

Company: MATADOR RESOURCES  
Lease/Well: DR SCRIVNER FEDERAL/01 24S 28E RB No. 228H



Rig Name: PATTERSON 297  
State/County: NEW MEXICO/EDDY  
VS-Azi: 269.74 Degrees  
Latitude: 32.24127, Longitude: -104.03396  
Grid North = True North -0.16 degs (NAD 27)  
Grid Correction Applied = -0.16 degs

Depth Reference : RKB=28.5 FEET

### DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro\_run01-01-de\_01.ut  
Minimum Curvature Method  
Report Date/Time: 8/24/2016 / 13:18

VES Survey International  
Midland, Texas  
432-563-5444

Surveyor: Michael Cook

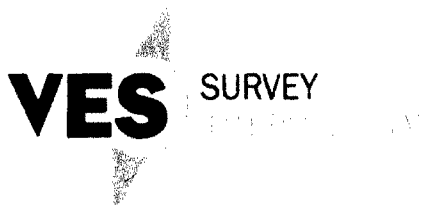
Dr Scrivner Federal/01 24S 28E RB No. 228H / API 30-015-43824

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	****
63.92	0.83	341.25	63.92	0.44	-0.15	0.15	0.46	341.25	1.29
158.60	0.79	333.96	158.59	1.67	-0.65	0.64	1.79	338.61	0.12
253.28	0.92	346.05	253.26	2.98	-1.12	1.11	3.19	339.42	0.23
347.96	1.07	354.83	347.92	4.59	-1.38	1.36	4.80	343.27	0.23
442.64	1.21	31.65	442.59	6.33	-0.93	0.91	6.40	351.60	0.77
537.32	1.32	56.19	537.24	7.79	0.50	-0.53	7.80	3.65	0.58
632.00	0.80	103.81	631.91	8.23	2.05	2.08	8.48	13.96	1.03
726.68	0.41	111.66	726.58	7.95	3.01	-3.05	8.50	20.74	0.42
821.36	0.33	102.66	821.26	7.76	3.60	-3.63	8.56	24.85	0.11
916.04	0.57	106.45	915.94	7.57	4.31	-4.35	8.71	29.68	0.25
1010.72	2.52	114.07	1010.58	6.55	6.74	-6.77	9.40	45.82	2.17
1105.40	3.09	117.62	1105.14	4.49	10.98	-11.00	11.86	67.77	0.53
1200.08	3.74	119.49	1199.65	1.79	15.92	-15.93	16.02	83.60	0.70
1294.76	3.68	121.27	1294.13	-1.31	21.21	-21.20	21.25	93.53	0.14
1389.44	3.36	123.50	1388.63	-4.42	26.12	-26.10	26.49	99.60	0.37
1484.12	3.11	124.36	1483.16	-7.40	30.56	-30.52	31.44	103.62	0.27

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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
1578.80	3.49	124.53	1577.69	-10.49	35.05	-35.00	36.59	106.66	0.30
1673.48	3.40	123.56	1672.19	-13.67	39.76	-39.70	42.05	108.97	0.11
1768.16	3.80	124.38	1766.69	-16.99	44.69	-44.61	47.81	110.82	0.42
1862.84	3.34	123.43	1861.18	-20.28	49.58	-49.49	53.57	112.25	0.48
1957.52	4.13	118.30	1955.66	-23.42	54.89	-54.78	59.67	113.11	0.90
2052.20	5.27	115.07	2050.02	-26.88	61.82	-61.70	67.41	113.50	1.23
2146.88	4.93	119.05	2144.33	-30.69	69.31	-69.17	75.81	113.88	0.52
2241.56	5.26	119.26	2238.63	-34.79	76.66	-76.50	84.18	114.41	0.35
2336.24	5.83	135.28	2332.88	-40.33	83.83	-83.64	93.02	115.69	1.73
2430.92	6.88	132.79	2426.97	-47.60	91.37	-91.15	103.03	117.52	1.15
2525.60	6.44	125.51	2521.02	-54.53	99.85	-99.60	113.77	118.64	1.01
2620.28	6.54	128.09	2615.09	-60.94	108.41	-108.14	124.37	119.34	0.33
2714.96	5.67	126.85	2709.23	-67.07	116.40	-116.10	134.35	119.95	0.93
2809.64	5.45	129.36	2803.47	-72.73	123.63	-123.30	143.44	120.47	0.35
2904.32	8.61	117.31	2897.43	-78.84	133.40	-133.05	154.96	120.58	3.66
2999.00	9.49	115.67	2990.93	-85.47	146.74	-146.35	169.81	120.22	0.98
3093.68	9.82	114.20	3084.27	-92.16	161.14	-160.72	185.63	119.77	0.43
3188.36	9.79	115.62	3177.56	-98.95	175.76	-175.31	201.70	119.38	0.26
3283.04	9.72	116.01	3270.88	-105.94	190.20	-189.72	217.71	119.12	0.11
3377.72	9.84	114.99	3364.18	-112.86	204.71	-204.20	233.76	118.87	0.23
3472.40	8.71	117.27	3457.62	-119.56	218.42	-217.87	249.00	118.70	1.26
3567.08	8.77	116.94	3551.20	-126.12	231.22	-230.65	263.38	118.61	0.08
3661.76	9.34	110.90	3644.70	-132.13	244.83	-244.23	278.21	118.35	1.17
3756.44	10.19	111.96	3738.01	-138.00	259.78	-259.15	294.15	117.98	0.92
3851.12	10.03	109.53	3831.22	-143.89	275.32	-274.66	310.65	117.59	0.48
3945.80	9.97	109.83	3924.46	-149.43	290.80	-290.11	326.94	117.20	0.09
4040.48	10.29	108.96	4017.67	-154.95	306.50	-305.79	343.44	116.82	0.38
4135.16	11.02	105.83	4110.72	-160.17	323.20	-322.47	360.71	116.36	0.99
4229.84	10.44	108.09	4203.74	-165.30	340.06	-339.31	378.11	115.92	0.76
4324.52	9.53	109.54	4296.99	-170.58	355.60	-354.82	394.40	115.63	0.99
4419.20	10.27	104.95	4390.26	-175.38	371.14	-370.34	410.49	115.29	1.14
4513.88	11.43	104.77	4483.24	-179.95	388.36	-387.54	428.03	114.86	1.23
4608.56	11.23	103.36	4576.08	-184.47	406.40	-405.56	446.30	114.41	0.36
4703.24	11.04	104.11	4668.98	-188.81	424.16	-423.30	464.28	114.00	0.25
4797.92	10.23	104.36	4762.03	-193.10	441.09	-440.21	481.51	113.64	0.86
4892.60	9.73	104.36	4855.28	-197.17	456.99	-456.09	497.72	113.34	0.52
4987.28	9.00	105.83	4948.70	-201.18	471.87	-470.95	512.97	113.09	0.82
5081.96	8.82	105.11	5042.23	-205.09	486.00	-485.07	527.50	112.88	0.22
5176.64	8.86	106.06	5135.79	-209.00	500.02	-499.06	541.94	112.68	0.16

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
5271.32	9.05	114.07	5229.32	-214.06	513.82	-512.84	556.63	112.62	1.33
5366.00	11.24	115.61	5322.51	-221.08	528.94	-527.93	573.29	112.68	2.34
5460.68	12.04	114.12	5415.25	-229.11	546.27	-545.23	592.37	112.75	0.90
5555.36	11.21	112.85	5507.98	-236.71	563.76	-562.68	611.44	112.78	0.91
5650.04	10.58	111.83	5600.96	-243.52	580.31	-579.20	629.34	112.76	0.69
5744.72	9.38	112.75	5694.20	-249.74	595.50	-594.36	645.75	112.75	1.28
5839.40	8.23	112.46	5787.76	-255.31	608.88	-607.72	660.24	112.75	1.21
5934.08	5.34	114.89	5881.77	-259.75	619.15	-617.96	671.43	112.76	3.06
6028.76	3.26	118.44	5976.18	-262.89	625.51	-624.31	678.51	112.80	2.22
6123.44	2.34	116.40	6070.75	-265.03	629.60	-628.39	683.11	112.83	0.98
6218.12	1.13	124.81	6165.38	-266.42	632.10	-630.88	685.95	112.85	1.30
6312.80	1.14	127.29	6260.04	-267.52	633.61	-632.39	687.77	112.89	0.06
6407.48	1.05	183.37	6354.71	-268.96	634.31	-633.08	688.98	112.98	1.09
6502.16	1.00	203.91	6449.37	-270.57	633.93	-632.69	689.25	113.11	0.39
6596.84	1.61	251.02	6544.03	-271.76	632.33	-631.09	688.26	113.26	1.25
6691.52	2.27	244.54	6638.66	-273.00	629.38	-628.14	686.04	113.45	0.73
6786.20	1.93	258.12	6733.27	-274.13	626.13	-624.88	683.51	113.64	0.64
6880.88	1.08	267.98	6827.92	-274.49	623.68	-622.43	681.42	113.75	0.93
6975.56	0.83	272.71	6922.59	-274.49	622.11	-620.86	679.98	113.81	0.28
7070.24	0.33	282.11	7017.26	-274.40	621.16	-619.91	679.07	113.83	0.53
7164.92	0.89	219.37	7111.94	-274.91	620.43	-619.18	678.61	113.90	0.84
7259.60	0.23	74.34	7206.61	-275.43	620.15	-618.90	678.56	113.95	1.15
7354.28	1.06	129.52	7301.29	-275.93	621.01	-619.76	679.56	113.96	1.00
7448.96	1.05	133.74	7395.95	-277.09	622.32	-621.05	681.22	114.00	0.08
7543.64	0.69	226.25	7490.62	-278.09	622.53	-621.26	681.82	114.07	1.35
7638.32	0.57	244.97	7585.30	-278.68	621.69	-620.42	681.29	114.15	0.25
7733.00	0.74	247.29	7679.97	-279.12	620.69	-619.42	680.56	114.21	0.17
7827.68	0.28	252.08	7774.65	-279.43	619.91	-618.64	679.98	114.26	0.49
7922.36	1.42	281.83	7869.32	-279.26	618.54	-617.27	678.66	114.30	1.25
8017.04	1.92	246.99	7963.96	-279.63	615.93	-614.66	676.44	114.42	1.17
8111.72	2.38	251.72	8058.57	-280.87	612.61	-611.33	673.93	114.63	0.51
8206.40	2.01	252.54	8153.18	-281.99	609.16	-607.88	671.26	114.84	0.38
8301.08	1.57	228.04	8247.82	-283.35	606.61	-605.32	669.52	115.04	0.92
8395.76	0.89	174.29	8342.48	-284.95	605.72	-604.42	669.40	115.19	1.34
8490.44	0.93	158.62	8437.14	-286.40	606.07	-604.76	670.33	115.29	0.27
8585.12	1.03	157.17	8531.81	-287.90	606.68	-605.37	671.53	115.39	0.10
8679.80	1.83	134.32	8626.46	-289.74	608.09	-606.77	673.59	115.48	1.03
8774.48	2.10	119.69	8721.09	-291.65	610.68	-609.35	676.75	115.53	0.60
8869.16	2.04	169.01	8815.71	-294.17	612.51	-611.17	679.49	115.65	1.82



I Michael Cook certify that I am employed by VES Survey International. That I did on the day(s) of 08/19/16 through 08/19/16 conduct or supervise the taking of a Rate Gyro survey from a depth of 0.00 feet to a depth of 10,100.00 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Matador Resources for the Dr Scrivner Federal 01 24S 28E RE Well # #228H API # 30-015-43824 in Eddy County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by VES Survey International.

Michael Cook  
Service Technician  
VES Survey International