

OCD - HOBBS
05/06/2020
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3950 Interwood S. Pkwy • Houston, TX 77032
PHONE 281.986.4400 • FAX 281.986.4499

State of New Mexico, Lea

I, Jesus Contreras certify that I am employed by Halliburton Energy Services, Inc. (aka Sperry Drilling) and that on the dates of September 09, 2019 through October 03, 2019, I did conduct or supervise the taking of MWD directional surveys for the Frizzle Fry 15 TB Fed Com 1H well from a depth of 158' MD to a depth of 21990' MD. This data is true, correct, complete and within the limitations of the tools as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling). I am authorized and qualified to make this report and these surveys were conducted at the request of Marathon, for the Frizzle Fry 15 TB Fed Com 1H well in Lea. I have reviewed this report and find that it confirms to the principles and procedures as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling.)

Jesus Contreras

Jesus Contreras
Field Engineer

Precision 601

Marathon Oil Permian LLC

Lea County, New Mexico (NAD27) Frizzle Fry 15 Pad (Grid)

API#

Frizzle Fry 15 TB Fed Com 1H

273' FNL, 792' FWL of Sec. 15

Wellbore #1

Design: Wellbore #1

Sperry Drilling Services

Combo Report

08 November, 2019

Well Coordinates: 32.39808201
-103.66807660

NAD 1927 (NADCON CONUS)
New Mexico East 3001
509,175.51 N
705,332.09 E

Ground Level: 3,791.00 usft

Local Coordinate Origin:

Centered on Well Frizzle Fry 15 TB Fed Com 1H

Viewing Datum:

GL: 3791' + KB: 25' @ 3816.00usft (Precision 601)

TVDs to System:

N

North Reference:

Grid

Unit System:

Midcon (2 decimal)

Version: 5000.15 Build: 91

Report Version: Midcon Combo v1.14

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Design Report for Frizzle Fry 15 TB Fed Com 1H - Wellbore #1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
0.00	0.00	0.00	0.00	0.00 N	0.00 E	509,175.51	705,332.09	0.00	0.00	0.00	
158.00	0.50	273.75	158.00	0.05 N	0.69 W	509,175.56	705,331.40	0.32	-0.05	273.75	First Invictus Survey @ 158'MD
254.00	0.70	81.75	254.00	0.16 N	0.53 W	509,175.67	705,331.56	1.24	-0.16	173.00	
348.00	0.70	65.75	347.99	0.47 N	0.57 E	509,175.98	705,332.66	0.21	-0.47	-98.00	
438.00	2.00	175.75	437.97	0.87 S	1.18 E	509,174.64	705,333.27	2.59	0.87	126.36	
526.00	0.30	321.75	525.95	2.22 S	1.16 E	509,173.29	705,333.25	2.56	2.22	175.73	
616.00	0.60	166.75	615.95	2.49 S	1.12 E	509,173.02	705,333.21	0.98	2.50	-163.27	
715.00	0.50	332.75	714.95	2.61 S	1.04 E	509,172.90	705,333.13	1.10	2.62	173.64	
808.00	0.40	187.75	807.95	2.57 S	0.81 E	509,172.94	705,332.90	0.92	2.58	-164.51	
898.00	0.40	220.75	897.95	3.12 S	0.56 E	509,172.39	705,332.65	0.25	3.12	106.50	
1,027.20	0.60	266.75	1,027.14	3.50 S	0.41 W	509,172.01	705,331.68	0.33	3.50	87.77	Last Invictus Survey @ 1027'MD
1,122.00	0.37	308.23	1,121.94	3.34 S	1.14 W	509,172.17	705,330.95	0.43	3.33	142.79	First Hal MWD Survey @ 1122'MD
1,212.00	0.77	302.02	1,211.94	2.84 S	1.89 W	509,172.67	705,330.20	0.45	2.83	-11.89	
1,301.00	0.91	300.78	1,300.93	2.16 S	3.00 W	509,173.35	705,329.09	0.16	2.14	-8.02	
1,391.00	1.18	310.00	1,390.91	1.20 S	4.32 W	509,174.31	705,327.77	0.35	1.17	36.58	
1,481.00	0.68	330.37	1,480.90	0.14 S	5.30 W	509,175.37	705,326.79	0.66	0.10	156.43	
1,570.00	0.68	30.89	1,569.89	0.77 N	5.29 W	509,176.28	705,326.80	0.77	-0.81	120.26	
1,660.00	0.68	58.44	1,659.89	1.51 N	4.56 W	509,177.02	705,327.53	0.36	-1.54	103.77	
1,749.00	0.87	52.09	1,748.88	2.20 N	3.58 W	509,177.71	705,328.51	0.23	-2.23	-27.52	
1,839.00	0.91	60.78	1,838.87	2.97 N	2.41 W	509,178.48	705,329.68	0.16	-2.99	77.87	
1,928.00	1.17	69.68	1,927.85	3.63 N	0.94 W	509,179.14	705,331.15	0.34	-3.64	36.35	
2,018.00	1.43	74.13	2,017.83	4.26 N	1.00 E	509,179.77	705,333.09	0.31	-4.25	23.46	
2,107.00	1.80	83.49	2,106.80	4.72 N	3.46 E	509,180.23	705,335.55	0.51	-4.70	40.23	
2,287.00	2.86	85.45	2,286.64	5.40 N	10.74 E	509,180.91	705,342.83	0.59	-5.33	5.28	
2,376.00	3.36	82.24	2,375.51	5.93 N	15.54 E	509,181.44	705,347.63	0.59	-5.82	-20.81	
2,466.00	3.37	68.18	2,465.36	7.26 N	20.61 E	509,182.77	705,352.70	0.91	-7.13	-96.33	
2,555.00	4.03	60.90	2,554.17	9.76 N	25.77 E	509,185.27	705,357.86	0.91	-9.59	-39.11	
2,645.00	4.58	48.45	2,643.92	13.68 N	31.22 E	509,189.19	705,363.31	1.20	-13.47	-65.83	
2,734.00	5.79	47.96	2,732.56	19.04 N	37.21 E	509,194.55	705,369.30	1.36	-18.80	-2.34	
2,824.00	7.72	52.20	2,821.93	25.79 N	45.36 E	509,201.30	705,377.45	2.21	-25.49	16.60	
2,913.00	7.36	53.28	2,910.16	32.86 N	54.66 E	509,208.37	705,386.75	0.43	-32.50	159.05	
3,003.00	6.45	63.50	2,999.51	38.56 N	63.80 E	509,214.07	705,395.89	1.70	-38.14	131.52	
3,092.00	5.30	80.97	3,088.05	41.44 N	72.34 E	509,216.95	705,404.43	2.37	-40.96	131.23	
3,182.00	2.57	108.68	3,177.83	41.45 N	78.35 E	509,216.96	705,410.44	3.61	-40.93	158.43	
3,271.00	0.43	168.52	3,266.80	40.48 N	80.31 E	509,215.99	705,412.40	2.68	-39.95	171.02	
3,361.00	0.92	345.46	3,356.80	40.85 N	80.20 E	509,216.36	705,412.29	1.50	-40.31	177.91	

Design Report for Frizzle Fry 15 TB Fed Com 1H - Wellbore #1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
3,450.00	1.33	3.41	3,445.78	42.57 N	80.08 E	509,218.08	705,412.17	0.60	-42.04	49.89	
3,540.00	1.77	11.92	3,535.75	44.97 N	80.43 E	509,220.48	705,412.52	0.55	-44.44	31.91	
3,629.00	2.39	28.70	3,624.69	47.95 N	81.60 E	509,223.46	705,413.69	0.97	-47.40	53.08	
3,719.00	3.31	20.69	3,714.58	52.02 N	83.42 E	509,227.53	705,415.51	1.11	-51.47	-27.44	
3,808.00	3.17	13.48	3,803.43	56.82 N	84.90 E	509,232.33	705,416.99	0.48	-56.25	-112.54	
3,898.00	3.28	29.63	3,893.29	61.48 N	86.76 E	509,236.99	705,418.85	1.01	-60.90	91.20	
3,987.00	4.95	43.01	3,982.06	66.50 N	90.64 E	509,242.01	705,422.73	2.15	-65.90	36.68	
4,077.00	6.47	49.91	4,071.61	72.60 N	97.16 E	509,248.11	705,429.25	1.85	-71.96	27.77	
4,166.00	5.42	59.45	4,160.14	77.97 N	104.62 E	509,253.48	705,436.71	1.62	-77.27	141.42	
4,256.00	4.77	67.73	4,249.78	81.55 N	111.74 E	509,257.06	705,443.83	1.09	-80.81	135.55	
4,345.00	2.78	87.04	4,338.59	83.06 N	117.32 E	509,258.57	705,449.41	2.62	-82.28	156.81	
4,435.00	1.27	120.71	4,428.53	82.67 N	120.36 E	509,258.18	705,452.45	2.07	-81.87	157.77	
4,524.00	0.89	101.54	4,517.52	82.02 N	121.89 E	509,257.53	705,453.98	0.58	-81.21	-145.76	
4,614.00	0.57	48.06	4,607.51	82.18 N	122.90 E	509,257.69	705,454.99	0.80	-81.37	-140.25	
4,703.00	1.69	11.89	4,696.49	83.76 N	123.50 E	509,259.27	705,455.59	1.43	-82.94	-51.46	
4,793.00	2.39	11.82	4,786.43	86.90 N	124.16 E	509,262.41	705,456.25	0.78	-86.07	-0.24	
4,882.00	2.79	6.36	4,875.34	90.87 N	124.78 E	509,266.38	705,456.87	0.53	-90.04	-34.41	
4,972.00	2.84	6.79	4,965.23	95.26 N	125.29 E	509,270.77	705,457.38	0.06	-94.43	23.11	
5,061.00	3.14	4.68	5,054.11	99.88 N	125.75 E	509,275.39	705,457.84	0.36	-99.04	-21.20	
5,151.00	3.48	13.68	5,143.96	104.99 N	126.60 E	509,280.50	705,458.69	0.69	-104.15	61.35	
5,240.00	3.69	29.80	5,232.79	110.10 N	128.66 E	509,285.61	705,460.75	1.15	-109.24	86.35	
5,330.00	3.32	35.58	5,322.62	114.73 N	131.61 E	509,290.24	705,463.70	0.57	-113.86	139.18	
5,419.00	3.04	46.04	5,411.49	118.46 N	134.81 E	509,293.97	705,466.90	0.72	-117.57	120.92	
5,509.00	3.07	47.46	5,501.36	121.75 N	138.31 E	509,297.26	705,470.40	0.09	-120.83	69.09	
5,598.00	3.18	46.76	5,590.23	125.05 N	141.86 E	509,300.56	705,473.95	0.13	-124.11	-19.48	
5,688.00	3.22	44.88	5,680.09	128.55 N	145.46 E	509,304.06	705,477.55	0.12	-127.59	-70.08	
5,777.00	3.03	40.34	5,768.95	132.12 N	148.75 E	509,307.63	705,480.84	0.35	-131.13	-129.77	
5,867.00	2.99	40.08	5,858.83	135.73 N	151.80 E	509,311.24	705,483.89	0.05	-134.72	-161.28	
5,956.00	3.21	41.62	5,947.70	139.37 N	154.95 E	509,314.88	705,487.04	0.26	-138.34	21.50	
6,046.00	3.13	39.14	6,037.56	143.16 N	158.17 E	509,318.67	705,490.26	0.18	-142.10	-121.49	
6,135.00	2.99	34.83	6,126.44	146.95 N	161.03 E	509,322.46	705,493.12	0.30	-145.87	-123.46	
6,225.00	3.43	33.52	6,216.29	151.12 N	163.86 E	509,326.63	705,495.95	0.50	-150.03	-10.12	
6,314.00	3.68	34.90	6,305.12	155.68 N	166.96 E	509,331.19	705,499.05	0.30	-154.57	19.58	
6,404.00	3.83	34.00	6,394.93	160.54 N	170.30 E	509,336.05	705,502.39	0.18	-159.41	-21.90	
6,493.00	4.24	30.81	6,483.71	165.83 N	173.65 E	509,341.34	705,505.74	0.53	-164.67	-30.30	
6,583.00	4.54	33.38	6,573.44	171.66 N	177.31 E	509,347.17	705,509.40	0.40	-170.48	34.54	
6,672.00	3.39	58.33	6,662.24	175.99 N	181.49 E	509,351.50	705,513.58	2.30	-174.78	135.71	

Design Report for Frizzle Fry 15 TB Fed Com 1H - Wellbore #1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
6,762.00	3.36	67.12	6,752.08	178.41 N	186.18 E	509,353.92	705,518.27	0.58	-177.17	97.70	
6,852.00	2.89	98.40	6,841.95	179.10 N	190.86 E	509,354.61	705,522.95	1.94	-177.83	120.66	
6,941.00	2.94	105.52	6,930.84	178.16 N	195.28 E	509,353.67	705,527.37	0.41	-176.86	85.70	
7,031.00	2.80	106.07	7,020.73	176.94 N	199.61 E	509,352.45	705,531.70	0.16	-175.61	169.15	
7,121.00	2.29	130.89	7,110.64	175.15 N	203.08 E	509,350.66	705,535.17	1.34	-173.80	126.89	
7,210.00	2.33	144.47	7,199.57	172.52 N	205.48 E	509,348.03	705,537.57	0.62	-171.15	92.62	
7,299.00	2.05	183.12	7,288.51	169.45 N	206.44 E	509,344.96	705,538.53	1.66	-168.08	119.65	
7,389.00	1.96	180.87	7,378.45	166.31 N	206.33 E	509,341.82	705,538.42	0.13	-164.94	-139.95	
7,478.00	1.37	201.45	7,467.42	163.80 N	205.92 E	509,339.31	705,538.01	0.93	-162.43	144.59	
7,568.00	1.71	200.90	7,557.38	161.54 N	205.05 E	509,337.05	705,537.14	0.38	-160.18	-2.76	
7,658.00	1.87	202.14	7,647.34	158.92 N	204.02 E	509,334.43	705,536.11	0.18	-157.57	14.23	
7,747.00	1.86	203.12	7,736.29	156.25 N	202.90 E	509,331.76	705,534.99	0.04	-154.90	107.90	
7,837.00	1.80	203.27	7,826.25	153.61 N	201.77 E	509,329.12	705,533.86	0.07	-152.27	175.51	
7,926.00	1.76	199.63	7,915.20	151.04 N	200.76 E	509,326.55	705,532.85	0.13	-149.70	-111.30	
8,016.00	1.55	203.43	8,005.17	148.62 N	199.81 E	509,324.13	705,531.90	0.26	-147.29	154.30	
8,106.00	0.77	326.01	8,095.15	148.00 N	198.99 E	509,323.51	705,531.08	2.30	-146.68	161.72	
8,196.00	0.10	77.61	8,185.15	148.52 N	198.73 E	509,324.03	705,530.82	0.90	-147.20	173.43	
8,285.00	0.14	134.23	8,274.15	148.46 N	198.88 E	509,323.97	705,530.97	0.13	-147.14	101.12	
8,375.00	0.18	148.24	8,364.15	148.27 N	199.03 E	509,323.78	705,531.12	0.06	-146.94	51.51	
8,464.00	0.28	169.51	8,453.15	147.93 N	199.15 E	509,323.44	705,531.24	0.15	-146.61	51.45	
8,554.00	0.40	160.39	8,543.15	147.42 N	199.29 E	509,322.93	705,531.38	0.15	-146.10	-28.88	
8,643.00	0.51	158.14	8,632.15	146.76 N	199.54 E	509,322.27	705,531.63	0.13	-145.43	-10.35	
8,733.00	0.57	154.80	8,722.14	145.98 N	199.88 E	509,321.49	705,531.97	0.08	-144.66	-29.36	
8,822.00	0.56	151.03	8,811.14	145.20 N	200.28 E	509,320.71	705,532.37	0.04	-143.87	-106.94	
8,841.00	0.50	149.71	8,830.14	145.05 N	200.37 E	509,320.56	705,532.46	0.32	-143.72	-169.16	
8,930.00	0.31	132.85	8,919.13	144.55 N	200.74 E	509,320.06	705,532.83	0.25	-143.22	-156.14	
9,019.00	0.57	137.63	9,008.13	144.06 N	201.22 E	509,319.57	705,533.31	0.29	-142.72	10.43	
9,109.00	0.71	135.95	9,098.13	143.33 N	201.91 E	509,318.84	705,534.00	0.16	-141.99	-8.47	
9,198.00	0.62	155.86	9,187.12	142.49 N	202.49 E	509,318.00	705,534.58	0.28	-141.15	121.04	
9,288.00	0.72	192.40	9,277.11	141.50 N	202.56 E	509,317.01	705,534.65	0.48	-140.15	95.53	
9,377.00	1.17	213.09	9,366.10	140.19 N	201.95 E	509,315.70	705,534.04	0.63	-138.85	47.82	
9,467.00	1.46	226.71	9,456.08	138.63 N	200.61 E	509,314.14	705,532.70	0.47	-137.30	54.09	
9,557.00	1.94	208.04	9,546.04	136.50 N	199.06 E	509,312.01	705,531.15	0.81	-135.18	-58.67	
9,646.00	2.64	224.06	9,634.97	133.70 N	196.93 E	509,309.21	705,529.02	1.06	-132.39	50.63	
9,736.00	1.98	225.79	9,724.90	131.13 N	194.37 E	509,306.64	705,526.46	0.74	-129.83	174.83	
9,825.00	1.13	169.52	9,813.87	129.19 N	193.43 E	509,304.70	705,525.52	1.85	-127.91	-145.20	
9,915.00	1.28	154.54	9,903.85	127.41 N	194.02 E	509,302.92	705,526.11	0.39	-126.12	-72.15	

Design Report for Frizzle Fry 15 TB Fed Com 1H - Wellbore #1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
10,004.00	1.40	157.81	9,992.82	125.51 N	194.86 E	509,301.02	705,526.95	0.16	-124.21	34.15	
10,094.00	1.56	148.33	10,082.79	123.45 N	195.92 E	509,298.96	705,528.01	0.32	-122.14	-61.64	
10,184.00	0.89	126.85	10,172.77	121.98 N	197.12 E	509,297.49	705,529.21	0.89	-120.67	-155.99	
10,273.00	0.90	87.53	10,261.76	121.60 N	198.37 E	509,297.11	705,530.46	0.68	-120.28	-108.76	
10,363.00	0.76	69.72	10,351.75	121.84 N	199.64 E	509,297.35	705,531.73	0.32	-120.51	-127.20	
10,452.00	1.27	69.41	10,440.74	122.39 N	201.12 E	509,297.90	705,533.21	0.57	-121.05	-0.77	
10,542.00	1.63	81.68	10,530.71	122.92 N	203.32 E	509,298.43	705,535.41	0.53	-121.57	47.02	
10,631.00	1.38	96.35	10,619.68	122.99 N	205.63 E	509,298.50	705,537.72	0.51	-121.62	130.17	
10,721.00	1.05	114.23	10,709.66	122.53 N	207.46 E	509,298.04	705,539.55	0.55	-121.15	139.74	
10,810.00	1.05	127.33	10,798.64	121.70 N	208.85 E	509,297.21	705,540.94	0.27	-120.31	96.55	
10,900.00	1.19	145.26	10,888.63	120.43 N	210.04 E	509,295.94	705,542.13	0.42	-119.04	77.35	
10,989.00	0.94	151.76	10,977.61	119.03 N	210.91 E	509,294.54	705,543.00	0.31	-117.63	157.43	
11,079.00	0.42	181.86	11,067.61	118.05 N	211.25 E	509,293.56	705,543.34	0.68	-116.65	159.93	
11,168.00	0.48	208.11	11,156.60	117.40 N	211.07 E	509,292.91	705,543.16	0.24	-115.99	87.17	
11,258.00	0.99	200.95	11,246.60	116.34 N	210.61 E	509,291.85	705,542.70	0.57	-114.94	-13.80	
11,305.00	1.09	185.68	11,293.59	115.51 N	210.42 E	509,291.02	705,542.51	0.62	-114.12	-77.90	
11,341.00	1.20	182.91	11,329.58	114.80 N	210.37 E	509,290.31	705,542.46	0.34	-113.40	-28.10	
11,369.00	4.09	182.25	11,357.55	113.51 N	210.31 E	509,289.02	705,542.40	10.31	-112.11	-0.94	KOP @ 11369'MD (161.86' FNL, 318.73' FEL of Sec. 15&22 W1/4)
11,430.00	10.38	182.08	11,418.03	105.83 N	210.03 E	509,281.34	705,542.12	10.31	-104.44	-0.28	
11,520.00	23.20	183.58	11,504.02	79.93 N	208.62 E	509,255.44	705,540.71	14.25	-78.54	2.66	
11,609.00	26.78	188.51	11,584.68	42.59 N	204.56 E	509,218.10	705,536.65	4.65	-41.23	32.44	
11,699.00	38.58	183.47	11,660.31	5.65 S	199.84 E	509,169.86	705,531.93	13.45	6.98	-15.15	
11,788.00	42.27	183.12	11,728.05	63.26 S	196.53 E	509,112.25	705,528.62	4.15	64.56	-3.65	
11,878.00	43.25	182.17	11,794.13	124.30 S	193.72 E	509,051.21	705,525.81	1.30	125.58	-33.70	
11,967.00	54.32	182.02	11,852.68	191.10 S	191.28 E	508,984.41	705,523.37	12.44	192.36	-0.63	
12,057.00	61.93	183.48	11,900.17	267.38 S	187.58 E	508,908.13	705,519.67	8.57	268.62	9.65	
12,147.00	74.04	181.13	11,933.85	350.59 S	184.30 E	508,824.92	705,516.39	13.67	351.80	-10.66	
12,236.00	83.42	181.75	11,951.23	437.75 S	182.10 E	508,737.76	705,514.19	10.56	438.94	3.77	
12,326.00	87.66	178.70	11,958.22	527.44 S	181.76 E	508,648.07	705,513.85	5.80	528.64	-35.78	
12,415.00	88.55	177.58	11,961.17	616.34 S	184.64 E	508,559.17	705,516.73	1.61	617.56	-51.53	
12,504.00	87.78	177.86	11,964.02	705.23 S	188.18 E	508,470.28	705,520.27	0.92	706.46	160.03	
12,582.00	89.51	177.30	11,965.86	783.13 S	191.48 E	508,392.38	705,523.57	2.33	784.39	-17.94	
12,715.00	89.14	177.55	11,967.43	915.99 S	197.45 E	508,259.52	705,529.54	0.34	917.28	145.96	
12,804.00	88.95	177.47	11,968.91	1,004.89 S	201.32 E	508,170.62	705,533.41	0.23	1,006.21	-157.17	
12,894.00	90.00	177.89	11,969.74	1,094.81 S	204.96 E	508,080.70	705,537.05	1.26	1,096.15	21.80	
12,983.00	89.69	179.38	11,969.98	1,183.79 S	207.08 E	507,991.72	705,539.17	1.71	1,185.13	101.75	

Design Report for Frizzle Fry 15 TB Fed Com 1H - Wellbore #1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
13,073.00	90.86	181.92	11,969.54	1,273.77 S	206.06 E	507,901.74	705,538.15	3.11	1,275.11	65.27	
13,163.00	91.54	181.45	11,967.66	1,363.71 S	203.41 E	507,811.80	705,535.50	0.92	1,365.03	-34.64	
13,252.00	90.50	182.39	11,966.08	1,452.64 S	200.43 E	507,722.87	705,532.52	1.57	1,453.94	137.89	
13,342.00	90.00	180.98	11,965.68	1,542.60 S	197.79 E	507,632.91	705,529.88	1.66	1,543.88	-109.52	
13,431.00	90.06	182.14	11,965.64	1,631.57 S	195.36 E	507,543.94	705,527.45	1.31	1,632.83	87.04	
13,521.00	90.00	180.88	11,965.59	1,721.53 S	192.99 E	507,453.98	705,525.08	1.40	1,722.78	-92.73	
13,611.00	90.12	181.99	11,965.50	1,811.50 S	190.74 E	507,364.01	705,522.83	1.24	1,812.73	83.83	
13,700.00	89.32	179.81	11,965.93	1,900.49 S	189.34 E	507,275.02	705,521.43	2.61	1,901.70	-110.15	
13,790.00	88.21	178.02	11,967.87	1,990.44 S	191.04 E	507,185.07	705,523.13	2.34	1,991.67	-121.83	
13,879.00	88.27	178.69	11,970.60	2,079.36 S	193.60 E	507,096.15	705,525.69	0.76	2,080.60	84.89	
13,968.00	88.83	178.45	11,972.86	2,168.31 S	195.82 E	507,007.20	705,527.91	0.68	2,169.56	-23.20	
14,058.00	90.00	179.15	11,973.77	2,258.28 S	197.70 E	506,917.23	705,529.79	1.51	2,259.54	30.89	
14,147.00	90.19	179.46	11,973.63	2,347.27 S	198.78 E	506,828.24	705,530.87	0.41	2,348.54	58.50	
14,237.00	90.12	178.35	11,973.38	2,437.26 S	200.50 E	506,738.25	705,532.59	1.24	2,438.53	-93.61	
14,326.00	88.76	178.99	11,974.25	2,526.23 S	202.57 E	506,649.28	705,534.66	1.69	2,527.51	154.80	
14,416.00	89.81	178.61	11,975.38	2,616.20 S	204.45 E	506,559.31	705,536.54	1.24	2,617.50	-19.90	
14,506.00	91.98	179.48	11,973.97	2,706.17 S	205.95 E	506,469.34	705,538.04	2.60	2,707.47	21.84	
14,596.00	92.10	179.72	11,970.77	2,796.11 S	206.58 E	506,379.40	705,538.67	0.30	2,797.42	63.42	
14,685.00	91.98	179.43	11,967.60	2,885.05 S	207.24 E	506,290.46	705,539.33	0.35	2,886.36	-112.49	
14,775.00	91.42	179.05	11,964.93	2,975.00 S	208.43 E	506,200.51	705,540.52	0.75	2,976.32	-145.85	
14,864.00	92.04	178.43	11,962.24	3,063.94 S	210.39 E	506,111.57	705,542.48	0.98	3,065.27	-44.98	
14,954.00	92.04	177.31	11,959.04	3,153.82 S	213.73 E	506,021.69	705,545.82	1.24	3,155.17	-89.98	
15,043.00	91.48	176.13	11,956.30	3,242.63 S	218.82 E	505,932.88	705,550.91	1.47	3,244.01	-115.38	
15,132.00	91.36	176.54	11,954.10	3,331.42 S	224.51 E	505,844.09	705,556.60	0.48	3,332.83	106.31	
15,222.00	90.43	178.04	11,952.69	3,421.30 S	228.76 E	505,754.21	705,560.85	1.96	3,422.75	121.79	
15,311.00	89.88	181.01	11,952.45	3,510.29 S	229.50 E	505,665.22	705,561.59	3.39	3,511.74	100.49	
15,428.00	88.76	182.82	11,953.84	3,627.21 S	225.59 E	505,548.30	705,557.68	1.82	3,628.63	121.76	
15,518.00	87.52	182.14	11,956.76	3,717.08 S	221.70 E	505,458.43	705,553.79	1.57	3,718.46	-151.28	
15,607.00	89.63	177.73	11,958.98	3,806.02 S	221.80 E	505,369.49	705,553.89	5.49	3,807.41	-64.49	
15,697.00	91.73	178.85	11,957.91	3,895.97 S	224.49 E	505,279.54	705,556.58	2.64	3,897.37	28.07	
15,786.00	92.10	183.71	11,954.93	3,984.87 S	222.50 E	505,190.64	705,554.59	5.47	3,986.26	85.57	
15,876.00	91.67	184.67	11,951.97	4,074.58 S	215.93 E	505,100.93	705,548.02	1.17	4,075.92	114.12	
15,966.00	90.93	180.76	11,949.93	4,164.44 S	211.67 E	505,011.07	705,543.76	4.42	4,165.75	-100.67	
16,055.00	89.94	180.68	11,949.25	4,253.43 S	210.55 E	504,922.08	705,542.64	1.12	4,254.73	-175.38	
16,145.00	89.69	179.61	11,949.54	4,343.42 S	210.32 E	504,832.09	705,542.41	1.22	4,344.72	-103.15	
16,234.00	89.38	181.10	11,950.27	4,432.42 S	209.77 E	504,743.09	705,541.86	1.71	4,433.71	101.76	
16,323.00	89.44	178.35	11,951.18	4,521.40 S	210.20 E	504,654.11	705,542.29	3.09	4,522.70	-88.76	

Design Report for Frizzle Fry 15 TB Fed Com 1H - Wellbore #1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
16,413.00	89.14	177.61	11,952.30	4,611.34 S	213.37 E	504,564.17	705,545.46	0.89	4,612.65	-112.07	
16,502.00	89.44	177.24	11,953.40	4,700.24 S	217.37 E	504,475.27	705,549.46	0.54	4,701.58	-50.96	
16,592.00	89.14	177.71	11,954.52	4,790.15 S	221.33 E	504,385.36	705,553.42	0.62	4,791.51	122.55	
16,681.00	89.13	177.83	11,955.86	4,879.07 S	224.80 E	504,296.44	705,556.89	0.14	4,880.45	94.77	
16,771.00	89.94	178.94	11,956.59	4,969.03 S	227.33 E	504,206.48	705,559.42	1.53	4,970.43	53.89	
16,860.00	90.19	177.04	11,956.49	5,057.97 S	230.45 E	504,117.54	705,562.54	2.15	5,059.39	-82.50	
16,950.00	90.37	177.56	11,956.05	5,147.87 S	234.69 E	504,027.64	705,566.78	0.61	5,149.31	70.91	
17,039.00	90.49	177.56	11,955.38	5,236.79 S	238.48 E	503,938.72	705,570.57	0.13	5,238.25	0.00	
17,129.00	90.68	180.61	11,954.46	5,326.76 S	239.92 E	503,848.75	705,572.01	3.40	5,328.23	86.42	
17,218.00	90.49	180.16	11,953.55	5,415.75 S	239.32 E	503,759.76	705,571.41	0.55	5,417.22	-112.89	
17,308.00	90.43	180.56	11,952.83	5,505.75 S	238.76 E	503,669.76	705,570.85	0.45	5,507.21	98.53	
17,397.00	90.31	179.67	11,952.26	5,594.74 S	238.58 E	503,580.77	705,570.67	1.01	5,596.20	-97.68	
17,487.00	90.43	178.67	11,951.68	5,684.73 S	239.88 E	503,490.78	705,571.97	1.12	5,686.20	-83.15	
17,576.00	90.25	180.23	11,951.15	5,773.72 S	240.73 E	503,401.79	705,572.82	1.76	5,775.19	96.58	
17,666.00	90.74	179.22	11,950.37	5,863.72 S	241.17 E	503,311.79	705,573.26	1.25	5,865.19	-64.12	
17,755.00	90.67	180.13	11,949.27	5,952.71 S	241.67 E	503,222.80	705,573.76	1.03	5,954.18	94.39	
17,844.00	90.43	181.36	11,948.42	6,041.69 S	240.51 E	503,133.82	705,572.60	1.41	6,043.16	101.04	
17,934.00	90.56	180.93	11,947.64	6,131.67 S	238.72 E	503,043.84	705,570.81	0.50	6,133.12	-73.18	
18,023.00	90.49	179.99	11,946.83	6,220.67 S	238.00 E	502,954.84	705,570.09	1.06	6,222.11	-94.25	
18,113.00	88.33	181.08	11,947.75	6,310.65 S	237.16 E	502,864.86	705,569.25	2.69	6,312.08	153.23	
18,203.00	89.38	180.67	11,949.55	6,400.62 S	235.79 E	502,774.89	705,567.88	1.25	6,402.04	-21.33	
18,292.00	89.57	180.72	11,950.37	6,489.61 S	234.71 E	502,685.90	705,566.80	0.22	6,491.02	14.74	
18,382.00	90.06	179.04	11,950.66	6,579.61 S	234.90 E	502,595.90	705,566.99	1.94	6,581.02	-73.74	
18,471.00	89.20	178.55	11,951.23	6,668.58 S	236.77 E	502,506.93	705,568.86	1.11	6,670.01	-150.33	
18,561.00	89.44	178.50	11,952.30	6,758.55 S	239.08 E	502,416.96	705,571.17	0.27	6,759.98	-11.77	
18,650.00	89.51	178.11	11,953.12	6,847.50 S	241.72 E	502,328.01	705,573.81	0.45	6,848.96	-79.83	
18,740.00	90.12	177.89	11,953.41	6,937.45 S	244.86 E	502,238.06	705,576.95	0.72	6,938.92	-19.83	
18,829.00	89.14	177.77	11,953.98	7,026.38 S	248.23 E	502,149.13	705,580.32	1.11	7,027.87	-173.02	
18,919.00	89.07	178.87	11,955.39	7,116.33 S	250.87 E	502,059.18	705,582.96	1.22	7,117.84	93.65	
19,008.00	89.01	179.37	11,956.88	7,205.31 S	252.23 E	501,970.20	705,584.32	0.57	7,206.82	96.85	
19,098.00	89.63	179.54	11,957.95	7,295.30 S	253.09 E	501,880.21	705,585.18	0.71	7,296.81	15.33	
19,187.00	89.75	180.10	11,958.43	7,384.29 S	253.37 E	501,791.22	705,585.46	0.64	7,385.81	77.91	
19,276.00	89.38	181.05	11,959.10	7,473.29 S	252.47 E	501,702.22	705,584.56	1.15	7,474.80	111.28	
19,365.00	90.43	180.19	11,959.25	7,562.28 S	251.51 E	501,613.23	705,583.60	1.52	7,563.78	-39.32	
19,455.00	90.56	179.53	11,958.47	7,652.27 S	251.73 E	501,523.24	705,583.82	0.75	7,653.78	-78.85	
19,544.00	90.43	179.06	11,957.71	7,741.26 S	252.83 E	501,434.25	705,584.92	0.55	7,742.77	-105.46	
19,634.00	90.06	178.58	11,957.32	7,831.24 S	254.68 E	501,344.27	705,586.77	0.67	7,832.76	-127.63	

Design Report for Frizzle Fry 15 TB Fed Com 1H - Wellbore #1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
19,723.00	89.63	178.68	11,957.56	7,920.22 S	256.81 E	501,255.29	705,588.90	0.50	7,921.75	166.91	
19,813.00	89.69	181.22	11,958.10	8,010.21 S	256.89 E	501,165.30	705,588.98	2.82	8,011.74	88.65	
19,903.00	89.57	180.80	11,958.68	8,100.19 S	255.30 E	501,075.32	705,587.39	0.49	8,101.71	-105.95	
19,993.00	91.30	180.54	11,957.99	8,190.18 S	254.25 E	500,985.33	705,586.34	1.94	8,191.69	-8.55	
20,082.00	90.68	180.34	11,956.46	8,279.16 S	253.56 E	500,896.35	705,585.65	0.73	8,280.66	-162.12	
20,172.00	87.90	179.34	11,957.57	8,369.15 S	253.82 E	500,806.36	705,585.91	3.28	8,370.65	-160.22	
20,261.00	88.70	179.90	11,960.21	8,458.10 S	254.41 E	500,717.41	705,586.50	1.10	8,459.61	34.99	
20,351.00	89.63	178.92	11,961.52	8,548.09 S	255.33 E	500,627.42	705,587.42	1.50	8,549.59	-46.50	
20,441.00	89.69	178.89	11,962.06	8,638.07 S	257.05 E	500,537.44	705,589.14	0.07	8,639.59	-26.56	
20,530.00	90.56	179.58	11,961.86	8,727.06 S	258.24 E	500,448.45	705,590.33	1.25	8,728.58	38.42	
20,619.00	89.26	178.96	11,962.00	8,816.05 S	259.37 E	500,359.46	705,591.46	1.62	8,817.58	-154.50	
20,708.00	89.57	178.39	11,962.91	8,905.02 S	261.43 E	500,270.49	705,593.52	0.73	8,906.56	-61.46	
20,798.00	90.49	180.17	11,962.86	8,995.01 S	262.56 E	500,180.50	705,594.65	2.23	8,996.55	62.67	
20,887.00	90.74	180.97	11,961.91	9,084.00 S	261.68 E	500,091.51	705,593.77	0.94	9,085.54	72.64	
20,977.00	90.19	180.50	11,961.18	9,173.99 S	260.52 E	500,001.52	705,592.61	0.80	9,175.52	-139.48	
21,066.00	90.62	179.84	11,960.55	9,262.99 S	260.26 E	499,912.52	705,592.35	0.89	9,264.51	-56.91	
21,156.00	90.37	180.21	11,959.77	9,352.98 S	260.22 E	499,822.53	705,592.31	0.50	9,354.50	124.05	
21,245.00	90.49	180.44	11,959.10	9,441.98 S	259.71 E	499,733.53	705,591.80	0.29	9,443.49	62.45	
21,335.00	89.44	178.42	11,959.16	9,531.97 S	260.61 E	499,643.54	705,592.70	2.53	9,533.49	-117.46	
21,424.00	89.32	178.46	11,960.12	9,620.93 S	263.03 E	499,554.58	705,595.12	0.14	9,622.46	161.57	
21,514.00	89.51	177.76	11,961.04	9,710.88 S	266.00 E	499,464.63	705,598.09	0.81	9,712.43	-74.82	
21,603.00	89.20	178.39	11,962.04	9,799.82 S	268.99 E	499,375.69	705,601.08	0.79	9,801.39	116.20	
21,693.00	89.07	179.62	11,963.40	9,889.79 S	270.55 E	499,285.72	705,602.64	1.37	9,891.37	96.04	
21,782.00	89.01	180.37	11,964.89	9,978.78 S	270.56 E	499,196.73	705,602.65	0.85	9,980.36	94.58	
21,872.00	89.63	181.58	11,965.96	10,068.76 S	269.03 E	499,106.75	705,601.12	1.51	10,070.32	62.88	
21,936.00	89.69	180.12	11,966.34	10,132.75 S	268.08 E	499,042.76	705,600.17	2.28	10,134.30	-87.65	Last Hal MWD Survey @ 21936'MD
21,990.00	89.69	180.12	11,966.63	10,186.75 S	267.97 E	498,988.76	705,600.06	0.00	10,188.30	0.00	Proj. to TD/LTP @ 21990'MD (100.49' FSL, 329.65' FEL of Sec. 15&22 W1/4)

Design Report for Frizzle Fry 15 TB Fed Com 1H - Wellbore #1

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
158.00	158.00	0.05	-0.69	First Invictus Survey @ 158'MD
1,027.20	1,027.14	-3.50	-0.41	Last Invictus Survey @ 1027'MD
1,122.00	1,121.94	-3.34	-1.14	First Hal MWD Survey @ 1122'MD
11,369.00	11,357.55	113.51	210.31	KOP @ 11369'MD (161.86' FNL, 318.73' FEL of Sec. 15&22 W1/4)
21,936.00	11,966.34	-10,132.75	268.08	Last Hal MWD Survey @ 21936'MD
21,990.00	11,966.63	-10,186.75	267.97	Proj. to TD/LTP @ 21990'MD (100.49' FSL, 329.65' FEL of Sec. 15&22 W1/4)

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	179.62	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
158.00	1,027.20	Invictus Surface Surveys	3_MWD+IGRF
1,122.00	7,926.00	BHA #1 MWD Surveys	3_MWD+HRGM+AX
8,016.00	8,841.00	BHA #2 MWD Surveys	3_MWD+HRGM+AX
8,930.00	11,305.00	BHA #3 MWD Surveys	3_MWD+HRGM+AX
11,341.00	12,582.00	BHA #4 MWD Surveys	3_MWD+HRGM+AX
12,715.00	14,326.00	BHA #5 MWD Surveys	3_MWD+HRGM+AX
14,416.00	15,311.00	BHA #6 MWD Surveys	3_MWD+HRGM+AX
15,428.00	21,936.00	BHA #7 MWD Surveys	3_MWD+HRGM+AX
21,990.00	21,990.00	Projection to TD	3_Blind

Design Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target									
- Shape	()	()	()	()	()	()	()		
									()

Design Report for Frizzle Fry 15 TB Fed Com 1H - Wellbore #1

Directional Difficulty Index

Average Dogleg over Survey:	1.37 °/100usft	Maximum Dogleg over Survey:	14.25 °/100usft at 11,520.00 usft
Net Tortosity applicable to Plans:	0.40 °/100usft	Directional Difficulty Index:	6.774

Audit Info

North Reference Sheet for Frizzle Fry 15 Pad (Grid) - Frizzle Fry 15 TB Fed Com 1H - Wellbore #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to GL: 3791' + KB: 25' @ 3816.00usft (Precision 601). Northing and Easting are relative to Frizzle Fry 15 TB Fed Com 1H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 3001 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -104.33333333°, Longitude Origin:0.00000000°, Latitude Origin:0.00000000°

False Easting: 500,000.00usft, False Northing: 0.00usft, Scale Reduction: 0.99995738

Grid Coordinates of Well: 509,175.51 usft N, 705,332.09 usft E

Geographical Coordinates of Well: 32.39808201, -103.66807660

Grid Convergence at Surface is: 0.36°

Based upon Minimum Curvature type calculations, at a Measured Depth of 21,990.00usft the Bottom Hole Displacement is 10,190.27usft in the Direction of 178.49° (Grid).

Magnetic Convergence at surface is: -6.39° (26 July 2019, , HDGM_2019)

