



HOBBS OCD

AUG 19 2019

RECEIVED



Brad Lummis Fed Com No. 111H

Lea County, NM

30-025-45511

April 16, 2019

Job No. LNM5198419

ORIGINAL

Certified Report



April 16, 2019



Operator Name: Matador Resources
Well Name: Brad Lummis Fed Com No. 111H
County/Parish: Lea County,
State: NM
Rig Name: Patterson 274
Job Number: LNM5198419

This is to certify the surveys performed on the referenced well by Professional Directional Ent., Inc. are true and correct MWD Surveys, data provided as follows:

<u>Surveyor</u>	<u>Surveyed Depths</u>	<u>Projection to Bit</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
ProDirectional	186' MD – 15,341' MD	15,403' MD	03/12/19 – 03/26/19	MWD-OWSG

Sincerely,

Mike Coats
Regulatory Specialist
Professional Directional

850 Conroe Park West Drive | Conroe, TX 77303 | Phone: 936.441.7266

prodirectional.com



Matador Resources

**Lea County, NM
Brad Lummis Fed Com
No. 111H
OH**

Survey: ProDirectional

Survey Report

16 April, 2019





ProDirectional Survey Report



Company: Matador Resources
Project: Lea County, NM (NAD83)
Site: Brad Lummis Fed Com
Well: No. 111H
Wellbore: OH
Design: MWD-186'-15341', PTB: 15403'

Local Co-ordinate Reference: Well No. 111H
TVD Reference: Well @ 3520.50usft
MD Reference: Well @ 3520.50usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983		System Datum: Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Brad Lummis Fed Com		
Site Position:		Northing: 441,075.00 usft	Latitude: 32.209451
From: Map		Easting: 816,955.00 usft	Longitude: -103.442194
Position Uncertainty: 0.00 usft		Slot Radius: 13-3/16 "	Grid Convergence: 0.48 °

Well	No. 111H		
Well Position	+N/-S 0.00 usft	Northing: 440,966.00 usft	Latitude: 32.209192
	+E/-W 0.00 usft	Easting: 815,191.00 usft	Longitude: -103.447900
Position Uncertainty	0.00 usft	Wellhead Elevation: usft	Ground Level: 3,492.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	HDGM	3/12/2019	(°) 6.65
			Dip Angle (°) 59.87
			Field Strength (nT) 47,919.40

Design	MWD-186'-15341', PTB: 15403'		
Audit Notes:			
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°) 179.55

Survey Program	Date 4/16/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
186.00	15,403.00	Survey #1 (OH)	MWD+HDGM
			Description OWSG MWD + HRGM



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Survey											
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0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	440,966.00	815,191.00	
186.00	0.60	317.60	186.00	-0.72	0.72	-0.66	0.97	317.60	440,966.72	815,190.34	
Pro MWD First Survey: 186' MD											
339.00	0.50	23.00	338.99	-1.93	1.93	-0.94	2.14	334.07	440,967.93	815,190.06	
430.00	0.70	80.80	429.99	-2.38	2.38	-0.23	2.39	354.43	440,968.38	815,190.77	
520.00	0.80	96.30	519.98	-2.39	2.40	0.94	2.57	21.30	440,968.40	815,191.94	
610.00	1.00	106.10	609.97	-2.09	2.11	2.31	3.13	47.62	440,968.11	815,193.31	
701.00	1.10	133.40	700.95	-1.26	1.29	3.71	3.93	70.81	440,967.29	815,194.71	
793.00	0.90	142.60	792.94	-0.07	0.11	4.79	4.79	88.68	440,966.11	815,195.79	
889.00	1.20	119.30	888.92	1.03	-0.98	6.13	6.20	99.09	440,965.02	815,197.13	
984.00	0.90	108.70	983.91	1.77	-1.71	7.70	7.89	102.49	440,964.29	815,198.70	
1,072.00	1.00	106.30	1,071.90	2.21	-2.14	9.09	9.34	103.26	440,963.86	815,200.09	
1,174.00	0.70	120.40	1,173.88	2.79	-2.71	10.48	10.83	104.48	440,963.29	815,201.48	
1,269.00	0.40	97.30	1,268.88	3.13	-3.04	11.31	11.72	105.06	440,962.96	815,202.31	
1,364.00	2.80	41.30	1,363.84	1.45	-1.34	13.17	13.24	95.82	440,964.66	815,204.17	
1,459.00	5.80	43.50	1,458.56	-3.74	3.88	18.01	18.43	77.83	440,969.88	815,209.01	
1,554.00	6.20	45.80	1,553.04	-10.75	10.94	24.99	27.28	66.36	440,976.94	815,215.99	
1,649.00	5.60	48.50	1,647.54	-17.34	17.59	32.14	36.64	61.31	440,983.59	815,223.14	
1,744.00	4.80	53.20	1,742.14	-22.74	23.04	38.80	45.12	59.29	440,989.04	815,229.80	
1,839.00	5.90	37.20	1,836.73	-28.96	29.31	44.93	53.65	56.88	440,995.31	815,235.93	
1,935.00	6.30	35.00	1,932.19	-37.16	37.56	50.94	63.29	53.60	441,003.56	815,241.94	
2,030.00	6.00	35.60	2,026.64	-45.42	45.86	56.82	73.02	51.09	441,011.86	815,247.82	
2,124.00	5.80	35.40	2,120.15	-53.24	53.73	62.43	82.37	49.28	441,019.73	815,253.43	
2,220.00	5.00	34.20	2,215.72	-60.61	61.14	67.59	91.14	47.87	441,027.14	815,258.59	
2,315.00	4.60	35.00	2,310.39	-67.12	67.69	72.10	98.90	46.81	441,033.69	815,263.10	
2,410.00	5.90	32.70	2,404.99	-74.31	74.92	76.92	107.38	45.76	441,040.92	815,267.92	
2,505.00	6.80	34.20	2,499.40	-83.03	83.68	82.72	117.67	44.67	441,049.68	815,273.72	



ProDirectional Survey Report



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Wellbore: OH
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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
2,600.00	6.30	35.40	2,593.78	-91.88	92.58	88.90	128.36	43.84	441,058.58	815,279.90
2,695.00	5.90	33.80	2,688.24	-100.14	100.89	94.64	138.33	43.17	441,066.89	815,285.64
2,790.00	5.50	31.70	2,782.77	-108.03	108.82	99.75	147.62	42.51	441,074.82	815,290.75
2,886.00	5.00	31.50	2,878.37	-115.48	116.30	104.35	156.25	41.90	441,082.30	815,295.35
2,981.00	4.50	35.10	2,973.04	-122.02	122.88	108.66	164.03	41.49	441,088.88	815,299.66
3,076.00	4.10	36.80	3,067.78	-127.76	128.65	112.84	171.12	41.25	441,094.65	815,303.84
3,171.00	5.00	38.50	3,162.48	-133.68	134.61	117.45	178.64	41.11	441,100.61	815,308.45
3,265.00	5.90	38.10	3,256.05	-140.64	141.61	122.98	187.56	40.97	441,107.61	815,313.98
3,360.00	5.70	39.50	3,350.56	-148.08	149.10	128.99	197.15	40.86	441,115.10	815,319.99
3,456.00	5.40	43.20	3,446.11	-155.00	156.07	135.12	206.43	40.88	441,122.07	815,326.12
3,551.00	5.20	46.30	3,540.71	-161.19	162.30	141.29	215.18	41.04	441,128.30	815,332.29
3,646.00	5.10	51.40	3,635.33	-166.74	167.91	147.70	223.63	41.34	441,133.91	815,338.70
3,741.00	4.90	55.20	3,729.96	-171.64	172.86	154.33	231.73	41.76	441,138.86	815,345.33
3,836.00	5.10	60.60	3,824.60	-175.97	177.25	161.34	239.68	42.31	441,143.25	815,352.34
3,931.00	5.90	51.50	3,919.17	-181.03	182.36	168.84	248.52	42.80	441,148.36	815,359.84
4,025.00	6.30	47.00	4,012.63	-187.49	188.88	176.40	258.44	43.04	441,154.88	815,367.40
4,121.00	5.90	51.30	4,108.09	-194.11	195.56	184.10	268.58	43.27	441,161.56	815,375.10
4,215.00	5.70	39.10	4,201.61	-200.70	202.21	190.81	278.02	43.34	441,168.21	815,381.81
4,311.00	5.90	32.80	4,297.12	-208.50	210.05	196.49	287.63	43.09	441,176.05	815,387.49
4,406.00	5.20	37.60	4,391.68	-215.98	217.57	201.77	296.72	42.84	441,183.57	815,392.77
4,501.00	4.40	37.40	4,486.34	-222.24	223.87	206.61	304.64	42.70	441,189.87	815,397.61
4,597.00	4.80	35.30	4,582.03	-228.41	230.08	211.16	312.29	42.55	441,196.08	815,402.16
4,692.00	5.30	45.50	4,676.67	-234.69	236.40	216.59	320.62	42.50	441,202.40	815,407.59
4,787.00	5.10	58.10	4,771.28	-239.94	241.70	223.30	329.07	42.73	441,207.70	815,414.30
4,882.00	4.30	51.80	4,865.96	-244.33	246.14	229.69	336.66	43.02	441,212.14	815,420.69
4,977.00	4.50	61.60	4,960.68	-248.25	250.11	235.76	343.72	43.31	441,216.11	815,426.76
5,072.00	4.90	74.00	5,055.36	-251.09	253.00	242.94	350.76	43.84	441,219.00	815,433.94



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5,168.00	5.20	81.20	5,150.99	-252.82	254.80	251.18	357.79	44.59	441,220.80	815,442.18
5,262.00	5.70	86.60	5,244.57	-253.68	255.73	260.05	364.73	45.48	441,221.73	815,451.05
5,342.00	4.30	85.40	5,324.26	-254.10	256.20	267.01	370.05	46.18	441,222.20	815,458.01
5,533.00	3.50	55.40	5,514.84	-257.89	260.09	278.95	381.39	47.00	441,226.09	815,469.95
5,629.00	3.90	51.00	5,610.64	-261.57	263.81	283.90	387.55	47.10	441,229.81	815,474.90
5,724.00	4.20	54.70	5,705.40	-265.57	267.85	289.25	394.22	47.20	441,233.85	815,480.25
5,819.00	4.90	31.60	5,800.11	-271.00	273.32	294.21	401.58	47.11	441,239.32	815,485.21
5,914.00	5.20	22.90	5,894.74	-278.39	280.74	298.01	409.42	46.71	441,246.74	815,489.01
6,010.00	5.00	25.40	5,990.36	-286.15	288.53	301.50	417.31	46.26	441,254.53	815,492.50
6,104.00	4.90	21.40	6,084.01	-293.56	295.96	304.72	424.79	45.84	441,261.96	815,495.72
6,200.00	5.30	21.00	6,179.63	-301.49	303.92	307.81	432.57	45.36	441,269.92	815,498.81
6,295.00	4.70	16.90	6,274.27	-309.29	311.74	310.51	440.00	44.89	441,277.74	815,501.51
6,391.00	4.60	12.00	6,369.95	-316.81	319.27	312.45	446.72	44.38	441,285.27	815,503.45
6,486.00	4.60	14.10	6,464.65	-324.21	326.69	314.17	453.25	43.88	441,292.69	815,505.17
6,581.00	4.60	16.10	6,559.34	-331.55	334.05	316.16	459.94	43.42	441,300.05	815,507.16
6,676.00	4.60	15.90	6,654.03	-338.86	341.37	318.26	466.71	42.99	441,307.37	815,509.26
6,771.00	3.30	8.00	6,748.81	-345.22	347.74	319.68	472.36	42.59	441,313.74	815,510.68
6,867.00	1.70	344.00	6,844.72	-349.32	351.85	319.68	475.38	42.26	441,317.85	815,510.68
6,962.00	1.90	334.40	6,939.67	-352.11	354.62	318.61	476.72	41.94	441,320.62	815,509.61
7,058.00	0.70	251.20	7,035.65	-353.36	355.87	317.36	476.82	41.73	441,321.87	815,508.36
7,152.00	1.40	239.70	7,129.63	-352.61	355.10	315.83	475.23	41.65	441,321.10	815,506.83
7,248.00	1.00	243.80	7,225.61	-351.66	354.14	314.06	473.34	41.57	441,320.14	815,505.06
7,343.00	1.50	256.60	7,320.59	-351.03	353.49	312.11	471.56	41.44	441,319.49	815,503.11
7,438.00	1.50	263.60	7,415.56	-350.62	353.06	309.67	469.62	41.25	441,319.06	815,500.67
7,533.00	1.30	253.50	7,510.53	-350.19	352.62	307.40	467.79	41.08	441,318.62	815,498.40
7,628.00	1.70	246.30	7,605.49	-349.34	351.74	305.07	465.61	40.94	441,317.74	815,496.07
7,723.00	1.90	257.60	7,700.45	-348.45	350.84	302.24	463.08	40.74	441,316.84	815,493.24



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7,819.00	1.50	256.30	7,796.41	-347.84	350.20	299.47	460.78	40.54	441,316.20	815,490.47
7,914.00	1.50	252.00	7,891.37	-347.18	349.52	297.08	458.72	40.36	441,315.52	815,488.08
8,009.00	1.60	256.10	7,986.34	-346.49	348.82	294.61	456.58	40.18	441,314.82	815,485.61
8,105.00	1.50	237.20	8,082.30	-345.51	347.82	292.25	454.30	40.04	441,313.82	815,483.25
8,200.00	1.50	253.40	8,177.27	-344.50	346.79	290.02	452.07	39.91	441,312.79	815,481.02
8,295.00	1.50	241.80	8,272.24	-343.57	345.84	287.73	449.88	39.76	441,311.84	815,478.73
8,391.00	1.30	246.20	8,368.21	-342.56	344.81	285.62	447.74	39.64	441,310.81	815,476.62
8,486.00	1.50	255.10	8,463.18	-341.82	344.06	283.44	445.77	39.48	441,310.06	815,474.44
8,581.00	1.90	245.50	8,558.14	-340.87	343.08	280.80	443.35	39.30	441,309.08	815,471.80
8,677.00	2.00	253.10	8,654.08	-339.74	341.94	277.75	440.53	39.09	441,307.94	815,468.75
8,772.00	1.30	328.40	8,749.05	-340.20	342.37	275.60	439.52	38.83	441,308.37	815,466.60
8,868.00	1.40	331.90	8,845.03	-342.17	344.33	274.48	440.34	38.56	441,310.33	815,465.48
8,962.00	0.40	67.00	8,939.02	-343.31	345.48	274.24	441.09	38.44	441,311.48	815,465.24
9,058.00	0.30	32.20	9,035.02	-343.65	345.82	274.68	441.63	38.46	441,311.82	815,465.68
9,153.00	0.00	115.30	9,130.02	-343.86	346.03	274.81	441.88	38.46	441,312.03	815,465.81
9,248.00	0.20	222.10	9,225.02	-343.74	345.91	274.70	441.72	38.45	441,311.91	815,465.70
9,343.00	0.70	275.60	9,320.01	-343.68	345.84	274.01	441.24	38.39	441,311.84	815,465.01
9,439.00	0.80	269.60	9,416.00	-343.74	345.89	272.76	440.50	38.26	441,311.89	815,463.76
9,534.00	1.40	283.80	9,510.99	-344.03	346.16	270.97	439.61	38.05	441,312.16	815,461.97
9,629.00	1.60	273.50	9,605.95	-344.40	346.52	268.52	438.38	37.77	441,312.52	815,459.52
9,724.00	1.90	282.90	9,700.91	-344.86	346.96	265.66	436.98	37.44	441,312.96	815,456.66
9,820.00	2.70	285.10	9,796.83	-345.83	347.90	261.92	435.48	36.98	441,313.90	815,452.92
9,893.00	3.30	285.00	9,869.73	-346.85	348.89	258.24	434.06	36.51	441,314.89	815,449.24
9,957.00	3.20	277.10	9,933.63	-347.58	349.59	254.68	432.52	36.07	441,315.59	815,445.68
9,988.00	3.00	257.70	9,964.58	-347.52	349.52	253.03	431.50	35.90	441,315.52	815,444.03
10,020.00	3.50	223.00	9,996.54	-346.64	348.63	251.55	429.91	35.81	441,314.63	815,442.55
10,052.00	5.80	195.10	10,028.43	-344.38	346.35	250.46	427.42	35.87	441,312.35	815,441.46



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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
10,084.00	9.00	186.60	10,060.16	-340.33	342.31	249.75	423.73	36.12	441,308.31	815,440.75
10,116.00	12.80	182.40	10,091.58	-334.31	336.28	249.31	418.62	36.55	441,302.28	815,440.31
10,179.00	19.80	179.90	10,152.01	-316.64	318.61	249.04	404.39	38.01	441,284.61	815,440.04
10,211.00	23.90	177.40	10,181.71	-304.74	306.71	249.34	395.28	39.11	441,272.71	815,440.34
10,274.00	29.70	175.30	10,237.92	-276.40	278.38	251.20	374.97	42.06	441,244.38	815,442.20
10,306.00	33.60	176.20	10,265.15	-259.65	261.64	252.44	363.57	43.97	441,227.64	815,443.44
10,337.00	38.30	179.70	10,290.24	-241.47	243.46	253.06	351.16	46.11	441,209.46	815,444.06
10,369.00	45.00	181.30	10,314.14	-220.22	222.21	252.85	336.62	48.69	441,188.21	815,443.85
10,401.00	52.20	180.30	10,335.29	-196.24	198.22	252.53	321.04	51.87	441,164.22	815,443.53
10,457.00	64.00	176.90	10,364.84	-148.80	150.79	253.78	295.20	59.28	441,116.79	815,444.78
10,489.00	67.50	176.80	10,377.98	-119.66	121.67	255.38	282.88	64.53	441,087.67	815,446.38
10,521.00	70.20	176.70	10,389.52	-89.85	91.87	257.08	273.00	70.33	441,057.87	815,448.08
10,583.00	71.70	176.90	10,409.76	-31.31	33.36	260.35	262.48	82.70	440,999.36	815,451.35
10,679.00	81.60	179.80	10,431.90	61.94	-59.88	262.98	269.72	102.83	440,906.12	815,453.98
10,773.00	87.10	179.70	10,441.15	155.45	-153.39	263.39	304.80	120.21	440,812.61	815,454.39
10,868.00	88.00	179.90	10,445.21	250.36	-248.30	263.72	362.22	133.27	440,717.70	815,454.72
10,963.00	88.40	180.20	10,448.20	345.31	-343.25	263.64	432.81	142.47	440,622.75	815,454.64
11,058.00	89.00	179.80	10,450.35	440.28	-438.23	263.64	511.42	148.97	440,527.77	815,454.64
11,154.00	89.60	179.70	10,451.52	536.28	-534.22	264.06	595.92	153.70	440,431.78	815,455.06
11,249.00	90.40	179.70	10,451.52	631.27	-629.22	264.56	682.57	157.20	440,336.78	815,455.56
11,344.00	91.20	179.50	10,450.20	726.26	-724.20	265.22	771.24	159.89	440,241.80	815,456.22
11,439.00	92.00	179.90	10,447.55	821.23	-819.16	265.72	861.18	162.03	440,146.84	815,456.72
11,535.00	89.80	181.40	10,446.04	917.19	-915.14	264.63	952.63	163.87	440,050.86	815,455.63
11,631.00	90.00	181.40	10,446.21	1,013.14	-1,011.11	262.28	1,044.57	165.46	439,954.89	815,453.28
11,726.00	90.90	182.00	10,445.46	1,108.07	-1,106.06	259.47	1,136.09	166.80	439,859.94	815,450.47
11,821.00	91.60	181.80	10,443.39	1,202.96	-1,200.99	256.32	1,228.03	167.95	439,765.01	815,447.32
11,916.00	92.30	182.10	10,440.15	1,297.82	-1,295.88	253.09	1,320.36	168.95	439,670.12	815,444.09



ProDirectional Survey Report



Company: Matador Resources
Project: Lea County, NM (NAD83)
Site: Brad Lummis Fed Com
Well: No. 111H
Wellbore: OH
Design: MWD-186'-15341', PTB: 15403'

Local Co-ordinate Reference: Well No. 111H
TVD Reference: Well @ 3520.50usft
MD Reference: Well @ 3520.50usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
12,011.00	89.70	182.40	10,438.50	1,392.70	-1,390.78	249.36	1,412.96	169.84	439,575.22	815,440.36
12,106.00	90.10	182.60	10,438.66	1,487.57	-1,485.69	245.21	1,505.79	170.63	439,480.31	815,436.21
12,201.00	90.90	182.50	10,437.83	1,582.44	-1,580.59	240.99	1,598.86	171.33	439,385.41	815,431.99
12,297.00	88.10	182.30	10,438.67	1,678.30	-1,676.49	236.97	1,693.16	171.95	439,289.51	815,427.97
12,392.00	88.00	182.10	10,441.90	1,773.15	-1,771.37	233.32	1,786.67	172.50	439,194.63	815,424.32
12,487.00	84.30	181.90	10,448.28	1,867.83	-1,866.08	230.01	1,880.20	172.97	439,099.92	815,421.01
12,582.00	84.60	181.40	10,457.47	1,962.32	-1,960.59	227.29	1,973.73	173.39	439,005.41	815,418.29
12,678.00	84.90	181.60	10,466.25	2,057.86	-2,056.16	224.79	2,068.41	173.76	438,909.84	815,415.79
12,773.00	85.40	178.30	10,474.29	2,152.51	-2,150.81	224.87	2,162.53	174.03	438,815.19	815,415.87
12,869.00	89.20	176.50	10,478.81	2,248.31	-2,246.58	229.22	2,258.24	174.17	438,719.42	815,420.22
12,963.00	89.40	175.80	10,479.96	2,342.14	-2,340.36	235.54	2,352.18	174.25	438,625.64	815,426.54
13,058.00	90.00	175.50	10,480.45	2,436.91	-2,435.08	242.74	2,447.15	174.31	438,530.92	815,433.74
13,154.00	90.50	175.50	10,480.04	2,532.67	-2,530.79	250.27	2,543.13	174.35	438,435.21	815,441.27
13,249.00	91.00	176.00	10,478.79	2,627.46	-2,625.52	257.31	2,638.10	174.40	438,340.48	815,448.31
13,345.00	91.50	178.40	10,476.70	2,723.35	-2,721.37	262.00	2,733.95	174.50	438,244.63	815,453.00
13,440.00	92.00	178.50	10,473.80	2,818.28	-2,816.29	264.57	2,828.69	174.63	438,149.71	815,455.57
13,534.00	87.70	179.70	10,474.04	2,912.26	-2,910.26	266.05	2,922.39	174.78	438,055.74	815,457.05
13,629.00	88.10	179.70	10,477.52	3,007.19	-3,005.19	266.54	3,016.99	174.93	437,960.81	815,457.54
13,724.00	88.10	179.80	10,480.67	3,102.14	-3,100.14	266.96	3,111.61	175.08	437,865.86	815,457.96
13,818.00	88.70	179.90	10,483.30	3,196.10	-3,194.10	267.20	3,205.26	175.22	437,771.90	815,458.20
13,913.00	89.10	179.70	10,485.12	3,291.08	-3,289.08	267.53	3,299.95	175.35	437,676.92	815,458.53
14,008.00	88.20	180.90	10,487.36	3,386.04	-3,384.05	267.04	3,394.57	175.49	437,581.95	815,458.04
14,103.00	86.60	181.40	10,491.67	3,480.91	-3,478.93	265.13	3,489.02	175.64	437,487.07	815,456.13
14,199.00	86.20	181.40	10,497.70	3,576.67	-3,574.71	262.79	3,584.36	175.80	437,391.29	815,453.79
14,294.00	88.40	179.70	10,502.17	3,671.54	-3,669.59	261.88	3,678.93	175.92	437,296.41	815,452.88
14,389.00	89.40	179.00	10,504.00	3,766.52	-3,764.57	262.96	3,773.74	176.00	437,201.43	815,453.96
14,484.00	89.40	178.40	10,504.99	3,861.50	-3,859.54	265.12	3,868.63	176.07	437,106.46	815,456.12



ProDirectional Survey Report



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Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
14,579.00	89.60	178.20	10,505.82	3,956.48	-3,954.49	267.93	3,963.56	176.12	437,011.51	815,458.93
14,675.00	89.90	177.60	10,506.24	4,052.43	-4,050.43	271.45	4,059.51	176.17	436,915.57	815,462.45
14,770.00	90.00	177.00	10,506.32	4,147.36	-4,145.32	275.93	4,154.49	176.19	436,820.68	815,466.93
14,865.00	89.50	176.80	10,506.74	4,242.26	-4,240.18	281.06	4,249.49	176.21	436,725.82	815,472.06
14,960.00	89.20	176.50	10,507.81	4,337.13	-4,335.01	286.62	4,344.48	176.22	436,630.99	815,477.62
15,055.00	88.50	176.60	10,509.72	4,431.98	-4,429.82	292.33	4,439.46	176.22	436,536.18	815,483.33
15,151.00	88.30	176.10	10,512.40	4,527.79	-4,525.59	298.44	4,535.42	176.23	436,440.41	815,489.44
15,246.00	87.90	175.70	10,515.55	4,622.55	-4,620.29	305.23	4,630.36	176.22	436,345.71	815,496.23
15,341.00	87.50	175.10	10,519.36	4,717.22	-4,714.91	312.84	4,725.28	176.20	436,251.09	815,503.84
Last Survey: 15341' MD										
15,403.00	87.50	175.10	10,522.07	4,778.98	-4,776.62	318.13	4,787.21	176.19	436,189.38	815,509.13
PTB: 15403' MD										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
186.00	186.00	0.72	-0.66	Pro MWD First Survey: 186' MD
15,341.00	10,519.36	-4,714.91	312.84	Last Survey: 15341' MD
15,403.00	10,522.07	-4,776.62	318.13	PTB: 15403' MD