

30.015-44070

MARATHON OIL PERMIAN

SURVEY REPORT

BLACK RIVER 15-10 STATE COM B1 5H

PATTERSON 244

10/3/2017

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 26 2018

RECEIVED



The Ultimate Partner In Wellbore Placement

SURVEY REPORT

BLACK RIVER 15-10 STATE COM B1 5H

BLACK RIVER 15-10 STATE COM X 5H

CUSTOMER Marathon Oil Permian
PROJECT Black River 15-10 State Com X 5H
FIELD Periman

SDI JOB NO. OP004626
SDI DISTRICT Midland
SDI KIT/UNIT 203-MP-193

SITE INFORMATION

Site Name Black River 15-10 State Com X 5H
Lat/Long 32° 12' 37.862" N, 104° 10' 22.443" W
Northing 440,342.87 ft
Easting 549,679.28 ft
Section -
Township -
Range -

MAP INFORMATION

North Reference Grid North
Grid Correction -0.09 deg
System US State Plane 1927
Datum North American Datum 1927 (Clarke 1866)
Map Zone New Mexico East: 3001



WELL INFORMATION

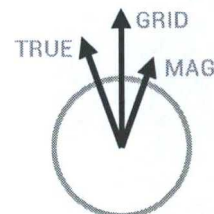
Lat/Long 32° 12' 37.863" N, 104° 10' 21.745" W
Northing 440,342.87 ft
Easting 549,679.28 ft
UWI 30-015-42728

DEPTH AND ELEVATION REFERENCE

Ground Level 3231 ft above Mean Sea Level
Reference Datum RKB
Reference Height 28 ft above G.L.
Reference Elevation 3259 ft

VERTICAL SECTION REFERENCE

+N/-S 0 ft
+E/-W 0 ft
Proposal Direction 1.76°
Calculation Method Minimum Curvature



GEOMAGNETIC REFERENCE INFORMATION

Local Gravity: 998.516 mG [computed]

MD	MODEL	DATE	DECLINATION	TRUE TO GRID	MAG TO GRID
0-17521 ft	HDGM2016		7.38°	subtract 0.09°	add 7.29°

WELL NOTES

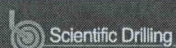
OPERATORS

I.Nunez, J.Fuller, J.Nair, T.Michelli

SDI Operator Name (Printed)

SIGNATURE

DATE



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10/25/2017 13:59 Central Daylight Time

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MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR	COURSE LENGTH
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg	ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00	Invalid
196.00	1.36	316.21	195.98	1.62	1.67	-1.61	0.69	2.32	316.21	196.00
316.00	1.38	324.46	315.95	3.77	3.88	-3.43	0.17	5.17	318.50	120.00
425.00	1.41	326.90	424.92	5.91	6.07	-4.92	0.06	7.81	320.94	109.00
590.00	1.60	352.42	589.86	9.85	10.05	-6.33	0.42	11.88	327.77	165.00
682.00	1.03	348.63	681.84	11.92	12.13	-6.67	0.63	13.84	331.20	92.00
772.00	1.05	85.04	771.83	12.80	12.99	-6.00	1.72	14.31	335.19	90.00
863.00	2.59	119.69	862.78	11.93	12.04	-3.39	2.00	12.51	344.27	91.00
953.00	2.90	125.43	952.68	9.72	9.72	0.23	0.46	9.72	1.33	90.00
1044.00	2.72	134.65	1043.57	6.98	6.87	3.63	0.53	7.77	27.86	91.00
1138.00	1.88	130.62	1137.49	4.50	4.30	6.39	0.90	7.70	56.04	94.00
1232.00	2.23	127.71	1231.43	2.46	2.18	9.00	0.39	9.26	76.39	94.00
1327.00	2.52	116.34	1326.35	0.50	0.12	12.34	0.58	12.34	89.43	95.00
1422.00	1.62	102.85	1421.29	-0.63	-1.10	15.52	1.07	15.56	94.06	95.00
1516.00	2.36	106.25	1515.23	-1.37	-1.94	18.67	0.79	18.78	95.93	94.00
1610.00	3.01	107.44	1609.13	-2.52	-3.22	22.89	0.70	23.12	98.01	94.00
1704.00	3.13	108.12	1702.99	-3.91	-4.76	27.69	0.13	28.09	99.76	94.00
1798.00	2.66	128.44	1796.87	-5.93	-6.91	31.83	1.19	32.57	102.25	94.00
1893.00	3.35	126.65	1891.74	-8.84	-9.94	35.78	0.74	37.14	105.53	95.00
1988.00	2.43	117.91	1986.62	-11.31	-12.54	39.79	1.07	41.72	107.50	95.00
2084.00	3.51	134.56	2082.49	-14.21	-15.56	43.69	1.43	46.37	109.60	96.00
2177.00	2.04	168.78	2175.39	-17.76	-19.18	46.04	2.32	49.87	112.62	93.00
2275.00	1.50	202.04	2273.34	-20.66	-22.08	45.90	1.16	50.93	115.69	98.00
2303.00	1.68	189.21	2301.33	-21.41	-22.82	45.69	1.41	51.08	116.54	28.00
2375.00	1.52	196.98	2373.30	-23.37	-24.77	45.25	0.37	51.58	118.70	72.00
2470.00	2.85	164.07	2468.24	-26.84	-28.25	45.53	1.88	53.58	121.82	95.00
2564.00	3.42	161.48	2562.09	-31.70	-33.16	47.06	0.62	57.57	125.17	94.00
2658.00	3.37	160.72	2655.93	-36.91	-38.43	48.86	0.07	62.17	128.19	94.00
2752.00	3.22	160.42	2749.77	-41.95	-43.53	50.66	0.17	66.80	130.67	94.00
2846.00	3.25	160.09	2843.62	-46.89	-48.52	52.46	0.04	71.46	132.77	94.00
2939.00	3.24	160.21	2936.47	-51.79	-53.48	54.24	0.02	76.17	134.59	93.00
3033.00	3.05	160.50	3030.33	-56.59	-58.34	55.98	0.20	80.85	136.18	94.00

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR	COURSE LENGTH
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg	ft
3128.00	2.50	161.27	3125.22	-60.89	-62.68	57.49	0.58	85.05	137.48	95.00
3223.00	3.84	138.37	3220.08	-65.14	-67.02	60.27	1.91	90.13	138.04	95.00
3317.00	4.01	134.81	3313.86	-69.67	-71.69	64.69	0.32	96.56	137.94	94.00
3411.00	3.93	134.82	3407.63	-74.11	-76.28	69.30	0.09	103.06	137.74	94.00
3504.00	3.89	135.18	3500.42	-78.45	-80.76	73.78	0.05	109.39	137.58	93.00
3598.00	3.38	135.59	3594.23	-82.56	-84.99	77.96	0.54	115.34	137.47	94.00
3692.00	3.11	134.79	3688.08	-86.22	-88.77	81.71	0.28	120.65	137.37	94.00
3787.00	2.83	135.85	3782.95	-89.61	-92.27	85.18	0.30	125.58	137.29	95.00
3881.00	2.83	135.35	3876.83	-92.83	-95.59	88.43	0.03	130.22	137.23	94.00
3976.00	2.62	134.26	3971.73	-95.91	-98.77	91.63	0.23	134.73	137.15	95.00
4070.00	2.59	132.72	4065.63	-98.75	-101.71	94.73	0.08	138.99	137.04	94.00
4164.00	2.56	131.94	4159.53	-101.50	-104.55	97.85	0.05	143.20	136.90	94.00
4259.00	2.33	132.42	4254.45	-104.13	-107.27	100.85	0.25	147.24	136.77	95.00
4353.00	2.21	134.03	4348.37	-106.59	-109.82	103.57	0.14	150.95	136.68	94.00
4448.00	3.10	128.07	4443.27	-109.34	-112.68	106.91	0.97	155.33	136.51	95.00
4543.00	3.25	123.18	4538.12	-112.27	-115.74	111.18	0.33	160.49	136.15	95.00
4637.00	2.59	120.79	4632.00	-114.69	-118.29	115.24	0.72	165.14	135.75	94.00
4732.00	2.96	123.34	4726.89	-117.02	-120.73	119.14	0.42	169.62	135.38	95.00
4826.00	3.69	123.00	4820.73	-119.86	-123.72	123.70	0.77	174.95	135.00	94.00
4920.00	3.08	121.70	4914.57	-122.68	-126.69	128.38	0.65	180.36	134.62	94.00
5014.00	2.80	125.05	5008.44	-125.21	-129.33	132.41	0.34	185.09	134.33	94.00
5109.00	2.60	127.23	5103.34	-127.73	-131.97	136.03	0.24	189.53	134.13	95.00
5204.00	2.88	123.75	5198.23	-130.24	-134.60	139.73	0.34	194.01	133.93	95.00
5298.00	2.81	122.64	5292.11	-132.68	-137.15	143.63	0.09	198.59	133.68	94.00
5393.00	2.52	124.78	5387.01	-135.01	-139.60	147.30	0.32	202.94	133.46	95.00
5486.00	3.41	130.64	5479.89	-137.86	-142.57	151.08	1.01	207.73	133.34	93.00
5581.00	3.66	132.25	5574.71	-141.60	-146.44	155.47	0.28	213.58	133.29	95.00
5675.00	3.47	135.36	5668.52	-145.51	-150.48	159.69	0.29	219.42	133.30	94.00
5769.00	3.46	138.64	5762.35	-149.54	-154.64	163.56	0.21	225.09	133.39	94.00
5862.00	3.00	144.17	5855.20	-153.52	-158.72	166.84	0.59	230.28	133.57	93.00
5957.00	3.92	153.21	5950.03	-158.35	-163.64	169.76	1.12	235.79	133.95	95.00
6051.00	2.55	129.26	6043.88	-162.45	-167.83	172.83	2.02	240.91	134.16	94.00

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR	COURSE LENGTH
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg	ft
6145.00	1.23	135.27	6137.83	-164.41	-169.87	175.16	1.41	244.00	134.12	94.00
6239.00	0.99	112.57	6231.81	-165.40	-170.91	176.62	0.53	245.77	134.06	94.00
6333.00	1.57	97.60	6325.79	-165.82	-171.39	178.65	0.71	247.57	133.81	94.00
6427.00	3.20	106.64	6419.70	-166.63	-172.31	182.45	1.77	250.95	133.36	94.00
6522.00	3.76	119.71	6514.53	-168.77	-174.62	187.69	1.02	256.36	132.93	95.00
6617.00	3.47	128.60	6609.34	-171.95	-177.95	192.65	0.66	262.26	132.73	95.00
6709.00	3.26	131.67	6701.18	-175.30	-181.43	196.78	0.31	267.65	132.68	92.00
6803.00	3.03	133.08	6795.04	-178.66	-184.90	200.59	0.25	272.81	132.67	94.00
6882.00	2.81	132.30	6873.94	-181.29	-187.63	203.55	0.29	276.84	132.67	79.00
6925.00	2.75	126.97	6916.89	-182.57	-188.96	205.15	0.62	278.92	132.65	43.00
6977.00	2.08	117.72	6968.84	-183.71	-190.15	206.98	1.49	281.07	132.57	52.00
7008.00	1.85	36.35	6999.83	-183.54	-190.01	207.78	8.28	281.56	132.44	31.00
7040.00	3.71	9.06	7031.79	-182.09	-188.57	208.25	6.98	280.94	132.16	32.00
7071.00	5.94	4.13	7062.68	-179.49	-185.98	208.52	7.31	279.41	131.73	31.00
7103.00	8.37	8.25	7094.43	-175.52	-182.02	208.97	7.76	277.13	131.06	32.00
7133.00	11.31	7.58	7123.98	-170.42	-176.95	209.67	9.81	274.36	130.16	30.00
7164.00	13.90	8.24	7154.23	-163.70	-170.24	210.61	8.37	270.81	128.95	31.00
7195.00	17.29	7.09	7184.09	-155.41	-161.98	211.71	10.98	266.57	127.42	31.00
7227.00	20.33	3.88	7214.37	-145.11	-151.72	212.68	10.02	261.24	125.50	32.00
7258.00	23.65	0.80	7243.12	-133.51	-140.12	213.13	11.35	255.06	123.32	31.00
7290.00	26.91	359.11	7272.05	-119.85	-126.46	213.10	10.41	247.80	120.69	32.00
7321.00	29.86	359.85	7299.32	-105.13	-111.72	212.98	9.60	240.50	117.68	31.00
7353.00	33.25	1.78	7326.58	-88.39	-94.98	213.23	11.05	233.43	114.01	32.00
7384.00	36.50	2.93	7352.01	-70.67	-77.28	213.96	10.67	227.49	109.86	31.00
7415.00	38.72	3.19	7376.57	-51.76	-58.39	214.98	7.18	222.76	105.19	31.00
7447.00	40.85	3.49	7401.16	-31.29	-37.95	216.17	6.70	219.48	99.96	32.00
7478.00	43.50	3.43	7424.13	-10.49	-17.17	217.43	8.53	218.10	94.52	31.00
7509.00	47.25	3.30	7445.90	11.56	4.85	218.72	12.10	218.78	88.73	31.00
7541.00	50.33	2.57	7466.98	35.63	28.89	219.95	9.78	221.84	82.52	32.00
7573.00	53.16	1.49	7486.80	60.75	53.99	220.83	9.22	227.34	76.26	32.00
7604.00	56.12	0.82	7504.74	86.03	79.27	221.34	9.72	235.11	70.30	31.00
7635.00	58.93	0.51	7521.38	112.17	105.42	221.64	9.11	245.43	64.56	31.00

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR	COURSE LENGTH
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg	ft
7667.00	62.10	0.70	7537.13	140.02	133.27	221.94	9.92	258.87	59.02	32.00
7698.00	65.28	1.09	7550.87	167.80	161.05	222.37	10.32	274.56	54.09	31.00
7730.00	68.48	2.18	7563.43	197.23	190.46	223.21	10.49	293.43	49.53	32.00
7761.00	71.92	2.63	7573.93	226.39	219.60	224.44	11.17	314.00	45.62	31.00
7793.00	75.09	2.22	7583.01	257.07	250.25	225.73	9.97	337.02	42.05	32.00
7824.00	77.46	2.29	7590.37	287.18	280.34	226.92	7.66	360.67	38.99	31.00
7918.00	82.04	0.89	7607.09	379.65	372.78	229.48	5.09	437.75	31.62	94.00
8013.00	87.86	2.55	7615.45	474.24	467.32	232.32	6.37	521.88	26.43	95.00
8044.00	89.53	3.14	7616.16	505.22	498.27	233.86	5.71	550.42	25.14	31.00
8107.00	91.14	3.60	7615.79	568.19	561.16	237.56	2.66	609.37	22.94	63.00
8201.00	89.19	2.50	7615.52	662.16	655.02	242.57	2.38	698.49	20.32	94.00
8296.00	89.66	1.05	7616.46	757.15	749.97	245.51	1.61	789.13	18.13	95.00
8390.00	90.61	0.21	7616.24	851.13	843.96	246.53	1.34	879.23	16.28	94.00
8485.00	88.05	359.14	7617.36	946.06	938.94	245.99	2.92	970.63	14.68	95.00
8579.00	88.22	358.42	7620.42	1039.88	1032.87	243.99	0.78	1061.30	13.29	94.00
8674.00	89.53	358.87	7622.29	1134.72	1127.82	241.75	1.46	1153.44	12.10	95.00
8769.00	90.47	0.07	7622.29	1229.64	1222.82	240.87	1.61	1246.31	11.14	95.00
8865.00	91.14	0.72	7620.94	1325.60	1318.80	241.54	0.97	1340.74	10.38	96.00
8961.00	89.40	359.74	7620.49	1421.56	1414.80	241.93	2.08	1435.33	9.70	96.00
9057.00	90.44	359.46	7620.63	1517.49	1510.79	241.26	1.12	1529.94	9.07	96.00
9152.00	91.67	359.73	7618.88	1612.40	1605.77	240.58	1.33	1623.70	8.52	95.00
9248.00	90.13	359.91	7617.37	1708.33	1701.76	240.28	1.61	1718.64	8.04	96.00
9344.00	90.91	0.41	7616.50	1804.29	1797.75	240.55	0.96	1813.77	7.62	96.00
9440.00	92.92	1.41	7613.30	1900.22	1893.68	242.08	2.34	1909.09	7.28	96.00
9536.00	90.37	359.75	7610.54	1996.15	1989.63	243.05	3.17	2004.42	6.96	96.00
9630.00	91.54	359.63	7608.98	2090.08	2083.61	242.54	1.26	2097.68	6.64	94.00
9724.00	90.40	0.59	7607.38	2184.02	2177.59	242.71	1.59	2191.08	6.36	94.00
9819.00	91.37	0.83	7605.91	2278.99	2272.57	243.89	1.05	2285.62	6.13	95.00
9912.00	90.64	0.36	7604.28	2371.96	2365.55	244.85	0.94	2378.19	5.91	93.00
10006.00	89.53	359.75	7604.14	2465.91	2459.55	244.95	1.34	2471.72	5.69	94.00
10100.00	90.74	0.95	7603.92	2559.88	2553.55	245.53	1.81	2565.32	5.49	94.00
10195.00	91.64	1.58	7601.94	2654.86	2648.50	247.62	1.16	2660.05	5.34	95.00

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR	COURSE LENGTH
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg	ft
10289.00	90.50	359.65	7600.18	2748.81	2742.47	248.63	2.38	2753.72	5.18	94.00
10385.00	91.41	0.09	7598.58	2844.75	2838.46	248.42	1.05	2849.31	5.00	96.00
10481.00	90.87	359.38	7596.67	2940.67	2934.44	247.98	0.93	2944.90	4.83	96.00
10576.00	92.24	358.97	7594.09	3035.53	3029.39	246.61	1.51	3039.41	4.65	95.00
10672.00	90.23	358.07	7592.01	3131.35	3125.33	244.14	2.29	3134.85	4.47	96.00
10768.00	90.60	357.55	7591.31	3227.12	3221.26	240.47	0.67	3230.22	4.27	96.00
10863.00	88.52	357.10	7592.04	3321.83	3316.14	236.04	2.25	3324.53	4.07	95.00
10959.00	88.99	359.12	7594.12	3417.61	3412.06	232.87	2.17	3420.00	3.90	96.00
11056.00	89.33	0.54	7595.54	3514.54	3509.05	232.58	1.50	3516.75	3.79	97.00
11151.00	90.77	1.83	7595.45	3609.53	3604.03	234.54	2.04	3611.65	3.72	95.00
11245.00	91.44	1.04	7593.63	3703.51	3697.98	236.90	1.11	3705.56	3.67	94.00
11270.00	91.78	1.86	7592.93	3728.50	3722.96	237.53	3.55	3730.53	3.65	25.00
11365.00	92.62	1.68	7589.29	3823.43	3817.84	240.46	0.90	3825.41	3.60	95.00
11459.00	90.47	1.94	7586.75	3917.39	3911.76	243.43	2.30	3919.32	3.56	94.00
11554.00	89.66	1.82	7586.64	4012.39	4006.70	246.55	0.86	4014.28	3.52	95.00
11647.00	90.30	0.97	7586.67	4105.38	4099.68	248.81	1.14	4107.22	3.47	93.00
11741.00	90.81	1.44	7585.76	4199.37	4193.65	250.79	0.74	4201.14	3.42	94.00
11835.00	91.31	0.34	7584.02	4293.34	4287.62	252.25	1.29	4295.03	3.37	94.00
11930.00	90.64	0.97	7582.41	4388.31	4382.60	253.33	0.97	4389.91	3.31	95.00
12024.00	91.61	0.95	7580.56	4482.28	4476.57	254.90	1.04	4483.82	3.26	94.00
12118.00	89.66	1.67	7579.52	4576.27	4570.53	257.05	2.21	4577.75	3.22	94.00
12213.00	90.23	1.46	7579.60	4671.27	4665.50	259.65	0.64	4672.71	3.19	95.00
12307.00	91.14	0.60	7578.47	4765.25	4759.47	261.34	1.33	4766.64	3.14	94.00
12401.00	89.93	0.79	7577.59	4859.23	4853.46	262.48	1.30	4860.55	3.10	94.00
12495.00	89.73	0.17	7577.86	4953.21	4947.45	263.27	0.70	4954.45	3.05	94.00
12589.00	92.32	1.29	7576.19	5047.17	5041.42	264.46	3.00	5048.35	3.00	94.00
12683.00	91.65	1.08	7572.94	5141.10	5135.35	266.41	0.75	5142.25	2.97	94.00
12777.00	90.17	0.94	7571.45	5235.08	5229.32	268.07	1.58	5236.18	2.93	94.00
12871.00	89.36	1.40	7571.83	5329.08	5323.29	269.99	0.98	5330.14	2.90	94.00
12966.00	90.10	1.60	7572.28	5424.07	5418.26	272.47	0.81	5425.11	2.88	95.00
13060.00	90.97	1.36	7571.40	5518.07	5512.22	274.90	0.96	5519.07	2.86	94.00
13155.00	88.25	1.08	7572.04	5613.05	5607.19	276.92	2.88	5614.03	2.83	95.00

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR	COURSE LENGTH
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg	ft
13250.00	88.59	0.76	7574.66	5708.00	5702.14	278.44	0.49	5708.94	2.80	95.00
13344.00	89.43	0.31	7576.29	5801.97	5796.12	279.33	1.01	5802.85	2.76	94.00
13437.00	90.37	359.84	7576.45	5894.93	5889.12	279.45	1.13	5895.75	2.72	93.00
13533.00	89.93	0.58	7576.20	5990.89	5985.12	279.79	0.89	5991.66	2.68	96.00
13629.00	89.76	0.30	7576.45	6086.86	6081.12	280.53	0.33	6087.58	2.64	96.00
13725.00	91.08	0.16	7575.75	6182.82	6177.11	280.91	1.37	6183.50	2.60	96.00
13820.00	91.24	0.34	7573.83	6277.77	6272.09	281.32	0.26	6278.40	2.57	95.00
13916.00	90.07	359.88	7572.73	6373.72	6368.08	281.50	1.32	6374.30	2.53	96.00
14011.00	90.10	359.64	7572.59	6468.67	6463.08	281.10	0.25	6469.19	2.49	95.00
14107.00	90.84	358.59	7571.80	6564.56	6559.06	279.62	1.33	6565.02	2.44	96.00
14203.00	90.67	358.69	7570.54	6660.41	6655.03	277.35	0.20	6660.81	2.39	96.00
14299.00	88.25	358.90	7571.44	6756.27	6751.00	275.34	2.53	6756.61	2.34	96.00
14393.00	87.99	359.52	7574.52	6850.12	6844.94	274.05	0.72	6850.42	2.29	94.00
14487.00	88.83	359.24	7577.14	6944.01	6938.89	273.03	0.94	6944.26	2.25	94.00
14581.00	89.63	358.62	7578.40	7037.88	7032.87	271.27	1.08	7038.10	2.21	94.00
14675.00	89.87	359.68	7578.81	7131.78	7126.86	269.87	1.16	7131.96	2.17	94.00
14769.00	88.96	0.21	7579.78	7225.73	7220.85	269.78	1.12	7225.89	2.14	94.00
14863.00	89.03	1.32	7581.43	7319.70	7314.82	271.04	1.18	7319.84	2.12	94.00
14958.00	89.26	2.80	7582.85	7414.68	7409.75	274.45	1.57	7414.83	2.12	95.00
15052.00	90.30	2.17	7583.21	7508.67	7503.66	278.52	1.29	7508.83	2.13	94.00
15146.00	91.14	2.08	7582.02	7602.66	7597.59	282.00	0.90	7602.82	2.13	94.00
15241.00	92.25	1.53	7579.21	7697.62	7692.50	284.99	1.30	7697.77	2.12	95.00
15335.00	91.88	2.92	7575.83	7791.55	7786.36	288.64	1.53	7791.71	2.12	94.00
15429.00	90.57	2.66	7573.82	7885.51	7880.23	293.22	1.42	7885.68	2.13	94.00
15523.00	91.08	2.32	7572.47	7979.50	7974.13	297.30	0.65	7979.67	2.14	94.00
15617.00	90.67	2.25	7571.04	8073.48	8068.04	301.04	0.44	8073.66	2.14	94.00
15712.00	90.77	1.57	7569.84	8168.47	8162.98	304.21	0.72	8168.65	2.13	95.00
15806.00	91.61	1.50	7567.89	8262.45	8256.93	306.73	0.90	8262.62	2.13	94.00
15901.00	90.71	1.30	7565.96	8357.43	8351.88	309.06	0.98	8357.59	2.12	95.00
15995.00	90.97	1.62	7564.59	8451.42	8445.84	311.46	0.44	8451.58	2.11	94.00
16089.00	92.25	1.99	7561.94	8545.38	8539.75	314.42	1.41	8545.54	2.11	94.00
16182.00	91.31	0.26	7559.05	8638.32	8632.68	316.24	2.12	8638.47	2.10	93.00

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR	COURSE LENGTH
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft	deg	ft
16276.00	89.80	359.14	7558.15	8732.25	8726.67	315.75	2.00	8732.38	2.07	94.00
16371.00	90.87	359.04	7557.59	8827.15	8821.66	314.25	1.14	8827.25	2.04	95.00
16465.00	88.89	358.63	7557.78	8921.02	8915.63	312.33	2.15	8921.10	2.01	94.00
16559.00	89.09	358.13	7559.43	9014.84	9009.58	309.67	0.57	9014.90	1.97	94.00
16653.00	89.97	358.40	7560.20	9108.66	9103.53	306.82	0.97	9108.70	1.93	94.00
16749.00	89.50	358.34	7560.65	9204.49	9199.49	304.09	0.49	9204.52	1.89	96.00
16843.00	87.18	359.12	7563.38	9298.32	9293.42	302.01	2.60	9298.33	1.86	94.00
16937.00	88.05	359.40	7567.29	9392.14	9387.33	300.80	0.97	9392.15	1.84	94.00
17031.00	89.13	1.02	7569.61	9486.08	9481.30	301.14	2.07	9486.08	1.82	94.00
17126.00	90.60	1.49	7569.83	9581.07	9576.27	303.21	1.63	9581.07	1.81	95.00
17220.00	91.81	3.17	7567.85	9675.04	9670.17	307.03	2.21	9675.04	1.82	94.00
17314.00	90.97	2.23	7565.56	9769.00	9764.04	311.46	1.34	9769.00	1.83	94.00
17408.00	92.01	2.27	7563.11	9862.96	9857.93	315.15	1.11	9862.97	1.83	94.00
17462.00	91.21	2.82	7561.59	9916.93	9911.86	317.54	1.80	9916.94	1.83	54.00
17521.00	91.21	2.82	7560.35	9975.91	9970.77	320.44	0.00	9975.92	1.84	59.00