



# **Caerus Operating LLC**

## **TWO-STAGE/MULTI-STAGE CEMENT POST JOB**

### **REPORT**

**BJU M33 FED #14A-33-496 05-045-18720**  
**S:33 T:4S R:96W Garfield CO**

CallSheet #: 88594  
Proposal #: 71477



**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

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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) 657-1187

## 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	3040.1	0
Casing	Inner	9.625	8.921	36	n/a	0	2995.5	0

### Equipment / People

Unit Type	Unit	Power Unit	Employee #1
Cement Trailer Float	CTF-340		Steven Richey
Field Storage Silo	FSS-468		
Field Storage Silo	FSS-478		
Light Duty Vehicles	LDV-022		Gerron McClure
Cement Pump Float	CPF-053	TRH-855	Eric Brown

### Timing

Event	Date/Time
ERTS	10/05/2023 20:30
Call Out	10/5/2023 12:00
Depart Facility	10/5/2023 18:00
On Location	10/5/2023 19:00
Rig Up Iron	10/5/2023 20:15
Job Started	10/5/2023 21:10
Job Completed	10/6/2023 17:15
Rig Down Iron	10/6/2023 18:30
Depart Location	10/6/2023 18:30

### General Job Information

Metrics	Value
Well Fluid Density	9.4 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	339 bbls
Rig Circulation Time	1 hours
Calculated Displacement	228/69 bbls
Actual Displacement	228/69 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	NONE bbls
Well Topped Out	Yes
Top Out Volume	382 bbls

### Job Details

Metrics	Value
Flare Prior to Job	No
Flare Prior to Job	N/A units
Flare During Job	No
Flare During Job	N/A units
Flare at End of Job	No
Flare at End of Job	N/A units
Well Full Prior to Job	Yes
Well Fluid Density Into Well	9.4 lb/gal
Well Fluid Density Out of Well	9.4 lb/gal

### Job Details (cont.)

Metrics	Value
BHCT	94 °F
BHST	124 °F
Initial ISIP	psi
Final ISIP	psi
Sks in Formation	sks
Injection #1	bpm
Injection #1	psi
Injection #2	bpm
Injection #2	psi

### Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	65 °F	50-80 °F
pH Level	6	5.5-8.5
Chlorides	100 mg/L	0-3000 mg/L
Total Alkalinity	100	0-1000
Total Hardness	10 mg/L	0-500 mg/L
Carbonates	10 mg/L	0-100 mg/L
Sulfates	100 mg/L	0-1500 mg/L
Potassium	100 mg/L	0-3000 mg/L
Iron	10 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

RETURNS WERE NEVER ESTABLISHED THROUGHOUT ENTIRE CEMENT JOB

### Job Execution Information

Fluid	Product	Function	Density (lb/gal)	Yield (ft <sup>3</sup> /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	2.47	14.41		536.00	235.49	950
3	Stage 1 Tail	Tail	13.00	1.94	10.50		185.00	64.04	2500
4	Water	DisplacementFinal	8.34			42.00		228.10	0
1	Water	Flush	8.34			42.00		10.00	0
2	Stage 2 Primary	Primary	12.00	2.50	14.62		352.00	157.00	0
3	Water	DisplacementFinal	8.34			42.00		68.90	0

### Job Fluid Details

Fluid	Type	Fluid	Product	Function	Conc.	Uom
2	Lead	Stage 1 Lead	ASTM TYPE IL	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	0.10	%BWOB
2	Lead	Stage 1 Lead	STATIC FREE	Other	0.01	%BWOB
3	Tail	Stage 1 Tail	ASTM TYPE IL	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
2	Primary	Stage 2 Primary	ASTM TYPE IL	Cement	100.00	%
2	Primary	Stage 2 Primary	A-10	Accelerator	5.00	%BWOB
2	Primary	Stage 2 Primary	A-2	Accelerator	3.50	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

## 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	ARRIVED ON LOCATION	10/5/2023	19:00					ARRIVED ON LOCATION PER CUSTOMER REQUEST 20:30
2	HAZARD ASSESMENT	10/5/2023	19:05					
3	SPOT EQUIPMENT	10/5/2023	19:10					
4	PRE RIG UP SAFETY MEETING	10/5/2023	19:15					
5	RIGGED UP	10/5/2023	20:15					
6	STAB HEAD	10/5/2023	20:30					
7	PRE JOB SAFETY MEETING	10/5/2023	21:00					
8	START JOB	10/5/2023	21:10					START JOB
9	PRESSURE TEST	10/5/2023	21:14	8.34	1	1	3000	PRESSURE TEST
10	20 BBL FRESH WATER SPACER	10/5/2023	21:17	8.34	5	20		20 BBL FRESH WATER SPACER
11	START LEAD @ 12.00	10/5/2023	21:21	12	5	1		START LEAD CEMENT @ 12.00 (2.47,14.41) 536 SACKS OR 236 BBLs
12	50 BBL GONE ON LEAD	10/5/2023	21:31	12	6	50		
13	100 BBL GONE ON LEAD	10/5/2023	21:41	12	6	100		
14	150 BBL GONE ON LEAD	10/5/2023	21:51	12	6	150		
15	200 BBL GONE ON LEAD	10/5/2023	21:58	12	6	200		
16	END OF LEAD CEMENT	10/5/2023	22:05	12	4	236		END OF LEAD CEMENT
17	START 64 BBL TAIL CEMENT	10/5/2023	22:05	13	5	1	355	START TAIL CEMENT @ 13.0 (1.94,10.50) 185 SACKS OR 64 BBLs
18	END OF TAIL CEMENT	10/5/2023	22:17	13	5	64	193	END OF TAIL CEMENT
19	SHUTDOWN/ DROP PLUG	10/5/2023	22:18	8.34				SHUTDOWN/ DROP PLUG
20	START 228.1 BBL FW DISPLACEMENT	10/5/2023	22:22	8.34	3	1	90	START 228.1 BBL FRESH WATER DISPLACEMENT
21	50 BBL GONE ON DISPLACEMENT	10/5/2023	22:29	8.34	8	50	308	
22	SLOW RATE THRU TOOL	10/5/2023	22:30	8.34	4	60	373	SLOW RATE THRU TOOL
23	100 BBL GONE ON DISPLACEMENT	10/5/2023	22:37	8.34	8	100	373	
24	150 BBL GONE ON DISPLACEMENT	10/5/2023	22:43	8.34	8	150	434	CAUGHT CEMENT @ 150 BBL GONE
25	200 BBL GONE ON DISPLACEMENT	10/5/2023	22:52	8.34	8	200	608	
26	PRESSURE BEFORE SLOW RATE	10/5/2023	22:53	8.34	8	218	648	PRESSURE BEFORE SLOWING RATE
27	SLOW RATE PRESSURE	10/5/2023	22:53	8.34	4	218	330	SLOW RATE PRESSURE @ 4 BPM
28	PRESSURE BEFORE LAND PLUG	10/5/2023	22:56	8.34	4	228	370	FINAL LIFT PRESSURE BEFORE LANDING PLUG
29	LAND PLUG	10/5/2023	22:56	8.34	4	228	924	LAND PLUG - 924PSI
30	CHECK FLOAT	10/5/2023	23:01	8.34				RETURNED 0.75 BBL UPON FLOAT CHECK
31	10 BBL SUGAR WATER	10/5/2023	23:03	8.45	2	10	351	10 BBL SUGAR WATER TO CLEAN PARASITE LINE TOOK 7 BBL TOTAL (2/351)
32	DROP BOMB	10/5/2023	23:09					DROP OPENING BOMB

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
33	FREE FALL 15 MINUTES	10/5/2023	23:09					FREE FALL 10 MINUTES
34	OPEN DV TOOL	10/5/2023	23:18	8.34	1	1	437	OPENED DV TOOL - 437PSI
35	CIRCULATE	10/5/2023	23:19					CIRCULATE
36	2ND STAGE	12/30/1899	00:00					2ND STAGE
37	10 BBL FRESH WATER SPACER	10/5/2023	23:20	8.34	5	10	190	10 BBL FRESH WATER SPACER
38	START PRIMARY CEMENT @ 12	10/5/2023	23:21	12	5	1	271	START PRIMARY CEMENT @ 12 (2.50,14.62) 352 SACKS OR 157 BBLs
39	50 BBL GONE ON PRIMARY	10/5/2023	23:30	12	5	50	254	
40	100 BBL GONE ON PRIMARY	10/5/2023	23:40	12	5	100	254	
41	END OF PRIMARY	10/5/2023	23:50	12	5	157	90	END OF PRIMARY CEMENT
42	SHUTDOWN/ DROP CLOSING PLUG	10/5/2023	23:51					SHUTDOWN/ DROP PLUG
43	START 68.9 BBL FW DISPLACEMENT	10/5/2023	23:58	8.34	5	1	127	START 68.9BBL FRESH WATER DISPLACEMENT
44	PRESSURE BEFORE SLOW RATE	10/6/2023	00:09	8.34	5	58	157	PRESSURE BEFORE SLOWING RATE
45	SLOW RATE PRESSURE	10/6/2023	00:09	8.34	5	58	127	SLOW RATE PRESSURE @ 4BPM
46	PRESSURE BEFORE LAND	10/6/2023	00:12	8.34	4	68	132	FINAL LIFT PRESSURE BEFORE LANDING PLUG - 132
47	LAND PLUG	10/6/2023	00:12	8.34	4	68	1801	LAND PLUG- 1801
48	CHECK DV TOOL CLOSED	10/6/2023	00:15					CHECKED TOOL CLOSED RETURNED 1 BBL
49	END OF 2ND STAGE	10/6/2023	00:20					END OF 2ND STAGE
50	TOP OUT	10/6/2023	00:00					TOP OUT
53	END OF TOP OUT	10/6/2023	02:27	15.6	2	50	220	END OF 1ST TOP OUT. 50 BBLs OR 236 SACKS
54	2ND TOP OUT	10/6/2023	04:37	15.6	2	1	180	2ND TOP OUT 50 BBLs OR 236 SACKS.
55	END OF 2ND TOP OUT	10/6/2023	04:54	15.6	3	50	180	END OF 2ND TOP OUT
56	3RD TOP OUT	10/6/2023	07:18	15.6	3	1	350	3RD TOP OUT 109 BBLs OR 514 SACKS
57	END OF 3RD TOP OUT	10/6/2023	07:53	15.6	3	109	350	END OF 3RD TOP OUT
58	4TH TOP OUT	10/6/2023	11:08	15.6	3	1	350	4TH TOP OUT 86.5BBLs OR 408 SACKS
59	END OF 4TH TOP OUT	10/6/2023	11:37	15.6	3	86.5	477	END OF FOURTH TOP OUT
60	5TH TOP OUT	10/6/2023	13:01	15.6	2	1	145	5TH TOP OUT 70 BBLs OR 330 SACKS
61	END OF 5TH TOP OUT	10/6/2023	14:51	15.6	2	70	150	END OF 5TH TOP OUT
62	6TH TOP OUT	10/6/2023	00:00	15.6	2	1	140	6TH TOP OUT 16.5BBLs OR 78 SACKS
63	END OF 6TH TOP OUT	10/6/2023	00:00	15.6	2	16.5	120	END OF 6TH TOP OUT
64	END OF JOB	10/6/2023	17:15					END OF CEMENTING SERVICES
65	POST JOB SAFETY MEETING	10/6/2023	17:15					
66	RIGGED DOWN	10/6/2023	18:15					
67	PRE CONVOY SAFETY MEETING	10/6/2023	18:30					
68	LOCATION DEPARTURE	10/6/2023	18:30					
69	END OF JOB	10/6/2023	18:30					END OF JOB