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# **Great Western Operating Company, LLC**

## **SURFACE POST JOB REPORT**

### **JOB PURPOSE: PRIMARY**

**Tower LD 19-182HC 05-001-10294**  
**S:21 T:1S R:67W Adams CO**

CallSheet #: 75372  
Proposal #: 50629



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

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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@americacementing.com](mailto:Jason.creel@americacementing.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	2017	40
Casing	Inner	9.625	8.921	36	0	2017	0

### 1.2 Equipment / People

Unit Type	Unit
Field Storage Silo	CTS-454
Cement Pump	CPF-184
Light Duty Trailers	FIF-161
Pneumatic Trailer	FTF-031
Pneumatic Trailer	FUF-308

### 1.3 Timing

Event	Date/Time
Call Out	11/6/2020 17:20
Depart Facility	11/6/2020 18:30
On Location	11/6/2020 20:30
Rig Up Iron	11/6/2020 20:45
Job Started	11/7/2020 01:58
Job Completed	11/7/2020 04:26
Rig Down Iron	11/7/2020 04:31
Depart Location	11/7/2020 05:30

### 1.4 Casing Equipment

Type	Description	Qty	MD	TVD
Bow Spring Centralizers	9.625"	19		
Landing/Float Collar	9.625"	1	1973	1973
Float Shoe	9.625"	1	2017	2017

#### • 1.4.1 Casing Equipment-Centralizer Depths

Surface Centralizers, 40.28, 82.41, 166.64, 293.02, 419.41, 545.23, 671.63, 797.45, 923.86, 1045.7, 1170.02, 1290.08, 1410.4, 1531.17, 1651.84, 1771.65, 1891.71, 1931.19, 2000.8

## 1.5 General Job Information

Metrics	Value
Well Fluid Density	8.4 lb/gal
Well Fluid Type	Water
Rig Circulation Vol	300 bbls
Rig Circulation Time	0.5 hours
Calculated Displacement	152.5 bbls
Actual Displacement	152.5 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	29 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	63 °F

## 1.8 Circulation

Lost Circulation Experienced
No

## 1.9 Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft <sup>3</sup> /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		1000.00	247.62	1390	0
1	3	Fresh Water	Displacement Final	8.34			42.00		152.50		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	%
1	2	Primary	ACem S100.3.XC	STATIC FREE	Other	0.01	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	Arrive On Location	11/6/2020	20:30					Crew Arrived on Location/ Checked and verified mix water and cement.
2	Safety Meeting	11/6/2020	20:38					Pre Rig Up Safety Meeting with Crew
3	Rig Up	11/6/2020	20:45					Crew Rigged up Treating equipment and lines.
4	Waiting	11/6/2020	21:20					Waiting on Rig Crew To Run Casing
5	Safety Meeting	11/7/2020	01:45					Safety Meeting with Rig Crew, and Company Representative
6	Prime Up	11/7/2020	01:59	8.34	4	5	113	Prime up Pump and Lines
7		11/7/2020	02:01	8.34	0.5	0.5	2500	Pressure Test Lines to 2500 psi
8		11/7/2020	02:13	8.34	4	20	113	Pump 20 bbls of Fresh Water with Blue Dye/ Full Returns
9		11/7/2020	02:18	14.5	4	248	130	Pump 248 bbls Primary Cement @ 14.5 ppg/ 1000 sks (1.39 Yield, 6.8 gps, 162 Mix Water.)/Full Returns.
10	Shutdown	11/7/2020	02:20					Shutdown because having trouble with Recirculation pump?/ swithced to secondary pump.
11	Pump Cement	11/7/2020	02:26	14.5	3	2	120	Back Online with Cement
12	Rate Change	11/7/2020	02:28	14.5	5	10	300	Changed Rate to 5 bpm
13	Pump Cement	11/7/2020	02:30	14.5	5	50	400	50bbls of Cement Pumped Away/ Full Returns/Wet sample Taken and Verified
14	Pump Cement	11/7/2020	02:46	14.5	5	100	400	100 bbls of Cement Pumped Away/ Full Returns
15	Pump Cement	11/7/2020	02:55	14.5	5	150	400	150 bbls of Cement Pumped Aaway/ Full Returns
16	Pump Cement	11/7/2020	03:05	14.5	5	200	420	200 bls of Cement Pumped Away/ Full Returns
17	Shutdown	11/7/2020	03:16					Shutdown to Drop Top Plug/ Wash Pump and Lines on Top of Plug
18	Pump Displacement	11/7/2020	03:18	8.34	4	10	100	Pump First 10 bbls of Displacement/ Full Returns
19	Pump Displacement	11/7/2020	03:31	8.34	5	50	260	Pumped 50 bbls of Displacement/ Chemicals added Through out/ Full Returns
20	Spacer to Surface	11/7/2020	03:39	8.34	5	90	700	Blue Dyed Spacer Back at 90 bbls Away
21	Pump Displacement	11/7/2020	03:41	8.34	5	100	700	Pumped 100 bbls of Displacement/ Chemicals added Through out/ Full Returns
22	Cement to Surface	11/7/2020	03:45		5	123	820	Cement Back to Surface at 123 bbls Away
23	Rate Change	11/7/2020	03:46	8.34	4	128	690	Slowed Rate to 4 bpm to Reduce Pressure/ Full Returns
24	Rate Change	11/7/2020	03:50	8.34	3	140	720	Sloed Rate to Land the Plug/ Full Returns
25	Pump Displacement	11/7/2020	03:51	8.34	3	150	900	Pumped 150 bbls of Displacement/ Chemicals added Through out/ Full Returns
26	Land Plug	11/7/2020	03:53		3	152.5	950	Land Plug at 152.5 bbls Away/ FCP was 950 psi and Took it to 1609 psi
27	Casing Test	11/7/2020	03:55				1609	Start 30 Min Casing Test Pressure was 1609 psi
28	Casing Test	11/7/2020	04:05				1609	10 min Point of Casing Test Pressure was 1609 Psi
29	Casing Test	11/7/2020	04:15				1574	20 Min Point of Casing Test Pressure was 1574 psi
30	Casing Test	11/7/2020	04:25				1568	30 Min Point of Casing Test Pressure was



Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
31	Check Floats	11/7/2020	04:26					Check Floats/ .75 bbls Back
32	Safety Meeting	11/7/2020	04:30					Pre Rig Down Safety Meeting
33	Rig Down	11/7/2020	04:31					Crew Rigged down Treating Equipment
34	Depart Location	11/7/2020	05:30					Pre Journey Safety Briefing/ Crew Departed Location

### 3 Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	65 °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	120 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



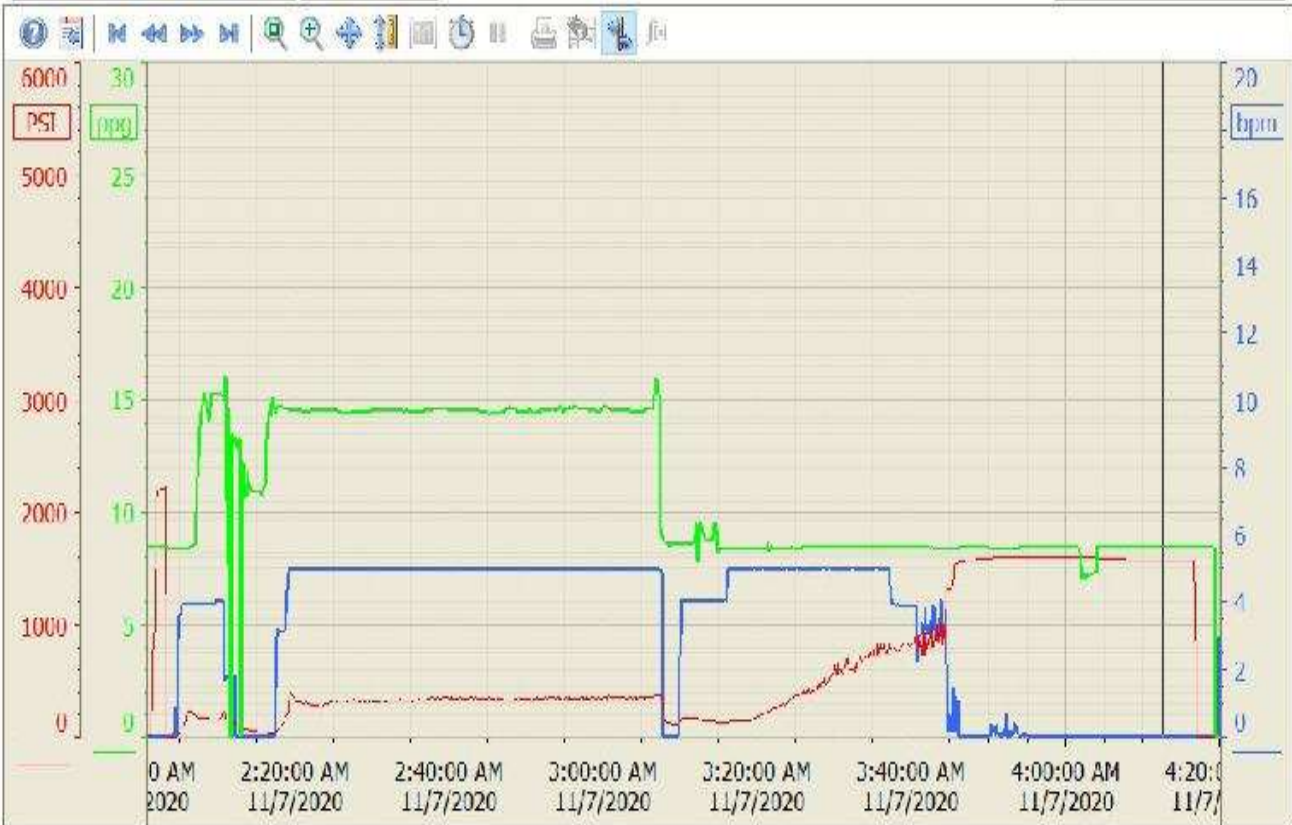
## 4 Pump Diagrams

### Summary Trend

GREAT WESTERN

19-182HC

Lease: TOWER LD



11/7/2020 4:37:06 AM