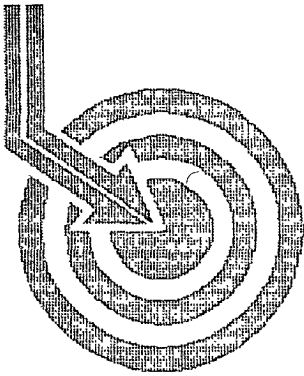
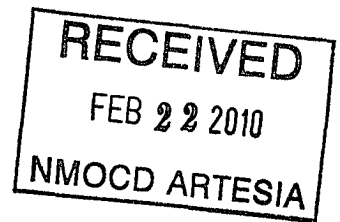


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Scientific Drilling



COG RESOURCES

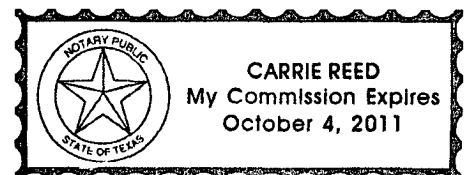
Field: Grayburg Jackson
Site: Eddy County, NM
Well: GJ West Coop #101
Wellpath: VH - Job #32K1109466
Survey: 11/02/09

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

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

Notorized this date 3rd of December, 2009.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific
Drilling

Scientific Drilling International Survey Report

Company: COG RESOURCES	Date: 11/05/2009	Time: 15:42:30	Page: 1
Field: Grayburg-Jackson	Co-ordinate(NE) Reference: Site: Eddy County, NM, Grid North		
Site: Eddy County, NM	Vertical (TVD) Reference: SITE 0:0		
Well: GJ West Coop #101	Section (VS) Reference: Well (0.00N,0.00E,319.83Azi)		
Wellpath: VH - Job #32K1109466	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey: 11/02/09	Start Date: 11/02/2009
KSRG 0'-5350'	
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	1.59	109.30	99.99	-1.20	-0.46	1.31	1.59	1.39	109.30
200.00	0.99	116.70	199.96	-3.18	-1.31	3.39	0.62	3.63	111.05
300.00	1.04	118.16	299.95	-4.82	-2.12	4.96	0.06	5.40	113.15
400.00	1.19	92.79	399.93	-6.37	-2.60	6.80	0.51	7.28	110.93
500.00	1.38	88.28	499.90	-7.83	-2.61	9.04	0.22	9.41	106.13
600.00	1.40	87.84	599.87	-9.33	-2.53	11.46	0.02	11.74	102.46
700.00	1.41	93.41	699.84	-10.93	-2.56	13.91	0.14	14.15	100.42
800.00	0.97	97.62	799.82	-12.41	-2.75	15.98	0.45	16.22	99.75
900.00	0.84	96.73	899.81	-13.57	-2.94	17.55	0.13	17.79	99.52
1000.00	0.92	97.94	999.80	-14.70	-3.14	19.07	0.08	19.33	99.35
1100.00	0.47	99.19	1099.79	-15.61	-3.32	20.27	0.45	20.54	99.29
1200.00	0.20	111.36	1199.79	-16.08	-3.45	20.84	0.28	21.12	99.39
1300.00	0.09	131.00	1299.79	-16.31	-3.56	21.06	0.12	21.36	99.60
1400.00	0.15	206.04	1399.79	-16.44	-3.73	21.06	0.15	21.39	100.04
1500.00	0.15	259.29	1499.79	-16.43	-3.87	20.88	0.13	21.23	100.51
1600.00	0.16	295.16	1599.79	-16.23	-3.84	20.62	0.10	20.97	100.54
1700.00	0.29	283.30	1699.79	-15.90	-3.72	20.25	0.14	20.59	100.41
1800.00	0.28	279.95	1799.78	-15.51	-3.62	19.76	0.02	20.09	100.38
1900.00	0.39	265.78	1899.78	-15.13	-3.60	19.18	0.14	19.52	100.63
2000.00	0.61	264.04	1999.78	-14.63	-3.68	18.31	0.22	18.68	101.37
2100.00	0.81	274.66	2099.77	-13.83	-3.68	17.08	0.24	17.47	102.16
2200.00	0.90	277.10	2199.76	-12.75	-3.53	15.59	0.10	15.99	102.74
2300.00	1.02	279.63	2299.75	-11.50	-3.28	13.94	0.13	14.32	103.24
2400.00	0.84	273.95	2399.73	-10.31	-3.08	12.33	0.20	12.71	104.03
2500.00	0.69	280.19	2499.72	-9.33	-2.92	11.01	0.17	11.39	104.87
2600.00	0.72	281.52	2599.72	-8.38	-2.69	9.80	0.03	10.16	105.36
2700.00	0.70	290.66	2699.71	-7.35	-2.35	8.61	0.11	8.92	105.27
2800.00	0.67	299.28	2799.70	-6.27	-1.85	7.53	0.11	7.75	103.80
2900.00	0.69	306.24	2899.69	-5.14	-1.21	6.53	0.08	6.64	100.47
3000.00	0.70	311.46	2999.69	-3.95	-0.45	5.59	0.06	5.61	94.56
3100.00	0.33	257.61	3099.68	-3.21	-0.10	4.85	0.57	4.85	91.22
3200.00	0.22	216.17	3199.68	-3.12	-0.32	4.46	0.22	4.47	94.11
3300.00	0.54	224.76	3299.68	-3.21	-0.81	4.01	0.32	4.09	101.42
3400.00	0.57	236.02	3399.68	-3.19	-1.42	3.27	0.11	3.56	113.54
3500.00	0.29	247.31	3499.67	-3.06	-1.80	2.62	0.29	3.18	124.46
3600.00	0.27	309.67	3599.67	-2.76	-1.75	2.21	0.29	2.81	128.36
3700.00	0.40	287.64	3699.67	-2.23	-1.49	1.69	0.18	2.25	131.37
3800.00	0.41	300.17	3799.67	-1.60	-1.20	1.05	0.09	1.60	138.92
3900.00	0.57	340.80	3899.66	-0.80	-0.55	0.58	0.37	0.80	133.87
4000.00	0.72	345.82	3999.66	0.23	0.52	0.26	0.16	0.59	26.25
4100.00	0.82	347.27	4099.65	1.43	1.83	-0.05	0.10	1.83	358.35
4200.00	0.61	350.48	4199.64	2.53	3.05	-0.30	0.21	3.07	354.42
4300.00	0.59	15.99	4299.64	3.27	4.07	-0.24	0.27	4.08	356.56
4400.00	0.32	12.42	4399.63	3.73	4.84	-0.04	0.27	4.84	359.49
4500.00	0.46	285.76	4499.63	4.23	5.22	-0.37	0.54	5.24	355.96
4600.00	0.48	325.46	4599.63	4.98	5.68	-0.99	0.32	5.76	350.08
4700.00	0.39	324.49	4699.62	5.74	6.30	-1.43	0.09	6.46	347.23
4800.00	0.50	286.92	4799.62	6.44	6.70	-2.04	0.30	7.01	343.05

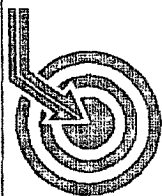


Scientific Drilling International Survey Report

Company: COG RESOURCES Date: 11/05/2009 Time: 15:42:30 Page: 2
Field: Grayburg Jackson Co-ordinate(NE) Reference: Site: Eddy County, NM, Grnd North
Site: Eddy County, NM Vertical (TVD) Reference: SITE 0.0
Well: GJ West Coop #101 Section (VS) Reference: Well (0.00N,0.00E,319.83Azi)
Wellpath: VH - Job #32K1109466 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	0.62	301.75	4899.62	7.32	7.12	-2.92	0.19	7.69	337.68
5000.00	0.61	286.43	4999.61	8.28	7.55	-3.89	0.16	8.50	332.74
5100.00	0.57	285.36	5099.61	9.13	7.83	-4.88	0.04	9.23	328.07
5200.00	0.39	232.94	5199.60	9.56	7.76	-5.63	0.45	9.59	324.03
5300.00	0.27	176.15	5299.60	9.39	7.32	-5.89	0.33	9.39	321.19



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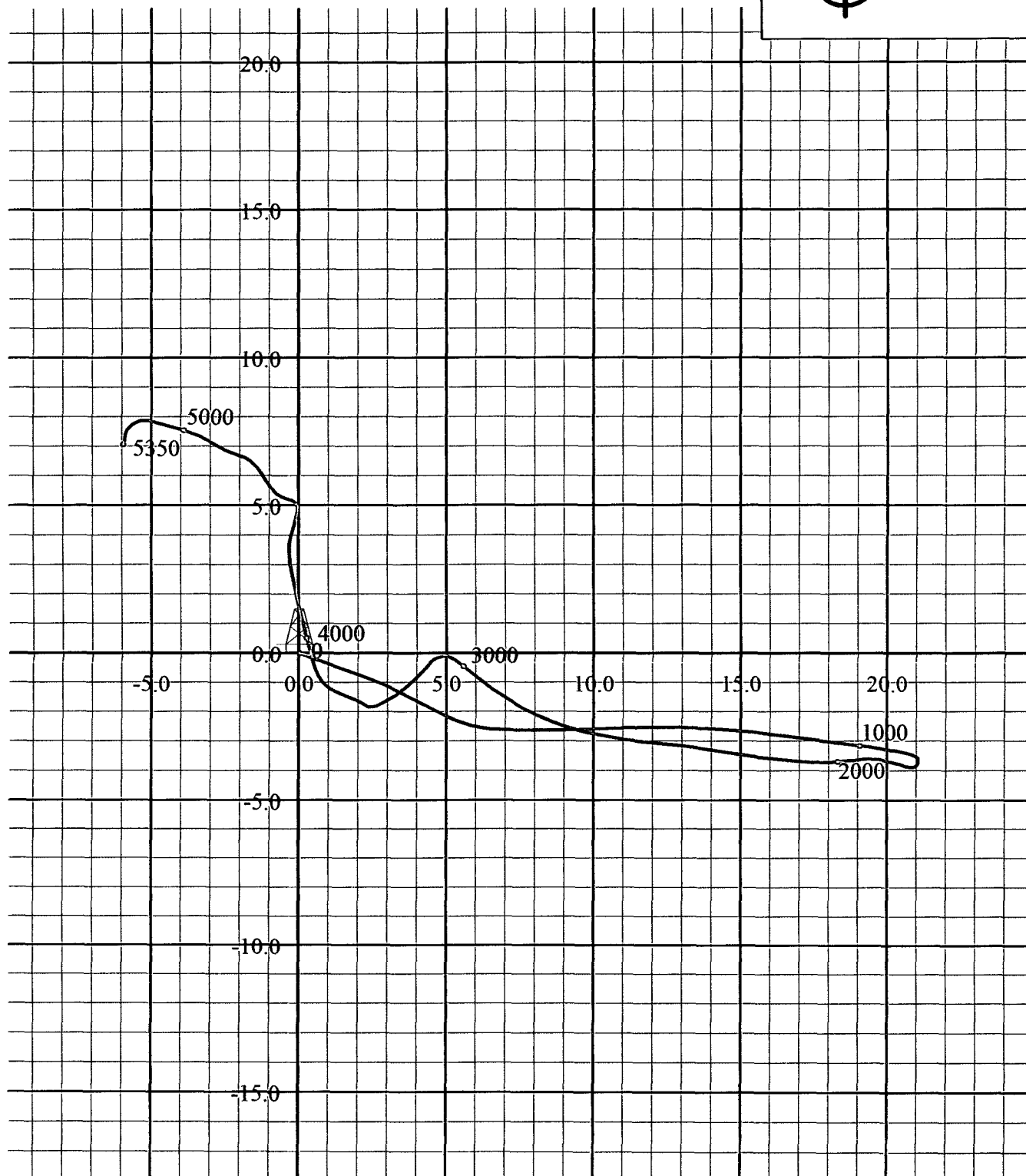
Field: Grayburg Jackson
Site: Eddy County, NM
Well: GJ West Coop #101
Wellpath: VH - Job #32K1109466
Survey: 11/02/09



G/T/M
Azimuths to Grid North
True North: 0.00°
Magnetic North: 0.00°

Magnetic Field
Strength: 0nT
Dip Angle: 0.00°
Date: 11/05/2009
Model: igrf2000

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



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