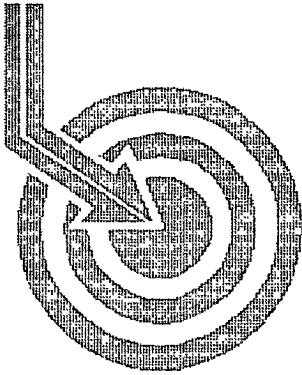
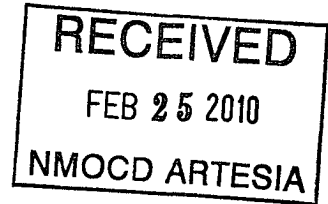


30 015 31016



Scientific Drilling



COG RESOURCES

Field: Loco Hills
Site: Eddy County, NM
Well: Imperial State #1
Wellpath: VH - Job #32K1209575
Survey: 12/18/09

This survey is correct to the best of my knowledge
and is supported by actual field data.

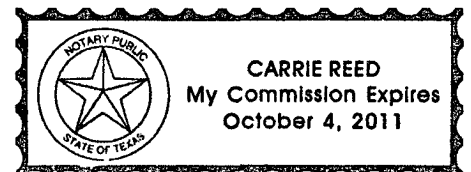
.....R. Wharton..... Company Representative

Notorized this date 31st of December, 2009.

Carrie Reed

Notary Signature
County of Midland
State of Texas

MR





Scientific
Drilling

Scientific Drilling International Survey Report

Company: COG RESOURCES
Field: Loco Hills
Site: Eddy County, NM
Well: Imperial State #1
Wellpath: VH - Job #32K1209575

Date: 12/29/2009 Time: 11:44:15 Page: 1
Co-ordinate(NE) Reference: Site: Eddy County, NM, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,76.95Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: 12/18/09 Start Date: 12/18/2009
KSRG 0'-5836'
Company: Scientific Drilling Internatio Engineer: Melendez w/Halliburton
Tool: Keeper;Keeper GYRO Tied-to: From Surface

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.48	143.57	100.00	0.17	-0.34	0.25	0.48	0.42	143.57
200.00	0.52	121.42	200.00	0.66	-0.91	0.88	0.20	1.27	135.83
300.00	1.69	147.52	299.98	1.47	-2.39	2.06	1.24	3.16	139.20
400.00	2.88	156.55	399.89	2.41	-5.94	3.86	1.24	7.08	147.01
500.00	2.73	159.93	499.77	3.16	-10.48	5.67	0.22	11.92	151.58
600.00	2.25	160.97	599.68	3.65	-14.57	7.13	0.48	16.22	153.93
700.00	2.03	160.37	699.61	4.06	-18.10	8.36	0.22	19.94	155.19
800.00	1.70	157.56	799.56	4.51	-21.14	9.53	0.34	23.18	155.74
900.00	1.75	147.90	899.51	5.25	-23.80	10.90	0.29	26.18	155.39
1000.00	1.38	126.18	999.48	6.53	-25.81	12.69	0.69	28.76	153.82
1100.00	1.55	125.40	1099.44	8.22	-27.30	14.76	0.17	31.04	151.60
1200.00	1.21	132.97	1199.41	9.70	-28.80	16.64	0.39	33.26	149.99
1300.00	0.89	122.67	1299.40	10.83	-29.94	18.06	0.37	34.97	148.90
1400.00	0.58	108.80	1399.39	11.81	-30.52	19.20	0.36	36.06	147.84
1500.00	0.25	102.53	1499.39	12.43	-30.74	19.89	0.33	36.61	147.09
1600.00	0.06	44.74	1599.39	12.67	-30.75	20.14	0.22	36.75	146.78
1700.00	0.18	318.94	1699.38	12.64	-30.59	20.07	0.19	36.59	146.73
1800.00	0.19	1.76	1799.38	12.61	-30.31	19.97	0.14	36.30	146.61
1900.00	0.25	19.08	1899.38	12.77	-29.93	20.05	0.09	36.03	146.19
2000.00	0.21	345.66	1999.38	12.88	-29.55	20.08	0.14	35.72	145.81
2100.00	0.56	354.29	2099.38	12.94	-28.89	19.98	0.35	35.12	145.33
2200.00	0.66	5.19	2199.37	13.18	-27.83	19.99	0.15	34.26	144.31
2300.00	0.72	2.85	2299.37	13.54	-26.63	20.07	0.07	33.34	142.99
2400.00	0.92	25.97	2399.36	14.22	-25.28	20.45	0.38	32.51	141.02
2500.00	1.21	19.73	2499.34	15.29	-23.56	21.16	0.31	31.67	138.07
2600.00	1.10	13.90	2599.32	16.30	-21.63	21.75	0.16	30.68	134.85
2700.00	1.08	14.94	2699.30	17.18	-19.79	22.22	0.03	29.76	131.69
2800.00	0.97	18.84	2799.29	18.07	-18.08	22.74	0.13	29.05	128.49
2900.00	0.72	10.46	2899.27	18.76	-16.66	23.12	0.28	28.50	125.77
3000.00	0.67	30.26	2999.27	19.42	-15.54	23.53	0.24	28.20	123.44
3100.00	0.80	18.04	3099.26	20.18	-14.37	24.04	0.20	28.01	120.87
3200.00	0.65	20.08	3199.25	20.85	-13.17	24.45	0.15	27.78	118.31
3300.00	0.82	15.00	3299.24	21.49	-11.95	24.83	0.18	27.56	115.70
3400.00	0.70	347.19	3399.23	21.83	-10.66	24.88	0.38	27.07	113.20
3500.00	0.92	343.45	3499.22	21.79	-9.30	24.52	0.23	26.22	110.77
3600.00	0.94	331.58	3599.21	21.52	-7.81	23.90	0.19	25.14	108.09
3700.00	0.87	321.00	3699.20	20.97	-6.50	23.03	0.18	23.93	105.75
3800.00	0.40	315.83	3799.19	20.46	-5.65	22.31	0.47	23.02	104.22
3900.00	0.34	347.47	3899.19	20.28	-5.11	22.00	0.21	22.59	103.09
4000.00	0.59	323.12	3999.19	20.07	-4.41	21.63	0.31	22.08	101.53
4100.00	0.47	319.48	4099.18	19.68	-3.69	21.05	0.12	21.38	99.94
4200.00	0.67	333.99	4199.18	19.36	-2.85	20.53	0.25	20.73	97.91
4300.00	0.93	334.70	4299.17	19.05	-1.59	19.93	0.26	19.99	94.57
4400.00	0.85	328.70	4399.16	18.65	-0.23	19.20	0.12	19.20	90.67
4500.00	0.59	313.17	4499.15	18.13	0.76	18.44	0.32	18.45	87.64
4600.00	0.74	275.28	4599.14	17.23	1.17	17.42	0.45	17.46	86.15
4700.00	0.51	264.06	4699.14	16.18	1.19	16.33	0.26	16.37	85.85
4800.00	0.54	264.38	4799.13	15.27	1.09	15.42	0.03	15.46	85.95

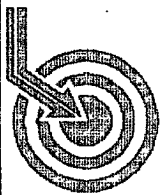


Scientific Drilling International Survey Report

Company: COG RESOURCES Date: 12/29/2009 Time: 11:44:15 Page: 2
Field: Loco Hills Co-ordinate(NE) Reference: Site: Eddy County, NM, Grid North
Site: Eddy County, NM Vertical (TVD) Reference: SITE 0.0
Well: Imperial State #1 Section (VS) Reference: Well (0.00N,0.00E,76.95Azi)
Wellpath: VH - Job #32K1209575 Survey Calculation Method: Minimum Curvature Db: Sybase

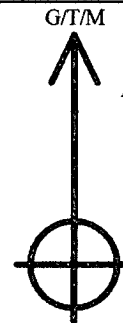
Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
4900.00	0.37	227.15	4899.13	14.52	0.83	14.71	0.33	14.74	86.78
5000.00	0.38	239.97	4999.13	13.92	0.44	14.19	0.08	14.20	88.22
5100.00	0.35	234.41	5099.12	13.32	0.10	13.65	0.05	13.66	89.59
5200.00	0.43	229.83	5199.12	12.71	-0.32	13.12	0.09	13.12	91.40
5300.00	0.46	245.97	5299.12	11.98	-0.73	12.47	0.13	12.49	93.34
5400.00	0.66	275.31	5399.12	11.04	-0.84	11.53	0.34	11.56	94.16
5500.00	0.74	277.27	5499.11	9.89	-0.70	10.31	0.08	10.34	93.90
5600.00	0.44	329.78	5599.10	9.17	-0.29	9.48	0.59	9.48	91.75
5700.00	0.67	329.97	5699.10	8.88	0.55	8.99	0.23	9.01	86.51
5800.00	0.76	310.18	5799.09	8.32	1.48	8.19	0.26	8.33	79.74
5836.00	0.74	324.04	5835.09	8.08	1.83	7.87	0.51	8.08	76.95



**Scientific
Drilling**

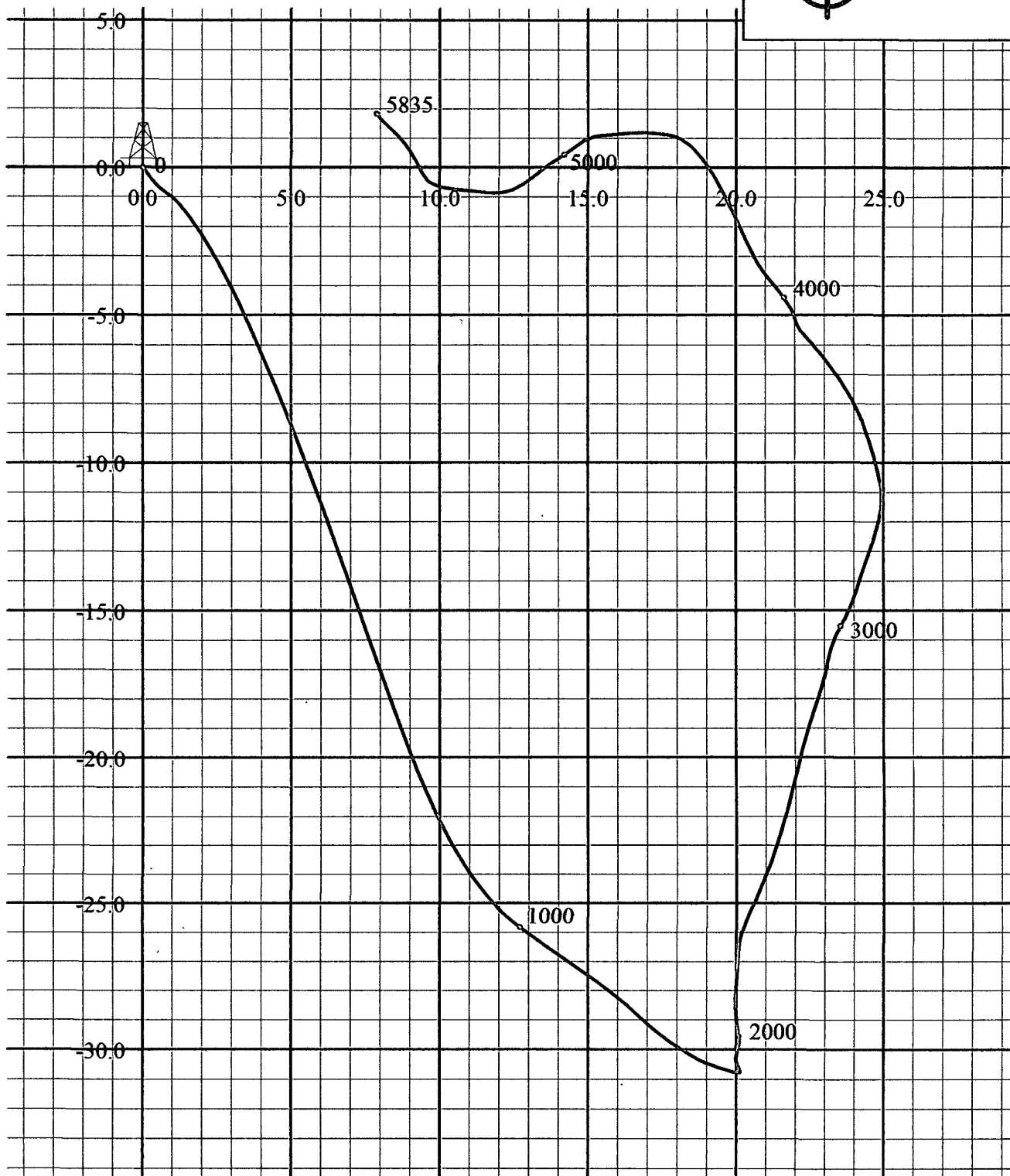
Field: Loco Hills
Site: Eddy County, NM
Well: Imperial State #1
Wellpath: VH - Job #32K1209575
Survey: 12/18/09



Azimuths to Grid North
True North: 0.00°
Magnetic North: 0.00°

Magnetic Field
Strength: 0nT
Dip Angle: 0.00°
Date: 12/29/2009
Model: igrf2000

South(-)/North(+) [5ft/in]



West(-)/East(+) [5ft/in]