



---

# **Terra Energy Partners, LLC**

## **LONG STRING POST JOB REPORT**

**CHEVRON GM 331-19 05-045-24354**  
**S:20 T:6S R:96W Garfield CO**

CallSheet #: 75785  
Proposal #: 50966



**LONG STRING Post Job Report**

**Attention:** Mr. Lynn Cass | (970) 263-2716 | lcass@terraep.com  
Terra Energy Partners, LLC  
4828 Loop Central Dr., Suite 900 | Houston, TX 77081

---

Dear Mr. Lynn Cass,

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,

**Zen Keith**

Field Engineer | (307) 757-7178 | zen.keith@americancementing.com

**Field Office**      28730 US-6, Rifle, CO 81650  
Phone: (970) 657-1187

## Table of Contents

1 Job Details & Summary .....	3
Geometry.....	3
Equipment / People .....	3
Timing .....	3
General Job Information.....	3
Job Details.....	3
Job Details (cont.) .....	3
Circulation.....	3
Job Execution Information.....	4
Job Fluid Details .....	4
2 Job Logs .....	5
3 Water Analysis .....	6
4 Pump Diagrams .....	6

## 1 Job Details & Summary

### Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	9.625	8.921	36		0	1027	0
Open Hole	Outer		8.75			1000	7785	45
Casing	Inner	4.5	4	11.6		0	7778	0

### Equipment / People

Unit Type	Unit	Power Unit	Employee #1	Mileage
Field Storage Silo	CTS-471			
Pneumatic Trailer	CTF-020		Diaz, Douglas	56
Bulk Trailer	CTF-340	TRB-115	Kirchenwitz, Jacob	56
Cement Pump	CPF-011	TRH-957	Aden, Mark	56

### Timing

Event	Date/Time
Call Out	12/31/2020 09:00
Depart Facility	12/31/2020 10:20
On Location	12/31/2020 12:00
Rig Up Iron	12/31/2020 12:15
Job Started	12/31/2020 16:36
Job Completed	12/31/2020 18:19
Rig Down Iron	12/31/2020 18:19
Depart Location	12/31/2020 19:20

### General Job Information

Metrics	Value
Well Fluid Density	10.6 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	660 bbls
Rig Circulation Time	1 hours
Calculated Displacement	120 bbls
Actual Displacement	120 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	0 bbls
Well Topped Out	N/A

### 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	10.6 lb/gal
Well Fluid Density Out of Well	10.6 lb/gal

### Job Details (cont.)

Metrics	Value
BHCT	170 °F
BHST	230 °F

### Circulation

Lost Circulation Experienced
No

## 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)	Top (ft)
1	1	Water	Flush	8.34			42.00		10.00	2320
1	2	Mud Flush	Flush	8.45			40.86		20.00	2503
1	3	Water	Flush	8.34			42.00		10.00	2869
1	4	Lead Cement	Lead	12.50	2.16	12.18		229.00	88.14	3052
1	5	Tail Cement	Tail	13.00	1.99	10.08		482.00	171.18	4661
1	6	Displacement	DisplacementFinal	8.34			42.00		102.00	0

## Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Flush	Mud Flush	SAPP	Surfactant	10.00	lb/bbl
1	2	Flush	Mud Flush	SS-201	Surfactant	0.50	gal/bbl
1	4	Lead	Lead Cement	ASTM TYPE III	Cement	100.00	%
1	4	Lead	Lead Cement	BA-90	BondEnhancer	5.00	lb/sk
1	4	Lead	Lead Cement	FL-66	FluidLoss	0.30	%BWOB
1	4	Lead	Lead Cement	FP-24	Defoamer	0.30	%BWOB
1	4	Lead	Lead Cement	GW-86	Viscosifier	0.10	%BWOB
1	4	Lead	Lead Cement	IntegraSeal POLI	LostCirculation	0.25	lb/sk
1	4	Lead	Lead Cement	R-3	Retarder	0.60	%BWOB
1	5	Tail	Tail Cement	CLASS G	Cement	50.00	%
1	5	Tail	Tail Cement	FLY ASH (POZZOLAN)	Extender	50.00	%
1	5	Tail	Tail Cement	BA-90	BondEnhancer	3.00	lb/sk
1	5	Tail	Tail Cement	BENTONITE	Viscosifier	6.00	%BWOB
1	5	Tail	Tail Cement	FL-66	FluidLoss	0.40	%BWOB
1	5	Tail	Tail Cement	FP-24	Defoamer	0.30	%BWOB
1	5	Tail	Tail Cement	GW-86	Viscosifier	0.10	%BWOB
1	5	Tail	Tail Cement	IntegraSeal POLI	LostCirculation	0.25	lb/sk
1	5	Tail	Tail Cement	R-3	Retarder	0.10	%BWOB
1	5	Tail	Tail Cement	S-8	StrengthRetrogression	20.00	%BWOB

## 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	12/31/2020	09:00					Yard call 0900 on location 1230, Crew temps D. Diaz 96.8, M. Aden 97.7, J. Kirchenwitz 95.1
2	Depart For Location	12/31/2020	10:20					Leave Rifle Shop for location
3	Arrive On Location	12/31/2020	12:00					Arrive on location rig running casing
4	Spot Equipment	12/31/2020	12:00					Spot in all equipment
5	Rig Up Iron	12/31/2020	12:15					Pre rig up safety meeting, rig in all equipment and lines to the standpipe
6	Waiting	12/31/2020	13:10					Waiting on rig to finish casing and circulating
7	Safety Meeting	12/31/2020	16:02					Pre job safety meeting with company man and rig crew
8	Rig Ends Circulation	12/31/2020	16:18					Rig circulated 60 mins @ 11 BBLs/min, total of 660 BBLs
9	Waiting	12/31/2020	16:18					Waiting on rig to lay down CRT and blow down
10	Rig Up Iron	12/31/2020	16:28					Rig in cement head and lines on the floor
11	Pump Spacer	12/31/2020	16:36	8.34	4	10	809	Pumping fresh water spacer, Returns
12	Pressure Test Lines	12/31/2020	16:41				5000	Pressure test lines, leak on back of pump, replaced and repressured
13	Pump Spacer	12/31/2020	16:58	8.34	5	20	735	Pumping mud flush spacer
14	Pump Spacer	12/31/2020	17:03	8.34	5	10	800	Pumping fresh water spacer
15	Pump Lead Cement	12/31/2020	17:06	12.5	6	0	1322	Pumping lead cement
16	Pump Lead Cement	12/31/2020	17:20	12.5	6	88	763	Pumping lead cement
17	Pump Tail Cement	12/31/2020	17:20	13	6	0	763	Pumping tail cement
18	Pump Tail Cement	12/31/2020	17:28	13	7	50	1248	Pumping tail cement
19	Pump Tail Cement	12/31/2020	17:34	13	7	100	1225	Pumping tail cement
20	Pump Tail Cement	12/31/2020	17:42	13	5	150	591	Pumping tail cement
21	Pump Tail Cement	12/31/2020	17:48	13	4	171	427	Pumping tail cement
22	Clean Pumps and Lines	12/31/2020	17:48					Clean pump and lines to high wall tank
23	Drop Top Plug	12/31/2020	18:01					Dropped top plug verified by company man
24	Pump Displacement	12/31/2020	18:01	8.34	8.5	0	762	Pumping KCL displacement
25	Pump Displacement	12/31/2020	18:06	8.34	10	50	1905	Pumping KCL displacement
26	Pump Displacement	12/31/2020	18:12	8.34	10	100	2752	Pumping KCL displacement
27	Pump Displacement	12/31/2020	18:15	8.34	4	120	2000	Pumping KCL displacement
28	Land Plug	12/31/2020	18:15				3000	Land plug, FCP 2000 PSI bumped to 3000 PSI
29	Check Floats	12/31/2020	18:19					Bled pressure floats held, 1 BBL bled back
30	Rig Down Iron	12/31/2020	18:19					Pre rig down safety meeting, rig down cement head and lines on the floor
31	Clean Pumps and Lines	12/31/2020	18:28					Wash and winterize pump and lines to high wall tank
32	Rig Down Iron	12/31/2020	18:50					Rig down lines and equipment
33	Depart Location	12/31/2020	19:20					Leave location for Rifle shop

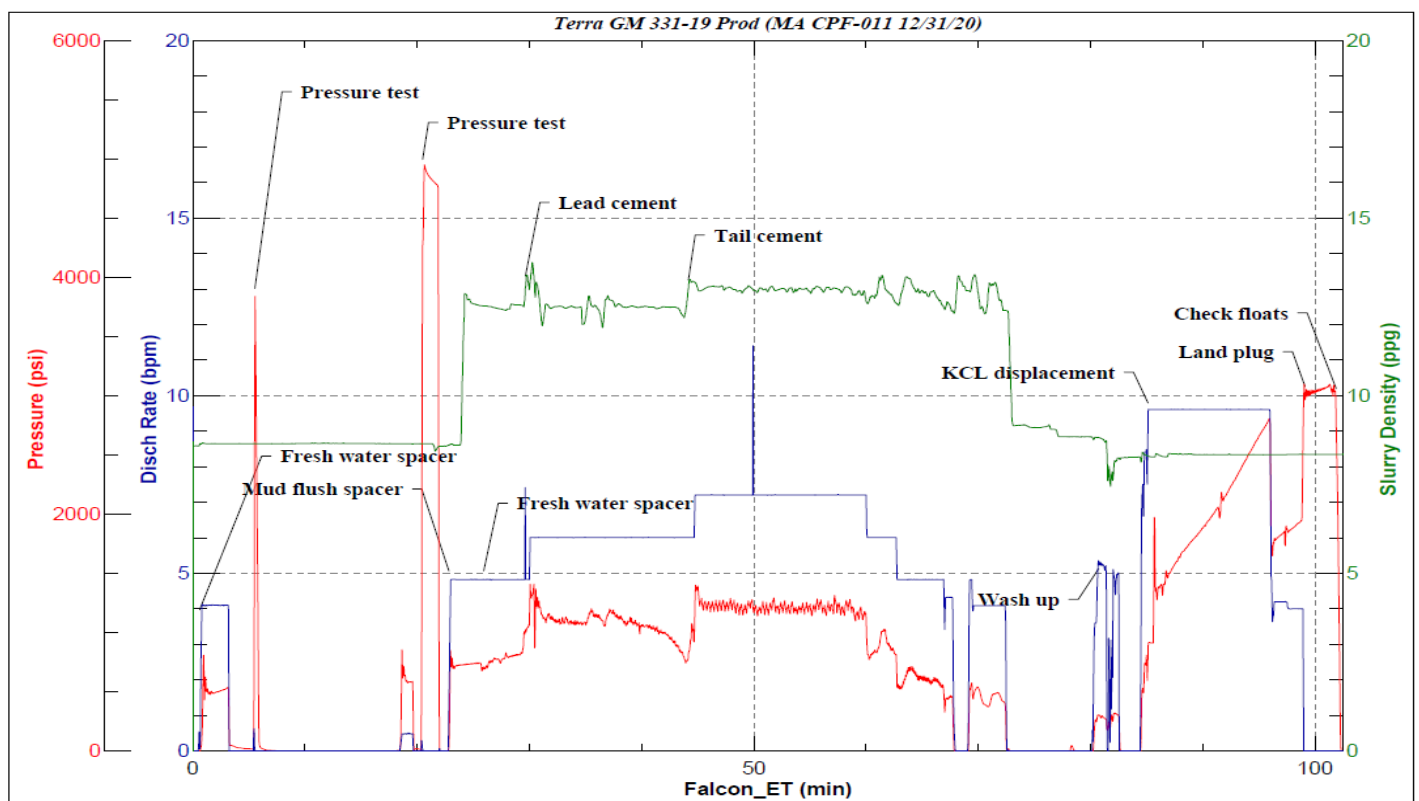
### 3 Water Analysis

Metrics	Value	Recommended
Water Source	Frac Tank	
Temperature	67 °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	425 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



**JobMaster Program Version 5.01C1**  
Job Number: 75785  
Customer: Terra  
Well Name: GM 331-19



BJ Services

Job Start: Thursday, December 31, 2020