

**McVAY DRILLING COMPANY**

P.O. Box 2450
Hobbs, New Mexico 88241
(575) 397-3311
FAX: 39-DRILL

Well Name and Num: Cuatro Hijos Fee #3H
Location: Sec 17, T19S, R35E
Operator: COG
Drilling Contractor: McVay Drilling Company

The undersigned certifies that he is an authorized representative of the drilling contractor who drilled the above described well and that he has conducted deviation tests and obtained the following results:

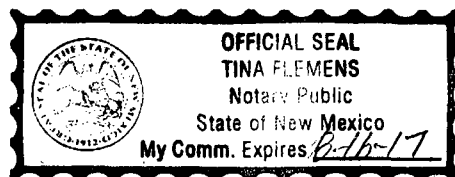
<u>Degrees @</u>	<u>Depth</u>	<u>Degrees @</u>	<u>Depth</u>	<u>Degrees @</u>	<u>Depth</u>
0.30	320	0.10	6199	91.80	11955
0.30	738	1.00	6455	91.50	12434
0.10	1148	1.20	6709	91.50	12907
0.40	1526	0.70	6963	91.80	13185
0.70	1896	0.90	7469	92.00	13555
0.30	1958	0.90	7977	93.70	13934
0.50	2464	0.70	8329	94.20	14409
2.20	2967	1.00	8739	92.70	14879
1.50	3447	0.80	9025	94.10	15164
1.40	3568	1.20	9535	95.50	15341
1.70	3803	1.00	9819		
1.30	4308	1.30	10208		
1.30	4562	7.80	10491		
1.30	5066	37.60	10714		
1.50	5318	63.70	10972		
1.10	5568	66.21	11001		
0.80	5820	96.40	11477		

HOBBS OCD**MAR 23 2015****RECEIVED**

By: Mario A. Bana S.

Subscribed and sworn to before me this 23rd day of February, 2015

Tina FLEMENS
Notary Public, Lea County, New Mexico

**MAR 26 2015***DM*



February 4, 2015

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

Attn: Kanicia Castillo

RE: Cuatro Hijos Fee 003H

HOBBS OGD

MAR 23 2015

RECEIVED

Please find enclosed a copy of the survey from 0' to 10,004' ran on the above referenced well.

Sincerely,

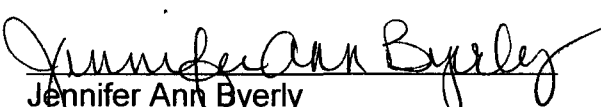

Keith Havelka
Operations

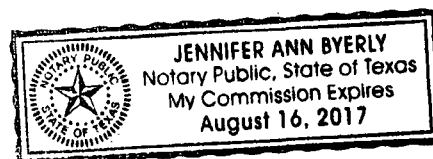
STATE OF TEXAS §

§

COUNTY OF NUECES §

This instrument was acknowledged before me on the 4 day of Feb,
A.D., 2015, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: Concho
Lease/Well: Cuatro Hijos Fee /003H
Location: S17 - T19/S - R35/E
Rig Name: McVay 7
State/County: New Mexico/Lea
Latitude: 32.65, Longitude: -103.48
GRID North is 0.46 Degrees East of True North
VS-Azi: 0.00 Degrees



HOBBS OCD

MAR 23 2015

RECEIVED

Depth Reference : RKB = 17 FT

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 2/4/2015 / 15:01

VES Survey International

West Texas

(432) 563-5444

Surveyor: Cody Johnson

Cuatro Hijos Fee 003H / API 30-025-42276

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	0.43	289.63	100.00	0.12	-0.35	0.12	0.37	289.63	0.43
200.00	0.67	227.28	200.00	-0.15	-1.13	-0.15	1.14	262.50	0.61
300.00	0.63	270.32	299.99	-0.54	-2.12	-0.54	2.19	255.57	0.48
400.00	0.14	168.35	399.99	-0.66	-2.65	-0.66	2.73	255.98	0.68
500.00	0.21	81.44	499.99	-0.75	-2.44	-0.75	2.55	252.86	0.25
600.00	0.30	101.81	599.99	-0.78	-2.00	-0.78	2.15	248.78	0.12
700.00	0.33	144.56	699.98	-1.07	-1.58	-1.07	1.91	235.94	0.23
800.00	0.35	210.28	799.98	-1.57	-1.57	-1.57	2.22	224.91	0.37
900.00	0.13	223.48	899.98	-1.92	-1.80	-1.92	2.63	223.17	0.22
1000.00	0.35	175.31	999.98	-2.31	-1.85	-2.31	2.96	218.81	0.28
1100.00	0.36	153.77	1099.98	-2.89	-1.69	-2.89	3.35	210.32	0.13
1200.00	0.37	121.68	1199.98	-3.34	-1.28	-3.34	3.58	200.92	0.20
1300.00	0.36	159.71	1299.98	-3.81	-0.89	-3.81	3.91	193.21	0.24
1400.00	0.53	139.63	1399.97	-4.46	-0.48	-4.46	4.48	186.19	0.23
1500.00	0.37	80.97	1499.97	-4.76	0.14	-4.76	4.76	178.36	0.46
1600.00	0.19	137.59	1599.97	-4.83	0.56	-4.83	4.86	173.34	0.31
1700.00	0.16	6.61	1699.97	-4.82	0.69	-4.82	4.86	171.85	0.31
1800.00	0.11	148.93	1799.97	-4.77	0.76	-4.77	4.83	170.97	0.26

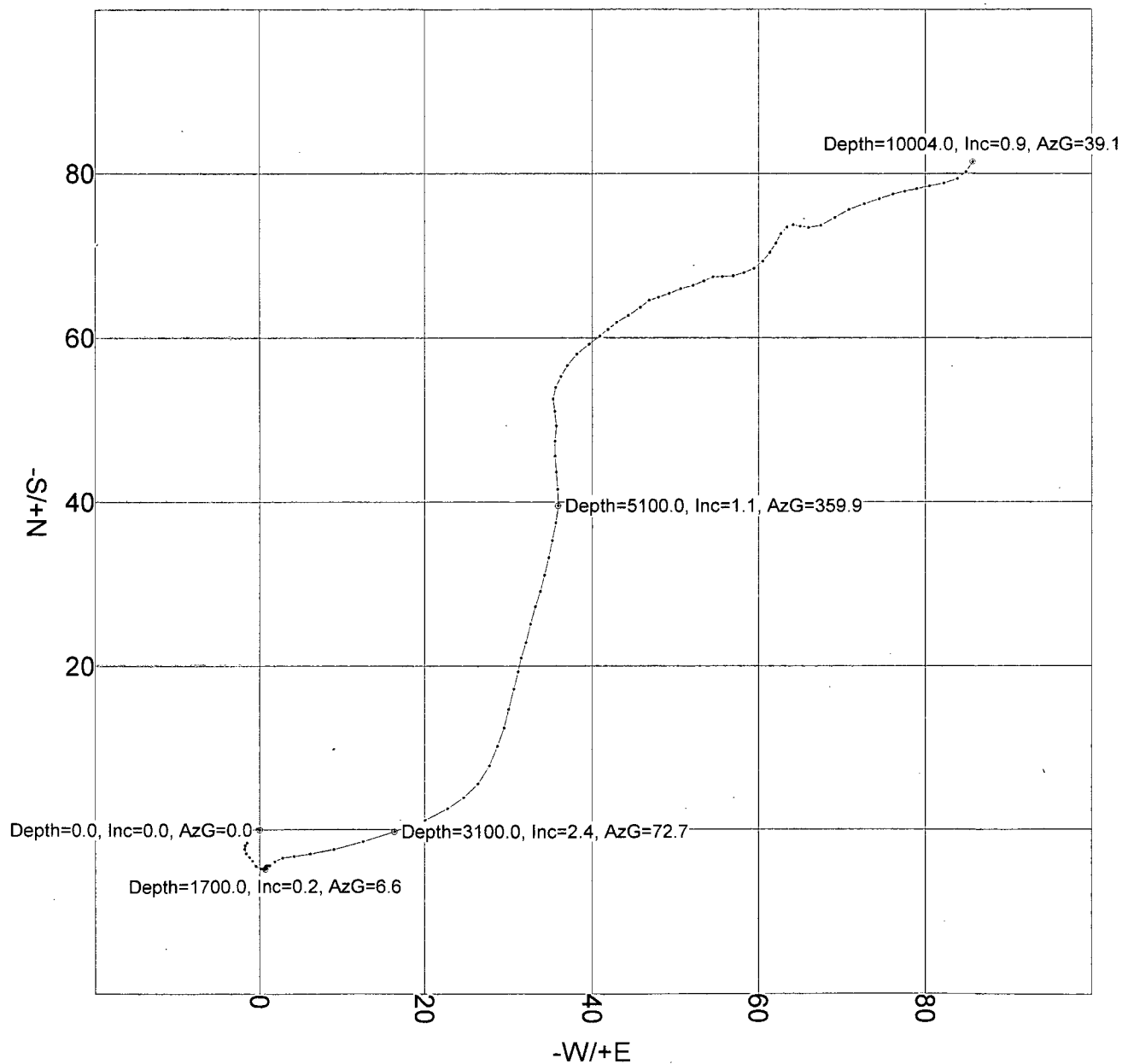
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.09	287.40	1899.97	-4.83	0.73	-4.83	4.88	171.40	0.20
2000.00	0.18	350.59	1999.97	-4.65	0.63	-4.65	4.69	172.34	0.16
2100.00	0.09	55.59	2099.97	-4.45	0.66	-4.45	4.50	171.52	0.16
2200.00	0.04	73.46	2199.97	-4.40	0.76	-4.40	4.47	170.21	0.05
2300.00	0.07	110.62	2299.97	-4.41	0.85	-4.41	4.49	169.14	0.04
2400.00	0.33	81.94	2399.97	-4.39	1.19	-4.39	4.55	164.88	0.27
2500.00	0.69	40.97	2499.96	-3.90	1.87	-3.90	4.32	154.40	0.49
2600.00	0.69	89.37	2599.96	-3.44	2.86	-3.44	4.47	140.21	0.56
2700.00	0.85	78.68	2699.95	-3.28	4.19	-3.28	5.32	128.08	0.22
2800.00	1.40	81.79	2799.93	-2.96	6.13	-2.96	6.81	115.80	0.55
2900.00	1.94	77.46	2899.89	-2.42	8.99	-2.42	9.31	105.08	0.55
3000.00	2.25	72.19	2999.82	-1.46	12.51	-1.46	12.59	96.64	0.36
3100.00	2.42	72.66	3099.74	-0.23	16.38	-0.23	16.39	90.80	0.17
3200.00	2.08	64.95	3199.66	1.17	20.04	1.17	20.07	86.66	0.45
3300.00	1.41	58.34	3299.61	2.58	22.73	2.58	22.88	83.52	0.70
3400.00	1.28	52.28	3399.58	3.91	24.66	3.91	24.97	80.99	0.19
3500.00	1.50	40.34	3499.56	5.59	26.39	5.59	26.98	78.03	0.36
3600.00	1.51	22.47	3599.52	7.81	27.75	7.81	28.83	74.28	0.47
3700.00	1.46	21.38	3699.49	10.22	28.72	10.22	30.48	70.41	0.06
3800.00	1.22	16.68	3799.46	12.43	29.49	12.43	32.00	67.15	0.27
3900.00	1.47	10.59	3899.43	14.71	30.03	14.71	33.44	63.90	0.29
4000.00	1.48	17.92	3999.40	17.21	30.66	17.21	35.16	60.70	0.19
4100.00	1.03	7.02	4099.38	19.33	31.17	19.33	36.68	58.20	0.51
4200.00	0.94	16.46	4199.36	21.00	31.51	21.00	37.87	56.32	0.18
4300.00	1.31	18.30	4299.34	22.88	32.11	22.88	39.43	54.52	0.37
4400.00	1.35	9.32	4399.31	25.13	32.66	25.13	41.21	52.42	0.21
4500.00	1.18	20.51	4499.29	27.26	33.21	27.26	42.96	50.62	0.30
4600.00	1.08	15.09	4599.27	29.13	33.81	29.13	44.63	49.26	0.15
4700.00	1.27	13.47	4699.25	31.11	34.32	31.11	46.32	47.80	0.20
4800.00	1.20	13.60	4799.23	33.22	34.82	33.22	48.12	46.35	0.07
4900.00	1.23	9.03	4899.20	35.30	35.24	35.30	49.87	44.95	0.10
5000.00	1.31	14.14	4999.18	37.47	35.69	37.47	51.74	43.61	0.14
5100.00	1.10	359.90	5099.16	39.54	35.96	39.54	53.45	42.29	0.37
5200.00	1.23	354.96	5199.14	41.57	35.87	41.57	54.90	40.79	0.16
5300.00	1.18	356.77	5299.11	43.66	35.72	43.66	56.41	39.28	0.06
5400.00	1.05	354.04	5399.10	45.60	35.56	45.60	57.83	37.95	0.14
5500.00	1.04	5.92	5499.08	47.41	35.56	47.41	59.27	36.87	0.22
5600.00	1.10	3.85	5599.06	49.27	35.72	49.27	60.86	35.94	0.07
5700.00	1.01	344.06	5699.05	51.07	35.54	51.07	62.22	34.84	0.37

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	0.75	3.14	5799.03	52.57	35.34	52.57	63.34	33.91	0.39
5900.00	0.93	19.73	5899.02	53.99	35.65	53.99	64.69	33.44	0.30
6000.00	0.75	32.98	5999.01	55.30	36.28	55.30	66.14	33.27	0.27
6100.00	1.02	27.90	6099.00	56.63	37.05	56.63	67.68	33.19	0.28
6200.00	1.07	48.62	6198.98	58.04	38.17	58.04	69.47	33.33	0.38
6300.00	1.10	52.64	6298.97	59.24	39.63	59.24	71.27	33.78	0.08
6400.00	0.77	49.98	6398.95	60.25	40.91	60.25	72.83	34.17	0.33
6500.00	0.66	50.12	6498.94	61.06	41.87	61.06	74.03	34.44	0.11
6600.00	0.87	50.91	6598.94	61.90	42.90	61.90	75.32	34.72	0.20
6700.00	1.01	66.25	6698.92	62.74	44.29	62.74	76.80	35.22	0.29
6800.00	1.05	46.34	6798.91	63.72	45.76	63.72	78.45	35.68	0.36
6900.00	0.52	58.93	6898.90	64.59	46.81	64.59	79.76	35.93	0.55
7000.00	0.86	79.10	6998.89	64.96	47.94	64.96	80.73	36.42	0.42
7100.00	0.75	60.21	7098.88	65.43	49.24	65.43	81.89	36.97	0.29
7200.00	0.96	73.73	7198.87	65.99	50.61	65.99	83.16	37.49	0.29
7300.00	0.81	75.09	7298.86	66.40	52.09	66.40	84.40	38.11	0.15
7400.00	0.85	60.56	7398.85	66.95	53.42	66.95	85.65	38.59	0.22
7500.00	0.54	76.82	7498.84	67.42	54.53	67.42	86.72	38.96	0.37
7600.00	0.75	93.02	7598.83	67.50	55.64	67.50	87.47	39.50	0.28
7700.00	0.77	80.18	7698.82	67.58	56.95	67.58	88.37	40.12	0.17
7800.00	0.80	66.59	7798.82	67.97	58.25	67.97	89.51	40.60	0.19
7900.00	0.72	67.41	7898.81	68.49	59.47	68.49	90.70	40.97	0.09
8000.00	0.88	37.06	7998.80	69.34	60.51	69.34	92.03	41.11	0.45
8100.00	0.68	39.70	8098.79	70.42	61.35	70.42	93.39	41.07	0.20
8200.00	0.90	27.62	8198.78	71.57	62.10	71.57	94.75	40.95	0.27
8300.00	0.58	28.99	8298.77	72.71	62.71	72.71	96.01	40.78	0.31
8400.00	0.67	53.61	8398.76	73.50	63.43	73.50	97.09	40.79	0.28
8500.00	0.34	107.38	8498.76	73.76	64.19	73.76	97.78	41.03	0.55
8600.00	0.63	98.50	8598.76	73.59	65.01	73.59	98.19	41.46	0.29
8700.00	0.57	99.45	8698.75	73.43	66.04	73.43	98.76	41.97	0.06
8800.00	1.17	69.34	8798.74	73.71	67.49	73.71	99.94	42.48	0.74
8900.00	1.09	50.82	8898.72	74.67	69.18	74.67	101.79	42.81	0.37
9000.00	1.16	69.37	8998.70	75.63	70.87	75.63	103.64	43.14	0.37
9100.00	1.07	68.32	9098.68	76.33	72.68	76.33	105.39	43.60	0.09
9200.00	1.11	74.56	9198.66	76.93	74.47	76.93	107.07	44.07	0.12
9300.00	0.87	64.83	9298.65	77.51	76.09	77.51	108.61	44.47	0.29
9400.00	0.85	88.29	9398.64	77.85	77.52	77.85	109.87	44.88	0.35
9500.00	0.82	68.28	9498.63	78.14	78.93	78.14	111.07	45.29	0.29
9600.00	1.01	84.16	9598.62	78.50	80.47	78.50	112.42	45.71	0.31

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
9700.00	1.02	74.77	9698.60	78.82	82.21	78.82	113.89	46.20	0.17
9800.00	0.94	66.68	9798.59	79.38	83.82	79.38	115.44	46.56	0.16
9900.00	0.70	29.32	9898.58	80.24	84.87	80.24	116.80	46.61	0.57
10004.00	0.90	39.12	10002.57	81.43	85.70	81.43	118.22	46.46	0.23



VES Survey International
West Texas
(432) 563-5444
Surveyor: Cody Johnson
Cuatro Hijos Fee 003H / API 30-025-42276



VES Survey Date: 1/21/2015



COG Operating LLC

Lea County, NM

Cuatro Hijos fee

#3H

OH

Survey: MWD #1

HOBBS OGD

MAR 28 2015

RECEIVED

Survey Report - Geographic

03 February, 2015

pm



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Lea County, NM	TVD Reference:	WELL @ 3859.5usft (Original Well Elev)
Site:	Cuatro Hijos fee	MD Reference:	WELL @ 3859.5usft (Original Well Elev)
Well:	#3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project	Lea County, NM		
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	Cuatro Hijos fee		
Site Position:		Northing:	602,563.00 usft
From:	Map	Easting:	760,807.50 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 39' 13.271 N
		Longitude:	103° 29' 9.422 W
		Grid Convergence:	0.46 °

Well	#3H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 39' 13.265 N
		Longitude:	103° 28' 52.114 W
		Ground Level:	3,842.5 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	12/4/2014	7.15
			Dip Angle
			(°)
			60.51
			Field Strength
			(nT)
			48,533

Design	OH		
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
			Direction
			(°)
			359.42

Survey Program	Date 2/3/2015		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	10,004.0	GYRO (OH)	NS-GYRO-SS
10,113.0	15,390.0	MWD #1 (OH)	MWD
			Description
			NS Gyro single shots
			MWD - Standard

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map	Latitude	Longitude
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting		
(usft)			(usft)			(usft)	(usft)		
10,004.0	0.90	39.12	10,002.6	81.4	85.7	602,655.64	762,373.04	32° 39' 14.064 N	103° 28' 51.104 W
10,113.0	0.90	20.00	10,111.6	82.9	86.6	602,657.11	762,373.87	32° 39' 14.078 N	103° 28' 51.094 W
10,208.0	1.30	31.30	10,206.5	84.5	87.4	602,658.73	762,374.69	32° 39' 14.094 N	103° 28' 51.084 W
10,304.0	1.00	77.60	10,302.5	85.6	88.8	602,659.84	762,376.07	32° 39' 14.105 N	103° 28' 51.068 W
10,400.0	0.90	73.60	10,398.5	86.0	90.3	602,660.23	762,377.61	32° 39' 14.109 N	103° 28' 51.050 W
10,430.0	1.30	35.40	10,428.5	86.4	90.7	602,660.58	762,378.04	32° 39' 14.112 N	103° 28' 51.045 W
10,462.0	4.00	10.80	10,460.5	87.8	91.2	602,661.97	762,378.46	32° 39' 14.126 N	103° 28' 51.040 W
10,493.0	7.80	4.40	10,491.3	90.9	91.5	602,665.13	762,378.82	32° 39' 14.157 N	103° 28' 51.035 W
10,525.0	11.80	1.30	10,522.8	96.4	91.8	602,670.57	762,379.06	32° 39' 14.211 N	103° 28' 51.032 W
10,557.0	16.00	359.90	10,553.9	104.0	91.8	602,678.25	762,379.13	32° 39' 14.287 N	103° 28' 51.030 W
10,589.0	20.40	358.20	10,584.3	114.0	91.6	602,688.24	762,378.95	32° 39' 14.386 N	103° 28' 51.031 W



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Lea County, NM	TVD Reference:	WELL @ 3859.5usft (Original Well Elev)
Site:	Cuatro Hijos fee	MD Reference:	WELL @ 3859.5usft (Original Well Elev)
Well:	#3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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
10,621.0	24.50	357.50	10,613.8	126.2	91.2	602,700.45	762,378.48	32° 39' 14.507 N	103° 28' 51.036 W
10,653.0	28.70	358.10	10,642.4	140.6	90.6	602,714.77	762,377.94	32° 39' 14.649 N	103° 28' 51.041 W
10,685.0	33.20	358.70	10,669.9	157.0	90.2	602,731.21	762,377.48	32° 39' 14.811 N	103° 28' 51.044 W
10,717.0	37.60	359.70	10,696.0	175.5	89.9	602,749.74	762,377.23	32° 39' 14.995 N	103° 28' 51.046 W
10,749.0	42.00	1.40	10,720.5	196.0	90.1	602,770.22	762,377.44	32° 39' 15.197 N	103° 28' 51.041 W
10,781.0	45.90	2.70	10,743.6	218.2	90.9	602,792.41	762,378.25	32° 39' 15.417 N	103° 28' 51.030 W
10,813.0	49.80	2.50	10,765.0	241.9	92.0	602,816.10	762,379.32	32° 39' 15.651 N	103° 28' 51.015 W
10,845.0	53.00	1.70	10,785.0	266.9	92.9	602,841.09	762,380.23	32° 39' 15.898 N	103° 28' 51.002 W
10,876.0	56.00	1.70	10,803.0	292.1	93.7	602,866.32	762,380.98	32° 39' 16.148 N	103° 28' 50.991 W
10,908.0	58.80	0.80	10,820.2	319.1	94.3	602,893.26	762,381.57	32° 39' 16.414 N	103° 28' 50.981 W
10,940.0	61.30	359.90	10,836.2	346.8	94.4	602,920.99	762,381.73	32° 39' 16.689 N	103° 28' 50.977 W
10,972.0	63.70	359.60	10,851.0	375.2	94.3	602,949.37	762,381.61	32° 39' 16.970 N	103° 28' 50.976 W
11,000.0	66.10	359.40	10,862.9	400.5	94.1	602,974.72	762,381.39	32° 39' 17.220 N	103° 28' 50.976 W
11,032.0	68.90	359.20	10,875.1	430.1	93.7	603,004.28	762,381.03	32° 39' 17.513 N	103° 28' 50.977 W
11,064.0	71.00	359.20	10,886.1	460.1	93.3	603,034.34	762,380.61	32° 39' 17.810 N	103° 28' 50.979 W
11,096.0	72.20	359.20	10,896.2	490.5	92.9	603,064.70	762,380.18	32° 39' 18.111 N	103° 28' 50.982 W
11,128.0	74.90	359.40	10,905.2	521.2	92.5	603,095.38	762,379.81	32° 39' 18.414 N	103° 28' 50.983 W
11,160.0	77.60	1.20	10,912.9	552.3	92.7	603,126.46	762,379.97	32° 39' 18.722 N	103° 28' 50.978 W
11,192.0	79.70	4.30	10,919.1	583.6	94.2	603,157.79	762,381.48	32° 39' 19.032 N	103° 28' 50.958 W
11,224.0	81.70	5.80	10,924.3	615.0	97.0	603,189.25	762,384.26	32° 39' 19.343 N	103° 28' 50.922 W
11,256.0	83.60	6.30	10,928.4	646.6	100.3	603,220.81	762,387.61	32° 39' 19.655 N	103° 28' 50.880 W
11,287.0	84.50	6.00	10,931.6	677.3	103.6	603,251.46	762,390.91	32° 39' 19.958 N	103° 28' 50.839 W
11,319.0	87.10	5.70	10,934.0	709.0	106.9	603,283.21	762,394.16	32° 39' 20.272 N	103° 28' 50.798 W
11,351.0	89.30	5.00	10,935.0	740.8	109.8	603,315.05	762,397.14	32° 39' 20.587 N	103° 28' 50.760 W
11,383.0	93.50	6.00	10,934.2	772.7	112.9	603,346.89	762,400.21	32° 39' 20.901 N	103° 28' 50.721 W
11,477.0	96.40	5.40	10,926.1	865.9	122.2	603,440.06	762,409.51	32° 39' 21.823 N	103° 28' 50.603 W
11,572.0	95.80	4.90	10,916.0	959.9	130.7	603,534.14	762,417.99	32° 39' 22.753 N	103° 28' 50.495 W
11,668.0	96.10	5.10	10,906.0	1,055.1	139.0	603,629.26	762,426.31	32° 39' 23.693 N	103° 28' 50.389 W
11,764.0	95.10	4.20	10,896.7	1,150.3	146.8	603,724.49	762,434.06	32° 39' 24.635 N	103° 28' 50.290 W
11,859.0	93.10	3.80	10,889.9	1,244.8	153.4	603,819.01	762,440.67	32° 39' 25.570 N	103° 28' 50.203 W
11,955.0	91.80	3.10	10,885.8	1,340.5	159.1	603,914.74	762,446.44	32° 39' 26.516 N	103° 28' 50.127 W
12,051.0	90.40	2.10	10,883.9	1,436.4	163.5	604,010.62	762,450.79	32° 39' 27.465 N	103° 28' 50.067 W
12,146.0	89.50	0.60	10,884.0	1,531.4	165.7	604,105.59	762,453.03	32° 39' 28.404 N	103° 28' 50.032 W
12,242.0	90.90	0.20	10,883.7	1,627.4	166.4	604,201.59	762,453.70	32° 39' 29.354 N	103° 28' 50.015 W
12,338.0	90.00	357.30	10,882.9	1,723.3	164.3	604,297.55	762,451.60	32° 39' 30.304 N	103° 28' 50.030 W
12,434.0	91.50	357.20	10,881.7	1,819.2	159.7	604,393.43	762,447.00	32° 39' 31.253 N	103° 28' 50.075 W
12,529.0	91.10	356.30	10,879.5	1,914.0	154.3	604,488.25	762,441.62	32° 39' 32.191 N	103° 28' 50.129 W
12,625.0	90.40	356.40	10,878.3	2,009.8	148.2	604,584.05	762,435.50	32° 39' 33.140 N	103° 28' 50.192 W
12,720.0	91.30	356.50	10,876.8	2,104.6	142.3	604,678.85	762,429.62	32° 39' 34.078 N	103° 28' 50.252 W
12,814.0	90.10	356.80	10,875.7	2,198.5	136.8	604,772.68	762,424.13	32° 39' 35.007 N	103° 28' 50.307 W
12,907.0	91.50	356.60	10,874.4	2,291.3	131.5	604,865.52	762,418.78	32° 39' 35.926 N	103° 28' 50.361 W
12,998.0	90.60	356.90	10,872.7	2,382.2	126.3	604,956.35	762,413.62	32° 39' 36.825 N	103° 28' 50.413 W
13,092.0	92.60	357.00	10,870.1	2,476.0	121.3	605,050.18	762,408.62	32° 39' 37.754 N	103° 28' 50.463 W
13,185.0	91.80	354.80	10,866.5	2,568.7	114.7	605,142.87	762,401.98	32° 39' 38.672 N	103° 28' 50.532 W
13,277.0	91.20	353.60	10,864.1	2,660.2	105.4	605,234.36	762,392.68	32° 39' 39.578 N	103° 28' 50.632 W
13,370.0	90.30	353.20	10,862.9	2,752.5	94.7	605,326.74	762,381.99	32° 39' 40.493 N	103° 28' 50.748 W
13,462.0	91.40	353.00	10,861.5	2,843.9	83.6	605,418.06	762,370.94	32° 39' 41.397 N	103° 28' 50.869 W
13,555.0	90.90	354.80	10,859.7	2,936.3	73.8	605,510.51	762,361.06	32° 39' 42.313 N	103° 28' 50.976 W
13,649.0	88.30	357.40	10,860.3	3,030.1	67.4	605,604.27	762,354.67	32° 39' 43.241 N	103° 28' 51.041 W
13,744.0	88.80	358.50	10,862.7	3,125.0	64.0	605,699.18	762,351.27	32° 39' 44.180 N	103° 28' 51.072 W
13,839.0	91.30	358.20	10,862.7	3,219.9	61.2	605,794.13	762,348.54	32° 39' 45.120 N	103° 28' 51.095 W
13,934.0	93.70	357.70	10,858.5	3,314.8	57.8	605,888.98	762,345.14	32° 39' 46.059 N	103° 28' 51.126 W
14,028.0	94.00	356.30	10,852.2	3,408.4	52.9	605,982.63	762,340.23	32° 39' 46.986 N	103° 28' 51.175 W
14,123.0	94.00	354.40	10,845.6	3,502.9	45.3	606,077.09	762,332.55	32° 39' 47.921 N	103° 28' 51.256 W
14,219.0	90.90	354.60	10,841.5	3,598.3	36.1	606,172.54	762,323.36	32° 39' 48.866 N	103° 28' 51.354 W



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Lea County, NM	TVD Reference:	WELL @ 3859.5usft (Original Well Elev)
Site:	Cuatro Hijos fee	MD Reference:	WELL @ 3859.5usft (Original Well Elev)
Well:	#3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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
14,314.0	92.00	354.30	10,839.1	3,692.9	26.9	606,267.07	762,314.18	32° 39' 49.802 N	103° 28' 51.453 W
14,409.0	94.20	353.80	10,833.9	3,787.2	17.0	606,361.41	762,304.34	32° 39' 50.736 N	103° 28' 51.559 W
14,502.0	91.70	354.80	10,829.1	3,879.6	7.8	606,453.82	762,295.12	32° 39' 51.652 N	103° 28' 51.658 W
14,597.0	88.90	356.00	10,828.6	3,974.3	0.2	606,548.50	762,287.50	32° 39' 52.589 N	103° 28' 51.738 W
14,691.0	89.10	356.30	10,830.3	4,068.1	-6.1	606,642.28	762,281.19	32° 39' 53.517 N	103° 28' 51.803 W
14,785.0	90.70	356.20	10,830.5	4,161.9	-12.3	606,736.07	762,275.05	32° 39' 54.446 N	103° 28' 51.867 W
14,879.0	92.70	355.90	10,827.7	4,255.6	-18.7	606,829.80	762,268.57	32° 39' 55.374 N	103° 28' 51.933 W
14,974.0	91.50	356.90	10,824.2	4,350.3	-24.7	606,924.55	762,262.61	32° 39' 56.312 N	103° 28' 51.994 W
15,069.0	91.90	357.70	10,821.4	4,445.2	-29.2	607,019.40	762,258.14	32° 39' 57.251 N	103° 28' 52.038 W
15,164.0	94.10	357.70	10,816.4	4,540.0	-33.0	607,114.19	762,254.33	32° 39' 58.189 N	103° 28' 52.073 W
15,259.0	94.90	356.60	10,808.9	4,634.6	-37.7	607,208.77	762,249.62	32° 39' 59.125 N	103° 28' 52.120 W
15,341.0	95.50	355.80	10,801.5	4,716.1	-43.1	607,290.26	762,244.21	32° 39' 59.932 N	103° 28' 52.175 W
15,390.0	95.50	355.80	10,796.8	4,764.7	-46.7	607,338.90	762,240.64	32° 40' 0.413 N	103° 28' 52.212 W
PBHL(CH#3H)									

Checked By: _____ Approved By: _____ Date: _____