

NM OIL CONSERVATION
ARTESIA DISTRICT

SEP - 1 2017

RECEIVED

Chisholm Energy Holdings

Eddy County, NM (NAD 83)

Cottonwood 28-33 Federal

Cottonwood 28-33 Federal 1H

ST02

Survey: MWD (ST02)

Sperry Drilling Services

Standard Report

24 June, 2017

Well Coordinates: 371,047.60 N, 550,946.20 E (32° 01' 12.31" N, 104° 18' 08.39" W)
Ground Level: 3,401.00 usft

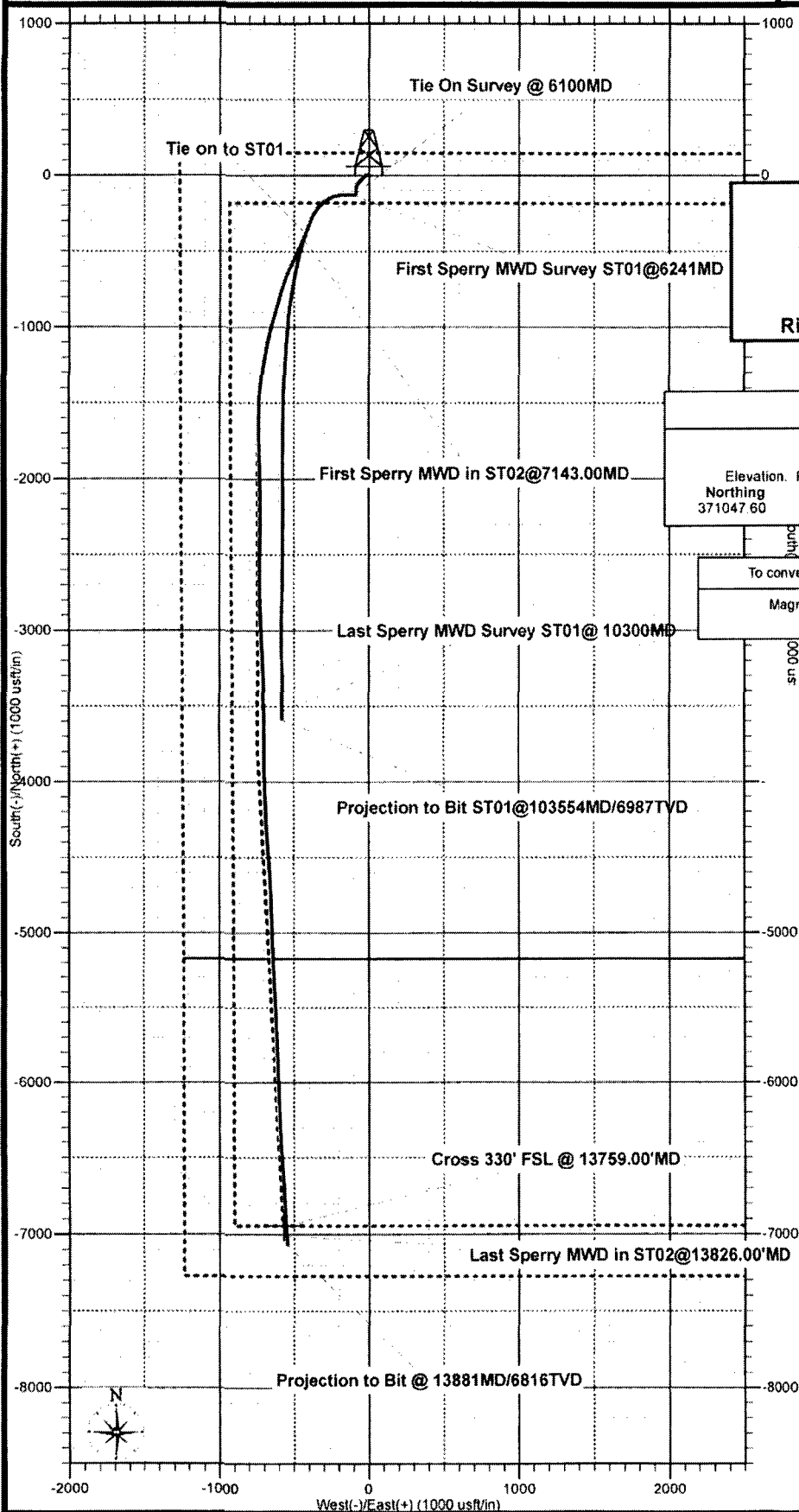
Local Coordinate Origin:	Centered on Site Cottonwood 28-33 Federal
Viewing Datum:	Plat @ 3423.00usft (GL3401'+22ft=3423ft(NaborsM55))
TVDs to System:	N
North Reference:	Grid
Unit System:	API 2 Decimal

Version: 5000.1 Build: 81

HALLIBURTON

Chisholm Energy Holdings

HALLIBURTON | Sperry Drilling



Project: Eddy County, NM (NAD 83)
Site: Cottonwood 28-33 Federal
Well: Cottonwood 28-33 Federal 1H
Wellbore: ST02
Plan: ST02 Surveys
Rig: GL3401'+22ft=3423ft(NaborsM55)

SURFACE LOCATION

US State Plane 1983
 New Mexico Eastern Zone
 Elevation: Plat @ 3423.00usft (GL3401'+22ft=3423ft(NaborsM55))
 Northing 371047.60 Easting 550946.20 Latitude 32° 1' 12.310 N Longitude 104° 18' 8.386 W

To convert a Magnetic Direction to a Grid Direction, Add 7.3431°

Magnetic Model: BGGM2017 Date: 14-Jun-17
 Azimuths to Grid North

Chisholm Energy Holdings

HALLIBURTON

Sperry Drilling

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Site: Cottonwood 28-33 Federal
Well: Cottonwood 28-33 Federal 1H
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Plan: ST02 Surveys
Rig: GL3401'+22ft=3423ft(NaborsM55)

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US State Plane 1983
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Northing: 371047.60 Easting: 550946.20 32° 1' 12.310 N 104° 18' 8.386 W

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL (CottonWood 28-33 Federal 1H)	6816.64	-6942.00	-573.50	364105.60	550372.70	32° 0' 3.611 N	104° 18' 15.070 W

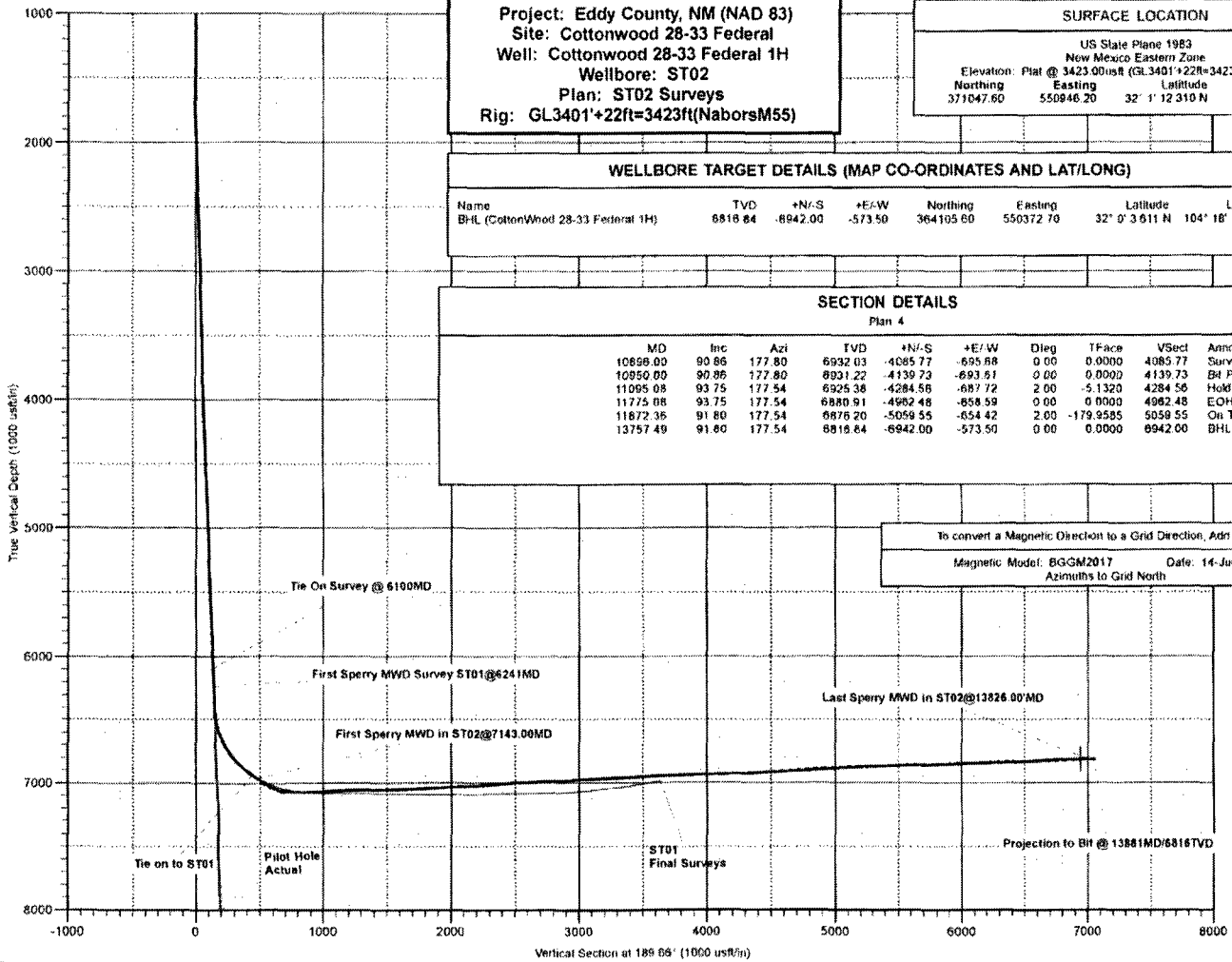
SECTION DETAILS

Plan 4

MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	TFace	VSecl	Annotation
10866.00	90.86	177.80	6932.03	-4085.77	-695.68	0.00	0.0000	4085.77	Survey tie on
10950.00	90.86	177.80	6931.22	-4139.73	-693.51	0.00	0.0000	4139.73	BH Projection
11095.08	93.75	177.54	6925.36	-4284.56	-687.72	2.00	-5.1320	4284.56	Hold 93.75 Inc
11775.08	93.75	177.54	6880.91	-4982.48	-658.59	0.00	0.0000	4982.48	E-OH
11872.36	91.80	177.54	6876.20	-5059.55	-654.42	2.00	-179.9585	5059.55	On Target Line
13757.40	91.80	177.54	6816.64	-6942.00	-573.50	0.00	0.0000	6942.00	BHL

To convert a Magnetic Direction to a Grid Direction, Add 7.3431°

Magnetic Model: BGGM2017 Date: 14-Jun-17
Azimuths to Grid North



Design Report for Cottonwood 28-33 Federal 1H - ST02 Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.50	328.79	100.00	0.37	-0.23	-0.33	0.50
200.00	0.50	328.40	199.99	1.12	-0.68	-0.99	0.00
300.00	0.49	306.82	299.99	1.75	-1.25	-1.51	0.19
400.00	0.65	282.23	399.99	2.12	-2.15	-1.73	0.29
500.00	1.42	267.50	499.97	2.19	-3.94	-1.50	0.81
600.00	1.80	259.18	599.93	1.84	-6.72	-0.69	0.45
700.00	1.49	261.40	699.89	1.35	-9.55	0.27	0.32
800.00	1.27	267.89	799.86	1.12	-11.94	0.91	0.27
900.00	1.22	280.30	899.84	1.26	-14.10	1.12	0.27
1,000.00	1.08	288.42	999.82	1.75	-16.04	0.96	0.21
1,100.00	0.79	325.93	1,099.80	2.62	-17.32	0.32	0.66
1,200.00	0.80	316.83	1,199.79	3.70	-18.18	-0.60	0.13
1,300.00	0.75	345.74	1,299.79	4.85	-18.82	-1.62	0.39
1,400.00	3.03	74.39	1,399.74	6.19	-16.44	-3.34	3.10
1,500.00	4.16	79.79	1,499.54	7.55	-10.32	-5.71	1.18
1,600.00	3.07	90.08	1,599.34	8.18	-4.07	-7.38	1.26
1,700.00	2.74	255.94	1,699.29	7.60	-3.71	-6.87	5.77
1,800.00	4.64	256.86	1,799.08	6.10	-9.97	-4.34	1.90
1,900.00	4.10	252.13	1,898.79	4.08	-17.31	-1.12	0.65
2,000.00	3.32	243.76	1,998.58	1.71	-23.31	2.23	0.95
2,100.00	2.82	242.29	2,098.44	-0.72	-28.09	5.42	0.51
2,200.00	1.96	226.97	2,198.35	-3.03	-31.52	8.28	1.06
2,300.00	2.05	225.73	2,298.29	-5.44	-34.05	11.08	0.10
2,400.00	2.11	223.26	2,398.22	-8.03	-36.59	14.06	0.11
2,500.00	2.20	224.02	2,498.15	-10.75	-39.18	17.18	0.09
2,600.00	2.23	220.31	2,598.08	-13.62	-41.78	20.44	0.15
2,700.00	2.28	221.78	2,698.00	-16.59	-44.36	23.80	0.08
2,800.00	2.16	219.16	2,797.93	-19.53	-46.88	27.12	0.16
2,900.00	2.22	219.04	2,897.85	-22.50	-49.29	30.45	0.06
3,000.00	2.22	216.65	2,997.78	-25.55	-51.66	33.86	0.09
3,100.00	2.27	218.83	3,097.70	-28.65	-54.06	37.32	0.10
3,200.00	1.25	227.53	3,197.65	-30.93	-56.11	39.91	1.05
3,300.00	1.25	228.83	3,297.63	-32.38	-57.73	41.62	0.03
3,400.00	1.30	229.07	3,397.60	-33.85	-59.41	43.34	0.05
3,500.00	1.28	224.51	3,497.58	-35.39	-61.05	45.13	0.10
3,600.00	1.28	219.62	3,597.55	-37.04	-62.55	47.02	0.11
3,700.00	1.75	221.28	3,697.52	-39.05	-64.27	49.28	0.47
3,800.00	1.88	221.52	3,797.47	-41.43	-66.36	51.98	0.13
3,900.00	1.94	221.32	3,897.41	-43.93	-68.57	54.81	0.06
4,000.00	1.98	221.92	3,997.35	-46.48	-70.84	57.71	0.04
4,100.00	2.14	217.77	4,097.29	-49.24	-73.13	60.82	0.22
4,200.00	2.17	218.97	4,197.22	-52.19	-75.47	64.12	0.05
4,300.00	2.19	213.62	4,297.15	-55.25	-77.72	67.52	0.20
4,400.00	2.19	212.61	4,397.07	-58.45	-79.81	71.02	0.04
4,500.00	2.24	211.43	4,497.00	-61.73	-81.85	74.60	0.07
4,600.00	2.30	210.09	4,596.92	-65.14	-83.88	78.29	0.08
4,700.00	2.02	194.43	4,696.85	-68.58	-85.32	81.93	0.65
4,800.00	2.06	191.17	4,796.79	-72.05	-86.11	85.48	0.12
4,900.00	2.13	185.87	4,896.72	-75.66	-86.65	89.13	0.21

Design Report for Cottonwood 28-33 Federal 1H - ST02 Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
5,000.00	2.10	185.56	4,996.65	-79.33	-87.02	92.81	0.03
5,100.00	2.19	186.69	5,096.58	-83.05	-87.42	96.55	0.10
5,200.00	2.22	188.32	5,196.51	-86.87	-87.92	100.39	0.07
5,300.00	2.12	187.08	5,296.44	-90.62	-88.43	104.18	0.11
5,400.00	2.37	176.93	5,396.36	-94.52	-88.55	108.04	0.47
5,500.00	2.63	174.68	5,496.26	-98.87	-88.22	112.27	0.28
5,600.00	2.94	174.26	5,596.15	-103.70	-87.75	116.96	0.31
5,700.00	1.72	178.06	5,696.06	-107.76	-87.45	120.91	1.23
5,800.00	1.80	183.38	5,796.01	-110.82	-87.49	123.94	0.18
5,900.00	2.34	199.75	5,895.95	-114.31	-88.27	127.51	0.80
6,000.00	3.48	202.99	5,995.82	-119.03	-90.15	132.47	1.15
6,100.00	3.21	221.11	6,095.65	-123.93	-93.17	137.81	1.09
6,241.00	9.65	269.57	6,235.76	-127.00	-107.61	143.26	5.60
6,273.00	10.70	272.67	6,267.26	-126.88	-113.26	144.09	3.70
6,305.00	12.35	272.16	6,298.62	-126.61	-119.64	144.90	5.17
6,336.00	12.77	271.20	6,328.87	-126.42	-126.38	145.84	1.51
6,369.00	12.59	270.61	6,361.07	-126.30	-133.63	146.94	0.67
6,400.00	14.17	268.70	6,391.23	-126.35	-140.80	148.19	5.29
6,432.00	17.19	267.66	6,422.03	-126.64	-149.44	149.92	9.48
6,464.00	21.34	268.01	6,452.23	-127.03	-159.99	152.08	12.97
6,498.00	26.17	268.14	6,483.34	-127.49	-173.67	154.83	14.21
6,527.00	29.81	265.91	6,508.95	-128.21	-187.26	157.82	13.06
6,558.00	32.42	263.91	6,535.49	-129.64	-203.21	161.91	9.05
6,591.00	32.86	258.27	6,563.28	-132.40	-220.78	167.58	9.31
6,622.00	33.68	252.38	6,589.21	-136.72	-237.21	174.59	10.75
6,654.00	34.89	246.46	6,615.65	-143.06	-254.06	183.67	11.08
6,686.00	36.05	241.56	6,641.72	-151.20	-270.74	194.50	9.59
6,718.00	36.21	237.66	6,667.57	-160.74	-287.00	206.64	7.20
6,749.00	36.26	232.73	6,692.58	-171.19	-302.04	219.46	9.40
6,782.00	36.48	228.67	6,719.15	-183.58	-317.17	234.22	7.33
6,813.00	37.33	225.68	6,743.95	-196.24	-330.82	248.98	6.41
6,847.00	38.85	221.44	6,770.71	-211.44	-345.26	266.39	8.90
6,879.00	40.35	217.04	6,795.37	-227.23	-358.14	284.13	9.94
6,908.00	42.41	211.89	6,817.13	-243.04	-368.97	301.52	13.72
6,940.00	44.85	207.70	6,840.30	-262.20	-379.92	322.25	11.82
6,971.00	46.78	203.64	6,861.91	-282.23	-389.53	343.61	11.27
7,003.00	49.76	200.95	6,883.21	-304.32	-398.58	366.91	11.23
7,034.00	53.04	201.00	6,902.55	-326.94	-407.25	390.66	10.58
7,066.00	54.33	200.42	6,921.50	-351.06	-416.36	415.97	4.29
7,098.00	56.44	200.67	6,939.67	-375.72	-425.61	441.83	6.63
Tie on to ST01							
7,143.00	54.40	202.42	6,965.21	-410.18	-439.21	478.08	5.55
First Sperry MWD in ST02@7143.00MD							
7,157.00	54.31	203.54	6,973.37	-420.65	-443.65	489.15	6.53
7,193.00	56.55	205.08	6,993.80	-447.66	-455.85	517.83	7.15
7,225.00	58.50	205.41	7,010.98	-472.08	-467.37	543.83	6.16
7,258.00	62.11	205.23	7,027.33	-497.99	-479.62	571.43	10.95
7,288.00	66.30	205.22	7,040.38	-522.42	-491.13	597.44	13.97
7,319.00	73.22	205.04	7,051.10	-548.74	-503.48	625.46	22.33
7,351.00	79.13	204.92	7,058.74	-576.89	-516.59	655.42	18.47
7,382.00	82.63	205.26	7,063.65	-604.60	-529.57	684.92	11.34

Design Report for Cottonwood 28-33 Federal 1H - ST02 Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
7,414.00	84.24	204.01	7,067.31	-633.50	-542.82	715.63	6.35
7,446.00	86.36	202.17	7,069.93	-662.83	-555.33	746.64	8.76
7,477.00	87.84	201.05	7,071.50	-691.62	-566.73	776.93	5.98
7,509.00	88.21	198.29	7,072.60	-721.73	-577.49	808.42	8.70
7,541.00	90.00	196.39	7,073.10	-752.27	-587.03	840.13	8.16
7,573.00	91.11	196.19	7,072.79	-782.98	-596.00	871.91	3.52
7,667.00	93.90	196.83	7,068.69	-873.01	-622.69	965.15	3.05
7,761.00	92.84	195.92	7,063.16	-963.04	-649.14	1,058.34	1.49
7,853.00	91.98	192.78	7,059.29	-1,052.08	-671.92	1,149.94	3.54
7,943.00	92.10	190.35	7,056.09	-1,140.19	-689.95	1,239.82	2.70
8,033.00	90.25	189.90	7,054.24	-1,228.77	-705.77	1,329.80	2.12
8,124.00	90.25	187.85	7,053.84	-1,318.67	-719.80	1,420.78	2.25
8,215.00	91.05	185.46	7,052.81	-1,409.04	-730.35	1,511.64	2.77
8,305.00	90.62	182.26	7,051.50	-1,498.82	-736.41	1,601.16	3.59
8,396.00	92.59	180.07	7,048.95	-1,589.75	-738.26	1,691.12	3.24
8,492.00	93.83	179.33	7,043.57	-1,685.60	-737.75	1,785.52	1.50
8,587.00	91.73	178.05	7,038.97	-1,780.46	-735.58	1,878.66	2.59
8,682.00	93.03	177.83	7,035.02	-1,875.31	-732.17	1,971.60	1.39
8,777.00	93.52	179.12	7,029.59	-1,970.12	-729.65	2,064.64	1.45
8,872.00	93.89	180.07	7,023.46	-2,064.92	-728.98	2,157.96	1.07
8,967.00	92.84	179.65	7,017.88	-2,159.75	-728.75	2,251.43	1.19
9,062.00	95.25	180.09	7,011.18	-2,254.51	-728.53	2,344.81	2.58
9,157.00	94.14	180.45	7,003.40	-2,349.19	-728.98	2,438.22	1.23
9,253.00	92.04	180.42	6,998.23	-2,445.04	-729.70	2,532.83	2.19
9,348.00	90.68	179.94	6,995.97	-2,540.01	-730.00	2,626.50	1.52
9,444.00	92.96	180.54	6,992.92	-2,635.95	-730.40	2,721.15	2.46
9,539.00	93.77	179.93	6,987.35	-2,730.79	-730.79	2,814.71	1.07
9,634.00	94.70	179.07	6,980.33	-2,825.52	-729.97	2,907.96	1.33
9,729.00	91.85	177.13	6,974.91	-2,920.30	-726.82	3,000.87	3.63
9,824.00	93.22	176.96	6,970.70	-3,015.08	-721.93	3,093.48	1.45
9,919.00	92.16	177.19	6,966.25	-3,109.85	-717.09	3,186.09	1.14
10,015.00	91.30	177.96	6,963.35	-3,205.72	-713.03	3,279.92	1.20
10,110.00	92.41	177.82	6,960.27	-3,300.60	-709.53	3,372.87	1.18
10,205.00	95.07	178.29	6,954.08	-3,395.34	-706.31	3,465.72	2.84
10,300.00	92.04	178.68	6,948.19	-3,490.11	-703.81	3,558.73	3.22
10,396.00	90.74	178.94	6,945.86	-3,586.06	-701.81	3,652.98	1.38
10,491.00	91.91	179.70	6,943.66	-3,681.02	-700.69	3,746.41	1.47
10,516.00	92.22	179.81	6,942.76	-3,706.01	-700.58	3,771.02	1.32
10,610.00	92.22	180.09	6,939.12	-3,799.94	-700.50	3,863.60	0.30
10,706.00	91.67	179.73	6,935.86	-3,895.88	-700.35	3,956.16	0.68
10,800.00	91.05	178.43	6,933.63	-3,989.84	-698.84	4,050.53	1.53
10,896.00	90.86	177.80	6,932.03	-4,085.77	-695.68	4,144.58	0.69
10,991.00	91.36	177.73	6,930.19	-4,180.68	-691.98	4,237.52	0.53
11,086.00	92.41	176.74	6,927.06	-4,275.52	-687.40	4,330.24	1.52
11,181.00	93.71	176.19	6,921.99	-4,370.20	-681.55	4,422.60	1.49
11,276.00	93.83	175.72	6,915.75	-4,464.76	-674.86	4,514.69	0.51
11,370.00	92.90	175.65	6,910.23	-4,558.33	-667.80	4,605.75	0.99
11,465.00	93.46	177.29	6,904.96	-4,653.00	-661.96	4,698.09	1.82
11,559.00	93.40	177.91	6,899.33	-4,746.75	-658.03	4,789.85	0.66
11,654.00	93.03	177.52	6,894.01	-4,841.52	-654.25	4,882.65	0.57
11,749.00	93.15	178.43	6,888.89	-4,936.32	-650.90	4,975.54	0.96

Design Report for Cottonwood 28-33 Federal 1H - ST02 Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
11,844.00	94.15	178.38	6,882.84	-5,031.09	-648.26	5,068.52	1.05
11,939.00	94.02	177.73	6,876.07	-5,125.80	-645.04	5,161.34	0.70
12,033.00	91.98	176.77	6,871.15	-5,219.55	-640.54	5,253.02	2.40
12,127.00	91.54	176.89	6,868.26	-5,313.37	-635.34	5,344.62	0.49
12,222.00	91.42	177.26	6,865.81	-5,408.21	-630.50	5,437.31	0.41
12,316.00	91.48	177.23	6,863.43	-5,502.07	-625.98	5,529.08	0.07
12,411.00	91.55	177.63	6,860.92	-5,596.94	-621.72	5,621.89	0.43
12,505.00	91.79	177.87	6,858.18	-5,690.83	-618.03	5,713.83	0.36
12,598.00	91.36	177.73	6,855.62	-5,783.73	-614.46	5,804.81	0.49
12,692.00	92.47	177.98	6,852.48	-5,877.61	-610.95	5,896.76	1.21
12,786.00	92.41	177.82	6,848.48	-5,971.46	-607.51	5,988.71	0.18
12,881.00	91.98	177.60	6,844.84	-6,066.31	-603.71	6,081.58	0.51
12,976.00	90.25	177.50	6,842.99	-6,161.20	-599.65	6,174.44	1.82
13,071.00	90.00	177.50	6,842.79	-6,256.11	-595.51	6,267.31	0.26
13,166.00	93.96	177.61	6,839.51	-6,350.95	-591.46	6,360.12	4.17
13,261.00	93.03	176.33	6,833.71	-6,445.64	-588.45	6,452.62	1.66
13,357.00	92.04	175.53	6,829.47	-6,541.30	-579.64	6,545.79	1.33
13,452.00	92.72	176.09	6,825.52	-6,635.96	-572.70	6,637.94	0.93
13,548.00	92.72	175.97	6,820.97	-6,731.63	-566.07	6,731.13	0.12
13,643.00	91.73	177.07	6,817.28	-6,826.38	-560.30	6,823.57	1.56
13,738.00	90.74	176.92	6,815.23	-6,921.22	-555.32	6,916.24	1.05
13,759.00	90.36	176.78	6,815.03	-6,942.19	-554.17	6,936.71	1.94
Cross 330' FSL @ 13759.00'MD							
13,826.00	89.14	176.33	6,815.32	-7,009.07	-550.14	7,001.97	1.94
Last Sperry MWD in ST02@13826.00'MD							
13,881.00	89.14	176.33	6,816.15	-7,063.95	-546.62	7,055.48	0.00
Projection to Bit @ 13881MD/6816TVD							

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,098.00	6,939.67	-375.72	-425.61	Tie on to ST01
7,143.00	6,965.21	-410.18	-439.21	First Sperry MWD in ST02@7143.00MD
13,759.00	6,815.03	-6,942.19	-554.17	Cross 330' FSL @ 13759.00'MD
13,826.00	6,815.32	-7,009.07	-550.14	Last Sperry MWD in ST02@13826.00'MD
13,881.00	6,816.15	-7,063.95	-546.62	Projection to Bit @ 13881MD/6816TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	189.66	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
100.00	6,100.00	Gyro (Pilot Hole)	NS-Gyro-MS
6,241.00	7,098.00	MWD (ST01)	MWD+SC
7,143.00	13,826.00	MWD (ST02)	MWD+SC
13,881.00	13,881.00	Projection to bit	Blind (OWSG)

Design Report for Cottonwood 28-33 Federal 1H - ST02 Surveys

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,590.00	9 5/8"		9-5/8	13-1/2

Wellbore Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL (CottonWood 28-)	0.00	0.00	6,816.64	-6,942.00	-573.50	364,105.60	550,372.70	32° 0' 3.611 N	104° 18' 15.070 W
- actual wellpath misses target center by 19.37usft at 13757.73usft MD (6815.04 TVD, -6940.92 N, -554.24 E)									
- Point									

Directional Difficulty Index

Average Dogleg over Survey:	1.82 °/100usft	Maximum Dogleg over Survey:	22.33 °/100usft at 7,319.00 usft
Net Tortousity applicable to Plans:	0.17 °/100usft	Directional Difficulty Index:	6.565

Audit Info

HALLIBURTON**North Reference Sheet for Cottonwood 28-33 Federal - Cottonwood 28-33 Federal
1H - ST02**

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

Vertical Depths are relative to Plat @ 3423.00usft (GL3401'+22ft=3423ft(NaborsM55)). Northing and Easting are relative to Cottonwood 28-33 Federal 1H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is 104° 20' 0.000 W°, Longitude Origin 0° 0' 0.000 E°, Latitude Origin: 0° 0' 0.000 N°

False Easting: 541,337.50usft, False Northing: 0.00usft, Scale Reduction: 0.99990920

Grid Coordinates of Well: 371,047.60 usft N, 550,946.20 usft E

Geographical Coordinates of Well: 32° 01' 12.31" N, 104° 18' 08.39" W

Grid Convergence at Surface is: 0.0164°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,881.00usft the Bottom Hole Displacement is 7,085.07usft in the Direction of 184.42° (Grid).

Magnetic Convergence at surface is: -7.3400° (14 June 2017, , BGGM2017)

