

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Friday, September 20, 2019

Interchange A S22-30-3N Surface

Job Date: Friday, September 20, 2019

Sincerely,
Bryce Hinsch

Legal Notice

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Table of Contents

1.0 Cementing Job Summary 4

 1.1 Executive Summary4

2.0 Real-Time Job Summary 7

 2.1 Job Event Log7

3.0 Attachments..... 10

 3.1 EXTRACTION INTERCHANGE A S22-30-3N -Custom Results.png10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Interchange A S22-30-3N** cement **surface** 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 13 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

Sold To #: 369404		Ship To #: 3901323		Quote #:		Sales Order #: 0905986437					
Customer: EXTRACTION OIL & GAS -						Customer Rep: Hans/ Justin					
Well Name: INTERCHANGE A				Well #: S22-30-3N		API/UWI #: 05-014-20767-00					
Field: WATTENBERG		City (SAP): BROOMFIELD		County/Parish: BROOMFIELD		State: COLORADO					
Legal Description: SW NW-10-1S-68W-2156FNL-895FWL											
Contractor: ENSIGN DRLG				Rig/Platform Name/Num: ENSIGN 147							
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Nikolaus Kornafel							
Job											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type				BHST							
Job depth MD		1631ft		Job Depth TVD		1631					
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	0	9.625	8.921	36			0	1631	0	1631	
OH		13.5					0	1636	0	1636	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	9.625	1		1631		Top Plug	9.625	1	HES		
Float Collar	9.625	1		1588							
						Plug Container	9.625	1	HES		
						Centralizers	9.625				
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	Spacer	Red Dye Spacer			10	bbl	8.33			5	

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	Cement	SWIFTCM (TM) SYSTEM	550	sack	13.5	1.74	9.17	5	5,043
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	Fresh Water	Fresh Water	123	bbl	8.33			8	
Cement Left In Pipe		Amount	42 ft		Reason			Shoe Joint	
Mix Water:	pH 7	Mix Water Chloride:	0 ppm			Mix Water Temperature:	62 °F		
Cement Temperature:	N/A	Plug Displaced by:	8.33 lb/gal			Disp. Temperature:	62 °F		
Plug Bumped?	Yes	Bump Pressure:	474 psi			Floats Held?	Yes		
Cement Returns:	13 bbl	Returns Density:	N/A			Returns Temperature:	N/A		
Comment: Once the rig was done circulating they handed it over to Halliburton. We pumped a 10 BBL water spacer with red dye in it. Followed by 170 BBLS of our swiftcem cement at 13.5 Lb/Gal . We shut down after cement was pumped to drop the top plug, followed by 123 BBLS of fresh water displacement. Bumped plug at calculated displacement. Checked floats 1 BBL back to the truck. Floats held.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/20/2019	01:30:00	USER					CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	2	Crew Leave Yard	Crew Leave Yard	9/20/2019	02:00:00	USER					STARTED JOURNEY MANAGEMENT.
Event	3	Call Out	Call Out	9/20/2019	06:00:00	USER					CREW CALLED OUT AT 06:00, REQUESTED ON LOCATION 07:00. CREW PICKED UP CEMENT, CHEMICALS, AND PLUG CONTAINER FROM FT. LUPTON, CO. BULK 660 10025030, BULK 660 10867415, AND PUMP 11826999.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	9/20/2019	06:30:00	USER					MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING- 9.625" 36 LB/FT @ 1,631', 13.5" OPEN HOLE 1,636', SHOE TRAC- 41', MUD WEIGHT 8.4 LB/GAL PUMP FRESH WATER DISPLACEMENT 123 BBLS. CASING LANDED @ 08:30 9/20/2019. RIG CIRCULATED BOTTOMS UP At 390 GPM at 108 PSI.

Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	9/20/2019	06:45:00	USER					HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP, AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	9/20/2019	07:00:00	USER					CREW STAGED EQUIPMENT, RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/20/2019	09:00:00	USER	4.00	8.36	0.00	12.80	SAFETY MEETING WITH HALLIBURTON, AND RIG PERSONNEL. CREW COMMUNICATED POTENTIAL SAFETY HAZARDS, AND JOB DETAILS.
Event	8	Start Job	Start Job	9/20/2019	09:20:42	COM11	5.00	8.35	0.00	0.00	BEGIN RECORDING JOB DATA.
Event	9	Test Lines	Test Lines	9/20/2019	09:22:53	COM11	83.00	8.28	0.00	2.40	PRESSURE TESTED IRON TO 2,500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 781 PSI, 5TH GEAR STALL OUT @ 1,270 PSI. THEN BROUGHT IT UP AND KICKED OUT @ 2836 PSI.
Event	10	Pump Spacer 1	Pump Spacer 1	9/20/2019	09:32:21	COM11	12.00	0.09	0.00	0.00	PUMP 10 BBLS OF RED DYE SPACER AT PUMP RATE 3.5 BBLS/MIN @ 121 PSI.
Event	11	Pump Lead Cement	Pump Lead Cement	9/20/2019	09:36:25	COM11	69.00	8.29	0.00	10.20	PUMPED 550 SKS OF SWIFTCM LEAD CEMENT @ 13.5 LB/GAL, 1.74 FT3/SK, 9.17 GAL/SK. 170 BBLS, TOP OF CEMENT @ SURFACE. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLS/MIN @ 440 PSI.

Event	12	Check Weight	Check Weight	9/20/2019	09:40:15	COM11	420.00	13.62	8.10	18.00	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	13	Check Weight	Check Weight	9/20/2019	09:52:21	COM11	395.00	13.56	8.00	114.60	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	14	Drop Top Plug	Drop Top Plug	9/20/2019	10:05:35	COM11	23.00	8.34	2.50	186.80	PLUG LEFT CONTAINER, VERIFIED BY CO. MAN.
Event	15	Pump Displacement	Pump Displacement	9/20/2019	10:05:38	COM11	28.00	8.33	2.50	187.00	BEGIN CALCULATED DISPLACEMENT OF 123 BBLs WITH FRESH WATER.
Event	16	Bump Plug	Bump Plug	9/20/2019	10:22:09	COM11	1045.00	8.29	0.00	124.90	PLUG BUMPED AT CALCULATED DISPLACEMENT. 464 PSI PRESSURED UP 500 PSI OVER FINAL CIRCULATING PRESSURE TO 1,000 PSI
Event	17	Other	Other	9/20/2019	10:23:27	COM11	6.00	8.27	0.00	124.90	RELEASED PRESSURE, FLOATS HELD, 1 BBL BACK.
Event	18	End Job	End Job	9/20/2019	10:23:36	COM11	5.00	8.27	0.00	0.00	STOP RECORDING JOB DATA.
Event	19	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/20/2019	10:25:00	USER	7.00	8.27	0.00	0.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	20	Rig-Down Completed	Rig-Down Completed	9/20/2019	11:45:00	USER					ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	21	Crew Leave Location	Safety Meeting - Departing Location	9/20/2019	11:50:00	USER					CREW DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	22	Crew Leave Location	Crew Leave Location	9/20/2019	11:55:00	USER					THANK YOU FOR USING HALLIBURTON – NICK KORNAFEL AND CREW.

3.0 Attachments

3.1 EXTRACTION INTERCHANGE A S22-30-3N -Custom Results.png

