

RECEIVED

FEB 04 2011

COGCC GTI

GYRO TECHNOLOGIES INC

VES

VAUGHN ENERGY SERVICES

Company: S&G Intrest
Lease/Well: Pasco Spadofora/#2
Location: Gunnison
Rig Name: precision
State/County: Colorado/Gunnison
Latitude: 39.07

GRID North is 1.21 Degrees West of True North
VS-Azi: 0.00 Degrees

FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : KB = 22 FEET

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: Pasco Spadofora #2.ut

Minimum Curvature Method

Report Date/Time: 7/19/2010 / 15:47

Vaughn Energy Services
Rifle, Colorado
970-456-5936
Garry Fowler
Pasco Spadofora #2

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	***
100.00	0.13	116.34	100.00	-0.05	0.10	-0.05	0.12	116.34	0.13
200.00	0.16	199.61	200.00	-0.23	0.16	-0.23	0.28	145.68	0.20
300.00	0.15	202.52	300.00	-0.49	0.06	-0.49	0.49	172.66	0.01
400.00	0.19	198.81	400.00	-0.76	-0.04	-0.76	0.76	183.02	0.04
500.00	0.08	202.49	500.00	-0.96	-0.12	-0.98	0.99	187.00	0.10
600.00	0.04	140.63	600.00	-1.08	-0.12	-1.08	1.09	186.56	0.07
700.00	0.11	171.49	700.00	-1.20	-0.09	-1.20	1.21	184.10	0.07
800.00	0.08	346.61	800.00	-1.23	-0.09	-1.23	1.23	184.11	0.18
900.00	0.22	303.67	900.00	-1.05	-0.27	-1.05	1.09	194.13	0.17
1000.00	0.34	294.75	1000.00	-0.82	-0.70	-0.82	1.08	220.24	0.13
1100.00	0.21	314.30	1100.00	-0.57	-1.10	-0.57	1.24	242.69	0.16
1200.00	0.12	313.53	1200.00	-0.36	-1.31	-0.36	1.36	254.49	0.09
1300.00	0.15	233.11	1300.00	-0.37	-1.50	-0.37	1.54	256.05	0.18
1400.00	0.21	206.36	1399.99	-0.61	-1.68	-0.61	1.79	249.95	0.10
1500.00	0.18	166.82	1499.99	-0.93	-1.73	-0.93	1.96	241.73	0.13
1600.00	0.20	156.47	1599.99	-1.25	-1.62	-1.25	2.04	232.46	0.04
1700.00	0.36	152.93	1699.99	-1.69	-1.41	-1.69	2.20	219.86	0.15
1800.00	0.39	146.09	1799.99	-2.25	-1.07	-2.25	2.49	205.54	0.06
1900.00	0.47	136.80	1899.99	-2.83	-0.60	-2.83	2.89	192.06	0.10
2000.00	0.51	151.45	1999.98	-3.52	-0.11	-3.52	3.52	181.86	0.13
2100.00	0.45	155.19	2099.98	-4.26	0.26	-4.26	4.27	176.48	0.07
2200.00	0.43	143.34	2199.98	-4.92	0.65	-4.92	4.96	172.45	0.09
2300.00	0.44	133.85	2299.97	-5.49	1.15	-5.49	5.61	168.13	0.07
2400.00	0.35	145.56	2399.97	-6.00	1.60	-6.00	6.21	165.08	0.12
2500.00	0.49	146.25	2499.97	-6.61	2.01	-6.61	6.90	163.10	0.14
2600.00	0.31	153.37	2599.97	-7.21	2.37	-7.21	7.58	161.81	0.18
2700.00	0.32	93.77	2699.97	-7.47	2.77	-7.47	7.97	159.66	0.32
2800.00	0.36	92.35	2799.96	-7.50	3.36	-7.50	8.22	155.89	0.04
2900.00	0.34	95.43	2899.96	-7.54	3.97	-7.54	8.52	152.25	0.02
3000.00	0.32	111.67	2999.96	-7.67	4.53	-7.67	8.91	149.46	0.10
3100.00	0.38	160.80	3099.96	-8.09	4.90	-8.09	9.46	148.80	0.30

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Cal Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
3200.00	0.62	167.10	3199.95	-8.93	5.13	-8.93	10.29	150.13	0.25
3300.00	0.61	154.72	3299.95	-9.93	5.47	-9.93	11.34	151.14	0.13
3400.00	0.61	155.70	3399.94	-10.90	5.92	-10.90	12.40	151.49	0.01
3500.00	0.46	143.24	3499.94	-11.70	6.38	-11.70	13.33	151.40	0.18
3600.00	0.53	142.04	3599.94	-12.39	6.91	-12.39	14.19	150.87	0.06
3700.00	0.63	153.96	3699.93	-13.25	7.43	-13.25	15.19	150.71	0.15
3800.00	0.61	167.66	3799.92	-14.26	7.78	-14.26	16.25	151.37	0.15
3900.00	0.72	176.11	3899.92	-15.41	7.94	-15.41	17.34	152.74	0.15
4000.00	0.74	182.14	3999.91	-16.68	7.96	-16.68	18.48	154.49	0.08
4100.00	0.83	167.29	4099.90	-18.03	8.10	-18.03	19.77	155.82	0.22
4200.00	0.99	162.14	4199.89	-19.57	8.52	-19.57	21.34	156.47	0.18
4300.00	1.50	162.70	4299.86	-21.65	9.18	-21.65	23.51	157.02	0.51
4400.00	1.85	152.91	4399.82	-24.34	10.30	-24.34	26.43	157.05	0.45
4500.00	2.02	165.10	4499.76	-27.47	11.49	-27.47	29.78	157.30	0.44
4600.00	1.85	154.54	4599.71	-30.63	12.64	-30.63	33.14	157.58	0.39
4700.00	1.67	161.95	4699.66	-33.48	13.78	-33.48	36.20	157.62	0.29
4800.00	1.32	165.02	4799.63	-35.97	14.53	-35.97	38.79	158.00	0.36
4900.00	1.25	165.83	4899.60	-38.13	15.09	-38.13	41.01	158.40	0.07
5000.00	1.41	166.50	4999.57	-40.39	15.65	-40.39	43.31	158.82	0.17
5100.00	1.45	164.76	5099.54	-42.81	16.27	-42.81	45.80	159.19	0.06
5200.00	1.22	170.18	5199.52	-45.09	16.79	-45.09	48.11	159.58	0.26
5300.00	1.53	181.17	5299.49	-47.47	16.94	-47.47	50.40	160.36	0.40
5400.00	1.35	175.11	5399.46	-49.98	17.01	-49.98	52.80	161.20	0.23
5500.00	1.39	176.27	5499.43	-52.37	17.19	-52.37	55.12	161.82	0.05
5600.00	1.33	170.86	5599.40	-54.72	17.46	-54.72	57.44	162.31	0.14
5700.00	1.21	177.57	5699.37	-56.92	17.69	-56.92	59.61	162.74	0.19
5800.00	1.33	171.06	5799.35	-59.12	17.91	-59.12	61.77	163.15	0.19
5900.00	1.52	179.72	5899.32	-61.58	18.10	-61.58	64.19	163.62	0.29
6000.00	1.53	174.26	5999.28	-64.23	18.24	-64.23	66.77	164.15	0.15
6100.00	1.58	163.91	6099.25	-66.88	18.75	-66.88	69.46	164.34	0.28
6200.00	1.50	167.11	6199.21	-69.48	19.42	-69.48	72.14	164.38	0.11
6300.00	1.75	172.33	6299.17	-72.27	19.92	-72.27	74.96	164.59	0.29
6400.00	2.11	185.78	6399.11	-75.61	19.94	-75.61	78.20	165.23	0.58
6500.00	2.25	208.64	6499.04	-79.16	18.81	-79.16	81.37	166.63	0.87
6600.00	2.85	217.35	6598.95	-82.86	16.36	-82.86	84.46	168.83	0.72
6700.00	2.69	210.78	6698.83	-86.85	13.65	-86.85	87.92	171.07	0.35
6800.00	1.79	202.73	6798.75	-90.32	11.85	-90.32	91.09	172.53	0.95
6900.00	1.53	170.92	6898.71	-93.08	11.45	-93.08	93.78	172.99	0.94
7000.00	1.33	163.97	6998.68	-95.51	11.98	-95.51	96.26	172.85	0.27
7100.00	1.69	152.68	7098.65	-97.93	12.98	-97.93	98.79	172.45	0.46
7200.00	1.87	153.23	7198.60	-100.70	14.39	-100.70	101.72	171.87	0.19
7300.00	2.03	151.82	7298.54	-103.72	15.96	-103.72	104.94	171.25	0.17
7400.00	2.08	130.63	7398.48	-106.47	18.18	-106.47	108.01	170.31	0.76
7500.00	2.01	123.31	7498.41	-108.61	21.02	-108.61	110.62	169.05	0.27
7600.00	1.96	140.06	7598.35	-110.88	23.58	-110.88	113.36	167.99	0.58
7700.00	1.98	138.99	7698.29	-113.50	25.81	-113.50	116.39	167.19	0.04
7800.00	2.09	134.29	7798.23	-116.08	28.25	-116.08	119.46	166.32	0.20
7900.00	2.05	132.73	7898.17	-118.57	30.88	-118.57	122.52	165.40	0.07
8000.00	2.09	133.56	7998.10	-121.04	33.51	-121.04	125.59	164.52	0.05
8100.00	2.11	123.09	8098.03	-123.30	36.38	-123.30	128.55	163.56	0.38
8200.00	2.17	121.24	8197.96	-125.29	39.54	-125.29	131.38	162.48	0.09
8300.00	2.21	121.93	8297.89	-127.29	42.80	-127.29	134.29	161.42	0.05
8400.00	2.41	108.61	8397.81	-128.98	46.43	-128.98	137.08	160.20	0.57

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
8500.00	2.86	102.23	8497.70	-130.18	50.85	-130.18	139.76	158.66	0.53
8600.00	2.80	88.61	8597.58	-130.65	55.73	-130.65	142.04	156.90	0.67
8700.00	2.63	89.37	8697.47	-130.56	60.47	-130.56	143.89	155.15	0.18
8730.00	2.56	88.13	8727.44	-130.53	61.83	-130.53	144.44	154.66	0.30

HORIZONTAL DISPLACEMENT IS
144.44 FEET AT 154.66 DEGREES

S&G Interests
 Pasco Spadofora #2
 Gyro Survey
 0-8730

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD
0	0	0	0	0	0	0 ****	0	0
100	0.13	116.34	-0.05	0.1	100	0.13	-0.05	0.12
200	0.16	199.61	-0.23	0.16	200	0.2	-0.23	0.28
300	0.15	202.52	-0.49	0.06	300	0.01	-0.49	0.49
400	0.19	198.81	-0.76	-0.04	400	0.04	-0.76	0.76
500	0.08	202.49	-0.98	-0.12	500	0.1	-0.98	0.99
600	0.04	140.63	-1.08	-0.12	600	0.07	-1.08	1.09
700	0.11	171.49	-1.2	-0.09	700	0.07	-1.2	1.21
800	0.08	346.61	-1.23	-0.09	800	0.18	-1.23	1.23
900	0.22	303.67	-1.05	-0.27	900	0.17	-1.05	1.09
1000	0.34	294.75	-0.82	-0.7	1000	0.13	-0.82	1.08
1100	0.21	314.3	-0.57	-1.1	1100	0.16	-0.57	1.24
1200	0.12	313.53	-0.36	-1.31	1200	0.09	-0.36	1.36
1300	0.15	233.11	-0.37	-1.5	1300	0.18	-0.37	1.54
1400	0.21	206.36	-0.61	-1.68	1399.99	0.1	-0.61	1.79
1500	0.18	166.82	-0.93	-1.73	1499.99	0.13	-0.93	1.96
1600	0.2	156.47	-1.25	-1.62	1599.99	0.04	-1.25	2.04
1700	0.36	152.93	-1.69	-1.41	1699.99	0.15	-1.69	2.2
1800	0.39	146.09	-2.25	-1.07	1799.99	0.06	-2.25	2.49
1900	0.47	136.8	-2.83	-0.6	1899.99	0.1	-2.83	2.89
2000	0.51	151.45	-3.52	-0.11	1999.98	0.13	-3.52	3.52
2100	0.45	155.19	-4.26	0.26	2099.98	0.07	-4.26	4.27
2200	0.43	143.34	-4.92	0.65	2199.98	0.09	-4.92	4.96
2300	0.44	133.85	-5.49	1.15	2299.97	0.07	-5.49	5.61
2400	0.35	145.56	-6	1.6	2399.97	0.12	-6	6.21
2500	0.49	146.25	-6.61	2.01	2499.97	0.14	-6.61	6.9
2600	0.31	153.37	-7.21	2.37	2599.97	0.18	-7.21	7.58
2700	0.32	93.77	-7.47	2.77	2699.97	0.32	-7.47	7.97
2800	0.36	92.35	-7.5	3.36	2799.96	0.04	-7.5	8.22
2900	0.34	95.43	-7.54	3.97	2899.96	0.02	-7.54	8.52
3000	0.32	111.67	-7.67	4.53	2999.96	0.1	-7.67	8.91
3100	0.38	160.8	-8.09	4.9	3099.96	0.3	-8.09	9.46
3200	0.62	167.1	-8.93	5.13	3199.95	0.25	-8.93	10.29
3300	0.61	154.72	-9.93	5.47	3299.95	0.13	-9.93	11.34
3400	0.61	155.7	-10.9	5.92	3399.94	0.01	-10.9	12.4
3500	0.46	143.24	-11.7	6.38	3499.94	0.18	-11.7	13.33
3600	0.53	142.04	-12.39	6.91	3599.94	0.06	-12.39	14.19
3700	0.63	153.96	-13.25	7.43	3699.93	0.15	-13.25	15.19
3800	0.61	167.66	-14.26	7.78	3799.92	0.15	-14.26	16.25
3900	0.72	176.11	-15.41	7.94	3899.92	0.15	-15.41	17.34
4000	0.74	182.14	-16.68	7.96	3999.91	0.08	-16.68	18.48
4100	0.83	167.29	-18.03	8.1	4099.9	0.22	-18.03	19.77
4200	0.99	162.14	-19.57	8.52	4199.89	0.18	-19.57	21.34
4300	1.5	162.7	-21.65	9.18	4299.86	0.51	-21.65	23.51
4400	1.85	152.91	-24.34	10.3	4399.82	0.45	-24.34	26.43

4500	2.02	165.1	-27.47	11.49	4499.76	0.44	-27.47	29.78
4600	1.85	154.54	-30.63	12.64	4599.71	0.39	-30.63	33.14
4700	1.67	161.95	-33.48	13.78	4699.66	0.29	-33.48	36.2
4800	1.32	165.02	-35.97	14.53	4799.63	0.36	-35.97	38.79
4900	1.25	165.83	-38.13	15.09	4899.6	0.07	-38.13	41.01
5000	1.41	166.5	-40.39	15.65	4999.57	0.17	-40.39	43.31
5100	1.45	164.76	-42.81	16.27	5099.54	0.06	-42.81	45.8
5200	1.22	170.18	-45.09	16.79	5199.52	0.26	-45.09	48.11
5300	1.53	181.17	-47.47	16.94	5299.49	0.4	-47.47	50.4
5400	1.35	175.11	-49.98	17.01	5399.46	0.23	-49.98	52.8
5500	1.39	176.27	-52.37	17.19	5499.43	0.05	-52.37	55.12
5600	1.33	170.86	-54.72	17.46	5599.4	0.14	-54.72	57.44
5700	1.21	177.57	-56.92	17.69	5699.37	0.19	-56.92	59.61
5800	1.33	171.06	-59.12	17.91	5799.35	0.19	-59.12	61.77
5900	1.52	179.72	-61.58	18.1	5899.32	0.29	-61.58	64.19
6000	1.53	174.26	-64.23	18.24	5999.28	0.15	-64.23	66.77
6100	1.58	163.91	-66.88	18.75	6099.25	0.28	-66.88	69.46
6200	1.5	167.11	-69.48	19.42	6199.21	0.11	-69.48	72.14
6300	1.75	172.33	-72.27	19.92	6299.17	0.29	-72.27	74.96
6400	2.11	185.78	-75.61	19.94	6399.11	0.58	-75.61	78.2
6500	2.25	208.64	-79.16	18.81	6499.04	0.87	-79.16	81.37
6600	2.85	217.35	-82.86	16.36	6598.95	0.72	-82.86	84.46
6700	2.69	210.78	-86.85	13.65	6698.83	0.35	-86.85	87.92
6800	1.79	202.73	-90.32	11.85	6798.75	0.95	-90.32	91.09
6900	1.53	170.92	-93.08	11.45	6898.71	0.94	-93.08	93.78
7000	1.33	163.97	-95.51	11.98	6998.68	0.27	-95.51	96.26
7100	1.69	152.68	-97.93	12.98	7098.65	0.46	-97.93	98.79
7200	1.87	153.23	-100.7	14.39	7198.6	0.19	-100.7	101.72
7300	2.03	151.82	-103.72	15.96	7298.54	0.17	-103.72	104.94
7400	2.08	130.63	-106.47	18.18	7398.48	0.76	-106.47	108.01
7500	2.01	123.31	-108.61	21.02	7498.41	0.27	-108.61	110.62
7600	1.96	140.06	-110.88	23.58	7598.35	0.58	-110.88	113.36
7700	1.98	138.99	-113.5	25.81	7698.29	0.04	-113.5	116.39
7800	2.09	134.29	-116.08	28.25	7798.23	0.2	-116.08	119.46
7900	2.05	132.73	-118.57	30.88	7898.17	0.07	-118.57	122.52
8000	2.09	133.56	-121.04	33.51	7998.1	0.05	-121.04	125.59
8100	2.11	123.09	-123.3	36.38	8098.03	0.38	-123.3	128.55
8200	2.17	121.24	-125.29	39.54	8197.96	0.09	-125.29	131.38
8300	2.21	121.93	-127.29	42.8	8297.89	0.05	-127.29	134.29
8400	2.41	108.61	-128.98	46.43	8397.81	0.57	-128.98	137.08
8500	2.86	102.23	-130.18	50.85	8497.7	0.53	-130.18	139.76
8600	2.8	88.61	-130.65	55.73	8597.58	0.67	-130.65	142.04
8700	2.63	89.37	-130.56	60.47	8697.47	0.18	-130.56	143.89
8730	2.56	88.13	-130.53	61.83	8727.44	0.3	-130.53	144.44

Thank You
Garry Fowler
970-456-5936
VES

Cbrg

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