

CAERUS OIL AND GAS LLC-EBUS

PUCKETT 13A-1

**H&P 330**

## **Post Job Summary**

# **Cement Surface**

Date Prepared: 7/8/2015  
Job Date: 7/6/2015

Submitted by: Keven Nye – Grand Junction Cement Engineer

The Road to Excellence Starts with Safety

Sold To #: 360446	Ship To #: 3623421	Quote #:	Sales Order #: 0902557629
Customer: CAERUS OIL AND GAS LLC - EBUS		Customer Rep: BOYD COTTAM	
Well Name: PUCKETT	Well #: 13A-1	API/UWI #: 05-045-22633-00	
Field: WILDCAT	City (SAP): PARACHUTE	County/Parish: GARFIELD	State: COLORADO
Legal Description: 2-7S-97W-2222FNL-628FEL			
Contractor: H & P DRLG		Rig/Platform Name/Num: H & P 330	
Job BOM: 7521			
Well Type: DIRECTIONAL GAS			
Sales Person: HALAMERICA\HB80977		Srcv Supervisor: Christopher Kukus	

### Job

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	2537ft Job Depth TVD
Water Depth	Wk Ht Above Floor 5 FT
Perforation Depth (MD)	From To

### Well Data

Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing	0	9.625	8.921	36	8 RD (LT&C)	J-55	0	2537		0
Open Hole Section			14.75				0	2545		0

### Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	9.625	1		2537	Top Plug	9.625	1	HES
Float Shoe	9.625	1			Bottom Plug	9.625		HES
Float Collar	9.625	1		2492.19	SSR plug set	9.625		HES
Insert Float	9.625	1			Plug Container	9.625	1	HES
Stage Tool	9.625	1			Centralizers	9.625	6	

### Miscellaneous Materials

Gelling Agt	Conc	Surfactant	Conc	Acid Type	Qty	Conc
Treatment Fld	Conc	Inhibitor	Conc	Sand Type	Size	Qty

### Fluid Data

Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Fresh Water	Fresh Water	10	bbl	8.34			4		
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	Super Flush 101	Super Flush 101	20	bbl	9.2			4		

21 gal/bbl		FRESH WATER							
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/mi n</b>	<b>Total Mix Fluid Gal</b>
3	Fresh Water	Fresh Water	10	bbl	8.34			2	
23.08 Gal		FRESH WATER							
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/mi n</b>	<b>Total Mix Fluid Gal</b>
4	VariCem GJ5	VARICEM (TM) CEMENT	0	sack	11	3.65		5	23.08
23.08 Gal		FRESH WATER							
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/mi n</b>	<b>Total Mix Fluid Gal</b>
5	VariCem GJ5	VARICEM (TM) CEMENT	0	sack	12.8	2.18		6	12.11
12.11 Gal		FRESH WATER							
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/mi n</b>	<b>Total Mix Fluid Gal</b>
6	Displacement	Displacement	192.6	bbl	8.34			4	
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/mi n</b>	<b>Total Mix Fluid Gal</b>
7	ReverCem	REVERCEM (TM) CEMENT	150	sack	12.8	2.12		3	11.15
11.15 Gal		FRESH WATER							
<b>Cement Left In Pipe</b>	<b>Amount</b>	45 ft			<b>Reason</b>	Shoe Joint			
<b>Comment</b>									

## 1.0 Real-Time Job Summary

### 1.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	Call Out	7/6/2015	08:00:24	USER					HES CREW CALLED OUT AT 08:00 WITH ON LOCATION TIME OF 15:00
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/6/2015	11:50:26	USER					ALL HES CREW MEMBERS
Event	3	Crew Leave Yard	Crew Leave Yard	7/6/2015	12:00:33	USER					ALL HES CREW MEMBERS AND EQUIPMENT READY AND LEFT YARD AT 12:00 1 F 550 PICK UP, 1 HT 400 PUMP TRUCK, 2 660 BULK TRUCKS, 1 TRANSPORT
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	7/6/2015	14:30:41	USER					HES CREW ARRIVED ON LOCATION AT 14:30 30 MINS EARLY
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	7/6/2015	14:45:48	USER					RIG WAS RUNNING CASING HES CREW SPOTTED EQUIPMENT AND RIG UP
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/6/2015	14:50:04	USER					ALL HES CREW MEMEBERS
Event	7	Rig-Up Equipment	Rig-Up Equipment	7/6/2015	15:00:18	USER					RIG UP IRON TO STAND PIPE, WASH UP LINE TO RIG TANK, FRESH WATER LINES TO DAY TANK, BULK LINES TO SILO AND BULK TRUCK, SUCTION LINE TO TRANSPORT
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	7/6/2015	17:45:28	USER					ALL HES CREW MEMBERS AND RIG CREW
Event	9	Start Job	Start Job	7/6/2015	18:00:02	USER					TD: 2545 TP: 2537 SJ: 44.81

CSG: 9 5/8 36# J55 OH: 14  
3/4 MUD: 9# VISC: 76 RIG  
SET 5 CEMENT BASKETS  
FIRST ONE AT 500FT AND 6  
CENTRALIZERS WELL HAD  
RETURNS WITH AIR ASSIST

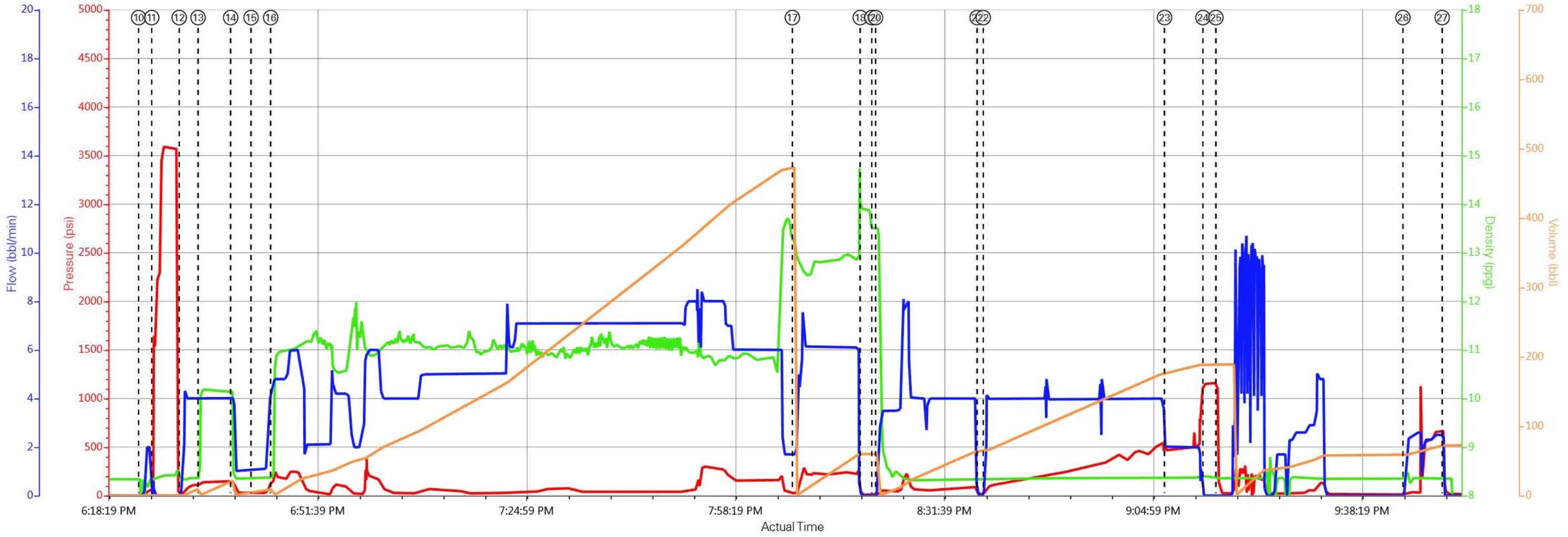
Event	10	Prime Pumps	Prime Lines	7/6/2015	18:23:25	USER	72.0	8.34	2.0	2.0	PRIME LINES WITH 2 BBL OF FRESH WATER AT 2 BBL/MIN AT 72 PSI
Event	11	Test Lines	Test Lines	7/6/2015	18:25:30	COM5	3570.0	8.38	0.00	2.0	PRESSURE TEST OK AT 3570 PSI KICK OUTS WORKING STALL OUT AT 2235 PSI
Event	12	Pump Spacer 1	Pump Spacer 1	7/6/2015	18:29:53	COM5	110.0	8.37	4.0	10.0	PUMP 10 BBL FRESH WATER SPACER AT 4 BBL/MIN AVERAGE PRESSURE 110 PSI
Event	13	Pump Spacer 2	Pump Spacer 2	7/6/2015	18:32:54	COM5	145.0	9.86	4.00	20.0	PUMP 20 BBL SUPERFLUSH SPACER AT 4 BBL/MIN AVERAGE PRESSURE 145 PSI
Event	14	Pump Spacer 1	Pump Spacer 1	7/6/2015	18:38:06	COM5	112.00	8.31	4.00	10.00	PUMP 10 BBL FRESH WATER SPACER AT 2 BBL/MIN AVERAGE PRESSURE 112 PSI WELL GAIN RETURNS
Event	15	Check Weight	Check weight	7/6/2015	18:41:21	COM5	28.00	8.40	1.00	4.3	LEAD CEMENT WEIGHT VERIFIED BY MUD SCALES
Event	16	Pump Lead Cement	Pump Lead Cement	7/6/2015	18:44:29	COM5	50.00	11.01	5.0	243.8	VARI CEM 375 SKS 11 PPG 3.65 YIELD 23.08 GAL/SK LEAD CEMENT WEIGHT VERIFIED BY MUD SCALES SAMPLES WERE TAKEN TOTAL OF 243.8 BBL AWAY AVERAGE PRESSURE 50 PSI AVERAGE RATE 5 BBL/MIN 7 BOXES OF TUFF FIBER WERE ADDED WHILE GOING DOWN HOLE BBL COUNTER WAS OFF DUE TO HAVING TO AJUST RATE DUE TO RIG

											PUMP NOT BEING ABLE TO KEEP UP AND PASSANGER SIDE PUMP LOST PRIME
Event	17	Pump Tail Cement	Pump Tail Cement	7/6/2015	20:07:44	COM5	240.00	12.84	6.0	62.1	VARI CEM 160 SKS 12.8 PPG 2.18 YIELD 12.11 GAL/SK TAIL CEMENT WEIGHT VERIFIED BY MUD SCALES SAMPLES WERE TAKEN TOTAL OF 62.1 BBLs OF TAIL CEMENT AWAY AVERAGE PRESSURE 240 PSI AT 6 BBL/MIN
Event	18	Shutdown	Shutdown	7/6/2015	20:18:34	USER	9.00	12.90	0.00	62.1	SHUTDOWN END OF CEMENT READY TANKS FOR DISPLACEMENT / HES WASHED UP ONTOP OF PLUG PER CO REP REQUEST
Event	19	Drop Top Plug	Drop Top Plug	7/6/2015	20:20:25	USER					TOP PLUG AWAY WITH NO ISSUES
Event	20	Pump Displacement	Pump Displacement	7/6/2015	20:21:01	COM5	360.0	8.43	4.00	192.6	PUMP 192.6 BBLs OF FRESH WATER DISPLACEMENT AT 4 BBL/MIN AVERAGE PRESSURE 360 PSI
Event	21	Shutdown	Shutdown	7/6/2015	20:37:13	USER	13.00	8.35	0.00	64.4	SHUTDOWN DUE TO CMT HEAD LEAKING ON THE FLOOR
Event	22	Resume	Resume	7/6/2015	20:38:11	USER	29.00	8.34	1.60	64.4	RESUMED DISPLACEMENT
Event	23	Slow Rate	Slow Rate	7/6/2015	21:07:07	USER	477.00	8.37	2.00	182.6	SLOW RATE TO BUMP PLUG
Event	24	Bump Plug	Bump Plug	7/6/2015	21:13:14	COM5	520.0	8.40	0.00	192.6	PLUG BUMP AT 192.6 BBLs AWAY AT 520 PSI AND WAS TAKEN UP TO 1156 PSI
Event	25	Check Floats	Check Floats	7/6/2015	21:15:19	USER	1156.0	8.33	0.00	192.6	FLOATS HELD WITH 1 BBL BACK TO DISPLACEMENT TANKS WELL HAD FULL RETURNS THROUGH OUT JOB WITH NO SPACER OR

											CEMENT TO SURFACE
Event	26	Pump Spacer	Pump Spacer	7/6/2015	21:45:09	USER	140.0	8.34	2.0	15.0	PUMP 15 BBLS OF SUGAR WATER TO CLEAR PARSITE STING
Event	27	Shutdown	Shutdown	7/6/2015	21:51:25	USER	109.00	8.34	0.00	15.0	SHUTDOWN HES WILL WAIT 4 HOURS AND RIG WILL TRY TO TAG CEMENT BEFORE TOP OUT
Event	28	Pump Spacer	Pump Spacer	7/7/2015	03:20:19	USER	60.0	8.33	3.0	2.0	PUMP 2 BBLS OF FRESH WATER AHEAD TO CLEAR LINES
Event	29	Pump Cement	Pump Cement	7/7/2015	03:21:21	COM5	90.00	12.8	3.00	56.6	REVERCEM 150 SKS 12.8 PPG 2.12 YIELD 11.15GAL/SK TOP OUT CEMENT WEIGHT VERIFIED BY MUD SCALES SAMPLES WERE TAKEN TOTAL OF 56.6 BBLS AWAY AVERAGE PRESSURE AT 90 PSI AT 3 BBLS/MIN CEMENT TO SURFACE
Event	30	Pump Spacer	Pump Spacer	7/7/2015	03:34:28	USER	95.00	8.33	3.00	2.0	PUMP 2 BBLS BEHIND TO CLEAR LINES
Event	31	Shutdown	Shutdown	7/7/2015	03:34:59	USER	37.00	8.57	0.00	2.0	SHUTDOWN WITH 5 BBLS OF CEMENT TO SURFACE
Event	32	End Job	End Job	7/7/2015	04:00:42	USER					CEMENT JOB WENT WELL WITH NO ISSUES HES CREW HAD TO TOP OUT 1 TIME WITH 150 SKS NO SUPERFLUSH WAS USED WITH TOPOUT 40 LBS OF SUGAR WAS USED HES CREW WAITED 30 MINS CEMENT WAS HOLDING NOT FALLING BACK
Event	33	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	7/7/2015	04:10:46	USER					ALL HES CREW MEMEBRES

Event	34	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/7/2015	04:15:58	USER	ALL HES CREW MEMBERS
Event	35	Rig-Down Equipment	Rig-Down Equipment	7/7/2015	04:20:12	USER	RIG DOWN IRON, FRESH WATER LINES, SUCTION LINES, BULK LINES, WASH AND BLOW DOWN PUMP
Event	36	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/7/2015	05:20:24	USER	ALL HES CREW MEMEBRS
Event	37	Crew Leave Location	Crew Leave Location	7/7/2015	05:30:34	USER	THANK YOU FOR USING HALLIBURTON CEMENT CHRIS KUKUS AND CREW

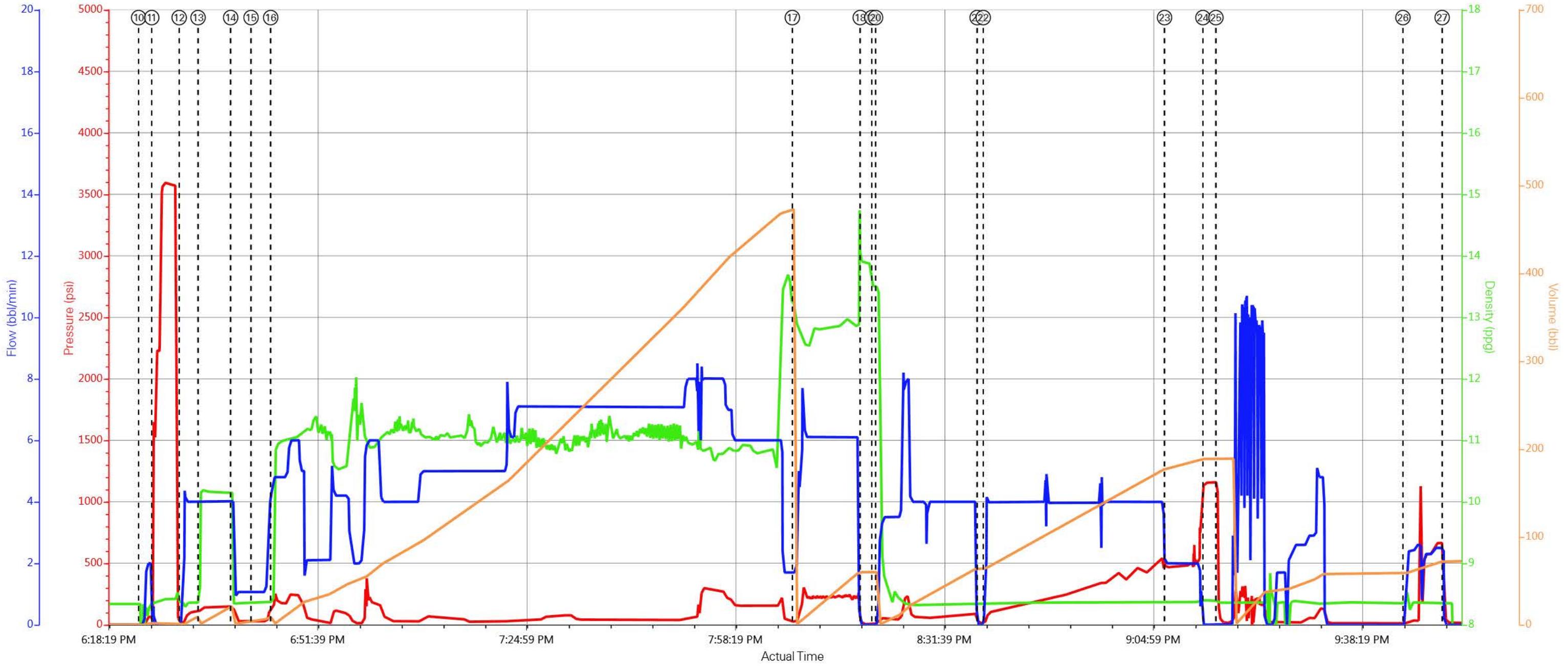
CAERUS OIL & GAS / PUCKETT 13A-1 / 9 5/8 SURFACE CASING



Pass-Side Pump Pressure (psi)    Downhole Density (ppg)    Combined Pump Rate (bbl/min)    Pump Stage Total (bbl)

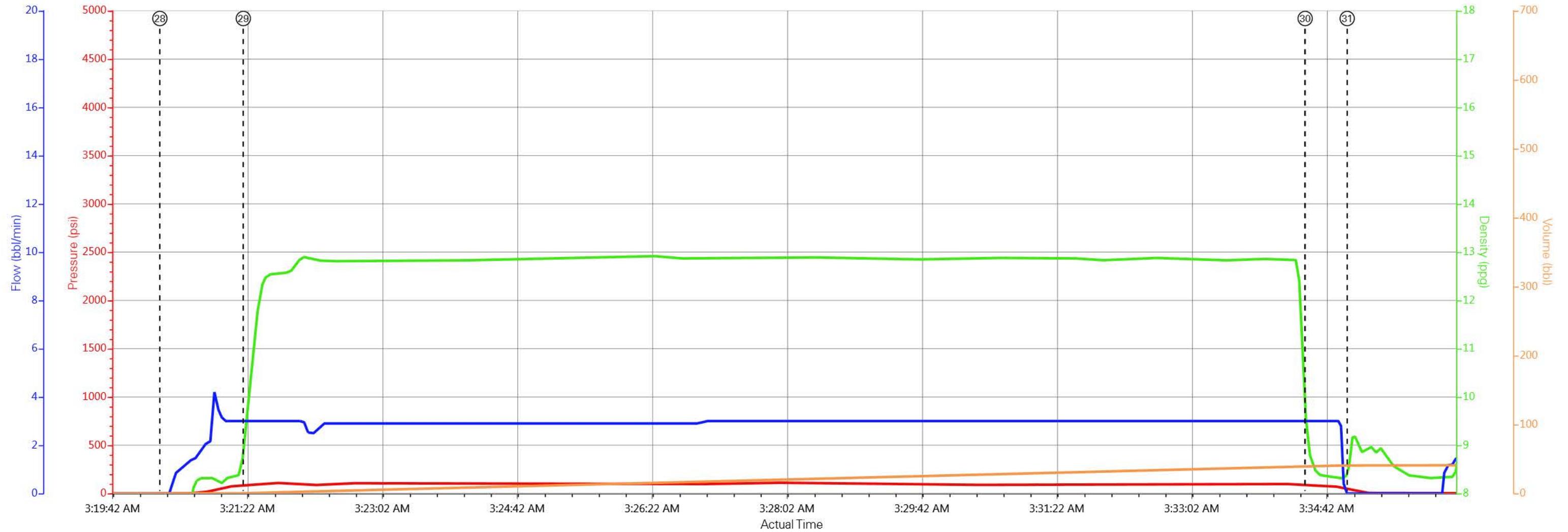
- ① Call Out
- ② Pre-Convoy Safety Meeting
- ③ Crew Leave Yard
- ④ Arrive at Location from Service Center
- ⑤ Assessment Of Location Safety Meeting
- ⑥ Pre-Rig Up Safety Meeting
- ⑦ Rig-Up Equipment
- ⑧ Pre-Job Safety Meeting
- ⑨ Start Job
- ⑩ Prime Lines
- ⑪ Test Lines
- ⑫ Pump Spacer 1
- ⑬ Pump Spacer 2
- ⑭ Pump Spacer 1
- ⑮ Check weight
- ⑯ Pump Lead Cement
- ⑰ Pump Tail Cement
- ⑱ Shutdown
- ⑲ Drop Top Plug
- ⑳ Pump Displacement
- ㉑ Shutdown
- ㉒ Resume
- ㉓ Slow Rate
- ㉔ Bump Plug
- ㉕ Check Floats
- ㉖ Pump Spacer
- ㉗ Shutdown

CAERUS OIL & GAS / PUCKETT 13A-1 / 9 5/8 SURFACE CASING



— Pass-Side Pump Pressure (psi)    
 — Downhole Density (ppg)    
 — Combined Pump Rate (bbl/min)    
 — Pump Stage Total (bbl)

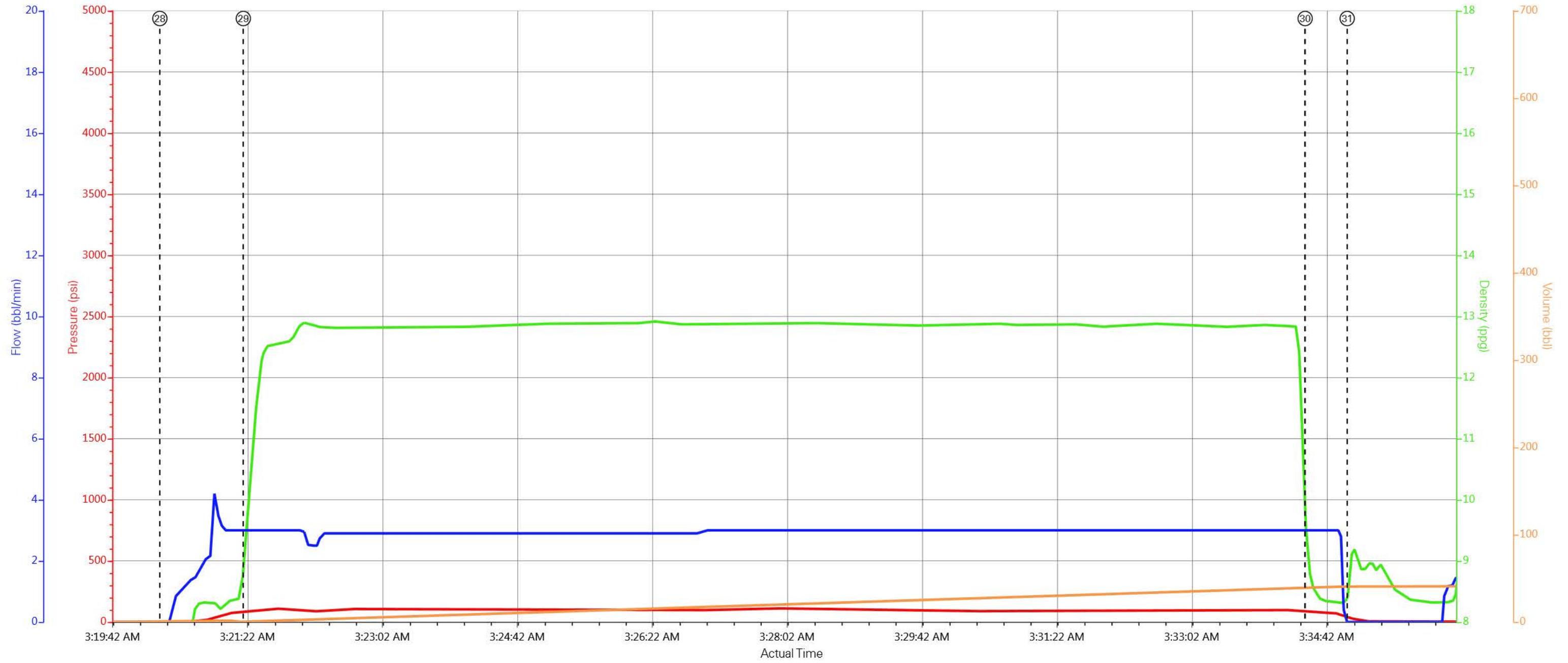
# CAERUS OIL & GAS / PUCKETT 13A-1 / TOP OUT



Pass-Side Pump Pressure (psi)    Downhole Density (ppg)    Combined Pump Rate (bbl/min)    Pump Stage Total (bbl)

- |  |                          |                    |                      |                 |             |
|--|--------------------------|--------------------|----------------------|-----------------|-------------|
| ① Call Out                               | ⑦ Rig-Up Equipment       | ⑬ Pump Spacer 2    | ⑲ Drop Top Plug      | 25 Check Floats | 31 Shutdown |
| ② Pre-Convoy Safety Meeting              | ⑧ Pre-Job Safety Meeting | ⑭ Pump Spacer 1    | 20 Pump Displacement | 26 Pump Spacer  | 32 End Job  |
| ③ Crew Leave Yard                        | ⑨ Start Job              | ⑮ Check weight     | 21 Shutdown          | 27 Shutdown     |             |
| ④ Arrive at Location from Service Center | ⑩ Prime Lines            | ⑯ Pump Lead Cement | 22 Resume            | 28 Pump Spacer  |             |
| ⑤ Assessment Of Location Safety Meeting  | ⑪ Test Lines             | ⑰ Pump Tail Cement | 23 Slow Rate         | 29 Pump Cement  |             |
| ⑥ Pre-Rig Up Safety Meeting              | ⑫ Pump Spacer 1          | ⑱ Shutdown         | 24 Bump Plug         | 30 Pump Spacer  |             |

# CAERUS OIL & GAS / PUCKETT 13A-1 / TOP OUT



— Pass-Side Pump Pressure (psi)    
 — Downhole Density (ppg)    
 — Combined Pump Rate (bbl/min)    
 — Pump Stage Total (bbl)

<b>Sales Order #:</b> 0902557629	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 7/7/2015
<b>Customer:</b> CAERUS OIL AND GAS LLC - EBUS		<b>Job Type (BOM):</b> CMT SURFACE CASING BOM
<b>Customer Representative:</b>		<b>API / UWI: (leave blank if unknown)</b> 05-045-22633-00
<b>Well Name:</b> PUCKETT		<b>Well Number:</b> 0080702241
<b>Well Type:</b> DIRECTIONAL GAS	<b>Well Country:</b> USA	
<b>H2S Present:</b> No	<b>Well State:</b> COLORADO	<b>Well County:</b> GARFIELD

Dear Customer,

We hope that you were satisfied with the service quality of this job performed by Halliburton. It is the aim of our management and service personnel to deliver equipment and service of a standard unmatched in the service sector of the energy industry.

Please take the time to let us know if our performance met with your satisfaction. Please be as critical as possible to ensure we constantly improve our service. Your comments are of great value to us and are intended for the exclusive use of Halliburton.

### CUSTOMER SATISFACTION SURVEY

CATEGORY	CUSTOMER SATISFACTION RESPONSE	
Survey Conducted Date	The date the survey was conducted	7/7/2015
Survey Interviewer	The survey interviewer is the person who initiated the survey.	HX35027
Customer Participation	Did the customer participate in this survey? (Y/N)	No
Customer Representative	Enter the Customer representative name	
HSE	Was our HSE performance satisfactory? Circle Y or N	
Equipment	Were you satisfied with our Equipment? Circle Y or N	
Personnel	Were you satisfied with our people? Circle Y or N	
Customer Comment	Customer's Comment	

<b>CUSTOMER SIGNATURE</b>
---------------------------

<b>Sales Order #:</b> 0902557629	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 7/7/2015
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<b>Well Name:</b> PUCKETT		<b>Well Number:</b> 0080702241
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<b>H2S Present:</b> No	<b>Well State:</b> COLORADO	<b>Well County:</b> GARFIELD

### KEY PERFORMANCE INDICATORS

General	
<b>Survey Conducted Date</b>	7/7/2015
The date the survey was conducted	

Cementing KPI Survey	
<b>Type of Job</b>	0
Select the type of job. (Cementing or Non-Cementing)	
<b>Select the Maximum Deviation range for this Job</b>	Vertical
What is the highest deviation for the job you just completed? This may not be the maximum well deviation.	
<b>Total Operating Time (hours)</b>	8
Total Operating Hours Including Rig-up, Pumping, Rig-down. Enter in decimal format.	
<b>HSE Incident, Accident, Injury</b>	No
HSE Incident, Accident, Injury. This should be recordable incidents only.	
<b>Was the job purpose achieved?</b>	Yes
Was the job delivered correctly as per customer agreed design?	
<b>Pumping Hours</b>	4
Total number of hours pumping fluid on this job. Enter in decimal format.	
<b>Type of Rig Classification Job Was Performed</b>	Drilling Rig (Portable)
Type Of Rig (classification) Job Was Performed On	
<b>Number Of JSAs Performed</b>	6
Number Of Jsas Performed	
<b>Was this a Primary Cement Job (Yes / No)</b>	Yes
Primary Cement Job= Casing job, Liner job, or Tie-back job.	
<b>Number of Unplanned Shutdowns</b>	0
Unplanned shutdown is when injection stops for any period of time.	
<b>Customer Non-Productive Rig Time (hrs)</b>	0

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<b>Customer Representative:</b>		<b>API / UWI: (leave blank if unknown)</b> 05-045-22633-00
<b>Well Name:</b> PUCKETT		<b>Well Number:</b> 0080702241
<b>Well Type:</b> DIRECTIONAL GAS	<b>Well Country:</b> USA	
<b>H2S Present:</b> No	<b>Well State:</b> COLORADO	<b>Well County:</b> GARFIELD

Lost time due to Halliburton in the start, execution, or completion of an ordered service or product, or delays in a follow-on service. Enter in decimal format. 0 if none.	
<b>Was the non productive time or the unplanned shutdown caused by a problem with a piece of equipment?</b> Was the non productive time or the unplanned shutdown caused by a problem with a piece of equipment?	No
<b>Did We Run Wiper Plugs?</b> Did We Run Top And Bottom Casing Wiper Plugs?	Top
<b>If a top plug was run, was the plug bumped? (Yes/No/N/A)</b> If a top plug was run, was the plug bumped? (Yes/No/N/A)	Yes
<b>If applicable, was Halliburton float equipment used? (Yes/No/N/A)</b> If applicable, was Halliburton float equipment used? (Yes/No/N/A)	No
<b>If applicable, did the floats hold? (Yes/No/N/A)</b> If applicable, did the floats hold? (Yes/No/N/A)	Yes
<b>Mixing Density of Job Stayed in Designed Density Range (0-100%)</b> Density Range defined as +/- .20 ppg. Calculation: Total BBLs cement mixed at designed density divided by total BBLs of cement multiplied by 100	80
<b>Pump Rate (percent) of Job Stayed At Designed Pump Rate</b> Pump Rate range defined as +/- 1bbl/min. Calculation: Total BBLs of fluid pumped at the designed rate divided by Total BBLs of fluid pumped, multiplied by 100	80
<b>If applicable, were there returns throughout the job? (Yes/No/N/A)</b> If applicable, were there returns throughout the job? (Yes/No/N/A)	Yes
<b>Nbr of Remedial Plug Jobs Rqd - HES</b> Number Of Remedial Plug Jobs Needed After Primary Plug Pumped By HES	0
<b>Nbr of Remedial Sqz Jobs Rqd - HES</b> Number Of Remedial Squeeze Jobs Required After Primary Job Performed By HES	0

# HALLIBURTON

## Water Analysis Report

Company: CAERUS

Date: 7/6/2015

Submitted by: CHRIS KUKUS

Date Rec.: 7/6/2015

Attention: LARRY COOKSEY

S.O.# 902557629

Lease PUCKETT

Job Type: SURFACE

Well # 13A-1

Specific Gravity	<i>MAX</i>	<b>1</b>
pH	<i>8</i>	<b>7</b>
Potassium (K)	<i>5000</i>	<b>0 Mg / L</b>
Calcium (Ca)	<i>500</i>	<b>120 Mg / L</b>
Iron (FE2)	<i>300</i>	<b>0 Mg / L</b>
Chlorides (Cl)	<i>3000</i>	<b>0 Mg / L</b>
Sulfates (SO <sub>4</sub> )	<i>1500</i>	<b>UNDER 400 Mg / L</b>
Hardness		<b>50 Mg / L</b>
Temp	<i>40-80</i>	<b>60 Deg</b>
Total Dissolved Solids		<b>200 Mg / L</b>

Respectfully: CHRIS KUKUS

Title: CEMENTING SUPERVISOR

Location: GRAND JUNCTION , CO

**NOTICE:**

This report is limited to the described sample tested. Any person using or relying on this report agrees that Halliburton shall not be liable for any loss or damage whether due to act or omission resulting from such report or i