15-41090

VAUGHN ENERGY SERVICES
A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

June 24, 2013

RECEIVED
SEP 30 2013
NMOCD ARTESIA

Devon Energy Production Co., L. P.
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

Attn: Patti Riechers

Re: **Josey Wales 16 State Com No. 003H**

Please find enclosed a copy of the survey from 0.00' to 8900.00' ran on the above referenced well.

If I can be of any further service please do not hesitate to call me at 800-606-4976.

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
§
COUNTY OF NUECES §

This instrument was acknowledged before me on the 24th day of June, A.D., 2013, by Keith Havelka.

Laura Ballew
Notary Public, State of Texas

LAURA BALLEW
Notary Public, State of Texas
My Commission Expires
January 28, 2014

Company: Devon Energy Production Co., LP
Lease/Well: Josey Wales 16 State Com/ No. 003H

Rig Name: Scan Texas
State/County: New Mexico/Eddy
Latitude: 32.210, Longitude: -104.194
GRID North is 0.070 Degrees West of True North
VS-Azi: 0.000 Degrees

Depth Reference : RKB= 26'

RECEIVED
SEP 30 2013
NMOCD ARTESIA

DRILLOG HA GYRO SURVEY CALCULATIONS
Filename: hagyro_9150-de_01.ut
Minimum Curvature Method
Report Date/Time: 6/24/2013 / 10:02

Vaughn Energy Services
Midland, Texas
866-835-8333
Surveyor: Brian Brewbaker
Josey Wales 16 State Com No. 003H / API 30-015-41090

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
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	****
100.000	0.612	28.914	99.998	0.468	0.258	0.468	0.534	28.914	0.612
200.000	1.206	44.674	199.985	1.684	1.257	1.684	2.101	36.736	0.639
300.000	1.843	67.412	299.950	3.050	3.482	3.050	4.629	48.781	0.867
400.000	2.215	80.351	399.888	3.992	6.872	3.992	7.948	59.849	0.588
500.000	2.628	89.147	499.799	4.350	11.070	4.350	11.894	68.547	0.554
600.000	2.908	95.501	599.682	4.141	15.887	4.141	16.418	75.390	0.415
700.000	2.758	93.716	699.560	3.742	20.813	3.742	21.146	79.807	0.174
800.000	2.358	97.994	799.460	3.300	25.251	3.300	25.465	82.554	0.443
900.000	2.468	103.248	899.372	2.521	29.383	2.521	29.491	85.097	0.247
1000.000	2.368	103.048	999.283	1.561	33.491	1.561	33.527	87.332	0.100
1100.000	2.411	111.579	1099.196	0.321	37.459	0.321	37.461	89.509	0.358
1200.000	2.633	110.198	1199.099	-1.246	41.571	-1.246	41.589	91.716	0.230
1300.000	2.671	108.211	1298.992	-2.767	45.939	-2.767	46.023	93.447	0.099
1400.000	3.230	116.038	1398.859	-4.732	50.684	-4.732	50.905	95.333	0.688
1500.000	3.787	108.457	1498.672	-7.014	56.349	-7.014	56.784	97.096	0.724
1600.000	4.011	108.780	1598.441	-9.186	62.793	-9.186	63.461	98.323	0.225
1700.000	3.919	111.574	1698.201	-11.568	69.282	-11.568	70.241	99.479	0.214
1800.000	3.873	121.181	1797.971	-14.573	75.349	-14.573	76.746	100.946	0.654

VES Survey Date: 06/19/2013

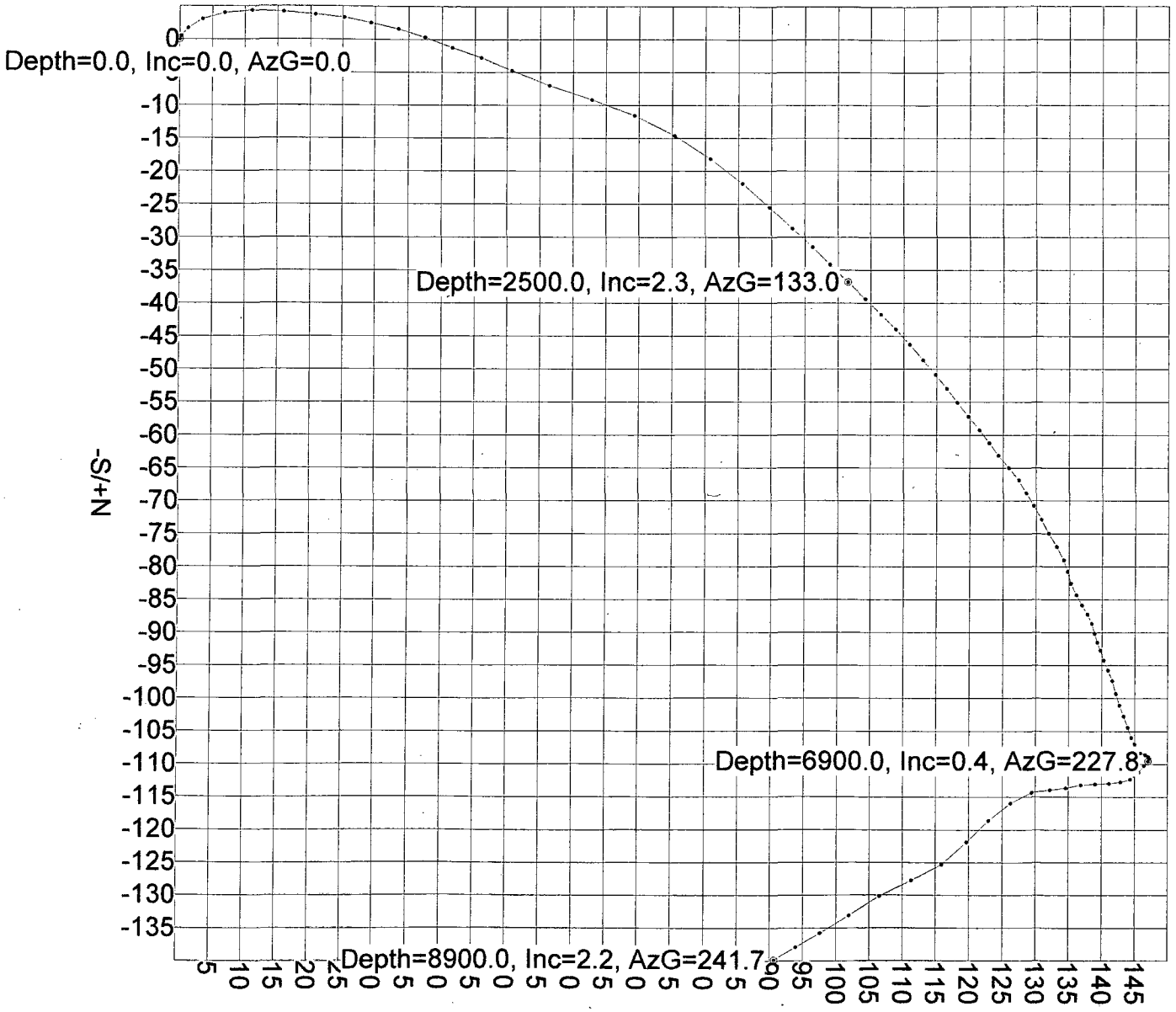
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.000	3.556	125.568	1897.761	-18.126	80.761	-18.126	82.770	102.650	0.426
2000.000	3.494	129.902	1997.572	-21.884	85.621	-21.884	88.374	104.337	0.273
2100.000	2.767	133.709	2097.422	-25.507	89.704	-25.507	93.260	105.873	0.755
2200.000	2.602	131.990	2197.313	-28.694	93.136	-28.694	97.456	107.123	0.184
2300.000	2.118	134.971	2297.228	-31.519	96.131	-31.519	101.166	108.153	0.499
2400.000	2.111	135.493	2397.159	-34.138	98.730	-34.138	104.465	109.074	0.021
2500.000	2.265	133.032	2497.087	-36.800	101.465	-36.800	107.933	109.935	0.180
2600.000	1.975	133.997	2597.018	-39.346	104.149	-39.346	111.334	110.696	0.292
2700.000	1.853	134.421	2696.962	-41.675	106.544	-41.675	114.404	111.363	0.122
2800.000	1.795	136.264	2796.911	-43.938	108.781	-43.938	117.320	111.994	0.083
2900.000	1.839	138.653	2896.861	-46.274	110.924	-46.274	120.189	112.644	0.088
3000.000	1.731	140.502	2996.813	-48.645	112.945	-48.645	122.975	113.301	0.122
3100.000	1.599	138.575	3096.770	-50.856	114.829	-50.856	125.587	113.888	0.144
3200.000	1.496	144.775	3196.734	-52.969	116.505	-52.969	127.981	114.449	0.196
3300.000	1.543	141.370	3296.699	-55.087	118.098	-55.087	130.314	115.007	0.102
3400.000	1.515	140.884	3396.663	-57.164	119.773	-57.164	132.715	115.514	0.031
3500.000	1.516	142.062	3496.628	-59.233	121.420	-59.233	135.098	116.005	0.031
3600.000	1.312	142.791	3596.598	-61.188	122.926	-61.188	137.313	116.463	0.205
3700.000	1.378	145.700	3696.570	-63.093	124.295	-63.093	139.392	116.913	0.095
3800.000	1.489	135.259	3796.539	-65.009	125.887	-65.009	141.682	117.312	0.283
3900.000	1.267	147.423	3896.510	-66.864	127.397	-66.864	143.878	117.692	0.366
4000.000	1.302	154.095	3996.485	-68.818	128.489	-68.818	145.758	118.173	0.153
4100.000	1.297	146.226	4096.460	-70.780	129.615	-70.780	147.682	118.638	0.178
4200.000	1.464	153.853	4196.431	-72.868	130.807	-72.868	149.733	119.121	0.248
4300.000	1.258	149.456	4296.402	-74.960	131.927	-74.960	151.736	119.605	0.231
4400.000	1.451	150.105	4396.374	-77.003	133.116	-77.003	153.784	120.048	0.194
4500.000	1.169	154.878	4496.348	-79.024	134.181	-79.024	155.722	120.495	0.303
4600.000	0.952	170.335	4596.331	-80.766	134.753	-80.766	157.103	120.937	0.357
4700.000	1.180	158.608	4696.314	-82.543	135.268	-82.543	158.464	121.392	0.314
4800.000	1.066	149.895	4796.295	-84.307	136.110	-84.307	160.105	121.774	0.205
4900.000	0.967	152.507	4896.279	-85.860	136.966	-85.860	161.653	122.082	0.109
5000.000	0.878	145.939	4996.266	-87.244	137.785	-87.244	163.083	122.341	0.138
5100.000	0.908	164.183	5096.254	-88.641	138.430	-88.641	164.378	122.633	0.285
5200.000	0.868	164.966	5196.242	-90.135	138.843	-90.135	165.534	122.991	0.042
5300.000	0.764	161.081	5296.232	-91.496	139.255	-91.496	166.624	123.307	0.118
5400.000	0.759	156.149	5396.223	-92.732	139.739	-92.732	167.709	123.569	0.066
5500.000	1.049	162.716	5496.211	-94.212	140.279	-94.212	168.979	123.886	0.308
5600.000	0.852	151.440	5596.197	-95.740	140.906	-95.740	170.354	124.194	0.271
5700.000	1.117	163.078	5696.182	-97.325	141.545	-97.325	171.777	124.512	0.331

VES Survey Date: 06/19/2013

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
5800.000	1.196	165.251	5796.162	-99.268	142.095	-99.268	173.335	124.938	0.090
5900.000	0.938	160.054	5896.144	-101.047	142.640	-101.047	174.804	125.314	0.275
6000.000	1.086	157.235	5996.129	-102.690	143.286	-102.690	176.284	125.628	0.156
6100.000	1.001	163.515	6096.112	-104.402	143.901	-104.402	177.784	125.961	0.142
6200.000	0.890	156.516	6196.099	-105.952	144.458	-105.952	179.148	126.258	0.160
6300.000	0.406	143.917	6296.092	-106.951	144.976	-106.951	180.157	126.417	0.501
6400.000	0.567	163.677	6396.088	-107.712	145.324	-107.712	180.890	126.545	0.230
6500.000	0.425	103.777	6496.085	-108.275	145.824	-108.275	181.627	126.594	0.510
6600.000	0.483	114.492	6596.082	-108.539	146.568	-108.539	182.381	126.521	0.102
6700.000	0.166	141.839	6696.080	-108.827	147.041	-108.827	182.933	126.506	0.344
6800.000	0.223	156.851	6796.080	-109.120	147.207	-109.120	183.241	126.548	0.076
6900.000	0.440	227.848	6896.078	-109.557	146.999	-109.557	183.334	126.697	0.423
7000.000	0.566	221.243	6996.075	-110.185	146.389	-110.185	183.223	126.968	0.139
7100.000	0.957	215.793	7096.066	-111.234	145.575	-111.234	183.208	127.383	0.398
7200.000	0.965	244.802	7196.052	-112.270	144.325	-112.270	182.850	127.879	0.481
7300.000	0.814	264.908	7296.040	-112.691	142.856	-112.691	181.953	128.268	0.344
7400.000	1.210	260.966	7396.025	-112.920	141.105	-112.920	180.725	128.669	0.401
7500.000	1.219	273.322	7496.002	-113.024	139.001	-113.024	179.153	129.115	0.261
7600.000	1.244	259.977	7595.979	-113.152	136.870	-113.152	177.586	129.581	0.287
7700.000	1.419	256.793	7695.952	-113.623	134.596	-113.623	176.143	130.171	0.190
7800.000	1.356	268.627	7795.923	-113.935	132.207	-113.935	174.528	130.754	0.293
7900.000	1.835	256.962	7895.884	-114.324	129.464	-114.324	172.717	131.446	0.577
8000.000	2.355	233.589	7995.819	-115.905	126.251	-115.905	171.386	132.554	0.989
8100.000	2.502	229.286	8095.729	-118.548	122.943	-118.548	170.788	133.957	0.234
8200.000	2.904	220.843	8195.618	-121.888	119.632	-121.888	170.788	135.535	0.565
8300.000	2.909	234.180	8295.491	-125.289	115.918	-125.289	170.688	137.225	0.675
8400.000	3.065	249.132	8395.356	-127.727	111.362	-127.727	169.457	138.916	0.792
8500.000	3.145	237.732	8495.210	-130.144	106.545	-130.144	168.194	140.694	0.621
8600.000	3.155	237.030	8595.059	-133.105	101.917	-133.105	167.643	142.559	0.040
8700.000	2.676	240.789	8694.930	-135.742	97.570	-135.742	167.170	144.292	0.516
8800.000	2.178	237.146	8794.840	-137.912	93.937	-137.912	166.865	145.740	0.521
8900.000	2.158	241.697	8894.768	-139.836	90.683	-139.836	166.666	147.037	0.173

VES Survey Date: 06/19/2013

Vaughn Energy Services
Midland, Texas
866-835-8333
Surveyor: Brian Brewbaker
Josey Wales 16 State Com No. 003H / API 30-015-41090



VES Survey Date: 06/19/2013