

VGWU #98 HORIZONTAL

Denver Region Estimate: 695016

Sur 237/S + 532/E P-35-17

3D-D25-32268

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SURVEY REPORT
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Lateral: 0

Proposed Direction: 161.5

Dog Leg Severity per: 100 feet

Measured Depth	Inclination	Azimuth	True Vertical Depth	North/South Coordinate	East/West Coordinate	Vertical Section	Dog Leg Severity	Survey Tool
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	GYRO
100	0.40	185.32	100.00	-0.35	-0.03	0.32	0.40	
200	0.27	258.76	200.00	-0.74	-0.30	0.61	0.41	
300	0.34	266.94	300.00	-0.80	-0.82	0.50	0.08	
400	0.15	259.87	400.00	-0.84	-1.25	0.40	0.19	
500	0.26	205.21	499.99	-1.07	-1.47	0.55	0.21	
600	0.21	221.57	599.99	-1.41	-1.69	0.80	0.08	
700	0.26	93.39	699.99	-1.56	-1.59	0.98	0.42	
800	0.32	59.52	799.99	-1.43	-1.12	1.01	0.18	
900	0.19	91.24	899.99	-1.30	-0.71	1.00	0.19	
1000	0.31	102.25	999.99	-1.36	-0.28	1.20	0.13	
1100	0.41	126.98	1099.99	-1.63	0.27	1.63	0.18	
1200	0.48	138.32	1199.99	-2.16	0.83	2.31	0.11	
1300	0.50	128.50	1299.98	-2.74	1.45	3.06	0.09	
1400	0.49	127.84	1399.98	-3.28	2.13	3.78	0.01	
1500	0.42	128.28	1499.98	-3.77	2.76	4.45	0.07	
1600	0.48	130.52	1599.97	-4.27	3.36	5.11	0.06	
1700	0.42	153.51	1699.97	-4.87	3.84	5.83	0.19	
1800	0.37	148.86	1799.97	-5.47	4.17	6.51	0.06	
1900	0.58	120.31	1899.96	-6.00	4.78	7.21	0.31	
2000	0.79	116.95	1999.96	-6.57	5.83	8.08	0.21	
2100	0.81	113.51	2099.95	-7.16	7.09	9.04	0.05	
2200	0.98	113.18	2199.93	-7.78	8.53	10.09	0.17	
2300	1.03	102.36	2299.92	-8.31	10.19	11.12	0.20	
2400	1.07	93.14	2399.90	-8.56	12.00	11.92	0.17	
2500	1.37	78.93	2499.88	-8.38	14.11	12.42	0.42	
2600	1.45	80.10	2599.85	-7.93	16.53	12.76	0.09	
2700	1.68	75.89	2699.81	-7.35	19.19	13.07	0.26	
2800	1.77	77.55	2799.77	-6.66	22.12	13.34	0.10	
2900	1.85	74.63	2899.72	-5.90	25.19	13.59	0.12	
3000	1.88	77.33	2999.66	-5.12	28.34	13.85	0.09	
3100	1.95	75.59	3099.61	-4.33	31.59	14.13	0.09	
3200	1.95	75.05	3199.55	-3.47	34.88	14.36	0.02	
3300	1.77	75.22	3299.50	-2.64	38.02	14.57	0.18	
3400	1.74	72.27	3399.45	-1.78	40.96	14.69	0.10	
3500	1.58	65.42	3499.41	-0.75	43.66	14.56	0.25	
3600	1.69	59.33	3599.37	0.58	46.18	14.10	0.21	
3700	1.69	56.37	3699.32	2.15	48.68	13.41	0.09	
3800	1.63	54.88	3799.28	3.78	51.07	12.62	0.07	
3900	1.69	58.98	3899.24	5.36	53.50	11.89	0.13	
4000	1.80	61.27	3999.19	6.88	56.14	11.29	0.13	
4100	1.88	59.94	4099.14	8.45	58.94	10.68	0.09	
4200	1.81	55.58	4199.09	10.17	61.66	9.92	0.16	
4300	1.75	56.43	4299.04	11.90	64.23	9.09	0.07	
4400	1.94	61.94	4398.99	13.55	67.00	8.41	0.26	
4500	1.89	60.89	4498.93	15.14	69.93	7.83	0.06	
4600	1.85	70.76	4598.88	16.48	72.90	7.50	0.32	
4700	2.03	63.17	4698.82	17.81	76.00	7.23	0.31	
4800	1.98	66.97	4798.76	19.28	79.17	6.83	0.14	
4900	1.91	64.24	4898.71	20.68	82.26	6.49	0.12	
5000	1.73	69.80	4998.66	21.93	85.18	6.23	0.25	
5100	1.68	68.27	5098.61	22.99	87.96	6.10	0.07	



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5200	1.55	69.26	5198.57	24.02	90.59	5.97	0.13
5300	1.61	73.34	5298.53	24.90	93.20	5.96	0.13
5400	1.49	68.54	5398.50	25.78	95.75	5.94	0.18
5500	1.59	64.08	5498.46	26.86	98.21	5.69	0.16
5600	1.60	70.59	5598.42	27.93	100.77	5.49	0.18
5700	1.34	75.04	5698.39	28.69	103.22	5.54	0.28
5800	1.16	77.85	5798.37	29.21	105.34	5.73	0.19GYRO
5829	1.20	77.60	5827.36	29.34	105.92	5.79	0.14
5883	25.20	144.80	5879.60	19.92	113.22	17.04	45.85GYRO
5893	29.80	144.80	5888.47	16.14	115.88	21.46	46.00MWD
5903	34.60	144.40	5896.93	11.80	118.96	26.56	48.05
5913	39.40	144.40	5904.91	6.91	122.47	32.31	48.00
5923	44.10	143.70	5912.37	1.52	126.38	38.66	47.23
5933	49.00	143.00	5919.24	-4.30	130.71	45.55	49.26
5943	53.70	142.00	5925.49	-10.49	135.46	52.93	47.64
5953	58.30	142.00	5931.08	-17.02	140.57	60.75	46.00
5963	62.90	142.00	5935.99	-23.89	145.93	68.96	46.00MWD
5988	74.50	140.60	5945.05	-42.03	160.48	90.77	46.69
5998	78.50	140.60	5947.39	-49.54	166.65	99.86	40.00
6018	82.90	141.30	5950.62	-64.86	179.08	118.33	22.27
6028	84.80	141.60	5951.69	-72.64	185.27	127.67	19.23
6048	88.10	142.70	5952.93	-88.40	197.52	146.50	17.39
6072	89.20	143.00	5953.49	-107.52	212.01	169.24	4.75MWD
6105	89.10	145.10	5953.98	-134.23	231.38	200.71	6.37
6135	88.50	148.00	5954.61	-159.25	247.91	229.69	9.87
6136	91.60	143.40	5954.90	-159.25	247.91	229.69	9.87
6167	88.30	151.50	5955.50	-186.88	264.02	261.00	10.95
6168	91.80	144.40	5954.00	-186.88	264.02	261.00	10.95
6198	88.40	156.00	5956.40	-214.67	277.72	291.70	14.51
6199	88.40	149.40	5953.90	-214.67	277.72	291.70	14.51
6230	88.40	159.60	5957.29	-244.28	289.81	323.61	11.25MWD
6231	89.90	149.00	5954.40	-244.28	289.81	323.61	11.25MWD
6261	90.00	162.70	5957.72	-273.61	299.82	354.60	11.25
6293	90.50	167.60	5957.58	-304.53	308.02	386.53	15.39MWD
6294	89.20	148.30	5954.10	-304.53	308.02	386.53	15.39MWD
6325	90.70	172.60	5957.25	-336.04	313.52	418.16	15.64
6334	90.20	174.00	5957.18	-344.98	314.57	426.97	16.52
6357	89.90	149.70	5954.60	-344.98	314.57	426.97	16.52
6371	90.20	181.00	5957.05	-381.92	316.18	462.51	18.92MWD
6387	90.10	150.80	5954.60	-381.92	316.18	462.51	18.92MWD

Lateral: 1

Proposed Direction: 141.92

Dog Leg Severity per: 100 feet

Measured Depth	Inclination	Azimuth	True Vertical Depth	North/South Coordinate	East/West Coordinate	Vertical Section	Dog Leg Severity	Survey Tool
6028	84.80	141.60	5951.70	-72.70	185.20	171.45	19.20MWD	
6040	86.80	142.30	5952.58	-82.12	192.58	183.42	17.65	
6052	86.60	138.80	5953.27	-91.37	200.19	195.39	29.17	
6062	87.00	138.10	5953.83	-98.85	206.81	205.36	8.05	
6072	87.50	137.40	5954.31	-106.24	213.53	215.32	8.60	
6105	89.50	138.50	5955.17	-130.73	235.62	248.23	6.92	
6136	91.60	143.40	5954.87	-154.80	255.14	279.21	17.20	
6168	91.80	144.40	5953.92	-180.64	273.99	311.18	3.19	
6199	88.40	149.40	5953.87	-206.60	290.91	342.05	19.50	
6231	89.90	149.00	5954.35	-234.08	307.29	373.78	4.85MWD	
6261	91.00	148.70	5954.11	-259.76	322.81	403.56	3.80MWD	
6294	89.20	148.30	5954.05	-287.89	340.05	436.34	5.59	



6325	89.60	149.00	5954.38	-314.36	356.18	467.13	2.60MWD
6357	89.90	149.70	5954.52	-341.89	372.49	498.86	2.38
6387	90.10	150.80	5954.52	-367.94	387.38	528.54	3.73
6411	90.00	151.10	5954.50	-388.92	399.03	552.24	1.32
6450	89.00	149.70	5954.84	-422.83	418.29	590.81	4.41MWD
6483	89.60	150.10	5955.24	-451.37	434.84	623.49	2.19
6515	86.20	149.70	5956.41	-479.04	450.88	655.16	10.70
6545	84.80	148.70	5958.76	-504.73	466.19	684.82	5.73MWD
6577	84.50	147.60	5961.75	-531.79	483.00	716.49	3.55
6608	86.10	147.30	5964.29	-557.83	499.62	747.24	5.25
6640	87.10	146.90	5966.19	-584.65	516.98	779.06	3.36
6671	86.90	145.10	5967.81	-610.31	534.29	809.94	5.83
6710	86.90	145.10	5969.92	-642.25	556.57	848.82	0.00MWD

Lateral: 2 Proposed Direction: 360 Dog Leg Severity per: 100 feet

Measured Depth	Inclination	Azimuth	True Vertical Depth	North/South Coordinate	East/West Coordinate	Vertical Section	Dog Leg Severity	Survey Tool
0	0.00	0.00	1542.46	-3316.29	606.06	-3316.29	-1.30	
5809	1.20	77.90	5807.40	29.20	105.50	29.20	0.00	
5887	30.40	2.40	5881.75	49.56	107.16	49.56	38.62	
5917	42.70	3.10	5905.80	67.37	108.03	67.37	41.02	
5949	55.40	3.80	5926.73	91.44	109.50	91.45	39.72	
5980	67.70	2.80	5941.47	118.60	111.05	118.60	39.78	
5990	71.80	2.80	5944.93	127.97	111.51	127.97	41.00	
6000	75.70	2.80	5947.73	137.56	111.98	137.56	39.00	
6009	89.20	2.40	5948.91	146.45	112.38	146.45	150.06	
6017	82.50	2.80	5950.96	154.22	112.79	154.22	40.00	
6042	89.20	2.40	5949.37	179.42	113.76	179.42	0.00	
6073	88.50	357.10	5950.00	210.40	113.63	210.40	17.24	
6104	90.30	352.90	5950.32	241.27	110.93	241.27	14.74	
6136	92.00	351.50	5949.68	272.97	106.59	272.97	6.88	
6168	91.40	351.50	5948.73	304.60	101.86	304.60	1.88	
6199	90.60	351.50	5948.19	335.26	97.28	335.26	2.58	
6231	91.30	350.50	5947.66	366.86	92.27	366.86	3.81	
6262	92.70	351.20	5946.57	397.45	87.35	397.45	5.05	
6293	93.40	350.80	5944.93	428.02	82.50	428.02	2.60	
6325	93.90	350.10	5942.89	459.51	77.21	459.51	2.68	
6357	94.00	349.40	5940.68	490.93	71.53	490.93	2.20	
6388	91.40	349.40	5939.22	521.36	65.83	521.36	8.39	
6420	91.30	349.40	5938.47	552.81	59.94	552.81	0.31	
6452	91.60	349.00	5937.66	584.23	53.95	584.23	1.56	
6484	89.50	349.80	5937.35	615.68	48.06	615.68	7.02	
6515	90.40	349.70	5937.38	646.19	42.55	646.19	2.92	
6546	91.40	349.80	5936.89	676.69	37.03	676.69	3.24	
6578	90.70	353.30	5936.31	708.33	32.33	708.33	11.15	
6609	92.20	353.30	5935.52	739.11	28.72	739.11	4.84	
6641	88.60	351.90	5935.30	770.83	24.60	770.83	12.07	
6673	85.60	351.90	5936.92	802.47	20.09	802.47	9.38	
6704	86.30	351.90	5939.11	833.08	15.74	833.08	2.26	
6736	87.10	352.20	5940.95	864.72	11.32	864.72	2.67	
6768	87.70	351.20	5942.40	896.35	6.70	896.35	3.64	
6799	88.40	351.90	5943.46	927.00	2.15	927.00	3.19	
6831	88.90	351.90	5944.21	958.67	-2.36	958.67	1.56	