



Company: Concho
Lease/Well: Dos XX 27 Fed Com/#1H

Rig Name: Silver Oak #7
State/County: New Mexico/Eddy
Latitude: -32.19, Longitude: -103.66
GRID North is 0.36 Degrees West of True North
VS-Azi: 0.00 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB=19 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: dos xx 27 fed com #1h.ut
Minimum Curvature Method
Report Date/Time: 1/16/2013 / 14:00

Vaughn Energy Services
Midland, Texas
432-563-5444
Logan Henry

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	0.43	190.31	100.00	-0.37	-0.07	-0.37	0.37	190.31	0.43
200.00	0.74	153.99	199.99	-1.32	0.15	-1.32	1.32	173.49	0.47
300.00	0.94	154.63	299.98	-2.64	0.79	-2.64	2.75	163.42	0.20
400.00	1.14	153.28	399.97	-4.27	1.59	-4.27	4.56	159.64	0.20
500.00	1.23	155.86	499.95	-6.14	2.47	-6.14	6.62	158.07	0.11
600.00	1.33	156.43	599.92	-8.19	3.38	-8.19	8.86	157.59	0.09
700.00	1.58	158.05	699.89	-10.53	4.35	-10.53	11.39	157.52	0.25
800.00	1.83	159.68	799.84	-13.30	5.42	-13.30	14.36	157.81	0.25
900.00	1.66	157.16	899.80	-16.13	6.54	-16.13	17.40	157.93	0.18
1000.00	1.50	156.64	999.76	-18.67	7.62	-18.67	20.17	157.79	0.16
1100.00	1.66	168.01	1099.72	-21.29	8.44	-21.29	22.91	158.37	0.35
1200.00	1.82	179.38	1199.68	-24.30	8.76	-24.30	25.83	160.17	0.38
1300.00	1.15	198.93	1299.64	-26.85	8.45	-26.85	28.14	162.52	0.83
1400.00	0.48	218.49	1399.63	-28.13	7.86	-28.13	29.21	164.38	0.72
1500.00	1.09	260.16	1499.62	-28.62	6.66	-28.62	29.39	166.90	0.80
1600.00	1.70	280.84	1599.59	-28.51	4.27	-28.51	28.82	171.49	0.78
1700.00	2.07	307.72	1699.54	-27.12	1.38	-27.12	27.16	177.09	0.95
1800.00	2.44	313.59	1799.46	-24.55	-1.59	-24.55	24.60	183.72	0.44
1900.00	2.27	325.41	1899.38	-21.45	-4.26	-21.45	21.87	191.24	0.52
2000.00	2.09	337.23	1999.31	-18.14	-6.09	-18.14	19.13	198.55	0.48
2100.00	1.88	357.76	2099.25	-14.82	-6.86	-14.82	16.33	204.84	0.74
2200.00	1.68	18.29	2199.20	-11.78	-6.46	-11.78	13.44	208.75	0.67
2300.00	1.85	22.41	2299.15	-8.90	-5.39	-8.90	10.40	211.19	0.21
2400.00	2.02	26.53	2399.10	-5.83	-3.98	-5.83	7.06	214.36	0.22
2500.00	2.28	38.95	2499.03	-2.70	-1.94	-2.70	3.33	215.77	0.53
2600.00	2.54	51.37	2598.94	0.23	1.04	0.23	1.06	77.42	0.58
2700.00	2.24	74.30	2698.85	2.14	4.65	2.14	5.12	65.26	0.99
2800.00	1.95	97.23	2798.79	2.46	8.22	2.46	8.58	73.35	0.88
2900.00	2.03	114.72	2898.73	1.51	11.51	1.51	11.61	82.55	0.61
3000.00	2.10	132.21	2998.66	-0.47	14.47	-0.47	14.48	91.85	0.63
3100.00	2.43	143.26	3098.59	-3.40	17.10	-3.40	17.43	101.24	0.54
3200.00	2.75	154.31	3198.49	-7.26	19.41	-7.26	20.72	110.50	0.59
3300.00	2.08	170.14	3298.40	-11.20	20.76	-11.20	23.59	118.36	0.94
3400.00	1.41	190.98	3398.35	-14.19	20.83	-14.19	25.21	124.27	0.91

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
3500.00	2.19	207.52	3498.30	-17.09	19.72	-17.09	26.10	130.93	0.93
3600.00	2.98	219.06	3598.20	-20.81	17.20	-20.81	26.99	140.43	0.94
3700.00	1.94	221.91	3698.11	-24.08	14.43	-24.08	28.07	149.07	1.05
3800.00	0.90	204.76	3798.08	-26.05	12.97	-26.05	29.10	153.53	1.11
3900.00	0.84	201.27	3898.06	-27.44	12.38	-27.44	30.10	155.71	0.08
4000.00	0.77	207.78	3998.05	-28.72	11.80	-28.72	31.05	157.66	0.11
4100.00	0.65	200.20	4098.05	-29.85	11.29	-29.85	31.92	159.28	0.15
4200.00	0.54	192.62	4198.04	-30.84	10.99	-30.84	32.74	160.39	0.14
4300.00	0.92	177.01	4298.03	-32.10	10.93	-32.10	33.91	161.20	0.43
4400.00	1.30	161.40	4398.01	-33.98	11.33	-33.98	35.82	161.55	0.48
4500.00	1.94	160.73	4497.97	-36.65	12.26	-36.65	38.65	161.51	0.64
4600.00	2.58	158.06	4597.90	-40.33	13.65	-40.33	42.58	161.30	0.65
4700.00	2.29	159.34	4697.80	-44.29	15.20	-44.29	46.83	161.06	0.29
4800.00	2.01	160.62	4797.73	-47.82	16.49	-47.82	50.58	160.97	0.29
4900.00	1.63	166.02	4897.68	-50.85	17.41	-50.85	53.75	161.10	0.42
5000.00	1.25	171.43	4997.65	-53.31	17.92	-53.31	56.25	161.42	0.40
5100.00	1.04	172.76	5097.63	-55.29	18.20	-55.29	58.21	161.78	0.21
5200.00	0.83	168.09	5197.62	-56.91	18.46	-56.91	59.83	162.02	0.22
5300.00	0.83	166.22	5297.61	-58.32	18.79	-58.32	61.27	162.15	0.03
5400.00	0.83	160.35	5397.60	-59.71	19.20	-59.71	62.72	162.17	0.09
5500.00	0.62	155.97	5497.59	-60.89	19.67	-60.89	63.98	162.10	0.22
5600.00	0.41	151.59	5597.59	-61.70	20.06	-61.70	64.87	161.99	0.21
5700.00	0.44	163.37	5697.58	-62.38	20.34	-62.38	65.61	161.94	0.09
5800.00	0.47	173.14	5797.58	-63.15	20.50	-63.15	66.40	162.02	0.08
5900.00	0.44	227.92	5897.58	-63.82	20.26	-63.82	66.96	162.39	0.42
6000.00	0.42	282.69	5997.57	-64.00	19.62	-64.00	66.94	162.96	0.40
6100.00	0.45	297.19	6097.57	-63.74	18.91	-63.74	66.49	163.47	0.11
6200.00	0.48	311.68	6197.57	-63.28	18.26	-63.28	65.86	163.91	0.12
6300.00	0.29	254.24	6297.57	-63.07	17.70	-63.07	65.51	164.32	0.40
6400.00	0.10	196.81	6397.57	-63.22	17.44	-63.22	65.58	164.58	0.25
6500.00	0.13	253.32	6497.57	-63.33	17.31	-63.33	65.66	164.72	0.11
6600.00	0.16	309.83	6597.57	-63.28	17.09	-63.28	65.54	164.88	0.14
6700.00	0.26	247.20	6697.56	-63.28	16.77	-63.28	65.46	165.15	0.24
6800.00	0.37	184.57	6797.56	-63.69	16.54	-63.69	65.80	165.44	0.34
6900.00	0.47	197.66	6897.56	-64.40	16.38	-64.40	66.45	165.73	0.14
7000.00	0.58	210.76	6997.56	-65.23	16.00	-65.23	67.16	166.22	0.16
7100.00	0.52	196.46	7097.55	-66.10	15.61	-66.10	67.91	166.71	0.15
7200.00	0.46	182.16	7197.55	-66.93	15.47	-66.93	68.69	166.98	0.14
7300.00	0.58	186.10	7297.54	-67.83	15.40	-67.83	69.55	167.21	0.13
7400.00	0.70	188.03	7397.54	-68.93	15.26	-68.93	70.60	167.51	0.12
7500.00	1.00	195.07	7497.53	-70.38	14.95	-70.38	71.95	168.01	0.32
7600.00	1.30	202.11	7597.51	-72.27	14.30	-72.27	73.67	168.81	0.33
7700.00	0.97	187.79	7697.49	-74.16	13.76	-74.16	75.43	169.49	0.43
7800.00	0.64	173.47	7797.48	-75.55	13.70	-75.55	76.79	169.72	0.39
7900.00	0.81	128.57	7897.47	-76.55	14.32	-76.55	77.87	169.40	0.57
8000.00	0.98	113.67	7997.46	-77.33	15.65	-77.33	78.90	168.56	0.29
8100.00	1.05	101.87	8097.44	-77.86	17.32	-77.86	79.76	167.46	0.22
8200.00	1.11	120.08	8197.43	-78.53	19.06	-78.53	80.81	166.36	0.35
8300.00	1.23	118.77	8297.40	-79.53	20.84	-79.53	82.22	165.32	0.11
8400.00	1.34	117.46	8397.38	-80.59	22.81	-80.59	83.75	164.20	0.11
8500.00	1.14	115.09	8497.36	-81.54	24.74	-81.54	85.21	163.12	0.21
8600.00	0.94	114.72	8597.34	-82.31	26.38	-82.31	86.43	162.23	0.20
8700.00	1.02	113.26	8697.32	-83.00	27.94	-83.00	87.57	161.40	0.08
8800.00	1.10	111.80	8797.31	-83.70	29.64	-83.70	88.80	160.50	0.09
8830.00	0.95	116.94	8827.30	-83.92	30.13	-83.92	89.17	160.25	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
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HORIZONTAL DISPLACEMENT IS
89.17 FEET AT 160.25 DEGREES