HALLIBURTON

iCem® Service

CRESTONE PEAK RESOURCES-EBUS

State Antelope O24-K21-31HNC Surface
Job Date: Sunday, January 30, 2022

Sincerely,
Meghan Van Zyl

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 **State Antelope O24-K21-31HNC** 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 45 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

Sold To #: 377645	**Ship To #:** 9048955	**Quote #:**	**Sales Order #:** 0907655111
Customer: CRESTONE PEAK RESOURCES-EBUS		**Customer Rep:** Josh Kliesen	
Well Name: STATE ANTELOPE	**Well #:** O24-K21-31HNC		**API/UWI #:** 05-123-51159-00
Field: WATTENBERG	**City (SAP):** KERSEY	**County/Parish:** WELD	**State:** COLORADO
Legal Description: SW SE-31-5N-62W-541FSL-2492FEL			
Contractor: ENSIGN DRLG	**Rig/Platform Name/Num:** ENSIGN 122		
Job BOM: 7521 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX41066	**Srvc Supervisor:** Nicholas Roles		

Job

Formation Name				
Formation Depth (MD)	**Top**		**Bottom**	
Form Type			**BHST**	
Job depth MD	1684ft		**Job Depth TVD**	
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
Open Hole Section			13.5				0	1684		1684
Casing		9.625	8.921	36			0	1684		1684

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	9.625					**Top Plug**	9.625	1	HES
Float Shoe	9.625			1684		**Bottom Plug**	9.625		HES
Float Collar	9.625			1641		**SSR plug set**	9.625		HES
Insert Float	9.625					**Plug Container**	9.625	1	HES
Stage Tool	9.625					**Centralizers**	9.625		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	Water with dye	Water with dye	20	bbl	8.34			6	

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	SBM SWIFTCEM CEMENT SYSTEM CEM	650	sack	13.5	1.75		8	9.23
9.23 Gal		**FRESH WATER**							
0.1250 lbm		**POLY-E-FLAKE (101216940)**							

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	Displacement	Displacement	127	bbl	8.34			8	

Cement Left In Pipe	**Amount**	43 ft	Reason	**Shoe Joint**	
Mix Water:	pH 7	**Mix Water Chloride:**	>3000 ppm	Mix Water Temperature:	**70 °F °C**
Cement Temperature:	## °F °C	**Plug Displaced by:**	8.33 lb/gal	Disp. Temperature:	**70 °F °C**
Plug Bumped?	Yes	**Bump Pressure:**	1050 psi MPa	Floats Held?	**Yes**
Cement Returns:	45 bbl m3	**Returns Density:**	## lb/gal kg/m3	Returns Temperature:	**## °F °C**

Comment Est. 45bbls cement to surface.

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Graph Label	Date	Time	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
1	Call Out	Call Out	1/29/2022	13:00:00					Called out by service coordinator for OL time of 2000.
2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/29/2022	19:45:00					Discuss all hazards associated with journey, directions to destination, complete journey management if needed, and ensure all convoy is fit for duty.
3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	1/29/2022	20:00:00					Depart from service center or other job site.
4	Arrive at Location from Service Center	Arrive at Location from Service Center	1/29/2022	21:15:00					Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications.
5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/29/2022	21:30:00					Held pre rig up JSA for hazards, hazard hunt with crew, and discussed plan for spotting equipment and rigging up lines for job. Discussed muster points and closest emergency location as well as coordinates.
6	Rig-Up Equipment	Rig-Up Equipment	1/29/2022	21:45:00					Begin rig up with crew.
7	Rig-Up Completed	Rig-Up Completed	1/29/2022	22:15:00					Complete rig up for job to nearest point before red zone.
8	Other	Other	1/29/2022	22:20:00					Mix water test results- PH-7, Chlo-0, Temp-65F.

9	Safety Meeting - Pre Job	Safety Meeting - Pre Job	1/29/2022	22:45:00					Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job.
10	Start Job	Start Job	1/29/2022	23:30:23	8.53	0.00	-6.00	10.80	TD-1684' 13.5", TP-1684' 9.625" 36#, with stickup 1686', FC-1641', Mud-9.3#
11	Test Lines	Test Lines	1/29/2022	23:31:47	8.49	0.00	143.00	3.10	Pumped 3bbls to fill lines, established circulation, shutdown and closed manifold, performed 500psi k/o function test, continued with 5th gear stall at 1850psi proceeded to bring pressure to 3500psi. Pressure stabilized and held with no leaks.
12	Pump Spacer 1	Pump Spacer 1	1/29/2022	23:35:15	8.38	0.00	22.00	0.00	Pumped 10bbls fresh water with 1/3btl green Dye at 4.5bpm 120psi.
13	Pump Spacer 2	Pump Spacer 2	1/29/2022	23:38:15	8.13	5.50	180.00	10.00	Pumped 10bbls fresh water at 4.5bpm 120psi.
14	Pump Cement	Pump Cement	1/29/2022	23:42:13	8.27	0.00	46.00	20.10	Pumped 650sks or 202.5bbls 13.5# 1.75y 9.23g/s Swiftcem at 8bpm 310psi.
15	Check Weight	Check Weight	1/29/2022	23:45:27	13.58	4.60	161.00	12.20	Weight verified with pressurized mud scales.
16	Shutdown	Shutdown	1/30/2022	00:11:19	14.07	0.00	4.00	202.10	
17	Drop Top Plug	Drop Top Plug	1/30/2022	00:12:42	16.94	0.00	-58.00	202.10	Dropped by HES supervisor, witnessed by company man.
18	Pump Displacement	Pump Displacement	1/30/2022	00:12:44	16.90	0.00	-59.00	202.10	Pumped 127bbls of fresh water at 8bpm 400psi.
19	Shutdown	Shutdown	1/30/2022	00:25:40	8.16	0.00	314.00	83.50	Shutdown, hesitate on cement.
20	Shutdown	Shutdown	1/30/2022	00:37:17	8.17	0.00	408.00	114.30	Shutdown, hesitate on cement.
21	Bump Plug	Bump Plug	1/30/2022	00:42:41	8.18	0.00	1207.00	128.80	Slowed down to 4bpm at 110bbls away, final circulating pressure - 550psi, Bumped at 1050psi.

22	Check Floats	Check Floats	1/30/2022	00:43:47	8.17	0.00	1205.00	128.80	Released pressure to check floats, got 0.5bbls back. Floats held.
23	End Job	End Job	1/30/2022	00:44:57	8.15	0.00	-30.00	128.80	Est. 45bbls cement to surface.
24	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/30/2022	00:50:00	8.14	0.00	3.00	0.00	Held safety meeting with crew prior to rig down, discussed possibility of trapped pressure, swing radius, slips trips and falls, pinch points and risks associated with rig down.
25	Rig Down Lines	Rig Down Lines	1/30/2022	01:00:00					Begin rig down
26	Rig-Down Completed	Rig-Down Completed	1/30/2022	01:30:00					Rig down complete with no injuries, spills or damage to equipment.

3.0 Attachments

3.1 Real Time iCem Job Chart