



A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

30-015-42084

May 13, 2014

NM OIL CONSERVATION

ARTESIA DISTRICT

JUN 27 2014

RECEIVED

Devon Energy Production Co., LP
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

Attn: David Cook

Re: Lone Tree Draw 13 State No 011H

Please find enclosed a copy of the survey from 0' to 6,164' ran on the above referenced well.

If I can be of any further service, please do not hesitate to call me at 800-606-4976.

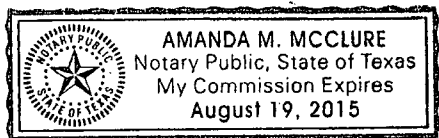
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 13 day of May, A.D., 2014, by Keith Havelka.

Amanda McClure
Notary Public, State of Texas





Company: DEVON
Lease/Well: LONE TREE DRAW 13/STATE NO 011H

Rig Name: CACTUS 126
State/County: NEW MEXICO/EDDY
Latitude: 32.49, Longitude: -104.14
GRID North is 0.10 Degrees East of True North
VS-Azi: 0.00 Degrees



NM OIL CONSERVATION
ARTESIA DISTRICT
JUN 27 2014
RECEIVED

Depth Reference : RKB=25'

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01d-01-de_01.ut
Minimum Curvature Method
Report Date/Time: 5/13/2014 / 09:10

VES Survey International
Conway, Arkansas
501-730-0602

Surveyor: Chris Ford
Lone Tree Draw 13 State No 011H / API 30-015-42084

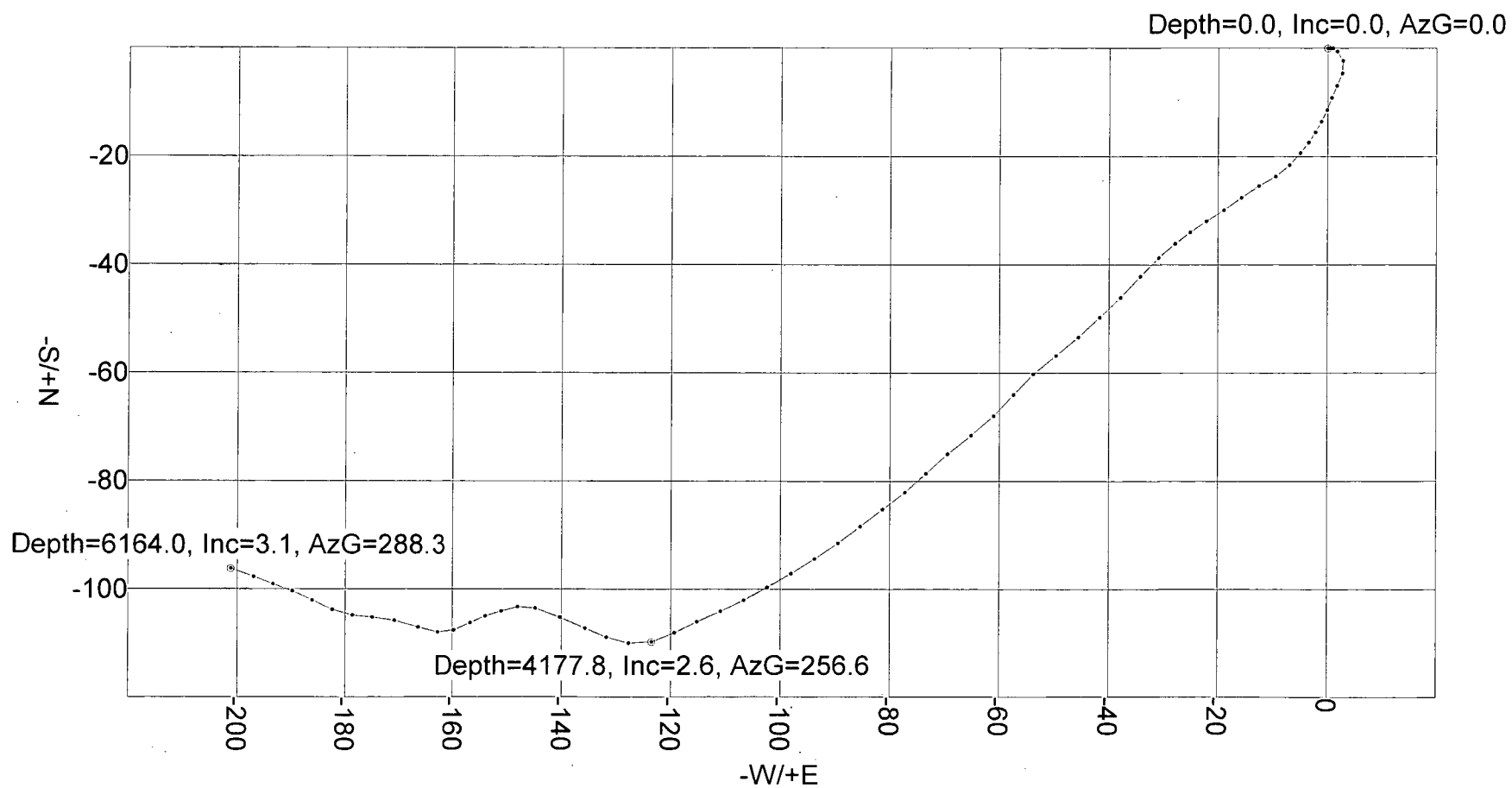
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
110.88	0.45	91.04	110.88	-0.01	0.43	-0.01	0.43	91.04	0.40
205.46	0.08	84.88	205.46	-0.01	0.87	-0.01	0.87	90.59	0.39
300.04	1.14	129.15	300.03	-0.60	1.66	-0.60	1.77	109.77	1.15
394.62	1.41	165.07	394.59	-2.32	2.69	-2.32	3.55	130.72	0.88
489.20	1.53	198.91	489.14	-4.64	2.58	-4.64	5.31	150.91	0.91
583.78	1.50	206.49	583.69	-6.94	1.62	-6.94	7.13	166.88	0.22
678.36	1.42	197.04	678.24	-9.17	0.72	-9.17	9.20	175.49	0.27
772.94	1.48	205.39	772.79	-11.39	-0.14	-11.39	11.39	180.71	0.23
867.52	1.41	205.66	867.34	-13.54	-1.17	-13.54	13.59	184.93	0.07
962.10	1.34	212.01	961.89	-15.53	-2.26	-15.53	15.69	188.28	0.17
1056.68	1.35	213.97	1056.44	-17.39	-3.47	-17.39	17.73	191.28	0.05
1151.26	1.63	221.42	1150.99	-19.32	-4.98	-19.32	19.95	194.45	0.37
1245.84	2.02	220.00	1245.52	-21.61	-6.94	-21.61	22.70	197.81	0.41
1340.42	2.01	242.12	1340.05	-23.66	-9.48	-23.66	25.49	201.83	0.82
1435.00	2.30	238.17	1434.56	-25.43	-12.55	-25.43	28.36	206.27	0.34
1529.58	2.39	233.14	1529.06	-27.62	-15.74	-27.62	31.79	209.68	0.24
1624.16	2.39	236.38	1623.56	-29.89	-18.96	-29.89	35.39	212.38	0.14
1718.74	2.17	237.04	1718.06	-31.95	-22.10	-31.95	38.85	214.67	0.23

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
1813.32	2.18	233.85	1812.57	-33.99	-25.06	-33.99	42.23	216.40	0.13
1907.90	2.06	230.47	1907.09	-36.13	-27.81	-36.13	45.60	217.59	0.18
2002.48	2.75	229.45	2001.59	-38.69	-30.85	-38.69	49.48	218.57	0.74
2097.06	3.17	220.30	2096.04	-42.16	-34.27	-42.16	54.33	219.11	0.67
2191.64	3.26	225.51	2190.47	-46.03	-37.88	-46.03	59.61	219.45	0.32
2286.22	3.18	227.19	2284.90	-49.70	-41.72	-49.70	64.89	220.01	0.13
2380.80	3.25	225.64	2379.33	-53.36	-45.56	-53.36	70.17	220.49	0.11
2475.38	3.24	234.42	2473.76	-56.79	-49.65	-56.79	75.43	221.16	0.52
2569.96	3.25	226.71	2568.19	-60.18	-53.77	-60.18	80.71	221.78	0.46
2664.54	3.17	219.69	2662.62	-64.04	-57.40	-64.04	85.99	221.87	0.42
2759.12	3.31	226.49	2757.05	-67.93	-61.05	-67.93	91.33	221.95	0.43
2853.70	3.37	231.16	2851.47	-71.55	-65.20	-71.55	96.80	222.34	0.29
2948.28	3.25	231.13	2945.89	-74.98	-69.45	-74.98	102.20	222.81	0.13
3042.86	3.21	223.97	3040.32	-78.57	-73.37	-78.57	107.50	223.04	0.43
3137.44	3.12	230.98	3134.76	-82.09	-77.21	-82.09	112.70	223.25	0.42
3232.02	3.14	234.59	3229.20	-85.21	-81.32	-85.21	117.79	223.66	0.21
3326.60	3.11	230.82	3323.64	-88.34	-85.42	-88.34	122.88	224.04	0.22
3421.18	3.16	234.83	3418.08	-91.46	-89.54	-91.46	128.00	224.39	0.24
3515.76	3.09	237.29	3512.52	-94.34	-93.81	-94.34	133.04	224.84	0.16
3610.34	3.09	237.26	3606.96	-97.09	-98.10	-97.09	138.02	225.30	0.00
3704.92	3.01	241.69	3701.41	-99.65	-102.43	-99.65	142.90	225.79	0.26
3799.50	2.93	239.86	3795.86	-102.04	-106.71	-102.04	147.64	226.28	0.14
3894.08	2.86	247.59	3890.32	-104.15	-110.98	-104.15	152.19	226.82	0.42
3988.66	2.82	244.77	3984.78	-106.04	-115.26	-106.04	156.62	227.39	0.16
4083.24	2.78	240.99	4079.25	-108.14	-119.37	-108.14	161.07	227.83	0.20
4177.82	2.61	256.58	4173.73	-109.76	-123.47	-109.76	165.20	228.37	0.79
4272.40	2.58	276.16	4268.21	-110.03	-127.68	-110.03	168.55	229.25	0.93
4366.98	2.57	295.00	4362.70	-108.90	-131.72	-108.90	170.91	230.42	0.89
4461.56	2.61	290.85	4457.18	-107.24	-135.65	-107.24	172.92	231.67	0.20
4556.14	3.55	294.97	4551.62	-105.24	-140.32	-105.24	175.40	233.13	1.02
4650.72	2.31	283.80	4646.08	-103.55	-144.83	-103.55	178.04	234.44	1.43
4745.30	1.70	262.27	4740.60	-103.28	-148.07	-103.28	180.53	235.10	1.02
4839.88	2.04	248.50	4835.13	-104.08	-151.03	-104.08	183.42	235.43	0.60
4934.46	1.73	256.97	4929.66	-105.02	-153.98	-105.02	186.39	235.70	0.44
5029.04	2.03	237.46	5024.19	-106.25	-156.78	-106.25	189.39	235.88	0.74
5123.62	1.97	252.10	5118.71	-107.65	-159.74	-107.65	192.63	236.03	0.54
5218.20	1.97	276.50	5213.24	-107.96	-162.91	-107.96	195.43	236.47	0.88
5312.78	2.60	289.36	5307.74	-107.06	-166.55	-107.06	198.00	237.27	0.86
5407.36	2.89	282.60	5402.22	-105.83	-170.90	-105.83	201.02	238.23	0.45

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
5501.94	2.16	273.03	5496.70	-105.22	-175.01	-105.22	204.20	238.98	0.89
5596.52	2.28	278.06	5591.21	-104.86	-178.65	-104.86	207.15	239.59	0.24
5691.10	2.45	292.77	5685.71	-103.81	-182.38	-103.81	209.86	240.35	0.66
5785.68	2.52	297.51	5780.20	-102.07	-186.09	-102.07	212.25	241.26	0.23
5880.26	2.40	291.62	5874.70	-100.38	-189.78	-100.38	214.69	242.12	0.30
5974.84	2.28	288.84	5969.20	-99.04	-193.40	-99.04	217.28	242.88	0.17
6069.42	2.35	291.97	6063.70	-97.71	-196.98	-97.71	219.88	243.62	0.15
6164.00	3.08	288.29	6158.17	-96.19	-201.19	-96.19	223.00	244.45	0.79



VES Survey International
Conway, Arkansas
501-730-0602
Surveyor: Chris Ford
Lone Tree Draw 13 State No 011H / API 30-015-42084





Directional Survey

District PERMIAN BASIN	County EDDY	Field Name CARLSBAD EAST	Project Group DELAWARE BASIN	State/Province NM
Surface Legal Location SEC13 T21S R27E	API/UWI 3001542084	Latitude (°) 32° 29' 13.806" N	Longitude (°) 104° 8' 41.779" W	Ground Elev... 3,187.10
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,212.10
				Tubing Head Elevation (ft)

Wellbores

Wellbore Name OH	Parent Wellbore	SAP Well ID	Kick Off Depth (ftKB)	Vertical Section Direction (°)
Actual Deviation Survey GYRO/MWD, Proposed? No	Definitive? Yes	Proposed? No	Proposed Deviation Survey	

Deviation Survey

Date 4/26/2014		Description GYRO/MWD				
MD Tie In (ftKB) 0.00	TVD Tie In (ftKB) 0.00	Inclination Tie In (°) 0.00	Azimuth Tie In (°) 0.00	NSTie In (ft) 0.00	EW Tie In (ft) 0.00	

Survey Data

Date	MD (ftKB)	Incl (°)	Azim (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
4/27/2014	110.88	0.45	91.04	110.88	0.01	-0.01	0.44	0.41	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	205.46	0.08	84.88	205.46	0.01	-0.01	0.87	0.39	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	300.04	1.14	129.15	300.03	0.61	-0.60	1.67	1.15	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	394.62	1.41	165.07	394.59	2.33	-2.32	2.70	0.87	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	489.20	1.53	198.91	489.14	4.65	-4.63	2.59	0.91	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	583.78	1.50	206.49	583.69	6.94	-6.94	1.63	0.21	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	678.36	1.42	197.04	678.24	9.17	-9.17	0.73	0.27	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	772.94	1.48	205.39	772.79	11.39	-11.39	-0.14	0.23	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	867.52	1.41	205.66	867.34	13.54	-13.54	-1.16	0.07	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	962.10	1.34	212.01	961.89	15.52	-15.53	-2.25	0.18	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	1,056.68	1.35	213.97	1,056.44	17.37	-17.39	-3.46	0.05	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	1,151.26	1.63	221.42	1,150.99	19.30	-19.32	-4.98	0.36	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	1,245.84	2.02	220.00	1,245.52	21.57	-21.61	-6.94	0.42	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	1,340.42	2.01	242.12	1,340.05	23.61	-23.66	-9.47	0.82	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	1,435.00	2.30	238.17	1,434.56	25.37	-25.44	-12.55	0.34	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	1,529.58	2.39	233.14	1,529.06	27.54	-27.62	-15.74	0.24	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	1,624.16	2.39	236.38	1,623.56	29.80	-29.90	-18.96	0.14	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	1,718.74	2.17	237.04	1,718.06	31.85	-31.96	-22.11	0.23	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	1,813.32	2.18	233.85	1,812.57	33.87	-34.00	-25.06	0.13	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	1,907.90	2.06	230.47	1,907.09	36.00	-36.14	-27.83	0.18	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	2,002.48	2.75	229.45	2,001.59	38.54	-38.70	-30.86	0.73	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	2,097.06	3.17	220.30	2,096.04	41.99	-42.17	-34.28	0.67	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	2,191.64	3.26	225.51	2,190.47	45.85	-46.05	-37.89	0.32	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	2,286.22	3.18	227.19	2,284.90	49.50	-49.71	-41.73	0.13	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	2,380.80	3.25	225.64	2,379.33	53.13	-53.37	-45.57	0.12	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	2,475.38	3.24	234.42	2,473.76	56.54	-56.80	-49.66	0.53	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	2,569.96	3.25	226.71	2,568.19	59.92	-60.19	-53.79	0.46	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	2,664.54	3.17	219.69	2,662.62	63.75	-64.04	-57.41	0.42	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	2,759.12	3.31	226.49	2,757.05	67.62	-67.94	-61.06	0.43	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	2,853.70	3.37	231.16	2,851.47	71.22	-71.56	-65.20	0.29	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	2,948.28	3.25	231.13	2,945.89	74.63	-74.99	-69.46	0.13	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	3,042.86	3.21	223.97	3,040.32	78.19	-78.57	-73.38	0.43	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	3,137.44	3.12	230.98	3,134.76	81.70	-82.10	-77.22	0.42	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	3,232.02	3.14	234.59	3,229.20	84.80	-85.22	-81.33	0.21	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	3,326.60	3.11	230.82	3,323.64	87.90	-88.34	-85.43	0.22	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	3,421.18	3.16	234.83	3,418.08	91.00	-91.47	-89.55	0.24	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	3,515.76	3.09	237.29	3,512.52	93.86	-94.34	-93.83	0.16	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	3,610.34	3.09	237.26	3,606.96	96.59	-97.10	-98.12	0.00	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	3,704.92	3.01	241.69	3,701.40	99.13	-99.66	-102.45	0.26	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	3,799.50	2.93	239.86	3,795.86	101.50	-102.05	-106.72	0.13	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	3,894.08	2.86	247.59	3,890.32	103.59	-104.16	-111.00	0.42	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	3,988.66	2.82	244.77	3,984.78	105.46	-106.05	-115.28	0.15	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	4,083.24	2.78	240.99	4,079.25	107.54	-108.16	-119.39	0.20	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	4,177.82	2.61	256.58	4,173.73	109.13	-109.77	-123.49	0.79	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	4,272.40	2.58	276.16	4,268.21	109.38	-110.04	-127.70	0.93	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	4,366.98	2.57	295.00	4,362.70	108.23	-108.92	-131.74	0.89	GYRO	VAUHG N ENERGY SERVICES
4/27/2014	4,461.56	2.61	290.85	4,457.18	106.55	-107.25	-135.68	0.20	GYRO	VAUHG N ENERGY SERVICES



LONE TREE DRAW 13 STATE 11H

WEST UNRESTRICTED

Directional Survey

District PERMIAN BASIN	County EDDY	Field Name CARLSBAD EAST	Project Group DELAWARE BASIN	State/Province NM
Surface Legal Location SEC13 T21S R27E	API/UWI 3001542084	Latitude (°) 32° 29' 13.806" N	Longitude (°) 104° 8' 41.779" W	Ground Elev... 3,187.10
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,212.10
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Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
4/27/2014	4,556.14	3.55	294.97	4,551.62	104.52	-105.25	-140.34	1.02	GYRO	VAUHG ENERGY SERVICES
4/27/2014	4,650.72	2.31	283.80	4,646.08	102.81	-103.56	-144.85	1.44	GYRO	VAUHG ENERGY SERVICES
4/27/2014	4,745.30	1.70	262.27	4,740.60	102.53	-103.29	-148.09	1.01	GYRO	VAUHG ENERGY SERVICES
4/27/2014	4,839.88	2.04	248.50	4,835.13	103.32	-104.10	-151.05	0.59	GYRO	VAUHG ENERGY SERVICES
4/27/2014	4,934.46	1.73	256.97	4,929.66	104.24	-105.04	-154.00	0.44	GYRO	VAUHG ENERGY SERVICES
4/27/2014	5,029.04	2.03	237.46	5,024.19	105.45	-106.26	-156.81	0.74	GYRO	VAUHG ENERGY SERVICES
4/27/2014	5,123.62	1.97	252.10	5,118.71	106.84	-107.66	-159.77	0.54	GYRO	VAUHG ENERGY SERVICES
4/27/2014	5,218.20	1.97	276.50	5,213.24	107.14	-107.98	-162.93	0.88	GYRO	VAUHG ENERGY SERVICES
4/27/2014	5,312.78	2.60	289.36	5,307.74	106.22	-107.08	-166.57	0.85	GYRO	VAUHG ENERGY SERVICES
4/27/2014	5,407.36	2.89	282.60	5,402.21	104.97	-105.85	-170.92	0.46	GYRO	VAUHG ENERGY SERVICES
4/27/2014	5,501.94	2.16	273.03	5,496.70	104.33	-105.24	-175.03	0.89	GYRO	VAUHG ENERGY SERVICES
4/27/2014	5,596.52	2.28	278.06	5,591.21	103.96	-104.88	-178.67	0.24	GYRO	VAUHG ENERGY SERVICES
4/27/2014	5,691.10	2.45	292.77	5,685.71	102.89	-103.83	-182.39	0.66	GYRO	VAUHG ENERGY SERVICES
4/27/2014	5,785.68	2.52	297.51	5,780.20	101.13	-102.09	-186.10	0.23	GYRO	VAUHG ENERGY SERVICES
4/27/2014	5,880.26	2.40	291.62	5,874.70	99.42	-100.40	-189.79	0.30	GYRO	VAUHG ENERGY SERVICES
4/27/2014	5,974.84	2.28	288.84	5,969.20	98.06	-99.06	-193.41	0.17	GYRO	VAUHG ENERGY SERVICES
4/27/2014	6,069.42	2.35	291.97	6,063.70	96.71	-97.73	-196.99	0.15	GYRO	VAUHG ENERGY SERVICES
4/27/2014	6,164.00	3.08	288.29	6,158.17	95.17	-96.21	-201.20	0.79	GYRO	VAUHG ENERGY SERVICES
4/27/2014	6,243.00	3.40	260.50	6,237.05	94.87	-95.93	-205.52	2.01	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,280.00	4.20	233.40	6,273.97	95.84	-96.92	-207.69	5.25	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,311.00	7.40	210.60	6,304.81	98.23	-99.31	-209.62	12.53	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,342.00	11.20	211.10	6,335.40	102.51	-103.61	-212.20	12.26	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,374.00	15.70	211.30	6,366.52	108.86	-109.97	-216.05	14.06	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,406.00	19.80	208.50	6,396.99	117.30	-118.44	-220.89	13.08	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,437.00	23.00	204.40	6,425.85	127.41	-128.57	-225.90	11.39	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,468.00	25.90	200.70	6,454.07	139.23	-140.43	-230.79	10.57	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,500.00	28.40	196.30	6,482.54	153.05	-154.27	-235.40	10.02	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,532.00	30.40	191.80	6,510.42	168.27	-169.50	-239.19	9.31	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,563.00	32.20	187.20	6,536.91	184.13	-185.38	-241.83	9.65	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,595.00	35.20	184.00	6,563.53	201.78	-203.04	-243.55	10.89	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,626.00	38.60	181.40	6,588.32	220.37	-221.63	-244.41	12.07	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,658.00	42.20	178.40	6,612.69	241.10	-242.36	-244.35	12.78	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,689.00	46.20	176.80	6,634.91	262.69	-263.95	-243.43	13.39	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,721.00	49.20	175.80	6,656.44	286.31	-287.56	-241.90	9.66	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,752.00	51.90	174.90	6,676.14	310.18	-311.42	-239.96	8.99	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,784.00	54.70	175.10	6,695.26	335.75	-336.98	-237.72	8.76	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,816.00	57.60	174.70	6,713.08	362.22	-363.44	-235.36	9.12	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,847.00	60.50	174.20	6,729.03	388.70	-389.90	-232.79	9.46	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,878.00	62.80	173.80	6,743.75	415.84	-417.03	-229.93	7.51	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,910.00	65.00	174.00	6,757.82	444.43	-445.61	-226.88	6.90	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,942.00	67.90	173.80	6,770.61	473.61	-474.77	-223.76	9.08	MWD	LEAM DRILLING SYSTEMS
4/27/2014	6,973.00	71.30	174.20	6,781.41	502.52	-503.66	-220.73	11.03	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,005.00	73.30	173.50	6,791.14	532.84	-533.97	-217.46	6.59	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,036.00	76.60	173.30	6,799.19	562.59	-563.71	-214.02	10.66	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,068.00	80.80	172.80	6,805.46	593.75	-594.85	-210.22	13.21	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,099.00	85.60	173.10	6,809.13	624.31	-625.39	-206.45	15.51	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,128.00	89.00	174.20	6,810.49	653.12	-654.17	-203.24	12.32	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,159.00	91.90	174.50	6,810.25	683.98	-685.02	-200.19	9.40	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,222.00	93.30	174.70	6,807.39	746.66	-747.67	-194.27	2.24	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,317.00	92.00	174.70	6,803.00	841.19	-842.16	-185.50	1.37	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,412.00	88.50	174.00	6,802.58	935.76	-936.69	-176.15	3.76	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,507.00	87.70	173.30	6,805.73	1,030.18	-1,031.05	-165.65	1.12	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,601.00	88.90	174.00	6,808.52	1,123.61	-1,124.43	-155.26	1.48	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,791.00	89.50	177.20	6,811.18	1,313.08	-1,313.83	-140.69	1.71	MWD	LEAM DRILLING SYSTEMS
4/27/2014	7,886.00	90.60	176.80	6,811.09	1,407.97	-1,408.69	-135.72	1.23	MWD	LEAM DRILLING SYSTEMS



LONE TREE DRAW 13 STATE 11H

WEST UNRESTRICTED

Directional Survey

District PERMIAN BASIN	County EDDY	Field Name CARLSBAD EAST	Project Group DELAWARE BASIN	State/Province NM
Surface Legal Location SEC13 T21S R27E	API/UWI 3001542084	Latitude (°) 32° 29' 13.806" N	Longitude (°) 104° 8' 41.779" W	Ground Elev... 3,187.10
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,212.10
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
4/27/2014	7,980.00	90.40	176.80	6,810.27	1,501.85	-1,502.54	-130.47	0.21	MWD	LEAM DRILLING SYSTEMS
4/27/2014	8,075.00	91.40	177.00	6,808.78	1,596.72	-1,597.39	-125.33	1.07	MWD	LEAM DRILLING SYSTEMS
4/27/2014	8,171.00	91.30	177.70	6,806.52	1,692.61	-1,693.26	-120.89	0.74	MWD	LEAM DRILLING SYSTEMS
4/27/2014	8,265.00	91.00	178.60	6,804.63	1,786.56	-1,787.19	-117.86	1.01	MWD	LEAM DRILLING SYSTEMS
4/27/2014	8,359.00	90.50	177.00	6,803.40	1,880.50	-1,881.11	-114.25	1.78	MWD	LEAM DRILLING SYSTEMS
4/27/2014	8,454.00	91.80	176.80	6,801.50	1,975.36	-1,975.95	-109.12	1.38	MWD	LEAM DRILLING SYSTEMS
4/27/2014	8,549.00	92.10	177.20	6,798.26	2,070.20	-2,070.77	-104.15	0.53	MWD	LEAM DRILLING SYSTEMS
4/27/2014	8,643.00	92.60	175.90	6,794.41	2,163.98	-2,164.51	-98.50	1.48	MWD	LEAM DRILLING SYSTEMS
4/27/2014	8,738.00	90.50	175.40	6,791.84	2,258.70	-2,259.20	-91.29	2.27	MWD	LEAM DRILLING SYSTEMS
4/27/2014	8,832.00	90.60	175.90	6,790.94	2,352.46	-2,352.93	-84.16	0.54	MWD	LEAM DRILLING SYSTEMS
4/27/2014	8,927.00	90.60	176.10	6,789.94	2,447.26	-2,447.69	-77.54	0.21	MWD	LEAM DRILLING SYSTEMS
4/27/2014	9,023.00	91.00	176.60	6,788.60	2,543.08	-2,543.48	-71.43	0.67	MWD	LEAM DRILLING SYSTEMS
4/27/2014	9,117.00	88.70	176.10	6,788.85	2,636.91	-2,637.29	-65.44	2.50	MWD	LEAM DRILLING SYSTEMS
4/27/2014	9,212.00	88.10	176.50	6,791.50	2,731.71	-2,732.05	-59.31	0.76	MWD	LEAM DRILLING SYSTEMS
4/27/2014	9,307.00	89.00	177.30	6,793.90	2,826.56	-2,826.88	-54.18	1.27	MWD	LEAM DRILLING SYSTEMS
4/27/2014	9,402.00	90.20	177.70	6,794.57	2,921.49	-2,921.79	-50.04	1.33	MWD	LEAM DRILLING SYSTEMS
4/27/2014	9,496.00	91.20	177.30	6,793.42	3,015.41	-3,015.69	-45.94	1.15	MWD	LEAM DRILLING SYSTEMS
4/27/2014	9,591.00	90.10	176.50	6,792.34	3,110.29	-3,110.54	-40.80	1.43	MWD	LEAM DRILLING SYSTEMS
4/27/2014	9,685.00	91.30	176.60	6,791.19	3,204.14	-3,204.36	-35.14	1.28	MWD	LEAM DRILLING SYSTEMS
4/27/2014	9,780.00	92.90	177.70	6,787.71	3,298.97	-3,299.18	-30.42	2.04	MWD	LEAM DRILLING SYSTEMS
4/27/2014	9,875.00	92.90	177.90	6,782.91	3,393.80	-3,393.98	-26.78	0.21	MWD	LEAM DRILLING SYSTEMS
4/27/2014	9,970.00	91.00	178.20	6,779.67	3,488.70	-3,488.87	-23.55	2.02	MWD	LEAM DRILLING SYSTEMS
4/27/2014	10,064.00	89.60	177.30	6,779.18	3,582.64	-3,582.79	-19.86	1.77	MWD	LEAM DRILLING SYSTEMS
4/27/2014	10,159.00	89.30	176.80	6,780.09	3,677.53	-3,677.66	-14.97	0.61	MWD	LEAM DRILLING SYSTEMS
4/27/2014	10,253.00	89.80	176.80	6,780.83	3,771.41	-3,771.51	-9.72	0.53	MWD	LEAM DRILLING SYSTEMS
4/27/2014	10,348.00	90.80	178.20	6,780.33	3,866.34	-3,866.42	-5.58	1.81	MWD	LEAM DRILLING SYSTEMS
4/27/2014	10,442.00	91.90	178.60	6,778.12	3,960.28	-3,960.35	-2.95	1.25	MWD	LEAM DRILLING SYSTEMS
4/27/2014	10,537.00	93.00	179.30	6,774.06	4,055.19	-4,055.25	-1.22	1.37	MWD	LEAM DRILLING SYSTEMS
4/27/2014	10,631.00	91.50	178.60	6,770.37	4,149.10	-4,149.16	0.51	1.76	MWD	LEAM DRILLING SYSTEMS
4/27/2014	10,726.00	89.20	177.30	6,769.79	4,244.05	-4,244.08	3.90	2.78	MWD	LEAM DRILLING SYSTEMS
4/27/2014	10,820.00	88.90	177.50	6,771.35	4,337.96	-4,337.97	8.17	0.38	MWD	LEAM DRILLING SYSTEMS
4/27/2014	10,915.00	90.00	177.50	6,772.26	4,432.88	-4,432.88	12.31	1.16	MWD	LEAM DRILLING SYSTEMS
4/27/2014	11,010.00	91.50	177.20	6,771.01	4,527.79	-4,527.77	16.70	1.61	MWD	LEAM DRILLING SYSTEMS
4/27/2014	11,104.00	91.50	178.00	6,768.55	4,621.70	-4,621.65	20.64	0.85	MWD	LEAM DRILLING SYSTEMS
4/27/2014	11,199.00	91.10	178.80	6,766.40	4,716.65	-4,716.59	23.29	0.94	MWD	LEAM DRILLING SYSTEMS
4/27/2014	11,241.00	90.70	179.10	6,765.74	4,758.64	-4,758.58	24.06	1.19	MWD	LEAM DRILLING SYSTEMS
4/27/2014	11,289.00	90.70	179.10	6,765.15	4,806.63	-4,806.57	24.81	0.00	BIT	LEAM DRILLING SYSTEMS