Results of Directional Survey

API number:	30-025-41456			
OGRID:		Operator:	ENDURANCE RESOURCES LLC	
		Property:	TELECASTER 30 FEDERAL	# 4H

surface	ULSTR:	A	30	T	23S	R	34E
				330	FNL	660	FEL

BH Loc	ULSTR:	P	30	T	23S	R	34E
14960	MD	10577.0	TVD	319	FSL	661	FEL
				4961	FNL		

Top Perf/OH	ULSTR:	A	30	T	23S	R	34E
11050	MD	10566.4	TVD	1053	FNL	664	FEL

Bot Perf/OH	ULSTR:	P	30	T	23S	R	34E
14800	MD	10581.0	TVD	479	FSL	659	FEL
				4801	FNL		

	MD	N/S	E/W	VD
	11038	-711.35	-4.30	10566.23
TOP PERFS/OH	**11050**	-723.35	-4.13	10566.44
	11133	-806.32	-2.95	10567.93
	14744	-4415.51	0.64	10582.27
BOT PERFS/OH	**14800**	-4471.49	0.65	10581.01
	14839	-4510.48	0.66	10580.13

NEXT TO LAST	14904	-4575.46	0.00	10578.64
LAST READING	14960	-4631.43	-1.03	10576.98
TD	**14960**	-4631.43	-1.03	10576.98

Surface Location	330	FN	660	FE
Projected BHL	4961	FN	661	FE
Location of				
Top Perfs/OH	1053	FN	664	FE
Bottom Perfs/OH	4801	FN	659	FE

SUMMARY of Subsurface Locations

Surface Location	A-30-23S-34E	330	FN	660	FE	Vert. Depth
Top Perfs/OH	A-30-23S-34E	1053	FN	664	FE	10566.44
Bottom Perfs/OH	P-30-23S-34E	4801	FN	659	FE	10581.01
Projected TD	P-30-23S-34E	4961	FN	661	FE	10576.98

MAR 31 2014

HALLIBURTON

3950 Interwood South Parkway • Houston, TX 77032

PHONE 281.986.4400 • FAX 281.986.4499

State of New Mexico, Lea County

I, Kenneth Marshall, certify that I am employed by Halliburton Energy Services, Inc. (AKA Sperry Drilling) and that on the dates of November 13, 2013 through November 27, 2013 I did conduct or supervise the taking of a MWD Directional surveys for the well Telecaster 30 Federal 4H ST00 from 9990' MD to 10594' 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 this survey was conducted at the request of Endurance Resources Inc. for the Telecaster 30 Federal 4H ST00 well, API No. 30-025-41456-0000 in Lea County, New Mexico. I have reviewed this report and find that it conforms to the principles and procedures as set forth by Halliburton Energy Services, Inc. (AKA Sperry Drilling).

Kenneth Marshall
MWD Field Engineer

Endurance Resources LLC
Telecaster 30 Federal 4H ST00
Lea County, NM
Patriot 4
API# 30-025-41456-0000

November 13, 2013 – November 27, 2013

HD-MJ-0900891995

Sperry Drilling
MWD Survey Report

Submitted by Kenneth Marshall
3950 Interwood South Parkway
Houston, TX 77032
Ph: 281.986.4400

HALLIBURTON

Drilling and Formation Evaluation

Created On : Dec 17 2013

Survey Report

Endurance Resources

Rig	:	Patriot Drilling Rig 4
Well Name	:	Telecaster 30 Fed 4H ST00
Field Name	:	Bell Lake (Bone Springs)
Country	:	USA
Job Number	:	HD-XX-0900891995
Job Start Date	:	13-Nov-13
API Number	:	30-025-41456-0000

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DIRECTIONAL SURVEY DATA

Tie-in

0.00	0.00	0.00	0.00	0.00 N	0.00 E

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100')
73.48	0.85	293.78	73.48	0.22 N	0.50 W	-0.22	1.16
168.36	0.51	318.72	168.35	0.82 N	1.42 W	-0.83	0.47
263.24	0.52	325.68	263.23	1.49 N	1.94 W	-1.51	0.07
358.12	0.35	326.98	358.10	2.09 N	2.34 W	-2.11	0.18
453.00	0.87	6.38	452.98	3.05 N	2.42 W	-3.07	0.67
547.88	0.64	7.27	547.85	4.29 N	2.27 W	-4.31	0.24
642.76	1.03	12.86	642.72	5.65 N	2.02 W	-5.67	0.42
737.64	1.17	13.33	737.58	7.42 N	1.60 W	-7.44	0.15
832.52	0.95	18.64	832.45	9.11 N	1.13 W	-9.12	0.25
927.40	1.17	49.83	927.31	10.48 N	0.14 W	-10.48	0.64
1022.28	1.16	64.74	1,022.17	11.52 N	1.47 E	-11.50	0.32
1117.16	1.03	70.42	1,117.03	12.21 N	3.14 E	-12.18	0.18
1212.04	1.35	85.59	1,211.89	12.58 N	5.06 E	-12.54	0.47
1306.92	1.10	70.13	1,306.75	12.98 N	7.03 E	-12.91	0.43
1401.80	1.27	70.79	1,401.61	13.63 N	8.88 E	-13.55	0.18
1496.68	1.04	69.44	1,496.47	14.28 N	10.68 E	-14.19	0.24
1591.56	1.50	57.70	1,591.33	15.25 N	12.54 E	-15.13	0.55
1686.44	1.13	53.98	1,686.18	16.46 N	14.34 E	-16.33	0.40
1781.32	1.39	50.01	1,781.04	17.75 N	15.98 E	-17.61	0.29
1876.20	1.17	67.21	1,875.90	18.87 N	17.76 E	-18.71	0.46
1971.08	1.23	83.54	1,970.76	19.36 N	19.66 E	-19.18	0.36
2065.96	1.08	101.52	2,065.62	19.29 N	21.55 E	-19.10	0.41
2160.84	0.88	91.64	2,160.48	19.09 N	23.15 E	-18.88	0.28
2255.72	0.84	59.87	2,255.35	19.42 N	24.48 E	-19.20	0.50
2350.60	0.73	50.49	2,350.23	20.16 N	25.55 E	-19.92	0.18
2445.48	0.87	343.76	2,445.10	21.23 N	25.82 E	-21.00	0.94
2540.36	0.37	343.36	2,539.97	22.22 N	25.53 E	-21.98	0.53
2635.24	0.26	334.28	2,634.85	22.70 N	25.35 E	-22.47	0.13
2730.12	0.13	329.10	2,729.73	22.99 N	25.20 E	-22.76	0.14
2825.00	0.81	350.59	2,824.61	23.74 N	25.03 E	-23.52	0.73
2919.88	1.71	5.21	2,919.46	25.82 N	25.05 E	-25.59	1.00
3014.76	1.03	24.16	3,014.32	28.00 N	25.53 E	-27.77	0.85
3109.64	0.76	57.55	3,109.18	29.12 N	26.41 E	-28.88	0.61
3204.52	1.72	68.88	3,204.04	29.97 N	28.27 E	-29.71	1.04
3299.40	1.72	61.48	3,298.88	31.16 N	30.85 E	-30.88	0.23
3394.28	1.47	52.68	3,393.72	32.58 N	33.07 E	-32.28	0.37
3489.16	1.80	52.63	3,488.56	34.22 N	35.22 E	-33.90	0.35
3584.04	1.51	50.90	3,583.40	35.92 N	37.37 E	-35.58	0.31
3678.92	1.38	54.97	3,678.25	37.36 N	39.28 E	-37.00	0.17
3773.80	1.22	63.63	3,773.11	38.46 N	41.12 E	-38.09	0.27
3868.68	0.83	94.99	3,867.97	38.85 N	42.71 E	-38.46	0.71

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100')
3963.56	0.87	101.76	3,962.84	38.65 N	44.10 E	-38.25	0.11
4058.44	0.71	155.16	4,057.72	37.97 N	45.05 E	-37.56	0.76
4153.32	1.19	155.74	4,152.58	36.54 N	45.70 E	-36.12	0.51
4248.20	1.25	200.27	4,247.44	34.67 N	45.75 E	-34.25	0.98
4343.08	1.51	233.23	4,342.30	32.95 N	44.39 E	-32.54	0.87
4437.96	1.60	253.50	4,437.14	31.82 N	42.12 E	-31.44	0.58
4532.84	2.30	263.08	4,531.97	31.22 N	38.96 E	-30.86	0.81
4627.72	1.91	283.38	4,626.79	31.35 N	35.53 E	-31.03	0.88
4722.60	1.45	309.31	4,721.63	32.48 N	33.06 E	-32.18	0.92
4817.48	1.41	346.81	4,816.48	34.38 N	31.87 E	-34.09	0.97
4912.36	0.47	13.42	4,911.34	35.89 N	31.69 E	-35.60	1.07
5007.24	0.35	69.34	5,006.22	36.37 N	32.05 E	-36.08	0.42
5102.12	0.62	84.07	5,101.10	36.53 N	32.83 E	-36.23	0.31
5197.00	0.65	95.70	5,195.97	36.53 N	33.88 E	-36.22	0.14
5291.88	0.38	111.10	5,290.85	36.36 N	34.71 E	-36.04	0.32
5386.76	0.88	124.55	5,385.72	35.83 N	35.60 E	-35.51	0.55
5481.64	0.63	133.79	5,480.59	35.06 N	36.58 E	-34.73	0.29
5576.52	0.66	164.35	5,575.47	34.17 N	37.10 E	-33.83	0.36
5671.40	0.01	178.81	5,670.35	33.64 N	37.25 E	-33.30	0.69
5766.28	0.26	264.15	5,765.23	33.61 N	37.04 E	-33.27	0.27
5861.16	0.29	288.15	5,860.11	33.66 N	36.59 E	-33.33	0.12
5956.04	0.72	327.45	5,954.98	34.24 N	36.04 E	-33.91	0.56
6050.92	0.53	336.00	6,049.86	35.14 N	35.55 E	-34.82	0.22
6145.80	0.23	11.29	6,144.73	35.73 N	35.40 E	-35.41	0.39
6240.68	0.09	13.21	6,239.61	35.99 N	35.46 E	-35.67	0.15
6335.56	0.31	26.71	6,334.49	36.29 N	35.59 E	-35.97	0.24
6430.44	0.39	307.07	6,429.37	36.71 N	35.45 E	-36.39	0.48
6525.32	0.36	299.51	6,524.25	37.06 N	34.93 E	-36.74	0.06
6620.20	0.60	290.12	6,619.13	37.37 N	34.21 E	-37.06	0.27
6715.08	0.13	294.87	6,714.00	37.59 N	33.64 E	-37.28	0.50
6809.96	0.30	301.00	6,808.88	37.76 N	33.33 E	-37.46	0.18
6904.84	0.32	285.99	6,903.76	37.96 N	32.86 E	-37.66	0.09
6999.72	0.54	243.04	6,998.64	37.83 N	32.21 E	-37.54	0.40
7094.60	0.45	236.19	7,093.52	37.42 N	31.50 E	-37.14	0.11
7189.48	0.33	203.91	7,188.39	36.97 N	31.08 E	-36.68	0.26
7284.36	0.53	211.88	7,283.27	36.34 N	30.74 E	-36.06	0.22
7379.24	0.93	267.39	7,378.14	35.94 N	29.74 E	-35.67	0.81
7474.12	0.35	292.83	7,473.02	36.01 N	28.70 E	-35.75	0.67
7569.00	0.77	308.52	7,567.89	36.52 N	27.94 E	-36.27	0.47
7663.88	0.87	299.60	7,662.76	37.28 N	26.81 E	-37.03	0.17
7758.76	1.36	289.24	7,757.63	38.00 N	25.12 E	-37.77	0.56
7853.64	1.65	281.95	7,852.47	38.66 N	22.72 E	-38.45	0.37
7948.52	1.19	269.18	7,947.32	38.93 N	20.40 E	-38.74	0.59
8043.40	1.12	238.99	8,042.19	38.43 N	18.62 E	-38.26	0.64
8138.28	1.71	209.61	8,137.04	36.73 N	17.13 E	-36.57	0.97

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100')
8233.16	1.38	176.69	8,231.88	34.35 N	16.49 E	-34.20	0.98
8328.04	1.41	149.17	8,326.74	32.21 N	17.16 E	-32.05	0.70
8422.92	1.41	135.95	8,421.59	30.37 N	18.57 E	-30.20	0.34
8517.80	1.17	133.00	8,516.44	28.87 N	20.09 E	-28.69	0.26
8612.68	0.87	146.48	8,611.31	27.61 N	21.19 E	-27.42	0.40
8707.56	1.85	151.36	8,706.16	25.66 N	22.33 E	-25.46	1.04
8802.44	1.75	167.47	8,801.00	22.91 N	23.37 E	-22.69	0.54
8897.32	1.57	198.91	8,895.84	20.26 N	23.27 E	-20.05	0.97
8992.20	1.92	226.20	8,990.68	17.93 N	21.70 E	-17.73	0.94
9087.08	2.48	262.93	9,085.49	16.58 N	18.51 E	-16.41	1.56
9181.96	3.12	272.45	9,180.26	16.44 N	13.90 E	-16.31	0.83
9276.84	2.99	288.00	9,275.00	17.31 N	8.96 E	-17.23	0.88
9371.72	3.29	298.83	9,369.74	19.39 N	4.23 E	-19.35	0.70
9466.60	3.00	283.82	9,464.48	21.30 N	0.57 W	-21.30	0.92
9561.48	3.34	271.18	9,559.22	21.95 N	5.75 W	-22.00	0.82
9656.36	2.83	260.63	9,653.96	21.62 N	10.82 W	-21.72	0.80
9751.24	2.51	243.43	9,748.74	20.31 N	14.99 W	-20.45	0.90
9846.12	2.24	224.23	9,843.54	18.05 N	18.14 W	-18.22	0.88
9941.00	2.30	221.96	9,938.34	15.31 N	20.71 W	-15.50	0.11
9990.00	2.88	212.48	9,987.29	13.54 N	22.03 W	-13.74	1.47
10022.00	5.81	180.79	10,019.20	11.24 N	22.48 W	-11.44	11.51
10053.00	9.59	174.74	10,049.92	7.10 N	22.26 W	-7.30	12.45
10085.00	12.17	176.38	10,081.34	1.08 N	21.81 W	-1.27	8.12
10117.00	14.15	166.49	10,112.50	6.09 S	20.68 W	5.91	9.35
10148.00	16.61	163.37	10,142.39	14.03 S	18.53 W	13.86	8.37
10180.00	18.02	161.35	10,172.94	23.10 S	15.63 W	22.95	4.79
10212.00	20.23	158.70	10,203.17	32.94 S	12.04 W	32.83	7.42
10244.00	22.83	156.72	10,232.94	43.80 S	7.58 W	43.73	8.44
10276.00	25.09	154.88	10,262.18	55.65 S	2.24 W	55.63	7.44
10308.00	27.19	154.66	10,290.90	68.40 S	3.77 E	68.43	6.57
10339.00	30.05	153.18	10,318.11	81.73 S	10.30 E	81.82	9.50
10371.00	32.67	153.35	10,345.43	96.61 S	17.79 E	96.76	8.19
10403.00	35.39	153.95	10,371.95	112.65 S	25.74 E	112.88	8.56
10434.00	36.96	154.64	10,396.97	129.14 S	33.67 E	129.44	5.23
10466.00	39.06	158.83	10,422.19	147.24 S	41.43 E	147.61	10.39
10499.00	42.11	161.01	10,447.25	167.40 S	48.79 E	167.84	10.19
10530.00	43.06	161.32	10,470.08	187.26 S	55.56 E	187.75	3.14
10562.00	47.28	162.75	10,492.63	208.84 S	62.55 E	209.40	13.56
10594.00	51.88	166.26	10,513.38	232.31 S	69.03 E	232.93	16.62

SURVEY FOOTER

SURVEYS ARE CALCULATED USING THE SHORT COLLAR METHOD.
WELL ASSUMED VERTICAL AT THE WELLHEAD.
SURVEYS FROM 73.48' MD TO 9846.12' MD PROVIDED BY VAUGHN ENERGY SERVICES.
SURVEYS FROM 9990' MD TO 10594' MD PROVIDED BY SPERRY DRILLING.
SPERRY DRILLING ENGINEERS: K. MARSHALL, I. IWEGBUE

DIRECTIONAL SURVEY DATA NOTES

- Calculation based on minimum curvature method.
- Survey coordinates relative to well system reference point.
- TVD values given relative to drilling measurement point.
- Vertical section relative to well head.
- Vertical section is computed along a direction of 179.48 degrees (Grid)
- A total correction of 6.93 deg from Magnetic north to Grid north has been applied
- Horizontal displacement is relative to the well head.
- Horizontal displacement (closure) at 10,594.00 feet is 242.35 feet along 163.45 degrees (Grid)

SPERRY DRILLING
3950 INTERWOOD S. PKWY
HOUSTON, TX. 77032

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FAX: 1.281.986.4499

HALLIBURTON

3950 Interwood South Parkway • Houston, TX 77032

PHONE 281.986.4400 • FAX 281.986.4499

State of New Mexico, Lea County

I, Kenneth Marshall, certify that I am employed by Halliburton Energy Services, Inc. (AKA Sperry Drilling) and that on the dates of November 13, 2013 through December 11, 2013 I did conduct or supervise the taking of a MWD Directional surveys for the well Telecaster 30 Federal 4H ST01 from 9994' MD to 14904' 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 this survey was conducted at the request of Endurance Resources Inc. for the Telecaster 30 Federal 4H ST01 well, API No. 30-025-41456-0100 in Lea County, New Mexico. I have reviewed this report and find that it conforms to the principles and procedures as set forth by Halliburton Energy Services, Inc. (AKA Sperry Drilling).

Kenneth Marshall
MWD Field Engineer

Endurance Resources LLC
Telecaster 30 Federal 4H ST01
Lea County, NM
Patriot 4
API# 30-025-41456-0100

November 13, 2013 – December 11, 2013

HD-MJ-0900891995

Sperry Drilling
MWD Survey Report

Submitted by Kenneth Marshall
3950 Interwood South Parkway
Houston, TX 77032
Ph: 281.986.4400

HALLIBURTON

Drilling and Formation Evaluation

Created On : Dec 13 2013

Survey Report

Endurance Resources

Rig	:	Patriot Drilling Rig 4
Well Name	:	Telecaster 30 Fed 4H ST01
Field Name	:	Bell Lake (Bone Springs)
Country	:	USA
Job Number	:	HD-XX-0900891995
Job Start Date	:	27-Nov-13
API Number	:	30-025-41456-0100

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DIRECTIONAL SURVEY DATA

Tie-in

0.00	0.00	0.00	0.00	0.00 N	0.00 E

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dog Leg (°/100)
73.48	0.85	293.78	73.48	0.22 N	0.50 W	-0.22	1.16
168.36	0.51	318.72	168.35	0.82 N	1.42 W	-0.83	0.47
263.24	0.52	325.68	263.23	1.49 N	1.94 W	-1.51	0.07
358.12	0.35	326.98	358.10	2.09 N	2.34 W	-2.11	0.18
453.00	0.87	6.38	452.98	3.05 N	2.42 W	-3.07	0.67
547.88	0.64	7.27	547.85	4.29 N	2.27 W	-4.31	0.24
642.76	1.03	12.86	642.72	5.65 N	2.02 W	-5.67	0.42
737.64	1.17	13.33	737.58	7.42 N	1.60 W	-7.44	0.15
832.52	0.95	18.64	832.45	9.11 N	1.13 W	-9.12	0.25
927.40	1.17	49.83	927.31	10.48 N	0.14 W	-10.48	0.64
1022.28	1.16	64.74	1,022.17	11.52 N	1.47 E	-11.50	0.32
1117.16	1.03	70.42	1,117.03	12.21 N	3.14 E	-12.18	0.18
1212.04	1.35	85.59	1,211.89	12.58 N	5.06 E	-12.54	0.47
1306.92	1.10	70.13	1,306.75	12.98 N	7.03 E	-12.91	0.43
1401.80	1.27	70.79	1,401.61	13.63 N	8.88 E	-13.55	0.18
1496.68	1.04	69.44	1,496.47	14.28 N	10.68 E	-14.19	0.24
1591.56	1.50	57.70	1,591.33	15.25 N	12.54 E	-15.13	0.55
1686.44	1.13	53.98	1,686.18	16.46 N	14.34 E	-16.33	0.40
1781.32	1.39	50.01	1,781.04	17.75 N	15.98 E	-17.61	0.29
1876.20	1.17	67.21	1,875.90	18.87 N	17.76 E	-18.71	0.46
1971.08	1.23	83.54	1,970.76	19.36 N	19.66 E	-19.18	0.36
2065.96	1.08	101.52	2,065.62	19.29 N	21.55 E	-19.10	0.41
2160.84	0.88	91.64	2,160.48	19.09 N	23.15 E	-18.88	0.28
2255.72	0.84	59.87	2,255.35	19.42 N	24.48 E	-19.20	0.50
2350.60	0.73	50.49	2,350.23	20.16 N	25.55 E	-19.92	0.18
2445.48	0.87	343.76	2,445.10	21.23 N	25.82 E	-21.00	0.94
2540.36	0.37	343.36	2,539.97	22.22 N	25.53 E	-21.98	0.53
2635.24	0.26	334.28	2,634.85	22.70 N	25.35 E	-22.47	0.13
2730.12	0.13	329.10	2,729.73	22.99 N	25.20 E	-22.76	0.14
2825.00	0.81	350.59	2,824.61	23.74 N	25.03 E	-23.52	0.73
2919.88	1.71	5.21	2,919.46	25.82 N	25.05 E	-25.59	1.00
3014.76	1.03	24.16	3,014.32	28.00 N	25.53 E	-27.77	0.85
3109.64	0.76	57.55	3,109.18	29.12 N	26.41 E	-28.88	0.61
3204.52	1.72	68.88	3,204.04	29.97 N	28.27 E	-29.71	1.04
3299.40	1.72	61.48	3,298.88	31.16 N	30.85 E	-30.88	0.23
3394.28	1.47	52.68	3,393.72	32.58 N	33.07 E	-32.28	0.37
3489.16	1.80	52.63	3,488.56	34.22 N	35.22 E	-33.90	0.35
3584.04	1.51	50.90	3,583.40	35.92 N	37.37 E	-35.58	0.31
3678.92	1.38	54.97	3,678.25	37.36 N	39.28 E	-37.00	0.17
3773.80	1.22	63.63	3,773.11	38.46 N	41.12 E	-38.09	0.27
3868.68	0.83	94.99	3,867.97	38.85 N	42.71 E	-38.46	0.71

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	DogLeg (°/100')
3963.56	0.87	101.76	3,962.84	38.65 N	44.10 E	-38.25	0.11
4058.44	0.71	155.16	4,057.72	37.97 N	45.05 E	-37.56	0.76
4153.32	1.19	155.74	4,152.58	36.54 N	45.70 E	-36.12	0.51
4248.20	1.25	200.27	4,247.44	34.67 N	45.75 E	-34.25	0.98
4343.08	1.51	233.23	4,342.30	32.95 N	44.39 E	-32.54	0.87
4437.96	1.60	253.50	4,437.14	31.82 N	42.12 E	-31.44	0.58
4532.84	2.30	263.08	4,531.97	31.22 N	38.96 E	-30.86	0.81
4627.72	1.91	283.38	4,626.79	31.35 N	35.53 E	-31.03	0.88
4722.60	1.45	309.31	4,721.63	32.48 N	33.06 E	-32.18	0.92
4817.48	1.41	346.81	4,816.48	34.38 N	31.87 E	-34.09	0.97
4912.36	0.47	13.42	4,911.34	35.89 N	31.69 E	-35.60	1.07
5007.24	0.35	69.34	5,006.22	36.37 N	32.05 E	-36.08	0.42
5102.12	0.62	84.07	5,101.10	36.53 N	32.83 E	-36.23	0.31
5197.00	0.65	95.70	5,195.97	36.53 N	33.88 E	-36.22	0.14
5291.88	0.38	111.10	5,290.85	36.36 N	34.71 E	-36.04	0.32
5386.76	0.88	124.55	5,385.72	35.83 N	35.60 E	-35.51	0.55
5481.64	0.63	133.79	5,480.59	35.06 N	36.58 E	-34.73	0.29
5576.52	0.66	164.35	5,575.47	34.17 N	37.10 E	-33.83	0.36
5671.40	0.01	178.81	5,670.35	33.64 N	37.25 E	-33.30	0.69
5766.28	0.26	264.15	5,765.23	33.61 N	37.04 E	-33.27	0.27
5861.16	0.29	288.15	5,860.11	33.66 N	36.59 E	-33.33	0.12
5956.04	0.72	327.45	5,954.98	34.24 N	36.04 E	-33.91	0.56
6050.92	0.53	336.00	6,049.86	35.14 N	35.55 E	-34.82	0.22
6145.80	0.23	11.29	6,144.73	35.73 N	35.40 E	-35.41	0.39
6240.68	0.09	13.21	6,239.61	35.99 N	35.46 E	-35.67	0.15
6335.56	0.31	26.71	6,334.49	36.29 N	35.59 E	-35.97	0.24
6430.44	0.39	307.07	6,429.37	36.71 N	35.45 E	-36.39	0.48
6525.32	0.36	299.51	6,524.25	37.06 N	34.93 E	-36.74	0.06
6620.20	0.60	290.12	6,619.13	37.37 N	34.21 E	-37.06	0.27
6715.08	0.13	294.87	6,714.00	37.59 N	33.64 E	-37.28	0.50
6809.96	0.30	301.00	6,808.88	37.76 N	33.33 E	-37.46	0.18
6904.84	0.32	285.99	6,903.76	37.96 N	32.86 E	-37.66	0.09
6999.72	0.54	243.04	6,998.64	37.83 N	32.21 E	-37.54	0.40
7094.60	0.45	236.19	7,093.52	37.42 N	31.50 E	-37.14	0.11
7189.48	0.33	203.91	7,188.39	36.97 N	31.08 E	-36.68	0.26
7284.36	0.53	211.88	7,283.27	36.34 N	30.74 E	-36.06	0.22
7379.24	0.93	267.39	7,378.14	35.94 N	29.74 E	-35.67	0.81
7474.12	0.35	292.83	7,473.02	36.01 N	28.70 E	-35.75	0.67
7569.00	0.77	308.52	7,567.89	36.52 N	27.94 E	-36.27	0.47
7663.88	0.87	299.60	7,662.76	37.28 N	26.81 E	-37.03	0.17
7758.76	1.36	289.24	7,757.63	38.00 N	25.12 E	-37.77	0.56
7853.64	1.65	281.95	7,852.47	38.66 N	22.72 E	-38.45	0.37
7948.52	1.19	269.18	7,947.32	38.93 N	20.40 E	-38.74	0.59
8043.40	1.12	238.99	8,042.19	38.43 N	18.62 E	-38.26	0.64
8138.28	1.71	209.61	8,137.04	36.73 N	17.13 E	-36.57	0.97

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100)
8233.16	1.38	176.69	8,231.88	34.35 N	16.49 E	-34.20	0.98
8328.04	1.41	149.17	8,326.74	32.21 N	17.16 E	-32.05	0.70
8422.92	1.41	135.95	8,421.59	30.37 N	18.57 E	-30.20	0.34
8517.80	1.17	133.00	8,516.44	28.87 N	20.09 E	-28.69	0.26
8612.68	0.87	146.48	8,611.31	27.61 N	21.19 E	-27.42	0.40
8707.56	1.85	151.36	8,706.16	25.66 N	22.33 E	-25.46	1.04
8802.44	1.75	167.47	8,801.00	22.91 N	23.37 E	-22.69	0.54
8897.32	1.57	198.91	8,895.84	20.26 N	23.27 E	-20.05	0.97
8992.20	1.92	226.20	8,990.68	17.93 N	21.70 E	-17.73	0.94
9087.08	2.48	262.93	9,085.49	16.58 N	18.51 E	-16.41	1.56
9181.96	3.12	272.45	9,180.26	16.44 N	13.90 E	-16.31	0.83
9276.84	2.99	288.00	9,275.00	17.31 N	8.96 E	-17.23	0.88
9371.72	3.29	298.83	9,369.74	19.39 N	4.23 E	-19.35	0.70
9466.60	3.00	283.82	9,464.48	21.30 N	0.57 W	-21.30	0.92
9561.48	3.34	271.18	9,559.22	21.95 N	5.75 W	-22.00	0.82
9656.36	2.83	260.63	9,653.96	21.62 N	10.82 W	-21.72	0.80
9751.24	2.51	243.43	9,748.74	20.31 N	14.99 W	-20.45	0.90
9846.12	2.24	224.23	9,843.54	18.05 N	18.14 W	-18.22	0.88
9941.00	2.30	221.96	9,938.34	15.31 N	20.71 W	-15.50	0.11
9994.00	2.84	208.28	9,991.29	13.36 N	22.04 W	-13.56	1.53
10026.00	1.91	141.19	10,023.27	12.25 N	22.08 W	-12.45	8.55
10057.00	5.86	135.15	10,054.19	10.72 N	20.64 W	-10.91	12.80
10089.00	9.05	149.56	10,085.92	7.39 N	18.21 W	-7.56	11.48
10121.00	13.16	149.61	10,117.31	2.08 N	15.09 W	-2.21	12.83
10152.00	16.62	152.65	10,147.27	4.91 S	11.27 W	4.80	11.45
10184.00	19.15	158.22	10,177.72	13.85 S	7.21 W	13.78	9.54
10216.00	22.63	165.39	10,207.62	24.69 S	3.71 W	24.65	13.46
10247.00	25.66	169.89	10,235.90	37.07 S	1.03 W	37.06	11.43
10279.00	28.78	172.45	10,264.36	51.53 S	1.20 E	51.54	10.42
10310.00	32.76	175.46	10,290.99	67.29 S	2.84 E	67.32	13.77
10342.00	36.89	177.73	10,317.25	85.53 S	3.91 E	85.56	13.51
10373.00	40.32	179.36	10,341.48	104.86 S	4.39 E	104.90	11.57
10405.00	44.26	182.07	10,365.14	126.39 S	4.10 E	126.42	13.55
10435.00	47.74	181.82	10,385.98	147.95 S	3.37 E	147.97	11.61
10467.00	51.86	182.26	10,406.63	172.37 S	2.50 E	172.39	12.92
10498.00	56.10	182.16	10,424.86	197.42 S	1.53 E	197.42	13.68
10530.00	60.20	183.07	10,441.74	224.57 S	0.29 E	224.56	13.02
10561.00	63.37	182.09	10,456.40	251.85 S	0.94 W	251.83	10.60
10593.00	65.66	180.62	10,470.17	280.72 S	1.62 W	280.70	8.29
10625.00	67.48	181.19	10,482.89	310.08 S	2.08 W	310.05	5.93
10657.00	68.90	181.20	10,494.78	339.78 S	2.70 W	339.75	4.43
10689.00	70.73	180.48	10,505.82	369.81 S	3.14 W	369.77	6.09
10721.00	71.94	180.82	10,516.06	400.13 S	3.48 W	400.08	3.92
10752.00	72.91	180.47	10,525.42	429.68 S	3.81 W	429.63	3.32
10784.00	73.51	180.50	10,534.66	460.31 S	4.07 W	460.26	1.86

HALLIBURTON | Sperry Drilling

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dog Leg (°/100)
10816.00	75.83	180.03	10,543.12	491.17 S	4.22 W	491.11	7.41
10848.00	78.65	179.27	10,550.19	522.38 S	4.03 W	522.32	9.10
10879.00	81.27	180.18	10,555.59	552.90 S	3.88 W	552.84	8.93
10911.00	83.05	180.46	10,559.96	584.60 S	4.06 W	584.54	5.64
10942.00	85.25	179.91	10,563.12	615.44 S	4.16 W	615.37	7.28
10974.00	87.32	180.28	10,565.19	647.37 S	4.21 W	647.30	6.58
11006.00	88.98	179.84	10,566.23	679.35 S	4.24 W	679.28	5.39
11038.00	89.20	180.38	10,566.73	711.35 S	4.30 W	711.28	1.83
11133.00	89.35	177.98	10,567.93	806.32 S	2.95 W	806.26	2.53
11227.00	90.09	178.37	10,568.39	900.27 S	0.04 E	900.23	0.89
11322.00	88.77	177.94	10,569.33	995.22 S	3.10 E	995.20	1.47
11417.00	89.08	178.49	10,571.12	1,090.15 S	6.06 E	1090.16	0.66
11511.00	89.14	178.12	10,572.59	1,184.10 S	8.83 E	1184.13	0.40
11606.00	90.90	176.98	10,572.56	1,279.01 S	12.90 E	1279.07	2.21
11701.00	90.68	176.40	10,571.26	1,373.84 S	18.38 E	1373.95	0.65
11795.00	90.80	177.19	10,570.04	1,467.68 S	23.63 E	1467.84	0.85
11890.00	89.91	178.15	10,569.46	1,562.60 S	27.50 E	1562.79	1.38
11985.00	87.72	178.99	10,571.42	1,657.54 S	29.87 E	1657.75	2.46
12079.00	87.20	180.60	10,575.58	1,751.45 S	30.20 E	1751.65	1.80
12175.00	89.48	180.29	10,578.37	1,847.40 S	29.46 E	1847.59	2.39
12270.00	90.12	181.41	10,578.70	1,942.39 S	28.05 E	1942.56	1.36
12365.00	89.20	183.22	10,579.26	2,037.30 S	24.21 E	2037.44	2.14
12460.00	90.55	182.81	10,579.46	2,132.17 S	19.22 E	2132.25	1.49
12555.00	89.08	182.94	10,579.77	2,227.04 S	14.45 E	2227.08	1.56
12650.00	89.88	182.27	10,580.64	2,321.94 S	10.13 E	2321.94	1.10
12746.00	90.09	181.20	10,580.66	2,417.90 S	7.23 E	2417.86	1.14
12841.00	88.98	180.13	10,581.43	2,512.88 S	6.13 E	2512.84	1.62
12936.00	89.51	181.13	10,582.68	2,607.87 S	5.08 E	2607.81	1.19
13031.00	90.06	179.16	10,583.04	2,702.86 S	4.84 E	2702.79	2.16
13126.00	91.35	177.90	10,581.87	2,797.82 S	7.28 E	2797.77	1.90
13222.00	90.37	179.74	10,580.43	2,893.78 S	9.26 E	2893.75	2.18
13317.00	89.20	180.27	10,580.78	2,988.78 S	9.26 E	2988.74	1.35
13412.00	90.09	179.23	10,581.37	3,083.78 S	9.67 E	3083.74	1.44
13507.00	91.35	178.94	10,580.17	3,178.75 S	11.19 E	3178.72	1.36
13602.00	90.00	178.87	10,579.05	3,273.73 S	13.01 E	3273.71	1.42
13697.00	89.11	180.08	10,579.80	3,368.72 S	13.88 E	3368.71	1.58
13793.00	89.91	180.33	10,580.62	3,464.71 S	13.53 E	3464.69	0.88
13887.00	89.66	181.83	10,580.98	3,558.69 S	11.76 E	3558.65	1.61
13983.00	88.70	181.51	10,582.35	3,654.64 S	8.96 E	3654.57	1.05
14078.00	89.94	181.50	10,583.47	3,749.60 S	6.46 E	3749.50	1.30
14173.00	89.75	180.26	10,583.73	3,844.59 S	5.00 E	3844.47	1.33
14268.00	91.21	180.34	10,582.93	3,939.58 S	4.51 E	3939.46	1.53
14364.00	90.93	180.04	10,581.15	4,035.56 S	4.19 E	4035.43	0.43
14459.00	89.20	181.05	10,581.05	4,130.55 S	3.28 E	4130.41	2.11
14554.00	89.08	180.53	10,582.48	4,225.53 S	1.97 E	4225.38	0.57

HALLIBURTON | Sperry Drilling

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dog leg (°/100')
14649.00	89.75	180.59	10,583.45	4,320.52 S	1.04 E	4320.35	0.72
14744.00	91.66	179.88	10,582.27	4,415.51 S	0.64 E	4415.33	2.15
14839.00	90.92	180.10	10,580.13	4,510.48 S	0.66 E	4510.30	0.81
14904.00	91.70	181.06	10,578.64	4,575.46 S	0.00 E	4575.27	1.89
14960.00	91.70	181.06	10,576.98	4,631.43 S	1.03 W	4631.23	0.01

SURVEY FOOTER

SURVEYS CALCULATED USING THE SHORT COLLAR METHOD.
TIE ON SURVEY ASSUMED VERTICLE AT SURFACE.
SURVEYS FROM 73.48' MD TO 9941' MD PROVIDED BY VAUGHN ENERGY SERVICES.
SURVEYS FROM 9994' MD TO 14904' MD PROVIDED BY SPERRY DRILLING.
SURVEY AT 14904' MD HAS BEEN PROJECTED TO TD AT 14960' MD.
SPERRY DRILLING ENGINEERS: K. MARSHALL AND IKE IWEGBUE

DIRECTIONAL SURVEY DATA NOTES

- Calculation based on minimum curvature method.
- Survey coordinates relative to well system reference point.
- TVD values given relative to drilling measurement point.
- Vertical section relative to well head.
- Vertical section is computed along a direction of 179.48 degrees (Grid)
- A total correction of 6.93 deg from Magnetic north to Grid north has been applied
- Horizontal displacement is relative to the well head.
- Horizontal displacement (closure) at 14,960.00 feet is 4,631.43 feet along 180.01 degrees (Grid)

SPERRY DRILLING
3950 INTERWOOD S. PKWY
HOUSTON, TX. 77032

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