

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

NORTHWEST A S20-25-11C 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 S20-25-11C** 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 30 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 #: 3901405		Quote #:		Sales Order #: 0905949638					
Customer: EXTRACTION OIL & GAS -				Customer Rep: HANS							
Well Name: NORTHWEST A			Well #: S20-25-11C			API/UWI #: 05-014-20789-00					
Field: WATTENBERG		City (SAP): BROOMFIELD		County/Parish: BROOMFIELD			State: COLORADO				
Legal Description: NW NW-9-1S-68W-1285FNL-831FWL											
Contractor: ENSIGN DRLG					Rig/Platform Name/Num: ENSIGN 147						
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199					Srvc Supervisor: Lance Carpenter						
Job											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type					BHST						
Job depth MD		1610ft			Job Depth TVD		1610				
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	1610	0	1610	
OH		13.5					0	1630	0	1630	
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	SWIFTCEM (TM) SYSTEM			625	sack	13.5	1.74		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			122	bbl	8.33				

Cement Left In Pipe	Amount	40	Reason	Shoe Joint
Mix Water:	pH 7	Mix Water Chloride:	100 ppm	Mix Water Temperature:
Cement Temperature:	## °F °C	Plug Displaced by:	8.4 lb/gal Water	Disp. Temperature:
Plug Bumped?	Yes	Bump Pressure:	608 psi	Floats Held?
Cement Returns:	## bbl m3	Returns Density:	## lb/gal kg/m3	Returns Temperature:

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 70 BBL AWAY. CEMENT TO SURFACE AT 85 BBL AWAY. BUMPED PLUG, FINAL CIRCULATING PRESSURE 608 PSI. TOOK TO 824 PSI. FLOATS HELD WITH .5 BBL BACK.

30 BBL CEMENT TO SURFACE

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS 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	Arrive At Loc	Arrive At Loc	8/31/2019	21:00:00	USER					ARRIVE AT LOCATION. RIG TD AT 21:45 AND STARTED RUNNING CASING.
Event	2	Casing on Bottom	Casing on Bottom	9/1/2019	01:15:00	USER					CASING ON BOTTOM. RIG DOWN CASING CREW. RIG UP HES PLUG CONTAINER AND BEGIN CIRCULATION THROUGH HES SWEDGE.
Event	3	Start Job	Start Job	9/1/2019	01:59:49	COM6	46.00	8.63	0.00	19.80	
Event	4	Safety Meeting	Safety Meeting	9/1/2019	02:00:00	USER	46.00	8.63	0.00	19.80	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	Test Lines	Test Lines	9/1/2019	02:04:06	COM6	2819.00	8.47	0.00	23.30	FILL LINES WITH 3 BBL WATER. PRESSURE TEST HES LINES TO 2500 PSI. HELD FOR A FEW MINUTES, TEST GOOD.
Event	6	Pump Spacer 1	Pump Spacer 1	9/1/2019	02:07:39	COM6	62.00	8.31	0.00	23.30	PUMPED 10BBLs OF RED DYE SPACER
Event	7	Pump Cement	Pump Cement	9/1/2019	02:11:42	COM6	126.00	8.30	4.00	11.40	PUMP 193 BBL SWIFTCEM 13.5# 1.74 YIELD 9.17 GAL 625 SACKS

Event	8	Drop Top Plug	Drop Top Plug	9/1/2019	02:55:40	COM6	33.00	15.10	0.00	219.40	DROPPED TOP PLUG WITH COMPANY MAN ON RIG FLOOR
Event	9	Pump Displacement	Pump Displacement	9/1/2019	02:55:47	COM6	33.00	15.10	0.00	0.00	PUMP 122 BBL DISPLACEMENT WATER (FIRST 10 BBL WASHUP ON TOP OF PLUG
Event	10	Bump Plug	Bump Plug	9/1/2019	03:19:25	COM6	810.00	8.38	0.00	127.40	BUMP PLUG. FINAL CIRCULATING PRESSURE 608 PSI. TOOK TO 824 PSI AND HELD FOR A COUPLE MINUTES. BLED BACK TO CHECK FLOATS, .5 BBL BACK, FLOATS HELD
Event	11	End Job	End Job	9/1/2019	03:29:24	COM6	49.00	8.36	0.00	145.30	
Event	12	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/1/2019	03:30:00	USER	54.00	8.31	0.00	145.30	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

3.0 Attachments

3.1 Northwest A S20-25-11C Surface – Job Chart

