

Ver 1.3



HOBBS OCU
MAY 29 2019
RECEIVED

SURVEY CALCULATION PROGRAM

ctrl-shift-I = Insert Survey

ctrl-shift-D = Delete Survey

Minimum Curvature

API Number:

30-025-45082

OIL & GAS CO.:	Matador Resources			Target Information		VS Referenced to Offset from Surface	
WELL:	Charles Ling Fed Com # 213H			TARGET TVD:	12411.00	NORTH/SOUTH:	-4590.84
COUNTY / STATE:	Lea	STATE:	New Mexico	TARGET INCL:	87.66	EAST/WEST:	-338.40
RIG:	Patterson 810			TARGET AZM:	179.64	(Enter 0° N and 0° E for Surface)	
JOB NUMBER:	MSMO-57773						

SURVEY COMPANY:	DIRECTIONAL COMPANY:			PROPOSED DIRECTION:	179.64	MAG-DEC. / TOTAL CORR.(+/-):	6.44
MS Guidance	MS Directional					REFERENCED TO:	Grid North
MWD SPECIALIST(S):	DIRECTIONAL DRILLER(S):			COMMENTS:			
SNIDER ZAMORA		DILLON GILLES					
PATRICK WALKER		MIKE HARVEY					

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	17,144	88.20	173.90	12379.72	-4596.76	-256.20	4595.06

30-025-45082

Target Calculations

SVY	MD	INC	TRUE AZM	TEMP °F	Course Length	TVD	N-S	E-W	Surface Vert Sect	CLOSURE DIST	DIR	DLS/ 100	BUR/ 100'	TVD AT 0' V. SEC.	RIGHT(+) LEFT(-)	ABOVE (+) BELOW (-)
Tie In	0	0.00	0.00	0.0												
1	199	0.40	71.20	64.2	199	199.00	0.22	0.66	-0.22	0.69	71.20	0.20	0.20	386.51	-367.90	12024.49
2	334	0.70	98.80	69.5	135	333.99	0.25	1.92	-0.24	1.93	82.59	0.29	0.22	521.51	-369.16	11889.49
3	519	0.60	112.80	73.1	185	518.98	-0.30	3.93	0.32	3.94	94.35	0.10	-0.05	706.47	-371.16	11704.53
4	708	0.80	104.40	76.7	189	707.97	-1.01	6.12	1.05	6.20	99.38	0.12	0.11	895.43	-373.35	11515.57
5	898	0.20	317.50	80.3	190	897.96	-1.10	7.18	1.14	7.26	98.68	0.51	-0.32	1085.42	-374.41	11325.58
6	979	0.80	297.40	83.0	81	978.96	-0.73	6.58	0.77	6.62	96.34	0.76	0.74	1166.43	-373.82	11244.57
7	1074	0.70	277.20	87.5	95	1073.95	-0.35	5.42	0.39	5.43	93.73	0.30	-0.11	1261.44	-372.65	11149.56
8	1169	1.00	304.70	92.0	95	1168.94	0.19	4.16	-0.17	4.16	87.37	0.52	0.32	1356.45	-371.40	11054.55
9	1264	1.60	300.70	95.6	95	1263.91	1.34	2.34	-1.33	2.69	60.17	0.64	0.63	1451.48	-369.58	10959.52
10	1354	2.20	304.10	77.6	90	1353.86	2.95	-0.17	-2.95	2.96	356.65	0.68	0.67	1541.49	-367.08	10869.51
11	1449	1.90	297.30	81.2	95	1448.80	4.70	-3.08	-4.71	5.62	326.72	0.41	-0.32	1636.50	-364.19	10774.50
12	1544	3.10	309.90	83.9	95	1543.71	7.07	-6.45	-7.11	9.57	317.60	1.38	1.26	1731.51	-360.83	10679.49
13	1639	5.50	313.80	91.1	95	1638.44	11.86	-11.71	-11.94	16.67	315.38	2.54	2.53	1826.43	-355.60	10584.57
14	1829	3.90	312.00	95.6	190	1827.79	22.49	-23.08	-22.64	32.23	314.25	0.85	-0.84	2016.23	-344.30	10394.77
15	2019	5.50	319.90	99.2	190	2017.15	33.78	-33.75	-33.99	47.75	315.02	0.91	0.84	2206.05	-333.70	10204.95
16	2210	6.20	326.40	106.4	191	2207.16	49.37	-45.36	-49.66	67.04	317.43	0.50	0.37	2396.69	-322.19	10014.31
17	2400	5.90	326.30	109.1	190	2396.10	66.04	-56.45	-66.40	86.88	319.48	0.16	-0.16	2586.32	-311.20	9824.68
18	2590	5.50	327.60	112.7	190	2585.16	81.86	-66.75	-82.27	105.62	320.80	0.22	-0.21	2776.03	-301.01	9634.97
19	2780	5.30	327.60	116.9	190	2774.31	96.95	-76.33	-97.43	123.39	321.79	0.11	-0.11	2965.80	-291.52	9445.20

					30-025-45082									Target Calculations		
SVY	MD	INC	TRUE AZM	TEMP °F	Course Length	TVD	N-S	E-W	Surface Vert Sect	CLOSURE		DLS/ 100	BUR/ 100'	TVD AT 0' V. SEC.	RIGHT(+) LEFT(-)	ABOVE (+) BELOW (-)
20	2970	5.10	326.40	116.9	190	2963.53	111.40	-85.71	-111.93	140.55	322.43	0.12	-0.11	3155.61	-282.23	9255.39
21	3161	5.00	330.80	117.2	191	3153.79	125.73	-94.46	-126.32	157.26	323.08	0.21	-0.05	3346.46	-273.57	9064.54
22	3351	4.70	332.60	116.3	190	3343.11	139.87	-102.09	-140.51	173.16	323.88	0.18	-0.16	3536.36	-266.03	8874.64
23	3542	4.20	333.40	119.9	191	3533.54	153.07	-108.82	-153.75	187.81	324.59	0.26	-0.26	3727.33	-259.38	8683.67
24	3732	5.80	340.70	116.9	190	3722.81	168.36	-115.11	-169.08	203.94	325.64	0.90	0.84	3917.22	-253.19	8493.78
25	3923	4.90	339.70	124.1	191	3912.97	185.11	-121.13	-185.87	221.22	326.80	0.47	-0.47	4108.08	-247.28	8302.92
26	4112	4.40	341.80	124.1	189	4101.35	199.57	-126.19	-200.36	236.12	327.69	0.28	-0.26	4297.05	-242.30	8113.95
27	4303	5.70	333.10	129.7	191	4291.61	214.99	-132.77	-215.82	252.69	328.30	0.79	0.68	4487.94	-235.82	7923.06
28	4493	4.60	333.70	129.7	190	4480.84	230.24	-140.42	-231.12	269.68	328.62	0.58	-0.58	4677.79	-228.27	7733.21
29	4684	3.70	340.60	131.5	191	4671.34	242.92	-145.86	-243.83	283.34	329.02	0.54	-0.47	4868.81	-222.91	7542.19
30	4874	3.90	340.20	134.2	190	4860.92	254.78	-150.08	-255.72	295.70	329.50	0.11	0.11	5058.88	-218.76	7352.12
31	5064	4.00	338.70	132.4	190	5050.47	267.03	-154.68	-268.00	308.60	329.92	0.08	0.05	5248.93	-214.24	7162.07
32	5158	4.10	333.70	134.2	94	5144.23	273.10	-157.36	-274.08	315.19	330.05	0.39	0.11	5342.94	-211.60	7068.06
33	5345	3.50	338.90	104.6	187	5330.82	284.42	-162.38	-285.43	327.50	330.28	0.37	-0.32	5529.99	-206.65	6881.01
34	5536	4.90	340.20	107.3	191	5521.30	297.53	-167.24	-298.58	341.31	330.66	0.73	0.73	5721.01	-201.87	6689.99
35	5726	5.80	332.00	113.6	190	5710.48	313.65	-174.49	-314.74	358.92	330.91	0.62	0.47	5910.85	-194.72	6500.15
36	5916	5.90	330.80	116.3	190	5899.49	330.65	-183.76	-331.79	378.28	330.94	0.08	0.05	6100.55	-185.55	6310.45
37	6106	5.50	330.80	119.0	190	6088.55	347.12	-192.97	-348.32	397.15	330.93	0.21	-0.21	6290.29	-176.45	6120.71
38	6296	4.70	329.40	122.5	190	6277.80	361.77	-201.38	-363.03	414.04	330.90	0.43	-0.42	6480.14	-168.14	5930.86
39	6486	4.00	331.20	123.4	190	6467.25	374.28	-208.53	-375.58	428.45	330.88	0.38	-0.37	6670.10	-161.06	5740.90
40	6676	6.00	323.00	123.4	190	6656.52	388.01	-217.70	-389.37	444.91	330.70	1.12	1.05	6859.93	-151.98	5551.07
41	6867	4.90	332.70	125.2	191	6846.65	403.24	-227.45	-404.66	462.96	330.57	0.75	-0.58	7050.70	-142.33	5360.30
42	7057	3.80	337.00	127.0	190	7036.10	416.24	-233.63	-417.70	477.33	330.70	0.60	-0.58	7240.68	-136.23	5170.32
43	7248	6.80	329.00	126.1	191	7226.27	431.77	-241.93	-433.28	494.93	330.74	1.61	1.57	7431.48	-128.02	4979.52
44	7438	6.20	329.30	127.0	190	7415.05	450.23	-252.96	-451.81	516.43	330.67	0.32	-0.32	7621.02	-117.11	4789.98
45	7629	4.80	327.80	131.4	191	7605.16	465.86	-262.49	-467.50	534.72	330.60	0.74	-0.73	7811.77	-107.68	4599.23
46	7819	3.60	331.50	131.4	190	7794.65	477.83	-269.57	-479.51	548.62	330.57	0.65	-0.63	8001.75	-100.68	4409.25
47	8009	4.40	328.80	131.4	190	7984.18	489.31	-276.19	-491.03	561.87	330.56	0.43	0.42	8191.76	-94.13	4219.24
48	8200	5.80	330.50	133.3	191	8174.42	503.97	-284.74	-505.75	578.85	330.53	0.74	0.73	8382.60	-85.67	4028.40
49	8390	4.30	332.90	129.7	190	8363.68	518.67	-292.71	-520.50	595.57	330.56	0.80	-0.79	8572.46	-77.79	3838.54
50	8580	3.60	332.30	127.0	190	8553.23	530.29	-298.73	-532.16	608.65	330.61	0.37	-0.37	8762.48	-71.85	3648.52
51	8771	2.70	341.00	124.1	191	8743.94	539.86	-302.98	-541.75	619.07	330.70	0.53	-0.47	8953.58	-67.65	3457.42
52	8961	1.40	5.90	128.8	190	8933.82	546.40	-304.20	-548.30	625.37	330.89	0.81	-0.68	9143.73	-66.48	3267.27
53	9150	1.00	21.80	133.3	189	9122.78	550.23	-303.35	-552.12	628.31	331.13	0.27	-0.21	9332.84	-67.35	3078.16
54	9340	1.60	43.40	137.8	190	9312.73	553.69	-300.91	-555.57	630.18	331.48	0.40	0.32	9522.94	-69.81	2888.06
55	9531	1.20	49.30	138.7	191	9503.67	556.93	-297.56	-558.79	631.44	331.88	0.22	-0.21	9714.01	-73.18	2696.99

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SVY	MD	INC	TRUE AZM	TEMP °F	Course Length	TVD	N-S	E-W	Surface Vert Sect	CLOSURE		DLS/ 100	BUR/ 100'	TVD AT 0' V. SEC.	RIGHT(+) LEFT(-)	ABOVE (+) BELOW (-)
56	9721	0.60	90.80	138.7	190	9693.65	558.22	-295.06	-560.06	631.40	332.14	0.45	-0.32	9904.04	-75.69	2506.96
57	9912	0.80	75.30	138.7	191	9884.63	558.54	-292.77	-560.37	630.62	332.34	0.14	0.10	10095.04	-77.98	2315.96
58	10103	1.50	102.90	131.5	191	10075.59	558.32	-289.04	-560.13	628.71	332.63	0.46	0.37	10285.99	-81.71	2125.01
59	10293	1.60	115.30	131.4	190	10265.53	556.63	-284.22	-558.41	625.00	332.95	0.18	0.05	10475.85	-86.52	1935.15
60	10483	1.90	97.40	138.7	190	10455.44	555.09	-278.70	-556.83	621.13	333.34	0.33	0.16	10665.70	-92.03	1745.30
61	10673	0.80	217.40	138.7	190	10645.40	553.63	-276.38	-555.36	618.79	333.47	1.26	-0.58	10855.61	-94.34	1555.39
62	10863	0.90	139.30	138.7	190	10835.39	551.45	-276.22	-553.17	616.76	333.39	0.57	0.05	11045.50	-94.49	1365.50
63	11054	0.50	85.10	141.4	191	11026.38	550.38	-274.41	-552.10	615.00	333.50	0.38	-0.21	11236.44	-96.29	1174.56
64	11244	1.80	107.60	143.2	190	11216.33	549.55	-270.74	-551.24	612.62	333.77	0.71	0.68	11426.37	-99.96	984.63
65	11433	1.50	306.80	145.0	189	11405.31	550.14	-269.89	-551.82	612.77	333.87	1.72	-0.16	11615.36	-100.81	795.64
66	11623	0.30	5.50	146.0	190	11595.28	552.12	-271.83	-553.82	615.41	333.79	0.72	-0.63	11805.42	-98.88	605.58
67	11716	1.90	157.80	138.7	93	11688.27	550.94	-271.23	-552.63	614.08	333.79	2.33	1.72	11898.36	-99.48	512.64
68	11764	8.60	177.90	136.9	48	11736.04	546.61	-270.79	-548.30	610.01	333.65	14.26	13.96	11945.95	-99.89	465.05
69	11811	15.40	183.30	137.8	47	11781.99	536.85	-271.02	-538.55	601.39	333.21	14.65	14.47	11991.50	-99.59	419.50
70	11859	21.20	185.60	137.8	48	11827.54	521.84	-272.24	-523.54	588.58	332.45	12.17	12.08	12036.44	-98.28	374.56
71	11907	25.60	184.20	139.9	48	11871.58	502.85	-273.85	-504.56	572.58	331.43	9.24	9.17	12079.71	-96.56	331.29
72	11955	31.10	183.30	139.6	48	11913.81	480.12	-275.32	-481.84	553.45	330.17	11.49	11.46	12121.01	-94.94	289.99
73	12002	36.90	184.00	139.6	47	11952.76	453.90	-277.00	-455.63	531.75	328.61	12.37	12.34	12158.88	-93.09	252.12
74	12050	41.70	186.50	139.6	48	11989.89	423.64	-279.82	-425.39	507.71	326.55	10.53	10.00	12194.78	-90.09	216.22
75	12097	46.70	188.00	141.4	47	12023.58	391.15	-283.97	-392.93	483.36	324.02	10.87	10.64	12227.14	-85.73	183.86
76	12145	49.80	186.50	141.4	48	12055.54	355.63	-288.48	-357.44	457.92	320.95	6.87	6.46	12257.65	-81.00	153.35
77	12192	54.00	184.10	143.2	47	12084.54	318.81	-291.87	-320.64	432.24	317.53	9.80	8.94	12285.14	-77.38	125.86
78	12240	58.90	181.10	142.3	48	12111.06	278.87	-293.66	-280.71	404.97	313.52	11.46	10.21	12310.04	-75.34	100.96
79	12287	63.00	180.80	143.2	47	12133.88	237.80	-294.33	-239.64	378.39	308.94	8.74	8.72	12331.18	-74.40	79.82
80	12335	67.10	180.30	143.2	48	12154.12	194.29	-294.75	-196.14	353.02	303.39	8.59	8.54	12349.64	-73.72	61.36
81	12382	70.90	180.80	144.1	47	12170.96	150.42	-295.17	-152.27	331.29	297.00	8.15	8.09	12364.69	-73.02	46.31
82	12431	75.10	181.80	138.7	49	12185.28	103.59	-296.24	-105.44	313.83	289.27	8.79	8.57	12377.10	-71.66	33.90
83	12478	81.10	181.20	141.4	47	12194.97	57.63	-297.44	-59.50	302.97	280.97	12.83	12.77	12384.91	-70.17	26.09
84	12525	87.70	178.00	148.6	47	12199.56	10.89	-297.11	-12.76	297.31	272.10	15.59	14.04	12387.58	-70.21	23.42
85	12621	89.70	177.80	157.6	96	12201.73	-85.02	-293.59	83.17	305.65	253.85	2.09	2.08	12385.84	-73.12	25.16
86	12717	90.10	177.80	163.0	96	12201.90	-180.95	-289.90	179.12	341.74	238.03	0.42	0.42	12382.09	-76.20	28.91
87	12813	91.40	177.70	167.5	96	12200.64	-276.86	-286.14	275.06	398.15	225.94	1.36	1.35	12376.91	-79.37	34.09
88	12907	90.50	179.40	169.3	94	12199.09	-370.81	-283.76	369.02	466.93	217.42	2.05	-0.96	12371.51	-81.16	39.49
89	13002	89.00	179.90	174.6	95	12199.50	-465.81	-283.18	464.02	545.13	211.30	1.66	-1.58	12368.05	-81.14	42.95
90	13096	88.00	181.80	176.4	94	12201.96	-559.76	-284.57	557.96	627.94	206.95	2.28	-1.06	12366.67	-79.16	44.33

					30-025-45082									Target Calculations		
			TRUE	TEMP	Course				Surface	CLOSURE		DLS/	BUR/	TVD AT 0'	RIGHT(+)	ABOVE (+)
SVY	MD	INC	AZM	°F	Length	TVD	N-S	E-W	Vert Sect	DIST	DIR	100	100'	V. SEC.	LEFT(-)	BELOW (-)
91	13191	90.00	182.70	178.2	95	12203.62	-654.67	-288.30	652.84	715.34	203.77	2.31	2.11	12364.45	-74.83	46.55
92	13286	88.70	184.80	174.6	95	12204.70	-749.45	-294.51	747.58	805.24	201.45	2.60	-1.37	12361.66	-68.02	49.34
93	13381	83.10	183.00	178.2	95	12211.49	-843.94	-300.96	842.04	896.00	199.63	6.19	-5.89	12364.59	-60.98	46.41
94	13475	81.90	181.90	176.4	94	12223.76	-937.05	-304.95	935.12	985.42	198.03	1.73	-1.28	12373.05	-56.41	37.95
95	13570	84.20	179.40	167.5	95	12235.25	-1031.33	-306.01	1029.39	1075.78	196.53	3.56	2.42	12380.70	-54.75	30.30
96	13664	90.30	179.10	167.5	94	12239.76	-1125.17	-304.78	1123.24	1165.72	195.16	6.50	6.49	12381.37	-55.39	29.63
97	13758	91.00	181.10	175.5	94	12238.69	-1219.16	-304.94	1217.22	1256.72	194.04	2.25	0.74	12376.46	-54.64	34.54
98	13853	89.90	182.20	176.4	95	12237.95	-1314.12	-307.68	1312.16	1349.66	193.18	1.64	-1.16	12371.84	-51.31	39.16
99	13948	86.80	181.70	177.3	95	12240.68	-1409.01	-310.91	1407.03	1442.91	192.44	3.31	-3.26	12370.69	-47.48	40.31
100	14042	88.20	182.40	177.3	94	12244.78	-1502.86	-314.27	1500.85	1535.37	191.81	1.66	1.49	12370.96	-43.53	40.04
101	14136	89.70	183.00	184.5	94	12246.51	-1596.73	-318.70	1594.70	1628.23	191.29	1.72	1.60	12368.85	-38.51	42.15
102	14231	88.80	181.20	180.0	95	12247.75	-1691.66	-322.18	1689.60	1722.06	190.78	2.12	-0.95	12366.21	-34.44	44.79
103	14326	89.70	181.70	184.5	95	12248.99	-1786.62	-324.58	1784.54	1815.86	190.30	1.08	0.95	12363.58	-31.44	47.42
104	14420	89.50	182.50	184.5	94	12249.65	-1880.55	-328.03	1878.45	1908.95	189.89	0.88	-0.21	12360.40	-27.40	50.60
105	14515	88.00	181.40	184.5	95	12251.72	-1975.47	-331.26	1973.35	2003.05	189.52	1.96	-1.58	12358.59	-23.57	52.41
106	14609	87.00	178.70	185.4	94	12255.82	-2069.37	-331.34	2067.25	2095.73	189.10	3.06	-1.06	12358.85	-22.90	52.15
107	14703	88.90	179.70	189.0	94	12259.19	-2163.30	-330.03	2161.18	2188.33	188.67	2.28	2.02	12358.38	-23.62	52.62
108	14798	87.40	179.00	187.2	95	12262.25	-2258.24	-328.95	2256.13	2282.07	188.29	1.74	-1.58	12357.57	-24.10	53.43
109	14892	87.00	178.30	191.7	94	12266.84	-2352.10	-326.74	2350.00	2374.68	187.91	0.86	-0.43	12358.32	-25.72	52.68
110	14986	87.00	178.00	193.5	94	12271.76	-2445.92	-323.71	2443.84	2467.25	187.54	0.32	0.00	12359.41	-28.17	51.59
111	15081	87.10	178.10	194.4	95	12276.65	-2540.74	-320.48	2538.68	2560.87	187.19	0.15	0.11	12360.42	-30.80	50.58
112	15175	87.60	177.60	195.3	94	12281.00	-2634.57	-316.96	2632.53	2653.57	186.86	0.75	0.53	12360.93	-33.73	50.07
113	15269	88.30	177.20	197.1	94	12284.36	-2728.41	-312.70	2726.40	2746.27	186.54	0.86	0.74	12360.46	-37.40	50.54
114	15364	88.80	178.20	194.4	95	12286.77	-2823.31	-308.89	2821.31	2840.15	186.24	1.18	0.53	12358.98	-40.62	52.02
115	15458	88.60	180.00	192.6	94	12288.90	-2917.27	-307.41	2915.28	2933.42	186.02	1.93	-0.21	12357.28	-41.50	53.72
116	15554	90.10	181.00	192.6	96	12289.99	-3013.25	-308.25	3011.26	3028.98	185.84	1.88	1.56	12354.44	-40.06	56.56
117	15648	89.90	181.30	184.5	94	12289.99	-3107.23	-310.14	3105.22	3122.67	185.70	0.38	-0.21	12350.60	-37.59	60.40
118	15743	86.80	181.90	183.6	95	12292.72	-3202.14	-312.79	3200.12	3217.38	185.58	3.32	-3.26	12349.46	-34.34	61.54
119	15837	85.10	182.30	189.0	94	12299.36	-3295.84	-316.22	3293.79	3310.98	185.48	1.86	-1.81	12352.27	-30.31	58.73
120	15932	85.40	182.80	190.8	95	12307.23	-3390.42	-320.43	3388.34	3405.53	185.40	0.61	0.32	12356.28	-25.51	54.72
121	16026	84.60	182.00	187.2	94	12315.42	-3483.98	-324.36	3481.87	3499.05	185.32	1.20	-0.85	12360.65	-21.00	50.35
122	16055	84.30	181.40	175.5	29	12318.23	-3512.83	-325.21	3510.72	3527.85	185.29	2.30	-1.03	12362.27	-19.96	48.73
123	16149	84.50	177.00	186.3	94	12327.40	-3606.35	-323.91	3604.25	3620.87	185.13	4.66	0.21	12367.63	-20.68	43.37
124	16245	85.10	177.20	189.9	96	12336.10	-3701.83	-319.07	3699.76	3715.56	184.93	0.66	0.62	12372.43	-24.92	38.57
125	16340	85.70	177.60	184.5	95	12343.72	-3796.43	-314.77	3794.38	3809.46	184.74	0.76	0.63	12376.18	-28.62	34.82

[illegible]