



COGCC doc # 2597449

# Caerus

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## Surface Post Job Report

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Puckett 23C-19 05-045-23200

S:24 T:6S R:97W Garfield CO

Quote #:

I Execution #:



## 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,

Gage Putnam  
Field Engineer I | (970) 632-2006 | [Gage.Putnam@BJServices.com](mailto:Gage.Putnam@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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# Cementing Treatment



<b>Start Date</b>	2/4/2018	<b>Well</b>	Puckett 23C-19
<b>End Date</b>	2/5/2018	<b>County</b>	GARFIELD
<b>Client</b>	CAERUS OPERATING, LLC	<b>State/Province</b>	CO
<b>Client Field Rep</b>	Beaude Oaks	<b>API</b>	05-045-23200
<b>Service Supervisor</b>	James Roush	<b>Formation</b>	-
<b>Field Ticket No.</b>	Surface	<b>Rig</b>	H&P 329
<b>District</b>	Rifle, CO	<b>Type of Job</b>	Surface

## WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	Excess(%)	Grade
Open Hole	14.75			2,550.00	0.00	
Previous Casing	19.50	20.00	52.73	100.00	0.00	
Casing	8.92	9.63	36.00	2,527.00		J-55
Open Hole	14.75			2,000.00	25.00	

**Shoe Length (ft):** 44

## HARDWARE

<b>Bottom Plug Used?</b>	No	<b>Tool Type</b>	Float Collar
<b>Bottom Plug Provided By</b>	-	<b>Tool Depth (ft)</b>	2,484.00
<b>Bottom Plug Size</b>	-	<b>Max Tubing Pressure - Rated (psi)</b>	-
<b>Top Plug Used?</b>	Yes	<b>Max Tubing Pressure - Operated (psi)</b>	-
<b>Top Plug Provided By</b>	Non BJ	<b>Max Casing Pressure - Rated (psi)</b>	3,560.00
<b>Top Plug Size</b>	9.625	<b>Max Casing Pressure - Operated (psi)</b>	2,000.00
<b>Centralizers Used</b>	Yes	<b>Pipe Movement</b>	None
<b>Centralizers Quantity</b>	5.00	<b>Job Pumped Through</b>	No Manifold
<b>Centralizers Type</b>	Bow	<b>Top Connection Thread</b>	BUTT
<b>Landing Collar Depth (ft)</b>	2,484	<b>Top Connection Size</b>	9.625

# Cementing Treatment



## CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Solids Present at End of Circulation	No
Circulation Prior to Job	No	10 sec SGS	12.00
Circulation Time (min)	30.00	10 min SGS	27.00
Circulation Rate (bpm)	6.00	30 min SGS	32.00
Circulation Volume (bbls)	250.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	Yes	Gas Present	No
Mud Density In (ppg)	9.10	Gas Units	0
Mud Density Out (ppg)	-		
PV Mud In	13		
PV Mud Out	-		
YP Mud In	9		
YP Mud Out	-		

## TEMPERATURE

Ambient Temperature (°F)	34.00	Slurry Cement Temperature (°F)	61.00
Mix Water Temperature (°F)	55.00	Flow Line Temperature (°F)	81.00

## BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	Water	8.33					20.00
Spacer / Pre Flush / Flush	Water	8.33					20.00
Spacer / Pre Flush / Flush	Sodium Silicate Spacer	10.00					20.00
Lead Slurry	S100-12	12.00	2.5329	14.89	704	1,774.00	315.90
Tail Slurry	S100-12	12.50	2.2282	12.62	162	358.00	63.70
Displacement Final	Displacement	8.33				0.00	190.20
Top Out Slurry	S100-12	12.50	2.2282	12.62	358	797.30	142.00

# Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	Water	Fresh Water	100.0000	PCT
Spacer / Pre Flush / Flush	Water	Fresh Water	100.0000	PCT
Spacer / Pre Flush / Flush	Sodium Silicate Spacer	SILICATE, SODIUM, A-3L	21.0000	GPB
Lead Slurry	S100-12	CEMENT EXTENDER, SODIUM METASILICATE, A-2	2.0000	LBS/SK
Lead Slurry	S100-12	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Lead Slurry	S100-12	IntegraSeal CELLO	0.1300	LBS/SK
Lead Slurry	S100-12	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	S100-12	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Lead Slurry	S100-12	Foam Preventer, FP-25	0.3000	BWOB
Tail Slurry	S100-12	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Tail Slurry	S100-12	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Tail Slurry	S100-12	IntegraSeal CELLO	0.1300	LBS/SK
Tail Slurry	S100-12	CEMENT EXTENDER, SODIUM METASILICATE, A-2	2.0000	LBS/SK
Tail Slurry	S100-12	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	S100-12	Foam Preventer, FP-25	0.3000	BWOB
Top Out Slurry	S100-12	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Top Out Slurry	S100-12	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Top Out Slurry	S100-12	IntegraSeal CELLO	0.1300	LBS/SK
Top Out Slurry	S100-12	CEMENT EXTENDER, SODIUM METASILICATE, A-2	2.0000	LBS/SK
Top Out Slurry	S100-12	CEMENT, ASTM TYPE III	100.0000	PCT
Top Out Slurry	S100-12	Foam Preventer, FP-25	0.3000	BWOB

# Cementing Treatment



## TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Comments
2/5/2018 12:01 AM	Water	5.50	20.00	225.00	
2/5/2018 12:06 AM	Water	5.50	20.00	227.00	
2/5/2018 12:03 AM	Sodium Silicate Spacer	5.50	20.00	233.00	
2/5/2018 12:14 AM	S100-12	7.50	315.90	527.00	LEAD
2/5/2018 1:04 AM	S100-12	6.00	63.70	330.00	TAIL
2/5/2018 1:25 AM	Displacement	7.00	190.20	343.00	
2/5/2018 2:12 AM	S100-12	3.00	142.00	87.00	TOP OUT

	Min	Max	Avg
Pressure (psi)	0.00	862.00	480.00
Rate (bpm)	0.00	7.50	5.00

## DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	1.00
Calculated Displacement Volume (bbls)	189.50	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	189.00	Amount of Spacer to Surface	0.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amount Bled Back After Job	0.50
Bump Plug Pressure (psi)	862.00	Total Volume Pumped (bbls)	768.50
Were Returns Planned at Surface	No	Top Out Cement Spotted	Yes
Cement returns During Job	None	Lost Circulation During Cement Job	No



Customer Name CAERUS  
Well Name PUCKETT 23C-19  
Job Type Surface

District Rifle  
Supervisor JAMES ROUSH  
Engineer GAGE PUTNAM

Seq No.	Start Date	Start Time	Category	Event	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	2/4/2018	15:00	Mobilization	Callout					BJ CREW CALLED OUT WITH A RTS OF 19:00 PM 2/4/18
2	2/4/2018	15:20	Mobilization						JOURNEY MANAGEMENT WITH BJ CREW
3	2/4/2018	15:45	Mobilization	Leave Location					LEAVE DISTRICT
4	2/4/2018	17:45	Mobilization	Arrive on Location					ARRIVE ON LOCATION
5	2/4/2018	17:50	Operational						STEACS BREIFING WITH BJ CREW
6	2/4/2018	18:00	Operational	Spot Units					SPOT TRUCKS
7	2/4/2018	18:05	Operational	Rig Up					RIG UP ALL EQUIPMENT
8	2/4/2018	18:30	StandBy	Customer					BJ ON STANDBY, RIG RUNNING CASING
9	2/4/2018	22:30	Operational	Prime Up					PIPE ON BOTTOM, RIG TO CIRCULATE
10	2/4/2018	22:57	Operational	Safety Meeting					SAFETY MEETING WITH BJ CREW, COMPANY, AND RIG CREW
11	2/4/2018	23:44	Operational	Rig Up					RIG UP CEMENT HEAD TO CASING
12	2/4/2018	23:55	Operational	Start Pumping	8.34	4	5	120	BREAK CIRCULATION
13	2/4/2018	23:57	Operational	Pressure Test					TEST LINES 3000
14	2/5/2018	0:01	Operational	Pump Spacer	8.34	5.5	15	225	FRESH WATER SPACER
15	2/5/2018	0:03	Operational	Pump Spacer	10	5.5	20	233	SODIUM SILICATE SPACER
16	2/5/2018	0:06	Operational	Pump Spacer	8.34	5.5	20	227	FRESH WATER SPACER
17	2/5/2018	0:12	Operational	Pump Lead Cement					BATCH UP LEAD CEMENT @ 12.0 PPG ( 704 SXS Y- 2.53 MW- 14.89)
18	2/5/2018	0:14	Operational	Pump Lead Cement	12	6	317	330	LEAD CEMENT @ 12.0 PPG DOWNHOLE
19	2/5/2018	0:21	Operational	Pump Lead Cement	12	6		317	50 BBLS GONE LEAD SLURRY
20	2/5/2018	0:28	Operational	Pump Lead Cement	12	7.5		527	100 BBLS GONE LEAD SLURRY
21	2/5/2018	0:34	Operational	Pump Lead Cement	12	7.5		518	150 BBLS GONE LEAD SLURRY
22	2/5/2018	0:41	Operational	Pump Lead Cement	12	7.5		520	200 BBLS GONE LEAD SLURRY
23	2/5/2018	0:48	Operational	Pump Lead Cement	12	7		438	250 BBLS GONE LEAD SLURRY
24	2/5/2018	0:58	Operational	Pump Lead Cement	12	3		87	300 BBLS GONE LEAD SLURRY
25	2/5/2018	1:02	Operational	Pump Tail Cement	12.5				BATCH UP TAIL SLURRY @ 12.5 PPG ( 162 SXS Y- 2.23 MW-12.62)
26	2/5/2018	1:04	Operational	Pump Tail Cement	12.5	6	60	330	TAIL CEMENT @ 12.5 PPG DOWN HOLE
27	2/5/2018	1:13	Operational	Pump Tail Cement	12.5	3		89	50 BBLS GONE TAIL SLURRY
28	2/5/2018	1:20	Operational	Pump Displacement			185.5		DROP TOP PLUG START DISPLACEMENT
29	2/5/2018	1:23	Operational	Pump Displacement	12.5	4	4	180	2 BBLS @ 12.5 PPG ON TOP OF PLUG
30	2/5/2018	1:32	Operational	Pump Displacement	8.34	7		344	50 BBLS GONE DISPLACEMENT
31	2/5/2018	1:39	Operational	Pump Displacement	8.34	7		334	100 BBLS GONE DISPLACEMENT
32	2/5/2018	1:47	Operational	Pump Displacement	8.34	7		411	150 BBLS GONE DISPLACEMENT
33	2/5/2018	1:53	Operational	Pump Displacement	8.34	2.5	10	228	SLOW RATE TO BUMP PLUG
34	2/5/2018	1:56	Operational	Land Plug				862	BUMP PLUG 862 PSI
35	2/5/2018	1:59	Operational	Check Floats					BLEED PRESSURE, CHECK FLOATS 0.5 BBLS BACK
36	2/5/2018	2:00							RIG UP TO PUMP PARASITE LINE
37	2/5/2018	2:04	Operational	Start Pumping	8.34	1	10	192	PUMP 10 BBLS SUGAR WATER



Customer Name CAERUS  
Well Name PUCKETT 23C-19  
Job Type Surface

District Rifle  
Supervisor JAMES ROUSH  
Engineer GAGE PUTNAM

Seq No.	Start Date	Start Time	Category	Event	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
38	2/5/2018	2:12	Operational	Pumping Cement					RIG UP TO PUMP 200 SXS DOWN BACKSIDE
39	2/5/2018	2:15	Operational	Pumping Cement	12.5				BATCH UP 12.5 PPG CEMENT
40	2/5/2018	2:16	Operational	Pumping Cement	12.5	3	79	87	CEMENT DOWNHOLE
41	2/5/2018	2:32	Operational	Pumping Cement	12.5	3		93	50 BBLS GONE TOPOUT SLURRY
42	2/5/2018	2:45	Operational	Clean Pumps and Lines					SHUTDOWN START WASH UP
43	2/5/2018	4:00	StandBy	Customer					BJ ON STANDBY, WAIT 4 HOURS TO DO TOP OUT JOB
44	2/5/2018	6:30	Operational	Rig Up					BJ RIG UP TO DO TOPOUT JOB
45	2/5/2018	7:02	Operational	Pump Spacer	8.6	2	3	40	PUMP CACL WATER AHEAD
46	2/5/2018	7:06	Operational						START INJECTING SODIUM SILICATE
47	2/5/2018	7:09	Operational	Pumping Cement	12.5				BATCH UP CEMENT @ 12.5 PPG
48	2/5/2018	7:11	Operational	Pumping Cement	12.5	3	63	100	PUMP CEMENT DOWNHOLE @ 12.5 PPG
49	2/5/2018	7:26	Operational	Pumping Cement	12.5	3		97	50 BBLS GONE TOPOUT SLURRY
	2/5/2018	7:36	Operational	Cement Back to Surface			1		CEMENT TO SURFACE
	2/5/2018	7:40	Operational	Pumping Cement	12.5	1.5	3	46	PUMP 3 BBLS CEMENT DOWN PREVIOUS WELL PARASITE LINE
53	2/5/2018	7:45	Operational	End Pumping					SHUT DOWN BLEED PRESSURE
54	2/5/2018	7:50	Operational	Safety Meeting					RIG DOWN MEETING WITH BJ CREW
55	2/5/2018	8:00	Operational	Clean Pumps and Lines					START WASH UP OF PUMP AND RIG DOWN EQUIPMENT
56	2/5/2018	9:20	Operational	Safety Meeting					JOURNEY MANAGEMENT WITH BJ CREW
57	2/5/2018	9:30	Mobilization	Leave Location					LEAVE LOCATION
58									
59	2/5/2018								FCP-290 PSI, BUMP PLUG- 862 PSI, BLEED PRESSURE FLOATS HOLDING- 0.5 BBLS BACK





