



Caerus

SURFACE POST JOB REPORT

Chevron 21D-17 05-045-23242
S:17 T:6N R:96W Garfield CO

CallSheet #: 909
Proposal #: 13390



SURFACE Post Job Report

Attention: Mr. Steve Schmitz | (720) 880-6412 | sschmitz@caerusoilandgas.com
Caerus
600 17th Street Suite 1600N | 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 1716 East Allison Rd., Cheyenne WY, 82007
Phone: (307) 638-5585

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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	13.5	n/a	n/a	100	700	10
Open Hole	Outer	n/a	13.5	n/a	n/a	700	1021	0
Open Hole	Outer	n/a	15.5	n/a	n/a	0	100	0
Casing	Inner	9.625	8.921	36	LTC	0	974	0

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Bulk Trailer	501	Boyd, Brian	Henrie, Bambii	60
Cement Pump	104	Gilliam, Glen		60
Cement Chemical	401	Roush, James		60

1.3 Timing

Event	Date/Time
Call Out	6/15/2017 00:30
Depart Facility	6/15/2017 02:00
On Location	6/15/2017 02:30
Rig Up Iron	6/15/2017 03:15
Job Started	6/15/2017 07:32
Job Completed	6/15/2017 09:00
Rig Down Iron	6/15/2017 09:10
Depart Location	6/15/2017 10:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	9 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	230 bbls
Rig Circulation Time	1 hours
Calculated Displacement	73 bbls
Actual Displacement	73 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	6 bbls
Well Topped Out	No

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	14
Yield Point	10
10 sec. SGS	3
10 min. SGS	7
30 min. SGS	16
Filtrate	0.8
Flow Line Temp.	78

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	Yes
Well Fluid Density Into Well	9 lb/gal
Well Fluid Density Out of Well	8.33 lb/gal

1.7 Job Details (cont.)

Metrics	Value
BHCT	86 °F
BHST	109 °F
Initial ISIP	48 psi
Final ISIP	60 psi
Skis in Formation	245 sks



1.8 Circulation

Lost Circulation Experienced
Yes

Circulation Details:

During the conductor squeeze no circulation was observed while pumping 989.9 bbls of top cement and 11 bbls of displacement.
Full returns during surface casing 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	ALTCem S100-12	Lead	12.00	2.53	14.85		112.00	50.00	0
1	3	ALTCem S100-12	Tail	12.50	2.22	12.58		118.00	46.73	474
1	4	Water	DisplacementFinal	8.33			42.00		90.00	0
1	5	ALTCem S100-12	Topout	12.50	2.22	12.58		100.00	39.60	0

1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Lead	ALTCem S100-12	AC3-10	Cement	100.00	%
1	2	Lead	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk
1	2	Lead	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB
1	2	Lead	ALTCem S100-12	ADF-11	Defoamer	0.30	%BWOB
1	2	Lead	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	2	Lead	ALTCem S100-12	AXE-30	Extender	2.00	lb/sk
1	3	Tail	ALTCem S100-12	AC3-10	Cement	100.00	%
1	3	Tail	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk
1	3	Tail	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB
1	3	Tail	ALTCem S100-12	ADF-11	Defoamer	0.30	%BWOB
1	3	Tail	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	3	Tail	ALTCem S100-12	AXE-30	Extender	2.00	lb/sk
1	5	Topout	ALTCem S100-12	AC3-10	Cement	100.00	%
1	5	Topout	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk
1	5	Topout	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB
1	5	Topout	ALTCem S100-12	ADF-11	Defoamer	0.30	%BWOB
1	5	Topout	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	5	Topout	ALTCem 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	Call Out	6/14/2017	00:00					Customer called crew out and asked crew to be on location soon as possible due to loss circulation and wells communicating through the conductor pipe. Will attempt to pump cement from 270' to 50'
2	Crew Departs Shop	6/14/2017	02:00					Crew departs shop and has journey management
3	Arrive On Location	6/14/2017	02:30					Crew arrives on location and meets with customer
4	STEACS briefing	6/14/2017	02:45					Crew has STEACS briefing over rig up and hazards
5	Rig Up Iron	6/14/2017	03:00					Crew rigs up iron and hoses
6	STEACS briefing	6/14/2017	04:30					STEACS briefing with BJ crew, company man and rig crew
7	Fill Pumps And Lines	6/14/2017	04:58	8.33	1	3	30	Fill pumps and lines
8	Pressure Test Iron	6/14/2017	05:01	8.33	0.5	0.5	1000	Pressure test iron and value to 1000 PSI
9	Pump Cement	6/14/2017	05:03	12.5	1.5	89	75	Pump 98.9 bbls of cement (250 sks, 2.22 Yield, 12.6 Gals/sks)
10	Shut Down	6/14/2017	06:00					89 bbls into pumping cement shut down for half hour
11	Pump Cement	6/14/2017	06:40	12.5	1.5	10	100	Pump remaining 10 bbls of cement
12	Pump Displacement	6/14/2017	06:50	8.33	1.25	11	65	Pump 11 bbls of displacement
13	Shut Down	6/14/2017	07:02					Shut down pump ISIP 60 PSI and closed head on well with 60 PSI and wait 4 hours before bleeding pressure off
14	STEACS briefing	6/14/2017	07:05					STEACS briefing with crew over rigging down equipment
15	Rig Down Iron	6/14/2017	07:15					Crew rigs down iron and hoses
16	Crew Departs Location	6/14/2017	08:00					Crew departs from shop
17	Call Out	6/15/2017	00:30					Customer called crew out for surface job and requested crew to be on location at 8:00
18	Crew Departs Shop	6/15/2017	02:00					Crew departs shop and has journey management
19	Arrive On Location	6/15/2017	02:30					Arrive on location and meet with customer get numbers
20	STEACS briefing	6/15/2017	03:00					STEACS briefing with crew over rigging up iron and hazards
21	Rig Up Iron	6/15/2017	03:15					Rig up iron and hoses



22	Waiting	6/15/2017	04:00					Waiting on rig to run casing
23	Rig Lands Casing	6/15/2017	06:45					Rig lands casing and recirculates
24	STEACS breifing	6/15/2017	07:00					STEACS briefing with BJ crew, rig crew and company man over rigging up iron
25	Fill Pumps And Lines	6/15/2017	07:32	8.33	2	3	50	Fill pumps and lines
26	Pressure Test Iron	6/15/2017	07:35	8.33	0.5	0.5	5200	Pressure test iron to 3000 PSI
27	Pump Water	6/15/2017	07:39	8.33	5	20	100	Pump 20 bbls of water ahead
28	Pump Lead Cement	6/15/2017	07:48	12	5	50	174	Pump 50 bbls of lead cement at 12ppg, (112sk, 2.53yld, 14.85gps)
29	Pump Tail Cement	6/15/2017	08:01	12.5	5	46.7	134	Pump 46.7 bbls of tail cement at 12.5ppg (118sk, 2.22yld, 12.58gps) Top Of Tail 474'
30	Shut Down	6/15/2017	08:15					Shut down pumping
31	Drop Top Plug	6/15/2017	08:17					Drop top plug with company man to verify plug went down hole
32	Pump Displacement	6/15/2017	08:18	8.33	5	63	200	Pump 73 bbls of fresh water displacement
33	Slow Rate	6/15/2017	08:36	8.33	2	10	370	Last 10 bbls slow rate to 2 bpm
34	Land Plug	6/15/2017	08:45	8.33			1500	Land plug bump up to 1500 PSI FCP 370 PSI
35	Casing Test	6/15/2017	08:45	8.33			1500	Hold pressure for 15 mins preform casing test
36	Check Floats	6/15/2017	09:00					Check floats and got .5 bbl back
37	STEACS breifing	6/15/2017	09:05					STEACS briefing with crew over rigging down iron and equipment
38	Rig Down Iron	6/15/2017	09:10					Crew rigs down iron and hoses
39	Depart Location	6/15/2017	10:00					Crew departs from location

3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	59 °F	50-80 °F
pH Level	5	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	80	0-1000
Total Hardness	70 mg/L	0-500 mg/L
Carbonates	140 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	450 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

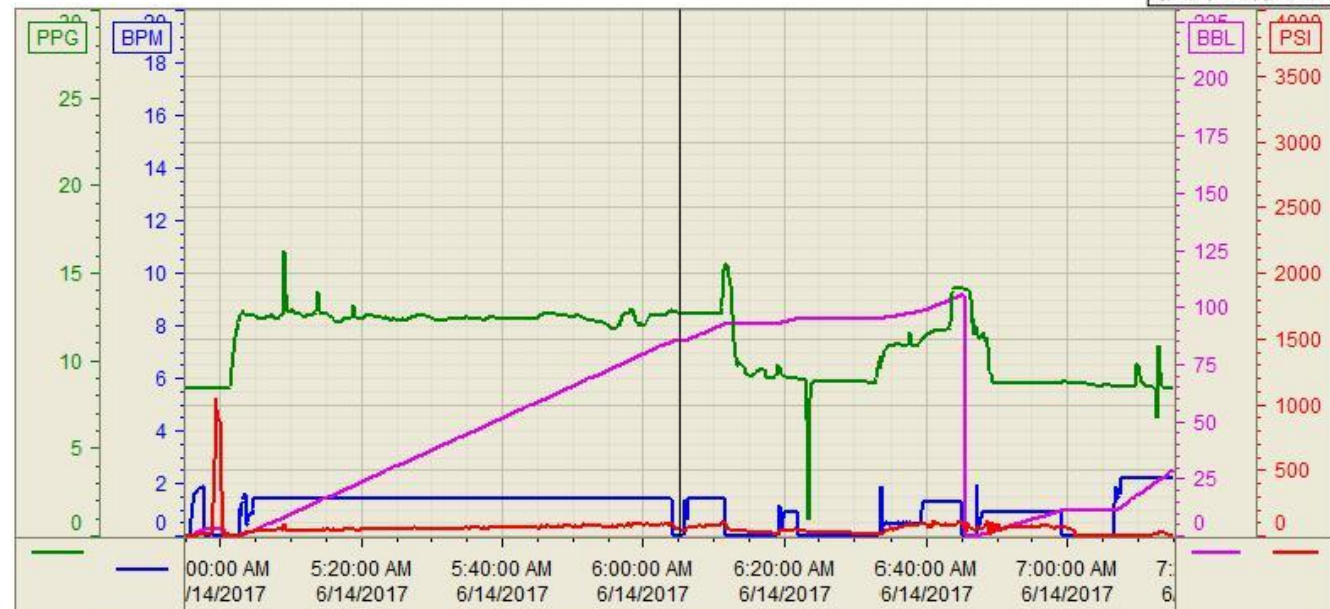
4 Pump Diagrams

Conductor Squeeze Job Chart

Customer: Caerus
Well Number: 21D-17
Lease Info: Chevron



Print Date/Time
6/14/2017 7:55:22 AM



Name	Y value	X value/time stamp	Tag name Y
1 DS - Press (PSI)	45.4	6/14/2017 6:05:07 AM	CementerDS_DISCHARGE_PRESS_DIAL
2 Den - Density (PPG)	12.67	6/14/2017 6:05:09 AM	CementerDENSITY_ACTUAL_RATE
3 Down Hole Total (BBLs)	85.2 i.	6/14/2017 6:05:08 AM i.	CementerDOWNHOLE_FLOW_TOTAL
4 Combined Rate	0.00	6/14/2017 6:05:11 AM	CementerFlow_Combined
5			

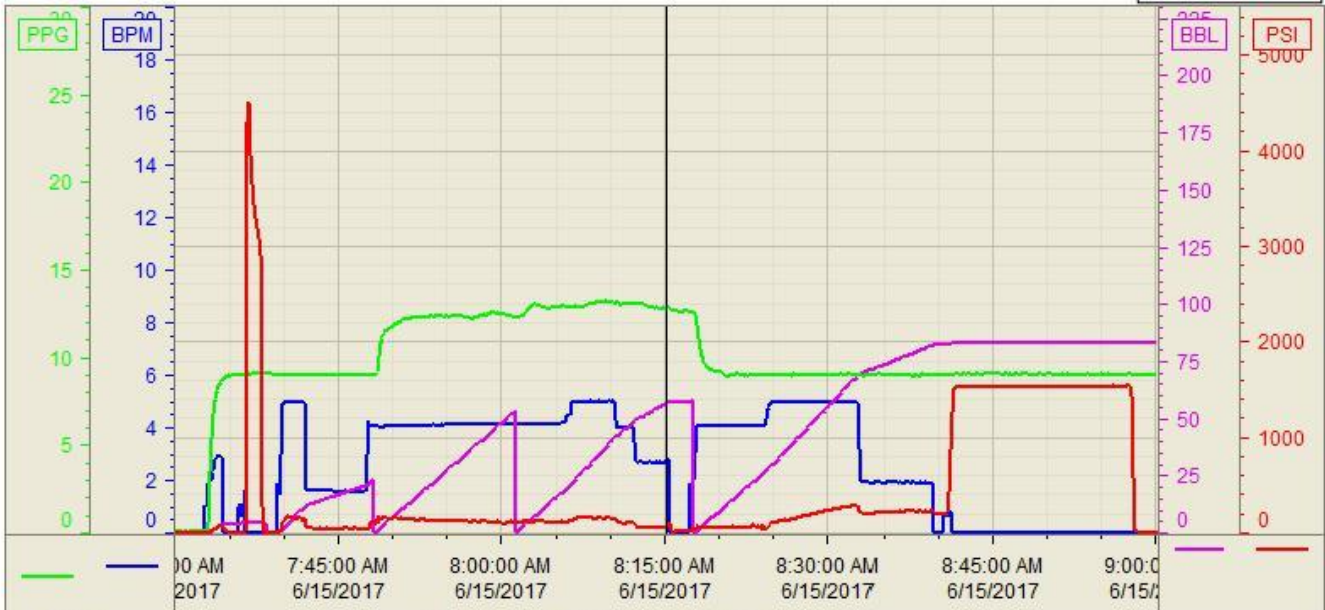
Source: Control1 7:55:17 AM

Surface Casing Job Chart

Customer:
Well Number: 21D-17
Lease Info: Chevron



Print Date/Time
6/15/2017 9:33:48 AM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	56.6 i.	6/15/2017 8:15:07 AM i.	Cementer\DS_DISCHARGE_PRESS_DIAL
2	Den2 - Discharge Density (F	12.80 i.	6/15/2017 8:15:07 AM i.	Cementer\DENSITY2_ACTUAL_RATE
3	Down Hole Total (BBLs)	56.5	6/15/2017 8:15:06 AM	Cementer\DOWNHOLE_FLOW_TOTAL
4	Combined Rate	2.68	6/15/2017 8:15:06 AM	Cementer\Flow_Combined
5				

Source: Control1 9:33:35 AM