HALLIBURTON

iCem® Service

EXTRACTION OIL & GAS-EBUS

Interchange A S22-30-21N Production
Job Date: Monday, January 24, 2022

Sincerely,
Meghan Van Zyl

Legal Notice

Disclaimer:

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Interchange A S22-30-21N** 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 40 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

Sold To #: 369404	**Ship To #:** 9008033	**Quote #:**	**Sales Order #:** 0907631056
Customer: EXTRACTION OIL AND GAS-EBUS		**Customer Rep:** Manny Parras	
Well Name: INTERCHANGE A	**Well #:** S22-30-21N		**API/UWI #:** 05-014-20852-00
Field: WATTENBERG	**City (SAP):** BROOMFIELD	**County/Parish:** BROOMFIELD	**State:** COLORADO
Legal Description: SW NW-10-1S-68W-2077FNL-938FWL			
Contractor: ENSIGN DRLG		**Rig/Platform Name/Num:** ENSIGN 769	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX41066		**Srvc Supervisor:** Michael Loughran	

Job

Formation Name					
Formation Depth (MD)	**Top**		**Bottom**		
Form Type			**BHST**		
Job depth MD	23467ft		**Job Depth TVD**		
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		9.625	8.921	36			0	1646	0	1646
Casing		5.5	4.892	17			0	23467	0	7928
Open Hole Section			8.75				1646	9056	1649	7928
Open Hole Section			8.5				9056	23479	7928	7928

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	5.5					**Top Plug**	5.5	1	3rd party
Float Shoe	5.5	1		23467		**Bottom Plug**	5.5	1	3rd party
Float Collar	5.5	1		23462		**SSR plug set**	5.5		
Insert Float	5.5					**Plug Container**	5.5	1	HES
Stage Tool	5.5					**Centralizers**	5.5		

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	Tuned Prime	TUNED PRIME CEMENT SPACER SYS	50	bbl	11.5	3.83		6	
0.10 gal/bbl		**D-AIR 3000L, 5 GAL PAIL (101007444)**							

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	Cap	SBM CEM ELASTICEM™ SYS	565	sack	13	1.67		8	8.33
0.35 %		**SCR-100, 1200 LB BAG - (1126328)**							
8.33 Gal		**FRESH WATER**							

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	FDP-C1371 SYS	SBM CEM FDP-C1371 SYS	840	sack	13	1.56		6	7.24
7.24 Gal		**FRESH WATER**							
5 %		**CHANNELFIX, 44 LB BAG - (1107429)**							
0.27 %		**SCR-100, 1200 LB BAG - (1126328)**							

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	ElastiCem	SBM CEM ELASTICEM™ SYS	2310	sack	13.2	1.59		8	7.76
0.65 %		**HR-5, 50 LB SK (100005050)**							
7.76 Gal		**FRESH WATER**							

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	Displacement	Displacement	544.3	bbl	8.33			8	

Cement Left In Pipe	**Amount**	5 ft	Reason	**Shoe Joint**	
Mix Water:	pH 6	**Mix Water Chloride:**	Less 200 ppm	Mix Water Temperature:	**69 °F**
Cement Temperature:	#	**Plug Displaced by:**	8.33 lb/gal	Disp. Temperature:	
Plug Bumped?	Yes	**Bump Pressure:**	3500 PSI psi	Floats Held?	**Yes**
Cement Returns:	40 BBL	**Returns Density:**	13 PPG	Returns Temperature:	

Comment

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Graph Label	Date	Time	Dwnhole Density (ppg)	Cmb Pump Rate (bbl/min)	Pump A Pressure (psi)	Cmb Stg Total (bbl)	Comments
1	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/23/2022	19:00:00					CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
2	Call Out	Call Out	1/23/2022	22:00:00					CREW CALLED OUT AT 2200 HRS. 01/23/2022 REQUESTED ON LOCATION 0400 HRS. 01/24/2022. CREW STAGED ON LOCATION DUE TO LOW DOT HOURS
3	Crew Leave Yard	Crew Leave Yard	1/23/2022	23:00:00					CREW LEAVES YARD
4	Arrive At Loc	Arrive At Loc	1/24/2022	01:00:00					MEET WITH CO. MAN TO DISCUSS JOB. 17# P-110 23467', TD 23479', TVD 7112', F/C 23462', 9.625" 36# 1646', HOLE 8.75" TO 9056' 8.50" TO TD, MUD 10.1#, MAX PRESSURE 3200 PSI, WATER 69 DEGREES, PH6, CHLORIDES LESS 200 PPM.
5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/24/2022	06:45:00					HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP, AND WEATHER.
6	Rig-Up Equipment	Rig-Up Equipment	1/24/2022	06:50:00					CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON AND WATER HOSES TO PERFORM JOB.
7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	1/24/2022	08:30:00	8.23	0.00	5.27	1.31	SAFETY MEETING WITH HALLIBURTON, AND RIG PERSONNEL. CREW COMMUNICATED POTENTIAL SAFETY HAZARDS, AND JOB DETAILS. RIG CIRCULATE 12 BPM/2000 PSI

8	Start Job	Start Job	1/24/2022	09:16:14	8.21	0.00	19.76	0.00	BEGIN RECORDING DATA
9	Drop Bottom Plug	Drop Bottom Plug	1/24/2022	09:16:20	8.21	0.00	19.46	0.00	BOTTOM PLUG VERIFIED BY MANNY
10	Test Lines	Test Lines	1/24/2022	09:17:38	8.66	0.00	524.35	1.65	TEST HES LINES TO 4700 PSI
11	Pump Spacer 1	Pump Spacer 1	1/24/2022	09:25:53	8.50	0.00	526.98	0.00	50 BBLS TUNED PRIME SPACER. 11.5 PPG, 3.83 YIELD, 24.15 GAL/SACK. D-AIR MIXED ON FLY
12	Pump Cap Cement	Pump Cap Cement	1/24/2022	09:36:54	11.78	3.99	633.02	0.03	565 SACKS ELASTICEM CAP CEMENT. 168.05 BBLS. 13 PPG, 1.67 YIELD, 8.33 GAL/SACK. 40 BBLS CAP TO SURFACE. TOC=0'
13	Pump Lead Cement	Pump Lead Cement	1/24/2022	10:01:32	12.57	8.12	385.90	0.61	840 SACKS FDP-C1371 LEAD CEMENT. 233.38 BBLS. 13 PPG, 1.56 YIELD, 7.24 GAL/SACK. ESTIMATED TOLC=2601'
14	Pump Tail Cement	Pump Tail Cement	1/24/2022	10:30:15	12.99	8.37	495.00	0.07	2310 SACKS SBMCEM TAIL CEMENT. 654.15 BBLS. 13.2 PPG, 1.59 YIELD, 7.76 GAL/SACK. ESTIMATED TOTC=7788'
15	Shutdown	Shutdown	1/24/2022	11:54:26	20.63	0.00	101.33	703.48	SHUTDOWN
16	Clean Lines	Clean Lines	1/24/2022	11:56:13	16.81	0.00	54.49	0.00	CLEAN PUMPS AND LINES
17	Shutdown	Shutdown	1/24/2022	12:03:28	8.28	0.00	83.27	21.64	SHUTDOWN
18	Drop Top Plug	Drop Top Plug	1/24/2022	12:04:51	8.23	0.00	42.62	0.00	TOP PLUG BY MANNY
19	Pump Displacement	Pump Displacement	1/24/2022	12:05:21	8.14	0.00	49.72	0.00	544.3 BBLS FRESH WATER DISPLACEMENT WITH 80 GALLONS MICRO MATRIX CEMENT RETARDER PRE-LOADE IN UPRIGHT
20	Bump Plug	Bump Plug	1/24/2022	13:10:49	8.25	0.00	3056.10	541.84	FINAL CIRCULATING PRESSURE 2760 PSI/4 BPM
21	Check Floats	Check Floats	1/24/2022	13:12:59	8.38	0.00	3390.41	542.60	FLOATS HOLD. 6.5 BBLS BACK
22	End Job	End Job	1/24/2022	13:15:12	8.04	0.00	19.21	0.00	STOP RECORDING DATA

23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/24/2022	13:47:20	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
24	Rig-Down Equipment	Rig-Down Equipment	1/24/2022	13:50:11	RIG DOWN BULK AND MIXING EQUIPMENT
25	Rig-Down Completed	Rig-Down Completed	1/24/2022	14:30:00	ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
26	Crew Leave Location	Crew Leave Location	1/24/2022	15:00:00	THANK YOU FOR USING HALLIBURTON – MIKE LOUGHRAN AND CREW.

3.0 Attachments

3.1 Real Time iCem Job Chart