

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS-EBUS**

Ft. Lupton District, COLORADO

**For: DANNY**

Date: Saturday, October 12, 2019

## **LIVINGSTON**

WELD

5.5 PRODUCTION EXTRACTION LIVINGSTON S20-25-3N

Job Date: Saturday, October 12, 2019

Sincerely,

**CARPENTER/CAMPER**

## Legal Notice

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*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 369404		<b>Ship To #:</b> 3904773		<b>Quote #:</b>		<b>Sales Order #:</b> 0906024981					
<b>Customer:</b> EXTRACTION OIL & GAS-EBUS						<b>Customer Rep:</b> DANNY					
<b>Well Name:</b> LIVINGSTON				<b>Well #:</b> S20-25-3N		<b>API/UWI #:</b> 05-014-20798-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> BROOMFIELD		<b>County/Parish:</b> BROOMFIELD		<b>State:</b> COLORADO					
<b>Legal Description:</b> NE SE-7-1S-68W-2330FSL-1240FEL											
<b>Contractor:</b> PATTERSON-UTI ENERGY					<b>Rig/Platform Name/Num:</b> PATTERSON 901						
<b>Job BOM:</b> 7523 7523											
<b>Well Type:</b> HORIZONTAL OIL											
<b>Sales Person:</b> HALAMERICA\HX38199					<b>Srv Supervisor:</b> Lance Carpenter						
<b>Job</b>											
<b>Formation Name</b>											
<b>Formation Depth (MD)</b>		<b>Top</b>		<b>Bottom</b>							
<b>Form Type</b>				<b>BHST</b>							
<b>Job depth MD</b>		21470ft		<b>Job Depth TVD</b>		1630					
<b>Water Depth</b>				<b>Wk Ht Above Floor</b>		4					
<b>Perforation Depth (MD)</b>		<b>From</b>		<b>To</b>							
<b>Well Data</b>											
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>	
Casing		9.625	8.921	36			0	1630	0	1630	
Casing		5.5	4.892	17			0	21470	0	8042	
Open Hole Section			8.75				1630	12121	1630	8042	
Open Hole Section			8.5				12121	21485			
<b>Tools and Accessories</b>											
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>		
<b>Guide Shoe</b>	5.5			21485		<b>Top Plug</b>	5.5	1	HES		
<b>Float Shoe</b>	5.5					<b>Bottom Plug</b>	5.5	1	HES		
<b>Float Collar</b>	5.5			21455		<b>SSR plug set</b>	5.5		HES		
<b>Insert Float</b>	5.5					<b>Plug Container</b>	5.5		HES		
<b>Stage Tool</b>	5.5					<b>Centralizers</b>	5.5		HES		
<b>Fluid Data</b>											
<b>Stage/Plug #:</b> 1											
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>			<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>

1	Tuned Prime Cement Spacer Base - RKS/SE	TUNED PRIME CEMENT SPACER SYS	50	bbl	11.5	3.74	23.7		
1 lbm/bbl		FE-2, 2000 LB BAG - (1005549)							
5 lbm/bbl		SEM-94P, 35 LB SACK - (1023987)							
35.60 gal/bbl		FRESH WATER							
150.22 lbm/bbl		BARITE, BULK (100003681)							
5 lbm/bbl		SEM-93P, 35 LB SACK - (1023977)							
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	805	sack	12.5	1.79		8	9.06
9.06 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	GasStop B1	GASSTOP (TM) SYSTEM	615	sack	13.2	1.59		8	7.74
5.24 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
4	ElastiCem	ELASTICEM (TM) SYSTEM	1985	sack	13.2	1.56		8	7.62
7.62 Gal		FRESH WATER							
0.45 %		HR-5, 50 LB SK (100005050)							
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, 1 GAL PAIL (100003780)							
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	478	bbl	8.33			8	
Cement Left In Pipe		Amount	ft		Reason			Shoe Joint	

Mix Water:	pH 7	Mix Water Chloride:	200 ppm	Mix Water Temperature:	40 °F
Cement Temperature:	## °F °C	Plug Displaced by:	8.34lb/gal	Disp. Temperature:	## °F °C
Plug Bumped?	Yes	Bump Pressure:	2514 psi	Floats Held?	Yes
Cement Returns:	## bbl m3	Returns Density:	## lb/gal kg/m3	Returns Temperature:	## °F °C

## Comment

JOB WENT VERY GOOD, CEMENT WAS WEIGHED AND VERRIFIED ON SCALES FULL VOLUMES WERE PUMPED. DISPLACED 498BBLS OF FRESH WATER, CAUGHT CEMENT AT 47BBLS AWAY. AT 200BBLS AWAY WE SHUT DOWN AND CHECKED FLOATS, THEY HELD WITH 2BBLS BACK. BUMPED PLUG FINAL CIRCULATIG PRESSURE WAS 2514PSI, TOOK 500 PSI OVER, RUPTURED DISC WHILE BUMPING. PUMPED 6 BBL WET SHOE, CHECKED FLOATS, THEY HELD AGAIN WITH 3.5 BBLS BACK.

## CALCULATED TOPS AND PRESSURE

TOP OF TAIL 8360'

TOP OF GASSTOP 4493'

TOP OF CAP SURFACE WITH 80BBL BACK

## 1.0 Real-Time Job Summary

### 1.1 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	10/11/2019	18:30:00	USER					CREW CALLED OUT FOR ON LOCATION AT 0100
Event	2	Crew Leave Yard	Call Out	10/11/2019	23:00:00	USER					AFTER VERRIFYING ALL EQUIPMENT WAS RUNNING AND CEMENT VOLUMES WERE LOADED. CREW HAD PRE CONVOY SAFETY MEETING AND DISCUSSED SAFE ROUTE TO LOCATION AND SAFE DRIVING DISTANCES.
Event	3	Arrive at Rig	Arrive at Rig	10/11/2019	23:45:00	USER					CREW ARRIVED ON LOCATION RIG WAS STILL RUNNING CASING AT 16000' FT
Event	4	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	10/12/2019	01:00:00	USER					HAD PRE RIG UP SAFETY MEETING WITH CREW AND DISCUSSED SLIP,TRIPS AND FALLS, 45' BUFFER ZONE AND TEAM CARRY WITH IRON.
Event	5	Casing on Bottom	Casing on Bottom	10/12/2019	03:45:00	USER					RIG LANDED CASING ON BOTTOM. HES STARTED MIXING UP LATEX
Event	6	Safety Meeting	Safety Meeting	10/12/2019	05:30:00	USER	7.00	10.48	0.00	0.10	HAD SAFETY MEETING WITH RIG CREW AND HES, DISCUSSED S.W.A MUSTER AREA, NEAREST HOSPITAL, THREE POINTS OF CONTACT, FOOTING

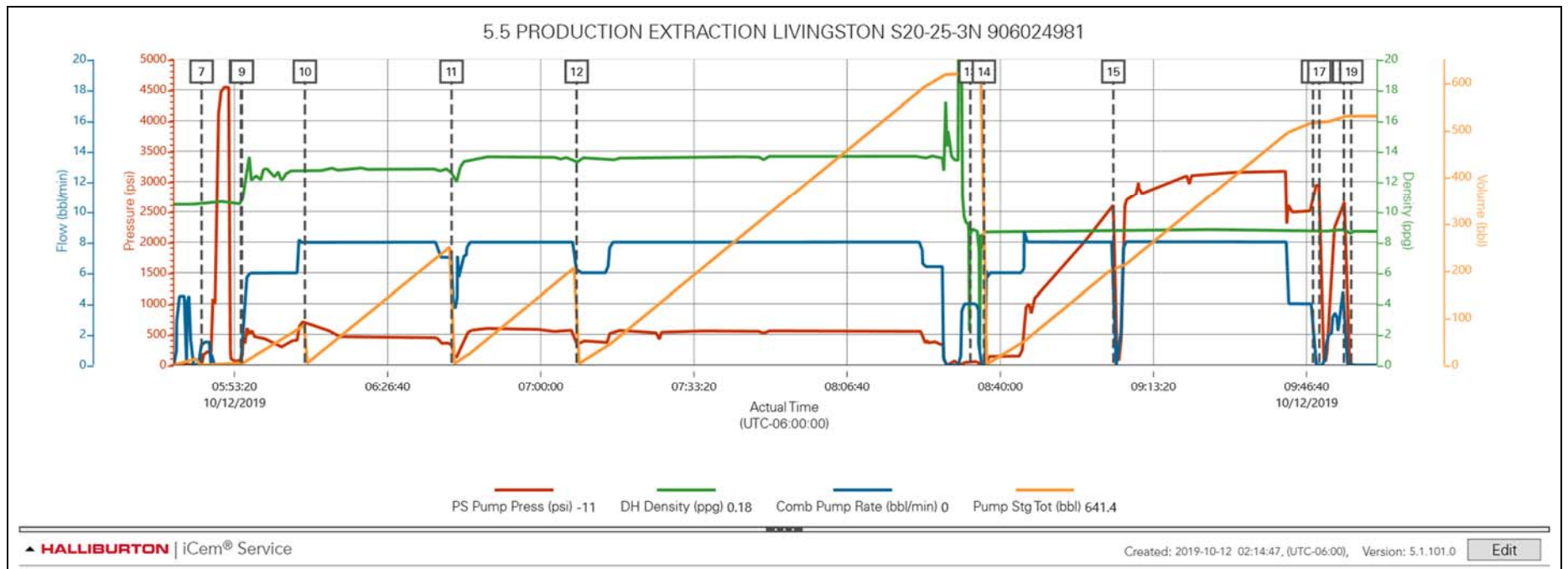
PLACEMENT AND GOOD COMMUNICATION.											
Event	7	Pressure Test	Test Lines	10/12/2019	05:46:11	COM6	20.00	10.60	1.40	0.40	PRESSURE TEST HES LINES TO 4500 PSI.
Event	8	Drop Bottom Plug	DROP BOTTOM PLUG	10/12/2019	05:54:45	USER	70.00	10.50	0.00	3.20	LOADED BOTTOM PLUG DIRECTLY INTO CASING WITH COMPANY MAN.
Event	9	Pump Spacer	Pump Spacer	10/12/2019	05:54:58	USER	128.00	10.52	1.40	3.40	PUMPED 50 BBL TUNED PRIME SPACER 11.5# 3.74 YIELD 23.7 GAL
Event	10	Pump Lead Cement	Pump Lead Cement	10/12/2019	06:08:40	COM6	675.00	12.72	8.00	85.40	PUMPED 256 BBL ELASTICEM CAP 12.5# 1.79 YIELD 9.06 GAL 805 SACKS
Event	11	Pump Cement	Pump Cement	10/12/2019	06:40:35	COM6	341.00	12.62	7.00	252.40	PUMPED 174 BBL GASSTOP 13.2# 1.59 YIELD 7.74 GAL 615 SACKS (76.7 BBL WATER)
Event	12	Pump Tail Cement	Pump Tail Cement	10/12/2019	07:07:48	COM6	361.00	13.25	6.20	0.10	PUMPED 551 BBL ELASTICEM TAIL 13.2# 1.56 YIELD 7.62 GAL 1985 SACKS
Event	13	Drop Top Plug	Drop Top Plug	10/12/2019	08:33:30	COM6	45.00	9.10	4.00	625.50	DROPPED TOP PLUG WITH COMPANY MAN ON RIG FLOOR.
Event	14	Pump Displacement	Pump Displacement	10/12/2019	08:36:26	COM6	-23.00	8.70	0.00	632.60	PUMPED 498BBLs OF WATER DISPLACEMENT, CAUGHT CEMENT AT 47BBLs AWAY.
Event	15	Check Floats	Check Floats	10/12/2019	09:04:36	USER	2607.00	8.80	8.00	205.40	CHECKED FLOATS AT 200BBLs AWAY, FLOATS HELD AND GOT 2BBLs BACK.
Event	16	Bump Plug	Bump Plug	10/12/2019	09:48:04	USER	2791.00	8.80	4.00	517.30	BUMPED PLUG FINAL CIRCULATING PRESSURE 2514PSI TOOK 500PSI OVER. WHILE BUMPING PLUG,



											WET SHOE SUB OPENED UP. PUMPED 6BBL WET SHOE.
Event	17	Check Floats	Check Floats	10/12/2019	09:49:26	USER	2869.00	8.80	0.00	517.40	CHECKED FLOATS AFTER BUMP. FLOATS HELD, 5.5BBL BACK
Event	18	Check Floats	Check Floats	10/12/2019	09:54:47	USER	2650.00	8.79	4.80	529.30	CHECKED FLOATS AFTER RUPTURING DISC, FLOATS HELD, 3.5 BBL BACK.
Event	19	End Job	End Job	10/12/2019	09:56:23	COM6	2.00	8.67	0.00	529.90	END JOB.
Event	20	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	10/12/2019	10:30:00	USER	-4.00	0.86	0.00	641.40	HAD PRE RIG DOWN SAFETY MEETING WITH CREW AND DISCUSSED 45 BUFFER ZONE, PINCH POINTS, TEAM CARRY, AND GOOD FOOTING PLACEMENT.
Event	21	Call Out	Crew Leave Location	10/12/2019	12:00:00	USER					HAD PRE CONVOY SAFETY MEETING WITH CREW AND DISCUSSED SAFE FOLLOWING DISTANCES, WILD LIFE AND ROUTE BACK TO YARD.

## 2.0 Attachments

### 2.1 5.5 PRODUCTION EXTRACTION LIVINGSTON S20-25-3N-Custom Results.png



## 3.0 Custom Graphs

### 3.1 Custom Graph

