

# HALLIBURTON

iCem<sup>®</sup> Service

## **VERDAD RESOURCES LLC**

**WUERTZ 1201-16H**

Production Casing

Job Date: Sunday, June 06, 2021

Sincerely,

**Nick Roles and Crew**

## Legal Notice

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### Disclaimer:

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the WUERTZ 1201-16H 5.5" 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 50 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*

<b>Sold To #:</b> 380688		<b>Ship To #:</b> 3946463		<b>Quote #:</b> 0022840778		<b>Sales Order #:</b> 0907189606				
<b>Customer:</b> VERDAD RESOURCES LLC-EBUS				<b>Customer Rep:</b> Les Fuglevland						
<b>Well Name:</b> WUERTZ			<b>Well #:</b> 1201-16H			<b>API/UWI #:</b> 05-123-49741-00				
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> HUDSON		<b>County/Parish:</b> WELD			<b>State:</b> COLORADO			
<b>Legal Description:</b> SE SW-12-1N-65W-281FSL-2291FWL										
<b>Contractor:</b> PRECISION DRLG				<b>Rig/Platform Name/Num:</b> PRECISION 464						
<b>Job BOM:</b> 7523 7523										
<b>Well Type:</b> HORIZONTAL OIL										
<b>Sales Person:</b> HALAMERICA\HX41066				<b>Srvc Supervisor:</b> Nicholas Roles						
<b>Job</b>										
<b>Job depth MD</b>		17348ft			<b>Job Depth TVD</b>					
<b>Well Data</b>										
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	8.921	36			0	1777	0	1777
Casing		5.5	4.892	17			0	17348	0	7032
Open Hole Section			8.5				1777	17363	1777	7032
<b>Tools and Accessories</b>										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Float Shoe	5.5			17348		Top Plug	5.5	1	HES	
Float Collar	5.5			17283		Bottom Plug	5.5	1	HES	
						Plug Container	5.5	1	HES	

Fluid Data									
Stage #: 1									
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Spacer	TUNED PRIME SPACER	100	bbl	11.5	3.71		7	
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	Cap Cement	ELASTICEM™ SYSTEM	150	sack	13.2	1.6		7	7.65
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Lead Cement	ELASTICEM™ SYSTEM	1073	sack	13.2	1.6		9	7.66
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	Tail Cement	NeoCem™	1183	sack	13.2	2.02		9	9.71
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	Displacement	MMCR Displacement	40	bbl	8.34			10	
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
6	Displacement	Fresh Water	351	bbl	8.34			10	
Cement Left In Pipe	Amount	65 ft			Reason	Shoe Joint			
<b>Mix Water:</b>	pH 7	<b>Mix Water Chloride:</b>	0 ppm		<b>Mix Water Temperature:</b>	65 °F °C			
<b>Cement Temperature:</b>		<b>Plug Displaced by:</b>	8.33 lb/gal		<b>Disp. Temperature:</b>	65 °F °C			
<b>Plug Bumped?</b>	Yes	<b>Bump Pressure:</b>	3250 psi		<b>Floats Held?</b>	Yes			
<b>Cement Returns:</b>	50 bbl	<b>Returns Density:</b>			<b>Returns Temperature:</b>				
<b>Comment</b> Got 50bbbls cement to surface. Estimated TOT-6990'. Bumped 10bbbls early at 391bbbls.									

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Seq. No.	Activity	Date	Time	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump A Pressure (psi)	Cmb Stg Total (bbl)	Comments
1	Call Out	6/5/2021	12:30:00					Called out by service coordinator for OL time of 1900.
2	Pre-Convoy Safety Meeting	6/5/2021	17:15:00					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	6/5/2021	17:30:00					Depart from service center or other job site.
4	Arrive at Location from Service Center	6/5/2021	18:00:00					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	6/5/2021	18:05:00					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	6/5/2021	18:15:00					Begin rig up with crew.
7	Rig-Up Completed	6/5/2021	19:00:00					Complete rig up for job to nearest point before red zone.
8	Other	6/5/2021	20:00:00					Mix water test results- PH-7, Chlo-0, Temp-65F.
9	Safety Meeting - Pre Job	6/5/2021	21:00:00	7.94	0.00	28.03	11.52	Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job.
10	Start Job	6/5/2021	21:20:27	8.01	0.00	34.93	0.00	TD-17363', TP-17348' FC-17283', 5.5" 17#, TVD-7032', OH-8.5", SURF-1777' 9.625" 36#, MUD-9.4#

11	Test Lines	6/5/2021	21:22:03	7.96	0.00	77.33	3.14	Pumped 3bbls fresh water to fill lines, closed manifold and performed 500psi k/o function test, proceeded to perform 5th gear stall at 1950psi, continued to bring pressure up to 4500psi. Pressure stabilized and held with no leaks
12	Pump Spacer 1	6/5/2021	21:26:14	7.96	0.00	38.18	0.00	Pumped 100bbls 11.5# 3.71y 23.58g/s Tuned Prime 10g D-Air at 7bpm 425psi.
13	Pump Cement	6/5/2021	21:50:07	15.78	0.00	28.80	0.00	Pumped 150skts or 42.7bbl 13.2# 1.6y 7.65g/s ElastiCem w/o CBL at 9bpm 520psi
14	Drop Bottom Plug	6/5/2021	21:50:30	11.85	3.38	63.66	0.79	Dropped by HES supervisor, witnessed by company man.
15	Check Weight	6/5/2021	21:51:33	13.32	3.65	120.79	4.60	Weight verified with pressurized mud scales at 13.4ppg
16	Check Weight	6/5/2021	21:52:36	13.33	3.67	135.43	8.39	Weight verified with pressurized mud scales at 13.2ppg
17	Pump Lead Cement	6/5/2021	21:56:56	13.00	8.53	361.01	0.14	Pumped 1073skts or 305.7bbls 13.2# 1.6y 7.66g/s ElastiCem w/ CBL at 9bpm 520psi.
18	Check Weight	6/5/2021	22:13:01	13.25	8.86	559.86	138.82	Weight verified with pressurized mud scales at 13.2ppg
19	Check Weight	6/5/2021	22:13:26	13.25	8.80	529.58	142.52	Weight verified with pressurized mud scales at 13.2ppg
20	Pump Tail Cement	6/5/2021	22:34:32	13.33	7.64	514.39	329.25	Pumped 1183skts or 425.6bbls 13.2# 2.02y 9.71g/s NeoCem at 9bpm 575psi.
21	Check Weight	6/5/2021	23:08:02	13.24	9.05	805.20	302.86	Weight verified with pressurized mud scales at 13.2ppg
22	Check Weight	6/5/2021	23:08:13	13.23	9.04	811.80	304.52	Weight verified with pressurized mud scales at 13.2ppg
23	Clean Lines	6/5/2021	23:26:55	12.85	0.00	34.99	426.86	Pumped 10bbls fresh water to clean through pumps and lines.
24	Drop Top Plug	6/5/2021	23:35:36	8.48	0.00	18.38	15.70	Dropped by HES supervisor, witnessed by company man.
25	Pump Displacement	6/5/2021	23:35:39	8.48	0.00	18.55	0.00	Pumped 391bbls fresh water with 20gals MMCR in first 40bbls, 3lbs BE-3 and 5gal MCMX throughout. Bumped 10bbls early.

26	Bump Plug	6/6/2021	00:28:21	8.72	0.00	3362.08	391.06	Slowed down to 4bpm at 370bbbls away, final circulating pressure-2750psi, bump pressure-3350psi.
27	Check Floats	6/6/2021	00:34:01	8.69	0.00	3170.14	391.06	Released pressure and got 4.5bbbls back to pump. Floats held.
28	End Job	6/6/2021	00:35:50	8.51	0.00	38.41	0.00	Got 50bbbls cement to surface. Estimated TOT-6990'. Bumped 10bbbls early at 391bbbls.
29	Pre-Rig Down Safety Meeting	6/6/2021	00:45:00	8.49	4.15	58.62	16.78	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.
30	Rig Down Lines	6/6/2021	01:00:00					Begin rig down
31	Rig-Down Completed	6/6/2021	01:30:00					Rig down complete with no injuries, spills or damage to equipment.
32	Pre-Convoy Safety Meeting	6/6/2021	01:45:00					Held safety meeting with convoy, discussed trip hazards, directions and all crew fit for duty prior to departure.
33	Depart Location for Service Center or Other Site	6/6/2021	02:00:00					Depart location if applicable journey will be submitted.

3.0 Attachments

3.1 Job Chart

