

HALLIBURTON

iCem[®] Service

GREAT WESTERN OPERATING CO LLC-EBUS

Raindance FC 23-289HNX Production

API 05-123-51584

Job Date: Tuesday, October 26, 2021

Sincerely,

Nick Roles and Crew

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 **Raindance FC 23-289HNX** 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 35 bbls of spacer 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 #: 346459	Ship To #: 9091035	Quote #: 0022884525	Sales Order #: 0907452149
Customer: GREAT WESTERN OPERATING CO LLC-EBUS		Customer Rep: Jeremy Mills	
Well Name: RAINDANCE FC		Well #: #23-289HNX	API/UWI #: 05-123-51584
Field:	City (SAP): WINDSOR	County/Parish: WELD	State: COLORADO
Legal Description:			
Contractor: PRECISION DRLG		Rig/Platform Name/Num: PRECISION 462	
Job BOM: 7523 7523			
Well Type: OIL & GAS WELL			
Sales Person: HALAMERICA\HB41307		Srvc Supervisor: Nicholas Roles	

Job

Formation Name				
Formation Depth (MD)	Top		Bottom	
Form Type			BHST	
Job depth MD	20546ft		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
Casing		9.625	8.835	40			0	2063		2063
Casing		5.5	4.778	20		HCP110	0	20546		6008
Open Hole Section			8.5				2063	20590	2063	6008

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5				Top Plug	5.5	1	WELLBOSS
Float Shoe	5.5				Bottom Plug	5.5	1	WELLBOSS
Float Collar	5.5			20541	SSR plug set	5.5		HES
Insert Float	5.5				Plug Container	5.5		
Stage Tool	5.5				Centralizers	5.5	136	HES

136 Centralizers: 2065.53, 2107.59, 2151.29, 2194.22, 2237.6, 2281.27, 2324.94, 2368.59, 2412.24, 2455.87, 2499.53, 2542.39, 2586, 2629.65, 2673.3, 2714.85, 2758.51, 2801.73, 2844.93, 2888.05, 2931.42, 2975.09, 3018.45, 3061.42, 3105.09, 3148.75, 3192.44, 3236.05, 3279.67, 3323.18, 3366.86, 3410.54, 3452.47, 3496.12, 3539.82, 3583.5, 3627.08, 3670.56, 3714.24, 3757.91, 3801.54, 3845.13, 3888.29, 3931.98, 3975.65, 4019.33, 4063, 4104.34, 4147.86, 4191.52, 4235.19, 4278.86, 4322.44, 4366.09, 4409.43, 4450.84, 4493.51, 4537.17, 4580.86, 4624.49, 4668.14, 4711.33, 4754.59, 4798.2, 4841.22, 4884.64, 4928.07, 4971.73, 5015.12, 5058.76, 5102.11, 5145.72, 5189.16, 5232.66, 5276.32, 5319.84, 5363.51, 5407.02, 5450.52, 5493.69, 5537.17, 5579.81, 5623.47, 5667.12, 5710.81, 5754.47, 5798.1, 5841.79, 5885.47, 5929.15, 5972.8, 6016.5, 6060.2, 6103.85, 6146.63, 6190.29, 6233.96, 6277.62, 6318.56, 6362.24, 6405.91, 6448.21, 6491.83, 6535.15, 6578.86, 6622.54, 6666.18, 6721.07, 6764.74, 6808.35, 6852.01, 6895.63, 6939.29, 6980.85, 7024.68, 7068.36, 7111.86, 7155.18, 7198.78, 7242.16, 7283.32, 7327, 7370.7, 7414.27, 7457.1, 7500.57, 7542.25, 7596.87, 7639.59, 7683.27, 7726.89, 7770.56, 7814.15, 7857.82, 7900.94, 7973.01

Fluid Data

Stage/Plug #: 1									
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Diesel	Diesel	40	bbl	7.4				

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	Spacer (Customer Supplied)	Spacer (Customer Supplied)	110	bbl	12.5				
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Water	Water	20	bbl	8.33				
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	ElastiCem	SBM CEM ELASTICEM™ SYS	2245	sack	13.5	1.92		12	8.91
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	Brine Displacement (3rd Party Retarder)	Brine Displacement (3rd Party Retarder)	20	bbl	8.6			9	
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
6	Brine Displacement (3rd Party Chems)	Brine Displacement (3rd Party Chems)	415	bbl	8.6			12	
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
7	Fresh Water Displacement	Fresh Water Displacement	20	bbl	8.33			5	
Cement Left In Pipe		Amount	7 ft		Reason			Shoe Joint	

Mix Water:	pH 7	Mix Water Chloride:	0 ppm	Mix Water Temperature:	65 °F °C
Plug Bumped?	Yes	Plug Displaced by:	7.9 lb/gal	Disp. Temperature:	65 °F °C
Cement Returns:	0 bbl m3	Bump Pressure:	3100 psi MPa	Floats Held?	Yes
Comment Released 500psi to pump and got 1bbl back, released pressure to trip tank and got 3.9bbls. Floats held. 35 spacer to surface, Est TOC-2413'					

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Graph Label	Date	Time	Combined Volume (bbl)	Combined Rate (bbl/min)	DH Density (ppg)	DS Pump Press (psi)	Dnwhole Density (ppg)	Comments
1	Call Out	Call Out	10/26/2021	01:00:00						Called out by service coordinator for OL time of 0700.
2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	10/26/2021	04:45:00						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	10/26/2021	05:00:00						Depart from service center or other job site.
4	Arrive at Location from Service Center	Arrive at Location from Service Center	10/26/2021	06:30:00						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	10/26/2021	06:45:00						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	10/26/2021	07:00:00						Begin rig up with crew.

7	Rig-Up Completed	Rig-Up Completed	10/26/2021	08:30:00						Complete rig up for job to nearest point before red zone.
8	Other	Other	10/26/2021	09:00:00			7.99	1.00	7.63	Mix water test results- PH-7, Chlo-0, Temp-65F.
9	Safety Meeting - Pre Job	Safety Meeting - Pre Job	10/26/2021	10:15:00			7.97	-1.00	7.78	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	10/26/2021	10:42:01			7.95	-1.00	0.00	Pumped 40bbls Diesel, 110bbls 12.5# spacer with surfactants, followed with 40bbls fresh water with rig pumps prior to rigging up HES iron.
11	Start Job	Start Job	10/26/2021	10:42:19			7.95	-1.00	0.00	TD-20546', OH-8.5", TP-20546', FC-20539', 5.5" 20#, TVD-6020', SURF-2063' 9.625" 40#, MUD 11.5#
12	Drop Bottom Plug	Drop Bottom Plug	10/26/2021	10:45:25	0.71	3.64	7.96	28.00	4.40	Dropped by company man, witnessed by HES supervisor
13	Test Lines	Test Lines	10/26/2021	10:47:17			8.31	262.00	7.76	Pump 1 pumped 3bbls fresh water to fill lines at 3bpm 720psi, shut manifold, and performed 500psi k/o function test, followed with 5th gear stall at 1800psi, proceeded to bring pressure to 7500psi, pressure stabilized and held with no leaks.
14	Test Lines	Test Lines	10/26/2021	10:47:20			8.31	262.00	7.76	Pump 2 pumped 3bbls fresh water to fill lines at 3bpm 620psi, shut manifold, and performed 500psi k/o function test, followed with 5th gear stall at 1800psi, proceeded to bring pressure to 5000psi,

pressure stabilized and held with no leaks.

15	Pump Cement	Pump Cement	10/26/2021	11:00:55			8.31	154.00	7.99	Pumped 2245sks or 767.7bbls of 13.5# 1.92y 8.91g/s Elasticem at 12bpm 1200psi.
16	Pump Cement	Pump Cement	10/26/2021	11:07:34	55.46		13.42	1642.00	7.92	Pump 2 begin cement
17	Check Weight	Check Weight	10/26/2021	11:14:28	130.07	11.88	13.59	2007.00	13.28	Weight verified with pressurized scales.
18	Check Weight	Check Weight	10/26/2021	11:16:56	159.60	11.82	13.60	1954.00	13.43	Weight verified with pressurized scales.
19	Check Weight	Check Weight	10/26/2021	11:25:58	269.35	12.28	13.57	1896.00	13.56	Weight verified with pressurized scales.
20	Check Weight	Check Weight	10/26/2021	11:39:02	426.88	11.95	13.51	2115.00	13.58	Weight verified with pressurized scales.
21	Check Weight	Check Weight	10/26/2021	11:44:42	494.30	11.89	13.51	2246.00	13.55	Weight verified with pressurized scales.
22	Bump Plug	Bump Plug	10/26/2021	11:45:52	507.97	10.33	13.53	3621.00	13.69	Bumped bottom plug at 508bbls away 3621psi.
23	Shutdown	Shutdown	10/26/2021	12:02:06	696.43	8.14	13.32	1602.00	13.28	Shutdown, washed lines with 10bbls fresh water through manifold on rig floor while 2nd pump finished last 50bbls.
24	Shutdown	Shutdown	10/26/2021	12:18:46	428.27	0.15	8.18	3.00	13.40	2nd pump finish pumping and begin wash up.
25	Clean Lines	Clean Lines	10/26/2021	12:21:57			8.19	2.00	13.30	
26	Drop Top Plug	Drop Top Plug	10/26/2021	12:23:16	16.20		8.19	13.00	10.00	Dropped by company man, witnessed by HES supervisor
27	Pump Displacement	Pump Displacement	10/26/2021	12:23:18	16.22	0.83	8.18	18.00	9.97	Pumped 415bbls brine water with 5gal O2 scavenger and 5gal corrosion inhibitor at 12bpm. First 20bbls fresh water with 10gal MMCR and last 20bbls

fresh water. Total displacement-455bbls fluid.

28	Pump Displacement	Pump Displacement	10/26/2021	12:28:51	62.91	8.90	8.34	2471.00	8.44	2nd pump begin displacement.
29	Bump Plug	Bump Plug	10/26/2021	13:08:39			8.27	3124.00	8.55	Slowed down at 20bbls away to 5bpm, final circulating pressure-2600psi. Bump pressure-3100psi.
30	Other	Other	10/26/2021	13:08:49			8.27	3129.00	8.54	Released 500psi to pump and got 1bbl back, released pressure to trip tank and got 3.9bbls. Floats held.
31	End Job	End Job	10/26/2021	13:13:27			8.20	1.00	8.13	35bbls spacer to surface, Est TOC-1767'.
32	End Job	End Job	10/26/2021	13:13:33			8.20	1.00	8.12	
33	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	10/26/2021	13:15:00			8.20	4.00	8.12	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.
34	Rig Down Lines	Rig Down Lines	10/26/2021	13:30:00			0.24	1.00	0.16	Begin rig down
35	Rig-Down Completed	Rig-Down Completed	10/26/2021	14:30:00						Rig down complete with no injuries, spills or damage to equipment.
36	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	10/26/2021	14:45:00						Held safety meeting with convoy, discussed trip hazards, directions and all crew fit for duty prior to departure.
37	Depart Location for	Depart Location for Service Center or Other Site	10/26/2021	15:00:00						Depart location, if applicable journey will be submitted.

Service Center
or Other Site

3.0 Attachments

3.1 Job Chart

