



PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

30-015.40929

COG OPERATING, LL
RECEIVED

MAY 28 2013

ARTESIA WEST

May 19, 2013

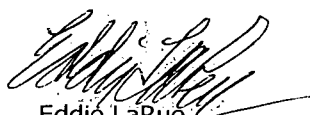
COG, LLC
One Concho Center
600 W. Illinois Ave.
Midland, TX 79701

RE: Mescal 22 Federal #3H
380' FNL & 190' FEL
Sec. 22, T25S, R29E
Eddy County, New Mexico

Dear Sir,

The attached is the Deviation Survey for the above captioned well.

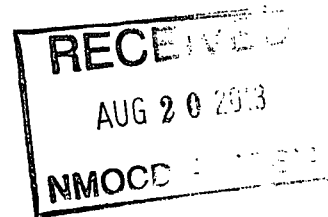
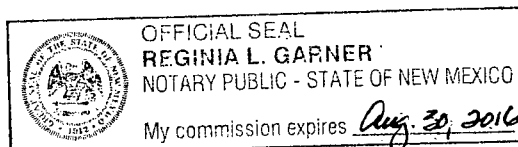
Very truly yours,


Eddie LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 19th day of May, 2013.


Regina L. Garner
Notary Public

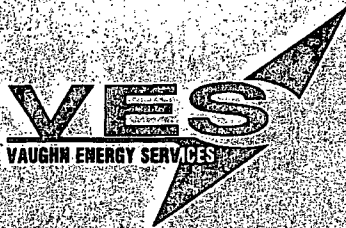


MESCAL 22 FED 3 H

# Date	Depth	Deviation	Direction	TVD
4/28/2013	160	0.70	0.00	0.00
4/28/2013	400	0.60	0.00	0.00
4/28/2013	647	1.10	0.00	0.00
4/30/2013	793	1.80	118.40	792.87
5/2/2013	976	1.30	114.00	975.83
5/2/2013	1068	0.40	130.20	1067.82
5/3/2013	1159	1.10	125.30	1158.81
5/3/2013	1344	1.10	122.80	1343.77
5/3/2013	1436	1.30	199.50	1435.75
5/3/2013	1528	1.90	216.20	1527.72
5/3/2013	1620	1.60	252.70	1619.68
5/3/2013	1715	1.30	255.70	1714.65
5/4/2013	1811	1.20	242.70	1810.63
5/5/2013	1936	1.10	253.30	1935.60
5/5/2013	2031	1.20	259.60	2030.59
5/5/2013	2221	0.90	277.20	2220.00
5/5/2013	2317	1.00	294.60	2316.00
5/5/2013	2412	1.30	286.00	2411.00
5/5/2013	2507	0.40	262.80	2506.52
5/5/2013	2603	0.70	148.10	2602.51
5/5/2013	2793	1.80	140.90	2792.47
5/6/2013	2983	1.00	159.40	2982.38
5/6/2013	3078	0.60	247.30	3077.37
5/6/2013	3174	0.70	294.20	3173.00
5/9/2013	3282	1.00	0.00	0.00
5/9/2013	3582	1.10	0.00	0.00
5/10/2013	3997	0.60	0.00	0.00
5/10/2013	4408	1.00	0.00	0.00
5/10/2013	4885	0.90	0.00	0.00
5/10/2013	5359	0.70	0.00	0.00
5/10/2013	5838	1.30	0.00	0.00
5/11/2013	6283	0.40	0.00	0.00
5/11/2013	6726	0.80	0.00	0.00
5/12/2013	7150	5.30	282.40	7148.00
5/12/2013	7246	12.10	269.10	7243.00
5/12/2013	7309	17.10	264.20	7304.00
5/12/2013	7341	19.70	262.90	7334.95
5/12/2013	7468	27.30	260.10	745.34
5/12/2013	7536	32.40	259.20	7506.79
5/13/2013	7563	34.50	258.90	7532.65
5/13/2013	7595	36.70	259.20	7558.67
5/13/2013	7627	40.10	259.80	7583.00
5/13/2013	7722	49.60	263.60	7650.00

#	Date	Depth	Deviation	Direction	TVD
	5/14/2013	7785	56.20	263.80	7684.92
	5/14/2013	7912	77.60	264.00	7740.65
	5/14/2013	7932	81.70	265.40	7744.74
	5/14/2013	7975	90.60	267.70	7747.13
	5/14/2013	8229	93.00	270.10	7731.79
	5/14/2013	8419	94.30	271.00	7719.78
	5/15/2013	8515	92.30	272.90	7714.25
	5/15/2013	8895	89.20	273.10	7708.54
	5/15/2013	8990	90.00	271.70	7709.20
	5/15/2013	9181	91.60	271.20	7706.00
	5/15/2013	9467	91.10	271.00	7700.00
	5/15/2013	9753	90.90	271.20	7695.00
	5/15/2013	9847	91.00	270.00	7694.08
	5/15/2013	10037	91.40	268.90	7690.44
	5/16/2013	10513	90.70	270.00	7687.85
	5/16/2013	10798	88.80	269.10	7681.30
	5/16/2013	10894	88.10	268.90	7683.90
	5/16/2013	10989	88.20	268.00	7686.00
	5/16/2013	11179	91.00	267.70	7686.00
	5/16/2013	11369	91.10	268.60	7681.00
	5/16/2013	11464	91.10	267.50	7680.08
	5/16/2013	11750	90.90	266.80	7673.26
	5/17/2013	12035	89.20	265.40	7668.87
	5/17/2013	12130	88.40	265.70	7670.86
	5/17/2013	12181	87.70	265.60	7672.59

#EOF

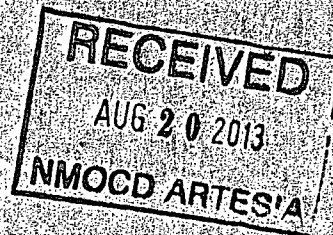


A GYRO TECHNOLOGIES INC. COMPANY

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

May 16, 2013

COG Operating LLC (Concho)
One Concho Center
600 W. Illinois Avenue
Midland, TX 79701



Attn: Kanicia Castillo

Re: **Mescal 22 Federal No 003H**

Please find enclosed a copy of the survey from 0' to 7,115' 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 16th day of May, A.D., 2013, by Keith Havelka.



Laura Ballew
Notary Public, State of Texas



Company: COG Operating LLC (Concho)
 Lease/Well: Mescal 22 Federal/No.003H
 Location: S22 T25s R29e
 Rig Name: Silver Oak 7
 State/County: New Mexico/Eddy
 Latitude: 32.12, Longitude: -103.96
 GRID North is 0.20 Degrees East of True North
 VS-Azi: 0.00 Degrees



RECEIVED
 AUG 20 2013
 NMCD ARTESIA

RKB : 19 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...22 federal:#3h gyro survey.ut

Minimum Curvature Method

Report Date/Time: 5/16/2013 / 13:42

Vaughn Energy Services

(432) 563-5444

Gardendale, TX

Surveyor: Dustin Wedel

Mescal 22 Federal No 003H / API 30-015-40929

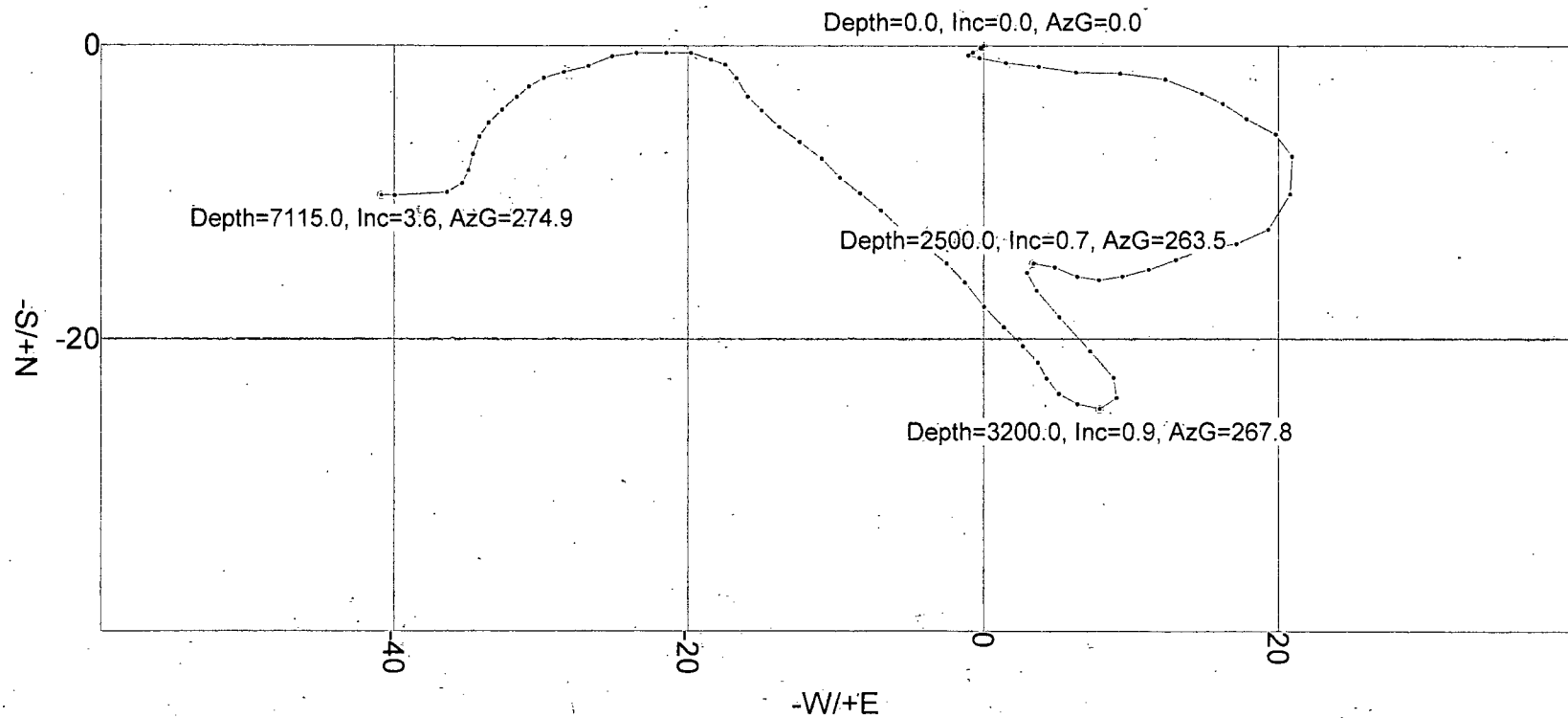
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.28	234.67	100.00	-0.14	-0.20	0.24	234.67	0.28
200.00	0.44	242.83	200.00	-0.46	-0.74	0.87	238.26	0.17
300.00	0.03	105.52	300.00	-0.64	-1.06	1.24	238.78	0.46
400.00	0.88	103.48	399.99	-0.83	-0.29	0.87	199.08	0.85
500.00	1.22	98.04	499.98	-1.15	1.51	1.90	127.37	0.35
600.00	1.37	95.50	599.95	-1.42	3.75	4.01	110.70	0.16
700.00	1.59	101.46	699.92	-1.81	6.29	6.55	106.01	0.27
800.00	1.88	82.96	799.87	-1.88	9.28	9.47	101.45	0.63
900.00	1.79	112.98	899.82	-2.29	12.35	12.56	100.50	0.95
1000.00	1.24	108.78	999.79	-3.25	14.81	15.16	102.37	0.57
1100.00	0.63	132.11	1099.77	-3.96	16.24	16.72	103.72	0.70
1200.00	1.52	118.51	1199.76	-4.97	17.82	18.50	105.58	0.92
1300.00	1.06	116.47	1299.73	-6.02	19.81	20.71	106.89	0.47
1400.00	1.29	164.33	1399.71	-7.51	20.95	22.25	109.74	0.98
1500.00	1.78	196.31	1499.68	-10.10	20.81	23.13	115.87	0.97
1600.00	1.61	229.42	1599.63	-12.50	19.31	23.00	122.92	0.98
1700.00	1.25	266.89	1699.61	-13.48	17.15	21.81	128.15	0.98
1800.00	1.30	254.04	1799.58	-13.85	14.98	20.40	132.76	0.29

Measured Depth FT	Incl- Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	1.07	243.16	1899.56	-14.58	13.06	19.57	138.15	0.32
2000.00	1.18	254.79	1999.54	-15.27	11.24	18.96	143.64	0.25
2100.00	0.95	257.56	2099.52	-15.72	9.44	18.33	149.02	0.23
2200.00	0.90	264.48	2199.51	-15.97	7.84	17.79	153.84	0.12
2300.00	0.86	293.46	2299.50	-15.75	6.37	16.99	157.97	0.44
2400.00	1.04	292.01	2399.49	-15.10	4.84	15.86	162.24	0.18
2500.00	0.68	263.48	2499.47	-14.83	3.41	15.22	167.05	0.55
2600.00	0.68	168.84	2599.47	-15.48	2.94	15.75	169.25	0.99
2700.00	0.97	139.51	2699.46	-16.70	3.60	17.08	167.83	0.50
2800.00	1.77	139.23	2799.43	-18.50	5.15	19.21	164.44	0.80
2900.00	1.81	136.79	2899.38	-20.82	7.24	22.04	160.83	0.09
3000.00	0.99	142.54	2999.35	-22.66	8.85	24.32	158.67	0.83
3100.00	0.88	205.45	3099.34	-24.04	9.04	25.68	159.39	0.98
3200.00	0.92	267.81	3199.33	-24.77	7.91	26.00	162.29	0.93
3300.00	0.91	295.83	3299.32	-24.45	6.39	25.27	165.36	0.44
3400.00	0.73	301.51	3399.31	-23.77	5.13	24.32	167.83	0.20
3500.00	0.91	337.03	3499.30	-22.70	4.27	23.10	169.35	0.53
3600.00	0.51	320.67	3599.29	-21.63	3.68	21.94	170.35	0.44
3700.00	1.22	318.40	3699.28	-20.48	2.69	20.66	172.53	0.71
3800.00	0.90	308.13	3799.26	-19.20	1.36	19.25	175.95	0.37
3900.00	1.34	322.42	3899.24	-17.79	0.03	17.79	179.90	0.51
4000.00	1.11	320.29	3999.22	-16.13	-1.30	16.18	184.59	0.23
4100.00	0.94	313.81	4099.20	-14.81	-2.51	15.03	189.60	0.20
4200.00	1.05	302.54	4199.19	-13.75	-3.87	14.29	195.73	0.22
4300.00	1.25	309.36	4299.17	-12.57	-5.49	13.72	203.58	0.24
4400.00	1.04	317.65	4399.15	-11.21	-6.94	13.18	211.76	0.26
4500.00	1.08	300.25	4499.13	-10.06	-8.37	13.09	219.74	0.32
4600.00	0.93	318.43	4599.12	-8.98	-9.72	13.23	227.28	0.35
4700.00	1.12	314.85	4699.10	-7.68	-10.95	13.38	234.96	0.19
4800.00	1.05	299.28	4799.08	-6.55	-12.44	14.06	242.25	0.30
4900.00	0.91	315.86	4899.07	-5.53	-13.79	14.86	248.16	0.31
5000.00	0.95	309.98	4999.05	-4.43	-14.98	15.62	253.54	0.10
5100.00	0.63	322.08	5099.05	-3.46	-15.95	16.32	257.75	0.36
5200.00	1.06	333.05	5199.03	-2.21	-16.70	16.85	262.46	0.46
5300.00	0.40	286.13	5299.03	-1.29	-17.45	17.50	265.77	0.84
5400.00	0.83	292.86	5399.02	-0.92	-18.45	18.47	267.16	0.44
5500.00	0.81	282.51	5499.01	-0.48	-19.81	19.81	268.60	0.15
5600.00	1.13	261.06	5599.00	-0.48	-21.47	21.47	268.71	0.48
5700.00	1.24	277.23	5698.98	-0.50	-23.51	23.52	268.78	0.35

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	0.78	238.80	5798.96	-0.71	-25.16	25.17	268.38	0.79
5900.00	1.23	253.66	5898.95	-1.37	-26.77	26.81	267.08	0.52
6000.00	0.75	258.57	5998.93	-1.80	-28.44	28.50	266.38	0.48
6100.00	0.88	250.19	6098.92	-2.19	-29.81	29.89	265.80	0.17
6200.00	0.49	219.74	6198.91	-2.78	-30.80	30.93	264.85	0.52
6300.00	0.77	235.31	6298.91	-3.49	-31.63	31.82	263.70	0.32
6400.00	0.74	223.36	6398.90	-4.35	-32.63	32.92	262.41	0.16
6500.00	0.73	228.64	6498.89	-5.24	-33.55	33.96	261.13	0.07
6600.00	0.64	195.70	6598.88	-6.19	-34.18	34.73	259.73	0.40
6700.00	0.81	201.18	6698.88	-7.39	-34.58	35.36	257.94	0.18
6800.00	0.54	186.10	6798.87	-8.51	-34.89	35.91	256.29	0.32
6900.00	0.63	226.07	6898.86	-9.36	-35.33	36.55	255.17	0.41
7000.00	0.82	249.99	6998.86	-9.98	-36.39	37.74	254.67	0.35
7100.00	3.33	270.32	7098.78	-10.21	-39.97	41.26	255.68	2.58
7115.00	3.64	274.92	7113.76	-10.16	-40.88	42.13	256.04	2.76



Vaughn Energy Services
(432) 563-5444
Gardendale, TX
Surveyor: Dustin Wedel
Mescal 22 Federal No 003H / API 30-015-40929





COG PRODUCTION, L.L.C.

EDDY COUNTY(NAD83)

SECTION 22

Mescal 22 Federal #3H

Wellbore #1

Survey: Plan v. Actual

Survey Report - Geographic

20 May, 2013





Stryker Directional
Survey Report - Geographic



Company:	COG PRODUCTION L.L.C.	Local Co-ordinate Reference:	Well Mescal 22 Federal #3H
Project:	EDDY COUNTY (NAD83)	TVD Reference:	WELL @ 18.0usft (Original Well Elev)
Site:	SECTION 22	MD Reference:	WELL @ 18.0usft (Original Well Elev)
Well:	Mescal 22 Federal #3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan v Actual	Database:	EDM 5000.1 Single User Db

Project:	EDDY COUNTY (NAD83) NM-East		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	SECTION 22		
Site Position:	Northings:	408,224.85 usft	Latitude: 32° 7' 18.306 N
From: Map	Easting:	655,561.49 usft	Longitude: 103° 57' 51.723 W
Position Uncertainty:	0.0 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.20 °

Well:	Mescal 22 Federal #3H		
Well Position	+N/-S	0.0 usft	Northings: 408,224.85 usft
	+E/-W	0.0 usft	Easting: 655,561.49 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
			Ground Level: 0.0 usft

Wellbore:	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF 2010	4/19/2013	7.53
			Dip Angle (°)
			59.98
			Field Strength (nT)
			48,352

Design:	Plan v Actual		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			269.62

Survey/Program	Date: 5/20/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
100.0	7,115.0	Gyro Survey (Wellbore #1)	
7,150.0	12,242.0	Plan v. Actual (Wellbore #1)	
		Description	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
7,115.0	3.64	274.92	7,113.8	-10.2	-40.9	408,214.68	655,520.59	32° 7' 18.206 N	103° 57' 52.199 W
T1 @ 7,115 MD									
7,150.0	5.30	282.40	7,148.6	-9.7	-43.6	408,215.12	655,517.90	32° 7' 18.211 N	103° 57' 52.230 W
7,182.0	6.20	277.90	7,180.5	-9.2	-46.7	408,215.67	655,514.75	32° 7' 18.216 N	103° 57' 52.267 W
7,214.0	9.50	271.90	7,212.2	-8.9	-51.1	408,216.00	655,510.39	32° 7' 18.220 N	103° 57' 52.317 W
7,246.0	12.10	269.10	7,243.6	-8.8	-57.1	408,216.03	655,504.40	32° 7' 18.220 N	103° 57' 52.387 W
7,277.0	14.40	265.70	7,273.8	-9.2	-64.2	408,215.69	655,497.31	32° 7' 18.217 N	103° 57' 52.469 W
7,309.0	17.10	264.20	7,304.6	-9.9	-72.8	408,214.92	655,488.66	32° 7' 18.210 N	103° 57' 52.570 W
7,341.0	19.70	262.90	7,334.9	-11.1	-82.9	408,213.78	655,478.62	32° 7' 18.199 N	103° 57' 52.687 W
7,373.0	21.60	261.90	7,364.9	-12.6	-94.1	408,212.28	655,467.44	32° 7' 18.184 N	103° 57' 52.817 W
7,405.0	23.80	260.10	7,394.4	-14.5	-106.3	408,210.34	655,455.24	32° 7' 18.166 N	103° 57' 52.959 W



Stryker Directional
Survey Report - Geographic



Company:	COG PRODUCTION, L.L.C.	Local Co-ordinate Reference:	Well Mescal 22 Federal #3H
Project:	EDDY COUNTY (NAD83)	TVD Reference:	WELL @ 18.0usft (Original Well Elev)
Site:	SECTION 22	MD Reference:	WELL @ 18.0usft (Original Well Elev)
Well:	Mescal 22 Federal #3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan v. Actual	Database:	EDM-5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
7,436.0	25.10	259.90	7,422.6	-16.7	-118.9	408,208.11	655,442.61	32° 7' 18.144 N	103° 57' 53.106 W	
7,468.0	27.30	260.10	7,451.3	-19.2	-132.8	408,205.66	655,428.70	32° 7' 18.120 N	103° 57' 53.268 W	
7,500.0	30.00	260.30	7,479.4	-21.8	-147.9	408,203.05	655,413.58	32° 7' 18.095 N	103° 57' 53.444 W	
7,532.0	32.40	259.20	7,506.8	-24.8	-164.2	408,200.09	655,397.27	32° 7' 18.066 N	103° 57' 53.633 W	
7,563.0	34.50	258.90	7,532.6	-28.0	-181.0	408,196.85	655,380.49	32° 7' 18.035 N	103° 57' 53.828 W	
7,595.0	36.70	259.20	7,558.7	-31.5	-199.3	408,193.31	655,362.21	32° 7' 18.000 N	103° 57' 54.041 W	
7,627.0	40.10	259.80	7,583.7	-35.2	-218.8	408,189.69	655,342.66	32° 7' 17.965 N	103° 57' 54.269 W	
7,658.0	43.40	261.00	7,606.9	-38.6	-239.2	408,186.26	655,322.31	32° 7' 17.932 N	103° 57' 54.505 W	
7,690.0	46.70	262.90	7,629.5	-41.8	-261.6	408,183.10	655,299.89	32° 7' 17.901 N	103° 57' 54.766 W	
7,722.0	49.60	263.60	7,650.8	-44.5	-285.3	408,180.30	655,276.22	32° 7' 17.874 N	103° 57' 55.042 W	
7,754.0	52.70	263.80	7,670.9	-47.3	-310.0	408,177.57	655,251.46	32° 7' 17.848 N	103° 57' 55.330 W	
7,785.0	56.20	263.80	7,688.9	-50.0	-335.1	408,174.84	655,226.39	32° 7' 17.822 N	103° 57' 55.621 W	
7,817.0	59.80	263.80	7,705.9	-52.9	-362.1	408,171.91	655,199.41	32° 7' 17.794 N	103° 57' 55.935 W	
7,849.0	65.50	263.30	7,720.6	-56.1	-390.3	408,168.72	655,171.18	32° 7' 17.763 N	103° 57' 56.264 W	
7,881.0	71.30	263.50	7,732.3	-59.5	-419.9	408,165.30	655,141.64	32° 7' 17.731 N	103° 57' 56.607 W	
7,912.0	77.60	264.00	7,740.6	-62.8	-449.5	408,162.05	655,111.96	32° 7' 17.699 N	103° 57' 56.952 W	
7,932.0	81.70	265.40	7,744.2	-64.6	-469.1	408,160.24	655,092.38	32° 7' 17.682 N	103° 57' 57.180 W	
7,937.2	82.64	265.89	7,744.9	-65.0	-474.3	408,159.84	655,087.21	32° 7' 17.678 N	103° 57' 57.240 W	
LP Mescal 22 Federal #3H										
7,992.0	92.50	271.00	7,747.3	-66.5	-528.9	408,158.37	655,032.60	32° 7' 17.666 N	103° 57' 57.876 W	
8,007.0	93.80	270.50	7,746.4	-66.3	-543.9	408,158.57	655,017.62	32° 7' 17.668 N	103° 57' 58.050 W	
8,038.0	94.60	270.70	7,744.2	-66.0	-574.8	408,158.89	654,986.71	32° 7' 17.672 N	103° 57' 58.409 W	
8,134.0	93.30	270.70	7,737.6	-64.8	-670.6	408,160.06	654,890.94	32° 7' 17.687 N	103° 57' 59.523 W	
8,229.0	93.00	270.10	7,732.3	-64.1	-765.4	408,160.72	654,796.09	32° 7' 17.697 N	103° 58' 0.626 W	
8,324.0	93.60	269.10	7,726.9	-64.8	-860.2	408,160.06	654,701.25	32° 7' 17.694 N	103° 58' 1.728 W	
8,419.0	94.30	271.00	7,720.3	-64.7	-955.0	408,160.15	654,606.48	32° 7' 17.698 N	103° 58' 2.831 W	
8,515.0	92.30	272.90	7,714.8	-61.4	-1,050.8	408,163.41	654,510.71	32° 7' 17.733 N	103° 58' 3.944 W	
8,610.0	92.20	272.60	7,711.1	-56.9	-1,145.6	408,167.96	654,415.89	32° 7' 17.781 N	103° 58' 5.047 W	
8,705.0	90.30	273.60	7,709.0	-51.8	-1,240.4	408,173.10	654,321.06	32° 7' 17.835 N	103° 58' 6.149 W	
8,800.0	90.20	273.60	7,708.6	-45.8	-1,335.3	408,179.06	654,226.24	32° 7' 17.898 N	103° 58' 7.251 W	
8,895.0	89.20	273.10	7,709.1	-40.2	-1,430.1	408,184.61	654,131.41	32° 7' 17.956 N	103° 58' 8.354 W	
8,990.0	90.00	271.70	7,709.7	-36.3	-1,525.0	408,188.59	654,036.50	32° 7' 17.998 N	103° 58' 9.457 W	
9,086.0	90.60	271.50	7,709.2	-33.6	-1,621.0	408,191.27	653,940.54	32° 7' 18.028 N	103° 58' 10.573 W	
9,181.0	91.60	271.20	7,707.4	-31.3	-1,715.9	408,193.51	653,845.58	32° 7' 18.053 N	103° 58' 11.677 W	
9,276.0	91.20	271.70	7,705.1	-28.9	-1,810.9	408,195.91	653,750.64	32° 7' 18.080 N	103° 58' 12.781 W	
9,371.0	91.30	271.50	7,703.0	-26.3	-1,905.8	408,198.57	653,655.70	32° 7' 18.110 N	103° 58' 13.885 W	
9,467.0	91.10	271.00	7,701.0	-24.2	-2,001.7	408,200.66	653,559.75	32° 7' 18.134 N	103° 58' 15.001 W	
9,562.0	90.90	271.40	7,699.4	-22.2	-2,096.7	408,202.65	653,464.78	32° 7' 18.156 N	103° 58' 16.105 W	
9,657.0	91.00	271.50	7,697.8	-19.8	-2,191.7	408,205.05	653,369.82	32° 7' 18.183 N	103° 58' 17.209 W	
9,753.0	90.90	271.20	7,696.2	-17.5	-2,287.6	408,207.31	653,273.86	32° 7' 18.209 N	103° 58' 18.325 W	
9,847.0	91.00	270.00	7,694.6	-16.6	-2,381.6	408,208.30	653,179.88	32° 7' 18.222 N	103° 58' 19.418 W	
9,942.0	91.00	269.30	7,693.0	-17.1	-2,476.6	408,207.72	653,084.90	32° 7' 18.219 N	103° 58' 20.522 W	
10,037.0	91.40	268.90	7,691.0	-18.6	-2,571.6	408,206.23	652,989.93	32° 7' 18.208 N	103° 58' 21.627 W	
10,133.0	90.20	269.80	7,689.6	-19.7	-2,667.5	408,205.14	652,893.95	32° 7' 18.200 N	103° 58' 22.743 W	
10,228.0	90.30	269.60	7,689.2	-20.2	-2,762.5	408,204.64	652,798.95	32° 7' 18.198 N	103° 58' 23.848 W	
10,323.0	90.20	270.30	7,688.8	-20.3	-2,857.5	408,204.56	652,703.96	32° 7' 18.200 N	103° 58' 24.952 W	
10,417.0	89.80	270.10	7,688.8	-20.0	-2,951.5	408,204.88	652,609.96	32° 7' 18.207 N	103° 58' 26.045 W	
10,513.0	90.70	270.00	7,688.4	-19.9	-3,047.5	408,204.97	652,513.96	32° 7' 18.211 N	103° 58' 27.162 W	
10,608.0	90.80	270.30	7,687.2	-19.6	-3,142.5	408,205.22	652,418.97	32° 7' 18.216 N	103° 58' 28.266 W	
10,703.0	93.40	270.70	7,683.7	-18.8	-3,237.5	408,206.05	652,324.04	32° 7' 18.228 N	103° 58' 29.370 W	
10,798.0	88.80	269.10	7,681.8	-19.0	-3,332.4	408,205.88	652,229.09	32° 7' 18.229 N	103° 58' 30.474 W	
10,894.0	88.10	268.90	7,684.4	-20.6	-3,428.4	408,204.20	652,133.14	32° 7' 18.216 N	103° 58' 31.590 W	
10,989.0	88.20	268.00	7,687.5	-23.2	-3,523.3	408,201.64	652,038.23	32° 7' 18.193 N	103° 58' 32.694 W	
11,084.0	90.90	267.50	7,688.3	-26.9	-3,618.2	408,197.91	651,943.31	32° 7' 18.160 N	103° 58' 33.798 W	
11,179.0	91.00	267.70	7,686.7	-30.9	-3,713.1	408,193.93	651,848.41	32° 7' 18.123 N	103° 58' 34.901 W	



Stryker Directional
Survey Report - Geographic



Company:	COG PRODUCTION, L.L.C.	Local Co-ordinate Reference:	Well Mescal 22 Federal #3H
Project:	EDDY COUNTY(NAD83)	TVD Reference:	WELL @ 18.0usft (Original Well Elev)
Site:	SECTION 22	MD Reference:	WELL @ 18.0usft (Original Well Elev)
Well:	Mescal 22 Federal #3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan v. Actual	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,274.0	91.50	268.60	7,684.6	-34.0	-3,808.0	408,190.86	651,753.48	32° 7' 18.096 N	103° 58' 36.005 W
11,369.0	91.10	268.60	7,682.5	-36.3	-3,903.0	408,188.54	651,658.53	32° 7' 18.076 N	103° 58' 37.110 W
11,464.0	91.10	267.50	7,680.6	-39.5	-3,997.9	408,185.31	651,563.61	32° 7' 18.047 N	103° 58' 38.214 W
11,560.0	91.60	267.30	7,678.4	-43.9	-4,093.8	408,180.96	651,467.73	32° 7' 18.008 N	103° 58' 39.329 W
11,655.0	91.50	267.50	7,675.8	-48.2	-4,188.6	408,176.65	651,372.87	32° 7' 17.968 N	103° 58' 40.432 W
11,750.0	90.90	266.80	7,673.8	-52.9	-4,283.5	408,171.93	651,278.00	32° 7' 17.924 N	103° 58' 41.535 W
11,845.0	91.10	266.30	7,672.2	-58.6	-4,378.3	408,166.21	651,183.19	32° 7' 17.871 N	103° 58' 42.638 W
11,940.0	91.50	266.30	7,670.0	-64.8	-4,473.1	408,160.08	651,088.41	32° 7' 17.813 N	103° 58' 43.740 W
12,035.0	89.20	265.40	7,669.4	-71.6	-4,567.8	408,153.21	650,993.67	32° 7' 17.748 N	103° 58' 44.842 W
12,130.0	88.40	265.70	7,671.4	-79.0	-4,662.5	408,145.84	650,898.98	32° 7' 17.679 N	103° 58' 45.944 W
12,181.0	87.70	265.60	7,673.1	-82.9	-4,713.3	408,141.97	650,848.16	32° 7' 17.642 N	103° 58' 46.535 W
12,242.0	87.70	265.60	7,675.6	-87.6	-4,774.1	408,137.30	650,787.39	32° 7' 17.598 N	103° 58' 47.242 W
BHL @ 12242 MD - PBHL Mescal 22 Federal #3H									

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
7,115.0	7,113.8	-10.2	-40.9	TI @ 7115 MD	
12,242.0	7,675.6	-87.6	-4,774.1	BHL @ 12242 MD	

Checked By: _____ Approved By: _____ Date: _____

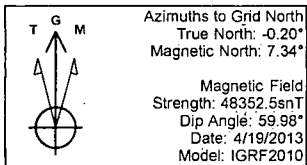


COMPANY: COG PRODUCTION, L.L.C.
WELL: Mescal 22 Federal #3H
COUNTY: EDDY COUNTY(NAD83)
DATUM: North American Datum 1983
RIG: Silver Oak #7
GRID CORRECTION: 7.34° E



OFFICE: 936.582.7296

PLANNING: 214.784.3778



GEODETIC ZONE: New Mexico Eastern Zone					
WELL @ 18.0usft (Original Well Elev)					
GROUND ELEVATION: 0.0					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	408224.85	655561.49	32° 7' 18.306 N	103° 57' 51.723 W

CRITICAL POINTS							
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure
7113.8	7115.0	3.64	274.92	-10.2	-40.9	41.0	0.0
7675.6	12242.0	87.70	265.60	-87.6	-4774.1	4774.6	4740.3
							Annotation
							TI @ 7115 MD
							BHL @ 12242 MD

CREATED BY: BRANDON ESTES

DATE: 10:18, May 20 2013
PLAN: Plan v. Actual

