

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Northwest A S20-25-10N Surface

Sincerely,
Meghan Jacobs

Legal Notice

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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 S20-25-10N** 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 29 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 #: 3901340		Quote #:		Sales Order #: 0905948350				
Customer: EXTRACTION OIL & GAS -				Customer Rep: HANS						
Well Name: NORTHWEST A			Well #: S20-25-10N			API/UWI #: 05-014-20790-00				
Field: WATTENBERG		City (SAP): BROOMFIELD		County/Parish: BROOMFIELD			State: COLORADO			
Legal Description: NW NW-9-1S-68W-1289FNL-814FWL										
Contractor: ENSIGN DRLG				Rig/Platform Name/Num: ENSIGN 147						
Job BOM: 7521 7521										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Lance Carpenter						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		1601ft		Job Depth TVD		1601				
Water Depth				Wk Ht Above Floor		4				
Perforation Depth (MD)		From		To						
Well Data										
Description	New / Used	Size	ID	Weight	Thread	Grade	Top MD	Bottom MD	Top TVD	Bottom TVD
Casing		9.625		36			0	1601	0	1601
OH		13.5					0	1623	0	1623
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	Red Dye Spacer	Red Dye Spacer	10	bbl	8.33					
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	SwiftCem	SWIFTCM (TM) SYSTEM	625	sack	13.5	1.74	9.17	5	9.17	
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	121	bbl	8.33					

Cement Left In Pipe	Amount	40	Reason	Shoe Joint
Mix Water:	pH ##	Mix Water Chloride:## ppm	Mix Water Temperature:## °F °C	
Cement Temperature:## °F °C	Plug Displaced by:## lb/gal kg/m3 XXXX	Disp. Temperature:## °F °C		
Plug Bumped?	Yes/No	Bump Pressure:#### psi MPa	Floats Held?Yes/No	
Cement Returns:## bbl m3	Returns Density:## lb/gal kg/m3	Returns Temperature:## °F °C		
<p>Comment JOB WENT WELL. CEMENT VOLUMES WERE SCALED AND VERIFIED. TOP PLUG DROPPED AFTER CEMENT. WASHED UP FIRST 10 BBL ON TOP OF PLUG. SPACER RETURNS AT 80 BBLS AWAY. BUMPED PLUG, FINAL CIRCULATING PRESSURE 624 PSI. TOOK TO 800 PSI. FLOATS HELD WITH 1 BBL BACK.</p> <p>29 BBL CEMENT TO SURFACE</p>				

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	Start Job	Arrive At Loc	9/1/2019	09:00:00	USER					CREW ARRIVES ON LOCATION, RIG STILL DRILLING.
Event	2	Reached Total Depth	Reached Total Depth	9/1/2019	12:00:00	USER					RIG TD AND STARTED TRIPPING OUT PIPE.
Event	3	Casing on Bottom	Casing on Bottom	9/1/2019	15:00:00	USER	15.00	8.53	0.00	43.00	CASING ON BOTTOM. RIG DOWN CASING CREW. RIG UP HES PLUG CONTAINER AND BEGIN CIRCULATION THROUGH HES LINES.
Event	4	Safety Meeting	Safety Meeting	9/1/2019	15:30:00	USER	6.00	8.52	0.00	43.10	CREW, RIG CREW AND CUSTOMER REPS HAVE PRE JOB SAFETY MEETING DISCUSSING HAZARDS, RIG OPERATIONS, RED ZONES, MUSTER AREAS, PINCH POINTS, LINE OF FIRE, CONTINGENCIES AND JOB PROCEEDURE
Event	5	Start Job	Start Job	9/1/2019	15:34:13	COM6	-6.00	0.28	0.00	43.10	START JOB
Event	6	Test Lines	Test Lines	9/1/2019	15:38:34	COM6	3165.00	8.49	0.00	46.10	FILL LINES WITH 3 BBL WATER. PRESSURE TEST HES LINES TO 2500 PSI. HELD FOR A FEW MINUTES, TEST GOOD
Event	7	Pump Spacer 1	Pump Spacer 1	9/1/2019	15:41:49	COM6	23.00	8.42	0.00	46.10	PUMPED 10BBLs OF RED DYE SPACER

Event	8	Pump Cement	Pump Cement	9/1/2019	15:45:59	COM6	46.00	8.37	3.60	0.00	PUMP 193 BBL SWIFTCEM 13.5# 1.74 YIELD 9.17 GAL 625 SACKS
Event	9	Drop Top Plug	Drop Top Plug	9/1/2019	16:18:09	COM6	97.00	15.00	0.00	209.60	DROPPED TOP PLUG WITH COMPANY MAN ON RIG FLOOR
Event	10	Pump Displacement	Pump Displacement	9/1/2019	16:18:12	COM6	97.00	15.00	0.00	0.00	PUMP 121 BBL DISPLACEMENT WATER (FIRST 10 BBL WASHUP ON TOP OF PLUG
Event	11	Other	Other	9/1/2019	16:42:43	USER	695.00	8.43	1.40	123.90	BUMP PLUG. FINAL CIRCULATING PRESSURE 624 PSI. TOOK TO 800 PSI AND HELD FOR A COUPLE MINUTES. BLED BACK TO CHECK FLOATS, .5 BBL BACK, FLOATS HELD
Event	12	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/1/2019	17:00:00	USER					CREW HAS PRE RIG DOWN SAFETY MEETING DISCUSSING SLIPS TRIPS FALLS, PROPER LIFTING, RED ZONES, RIG OPERATIONS, HAZARDS, PROPER PPE AND BEGIN RIGGING DOWN LINES AND EQUIPMENT
Event	13	Depart Location	Pre-Rig Down Safety Meeting	9/1/2019	18:00:00	USER					CREW LEAVES LOCATION

3.0 Attachments

3.1 Northwest A S20-25-10N Surface – Job Chart

