



Caerus

Well Name: NPR 24D-3

API #: 05-045-24000

Job Type: Surface

Date Job Completed: 01/24/2019

Quote #: QUO-25773

Execution #: EXC-15077



Caerus

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

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

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

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

BJ Cementing Treatment Report

SERVICE SUPERVISOR	Francisco Castillo	FORMATION	
CLIENT FIELD REPRESENTATIVE	Kim Gritz	RIG	H&P 330
DISTRICT	Rifle, CO	COUNTY	GARFIELD
SERVICE	Cementing	STATE / PROVINCE	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	3,007.00			
Casing	9.63	8.92	36.00	2,914.54		J-55	LTC

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	2,914.54
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	3,520.00
Top Plug Size	9.625	Max Casing Pressure - Operated (psi)	2,816.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Type	Bow	Job Pumped Through	Manifold
Landing Collar Depth (ft)	2,915	Top Connection Thread	8 Rnd
		Top Connection Size	9.625



CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	YP Mud In	13
Circulation Prior to Job	Yes	Solids Present at End of Circulation	No
Circulation Time (min)	53.00	10 sec SGS	11
Circulation Rate (bpm)	7.50	10 min SGS	40
Circulation Volume (bbls)	400.00	30 min SGS	57
Lost Circulation Prior to Cement Job	Yes	Flare Prior to / during the Cement Job	No
Mud Density In (ppg)	8.80	Gas Present	No
PV Mud In	23		

TEMPERATURE

Ambient Temperature (°F)	18.00	Slurry Cement Temperature (°F)	85.00
Mix Water Temperature (°F)	78.00	Flow Line Temperature (°F)	80.00

FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H ₂ O REQ (gals/sk)	VOL (sk)	VOL (Cu Ft)	VOL (bbls)
Spacer / Pre Flush / Flush	Water 1	8.3300					20.0000
Spacer / Pre Flush / Flush	Sodium Silicate	10.0000					20.0000
Spacer / Pre Flush / Flush	Water 2	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	225.3000
Tail Slurry	BJCem S100.3.01D	12.5000	2.2256	12.59	50	111.0000	20.0000



FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
Spacer / Pre Flush / Flush	Sodium Silicate	SILICATE, SODIUM, A-3L	21.0000	GPB
Lead Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Lead Slurry	BJCem S100.3.01D	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Lead Slurry	BJCem S100.3.01D	IntegraSeal CELLO	0.1300	LBS/SK
Lead Slurry	BJCem S100.3.01D	FOAM PREVENTER, FP-25	0.3000	BWOB
Lead Slurry	BJCem S100.3.01D	Cement Additive, Sodium Metasilicate A-2	2.0000	LBS/SK
Lead Slurry	BJCem S100.3.01D	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem S100.3.01D	Cement Additive, Sodium Metasilicate A-2	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	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	IntegraSeal CELLO	0.1300	LBS/SK
Tail Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB

TREATMENT SUMMARY

TIME	FLUID	RATE (bpm)	FLUID VOL (bbls)	PIPE PRESSURE (psi)	ANNULUS PRESSURE (psi)
1/23/2019 9:53:00 PM	Water 1	6.00	20.00	245.00	
1/23/2019 9:56:00 PM	Sodium Silicate	6.00	20.00	313.00	
1/23/2019 10:00:00 PM	Water 2	6.00	20.00	145.00	
1/23/2019 10:07:00 PM	BJCem S100.3.01D	6.00	323.70	162.00	
1/23/2019 11:14:00 PM	BJCem S100.3.01D	4.00	63.70	19.00	
1/24/2019 11:38:00 PM	Displacement	6.00	225.30	396.00	

MIN / MAX / AVG PRESSURE AND RATES

	MIN	MAX	AVG
Pressure (psi)	19.00	396.00	213.33
Rate (bpm)	4.00	6.00	5.67



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)	1,200.00
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	1.00
Total Volume Pumped (bbls)	673.00
Top Out Cement Spotted	Yes
Lost Circulation During Cement Job	Yes

Client Name: Caerus Operating LLC

Well: NPR 24D-3-596

Well API: 05-045-24000

Start Date: 1/23/2019

End Date: 1/24/2019

Field Ticket #: FT-15077-J9Z7J20202-25636



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	01/23/2019 16:15	Depart for Location					LEAVE YARD TO RELIEVE CREW ON LOCATION
2	01/23/2019 17:30	Arrive on Location					ARRIVE ON LOCATION, RIG RUNNING CASING
3	01/23/2019 17:45	Rig Up					RIG UP EQUIPMENT
4	01/23/2019 20:35	STEACS Briefing					PRE-JOB SAFETY MEETING WITH RIG CREW
5	01/23/2019 20:40	Other (See comment)					RIG STOPPED CIRCULATING, CIRCULATED AT 7.5BPM, 400 BBLs, WITH 84 PSI
6	01/23/2019 21:49	Pressure Test				4000.00	PRESSURE TEST LINES
7	01/23/2019 21:53	Pump Spacer	8.3400	6.00	20.00	245.00	WATER SPACER
8	01/23/2019 21:56	Pump Spacer	11.0000	6.00	20.00	313.00	SODIUM SILICATE SPACER
9	01/23/2019 22:00	Pump Spacer	8.3400	6.00	20.00	145.00	WATER SPACER
10	01/23/2019 22:07	Pump Lead Cement	12.0000				LEAD 719SKS/324BBLs AT 12PPG, 2.53YLD, 14.86GPS
11	01/23/2019 22:19	Pump Lead Cement	12.0000	5.00	50.00	149.00	50 BBLs LEAD CEMENT PUMPED
12	01/23/2019 22:27	Pump Lead Cement	12.0000	6.00	50.00	162.00	100 BBLs LEAD CEMENT PUMPED
13	01/23/2019 22:35	Pump Lead Cement	12.0000	6.00	50.00	139.00	150 BBLs LEAD CEMENT PUMPED
14	01/23/2019 22:43	Pump Lead Cement	12.0000	6.00	50.00	135.00	200 BBLs LEAD CEMENT PUMPED
15	01/23/2019 22:51	Pump Lead Cement	12.0000	6.00	50.00	119.00	250 BBLs LEAD CEMENT PUMPED
16	01/23/2019 22:59	Pump Lead Cement	12.0000	6.00	74.00	115.00	324 BBLs LEAD CEMENT PUMPED
17	01/23/2019 23:14	Pump Tail Cement	12.5000	4.00	43.00	19.00	TAIL 161SKS/64BBLs AT 12.5PPG, 2.23YLD, 12.59GPS, CALCULATED TOP OF TAIL 2,457'

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Client: Caerus Operating LLC

Well: NPR 24D-3-596

Well API:05-045-24000

Plan #: ORD-15077-J9Z7J2

Execution #: EXC-15077-J9Z7J202

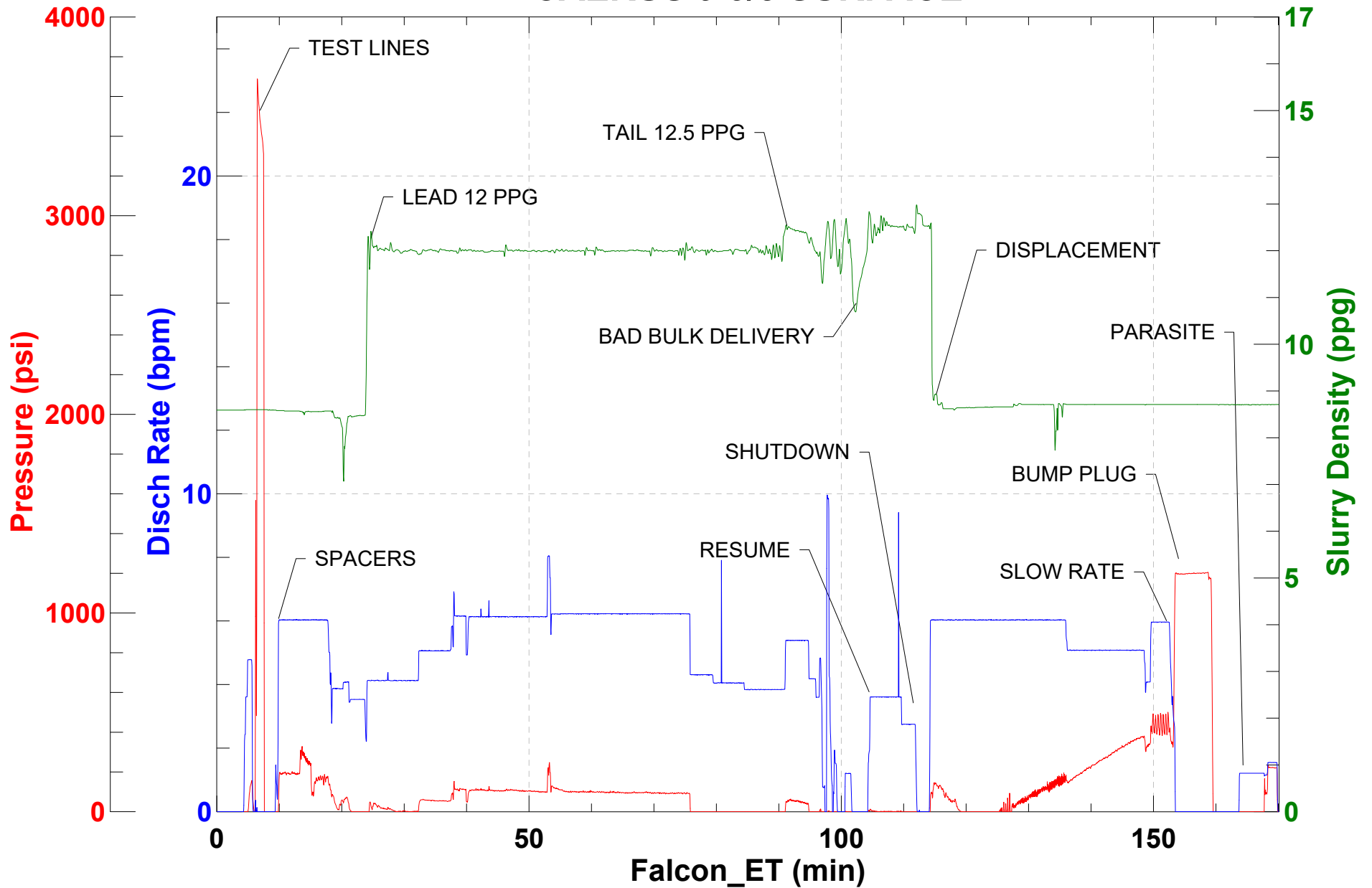
Quote #: QUO-25773-Q6P2R9



SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
18	01/23/2019 23:23	End Pumping					SHUTDOWN TO BATCH, BAD BULK DELIVERY, GOT IT GOING
19	01/23/2019 23:27	Pump Tail Cement	12.5000	4.00	21.00	19.00	RESUME PUMPING TAIL CEMENT
20	01/23/2019 23:37	End Pumping					SHUTDOWN DROP TOP PLUG, GOT RETURNS WHEN STARTING TAIL CEMENT
21	01/23/2019 23:38	Pump Displacement	8.3400				BEGIN DISPLACEMENT
22	01/23/2019 23:48	Pump Displacement	8.3400	6.00	50.00	21.00	50BBLS DISPLACEMENT PUMPED
23	01/23/2019 23:56	Pump Displacement	8.3400	6.00	50.00	17.00	100BBLS DISPLACEMENT PUMPED
24	01/24/2019 00:05	Pump Displacement	8.3400	5.00	50.00	286.00	150BBLS DISPLACEMENT PUMPED
25	01/24/2019 00:15	Pump Displacement	8.3400	6.00	65.00	532.00	215BBLS DISPLACEMENT PUMPED
26	01/24/2019 00:17	Pump Displacement	8.3400	2.00	10.00	396.00	SLOW RATE, LOST RETURNS ON LAST 10BBLS DISPLACEMENT
27	01/24/2019 00:18	Land Plug				1200.00	LAND TOP PLUG
28	01/24/2019 00:23	Check Floats					FLOATS HELD, 1 BBL FLOW BACK
29	01/24/2019 00:26	Other (See comment)	8.3400	2.00	10.00	215.00	PUMP SUGAR WATER THROUGH PARASITE, BROKE AT 215 PSI
30	01/24/2019 00:39	End Pumping					SHUTDOWN GET READY FOR TOPOUT
31	01/24/2019 07:08	Pump Spacer	9.0000	2.00	2.00	17.00	200LBS CACL2 SPACER
32	01/24/2019 07:09	Pump Spacer	8.3400	2.00	2.00	21.00	WATER SPACER
33	01/24/2019 07:11	Pumping Cement	12.5000	2.50	17.00	23.00	PUMPED 43SKS/17BBLS TOPOUT AT 12.5PPG
34	01/24/2019 07:40	Pumping Cement	12.5000	1.00	3.00	0.00	PUMPED 7SKS/3BBLS IN PREVIOUS PARASITE
35	01/24/2019 07:55	Pumping Cement					SHUTDOWN
36	01/24/2019 08:05	Rig Down					RIG DOWN MEETING, RIG DOWN
37	01/24/2019 11:00	Leave Location					LEAVE LOCATION
38	01/24/2019 11:01	Other (See comment)					THANK YOU FOR YOUR BUSINESS FROM JAVIER AND CREW



CAERUS 9 5/8 SURFACE





CAERUS TOPOUT

