



Caerus

SURFACE POST JOB REPORT

Puckett 33C-23 697 05-045-23377
S:23 T:6S R:97W Garfield CO

CallSheet #: 1120
Proposal #: 13683



SURFACE Post Job Report

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

Technical Specialist-II | (307) 757-7178 | Zen.Keith@bjservices.com

Field Office 28730 US-6, Rifle, CO 81650
Phone: (307) 360-3062

Sales Office 475 17th St. Suite 460 Denver Co., 80202
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1 Job Details & Summary

1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Open Hole	Outer	n/a	14.75	n/a	n/a	100	2000	25
Open Hole	Outer	n/a	14.75	n/a	n/a	2000	2496	0
Casing	Outer	20	19.5	53	n/a	0	100	0
Casing	Inner	9.625	8.921	36	LTC	0	2483	0

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Silo	651			
Silo	25	Youngberg, Wendell		
Cement Chemical	403	Ham, Robert	Turek, Chad	60
Light Duty Pickups	2	McVay Jr., Jerry	Tippetts, Allen	60

1.3 Timing

Event	Date/Time
Call Out	8/3/2017 11:45
Depart Facility	8/3/2017 16:00
On Location	8/3/2017 17:30
Rig Up Iron	8/3/2017 18:45
Job Started	8/3/2017 23:06
Job Completed	8/4/2017 07:53
Rig Down Iron	8/4/2017 09:00
Depart Location	8/4/2017 09:30

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.3 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	191 bbls
Rig Circulation Time	1 hours
Calculated Displacement	191 bbls
Actual Displacement	191 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	0 bbls
Well Topped Out	Yes
Top Out Volume	53 bbls

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	27
Yield Point	26
10 sec. SGS	6
10 min. SGS	22
30 min. SGS	51
Filtrate	9.6
Flow Line Temp.	84

1.6 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	9.3 lb/gal
Well Fluid Density Out of Well	- lb/gal

1.7 Job Details (cont.)

Metrics	Value
BHCT	94 °F
BHST	128 °F

1.8 Circulation

Lost Circulation Experienced
Yes

Circulation Details:

No circulation throughout entire job

1.9 Job Execution Information

Job	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	8.33			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	S100-12	Lead	12.00	2.53	14.85		703.00	316.33	0
1	5	S100-12	Tail	12.50	2.22	12.58		162.00	64.15	2000
1	6	Water	DisplacementFinal	8.33			42.00		191.00	0
1	7	S100-12	Topout	12.50	2.22	12.58		300.00	118.80	0

1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Flush	Sodium Silicate	ASF-10	Extender	21.00	gal/bbl
1	4	Lead	S100-12	AC3-10	Cement	100.00	%
1	4	Lead	S100-12	ACL-10	Accelerator	2.00	lb/sk
1	4	Lead	S100-12	ACL-20	Accelerator	5.00	%BWOB
1	4	Lead	S100-12	ADF-11	Defoamer	0.30	%BWOB
1	4	Lead	S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	4	Lead	S100-12	AXE-30	Extender	2.00	lb/sk
1	5	Tail	S100-12	AC3-10	Cement	100.00	%
1	5	Tail	S100-12	ACL-10	Accelerator	2.00	lb/sk
1	5	Tail	S100-12	ACL-20	Accelerator	5.00	%BWOB
1	5	Tail	S100-12	ADF-11	Defoamer	0.30	%BWOB
1	5	Tail	S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	5	Tail	S100-12	AXE-30	Extender	2.00	lb/sk
1	7	Topout	S100-12	AC3-10	Cement	100.00	%
1	7	Topout	S100-12	ACL-10	Accelerator	2.00	lb/sk
1	7	Topout	S100-12	ACL-20	Accelerator	5.00	%BWOB
1	7	Topout	S100-12	ADF-11	Defoamer	0.30	%BWOB
1	7	Topout	S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	7	Topout	S100-12	AXE-30	Extender	2.00	lb/sk

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	8/3/2017	11:45					Crew Called Out
2	Arrive Rifle District	8/3/2017	07:30					Arrive Rifle District for Caerus Surface
3	STEACS/Journy Management	8/3/2017	16:00					STEACS/Journey Management Discussed Lease Road Hazards
4	Depart Rifle District Facility	8/3/2017	16:10					Departed Rifle District Facility
5	Arrive On Location	8/3/2017	17:30					Met with Customer Rep to get job numbers.
6	Safety Meeting	8/3/2017	17:35					STEACS, discussed hazards of rig-up and Rig Hazards.
7	Start Rig-up	8/3/2017	17:45					Start Rig-up
8	Rig-up Complete/WOR	8/3/2017	18:45					Rig-up complete/Waiting on Rig (running casing with parasite line)
9	Rig-up Head in Cellar to pump job/Cement Head left on location	8/3/2017	22:20					Rig-up Head in Cellar to pump job/Cement Head left on location
10	Pre-job STEACS/Safety meeting	8/3/2017	23:00					Pre-job STEACS/Safety meeting Discussed Hazard of job with Rig Crew
11	Start Job	8/3/2017	23:06					Job Started.
12	Fill Line to Pressure Test	8/3/2017	23:09	8.33	2	3	25	Filled Line with 3bbls Fresh Water
13	Mountain Lion Compute Not communicating with lap top/Shut down Pump computer/Computer would not boot up/Reset Breaker and power/Computer still will not boot up/reset computer with reset switch/Computer booted/Job restarted	8/3/2017	23:20					Mountain Lion Compute Not communicating with lap top/Shut down Pump computer/Computer would not boot up/Reset Breaker and power/Computer still will not boot up/reset computer with reset switch/Computer booted/Job restarted
14	Mountain Lion Compute computer back on-line and communicating with lap top	8/4/2017	00:10					Mountain Lion Compute computer back on-line and communicating with lap top
15	Pressure Test Lines	8/4/2017	00:12	8.33	2	5	30	Tested Line to 3000psi.



16	Pump Fresh Water Spacer	8/4/2017	00:16	8.33	5	15	35	Pumped 20bbls Fresh Water Spacer
17	Pump Sodium Silicate	8/4/2017	00:20	10	8	20	40	Pumped 20bbls 50/50 Sodium Silicate. 40bbls
18	SS Complete/Pump Fresh Water Spacer/Batch Lead	8/4/2017	00:22	8.33	9	20	55	Pumped 20bbls Fresh Water Spacer. 60bbls/Batch Lead Cement
19	Fresh Water Spacer Complete/Pump Lead Cement	8/4/2017	00:30	12	9	317	396	Pumped 703sks, 316.7669bbls of (12.0lb, 2.53Cf/sk, 14.85gal/sk) Lead
20	Lead Downhole Complete/Tail Downhole	8/4/2017	01:14	12.5	9	317	205	Lead Downhole Complete 317bbls/Tail Downhole
21	Tail Cement Downhole complete/Shut Down/Dropped Plug/2bbls Tail Cement on top of Plug/Begin Displacement	8/4/2017	01:38	12.7	9	64	250	Pumped 162sks, 64bbls of (12.5lb, 2.22cf/sk, 12.58gal/sk), Shut down, pumped 2bbls Tail cement on top of Bottom Plug/Begin Displacement
22	Pump Displacement/Slowed rate to 2bpm at 170bbls	8/4/2017	01:58	8.33	9	170	395	Pump Displacement, slowed rate to 2bpm, 170bbls
23	Pumped 188bbls, shut down, Bled-off, checked floats/.5bbl back/Customer continue for 2bbls/Shut Down/check floats/floats held/1bbl back/Pumped 2bbls/Shut Down/Bled off/1bbl back/Total pumped 192bbls displacement, 3bbls over calculated	8/4/2017	02:07	8.33	2	188	225	Pumped 188bbls, shut down, Bled-off, checked floats/.5bbl back/Customer continue for 2bbls/Shut Down/check floats/floats held/1bbl back/Pumped 2bbls/Shut Down/Bled off/1bbl back/Total pumped 192bbls displacement, 3bbls over calculated. 220bbls
24	Rig up to parasite line/pump 10bbls sugar water/blow diaphragm at 800psi/returns through casing at 10bbls	8/4/2017	02:44	8.33	6.5	10	800	Rig up to parasite line/pump 10bbls sugar water/blow diaphragm at 800psi/returns through casing at 10bbls
25	Rig Down Head/washed up pump/WOR 4 hours	8/4/2017	03:00					Rig Down Head/washed up pump/WOR 4 hours to begin top out at 0700



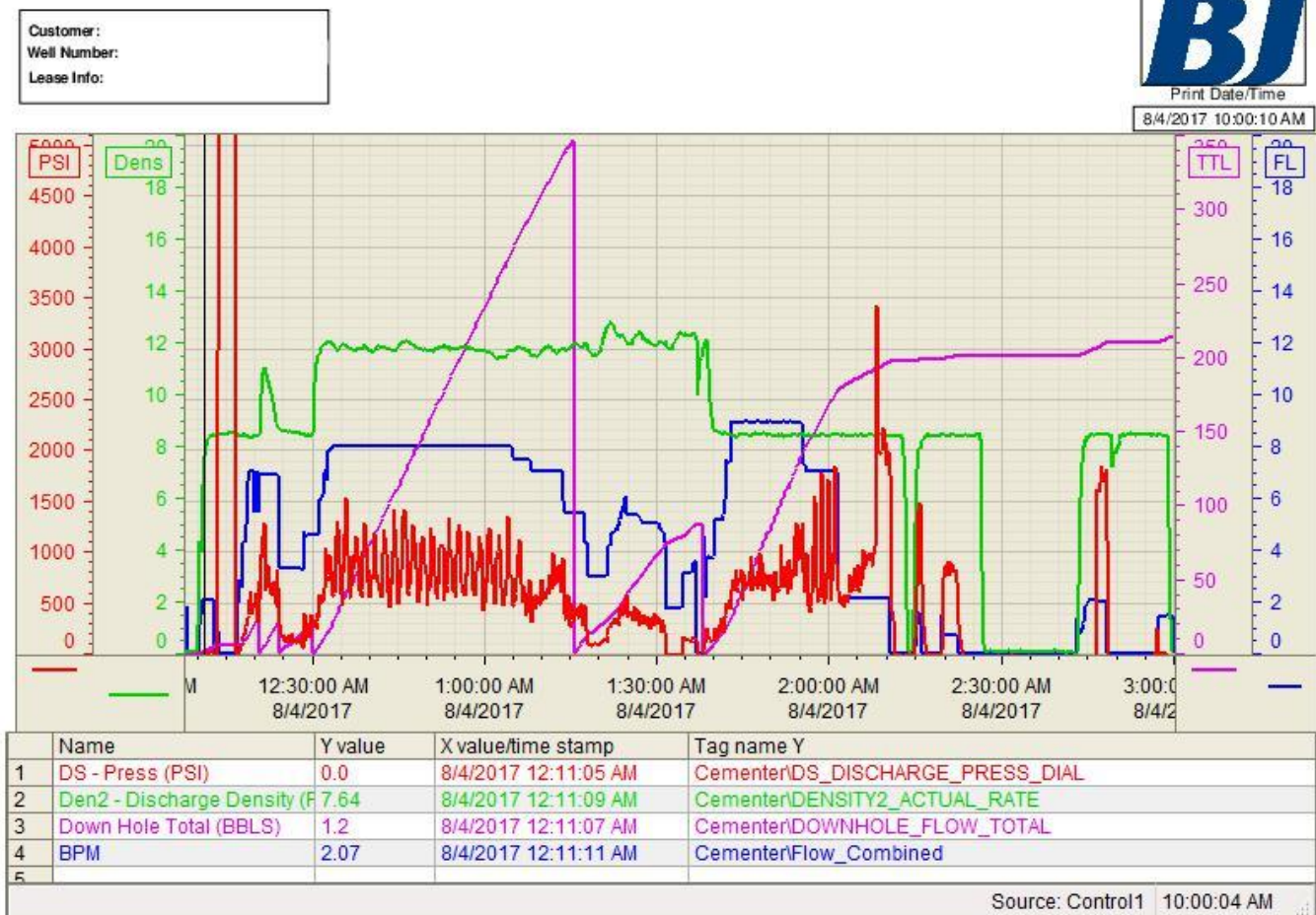
	to begin top out at 0700							
26	Begin Top out	8/4/2017	06:58					Begin top out
27	Pump C/C Water, 115gals of Sodium Silicate behind CC water and ahead of Cement	8/4/2017	07:05	8.33	2	2	150	Pump C/C Water, 115gals of Sodium Silicate behind CC water and ahead of Cement
28	Batch-up Topout/Top out downhole	8/4/2017	07:10	12.5	2			Batch-up Topout/Top out downhole
29	Cement to Surface/shut down/Job Complete	8/4/2017	07:43					Cement to Surface/53.4614bbls/300.18cf/ Top Out pumped
30	Rig Down Complete	8/4/2017	09:00					Rig Down Completed Safely
31	AAR, Journey Management	8/4/2017	09:30					Discussed job results and hazards driving down the mountain.
32	Depart Location	8/4/2017	10:00					Crew departed location, returning to Rifle District

3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	59 °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	>375 mg/L	0-500 mg/L
Carbonates	215 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	1500 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

4 Pump Diagrams

Job Chart



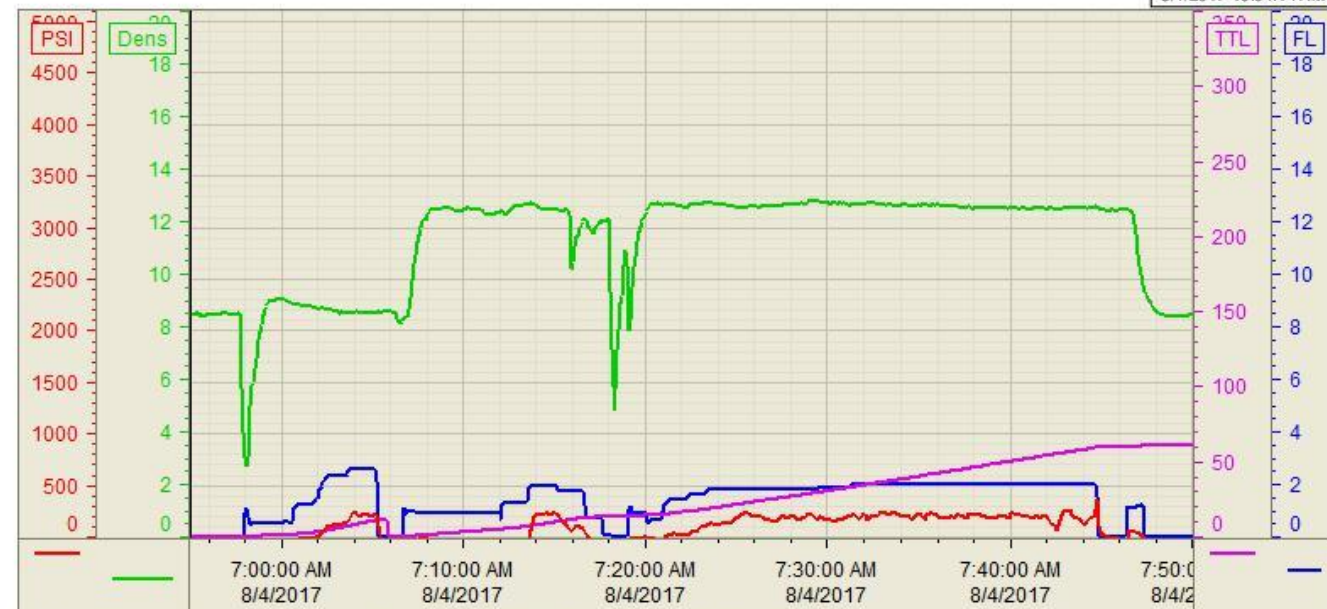
Top Out Chart

Customer:
Well Number:
Lease Info:



Print Date/Time

8/4/2017 10:04:14 AM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	-52.1 i.	8/4/2017 6:55:00 AM i.	CementerDS_DISCHARGE_PRESS_DIAL
2	Den2 - Discharge Density (F	8.49 i.	8/4/2017 6:55:00 AM i.	CementerDENSITY2_ACTUAL_RATE
3	Down Hole Total (BBLs)	0.0 i.	8/4/2017 6:55:00 AM i.	CementerDOWNHOLE_FLOW_TOTAL
4	BPM	0.00 i.	8/4/2017 6:55:00 AM i.	CementerFlow_Combined
5				

Source: Control1110:04:09 AM

Source: Control1 10:04:09 AM