

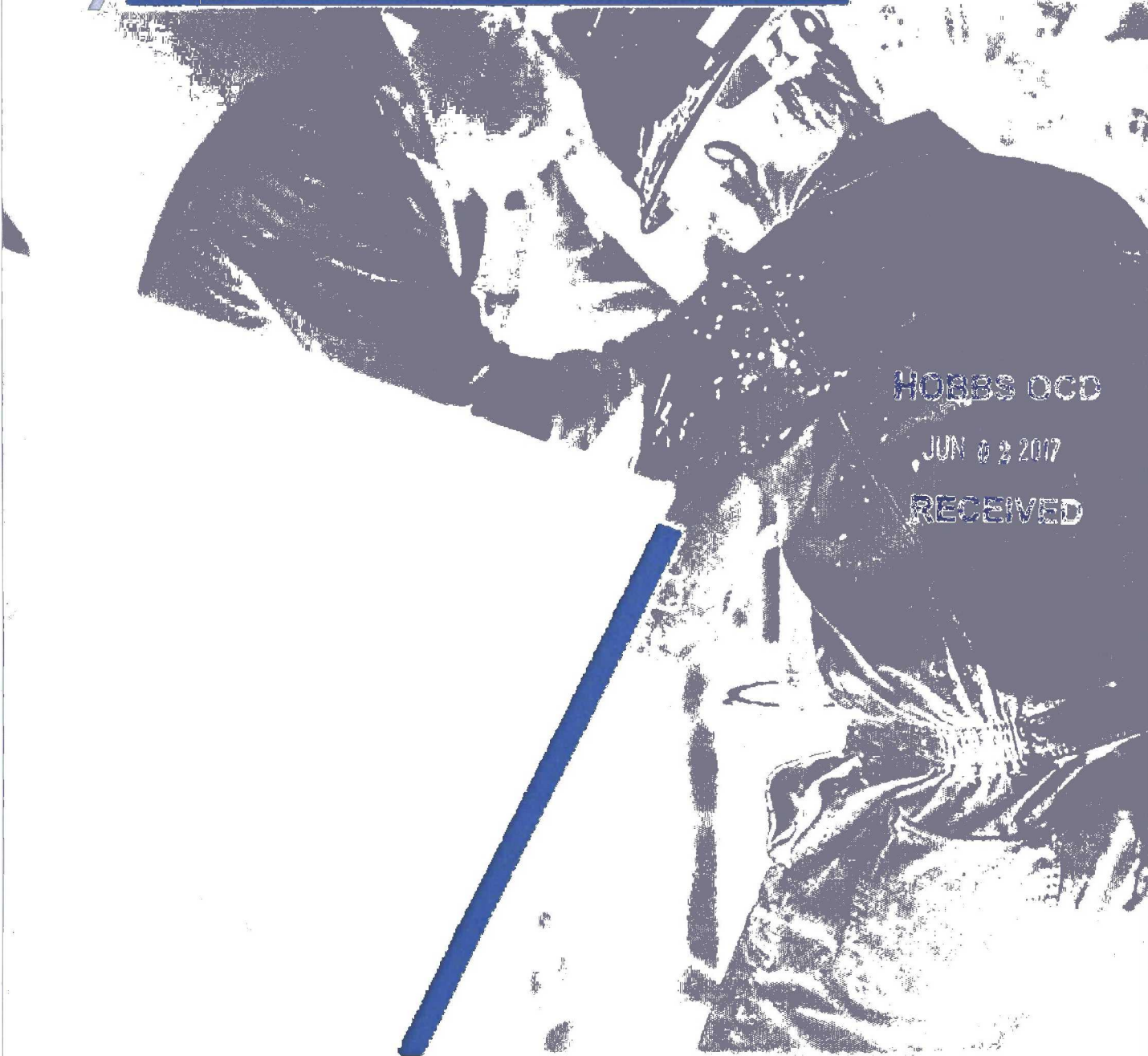
COG

SURVEY REPORT

LIGHTNING 1 STATE SWD #2

NOR AM 23

3/24/2017



HOBBS OGD

JUN 02 2017

RECEIVED



Scientific Drilling

The **Ultimate Partner** In Wellbore Placement

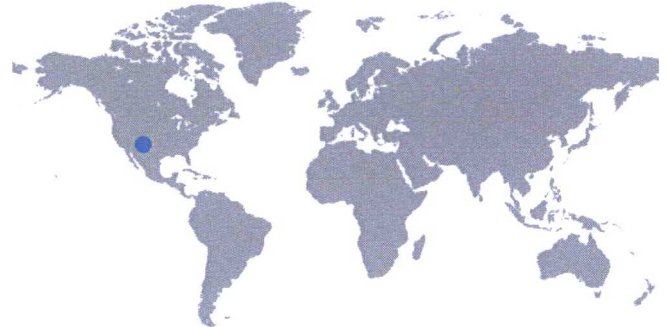
CUSTOMER	COG	SDI JOB NO.	OP.000208
PROJECT	Lightning 1 State SWD #2	SDI DISTRICT	Midland
FIELD	Lightning 1 State SWD #2	SDI KIT/UNIT	

SITE INFORMATION

Site Name	Lightning 1 State SWD #2	Section
Lat/Long	32.510828° N, 103.52677° W	Township
Northing	550,492.6 ft	Range
Easting	748,637.8 ft	

MAP INFORMATION

North Reference	Grid North
Grid Correction	-0.44 deg
System	US State Plane 1927
Datum	North American Datum 1927 (Clarke 1866)
Map Zone	New Mexico East: 3001



WELL INFORMATION

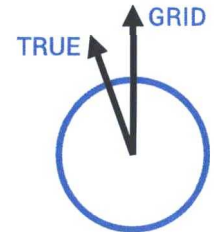
Lat/Long	32.510828° N, 103.52677° W
Northing	550,492.6 ft
Easting	748,637.8 ft
UWI	30-025-43474

DEPTH AND ELEVATION REFERENCE

Ground Level	3780 ft above Mean Sea Level
Reference Datum	RKB
Reference Height	28.5 ft above G.L.
Reference Elevation	3808.5 ft

VERTICAL SECTION REFERENCE

+N/-S	0 ft
+E/-W	0 ft
Proposal Direction	68.64°
Calculation Method	Minimum Curvature



LOCAL GRAVITY REFERENCE INFORMATION

Local Gravity	998.488 mG [computed]
True to Grid	subtract 0.44°

WELL NOTES

Keeper Gyro Wireline Survey in 4" xt 39 to 16400'

OPERATORS

Nathan Yerby

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	0.17	79.37	100.00	0.15	0.03	0.15	0.17	0.15	79.37
125.00	0.01	252.96	125.00	0.18	0.03	0.18	0.74	0.19	79.46
150.00	0.05	214.51	150.00	0.17	0.02	0.17	0.14	0.18	81.83
175.00	0.09	96.32	175.00	0.18	0.01	0.19	0.47	0.19	85.53
200.00	0.14	26.18	200.00	0.22	0.04	0.22	0.55	0.22	79.85
225.00	0.18	6.11	225.00	0.26	0.11	0.24	0.28	0.26	66.03
250.00	0.05	7.38	250.00	0.28	0.16	0.24	0.51	0.29	57.23
275.00	0.10	55.50	275.00	0.31	0.18	0.26	0.30	0.32	55.49
300.00	0.20	32.69	300.00	0.37	0.23	0.31	0.48	0.38	52.90
325.00	0.16	25.75	325.00	0.43	0.30	0.34	0.20	0.46	48.95
350.00	0.19	41.49	350.00	0.49	0.36	0.39	0.21	0.53	46.89
375.00	0.30	38.54	375.00	0.58	0.44	0.45	0.45	0.64	45.69
400.00	0.28	26.13	400.00	0.69	0.55	0.52	0.26	0.76	43.51
425.00	0.30	17.49	425.00	0.77	0.67	0.57	0.18	0.88	40.43
450.00	0.37	26.85	450.00	0.88	0.80	0.63	0.36	1.02	37.93
475.00	0.49	35.84	475.00	1.03	0.96	0.72	0.54	1.20	37.00
500.00	0.58	32.43	500.00	1.22	1.16	0.86	0.38	1.44	36.51
525.00	0.66	22.66	524.99	1.42	1.40	0.98	0.53	1.70	35.05
550.00	0.72	17.98	549.99	1.62	1.68	1.08	0.33	2.00	32.83
575.00	0.81	26.56	574.99	1.85	1.99	1.21	0.57	2.33	31.36
600.00	0.90	28.97	599.99	2.13	2.32	1.38	0.39	2.70	30.87
625.00	1.05	28.29	624.98	2.46	2.69	1.59	0.59	3.12	30.57
650.00	1.22	24.71	649.98	2.82	3.13	1.81	0.76	3.62	29.99
675.00	1.27	27.76	674.97	3.23	3.62	2.05	0.33	4.16	29.50
700.00	1.30	31.79	699.97	3.66	4.11	2.33	0.38	4.72	29.54
725.00	1.37	30.31	724.96	4.12	4.61	2.63	0.33	5.30	29.70
750.00	1.36	31.14	749.95	4.60	5.12	2.93	0.09	5.90	29.81
775.00	1.46	29.31	774.95	5.08	5.65	3.24	0.42	6.51	29.84
800.00	1.44	29.77	799.94	5.57	6.20	3.55	0.07	7.15	29.82
825.00	1.29	34.69	824.93	6.05	6.71	3.87	0.76	7.74	29.99
850.00	1.31	41.61	849.92	6.54	7.15	4.22	0.63	8.31	30.55

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	1.38	54.69	874.92	7.09	7.54	4.66	1.26	8.86	31.70
900.00	1.54	68.92	899.91	7.72	7.84	5.22	1.58	9.42	33.66
925.00	1.66	78.03	924.90	8.41	8.03	5.89	1.12	9.96	36.23
950.00	1.77	82.44	949.89	9.14	8.16	6.62	0.70	10.51	39.07
975.00	1.85	83.62	974.88	9.91	8.26	7.41	0.35	11.09	41.90
1000.00	1.88	86.96	999.86	10.68	8.32	8.22	0.45	11.70	44.64
1025.00	1.94	90.90	1024.85	11.47	8.34	9.05	0.59	12.31	47.35
1050.00	2.03	88.84	1049.83	12.27	8.34	9.92	0.44	12.96	49.94
1075.00	2.16	86.09	1074.82	13.14	8.38	10.83	0.66	13.69	52.27
1100.00	2.30	86.70	1099.80	14.06	8.44	11.80	0.58	14.51	54.42
1125.00	2.37	87.73	1124.78	15.03	8.49	12.82	0.33	15.37	56.48
1150.00	2.50	84.13	1149.75	16.04	8.57	13.88	0.79	16.31	58.31
1175.00	2.51	82.22	1174.73	17.10	8.70	14.96	0.34	17.30	59.83
1200.00	2.23	88.48	1199.71	18.09	8.78	15.99	1.51	18.24	61.22
1225.00	2.37	88.54	1224.69	19.03	8.81	16.99	0.55	19.14	62.59
1250.00	2.43	88.27	1249.67	20.02	8.84	18.03	0.24	20.08	63.89
1275.00	2.44	87.58	1274.64	21.02	8.88	19.10	0.14	21.06	65.07
1300.00	2.41	86.71	1299.62	22.02	8.93	20.15	0.19	22.04	66.10
1325.00	2.43	85.99	1324.60	23.03	9.00	21.21	0.15	23.04	67.01
1350.00	2.41	85.87	1349.58	24.04	9.07	22.26	0.10	24.04	67.83
1375.00	2.37	84.64	1374.56	25.04	9.16	23.30	0.25	25.04	68.54
1400.00	2.30	83.38	1399.54	26.02	9.26	24.31	0.36	26.02	69.14
1425.00	2.20	80.70	1424.52	26.97	9.40	25.28	0.57	26.97	69.61
1450.00	2.14	78.12	1449.50	27.90	9.57	26.21	0.46	27.91	69.94
1475.00	2.05	76.22	1474.48	28.80	9.78	27.10	0.44	28.81	70.17
1500.00	1.91	74.06	1499.47	29.66	10.00	27.94	0.63	29.68	70.31
1525.00	1.71	73.93	1524.45	30.45	10.21	28.70	0.81	30.46	70.41
1550.00	1.67	72.37	1549.44	31.19	10.43	29.41	0.24	31.20	70.47
1575.00	1.64	72.10	1574.43	31.91	10.65	30.10	0.14	31.92	70.51
1600.00	1.52	70.07	1599.42	32.60	10.87	30.75	0.51	32.61	70.53
1625.00	1.18	71.01	1624.42	33.19	11.07	31.30	1.38	33.20	70.53
1650.00	1.00	74.64	1649.41	33.66	11.21	31.76	0.77	33.68	70.56

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
1675.00	0.92	81.03	1674.41	34.07	11.30	32.17	0.54	34.09	70.64
1700.00	0.83	80.15	1699.41	34.45	11.36	32.54	0.34	34.47	70.75
1725.00	0.72	78.47	1724.40	34.78	11.42	32.88	0.48	34.80	70.84
1750.00	0.62	77.10	1749.40	35.07	11.49	33.16	0.38	35.09	70.90
1775.00	0.64	73.92	1774.40	35.34	11.55	33.43	0.15	35.37	70.93
1800.00	0.55	80.65	1799.40	35.60	11.61	33.68	0.45	35.63	70.98
1825.00	0.57	78.07	1824.40	35.84	11.66	33.92	0.12	35.87	71.03
1850.00	0.54	80.99	1849.40	36.07	11.70	34.16	0.15	36.11	71.09
1875.00	0.51	88.24	1874.39	36.29	11.72	34.39	0.29	36.33	71.17
1900.00	0.56	82.87	1899.39	36.52	11.74	34.62	0.29	36.56	71.26
1925.00	0.58	79.57	1924.39	36.76	11.78	34.87	0.14	36.80	71.33
1950.00	0.59	79.05	1949.39	37.01	11.83	35.12	0.05	37.05	71.39
1975.00	0.63	83.18	1974.39	37.27	11.87	35.38	0.25	37.32	71.45
2000.00	0.84	94.75	1999.39	37.57	11.87	35.70	1.00	37.62	71.61
2025.00	1.15	100.84	2024.38	37.95	11.81	36.13	1.34	38.01	71.90
2050.00	1.46	101.90	2049.38	38.42	11.69	36.68	1.22	38.50	72.32
2075.00	1.76	102.64	2074.37	39.01	11.54	37.37	1.22	39.11	72.83
2100.00	1.86	103.42	2099.36	39.66	11.37	38.14	0.42	39.80	73.41
2125.00	1.95	103.66	2124.34	40.34	11.17	38.95	0.34	40.52	74.00
2150.00	2.14	103.59	2149.33	41.07	10.96	39.82	0.76	41.30	74.61
2175.00	2.45	105.60	2174.31	41.88	10.71	40.78	1.27	42.17	75.29
2200.00	2.80	105.16	2199.28	42.80	10.41	41.89	1.42	43.16	76.05
2225.00	3.12	102.19	2224.25	43.86	10.10	43.14	1.41	44.31	76.82
2250.00	3.50	98.86	2249.20	45.08	9.84	44.56	1.72	45.63	77.55
2275.00	3.95	95.30	2274.15	46.51	9.64	46.17	2.02	47.17	78.20
2300.00	4.42	92.92	2299.08	48.16	9.52	47.99	2.01	48.92	78.79
2325.00	4.72	90.90	2324.00	49.99	9.45	49.98	1.35	50.87	79.29
2350.00	4.94	88.50	2348.92	51.95	9.46	52.08	1.19	52.94	79.70
2375.00	4.83	87.87	2373.83	53.96	9.53	54.21	0.47	55.04	80.03
2400.00	4.51	86.24	2398.74	55.89	9.63	56.24	1.38	57.06	80.28
2425.00	3.87	80.38	2423.68	57.65	9.84	58.06	3.09	58.89	80.38
2450.00	3.28	70.95	2448.63	59.19	10.21	59.56	3.34	60.43	80.27

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg
2475.00	2.76	59.83	2473.59	60.50	10.75	60.76	3.10	61.70	79.97
2500.00	2.41	50.17	2498.57	61.60	11.39	61.69	2.24	62.73	79.54
2525.00	2.10	40.96	2523.55	62.50	12.07	62.39	1.90	63.55	79.05
2550.00	2.04	28.66	2548.53	63.25	12.81	62.91	1.79	64.20	78.49
2575.00	2.03	17.16	2573.52	63.87	13.62	63.25	1.63	64.70	77.84
2600.00	1.90	7.71	2598.50	64.34	14.46	63.44	1.38	65.06	77.16
2625.00	1.85	4.00	2623.49	64.72	15.27	63.52	0.52	65.33	76.48
2650.00	1.91	4.74	2648.47	65.07	16.09	63.58	0.24	65.59	75.80
2675.00	1.93	4.87	2673.46	65.44	16.92	63.65	0.07	65.86	75.11
2700.00	1.85	4.35	2698.45	65.80	17.75	63.72	0.31	66.14	74.44
2725.00	1.75	3.59	2723.43	66.14	18.53	63.77	0.41	66.41	73.80
2750.00	1.68	4.26	2748.42	66.46	19.28	63.82	0.29	66.67	73.19
2775.00	1.62	4.84	2773.41	66.78	19.99	63.88	0.26	66.94	72.62
2800.00	1.49	3.16	2798.40	67.07	20.67	63.93	0.55	67.19	72.08
2825.00	1.35	3.98	2823.40	67.33	21.29	63.97	0.56	67.42	71.59
2850.00	1.21	5.18	2848.39	67.57	21.85	64.01	0.58	67.64	71.16
2875.00	1.14	9.09	2873.38	67.82	22.36	64.07	0.42	67.86	70.77
2900.00	1.09	13.67	2898.38	68.08	22.83	64.17	0.41	68.11	70.41
2925.00	1.02	11.20	2923.38	68.34	23.28	64.27	0.36	68.36	70.09
2950.00	0.95	10.64	2948.37	68.57	23.71	64.35	0.25	68.58	69.78
2975.00	0.90	13.24	2973.37	68.79	24.10	64.44	0.26	68.80	69.49
3000.00	0.90	15.97	2998.37	69.02	24.48	64.53	0.17	69.02	69.23
3025.00	0.91	15.94	3023.36	69.26	24.86	64.64	0.07	69.26	68.96
3050.00	0.91	14.30	3048.36	69.49	25.24	64.75	0.11	69.49	68.70
3075.00	0.74	16.18	3073.36	69.71	25.59	64.84	0.69	69.71	68.46
3100.00	0.58	24.24	3098.35	69.90	25.86	64.94	0.72	69.90	68.28
3125.00	0.60	26.65	3123.35	70.08	26.09	65.05	0.11	70.09	68.14
3150.00	0.69	31.50	3148.35	70.30	26.34	65.19	0.44	70.31	68.00
3175.00	0.70	36.68	3173.35	70.55	26.59	65.36	0.26	70.56	67.86
3200.00	0.48	36.53	3198.35	70.77	26.80	65.51	0.89	70.78	67.75
3225.00	0.49	32.87	3223.35	70.95	26.97	65.63	0.13	70.96	67.66
3250.00	0.46	32.66	3248.35	71.11	27.15	65.74	0.12	71.13	67.56

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
3275.00	0.51	36.88	3273.35	71.29	27.32	65.86	0.25	71.30	67.47
3300.00	0.46	37.90	3298.35	71.47	27.49	65.99	0.21	71.49	67.39
3325.00	0.30	41.10	3323.34	71.61	27.62	66.10	0.61	71.63	67.32
3350.00	0.31	39.26	3348.34	71.73	27.72	66.18	0.04	71.75	67.28
3375.00	0.35	38.64	3373.34	71.86	27.83	66.27	0.19	71.88	67.22
3400.00	0.35	39.04	3398.34	71.99	27.95	66.37	0.03	72.01	67.16
3425.00	0.36	39.76	3423.34	72.12	28.07	66.47	0.06	72.15	67.11
3450.00	0.40	54.49	3448.34	72.28	28.18	66.59	0.41	72.30	67.06
3475.00	0.35	72.91	3473.34	72.44	28.25	66.73	0.51	72.46	67.05
3500.00	0.22	63.07	3498.34	72.56	28.30	66.85	0.55	72.59	67.06
3525.00	0.32	40.76	3523.34	72.67	28.37	66.94	0.57	72.70	67.03
3550.00	0.36	27.91	3548.34	72.79	28.49	67.02	0.33	72.82	66.97
3575.00	0.32	23.43	3573.34	72.90	28.62	67.08	0.20	72.93	66.89
3600.00	0.27	25.14	3598.34	72.99	28.74	67.13	0.18	73.03	66.82
3625.00	0.28	22.43	3623.34	73.08	28.85	67.18	0.07	73.12	66.76
3650.00	0.25	23.84	3648.34	73.16	28.96	67.23	0.16	73.20	66.70
3675.00	0.09	357.29	3673.34	73.20	29.03	67.25	0.67	73.25	66.65
3700.00	0.16	328.23	3698.34	73.20	29.08	67.23	0.36	73.25	66.61
3725.00	0.21	324.06	3723.34	73.18	29.14	67.18	0.19	73.23	66.55
3750.00	0.29	321.69	3748.34	73.15	29.23	67.12	0.36	73.21	66.47
3775.00	0.33	336.44	3773.34	73.13	29.35	67.05	0.36	73.19	66.36
3800.00	0.27	346.01	3798.34	73.14	29.47	67.01	0.32	73.20	66.26
3825.00	0.17	315.99	3823.34	73.13	29.55	66.97	0.59	73.20	66.19
3850.00	0.26	307.00	3848.34	73.09	29.62	66.89	0.38	73.16	66.12
3875.00	0.34	294.20	3873.34	73.01	29.68	66.78	0.39	73.08	66.04
3900.00	0.42	289.29	3898.34	72.89	29.74	66.63	0.35	72.97	65.95
3925.00	0.44	293.01	3923.34	72.75	29.81	66.45	0.16	72.83	65.84
3950.00	0.43	288.59	3948.34	72.60	29.88	66.28	0.14	72.70	65.73
3975.00	0.52	286.48	3973.33	72.44	29.94	66.08	0.35	72.54	65.62
4000.00	0.60	293.02	3998.33	72.26	30.02	65.85	0.41	72.37	65.49
4025.00	0.58	297.21	4023.33	72.08	30.13	65.62	0.19	72.20	65.33
4050.00	0.56	294.22	4048.33	71.91	30.24	65.39	0.15	72.04	65.18

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	0.76	287.20	4073.33	71.70	30.34	65.12	0.87	71.84	65.02
4100.00	0.80	293.64	4098.33	71.45	30.46	64.80	0.39	71.60	64.83
4125.00	0.74	293.13	4123.32	71.21	30.59	64.49	0.27	71.38	64.62
4150.00	0.76	286.03	4148.32	70.96	30.70	64.19	0.39	71.15	64.44
4175.00	0.82	284.51	4173.32	70.68	30.79	63.85	0.22	70.89	64.26
4200.00	0.90	286.89	4198.32	70.38	30.89	63.49	0.37	70.61	64.05
4225.00	0.88	292.33	4223.31	70.09	31.02	63.13	0.35	70.34	63.83
4250.00	0.89	292.96	4248.31	69.81	31.17	62.77	0.04	70.08	63.59
4275.00	0.99	288.54	4273.31	69.51	31.32	62.39	0.49	69.81	63.35
4300.00	1.00	287.60	4298.30	69.17	31.45	61.97	0.09	69.50	63.09
4325.00	0.98	286.28	4323.30	68.83	31.58	61.56	0.14	69.19	62.85
4350.00	0.98	286.21	4348.30	68.50	31.70	61.15	0.01	68.88	62.60
4375.00	0.96	285.42	4373.29	68.16	31.81	60.74	0.08	68.57	62.36
4400.00	0.87	285.22	4398.29	67.84	31.92	60.36	0.37	68.28	62.13
4425.00	0.62	283.47	4423.29	67.57	32.00	60.04	1.01	68.04	61.95
4450.00	0.51	286.45	4448.29	67.38	32.06	59.81	0.47	67.86	61.81
4475.00	0.53	286.51	4473.29	67.20	32.13	59.59	0.10	67.70	61.67
4500.00	0.53	293.37	4498.28	67.02	32.20	59.37	0.25	67.54	61.52
4525.00	0.51	303.95	4523.28	66.88	32.31	59.17	0.40	67.42	61.36
4550.00	0.53	302.08	4548.28	66.75	32.44	58.98	0.11	67.31	61.19
4575.00	0.53	305.06	4573.28	66.61	32.56	58.79	0.11	67.21	61.02
4600.00	0.50	310.75	4598.28	66.50	32.70	58.61	0.24	67.12	60.84
4625.00	0.50	309.65	4623.28	66.39	32.84	58.45	0.05	67.04	60.67
4650.00	0.45	303.23	4648.28	66.28	32.97	58.28	0.31	66.96	60.51
4675.00	0.44	303.69	4673.28	66.17	33.07	58.12	0.04	66.87	60.36
4700.00	0.46	306.86	4698.28	66.06	33.19	57.96	0.12	66.79	60.20
4725.00	0.41	311.00	4723.28	65.97	33.30	57.81	0.23	66.72	60.05
4750.00	0.51	322.72	4748.28	65.90	33.45	57.68	0.54	66.67	59.89
4775.00	0.62	326.85	4773.27	65.84	33.65	57.54	0.48	66.65	59.68
4800.00	0.61	320.20	4798.27	65.77	33.87	57.38	0.29	66.63	59.45
4825.00	0.63	325.94	4823.27	65.70	34.08	57.21	0.26	66.60	59.22
4850.00	0.70	322.25	4848.27	65.63	34.32	57.04	0.34	66.57	58.97

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS "/100ft	CLOSURE DIST ft	CLOSURE DIR deg
4875.00	0.85	311.79	4873.27	65.50	34.56	56.81	0.81	66.50	58.68
4900.00	0.95	310.84	4898.26	65.32	34.82	56.52	0.43	66.38	58.36
4925.00	1.10	304.23	4923.26	65.09	35.09	56.16	0.74	66.22	58.00
4950.00	1.23	291.98	4948.26	64.76	35.33	55.71	1.12	65.97	57.62
4975.00	1.33	284.50	4973.25	64.32	35.50	55.18	0.78	65.62	57.25
5000.00	1.26	279.08	4998.24	63.85	35.62	54.63	0.57	65.22	56.90
5025.00	1.16	260.42	5023.24	63.37	35.62	54.11	1.62	64.78	56.65
5050.00	1.17	241.95	5048.23	62.87	35.46	53.64	1.50	64.30	56.53
5075.00	1.18	227.68	5073.23	62.37	35.16	53.22	1.17	63.79	56.55
5100.00	1.29	216.69	5098.22	61.89	34.76	52.86	1.04	63.27	56.67
5125.00	1.44	208.47	5123.21	61.41	34.26	52.54	0.99	62.73	56.89
5150.00	1.44	204.51	5148.21	60.95	33.70	52.26	0.40	62.19	57.19
5175.00	1.48	204.88	5173.20	60.49	33.12	52.00	0.13	61.65	57.50
5200.00	1.49	204.45	5198.19	60.02	32.53	51.73	0.07	61.11	57.83
5225.00	1.50	202.13	5223.18	59.57	31.93	51.47	0.25	60.57	58.18
5250.00	1.46	197.79	5248.17	59.14	31.33	51.25	0.48	60.07	58.56
5275.00	1.31	191.49	5273.17	58.78	30.74	51.09	0.85	59.63	58.96
5300.00	1.23	186.87	5298.16	58.50	30.20	51.01	0.52	59.27	59.37
5325.00	1.24	183.66	5323.15	58.26	29.66	50.96	0.28	58.96	59.80
5350.00	1.22	181.37	5348.15	58.04	29.12	50.93	0.23	58.67	60.24
5375.00	1.15	178.47	5373.14	57.85	28.61	50.93	0.36	58.42	60.68
5400.00	1.07	176.42	5398.14	57.70	28.12	50.95	0.37	58.20	61.10
5425.00	0.94	174.65	5423.13	57.57	27.69	50.99	0.54	58.02	61.50
5450.00	0.95	176.20	5448.13	57.45	27.28	51.02	0.12	57.85	61.87
5475.00	0.99	179.19	5473.13	57.31	26.85	51.04	0.24	57.67	62.25
5500.00	0.94	179.78	5498.12	57.16	26.43	51.04	0.17	57.48	62.62
5525.00	0.88	178.52	5523.12	57.02	26.04	51.05	0.25	57.30	62.98
5550.00	0.87	177.08	5548.12	56.90	25.65	51.06	0.10	57.14	63.33
5575.00	0.90	176.24	5573.11	56.78	25.27	51.08	0.11	56.99	63.68
5600.00	1.01	172.25	5598.11	56.67	24.85	51.13	0.52	56.85	64.08
5625.00	1.01	173.12	5623.11	56.56	24.41	51.18	0.06	56.71	64.50
5650.00	0.82	173.22	5648.10	56.46	24.02	51.23	0.78	56.58	64.88

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg
5675.00	0.76	175.69	5673.10	56.37	23.67	51.26	0.25	56.47	65.21
5700.00	0.87	179.48	5698.10	56.25	23.32	51.28	0.46	56.33	65.55
5725.00	0.87	180.33	5723.10	56.11	22.94	51.28	0.05	56.18	65.90
5750.00	0.74	174.20	5748.09	56.00	22.59	51.29	0.64	56.05	66.23
5775.00	0.64	170.09	5773.09	55.93	22.29	51.33	0.44	55.97	66.52
5800.00	0.63	164.01	5798.09	55.89	22.02	51.40	0.27	55.92	66.80
5825.00	0.68	169.24	5823.09	55.85	21.74	51.46	0.32	55.87	67.09
5850.00	0.79	177.39	5848.09	55.76	21.43	51.50	0.58	55.78	67.41
5875.00	0.79	186.88	5873.08	55.63	21.08	51.48	0.52	55.63	67.73
5900.00	0.68	190.47	5898.08	55.47	20.77	51.44	0.50	55.47	68.01
5925.00	0.65	180.12	5923.08	55.34	20.48	51.41	0.49	55.34	68.28
5950.00	0.65	180.62	5948.08	55.23	20.20	51.41	0.03	55.23	68.55
5975.00	0.66	183.36	5973.08	55.12	19.91	51.40	0.13	55.12	68.83
6000.00	0.68	177.16	5998.08	55.01	19.62	51.40	0.30	55.01	69.11
6025.00	0.66	182.32	6023.07	54.91	19.33	51.40	0.25	54.91	69.39
6050.00	0.73	186.20	6048.07	54.78	19.03	51.38	0.34	54.79	69.68
6075.00	0.81	185.16	6073.07	54.63	18.70	51.34	0.32	54.64	69.99
6100.00	0.80	182.83	6098.07	54.48	18.35	51.32	0.14	54.50	70.33
6125.00	0.72	183.10	6123.06	54.34	18.02	51.30	0.33	54.37	70.65
6150.00	0.68	183.51	6148.06	54.21	17.71	51.28	0.14	54.26	70.95
6175.00	0.68	184.04	6173.06	54.09	17.42	51.26	0.03	54.14	71.24
6200.00	0.70	184.07	6198.06	53.96	17.12	51.24	0.06	54.03	71.53
6225.00	0.67	189.38	6223.06	53.82	16.82	51.21	0.28	53.90	71.82
6250.00	0.66	188.79	6248.06	53.67	16.53	51.16	0.04	53.77	72.09
6275.00	0.69	188.29	6273.05	53.52	16.24	51.12	0.12	53.64	72.37
6300.00	0.63	184.47	6298.05	53.39	15.96	51.09	0.29	53.52	72.66
6325.00	0.54	168.38	6323.05	53.31	15.70	51.10	0.75	53.46	72.92
6350.00	0.46	160.52	6348.05	53.28	15.49	51.16	0.43	53.45	73.15
6375.00	0.45	160.34	6373.05	53.28	15.31	51.22	0.03	53.46	73.36
6400.00	0.40	157.18	6398.05	53.28	15.13	51.29	0.22	53.48	73.56
6425.00	0.41	151.02	6423.05	53.29	14.97	51.37	0.18	53.50	73.75
6450.00	0.47	141.45	6448.05	53.33	14.82	51.47	0.36	53.56	73.94

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg
6475.00	0.48	143.97	6473.05	53.39	14.65	51.60	0.10	53.64	74.15
6500.00	0.45	143.88	6498.05	53.44	14.49	51.72	0.12	53.71	74.35
6525.00	0.43	154.16	6523.05	53.48	14.32	51.82	0.33	53.76	74.55
6550.00	0.47	168.43	6548.04	53.46	14.14	51.88	0.48	53.77	74.76
6575.00	0.37	155.13	6573.04	53.45	13.96	51.93	0.57	53.78	74.95
6600.00	0.39	144.98	6598.04	53.48	13.82	52.02	0.29	53.82	75.12
6625.00	0.39	149.13	6623.04	53.51	13.67	52.11	0.11	53.88	75.30
6650.00	0.40	152.73	6648.04	53.53	13.52	52.19	0.10	53.92	75.47
6675.00	0.45	150.34	6673.04	53.56	13.36	52.28	0.24	53.96	75.66
6700.00	0.51	144.49	6698.04	53.60	13.19	52.40	0.29	54.03	75.87
6725.00	0.46	152.74	6723.04	53.64	13.01	52.51	0.33	54.09	76.09
6750.00	0.45	166.82	6748.04	53.63	12.82	52.57	0.45	54.12	76.29
6775.00	0.39	165.15	6773.04	53.61	12.64	52.62	0.26	54.12	76.49
6800.00	0.39	153.67	6798.04	53.61	12.48	52.68	0.31	54.14	76.67
6825.00	0.48	154.79	6823.04	53.62	12.31	52.76	0.35	54.18	76.87
6850.00	0.45	164.72	6848.04	53.62	12.12	52.83	0.34	54.21	77.08
6875.00	0.35	164.36	6873.04	53.60	11.95	52.88	0.40	54.21	77.27
6900.00	0.41	154.91	6898.03	53.60	11.80	52.94	0.33	54.24	77.44
6925.00	0.44	147.54	6923.03	53.62	11.63	53.03	0.26	54.29	77.63
6950.00	0.39	154.59	6948.03	53.65	11.47	53.12	0.30	54.34	77.81
6975.00	0.44	158.84	6973.03	53.65	11.31	53.19	0.25	54.38	78.00
7000.00	0.52	168.56	6998.03	53.63	11.11	53.25	0.44	54.39	78.22
7025.00	0.57	163.13	7023.03	53.60	10.88	53.30	0.31	54.40	78.47
7050.00	0.56	150.49	7048.03	53.61	10.65	53.40	0.50	54.45	78.72
7075.00	0.55	151.12	7073.03	53.64	10.44	53.52	0.04	54.53	78.96
7100.00	0.51	152.19	7098.03	53.67	10.24	53.63	0.15	54.60	79.20
7125.00	0.35	150.24	7123.03	53.70	10.07	53.72	0.67	54.65	79.38
7150.00	0.36	139.48	7148.03	53.73	9.94	53.81	0.27	54.72	79.53
7175.00	0.54	148.39	7173.03	53.78	9.79	53.92	0.76	54.80	79.71
7200.00	0.51	147.57	7198.02	53.82	9.59	54.04	0.10	54.88	79.93
7225.00	0.53	149.34	7223.02	53.86	9.40	54.16	0.10	54.97	80.16
7250.00	0.58	155.26	7248.02	53.89	9.18	54.27	0.30	55.04	80.39

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft	deg
7275.00	0.55	166.32	7273.02	53.88	8.95	54.35	0.45	55.08	80.64
7300.00	0.46	163.30	7298.02	53.85	8.74	54.41	0.38	55.11	80.87
7325.00	0.40	145.78	7323.02	53.87	8.57	54.49	0.57	55.16	81.06
7350.00	0.44	147.68	7348.02	53.90	8.42	54.59	0.15	55.23	81.23
7375.00	0.58	156.84	7373.02	53.93	8.23	54.69	0.65	55.30	81.45
7400.00	0.60	163.26	7398.02	53.92	7.98	54.77	0.28	55.35	81.71
7425.00	0.54	165.09	7423.01	53.90	7.74	54.84	0.28	55.39	81.96
7450.00	0.58	161.59	7448.01	53.88	7.51	54.91	0.21	55.42	82.21
7475.00	0.65	156.40	7473.01	53.87	7.26	55.01	0.38	55.49	82.48
7500.00	0.64	160.93	7498.01	53.87	7.00	55.11	0.21	55.56	82.76
7525.00	0.60	165.08	7523.01	53.85	6.74	55.19	0.23	55.60	83.04
7550.00	0.72	169.81	7548.01	53.81	6.46	55.25	0.52	55.63	83.34
7575.00	0.70	177.90	7573.01	53.73	6.15	55.29	0.41	55.63	83.66
7600.00	0.54	180.44	7598.00	53.63	5.88	55.29	0.64	55.60	83.93
7625.00	0.57	176.71	7623.00	53.55	5.63	55.30	0.18	55.58	84.18
7650.00	0.55	174.87	7648.00	53.48	5.39	55.32	0.10	55.58	84.43
7675.00	0.51	183.36	7673.00	53.40	5.16	55.32	0.36	55.56	84.67
7700.00	0.51	186.26	7698.00	53.30	4.94	55.30	0.10	55.52	84.89
7725.00	0.48	187.80	7723.00	53.20	4.73	55.28	0.10	55.48	85.11
7750.00	0.52	194.50	7748.00	53.08	4.51	55.23	0.28	55.42	85.33
7775.00	0.56	196.46	7773.00	52.94	4.28	55.17	0.17	55.34	85.56
7800.00	0.65	196.88	7798.00	52.78	4.03	55.09	0.37	55.24	85.82
7825.00	0.62	205.05	7822.99	52.59	3.77	54.99	0.38	55.12	86.08
7850.00	0.47	211.54	7847.99	52.41	3.56	54.88	0.67	55.00	86.29
7875.00	0.49	203.74	7872.99	52.25	3.38	54.79	0.28	54.89	86.47
7900.00	0.52	200.81	7897.99	52.10	3.17	54.70	0.15	54.80	86.68
7925.00	0.54	203.01	7922.99	51.94	2.96	54.62	0.13	54.70	86.90
7950.00	0.57	201.50	7947.99	51.78	2.73	54.53	0.14	54.59	87.13
7975.00	0.56	203.11	7972.99	51.61	2.51	54.43	0.10	54.49	87.36
8000.00	0.57	199.86	7997.99	51.44	2.28	54.34	0.13	54.39	87.60
8025.00	0.66	198.08	8022.98	51.27	2.03	54.26	0.37	54.29	87.86
8050.00	0.61	206.78	8047.98	51.08	1.77	54.15	0.43	54.18	88.13

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	0.55	211.85	8072.98	50.88	1.55	54.03	0.31	54.05	88.36
8100.00	0.57	212.32	8097.98	50.68	1.34	53.90	0.09	53.92	88.57
8125.00	0.54	216.73	8122.98	50.48	1.14	53.76	0.22	53.77	88.78
8150.00	0.51	218.18	8147.98	50.29	0.96	53.62	0.14	53.63	88.97
8175.00	0.49	215.42	8172.98	50.10	0.79	53.49	0.13	53.50	89.16
8200.00	0.42	212.97	8197.98	49.94	0.62	53.38	0.27	53.38	89.33
8225.00	0.48	210.73	8222.98	49.78	0.45	53.28	0.22	53.28	89.51
8250.00	0.52	214.02	8247.98	49.61	0.27	53.16	0.20	53.16	89.71
8275.00	0.59	211.74	8272.97	49.41	0.07	53.03	0.31	53.03	89.93
8300.00	0.61	208.24	8297.97	49.21	-0.16	52.90	0.16	52.90	90.17
8325.00	0.55	211.10	8322.97	49.01	-0.38	52.77	0.26	52.78	90.41
8350.00	0.54	211.20	8347.97	48.82	-0.58	52.65	0.04	52.65	90.63
8375.00	0.56	207.74	8372.97	48.64	-0.79	52.53	0.16	52.54	90.86
8400.00	0.61	207.27	8397.97	48.45	-1.01	52.42	0.22	52.43	91.11
8425.00	0.61	213.95	8422.97	48.24	-1.24	52.28	0.29	52.30	91.36
8450.00	0.54	215.95	8447.97	48.03	-1.45	52.14	0.30	52.16	91.59
8475.00	0.62	208.20	8472.96	47.83	-1.66	52.00	0.47	52.03	91.83
8500.00	0.64	206.21	8497.96	47.62	-1.91	51.88	0.10	51.91	92.10
8525.00	0.65	209.44	8522.96	47.41	-2.15	51.75	0.15	51.79	92.38
8550.00	0.66	216.55	8547.96	47.18	-2.39	51.59	0.33	51.65	92.66
8575.00	0.60	222.36	8572.96	46.94	-2.60	51.42	0.35	51.49	92.90
8600.00	0.61	229.95	8597.96	46.69	-2.79	51.23	0.33	51.30	93.11
8625.00	0.58	227.58	8622.95	46.45	-2.96	51.03	0.16	51.12	93.32
8650.00	0.53	231.43	8647.95	46.22	-3.12	50.85	0.27	50.94	93.51
8675.00	0.46	245.33	8672.95	46.01	-3.23	50.67	0.56	50.77	93.65
8700.00	0.46	254.80	8697.95	45.81	-3.30	50.48	0.30	50.59	93.74
8725.00	0.52	247.06	8722.95	45.60	-3.37	50.28	0.37	50.39	93.83
8750.00	0.52	255.81	8747.95	45.37	-3.44	50.06	0.32	50.18	93.93
8775.00	0.45	279.84	8772.95	45.17	-3.45	49.86	0.86	49.98	93.96
8800.00	0.38	279.58	8797.95	45.02	-3.42	49.68	0.26	49.80	93.94
8825.00	0.50	286.85	8822.95	44.86	-3.38	49.49	0.54	49.61	93.90
8850.00	0.68	290.07	8847.95	44.66	-3.29	49.25	0.74	49.36	93.83

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	0.75	288.23	8872.94	44.42	-3.19	48.95	0.28	49.05	93.73
8900.00	0.75	291.29	8897.94	44.18	-3.08	48.64	0.16	48.74	93.62
8925.00	0.84	293.44	8922.94	43.93	-2.95	48.32	0.39	48.41	93.49
8950.00	0.85	297.43	8947.94	43.67	-2.79	47.99	0.24	48.07	93.33
8975.00	0.88	294.13	8972.93	43.42	-2.63	47.65	0.23	47.72	93.15
9000.00	0.92	288.07	8997.93	43.13	-2.49	47.28	0.41	47.35	93.01
9025.00	0.97	287.05	9022.93	42.81	-2.36	46.89	0.22	46.95	92.88
9050.00	1.00	289.76	9047.92	42.48	-2.23	46.48	0.22	46.54	92.74
9075.00	1.02	290.63	9072.92	42.15	-2.07	46.07	0.13	46.12	92.58
9100.00	0.96	291.93	9097.92	41.83	-1.92	45.67	0.26	45.71	92.40
9125.00	0.86	292.55	9122.91	41.54	-1.77	45.30	0.43	45.33	92.23
9150.00	0.88	289.45	9147.91	41.26	-1.63	44.95	0.21	44.98	92.08
9175.00	0.80	294.98	9172.91	41.00	-1.49	44.61	0.45	44.63	91.92
9200.00	0.74	302.84	9197.91	40.78	-1.33	44.31	0.49	44.33	91.72
9225.00	0.71	305.86	9222.90	40.60	-1.15	44.05	0.20	44.07	91.50
9250.00	0.57	307.88	9247.90	40.46	-0.99	43.83	0.57	43.84	91.29
9275.00	0.51	315.93	9272.90	40.35	-0.83	43.66	0.38	43.66	91.09
9300.00	0.47	324.69	9297.90	40.28	-0.67	43.52	0.33	43.52	90.88
9325.00	0.38	321.56	9322.90	40.24	-0.52	43.41	0.38	43.41	90.69
9350.00	0.34	320.70	9347.90	40.19	-0.40	43.31	0.17	43.31	90.53
9375.00	0.28	312.88	9372.90	40.14	-0.30	43.22	0.28	43.22	90.40
9400.00	0.18	297.09	9397.90	40.09	-0.24	43.14	0.47	43.14	90.32
9425.00	0.20	308.11	9422.90	40.04	-0.20	43.07	0.16	43.07	90.26
9450.00	0.22	325.16	9447.90	40.01	-0.13	43.01	0.26	43.01	90.18
9475.00	0.15	346.45	9472.90	40.00	-0.06	42.97	0.38	42.97	90.08
9500.00	0.12	2.74	9497.90	40.02	0.00	42.97	0.20	42.97	90.00
9525.00	0.30	13.47	9522.90	40.06	0.09	42.98	0.71	42.98	89.88
9550.00	0.32	26.65	9547.90	40.15	0.21	43.03	0.30	43.03	89.71
9575.00	0.34	20.43	9572.90	40.25	0.35	43.09	0.16	43.09	89.54
9600.00	0.47	8.84	9597.90	40.35	0.52	43.13	0.63	43.13	89.32
9625.00	0.49	13.75	9622.90	40.47	0.72	43.17	0.19	43.18	89.04
9650.00	0.44	1.40	9647.89	40.57	0.92	43.20	0.45	43.21	88.78

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	0.56	3.28	9672.89	40.65	1.14	43.21	0.51	43.22	88.49
9700.00	0.57	8.59	9697.89	40.77	1.38	43.23	0.21	43.26	88.17
9725.00	0.53	0.84	9722.89	40.87	1.62	43.25	0.34	43.28	87.85
9750.00	0.58	355.56	9747.89	40.95	1.86	43.25	0.29	43.29	87.53
9775.00	0.59	1.25	9772.89	41.04	2.12	43.24	0.23	43.29	87.20
9800.00	0.58	358.85	9797.89	41.13	2.37	43.24	0.10	43.30	86.86
9825.00	0.54	358.80	9822.89	41.22	2.62	43.23	0.18	43.31	86.54
9850.00	0.58	355.57	9847.88	41.29	2.86	43.22	0.22	43.32	86.21
9875.00	0.68	350.81	9872.88	41.36	3.13	43.19	0.43	43.30	85.85
9900.00	0.59	358.56	9897.88	41.44	3.41	43.16	0.49	43.30	85.48
9925.00	0.52	351.38	9922.88	41.51	3.65	43.14	0.39	43.29	85.16
9950.00	0.56	345.04	9947.88	41.54	3.88	43.09	0.29	43.27	84.85
9975.00	0.65	337.04	9972.88	41.55	4.13	43.00	0.48	43.20	84.51
10000.00	0.73	333.84	9997.88	41.54	4.40	42.88	0.34	43.10	84.14
10025.00	0.65	335.37	10022.87	41.52	4.67	42.75	0.31	43.01	83.76
10050.00	0.63	322.19	10047.87	41.47	4.91	42.61	0.59	42.89	83.42
10075.00	0.64	315.51	10072.87	41.38	5.12	42.42	0.30	42.73	83.12
10100.00	0.67	311.42	10097.87	41.25	5.32	42.22	0.22	42.55	82.82
10125.00	0.73	315.27	10122.87	41.12	5.53	42.00	0.30	42.36	82.50
10150.00	0.75	323.46	10147.87	41.02	5.77	41.79	0.43	42.18	82.14
10175.00	0.73	321.37	10172.86	40.93	6.03	41.59	0.15	42.03	81.76
10200.00	0.73	318.80	10197.86	40.83	6.27	41.39	0.13	41.86	81.39
10225.00	0.71	315.25	10222.86	40.71	6.50	41.17	0.19	41.68	81.03
10250.00	0.77	318.28	10247.86	40.59	6.73	40.95	0.27	41.50	80.66
10275.00	0.77	316.71	10272.86	40.47	6.98	40.73	0.09	41.32	80.27
10300.00	0.76	318.01	10297.85	40.35	7.23	40.50	0.09	41.14	79.88
10325.00	0.80	323.85	10322.85	40.25	7.49	40.29	0.35	40.98	79.47
10350.00	0.73	323.43	10347.85	40.16	7.76	40.09	0.26	40.83	79.05
10375.00	0.74	319.12	10372.85	40.07	8.01	39.89	0.23	40.69	78.65
10400.00	0.78	316.40	10397.84	39.95	8.25	39.67	0.20	40.52	78.25
10425.00	0.79	312.37	10422.84	39.81	8.49	39.42	0.22	40.33	77.84
10450.00	0.88	309.98	10447.84	39.64	8.73	39.15	0.38	40.11	77.43

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	0.92	313.46	10472.84	39.46	8.99	38.86	0.28	39.88	76.97
10500.00	0.88	317.74	10497.83	39.31	9.27	38.58	0.31	39.68	76.49
10525.00	0.79	319.23	10522.83	39.18	9.54	38.34	0.39	39.51	76.02
10550.00	0.69	320.18	10547.83	39.08	9.79	38.13	0.39	39.37	75.60
10575.00	0.58	317.88	10572.83	38.99	10.00	37.95	0.46	39.25	75.24
10600.00	0.50	305.89	10597.83	38.88	10.15	37.78	0.56	39.12	74.96
10625.00	0.44	280.13	10622.83	38.74	10.23	37.60	0.86	38.97	74.77
10650.00	0.43	268.76	10647.82	38.57	10.25	37.41	0.35	38.79	74.68
10675.00	0.46	267.89	10672.82	38.39	10.24	37.22	0.15	38.60	74.61
10700.00	0.53	264.04	10697.82	38.18	10.23	37.00	0.31	38.39	74.55
10725.00	0.61	257.88	10722.82	37.94	10.19	36.76	0.38	38.14	74.51
10750.00	0.69	254.77	10747.82	37.66	10.12	36.48	0.35	37.86	74.49
10775.00	0.71	255.21	10772.82	37.36	10.04	36.19	0.09	37.56	74.49
10800.00	0.70	253.56	10797.82	37.06	9.96	35.89	0.09	37.25	74.49
10825.00	0.67	244.17	10822.81	36.76	9.85	35.62	0.46	36.95	74.54
10850.00	0.67	233.75	10847.81	36.47	9.70	35.37	0.49	36.67	74.66
10875.00	0.79	229.22	10872.81	36.17	9.50	35.12	0.50	36.38	74.86
10900.00	0.86	228.86	10897.81	35.83	9.27	34.85	0.30	36.06	75.11
10925.00	0.91	230.90	10922.81	35.46	9.02	34.55	0.24	35.71	75.37
10950.00	0.98	233.22	10947.80	35.07	8.77	34.22	0.30	35.33	75.63
10975.00	0.97	235.39	10972.80	34.65	8.52	33.88	0.15	34.93	75.89
11000.00	0.97	238.86	10997.79	34.24	8.29	33.52	0.24	34.53	76.12
11025.00	0.96	244.95	11022.79	33.82	8.09	33.15	0.41	34.12	76.29
11050.00	0.92	246.90	11047.79	33.41	7.92	32.77	0.21	33.72	76.42
11075.00	0.87	243.77	11072.78	33.02	7.76	32.42	0.28	33.33	76.54
11100.00	0.84	242.59	11097.78	32.65	7.59	32.09	0.15	32.97	76.69
11125.00	0.86	241.02	11122.78	32.28	7.41	31.76	0.12	32.61	76.86
11150.00	0.98	233.79	11147.78	31.89	7.20	31.42	0.69	32.24	77.10
11175.00	1.08	233.24	11172.77	31.45	6.93	31.06	0.36	31.83	77.43
11200.00	1.07	237.67	11197.77	31.00	6.66	30.68	0.33	31.39	77.75
11225.00	1.11	236.87	11222.76	30.53	6.41	30.28	0.18	30.95	78.05
11250.00	1.13	237.63	11247.76	30.05	6.14	29.86	0.09	30.49	78.38

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	1.16	238.72	11272.75	29.56	5.88	29.44	0.13	30.02	78.71
11300.00	1.21	242.32	11297.75	29.05	5.62	28.99	0.37	29.53	79.02
11325.00	1.25	248.19	11322.74	28.51	5.40	28.50	0.52	29.01	79.27
11350.00	1.29	249.77	11347.74	27.96	5.20	27.99	0.21	28.47	79.47
11375.00	1.23	251.44	11372.73	27.41	5.02	27.47	0.27	27.93	79.64
11400.00	1.14	252.75	11397.72	26.90	4.86	26.98	0.36	27.41	79.79
11425.00	1.10	257.21	11422.72	26.41	4.73	26.51	0.40	26.93	79.87
11450.00	1.12	256.04	11447.72	25.93	4.62	26.04	0.13	26.45	79.93
11475.00	1.16	247.84	11472.71	25.44	4.47	25.57	0.68	25.95	80.09
11500.00	1.21	251.22	11497.70	24.92	4.29	25.08	0.33	25.45	80.30
11525.00	1.28	255.11	11522.70	24.38	4.13	24.56	0.44	24.91	80.45
11550.00	1.26	259.66	11547.69	23.83	4.01	24.02	0.41	24.36	80.52
11575.00	1.17	263.99	11572.69	23.32	3.93	23.50	0.53	23.83	80.50
11600.00	1.05	267.63	11597.68	22.86	3.90	23.02	0.53	23.35	80.39
11625.00	0.93	266.78	11622.68	22.45	3.88	22.59	0.48	22.92	80.26
11650.00	0.88	266.60	11647.68	22.07	3.85	22.19	0.20	22.52	80.15
11675.00	0.86	266.19	11672.67	21.71	3.83	21.81	0.09	22.15	80.04
11700.00	0.85	265.17	11697.67	21.35	3.80	21.44	0.07	21.78	79.94
11725.00	0.88	264.22	11722.67	20.99	3.77	21.06	0.14	21.40	79.86
11750.00	0.91	263.39	11747.66	20.61	3.72	20.68	0.12	21.01	79.79
11775.00	0.96	267.52	11772.66	20.22	3.69	20.27	0.33	20.60	79.68
11800.00	0.94	275.04	11797.66	19.84	3.70	19.86	0.50	20.20	79.44
11825.00	0.83	285.34	11822.65	19.51	3.77	19.48	0.79	19.84	79.05
11850.00	0.64	297.24	11847.65	19.27	3.88	19.18	0.95	19.57	78.56
11875.00	0.52	308.59	11872.65	19.13	4.02	18.97	0.67	19.39	78.05
11900.00	0.48	311.15	11897.65	19.02	4.16	18.80	0.17	19.25	77.53
11925.00	0.44	305.42	11922.65	18.92	4.28	18.64	0.26	19.13	77.07
11950.00	0.35	304.38	11947.65	18.82	4.38	18.50	0.34	19.01	76.68
11975.00	0.31	302.54	11972.65	18.74	4.46	18.38	0.17	18.91	76.37
12000.00	0.30	294.42	11997.65	18.66	4.52	18.26	0.18	18.81	76.09
12025.00	0.28	293.37	12022.65	18.57	4.57	18.15	0.06	18.71	75.86
12050.00	0.25	297.57	12047.65	18.49	4.62	18.04	0.17	18.63	75.63

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg
12075.00	0.26	291.14	12072.65	18.41	4.67	17.94	0.12	18.54	75.42
12100.00	0.30	293.20	12097.65	18.32	4.71	17.83	0.18	18.44	75.19
12125.00	0.28	309.21	12122.65	18.24	4.78	17.72	0.33	18.35	74.91
12150.00	0.29	333.32	12147.65	18.21	4.87	17.65	0.48	18.31	74.56
12175.00	0.31	340.10	12172.65	18.20	4.99	17.59	0.17	18.29	74.16
12200.00	0.28	340.78	12197.65	18.21	5.11	17.55	0.13	18.28	73.75
12225.00	0.27	354.17	12222.65	18.23	5.23	17.53	0.26	18.29	73.38
12250.00	0.27	10.04	12247.64	18.27	5.35	17.53	0.30	18.33	73.03
12275.00	0.26	18.59	12272.64	18.34	5.46	17.56	0.16	18.39	72.72
12300.00	0.27	27.27	12297.64	18.42	5.57	17.60	0.16	18.46	72.45
12325.00	0.28	35.05	12322.64	18.52	5.67	17.67	0.16	18.55	72.20
12350.00	0.47	29.03	12347.64	18.65	5.81	17.75	0.76	18.68	71.88
12375.00	0.61	26.26	12372.64	18.82	6.02	17.86	0.58	18.84	71.38
12400.00	0.56	34.59	12397.64	19.02	6.24	17.99	0.39	19.04	70.87
12425.00	0.48	46.96	12422.64	19.22	6.41	18.13	0.56	19.23	70.53
12450.00	0.43	49.00	12447.64	19.41	6.54	18.28	0.20	19.42	70.30
12475.00	0.49	50.87	12472.64	19.60	6.67	18.43	0.24	19.60	70.10
12500.00	0.59	47.33	12497.64	19.82	6.83	18.61	0.41	19.82	69.86
12525.00	0.63	42.54	12522.64	20.06	7.01	18.80	0.26	20.06	69.54
12550.00	0.77	42.11	12547.63	20.33	7.24	19.00	0.55	20.33	69.14
12575.00	0.87	45.02	12572.63	20.66	7.50	19.25	0.44	20.66	68.72
12600.00	0.87	47.69	12597.63	21.01	7.76	19.52	0.16	21.01	68.32
12625.00	0.90	49.62	12622.63	21.37	8.01	19.81	0.19	21.37	67.98
12650.00	0.92	52.23	12647.62	21.75	8.27	20.12	0.18	21.75	67.67
12675.00	0.96	56.62	12672.62	22.15	8.50	20.46	0.32	22.15	67.43
12700.00	0.95	57.12	12697.62	22.56	8.73	20.81	0.05	22.56	67.23
12725.00	0.99	55.88	12722.61	22.97	8.97	21.16	0.18	22.98	67.03
12750.00	1.00	57.05	12747.61	23.40	9.21	21.52	0.09	23.41	66.84
12775.00	1.00	58.35	12772.60	23.83	9.44	21.89	0.09	23.84	66.67
12800.00	1.09	57.05	12797.60	24.27	9.68	22.28	0.35	24.29	66.50
12825.00	1.13	54.65	12822.60	24.75	9.96	22.68	0.26	24.77	66.30
12850.00	1.14	55.33	12847.59	25.23	10.24	23.08	0.05	25.25	66.08

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
12875.00	1.10	53.82	12872.59	25.70	10.52	23.48	0.17	25.73	65.86
12900.00	1.02	48.71	12897.58	26.14	10.81	23.84	0.50	26.18	65.61
12925.00	1.03	48.29	12922.58	26.56	11.11	24.18	0.04	26.61	65.32
12950.00	1.05	45.97	12947.57	26.99	11.42	24.51	0.20	27.04	65.02
12975.00	0.96	43.58	12972.57	27.39	11.73	24.82	0.43	27.45	64.71
13000.00	0.84	37.11	12997.57	27.73	12.03	25.07	0.63	27.81	64.38
13025.00	0.74	31.63	13022.56	28.02	12.31	25.27	0.49	28.11	64.03
13050.00	0.65	29.58	13047.56	28.25	12.57	25.42	0.36	28.36	63.69
13075.00	0.61	29.45	13072.56	28.47	12.81	25.56	0.17	28.59	63.38
13100.00	0.58	30.91	13097.56	28.67	13.03	25.69	0.13	28.81	63.10
13125.00	0.50	36.16	13122.56	28.86	13.23	25.82	0.39	29.01	62.87
13150.00	0.41	43.24	13147.56	29.04	13.38	25.94	0.41	29.19	62.71
13175.00	0.40	37.52	13172.56	29.19	13.52	26.06	0.17	29.36	62.58
13200.00	0.37	25.47	13197.56	29.33	13.66	26.15	0.34	29.50	62.41
13225.00	0.32	17.38	13222.56	29.43	13.80	26.20	0.29	29.62	62.22
13250.00	0.34	6.38	13247.56	29.51	13.94	26.23	0.26	29.71	62.01
13275.00	0.36	354.43	13272.56	29.56	14.09	26.23	0.30	29.78	61.76
13300.00	0.41	343.96	13297.55	29.59	14.25	26.20	0.36	29.83	61.45
13325.00	0.57	337.81	13322.55	29.60	14.46	26.13	0.69	29.86	61.04
13350.00	0.70	326.64	13347.55	29.57	14.70	26.00	0.69	29.87	60.51
13375.00	0.75	325.17	13372.55	29.50	14.96	25.82	0.21	29.84	59.91
13400.00	0.75	326.23	13397.55	29.42	15.23	25.64	0.06	29.82	59.29
13425.00	0.79	328.70	13422.55	29.36	15.51	25.46	0.22	29.81	58.64
13450.00	0.87	324.26	13447.54	29.28	15.81	25.26	0.39	29.80	57.95
13475.00	0.88	322.01	13472.54	29.18	16.12	25.03	0.15	29.77	57.22
13500.00	0.84	321.61	13497.54	29.07	16.41	24.80	0.16	29.74	56.50
13525.00	0.88	320.90	13522.53	28.96	16.71	24.56	0.17	29.70	55.77
13550.00	0.99	319.12	13547.53	28.83	17.02	24.30	0.45	29.67	54.99
13575.00	1.11	319.69	13572.53	28.68	17.37	24.00	0.48	29.62	54.10
13600.00	1.29	324.97	13597.52	28.53	17.78	23.68	0.85	29.61	53.09
13625.00	1.46	330.06	13622.51	28.42	18.29	23.36	0.82	29.67	51.94
13650.00	1.54	335.14	13647.51	28.35	18.87	23.06	0.62	29.80	50.70

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg
13675.00	1.55	341.15	13672.50	28.34	19.50	22.81	0.65	30.01	49.48
13700.00	1.54	351.42	13697.49	28.43	20.15	22.65	1.11	30.31	48.34
13725.00	1.56	359.98	13722.48	28.63	20.82	22.60	0.93	30.73	47.35
13750.00	1.54	1.86	13747.47	28.89	21.50	22.61	0.22	31.20	46.45
13775.00	1.59	4.95	13772.46	29.17	22.18	22.65	0.39	31.70	45.61
13800.00	1.66	15.45	13797.45	29.54	22.87	22.78	1.22	32.28	44.88
13825.00	1.80	31.24	13822.44	30.07	23.56	23.08	1.98	32.98	44.41
13850.00	2.09	42.07	13847.42	30.79	24.23	23.59	1.87	33.82	44.23
13875.00	2.27	46.64	13872.41	31.66	24.91	24.25	1.01	34.77	44.23
13900.00	2.36	47.47	13897.39	32.60	25.60	24.99	0.37	35.78	44.31
13925.00	2.38	46.13	13922.36	33.56	26.31	25.75	0.23	36.81	44.38
13950.00	2.35	43.72	13947.34	34.50	27.04	26.47	0.42	37.84	44.40
13975.00	2.26	41.77	13972.32	35.41	27.77	27.16	0.47	38.85	44.36
14000.00	2.12	40.63	13997.30	36.26	28.49	27.79	0.58	39.80	44.28
14025.00	2.06	40.45	14022.29	37.06	29.19	28.38	0.26	40.71	44.20
14050.00	1.94	42.98	14047.27	37.84	29.84	28.96	0.61	41.58	44.14
14075.00	1.72	49.15	14072.26	38.57	30.39	29.53	1.17	42.38	44.18
14100.00	1.62	57.03	14097.25	39.27	30.83	30.11	1.00	43.09	44.32
14125.00	1.60	65.02	14122.24	39.97	31.17	30.72	0.90	43.77	44.59
14150.00	1.63	72.89	14147.23	40.67	31.42	31.38	0.90	44.41	44.96
14175.00	1.70	81.22	14172.22	41.39	31.58	32.09	1.01	45.02	45.45
14200.00	1.77	90.78	14197.21	42.11	31.63	32.84	1.19	45.60	46.07
14225.00	2.00	100.75	14222.19	42.84	31.55	33.66	1.59	46.13	46.85
14250.00	2.38	111.96	14247.18	43.58	31.27	34.57	2.27	46.61	47.87
14275.00	2.66	119.30	14272.15	44.33	30.79	35.55	1.72	47.04	49.10
14300.00	2.80	121.27	14297.12	45.07	30.19	36.58	0.67	47.43	50.47
14325.00	2.79	121.76	14322.09	45.80	29.56	37.62	0.10	47.84	51.85
14350.00	2.81	123.81	14347.06	46.52	28.89	38.65	0.41	48.26	53.22
14375.00	2.81	125.03	14372.03	47.21	28.20	39.66	0.24	48.66	54.58
14400.00	2.80	126.56	14397.00	47.87	27.49	40.65	0.30	49.07	55.94
14425.00	2.74	126.78	14421.97	48.51	26.76	41.62	0.24	49.48	57.26
14450.00	2.60	125.74	14446.95	49.14	26.07	42.56	0.59	49.91	58.51

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
14475.00	2.54	126.14	14471.92	49.74	25.42	43.47	0.29	50.35	59.69
14500.00	2.50	129.04	14496.90	50.31	24.75	44.34	0.53	50.78	60.83
14525.00	2.37	130.62	14521.88	50.82	24.07	45.16	0.59	51.17	61.95
14550.00	2.19	131.27	14546.86	51.28	23.41	45.91	0.74	51.53	62.98
14575.00	2.08	132.57	14571.84	51.70	22.79	46.60	0.47	51.88	63.94
14600.00	2.03	133.76	14596.82	52.09	22.18	47.26	0.27	52.20	64.86
14625.00	1.95	133.13	14621.81	52.46	21.58	47.89	0.33	52.52	65.74
14650.00	1.92	132.62	14646.79	52.82	21.01	48.50	0.13	52.86	66.58
14675.00	1.86	133.07	14671.78	53.18	20.45	49.11	0.26	53.20	67.40
14700.00	1.77	132.88	14696.77	53.53	19.91	49.69	0.37	53.53	68.17
14725.00	1.64	132.36	14721.76	53.85	19.40	50.24	0.50	53.85	68.88
14750.00	1.52	131.08	14746.75	54.16	18.94	50.75	0.52	54.17	69.53
14775.00	1.36	125.31	14771.74	54.48	18.55	51.24	0.85	54.50	70.10
14800.00	1.22	112.42	14796.73	54.84	18.28	51.73	1.29	54.87	70.54
14825.00	1.17	90.36	14821.73	55.26	18.18	52.23	1.84	55.30	70.81
14850.00	1.30	72.50	14846.72	55.79	18.26	52.76	1.63	55.83	70.91
14875.00	1.35	59.54	14871.71	56.36	18.50	53.28	1.22	56.40	70.86
14900.00	1.48	45.68	14896.71	56.95	18.87	53.77	1.45	56.98	70.66
14925.00	1.67	35.56	14921.70	57.55	19.39	54.21	1.34	57.58	70.32
14950.00	1.94	34.06	14946.69	58.20	20.04	54.66	1.09	58.22	69.87
14975.00	2.10	32.26	14971.67	58.92	20.78	55.14	0.70	58.92	69.35
15000.00	2.21	31.96	14996.65	59.68	21.57	55.64	0.44	59.68	68.81
15025.00	2.27	38.94	15021.63	60.49	22.37	56.21	1.11	60.49	68.30
15050.00	2.40	52.61	15046.61	61.42	23.07	56.93	2.29	61.43	67.94
15075.00	2.56	55.74	15071.59	62.47	23.70	57.81	0.83	62.48	67.71
15100.00	2.63	52.50	15096.56	63.57	24.36	58.73	0.64	63.58	67.47
15125.00	2.60	54.96	15121.54	64.67	25.04	59.65	0.46	64.69	67.23
15150.00	2.75	55.31	15146.51	65.80	25.71	60.60	0.59	65.83	67.01
15175.00	2.71	54.14	15171.48	66.96	26.40	61.58	0.26	67.00	66.80
15200.00	2.66	56.64	15196.45	68.10	27.06	62.54	0.52	68.14	66.60
15225.00	2.73	56.11	15221.43	69.25	27.71	63.52	0.30	69.30	66.43
15250.00	2.79	58.86	15246.40	70.43	28.36	64.53	0.59	70.49	66.28

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
15275.00	2.71	58.86	15271.37	71.61	28.98	65.56	0.33	71.68	66.15
15300.00	2.84	59.76	15296.34	72.81	29.60	66.60	0.54	72.88	66.04
15325.00	2.78	59.82	15321.31	74.02	30.21	67.66	0.22	74.10	65.94
15350.00	2.84	60.31	15346.28	75.23	30.82	68.72	0.26	75.32	65.84
15375.00	2.80	63.32	15371.25	76.45	31.41	69.81	0.62	76.55	65.78
15400.00	2.79	60.81	15396.22	77.66	31.98	70.89	0.49	77.76	65.72
15425.00	2.99	61.72	15421.19	78.91	32.58	71.99	0.84	79.02	65.65
15450.00	2.98	64.77	15446.15	80.21	33.17	73.15	0.64	80.32	65.61
15475.00	2.96	61.32	15471.12	81.50	33.76	74.31	0.72	81.62	65.57
15500.00	3.10	60.90	15496.08	82.81	34.39	75.47	0.59	82.93	65.50
15525.00	3.12	62.72	15521.05	84.16	35.04	76.66	0.40	84.29	65.44
15550.00	3.15	63.92	15546.01	85.52	35.65	77.88	0.29	85.65	65.40
15575.00	3.14	64.34	15570.97	86.89	36.25	79.12	0.10	87.03	65.38
15600.00	3.09	65.69	15595.94	88.24	36.82	80.35	0.37	88.39	65.38
15625.00	3.03	68.28	15620.90	89.58	37.34	81.58	0.60	89.72	65.40
15650.00	3.06	69.42	15645.86	90.90	37.82	82.82	0.26	91.04	65.45
15675.00	3.05	70.31	15670.83	92.24	38.28	84.07	0.19	92.37	65.52
15700.00	3.07	71.96	15695.79	93.57	38.71	85.33	0.36	93.70	65.60
15725.00	3.07	70.82	15720.76	94.91	39.14	86.60	0.24	95.04	65.68
15750.00	3.23	71.53	15745.72	96.28	39.58	87.90	0.64	96.40	65.76
15775.00	3.24	73.06	15770.68	97.69	40.01	89.25	0.35	97.81	65.85
15800.00	3.14	74.87	15795.64	99.07	40.40	90.58	0.55	99.18	65.96
15825.00	3.08	77.18	15820.60	100.42	40.73	91.90	0.56	100.52	66.10
15850.00	3.04	79.40	15845.57	101.74	41.00	93.21	0.50	101.82	66.26
15875.00	3.05	79.58	15870.53	103.04	41.24	94.51	0.05	103.12	66.43
15900.00	3.09	80.81	15895.50	104.35	41.47	95.83	0.31	104.42	66.60
15925.00	3.13	81.57	15920.46	105.68	41.67	97.17	0.24	105.73	66.79
15950.00	3.17	81.25	15945.42	107.02	41.88	98.53	0.16	107.06	66.97
15975.00	3.16	81.33	15970.38	108.36	42.09	99.89	0.04	108.40	67.15
16000.00	3.15	81.66	15995.35	109.70	42.29	101.26	0.08	109.73	67.33
16025.00	3.11	81.18	16020.31	111.04	42.50	102.61	0.19	111.06	67.50
16050.00	3.04	80.79	16045.27	112.35	42.71	103.93	0.30	112.36	67.66

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg
16075.00	3.01	80.83	16070.24	113.64	42.92	105.24	0.11	113.65	67.81
16100.00	2.90	79.13	16095.21	114.90	43.14	106.51	0.57	114.91	67.95
16125.00	2.87	76.92	16120.17	116.14	43.40	107.74	0.47	116.15	68.06
16150.00	2.87	75.83	16145.14	117.38	43.70	108.95	0.22	117.39	68.15
16175.00	2.84	76.14	16170.11	118.62	44.00	110.16	0.14	118.62	68.23
16200.00	2.82	76.92	16195.08	119.84	44.29	111.36	0.17	119.85	68.31
16225.00	2.81	75.91	16220.05	121.06	44.58	112.56	0.20	121.06	68.40
16250.00	2.73	75.45	16245.02	122.26	44.87	113.73	0.34	122.26	68.47
16275.00	2.66	75.00	16269.99	123.43	45.17	114.87	0.32	123.43	68.53
16300.00	2.58	75.21	16294.97	124.57	45.47	115.97	0.31	124.57	68.59
16325.00	2.48	73.87	16319.94	125.66	45.76	117.03	0.48	125.66	68.64
16350.00	2.33	71.06	16344.92	126.71	46.08	118.03	0.77	126.71	68.68
16375.00	2.06	69.68	16369.90	127.66	46.40	118.93	1.10	127.66	68.69
16400.00	1.99	65.14	16394.89	128.55	46.74	119.75	0.70	128.55	68.68
16425.00	1.93	59.07	16419.87	129.39	47.13	120.50	0.86	129.39	68.64