.7	57	84	157 BBLS AWAY
38	WASHUP	9/15/2022	14:34					WASHUP PUMP MIX SYSTEM
39	DISPLACEMENT	9/15/2022	14:39	8.34	4	10	103	SEND PLUG AND BEGIN DISPLACEMENT, 10 BBLS AWAY
40	DISPLACEMENT	9/15/2022	14:47	8.34	4	20	93	30 BBLS AWAY
41	LAND PLUG	9/15/2022	14:54	8.34	4	38.9	100	68.9 BBLS AWAY LAND PLUG UP TO 1646 PSI
42	CHECK FLOATS	9/15/2022	14:56					CHECK FLOATS, FLOATS HELD WITH 0.5 BBLS BACK
43	STANDBY	9/15/2022	15:00					CREW ON STANDBY FOR TOP OUT JOB WHILE RIG NIPPLES UP
44	TOPOUT CEMENT	9/15/2022	17:07	15.8	3.3	40	295	TOPOUT CEMENT JOB, 40 BBLS PUMPED TO GET CEMENT TO SURFACE, 0.5 BBLS TO SURFACE
45	TOPOUT CEMENT	9/15/2022	18:30	15.8	3	40	120	TOPOUT CEMENT JOB, 40 BBLS, NO RETURNS. STANDBY FOR NEXT TOPOUT
46	TOPOUT CEMENT	9/15/2022	22:20	15.8	3	50	115	TOPOUT CEMENT JOB, 50 BBLS, NO RETURNS. STANDBY FOR NEXT TOPOUT
47	TOPOUT CEMENT	9/15/2022	03:00	15.8	3	40	120	TOPOUT CEMENT JOB, 40 BBLS, NO RETURNS
48	TOPOUT CEMENT	9/15/2022	08:13	15.8	3	13.5	100	TOPOUT CEMENT JOB, 13.5 BBLS TO GET CEMENT TO SURFACE, AND 183 BBLS TOTAL TOPOUT CEMENT PUMPED WITH 1.5 BBLS TOTAL TO SURFACE
49	WASHUP	9/15/2022	08:30					WASHUP PUMP, LINES AND CELLAR
50	SAFETY MEETING	9/15/2022	09:20					RIG DOWN MEETING
51	RIG DOWN	9/15/2022	09:30					RIG DOWN ALL EQUIPMENT, LOAD TOPOUT SILO
52	DEPART LOCATION	9/15/2022	11:00					CREW DEPARTS LOCATION

Pump Diagrams



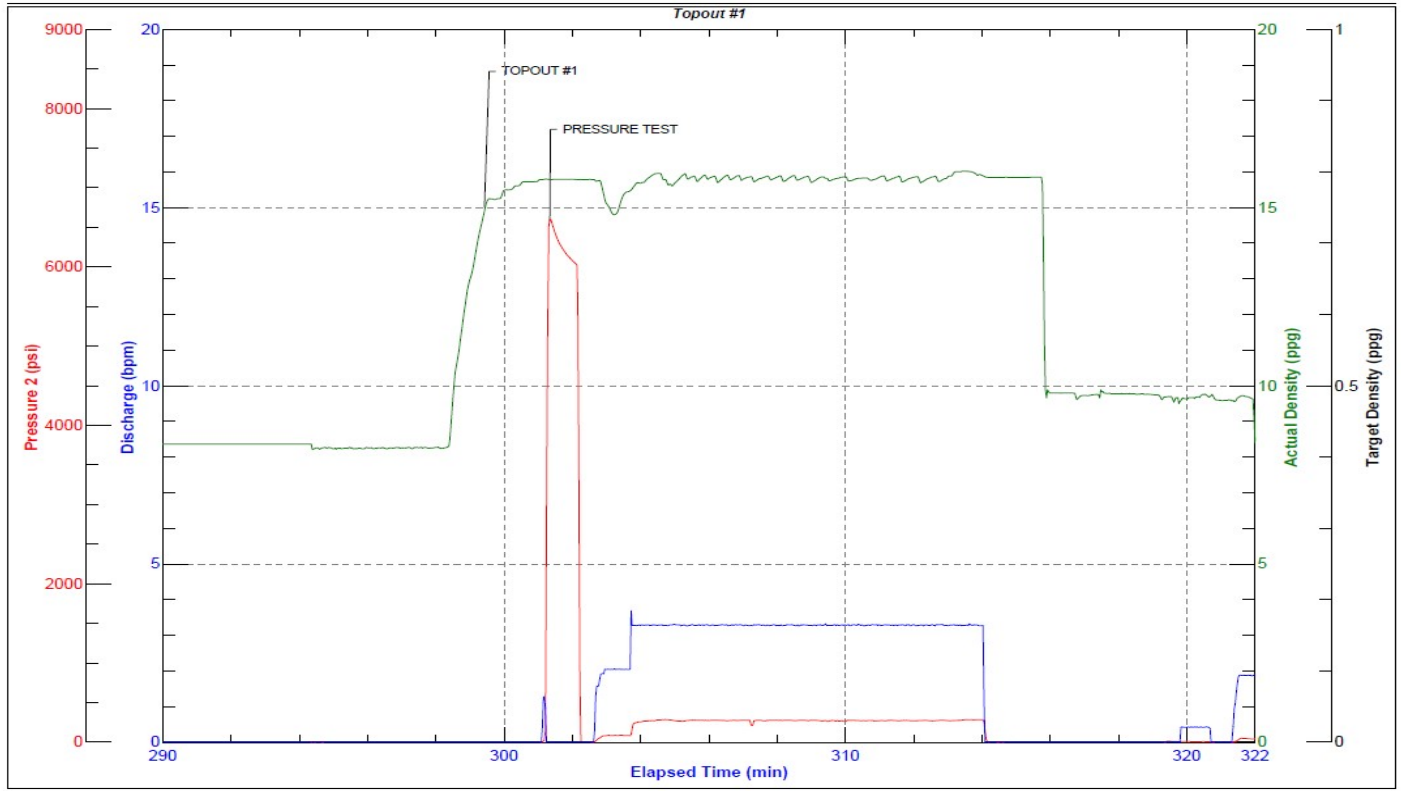
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Customer: Cearus
Well Name: Federal 21C-27-496



Job Start: Thursday, September 15, 2022



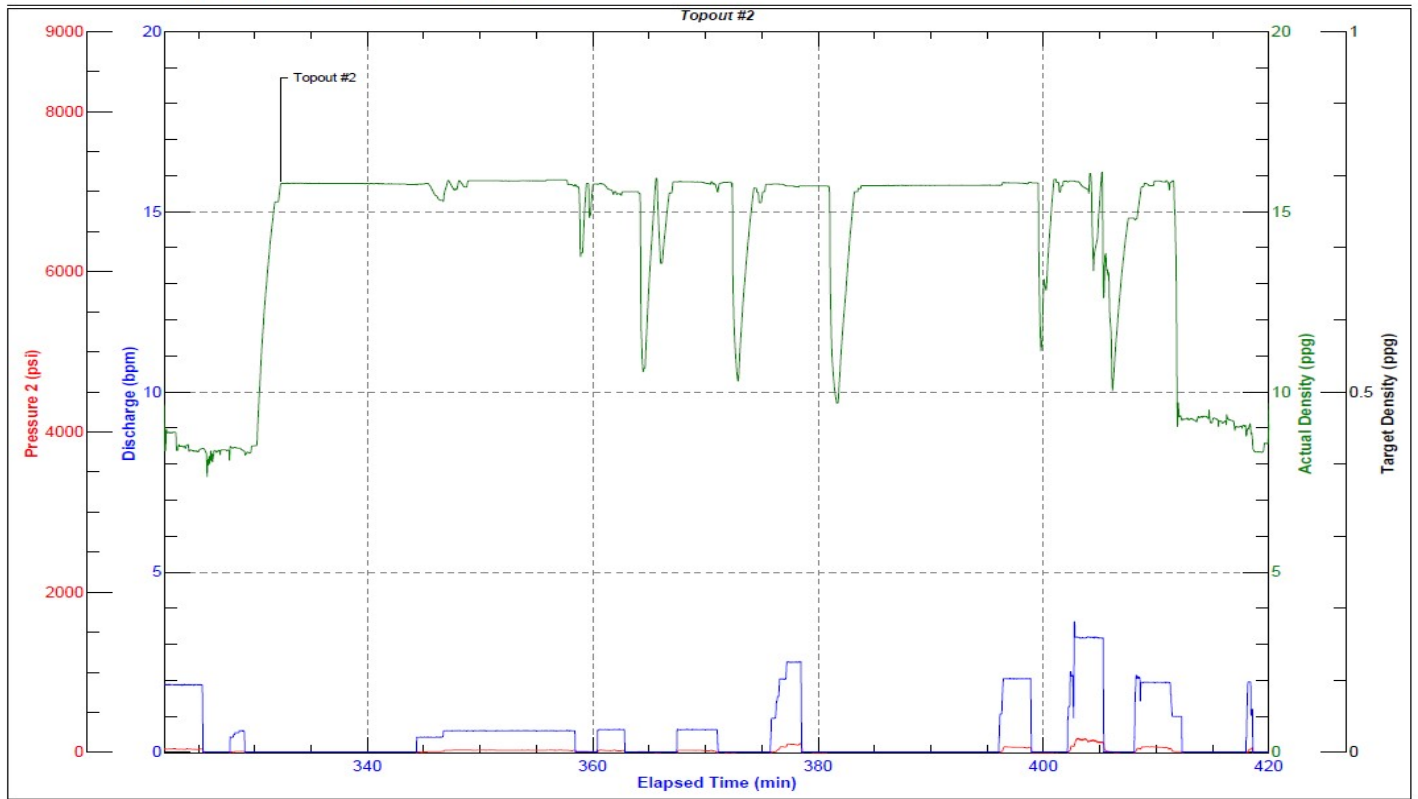
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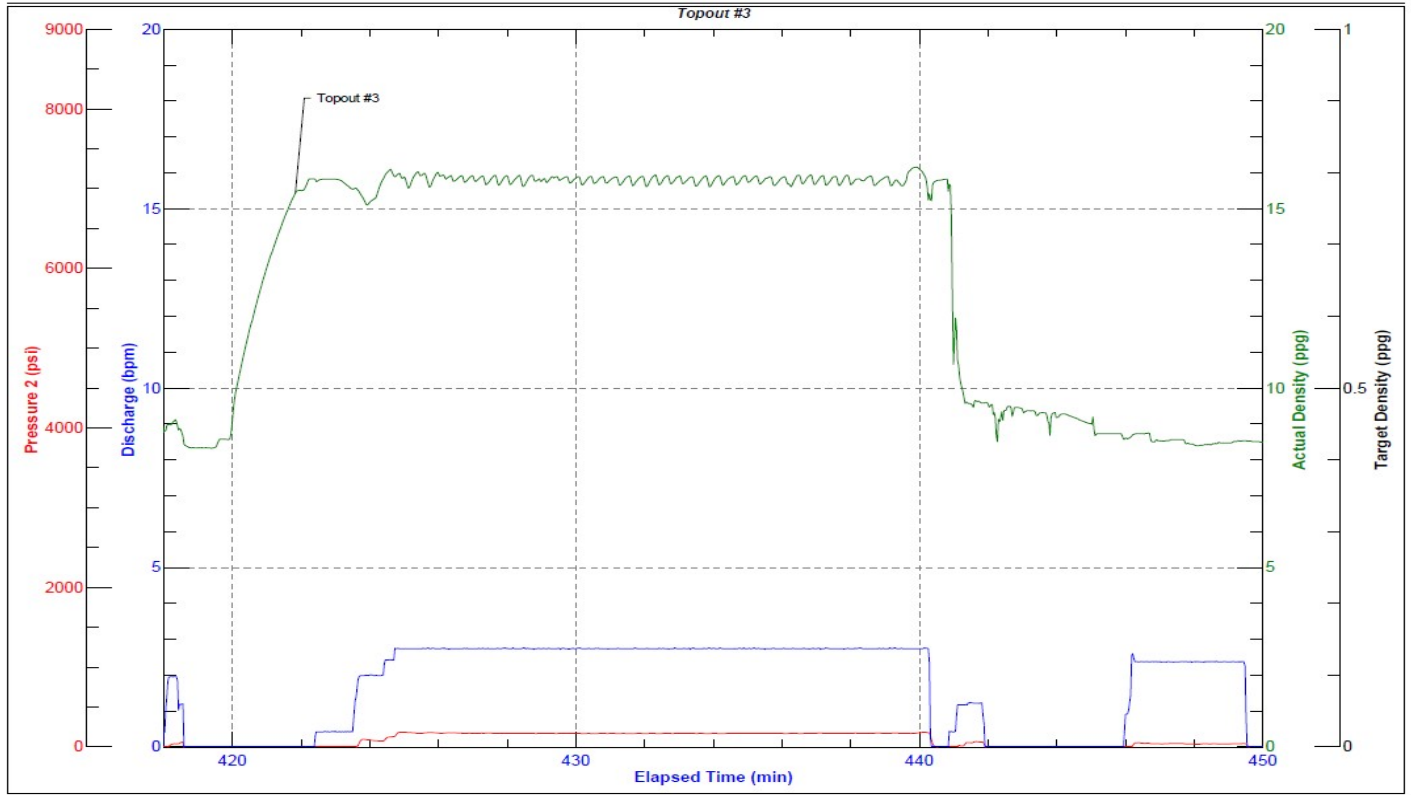
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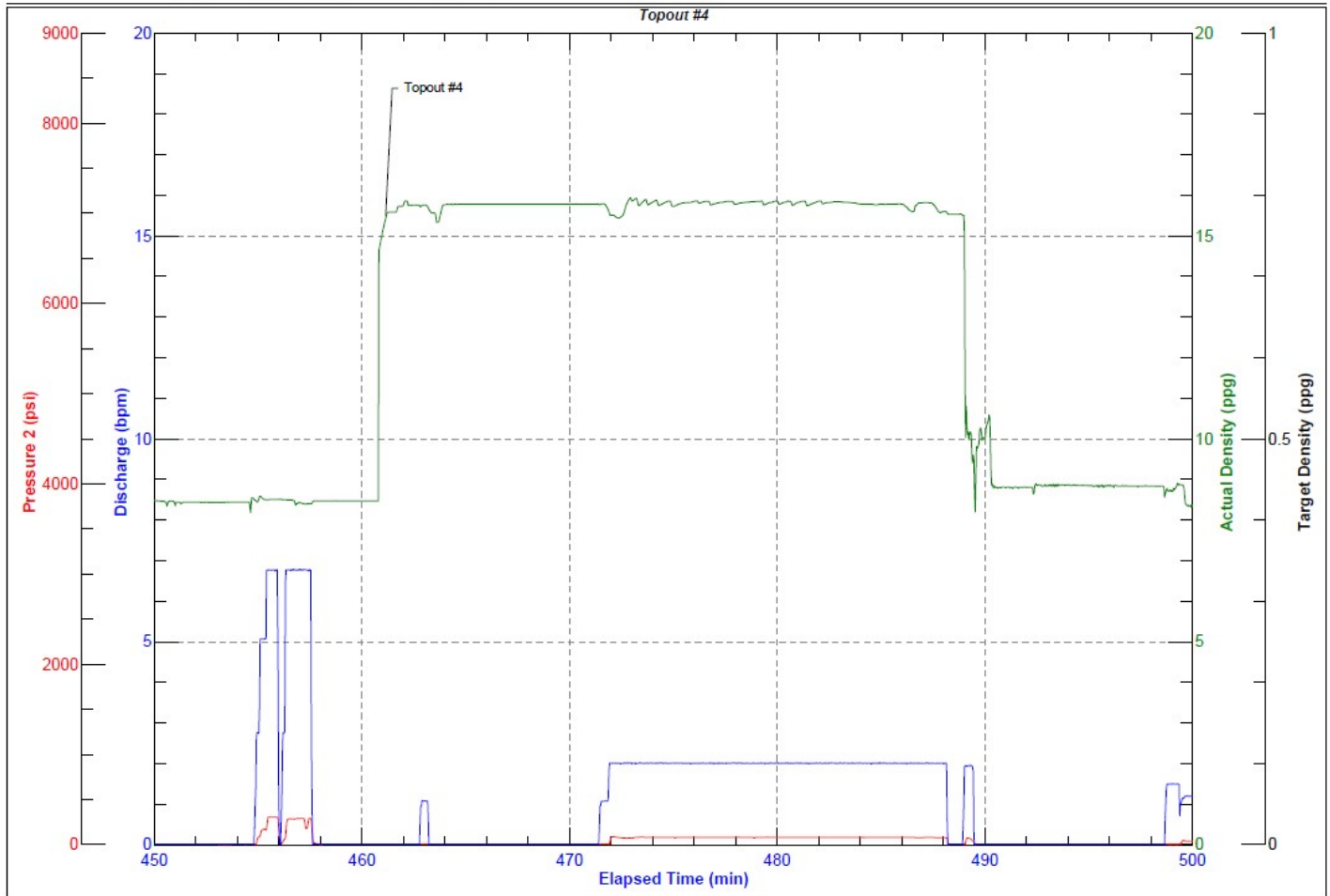


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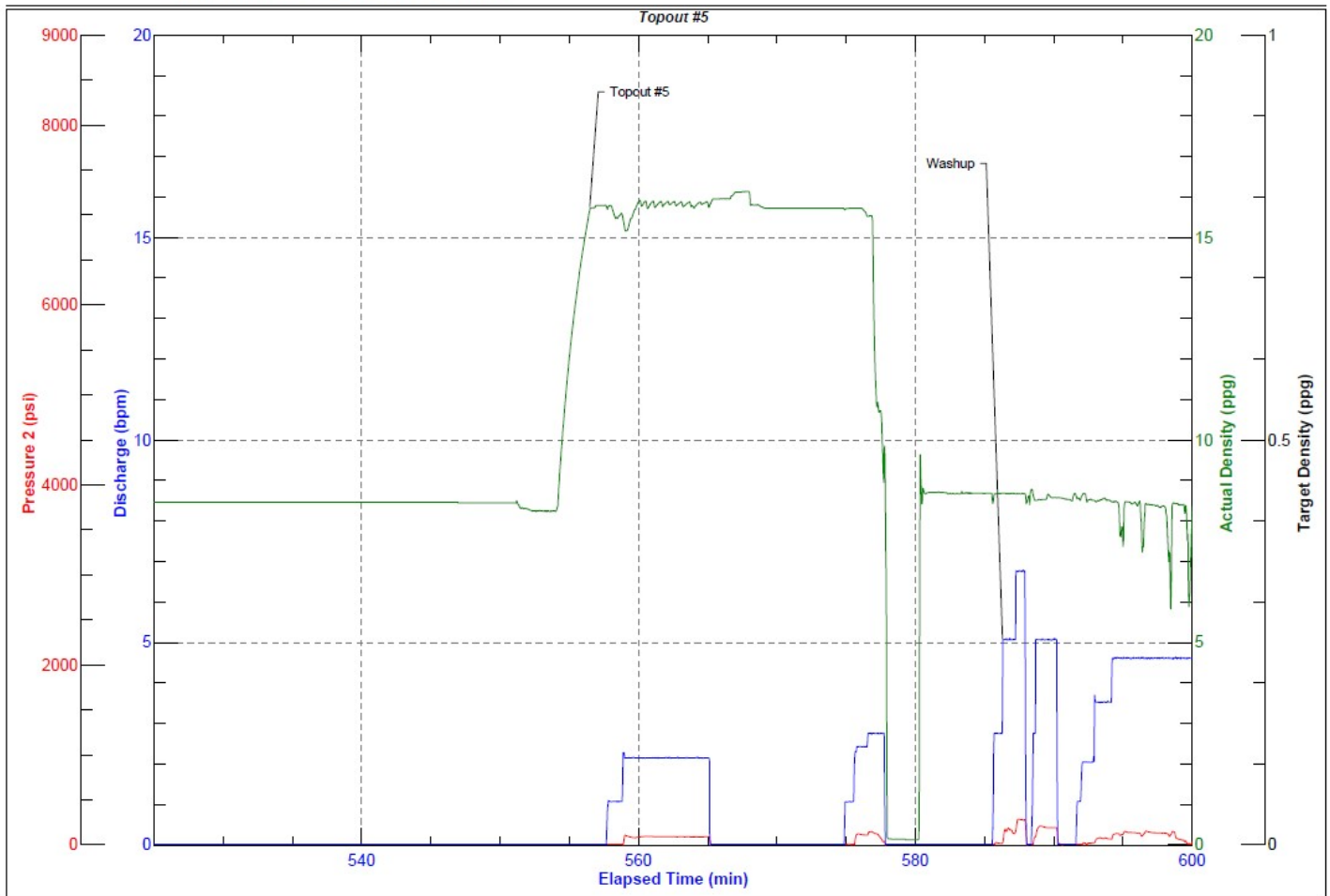
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