HALLIBURTON

Confluence DJ LLC

70 Ranch 10-8-2L

Intervals 1-60

Niobrara Formation

Weld County, CO

API: 05-123-46619

Prepared for:

January 9, 2019

Stimulation Treatment

Post Job Report

Prepared By:

Calvin Donley

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Yeti Crew

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Engineering Executive Summary

On December 27, 2018 a stimulation treatment was performed in the Niobrara formation on the 70 Ranch 10-8-2L well in Weld County, CO. The 70 Ranch 10-8-2L was a 60 stage Horizontal Plug and Perf Design. The proposed treatment consisted of:

13,986,662	gallons of FR Water (FightR EC-1)
590,000	gallons of Treated Water
30,000	gallons of 15% HCl Acid
2,400,000	pounds of 100 Mesh
14,400,000	pounds of 30/50

The actual treatment fully completed 59 of 60 stages. During the treatment 0 stages were skipped, and 1 stages screened out or were otherwise cut short of design. The actual treatment consisted of:

15,040,971	gallons of FR Water (FightR EC-1)
626,808	gallons of Treated Water
30,755	gallons of 15% HCl Acid
2,666,060	pounds of 100 Mesh
13,614,940	pounds of 30/50
720,420	pounds of 40/70

A more detailed description of the actual treatment can be found in the attached reports. The following comments were provided to summarize events and changes to the proposed treatment:

Interval 13 was cut short due to pressure concerns.

Per discussion with customer, decision was made to pump a full box of 100 Mesh per interval. As box weights vary, the difference in actual weight and design was compensated for in 2.00ppg stage. 40/70 was pumped in lieu of 30/50 in intervals 19, 20, 21 due to a 30/50 shortage.

Halliburton is strongly committed to quality control on location. Before and after each job all chemicals, proppants, and fluid volumes are measured to assure the highest level of quality control. Tank fluid analysis, crosslink time, and break tests are performed before each job in order to optimize the performance of the treatment fluids.

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.

Thank you,

Kyle Hendrick
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70 Ranch 10-8-2L Plug and Perf Depths

Stage	Plug Depth (ft-MD)	Top Perf (ft-MD)	Bottom Perf (ft-MD)	Perf Density (spf)	Total Perfs
1	16,310	16,158	16,304	variable, 3-6 spf	39
2	16,150	15,998	16,144	variable, 3-6 spf	39
3	15,990	15,838	15,984	variable, 3-6 spf	39
4	15,830	15,678	15,824	variable, 3-6 spf	39
5	15,670	15,518	15,664	variable, 3-6 spf	39
6	15,510	15,358	15,504	variable, 3-6 spf	39
7	15,350	15,198	15,344	variable, 3-6 spf	39
8	15,190	15,038	15,184	variable, 3-6 spf	39
9	15,030	14,878	15,024	variable, 3-6 spf	39
10	14,870	14,718	14,864	variable, 3-6 spf	39
11	14,710	14,558	14,704	variable, 3-6 spf	39
12	14,550	14,398	14,544	variable, 3-6 spf	39
13	14,390	14,238	14,384	variable, 3-6 spf	39
14	14,230	14,078	14,224	variable, 3-6 spf	39
15	14,070	13,918	14,064	variable, 3-6 spf	39
16	13,910	13,758	13,904	variable, 3-6 spf	39
17	13,750	13,598	13,744	variable, 3-6 spf	39
18	13,590	13,438	13,584	variable, 3-6 spf	39
19	13,430	13,278	13,424	variable, 3-6 spf	39
20	13,270	13,118	13,264	variable, 3-6 spf	39
21	13,110	12,963	13,104	variable, 3-6 spf	39
22	12,955	12,808	12,949	variable, 3-6 spf	39
23	12,800	12,653	12,794	variable, 3-6 spf	39
24	12,645	12,498	12,639	variable, 3-6 spf	39
25	12,490	12,343	12,484	variable, 3-6 spf	39
26	12,335	12,188	12,329	variable, 3-6 spf	39
27	12,180	12,033	12,174	variable, 3-6 spf	39
28	12,025	11,878	12,019	variable, 3-6 spf	39
29	11,870	11,723	11,864	variable, 3-6 spf	39
30	11,715	11,568	11,709	variable, 3-6 spf	39
31	11,560	11,413	11,554	variable, 3-6 spf	39
32	11,405	11,258	11,399	variable, 3-6 spf	39
33	11,250	11,103	11,244	variable, 3-6 spf	39
34	11,095	10,938	11,089	variable, 3-6 spf	39
35	10,930	10,773	10,924	variable, 3-6 spf	39
36	10,765	10,604	10,759	variable, 3-6 spf	39
37	10,595	10,434	10,589	variable, 3-6 spf	39
38	10,425	10,264	10,419	variable, 3-6 spf	39
39	10,255	10,094	10,249	variable, 3-6 spf	39
40	10,085	9,924	10,079	variable, 3-6 spf	39
41	9,915	9,758	9,909	variable, 3-6 spf	39
42	9,750	9,598	9,744	variable, 3-6 spf	39
43	9,590	9,438	9,584	variable, 3-6 spf	39
44	9,430	9,278	9,424	variable, 3-6 spf	39
45	9,270	9,118	9,264	variable, 3-6 spf	39
46	9,110	8,958	9,104	variable, 3-6 spf	39
47	8,950	8,798	8,944	variable, 3-6 spf	39
48	8,790	8,638	8,784	variable, 3-6 spf	39
49	8,630	8,478	8,624	variable, 3-6 spf	39
50	8,470	8,318	8,464	variable, 3-6 spf	39
51	8,310	8,158	8,304	variable, 3-6 spf	39
52	8,150	7,998	8,144	variable, 3-6 spf	39
53	7,990	7,838	7,984	variable, 3-6 spf	39
54	7,830	7,678	7,824	variable, 3-6 spf	39
55	7,670	7,518	7,664	variable, 3-6 spf	39
56	7,510	7,358	7,504	variable, 3-6 spf	39
57	7,350	7,198	7,344	variable, 3-6 spf	39
58	7,190	7,038	7,184	variable, 3-6 spf	39
59	7,030	6,878	7,024	variable, 3-6 spf	39
60	6,870	6,718	6,864	variable, 3-6 spf	39
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