

# HALLIBURTON

iCem<sup>®</sup> Service

## **TERRA ENERGY PARTNERS-EBUS**

Rock Springs District, CO

### **For: H&P 318**

Date: Thursday, November 14, 2019

### **PUCKETT**

GARFIELD, PUCKETT GM 313-8

API # 05-045-24090

Job Date: Thursday, November 14, 2019

Sincerely,

**Rock Springs Engineering**

## Legal Notice

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### Disclaimer:

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on this casing services job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

BARTLEY OLSEN

Job Checks		Units	Description					
1	Surface temperature at time of job	°F	37					
2	Actual mud density	lb/gal	9.8					
3	Mud plastic viscosity (PV)	CP						
4	Mud yield point (YP)	lb/100ft <sup>2</sup>						
5	Mud Rheologies (if given)	RPM	600	300	200	100	6	3
		Dial Reading						
6	Time circulated before job	HH:MM	1:00					
7	Mud volume circulated	bbls	600					
8	Rate at which well was circulated	bpm	10					
9	Pipe movement during hole circulation	Y/N	Y					
10	Rig pressure while circulating	psi	700					
11	Rig pressure after circulation	psi						
12	Time from end mud circulation to start of job	HH:MM	0:10					
13	Pipe movement during cementing	Y/N	Y					
14	Annular flow before job (gas units)	Units	500					
15	Annular flow after job (gas units)	Units						
16	Length of rat hole	ft	10					
17	Was there a pipe tally (attach with job packet)	Y/N	N					
18	Was lost circulation experienced at any time ?	Y/N	N					
19	Spacer volume to surface	bbls	30					
20	Cement volume to surface	bbls	0					
21	Pressure to land plug	psi	1350					
22	Mix water temperature	deg F	72					
23	Mix water pH	pH	7					
24	Mix water chlorides	ppm	368					

## 2.0 Real-Time Job Summary

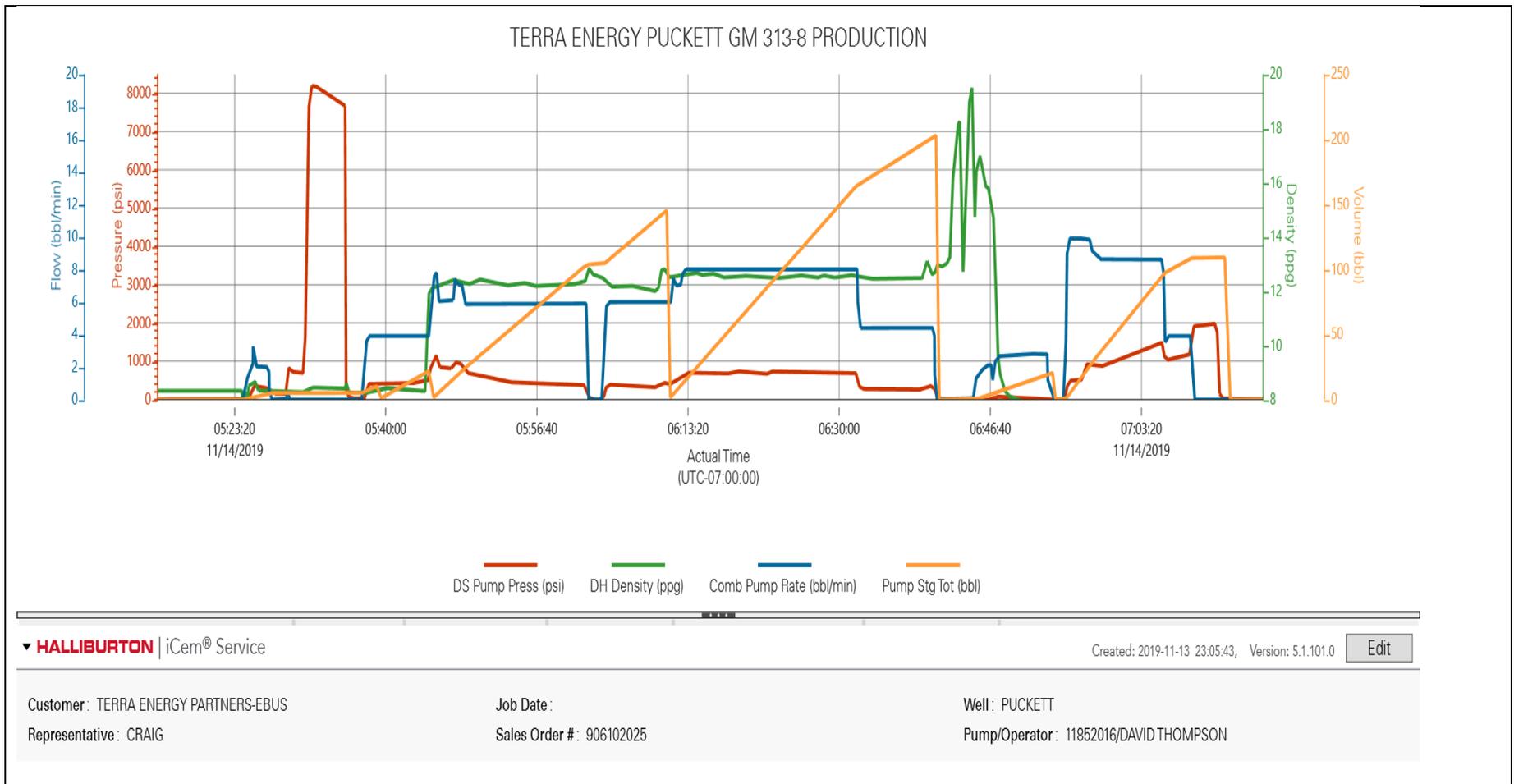
### 2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	11/13/2019	14:00:00	USER					REQUESTED ON LOCATION 11/14/19 AT 01:00
Event	2	Pre-Convoy Safety Meeting	11/13/2019	15:45:00	USER					DISCUSS HAZARDS OF TRAVELING TO LOCATION
Event	3	Crew Leave Yard	11/13/2019	16:00:00	USER					
Event	4	Arrive At Loc	11/13/2019	22:00:00	USER					CUSTOMER REQUESTED CREW TO STAGE ON ANOTHER SITE UNTIL OTHER OPERATIONS WERE COMPLETED
Event	5	Assessment Of Location Safety Meeting	11/13/2019	23:30:00	USER					DISCUSS HAZARDS OF SPOTTING EQUIPMENT
Event	6	Other	11/14/2019	02:00:00	USER	-1.00	1.49	0.00	0.00	SPOT HES EQUIPMENT
Event	7	Pre-Rig Up Safety Meeting	11/14/2019	02:45:00	USER	-1.00	1.44	0.00	0.00	DISCUSS HAZARDS OF RIGGING UP HES EQUIPMENT
Event	8	Rig-Up Equipment	11/14/2019	03:00:00	USER	-1.00	1.44	0.00	0.00	
Event	9	Rig-Up Completed	11/14/2019	04:00:00	USER	223.00	8.09	7.80	22.60	WAIT ON CUSTOMER TO RUN 6725' OF 4.5", 11.6LB/FT, P-110 CASING, SJ 30.41', TD 6735, OH 8.75". PREV CSG 9.625" 36LB/FT TO 1010'
Event	10	Pre-Job Safety Meeting	11/14/2019	04:40:00	USER	1.00	8.26	0.00	0.00	DISCUSS HAZARDS AND JOB PROCEDURE WITH THE CUSTOMER AND RIG CREW
Event	11	Pump Water	11/14/2019	05:25:00	USER	39.00	8.62	1.70	0.60	FILL LINES WITH 5BBL OF FRESH H2O
Event	12	Shutdown	11/14/2019	05:27:36	USER	164.00	8.32	0.00	5.00	SET VALVES TO PRESSURE TEST HES IRON
Event	13	Pressure Test	11/14/2019	05:29:27	USER	762.00	8.29	0.00	5.00	500PSI KICKOUT TEST/8000PSI HIGH PRESSURE TEST
Event	14	Pump Water	11/14/2019	05:37:46	USER	45.00	8.20	2.60	5.40	PUMP 5BBL OF FRESH H2O AT 4BBL/MIN
Event	15	Pump Spacer	11/14/2019	05:39:45	USER	431.00	8.42	3.90	2.10	MIX AND PUMP 20BBL OF MUDFLUSH III AT 4BBL/MIN

Event	16	Pump Lead Cement	11/14/2019	05:44:45	USER	509.00	11.91	3.90	21.70	MIX AND PUMP 340SKS NEOCEM AT 12.3LB/GAL, 2.22YLD, 11.57GAL/SK AT 6BBLS/MIN COULD NOT GET 8BBLS/MIN AS DESIGNED DUE TO SILO DELIVERY
Event	17	Pump Tail Cement	11/14/2019	06:11:11	USER	398.00	12.47	5.90	0.40	MIX AND PUMP 485SKS NEOCEM AT 12.52LB/GAL, 2.11YLD, 10.78GAL/SK AT 8BBLS/MIN
Event	18	Shutdown	11/14/2019	06:40:48	USER	49.00	12.93	0.00	0.00	WASH PUMPS AND LINES
Event	19	Drop Plug	11/14/2019	06:43:59	USER	-7.00	15.45	0.00	0.00	DROPPED HES TOP PLUG WITNESSED BY THE CUSTOMER
Event	20	Pump Displacement	11/14/2019	06:54:55	USER	24.00	7.72	2.50	0.20	PUMP 30BBLS OF BIOCID H2O WITH MMCR IN THE FIRST 10BBLS, AT 10BBLS/MIN, PUMP 73.7BBLS OF KCL DISPLACEMENT AT 10BBLS/MIN FOR A TOTAL OF 103.7BBLS DISPLACEMENT
Event	21	Slow Rate	11/14/2019	07:05:24	USER	1491.00	7.80	8.60	93.60	SLOW RATE TO 4BBLS/MIN FOR THE LAST 10BBLS OF DISPLACEMENT
Event	22	Bump Plug	11/14/2019	07:08:53	USER	1625.00	7.73	3.90	108.90	FINAL CIRCULATING PRESSURE 1350PSI BROUGHT 500PSI OVER
Event	23	Check Floats	11/14/2019	07:11:37	USER	1900.00	7.73	0.00	109.00	FLOATS HELD GOT 1BBL BACK TO THE PUMP
Event	24	Pre-Rig Down Safety Meeting	11/14/2019	07:25:00	USER	-4.00	-1.02	0.00	0.00	DISCUSS HAZARDS OF RIGGING DOWN HES IRON
Event	25	Rig-Down Completed	11/14/2019	08:45:00	USER					
Event	26	Safety Meeting	11/14/2019	08:50:00	USER					DISCUSS HAZARDS OF TRAVELING BACK TO THE YARD
Event	27	Crew Leave Location	11/14/2019	09:00:00	USER					NO INJURIES OR SPILLS WHILE ON LOCATION. TOP OF TAIL 3402', TOP OF LEAD 947', PIPE WAS RECIPROCATED DURING THE ENTIRE JOB. THANK YOU FOR USING HALLIBURTON CEMENT

3.0 Attachments

3.1 TERRA PUCKETT GM 313-8-CHART NO EVENTS.png



3.2 TERRA PUCKETT GM 313-8-CHART WITH EVENTS.png

