



OPERATOR		FIELD NAME		Well name/No.		Rig Name & No.		Panther Job No.		Calculation Method		Minimum Curvature		
Panther		DJ		Wetco 4-63-5-5649C		Cade 23		775H-2019		Proposed Azimuth		263.75°		
MWD OPERATOR		DIR SUPERVISOR		COUNTY		STATE		Start Date		Depth Reference:		RKB		
Jack Tucker		John Sartori		Weld		Colorado		23-Feb-19		Tie Into:		MWD		
DipA:	66.81	Mag Field:		0.52219	Mag Dec.	7.87	Total Cor.:		7.87	Job Service:				
Mag Spacing Req.		Mag Spacing Actual			Mag Spacing Req.		Mag Spacing Actual							
Below 32		Below	36.65		Above	50	Above		55.75					
Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vert Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (°/100')	Build Rate (°/100')	Walk Rate (°/100')	
							N/S (ft)	E/W (ft)	Distance (ft)	Direction Azimuth				
Tie-In	847	4.83°	206.39°	0.00'	845	11.09'	34.21' S	7.41' W	0.00'	0.00°	0.00°	0.0°	0.0°	
1	886	4.90	208.50	39.50	885	12.95	37.18 S	8.95 W	38.25	193.54	0.49	0.18	5.34	
2	978	4.90	210.90	92.00	976	17.56	44.01 S	12.85 W	45.84	196.27	0.22	0.00	2.61	
3	1070	4.70	212.70	92.00	1068	22.30	50.55 S	16.90 W	53.30	198.49	0.27	-0.22	1.96	
4	1162	4.70	196.30	92.00	1160	26.12	57.34 S	20.00 W	60.73	199.22	1.46	0.00	-17.83	
5	1253	4.60	193.10	91.00	1250	28.76	64.47 S	21.87 W	68.08	198.74	0.31	-0.11	-3.52	
6	1345	5.50	199.70	92.00	1342	31.91	72.22 S	24.19 W	76.16	198.52	1.16	0.98	7.17	
7	1437	5.70	198.10	92.00	1434	35.72	80.71 S	27.10 W	85.14	198.56	0.28	0.22	-1.74	
8	1529	4.60	198.80	92.00	1525	39.17	88.55 S	29.70 W	93.40	198.55	1.20	-1.20	0.76	
9	1621	5.20	197.50	92.00	1617	42.41	96.01 S	32.15 W	101.25	198.51	0.66	0.65	-1.41	
10	1717	6.10	208.30	96.00	1712	47.05	104.65 S	35.87 W	110.63	198.92	1.45	0.94	11.25	
11	1812	7.50	218.80	95.00	1807	54.31	113.93 S	42.15 W	121.48	200.30	1.97	1.47	11.05	
12	1908	9.40	215.30	96.00	1902	63.94	125.21 S	50.61 W	135.05	202.01	2.05	1.98	-3.65	
13	2002	10.90	209.10	94.00	1994	74.17	139.25 S	59.37 W	151.37	203.09	1.97	1.60	-6.60	
14	2096	12.50	205.70	94.00	2086	84.70	156.18 S	68.10 W	170.38	203.56	1.85	1.70	-3.62	
15	2191	13.60	204.10	95.00	2179	95.78	175.64 S	77.12 W	191.82	203.71	1.22	1.16	-1.68	
16	2285	15.00	203.90	94.00	2270	107.48	196.85 S	86.56 W	215.04	203.74	1.49	1.49	-0.21	
17	2379	16.30	209.00	94.00	2360	121.20	219.51 S	97.89 W	240.35	204.03	2.01	1.38	5.43	
18	2474	15.50	204.70	95.00	2452	135.43	242.70 S	109.66 W	266.33	204.31	1.50	-0.84	-4.53	
19	2568	17.20	209.50	94.00	2542	150.01	266.21 S	121.75 W	292.73	204.58	2.31	1.81	5.11	
20	2662	17.50	209.30	94.00	2632	166.35	290.64 S	135.51 W	320.67	205.00	0.33	0.32	-0.21	
21	2757	17.00	207.00	95.00	2722	182.27	315.47 S	148.81 W	348.80	205.25	0.89	-0.53	-2.42	
22	2851	16.00	203.70	94.00	2813	196.27	339.57 S	160.25 W	375.49	205.26	1.46	-1.06	-3.51	
23	2946	17.20	206.90	95.00	2904	210.49	364.09 S	171.87 W	402.62	205.27	1.59	1.26	3.37	
24	3040	18.50	208.10	94.00	2993	226.50	389.64 S	185.18 W	431.41	205.42	1.44	1.38	1.28	
25	3136	16.20	203.40	96.00	3085	241.72	415.37 S	197.68 W	460.01	205.45	2.80	-2.40	-4.90	
26	3231	15.70	204.80	95.00	3176	254.91	439.20 S	208.33 W	486.11	205.38	0.66	-0.53	1.47	
27	3326	15.30	212.90	95.00	3268	269.45	461.40 S	220.53 W	511.39	205.55	2.32	-0.42	8.53	
28	3421	16.80	211.80	95.00	3359	285.83	483.59 S	234.58 W	537.48	205.88	1.61	1.58	-1.16	
29	3516	18.80	212.40	95.00	3449	303.85	508.19 S	250.02 W	566.36	206.20	2.11	2.11	0.63	
30	3612	19.60	211.80	96.00	3540	323.44	534.93 S	266.79 W	597.77	206.51	0.86	0.83	-0.62	
31	3707	19.70	211.70	95.00	3630	343.11	562.10 S	283.60 W	629.59	206.77	0.11	0.11	-0.11	
32	3802	19.80	210.70	95.00	3719	362.63	589.55 S	300.23 W	661.60	206.99	0.37	0.11	-1.05	
33	3898	17.40	208.20	96.00	3810	380.52	616.19 S	315.31 W	692.18	207.10	2.63	-2.50	-2.60	
34	3993	17.90	197.50	95.00	3900	394.44	642.64 S	326.42 W	720.79	206.93	3.45	0.53	-11.26	
35	4087	16.80	214.00	94.00	3990	409.05	667.69 S	338.37 W	748.54	206.87	5.35	-1.17	17.55	
36	4181	15.80	210.60	94.00	4080	425.50	689.97 S	352.48 W	774.79	207.06	1.47	-1.06	-3.62	



Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vert Depth (ft)	Vertical Section (ft)	Coordinates			Closure		Dogleg Severity (°/100')	Build Rate (°/100')	Walk Rate (°/100')
							N/S (ft)	E/W (ft)		Distance (ft)	Direction Azimuth			
37	4276	16.70	210.40	95.00	4172	441.40	712.88 S	365.97 W		801.33	207.17	0.95	0.95	-0.21
38	4372	16.90	206.90	96.00	4264	457.27	737.22 S	379.26 W		829.06	207.22	1.07	0.21	-3.65
39	4467	15.40	204.00	95.00	4355	471.18	761.06 S	390.64 W		855.46	207.17	1.79	-1.58	-3.05
40	4561	16.50	203.90	94.00	4445	484.17	784.67 S	401.13 W		881.25	207.08	1.17	1.17	-0.11
41	4655	15.60	203.20	94.00	4536	497.09	808.49 S	411.52 W		907.19	206.98	0.98	-0.96	-0.74
42	4750	15.60	206.90	95.00	4627	510.35	831.62 S	422.33 W		932.71	206.92	1.05	0.00	3.89
43	4845	17.50	210.00	95.00	4718	525.79	855.39 S	435.25 W		959.75	206.97	2.20	2.00	3.26
44	4939	17.10	208.40	94.00	4808	542.00	879.78 S	448.89 W		987.68	207.03	0.66	-0.43	-1.70
45	5034	15.30	205.60	95.00	4899	556.56	903.37 S	460.95 W		1014.18	207.03	2.06	-1.89	-2.95
46	5129	15.20	207.20	95.00	4991	570.04	925.75 S	472.06 W		1039.16	207.02	0.46	-0.11	1.68
47	5224	14.90	206.60	95.00	5082	583.53	947.75 S	483.22 W		1063.83	207.02	0.36	-0.32	-0.63
48	5318	16.60	208.50	94.00	5173	597.74	970.36 S	495.04 W		1089.34	207.03	1.89	1.81	2.02
49	5413	15.90	207.60	95.00	5264	612.72	993.82 S	507.54 W		1115.92	207.05	0.78	-0.74	-0.95
50	5507	16.70	207.80	94.00	5354	627.45	1017.18 S	519.81 W		1142.30	207.07	0.85	0.85	0.21
51	5602	17.10	209.10	95.00	5445	643.18	1041.45 S	532.97 W		1169.91	207.10	0.58	0.42	1.37
52	5697	16.80	206.20	95.00	5536	658.63	1065.98 S	545.82 W		1197.59	207.11	0.94	-0.32	-3.05
53	5792	17.10	206.80	95.00	5627	673.61	1090.76 S	558.18 W		1225.29	207.10	0.37	0.32	0.63
54	5854	16.00	204.40	62.00	5686	682.94	1106.68 S	565.82 W		1242.94	207.08	2.09	-1.77	-3.87
55	5886	16.80	209.00	32.00	5717	687.85	1114.74 S	569.88 W		1251.97	207.08	4.76	2.50	14.38
56	5981	16.30	209.10	95.00	5808	703.49	1138.40 S	583.02 W		1279.01	207.12	0.53	-0.53	0.11
57	6035	14.20	206.00	54.00	5860	711.41	1150.98 S	589.61 W		1293.21	207.12	4.17	-3.89	-5.74
58	6077	16.20	203.90	42.00	5901	717.10	1160.96 S	594.25 W		1304.21	207.11	4.94	4.76	-5.00
59	6172	20.00	221.20	95.00	5991	735.75	1185.33 S	610.33 W		1333.23	207.24	6.89	4.00	18.21
60	6235	28.50	242.60	63.00	6049	757.78	1200.41 S	630.85 W		1356.08	207.72	19.21	13.49	33.97
61	6267	34.00	246.80	32.00	6076	773.48	1207.45 S	645.86 W		1369.34	208.14	18.48	17.19	13.13
62	6330	37.50	251.60	63.00	6127	809.09	1220.45 S	680.27 W		1397.24	209.13	7.12	5.56	7.62
63	6362	36.20	250.40	32.00	6153	827.81	1226.70 S	698.41 W		1411.58	209.65	4.64	-4.06	-3.75
64	6457	38.10	252.90	95.00	6228	883.90	1244.73 S	752.86 W		1454.70	211.17	2.55	2.00	2.63
65	6553	44.10	259.90	96.00	6301	946.41	1259.32 S	814.15 W		1499.57	212.88	7.87	6.25	7.29
66	6648	53.40	262.60	95.00	6363	1017.68	1270.05 S	884.67 W		1547.79	214.86	10.02	9.79	2.84
67	6744	61.30	262.70	96.00	6415	1098.43	1280.38 S	964.77 W		1603.17	217.00	8.23	8.23	0.10
68	6839	69.00	264.80	95.00	6455	1184.56	1289.71 S	1050.40 W		1663.33	219.16	8.35	8.11	2.21
69	6878	76.70	266.90	39.00	6467	1221.77	1292.39 S	1087.54 W		1689.08	220.08	20.40	19.74	5.38
70	6935	81.90	268.70	57.00	6477	1277.62	1294.53 S	1143.48 W		1727.24	221.45	9.64	9.12	3.16
71	6955	84.80	269.20	20.00	6479	1297.40	1294.89 S	1163.34 W		1740.72	221.94	14.71	14.50	2.50
72	7039	88.90	270.30	84.00	6484	1380.79	1295.26 S	1247.20 W		1798.11	223.92	5.05	4.88	1.31
73	7133	90.10	270.20	94.00	6485	1474.18	1294.85 S	1341.19 W		1864.25	226.01	1.28	1.28	-0.11
74	7228	91.30	270.00	95.00	6484	1568.59	1294.68 S	1436.18 W		1933.60	227.97	1.28	1.26	-0.21
75	7322	92.90	270.20	94.00	6480	1661.95	1294.52 S	1530.11 W		2004.25	229.77	1.72	1.70	0.21
76	7417	93.50	270.00	95.00	6475	1756.22	1294.35 S	1624.97 W		2077.46	231.46	0.67	0.63	-0.21
77	7512	93.30	269.60	95.00	6469	1850.52	1294.68 S	1719.80 W		2152.65	233.03	0.47	-0.21	-0.42
78	7576	94.50	270.10	64.00	6465	1914.01	1294.85 S	1783.65 W		2204.09	234.02	2.03	1.88	0.78
79	7608	93.90	270.80	32.00	6463	1945.71	1294.60 S	1815.56 W		2229.85	234.51	2.88	-1.87	2.19
80	7653	94.20	270.60	45.00	6459	1990.27	1294.05 S	1860.44 W		2266.23	235.18	0.80	0.67	-0.44
81	7704	93.30	270.80	51.00	6456	2040.78	1293.43 S	1911.33 W		2307.84	235.91	1.81	-1.76	0.39



Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vert Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (°/100')	Build Rate (°/100')	Walk Rate (°/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Direction Azimuth			
82	7736	92.40	271.10	32.00	6455	2072.49	1292.90 S	1943.29 W	2334.08	236.36	2.96	-2.81	0.94
83	7767	91.90	270.30	31.00	6453	2103.24	1292.52 S	1974.26 W	2359.73	236.79	3.04	-1.61	-2.58
84	7800	91.30	270.00	33.00	6452	2136.02	1292.43 S	2007.25 W	2387.35	237.22	2.03	-1.82	-0.91
85	7863	90.20	269.20	63.00	6452	2198.69	1292.87 S	2070.24 W	2440.78	238.02	2.16	-1.75	-1.27
86	7895	89.10	269.60	32.00	6452	2230.53	1293.21 S	2102.24 W	2468.16	238.40	3.66	-3.44	1.25
87	7927	89.40	270.00	32.00	6452	2262.35	1293.32 S	2134.23 W	2495.52	238.78	1.56	0.94	1.25
88	7958	88.80	270.00	31.00	6453	2293.16	1293.32 S	2165.23 W	2522.08	239.15	1.94	-1.94	0.00
89	7989	88.00	270.20	31.00	6454	2323.96	1293.27 S	2196.22 W	2548.71	239.51	2.66	-2.58	0.65
90	8021	87.30	271.40	32.00	6455	2355.69	1292.82 S	2228.19 W	2576.08	239.88	4.34	-2.19	3.75
91	8084	86.90	271.60	63.00	6458	2418.03	1291.17 S	2291.09 W	2629.87	240.60	0.71	-0.63	0.32
92	8146	86.00	272.00	62.00	6462	2479.30	1289.23 S	2352.94 W	2682.99	241.28	1.59	-1.45	0.65
93	8178	85.50	272.30	32.00	6464	2510.87	1288.03 S	2384.82 W	2710.43	241.63	1.82	-1.56	0.94
94	8228	85.30	272.90	50.00	6468	2560.12	1285.77 S	2434.61 W	2753.28	242.16	1.26	-0.40	1.20
95	8273	87.10	272.60	45.00	6471	2604.47	1283.62 S	2479.46 W	2792.02	242.63	4.05	4.00	-0.67
96	8320	87.60	271.60	47.00	6473	2650.92	1281.90 S	2526.38 W	2832.99	243.10	2.38	1.06	-2.13
97	8367	88.40	270.10	47.00	6475	2697.53	1281.20 S	2573.34 W	2874.64	243.53	3.62	1.70	-3.19
98	8403	89.20	268.90	36.00	6476	2733.34	1281.51 S	2609.33 W	2907.04	243.84	4.01	2.22	-3.33
99	8431	90.30	269.20	28.00	6476	2761.22	1281.98 S	2637.33 W	2932.40	244.08	4.07	3.93	1.07
100	8463	90.10	268.90	32.00	6476	2793.08	1282.51 S	2669.32 W	2961.44	244.34	1.13	-0.63	-0.94
101	8508	89.20	269.50	45.00	6476	2837.87	1283.14 S	2714.32 W	3002.32	244.70	2.40	-2.00	1.33
102	8527	89.10	269.70	19.00	6476	2856.77	1283.27 S	2733.31 W	3019.57	244.85	1.18	-0.53	1.05
103	8558	88.60	269.50	31.00	6477	2887.61	1283.49 S	2764.31 W	3047.74	245.09	1.74	-1.61	-0.65
104	8654	88.60	269.30	96.00	6479	2983.11	1284.49 S	2860.27 W	3135.45	245.82	0.21	0.00	-0.21
105	8748	89.80	269.90	94.00	6481	3076.61	1285.15 S	2954.26 W	3221.68	246.49	1.43	1.28	0.64
106	8844	90.20	270.10	96.00	6481	3172.04	1285.15 S	3050.26 W	3309.94	247.15	0.47	0.42	0.21
107	8940	88.10	270.10	96.00	6482	3267.43	1284.98 S	3146.24 W	3398.53	247.78	2.19	-2.19	0.00
108	8972	88.50	270.30	32.00	6483	3299.22	1284.87 S	3178.23 W	3428.12	247.99	1.40	1.25	0.62
109	9035	88.90	270.30	63.00	6485	3361.79	1284.54 S	3241.21 W	3486.47	248.38	0.63	0.63	0.00
110	9131	91.60	270.60	96.00	6484	3457.12	1283.78 S	3337.20 W	3575.61	248.96	2.83	2.81	0.31
111	9163	91.90	270.30	32.00	6483	3488.89	1283.53 S	3369.18 W	3605.39	249.15	1.33	0.94	-0.94
112	9226	92.40	270.30	63.00	6481	3551.44	1283.20 S	3432.14 W	3664.17	249.50	0.79	0.79	0.00
113	9258	91.30	270.50	32.00	6480	3583.20	1282.98 S	3464.12 W	3694.07	249.68	3.49	-3.44	0.62
114	9322	92.00	270.60	64.00	6478	3646.73	1282.37 S	3528.09 W	3753.91	250.03	1.10	1.09	0.16
115	9418	91.20	270.80	96.00	6475	3741.98	1281.19 S	3624.04 W	3843.85	250.53	0.86	-0.83	0.21
116	9481	91.60	270.70	63.00	6474	3804.49	1280.37 S	3687.02 W	3903.01	250.85	0.65	0.63	-0.16
117	9513	89.80	270.80	32.00	6473	3836.25	1279.95 S	3719.01 W	3933.11	251.01	5.63	-5.62	0.31
118	9577	87.50	271.20	64.00	6475	3899.72	1278.83 S	3782.98 W	3993.29	251.32	3.65	-3.59	0.62
119	9609	87.50	271.10	32.00	6476	3931.42	1278.19 S	3814.94 W	4023.38	251.48	0.31	0.00	-0.31
120	9673	88.40	271.10	64.00	6478	3994.85	1276.96 S	3878.89 W	4083.68	251.78	1.41	1.41	0.00
121	9704	88.90	270.60	31.00	6479	4025.61	1276.51 S	3909.88 W	4112.98	251.92	2.28	1.61	-1.61
122	9800	88.20	271.00	96.00	6482	4120.85	1275.17 S	4005.84 W	4203.90	252.34	0.84	-0.73	0.42
123	9895	88.20	270.60	95.00	6485	4215.09	1273.84 S	4100.78 W	4294.07	252.74	0.42	0.00	-0.42
124	9990	88.90	270.50	95.00	6487	4309.39	1272.93 S	4195.75 W	4384.59	253.12	0.74	0.74	-0.11
125	10084	87.60	271.20	94.00	6490	4402.62	1271.53 S	4289.69 W	4474.17	253.49	1.57	-1.38	0.74
126	10179	87.60	271.50	95.00	6494	4496.70	1269.30 S	4384.58 W	4564.61	253.85	0.32	0.00	0.32



Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vert Depth (ft)	Vertical Section (ft)	Coordinates			Closure		Dogleg Severity (°/100')	Build Rate (°/100')	Walk Rate (°/100')
							N/S (ft)	E/W (ft)		Distance (ft)	Direction Azimuth			
127	10274	88.60	271.50	95.00	6497	4590.78	1266.81 S	4479.49 W		4655.18	254.21	1.05	1.05	0.00
128	10369	89.80	271.90	95.00	6498	4684.86	1263.99 S	4574.44 W		4745.86	254.55	1.33	1.26	0.42
129	10461	90.60	271.80	92.00	6498	4775.94	1261.02 S	4666.39 W		4833.78	254.88	0.88	0.87	-0.11
130	10553	88.00	270.40	92.00	6499	4867.17	1259.26 S	4758.36 W		4922.16	255.18	3.21	-2.83	-1.52
131	10645	88.00	270.60	92.00	6502	4958.47	1258.46 S	4850.30 W		5010.90	255.45	0.22	0.00	0.22
132	10737	89.40	271.30	92.00	6504	5049.72	1256.93 S	4942.26 W		5099.59	255.73	1.70	1.52	0.76
133	10829	90.00	271.10	92.00	6505	5140.94	1255.00 S	5034.24 W		5188.31	256.00	0.69	0.65	-0.22
134	10921	91.00	271.10	92.00	6504	5232.18	1253.24 S	5126.21 W		5277.18	256.26	1.09	1.09	0.00
135	11013	90.60	270.90	92.00	6503	5323.44	1251.63 S	5218.19 W		5366.20	256.51	0.49	-0.43	-0.22
136	11104	89.50	272.80	91.00	6503	5413.52	1248.70 S	5309.14 W		5454.01	256.76	2.41	-1.21	2.09
137	11196	89.90	269.90	92.00	6503	5504.70	1246.53 S	5401.10 W		5543.08	257.00	3.18	0.43	-3.15
138	11288	89.10	269.50	92.00	6504	5596.20	1247.01 S	5493.10 W		5632.86	257.21	0.97	-0.87	-0.43
139	11380	88.90	269.30	92.00	6506	5687.74	1247.97 S	5585.08 W		5722.81	257.40	0.31	-0.22	-0.22
140	11472	88.30	268.30	92.00	6508	5779.36	1249.90 S	5677.03 W		5812.99	257.58	1.27	-0.65	-1.09
141	11564	87.90	267.40	92.00	6511	5871.07	1253.35 S	5768.91 W		5903.49	257.74	1.07	-0.43	-0.98
142	11655	90.30	268.00	91.00	6512	5961.84	1257.00 S	5859.82 W		5993.12	257.89	2.72	2.64	0.66
143	11747	90.00	268.90	92.00	6512	6053.53	1259.49 S	5951.78 W		6083.59	258.05	1.03	-0.33	0.98
144	11839	89.50	270.20	92.00	6513	6145.05	1260.21 S	6043.78 W		6173.77	258.22	1.51	-0.54	1.41
145	11853	89.00	270.50	14.00	6513	6158.96	1260.13 S	6057.78 W		6187.45	258.25	4.16	-3.57	2.14
146	11932	87.90	270.70	79.00	6515	6237.36	1259.30 S	6136.74 W		6264.62	258.40	1.42	-1.39	0.25
147	12026	88.00	270.10	94.00	6518	6330.67	1258.64 S	6230.68 W		6356.54	258.58	0.65	0.11	-0.64
148	12122	87.00	270.90	96.00	6522	6425.91	1257.81 S	6326.58 W		6450.40	258.76	1.33	-1.04	0.83
149	12138	86.80	271.00	16.00	6523	6441.76	1257.54 S	6342.56 W		6466.02	258.79	1.40	-1.25	0.63
150	12217	86.80	271.90	79.00	6528	6519.93	1255.54 S	6421.41 W		6543.00	258.94	1.14	0.00	1.14
151	12313	87.60	272.20	96.00	6532	6614.81	1252.11 S	6517.23 W		6636.42	259.12	0.89	0.83	0.31
152	12333	87.40	272.20	20.00	6533	6634.57	1251.35 S	6537.20 W		6655.89	259.16	1.00	-1.00	0.00
153	12408	88.10	272.10	75.00	6536	6708.71	1248.54 S	6612.09 W		6728.93	259.31	0.94	0.93	-0.13
154	12504	90.20	271.50	96.00	6538	6803.75	1245.52 S	6708.02 W		6822.67	259.48	2.28	2.19	-0.63
155	12599	89.50	270.30	95.00	6538	6898.01	1244.03 S	6803.01 W		6915.82	259.64	1.46	-0.74	-1.26
156	12694	91.20	271.50	95.00	6537	6992.26	1242.54 S	6897.99 W		7009.00	259.79	2.19	1.79	1.26
157	12790	92.60	271.60	96.00	6534	7087.32	1239.94 S	6993.90 W		7102.96	259.95	1.46	1.46	0.10
158	12835	92.90	271.40	45.00	6532	7131.86	1238.77 S	7038.83 W		7147.01	260.02	0.80	0.67	-0.44
159	12885	90.70	271.60	50.00	6530	7181.37	1237.46 S	7088.79 W		7195.98	260.10	4.42	-4.40	0.40
160	12930	90.50	271.30	45.00	6530	7225.96	1236.32 S	7133.77 W		7240.11	260.17	0.80	-0.44	-0.67
161	12980	92.20	271.90	50.00	6529	7275.48	1234.92 S	7183.73 W		7289.11	260.25	3.61	3.40	1.20
162	13025	91.60	272.50	45.00	6527	7319.96	1233.20 S	7228.68 W		7333.11	260.32	1.89	-1.33	1.33
163	13076	89.50	273.10	51.00	6527	7370.32	1230.71 S	7279.61 W		7382.91	260.40	4.28	-4.12	1.18
164	13121	88.00	272.90	45.00	6528	7414.73	1228.35 S	7324.54 W		7426.82	260.48	3.36	-3.33	-0.44
165	13171	88.00	272.90	50.00	6529	7464.06	1225.82 S	7374.44 W		7475.63	260.56	0.00	0.00	0.00
166	13266	86.80	272.00	95.00	6534	7557.87	1221.77 S	7469.25 W		7568.52	260.71	1.58	-1.26	-0.95
167	13298	86.60	271.70	32.00	6536	7589.50	1220.73 S	7501.18 W		7599.87	260.76	1.13	-0.63	-0.94
168	13330	86.60	271.60	32.00	6538	7621.14	1219.81 S	7533.11 W		7631.24	260.80	0.31	0.00	-0.31
169	13362	86.80	272.10	32.00	6539	7652.77	1218.78 S	7565.04 W		7662.59	260.85	1.68	0.63	1.56
170	13456	86.60	271.70	94.00	6545	7745.66	1215.67 S	7658.84 W		7754.72	260.98	0.48	-0.21	-0.43
171	13551	88.30	271.20	95.00	6549	7839.71	1213.27 S	7753.71 W		7848.06	261.11	1.87	1.79	-0.53



Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vert Depth (ft)	Vertical Section (ft)	Coordinates			Closure		Dogleg Severity (°/100')	Build Rate (°/100')	Walk Rate (°/100')
							N/S (ft)	E/W (ft)		Distance (ft)	Direction Azimuth			
172	13645	89.00	270.90	94.00	6551	7932.92	1211.55 S	7847.67 W		7940.64	261.22	0.81	0.74	-0.32
173	13739	89.40	270.40	94.00	6553	8026.23	1210.48 S	7941.65 W		8033.37	261.33	0.68	0.43	-0.53
174	13834	89.90	270.50	95.00	6553	8120.58	1209.74 S	8036.65 W		8127.18	261.44	0.54	0.53	0.11
175	13928	89.40	270.80	94.00	6554	8213.90	1208.67 S	8130.64 W		8219.98	261.54	0.62	-0.53	0.32
176	14022	88.60	271.00	94.00	6555	8307.15	1207.19 S	8224.61 W		8312.73	261.65	0.88	-0.85	0.21
177	14117	87.90	270.70	95.00	6558	8401.38	1205.79 S	8319.55 W		8406.48	261.75	0.80	-0.74	-0.32
178	14211	87.40	270.60	94.00	6562	8494.62	1204.72 S	8413.47 W		8499.28	261.85	0.54	-0.53	-0.11
179	14306	87.60	270.60	95.00	6566	8588.85	1203.73 S	8508.37 W		8593.10	261.95	0.21	0.21	0.00
180	14337	86.40	270.00	31.00	6568	8619.60	1203.56 S	8539.33 W		8623.73	261.98	4.33	-3.87	-1.94
181	14400	86.30	270.40	63.00	6572	8682.08	1203.34 S	8602.20 W		8685.96	262.04	0.65	-0.16	0.63
182	14423	87.10	270.80	23.00	6573	8704.88	1203.10 S	8625.16 W		8708.67	262.06	3.89	3.48	1.74
183	14494	87.70	271.50	71.00	6576	8775.21	1201.68 S	8696.07 W		8778.71	262.13	1.30	0.85	0.99
184	14508	87.80	271.60	14.00	6577	8789.07	1201.30 S	8710.06 W		8792.51	262.15	1.01	0.71	0.71
185	14589	89.20	271.40	81.00	6579	8869.30	1199.18 S	8791.00 W		8872.41	262.23	1.75	1.73	-0.25
186	14683	90.30	271.70	94.00	6579	8962.43	1196.64 S	8884.96 W		8965.18	262.33	1.21	1.17	0.32
187	14778	91.10	271.70	95.00	6578	9056.51	1193.82 S	8979.91 W		9058.92	262.43	0.84	0.84	0.00
188	14872	89.60	271.40	94.00	6578	9149.63	1191.28 S	9073.88 W		9151.74	262.52	1.63	-1.60	-0.32
189	14967	89.40	271.50	95.00	6579	9243.77	1188.88 S	9168.84 W		9245.60	262.61	0.24	-0.21	0.11
190	15062	90.30	272.20	95.00	6579	9337.82	1185.81 S	9263.79 W		9339.38	262.71	1.20	0.95	0.74
191	15157	90.80	272.40	95.00	6578	9431.76	1182.00 S	9358.71 W		9433.06	262.80	0.57	0.53	0.21
192	15252	90.50	271.10	95.00	6577	9525.83	1179.10 S	9453.66 W		9526.90	262.89	1.40	-0.32	-1.37
193	15347	91.00	271.00	95.00	6576	9620.05	1177.35 S	9548.63 W		9620.94	262.97	0.54	0.53	-0.11
194	15410	90.20	270.70	63.00	6575	9682.57	1176.42 S	9611.62 W		9683.35	263.02	1.36	-1.27	-0.48
195	15441	90.90	270.90	31.00	6575	9713.33	1175.99 S	9642.62 W		9714.06	263.05	2.35	2.26	0.65
196	15504	90.20	270.90	63.00	6574	9775.84	1175.00 S	9705.60 W		9776.47	263.10	1.11	-1.11	0.00
197	15536	89.20	269.50	32.00	6574	9807.63	1174.89 S	9737.60 W		9808.22	263.12	5.38	-3.13	-4.37
198	15632	88.60	269.30	96.00	6576	9903.15	1175.89 S	9833.58 W		9903.64	263.18	0.66	-0.63	-0.21
199	15727	90.20	269.50	95.00	6577	9997.68	1176.89 S	9928.57 W		9998.07	263.24	1.70	1.68	0.21
200	15759	91.80	270.00	32.00	6576	10029.50	1177.03 S	9960.56 W		10029.86	263.26	5.24	5.00	1.56
201	15822	91.60	269.90	63.00	6575	10092.10	1177.08 S	10023.53 W		10092.41	263.30	0.35	-0.32	-0.16
202	15854	88.80	270.00	32.00	6574	10123.91	1177.11 S	10055.53 W		10124.19	263.32	8.76	-8.75	0.31
203	15917	88.70	270.00	63.00	6576	10186.52	1177.11 S	10118.51 W		10186.75	263.36	0.16	-0.16	0.00
204	16011	89.50	270.70	94.00	6577	10279.88	1176.53 S	10212.50 W		10280.05	263.43	1.13	0.85	0.74
205	16105	89.00	270.70	94.00	6579	10373.19	1175.39 S	10306.48 W		10373.29	263.49	0.53	-0.53	0.00
206	16118	88.90	270.40	13.00	6579	10386.09	1175.26 S	10319.48 W		10386.19	263.50	2.43	-0.77	-2.31
207	16200	88.20	271.80	82.00	6581	10467.39	1173.69 S	10401.44 W		10467.45	263.56	1.91	-0.85	1.71
208	16295	88.60	271.90	95.00	6584	10561.40	1170.62 S	10496.35 W		10561.43	263.64	0.43	0.42	0.11
209	16390	89.60	271.70	95.00	6585	10655.46	1167.64 S	10591.29 W		10655.46	263.71	1.07	1.05	-0.21
210	16403	89.30	271.20	13.00	6585	10668.34	1167.31 S	10604.28 W		10668.34	263.72	4.49	-2.31	-3.85
P-TD	16470	89.00	271.00	67.00	6586	10734.78	1166.02 S	10671.27 W		10734.78	263.76	0.54	-0.45	-0.30