



# **Great Western Operating Company, LLC**

## **SURFACE POST JOB REPORT**

### **JOB PURPOSE: PRIMARY**

**Tower LD 19-142HN 05-001-10301**  
**S:21 T:1S R:67W Adams CO**

CallSheet #: 75360  
Proposal #: 50627



**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@americancementing.com](mailto: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	2002	35
Casing	Inner	9.625	8.921	36	0	2002	0

### 1.2 Equipment / People

Unit Type	Unit
Pneumatic Trailer	FUF-308
Pneumatic Trailer	FTF-152
Light Duty Trailers	FIF-161
Field Storage Silo	6
Cement Pump	CPF-182

### 1.3 Timing

Event	Date/Time
Call Out	11/4/2020 20:00
Depart Facility	11/4/2020 21:00
On Location	11/4/2020 23:00
Rig Up Iron	11/4/2020 23:10
Job Started	11/5/2020 04:11
Job Completed	11/5/2020 06:28
Rig Down Iron	11/5/2020 06:35
Depart Location	11/5/2020 07:00

### 1.4 Casing Equipment

Type	Description	Qty	MD	TVD
Bow Spring Centralizers	9.625"	19		
Landing/Float Collar	9.625"	1	1958	1957
Float Shoe	9.625"	1	2002	2002

#### • 1.4.1 Casing Equipment-Centralizer Depths

Surface Centralizers, 40.47, 82.57, 124.67, 250.96, 377.21, 502.38, 626.98, 751.56, 876.17, 1000.77, 1124.64, 1249.29, 1373.91, 1498.54, 1623.16, 1748.89, 1874.65, 1916.2, 1985.8

## 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	151.4 bbls
Actual Displacement	151.4 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	0 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	50 °F

## 1.8 Circulation

Lost Circulation Experienced	Losses into Displacement
Yes	100

### Circulation Details:

At 100 bbls away the return flow in the cellar started to slow down. At 110 bbls away the returns stopped, and the pumps kicked out at 1282 psi. Came back online at 5 bpm still with no returns. Slowed rate to 2 bpm with 130 bbls pumped and regained partial returns. Did not get cement to surface.

## 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		965.00	238.96	1341.35	0
1	3	Fresh Water	Displacement Final	8.34			42.00		151.40		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	11/4/2020	20:00					Crew called out, requested on location at 02:00
2	Safety Meeting	11/4/2020	22:50					Talked with the American Cementing Crew about the hazards of driving to location.
3	Depart For Location	11/4/2020	21:00					Crew departed for location
4	Arrive On Location	11/4/2020	23:00					Crew arrived on location and talked about the hazards of spotting in equipment.
5	Safety Meeting	11/4/2020	23:05					Talked with crew about the hazards of rigging up water bulk and iron lines.
6	Rig Up Iron	11/4/2020	23:10					Crew rigged up
7	Waiting	11/5/2020	00:00					Waited for rig to finish Running casing and to circulating the well.
8	Safety Meeting	11/5/2020	03:55					Talked with American Cementing Crew and rig Crews about the hazards of pumping the job.
9	Fill Lines	11/5/2020	04:11	8.33	5	5	50	Pump 5 bbls water ahead to fill lines for the pressure test.
10	Shutdown	11/5/2020	04:12	8.33			0	Shutdown to line out valves for pressure test
11	Pressure Test Lines	11/5/2020	04:13	8.33			2700	Pressure Test AC lines to 2500 PSI.
12	Pump Spacer	11/5/2020	04:16	8.33	4	20	200	Pump 20 bbls water spacer with blue dye
13	Pump Cement	11/5/2020	04:22	14.5	3.5	0	60	Mix and Pump 965 total sacks of ACem Cement at 14.5 lb/gal, 1.39 cuft/sk and 6.81 gals/sk from Silo 6 and CTF-009. Pump ar 3.5 bpm due to poor cement delivery from Silo and Bulk truck.
14	Pump Cement	11/5/2020	03:36	14.5	3.5	44	120	Attempted to bring rate up to 4.5 but could not maintain cement density
15	Pump Cement	11/5/2020	04:40	14.5	5	65	276	Bring rate up to 5 bpm with 65 bbls away
16	Pump Cement	11/5/2020	05:12	14.5	2.5	212	60	Switch to pod 1 on CTF-009, slow rate to 2.5 bpm due to poor cement delivery.
17	Shutdown	11/5/2020	05:17	14.5	2.5	227	0	Shutdown to batch up cement tub to correct density.
18	Pump Cement	11/5/2020	05:19	14.5	2.5	227	72	Come back online and pump remaining cement at correct density.
19	Shutdown	11/5/2020	05:24	14.5	0	239	0	Shutdown to drop top plug and line out valves for displacement.
20	Pump Displacement	11/5/2020	05:27	8.33	7	0	117	Pump 153.4 bbls water displacement with Biocide and O2 scavenger.
21	Pump Displacement	11/5/2020	05:35	8.33	7	50	400	50bbls away.
22	Pump Displacement	11/5/2020	05:39	8.33	7	80	800	Blue dye to surface
23	Pump Displacement	11/5/2020	05:43	8.33	7	100	1000	Returns started to slow down
24	Pump Displacement	11/5/2020	05:44	8.33	7	110	1282	Lost all returns, pumps kicked out at 1282 psi.
25	Pump Displacement	11/5/2020	05:44	8.33	5	130	932	Come back online at 5 bpm
26	Slow Pump Rate	11/5/2020	05:48	8.33	2	130	824	Slow pump rate to 2 bpm to try to get returns back.
27	Pump Displacement	11/5/2020	05:54	8.33	2	130	850	Partial returns back to surface. Still no cement to surface.



Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
28	Land Plug	11/5/2020	05:56	8.33	0	153.4	1623	Land plug, bring pressure up to 1623 psi for 30 min casing test. FCP was 788 psi. Lost all returns, No cement circulated to surface.
29	Test Casing	11/5/2020	06:06	8.33	0	153.4	1623	10 min into casing test.
30	Test Casing	11/5/2020	06:16	8.33	0	153.4	1610	20 min into casing test.
31	Test Casing	11/5/2020	06:26	8.33	0	153.4	1619	30 min into casing test.
32	Check Floats	11/5/2020	06:28					Floats held with .75 bbls back.
33	Safety Meeting	11/5/2020	06:30					Talked with AC Crew about the hazards of rigging down.
34	Rig Down Iron	11/5/2020	06:35					Rig Down
35	Safety Meeting	11/5/2020	06:55					Talked with AC Crew about the hazards of driving back to the yard.
36	Depart Location	11/5/2020	07:00					<b>Job Completed, no cement to surface.</b> Crew Departed Location.

### 3 Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	58 °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

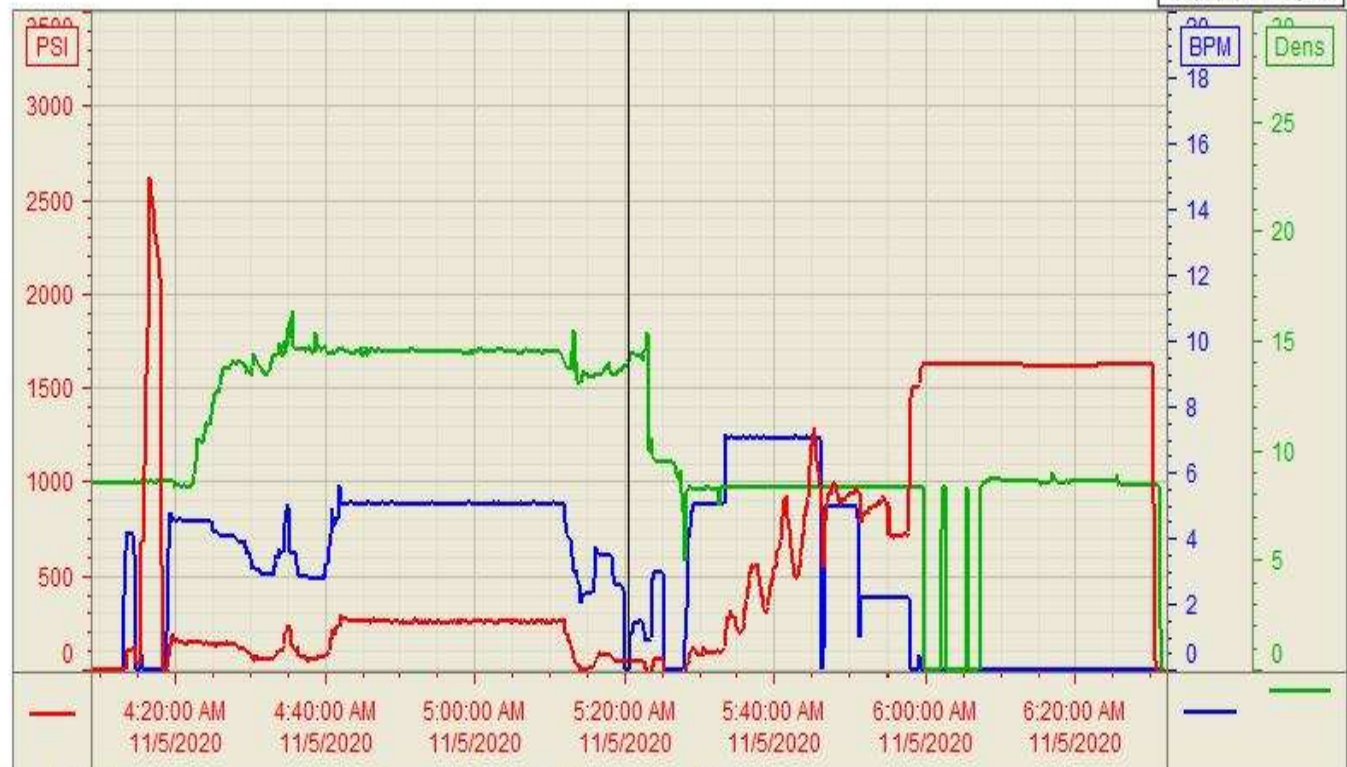


## 4 Pump Diagrams

Customer: Great Western  
Well Number: Tower LD  
Lease Info: 19-142HN

Print Date/Time

11/5/2020 7:24:18 AM



	Name	Y value	X value/time stamp	Tag name Y
1	PS - Press (PSI)	47.1	11/5/2020 5:20:28 AM	Cementer/PS_DISCHARGE_PRESS_DIAL
2	Den - Density (PPG)	14.07	11/5/2020 5:20:28 AM	Cementer/DENSITY_ACTUAL_RATE
3	Flow Rate (BBLs)	0.00	11/5/2020 5:20:30 AM	Cementer/Flow_Combined
4				
5				
				Source: Control1 7:24:12 AM