

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS-EBUS**

**Coyote Trails 33W-15-11N**

Sincerely,

**Alexandria Dionigi**

## Legal Notice

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### Disclaimer:

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Table of Contents

1.0    Cementing Job Summary ..... 4

    1.1    Executive Summary .....4

2.0    Real-Time Job Summary ..... 8

    2.1    Job Event Log .....8

3.0    Attachments..... 11

    3.1    EXTRACTION COYOTE TRAILS PRODUCTION 33W-15-11N-Custom Results.png .....11

## 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 the **Coyote Trails 33W-15-11N** cement **Production** casing 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.

**Approximately 57 bbls of cement were returned to surface.**

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,

**Halliburton Fort Lupton**

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 369404		<b>Ship To #:</b> 3951532		<b>Quote #:</b>		<b>Sales Order #:</b> 0905791867					
<b>Customer:</b> EXTRACTION OIL & GAS-EBUS				<b>Customer Rep:</b> Hans Cary							
<b>Well Name:</b> COYOTE TRAILS			<b>Well #:</b> 33W-15-11N			<b>API/UWI #:</b> 05-123-49912-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> ERIE		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO					
<b>Legal Description:</b> SW SE-28-1N-68W-1149FSL-2319FEL											
<b>Contractor:</b> ENSIGN DRLG				<b>Rig/Platform Name/Num:</b> ENSIGN 147							
<b>Job BOM:</b> 7523 7523											
<b>Well Type:</b> HORIZONTAL OIL											
<b>Sales Person:</b> HALAMERICA\HX38199				<b>Srv Supervisor:</b> Thomas Haas							
<b>Job</b>											
<b>Formation Name</b>											
<b>Formation Depth (MD)</b>		<b>Top</b>		<b>Bottom</b>							
<b>Form Type</b>				<b>BHST</b>							
<b>Job depth MD</b>		16750ft		<b>Job Depth TVD</b>							
<b>Water Depth</b>				<b>Wk Ht Above Floor</b>							
<b>Perforation Depth (MD)</b>		<b>From</b>		<b>To</b>							
<b>Well Data</b>											
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>	
Casing	0	9.625	8.921	36			0	1661	0	1661	
Casing	0	5.5	4.892	17			0	16750	0	7440	
Open Hole Section			8.5				1661	16751	1661	7440	
<b>Tools and Accessories</b>											
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>		
						<b>Top Plug</b>	5.5	1	HES		
<b>Float Shoe</b>	5.5	1	NCS	16747		<b>Bottom Plug</b>	5.5	1	HES		
<b>Float Collar</b>	5.5	1	NCS	16747							
						<b>Plug Container</b>	5.5	1	HES		
<b>Fluid Data</b>											
<b>Stage/Plug #:</b> 1											
<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 ft<sup>3</sup>/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
1	FDP-C1337-18	SBM FDP-C1337-18 CEMENT SPACER SYS			50	bbl	12.5	2.74	16.6	8	1693
1 lbm/bbl		<b>FE-2 (100001615)</b>									

5 lbm/bbl	<b>SEM-94P, 35 LB SACK - (1023987)</b>
205.22 lbm/bbl	<b>BARITE, BULK (100003681)</b>
5 lbm/bbl	<b>SEM-93P, 35 LB SACK - (1023977)</b>

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	ElastiCem	ELASTICEM (TM) SYSTEM	585	sack	13.2	1.6	7.75	8	4533
0.75 %		<b>SCR-100 (100003749)</b>							
7.75 Gal		<b>FRESH WATER</b>							

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
3	GasStop	ELASTICEM (TM) SYSTEM	615	sack	13.2	1.6	7.74	8	4760
0.75 %		<b>SCR-100 (100003749)</b>							
5.24 Gal		<b>FRESH WATER</b>							

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
4	13.2# ElastiCem	ELASTICEM (TM) SYSTEM	1470	sack	13.2	1.57	7.66	8	11260
7.66 Gal		<b>FRESH WATER</b>							

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
5	MMCR Displacement	MMCR Displacement	20	bbl	8.33			8	
0.50 gal/bbl		<b>MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)</b>							

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
6	Displacement	Displacement	369	bbl	8.33			8	

Cement Left In Pipe	Amount	N/A			Reason			Shoe Joint	

Mix Water:	pH 7	Mix Water Chloride:	<300 ppm	Mix Water Temperature:	70 °F
Cement Temperature:	N/A	Plug Displaced by:	FW 8.33 lb/gal	Disp. Temperature:	70 °F
Plug Bumped?	Yes	Bump Pressure:	2330 psi	Floats Held?	Yes
Cement Returns:	57 bbl	Returns Density:	N/A	Returns Temperature:	N/A
<b>Comment</b> PLUG BUMP AT CALCULATED DISPLACEMENT, FINAL CIRCULATING PRESSURE 2330 PSI, DISK SHOE RUPTURE AT 2180 PSI, FLOATS HELD, 2 ½ BBLs BACK. 57 BBLs OF CEMENT TO SURFACE.					

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	6/26/2019	15:00:00	USER					CREW CALLED OUT AT 15:00 06/26/2019, REQUESTED ON LOCATION 22:00 06/26/2019. CREW PICKED UP CEMENT, CHEMICALS (30 GAL D-AIR, 10 GAL MMCR), 100 LBS SUGAR, AND PLUG CONTAINER FROM FORT LUPTON, CO. BULK 660: 11633846/10989685 Bulk 660: 11527037/11062210 PUMP ELITE: 11645460/11897034 SOFT: 12051660/12240040
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/26/2019	19:00:00	USER					DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW
Event	3	Crew Leave Yard	Crew Leave Yard	6/26/2019	19:30:00	USER					STARTED JOURNEY MANAGEMENT.
Event	4	Arrive At Loc	Arrive At Loc	6/26/2019	20:30:00	USER					END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 9.625" 36# @ 1661', CASING: 5.5" 17# @ 16750', 3' SHOE JOINT, 8.5" OPEN HOLE, TVD @ 7440', 9.9 PPG WELL FLUID, FRESH WATER DISPLACEMENT.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	6/26/2019	21:30:00	USER					HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	6/26/2019	21:45:00	USER					CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	6/27/2019	02:45:00	USER	8.82	0.00	-3.00	8.10	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED



											POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	6/27/2019	03:14:26	COM4	8.45	0.00	-2.00	0.00	START JOB DATA RECORDING.
Event	9	Test Lines	Test Lines	6/27/2019	03:16:00	COM4	8.41	0.00	179.00	2.00	PRESSURE TESTED LINES TO 4800 PSI, 500 PSI KICK OUT AT 540 PSI, 5TH GEAR STALL AT 1800 PSI.
Event	10	Drop Bottom Plug	Drop Bottom Plug	6/27/2019	03:22:18	COM4	8.40	0.00	116.00	2.00	PLUG LEFT PUP JOINT, VERIFIED BY COMPANY MAN.
Event	11	Pump Spacer 1	Pump Spacer 1	6/27/2019	03:22:25	COM4	8.40	0.00	120.00	2.00	PUMP 50 BBLS OF FDP SPACER @ 12.5 LB/GAL, ADDED 10 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	12	Pump Cap Cement	Pump Cap Cement	6/27/2019	03:31:44	COM4	12.99	3.60	94.00	52.20	PUMP 585 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.6 YIELD, 7.75 GAL/SK, 166.7 BBLS, CALCULATED TOC @ SURFACE, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	13	Pump Lead Cement	Pump Lead Cement	6/27/2019	03:53:18	COM4	13.16	8.50	526.00	179.40	PUMP 615 SKS OF GASSTOP @ 13.2 LB/GAL, 1.57 YIELD, 7.7 GAL/SK, 175 BBLS, CALCULATED TOL 2388', MIX WATER MIXED WITH 1538 GAL OF LATEX AND 15 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	14	Pump Tail Cement	Pump Tail Cement	6/27/2019	04:14:45	COM4	13.17	8.50	633.00	181.60	PUMP 1470 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 YIELD, 7.66 GAL/SK, 411 BBLS, CALCULATED TOT @ 6677', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	15	Cement At Bottom	Cement At Bottom	6/27/2019	04:15:54	USER	13.15	8.40	1255.00	9.80	BOTTOM PLUG RUPTURED @ 1450 PSI.
Event	16	Shutdown	Shutdown	6/27/2019	05:07:41	COM4	13.30	0.00	116.00	435.00	SHUTDOWN TO WASH PUMPS/LINES AND DROP TOP PLUG.
Event	17	Drop Top Plug	Drop Top Plug	6/27/2019	05:19:15	COM4	-0.15	0.00	5.00	453.80	PLUG LEFT PLUG CONTAINER, VERIFIED BY COMPANY MAN.

Event	18	Pump Displacement	Pump Displacement	6/27/2019	05:19:18	COM4	-0.17	0.00	6.00	453.80	BEGIN PUMPING CALCULATED DISPLACEMENT OF 389 BBL FRESH WATER, 10 GAL OF MMCR ADDED TO THE FIRST 20 BBL.
Event	19	Cement Returns to Surface	Cement Returns to Surface	6/27/2019	06:06:10	USER	8.24	5.20	2483.00	366.20	CEMENT RETURN TO SURFACE 332 BBLs IN DISPLACEMENT. 57 BBLs OF CEMENT TO SURFACE
Event	20	Bump Plug	Bump Plug	6/27/2019	06:12:28	COM4	8.24	0.00	2499.00	393.70	PLUG BUMPED AT CALCULATED DISPLACEMENT, FINAL CIRCULATING PRESSURE OF 2330 PSI.
Event	21	Bump Plug	RUPTURE DISK	6/27/2019	06:13:32	USER	8.26	1.90	3169.00	394.40	PRESSURE UP TO RUPTURE SHOE DISK, RUPTURE @ 3180 PSI.
Event	22	Other	Wet Shoe	6/27/2019	06:13:47	USER	8.24	4.60	2383.00	395.20	PUMP 3 BBLs WET SHOE.
Event	23	Other	CHECK FLOATS	6/27/2019	06:14:42	USER	8.24	4.50	2398.00	399.30	RELEASED PRESSURE BACK TO THE TRUCK, FLOATS HELD, RECIEVED 2 1/2 BBL BACK.
Event	24	End Job	End Job	6/27/2019	06:16:21	COM4	8.19	0.00	8.00	0.00	END JOB DATA RECORDING.
Event	25	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	6/27/2019	06:20:00	USER	8.18	0.00	0.00	0.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	26	Rig-Down Completed	Rig-Down Completed	6/27/2019	07:30:00	USER					ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL.
Event	27	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/27/2019	07:45:00	USER					DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	28	Crew Leave Location	Crew Leave Location	6/27/2019	08:00:00	USER					THANK YOU FOR USING HALLIBURTON - THOMAS HAAS AND CREW.

## 3.0 Attachments

### 3.1 EXTRACTION COYOTE TRAILS PRODUCTION 33W-15-11N-Custom Results.png

