

# HALLIBURTON

iCem<sup>®</sup> Service

**EXTRACTION OIL & GAS-EBUS**

**GP Cody Fed 20E-15-3 Production**

Sincerely,

**Alexandria Dionigi**

## 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 the **GP Cody FED 20E-15-3** 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 45 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> 3987053	<b>Quote #:</b>	<b>Sales Order #:</b> 0906308414
<b>Customer:</b> EXTRACTION OIL & GAS-EBUS		<b>Customer Rep:</b> Manny Parras	
<b>Well Name:</b> GP CODY FED	<b>Well #:</b> 20E-15-3	<b>API/UWI #:</b> 05-123-50282-00	
<b>Field:</b> WATTENBERG	<b>City (SAP):</b> GREELEY	<b>County/Parish:</b> WELD	<b>State:</b> COLORADO
<b>Legal Description:</b> NE NE-20-5N-65W-694FNL-1305FEL			
<b>Contractor:</b> PATTERSON-UTI ENERGY		<b>Rig/Platform Name/Num:</b> PATTERSON 901	
<b>Job BOM:</b> 7523 7523			
<b>Well Type:</b> HORIZONTAL OIL			
<b>Sales Person:</b> HALAMERICA\H171328		<b>Srvc Supervisor:</b> Thomas Haas	

**Job**

<b>Formation Name</b>	
<b>Formation Depth (MD)</b>	<b>Top</b> <b>Bottom</b>
<b>Form Type</b>	BHST
<b>Job depth MD</b>	14266ft <b>Job Depth TVD</b> 6905
<b>Water Depth</b>	<b>Wk Ht Above Floor</b> 4'
<b>Perforation Depth (MD)</b>	<b>From</b> <b>To</b>

**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			0	1616	0	1616
Casing	0	5.5	4.892	17			0	14266	0	6905
Open Hole Section			8.5				1616	14267	1616	6905

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
					Top Plug	5.5	1	CTD
Float Shoe	5.5	1	CTD	14266	Bottom Plug	5.5	1	CTD
Float Collar	5.5	1	CTD	14217				
					Plug Container	5.5	1	HES

**Fluid Data**

<b>Stage/Plug #:</b> 1
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Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
1	Tuned Prime Cement Spacer Base - RKS/SE	TUNED PRIME CEMENT SPACER SYS	50	bbl	12.5	2.73	16.57	8	1703	
5 lbm/bbl		SEM-94P, 35 LB SACK - (1023987)								
42 gal/bbl		FRESH WATER								
205.4570 lbm/bbl		BARITE, BULK (100003681)								
5 lbm/bbl		SEM-93P, 35 LB SACK - (1023977)								
1 lbm/bbl		FE-2, 2000 LB BAG - (1005549)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
2	Cap	ELASTICEM (TM) SYSTEM	563	sack	13.2	1.59	7.79	8	4386	
0.42 %		SCR-100, 1200 LB BAG - (1126328)								
7.79 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
3	GasStop B1	GASSTOP (TM) SYSTEM	615	sack	13.2	1.56	7.61	8	4680	
0.30 %		SCR-100, 1200 LB BAG - (1126328)								
5.11 Gal		FRESH WATER								
0.25 lbm		POLY-E-FLAKE (101216940)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
4	ElastiCem	ELASTICEM (TM) SYSTEM	1115	sack	13.2	1.56	7.62	8	8496	
7.62 Gal		FRESH WATER								
0.25 lbm		POLY-E-FLAKE (101216940)								
0.60 %		HR-5, 50 LB SK (100005050)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
5	MMCR Displacement	MMCR Displacement	20	bbl	8.33			8		
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
6	Displacement	Displacement	311	bbl	8.33			8		
<b>Cement Left In Pipe</b>		<b>Amount</b>	49 ft		<b>Reason</b>			Shoe Track		
								Shoe Joint		

<b>Mix Water:</b>	pH 7	<b>Mix Water Chloride:</b>	<300 ppm	<b>Mix Water Temperature:</b>	70 °F
<b>Cement Temperature:</b>	N/A	<b>Plug Displaced by:</b>	8.33 lb/gal F.W.	<b>Disp. Temperature:</b>	49 °F
<b>Plug Bumped?</b>	Yes	<b>Bump Pressure:</b>	2650 psi	<b>Floats Held?</b>	Yes
<b>Cement Returns:</b>	45 bbl	<b>Returns Density:</b>	N/A	<b>Returns Temperature:</b>	N/A
<b>Comment</b> Plug bumped at calculated displacement, final circulating pressure of 2650 psi, 3 min casing test at 3100 psi, floats held, 3.5 bbl back to the truck. 45 bbl of cement returned to surface.					

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	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	Call Out	2/15/2020	15:00:00	USER					CREW CALLED OUT AT 15:00 2/15/2020, REQUESTED ON LOCATION 23:00 2/15/2020. CREW PICKED UP CEMENT, CHEMICALS (50 GAL D-AIR, 10 GAL MMCR), 100 LBS SUGAR, AND PLUG CONTAINER FROM FORT LUPTON, CO. BULK 660: 111644701/10866497 CHEM: 11255351/12051673 PUMP ELITE: 11255761/11368474.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	2/15/2020	19:45:00	USER					DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW
Event	3	Crew Leave Yard	Crew Leave Yard	2/15/2020	20:00:00	USER					STARTED JOURNEY MANAGEMENT.
Event	4	Arrive At Loc	Arrive At Loc	2/15/2020	21:00:00	USER					END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 9.625" 36# @ 1616', CASING: 5.5" 17# @ 14267', 49' SHOE JOINT, 8.5" OPEN HOLE, TVD @ 6905', 9.8 PPG WELL FLUID, FRESH WATER DISPLACEMENT.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	2/15/2020	21:10:00	USER					HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	2/15/2020	21:15:00	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	2/16/2020	00:00:00	USER					MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED

											POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	2/16/2020	00:40:56	COM10	0.00	8.86	0.00	15.90	START JOB DATA RECORDING.
Event	9	Drop Bottom Plug	Drop Bottom Plug	2/16/2020	00:42:10	COM10	143.00	8.67	1.60	17.20	PLUG LEFT PLUG CONTAINER, VERIFIED BY COMPANY MAN.
Event	10	Test Lines	Test Lines	2/16/2020	00:45:21	COM10	64.00	8.19	0.00	20.70	PRESSURE TESTED LINES TO 4500 PSI, 500 PSI KICK OUT AT 530 PSI, 5TH GEAR STALL AT 1854 PSI.
Event	11	Pump Spacer 1	Pump Spacer 1	2/16/2020	00:48:22	COM10	46.00	8.18	0.00	0.00	PUMP 50 BBLS OF FDP SPACER @ 12.5 LB/GAL, ADDED 15 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	12	Pump Lead Cement	Pump Cap Cement	2/16/2020	00:56:04	COM10	618.00	13.50	8.50	53.20	PUMP 563 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.59 YIELD, 7.79 GAL/SK, 159.4 BBLS, CALCULATED TOC @ SURFACE, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	13	Pump Lead Cement	Pump Lead Cement	2/16/2020	01:18:03	COM10	657.00	13.32	8.60	0.10	PUMP 615 SKS OF GASSTOP @ 13.2 LB/GAL, 1.56 YIELD, 7.61 GAL/SK, 170.9 BBLS, CALCULATED TOC @ 2484, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	14	Pump Tail Cement	Pump Tail Cement	2/16/2020	01:39:06	COM10	621.00	13.02	8.60	180.40	PUMP 1115 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.56 YIELD, 7.62 GAL/SK, 309.8 BBLS, CALCULATED TOC @ 6673', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	15	Shutdown	Shutdown	2/16/2020	02:16:27	COM10	52.00	14.78	0.00	306.00	SHUTDOWN TO WASH PUMPS/LINES, AND DROP TOP PLUG.
Event	16	Drop Top Plug	Drop Top Plug	2/16/2020	02:25:33	COM10	5.00	7.61	0.00	315.60	PLUG LEFT PLUG CONTAINER, VERIFIED BY COMPANY MAN.
Event	17	Pump Displacement	Pump Displacement	2/16/2020	02:25:39	COM10	4.00	7.65	0.00	0.00	DISPLACEMENT OF 331 BBL FRESH WATER, 10 GAL MMCR IN FIRST 20 BBL.

Event	18	Cement Returns to Surface	Cement Returns to Surface	2/16/2020	02:55:56	USER	3059.00	7.71	7.50	292.90	CEMENT RETURNED TO SURFACE 286 BBL INTO DISPLACEMENT, 45 BBL OF CEMENT TO SURFACE.
Event	19	Bump Plug	Bump Plug	2/16/2020	03:05:07	COM10	3054.00	7.70	0.00	343.00	PLUG BUMPED AT CALCULATED DISPLACEMENT, FINAL CIRCULATING PRESSURE OF 2650 PSI.
Event	20	Other	Casing Test	2/16/2020	03:05:11	USER	3049.00	7.70	0.00	343.00	HOLD A 3 MIN CASING TEST AT 3100 PSI.
Event	21	Check Floats	Check Floats	2/16/2020	03:05:45	USER	3049.00	7.70	0.00	343.00	RELEASED PRESSURE BACK TO THE TRUCK, FLOATS HELD, 3.5 BBL BACK TO THE TRUCK.
Event	22	End Job	End Job	2/16/2020	03:07:08	COM10	5.00	7.62	0.00	0.00	END JOB DATA RECORDING.
Event	23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	2/16/2020	03:10:00	USER	3.00	7.60	0.00	0.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	24	Rig-Down Completed	Rig-Down Completed	2/16/2020	04:00:00	USER					ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL.
Event	25	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	2/16/2020	04:20:00	USER					DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	26	Crew Leave Location	Crew Leave Location	2/16/2020	04:30:00	USER					THANK YOU FOR USING HALLIBURTON - THOMAS HAAS AND CREW.

## 3.0 Attachments

### 3.1 Extraction Production -Custom Results.png

