



Matador Resources

**Eddy County, New Mexico (NAD 27)
Zach McCormick Fed 18-24S-29E RB
#121H**

Wellbore #1

30.015-44244

Design: Surveys

Standard Survey Report

09 February, 2018

MS *Directional*



MS Directional Survey Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well #121H
Project:	Eddy County, New Mexico (NAD 27)	TVD Reference:	WELL @ 2981.63usft (Patterson 297)
Site:	Zach McCormick Fed 18-24S-29E RB	MD Reference:	WELL @ 2981.63usft (Patterson 297)
Well:	#121H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Conroe Db

Project	Eddy County, New Mexico (NAD 27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Well	#121H			
Well Position	+N/-S	0.00 usft	Northing:	444,955.64 usft
	+E/-W	0.00 usft	Easting:	593,576.63 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:
				2,952.63 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	1/25/2018	7.18	59.94	47,885

Design	Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	90.02	

Survey Program	Date 2/9/2018				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
176.00	13,162.00	MS MWD (Wellbore #1)	MWD	OWSG MWD - Standard	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
176.00	0.20	265.40	176.00	-0.02	-0.31	-0.31	0.11	0.11	0.00	
328.00	0.20	201.00	328.00	-0.29	-0.67	-0.67	0.14	0.00	-42.37	
441.00	0.30	210.00	441.00	-0.73	-0.88	-0.88	0.09	0.09	7.96	
603.00	0.20	180.20	603.00	-1.38	-1.10	-1.10	0.10	-0.06	-18.40	
785.00	0.20	179.90	785.00	-2.02	-1.10	-1.10	0.00	0.00	-0.16	
970.00	0.10	119.10	969.99	-2.42	-0.96	-0.96	0.09	-0.05	-32.86	
1,157.00	0.20	90.20	1,156.99	-2.50	-0.49	-0.49	0.07	0.05	-15.45	
1,345.00	0.00	33.50	1,344.99	-2.50	-0.16	-0.16	0.11	-0.11	0.00	
1,532.00	1.30	286.20	1,531.98	-1.91	-2.20	-2.20	0.70	0.70	0.00	
1,720.00	2.60	291.50	1,719.86	0.25	-8.21	-8.21	0.70	0.69	2.82	
1,907.00	3.50	288.10	1,906.60	3.58	-17.58	-17.59	0.49	0.48	-1.82	
2,094.00	4.00	285.50	2,093.20	7.09	-29.29	-29.30	0.28	0.27	-1.39	
2,281.00	3.70	279.80	2,279.78	9.86	-41.53	-41.53	0.26	-0.16	-3.05	
2,468.00	3.90	289.20	2,466.37	12.98	-53.48	-53.48	0.35	0.11	5.03	



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Well:	#121H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Conroe Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
2,655.00	3.40	294.00	2,652.99	17.33	-64.55	-64.55	0.31	-0.27	2.57	
2,843.00	2.60	291.80	2,840.73	21.18	-73.60	-73.61	0.43	-0.43	-1.17	
3,030.00	5.50	286.70	3,027.24	25.33	-86.13	-86.13	1.56	1.55	-2.73	
3,217.00	5.70	283.10	3,213.35	30.01	-103.75	-103.76	0.22	0.11	-1.93	
3,405.00	5.50	282.50	3,400.45	34.08	-121.64	-121.65	0.11	-0.11	-0.32	
3,592.00	6.90	286.70	3,586.35	39.24	-141.15	-141.17	0.79	0.75	2.25	
3,779.00	6.90	286.30	3,772.00	45.62	-162.69	-162.71	0.03	0.00	-0.21	
3,966.00	6.90	288.40	3,957.65	52.32	-184.13	-184.15	0.13	0.00	1.12	
4,153.00	6.70	289.80	4,143.33	59.56	-205.05	-205.08	0.14	-0.11	0.75	
4,340.00	5.90	291.50	4,329.20	66.78	-224.26	-224.28	0.44	-0.43	0.91	
4,527.00	5.10	287.10	4,515.34	72.75	-241.15	-241.17	0.48	-0.43	-2.35	
4,714.00	2.80	279.00	4,701.88	75.91	-253.60	-253.63	1.26	-1.23	-4.33	
4,901.00	0.90	311.60	4,888.78	77.60	-259.22	-259.24	1.12	-1.02	17.43	
5,088.00	1.40	212.60	5,075.76	76.65	-261.54	-261.57	0.95	0.27	-52.94	
5,275.00	0.20	308.20	5,262.74	74.92	-263.03	-263.06	0.77	-0.64	51.12	
5,463.00	0.10	48.80	5,450.74	75.23	-263.17	-263.19	0.13	-0.05	53.51	
5,650.00	0.10	132.90	5,637.74	75.23	-262.92	-262.95	0.07	0.00	44.97	
5,837.00	0.30	173.50	5,824.74	74.63	-262.75	-262.77	0.12	0.11	21.71	
6,025.00	0.40	204.90	6,012.73	73.55	-262.97	-262.99	0.11	0.05	16.70	
6,212.00	0.80	203.50	6,199.72	71.76	-263.76	-263.79	0.21	0.21	-0.75	
6,400.00	1.20	212.10	6,387.69	68.89	-265.33	-265.36	0.23	0.21	4.57	
6,587.00	1.50	246.00	6,574.64	66.23	-268.61	-268.63	0.45	0.16	18.13	
6,774.00	0.60	337.00	6,761.62	66.14	-271.23	-271.25	0.87	-0.48	48.66	
6,961.00	1.60	301.60	6,948.58	68.41	-273.84	-273.86	0.62	0.53	-18.93	
7,148.00	1.80	318.50	7,135.50	71.98	-278.01	-278.03	0.29	0.11	9.04	
7,335.00	0.90	193.90	7,322.47	72.75	-280.30	-280.33	1.30	-0.48	-66.63	
7,523.00	1.50	147.20	7,510.44	69.25	-279.33	-279.35	0.58	0.32	-24.84	
7,710.00	0.60	120.50	7,697.40	66.70	-277.16	-277.18	0.54	-0.48	-14.28	
7,787.00	0.30	32.40	7,774.40	66.66	-276.70	-276.72	0.86	-0.39	-114.42	
7,834.00	4.20	83.20	7,821.36	66.97	-274.93	-274.95	8.55	8.30	108.09	
7,881.00	11.00	85.40	7,867.92	67.53	-268.74	-268.76	14.48	14.47	4.68	
7,927.00	16.30	87.10	7,912.60	68.21	-257.91	-257.93	11.55	11.52	3.70	
7,974.00	19.70	90.60	7,957.30	68.46	-243.40	-243.42	7.59	7.23	7.45	
8,021.00	22.10	90.00	8,001.20	68.38	-226.63	-226.66	5.13	5.11	-1.28	
8,068.00	24.80	89.10	8,044.31	68.53	-207.93	-207.96	5.79	5.74	-1.91	
8,114.00	28.10	88.10	8,085.49	69.05	-187.45	-187.48	7.24	7.17	-2.17	
8,161.00	30.40	85.50	8,126.50	70.35	-164.53	-164.55	5.59	4.89	-5.53	
8,208.00	35.00	85.20	8,166.04	72.41	-139.23	-139.26	9.79	9.79	-0.64	
8,255.00	41.00	85.90	8,203.06	74.64	-110.39	-110.42	12.80	12.77	1.49	
8,302.00	47.70	87.50	8,236.65	76.50	-77.61	-77.64	14.45	14.26	3.40	
8,349.00	54.30	88.30	8,266.21	77.83	-41.13	-41.16	14.10	14.04	1.70	
8,395.00	57.50	88.50	8,292.00	78.89	-3.06	-3.09	6.97	6.96	0.43	
8,409.19	58.47	88.81	8,299.52	79.17	8.97	8.94	7.05	6.80	2.18	
HL Crossing - 8409.19' MD										



MS Directional
Survey Report



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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Conroe Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,442.00	60.70	89.50	8,316.13	79.59	37.26	37.23	7.05	6.81	2.11
8,489.00	66.00	90.40	8,337.21	79.62	79.25	79.22	11.41	11.28	1.91
8,536.00	70.40	90.80	8,354.66	79.16	122.87	122.85	9.39	9.36	0.85
8,583.00	74.30	91.40	8,368.91	78.30	167.64	167.62	8.39	8.30	1.28
8,630.00	78.00	91.00	8,380.15	77.34	213.26	213.23	7.92	7.87	-0.85
8,676.00	80.50	89.90	8,388.73	76.99	258.45	258.42	5.92	5.43	-2.39
8,723.00	82.60	89.50	8,395.64	77.23	304.93	304.91	4.55	4.47	-0.85
8,782.00	85.50	90.50	8,401.76	77.23	363.61	363.58	5.20	4.92	1.69
8,829.00	86.20	89.90	8,405.16	77.07	410.48	410.46	1.96	1.49	-1.28
8,876.00	86.70	89.70	8,408.07	77.23	457.39	457.37	1.15	1.06	-0.43
8,969.00	88.40	90.20	8,412.04	77.31	550.30	550.28	1.91	1.83	0.54
9,063.00	89.50	90.00	8,413.77	77.15	644.29	644.26	1.19	1.17	-0.21
9,157.00	88.20	89.70	8,415.65	77.39	738.27	738.24	1.42	-1.38	-0.32
9,250.00	89.40	89.50	8,417.60	78.04	831.24	831.21	1.31	1.29	-0.22
9,344.00	88.20	90.20	8,419.57	78.29	925.22	925.19	1.48	-1.28	0.74
9,438.00	89.10	90.20	8,421.78	77.96	1,019.19	1,019.16	0.96	0.96	0.00
9,532.00	87.50	90.40	8,424.57	77.47	1,113.14	1,113.12	1.72	-1.70	0.21
9,625.00	88.20	90.10	8,428.06	77.06	1,206.08	1,206.05	0.82	0.75	-0.32
9,718.00	89.40	90.00	8,430.01	76.98	1,299.06	1,299.03	1.29	1.29	-0.11
9,812.00	88.10	90.70	8,432.06	76.41	1,393.03	1,393.00	1.57	-1.38	0.74
9,905.00	87.30	90.90	8,435.79	75.11	1,485.94	1,485.92	0.89	-0.86	0.22
9,999.00	88.00	90.80	8,439.64	73.72	1,579.85	1,579.83	0.75	0.74	-0.11
10,093.00	87.10	91.10	8,443.66	72.16	1,673.75	1,673.73	1.01	-0.96	0.32
10,186.00	88.20	91.50	8,447.48	70.05	1,766.65	1,766.63	1.26	1.18	0.43
10,280.00	86.40	91.40	8,451.90	67.68	1,860.51	1,860.49	1.92	-1.91	-0.11
10,374.00	86.20	91.70	8,457.97	65.14	1,954.28	1,954.26	0.38	-0.21	0.32
10,467.00	87.30	91.40	8,463.24	62.63	2,047.10	2,047.07	1.23	1.18	-0.32
10,561.00	86.10	92.30	8,468.65	59.60	2,140.89	2,140.87	1.59	-1.28	0.96
10,655.00	86.60	92.40	8,474.64	55.75	2,234.62	2,234.60	0.54	0.53	0.11
10,748.00	88.00	90.70	8,479.02	53.24	2,327.48	2,327.46	2.37	1.51	-1.83
10,842.00	89.60	90.50	8,480.99	52.26	2,421.45	2,421.43	1.72	1.70	-0.21
10,935.00	88.30	90.60	8,482.69	51.36	2,514.43	2,514.41	1.40	-1.40	0.11
11,029.00	86.50	90.10	8,486.96	50.79	2,608.32	2,608.30	1.99	-1.91	-0.53
11,123.00	86.60	89.90	8,492.61	50.79	2,702.15	2,702.13	0.24	0.11	-0.21
11,216.00	87.40	89.60	8,497.48	51.20	2,795.02	2,795.01	0.92	0.86	-0.32
11,310.00	88.80	89.30	8,500.60	52.10	2,888.96	2,888.95	1.52	1.49	-0.32
11,403.00	87.90	89.50	8,503.27	53.07	2,981.92	2,981.90	0.99	-0.97	0.22
11,497.00	89.30	90.10	8,505.57	53.40	3,075.89	3,075.87	1.62	1.49	0.64
11,591.00	88.60	89.40	8,507.29	53.81	3,169.87	3,169.85	1.05	-0.74	-0.74
11,684.00	89.60	89.50	8,508.75	54.70	3,262.85	3,262.83	1.08	1.08	0.11
11,778.00	87.60	88.90	8,511.05	56.01	3,356.81	3,356.79	2.22	-2.13	-0.64
11,871.00	88.10	89.00	8,514.54	57.72	3,449.73	3,449.71	0.55	0.54	0.11
11,965.00	89.80	88.90	8,516.26	59.44	3,543.70	3,543.67	1.81	1.81	-0.11



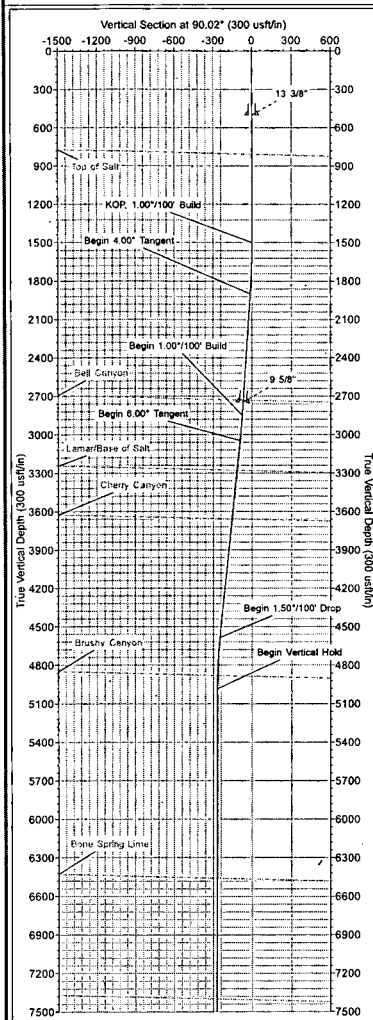
MS Directional
Survey Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well #121H
Project:	Eddy County, New Mexico (NAD 27)	TVD Reference:	WELL @ 2981.63usft (Patterson 297)
Site:	Zach McCormick Fed 18-24S-29E RB	MD Reference:	WELL @ 2981.63usft (Patterson 297)
Well:	#121H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Conroe Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
12,059.00	88.10	89.60	8,517.98	60.67	3,637.67	3,637.65	1.96	-1.81	0.74	
12,152.00	87.80	89.50	8,521.31	61.40	3,730.60	3,730.58	0.34	-0.32	-0.11	
12,246.00	89.10	89.40	8,523.85	62.30	3,824.56	3,824.54	1.39	1.38	-0.11	
12,339.00	90.30	89.40	8,524.34	63.27	3,917.56	3,917.53	1.29	1.29	0.00	
12,433.00	88.90	90.10	8,525.00	63.68	4,011.55	4,011.53	1.67	-1.49	0.74	
12,526.00	89.50	89.90	8,526.30	63.68	4,104.54	4,104.52	0.68	0.65	-0.22	
12,620.00	90.40	89.10	8,526.38	64.51	4,198.53	4,198.51	1.28	0.96	-0.85	
12,714.00	89.50	89.70	8,526.46	65.49	4,292.53	4,292.51	1.15	-0.96	0.64	
12,807.00	90.20	89.90	8,526.70	65.81	4,385.53	4,385.50	0.78	0.75	0.22	
12,901.00	89.40	89.80	8,527.03	66.06	4,479.53	4,479.50	0.86	-0.85	-0.11	
12,995.00	90.60	89.80	8,527.03	66.39	4,573.52	4,573.50	1.28	1.28	0.00	
13,058.87	91.77	89.66	8,525.71	66.69	4,637.38	4,637.35	1.84	1.83	-0.21	
HL Crossing - 13058.87' MD										
13,088.00	92.30	89.60	8,524.68	66.88	4,666.49	4,666.46	1.84	1.83	-0.22	
13,162.00	92.30	89.60	8,521.71	67.39	4,740.43	4,740.40	0.00	0.00	0.00	
Projection to TD-13162.00' MD										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,409.19	8,299.52	79.17	8.97	HL Crossing - 8409.19' MD
13,058.87	8,525.71	66.69	4,637.38	HL Crossing - 13058.87' MD
13,162.00	8,521.71	67.39	4,740.43	Projection to TD-13162.00' MD



ANNOTATIONS									
MD	Inc	Az	21-N-S	+E-W	V-Sect	Departure	Annotation		
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	KOP: 1.00°/100' Build		
1800.00	0.00	0.00	284.70	189.68	3.54	-13.50	13.96	Bain 6.00°/100' Tangent	
2450.00	0.00	0.00	284.70	189.68	3.54	-13.50	13.96	Bain 6.00°/100' Tangent	
3050.10	6.00	284.70	3046.69	24.78	-94.47	-94.48	97.87	Bain 6.00°/100' Tangent	
4595.54	6.00	284.70	4583.66	65.78	-252.75	-252.77	259.24	Bain 1.50°/100' Drop	
4985.61	0.00	0.00	284.70	189.68	3.54	-13.50	13.96	Bain 6.00°/100' Tangent	
7851.86	0.00	0.00	7833.25	71.05	-271.00	-271.02	280.17	Bain 10.00°/100' Build	
8751.86	88.80	80.02	8412.04	70.85	287.96	287.94	859.13	Bain 88.60°/ Lateral	
13788.60	0.00	0.00	284.70	189.68	3.54	-13.50	13.96	Bain 6.00°/100' Tangent	



Azimuths to Grid North
True North: -0.16°
Magnetic North: 7.02°
Magnetic Field
Strength: 47885.5nT
Dip Angle: 59.94°
Date: 1/25/2016
Model: BGGM2017

WELL DETAILS: #121H				
		2852.63		
*N-S	*E-W	Northing	Easting	Latitude
0 00	0 00	444955.64	593576.93	32° 13' 22.57" N 104° 1' 50.643 W

US State Plane 1927 (Exact solution)
 New Mexico East 3001

Created By: HLH
 Date: 14:20, February 09 2018

