



HOBBS OCD

MAR 16 2015

Customer Name: Regeneration Energy
 Well Name: E Livingston 31 Fed #6
 API Number: 30-025-41926
 County / Parish: Lea County, NM

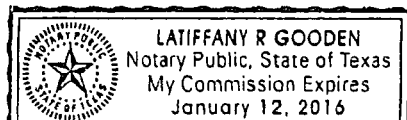
Vertical Section: 0.00

RECEIVED

M.W.D. Operator: Tyler Hill
 Directional Driller: Chuck Adams
 Total Magnetic Correction: 7.01
 Job #: NM-494

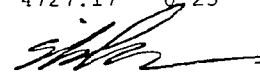
Tie In Survey(s) Provided By:

	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS
Tie - In										
0	9697.00	0.84	328.22	9696.40	-8.57	-8.57	3.21	9.15	159.47	0.36
1	9742.00	1.10	302.00	9741.39	-8.06	-8.06	2.67	8.49	161.67	1.13
2	9773.00	0.70	293.20	9772.39	-7.83	-7.83	2.24	8.14	164.01	1.36
3	9805.00	2.50	13.70	9804.38	-7.07	-7.07	2.23	7.42	162.51	7.76
4	9837.00	6.30	21.80	9836.28	-4.76	-4.76	3.05	5.66	147.40	12.00
5	9869.00	10.00	20.00	9867.95	-0.52	-0.52	4.65	4.68	96.40	11.59
6	9900.00	14.10	16.90	9898.26	5.62	5.62	6.67	8.72	49.86	13.38
7	9932.00	17.60	14.00	9929.04	14.05	14.05	8.97	16.67	32.57	11.21
8	9964.00	20.80	10.90	9959.26	24.33	24.33	11.22	26.79	24.76	10.49
9	9996.00	25.20	9.10	9988.71	36.64	36.64	13.37	39.00	20.05	13.92
10	10027.00	29.40	9.10	10016.25	50.67	50.67	15.62	53.03	17.13	13.55
11	10059.00	32.20	9.50	10043.73	66.84	66.84	18.27	69.29	15.29	8.77
12	10091.00	36.40	9.80	10070.16	84.62	84.62	21.29	87.25	14.13	13.14
13	10123.00	39.80	9.10	10095.34	104.09	104.09	24.53	106.94	13.26	10.71
14	10154.00	43.80	8.10	10118.44	124.52	124.52	27.61	127.54	12.50	13.08
15	10186.00	48.60	7.00	10140.59	147.41	147.41	30.64	150.56	11.74	15.20
16	10218.00	53.50	6.30	10160.70	172.12	172.12	33.51	175.35	11.02	15.41
17	10249.00	58.80	5.60	10177.96	197.72	197.72	36.18	201.00	10.37	17.20
18	10281.00	62.80	5.30	10193.57	225.52	225.52	38.83	228.84	9.77	12.53
19	10313.00	65.50	4.50	10207.52	254.21	254.21	41.29	257.54	9.22	8.73
20	10344.00	68.30	4.50	10219.68	282.63	282.63	43.52	285.96	8.75	9.03
21	10376.00	71.10	4.20	10230.78	312.55	312.55	45.80	315.89	8.34	8.79
22	10408.00	73.50	3.50	10240.51	342.97	342.97	47.84	346.29	7.94	7.78
23	10439.00	75.80	2.80	10248.71	372.82	372.82	49.48	376.09	7.56	7.73
24	10472.00	77.60	3.50	10256.31	404.88	404.88	51.25	408.11	7.21	5.83
25	10503.00	80.20	4.20	10262.27	435.23	435.23	53.29	438.48	6.98	8.67
26	10535.00	82.50	3.10	10267.09	466.80	466.80	55.31	470.06	6.76	7.95
27	10567.00	84.30	2.10	10270.76	498.55	498.55	56.75	501.77	6.49	6.42
28	10630.00	87.60	2.40	10275.21	561.34	561.34	59.21	564.45	6.02	5.26
29	10725.00	89.00	2.80	10278.03	656.19	656.19	63.52	659.26	5.53	1.53
30	10820.00	91.00	2.40	10278.03	751.09	751.09	67.83	754.15	5.16	2.15
31	10916.00	92.60	2.40	10275.02	846.96	846.96	71.85	850.00	4.85	1.67
32	11011.00	92.90	0.30	10270.46	941.82	941.82	74.09	944.73	4.50	2.23
33	11106.00	91.80	359.30	10266.56	1036.73	1036.73	73.75	1039.35	4.07	1.56
34	11201.00	87.60	358.90	10267.06	1131.70	1131.70	72.26	1134.00	3.65	4.44
35	11296.00	88.00	357.90	10270.71	1226.59	1226.59	69.61	1228.56	3.25	1.13
36	11391.00	89.40	357.50	10272.86	1321.49	1321.49	65.80	1323.12	2.85	1.53
37	11486.00	89.20	357.50	10274.02	1416.39	1416.39	61.66	1417.73	2.49	0.21
38	11581.00	89.60	357.50	10275.02	1511.29	1511.29	57.51	1512.39	2.18	0.42
39	11676.00	91.00	357.20	10274.52	1606.19	1606.19	53.12	1607.07	1.89	1.51
40	11772.00	90.30	358.20	10273.43	1702.10	1702.10	49.27	1702.82	1.66	1.27
41	11867.00	89.20	357.50	10273.85	1797.03	1797.03	45.70	1797.61	1.46	1.37
42	11962.00	91.30	357.50	10273.43	1891.94	1891.94	41.56	1892.39	1.26	2.21
43	12057.00	90.60	357.90	10271.86	1986.85	1986.85	37.75	1987.20	1.09	0.85



MAP 2 6 2015

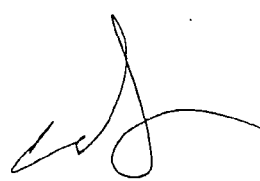
44	12152.00	89.60	359.60	10271.69	2081.82	2081.82	35.68	2082.12	0.98	2.08
45	12247.00	87.80	1.00	10273.85	2176.79	2176.79	36.17	2177.09	0.95	2.40
46	12342.00	88.90	1.40	10276.58	2271.72	2271.72	38.16	2272.04	0.96	1.23
47	12437.00	87.60	1.00	10279.48	2366.66	2366.66	40.15	2367.00	0.97	1.43
48	12532.00	88.70	0.30	10282.55	2461.60	2461.60	41.23	2461.94	0.96	1.37
49	12627.00	88.50	0.70	10284.87	2556.57	2556.57	42.06	2556.91	0.94	0.47
50	12722.00	90.80	0.70	10285.45	2651.55	2651.55	43.22	2651.90	0.93	2.42
51	12817.00	90.10	1.00	10284.70	2746.54	2746.54	44.63	2746.90	0.93	0.80
52	12912.00	89.00	0.00	10285.45	2841.53	2841.53	45.46	2841.89	0.92	1.56
53	13007.00	89.20	358.90	10286.94	2936.51	2936.51	44.54	2936.85	0.87	1.18
54	13102.00	89.60	357.90	10287.94	3031.47	3031.47	41.89	3031.76	0.79	1.13
55	13197.00	90.30	356.80	10288.02	3126.36	3126.36	37.50	3126.59	0.69	1.37
56	13293.00	91.10	356.50	10286.85	3222.19	3222.19	31.89	3222.35	0.57	0.89
57	13388.00	92.00	357.90	10284.29	3317.04	3317.04	27.25	3317.15	0.47	1.75
58	13483.00	90.60	357.90	10282.12	3411.95	3411.95	23.77	3412.03	0.40	1.47
59	13578.00	91.00	357.90	10280.80	3506.88	3506.88	20.29	3506.93	0.33	0.42
60	13673.00	90.60	358.90	10279.47	3601.83	3601.83	17.64	3601.87	0.28	1.13
61	13768.00	91.30	358.90	10277.89	3696.80	3696.80	15.81	3696.83	0.25	0.74
62	13863.00	90.10	0.00	10276.73	3791.78	3791.78	14.90	3791.81	0.23	1.71
63	13959.00	91.50	0.00	10275.39	3887.77	3887.77	14.90	3887.80	0.22	1.46
64	14054.00	90.30	0.00	10273.90	3982.76	3982.76	14.90	3982.79	0.21	1.26
65	14149.00	92.40	0.30	10271.66	4077.73	4077.73	15.15	4077.75	0.21	2.23
66	14244.00	93.40	359.60	10266.86	4172.60	4172.60	15.07	4172.63	0.21	1.28
67	14339.00	93.40	0.70	10261.22	4267.43	4267.43	15.32	4267.46	0.21	1.16
68	14434.00	94.10	1.00	10255.01	4362.22	4362.22	16.72	4362.25	0.22	0.80
69	14529.00	94.00	0.30	10248.30	4456.97	4456.97	17.80	4457.01	0.23	0.74
70	14624.00	93.60	0.70	10242.00	4551.76	4551.76	18.62	4551.80	0.23	0.59
71	14720.00	95.00	0.70	10234.81	4647.48	4647.48	19.79	4647.52	0.24	1.46
72	14749.00	95.50	0.30	10232.15	4676.36	4676.36	20.05	4676.40	0.25	2.20
PTB	14800.00	95.50	0.31	10227.26	4727.12	4727.12	20.32	4727.17	0.25	0.02



HOBBS OCD

MAR 16 2015

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Company: Regeneration Energy
Lease/Well: E. Livingston 31 Federal/6H
Location: S31 - T22/S - R32/E
Rig Name: Patriot 1
State/County: New Mexico/Lea
Latitude: 32.34, Longitude: -103.72
GRID North is 0.33 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB = 18.5 FT

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut
Minimum Curvature Method
Report Date/Time: 1/23/2015 / 15:24

VES Survey International
West Texas
(432) 563-5444
Surveyor: Cody Johnson
E Livingston 31 Federal 6H / API 30-025-41926

HOPPS OCD

MAR 16 2015

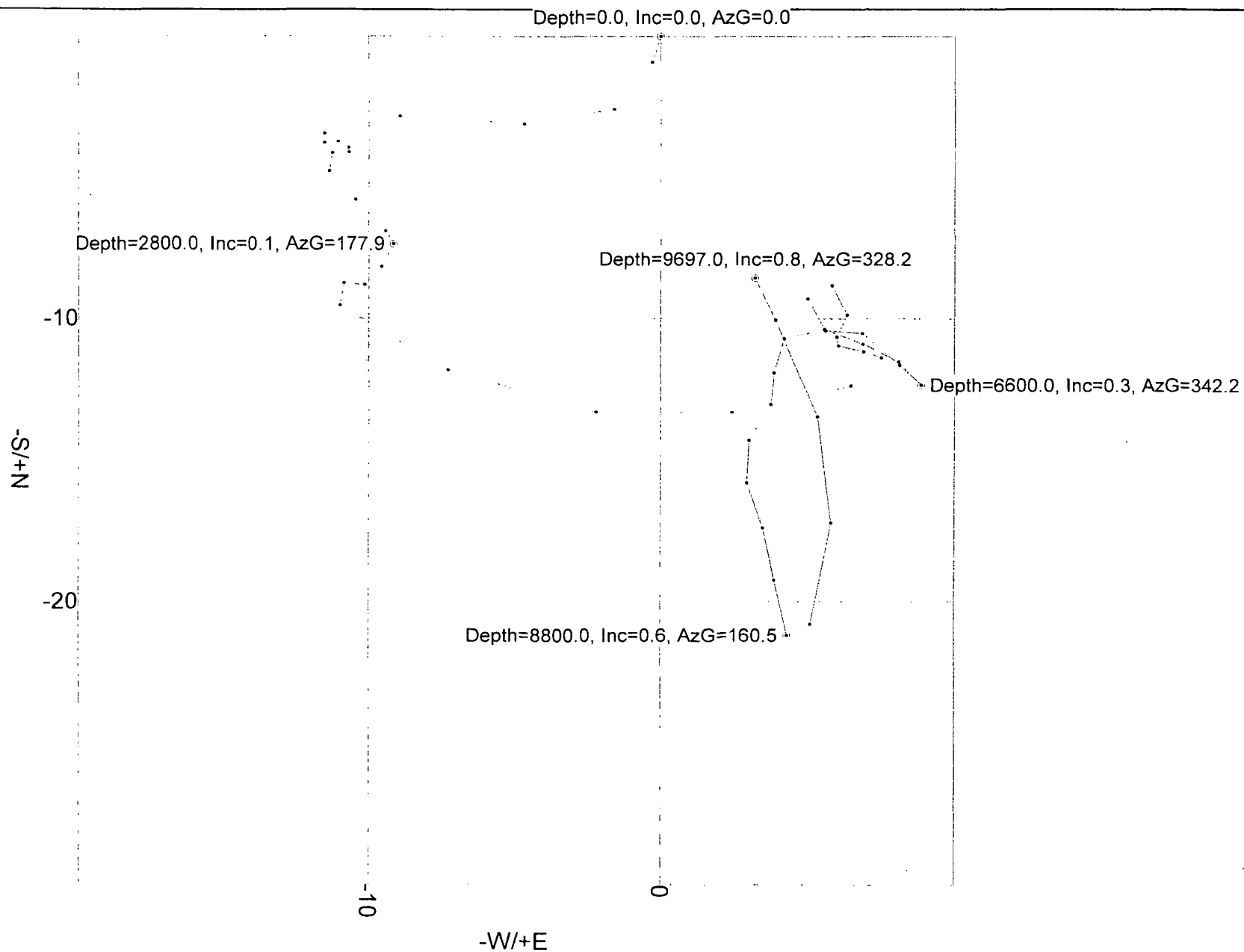
RECEIVED

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
200.00	0.55	197.76	200.00	-0.91	-0.29	-0.91	0.96	197.76	0.28
400.00	0.74	232.75	399.98	-2.61	-1.61	-2.61	3.06	211.67	0.21
600.00	1.19	277.43	599.96	-3.11	-4.69	-3.11	5.63	236.42	0.42
800.00	1.25	270.05	799.91	-2.84	-8.93	-2.84	9.37	252.34	0.08
1000.00	0.43	212.96	999.89	-3.47	-11.52	-3.47	12.04	253.22	0.54
1200.00	0.29	53.31	1199.89	-3.80	-11.53	-3.80	12.14	251.74	0.36
1400.00	0.15	167.68	1399.89	-3.76	-11.06	-3.76	11.68	251.25	0.19
1600.00	0.20	110.21	1599.89	-4.13	-10.68	-4.13	11.45	248.84	0.09
1800.00	0.25	309.84	1799.89	-3.97	-10.69	-3.97	11.40	249.62	0.22
2000.00	0.30	205.63	1999.89	-4.16	-11.25	-4.16	12.00	249.71	0.22
2200.00	0.13	145.94	2199.89	-4.81	-11.35	-4.81	12.33	247.03	0.13
2400.00	0.65	136.13	2399.88	-5.82	-10.44	-5.82	11.95	240.89	0.26
2600.00	0.22	138.45	2599.87	-6.92	-9.41	-6.92	11.68	233.68	0.22
2800.00	0.10	177.92	2799.87	-7.37	-9.15	-7.37	11.75	231.15	0.08
3000.00	0.43	213.42	2999.87	-8.17	-9.56	-8.17	12.58	229.47	0.18
3200.00	0.09	268.45	3199.87	-8.81	-10.14	-8.81	13.43	229.02	0.19
3400.00	0.32	275.93	3399.87	-8.75	-10.86	-8.75	13.95	231.13	0.11
3600.00	0.54	153.61	3599.87	-9.54	-10.99	-9.54	14.56	229.05	0.38

measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
3800.00	2.05	113.21	3799.81	-11.80	-7.28	-11.80	13.87	211.67	0.84
4000.00	1.01	92.76	3999.74	-13.30	-2.23	-13.30	13.48	189.51	0.58
4200.00	1.66	88.54	4199.68	-13.31	2.42	-13.31	13.53	169.68	0.33
4400.00	0.82	52.28	4399.64	-12.36	6.45	-12.36	13.94	152.45	0.55
4600.00	0.08	323.91	4599.63	-11.37	7.50	-11.37	13.62	146.58	0.41
4800.00	0.31	283.53	4799.63	-11.14	6.90	-11.14	13.10	148.22	0.13
5000.00	0.20	281.32	4999.63	-10.94	6.04	-10.94	12.50	151.11	0.06
5200.00	0.21	49.44	5199.63	-10.64	5.98	-10.64	12.21	150.68	0.18
5400.00	0.31	7.51	5399.62	-9.87	6.32	-9.87	11.72	147.35	0.11
5600.00	0.44	310.89	5599.62	-8.82	5.81	-8.82	10.56	146.61	0.19
5800.00	0.58	193.67	5799.62	-9.30	4.99	-9.30	10.55	151.79	0.44
6000.00	0.49	99.08	5999.61	-10.42	5.59	-10.42	11.83	151.77	0.40
6200.00	0.24	83.30	6199.61	-10.51	6.85	-10.51	12.54	146.89	0.14
6400.00	0.84	143.42	6399.60	-11.63	8.13	-11.63	14.19	145.04	0.37
6600.00	0.28	342.21	6599.59	-12.34	8.85	-12.34	15.19	144.34	0.55
6800.00	0.40	300.68	6799.59	-11.51	8.10	-11.51	14.07	144.88	0.13
7000.00	0.39	294.61	6999.58	-10.87	6.87	-10.87	12.86	147.69	0.02
7200.00	0.42	287.10	7199.58	-10.37	5.56	-10.37	11.77	151.80	0.03
7400.00	0.49	230.81	7399.57	-10.70	4.19	-10.70	11.50	158.60	0.22
7600.00	0.42	153.26	7599.57	-11.90	3.86	-11.90	12.51	162.05	0.29
7800.00	0.37	223.62	7799.57	-13.03	3.74	-13.03	13.55	163.99	0.23
8000.00	0.49	198.89	7999.56	-14.31	3.01	-14.31	14.62	168.10	0.11
8200.00	0.40	163.03	8199.55	-15.79	2.94	-15.79	16.07	169.45	0.14
8400.00	0.56	160.02	8399.55	-17.39	3.48	-17.39	17.73	168.67	0.08
8600.00	0.54	176.37	8599.54	-19.24	3.88	-19.24	19.63	168.61	0.08
8800.00	0.63	160.45	8799.53	-21.22	4.30	-21.22	21.65	168.54	0.09
9000.00	0.86	16.29	8999.52	-20.81	5.09	-20.81	21.43	166.25	0.71
9200.00	1.25	7.22	9199.49	-17.20	5.79	-17.20	18.15	161.40	0.21
9400.00	1.00	334.71	9399.45	-13.46	5.32	-13.46	14.48	158.44	0.34
9600.00	1.12	339.91	9599.42	-10.06	3.91	-10.06	10.79	158.77	0.08
9697.00	0.84	328.22	9696.40	-8.57	3.21	-8.57	9.15	159.47	0.36



VES Survey International
West Texas
(432) 563-5444
Surveyor: Cody Johnson
E Livingston 31 Federal 6H / API 30-025-41926



VES Survey Date: 12/7/2014