



HOBBS OCD
JUL 22 2019
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30-025-44918

Carl Mottek Federal No. 211H

Lea County, NM

February 06, 2019

Job No. LNM5191318

Certified Report



February 06, 2019



Operator Name: Matador Resources
Well Name: Carl Mottek Federal No. 211H
County/Parish: Lea County,
State: NM
Rig Name: Patterson 274
Job Number: LNM5191318

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	152' MD – 16,798' MD	16,949' MD	12/19/18 – 01/11/19	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
Carl Mottek Federal
No. 211H
OH**

Survey: ProDirectional

Survey Report

06 February, 2019





ProDirectional Survey Report



Company: Matador Resources
Project: Lea County, NM (NAD83)
Site: Carl Mottek Federal
Well: No. 211H
Wellbore: OH
Design: MWD-152'-16798', Proj. 16949'

Local Co-ordinate Reference: Well No. 211H
TVD Reference: Well @ 3606.50usft
MD Reference: Well @ 3606.50usft
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	Carl Mottek Federal		
Site Position:		Northing:	446,202.00 usft
From:	Map	Easting:	799,323.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.223932
		Longitude:	-103.499069
		Grid Convergence:	0.44 "

Well	No. 211H					
Well Position	+N/-S	0.00 usft	Northing:	446,202.00 usft	Latitude:	32.223934
	+E/-W	0.00 usft	Easting:	799,263.00 usft	Longitude:	-103.499263
Position Uncertainty	0.00 usft		Wellhead Elevation:	usft	Ground Level:	3,578.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	12/13/2018	6.68	59.90	47,957.70

Design		MWD-152'-16798', Proj. 16949'		
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	179.45

Survey Program		Date 2/6/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
152.00	16,949.00	Survey #1 (OH)	MWD+HDGM	OWSG MWD + HRGM



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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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	446,202.00	799,263.00
152.00	0.60	289.10	152.00	-0.27	0.26	-0.75	0.80	289.10	446,202.26	799,262.25
Pro MWD First Survey: 152' MD										
246.00	0.70	236.70	245.99	-0.12	0.11	-1.70	1.70	273.58	446,202.11	799,261.30
336.00	0.60	267.50	335.99	0.19	-0.22	-2.63	2.64	265.30	446,201.78	799,260.37
432.00	0.60	323.50	431.98	-0.20	0.17	-3.43	3.43	272.77	446,202.17	799,259.57
523.00	1.50	347.20	522.97	-1.75	1.71	-3.98	4.33	293.28	446,203.71	799,259.02
615.00	2.00	340.10	614.92	-4.44	4.39	-4.79	6.50	312.54	446,206.39	799,258.21
707.00	1.50	339.70	706.88	-7.09	7.03	-5.75	9.09	320.72	446,209.03	799,257.25
799.00	1.60	351.00	798.85	-9.49	9.43	-6.37	11.38	325.96	446,211.43	799,256.63
894.00	1.50	348.20	893.81	-12.02	11.96	-6.83	13.77	330.25	446,213.96	799,256.17
989.00	1.00	357.10	988.79	-14.07	14.00	-7.13	15.71	333.02	446,216.00	799,255.87
1,084.00	0.90	6.60	1,083.78	-15.64	15.57	-7.09	17.11	335.53	446,217.57	799,255.91
1,179.00	0.80	12.90	1,178.77	-17.02	16.96	-6.85	18.29	338.00	446,218.96	799,256.15
1,261.00	1.00	24.10	1,260.76	-18.23	18.17	-6.43	19.28	340.51	446,220.17	799,256.57
1,369.00	0.40	346.60	1,368.75	-19.46	19.40	-6.13	20.35	342.45	446,221.40	799,256.87
1,464.00	0.40	327.90	1,463.74	-20.06	20.00	-6.39	21.00	342.29	446,222.00	799,256.61
1,559.00	0.30	323.70	1,558.74	-20.55	20.48	-6.71	21.55	341.86	446,222.48	799,256.29
1,655.00	0.40	314.40	1,654.74	-20.99	20.92	-7.10	22.09	341.25	446,222.92	799,255.90
1,749.00	1.30	0.90	1,748.73	-22.28	22.22	-7.32	23.39	341.77	446,224.22	799,255.68
1,844.00	2.00	5.30	1,843.69	-25.01	24.94	-7.15	25.95	344.01	446,226.94	799,255.85
1,940.00	2.50	357.80	1,939.62	-28.77	28.70	-7.07	29.56	346.16	446,230.70	799,255.93
2,035.00	3.30	1.50	2,034.49	-33.57	33.51	-7.08	34.25	348.07	446,235.51	799,255.92
2,130.00	3.70	351.10	2,129.32	-39.34	39.27	-7.48	39.98	349.21	446,241.27	799,255.52
2,226.00	4.60	351.80	2,225.07	-46.22	46.14	-8.51	46.92	349.55	446,248.14	799,254.49
2,321.00	4.30	348.90	2,319.78	-53.50	53.41	-9.74	54.29	349.66	446,255.41	799,253.26
2,416.00	4.30	351.40	2,414.51	-60.52	60.42	-10.96	61.41	349.72	446,262.42	799,252.04



ProDirectional Survey Report



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Wellbore: OH
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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)
2,511.00	5.40	351.70	2,509.17	-68.48	68.37	-12.14	69.44	349.93	446,270.37	799,250.86
2,607.00	6.00	350.60	2,604.69	-77.91	77.79	-13.61	78.97	350.08	446,279.79	799,249.39
2,703.00	5.70	351.00	2,700.19	-87.59	87.45	-15.17	88.75	350.16	446,289.45	799,247.83
2,798.00	5.20	354.00	2,794.77	-96.54	96.39	-16.36	97.77	350.37	446,298.39	799,246.64
2,893.00	4.90	352.80	2,889.40	-104.86	104.69	-17.32	106.12	350.61	446,306.69	799,245.68
2,989.00	4.80	353.90	2,985.05	-112.93	112.76	-18.26	114.22	350.80	446,314.76	799,244.74
3,084.00	6.20	1.50	3,079.61	-122.01	121.84	-18.55	123.24	351.34	446,323.84	799,244.45
3,179.00	7.00	5.40	3,173.98	-132.89	132.73	-17.87	133.93	352.33	446,334.73	799,245.13
3,274.00	6.80	5.50	3,268.30	-144.24	144.09	-16.79	145.06	353.36	446,346.09	799,246.21
3,369.00	6.60	5.60	3,362.65	-155.26	155.12	-15.71	155.91	354.22	446,357.12	799,247.29
3,464.00	6.10	4.70	3,457.06	-165.72	165.58	-14.77	166.24	354.90	446,367.58	799,248.23
3,559.00	5.90	7.50	3,551.54	-175.58	175.46	-13.72	175.99	355.53	446,377.46	799,249.28
3,655.00	5.50	3.60	3,647.07	-185.05	184.94	-12.78	185.38	356.05	446,386.94	799,250.22
3,750.00	5.00	2.20	3,741.67	-193.73	193.62	-12.34	194.01	356.35	446,395.62	799,250.66
3,845.00	4.20	4.40	3,836.36	-201.33	201.23	-11.91	201.58	356.61	446,403.23	799,251.09
3,941.00	3.60	2.00	3,932.14	-207.84	207.74	-11.54	208.06	356.82	446,409.74	799,251.46
4,035.00	2.80	357.80	4,025.99	-213.09	212.99	-11.52	213.30	356.90	446,414.99	799,251.48
4,131.00	3.50	359.10	4,121.85	-218.36	218.26	-11.66	218.57	356.94	446,420.26	799,251.34
4,226.00	4.00	358.80	4,216.64	-224.57	224.47	-11.77	224.78	357.00	446,426.47	799,251.23
4,322.00	3.30	3.00	4,312.45	-230.68	230.58	-11.70	230.88	357.10	446,432.58	799,251.30
4,417.00	2.70	26.60	4,407.32	-235.40	235.31	-10.56	235.55	357.43	446,437.31	799,252.44
4,512.00	1.90	32.90	4,502.25	-238.71	238.63	-8.70	238.79	357.91	446,440.63	799,254.30
4,608.00	1.60	48.60	4,598.20	-240.91	240.86	-6.83	240.95	358.38	446,442.86	799,256.17
4,703.00	1.40	44.30	4,693.17	-242.60	242.56	-5.02	242.62	358.81	446,444.56	799,257.98
4,799.00	2.00	49.20	4,789.13	-244.51	244.50	-2.94	244.52	359.31	446,446.50	799,260.06
4,894.00	3.10	52.70	4,884.03	-247.12	247.14	0.36	247.14	0.08	446,449.14	799,263.36
4,990.00	2.70	62.90	4,979.91	-249.69	249.74	4.44	249.78	1.02	446,451.74	799,267.44



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5,085.00	2.00	49.00	5,074.83	-251.76	251.85	7.68	251.96	1.75	446,453.85	799,270.68
5,181.00	2.30	49.20	5,170.76	-254.09	254.21	10.41	254.42	2.34	446,456.21	799,273.41
5,257.00	2.00	56.10	5,246.71	-255.81	255.94	12.66	256.25	2.83	446,457.94	799,275.66
5,359.00	1.60	54.70	5,348.66	-257.60	257.76	15.30	258.21	3.40	446,459.76	799,278.30
5,454.00	1.50	58.10	5,443.62	-259.00	259.18	17.44	259.77	3.85	446,461.18	799,280.44
5,549.00	1.50	58.80	5,538.59	-260.28	260.48	19.56	261.22	4.29	446,462.48	799,282.56
5,645.00	2.30	338.50	5,634.55	-262.72	262.93	19.93	263.68	4.33	446,464.93	799,282.93
5,740.00	2.50	335.20	5,729.47	-266.39	266.58	18.36	267.21	3.94	446,468.58	799,281.36
5,836.00	2.50	335.00	5,825.37	-270.21	270.38	16.60	270.89	3.51	446,472.38	799,279.60
5,931.00	2.70	333.90	5,920.28	-274.11	274.27	14.74	274.66	3.08	446,476.27	799,277.74
6,026.00	2.90	333.80	6,015.16	-278.30	278.43	12.69	278.72	2.61	446,480.43	799,275.69
6,121.00	2.80	332.00	6,110.05	-282.52	282.64	10.54	282.83	2.14	446,484.64	799,273.54
6,216.00	2.70	334.40	6,204.94	-286.61	286.70	8.48	286.83	1.70	446,488.70	799,271.48
6,312.00	2.60	335.60	6,300.83	-290.65	290.72	6.61	290.80	1.30	446,492.72	799,269.61
6,407.00	2.70	330.30	6,395.73	-294.57	294.63	4.61	294.67	0.90	446,496.63	799,267.61
6,502.00	0.20	267.10	6,490.70	-296.52	296.57	3.33	296.58	0.64	446,498.57	799,266.33
6,597.00	0.70	185.70	6,585.69	-295.94	295.98	3.11	296.00	0.60	446,497.98	799,266.11
6,693.00	0.70	184.10	6,681.69	-294.77	294.81	3.01	294.83	0.59	446,496.81	799,266.01
6,788.00	0.80	177.90	6,776.68	-293.53	293.57	2.99	293.59	0.58	446,495.57	799,265.99
6,883.00	0.70	171.70	6,871.67	-292.29	292.33	3.10	292.35	0.61	446,494.33	799,266.10
6,979.00	0.70	175.10	6,967.66	-291.12	291.17	3.24	291.19	0.64	446,493.17	799,266.24
7,074.00	0.70	178.60	7,062.66	-289.97	290.01	3.30	290.03	0.65	446,492.01	799,266.30
7,169.00	0.60	189.50	7,157.65	-288.90	288.94	3.23	288.96	0.64	446,490.94	799,266.23
7,264.00	0.90	186.40	7,252.64	-287.67	287.71	3.07	287.72	0.61	446,489.71	799,266.07
7,359.00	1.10	184.70	7,347.63	-286.02	286.06	2.91	286.07	0.58	446,488.06	799,265.91
7,455.00	1.10	183.60	7,443.61	-284.18	284.22	2.78	284.23	0.56	446,486.22	799,265.78
7,549.00	1.10	174.60	7,537.59	-282.38	282.42	2.80	282.43	0.57	446,484.42	799,265.80



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7,644.00	1.10	179.20	7,632.57	-280.56	280.60	2.90	280.62	0.59	446,482.60	799,265.90
7,739.00	1.10	180.70	7,727.56	-278.74	278.78	2.90	278.79	0.60	446,480.78	799,265.90
7,835.00	1.20	176.80	7,823.54	-276.81	276.85	2.95	276.87	0.61	446,478.85	799,265.95
7,930.00	1.00	181.30	7,918.52	-274.99	275.03	2.99	275.05	0.62	446,477.03	799,265.99
8,025.00	1.00	187.60	8,013.51	-273.34	273.38	2.86	273.39	0.60	446,475.38	799,265.86
8,120.00	1.00	185.70	8,108.49	-271.70	271.73	2.67	271.75	0.56	446,473.73	799,265.67
8,215.00	0.80	202.30	8,203.48	-270.26	270.29	2.33	270.30	0.49	446,472.29	799,265.33
8,311.00	0.80	211.80	8,299.47	-269.08	269.11	1.72	269.11	0.37	446,471.11	799,264.72
8,406.00	0.70	206.80	8,394.46	-268.00	268.02	1.11	268.03	0.24	446,470.02	799,264.11
8,502.00	0.80	189.10	8,490.45	-266.82	266.84	0.74	266.84	0.16	446,468.84	799,263.74
8,597.00	0.70	196.30	8,585.45	-265.61	265.63	0.47	265.63	0.10	446,467.63	799,263.47
8,691.00	0.80	183.70	8,679.44	-264.41	264.42	0.27	264.42	0.06	446,466.42	799,263.27
8,787.00	0.40	186.90	8,775.43	-263.41	263.42	0.19	263.42	0.04	446,465.42	799,263.19
8,882.00	0.30	194.40	8,870.43	-262.84	262.85	0.09	262.85	0.02	446,464.85	799,263.09
8,977.00	0.10	231.40	8,965.43	-262.54	262.56	-0.04	262.56	359.99	446,464.56	799,262.96
9,072.00	0.10	313.20	9,060.43	-262.55	262.56	-0.17	262.56	359.96	446,464.56	799,262.83
9,168.00	0.50	341.40	9,156.43	-263.01	263.02	-0.36	263.02	359.92	446,465.02	799,262.64
9,263.00	0.90	343.40	9,251.42	-264.12	264.12	-0.71	264.12	359.85	446,466.12	799,262.29
9,357.00	1.00	16.50	9,345.41	-265.61	265.62	-0.68	265.62	359.85	446,467.62	799,262.32
9,452.00	1.80	25.50	9,440.38	-267.74	267.76	0.19	267.76	0.04	446,469.76	799,263.19
9,548.00	2.20	22.70	9,536.32	-270.79	270.82	1.55	270.82	0.33	446,472.82	799,264.55
9,643.00	2.50	31.30	9,631.24	-274.23	274.27	3.33	274.29	0.70	446,476.27	799,266.33
9,739.00	1.90	50.20	9,727.17	-277.01	277.08	5.64	277.14	1.17	446,479.08	799,268.64
9,834.00	2.10	50.70	9,822.11	-279.10	279.19	8.20	279.31	1.68	446,481.19	799,271.20
9,930.00	2.10	65.60	9,918.05	-280.91	281.03	11.16	281.25	2.28	446,483.03	799,274.16
10,025.00	1.10	96.30	10,013.01	-281.51	281.65	13.66	281.98	2.78	446,483.65	799,276.66
10,120.00	1.00	115.10	10,108.00	-281.04	281.20	15.31	281.62	3.12	446,483.20	799,278.31



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Wellbore: OH
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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)
10,215.00	0.70	100.20	10,202.99	-280.57	280.74	16.64	281.24	3.39	446,482.74	799,279.64
10,311.00	0.20	203.10	10,298.98	-280.31	280.49	17.15	281.01	3.50	446,482.49	799,280.15
10,405.00	0.30	262.30	10,392.98	-280.13	280.30	16.84	280.81	3.44	446,482.30	799,279.84
10,501.00	0.10	70.50	10,488.98	-280.12	280.30	16.67	280.79	3.40	446,482.30	799,279.67
10,597.00	0.60	69.00	10,584.98	-280.33	280.50	17.22	281.03	3.51	446,482.50	799,280.22
10,692.00	0.80	84.70	10,679.97	-280.56	280.74	18.34	281.34	3.74	446,482.74	799,281.34
10,788.00	1.00	215.40	10,775.97	-279.93	280.12	18.52	280.74	3.78	446,482.12	799,281.52
10,883.00	1.50	231.80	10,870.95	-278.50	278.68	17.07	279.20	3.50	446,480.68	799,280.07
10,977.00	0.80	281.40	10,964.93	-277.89	278.05	15.46	278.48	3.18	446,480.05	799,278.46
11,072.00	0.90	279.20	11,059.92	-278.15	278.30	14.07	278.65	2.89	446,480.30	799,277.07
11,168.00	1.30	281.80	11,155.90	-278.51	278.64	12.26	278.91	2.52	446,480.64	799,275.26
11,263.00	1.90	288.20	11,250.86	-279.25	279.35	9.71	279.52	1.99	446,481.35	799,272.71
11,357.00	1.90	285.00	11,344.81	-280.17	280.24	6.72	280.32	1.37	446,482.24	799,269.72
11,453.00	2.00	282.50	11,440.76	-280.97	281.02	3.55	281.04	0.72	446,483.02	799,266.55
11,517.00	2.80	189.10	11,504.72	-279.68	279.72	2.21	279.72	0.45	446,481.72	799,265.21
11,549.00	6.70	171.50	11,536.60	-277.06	277.10	2.36	277.11	0.49	446,479.10	799,265.36
11,644.00	19.20	165.70	11,629.01	-256.32	256.40	7.06	256.49	1.58	446,458.40	799,270.06
11,722.37	27.37	166.22	11,700.93	-226.21	226.36	14.55	226.83	3.68	446,428.36	799,277.55
FTP: 11722' MD										
11,739.00	29.10	166.30	11,715.58	-218.55	218.72	16.41	219.34	4.29	446,420.72	799,279.41
11,835.00	37.10	177.00	11,796.01	-166.77	167.00	23.47	168.64	8.00	446,369.00	799,286.47
11,930.00	46.80	177.40	11,866.58	-103.38	103.64	26.55	106.99	14.37	446,305.64	799,289.55
12,026.00	58.90	177.30	11,924.45	-27.06	27.35	30.09	40.66	47.73	446,229.35	799,293.09
12,121.00	65.00	179.70	11,969.10	56.72	-56.42	32.23	64.97	150.26	446,145.58	799,295.23
12,134.00	66.90	180.60	11,974.40	68.59	-68.29	32.20	75.50	154.75	446,133.71	799,295.20
12,168.00	70.40	183.40	11,986.78	100.22	-99.92	31.09	104.65	162.72	446,102.08	799,294.09
12,213.00	79.80	181.10	11,998.34	143.60	-143.33	29.40	146.31	168.41	446,058.67	799,292.40



ProDirectional Survey Report



Company: Matador Resources
Project: Lea County, NM (NAD83)
Site: Carl Mottek Federal
Well: No. 211H
Wellbore: OH
Design: MWD-152'-16798', Proj. 16949'

Local Co-ordinate Reference: Well No. 211H
TVD Reference: Well @ 3606.50usft
MD Reference: Well @ 3606.50usft
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)
12,257.00	86.50	178.00	12,003.59	187.26	-186.98	29.75	189.33	170.96	446,015.02	799,292.75
12,302.00	92.10	177.60	12,004.13	232.22	-231.93	31.48	234.05	172.27	445,970.07	799,294.48
12,391.00	90.90	179.30	12,001.80	321.17	-320.86	33.88	322.64	173.97	445,881.14	799,296.88
12,480.00	89.70	179.90	12,001.34	410.16	-409.85	34.51	411.30	175.19	445,792.15	799,297.51
12,525.00	86.50	181.70	12,002.83	455.12	-454.82	33.88	456.08	175.74	445,747.18	799,296.88
12,569.00	85.50	181.60	12,005.90	498.98	-498.69	32.61	499.76	176.26	445,703.31	799,295.61
12,614.00	85.20	181.90	12,009.55	543.80	-543.52	31.25	544.42	176.71	445,658.48	799,294.25
12,659.00	83.30	182.50	12,014.06	588.52	-588.26	29.53	589.00	177.13	445,613.74	799,292.53
12,703.00	82.10	183.90	12,019.65	632.06	-631.83	27.09	632.41	177.54	445,570.17	799,290.09
12,748.00	79.50	185.60	12,026.84	676.29	-676.10	23.42	676.50	178.02	445,525.90	799,286.42
12,792.00	79.90	184.90	12,034.71	719.36	-719.20	19.45	719.47	178.45	445,482.80	799,282.45
12,837.00	80.00	184.70	12,042.56	763.47	-763.36	15.75	763.52	178.82	445,438.64	799,278.75
12,927.00	82.10	182.80	12,056.56	852.12	-852.06	9.94	852.12	179.33	445,349.94	799,272.94
12,971.00	82.20	182.20	12,062.57	895.65	-895.61	8.04	895.65	179.49	445,306.39	799,271.04
13,016.00	82.60	182.40	12,068.53	940.19	-940.18	6.25	940.20	179.62	445,261.82	799,269.25
13,105.00	83.80	183.50	12,079.06	1,028.40	-1,028.43	1.70	1,028.43	179.91	445,173.57	799,264.70
13,195.00	85.60	185.00	12,087.38	1,117.70	-1,117.79	-4.95	1,117.81	180.25	445,084.21	799,258.05
13,284.00	86.50	187.10	12,093.51	1,205.89	-1,206.08	-14.30	1,206.17	180.68	444,995.92	799,248.70
13,373.00	85.30	184.60	12,099.87	1,294.10	-1,294.38	-23.35	1,294.59	181.03	444,907.62	799,239.65
13,463.00	83.10	181.80	12,108.97	1,383.43	-1,383.77	-28.35	1,384.06	181.17	444,818.23	799,234.65
13,552.00	83.10	179.00	12,119.66	1,471.77	-1,472.11	-28.97	1,472.40	181.13	444,729.89	799,234.03
13,641.00	84.70	178.40	12,129.12	1,560.25	-1,560.58	-26.96	1,560.82	180.99	444,641.42	799,236.04
13,730.00	86.20	179.00	12,136.18	1,648.96	-1,649.28	-24.95	1,649.47	180.87	444,552.72	799,238.05
13,820.00	86.00	179.80	12,142.30	1,738.75	-1,739.06	-24.01	1,739.23	180.79	444,462.94	799,238.99
13,909.00	84.60	179.10	12,149.59	1,827.45	-1,827.76	-23.16	1,827.90	180.73	444,374.24	799,239.84
13,998.00	81.60	177.40	12,160.29	1,915.77	-1,916.06	-20.47	1,916.17	180.61	444,285.94	799,242.53
14,087.00	82.60	177.10	12,172.52	2,003.86	-2,004.11	-16.24	2,004.18	180.46	444,197.89	799,246.76



ProDirectional Survey Report



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Local Co-ordinate Reference: Well No. 211H
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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)
14,176.00	83.50	177.60	12,183.29	2,092.15	-2,092.36	-12.15	2,092.40	180.33	444,109.64	799,250.85
14,265.00	85.80	178.00	12,191.59	2,180.72	-2,180.90	-8.75	2,180.92	180.23	444,021.10	799,254.25
14,355.00	85.00	179.10	12,198.80	2,270.41	-2,270.58	-6.48	2,270.59	180.16	443,931.42	799,256.52
14,444.00	85.20	179.50	12,206.41	2,359.09	-2,359.25	-5.40	2,359.25	180.13	443,842.75	799,257.60
14,533.00	84.70	178.40	12,214.24	2,447.74	-2,447.89	-3.77	2,447.89	180.09	443,754.11	799,259.23
14,622.00	84.40	177.60	12,222.69	2,536.31	-2,536.43	-0.68	2,536.43	180.02	443,665.57	799,262.32
14,711.00	86.20	178.10	12,229.99	2,624.97	-2,625.06	2.65	2,625.06	179.94	443,576.94	799,265.65
14,800.00	87.20	177.70	12,235.11	2,713.79	-2,713.85	5.90	2,713.86	179.88	443,488.15	799,268.90
14,889.00	86.00	175.40	12,240.39	2,802.51	-2,802.53	11.25	2,802.55	179.77	443,399.47	799,274.25
14,979.00	84.80	173.40	12,247.61	2,891.86	-2,891.81	20.00	2,891.87	179.60	443,310.19	799,283.00
15,069.00	86.10	173.20	12,254.75	2,981.06	-2,980.91	30.47	2,981.06	179.41	443,221.09	799,293.47
15,158.00	88.60	175.00	12,258.86	3,069.57	-3,069.33	39.60	3,069.59	179.26	443,132.67	799,302.60
15,247.00	89.30	177.70	12,260.49	3,158.42	-3,158.13	45.27	3,158.45	179.18	443,043.87	799,308.27
15,336.00	90.20	179.80	12,260.88	3,247.40	-3,247.10	47.21	3,247.44	179.17	442,954.90	799,310.21
15,425.00	91.80	181.50	12,259.33	3,336.36	-3,336.07	46.20	3,336.39	179.21	442,865.93	799,309.20
15,514.00	88.70	183.60	12,258.94	3,425.22	-3,424.97	42.24	3,425.23	179.29	442,777.03	799,305.24
15,603.00	91.20	184.30	12,259.02	3,513.93	-3,513.75	36.11	3,513.93	179.41	442,688.25	799,299.11
15,692.00	90.60	187.10	12,257.62	3,602.38	-3,602.29	27.27	3,602.39	179.57	442,599.71	799,290.27
15,726.00	91.30	186.90	12,257.05	3,636.08	-3,636.03	23.13	3,636.10	179.64	442,565.97	799,286.13
15,815.00	86.00	183.10	12,259.15	3,724.60	-3,724.62	15.38	3,724.65	179.76	442,477.38	799,278.38
15,905.00	85.70	181.50	12,265.66	3,814.24	-3,814.31	11.77	3,814.33	179.82	442,387.69	799,274.77
15,994.00	84.30	180.60	12,273.42	3,902.87	-3,902.95	10.15	3,902.96	179.85	442,299.05	799,273.15
16,083.00	84.30	178.10	12,282.26	3,991.42	-3,991.50	11.15	3,991.51	179.84	442,210.50	799,274.15
16,173.00	88.10	177.30	12,288.23	4,081.16	-4,081.21	14.76	4,081.24	179.79	442,120.79	799,277.76
16,262.00	90.90	178.10	12,289.00	4,170.11	-4,170.13	18.33	4,170.17	179.75	442,031.87	799,281.33
16,351.00	92.20	178.00	12,286.60	4,259.05	-4,259.04	21.36	4,259.09	179.71	441,942.96	799,284.36
16,441.00	93.50	178.40	12,282.12	4,348.91	-4,348.88	24.18	4,348.95	179.68	441,853.12	799,287.18



ProDirectional
Survey Report



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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)
16,530.00	95.10	179.20	12,275.45	4,437.65	-4,437.61	26.04	4,437.68	179.66	441,764.39	799,289.04
16,620.00	95.90	179.80	12,266.82	4,527.24	-4,527.19	26.82	4,527.27	179.66	441,674.81	799,289.82
16,709.00	98.50	180.60	12,255.67	4,615.52	-4,615.48	26.51	4,615.56	179.67	441,586.52	799,289.51
16,798.00	100.90	181.40	12,240.67	4,703.21	-4,703.19	24.98	4,703.25	179.70	441,498.81	799,287.98
Last Survey: 16798' MD										
16,949.00	100.90	181.40	12,212.12	4,851.40	-4,851.42	21.36	4,851.46	179.75	441,350.58	799,284.36
PTB: 16949' MD										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
152.00	152.00	0.26	-0.75	Pro MWD First Survey: 152' MD
11,722.37	11,700.93	226.36	14.55	FTP: 11722' MD
16,798.00	12,240.67	-4,703.19	24.98	Last Survey: 16798' MD
16,949.00	12,212.12	-4,851.42	21.36	PTB: 16949' MD