

COG

SURVEY REPORT

WHITE FALCON 16 STATE #13H

NORAM #23

11/7/2017

This survey is correct to the best of my knowledge and is supported by actual field data.

Kolton Cotton

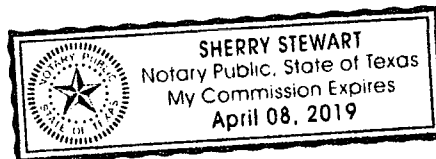
Notarized this date 9 of February, 2018.

Sherry Stewart

Notary Signature

County of Midland

State of Texas



Scientific Drilling

The Ultimate Partner In Wellbore Placement

CUSTOMER
PROJECT
FIELD

COG
White Falcon 16 State #13H
Bone Spring

SDI JOB NO.
SDI DISTRICT
SDI KIT/UNIT

OP.005682
Midland

SITE INFORMATION

Site Name **Bulldog**
Lat/Long **32.13689° N, 103.3780628° W**
Northing **414,833.8 ft**
Easting **795,694 ft**

Section
Township
Range

MAP INFORMATION

North Reference **Grid North**
Grid Correction **-0.51 deg**
System **US State Plane 1927**
Datum **North American Datum 1927 (Clarke 1866)**
Map Zone **New Mexico East: 3001**

**WELL INFORMATION**

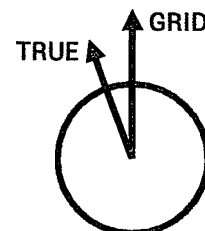
Lat/Long **32.13689° N, 103.3780628° W**
Northing
Easting
UWI **30-025-43698**

DEPTH AND ELEVATION REFERENCE

Ground Level **3257 ft above Mean Sea Level**
Reference Datum **KB**
Reference Height **29 ft above G.L.**
Reference Elevation **3286 ft**

VERTICAL SECTION REFERENCE

+N/-S **0 ft**
+E/-W **0 ft**
Proposal Direction **179.38°**
Calculation Method **Minimum Curvature**

**LOCAL GRAVITY REFERENCE INFORMATION**

Local Gravity **998.507 mG [computed]**
True to Grid **subtract 0.51°**

WELL NOTES**OPERATORS**

Grayson Wegner

SDI Operator Name (Printed)

SIGNATURE

DATE

MD	INC	AZIM	TVD	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	0.40	73.34	100.00	-0.10	0.10	0.33	0.40	0.35	73.34
125.00	0.46	60.46	125.00	-0.17	0.17	0.50	0.47	0.53	70.91
150.00	0.47	64.64	150.00	-0.26	0.27	0.68	0.14	0.73	68.60
175.00	0.43	60.42	175.00	-0.35	0.36	0.86	0.22	0.93	67.34
200.00	0.56	71.97	200.00	-0.43	0.44	1.05	0.65	1.14	67.27
225.00	0.69	60.31	224.99	-0.54	0.55	1.30	0.74	1.41	66.93
250.00	0.63	70.25	249.99	-0.66	0.68	1.56	0.53	1.70	66.61
275.00	0.66	73.43	274.99	-0.74	0.76	1.83	0.20	1.98	67.36
300.00	0.73	69.29	299.99	-0.84	0.86	2.12	0.34	2.28	67.88
325.00	0.88	72.25	324.99	-0.95	0.97	2.45	0.61	2.63	68.28
350.00	0.89	77.16	349.98	-1.05	1.08	2.82	0.31	3.02	69.10
375.00	1.07	75.72	374.98	-1.14	1.18	3.23	0.74	3.44	70.00
400.00	1.14	78.35	399.98	-1.24	1.29	3.70	0.35	3.92	70.87
425.00	1.15	79.76	424.97	-1.33	1.38	4.20	0.11	4.42	71.79
450.00	1.13	84.48	449.97	-1.40	1.45	4.69	0.38	4.91	72.83
475.00	1.01	75.53	474.96	-1.47	1.53	5.15	0.82	5.37	73.48
500.00	1.06	81.28	499.96	-1.56	1.62	5.59	0.45	5.82	73.86
525.00	1.07	80.66	524.95	-1.63	1.69	6.05	0.08	6.28	74.39
550.00	1.07	78.85	549.95	-1.70	1.77	6.51	0.14	6.75	74.76
575.00	1.17	75.03	574.94	-1.81	1.88	6.98	0.49	7.23	74.90
600.00	1.25	71.20	599.94	-1.96	2.04	7.49	0.46	7.76	74.77
625.00	1.38	69.96	624.93	-2.14	2.23	8.03	0.56	8.33	74.48
650.00	1.21	74.09	649.93	-2.31	2.41	8.57	0.79	8.90	74.32
675.00	1.19	63.81	674.92	-2.49	2.59	9.05	0.86	9.42	74.02
700.00	1.33	58.39	699.91	-2.76	2.86	9.53	0.71	9.95	73.31
725.00	1.78	54.00	724.90	-3.13	3.24	10.09	1.86	10.60	72.21
750.00	1.93	46.23	749.89	-3.64	3.76	10.71	1.18	11.35	70.67
775.00	2.11	43.22	774.88	-4.26	4.38	11.33	0.85	12.15	68.85
800.00	2.13	45.97	799.86	-4.91	5.04	11.98	0.41	13.00	67.17
825.00	2.24	42.14	824.84	-5.59	5.73	12.64	0.74	13.88	65.62
850.00	2.37	39.27	849.82	-6.35	6.49	13.30	0.68	14.80	63.98

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	2.36	37.56	874.80	-7.15	7.30	13.94	0.29	15.74	62.36
900.00	2.32	36.60	899.78	-7.96	8.11	14.55	0.21	16.66	60.86
925.00	2.45	37.85	924.76	-8.78	8.94	15.18	0.54	17.62	59.51
950.00	2.62	35.81	949.73	-9.65	9.83	15.85	0.79	18.65	58.19
975.00	3.04	36.08	974.70	-10.65	10.83	16.57	1.67	19.79	56.84
1000.00	3.01	37.08	999.67	-11.70	11.89	17.36	0.24	21.04	55.60
1025.00	2.98	37.94	1024.63	-12.73	12.92	18.15	0.22	22.28	54.55
1050.00	2.96	35.86	1049.60	-13.75	13.96	18.93	0.44	23.52	53.60
1075.00	2.97	36.47	1074.57	-14.79	15.01	19.70	0.13	24.76	52.70
1100.00	2.98	35.54	1099.53	-15.83	16.06	20.46	0.20	26.01	51.88
1125.00	2.95	35.53	1124.50	-16.88	17.11	21.21	0.15	27.25	51.11
1150.00	2.86	34.98	1149.47	-17.90	18.14	21.94	0.34	28.47	50.42
1175.00	2.72	34.28	1174.44	-18.90	19.14	22.63	0.59	29.65	49.78
1200.00	2.64	29.41	1199.41	-19.88	20.14	23.25	0.97	30.76	49.11
1225.00	2.33	14.47	1224.39	-20.87	21.13	23.66	2.86	31.72	48.24
1250.00	2.16	352.59	1249.37	-21.83	22.09	23.73	3.47	32.42	47.05
1275.00	2.25	332.60	1274.35	-22.74	22.99	23.44	3.08	32.83	45.55
1300.00	2.88	316.66	1299.32	-23.64	23.88	22.78	3.80	33.01	43.65
1325.00	3.16	314.93	1324.29	-24.59	24.83	21.86	1.18	33.08	41.37
1350.00	3.06	315.64	1349.25	-25.57	25.79	20.91	0.43	33.20	39.03
1375.00	3.00	315.84	1374.22	-26.52	26.74	19.99	0.28	33.38	36.78
1400.00	3.04	310.90	1399.18	-27.43	27.64	19.03	1.05	33.56	34.55
1425.00	2.75	312.04	1424.15	-28.28	28.48	18.09	1.17	33.73	32.42
1450.00	1.99	310.63	1449.13	-28.97	29.16	17.31	3.05	33.91	30.69
1475.00	1.57	309.22	1474.12	-29.48	29.66	16.72	1.68	34.05	29.40
1500.00	1.30	307.16	1499.11	-29.87	30.05	16.22	1.10	34.15	28.37
1525.00	1.10	310.43	1524.10	-30.20	30.37	15.82	0.85	34.25	27.51
1550.00	1.06	310.33	1549.10	-30.51	30.68	15.46	0.14	34.35	26.74
1575.00	1.09	309.71	1574.09	-30.82	30.98	15.10	0.12	34.46	25.98
1600.00	1.07	313.71	1599.09	-31.14	31.30	14.74	0.31	34.60	25.22
1625.00	0.98	310.75	1624.09	-31.44	31.60	14.41	0.42	34.73	24.52
1650.00	0.97	310.10	1649.08	-31.72	31.88	14.09	0.07	34.85	23.84

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
1675.00	0.83	309.80	1674.08	-31.98	32.13	13.79	0.56	34.96	23.22
1700.00	0.87	307.15	1699.08	-32.21	32.36	13.49	0.20	35.06	22.64
1725.00	0.93	303.11	1724.07	-32.44	32.58	13.17	0.37	35.15	22.01
1750.00	0.88	306.82	1749.07	-32.67	32.81	12.85	0.32	35.24	21.39
1775.00	0.88	303.96	1774.07	-32.89	33.03	12.54	0.18	35.33	20.78
1800.00	1.01	304.33	1799.06	-33.13	33.26	12.20	0.52	35.43	20.14
1825.00	0.99	305.26	1824.06	-33.38	33.51	11.84	0.08	35.54	19.46
1850.00	1.01	306.93	1849.06	-33.64	33.77	11.49	0.13	35.67	18.78
1875.00	1.11	310.55	1874.05	-33.94	34.06	11.13	0.50	35.83	18.09
1900.00	1.05	304.84	1899.05	-34.23	34.35	10.75	0.50	35.99	17.38
1925.00	1.02	299.18	1924.04	-34.47	34.59	10.37	0.43	36.11	16.69
1950.00	1.06	294.68	1949.04	-34.68	34.79	9.97	0.36	36.19	15.98
1975.00	0.95	293.92	1974.04	-34.87	34.97	9.57	0.44	36.26	15.30
2000.00	1.00	291.94	1999.03	-35.04	35.14	9.18	0.23	36.32	14.64
2025.00	1.01	288.18	2024.03	-35.19	35.29	8.77	0.27	36.36	13.95
2050.00	0.96	289.47	2049.02	-35.33	35.43	8.36	0.22	36.40	13.28
2075.00	1.00	286.73	2074.02	-35.47	35.56	7.95	0.24	36.44	12.61
2100.00	0.94	285.57	2099.02	-35.59	35.68	7.55	0.25	36.47	11.95
2125.00	1.01	286.51	2124.01	-35.71	35.79	7.14	0.28	36.50	11.28
2150.00	1.05	285.79	2149.01	-35.84	35.92	6.71	0.18	36.54	10.58
2175.00	1.08	285.58	2174.01	-35.97	36.04	6.26	0.12	36.58	9.86
2200.00	1.00	285.86	2199.00	-36.10	36.17	5.83	0.31	36.63	9.15
2225.00	0.99	289.63	2224.00	-36.24	36.30	5.41	0.26	36.70	8.48
2250.00	0.98	291.45	2248.99	-36.39	36.45	5.01	0.13	36.79	7.82
2275.00	0.98	290.15	2273.99	-36.55	36.60	4.61	0.09	36.89	7.18
2300.00	0.95	288.77	2298.99	-36.69	36.74	4.21	0.15	36.98	6.54
2325.00	1.00	287.38	2323.98	-36.83	36.87	3.81	0.23	37.07	5.90
2350.00	0.98	288.21	2348.98	-36.97	37.01	3.40	0.10	37.16	5.24
2375.00	0.98	294.42	2373.98	-37.13	37.16	3.00	0.42	37.28	4.61
2400.00	1.00	295.15	2398.97	-37.31	37.34	2.61	0.08	37.43	3.99
2425.00	0.94	294.81	2423.97	-37.49	37.52	2.22	0.23	37.59	3.39
2450.00	1.00	294.82	2448.97	-37.68	37.70	1.84	0.24	37.74	2.80

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
2475.00	1.03	297.54	2473.96	-37.87	37.89	1.44	0.22	37.92	2.18
2500.00	1.08	301.65	2498.96	-38.11	38.12	1.05	0.37	38.13	1.57
2525.00	1.05	303.88	2523.95	-38.36	38.37	0.65	0.19	38.38	0.98
2550.00	0.99	304.04	2548.95	-38.61	38.62	0.29	0.27	38.62	0.42
2575.00	0.95	307.93	2573.95	-38.87	38.87	-0.06	0.30	38.87	359.92
2600.00	0.92	306.50	2598.94	-39.12	39.11	-0.38	0.16	39.12	359.44
2625.00	0.96	307.31	2623.94	-39.37	39.36	-0.71	0.18	39.37	358.97
2650.00	0.99	309.76	2648.93	-39.64	39.63	-1.04	0.21	39.64	358.49
2675.00	0.88	308.53	2673.93	-39.90	39.88	-1.36	0.46	39.91	358.05
2700.00	0.90	316.25	2698.93	-40.16	40.15	-1.64	0.48	40.18	357.65
2725.00	0.79	318.05	2723.93	-40.43	40.41	-1.89	0.43	40.46	357.32
2750.00	0.87	319.90	2748.92	-40.71	40.69	-2.13	0.32	40.74	357.00
2775.00	0.81	321.71	2773.92	-40.99	40.97	-2.36	0.24	41.04	356.70
2800.00	0.80	318.53	2798.92	-41.27	41.24	-2.59	0.19	41.32	356.41
2825.00	0.78	321.78	2823.92	-41.53	41.50	-2.81	0.19	41.60	356.13
2850.00	0.68	317.99	2848.91	-41.78	41.75	-3.01	0.44	41.86	355.87
2875.00	0.46	311.04	2873.91	-41.96	41.93	-3.19	0.94	42.05	355.65
2900.00	0.46	319.02	2898.91	-42.10	42.07	-3.33	0.25	42.20	355.47
2925.00	0.51	311.94	2923.91	-42.25	42.22	-3.48	0.32	42.36	355.29
2950.00	0.50	311.49	2948.91	-42.40	42.36	-3.64	0.05	42.52	355.09
2975.00	0.44	306.30	2973.91	-42.53	42.49	-3.80	0.29	42.66	354.89
3000.00	0.50	308.23	2998.91	-42.66	42.62	-3.96	0.23	42.80	354.69
3025.00	0.50	311.33	3023.91	-42.80	42.76	-4.13	0.11	42.95	354.48
3050.00	0.43	312.94	3048.91	-42.94	42.89	-4.28	0.29	43.11	354.30
3075.00	0.44	310.02	3073.91	-43.06	43.02	-4.42	0.09	43.24	354.13
3100.00	0.50	312.69	3098.90	-43.20	43.15	-4.58	0.26	43.39	353.95
3125.00	0.46	313.42	3123.90	-43.34	43.29	-4.73	0.15	43.55	353.77
3150.00	0.35	339.90	3148.90	-43.48	43.43	-4.83	0.86	43.70	353.66
3175.00	0.37	340.45	3173.90	-43.63	43.58	-4.88	0.08	43.85	353.61
3200.00	0.36	339.88	3198.90	-43.78	43.73	-4.93	0.02	44.01	353.56
3225.00	0.38	351.40	3223.90	-43.94	43.89	-4.97	0.31	44.17	353.53
3250.00	0.37	340.32	3248.90	-44.10	44.04	-5.01	0.29	44.33	353.51

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	0.36	354.30	3273.90	-44.25	44.20	-5.05	0.36	44.49	353.48
3300.00	0.55	348.79	3298.90	-44.45	44.39	-5.08	0.77	44.68	353.47
3325.00	0.55	348.41	3323.90	-44.68	44.63	-5.13	0.02	44.92	353.45
3350.00	0.67	342.04	3348.90	-44.94	44.88	-5.20	0.54	45.18	353.40
3375.00	0.87	336.58	3373.90	-45.25	45.20	-5.32	0.88	45.51	353.29
3400.00	0.76	325.70	3398.89	-45.56	45.51	-5.49	0.76	45.84	353.13
3425.00	0.96	331.44	3423.89	-45.89	45.83	-5.68	0.84	46.18	352.94
3450.00	0.92	336.42	3448.89	-46.26	46.20	-5.86	0.36	46.57	352.77
3475.00	0.90	336.50	3473.88	-46.62	46.56	-6.02	0.08	46.95	352.64
3500.00	0.81	338.47	3498.88	-46.97	46.90	-6.16	0.35	47.31	352.52
3525.00	0.72	332.79	3523.88	-47.27	47.21	-6.30	0.48	47.63	352.40
3550.00	0.65	334.00	3548.88	-47.54	47.48	-6.43	0.29	47.91	352.28
3575.00	0.73	323.47	3573.87	-47.80	47.73	-6.59	0.59	48.18	352.14
3600.00	0.63	314.81	3598.87	-48.03	47.95	-6.78	0.57	48.43	351.95
3625.00	0.85	279.21	3623.87	-48.15	48.08	-7.06	1.99	48.60	351.65
3650.00	1.11	271.06	3648.87	-48.19	48.11	-7.48	1.20	48.69	351.16
3675.00	1.29	269.26	3673.86	-48.20	48.12	-8.01	0.73	48.78	350.55
3700.00	0.87	285.84	3698.86	-48.25	48.16	-8.47	2.10	48.90	350.02
3725.00	1.15	269.62	3723.85	-48.31	48.21	-8.91	1.59	49.03	349.53
3750.00	1.36	263.30	3748.85	-48.28	48.18	-9.45	1.00	49.10	348.90
3775.00	1.22	268.44	3773.84	-48.24	48.14	-10.01	0.71	49.17	348.25
3800.00	1.32	264.71	3798.83	-48.21	48.10	-10.56	0.53	49.25	347.61
3825.00	1.45	267.48	3823.83	-48.18	48.06	-11.17	0.57	49.34	346.92
3850.00	1.48	267.88	3848.82	-48.16	48.04	-11.81	0.13	49.47	346.19
3875.00	1.50	266.54	3873.81	-48.14	48.00	-12.46	0.15	49.59	345.45
3900.00	1.50	268.83	3898.80	-48.12	47.98	-13.11	0.24	49.74	344.72
3925.00	1.44	267.80	3923.79	-48.10	47.96	-13.75	0.25	49.89	344.00
3950.00	1.52	265.55	3948.79	-48.07	47.92	-14.39	0.40	50.04	343.28
3975.00	1.49	267.27	3973.78	-48.04	47.88	-15.05	0.23	50.19	342.55
4000.00	0.94	268.24	3998.77	-48.02	47.86	-15.58	2.22	50.33	341.97
4025.00	0.40	278.73	4023.77	-48.03	47.86	-15.87	2.19	50.43	341.66
4050.00	0.22	335.50	4048.77	-48.09	47.92	-15.97	1.34	50.51	341.56

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	0.24	44.51	4073.77	-48.17	48.00	-15.96	1.03	50.58	341.61
4100.00	0.27	32.13	4098.77	-48.26	48.09	-15.89	0.25	50.64	341.71
4125.00	0.33	18.30	4123.77	-48.37	48.20	-15.84	0.37	50.74	341.81
4150.00	0.37	37.95	4148.77	-48.50	48.34	-15.76	0.52	50.84	341.94
4175.00	0.51	31.39	4173.77	-48.66	48.50	-15.66	0.58	50.96	342.11
4200.00	0.51	45.20	4198.77	-48.83	48.67	-15.52	0.49	51.08	342.31
4225.00	0.54	47.83	4223.77	-48.99	48.83	-15.35	0.15	51.18	342.55
4250.00	0.64	52.69	4248.76	-49.15	48.99	-15.15	0.45	51.28	342.81
4275.00	0.71	62.22	4273.76	-49.31	49.15	-14.90	0.53	51.36	343.13
4300.00	0.79	59.49	4298.76	-49.46	49.31	-14.62	0.33	51.43	343.49
4325.00	0.78	63.97	4323.76	-49.62	49.47	-14.32	0.25	51.50	343.86
4350.00	0.82	63.15	4348.76	-49.77	49.62	-14.01	0.15	51.56	344.24
4375.00	0.70	66.03	4373.75	-49.91	49.77	-13.71	0.50	51.62	344.60
4400.00	0.73	66.60	4398.75	-50.03	49.89	-13.42	0.12	51.67	344.94
4425.00	0.76	58.71	4423.75	-50.18	50.04	-13.13	0.43	51.74	345.29
4450.00	0.58	48.69	4448.75	-50.35	50.21	-12.90	0.86	51.84	345.60
4475.00	0.61	356.86	4473.75	-50.56	50.43	-12.81	2.08	52.03	345.75
4500.00	0.72	348.47	4498.74	-50.85	50.71	-12.85	0.60	52.32	345.78
4525.00	0.78	343.12	4523.74	-51.17	51.03	-12.93	0.36	52.64	345.78
4550.00	0.70	342.49	4548.74	-51.48	51.34	-13.02	0.29	52.96	345.77
4575.00	0.75	341.63	4573.74	-51.78	51.64	-13.12	0.17	53.28	345.74
4600.00	0.77	349.60	4598.74	-52.10	51.96	-13.20	0.43	53.61	345.74
4625.00	0.78	7.67	4623.73	-52.43	52.29	-13.21	0.97	53.94	345.82
4650.00	0.79	36.23	4648.73	-52.74	52.60	-13.09	1.54	54.20	346.03
4675.00	0.97	47.16	4673.73	-53.02	52.88	-12.83	0.98	54.42	346.36
4700.00	1.13	52.79	4698.72	-53.30	53.17	-12.48	0.76	54.62	346.79
4725.00	1.13	52.24	4723.72	-53.60	53.47	-12.09	0.04	54.82	347.26
4750.00	1.16	52.45	4748.71	-53.90	53.78	-11.69	0.11	55.03	347.73
4775.00	1.21	50.22	4773.71	-54.22	54.10	-11.29	0.28	55.27	348.21
4800.00	1.13	51.51	4798.70	-54.54	54.42	-10.90	0.35	55.50	348.68
4825.00	1.12	50.96	4823.70	-54.84	54.73	-10.52	0.06	55.73	349.12
4850.00	1.07	45.64	4848.69	-55.15	55.04	-10.16	0.45	55.97	349.54

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	1.09	44.95	4873.69	-55.48	55.38	-9.82	0.10	56.24	349.94
4900.00	1.18	45.25	4898.69	-55.82	55.72	-9.47	0.34	56.52	350.35
4925.00	1.02	42.99	4923.68	-56.16	56.07	-9.14	0.64	56.81	350.74
4950.00	0.97	41.70	4948.68	-56.48	56.39	-8.85	0.21	57.08	351.08
4975.00	1.02	40.57	4973.67	-56.81	56.72	-8.56	0.21	57.36	351.42
5000.00	0.82	32.95	4998.67	-57.12	57.04	-8.32	0.94	57.64	351.70
5025.00	0.72	9.80	5023.67	-57.43	57.34	-8.20	1.29	57.92	351.87
5050.00	1.24	314.62	5048.66	-57.77	57.69	-8.36	4.08	58.29	351.75
5075.00	1.61	308.61	5073.66	-58.19	58.10	-8.83	1.58	58.76	351.36
5100.00	1.63	303.71	5098.65	-58.61	58.51	-9.40	0.56	59.26	350.87
5125.00	1.67	306.80	5123.64	-59.03	58.93	-9.99	0.39	59.77	350.38
5150.00	1.61	306.39	5148.63	-59.47	59.36	-10.56	0.25	60.29	349.91
5175.00	1.59	309.66	5173.62	-59.90	59.79	-11.11	0.38	60.81	349.47
5200.00	1.51	308.79	5198.61	-60.34	60.22	-11.64	0.34	61.33	349.06
5225.00	1.16	311.60	5223.60	-60.72	60.59	-12.08	1.43	61.78	348.72
5250.00	0.55	324.04	5248.60	-60.99	60.86	-12.35	2.52	62.10	348.53
5275.00	0.23	299.49	5273.60	-61.11	60.98	-12.46	1.43	62.24	348.45
5300.00	0.10	271.95	5298.60	-61.14	61.00	-12.53	0.60	62.28	348.40
5325.00	0.13	274.04	5323.60	-61.14	61.01	-12.57	0.10	62.29	348.35
5350.00	0.28	264.43	5348.60	-61.14	61.00	-12.66	0.63	62.30	348.27
5375.00	0.28	269.86	5373.60	-61.13	61.00	-12.78	0.11	62.32	348.16
5400.00	0.38	263.55	5398.60	-61.12	60.99	-12.93	0.42	62.34	348.03
5425.00	0.47	260.43	5423.60	-61.10	60.96	-13.11	0.39	62.35	347.87
5450.00	0.29	266.70	5448.59	-61.08	60.94	-13.27	0.74	62.37	347.71
5475.00	0.21	285.69	5473.59	-61.09	60.95	-13.38	0.45	62.40	347.62
5500.00	0.25	278.18	5498.59	-61.11	60.97	-13.48	0.20	62.44	347.53
5525.00	0.32	262.72	5523.59	-61.11	60.97	-13.60	0.42	62.47	347.42
5550.00	0.21	269.28	5548.59	-61.10	60.96	-13.72	0.46	62.48	347.32
5575.00	0.30	268.17	5573.59	-61.10	60.96	-13.83	0.35	62.51	347.22
5600.00	0.44	254.27	5598.59	-61.08	60.93	-13.99	0.67	62.51	347.07
5625.00	0.28	270.07	5623.59	-61.05	60.90	-14.14	0.76	62.52	346.93
5650.00	0.36	245.07	5648.59	-61.02	60.87	-14.27	0.65	62.52	346.80

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	0.39	251.02	5673.59	-60.96	60.81	-14.43	0.18	62.50	346.65
5700.00	0.24	250.19	5698.59	-60.92	60.76	-14.55	0.60	62.48	346.53
5725.00	0.32	242.16	5723.59	-60.87	60.71	-14.66	0.36	62.46	346.42
5750.00	0.18	245.50	5748.59	-60.82	60.66	-14.76	0.56	62.43	346.32
5775.00	0.23	237.15	5773.59	-60.78	60.62	-14.84	0.24	62.41	346.24
5800.00	0.30	253.02	5798.59	-60.73	60.57	-14.94	0.40	62.39	346.14
5825.00	0.19	286.56	5823.59	-60.73	60.57	-15.05	0.71	62.41	346.05
5850.00	0.31	279.90	5848.59	-60.75	60.59	-15.15	0.49	62.46	345.96
5875.00	0.35	281.30	5873.59	-60.78	60.62	-15.29	0.16	62.52	345.84
5900.00	0.33	291.39	5898.59	-60.82	60.66	-15.43	0.25	62.59	345.72
5925.00	0.38	289.29	5923.59	-60.88	60.71	-15.58	0.21	62.68	345.61
5950.00	0.45	286.80	5948.59	-60.93	60.77	-15.75	0.30	62.77	345.47
5975.00	0.34	291.62	5973.59	-60.99	60.82	-15.91	0.46	62.87	345.34
6000.00	0.48	280.85	5998.59	-61.04	60.87	-16.08	0.63	62.96	345.20
6025.00	0.43	278.18	6023.59	-61.07	60.90	-16.28	0.22	63.04	345.03
6050.00	0.43	264.92	6048.59	-61.08	60.91	-16.46	0.39	63.09	344.87
6075.00	0.42	259.07	6073.58	-61.06	60.88	-16.65	0.18	63.12	344.71
6100.00	0.31	271.19	6098.58	-61.04	60.87	-16.80	0.54	63.14	344.57
6125.00	0.37	283.10	6123.58	-61.07	60.89	-16.95	0.39	63.20	344.44
6150.00	0.28	273.84	6148.58	-61.09	60.91	-17.09	0.41	63.26	344.33
6175.00	0.34	288.43	6173.58	-61.12	60.94	-17.22	0.38	63.32	344.22
6200.00	0.34	270.51	6198.58	-61.14	60.96	-17.37	0.42	63.38	344.10
6225.00	0.35	269.94	6223.58	-61.15	60.96	-17.52	0.04	63.43	343.97
6250.00	0.31	283.72	6248.58	-61.16	60.98	-17.66	0.35	63.48	343.85
6275.00	0.37	299.16	6273.58	-61.22	61.03	-17.80	0.44	63.57	343.74
6300.00	0.42	289.68	6298.58	-61.29	61.10	-17.95	0.33	63.69	343.63
6325.00	0.51	275.32	6323.58	-61.34	61.14	-18.15	0.58	63.78	343.47
6350.00	0.46	267.91	6348.58	-61.35	61.15	-18.36	0.32	63.85	343.29
6375.00	0.43	264.13	6373.58	-61.33	61.14	-18.56	0.15	63.89	343.12
6400.00	0.36	262.27	6398.58	-61.32	61.12	-18.73	0.31	63.92	342.96
6425.00	0.22	263.07	6423.58	-61.30	61.10	-18.85	0.53	63.94	342.85
6450.00	0.25	263.83	6448.58	-61.29	61.09	-18.95	0.11	63.96	342.76

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	0.18	284.64	6473.58	-61.30	61.09	-19.05	0.43	63.99	342.68
6500.00	0.23	312.16	6498.58	-61.34	61.14	-19.12	0.45	64.06	342.63
6525.00	0.29	310.02	6523.58	-61.42	61.21	-19.21	0.23	64.15	342.58
6550.00	0.38	285.90	6548.58	-61.48	61.27	-19.34	0.67	64.25	342.49
6575.00	0.33	272.83	6573.58	-61.51	61.30	-19.49	0.39	64.32	342.36
6600.00	0.27	263.72	6598.57	-61.51	61.30	-19.62	0.30	64.36	342.25
6625.00	0.31	252.44	6623.57	-61.48	61.27	-19.74	0.28	64.37	342.14
6650.00	0.18	256.42	6648.57	-61.45	61.24	-19.84	0.54	64.38	342.05
6675.00	0.17	270.39	6673.57	-61.45	61.23	-19.92	0.17	64.39	341.98
6700.00	0.17	268.09	6698.57	-61.44	61.23	-19.99	0.03	64.41	341.92
6725.00	0.13	295.90	6723.57	-61.46	61.24	-20.05	0.32	64.44	341.87
6750.00	0.25	297.52	6748.57	-61.50	61.28	-20.13	0.46	64.50	341.82
6775.00	0.27	299.32	6773.57	-61.55	61.34	-20.23	0.12	64.58	341.75
6800.00	0.34	278.92	6798.57	-61.59	61.38	-20.35	0.51	64.66	341.66
6825.00	0.31	274.18	6823.57	-61.61	61.39	-20.49	0.15	64.72	341.54
6850.00	0.27	253.02	6848.57	-61.60	61.38	-20.62	0.47	64.75	341.43
6875.00	0.16	287.61	6873.57	-61.59	61.37	-20.70	0.65	64.77	341.36
6900.00	0.21	332.25	6898.57	-61.65	61.42	-20.76	0.58	64.84	341.33
6925.00	0.33	280.16	6923.57	-61.70	61.48	-20.85	1.03	64.92	341.27
6950.00	0.28	282.06	6948.57	-61.73	61.50	-20.98	0.18	64.98	341.16
6975.00	0.20	266.68	6973.57	-61.74	61.51	-21.08	0.41	65.03	341.08
7000.00	0.12	295.12	6998.57	-61.75	61.52	-21.15	0.46	65.06	341.03
7025.00	0.14	238.06	7023.57	-61.74	61.52	-21.20	0.49	65.07	340.98
7050.00	0.07	334.44	7048.57	-61.74	61.51	-21.23	0.64	65.07	340.96
7075.00	0.18	307.71	7073.57	-61.78	61.55	-21.27	0.51	65.12	340.94
7100.00	0.17	338.38	7098.57	-61.84	61.61	-21.32	0.38	65.19	340.92
7125.00	0.18	337.31	7123.57	-61.91	61.68	-21.34	0.04	65.27	340.91
7150.00	0.22	327.73	7148.57	-61.98	61.76	-21.38	0.19	65.35	340.90
7175.00	0.21	310.96	7173.57	-62.05	61.83	-21.44	0.25	65.44	340.87
7200.00	0.17	324.77	7198.57	-62.12	61.89	-21.50	0.25	65.51	340.84
7225.00	0.22	341.88	7223.57	-62.19	61.96	-21.54	0.30	65.60	340.83
7250.00	0.14	293.16	7248.57	-62.25	62.02	-21.58	0.65	65.67	340.81

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	/100ft	ft	deg
7275.00	0.25	274.72	7273.57	-62.27	62.04	-21.66	0.49	65.71	340.75
7300.00	0.12	249.51	7298.57	-62.26	62.03	-21.74	0.60	65.73	340.68
7325.00	0.07	255.48	7323.57	-62.25	62.02	-21.78	0.19	65.73	340.65
7350.00	0.10	234.17	7348.57	-62.23	62.00	-21.82	0.18	65.73	340.61
7375.00	0.09	39.43	7373.57	-62.23	62.00	-21.82	0.76	65.73	340.61
7400.00	0.21	45.47	7398.57	-62.28	62.05	-21.78	0.50	65.76	340.66
7425.00	0.04	39.89	7423.57	-62.32	62.09	-21.74	0.69	65.78	340.70
7450.00	0.29	52.29	7448.57	-62.36	62.13	-21.68	1.00	65.81	340.76
7475.00	0.10	342.96	7473.57	-62.42	62.19	-21.64	1.08	65.85	340.81
7500.00	0.15	311.91	7498.57	-62.47	62.24	-21.67	0.35	65.90	340.80
7525.00	0.05	240.29	7523.57	-62.48	62.25	-21.71	0.59	65.93	340.78
7550.00	0.09	5.84	7548.57	-62.50	62.27	-21.71	0.53	65.94	340.77
7575.00	0.16	342.85	7573.57	-62.55	62.32	-21.72	0.33	66.00	340.78
7600.00	0.16	306.19	7598.57	-62.61	62.37	-21.76	0.41	66.06	340.77
7625.00	0.08	231.89	7623.57	-62.62	62.38	-21.80	0.65	66.09	340.73
7650.00	0.03	159.15	7648.57	-62.60	62.37	-21.82	0.31	66.07	340.72
7675.00	0.13	23.30	7673.57	-62.62	62.39	-21.80	0.60	66.09	340.74
7700.00	0.12	356.97	7698.57	-62.67	62.44	-21.79	0.23	66.14	340.76
7725.00	0.20	306.52	7723.57	-62.73	62.49	-21.83	0.62	66.20	340.75
7750.00	0.08	292.54	7748.57	-62.76	62.53	-21.88	0.50	66.24	340.71
7775.00	0.07	113.88	7773.57	-62.76	62.53	-21.88	0.62	66.25	340.71
7800.00	0.07	40.47	7798.57	-62.77	62.53	-21.86	0.36	66.24	340.73
7825.00	0.04	16.98	7823.57	-62.79	62.55	-21.84	0.15	66.26	340.75
7850.00	0.20	30.10	7848.57	-62.83	62.60	-21.82	0.63	66.29	340.78
7875.00	0.20	38.97	7873.57	-62.90	62.67	-21.77	0.12	66.34	340.84
7900.00	0.16	24.31	7898.57	-62.97	62.74	-21.73	0.24	66.39	340.90
7925.00	0.21	16.24	7923.57	-63.05	62.81	-21.70	0.23	66.46	340.94
7950.00	0.18	353.28	7948.57	-63.13	62.90	-21.69	0.34	66.53	340.97
7975.00	0.22	332.22	7973.57	-63.21	62.98	-21.72	0.34	66.62	340.97
8000.00	0.20	309.43	7998.57	-63.28	63.05	-21.78	0.35	66.71	340.95
8025.00	0.26	302.94	8023.57	-63.34	63.11	-21.86	0.28	66.79	340.90
8050.00	0.23	335.45	8048.57	-63.42	63.19	-21.93	0.56	66.88	340.86

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
8075.00	0.23	320.51	8073.57	-63.50	63.27	-21.98	0.24	66.98	340.84
8100.00	0.69	306.74	8098.57	-63.64	63.40	-22.13	1.85	67.15	340.76
8125.00	0.95	304.00	8123.56	-63.84	63.61	-22.42	1.07	67.44	340.58
8150.00	1.12	303.95	8148.56	-64.10	63.86	-22.80	0.69	67.81	340.35
8175.00	1.22	302.89	8173.55	-64.39	64.14	-23.23	0.39	68.22	340.09
8200.00	1.25	298.68	8198.55	-64.67	64.41	-23.69	0.38	68.63	339.81
8225.00	1.20	299.01	8223.54	-64.93	64.67	-24.16	0.19	69.04	339.52
8250.00	1.10	305.90	8248.54	-65.20	64.94	-24.58	0.69	69.44	339.27
8275.00	1.09	299.67	8273.53	-65.46	65.20	-24.98	0.48	69.82	339.04
8300.00	1.18	307.22	8298.53	-65.74	65.47	-25.39	0.70	70.22	338.80
8325.00	1.21	308.31	8323.52	-66.07	65.79	-25.80	0.15	70.67	338.59
8350.00	1.27	307.58	8348.52	-66.40	66.12	-26.23	0.25	71.13	338.36
8375.00	1.23	305.11	8373.51	-66.73	66.45	-26.67	0.27	71.60	338.13
8400.00	1.21	300.63	8398.51	-67.02	66.73	-27.11	0.39	72.03	337.89
8425.00	1.17	303.80	8423.50	-67.30	67.01	-27.55	0.32	72.45	337.65
8450.00	1.08	298.39	8448.50	-67.56	67.26	-27.97	0.54	72.85	337.42
8475.00	0.87	308.83	8473.49	-67.80	67.50	-28.33	1.10	73.20	337.23
8500.00	0.98	307.87	8498.49	-68.05	67.75	-28.64	0.43	73.55	337.08
8525.00	1.00	314.11	8523.48	-68.34	68.03	-28.97	0.44	73.94	336.93
8550.00	0.96	318.50	8548.48	-68.65	68.34	-29.26	0.34	74.34	336.82
8575.00	0.97	313.97	8573.48	-68.96	68.64	-29.56	0.31	74.74	336.70
8600.00	0.88	305.31	8598.47	-69.22	68.90	-29.87	0.68	75.09	336.57
8625.00	0.68	314.96	8623.47	-69.44	69.12	-30.13	0.96	75.40	336.45
8650.00	0.74	321.18	8648.47	-69.67	69.35	-30.33	0.41	75.69	336.38
8675.00	0.76	318.13	8673.47	-69.92	69.60	-30.54	0.17	76.00	336.30
8700.00	0.61	320.16	8698.47	-70.15	69.82	-30.74	0.61	76.29	336.24
8725.00	0.63	333.10	8723.46	-70.38	70.05	-30.89	0.57	76.55	336.20
8750.00	0.76	321.59	8748.46	-70.63	70.30	-31.05	0.76	76.85	336.17
8775.00	0.71	315.15	8773.46	-70.87	70.54	-31.27	0.40	77.16	336.10
8800.00	0.57	328.03	8798.46	-71.09	70.75	-31.44	0.79	77.43	336.04
8825.00	0.68	328.33	8823.46	-71.32	70.99	-31.58	0.44	77.70	336.01
8850.00	0.77	324.82	8848.46	-71.59	71.25	-31.76	0.42	78.01	335.98

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
8875.00	0.67	313.66	8873.45	-71.83	71.49	-31.96	0.70	78.31	335.91
8900.00	0.57	316.67	8898.45	-72.02	71.68	-32.15	0.40	78.56	335.84
8925.00	0.48	330.95	8923.45	-72.21	71.86	-32.29	0.65	78.78	335.80
8950.00	0.51	330.02	8948.45	-72.40	72.05	-32.40	0.15	79.00	335.79
8975.00	0.66	331.66	8973.45	-72.62	72.27	-32.52	0.57	79.25	335.77
9000.00	0.60	314.34	8998.45	-72.84	72.49	-32.68	0.78	79.52	335.73
9025.00	0.50	313.14	9023.45	-73.01	72.66	-32.86	0.42	79.74	335.67
9050.00	0.44	302.26	9048.45	-73.14	72.78	-33.02	0.44	79.92	335.60
9075.00	0.42	308.30	9073.45	-73.25	72.89	-33.17	0.19	80.08	335.53
9100.00	0.52	305.05	9098.44	-73.37	73.01	-33.33	0.40	80.26	335.46
9125.00	0.66	286.44	9123.44	-73.48	73.12	-33.56	0.93	80.46	335.34
9150.00	0.62	286.74	9148.44	-73.56	73.20	-33.83	0.13	80.64	335.19
9175.00	0.67	269.68	9173.44	-73.60	73.24	-34.11	0.79	80.79	335.03
9200.00	0.79	262.16	9198.44	-73.58	73.21	-34.43	0.62	80.90	334.82
9225.00	0.81	251.40	9223.44	-73.51	73.13	-34.76	0.60	80.98	334.58
9250.00	0.86	242.04	9248.43	-73.37	72.99	-35.10	0.59	80.99	334.32
9275.00	0.87	242.53	9273.43	-73.19	72.81	-35.43	0.04	80.98	334.05
9300.00	0.86	239.79	9298.43	-73.01	72.63	-35.76	0.17	80.96	333.78
9325.00	1.00	245.71	9323.42	-72.83	72.45	-36.12	0.67	80.95	333.50
9350.00	1.12	237.18	9348.42	-72.62	72.22	-36.53	0.79	80.94	333.17
9375.00	1.26	241.08	9373.41	-72.36	71.96	-36.97	0.63	80.90	332.81
9400.00	1.29	239.68	9398.41	-72.09	71.68	-37.46	0.19	80.88	332.41
9425.00	1.31	238.88	9423.40	-71.80	71.39	-37.95	0.10	80.85	332.01
9450.00	1.44	240.15	9448.39	-71.50	71.09	-38.46	0.52	80.83	331.59
9475.00	1.56	238.31	9473.39	-71.17	70.76	-39.02	0.54	80.80	331.12
9500.00	1.87	241.56	9498.37	-70.81	70.38	-39.67	1.29	80.79	330.59
9525.00	1.92	242.12	9523.36	-70.43	69.99	-40.40	0.22	80.82	330.01
9550.00	1.90	246.52	9548.35	-70.07	69.63	-41.15	0.59	80.88	329.42
9575.00	1.93	247.71	9573.33	-69.76	69.31	-41.92	0.20	81.00	328.83
9600.00	1.99	249.74	9598.32	-69.45	69.00	-42.72	0.36	81.15	328.23
9625.00	2.07	247.96	9623.30	-69.14	68.68	-43.55	0.42	81.32	327.62
9650.00	2.17	248.07	9648.29	-68.81	68.33	-44.41	0.39	81.49	326.98

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	%/100ft	ft	deg
9675.00	2.10	244.77	9673.27	-68.44	67.96	-45.26	0.57	81.65	326.34
9700.00	2.05	243.74	9698.25	-68.06	67.56	-46.07	0.24	81.78	325.71
9725.00	1.98	245.86	9723.24	-67.69	67.19	-46.87	0.42	81.92	325.10
9750.00	2.03	246.50	9748.22	-67.35	66.84	-47.67	0.23	82.09	324.50
9775.00	2.10	249.71	9773.20	-67.02	66.50	-48.50	0.55	82.31	323.89
9800.00	2.20	247.73	9798.19	-66.69	66.16	-49.38	0.50	82.56	323.26
9825.00	2.25	247.85	9823.17	-66.33	65.79	-50.28	0.21	82.80	322.61
9850.00	2.25	243.67	9848.15	-65.94	65.39	-51.17	0.66	83.03	321.95
9875.00	1.98	246.03	9873.13	-65.56	65.00	-52.01	1.11	83.24	321.34
9900.00	2.07	247.49	9898.12	-65.22	64.65	-52.82	0.42	83.48	320.75
9925.00	2.15	244.12	9923.10	-64.85	64.27	-53.66	0.58	83.73	320.14
9950.00	2.00	245.78	9948.08	-64.47	63.89	-54.48	0.62	83.96	319.55
9975.00	2.08	247.47	9973.07	-64.13	63.53	-55.30	0.39	84.23	318.97
10000.00	2.17	246.68	9998.05	-63.78	63.17	-56.15	0.38	84.52	318.37
10025.00	2.21	246.24	10023.03	-63.40	62.79	-57.03	0.18	84.82	317.75
10050.00	2.10	242.75	10048.01	-63.01	62.39	-57.88	0.69	85.10	317.15
10075.00	2.16	244.63	10073.00	-62.61	61.98	-58.71	0.36	85.37	316.55
10100.00	2.21	242.77	10097.98	-62.20	61.55	-59.56	0.35	85.65	315.94
10125.00	2.01	241.95	10122.96	-61.78	61.13	-60.37	0.81	85.92	315.36
10150.00	2.22	241.18	10147.94	-61.35	60.69	-61.19	0.87	86.18	314.77
10175.00	2.30	237.73	10172.92	-60.86	60.19	-62.03	0.63	86.43	314.13
10200.00	2.28	237.36	10197.90	-60.33	59.65	-62.88	0.11	86.67	313.49
10225.00	2.27	240.48	10222.89	-59.83	59.14	-63.73	0.50	86.94	312.86
10250.00	2.53	239.66	10247.86	-59.31	58.62	-64.63	1.03	87.26	312.21
10275.00	2.59	238.40	10272.84	-58.75	58.04	-65.59	0.33	87.58	311.51
10300.00	2.61	236.71	10297.81	-58.15	57.43	-66.55	0.32	87.90	310.80
10325.00	2.64	237.76	10322.79	-57.54	56.81	-67.51	0.22	88.24	310.08
10350.00	2.70	238.62	10347.76	-56.94	56.20	-68.50	0.30	88.60	309.37
10375.00	2.69	241.67	10372.73	-56.36	55.62	-69.52	0.58	89.03	308.66
10400.00	2.90	236.79	10397.70	-55.75	54.99	-70.56	1.28	89.46	307.93
10425.00	2.94	239.46	10422.67	-55.09	54.32	-71.65	0.57	89.91	307.17
10450.00	3.08	237.58	10447.63	-54.42	53.63	-72.77	0.66	90.40	306.39

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	/100ft	ft	deg
10475.00	3.17	235.17	10472.60	-53.67	52.88	-73.90	0.64	90.87	305.59
10500.00	3.29	236.22	10497.56	-52.89	52.08	-75.06	0.56	91.36	304.76
10525.00	3.20	235.32	10522.52	-52.11	51.29	-76.23	0.43	91.88	303.93
10550.00	3.36	233.79	10547.48	-51.29	50.46	-77.40	0.75	92.39	303.10
10575.00	3.36	235.27	10572.43	-50.46	49.61	-78.59	0.35	92.94	302.26
10600.00	3.22	234.40	10597.39	-49.64	48.78	-79.76	0.60	93.50	301.45
10625.00	3.38	232.70	10622.35	-48.80	47.93	-80.92	0.76	94.05	300.64
10650.00	3.26	230.91	10647.31	-47.92	47.03	-82.06	0.65	94.58	299.82
10675.00	3.11	229.64	10672.27	-47.04	46.15	-83.13	0.65	95.08	299.04
10700.00	3.07	228.22	10697.23	-46.17	45.26	-84.14	0.34	95.54	298.28
10725.00	3.08	228.07	10722.20	-45.28	44.36	-85.14	0.06	96.01	297.52
10750.00	3.14	224.95	10747.16	-44.36	43.43	-86.13	0.71	96.46	296.76
10775.00	3.14	225.80	10772.12	-43.41	42.47	-87.10	0.19	96.90	295.99
10800.00	3.14	222.14	10797.09	-42.43	41.48	-88.05	0.80	97.33	295.23
10825.00	3.22	220.00	10822.05	-41.40	40.44	-88.96	0.56	97.72	294.44
10850.00	3.22	216.21	10847.01	-40.30	39.33	-89.83	0.85	98.06	293.65
10875.00	3.28	213.74	10871.97	-39.15	38.17	-90.64	0.61	98.35	292.84
10900.00	3.37	210.12	10896.93	-37.93	36.95	-91.40	0.91	98.59	292.01
10925.00	3.45	205.50	10921.88	-36.63	35.63	-92.10	1.15	98.75	291.15
10950.00	3.49	200.87	10946.84	-35.24	34.24	-92.69	1.13	98.81	290.28
10975.00	3.60	198.03	10971.79	-33.79	32.79	-93.20	0.83	98.80	289.38
11000.00	3.55	196.74	10996.74	-32.31	31.30	-93.67	0.38	98.76	288.48
11025.00	3.30	193.27	11021.70	-30.87	29.86	-94.06	1.28	98.68	287.61
11050.00	3.10	190.55	11046.66	-29.51	28.49	-94.35	1.03	98.56	286.80
11075.00	2.84	187.90	11071.62	-28.24	27.22	-94.56	1.16	98.39	286.06
11100.00	2.98	188.89	11096.59	-26.98	25.96	-94.74	0.62	98.23	285.32
11125.00	2.82	188.33	11121.56	-25.73	24.71	-94.93	0.69	98.09	284.59
11150.00	2.90	192.63	11146.53	-24.51	23.49	-95.16	0.92	98.01	283.86
11175.00	3.06	189.91	11171.49	-23.24	22.21	-95.41	0.87	97.96	283.11
11200.00	3.07	190.10	11196.46	-21.93	20.90	-95.64	0.05	97.90	282.32
11225.00	3.07	189.29	11221.42	-20.61	19.58	-95.87	0.17	97.85	281.54
11250.00	3.09	189.08	11246.39	-19.29	18.25	-96.08	0.13	97.80	280.76

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	%/100ft	ft	deg
11275.00	3.13	188.82	11271.35	-17.95	16.91	-96.29	0.14	97.77	279.96
11300.00	3.13	187.78	11296.31	-16.60	15.56	-96.49	0.23	97.74	279.16
11325.00	3.19	187.70	11321.27	-15.24	14.19	-96.68	0.23	97.71	278.35
11350.00	3.19	186.63	11346.24	-13.86	12.81	-96.85	0.24	97.69	277.54
11375.00	3.17	186.47	11371.20	-12.48	11.44	-97.01	0.08	97.68	276.72
11400.00	3.16	185.04	11396.16	-11.11	10.06	-97.15	0.32	97.67	275.91
11425.00	3.08	187.68	11421.12	-9.76	8.71	-97.30	0.66	97.69	275.12
11450.00	3.19	187.52	11446.08	-8.41	7.35	-97.48	0.47	97.75	274.31
11475.00	3.18	187.20	11471.05	-7.03	5.98	-97.66	0.09	97.84	273.50
11500.00	3.16	185.74	11496.01	-5.66	4.60	-97.81	0.33	97.92	272.69
11525.00	3.25	185.41	11520.97	-4.27	3.21	-97.95	0.38	98.00	271.88
11550.00	3.29	183.60	11545.93	-2.85	1.79	-98.06	0.44	98.08	271.05
11575.00	3.65	179.01	11570.88	-1.34	0.28	-98.09	1.82	98.09	270.16
11600.00	3.38	182.83	11595.84	0.19	-1.25	-98.11	1.43	98.12	269.27

From Bottom to Top	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots
	16,770	19	5	16,591	48	5	16,471	18	5	16,319	25	5	16,170	19	5
	16,751	18	5	16,577	14	5	16,448	15	5	16,298	21	5	16,147	14	5
	16,733	19	5	16,563	14	5	16,433	18	5	16,277	16	5	16,133	19	5
	16,714	19	5	16,549	14	5	16,415	20	5	16,261	16	5	16,114	19	5
	16,695	19	5	16,535	15	5	16,395	5	5	16,245	19	5	16,095	19	5
	16,676	18	5	16,520	13	5	16,376	18	5	16,226	18	5	16,076	18	5
	16,658	19	5	16,507	18	5	16,358	14	5	16,208	19	5	16,058	19	5
	16,639	5	5	16,489	5	5	16,344	5	5	16,189	5	5	16,039	5	5
	Plug to Plug	86	40	Plug to Plug	50	40	Plug to Plug	64	40	Plug to Plug	73	40	Plug to Plug	64	40
Frac Plug		16,800	Total Shots	Frac Plug	16,599	Total Shots	Frac Plug	16,479	Total Shots	Frac Plug	16,334	Total Shots	Frac Plug	16,178	Total Shots

From Bottom to Top	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots
	16,012	27	5	15,865	25	5	15,720	19	5	15,569	25	5	15,421	18	5
	15,996	16	5	15,850	16	5	15,701	18	5	15,551	18	5	15,400	7	5
	15,980	16	5	15,834	20	5	15,683	17	5	15,533	19	5	15,393	35	5
	15,964	21	5	15,814	19	5	15,666	21	5	15,514	19	5	15,358	13	5
	15,943	17	5	15,795	19	5	15,645	19	5	15,495	19	5	15,345	19	5
	15,926	18	5	15,776	18	5	15,626	16	5	15,476	18	5	15,326	18	5
	15,908	18	5	15,758	19	5	15,610	16	5	15,458	19	5	15,308	19	5
	15,890	5	5	15,739	5	5	15,594	5	5	15,439	5	5	15,289	5	5
	Plug to Plug	56	40	Plug to Plug	66	40	Plug to Plug	62	40	Plug to Plug	68	40	Plug to Plug	71	40
Frac Plug		16,020	Total Shots	Frac Plug	15,880	Total Shots	Frac Plug	15,728	Total Shots	Frac Plug	15,582	Total Shots	Frac Plug	15,429	Total Shots

From Bottom to Top	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots
	15,260	29	5	15,121	18	5	14,984	25	5	14,821	18	5	14,671	23	5
	15,243	23	5	15,101	18	5	14,951	18	5	14,801	18	5	14,651	18	5
	15,220	20	5	15,083	20	5	14,933	19	5	14,783	19	5	14,633	19	5
	15,200	16	5	15,063	18	5	14,914	21	5	14,764	19	5	14,614	19	5
	15,184	14	5	15,045	26	5	14,893	17	5	14,745	19	5	14,595	19	5
	15,170	13	5	15,019	15	5	14,876	24	5	14,726	18	5	14,576	19	5
	15,157	18	5	15,004	15	5	14,852	13	5	14,708	14	5	14,557	17	5
	15,139	5	5	14,989	5	5	14,839	5	5	14,694	5	5	14,540	5	5
	Plug to Plug	68	40	Plug to Plug	66	40	Plug to Plug	58	40	Plug to Plug	65	40	Plug to Plug	65	40
Frac Plug		15,268	Total Shots	Frac Plug	15,129	Total Shots	Frac Plug	14,972	Total Shots	Frac Plug	14,829	Total Shots	Frac Plug	14,679	Total Shots

From Bottom to Top	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots
	14,515	25	5	14,371	18	5	14,231	18	5	14,071	18	5	13,910	29	5
	14,499	16	5	14,347	14	5	14,201	25	5	14,051	18	5	13,901	23	5
	14,483	19	5	14,333	18	5	14,176	12	5	14,033	24	5	13,878	18	5
	14,464	19	5	14,315	20	5	14,164	19	5	14,009	14	5	13,860	20	5
	14,445	19	5	14,295	19	5	14,145	19	5	13,995	19	5	13,840	14	5
	14,426	18	5	14,276	14	5	14,126	18	5	13,976	18	5	13,826	18	5
	14,408	19	5	14,262	13	5	14,108	19	5	13,958	19	5	13,808	19	5
	14,389	5	5	14,249	5	5	14,089	5	5	13,939	5	5	13,789	5	5
	Plug to Plug	66	40	Plug to Plug	64	40	Plug to Plug	75	40	Plug to Plug	70	40	Plug to Plug	58	40
Frac Plug		14,530	Total Shots	Frac Plug	14,379	Total Shots	Frac Plug	14,239	Total Shots	Frac Plug	14,079	Total Shots	Frac Plug	13,918	Total Shots

From Bottom to Top	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots
	13,771	18	5	13,613	26	5	13,471	18	5	13,318	21	5	13,165	24	5
	13,751	18	5	13,601	18	5	13,451	18	5	13,301	18	5	13,151	18	5
	13,733	23	5	13,583	19	5	13,433	19	5	13,283	19	5	13,133	19	5
	13,710	15	5	13,564	19	5	13,414	19	5	13,264	19	5	13,114	19	5
	13,695	15	5	13,545	19	5	13,395	22	5	13,245	19	5	13,095	19	5
	13,680	22	5	13,526	13	5	13,373	15	5	13,226	18	5	13,076	18	5
	13,658	19	5	13,513	24	5	13,358	19	5	13,208	19	5	13,058	24	5
	13,639	5	5	13,489	5	5	13,339	5	5	13,189	5	5	13,034	5	5
	Plug to Plug	69	40	Plug to Plug	57	40	Plug to Plug	65	40	Plug to Plug	62	40	Plug to Plug	65	40
Frac Plug		13,779	Total Shots	Frac Plug	13,621	Total Shots	Frac Plug	13,479	Total Shots	Frac Plug	13,326	Total Shots	Frac Plug	13,178	Total Shots

From Bottom to Top	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots	Shot	Distance Between Perfs	Shots
	13,016	18	5	12,862	27	5	12,721	18	5	12,567	18	5		12,439	
	13,001	18	5	12,851	18	5	12,701	18	5	12,554	21	5			
	12,983	19	5	12,833	19	5	12,683	19	5	12,533	19	5			
	12,964	19	5	12,814	19	5	12,664	19	5	12,514	19	5			
	12,945	19	5	12,795	19	5	12,645	19	5	12,495	19	5			
	12,926	18	5	12,776	14	5	12,626	18	5	12,476	22	5			
	12,908	19	5	12,762	23	5	12,608	23	5	12,454	15	5			
	12,889	5	5	12,739	5	5	12,585	5	5	12,439	5	5			
	Plug to Plug	60	40	Plug to Plug	56	40	Plug to Plug	65	40	Plug to Plug	61	40	Plug to Plug	0	0
Frac Plug		13,024	Total Shots	Frac Plug	12,870	Total Shots	Frac Plug	12,729	Total Shots	Frac Plug	12,575	Total Shots	Frac Plug		Total Shots