



A GYRO TECHNOLOGIES INC. COMPANY

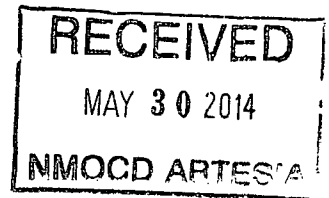
P.O. Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

March 19, 2014

15-39514

Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

Attn: Kanicia Castillo



RE: **Falabella 31 Fee No 007H**

Please find enclosed a copy of the survey from 0.00' to 2174.00' ran on the above referenced well.

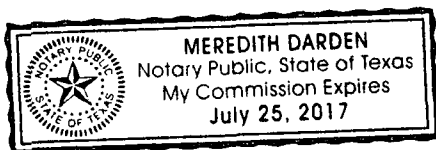
Sincerely,

Keith Havelka
Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 19th day of March, A.D., 2014, by Keith Havelka.

Meredith Darden
Meredith Darden
Notary Public, State of Texas





Company: COG OPERATING LLC

Lease/Well: FALABELLA 31 FEE /7H

Location:

Rig Name: SILVER OAK # 3

State/County: NEW MEXICO/EDDY

Latitude: 32.70, Longitude: -104.42

GRID North is 0.05 Degrees West of True North

VS-Azi: 359.65 Degrees



Depth Reference : RKB = 17'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: falabella 7h-de_01.ut

Minimum Curvature Method

Report Date/Time: 3/19/2014 / 14:55

VAUGHN ENERGY SERVICES

MIDLAND, TX

432-563-5444

SURVEYOR : JAVIER ESTRADA

Falabella 31 Fee No. 007H / API 30-015-39514

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.46	58.23	100.00	0.21	0.34	0.21	0.40	58.23	0.46
200.00	1.12	61.57	199.99	0.89	1.54	0.88	1.78	60.07	0.67
300.00	1.49	64.43	299.96	1.92	3.58	1.89	4.06	61.83	0.37
400.00	1.42	60.56	399.93	3.08	5.82	3.05	6.59	62.10	0.12
500.00	1.35	61.31	499.90	4.26	7.94	4.21	9.01	61.79	0.07
600.00	1.32	63.74	599.87	5.33	10.01	5.27	11.34	61.94	0.06
700.00	1.10	64.98	699.85	6.25	11.91	6.18	13.45	62.31	0.22
800.00	1.05	70.67	799.83	6.96	13.65	6.88	15.32	62.98	0.12
900.00	0.95	53.43	899.82	7.76	15.18	7.67	17.05	62.92	0.32
1000.00	0.95	52.71	999.81	8.76	16.51	8.66	18.69	62.05	0.01
1100.00	0.75	47.89	1099.79	9.70	17.65	9.59	20.14	61.22	0.21
1200.00	0.50	18.91	1199.79	10.55	18.28	10.44	21.10	60.01	0.40
1300.00	0.57	21.36	1299.78	11.42	18.60	11.31	21.83	58.45	0.08
1400.00	0.62	28.96	1399.78	12.36	19.04	12.24	22.70	57.02	0.09
1500.00	0.70	12.36	1499.77	13.43	19.44	13.31	23.62	55.37	0.20
1600.00	0.68	28.30	1599.77	14.55	19.85	14.42	24.61	53.77	0.19
1700.00	0.46	8.99	1699.76	15.47	20.20	15.34	25.44	52.55	0.29
1800.00	0.38	17.36	1799.76	16.18	20.36	16.05	26.00	51.52	0.10



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

March 17, 2014

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

RE: Falabella 31 Fee #7H
150' FSL & 1700' FEL
Sec. 31, T18S, R26E
Eddy County, New Mexico

Dear Sir,

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

Very truly yours,

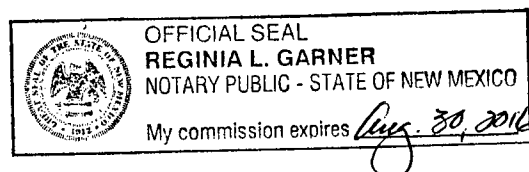
A handwritten signature in cursive script that reads "Chris Graham".

Chris Graham
Drilling Superintendent

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 17th day of March, 2014.

A handwritten signature in cursive script that reads "Regina L. Garner".

Notary Public

FALABELLA 31 FEE 7H

Date	Depth	Deviation	Direction
3/4/2014	174	0.70	0.00
3/4/2014	421	1.00	0.00
3/4/2014	664	1.10	0.00
3/4/2014	904	1.00	0.00
3/4/2014	1154	0.60	0.00
3/6/2014	1567	0.70	0.00
3/6/2014	1915	0.40	0.00
3/8/2014	2380	11.60	19.00
3/8/2014	2412	15.40	16.50
3/8/2014	2443	19.00	18.40
3/8/2014	2475	22.60	18.00
3/8/2014	2506	26.10	17.20
3/8/2014	2537	29.50	15.00
3/8/2014	2568	32.10	10.20
3/8/2014	2600	35.10	5.70
3/8/2014	2631	37.40	2.60
3/8/2014	2662	40.00	0.30
3/8/2014	2694	42.50	358.30
3/8/2014	2725	45.10	358.40
3/8/2014	2756	47.80	358.50
3/8/2014	2787	49.50	359.00
3/8/2014	2818	51.50	359.80
3/8/2014	2849	53.90	359.80
3/9/2014	3006	70.70	2.30
3/9/2014	3037	73.60	1.90
3/9/2014	3068	76.10	359.60
3/9/2014	3099	78.50	357.60
3/9/2014	3130	81.10	356.80
3/9/2014	3162	83.40	356.10
3/9/2014	3223	87.90	355.40
3/9/2014	3255	90.00	355.40
3/9/2014	3286	91.90	355.50
3/10/2014	3368	92.30	355.30
3/10/2014	3556	90.80	357.10
3/10/2014	3650	90.50	358.20
3/10/2014	3743	90.30	359.60
3/10/2014	3837	90.50	0.40
3/10/2014	3931	91.10	0.20
3/10/2014	4025	91.80	0.50
3/10/2014	4120	92.10	0.20
3/10/2014	4214	92.70	359.80
3/10/2014	4307	93.20	359.70
3/11/2014	4401	92.80	0.50

Date	Depth	Deviation	Direction
3/11/2014	4495	91.80	0.10
3/11/2014	4588	91.60	359.70
3/11/2014	4682	92.00	359.30
3/11/2014	4775	92.50	359.30
3/11/2014	4869	92.70	359.60
3/11/2014	4962	92.60	359.00
3/11/2014	5057	92.30	358.00
3/11/2014	5150	91.30	357.50
3/11/2014	5244	91.50	357.50
3/11/2014	5337	91.90	357.30
3/11/2014	5431	92.20	357.50
3/12/2014	5525	92.10	358.30
3/12/2014	5619	92.10	359.00
3/12/2014	5806	92.00	359.50
3/13/2014	5900	91.90	359.90
3/13/2014	5995	91.90	0.20
3/13/2014	6088	92.10	0.60
3/13/2014	6182	92.50	1.30
3/13/2014	6273	92.10	1.60
3/13/2014	6367	92.40	1.80
3/13/2014	6460	91.80	1.10
3/13/2014	6553	92.00	1.20
3/13/2014	6646	90.90	0.50
3/14/2014	6832	89.90	359.50
3/14/2014	6926	90.70	358.90
3/14/2014	7019	91.70	358.50
3/14/2014	7112	91.70	357.40
3/14/2014	7206	92.30	356.70
3/14/2014	7300	92.70	356.80
3/14/2014	7371	92.90	356.80



PHOENIX
TECHNOLOGY SERVICES

COG Operating LLC

Eddy County, NM (NAD 27 NME)

Falabella 31 Fee

#7H

WB1/Job #1410178

Survey: Phoenix MWD Survey

Standard Survey Report

15 March, 2014



PHOENIX
TECHNOLOGY SERVICES

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #7H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3421.00usft (Silver Oak 3)
Site:	Falabella 31 Fee	MD Reference:	KB @ 3421.00usft (Silver Oak 3)
Well:	#7H	North Reference:	Grid
Wellbore:	WB1/Job #1410178	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	Compass 5000 GCR DB

Project:	Eddy County, NM (NAD 27 NME)	System Datum:	Mean Sea Level
Map System:	US State Plane 1927 (Exact solution)		
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Falabella 31 Fee				
Site Position:		Northing:	617,359.30 usft	Latitude:	32° 41' 49.87612 N
From:	Map	Easting:	472,777.20 usft	Longitude:	104° 25' 18.57515 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.05 °

Well:	#7H					
Well Position	+N/-S	0.00 usft	Northing:	617,355.40 usft	Latitude:	32° 41' 49.84735 N
	+E/-W	0.00 usft	Easting:	473,994.10 usft	Longitude:	104° 25' 4.33434 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,403.00 usft

Wellbore:	WB1/Job #1410178				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010_14	3/7/2014	7.68	60.41	48,535

Design:	Surveys (Silver Oak 3)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	359.65	

Survey Program	Date	3/15/2014			
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
100.00	2,174.00	VES Gyro Survey (WB1/Job #1410178)	VES-ISCWSA-GYRO-3	Biaxial Semi-Cont. Gyro	
2,224.00	7,432.00	Phoenix MWD Survey (WB1/Job #141017)	MWD	MWD - Standard	

Survey										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate	
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
2,174.00	0.30	117.40	2,173.76	16.81	20.99	16.69	0.00	0.00	0.00	
Tie-on to VES Gyro Survey										
2,224.00	0.30	152.80	2,223.75	16.64	21.17	16.51	0.36	0.00	70.80	
First Phoenix MWD Survey										
2,255.00	0.00	178.00	2,254.75	16.57	21.20	16.44	0.97	-0.97	0.00	
2,286.00	0.30	129.10	2,285.75	16.51	21.27	16.38	0.97	0.97	0.00	
2,318.00	2.80	19.20	2,317.74	17.20	21.59	17.07	9.11	7.81	-343.44	
2,349.00	7.90	22.20	2,348.60	19.89	22.64	19.75	16.47	16.45	9.68	
2,380.00	11.60	19.00	2,379.14	24.81	24.46	24.66	12.06	11.94	-10.32	

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #7H
Project:	Eddy County, NM.(NAD 27-NME)	TVD Reference:	KB @ 3421.00usft (Silver Oak 3)
Site:	Falabella 31 Fee	MD Reference:	KB @ 3421.00usft (Silver Oak 3)
Well:	#7H	North Reference:	Grid
Wellbore:	WB1/Job #1410178	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	Compass 5000 GCR DB

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
2,412.00	15.40	16.50	2,410.25	31.93	26.72	31.76	12.01	11.88	-7.81	
2,443.00	19.00	18.40	2,439.86	40.67	29.48	40.49	11.75	11.61	6.13	
2,475.00	22.60	18.00	2,469.77	51.46	33.03	51.26	11.26	11.25	-1.25	
2,506.00	26.10	17.20	2,498.01	63.64	36.88	63.42	11.34	11.29	-2.58	
2,537.00	29.50	15.00	2,525.43	77.53	40.88	77.28	11.45	10.97	-7.10	
2,568.00	32.10	10.20	2,552.06	93.02	44.31	92.75	11.54	8.39	-15.48	
2,600.00	35.10	5.70	2,578.71	110.55	46.73	110.26	12.18	9.38	-14.06	
2,631.00	37.40	2.60	2,603.71	128.82	48.05	128.53	9.49	7.42	-10.00	
2,662.00	40.00	0.30	2,627.91	148.20	48.53	147.90	9.58	8.39	-7.42	
2,694.00	42.50	358.30	2,651.96	169.29	48.26	168.99	8.83	7.81	-6.25	
2,725.00	45.10	358.40	2,674.34	190.74	47.64	190.44	8.39	8.39	0.32	
2,756.00	47.80	358.50	2,695.69	213.19	47.03	212.90	8.71	8.71	0.32	
2,787.00	49.50	359.00	2,716.17	236.46	46.53	236.17	5.62	5.48	1.61	
2,818.00	51.50	359.80	2,735.89	260.38	46.28	260.09	6.75	6.45	2.58	
2,850.00	53.90	0.50	2,755.28	285.83	46.35	285.54	7.70	7.50	2.19	
2,881.00	57.30	1.80	2,772.79	311.40	46.87	311.11	11.50	10.97	4.19	
2,912.00	61.10	2.10	2,788.66	338.00	47.78	337.71	12.29	12.26	0.97	
2,943.00	64.40	2.20	2,802.86	365.54	48.81	365.24	10.65	10.65	0.32	
2,974.00	67.80	2.40	2,815.41	393.86	49.95	393.54	10.98	10.97	0.65	
3,006.00	70.70	2.30	2,826.75	423.75	51.17	423.43	9.07	9.06	-0.31	
3,037.00	73.60	1.90	2,836.25	453.24	52.25	452.91	9.44	9.35	-1.29	
3,068.00	76.10	359.60	2,844.35	483.15	52.64	482.82	10.78	8.06	-7.42	
3,099.00	78.50	357.60	2,851.17	513.38	51.90	513.05	9.98	7.74	-6.45	
3,130.00	81.10	356.80	2,856.66	543.85	50.41	543.53	8.76	8.39	-2.58	
3,162.00	83.40	356.10	2,860.97	575.50	48.45	575.19	7.51	7.19	-2.19	
3,193.00	85.80	355.50	2,863.89	606.27	46.19	605.98	7.98	7.74	-1.94	
3,224.00	87.90	355.40	2,865.59	637.13	43.73	636.85	6.78	6.77	-0.32	
3,255.00	90.00	355.40	2,866.16	668.02	41.24	667.76	6.77	6.77	0.00	
3,286.00	91.90	355.50	2,865.65	698.92	38.79	698.67	6.14	6.13	0.32	
3,368.00	92.30	355.30	2,862.64	780.60	32.21	780.39	0.55	0.49	-0.24	
3,462.00	91.10	356.10	2,859.85	874.29	25.17	874.12	1.53	-1.28	0.85	
3,556.00	90.80	357.10	2,858.30	968.11	19.60	967.97	1.11	-0.32	1.06	
3,650.00	90.50	358.20	2,857.23	1,062.02	15.74	1,061.91	1.21	-0.32	1.17	
3,743.00	90.30	359.60	2,856.58	1,155.00	13.96	1,154.89	1.52	-0.22	1.51	
3,837.00	90.50	0.40	2,855.92	1,249.00	13.96	1,248.89	0.88	0.21	0.85	
3,932.00	91.10	0.20	2,854.60	1,343.99	14.45	1,343.87	0.67	0.63	-0.21	
4,025.00	91.80	0.50	2,852.24	1,436.95	15.02	1,436.84	0.82	0.75	0.32	
4,120.00	92.10	0.20	2,849.01	1,531.90	15.60	1,531.77	0.45	0.32	-0.32	
4,213.00	92.70	359.80	2,845.12	1,624.82	15.60	1,624.69	0.78	0.65	-0.43	
4,307.00	93.20	359.70	2,840.28	1,718.69	15.19	1,718.57	0.54	0.53	-0.11	
4,401.00	92.80	0.50	2,835.36	1,812.56	15.36	1,812.43	0.95	-0.43	0.85	
4,494.00	91.80	0.10	2,831.63	1,905.48	15.84	1,905.35	1.16	-1.08	-0.43	
4,588.00	91.60	359.70	2,828.84	1,999.44	15.68	1,999.31	0.48	-0.21	-0.43	

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #7H
Project:	Eddy County, NM (NAD 27, NME)	TVD Reference:	KB @ 3421' 00usft (Silver Oak 3)
Site:	Falabella 31 Fee	MD Reference:	KB @ 3421' 00usft (Silver Oak 3)
Well:	#7H	North Reference:	Grid
Wellbore:	WB1/Job #1410178	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	Compass 5000 GCR DB

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,682.00	92.00	359.30	2,825.89	2,093.39	14.86	2,093.26	0.60	0.43	-0.43	
4,776.00	92.50	359.30	2,822.20	2,187.31	13.71	2,187.19	0.53	0.53	0.00	
4,869.00	92.70	359.60	2,817.98	2,280.21	12.82	2,280.09	0.39	0.22	0.32	
4,962.00	92.60	359.00	2,813.68	2,373.10	11.68	2,372.99	0.65	-0.11	-0.65	
5,057.00	92.30	358.00	2,809.62	2,467.98	9.20	2,467.88	1.10	-0.32	-1.05	
5,150.00	91.30	357.50	2,806.69	2,560.86	5.55	2,560.78	1.20	-1.08	-0.54	
5,244.00	91.50	357.50	2,804.40	2,654.75	1.45	2,654.69	0.21	0.21	0.00	
5,337.00	91.90	357.30	2,801.64	2,747.61	-2.77	2,747.58	0.48	0.43	-0.22	
5,431.00	92.20	357.50	2,798.28	2,841.45	-7.03	2,841.44	0.38	0.32	0.21	
5,524.00	92.10	358.30	2,794.79	2,934.32	-10.43	2,934.33	0.87	-0.11	0.86	
5,619.00	92.10	359.00	2,791.31	3,029.23	-12.67	3,029.25	0.74	0.00	0.74	
5,712.00	92.40	359.00	2,787.66	3,122.15	-14.29	3,122.18	0.32	0.32	0.00	
5,806.00	92.00	359.50	2,784.05	3,216.07	-15.52	3,216.10	0.68	-0.43	0.53	
5,900.00	91.90	359.90	2,780.85	3,310.01	-16.01	3,310.05	0.44	-0.11	0.43	
5,994.00	91.90	0.20	2,777.73	3,403.96	-15.93	3,404.00	0.32	0.00	0.32	
6,088.00	92.10	0.60	2,774.45	3,497.90	-15.27	3,497.93	0.48	0.21	0.43	
6,180.00	92.40	1.20	2,770.84	3,589.82	-13.83	3,589.84	0.73	0.33	0.65	
6,274.00	92.10	1.60	2,767.15	3,683.72	-11.54	3,683.72	0.53	-0.32	0.43	
6,367.00	92.40	1.80	2,763.50	3,776.61	-8.78	3,776.59	0.39	0.32	0.22	
6,460.00	91.80	1.10	2,760.09	3,869.51	-6.43	3,869.48	0.99	-0.65	-0.75	
6,553.00	92.00	1.20	2,757.01	3,962.44	-4.56	3,962.40	0.24	0.22	0.11	
6,646.00	90.90	0.50	2,754.65	4,055.40	-3.18	4,055.34	1.40	-1.18	-0.75	
6,739.00	90.40	360.00	2,753.60	4,148.39	-2.78	4,148.33	0.76	-0.54	-0.54	
6,832.00	89.90	359.50	2,753.35	4,241.39	-3.18	4,241.33	0.76	-0.54	-0.54	
6,926.00	90.70	358.90	2,752.86	4,335.38	-4.50	4,335.33	1.06	0.85	-0.64	
7,019.00	91.70	358.50	2,750.91	4,428.33	-6.60	4,428.29	1.16	1.08	-0.43	
7,112.00	91.70	357.40	2,748.16	4,521.23	-9.93	4,521.21	1.18	0.00	-1.18	
7,206.00	92.30	356.70	2,744.87	4,615.05	-14.76	4,615.05	0.98	0.64	-0.74	
7,300.00	92.70	356.80	2,740.77	4,708.81	-20.09	4,708.84	0.44	0.43	0.11	
7,371.00	92.90	356.80	2,737.31	4,779.61	-24.05	4,779.67	0.28	0.28	0.00	
Last Phoenix MWD Survey										
7,432.00	92.90	356.80	2,734.22	4,840.44	-27.45	4,840.52	0.00	0.00	0.00	
Projection to TD										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/S (usft)	+E/W (usft)	Comment	
2,174.00	2,173.76	16.81	20.99	Tie-on to VES Gyro Survey	
2,224.00	2,223.75	16.64	21.17	First Phoenix MWD Survey	
7,371.00	2,737.31	4,779.61	-24.05	Last Phoenix MWD Survey	
7,432.00	2,734.22	4,840.44	-27.45	Projection to TD	



CURRENT WELL SKETCH

		API: 30-015-39514 SPUD: 3/3/2014 RR: 3/16/14 RIG: Silver Oak #3	Falabella 31 Fee #7 Eddy County, NM	Sec 31, T-18S, R-26E SHL: 150' FSL & 1700' FEL BHL: 330' FNL & 1700' FEL GL: 3,403' KB: 3,421'	HOLE SIZE	MW (ppg)	BHST (°F)			EVALUATION
			<u>Surface Casing @ 1,217'</u> 8 5/8" 32# J-55 LTC circ 713 sxs		11"	8.3				
			KOP @ 2311' EOC @ 3342' EOL @ 7432' Avg TVD in Lateral - 2799'		7-7/8"	8.6				Mud Log
			<u>Production Casing @ 7,430'</u> 5 1/2" 17# L-80 LTC FC @ 7,429 Marker joint @ 2,220' DV tool @ 1,707' Circ 247 sxs							

Updated by	S.Brumley
Date:	3/19/2014