



# Caerus

**Well Name: NPR 22B-3**

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**API #: 05-045-24003**

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**Job Type: Surface**

Date Job Completed: 02/09/2019

**Quote #:** QUO-26839

**Execution #:** EXC-15585



# Caerus

Attention: Mr. Steve Schmitz | (720) 880-6412 | [sschmitz@caerusoilandgas.com](mailto:sschmitz@caerusoilandgas.com)

Caerus | 1001 17th Street, Suite 1600 | Denver, CO 80202

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Dear Mr. Schmitz,

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

Sincerely,

Zen Keith  
Field Engineer III | (307) 757-7178 | [Zen.Keith@BJServices.com](mailto:Zen.Keith@BJServices.com)

Field Office 28730 US-6, Rifle, CO 81650  
Phone: (970) 632-2412

Sales Office 999 18th St. Suite 1200 Denver, CO 80202  
Phone: (281) 408-2361

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# BJ Cementing Treatment Report

<b>SERVICE SUPERVISOR</b>	Francisco Castillo	<b>FORMATION</b>	
<b>CLIENT FIELD REPRESENTATIVE</b>	George Urban	<b>RIG</b>	H&P 330
<b>DISTRICT</b>	Rifle, CO	<b>COUNTY</b>	GARFIELD
<b>SERVICE</b>	Cementing	<b>STATE / PROVINCE</b>	CO

TYPE	OD (in)	ID (in)	WEIGHT (lb/ft)	MD (ft)	EXCESS (%)	GRADE	THREAD
Previous Casing	20.00	19.50	52.73	130.00			
Open Hole	0.00	14.75	0.00	3,008.00			
Casing	9.63	8.92	36.00	2,956.04		J-55	LTC

## HARDWARE

<b>Bottom Plug Used?</b>	No	<b>Tool Type</b>	Float Collar
<b>Top Plug Used?</b>	Yes	<b>Tool Depth (ft)</b>	2,913.92
<b>Top Plug Provided By</b>	Non BJ	<b>Max Casing Pressure - Rated (psi)</b>	3,520.00
<b>Top Plug Size</b>	9.625	<b>Max Casing Pressure - Operated (psi)</b>	2,816.00
<b>Centralizers Used</b>	Yes	<b>Pipe Movement</b>	None
<b>Centralizers Quantity</b>	5.00	<b>Job Pumped Through</b>	Manifold
<b>Centralizers Type</b>	Bow	<b>Top Connection Thread</b>	8RD
<b>Landing Collar Depth (ft)</b>	2,914	<b>Top Connection Size</b>	9.625

## CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	YP Mud In	16
Circulation Prior to Job	Yes	Solids Present at End of Circulation	No
Circulation Time (min)	29.00	10 sec SGS	6
Circulation Rate (bpm)	8.00	10 min SGS	12
Circulation Volume (bbls)	230.00	30 min SGS	27
Lost Circulation Prior to Cement Job	Yes	Flare Prior to / during the Cement Job	No
Mud Density In (ppg)	9.00	Gas Present	No
PV Mud In	16		

## TEMPERATURE

Ambient Temperature (°F)	15.00	Slurry Cement Temperature (°F)	73.00
Mix Water Temperature (°F)	61.00	Flow Line Temperature (°F)	0.00

## FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H <sub>2</sub> O REQ (gals/sk)	VOL (sk)	VOL (Cu Ft)	VOL (bbls)
Spacer / Pre Flush / Flush	Water	8.3300					20.0000
Lead Slurry	BJCem S100.3.01D	12.0000	2.5298	14.86	719	1818.0000	323.7000
Tail Slurry	BJCem S100.3.01D	12.5000	2.2256	12.59	161	358.0000	63.7000
Displacement Final	Displacement	8.3300				0.0000	225.0000
Tail Slurry	BJCem S100.3.01D	12.5000	2.2256	12.59	81	180.0000	32.0000

FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
Lead Slurry	BJCem S100.3.01D	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Lead Slurry	BJCem S100.3.01D	FOAM PREVENTER, FP-25	0.3000	BWOB
Lead Slurry	BJCem S100.3.01D	IntegraSeal CELLO	0.1300	LBS/SK
Lead Slurry	BJCem S100.3.01D	Cement Additive, Sodium Metasilicate A-2	2.0000	LBS/SK
Lead Slurry	BJCem S100.3.01D	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem S100.3.01D	FOAM PREVENTER, FP-25	0.3000	BWOB
Tail Slurry	BJCem S100.3.01D	IntegraSeal CELLO	0.1300	LBS/SK
Tail Slurry	BJCem S100.3.01D	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Tail Slurry	BJCem S100.3.01D	Cement Additive, Sodium Metasilicate A-2	2.0000	LBS/SK

### TREATMENT SUMMARY

TIME	FLUID	RATE (bpm)	FLUID VOL (bbls)	PIPE PRESSURE (psi)	ANNULUS PRESSURE (psi)	COMMENTS
2/9/2019 9:27:00 AM	Water	5.50	20.00	305.00		SPACER
2/9/2019 9:31:00 AM	BJCem S100.3.01D	5.50	323.70	172.00		LEAD CEMENT
2/9/2019 10:39:00 AM	BJCem S100.3.01D	4.50	63.70	97.00		TAIL CEMENT
2/9/2019 10:58:00 AM	Displacement	5.70	225.00	493.00		DISPLACEMENT

### MIN / MAX / AVG PRESSURE AND RATES

	MIN	MAX	AVG
Pressure (psi)	97.00	493.00	266.75
Rate (bpm)	4.50	5.70	5.30



## DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ
Calculated Displacement Vol (bbls)	225.00
Actual Displacement Vol (bbls)	225.00
Did Float Hold?	Yes
Bump Plug	Yes
Bump Plug Pressure (psi)	930.00
Were Returns Planned at Surface	No
Cement Returns During Job	None

Amt of Cement Returned / Reversed	0.00
Method Used to Verify Returns	Visual
Amt of Spacer to Surface	0.00
Pressure Left on Casing (psi)	0.00
Amt Bled Back After Job	0.50
Total Volume Pumped (bbls)	669.00
Top Out Cement Spotted	Yes
Lost Circulation During Cement Job	Yes

**Client Name:** Caerus Operating LLC

**Well:** NPR 22B-3-596

**Well API:** 05-045-24003

**Start Date:** 2/9/2019

**End Date:** 2/9/2019

**Field Ticket #:** FT-15585-D3W7P90202-50541



# BJ Cementing Event Log

Surface - Rifle, CO - Francisco Castillo

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	02/09/2019 00:00	Callout					ON LOCATION AT 07:00 HRS
2	02/09/2019 02:50	Depart for Location					JM STEACS WITH BJ CREW, LEAVE THE YARD
3	02/09/2019 05:13	Arrive on Location					ARRIVE ON LOCATION, RIG RUNNING CASING
4	02/09/2019 05:45	Rig Up					RIG UP MEETING, RIG UP
5	02/09/2019 08:00	STEACS Briefing					PRE-JOB SAFETY MEETING WITH RIG CREW
6	02/09/2019 08:30	Other (See comment)		8.00	230.00	61.00	RIG STOPPED CIRCULATING
7	02/09/2019 09:25	Other (See comment)				4000.00	PRESSURE TEST LINES
8	02/09/2019 09:27	Pump Spacer	8.3400	5.50	20.00	305.00	WATER SPACER
9	02/09/2019 09:31	Pump Lead Cement	12.0000				LEAD 719SKS/324BBLS AT 12PPG, 2.53YLD, 14.86GPS
10	02/09/2019 09:40	Pump Lead Cement	12.0000	4.50	50.00	137.00	50 BBLS LEAD CEMENT PUMPED
11	02/09/2019 09:52	Pump Lead Cement	12.0000	4.00	50.00	79.00	100 BBLS LEAD CEMENT PUMPED
12	02/09/2019 10:05	Pump Lead Cement	12.0000	5.00	50.00	117.00	150 BBLS LEAD CEMENT PUMPED
13	02/09/2019 10:16	Pump Lead Cement	12.0000	5.00	50.00	119.00	200 BBLS LEAD CEMENT PUMPED
14	02/09/2019 10:25	Pump Lead Cement	12.0000	5.50	50.00	172.00	250 BBLS LEAD CEMENT PUMPED
15	02/09/2019 10:34	Pump Lead Cement	12.0000	4.50	74.00	109.00	324 BBLS LEAD CEMENT PUMPED
16	02/09/2019 10:39	Pump Tail Cement	12.5000				TAIL 161SKS/64BBLS AT 12.5PPG, 2.23YLD, 12.59GPS, CALCULATED TOP OF TAIL 2,454'
17	02/09/2019 10:55	End Pumping					SHUTDOWN WITH 2BBL TAIL CEMENT LEFT IN MIXING TUB

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Client: Caerus Operating LLC

Well: NPR 22B-3-596

Well API:05-045-24003

Plan #: ORD-15585-D3W7P9

Execution #: EXC-15585-D3W7P902

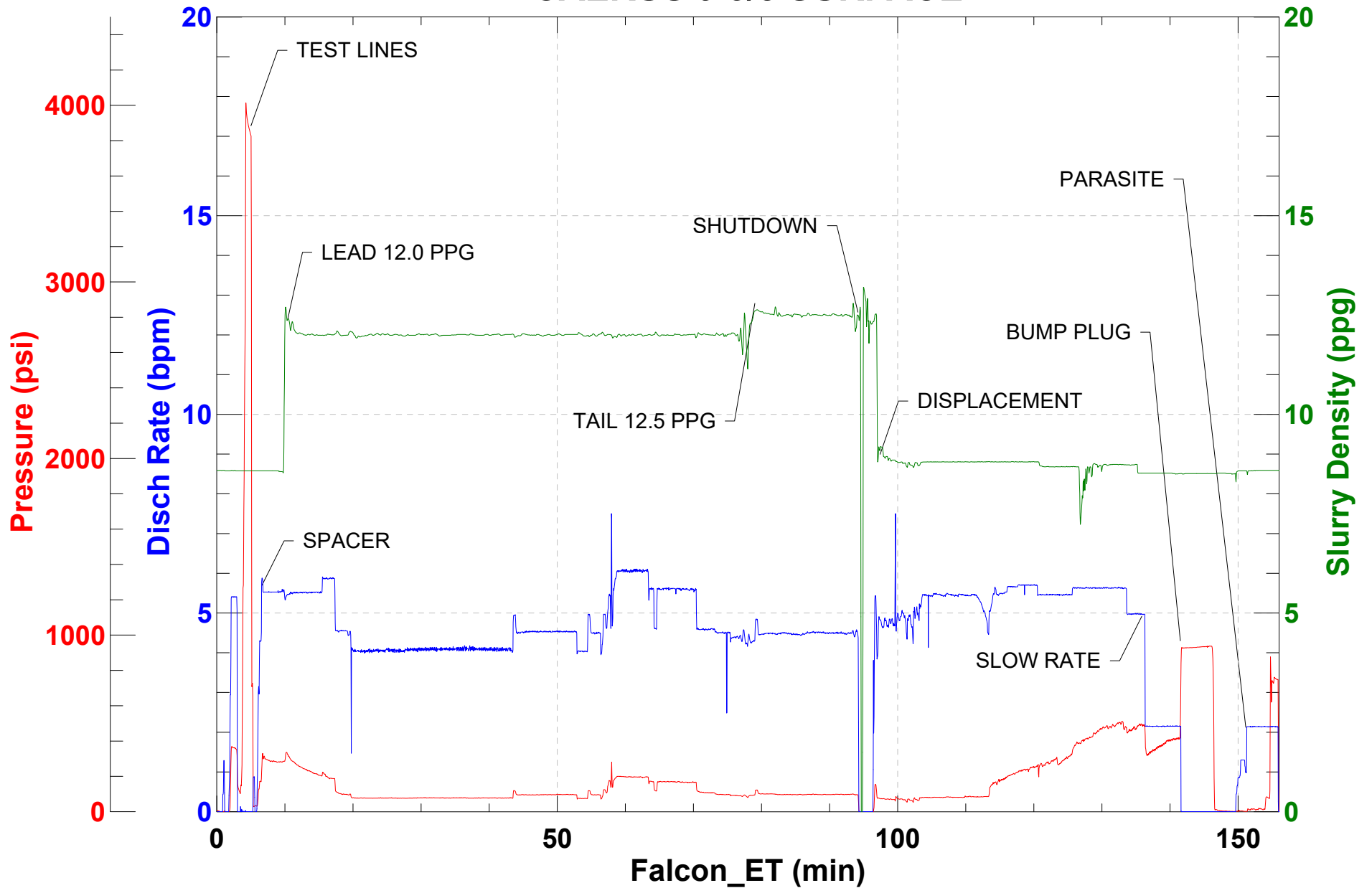
Quote #: QUO-26839-J0X2G0



SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
18	02/09/2019 10:58	Pump Displacement	8.3400				BEGIN DISPLACEMENT FRESH WATER
19	02/09/2019 11:08	Pump Displacement	8.3400	5.50	50.00	81.00	50 BBLS DISPLACEMENT PUMPED
20	02/09/2019 11:18	Pump Displacement	8.3400	5.70	50.00	205.00	100 BBLS DISPLACEMENT PUMPED
21	02/09/2019 11:28	Pump Displacement	8.3400	5.50	50.00	315.00	150 BBLS DISPLACEMENT PUMPED
22	02/09/2019 11:35	Pump Displacement	8.3400	5.00	65.00	493.00	215 BBLS DISPLACEMENT PUMPED
23	02/09/2019 11:38	Pump Displacement	8.3400	2.00	10.00	415.00	SLOW RATE
24	02/09/2019 11:43	Land Plug				930.00	LAND TOP PLUG, PARTIAL RETURNS THROUGH OUT THE JOB
25	02/09/2019 11:48	Check Floats					FLOATS HELD, 0.5 BBL FLOW BACK
26	02/09/2019 11:52	Other (See comment)	8.3400	2.00	10.00	741.00	SUGAR WATER THROUGH PARASITE, BROKE AT 741 PSI
27	02/09/2019 11:58	End Pumping					SHUTDOWN GET READY FOR TOPOUT
28	02/09/2019 12:33	Pump Spacer	8.5000	2.00	2.00	43.00	CACL2 SPACER
29	02/09/2019 12:35	Pump Spacer	8.3400	2.00	2.00	49.00	WATER SPACER
30	02/09/2019 12:37	Run Top Out	12.5000	2.50	30.00	71.00	TOPOUT CEMENT 76SKS/30BBLS AT 12.5 PPG
31	02/09/2019 13:30	End Pumping					SHUTDOWN PUMPED 5 SKS/2 BBLS IN PREVIOUS PARASITE
32	02/09/2019 13:45	Rig Down					RIG DOWN MEETING, RIG DOWN
33	02/09/2019 15:30	Other (See comment)					USED 110-GAL SODIUM SILICATE ON TOPOUT JOB, TOTAL TOP OUT CEMENT 81SKS/32BBLS
34	02/09/2019 15:31	Leave Location					AAR JM STEACS WITH BJ CREW, LEAVE LOCATION
35	02/09/2019 15:44	Other (See comment)					THANK YOU FOR YOUR BUSINESS FROM JAVIER AND CREW



# CAERUS 9 5/8 SURFACE





# CAERUS TOPOUT

