

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

For: Danny Herrarra

Date: Thursday, January 16, 2020

Northwest A

Wattenberg

Extraction Northwest A S20-25-13N

Job Date: Friday, January 10, 2020

Sincerely,

James Bunnell

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 **Northwest A S20-25-13N** 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 69 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 #: 3901327		Quote #: 0022672316		Sales Order #: 0906224813					
Customer: EXTRACTION OIL & GAS-EBUS				Customer Rep: Danny Herrera							
Well Name: NORTHWEST A			Well #: S20-25-13N		API/UWI #: 05-014-20784-00						
Field: WATTENBERG		City (SAP): BROOMFIELD		County/Parish: BROOMFIELD		State: COLORADO					
Legal Description: NW NW-9-1S-68W-1277FNL-867FWL											
Contractor:				Rig/Platform Name/Num:							
Job BOM: 7523 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA/H171328				Srv Supervisor: James Bunnell							
Job											
Formation Name											
Formation Depth (MD)		Top				Bottom					
Form Type						BHST					
Job depth MD		21,517'		Job Depth TVD		7,971'					
Water Depth				Wk Ht Above Floor		5'					
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	1592		0	
Casing		5.5	4.892	17			0	21506		0	
Open Hole Section			8.5				1592	21517	0	0	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5	1	HES	21,504							
						Bottom Plug	5.5	2	HES		
Float Collar	5.5	1	HES	21,492							
						Plug Container	5.5	1	HES		
						Centralizers	5.5		HES		
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 Cement Spacer Base - RKS/SE	TUNED PRIME CEMENT SPACER SYS			100	bbl	11.5	3.6	22.8	5	3,556

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	ELASTICEM (TM) SYSTEM	862	sack	12.5	1.76	8.98	6	7,741
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 B1	GASSTOP (TM) SYSTEM	615	sack	13.2	1.57	7.64	6.5	4,699
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	ELASTICEM (TM) SYSTEM	2004	sack	13.2	1.56	7.62	7.5	15,270
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		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/min	Total Mix Fluid Gal
6	Displacement	Displacement	479	bbl	8.33			8	
Cement Left In Pipe		Amount	ft		Reason			Shoe Joint	
Mix Water:		pH 7.5	Mix Water Chloride: 300			Mix Water Temperature:		64 °F	
Cement Temperature:		## °F	Plug Displaced by: 8.33 lb/gal			Disp. Temperature:		64 °F	
Plug Bumped?		Yes	Bump Pressure: 3000			Floats Held?		Yes	
Cement Returns:		69 bbls	Returns Density: 12.5			Returns Temperature:		## °F	
Comment									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	1/10/2020	06:30:00	USER					CREW CALLED OUT AT 0630, REQUESTED ON LOCATION 1300. CREW PICKED UP CEMENT, CHEMICALS, AND PLUG CONTAINER FROM FT. LUPTON, CO. PUMP 11189145.
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	1/10/2020	10:45:00	USER					CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	1/10/2020	11:30:00	USER					With all equipment and materials.
Event	4	Other	Other	1/10/2020	11:35:00	USER					SURFACE CASING- 9.625" 36 LB/FT @ 1,592', 5.5" CASING: 17 LB/FT TOTAL 21492', 8.75 HOLE 1592-11072 8.5" HOLE 11072-21517, TD 21517', 12' SHOE TRAC, TVD- 7971'. PUMP FRESH WATER DISPLACEMENT WITH MMCR FIRST 20 BBLS. CASING LANDED @ 1400 1-10-20. RIG CIRCULATED 2 BOTTOMS UP. Water tested good PH 7 Chlorides less than 400
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/10/2020	12:00:00	USER					HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH

											LOCATION, RIG UP, AND WEATHER.
Event	6	Rig-Up Completed	Rig-Up Completed	1/10/2020	14:45:00	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	1/10/2020	15:10:00	USER					SAFETY MEETING WITH HALLIBURTON, AND RIG PERSONNEL. CREW COMMUNICATED POTENTIAL SAFETY HAZARDS, AND JOB DETAILS
Event	8	Start Job	Start Job	1/10/2020	15:40:23	COM4	2.00	8.62	0.00	14.80	BEGIN RECORDING JOB DATA
Event	9	Start Job	Start Job	1/10/2020	16:06:27	COM4	1.00	6.84	0.00	14.80	BEGIN RECORDING JOB DATA
Event	10	Test Lines	Test Lines	1/10/2020	16:08:44	COM4	47.00	8.74	0.00	18.10	PRESSURE TESTED IRON TO 6500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 543 PSI, 5TH GEAR STALL OUT @ 1800 PSI.
Event	11	Pump Spacer 1	Pump Spacer 1	1/10/2020	16:25:05	COM4	0.00	8.62	0.00	18.30	PUMP 100 BBLS OF TUNED SPACER @ 11.5 LB/GAL, 10 GALLONS D-AIR. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLS/MIN @ 500 PSI.
Event	12	Check Weight	Check Weight	1/10/2020	16:29:21	COM4	374.00	11.58	4.90	18.20	
Event	13	Pump Cap Cement	Pump Cap Cement	1/10/2020	16:45:49	COM4	72.00	11.84	5.30	104.80	PUMPED CAP 862 SKS OF HALCEM @ 12.5 LB/GAL, 1.76 FT3/SK, 8.98 GAL/SK. 270 BBLS, HOCAP CALCULATED 69BBLS TO SURFACE. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 6 BBLS/MIN @500 PSI.

Event	14	Check Weight	Check Weight	1/10/2020	16:56:53	COM4	269.00	12.30	6.00	70.20	
Event	15	Shutdown	Shutdown	1/10/2020	17:29:25	COM4	-5.00	13.10	0.00	306.60	SHUTDOWN DUE TO PUMP ISSUES PASSENGER SIDE HT NOT PUMPING CORRECTLY
Event	16	Pump Lead Cement	Pump Lead Cement	1/10/2020	17:37:41	COM4	492.00	12.97	7.70	344.10	PUMPED 615 SKS OF GASTOP @ 13.2 LB/GAL, 1.57 FT3/SK, 5.15 GAL/SK. 171.28 BBLS, HOL CALCULATED @ 3821', TOL CALCULATED @ 4336'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 6 BBLS/MIN 670 PSI.
Event	17	Pump Tail Cement	Pump Tail Cement	1/10/2020	18:04:52	COM4	505.00	13.14	7.50	181.00	PUMP 2004 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.56 FT3/SK, 7.62 GAL/SK, 556.7 BBLS. HOT CALCULATED @ 13360', TOT CALCULATED @ 8157'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 7 BBLS/MIN @ 645 PSI.
Event	18	Check Weight	Check Weight	1/10/2020	18:08:52	COM4	548.00	13.19	7.60	30.30	SILO 1
Event	19	Check Weight	Check Weight	1/10/2020	18:45:05	COM4	547.00	13.24	7.60	304.30	SILO 2
Event	20	Drop Top Plug	Drop Top Plug	1/10/2020	19:34:42	COM4	36.00	0.00	0.00	7.30	PLUG LEFT CONTAINER, VERIFIED BY CO. MAN.
Event	21	Pump Displacement	Pump Displacement	1/10/2020	19:34:45	COM4	34.00	0.00	0.00	7.30	BEGIN CALCULATED DISPLACEMENT OF 499 BBLS WITH FRESH WATER. PUMPED THE FIRST 20 BBLS WITH MMCR, @ 8 BBLS/MIN.

Event	22	Bump Plug	Bump Plug	1/10/2020	20:46:18	COM4	2786.00	8.27	0.00	506.70	PLUG BUMPED AT CALCULATED DISPLACEMENT. 3000PSI PRESSURED CAUGHT CEMENT @ 34 BBLS INTO DISPLACEMENT. PRESSURED UP TO 3400PSI TO BURST PLUG PUMPED 5BBL WET SHOE
Event	23	End Job	End Job	1/10/2020	20:50:38	COM4	6.00	8.21	0.00	0.00	CHECK FLOATS STOP RECORDING DATA
Event	24	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/10/2020	21:55:00	USER					DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	25	Rig-Down Completed	Rig-Down Completed	1/10/2020	22:00:00	USER					ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	26	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	1/10/2020	22:30:00	USER					CREW DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	27	Other	Other	1/10/2020	22:31:00	USER					Thank you from Halliburton and crew.

3.0 Attachments

3.1 Extraction Northwest A S20-25-13N -Custom Results.png

