

30-015-44103

COG

POPULUS FED #4H

PATRIOT #2

5/5/2017

**Please provide signature
page for directional survey**

Scientific Drilling

The

In Wellbore Placement

CUSTOMER
PROJECT
FIELD

COG
Populus Fed #4H
Bone Spring

SDI JOB NO.
SDI DISTRICT
SDI KIT/UNIT

OP.001179
Midland

SITE INFORMATION

Site Name Populus Fed #4H
Lat/Long 32.10759° N, 104.21737° W
Northing
Easting

Section
Township
Range

MAP INFORMATION

North Reference Grid North
Grid Correction -0.06 deg
System US State Plane 1927
Datum North American Datum 1927 (Clarke 1866)
Map Zone New Mexico East: 3001



WELL INFORMATION

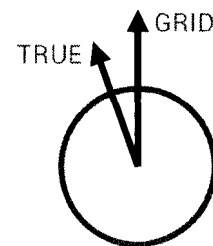
Lat/Long 32.10759° N, 104.21737° W
Northing
Easting
UWI 30-015-44103

DEPTH AND ELEVATION REFERENCE

Ground Level 3138 ft above Mean Sea Level
Reference Datum KB
Reference Height 20 ft above G.L.
Reference Elevation 3158 ft

VERTICAL SECTION REFERENCE

+N/-S 0 ft
+E/-W 0 ft
Proposal Direction 184.26°
Calculation Method Minimum Curvature



LOCAL GRAVITY REFERENCE INFORMATION

Local Gravity 998.517 mG [computed]
True to Grid subtract 0.06°

WELL NOTES

OPERATORS
Grayson Wegner

SDI Operator Name (Printed)

SIGNATURE

DATE

MD	INC	AZIM	TYD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft	deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.99	316.25	100.00	-0.58	0.62	-0.60	0.99	0.86	316.25
125.00	0.97	314.19	124.99	-0.86	0.93	-0.90	0.16	1.29	315.91
150.00	0.96	315.85	149.99	-1.13	1.22	-1.20	0.12	1.71	315.69
175.00	0.86	319.28	174.98	-1.40	1.52	-1.46	0.45	2.11	316.03
200.00	0.94	323.71	199.98	-1.69	1.82	-1.71	0.42	2.50	316.90
225.00	0.96	333.25	224.98	-2.03	2.18	-1.92	0.64	2.90	318.54
250.00	0.97	333.75	249.97	-2.39	2.55	-2.11	0.04	3.31	320.42
275.00	0.98	334.50	274.97	-2.76	2.93	-2.30	0.08	3.73	321.96
300.00	1.05	336.70	299.97	-3.15	3.34	-2.48	0.33	4.16	323.41
325.00	0.97	333.73	324.96	-3.53	3.74	-2.66	0.40	4.59	324.54
350.00	0.83	336.12	349.96	-3.87	4.09	-2.83	0.58	4.98	325.35
375.00	0.65	335.28	374.96	-4.16	4.39	-2.96	0.71	5.30	325.98
400.00	0.67	337.38	399.96	-4.41	4.65	-3.08	0.11	5.58	326.51
425.00	0.61	333.85	424.95	-4.66	4.91	-3.19	0.28	5.85	326.95
450.00	0.64	336.03	449.95	-4.89	5.15	-3.31	0.15	6.12	327.30
475.00	0.59	337.17	474.95	-5.13	5.40	-3.41	0.21	6.39	327.69
500.00	0.65	334.53	499.95	-5.37	5.64	-3.52	0.28	6.65	328.01
525.00	0.64	333.36	524.95	-5.61	5.90	-3.65	0.07	6.93	328.25
550.00	0.60	334.10	549.95	-5.84	6.14	-3.77	0.15	7.20	328.46
575.00	0.60	338.62	574.95	-6.07	6.38	-3.87	0.19	7.46	328.74
600.00	0.60	334.83	599.94	-6.31	6.62	-3.98	0.16	7.72	329.01
625.00	0.55	332.17	624.94	-6.52	6.84	-4.09	0.21	7.97	329.15
650.00	0.56	336.95	649.94	-6.73	7.06	-4.19	0.19	8.21	329.31
675.00	0.50	341.53	674.94	-6.94	7.28	-4.27	0.32	8.44	329.58
700.00	0.54	341.10	699.94	-7.15	7.49	-4.35	0.15	8.66	329.88
725.00	0.58	344.48	724.94	-7.38	7.73	-4.42	0.23	8.90	330.23
750.00	0.53	343.07	749.94	-7.60	7.96	-4.49	0.21	9.14	330.59
775.00	0.53	338.02	774.94	-7.82	8.18	-4.56	0.19	9.37	330.84
800.00	0.53	345.32	799.94	-8.03	8.40	-4.64	0.27	9.59	331.10
825.00	0.49	340.31	824.93	-8.24	8.61	-4.70	0.23	9.81	331.36
850.00	0.49	350.87	849.93	-8.44	8.82	-4.76	0.36	10.02	331.66

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft	deg
875.00	0.60	344.85	874.93	-8.67	9.05	-4.81	0.48	10.25	332.03
900.00	0.56	350.07	899.93	-8.91	9.30	-4.86	0.27	10.49	332.39
925.00	0.61	351.74	924.93	-9.16	9.55	-4.90	0.22	10.73	332.83
950.00	0.48	7.29	949.93	-9.39	9.79	-4.91	0.78	10.95	333.36
975.00	0.47	15.03	974.93	-9.60	9.99	-4.87	0.26	11.11	334.01
1000.00	0.44	6.24	999.93	-9.79	10.18	-4.83	0.29	11.27	334.62
1025.00	0.48	9.31	1024.93	-10.00	10.38	-4.80	0.18	11.44	335.17
1050.00	0.44	24.33	1049.93	-10.19	10.57	-4.75	0.51	11.59	335.82
1075.00	0.48	26.19	1074.92	-10.38	10.75	-4.66	0.18	11.72	336.56
1100.00	0.51	33.31	1099.92	-10.57	10.94	-4.55	0.27	11.85	337.40
1125.00	0.47	27.80	1124.92	-10.76	11.12	-4.45	0.26	11.98	338.22
1150.00	0.47	35.89	1149.92	-10.94	11.30	-4.34	0.26	12.10	339.00
1175.00	0.51	59.36	1174.92	-11.10	11.44	-4.18	0.82	12.18	339.92
1200.00	0.62	60.39	1199.92	-11.23	11.56	-3.97	0.44	12.22	341.06
1225.00	0.85	69.12	1224.92	-11.39	11.69	-3.68	1.01	12.26	342.54
1250.00	0.89	69.68	1249.92	-11.55	11.83	-3.32	0.17	12.29	344.31
1275.00	1.26	79.52	1274.91	-11.70	11.94	-2.87	1.65	12.28	346.49
1300.00	1.42	85.38	1299.90	-11.82	12.02	-2.29	0.84	12.24	349.20
1325.00	1.45	88.32	1324.90	-11.90	12.05	-1.67	0.33	12.17	352.12
1350.00	1.45	81.47	1349.89	-12.00	12.11	-1.04	0.69	12.15	355.10
1375.00	1.49	86.71	1374.88	-12.11	12.18	-0.40	0.56	12.18	358.12
1400.00	1.17	86.84	1399.87	-12.19	12.21	0.18	1.27	12.21	0.84
1425.00	1.17	91.46	1424.87	-12.23	12.22	0.69	0.38	12.24	3.23
1450.00	1.13	90.83	1449.86	-12.26	12.21	1.19	0.17	12.26	5.58
1475.00	1.14	91.46	1474.86	-12.29	12.20	1.69	0.06	12.31	7.88
1500.00	1.18	94.92	1499.85	-12.30	12.17	2.19	0.33	12.36	10.22
1525.00	1.34	96.96	1524.85	-12.28	12.11	2.74	0.64	12.42	12.75
1550.00	1.61	95.72	1549.84	-12.26	12.04	3.38	1.10	12.50	15.68
1575.00	1.87	95.12	1574.83	-12.24	11.97	4.14	1.06	12.66	19.06
1600.00	2.18	94.99	1599.81	-12.23	11.89	5.01	1.22	12.90	22.87
1625.00	2.41	93.95	1624.79	-12.23	11.81	6.01	0.95	13.25	26.97
1650.00	2.54	92.99	1649.77	-12.24	11.75	7.09	0.55	13.72	31.11

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIA
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft	deg
1675.00	2.62	92.97	1674.74	-12.27	11.69	8.21	0.30	14.29	35.09
1700.00	2.54	90.47	1699.72	-12.32	11.65	9.34	0.54	14.93	38.70
1725.00	2.42	86.37	1724.69	-12.43	11.68	10.42	0.86	15.66	41.73
1750.00	2.15	80.47	1749.67	-12.61	11.80	11.41	1.44	16.41	44.05
1775.00	1.54	71.61	1774.66	-12.85	11.98	12.19	2.71	17.09	45.51
1800.00	0.93	49.16	1799.65	-13.12	12.22	12.66	3.06	17.60	46.03
1825.00	0.67	14.72	1824.65	-13.41	12.49	12.85	2.13	17.92	45.82
1850.00	0.70	334.49	1849.65	-13.69	12.77	12.83	1.89	18.10	45.13
1875.00	0.79	322.83	1874.65	-13.95	13.05	12.66	0.71	18.18	44.13
1900.00	0.83	315.82	1899.65	-14.20	13.31	12.42	0.42	18.21	43.02
1925.00	0.87	315.06	1924.64	-14.44	13.58	12.16	0.18	18.23	41.85
1950.00	0.89	317.36	1949.64	-14.70	13.86	11.90	0.16	18.26	40.65
1975.00	0.88	316.85	1974.64	-14.96	14.14	11.63	0.07	18.31	39.45
2000.00	0.79	315.12	1999.63	-15.21	14.40	11.38	0.35	18.36	38.31
2025.00	0.89	313.94	2024.63	-15.44	14.66	11.12	0.37	18.40	37.18
2050.00	0.89	315.48	2049.63	-15.70	14.93	10.84	0.10	18.45	35.98
2075.00	0.95	315.84	2074.63	-15.96	15.22	10.56	0.23	18.53	34.76
2100.00	1.00	315.41	2099.62	-16.24	15.52	10.26	0.20	18.61	33.47
2125.00	1.00	317.89	2124.62	-16.54	15.84	9.96	0.17	18.72	32.17
2150.00	0.96	317.69	2149.61	-16.83	16.16	9.68	0.17	18.83	30.91
2175.00	1.04	315.42	2174.61	-17.13	16.48	9.38	0.34	18.96	29.64
2200.00	1.03	321.12	2199.61	-17.44	16.81	9.08	0.41	19.11	28.37
2225.00	1.05	317.97	2224.60	-17.76	17.16	8.78	0.25	19.27	27.11
2250.00	0.98	318.01	2249.60	-18.07	17.49	8.49	0.29	19.44	25.89
2275.00	1.01	315.46	2274.60	-18.36	17.80	8.19	0.21	19.59	24.70
2300.00	1.04	318.31	2299.59	-18.66	18.13	7.88	0.24	19.77	23.50
2325.00	1.06	319.21	2324.59	-18.98	18.47	7.58	0.12	19.97	22.31
2350.00	1.07	318.08	2349.58	-19.31	18.82	7.27	0.09	20.18	21.13
2375.00	1.08	319.18	2374.58	-19.64	19.17	6.96	0.09	20.40	19.96
2400.00	1.10	319.18	2399.57	-19.97	19.53	6.65	0.07	20.63	18.81
2425.00	1.11	316.95	2424.57	-20.30	19.89	6.33	0.18	20.87	17.66
2450.00	1.02	319.90	2449.56	-20.63	20.24	6.02	0.39	21.11	16.58

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE D(R)
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft	deg
2475.00	0.85	324.47	2474.56	-20.93	20.56	5.77	0.76	21.35	15.68
2500.00	1.14	312.87	2499.56	-21.23	20.88	5.48	1.39	21.59	14.71
2525.00	1.48	299.52	2524.55	-21.52	21.21	5.02	1.83	21.79	13.32
2550.00	1.92	289.52	2549.54	-21.77	21.50	4.34	2.12	21.94	11.42
2575.00	2.07	278.84	2574.53	-21.91	21.71	3.50	1.60	21.99	9.17
2600.00	2.43	271.64	2599.51	-21.93	21.80	2.53	1.82	21.94	6.62
2625.00	2.59	272.59	2624.48	-21.89	21.84	1.44	0.69	21.89	3.76
2650.00	3.04	267.02	2649.45	-21.79	21.83	0.21	2.09	21.83	0.55
2675.00	3.45	265.46	2674.41	-21.59	21.74	-1.20	1.70	21.77	356.83
2700.00	3.60	267.06	2699.36	-21.37	21.64	-2.74	0.70	21.81	352.79
2725.00	3.76	268.55	2724.31	-21.19	21.58	-4.34	0.76	22.01	348.62
2750.00	4.03	266.28	2749.25	-20.99	21.50	-6.04	1.24	22.33	344.31
2775.00	4.15	265.63	2774.19	-20.73	21.37	-7.82	0.50	22.76	339.91
2800.00	4.16	265.35	2799.13	-20.46	21.23	-9.62	0.09	23.31	335.62
2825.00	4.14	264.53	2824.06	-20.16	21.07	-11.42	0.25	23.97	331.53
2850.00	4.04	263.72	2849.00	-19.85	20.89	-13.20	0.48	24.71	327.71
2875.00	3.88	263.44	2873.94	-19.53	20.69	-14.91	0.62	25.51	324.22
2900.00	3.86	264.13	2898.88	-19.22	20.51	-16.59	0.22	26.38	321.03
2925.00	3.74	263.40	2923.82	-18.92	20.33	-18.24	0.49	27.31	318.11
2950.00	3.80	263.15	2948.77	-18.61	20.14	-19.87	0.23	28.29	315.39
2975.00	3.92	262.60	2973.71	-18.28	19.93	-21.54	0.50	29.35	312.78
3000.00	3.79	263.70	2998.66	-17.95	19.73	-23.21	0.59	30.46	310.37
3025.00	3.80	263.61	3023.60	-17.65	19.55	-24.85	0.06	31.62	308.19
3050.00	3.82	263.68	3048.55	-17.34	19.36	-26.50	0.06	32.82	306.15
3075.00	3.75	262.97	3073.49	-17.03	19.17	-28.14	0.31	34.05	304.26
3100.00	3.74	262.63	3098.44	-16.70	18.97	-29.77	0.11	35.29	302.51
3125.00	3.76	262.14	3123.39	-16.37	18.75	-31.38	0.15	36.56	300.86
3150.00	3.77	263.07	3148.33	-16.04	18.54	-33.01	0.25	37.86	299.32
3175.00	3.77	261.06	3173.28	-15.69	18.31	-34.64	0.53	39.18	297.86
3200.00	3.77	262.17	3198.22	-15.33	18.07	-36.27	0.29	40.52	296.49
3225.00	3.73	262.49	3223.17	-14.99	17.85	-37.89	0.16	41.88	295.23
3250.00	3.59	261.91	3248.12	-14.66	17.64	-39.47	0.61	43.23	294.08

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft	deg
3275.00	3.53	261.05	3273.07	-14.31	17.41	-41.00	0.32	44.54	293.01
3300.00	3.44	261.15	3298.02	-13.97	17.17	-42.50	0.34	45.84	292.00
3325.00	3.24	261.69	3322.98	-13.64	16.96	-43.94	0.81	47.10	291.10
3350.00	3.09	261.85	3347.94	-13.35	16.76	-45.31	0.63	48.31	290.30
3375.00	3.05	260.21	3372.91	-13.04	16.55	-46.63	0.38	49.48	289.54
3400.00	3.04	261.56	3397.87	-12.73	16.34	-47.94	0.29	50.65	288.82
3425.00	2.95	260.92	3422.84	-12.44	16.14	-49.23	0.38	51.81	288.15
3450.00	3.05	261.24	3447.80	-12.14	15.94	-50.52	0.38	52.98	287.51
3475.00	3.48	258.62	3472.76	-11.79	15.69	-51.92	1.83	54.24	286.81
3500.00	3.89	258.46	3497.71	-11.35	15.37	-53.50	1.65	55.66	286.03
3525.00	3.99	258.32	3522.65	-10.88	15.02	-55.18	0.41	57.19	285.23
3550.00	3.96	259.19	3547.59	-10.42	14.68	-56.88	0.27	58.75	284.47
3575.00	4.01	258.43	3572.53	-9.95	14.35	-58.59	0.29	60.32	283.76
3600.00	4.06	258.27	3597.47	-9.47	13.99	-60.31	0.22	61.91	283.06
3625.00	4.07	258.54	3622.41	-8.99	13.63	-62.05	0.08	63.53	282.39
3650.00	4.13	258.02	3647.34	-8.50	13.27	-63.80	0.28	65.16	281.75
3675.00	4.32	256.57	3672.28	-7.96	12.87	-65.59	0.89	66.84	281.10
3700.00	4.42	255.13	3697.20	-7.36	12.40	-67.44	0.58	68.57	280.42
3725.00	4.46	255.73	3722.13	-6.73	11.91	-69.31	0.25	70.33	279.75
3750.00	4.48	255.91	3747.05	-6.11	11.44	-71.20	0.09	72.12	279.12
3775.00	4.52	255.57	3771.97	-5.49	10.95	-73.10	0.18	73.92	278.52
3800.00	4.40	255.06	3796.90	-4.86	10.46	-74.98	0.51	75.71	277.94
3825.00	4.26	255.26	3821.83	-4.24	9.98	-76.81	0.56	77.45	277.40
3850.00	4.11	255.07	3846.76	-3.65	9.51	-78.57	0.58	79.14	276.90
3875.00	4.08	254.01	3871.70	-3.05	9.03	-80.29	0.33	80.80	276.42
3900.00	4.16	254.18	3896.63	-2.43	8.54	-82.02	0.31	82.46	275.95
3925.00	3.97	254.10	3921.57	-1.82	8.06	-83.72	0.77	84.11	275.50
3950.00	3.88	254.54	3946.51	-1.23	7.60	-85.37	0.37	85.71	275.08
3975.00	3.78	255.08	3971.46	-0.68	7.16	-86.98	0.42	87.28	274.70
4000.00	3.74	255.93	3996.40	-0.15	6.75	-88.57	0.27	88.83	274.36
4025.00	3.80	255.70	4021.35	0.37	6.34	-90.17	0.22	90.39	274.02
4050.00	3.97	261.63	4046.29	0.82	6.01	-91.82	1.76	92.02	273.75

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft	deg
4075.00	3.99	263.14	4071.23	1.18	5.78	-93.54	0.42	93.72	273.54
4100.00	4.02	264.58	4096.17	1.50	5.60	-95.28	0.43	95.44	273.36
4125.00	3.97	265.03	4121.11	1.78	5.44	-97.02	0.25	97.17	273.21
4150.00	3.73	265.76	4146.05	2.04	5.30	-98.69	0.96	98.83	273.08
4175.00	3.65	265.51	4171.00	2.28	5.18	-100.29	0.32	100.43	272.96
4200.00	3.68	266.66	4195.95	2.51	5.07	-101.89	0.32	102.02	272.85
4225.00	3.89	267.50	4220.89	2.72	4.99	-103.54	0.87	103.66	272.76
4250.00	4.22	271.94	4245.83	2.85	4.98	-105.31	1.81	105.42	272.71
4275.00	4.34	274.68	4270.76	2.88	5.09	-107.17	0.95	107.29	272.72
4300.00	4.39	273.55	4295.69	2.89	5.23	-109.07	0.41	109.19	272.74
4325.00	4.27	274.32	4320.62	2.90	5.36	-110.95	0.53	111.08	272.76
4350.00	4.13	274.67	4345.55	2.89	5.50	-112.78	0.60	112.91	272.79
4375.00	4.04	274.53	4370.49	2.88	5.64	-114.55	0.36	114.69	272.82
4400.00	3.97	275.76	4395.43	2.85	5.80	-116.29	0.45	116.43	272.85
4425.00	3.95	274.44	4420.37	2.83	5.95	-118.01	0.37	118.16	272.89
4450.00	3.95	275.16	4445.31	2.81	6.10	-119.73	0.20	119.88	272.92
4475.00	3.88	274.95	4470.25	2.79	6.25	-121.43	0.32	121.59	272.95
4500.00	3.83	275.27	4495.19	2.76	6.40	-123.10	0.19	123.27	272.97
4525.00	3.85	275.66	4520.14	2.73	6.56	-124.77	0.13	124.94	273.01
4550.00	3.93	275.16	4545.08	2.70	6.72	-126.46	0.35	126.63	273.04
4575.00	3.90	275.24	4570.02	2.67	6.87	-128.16	0.13	128.34	273.07
4600.00	3.88	276.37	4594.96	2.62	7.04	-129.84	0.31	130.03	273.10
4625.00	4.16	281.31	4619.90	2.48	7.31	-131.57	1.76	131.78	273.18
4650.00	4.22	282.46	4644.83	2.24	7.69	-133.36	0.41	133.58	273.30
4675.00	4.25	283.65	4669.77	1.96	8.11	-135.16	0.37	135.40	273.43
4700.00	4.21	282.81	4694.70	1.67	8.53	-136.95	0.28	137.22	273.56
4725.00	4.15	282.10	4719.63	1.41	8.92	-138.73	0.34	139.02	273.68
4750.00	4.01	283.03	4744.57	1.15	9.31	-140.46	0.59	140.77	273.79
4775.00	3.99	283.00	4769.51	0.89	9.70	-142.16	0.07	142.50	273.90
4800.00	3.93	282.82	4794.45	0.63	10.09	-143.85	0.27	144.20	274.01
4825.00	3.84	283.27	4819.39	0.37	10.47	-145.50	0.36	145.87	274.12
4850.00	3.78	283.48	4844.33	0.10	10.85	-147.11	0.26	147.51	274.22

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft	deg
4875.00	3.80	282.57	4869.28	-0.15	11.23	-148.72	0.25	149.15	274.32
4900.00	3.83	283.97	4894.22	-0.41	11.61	-150.34	0.39	150.79	274.41
4925.00	3.72	282.27	4919.17	-0.66	11.98	-151.94	0.61	152.41	274.51
4950.00	3.69	281.82	4944.12	-0.88	12.32	-153.52	0.16	154.02	274.59
4975.00	3.66	282.64	4969.07	-1.10	12.66	-155.09	0.26	155.61	274.67
5000.00	3.53	281.97	4994.02	-1.32	12.99	-156.62	0.52	157.16	274.74
5025.00	3.47	280.68	5018.97	-1.51	13.29	-158.12	0.41	158.68	274.81
5050.00	3.37	281.21	5043.93	-1.68	13.58	-159.58	0.40	160.16	274.86
5075.00	3.34	280.83	5068.88	-1.86	13.86	-161.02	0.15	161.62	274.92
5100.00	3.33	280.68	5093.84	-2.02	14.13	-162.45	0.05	163.07	274.97
5125.00	3.30	281.66	5118.80	-2.19	14.41	-163.87	0.26	164.50	275.02
5150.00	3.39	281.98	5143.76	-2.39	14.71	-165.30	0.35	165.95	275.08
5175.00	3.41	282.79	5168.71	-2.60	15.02	-166.75	0.21	167.43	275.15
5200.00	3.56	283.23	5193.67	-2.83	15.37	-168.23	0.60	168.93	275.22
5225.00	3.70	283.66	5218.62	-3.08	15.73	-169.77	0.57	170.50	275.30
5250.00	3.73	284.24	5243.56	-3.35	16.12	-171.34	0.19	172.10	275.38
5275.00	4.16	278.24	5268.50	-3.56	16.45	-173.02	2.38	173.80	275.43
5300.00	4.25	278.05	5293.44	-3.68	16.71	-174.84	0.40	175.63	275.46
5325.00	4.27	277.87	5318.37	-3.80	16.97	-176.68	0.07	177.49	275.49
5350.00	4.35	278.07	5343.30	-3.92	17.23	-178.54	0.33	179.37	275.51
5375.00	4.26	275.91	5368.23	-4.01	17.46	-180.40	0.73	181.24	275.53
5400.00	4.21	277.05	5393.16	-4.08	17.67	-182.23	0.40	183.09	275.54
5425.00	4.20	276.17	5418.09	-4.16	17.88	-184.06	0.26	184.92	275.55
5450.00	4.24	275.02	5443.02	-4.20	18.06	-185.89	0.38	186.76	275.55
5475.00	4.14	276.73	5467.96	-4.25	18.25	-187.70	0.64	188.59	275.55
5500.00	4.19	274.99	5492.89	-4.30	18.43	-189.51	0.53	190.41	275.55
5525.00	4.17	274.56	5517.82	-4.32	18.58	-191.33	0.14	192.23	275.55
5550.00	4.06	272.99	5542.76	-4.30	18.70	-193.12	0.63	194.02	275.53
5575.00	3.99	271.53	5567.70	-4.24	18.77	-194.87	0.51	195.77	275.50
5600.00	3.81	269.47	5592.64	-4.13	18.79	-196.57	0.89	197.47	275.46
5625.00	3.79	267.22	5617.58	-3.96	18.74	-198.23	0.60	199.11	275.40
5650.00	3.84	266.61	5642.53	-3.75	18.65	-199.89	0.25	200.76	275.33

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft	deg
5675.00	3.88	266.44	5667.47	-3.52	18.55	-201.57	0.15	202.42	275.26
5700.00	3.89	264.27	5692.41	-3.26	18.41	-203.26	0.59	204.09	275.18
5725.00	3.95	263.44	5717.36	-2.95	18.23	-204.96	0.33	205.77	275.08
5750.00	3.83	263.26	5742.30	-2.63	18.03	-206.65	0.50	207.43	274.99
5775.00	3.70	262.63	5767.24	-2.31	17.83	-208.28	0.55	209.04	274.89
5800.00	3.59	261.49	5792.19	-1.97	17.61	-209.85	0.54	210.59	274.80
5825.00	3.63	262.04	5817.14	-1.63	17.38	-211.41	0.22	212.12	274.70
5850.00	3.56	261.32	5842.10	-1.29	17.16	-212.96	0.34	213.65	274.61
5875.00	3.64	262.83	5867.05	-0.96	16.94	-214.51	0.50	215.18	274.52
5900.00	3.67	263.44	5892.00	-0.65	16.75	-216.09	0.19	216.74	274.43
5925.00	3.36	263.47	5916.95	-0.37	16.58	-217.61	1.21	218.24	274.36
5950.00	3.13	264.91	5941.91	-0.12	16.43	-219.02	0.98	219.64	274.29
5975.00	2.92	263.90	5966.87	0.11	16.30	-220.34	0.89	220.94	274.23
6000.00	2.90	261.80	5991.84	0.36	16.15	-221.59	0.43	222.18	274.17
6025.00	3.24	259.80	6016.81	0.67	15.93	-222.91	1.45	223.48	274.09
6050.00	3.72	258.08	6041.76	1.07	15.64	-224.41	1.97	224.95	273.99
6075.00	3.80	256.21	6066.71	1.56	15.27	-226.00	0.58	226.52	273.87
6100.00	3.60	256.56	6091.65	2.05	14.89	-227.57	0.79	228.06	273.74
6125.00	3.25	258.24	6116.61	2.49	14.57	-229.03	1.49	229.49	273.64
6150.00	2.97	259.83	6141.57	2.84	14.31	-230.36	1.14	230.81	273.55
6175.00	2.73	267.53	6166.54	3.08	14.17	-231.59	1.81	232.03	273.50
6200.00	2.69	268.85	6191.51	3.20	14.13	-232.78	0.30	233.20	273.47
6225.00	2.62	271.38	6216.49	3.28	14.13	-233.93	0.54	234.36	273.46
6250.00	2.49	274.43	6241.46	3.31	14.19	-235.05	0.74	235.47	273.45
6275.00	2.39	275.73	6266.44	3.30	14.28	-236.11	0.48	236.54	273.46
6300.00	2.33	275.93	6291.42	3.27	14.39	-237.13	0.23	237.57	273.47
6325.00	2.24	278.81	6316.40	3.21	14.51	-238.12	0.57	238.56	273.49
6350.00	2.17	284.19	6341.38	3.09	14.70	-239.06	0.87	239.51	273.52
6375.00	2.26	294.94	6366.36	2.84	15.03	-239.97	1.70	240.44	273.58
6400.00	2.52	294.38	6391.34	2.47	15.46	-240.92	1.04	241.41	273.67
6425.00	3.31	303.37	6416.31	1.93	16.09	-242.02	3.62	242.55	273.80
6450.00	3.66	306.56	6441.26	1.16	16.96	-243.26	1.62	243.85	273.99

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft	deg
6475.00	3.64	304.40	6466.21	0.33	17.88	-244.56	0.56	245.21	274.18
6500.00	3.38	303.21	6491.16	-0.42	18.74	-245.83	1.10	246.54	274.36
6525.00	3.19	300.00	6516.12	-1.08	19.49	-247.05	1.04	247.82	274.51
6550.00	3.20	297.99	6541.08	-1.67	20.16	-248.27	0.45	249.09	274.64
6575.00	3.19	297.86	6566.04	-2.22	20.82	-249.50	0.06	250.37	274.77
6600.00	3.19	294.85	6591.00	-2.75	21.43	-250.75	0.67	251.66	274.89
6625.00	3.29	292.96	6615.96	-3.22	22.01	-252.04	0.60	253.00	274.99
6650.00	3.36	291.49	6640.92	-3.67	22.55	-253.38	0.43	254.38	275.09
6675.00	3.40	290.82	6665.88	-4.10	23.09	-254.76	0.23	255.80	275.18
6700.00	3.41	289.71	6690.83	-4.51	23.60	-256.15	0.27	257.23	275.26
6710.00	3.30	285.94	6700.82	-4.64	23.78	-256.71	2.49	257.80	275.29