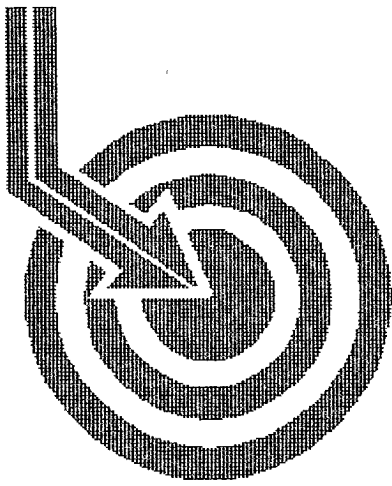
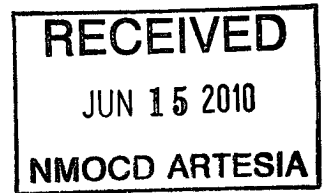


30.015.25489



Scientific Drilling



COG RESOURCES

Field: Grayburg Jackson
Site: Eddy County, NM
Well: GJ West Coop #78
Wellpath: VH - Job #32K0410238
Survey: 04/05/10

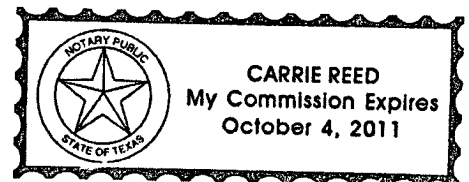
ml

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

Richardson
Company Representative

Notarized this date 22nd of April, 2010.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific Drilling International, Inc.

Survey Report

Company: COG RESOURCES	Date: 4/8/2010	Time: 21:56:05	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 #78	Section (VS) Reference:	Well: (0.00N,0.00E,207.92Azi)	
Wellpath: VH - Job #32K0410238	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 04/05/10	Start Date: 4/5/2010
Company: Scientific Drilling Internatio	Engineer: Guebara/Sutherland w/Hallibur
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
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.0	0.00
100.0	0.90	291.13	100.0	0.1	0.3	-0.7	0.90	0.8	291.13
200.0	0.76	284.72	200.0	0.3	0.7	-2.1	0.17	2.2	289.23
300.0	0.30	320.50	300.0	0.4	1.1	-2.9	0.55	3.1	290.77
400.0	0.27	0.52	400.0	0.1	1.5	-3.1	0.20	3.4	296.62
500.0	0.43	39.89	500.0	-0.5	2.1	-2.8	0.28	3.5	306.08
600.0	0.52	49.78	600.0	-1.3	2.6	-2.2	0.12	3.5	319.65
700.0	0.50	66.07	700.0	-2.1	3.1	-1.5	0.15	3.5	334.25
800.0	0.49	109.94	800.0	-2.5	3.1	-0.7	0.37	3.2	347.42
900.0	0.53	164.86	900.0	-2.2	2.6	-0.2	0.47	2.6	355.97
1000.0	0.72	180.25	1000.0	-1.3	1.5	-0.1	0.25	1.5	357.60
1100.0	0.69	181.48	1100.0	-0.2	0.3	-0.1	0.03	0.3	342.26
1200.0	0.70	183.17	1199.9	0.9	-1.0	-0.1	0.02	1.0	187.69
1300.0	0.72	194.22	1299.9	2.1	-2.2	-0.3	0.14	2.2	188.30
1400.0	0.67	195.25	1399.9	3.3	-3.4	-0.6	0.05	3.4	190.58
1500.0	0.68	201.66	1499.9	4.4	-4.5	-1.0	0.08	4.6	192.60
1600.0	0.67	197.09	1599.9	5.6	-5.6	-1.4	0.05	5.7	193.99
1700.0	0.58	203.35	1699.9	6.7	-6.6	-1.8	0.11	6.8	194.94
1800.0	0.69	200.69	1799.9	7.8	-7.6	-2.2	0.11	7.9	195.91
1900.0	0.87	201.61	1899.9	9.1	-8.9	-2.7	0.18	9.3	196.69
2000.0	0.90	199.43	1999.9	10.6	-10.3	-3.2	0.05	10.8	197.23
2100.0	0.98	203.22	2099.9	12.3	-11.9	-3.8	0.10	12.5	197.78
2200.0	0.82	201.61	2199.9	13.8	-13.3	-4.4	0.16	14.0	198.31
2300.0	0.68	205.63	2299.8	15.1	-14.5	-4.9	0.15	15.3	198.74
2400.0	0.69	207.99	2399.8	16.3	-15.6	-5.5	0.03	16.5	199.32
2500.0	0.74	204.21	2499.8	17.6	-16.7	-6.0	0.07	17.8	199.79
2600.0	0.74	209.14	2599.8	18.9	-17.9	-6.6	0.06	19.0	200.26
2700.0	0.72	210.69	2699.8	20.1	-19.0	-7.2	0.03	20.3	200.86
2800.0	0.77	210.23	2799.8	21.4	-20.1	-7.9	0.05	21.6	201.44
2900.0	0.68	211.75	2899.8	22.7	-21.2	-8.5	0.09	22.8	201.96
3000.0	0.67	215.29	2999.8	23.9	-22.2	-9.2	0.04	24.0	202.52
3100.0	0.72	214.47	3099.8	25.1	-23.2	-9.9	0.05	25.2	203.11
3200.0	0.52	214.13	3199.8	26.2	-24.0	-10.5	0.20	26.2	203.57
3300.0	0.50	212.24	3299.8	27.0	-24.8	-11.0	0.03	27.1	203.89
3400.0	0.53	209.71	3399.8	27.9	-25.6	-11.4	0.04	28.0	204.11
3500.0	0.66	202.52	3499.8	29.0	-26.5	-11.9	0.15	29.0	204.17
3600.0	0.77	188.44	3599.8	30.2	-27.7	-12.2	0.21	30.3	203.80
3700.0	0.75	187.25	3699.7	31.4	-29.0	-12.4	0.03	31.5	203.13
3800.0	0.73	191.07	3799.7	32.7	-30.3	-12.6	0.05	32.8	202.59
3900.0	0.69	191.59	3899.7	33.8	-31.5	-12.8	0.04	34.0	202.18
4000.0	0.72	196.06	3999.7	35.0	-32.7	-13.1	0.06	35.2	201.89
4100.0	0.79	219.57	4099.7	36.3	-33.8	-13.7	0.32	36.5	202.12
4200.0	0.56	223.47	4199.7	37.5	-34.7	-14.5	0.23	37.6	202.71
4300.0	0.16	201.99	4299.7	38.1	-35.2	-14.9	0.42	38.2	202.96
4400.0	0.35	274.10	4399.7	38.3	-35.3	-15.3	0.34	38.5	203.39
4500.0	0.17	220.22	4499.7	38.6	-35.4	-15.7	0.29	38.7	203.88
4600.0	0.32	261.21	4599.7	38.9	-35.5	-16.0	0.22	39.0	204.29
4700.0	0.35	239.48	4699.7	39.3	-35.7	-16.6	0.13	39.4	204.88
4800.0	0.27	243.48	4799.7	39.8	-36.0	-17.1	0.08	39.8	205.34



Scientific Drilling International, Inc.

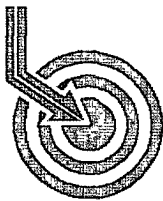
Survey Report

Company: COG RESOURCES
Field: Grayburg Jackson
Site: Eddy County, NM
Well: GJ West Coop #78
Wellpath: VH - Job #32K0410238

Date: 4/8/2010 Time: 21:56:05 Page: 2
Co-ordinate(NE) Reference: Site: Eddy County, NM, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,207.92Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

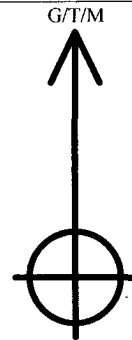
Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
4900.0	0.38	261.69	4899.7	40.2	-36.2	-17.6	0.15	40.2	205.94
5000.0	0.12	197.99	4999.7	40.5	-36.3	-18.0	0.34	40.5	206.31
5100.0	0.14	15.28	5099.7	40.5	-36.3	-18.0	0.26	40.5	206.32
5200.0	0.24	286.27	5199.7	40.4	-36.1	-18.1	0.28	40.4	206.65
5300.0	0.10	315.26	5299.7	40.4	-36.0	-18.4	0.16	40.4	207.06
5400.0	0.28	292.08	5399.7	40.4	-35.8	-18.7	0.19	40.4	207.52
5458.0	0.28	292.01	5457.7	40.4	-35.7	-18.9	0.00	40.4	207.92



Scientific
Drilling

Field: Grayburg Jackson
Site: Eddy County, NM
Well: GJ West Coop #78
Survey: 04/05/10



Azimuths to Grid North
True North 0 00°
Magnetic North 0 00°
Magnetic Field
Dip Angle 0 00°
Date 4/8/2010
Model igrf2000

