



Caerus Operating LLC

TWO-STAGE/MULTI-STAGE CEMENT POST JOB REPORT

ELU J14 FED 21B-14-496 05-103-12383
S:14 T:4S R:96W Rio Blanco CO

CallSheet #: 76024
Proposal #: 51540



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,

Zen Keith

Field Engineer | (307) 757-7178 | zen.keith@americancementing.com

Field Office 28730 US-6, Rifle, CO 81650
Phone: (970) 657-1187



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1 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		0	100	0
Open Hole	Outer		14.75			100	2500	25
Open Hole	Outer		14.75			2500	3010	0
Casing	Inner	9.625	8.921	36		0	2959.75	0

Equipment / People

Unit Type	Unit	Power Unit	Employee #1	Mileage
Field Storage Silo	CTS-469			
Field Storage Silo	CTS-468			
Bulk Trailer	CTF-246	TRB-112	Richey, Steven	70
Bulk Trailer	CTF-407	TRB-424	Toole, Brittain	70
Cement Pump	CPF-012	TRH-1140	Mcneal, Lawrence	70
Light Duty Pickups	LDV-5429		Castillo, Francisco	70

Timing

Event	Date/Time
Call Out	2/11/2021 01:00
Depart Facility	2/11/2021 02:45
On Location	2/11/2021 04:00
Rig Up Iron	2/11/2021 04:30
Job Started	2/11/2021 13:48
Job Completed	2/12/2021 04:20
Rig Down Iron	2/12/2021 04:30
Depart Location	2/12/2021 06:00

General Job Information

Metrics	Value
Well Fluid Density	9.2 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	300 bbls
Rig Circulation Time	0.5 hours
Calculated Displacement	226 bbls
Actual Displacement	226 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	0 bbls
Well Topped Out	Yes
Top Out Volume	194 bbls

Well Fluid Details

Metrics	Value
Plastic Viscosity	13
Yield Point	11
10 sec. SGS	5
10 min. SGS	19
30 min. SGS	24
Filtrate	14.8
Flow Line Temp.	0

Job Details

Metrics	Value
Flare Prior to Job	No
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	No
Well Fluid Density Into Well	9.2 lb/gal
Well Fluid Density Out of Well	0 lb/gal

Job Details (cont.)

Metrics	Value
BHCT	97 °F
BHST	130 °F

Circulation

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

Circulation Details:

NO RETURNS THROUGH OUT 1ST STAGE.

Job Execution Information

Stage	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	8.34			42.00		40.00	1136
1	2	Stage-1 Lead	Lead	12.00	2.50	14.71		375.00	167.16	1400
1	3	Stage-1 Tail	Tail	12.50	2.23	12.56		161.00	63.94	2500
1	4	Water	DisplacementFinal	8.34			42.00		226.00	0
2	1	Water	Flush	8.34			42.00		40.00	0
2	2	Stage-2 Beaded Cement	Primary	10.00	3.56	15.52		356.00	226.00	0
2	3	Water	DisplacementFinal	8.34			42.00		94.00	0

Job Fluid Details

Stage	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Lead	Stage-1 Lead	ASTM TYPE III	Cement	100.00	%
1	2	Lead	Stage-1 Lead	A-10	Accelerator	5.00	%BWOB
1	2	Lead	Stage-1 Lead	A-2	Accelerator	2.00	lb/sk
1	2	Lead	Stage-1 Lead	FP-24	Defoamer	0.30	%BWOB
1	2	Lead	Stage-1 Lead	IntegraSeal PHENO	LostCirculation	0.50	lb/sk
1	2	Lead	Stage-1 Lead	IntegraSeal POLI	LostCirculation	0.25	lb/sk
1	2	Lead	Stage-1 Lead	R-7C	Retarder	0.30	%BWOB
1	3	Tail	Stage-1 Tail	ASTM TYPE III	Cement	100.00	%
1	3	Tail	Stage-1 Tail	A-10	Accelerator	5.00	%BWOB
1	3	Tail	Stage-1 Tail	A-2	Accelerator	2.00	lb/sk
1	3	Tail	Stage-1 Tail	A-7P	Accelerator	2.00	lb/sk
1	3	Tail	Stage-1 Tail	FP-24	Defoamer	0.30	%BWOB
1	3	Tail	Stage-1 Tail	IntegraSeal PHENO	LostCirculation	0.50	lb/sk
1	3	Tail	Stage-1 Tail	IntegraSeal POLI	LostCirculation	0.25	lb/sk
1	2	Primary	Stage-2 Beaded Cement	ASTM TYPE III	Cement	100.00	%
1	2	Primary	Stage-2 Beaded Cement	A-10	Accelerator	5.00	%BWOB
1	2	Primary	Stage-2 Beaded Cement	A-12	Thixotropic	0.40	%BWOB
1	2	Primary	Stage-2 Beaded Cement	A-2	Accelerator	1.00	lb/sk
1	2	Primary	Stage-2 Beaded Cement	BA-90	BondEnhancer	5.00	lb/sk
1	2	Primary	Stage-2 Beaded Cement	FP-24	Defoamer	0.30	%BWOB
1	2	Primary	Stage-2 Beaded Cement	IntegraSeal POLI	LostCirculation	0.13	lb/sk
1	2	Primary	Stage-2 Beaded Cement	LW-5E	Lightweight	33.00	%BWOB

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	2/11/2021	01:00					ON LOC 05:00, CREW TEMPS, JAVI-98.3, LONNY-98.1, STEVE-98.5, BRITAIN-98.1
2	LEAVE YARD	2/11/2021	02:45					CREW LEAVE THE YARD
3	ON LOCATION	2/11/2021	04:00					ON LOCATION, RIG RUNNING CASING
4	RIG UP	2/11/2021	04:30					RIG UP MEETING, RIG UP
5	SAFETY MEETING	2/11/2021	13:20					PRE-JOB SAFETY MEETING
6	PRESSURE TEST	2/11/2021	13:46				3700	PRESSURE TEST LINES
7	PUMP SPACER	2/11/2021	13:48	8.34	6.8	40	297	WATER SPACER
8	LEAD CEMENT	2/11/2021	13:58	12	6.8	50	435	LEAD 375SKS AT 12PPG, 2.5YLD, 14.7GPS, CALC TOP OF LEAD 1081'
9	LEAD CEMENT	2/11/2021	14:07	12	6	50	443	100 BBLS LEAD CEMENT PUMPED
10	LEAD CEMENT	2/11/2021	14:15	12	5	67	305	167 BBLS LEAD CEMENT PUMPED
11	TAIL CEMENT	2/11/2021	14:29	12.5	5	64	395	TAIL 161SKS, AT 12.5PPG, 2.23YLD, 12.56GPS, CALC TOP OF TAIL 2457'
12	SHUTDOWN	2/11/2021	14:44					SHUTDOWN, DROP PLUG
13	DISPLACEMENT	2/11/2021	14:47	8.34	7	50	307	DISPLACEMENT WATER
14	DISPLACEMENT	2/11/2021	14:55	8.34	7	50	283	100 BBLS DISPLACEMENT PUMPED
15	DISPLACEMENT	2/11/2021	15:04	8.34	5	50	175	150 BBLS DISPLACEMENT PUMPED
16	DISPLACEMENT	2/11/2021	15:15	8.34	5.5	66	357	216 BBLS DISPLACEMENT PUMPED
17	DISPLACEMENT	2/11/2021	15:25	8.34	3.5	10	263	SLOW RATE
18	LAND PLUG	2/11/2021	15:27				1031	LAND PLUG, NO RETURNS
19	CHECK FLOATS	2/11/2021	15:30					FLOATS HELD, 1 BBL FLOW BACK
20	OPENING DEVICE	2/11/2021	15:35					DROP DV TOOL OPENING DEVICE
21	OPEN DV TOOL	2/11/2021	15:42	8.34	2.7	20	630	OPEN DV TOOL AT 630 PSI, DV TOOL AT 1247'
22	CIRCULATE	2/11/2021	16:04					RIG CIRCULATE WELL
53	SAFETY MEETING	2/11/2021	17:45					STG-2 PRE-JOB SAFETY MEETING
54	PUMP SPACER	2/11/2021	17:56	8.34	5.5	40	193	WATER SPACER
55	PUMP CEMENT	2/11/2021	18:06	10	5	50	173	356SKS/226BBLS AT 10PPG, 3.56YLD, 15.52 GPS
56	PUMP CEMENT	2/11/2021	18:22	10	5	50	289	100 BBLS CEMENT PUMPED
57	PUMP CEMENT	2/11/2021	18:31	10	4	50	187	150 BBLS CEMENT PUMPED, GOT MUD RETURNS AT 150 BBLS CEMENT
58	PUMP CEMENT	2/11/2021	18:42	10	4	76	189	226 BBLS CEMENT PUMPED
59	SHUTDOWN	2/11/2021	19:03					SHUTDOWN, DROP CLOSING PLUG
60	DISPLACEMENT	2/11/2021	19:05	8.34	5.5	84	279	DISPLACEMENT WATER
61	DISPLACEMENT	2/11/2021	19:20	8.34	4	10	210	SLOW RATE
62	LAND PLUG	2/11/2021	19:23				1910	LAND CLOSING PLUG
63	CHECK FLOATS	2/11/2021	19:28					DV TOOL CLOSED, 1 BBLS BLOW BACK
64	TOPOUT	2/11/2021	23:34	12.5	2	158	110	400SKS/158 BBLS AT 12.5PPG, 2.23YLD, 12.56GPS
65	SHUTDOWN	2/12/2021	01:00					SHUTDOWN
66	TOPOUT	2/12/2021	01:58	15.8	2	36	207	175SK/36BBLS G NEAT AT 15.8PPG, 1.16YLD, 5.0GPS
67	SHUTDOWN	2/12/2021	03:20					SHUTDOWN, WASH LINES AND PICKLE
68	OTHER	2/12/2021	04:20					RELEASED
69	RIG DOWN	2/12/2021	04:30					RIG DOWN MEETING RIG DOWN
70	LEAVE LOCATION	2/12/2021	06:00					CREW LEAVE LOCATION

3 Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	62 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	240	0-1000
Total Hardness	250 mg/L	0-500 mg/L
Carbonates	0 mg/L	0-100 mg/L
Sulfates	200 mg/L	0-1500 mg/L
Potassium	250 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

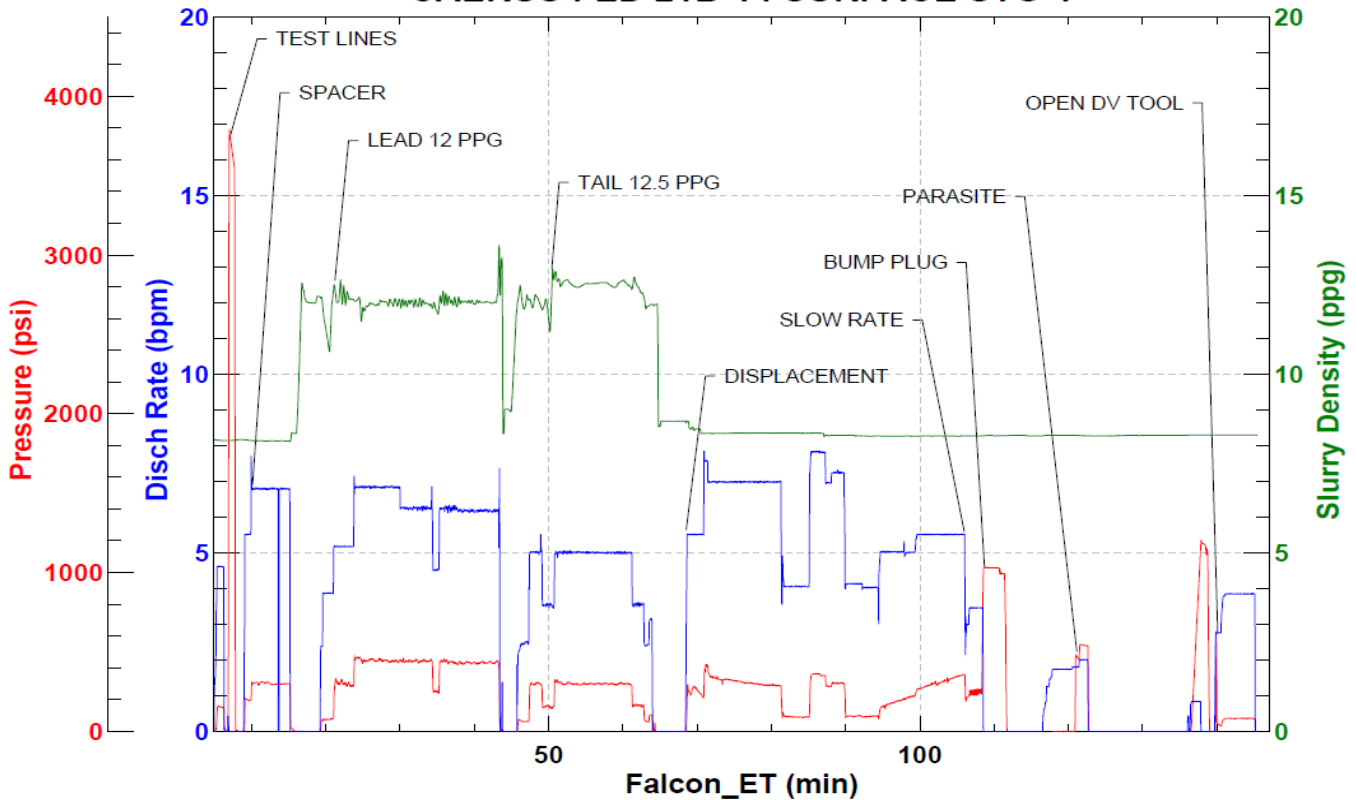
4 Pump Diagrams

Stage-1



JobMaster Program Version 5.01C1
Job Number: 76024
Customer: CAERUS
Well Name: FED 21B-14

CAERUS FED 21B-14 SURFACE STG-1

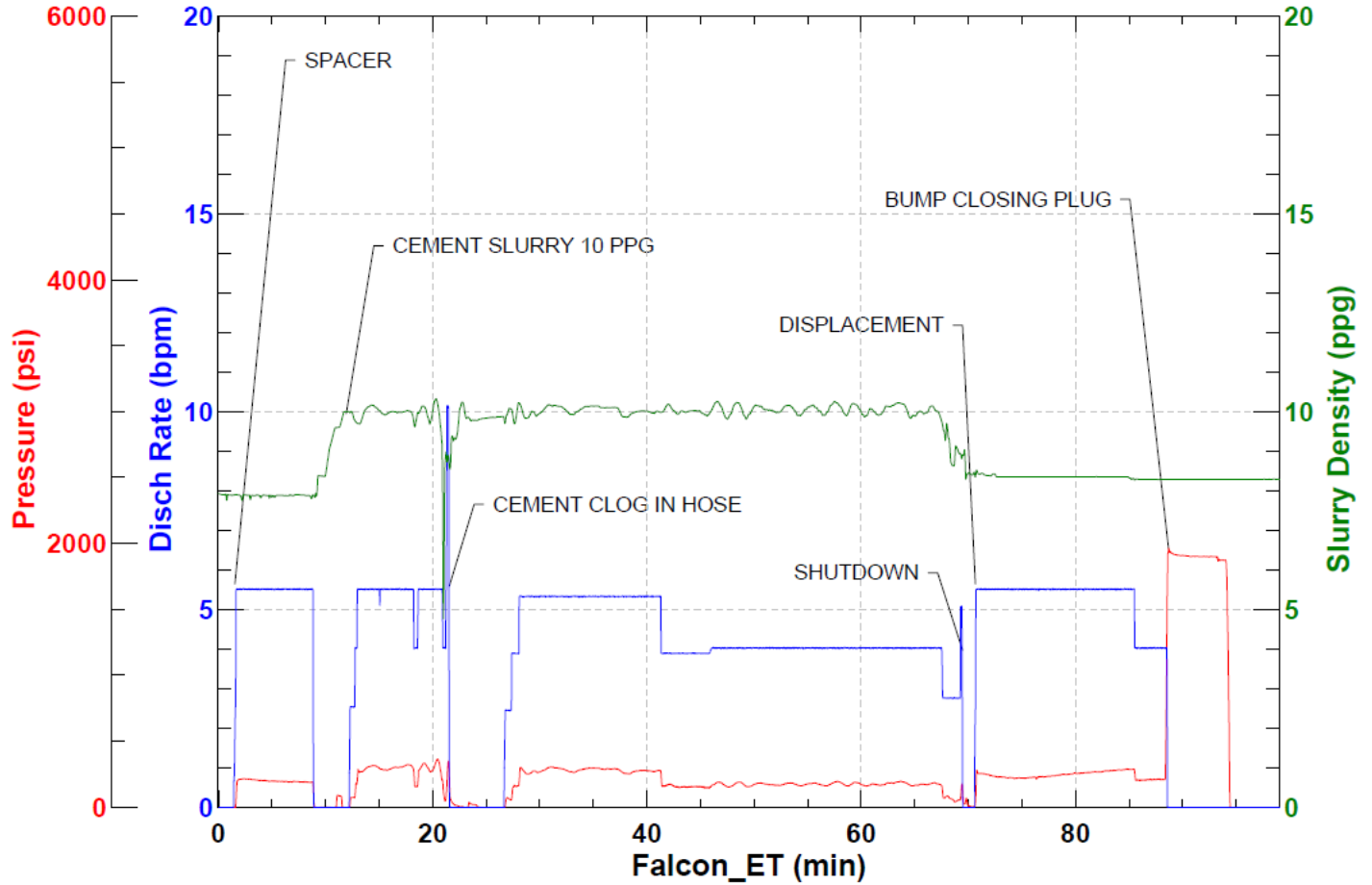


Stage-2



JobMaster Program Version 5.01C1
Job Number: 76024
Customer: CAERUS
Well Name: FED 21B-14

CAERUS FED 21B-14 SURFACE STG-2



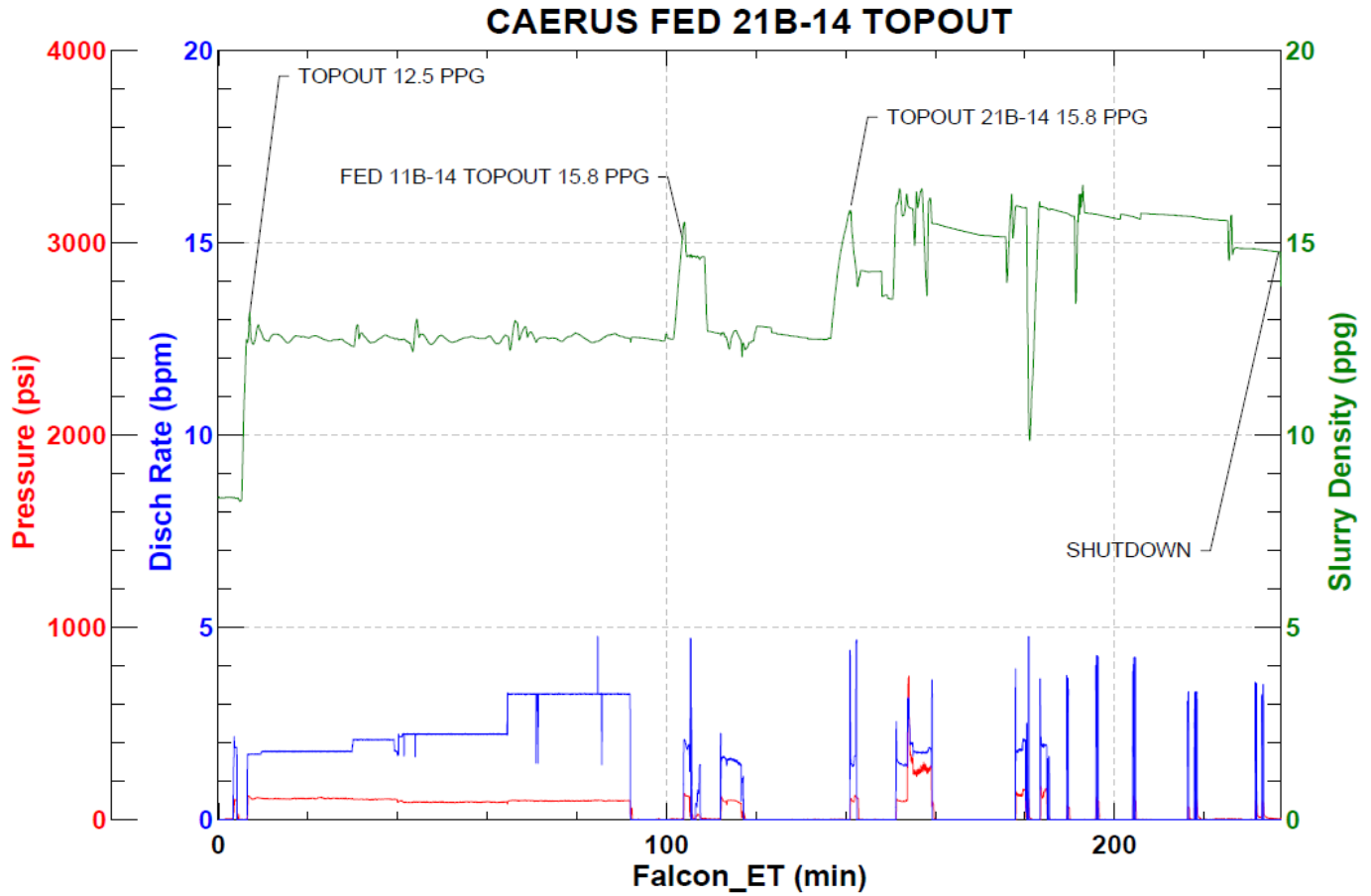
BJ Services

Job Start: Thursday, February 11, 2021

Top Out



JobMaster Program Version 5.01C1
Job Number: 76024
Customer: CAERUS
Well Name: FED 21B-14



BJ Services

Job Start: Thursday, February 11, 2021