

Cynosure Energy LLC

Federal 14/15-3-21

**Frontier 28**

# **Post Job Summary**

## **Cement Production Casing**

Date Prepared: 11/23/2014

Job Date: 11/13/2014

Submitted by: Evan Russell – Grand Junction Cement Engineer

The Road to Excellence Starts with Safety

Sold To #: 373950	Ship To #: 3557148	Quote #:	Sales Order #: 0901823601
Customer: CYNOSURE ENERGY LLC		Customer Rep: WHITEY COTTAM	
Well Name: FEDERAL	Well #: 14/15-3-21	API/UWI #: 05-045-22455-00	
Field: KOKOPELLI	City (SAP): NEW CASTLE	County/Parish: GARFIELD	State: COLORADO
Legal Description: SE NE-21-6S-91W-2337FNL-743FEL			
Contractor:		Rig/Platform Name/Num: Frontier 28	
Job BOM: 7523			
Well Type: DIRECTIONAL GAS			
Sales Person: HALAMERICA\HB50180		Srvc Supervisor: Dustin Smith	

### Job

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	8129ft 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		9.625	8.921	36	STC	J-55	0	1520	0	0
Casing		4.5	4	11.6	LTC	N-80	0	8129	0	0
Open Hole Section			8.75				1520	8154	0	0

### Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	4.5	1		8129	Top Plug	4.5	1	HES
Float Shoe	4.5	1						
Float Collar	4.5	1		8082.35				
Insert Float	4.5	1			Plug Container	4.5	1	HES
Stage Tool	4.5	1			Centralizers	4.5		

### 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 ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Mud Flush III (Powder)	Mud Flush III	20	bbl	8.4			4.0		
42 gal/bbl			FRESH WATER							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
2	EconoCem	ECONOCEM (TM) SYSTEM	300	sack	11.5	2.28		6	12.74	
12.74 Gal		FRESH WATER								
0.25 lbm		POLY-E-FLAKE (101216940)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
3	VersaCem	VERSACEM (TM) SYSTEM	350	sack	12.5	1.83		6	8.7	
6 lbm		KOL-SEAL, BULK (100064233)								
0.25 lbm		POLY-E-FLAKE (101216940)								
8.70 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
4	Expandacem	EXPANDACEM (TM) SYSTEM	900	sack	13.1	1.67		6	7.88	
0.25 lbm		POLY-E-FLAKE (101216940)								
7.88 Gal		FRESH WATER								
5 lbm		KOL-SEAL, BULK (100064233)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
5	Fresh Water Displacement	Fresh Water Displacement	125.3	bbl	8.34			8.0		
<b>Cement Left In Pipe</b>		<b>Amount</b>	46.65 ft		<b>Reason</b>			Shoe Joint		
<b>Comment</b>										

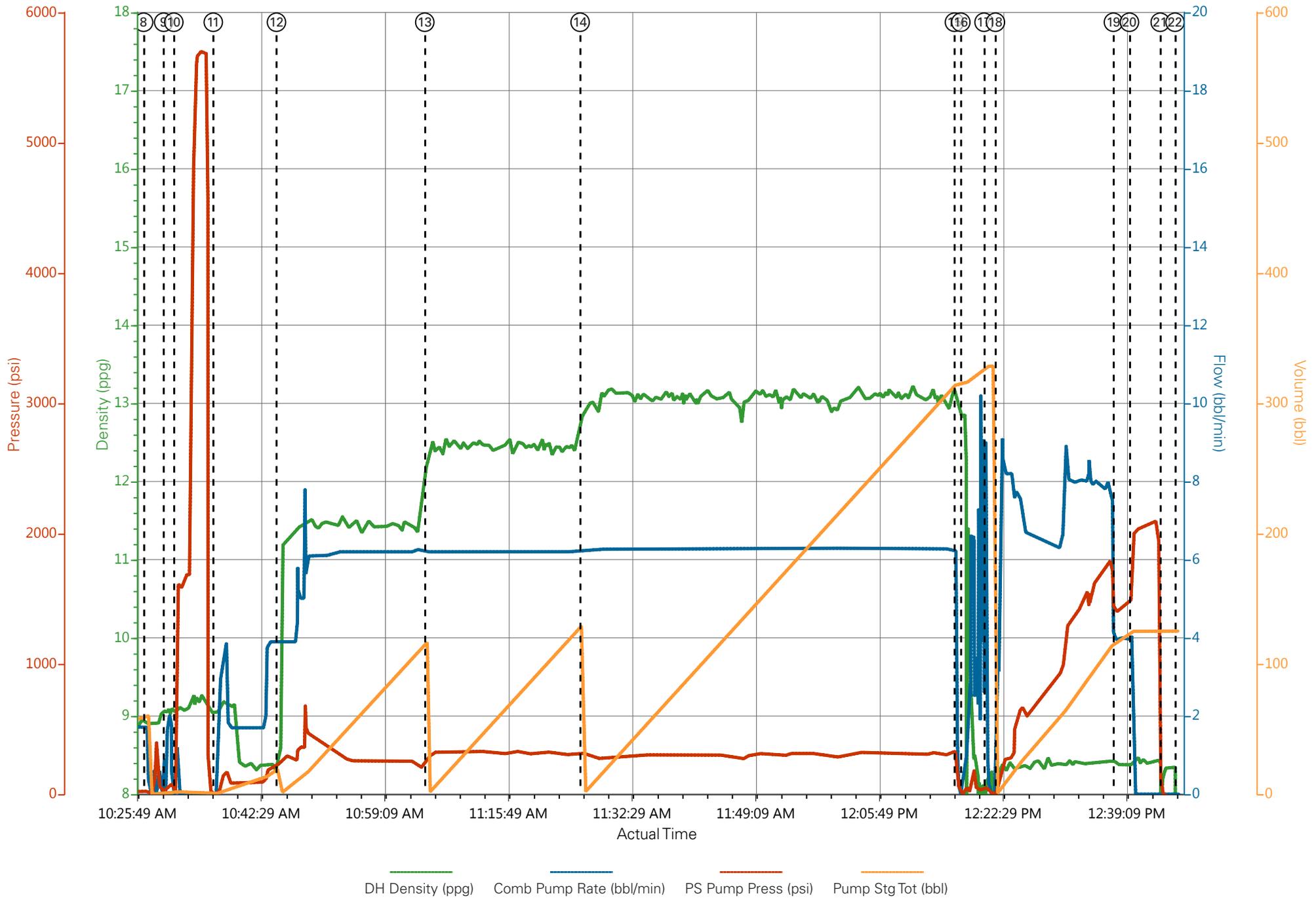
### 3.5 Job Event Log

Type	Seq. No.	Activity	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	11/12/2014	15:30:00	USER					ELITE # 2
Event	2	Pre-Convoy Safety Meeting	11/12/2014	18:00:00	USER					ALL HES EMPLOYEES
Event	3	Arrive At Loc	11/12/2014	20:30:00	USER					ARRIVED ON LOCATION 1/2 HOUR EARLY DIDNT START CHARGING TIME UNTIL REQUESTED ON LOCATION TIME RIG RUNNING CASING
Event	4	Assessment Of Location Safety Meeting	11/13/2014	04:00:00	USER					ALL HES EMPLOYEES
Event	5	Pre-Rig Up Safety Meeting	11/13/2014	04:10:00	USER					ALL HES EMPLOYEES
Event	6	Rig-Up Equipment	11/13/2014	04:20:00	USER					1 HT-400 PUMP TRUCK (ELITE #2) 2 660 BULK TRUCKS 1 FIELD STORAGE BIN 1 F-550 PICKUP
Event	7	Pre-Job Safety Meeting	11/13/2014	10:00:00	USER					ALL HES EMPLOYEES AND RIG CREW
Event	8	Start Job	11/13/2014	10:27:00	COM5					TD:8154 TP: 8129 SJ: 46.65 CCSG: 4 1/2 11.6# N-80 OH: 8 3/4 SP @ 1520 9 5/8 36# J-55 MUD WT 9.0 PPG
Event	9	Prime Pumps	11/13/2014	10:29:42	COM5	8.33	2.0	108	2.0	PRIME LINES WITH 2 BBLS FRESH WATER
Event	10	Test Lines	11/13/2014	10:31:04	COM5	8.33	0.00	5707	2.0	PRESSURE TEST OK
Event	11	Pump Spacer 1	11/13/2014	10:36:23	COM5	8.4	4.0	235	20	20 BBL MUD FLUSH III SPACER
Event	12	Pump Spacer 2	11/13/2014	10:44:54	COM5	11.5	6.0	460	121.8	300 SKS 11.5 PPG 2.38 YIELD 12.74 GAL/SK SCAVENGER CEMENT

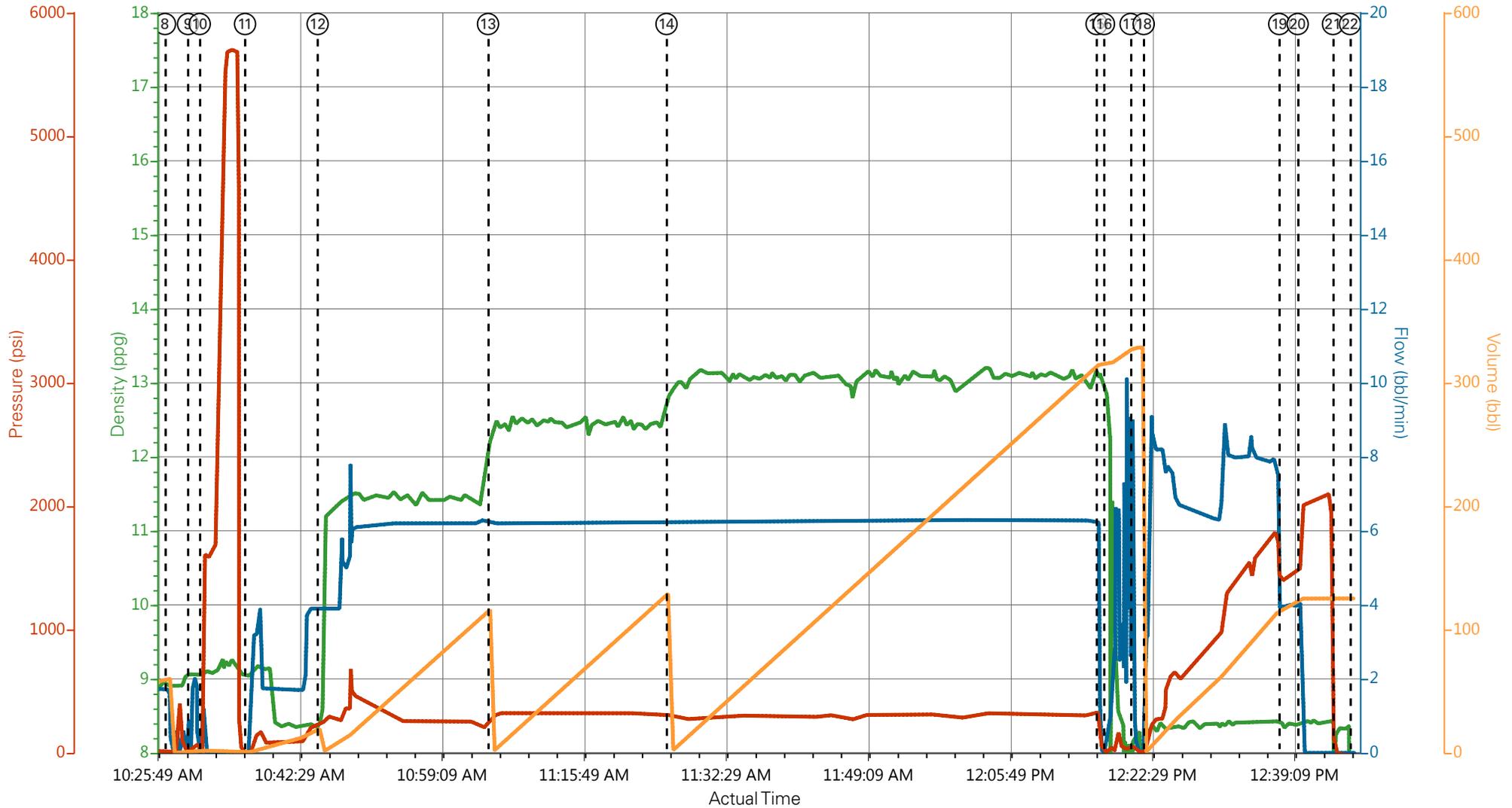
Type	Seq. No.	Activity	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
										WEIGHT VERIFIED VIA PRESSURIZED MUD SCALES
Event	13	Pump Lead Cement	11/13/2014	11:04:53	COM5	12.5	6.0	320	114.1	350 SKS 12.5 PPG 1.83 YIELD 8.7 GAL/SK LEAD CEMENT WEIGHT VERIFIED VIA PRESSURIZED MUD SCALES
Event	14	Pump Tail Cement	11/13/2014	11:25:49	COM5	13.1	6.0	325	267.7	900 SKS 13.1 PPG 1.67 YIELD 7.88 GAL/SK TAIL CEMENT WEIGHT VERIFIED VIA PRESSURIZED MUD SCALES
Event	15	Shutdown	11/13/2014	12:16:16	COM5					
Event	16	Clean Lines	11/13/2014	12:17:08	USER	8.33			10	CLEAN PUMPS AND LINES TO CUTTINGS TANK
Event	17	Drop Top Plug	11/13/2014	12:20:15	COM5					PLUG AWAY NO PROBLEMS
Event	18	Pump Displacement	11/13/2014	12:21:47	COM5	8.4	8.0	1766	125.3	FRESH WATER DISPLACEMENT W/ 1BAG/ 10 BBL KCL
Event	19	Slow Rate	11/13/2014	12:37:41	USER	8.4	4.0	1490	115	SLOW RATE TO BUMP PLUG
Event	20	Bump Plug	11/13/2014	12:39:51	COM5	8.4	4.0	2101	125.3	PSI BEFORE LANDING PLUG @ 1490 BUMPED PLUG UP TO 2101 PSI
Event	21	Check Floats	11/13/2014	12:44:00	USER					FLOATS HELD 1 BBL BACK TO DISPLACEMENT TANKS
Event	22	End Job	11/13/2014	12:46:00	COM5					GOOD RETURNS THROUGHOUT JOB UNTIL LAST 30 BBLS OF DISPLACEMENT WHEN

Type	Seq. No.	Activity	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
										RETURNS WERE LOST FOR REMAINDER OF THE JOB PIPE STATIC THROUGHOUT JOB
Event	23	Pre-Rig Down Safety Meeting	11/13/2014	13:00:00	USER					ALL HES EMPLOYEES
Event	24	Rig-Down Equipment	11/13/2014	13:10:00	USER					
Event	25	Pre-Convoy Safety Meeting	11/13/2014	14:20:00	USER					ALL HES EMPLOYEES
Event	26	Crew Leave Location	11/13/2014	14:30:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT DUSTIN SMITH AND CREW

# CYNOSURE - FEDERAL 14/15-3-21 - 4 1/2 PRODUCTION



# CYNOSURE - FEDERAL 14/15-3-21 - 4 1/2 PRODUCTION



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

- |   |                          |                             |                     |                                |                        |
|---|--------------------------|-----------------------------|---------------------|--------------------------------|------------------------|
| ① Call Out                              | ⑥ Rig-Up Equipment       | ⑪ Pump Mud Flush III Spacer | ⑯ Clean Lines       | 21 Check Floats                | 26 Crew Leave Location |
| ② Pre-Convoy Safety Meeting             | ⑦ Pre-Job Safety Meeting | ⑫ Pump Scavenger Cement     | ⑰ Drop Top Plug     | 22 End Job                     |                        |
| ③ Arrive At Loc                         | ⑧ Start Job              | ⑬ Pump Lead Cement          | ⑱ Pump Displacement | 23 Pre-Rig Down Safety Meeting |                        |
| ④ Assessment Of Location Safety Meeting | ⑨ Prime Lines            | ⑭ Pump Tail Cement          | ⑲ Slow Rate         | 24 Rig-Down Equipment          |                        |
| ⑤ Pre-Rig Up Safety Meeting             | ⑩ Test Lines             | ⑮ Shutdown                  | 20 Bump Plug        | 25 Pre-Convoy Safety Meeting   |                        |

▼ **HALLIBURTON** | iCem® Service

Created: 2014-11-12 17:48:58, Version: 4.0.248

Edit

Customer: CYNOSURE ENERGY LLC  
 Representative: WHITEY COTTAM

Job Date: 11/13/2014 12:00:00 AM  
 Sales Order #: 0901823601

Well: FEDERAL 14/15-3-21  
 ELITE # 2: DUSTIN SMITH / BEN ROSE

# HALLIBURTON

## Water Analysis Report

Company: CYNOSURE

Date: 11/14/2014

Submitted by: DUSTIN SMITH

Date Rec.: \_\_\_\_\_

Attention: \_\_\_\_\_

S.O.# 901823601

Lease FEDERAL

Job Type: PRODUCTION

Well # 14/15-3-21

Specific Gravity	<i>MAX</i>	<b>1</b>
pH	<i>8</i>	<b>7</b>
Potassium (K)	<i>5000</i>	<b>200 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 200 Mg / L</b>
Chlorine (Cl <sub>2</sub> )		<b>0 Mg / L</b>
Temp	<i>40-90</i>	<b>34 Deg</b>
Total Dissolved Solids		<b>520 Mg / L</b>

Respectfully: DUSTIN SMITH

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

<b>Sales Order #:</b> 0901823601	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 11/14/2014
<b>Customer:</b> CYNOSURE ENERGY LLC		<b>Job Type (BOM):</b> CMT PRODUCTION CASING BOM
<b>Customer Representative:</b>		<b>API / UWI: (leave blank if unknown)</b> 05-045-22455-00
<b>Well Name:</b> FEDERAL		<b>Well Number:</b> 0080638653
<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	11/14/2014
Survey Interviewer	The survey interviewer is the person who initiated the survey.	HX37079
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> 0901823601	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 11/14/2014
<b>Customer:</b> CYNOSURE ENERGY LLC		<b>Job Type (BOM):</b> CMT PRODUCTION CASING BOM
<b>Customer Representative:</b>		<b>API / UWI: (leave blank if unknown)</b> 05-045-22455-00
<b>Well Name:</b> FEDERAL		<b>Well Number:</b> 0080638653
<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

### KEY PERFORMANCE INDICATORS

General	
<b>Survey Conducted Date</b>	11/14/2014
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>	5
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>	2
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

<b>Sales Order #:</b> 0901823601	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 11/14/2014
<b>Customer:</b> CYNOSURE ENERGY LLC		<b>Job Type (BOM):</b> CMT PRODUCTION CASING BOM
<b>Customer Representative:</b>		<b>API / UWI: (leave blank if unknown)</b> 05-045-22455-00
<b>Well Name:</b> FEDERAL		<b>Well Number:</b> 0080638653
<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>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, 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	90
<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	90
<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)	NO
<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