

PICEANCE ENERGY LLC - EBUS

Piceance 28-21E

Patterson 306

Post Job Summary

Cement Surface Casing

Date Prepared: 10/20/2015

Job Date: 10/10/2015

Submitted by: Aaron Katz – Grand Junction Cement Engineer

The Road to Excellence Starts with Safety

Sold To #: 344919	Ship To #: 3681108	Quote #:	Sales Order #: 0902816678
Customer: PICEANCE ENERGY LLC - EBUS		Customer Rep: MATT SETTLES	
Well Name: PICEANCE FEDERAL	Well #: 28-21E	API/UWI #: 05-077-10250-00	
Field: VEGA	City (SAP): COLLBRAN	County/Parish: MESA	State: COLORADO
Legal Description: NE SW-28-9S-93W-1981FSL-2484FWL			
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 306	
Job BOM: 7521			
Well Type: DIRECTIONAL GAS			
Sales Person: HALAMERICA\HX41066		Srvc Supervisor: Steven Wardell	

Job

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	1658ft Job Depth TVD 3 FT
Water Depth	Wk Ht Above Floor
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		16	15.25	65			0	60		
Casing		8.625	8.097	24	8 RD (LT&C)		0	1658		0
Open Hole Section			11				60	1668		0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	8.625			1658	Top Plug	8.625	1	HES
Float Shoe	8.625				Bottom Plug	8.625	1	HES
Float Collar	8.625				SSR plug set	8.625		
Insert Float	8.625				Plug Container	8.625	1	HES
Stage Tool	8.625				Centralizers	8.625		HES

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	40	bbl	8.33			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	VariCem GJ5	VARICEM (TM) CEMENT	192	sack	12.3	2.46		7	14.17

14.17 Gal

FRESH WATER

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
3	VariCem GJ5	VARICEM (TM) CEMENT	135	sack	12.8	2.18		7	12.11	
12.11 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
4	Fresh Water Displacement	Fresh Water Displacement	102.7	bbl	8.3			8		
Cement Left In Pipe		Amount	46 ft		Reason			Shoe Joint		
Mix Water:		pH ##	Mix Water Chloride: ## ppm			Mix Water Temperature: ## °F °C				
Cement Temperature: ## °F °C		Plug Displaced by: ## lb/gal kg/m ³ XXXX			Disp. Temperature: ## °F °C					
Plug Bumped?		Yes/No	Bump Pressure: ##### psi MPa			Floats Held?			Yes/No	
Cement Returns: ## bbl m ³		Returns Density: ## lb/gal kg/m ³			Returns Temperature: ## °F °C					
Comment										

1.0 Real-Time Job Summary

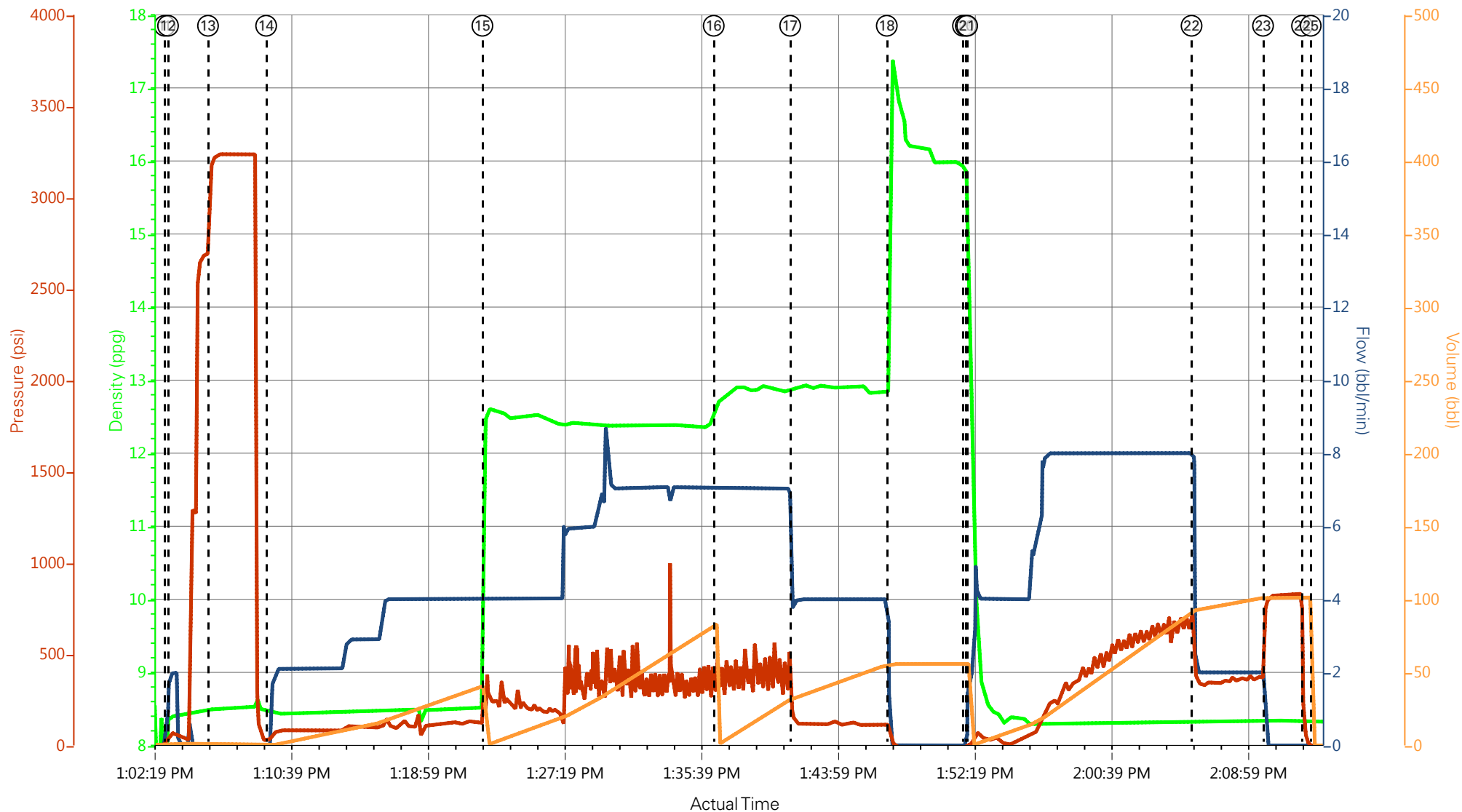
1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pass-Side Pump Pressure (psi)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	10/10/2015	05:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	10/10/2015	07:30:00	USER					WITH ALL HES PERSONNEL
Event	3	Crew Leave Yard	10/10/2015	07:45:00	USER					
Event	4	Arrive At Loc	10/10/2015	09:00:00	USER					RIG RUNNING CASING UPON HES ARRIVAL
Event	5	Assessment Of Location Safety Meeting	10/10/2015	09:10:00	USER					WITH ALL HES PERSONNEL
Event	6	Spot Equipment	10/10/2015	09:20:00	USER					I PUMP, 1 660 BULK TRUCK
Event	7	Pre-Rig Up Safety Meeting	10/10/2015	09:30:00	USER					WITH ALL HES PERSONNEL
Event	8	Rig-Up Equipment	10/10/2015	09:45:00	USER					
Event	9	Pre-Job Safety Meeting	10/10/2015	12:40:00	USER					WITH ALL PERSONNEL
Event	10	Start Job	10/10/2015	12:58:26	COM6					TD 1668 FT, TP 1658 FT, SJ 45.7 FT, CSG 8 5/8 IN 24 LB/FT, OH 11 IN, MUD 9.4 PPG
Event	11	Prime Lines	10/10/2015	13:03:07	COM6	8.4	2.0	73.0	2.0	FRESH WATER
Event	12	Drop Bottom Plug	10/10/2015	13:03:19	USER					PLUG LAUNCHED
Event	13	Test Lines	10/10/2015	13:05:46	COM6					TESTED LINES TO 3237 PSI, PRESSURE

HOLDING										
Event	14	Pump Fresh Water	10/10/2015	13:09:18	COM6	8.4	4.0	110.0	40.0	FRESH WATER SPACER
Event	15	Pump Lead Cement	10/10/2015	13:22:29	COM6	12.3	7.0	320.0	84.1	192 SKS, 12.3 PPG, 2.46 FT3/SK, 14.17 GAL/SK
Event	16	Pump Tail Cement	10/10/2015	13:36:35	COM6	12.8	7.0	360.0	52.4	135 SKS, 12.8 PPG, 2.18 FT3/SK, 12.11 GAL/SK
Event	17	Slow Rate	10/10/2015	13:41:15	USER	12.8	4.0	150.0	40.0	SLOWED RATE TO FINISH CEMENT
Event	18	Shutdown	10/10/2015	13:47:08	USER					
Event	19	Clean Lines	10/10/2015	13:51:47	USER					CLEANED PUMPS AND LINES ON TOP OF PLUG PER COMPANY REP
Event	20	Drop Top Plug	10/10/2015	13:51:58	COM6					PLUG LAUNCHED
Event	21	Pump Displacement	10/10/2015	13:52:03	COM6	8.4	8.0	390.0	102.7	FRESH WATER, HES RETURNED 30 BBLS CEMENT TO SURFACE.
Event	22	Slow Rate	10/10/2015	14:05:43	USER	8.4	2.0	350.0	92.7	SLOWED RATE 10 BBLS PRIOR TO CALCULATED DISPLACEMENT
Event	23	Bump Plug	10/10/2015	14:10:05	COM6			830.0		
Event	24	Check Floats	10/10/2015	14:12:27	USER			830.0		FLOATS HOLDING, HES RETURNED 1/2 BBL BACK TO PUMP
Event	25	End Job	10/10/2015	14:12:59	COM6					PIPE WAS STATIC DURING JOG, GOOD RETURNS THROUGHOUT JOB. HES USED 20 LBS SUGAR.
Event	26	Pre-Rig Down Safety Meeting	10/10/2015	14:15:00	USER					WITH ALL HES PERSONNEL
Event	27	Rig-Down Equipment	10/10/2015	14:30:00	USER					
Event	28	Pre-Convoy Safety Meeting	10/10/2015	15:30:00	USER					WITH ALL HES PERSONNEL

Event	29	Crew Leave Location	10/10/2015	15:45:00	USER	
Event	30	Comment	10/10/2015	16:00:00	USER	THANK YOU FOR USING HALLIBURTON CEMENT DEPARTMENT, STEVEN WARDELL AND CREW.

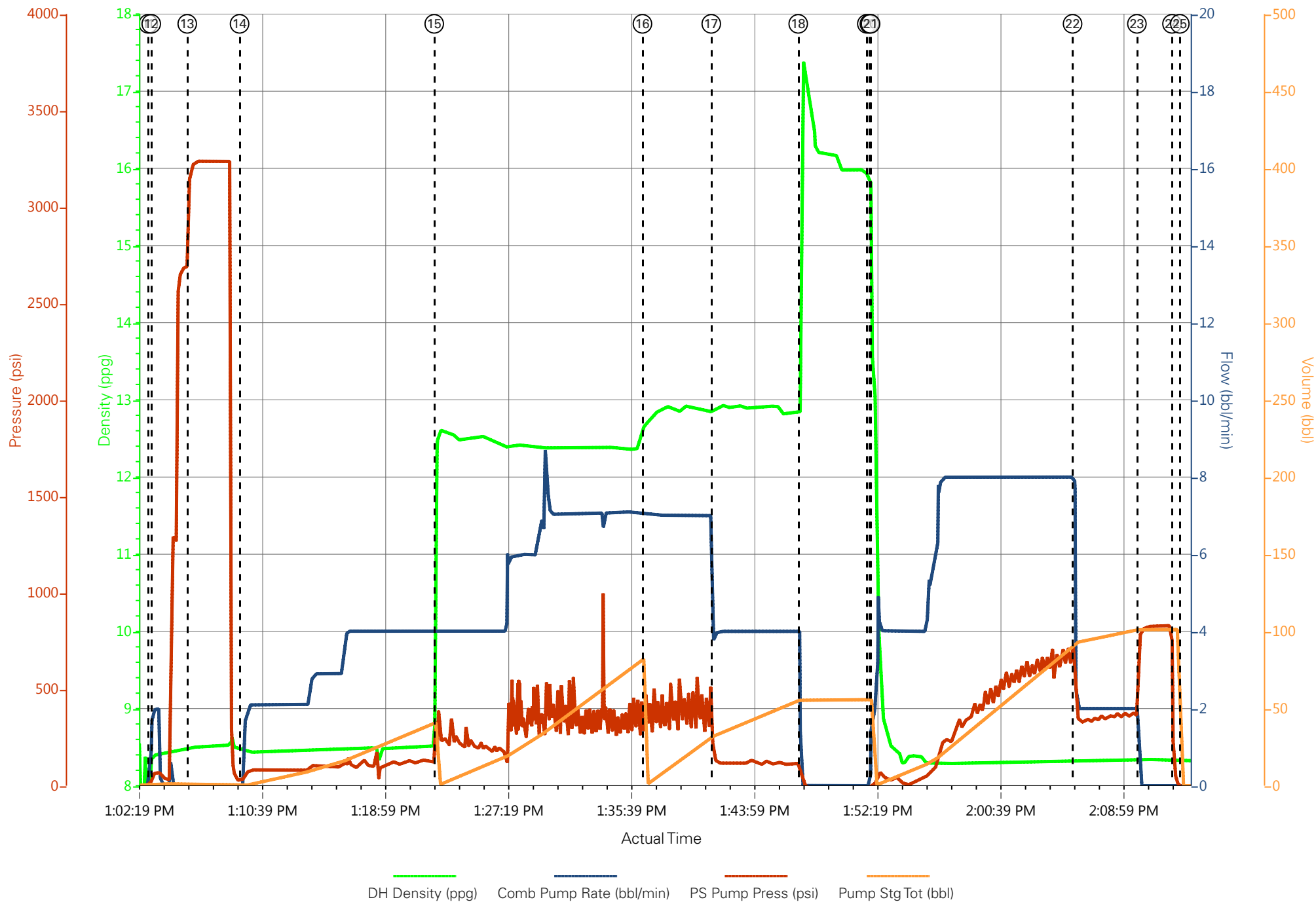
PICEANCE ENERGY PICEANCE FEDERAL 28-21W SURFACE 902816678



— DH Density (ppg)
 — Comb Pump Rate (bbl/min)
 — PS Pump Press (psi)
 — Pump Stg Tot (bbl)

- | | | | | | | |
|-----------------------------|---|-----------------------------|--------------------|--------------------|--------------------|----------------------|
| ① Call Out | ④ Arrive At Loc | ⑦ Pre-Rig Up Safety Meeting | ⑩ Start Job | ⑬ Test Lines | ⑯ Pump Tail Cement | ⑲ Clean Lines |
| ② Pre-Convoy Safety Meeting | ⑤ Assessment Of Location Safety Meeting | ⑧ Rig-Up Equipment | ⑪ Prime Lines | ⑭ Pump Fresh Water | ⑰ Slow Rate | 20 Drop Top Plug |
| ③ Crew Leave Yard | ⑥ Spot Equipment | ⑨ Pre-Job Safety Meeting | ⑫ Drop Bottom Plug | ⑮ Pump Lead Cement | ⑱ Shutdown | 21 Pump Displacement |

PICEANCE ENERGY PICEANCE FEDERAL 28-21W SURFACE 902816678



HALLIBURTON

Water Analysis Report

Company: PICEANCE
Submitted by: STEVEN WARDELL
Attention: LAB
Lease: PATTERSON 306
Well #: PICEANCE FEDERAL 28-21W

Date: 10/10/2015
Date Rec.: 10/10/2015
S.O.#: 902816678
Job Type: SURFACE

Specific Gravity	<i>MAX</i>	<i>1</i>
pH	<i>8</i>	<i>8</i>
Potassium (K)	<i>5000</i>	<i>1000</i> Mg / L
Hardness	<i>500</i>	<i>200</i> Mg / L
Iron (FE2)	<i>300</i>	<i>0</i> Mg / L
Chlorides (Cl)	<i>3000</i>	<i>500</i> Mg / L
Sulfates (SO ₄)	<i>1500</i>	<i><200</i> Mg / L
Temp	<i>40-80</i>	<i>55</i> Deg
Total Dissolved Solids		<i>100</i> Mg / L

Respectfully: STEVEN WARDELL

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 its use

Sales Order #: 0902816678	Line Item: 10	Survey Conducted Date: 10/10/2015
Customer: PICEANCE ENERGY LLC - EBUS		Job Type (BOM): CMT SURFACE CASING BOM
Customer Representative: MATT SETTLES		API / UWI: (leave blank if unknown) 05-077-10250-00
Well Name: PICEANCE FEDERAL		Well Number: 0080739662
Well Type: DIRECTIONAL GAS	Well Country: USA	
H2S Present: No	Well State: COLORADO	Well County: MESA

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	10/10/2015
Survey Interviewer	The survey interviewer is the person who initiated the survey.	H127209
Customer Participation	Did the customer participate in this survey? (Y/N)	Yes
Customer Representative	Enter the Customer representative name	MATT SETTLES
HSE	Was our HSE performance satisfactory? Circle Y or N	Yes
Equipment	Were you satisfied with our Equipment? Circle Y or N	Yes
Personnel	Were you satisfied with our people? Circle Y or N	Yes
Customer Comment	Customer's Comment	

CUSTOMER SIGNATURE

Sales Order #: 0902816678	Line Item: 10	Survey Conducted Date: 10/10/2015
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Well Type: DIRECTIONAL GAS	Well Country: USA	
H2S Present: No	Well State: COLORADO	Well County: MESA

KEY PERFORMANCE INDICATORS

General	
Survey Conducted Date The date the survey was conducted	10/10/2015

Cementing KPI Survey	
Type of Job Select the type of job. (Cementing or Non-Cementing)	0
Select the Maximum Deviation range for this Job What is the highest deviation for the job you just completed? This may not be the maximum well deviation.	Vertical
Total Operating Time (hours) Total Operating Hours Including Rig-up, Pumping, Rig-down. Enter in decimal format.	2
HSE Incident, Accident, Injury HSE Incident, Accident, Injury. This should be recordable incidents only.	No
Was the job purpose achieved? Was the job delivered correctly as per customer agreed design?	Yes
Pumping Hours Total number of hours pumping fluid on this job. Enter in decimal format.	1
Type of Rig Classification Job Was Performed Type Of Rig (classification) Job Was Performed On	Drilling Rig (Portable)
Number Of JSAs Performed Number Of Jsas Performed	6
Was this a Primary Cement Job (Yes / No) Primary Cement Job= Casing job, Liner job, or Tie-back job.	Yes
Number of Unplanned Shutdowns Unplanned shutdown is when injection stops for any period of time.	0
Customer Non-Productive Rig Time (hrs)	0

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Well Type: DIRECTIONAL GAS	Well Country: USA	
H2S Present: No	Well State: COLORADO	Well County: MESA

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.	
Was the non productive time or the unplanned shutdown caused by a problem with a piece of equipment? Was the non productive time or the unplanned shutdown caused by a problem with a piece of equipment?	No
Did We Run Wiper Plugs? Did We Run Top And Bottom Casing Wiper Plugs?	Both
If a top plug was run, was the plug bumped? (Yes/No/N/A) If a top plug was run, was the plug bumped? (Yes/No/N/A)	Yes
If applicable, was Halliburton float equipment used? (Yes/No/N/A) If applicable, was Halliburton float equipment used? (Yes/No/N/A)	Yes
If applicable, did the floats hold? (Yes/No/N/A) If applicable, did the floats hold? (Yes/No/N/A)	Yes
Mixing Density of Job Stayed in Designed Density Range (0-100%) Density Range defined as +/- .20 ppg. Calculation: Total BBLs cement mixed at designed density divided by total BBLs of cement multiplied by 100	96
Pump Rate (percent) of Job Stayed At Designed Pump Rate 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	95
If applicable, were there returns throughout the job? (Yes/No/N/A) If applicable, were there returns throughout the job? (Yes/No/N/A)	Yes
Nbr of Remedial Plug Jobs Rqd - HES Number Of Remedial Plug Jobs Needed After Primary Plug Pumped By HES	0
Nbr of Remedial Sqz Jobs Rqd - HES Number Of Remedial Squeeze Jobs Required After Primary Job Performed By HES	0