

Results of Directional Survey

API number:	30-025-41911		
OGRID:		Operator:	COG PRODUCTION, LLC
		Property:	CORVO FEDERAL # 3H

surface	ULSTR:	N	29	T 24S	R 32E
				190 FSL	1880 FWL

BH Loc	ULSTR:	C	29	T 24S	R 32E
12907	MD	8445.7	TVD	347 FNL	1852 FWL
4933 FSL					

Top Perf/OH	ULSTR:	N	29	T 24S	R 32E
8634	MD	8399.2	TVD	667 FSL	1805 FWL

Bot Perf/OH	ULSTR:	C	29	T 24S	R 32E
12830	MD	8449.8	TVD	424 FNL	1854 FWL
4856 FSL					

	MD	N/S	E/W	VD
	8605.00	448.70	-73.50	8391.40
TOP PERFS/OH	8634.00	476.67	-74.53	8399.16
	8636.00	478.60	-74.60	8399.70
	12766.00	4602.20	-28.40	8452.80
BOT PERFS/OH	12830.00	4666.07	-30.02	8449.77
	12861.00	4697.00	-30.80	8448.30

NEXT TO LAST	12861.00	4697.00	-30.80	8448.30
LAST READING	12907.00	4742.90	-32.30	8445.70
TD	12907.00	4742.90	-32.30	8445.70

Surface Location	190	FS	1880	FW
Projected BHL	4933	FS	1848	FW
Location of				
Top Perfs/OH	667	FS	1805	FW
Bottom Perfs/OH	4856	FS	1850	FW

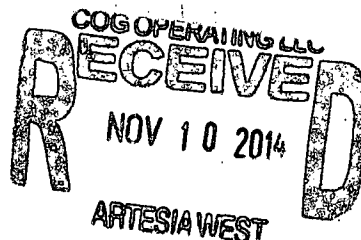
SUMMARY of Subsurface Locations

Surface Location	N-29-24S-32E	190	FS	1880	FW	Vert. Depth
Top Perfs/OH	N-29-24S-32E	667	FS	1805	FW	8399.16
Bottom Perfs/OH	C-29-24S-32E	4856	FS	1850	FW	8449.77
Projected TD	C-29-24S-32E	4933	FS	1848	FW	8445.70

FEB 10 2015



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



October 27, 2014

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

RE: Corvo Federal #3H
190' FSL & 1880' FWL
Sec. 29, T24S, R32E
Lea County, New Mexico

HOBSOCD
JAN 30 2015
RECEIVED

Dear Sir,

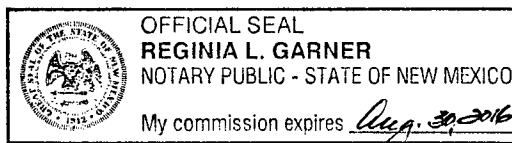
The attached is the Deviation Survey for the above captioned well.

Very truly yours,

Eddie LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 27th day of October, 2014.

Notary Public

Corvo Federal #3H

Date	Depth	Deviation	Direction	TVD	Horiz Disp
10/4/2014	122	0.40	299.00	0.00	0.00
10/4/2014	212	0.40	296.30	0.00	0.00
10/5/2014	328	1.00	309.30	0.00	0.00
10/5/2014	414	39.00	334.30	0.00	0.00
10/5/2014	503	1.40	302.30	0.00	0.00
10/5/2014	564	1.70	304.30	0.00	0.00
10/5/2014	625	2.00	313.30	0.00	0.00
10/5/2014	687	2.00	317.30	0.00	0.00
10/5/2014	748	1.90	313.30	0.00	0.00
10/5/2014	782	2.00	321.30	0.00	0.00
10/7/2014	852	1.50	312.30	0.00	0.00
10/7/2014	945	1.50	309.30	0.00	0.00
10/8/2014	1129	1.00	327.00	0.00	0.00
10/8/2014	1220	1.00	327.00	0.00	0.00
10/8/2014	1312	0.70	319.30	0.00	0.00
10/8/2014	1587	0.60	319.30	0.00	0.00
10/8/2014	1769	0.50	303.30	0.00	0.00
10/8/2014	1953	0.60	298.30	0.00	0.00
10/8/2014	2137	0.60	289.30	0.00	0.00
10/8/2014	2610	0.70	264.30	0.00	0.00
10/9/2014	2796	1.40	265.00	0.00	0.00
10/9/2014	2891	1.40	267.00	0.00	0.00
10/9/2014	2984	1.40	267.00	0.00	0.00
10/9/2014	3079	1.80	276.00	0.00	0.00
10/9/2014	3173	2.20	282.00	0.00	0.00
10/9/2014	3268	2.10	284.30	0.00	0.00
10/9/2014	3362	2.10	270.30	0.00	0.00
10/9/2014	3457	2.00	284.30	0.00	0.00
10/9/2014	3551	1.40	312.30	0.00	0.00
10/9/2014	3645	1.10	272.30	0.00	0.00
10/9/2014	3929	1.00	196.30	0.00	0.00
10/10/2014	4022	0.90	208.00	0.00	0.00
10/10/2014	4117	0.40	162.00	0.00	0.00
10/10/2014	4212	0.50	150.00	0.00	0.00
10/10/2014	4327	0.60	184.00	0.00	0.00
10/12/2014	4635	0.70	251.04	0.00	0.00
10/12/2014	4730	0.79	249.02	0.00	0.00
10/12/2014	4825	0.60	257.70	0.00	0.00
10/12/2014	5014	0.40	21.25	0.00	0.00
10/12/2014	5111	0.70	327.55	0.00	0.00
10/12/2014	5204	0.31	337.13	0.00	0.00
10/12/2014	5301	0.40	331.24	0.00	0.00
10/12/2014	5390	0.48	316.12	0.00	0.00

Date	Depth	Deviation	Direction	TVD	Horiz Disp
10/12/2014	5485	0.48	332.91	0.00	0.00
10/12/2014	5677	0.62	327.42	0.00	0.00
10/12/2014	6053	0.70	314.32	0.00	0.00
10/12/2014	6431	0.79	299.51	0.00	0.00
10/13/2014	6620	0.70	296.13	0.00	0.00
10/13/2014	6904	0.40	290.24	0.00	0.00
10/13/2014	6995	0.40	275.00	0.00	0.00
10/13/2014	7093	0.30	251.40	0.00	0.00
10/13/2014	7313	1.19	218.04	0.00	0.00
10/13/2014	7407	1.19	209.25	0.00	0.00
10/13/2014	7500	0.40	185.52	0.00	0.00
10/13/2014	7597	0.62	172.42	0.00	0.00
10/13/2014	7691	0.88	158.31	0.00	0.00
10/15/2014	7915	2.10	356.90	7913.00	17.90
10/15/2014	7947	5.10	20.00	7945.00	19.82
10/15/2014	8010	14.60	8.40	8007.00	30.02
10/15/2014	8041	19.90	5.90	8037.00	5110.00
10/15/2014	8104	27.50	5.50	8094.00	64.56
10/15/2014	8167	33.70	5.70	8149.00	96.50
10/15/2014	8199	36.70	5.90	8175.17	0.00
10/15/2014	8230	39.40	4.80	8199.57	0.00
10/15/2014	8262	43.00	3.60	8223.00	0.00
10/15/2014	8293	46.20	2.60	8245.70	0.00
10/16/2014	8325	50.60	0.90	8266.00	201.20
10/16/2014	8356	54.60	1.20	8285.00	225.81
10/16/2014	8388	57.50	1.50	8303.00	252.34
10/16/2014	8417	60.60	0.40	8318.57	0.00
10/16/2014	8479	64.10	359.50	8347.70	0.00
10/16/2014	8488	62.90	0.20	8333.24	0.00
10/16/2014	8511	66.40	358.30	8360.47	0.00
10/16/2014	8542	70.00	357.70	8371.98	0.00
10/16/2014	8572	72.20	357.70	8382.34	0.00
10/17/2014	8700	77.10	358.00	8415.00	541.10
10/17/2014	8731	79.80	358.50	8421.00	571.46
10/17/2014	8984	88.90	1.30	8442.00	823.21
10/17/2014	9173	88.10	359.00	8442.00	1012.15
10/17/2014	9268	91.10	358.80	8442.26	1107.14
10/17/2014	9361	89.10	358.00	8442.10	1200.11
10/17/2014	9455	90.40	359.60	8442.51	0.00
10/17/2014	9550	89.50	358.30	8442.59	0.00
10/17/2014	9645	89.80	358.80	8443.17	0.00
10/17/2014	9739	90.20	359.20	8443.17	0.00
10/18/2014	9834	90.40	359.80	8442.00	1673.06
10/18/2014	9929	88.10	1.50	8443.00	1768.03
10/18/2014	10023	89.70	1.80	8445.00	1861.95

Date	Depth	Deviation	Direction	TVD	Horiz Disp
10/18/2014	10212	89.80	4.00	8446.96	2050.68
10/18/2014	10307	90.50	2.00	8446.71	2145.51
10/18/2014	10402	92.40	1.30	8444.31	2240.41
10/18/2014	10497	92.10	1.80	8440.00	0.00
10/18/2014	10590	89.70	1.80	8439.11	0.00
10/18/2014	10685	89.50	3.50	8439.78	0.00
10/19/2014	10779	86.90	2.20	8442.00	2616.86
10/19/2014	10874	87.70	1.50	8447.00	2711.68
10/19/2014	10969	89.90	0.60	8449.00	2806.62
10/19/2014	11159	91.60	0.10	8444.79	2996.56
10/19/2014	11252	90.20	359.80	8443.33	3089.54
10/19/2014	11347	88.50	0.90	8444.41	3184.00
10/19/2014	11536	91.10	358.20	8445.55	3373.48
10/20/2014	11724	90.20	1.40	8443.50	3561.45
10/20/2014	11819	89.60	4.10	8443.66	3656.30
10/20/2014	11914	89.50	3.80	8441.14	3751.02
10/20/2014	12009	91.50	3.20	8443.58	3845.80
10/20/2014	12104	90.30	2.50	8442.09	3940.63
10/20/2014	12199	87.00	1.30	8444.33	4035.52
10/20/2014	12293	88.70	0.70	8447.85	4129.36
10/20/2014	12388	88.00	359.90	8447.79	4221.41
10/21/2014	12482	88.60	359.00	8448.40	4318.40
10/21/2014	12576	87.40	359.30	8451.38	4412.33
10/21/2014	12671	89.30	358.40	8455.70	4507.28
10/21/2014	12766	92.10	358.80	8452.00	4602.25
10/21/2014	12861	93.30	358.20	8448.48	4697.12



October 17, 2014

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

HOBBSOCD
JAN 30 2015
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Attn: Kanicia Castillo

RE: **Corvo Fed 3H**

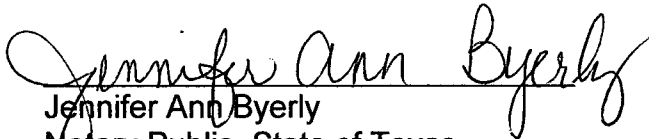
Please find enclosed a copy of the survey from 0.00' to 7740.00' ran on the above referenced well.

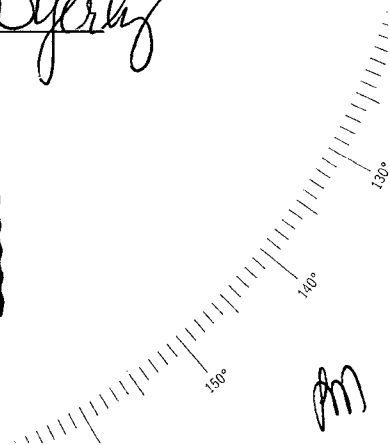
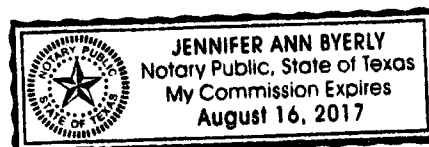
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 17 day of October, A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: Cog Operating

Lease/Well: Corvo Fed /3H

Rig Name: Silver Oak Rig 7

State/County: New Mexico /Lea

Latitude: 32.18, Longitude: -103.70

GRID North is 0.34 Degrees East of True North

VS-Azi: 359.63 Degrees

Depth Reference : R.K.B = 18Ft

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: corvo fed 3h-de_01.ut

Minimum Curvature Method

Report Date/Time: 10/17/2014 / 12:11

VES Survey International

(432) 563-5444

West Texas

Surveyor: Javier Estrada

Corvo Fed 3H / API 30-025-41911

HOBBSOCD
JAN 30 2015
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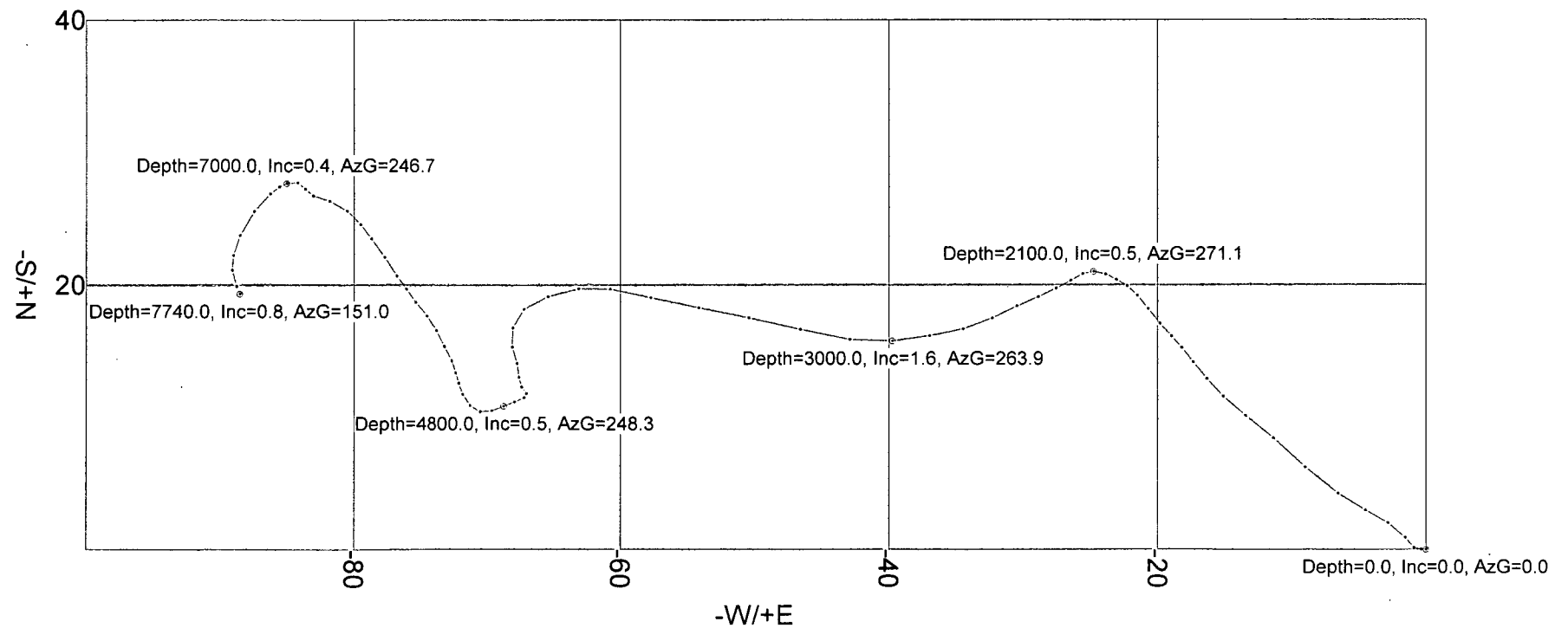
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.42	272.41	100.00	0.02	-0.37	0.02	0.37	272.41	0.42
200.00	0.23	303.01	200.00	0.14	-0.91	0.15	0.92	278.76	0.26
300.00	0.94	323.60	299.99	0.91	-1.56	0.92	1.81	300.21	0.73
400.00	1.10	297.33	399.98	2.01	-2.90	2.03	3.53	304.73	0.49
500.00	1.13	302.18	499.96	2.97	-4.58	3.00	5.46	302.98	0.10
600.00	1.61	301.58	599.93	4.24	-6.62	4.28	7.86	302.63	0.48
700.00	2.00	315.63	699.88	6.22	-9.03	6.28	10.97	304.54	0.58
800.00	1.68	310.04	799.83	8.41	-11.37	8.48	14.14	306.47	0.37
900.00	1.40	308.85	899.79	10.11	-13.45	10.20	16.83	306.95	0.28
1000.00	1.14	314.13	999.77	11.57	-15.11	11.67	19.03	307.45	0.28
1100.00	0.93	321.81	1099.75	12.91	-16.33	13.01	20.81	308.32	0.25
1200.00	0.92	320.61	1199.74	14.16	-17.34	14.28	22.39	309.25	0.03
1300.00	0.67	323.32	1299.73	15.25	-18.20	15.37	23.74	309.97	0.25
1400.00	0.66	314.03	1399.72	16.12	-18.96	16.24	24.89	310.37	0.11
1500.00	0.83	322.38	1499.71	17.10	-19.82	17.22	26.17	310.78	0.20
1600.00	0.80	319.87	1599.70	18.20	-20.71	18.33	27.57	311.31	0.05
1700.00	0.66	322.10	1699.69	19.19	-21.51	19.32	28.82	311.73	0.14
1800.00	0.58	302.37	1799.69	19.91	-22.29	20.05	29.89	311.77	0.23

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
1900.00	0.50	298.83	1899.68	20.39	-23.10	20.54	30.81	311.44	0.09
2000.00	0.54	294.43	1999.68	20.79	-23.91	20.95	31.68	311.02	0.05
2100.00	0.52	271.12	2099.68	21.00	-24.78	21.16	32.48	310.27	0.21
2200.00	0.51	244.62	2199.67	20.82	-25.63	20.98	33.02	309.08	0.23
2300.00	0.65	237.66	2299.67	20.32	-26.51	20.49	33.41	307.47	0.16
2400.00	0.78	245.09	2399.66	19.73	-27.61	19.91	33.94	305.55	0.16
2500.00	0.92	243.65	2499.65	19.09	-28.95	19.28	34.67	303.40	0.14
2600.00	1.07	248.63	2599.63	18.39	-30.54	18.59	35.65	301.06	0.17
2700.00	1.28	239.36	2699.61	17.48	-32.37	17.69	36.79	298.37	0.29
2800.00	1.39	257.95	2799.59	16.66	-34.52	16.88	38.33	295.76	0.44
2900.00	1.53	259.50	2899.55	16.16	-37.01	16.40	40.38	293.59	0.15
3000.00	1.64	263.89	2999.52	15.77	-39.74	16.02	42.75	291.64	0.17
3100.00	2.02	278.14	3099.46	15.86	-42.91	16.14	45.75	290.29	0.59
3200.00	2.32	284.59	3199.39	16.62	-46.61	16.92	49.48	289.63	0.39
3300.00	2.23	281.41	3299.31	17.52	-50.47	17.84	53.42	289.14	0.16
3400.00	2.15	281.46	3399.24	18.27	-54.21	18.62	57.21	288.63	0.08
3500.00	2.02	283.19	3499.18	19.05	-57.76	19.42	60.82	288.25	0.14
3600.00	1.49	279.83	3599.13	19.67	-60.76	20.07	63.87	287.94	0.53
3700.00	1.24	260.54	3699.10	19.72	-63.11	20.13	66.12	287.35	0.52
3800.00	1.47	250.81	3799.07	19.12	-65.39	19.54	68.12	286.30	0.33
3900.00	0.91	228.77	3899.05	18.17	-67.20	18.61	69.61	285.14	0.72
4000.00	1.05	195.04	3999.04	16.77	-68.03	17.21	70.06	283.85	0.58
4100.00	0.70	159.99	4099.03	15.31	-68.06	15.75	69.76	282.67	0.62
4200.00	0.80	167.33	4199.02	14.05	-67.69	14.49	69.14	281.73	0.13
4300.00	0.41	183.67	4299.01	13.02	-67.57	13.46	68.81	280.91	0.42
4400.00	0.50	151.19	4399.01	12.28	-67.38	12.72	68.49	280.33	0.27
4500.00	0.22	122.12	4499.01	11.79	-67.00	12.22	68.03	279.98	0.33
4600.00	0.46	240.33	4599.01	11.49	-67.18	11.92	68.16	279.70	0.60
4700.00	0.44	249.28	4699.00	11.15	-67.89	11.59	68.80	279.33	0.07
4800.00	0.54	248.28	4799.00	10.84	-68.69	11.29	69.54	278.97	0.10
4900.00	0.57	250.65	4898.99	10.50	-69.60	10.95	70.39	278.58	0.04
5000.00	0.47	281.91	4998.99	10.42	-70.48	10.88	71.24	278.41	0.30
5100.00	0.61	317.01	5098.99	10.90	-71.24	11.36	72.07	278.70	0.35
5200.00	0.58	338.59	5198.98	11.75	-71.79	12.22	72.74	279.30	0.22
5300.00	0.43	341.50	5298.98	12.58	-72.09	13.04	73.18	279.90	0.15
5400.00	0.51	346.31	5398.97	13.36	-72.31	13.83	73.54	280.47	0.09
5500.00	0.60	337.40	5498.97	14.28	-72.62	14.75	74.01	281.12	0.13
5600.00	0.78	331.06	5598.96	15.36	-73.15	15.83	74.75	281.85	0.19
5700.00	0.77	336.23	5698.95	16.56	-73.75	17.04	75.59	282.66	0.07

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
5800.00	0.79	315.04	5798.94	17.66	-74.51	18.15	76.57	283.34	0.29
5900.00	0.75	327.83	5898.93	18.71	-75.35	19.20	77.63	283.95	0.18
6000.00	0.65	319.39	5998.93	19.69	-76.06	20.19	78.57	284.52	0.15
6100.00	0.77	329.35	6098.92	20.70	-76.77	21.20	79.52	285.09	0.17
6200.00	1.16	324.67	6198.90	22.11	-77.70	22.61	80.78	285.88	0.39
6300.00	0.79	325.31	6298.89	23.50	-78.68	24.00	82.11	286.63	0.37
6400.00	0.77	320.08	6398.88	24.58	-79.50	25.09	83.21	287.18	0.07
6500.00	0.85	310.62	6498.87	25.58	-80.50	26.10	84.47	287.63	0.16
6600.00	0.90	288.56	6598.86	26.32	-81.81	26.84	85.94	287.83	0.34
6700.00	0.58	287.69	6698.85	26.72	-83.04	27.26	87.24	287.84	0.33
6800.00	0.44	344.04	6798.85	27.25	-83.63	27.79	87.96	288.05	0.50
6900.00	0.55	281.92	6898.84	27.72	-84.20	28.26	88.65	288.22	0.52
7000.00	0.44	246.67	6998.84	27.66	-85.03	28.21	89.41	288.02	0.32
7100.00	0.26	242.36	7098.84	27.40	-85.58	27.96	89.86	287.75	0.19
7200.00	0.74	228.93	7198.83	26.87	-86.27	27.43	90.36	287.30	0.49
7300.00	1.32	217.90	7298.82	25.54	-87.46	26.11	91.12	286.28	0.61
7400.00	1.10	202.66	7398.80	23.75	-88.54	24.32	91.67	285.02	0.39
7500.00	0.74	192.71	7498.78	22.24	-89.05	22.82	91.78	284.02	0.39
7600.00	0.56	171.90	7598.78	21.13	-89.12	21.71	91.59	283.34	0.29
7700.00	0.92	160.99	7698.77	19.89	-88.79	20.46	90.99	282.62	0.39
7740.00	0.82	150.98	7738.76	19.33	-88.55	19.90	90.63	282.32	0.46



VES Survey International
(432) 563-5444
West Texas
Surveyor: Javier Estrada
Corvo Fed 3H / API 30-025-41911



VES Survey Date: 10/13/2014

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COG Production LLC

Lea County, N.M.

Section 29-24S-32E Corvo Federal #3H

Corvo Federal #3H

Original Hole

Design: Original Hole

Survey Report - Geographic

22 October, 2014

pm

Stryker Directional

Survey Report - Geographic

Company:	COG Production LLC	Local Co-ordinate Reference:	Well Corvo Federal #3H
Project:	Lea County, N.M.	TVD Reference:	GL 3494.4 + 18 @ 3512.4usft (Silver Oak #7)
Site:	Section 29-24S-32E Corvo Federal #3H	MD Reference:	GL 3494.4 + 18 @ 3512.4usft (Silver Oak #7)
Well:	Corvo Federal #3H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

Project	Lea County, N.M.		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Section 29-24S-32E Corvo Federal #3H		
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Site Position:		Northing:	430,350.80 usft	Latitude:	32° 10' 53.613 N
From:	Map	Easting:	696,355.60 usft	Longitude:	103° 41' 55.209 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.34 °

Well	Corvo Federal #3H				
Well Position	+N/-S	0.0 usft	Northing:	430,350.80 usft	Latitude: 32° 10' 53.613 N
	+E/-W	0.0 usft	Easting:	696,355.60 usft	Longitude: 103° 41' 55.209 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level: 3,494.4 usft

Wellbore	Original Hole				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/20/2014	7.30	60.06	48,300

Design	Original Hole				
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Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.63

Survey Program		Date 10/22/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	7,740.0	VES Gyro Survey (Original Hole)	NSG-GYC_Drop	Battery powered gyrocompassing drop gyro	
7,852.0	12,907.0	Stryker MWD Survey (Original Hole)	MWD	MWD - Standard	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	430,350.80	696,355.60	32° 10' 53.613 N	103° 41' 55.209 W
100.0	0.42	272.41	100.0	0.0	-0.4	430,350.82	696,355.23	32° 10' 53.613 N	103° 41' 55.213 W
200.0	0.23	303.01	200.0	0.1	-0.9	430,350.94	696,354.69	32° 10' 53.614 N	103° 41' 55.220 W
300.0	0.94	323.60	300.0	0.9	-1.6	430,351.71	696,354.04	32° 10' 53.622 N	103° 41' 55.227 W
400.0	1.10	297.33	400.0	2.0	-2.9	430,352.81	696,352.70	32° 10' 53.633 N	103° 41' 55.243 W
500.0	1.13	302.18	500.0	3.0	-4.6	430,353.78	696,351.01	32° 10' 53.642 N	103° 41' 55.262 W
600.0	1.61	301.58	599.9	4.2	-6.6	430,355.04	696,348.98	32° 10' 53.655 N	103° 41' 55.286 W
700.0	2.00	315.63	699.9	6.2	-9.0	430,357.02	696,346.56	32° 10' 53.675 N	103° 41' 55.314 W
800.0	1.68	310.04	799.8	8.4	-11.4	430,359.21	696,344.22	32° 10' 53.697 N	103° 41' 55.341 W
900.0	1.40	308.85	899.8	10.1	-13.4	430,360.92	696,342.15	32° 10' 53.714 N	103° 41' 55.365 W
1,000.0	1.14	314.13	999.8	11.6	-15.1	430,362.38	696,340.48	32° 10' 53.728 N	103° 41' 55.384 W

Stryker Directional

Survey Report - Geographic

Company:	COG Production LLC	Local Co-ordinate Reference:	Well Corvo Federal #3H
Project:	Lea County, N.M.	TVD Reference:	GL 3494.4 + 18 @ 3512.4usft (Silver Oak #7)
Site:	Section 29-24S-32E Corvo Federal #3H	MD Reference:	GL 3494.4 + 18 @ 3512.4usft (Silver Oak #7)
Well:	Corvo Federal #3H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,100.0	0.93	321.81	1,099.8	12.9	-16.3	430,363.71	696,339.27	32° 10' 53.741 N	103° 41' 55.398 W
1,200.0	0.92	320.61	1,199.7	14.2	-17.3	430,364.97	696,338.26	32° 10' 53.754 N	103° 41' 55.410 W
1,300.0	0.67	323.32	1,299.7	15.3	-18.2	430,366.06	696,337.40	32° 10' 53.765 N	103° 41' 55.420 W
1,400.0	0.66	314.03	1,399.7	16.1	-19.0	430,366.93	696,336.63	32° 10' 53.773 N	103° 41' 55.429 W
1,500.0	0.83	322.38	1,499.7	17.1	-19.8	430,367.90	696,335.78	32° 10' 53.783 N	103° 41' 55.439 W
1,600.0	0.80	319.87	1,599.7	18.2	-20.7	430,369.01	696,334.89	32° 10' 53.794 N	103° 41' 55.449 W
1,700.0	0.66	322.10	1,699.7	19.2	-21.5	430,370.00	696,334.08	32° 10' 53.804 N	103° 41' 55.458 W
1,800.0	0.58	302.37	1,799.7	19.9	-22.3	430,370.72	696,333.30	32° 10' 53.811 N	103° 41' 55.467 W
1,900.0	0.50	298.83	1,899.7	20.4	-23.1	430,371.20	696,332.49	32° 10' 53.816 N	103° 41' 55.477 W
2,000.0	0.54	294.43	1,999.7	20.8	-23.9	430,371.61	696,331.68	32° 10' 53.820 N	103° 41' 55.486 W
2,100.0	0.52	271.12	2,099.7	21.0	-24.8	430,371.81	696,330.80	32° 10' 53.822 N	103° 41' 55.496 W
2,200.0	0.51	244.62	2,199.7	20.8	-25.7	430,371.63	696,329.94	32° 10' 53.820 N	103° 41' 55.506 W
2,300.0	0.65	237.66	2,299.7	20.3	-26.5	430,371.14	696,329.06	32° 10' 53.815 N	103° 41' 55.516 W
2,400.0	0.78	245.09	2,399.7	19.7	-27.6	430,370.55	696,327.96	32° 10' 53.810 N	103° 41' 55.529 W
2,500.0	0.92	243.65	2,499.6	19.1	-29.0	430,369.90	696,326.63	32° 10' 53.803 N	103° 41' 55.545 W
2,600.0	1.07	248.63	2,599.6	18.4	-30.6	430,369.21	696,325.04	32° 10' 53.797 N	103° 41' 55.563 W
2,700.0	1.28	239.36	2,699.6	17.5	-32.4	430,368.30	696,323.21	32° 10' 53.788 N	103° 41' 55.585 W
2,800.0	1.39	257.95	2,799.6	16.7	-34.5	430,367.47	696,321.06	32° 10' 53.780 N	103° 41' 55.610 W
2,900.0	1.53	259.50	2,899.6	16.2	-37.0	430,366.98	696,318.56	32° 10' 53.775 N	103° 41' 55.639 W
3,000.0	1.64	263.89	2,999.5	15.8	-39.8	430,366.58	696,315.83	32° 10' 53.771 N	103° 41' 55.671 W
3,100.0	2.02	278.14	3,099.5	15.9	-42.9	430,366.68	696,312.66	32° 10' 53.772 N	103° 41' 55.708 W
3,200.0	2.32	284.59	3,199.4	16.6	-46.6	430,367.44	696,308.95	32° 10' 53.780 N	103° 41' 55.751 W
3,300.0	2.23	281.41	3,299.3	17.5	-50.5	430,368.33	696,305.09	32° 10' 53.789 N	103° 41' 55.796 W
3,400.0	2.15	281.46	3,399.2	18.3	-54.3	430,369.09	696,301.34	32° 10' 53.797 N	103° 41' 55.839 W
3,500.0	2.02	283.19	3,499.2	19.1	-57.8	430,369.87	696,297.79	32° 10' 53.805 N	103° 41' 55.880 W
3,600.0	1.49	279.83	3,599.1	19.7	-60.8	430,370.49	696,294.79	32° 10' 53.811 N	103° 41' 55.915 W
3,700.0	1.24	260.54	3,699.1	19.7	-63.2	430,370.53	696,292.44	32° 10' 53.812 N	103° 41' 55.943 W
3,800.0	1.47	250.81	3,799.1	19.1	-65.4	430,369.93	696,290.16	32° 10' 53.806 N	103° 41' 55.969 W
3,900.0	0.91	228.77	3,899.0	18.2	-67.2	430,368.99	696,288.36	32° 10' 53.797 N	103° 41' 55.990 W
4,000.0	1.05	195.04	3,999.0	16.8	-68.1	430,367.58	696,287.52	32° 10' 53.783 N	103° 41' 56.000 W
4,100.0	0.70	159.99	4,099.0	15.3	-68.1	430,366.12	696,287.49	32° 10' 53.768 N	103° 41' 56.000 W
4,200.0	0.80	167.33	4,199.0	14.1	-67.7	430,364.87	696,287.85	32° 10' 53.756 N	103° 41' 55.996 W
4,300.0	0.41	183.67	4,299.0	13.0	-67.6	430,363.83	696,287.98	32° 10' 53.746 N	103° 41' 55.995 W
4,400.0	0.50	151.19	4,399.0	12.3	-67.4	430,363.09	696,288.17	32° 10' 53.738 N	103° 41' 55.993 W
4,500.0	0.22	122.12	4,499.0	11.8	-67.1	430,362.61	696,288.55	32° 10' 53.733 N	103° 41' 55.988 W
4,600.0	0.46	240.33	4,599.0	11.5	-67.2	430,362.30	696,288.36	32° 10' 53.730 N	103° 41' 55.991 W
4,700.0	0.44	249.28	4,699.0	11.2	-67.9	430,361.97	696,287.65	32° 10' 53.727 N	103° 41' 55.999 W
4,800.0	0.54	248.28	4,799.0	10.9	-68.7	430,361.66	696,286.85	32° 10' 53.724 N	103° 41' 56.008 W
4,900.0	0.57	250.65	4,899.0	10.5	-69.6	430,361.32	696,285.95	32° 10' 53.721 N	103° 41' 56.019 W
5,000.0	0.47	281.91	4,999.0	10.4	-70.5	430,361.24	696,285.08	32° 10' 53.720 N	103° 41' 56.029 W
5,100.0	0.61	317.01	5,099.0	10.9	-71.3	430,361.71	696,284.31	32° 10' 53.725 N	103° 41' 56.038 W
5,200.0	0.58	338.59	5,199.0	11.8	-71.8	430,362.57	696,283.76	32° 10' 53.733 N	103° 41' 56.044 W
5,300.0	0.43	341.50	5,299.0	12.6	-72.1	430,363.40	696,283.46	32° 10' 53.742 N	103° 41' 56.048 W
5,400.0	0.51	346.31	5,399.0	13.4	-72.4	430,364.19	696,283.24	32° 10' 53.749 N	103° 41' 56.050 W
5,500.0	0.60	337.40	5,499.0	14.3	-72.7	430,365.11	696,282.93	32° 10' 53.758 N	103° 41' 56.054 W
5,600.0	0.78	331.06	5,599.0	15.4	-73.2	430,366.19	696,282.40	32° 10' 53.769 N	103° 41' 56.060 W
5,700.0	0.77	336.23	5,699.0	16.6	-73.8	430,367.40	696,281.80	32° 10' 53.781 N	103° 41' 56.067 W
5,800.0	0.79	315.04	5,798.9	17.7	-74.6	430,368.50	696,281.04	32° 10' 53.792 N	103° 41' 56.075 W
5,900.0	0.75	327.83	5,898.9	18.7	-75.4	430,369.54	696,280.21	32° 10' 53.802 N	103° 41' 56.085 W
6,000.0	0.65	319.39	5,998.9	19.7	-76.1	430,370.52	696,279.49	32° 10' 53.812 N	103° 41' 56.093 W
6,100.0	0.77	329.35	6,098.9	20.7	-76.8	430,371.53	696,278.78	32° 10' 53.822 N	103° 41' 56.102 W
6,200.0	1.16	324.67	6,198.9	22.1	-77.7	430,372.94	696,277.85	32° 10' 53.836 N	103° 41' 56.112 W
6,300.0	0.79	325.31	6,298.9	23.5	-78.7	430,374.33	696,276.87	32° 10' 53.850 N	103° 41' 56.123 W
6,400.0	0.77	320.08	6,398.9	24.6	-79.5	430,375.41	696,276.05	32° 10' 53.861 N	103° 41' 56.133 W
6,500.0	0.85	310.62	6,498.9	25.6	-80.5	430,376.41	696,275.05	32° 10' 53.871 N	103° 41' 56.145 W

Stryker Directional

Survey Report - Geographic

Company:	COG Production LLC	Local Co-ordinate Reference:	Well Corvo Federal #3H
Project:	Lea County, N.M.	TVD Reference:	GL 3494.4 + 18 @ 3512.4usft (Silver Oak #7)
Site:	Section 29-24S-32E Corvo Federal #3H	MD Reference:	GL 3494.4 + 18 @ 3512.4usft (Silver Oak #7)
Well:	Corvo Federal #3H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,600.0	0.90	288.56	6,598.9	26.3	-81.9	430,377.14	696,273.74	32° 10' 53.878 N	103° 41' 56.160 W
6,700.0	0.58	287.69	6,698.8	26.7	-83.1	430,377.55	696,272.52	32° 10' 53.882 N	103° 41' 56.174 W
6,800.0	0.44	344.04	6,798.8	27.3	-83.7	430,378.07	696,271.93	32° 10' 53.887 N	103° 41' 56.181 W
6,900.0	0.55	281.92	6,898.8	27.7	-84.2	430,378.54	696,271.36	32° 10' 53.892 N	103° 41' 56.187 W
7,000.0	0.44	246.67	6,998.8	27.7	-85.1	430,378.49	696,270.53	32° 10' 53.892 N	103° 41' 56.197 W
7,100.0	0.26	242.36	7,098.8	27.4	-85.6	430,378.23	696,269.98	32° 10' 53.889 N	103° 41' 56.203 W
7,200.0	0.74	228.93	7,198.8	26.9	-86.3	430,377.70	696,269.29	32° 10' 53.884 N	103° 41' 56.211 W
7,300.0	1.32	217.90	7,298.8	25.6	-87.5	430,376.37	696,268.10	32° 10' 53.871 N	103° 41' 56.225 W
7,400.0	1.10	202.66	7,398.8	23.8	-88.6	430,374.57	696,267.02	32° 10' 53.853 N	103° 41' 56.238 W
7,500.0	0.74	192.71	7,498.8	22.3	-89.1	430,373.06	696,266.51	32° 10' 53.838 N	103° 41' 56.244 W
7,600.0	0.56	171.90	7,598.8	21.1	-89.2	430,371.94	696,266.43	32° 10' 53.827 N	103° 41' 56.245 W
7,700.0	0.92	160.99	7,698.8	19.9	-88.8	430,370.70	696,266.77	32° 10' 53.815 N	103° 41' 56.241 W
7,740.0	0.82	150.98	7,738.8	19.3	-88.6	430,370.14	696,267.01	32° 10' 53.809 N	103° 41' 56.239 W
7740' MD VES Gyro Survey									
7,852.0	1.20	169.80	7,850.7	17.5	-88.0	430,368.29	696,267.61	32° 10' 53.791 N	103° 41' 56.232 W
7,884.0	0.70	184.60	7,882.7	17.0	-87.9	430,367.76	696,267.65	32° 10' 53.786 N	103° 41' 56.231 W
7,915.0	2.10	356.90	7,913.7	17.3	-88.0	430,368.14	696,267.60	32° 10' 53.789 N	103° 41' 56.232 W
7,947.0	5.10	20.00	7,945.7	19.3	-87.5	430,370.07	696,268.06	32° 10' 53.808 N	103° 41' 56.226 W
7,978.0	9.30	14.40	7,976.4	23.0	-86.4	430,373.79	696,269.15	32° 10' 53.845 N	103° 41' 56.213 W
8,010.0	14.60	8.40	8,007.7	29.5	-85.2	430,380.29	696,270.39	32° 10' 53.909 N	103° 41' 56.199 W
8,041.0	19.90	5.90	8,037.3	38.6	-84.1	430,389.41	696,271.50	32° 10' 54.000 N	103° 41' 56.185 W
8,073.0	24.30	5.80	8,067.0	50.6	-82.9	430,401.38	696,272.73	32° 10' 54.118 N	103° 41' 56.170 W
8,104.0	27.50	5.50	8,094.8	64.1	-81.5	430,414.85	696,274.06	32° 10' 54.251 N	103° 41' 56.153 W
8,136.0	30.70	6.30	8,122.8	79.5	-79.9	430,430.33	696,275.66	32° 10' 54.404 N	103° 41' 56.134 W
8,167.0	33.70	5.70	8,149.0	96.0	-78.2	430,446.76	696,277.38	32° 10' 54.567 N	103° 41' 56.113 W
8,199.0	36.70	5.90	8,175.2	114.3	-76.3	430,465.11	696,279.25	32° 10' 54.748 N	103° 41' 56.090 W
8,230.0	39.40	4.80	8,199.6	133.3	-74.6	430,484.13	696,281.02	32° 10' 54.936 N	103° 41' 56.068 W
8,262.0	43.00	3.60	8,223.7	154.3	-73.0	430,505.15	696,282.56	32° 10' 55.144 N	103° 41' 56.048 W
8,293.0	46.20	2.60	8,245.7	176.1	-71.9	430,526.88	696,283.73	32° 10' 55.359 N	103° 41' 56.033 W
8,325.0	50.60	0.90	8,267.0	200.0	-71.1	430,550.79	696,284.45	32° 10' 55.596 N	103° 41' 56.023 W
8,356.0	54.60	1.20	8,285.8	224.6	-70.7	430,575.41	696,284.90	32° 10' 55.839 N	103° 41' 56.016 W
8,388.0	57.50	1.50	8,303.7	251.1	-70.1	430,601.94	696,285.53	32° 10' 56.102 N	103° 41' 56.007 W
8,417.0	60.60	0.40	8,318.6	276.0	-69.7	430,626.81	696,285.94	32° 10' 56.348 N	103° 41' 56.001 W
8,448.0	62.90	0.20	8,333.2	303.3	-69.5	430,654.11	696,286.08	32° 10' 56.618 N	103° 41' 55.997 W
8,479.0	64.10	359.50	8,347.1	331.1	-69.6	430,681.85	696,286.01	32° 10' 56.893 N	103° 41' 55.996 W
8,511.0	66.40	358.30	8,360.5	360.1	-70.1	430,710.91	696,285.45	32° 10' 57.180 N	103° 41' 56.001 W
8,542.0	70.00	357.70	8,372.0	388.9	-71.2	430,739.67	696,284.44	32° 10' 57.465 N	103° 41' 56.010 W
8,574.0	72.20	357.70	8,382.3	419.1	-72.4	430,769.92	696,283.23	32° 10' 57.764 N	103° 41' 56.022 W
8,605.0	73.90	357.90	8,391.4	448.7	-73.5	430,799.55	696,282.09	32° 10' 58.058 N	103° 41' 56.034 W
8,636.0	75.00	358.00	8,399.7	478.6	-74.6	430,829.39	696,281.02	32° 10' 58.353 N	103° 41' 56.044 W
8,668.0	75.80	357.90	8,407.8	509.5	-75.7	430,860.34	696,279.91	32° 10' 58.659 N	103° 41' 56.055 W
8,700.0	77.10	358.00	8,415.3	540.6	-76.8	430,891.43	696,278.80	32° 10' 58.967 N	103° 41' 56.066 W
8,731.0	79.80	358.50	8,421.5	571.0	-77.7	430,921.78	696,277.87	32° 10' 59.268 N	103° 41' 56.074 W
8,763.0	81.50	358.90	8,426.7	602.5	-78.4	430,953.35	696,277.16	32° 10' 59.580 N	103° 41' 56.080 W
8,794.0	83.10	359.10	8,430.8	633.3	-79.0	430,984.06	696,276.62	32° 10' 59.884 N	103° 41' 56.085 W
8,826.0	84.70	0.10	8,434.2	665.1	-79.2	431,015.88	696,276.40	32° 11' 0.199 N	103° 41' 56.085 W
8,858.0	85.70	0.30	8,436.9	697.0	-79.1	431,047.77	696,276.51	32° 11' 0.514 N	103° 41' 56.081 W
8,889.0	86.20	1.70	8,439.1	727.9	-78.5	431,078.68	696,277.05	32° 11' 0.820 N	103° 41' 56.073 W
8,921.0	87.60	2.20	8,440.8	759.8	-77.5	431,110.62	696,278.14	32° 11' 1.136 N	103° 41' 56.058 W
8,952.0	87.90	1.40	8,442.0	790.8	-76.5	431,141.58	696,279.11	32° 11' 1.443 N	103° 41' 56.045 W
8,984.0	88.90	1.30	8,442.9	822.8	-75.7	431,173.56	696,279.86	32° 11' 1.759 N	103° 41' 56.034 W
9,078.0	91.60	1.00	8,442.5	916.7	-73.8	431,267.53	696,281.75	32° 11' 2.689 N	103° 41' 56.005 W
9,173.0	88.80	359.00	8,442.2	1,011.7	-73.8	431,362.51	696,281.75	32° 11' 3.629 N	103° 41' 55.999 W
9,268.0	91.10	358.80	8,442.3	1,106.7	-75.7	431,457.49	696,279.93	32° 11' 4.569 N	103° 41' 56.014 W
9,361.0	89.10	358.00	8,442.1	1,199.6	-78.3	431,550.45	696,277.33	32° 11' 5.489 N	103° 41' 56.037 W

Stryker Directional

Survey Report - Geographic

Company:	COG Production LLC	Local Co-ordinate Reference:	Well Corvo Federal #3H
Project:	Lea County, N.M.	TVD Reference:	GL 3494.4 + 18 @ 3512.4usft (Silver Oak #7)
Site:	Section 29-24S-32E Corvo Federal #3H	MD Reference:	GL 3494.4 + 18 @ 3512.4usft (Silver Oak #7)
Well:	Corvo Federal #3H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,455.0	90.40	359.60	8,442.5	1,293.6	-80.2	431,644.42	696,275.36	32° 11' 6.419 N	103° 41' 56.054 W
9,550.0	89.50	358.30	8,442.6	1,388.6	-82.0	431,739.40	696,273.62	32° 11' 7.359 N	103° 41' 56.068 W
9,645.0	89.80	358.80	8,443.2	1,483.6	-84.4	431,834.37	696,271.22	32° 11' 8.299 N	103° 41' 56.089 W
9,739.0	90.20	359.40	8,443.2	1,577.6	-85.9	431,928.36	696,269.74	32° 11' 9.229 N	103° 41' 56.100 W
9,834.0	90.40	359.80	8,442.7	1,672.6	-86.5	432,023.35	696,269.08	32° 11' 10.169 N	103° 41' 56.101 W
9,929.0	88.10	1.50	8,443.9	1,767.5	-85.4	432,118.33	696,270.15	32° 11' 11.109 N	103° 41' 56.082 W
10,023.0	89.70	1.80	8,445.7	1,861.5	-82.7	432,212.27	696,272.86	32° 11' 12.038 N	103° 41' 56.044 W
10,117.0	89.50	2.30	8,446.4	1,955.4	-79.4	432,306.21	696,276.22	32° 11' 12.968 N	103° 41' 55.998 W
10,212.0	89.80	4.00	8,447.0	2,050.3	-74.2	432,401.06	696,281.44	32° 11' 13.906 N	103° 41' 55.931 W
10,307.0	90.50	2.00	8,446.7	2,145.1	-69.2	432,495.92	696,286.41	32° 11' 14.844 N	103° 41' 55.867 W
10,402.0	92.40	1.30	8,444.3	2,240.0	-66.4	432,590.85	696,289.15	32° 11' 15.784 N	103° 41' 55.829 W
10,497.0	92.10	1.80	8,440.6	2,334.9	-63.9	432,685.74	696,291.72	32° 11' 16.723 N	103° 41' 55.792 W
10,590.0	89.70	1.80	8,439.1	2,427.9	-61.0	432,778.67	696,294.64	32° 11' 17.642 N	103° 41' 55.752 W
10,685.0	89.50	3.50	8,439.8	2,522.8	-56.6	432,873.57	696,299.03	32° 11' 18.581 N	103° 41' 55.694 W
10,779.0	86.90	2.20	8,442.7	2,616.6	-51.9	432,967.39	696,303.70	32° 11' 19.509 N	103° 41' 55.633 W
10,874.0	87.70	1.50	8,447.2	2,711.4	-48.8	433,062.24	696,306.76	32° 11' 20.447 N	103° 41' 55.591 W
10,969.0	89.90	0.60	8,449.2	2,806.4	-47.1	433,157.19	696,308.50	32° 11' 21.387 N	103° 41' 55.564 W
11,063.0	91.90	359.80	8,447.7	2,900.4	-46.8	433,251.18	696,308.83	32° 11' 22.317 N	103° 41' 55.554 W
11,159.0	91.60	0.10	8,444.8	2,996.3	-46.8	433,347.13	696,308.75	32° 11' 23.267 N	103° 41' 55.549 W
11,252.0	90.20	359.80	8,443.3	3,089.3	-46.9	433,440.12	696,308.67	32° 11' 24.187 N	103° 41' 55.543 W
11,347.0	88.50	0.90	8,444.4	3,184.3	-46.3	433,535.10	696,309.25	32° 11' 25.127 N	103° 41' 55.530 W
11,441.0	89.50	359.80	8,446.0	3,278.3	-45.8	433,629.09	696,309.82	32° 11' 26.057 N	103° 41' 55.517 W
11,536.0	91.10	358.20	8,445.6	3,373.3	-47.4	433,724.06	696,308.16	32° 11' 26.997 N	103° 41' 55.529 W
11,630.0	90.60	359.40	8,444.2	3,467.2	-49.4	433,818.03	696,306.20	32° 11' 27.927 N	103° 41' 55.546 W
11,724.0	90.20	1.40	8,443.5	3,561.2	-48.7	433,912.02	696,306.85	32° 11' 28.857 N	103° 41' 55.532 W
11,819.0	89.60	4.10	8,443.7	3,656.1	-44.2	434,006.90	696,311.41	32° 11' 29.795 N	103° 41' 55.472 W
11,914.0	89.50	3.80	8,444.4	3,750.9	-37.6	434,101.67	696,317.95	32° 11' 30.733 N	103° 41' 55.390 W
12,009.0	91.50	3.20	8,443.6	3,845.7	-31.8	434,196.49	696,323.75	32° 11' 31.671 N	103° 41' 55.316 W
12,104.0	90.30	2.50	8,442.1	3,940.6	-27.1	434,291.36	696,328.47	32° 11' 32.609 N	103° 41' 55.254 W
12,199.0	87.00	1.30	8,444.3	4,035.5	-24.0	434,386.26	696,331.62	32° 11' 33.548 N	103° 41' 55.211 W
12,293.0	88.70	0.70	8,447.9	4,129.4	-22.3	434,480.18	696,333.26	32° 11' 34.478 N	103° 41' 55.185 W
12,388.0	91.20	359.90	8,447.9	4,224.4	-21.8	434,575.17	696,333.76	32° 11' 35.418 N	103° 41' 55.173 W
12,482.0	88.60	359.00	8,448.1	4,318.4	-22.7	434,669.16	696,332.86	32° 11' 36.348 N	103° 41' 55.177 W
12,576.0	87.50	359.30	8,451.3	4,412.3	-24.1	434,763.09	696,331.46	32° 11' 37.277 N	103° 41' 55.187 W
12,671.0	89.30	358.40	8,454.0	4,507.2	-26.0	434,858.03	696,329.56	32° 11' 38.217 N	103° 41' 55.203 W
12,766.0	92.10	358.80	8,452.8	4,602.2	-28.4	434,952.98	696,327.24	32° 11' 39.157 N	103° 41' 55.223 W
12,861.0	93.30	358.20	8,448.3	4,697.0	-30.8	435,047.84	696,324.75	32° 11' 40.096 N	103° 41' 55.245 W
12,907.0	93.30	358.20	8,445.7	4,742.9	-32.3	435,093.74	696,323.31	32° 11' 40.550 N	103° 41' 55.259 W

12907' MD Projected to Bit

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		
		+N/-S (usft)	+E/-W (usft)	Comment
7,740.0	7,738.8	19.3	-88.6	7740' MD VES Gyro Survey
12,907.0	8,445.7	4,742.9	-32.3	12907' MD Projected to Bit