

# Cement Post Job Report

**Caerus**

**1001 17th Street, Suite 1600  
Denver, CO 80202**

**Puckett 21D-26-697**

**05-045-23354**

**S:26 T:6S R:97W**

**GARFIELD, CO**

**Prepared For:**

**Mr. Steve Schmitz**

**sschmitz@caerusoilandgas.com**

**(720) 880-6412**

**Job Completion Data:**

**1/3/2017**

**CallSheet #: 440**

**Proposal #: 12768**

**Submitted by:**

**Zen Keith**

**(307) 757-7178**

**zenkeith@altcem.com**





Dear Mr. Schmitz,

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

Sincerely,

Zen Keith

**Field Office**

**1716 East Allison Rd., Cheyenne WY, 82007**  
**Phone: (307) 638-5585**

**Sales Office**

**475 17<sup>th</sup> St. Suite 460 Denver Co., 80202**  
**Phone: (303) 296-1158**



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## Job Details & Summary

### Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Inner	9.625	8.835	40	LTC	0	2328	0
Open Hole	Outer	n/a	14.75	n/a	n/a	90	2000	25
Open Hole	Outer	n/a	14.75	n/a	n/a	2000	2361	0
Casing	Outer	20	19.5	53	n/a	0	90	0

### Equipment / People

Unit Type	Unit	Power Unit	Employee #1	Mileage
Light Duty Pickups	4		Johnson, Chad	677
Bulk Trailer	512		Kresge, Adam	677
Cement Pump	104		Draney, Chance	677
Cement Chemical	401	213	Orner, Lance	677
Bulk Trailer	506	218	Hamilton, Daniel	677
Plug Container	150519			
Swage	150539			
Pneumatic Trailer	702	216		677
Pneumatic Trailer	703	212		677

### Timing

Event	Date/Time
Call Out	1/3/2017 06:30
Depart Facility	1/3/2017 08:00
On Location	1/3/2017 11:00
Rig Up Iron	1/3/2017 11:30
Job Started	1/3/2017 18:45
Job Completed	1/4/2017 13:30
Rig Down Iron	1/4/2017 14:30
Depart Location	1/4/2017 16:30

### General Job Information

Metrics	Value
Well Fluid Density	9.3 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	30 bbls
Rig Circulation Time	0.25 hours
Calculated Displacement	177 bbls
Actual Displacement	177 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	1 bbls
Well Topped Out	Yes
Top Out Volume	15 bbls

### Well Fluid Details

Metrics	Value
Plastic Viscosity	18
Yield Point	17
10 sec. SGS	10
10 min. SGS	30
30 min. SGS	43
Filtrate	13.6
Flow Line Temp.	68

### Job Details

Metrics	Value
Flare Prior to Job	No
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	Yes
Well Fluid Density Into Well	9.3 lb/gal
Well Fluid Density Out of Well	9.3 lb/gal

### Job Details (cont.)

Metrics	Value
BHCT	94 °F
BHST	128 °F



## Circulation

Lost Circulation Experienced	Losses into Spacer	Losses into Cement	Losses into Displacement
Yes	0	0	0

## Circulation Details:

No returns during job

## Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft³/sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sk)	Volume (bbl)	Top (ft)
1	1	Water	Flush	8.33			42.00		20.00	0
1	2	Sodium Silicate	Flush	10.00			21.00		20.00	0
1	3	Water	Flush	8.33			42.00		20.00	0
1	4	ALTCem S100-12	Lead	12.00	2.52	14.80		704.00	316.16	0
1	5	ALTCem S100-12	Tail	12.50	2.22	12.53		162.00	64.03	2000
1	6	Water	DisplacementFinal	8.33			42.00		187.00	0
1	7	ALTCem S100-12	Topout	12.50	2.22	12.53		286.00	113.00	0

## Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom	Start (gal)	End (gal)	Used (gal)
1	2	Flush	Sodium Silicate	ASF-10	Extender	21.00	gal/bbl	420	0	420
1	4	Lead	ALTCem S100-12	AC3-10	Cement	100.00	%			
1	4	Lead	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk			
1	4	Lead	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB			
1	4	Lead	ALTCem S100-12	ADF-20	Defoamer	0.03	gal/sk	20	5	15
1	4	Lead	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk			
1	4	Lead	ALTCem S100-12	AXE-30	Extender	2.00	lb/sk			
1	5	Tail	ALTCem S100-12	AC3-10	Cement	100.00	%			
1	5	Tail	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk			
1	5	Tail	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB			
1	5	Tail	ALTCem S100-12	ADF-20	Defoamer	0.03	gal/sk	5	0	5
1	5	Tail	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk			
1	5	Tail	ALTCem S100-12	AXE-30	Extender	2.00	lb/sk			
1	7	Topout	ALTCem S100-12	AC3-10	Cement	100.00	%			
1	7	Topout	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk			
1	7	Topout	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB			
1	7	Topout	ALTCem S100-12	ADF-20	Defoamer	0.03	gal/sk			
1	7	Topout	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk			
1	7	Topout	ALTCem S100-12	AXE-30	Extender	2.00	lb/sk			

## Job Logs

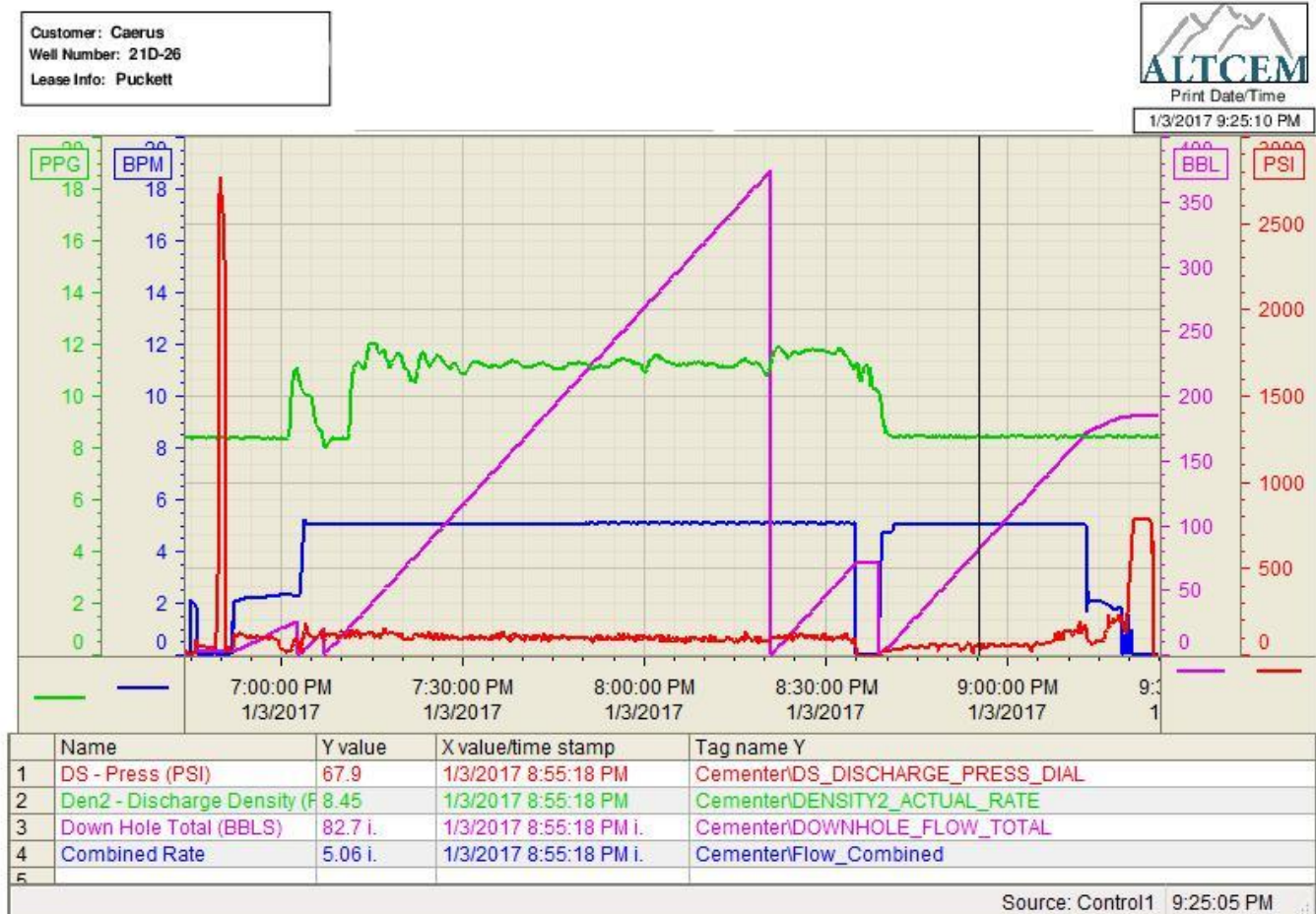
Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Callout	1/3/2017	06:30					Crew called out request on location at 12:30 1/3/17
2	Safety Meeting	1/3/2017	07:45					Pre convoy safety meeting
3	Depart For Location	1/3/2017	08:00					Crew departed for location
4	Arrive On Location	1/3/2017	11:00					Crew arrived on location
5	Safety Meeting	1/3/2017	11:15					Pre rig up safety meeting
6	Rig Up Iron	1/3/2017	11:30					Crew spotted and rigged up all equipment and iron
7	Waiting	1/3/2017	12:00					Crew waiting on rig to finish running casing and circulate on well. Casing on bottom at 17:00, rig circulated at 2 bpm and 300 psi for 15 mins.
8	Safety Meeting	1/3/2017	18:16					Pre job safety meeting
9	Fill Lines	1/3/2017	18:44	8.33	2	2	50	Fill ines with 2 bbls fresh water
10	Pressure Test Lines	1/3/2017	18:48					Pressure test lines to 2500 psi
11	Pump Spacer	1/3/2017	18:51	8.33	2	20	100	Pump 20 bbls water spacer
12	Pump Spacer	1/3/2017	19:00	10	2	20	100	Pump 20 bbls ASF-10 spacer
13	Pump Spacer	1/3/2017	19:07	8.33	5	20	150	Pump 20 bbls water spacer
14	Pump Lead Cement	1/3/2017	19:11	12	5	316	150	Pump 316 bbls lead cement @ 12 ppg, (704sks, 2.52Y, 14.8 gal/sk)
15	Pump Tail Cement	1/3/2017	20:20	12.5	5	64	150	Pump 64 bbls tail cement @ 12.5 ppg, (162sks, 2.22Y, 12.53 gal/sk)
16	Shutdown	1/3/2017	20:35					Shutdown
17	Drop Top Plug	1/3/2017	20:37					Drop top plug, tattle tail indicated
18	Pump Displacement	1/3/2017	20:38	8.33	5	50	50	Pump 50 bbls water displacement
19	Pump Displacement	1/3/2017	20:48	8.33	5	100	50	Pump 50 bbls water displacemnt
20	Slow Pump Rate	1/3/2017	21:12	8.33	2	167	150	Slow pump rate at 167bbls away to 2 bpm
21	Land Plug	1/3/2017	21:21	8.33	2	177	250	Land plug at 250 psi and took to 750 psi
22	Check Floats	1/3/2017	21:23					Check floats, floats holding, bbls back
23	Test Casing	1/3/2017	21:26	8.33			1500	Pressure test casing to 1500 psi for 30 mins
24	Other	1/3/2017	22:22	8.33		10	300	Pump 10 bbls sugar water down parasite line
25	Waiting	1/3/2017	23:00					Wait for rig to nipple up and test BOP'S
26	Safety Meeting	1/4/2017	06:30					Safety meeting
27	Pump Spacer	1/4/2017	07:12	8.5	2	5	50	Pump 5 bbls of water with 200 lbs ACL-10, followed by 2 bbls fresh water
28	Pump Cement	1/4/2017	07:36	12.5	2	15	50	Pump 15 bbls of top out cement (37 sks, 2.22Y, 12.53 gal/sk)
29	Shutdown	1/4/2017	07:49					1 bbl cement to surface, shutdown monitored for 10 mins cement did not fall
30	Other	1/4/2017	08:30					Customer requested to pump cement in to all conductor pipes on location
31	Shutdown	1/4/2017	11:00	12.5	2	80	50	Shutdown after pumping 80 bbls of cement for 8 conductor pipe. (213 sks, 2.22 Y, 12.53 gal/sk) Ran out of cement on location
32	Other	1/4/2017	11:05					Crew offloaded cement on to bulk truck to finish pumping in to conductor pipes
33	Other	1/4/2017	13:00	12.5	2	14	50	Crew pumped 14 bbls of cement in 7 conductor pipes. ( 36 sks, 2.22 Y, 12.53 gal/sk)
34	Shutdown	1/4/2017	13:30					Shutdown
35	Safety Meeting	1/4/2017	13:45					Pre rig down safety meeting
36	Rig Down Iron	1/4/2017	14:00					Crew rigged down all equipment and iron
37	Depart Location	1/4/2017	16:30					Crew departed location

## Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	70 °F	50-80 °F
pH Level	6	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	250 mg/L	0-500 mg/L
Carbonates	70 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	250 mg/L	0-3000 mg/L
Iron	1 mg/L	0-300 mg/L

## Pump Diagrams

### Job Chart



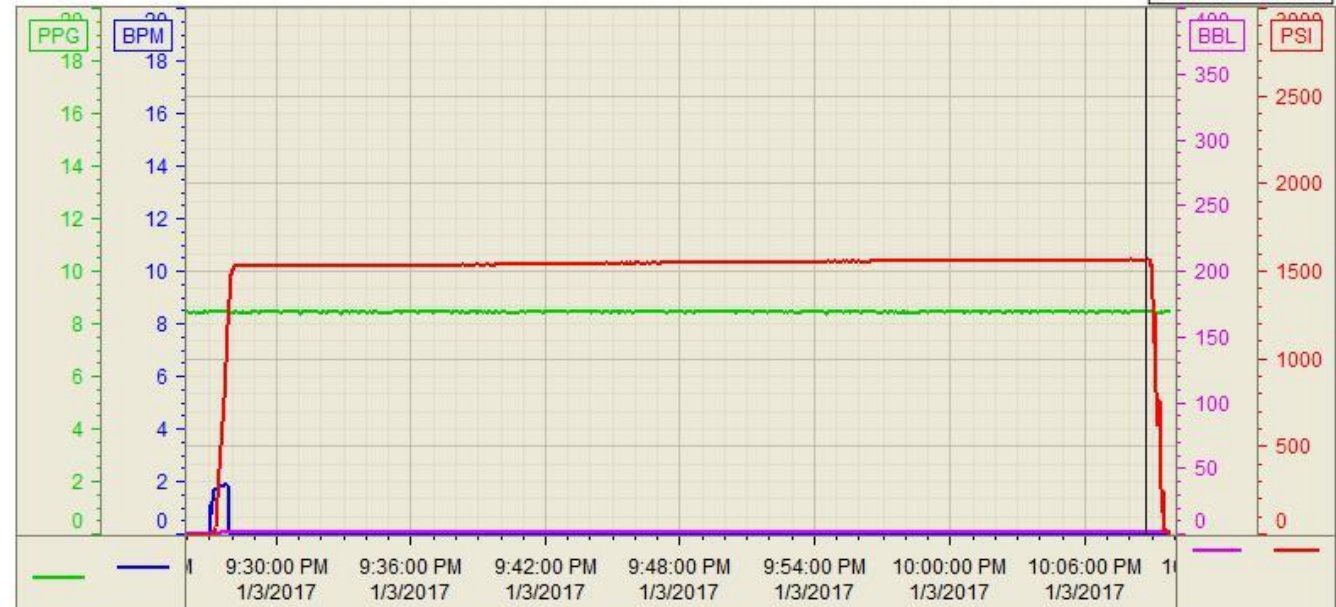
## Casing Test

Customer: Caerus  
Well Number: 21D-26  
Lease Info: Puckett



Print Date/Time

1/3/2017 10:09:50 PM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	1562.5	1/3/2017 10:08:42 PM	CementerDS_DISCHARGE_PRESS_DIAL
2	Den2 - Discharge Density (F 8.46 i.	1/3/2017 10:08:41 PM i.		CementerDENSITY2_ACTUAL_RATE
3	Down Hole Total (BBLs)	1.4	1/3/2017 10:08:42 PM	CementerDOWNHOLE_FLOW_TOTAL
4	Combined Rate	0.00	1/3/2017 10:08:42 PM	CementerFlow_Combined
5				

Source: Control1 10:09:45 PM



## Top Out

Customer: Caerus  
Well Number: 21D-26  
Lease Info: Puckett



Print Date/Time

1/4/2017 1:33:26 PM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	-17.5 i.	1/4/2017 1:09:30 PM i.	CementerDS_DISCHARGE_PRESS_DIAL
2	Den - Density (PPG)	8.60 i.	1/4/2017 1:09:30 PM i.	CementerDENSITY_ACTUAL_RATE
3	Down Hole Total (BBLs)	0.0	1/4/2017 1:09:33 PM	CementerDOWNHOLE_FLOW_TOTAL
4	Combined Rate	0.00	1/4/2017 1:09:33 PM	CementerFlow_Combined
5				

Source: Control1 1:33:22 PM