



Great Western Operating Company, LLC

SURFACE POST JOB REPORT

JOB PURPOSE: PRIMARY

Tower LD 19-142HC 05-001-10305
S:21 T:1S R:67W Adams CO

CallSheet #: 75354
Proposal #: 50626



Attention: Great Western Operating Company LLC,
Great Western Operating Company, LLC
1001 17TH STREET, SUITE 2000 | DENVER, CO 80202

Dear Great Western Operating Company LLC,

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

Sincerely,

Jason Creel

Field Engineer | (307) 256-0306 | Jason.creel@americancementing.com

Field Office 1716 E 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)	Top (ft)	Bottom (ft)	Excess (%)
Open Hole	Outer	n/a	13.5	n/a	0	2039	35
Casing	Inner	9.625	8.921	36	0	2039	0

1.2 Equipment / People

Unit Type	Unit
Field Storage Silo	CTS-449
Pneumatic Trailer	FUF-308
Light Duty Pickups	LDV-5223
Pneumatic Trailer	FTF-031
Field Storage Silo	CTS-453

1.3 Timing

Event	Date/Time
Call Out	11/3/2020 23:00
Depart Facility	11/4/2020 00:00
On Location	11/4/2020 03:00
Rig Up Iron	11/4/2020 03:10
Job Started	11/4/2020 07:32
Job Completed	11/4/2020 09:29
Rig Down Iron	11/4/2020 09:40
Depart Location	11/4/2020 10:30

1.4 Casing Equipment

Type	Description	Qty	MD	TVD
Bow Spring Centralizers	9.625"	19		
Landing/Float Collar	9.625"	1	1997	1996
Float Shoe	9.625"	1	2039	2038

• 1.4.1 Casing Equipment-Centralizer Depths

Surface Centralizers, 40.41, 82.51, 166.8, 292.43, 417.06, 541.71, 666.33, 790.97, 915.62, 1039.89, 1164.55, 1288.47, 1412.71, 1537.34, 1663.58, 1788.57, 1913.23, 1954.78, 2022.8

1.5 General Job Information

Metrics	Value
Well Fluid Density	8.4 lb/gal
Well Fluid Type	Water
Rig Circulation Vol	357 bbls
Rig Circulation Time	30 hours
Calculated Displacement	154.4 bbls
Actual Displacement	154.4 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	20 bbls
Well Topped Out	No
Top Out Volume	0 bbls

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	8.4 lb/gal
Well Fluid Density Out of Well	8.4 lb/gal

1.7 Job Details (cont.)

Metrics	Value
BHCT	86 °F
BHST	110 °F
Ambient Temperature	57 °F

1.8 Circulation

Lost Circulation Experienced
No

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)	Volume (cu.ft)	Top (ft)
1	1	Fresh Water	Spacer	8.34			42.00		20.00		0
1	2	ACem S100.3.XC	Primary	14.50	1.39	6.81		965.00	238.96	1341.35	0
1	3	Fresh Water	Displacement Final	8.34			42.00		154.40		0

1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Primary	ACem S100.3.XC	ASTM TYPE III	Cement	100.00	%

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	11/3/2020	23:00					Crew called out, requested on location at 05:00
2	Safety Meeting	11/4/2020	23:45					Talked with the American Cementing Crew about the hazards of driving to location.
3	Depart For Location	11/4/2020	00:00					Crew departed for location
4	Arrive On Location	11/4/2020	03:00					Crew arrived on location and talked about the hazards of spotting in equipment.
5	Safety Meeting	11/4/2020	03:05					Talked with crew about the hazards of rigging up water bulk and iron lines.
6	Rig Up Iron	11/4/2020	03:10					Crew rigged up
7	Waiting	11/4/2020	04:00					Waited for rig to finish Running casing and to circulating the well.
8	Safety Meeting	11/4/2020	07:00					Talked with American Cementing Crew and rig Crews about the hazards of pumping the job.
9	Fill Lines	11/4/2020	07:32	8.33	4	5	100	Pump 5 bbls water ahead to fill lines for the pressure test.
10	Shutdown	11/4/2020	07:33	8.33			0	Shutdown to line out valves for pressure test
11	Pressure Test Lines	11/4/2020	07:34	8.33			2700	Pressure Test AC lines to 2500 PSI.
12	Pump Spacer	11/4/2020	07:36	8.33	4	20	100	Pump 20 bbls water spacer with blue dye
13	Pump Cement	11/4/2020	07:46	14.5	6	0	150	Mix and Pump 965 total sacks of ACem Cement at 14.5 lb/gal, 1.39 cuft/sk and 6.81 gals/sk from Pod 2 on CTF-009 and Silo 12. Pump first 10 bbls at 4 bpm, then bring rate up to 6 bpm.
14	Pump Cement	11/4/2020	07:58	14.5	6	87	450	Switch to Silo 12 with 87 bbls away. Slow rate to 3 bpm for pod switch then bring rate back up to 6 bpm.
15	Shutdown	11/4/2020	08:24	14.5	0	230	0	Shutdown to drop top plug and line out valves for displacement.
16	Pump Displacement	11/4/2020	08:28	8.33	7	0	100	Pump 154.4 bbls water displacement with Biocide and O2 scavenger.
17	Pump Displacement	11/4/2020	08:38	8.33	7	50	400	50bbls away.
18	Pump Displacement	11/4/2020	08:46	8.33	7	100	800	Blue dye to surface
19	Slow Pump Rate	11/4/2020	08:50	8.33	7	134	1030	Cement to surface
20	Pump Displacement	11/4/2020	08:52	8.33	3	140	840	Slow Rate to 3 bpm
21	Land Plug	11/4/2020	08:57	8.33	0	154.4	1780	Land plug, bring pressure up to 1780 psi for 30 min casing test. FCP was 850 psi
22	Test Casing	11/4/2020	09:07	8.33	0	154.4	1780	10 min into casing test.
23	Test Casing	11/4/2020	09:17	8.33	0	154.4	1753	20 min into casing test.
24	Test Casing	11/4/2020	09:27	8.33	0	154.4	1740	30 min into casing test.
25	Check Floats	11/4/2020	09:29					Floats held with 1 bbl back
26	Safety Meeting	11/4/2020	09:35					Talked with AC Crew about the hazards of rigging down.
27	Rig Down Iron	11/4/2020	09:40					Rig Down
28	Safety Meeting	11/4/2020	10:20					Talked with AC Crew about the hazards of driving back to the yard.
29	Depart Location	11/4/2020	10:30					Job Completed, no issues. Crew Departed Location.



3 Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	56 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	180	0-1000
Total Hardness	50 mg/L	0-500 mg/L
Carbonates	0 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	0 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

4 Pump Diagrams

