

Results of Directional Survey

API number:	30-025-40950		
OGRID:		Operator:	COG OPERATING LLC
		Property:	CORAZON STATE UNIT # 8H

surface	ULSTR:	B	10	T	21S	R	33E
				100	FNL	1980	FEL

BH Loc	ULSTR:	O	10	T	21S	R	33E
16135	MD	11689.6	TVD	335	FSL	1903	FEL
				4945	FNL		

Top Perf/OH	ULSTR:	B	10	T	21S	R	33E
11786	MD	11579.7	TVD	601	FNL	1949	FEL

Bot Perf/OH	ULSTR:	O	10	T	21S	R	33E
16050	MD	11690.1	TVD	419	FSL	1906	FEL
				4861	FNL		

	MD	N/S	E/W	VD
	11754	-470.10	33.80	11571.2
TOP PERFS/OH	11786	-500.90	31.50	11579.70
	11786	-500.90	31.50	11579.70
	15965	-4675.50	71.70	11690.50
BOT PERFS/OH	16050	-4760.50	73.76	11690.14
	16060	-4770.50	74.00	11690.10

NEXT TO LAST	16085	-4795.50	74.90	11690.00
LAST READING	16135	-4845.40	76.80	11689.60
TD	16135	-4845.40	76.80	11689.60

Surface Location	100	FN	1980	FE
Projected BHL	4945	FN	1903	FE
Location of				
Top Perfs/OH	601	FN	1949	FE
Bottom Perfs/OH	4861	FN	1906	FE

SUMMARY of Subsurface Locations

Surface Location	B-10-21S-33E	100	FN	1980	FE	Vert. Depth
Top Perfs/OH	B-10-21S-33E	601	FN	1949	FE	11579.70
Bottom Perfs/OH	O-10-21S-33E	4861	FN	1906	FE	11690.14
Projected TD	O-10-21S-33E	4945	FN	1903	FE	11689.60

AUG 28 2013



A GYRO TECHNOLOGIES INC. COMPANY

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

HOBBS OCD

JUL 01 2013

RECEIVED

April 25, 2013

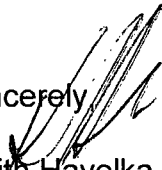
Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

Attn: Kanicia Castillo

RE: **Corazon State Unit No. 008H**

Please find enclosed a copy of the survey from 0.00' to 11045.00' ran on the above referenced well.

Sincerely,

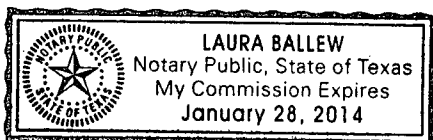

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 25th day of April, A.D., 2013, by Keith Havelka.



Laura Ballew
Notary Public, State of Texas





Company: COG Operating LLC (Concho)
 Lease/Well: Corazon State Unit / No. 008H
 Location: S10 T21s R33e
 Rig Name: Precision 105
 State/County: New Mexico / Lea
 Latitude: 32.50, Longitude: -103.56
 GRID North is 0.42 Degrees East of True North
 VS-Azi: 179.47 Degrees



RKB : 26'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...state unit #8h gyro survey.ut

Minimum Curvature Method

Report Date/Time: 4/25/2013 / 10:38

Vaughn Energy Services

Gardendale, Texas

432-563-5444

Survey Engineer: Dustin Wedel

Corazon State Unit No. 008H / API 30-025-40950

RECEIVED

JUL 01 2013

HOBBS OGD

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	0.16	129.30	100.00	-0.09	0.11	0.14	129.30	0.16
200.00	0.22	83.63	200.00	-0.16	0.41	0.44	111.33	0.15
300.00	0.05	50.68	300.00	-0.11	0.63	0.64	99.90	0.17
400.00	0.39	52.45	400.00	0.13	0.93	0.94	82.32	0.34
500.00	0.13	60.00	500.00	0.39	1.30	1.35	73.33	0.26
600.00	0.28	24.15	600.00	0.66	1.49	1.63	66.00	0.19
700.00	0.34	71.00	700.00	0.98	1.87	2.11	62.33	0.25
800.00	0.41	52.59	799.99	1.29	2.43	2.75	62.02	0.14
900.00	0.39	49.41	899.99	1.73	2.97	3.43	59.82	0.03
1000.00	0.32	46.50	999.99	2.14	3.43	4.04	58.04	0.07
1100.00	0.45	103.56	1099.99	2.24	4.02	4.60	60.85	0.39
1200.00	0.72	109.24	1199.98	1.94	4.99	5.35	68.74	0.27
1300.00	1.15	116.25	1299.97	1.29	6.48	6.60	78.71	0.45
1400.00	1.40	118.23	1399.94	0.27	8.45	8.46	88.16	0.26
1500.00	1.64	117.47	1499.91	-0.97	10.80	10.84	95.12	0.24
1600.00	1.57	126.87	1599.87	-2.45	13.16	13.39	100.53	0.27
1700.00	1.35	135.55	1699.84	-4.11	15.08	15.63	105.24	0.31
1800.00	1.26	132.41	1799.81	-5.69	16.72	17.66	108.80	0.11

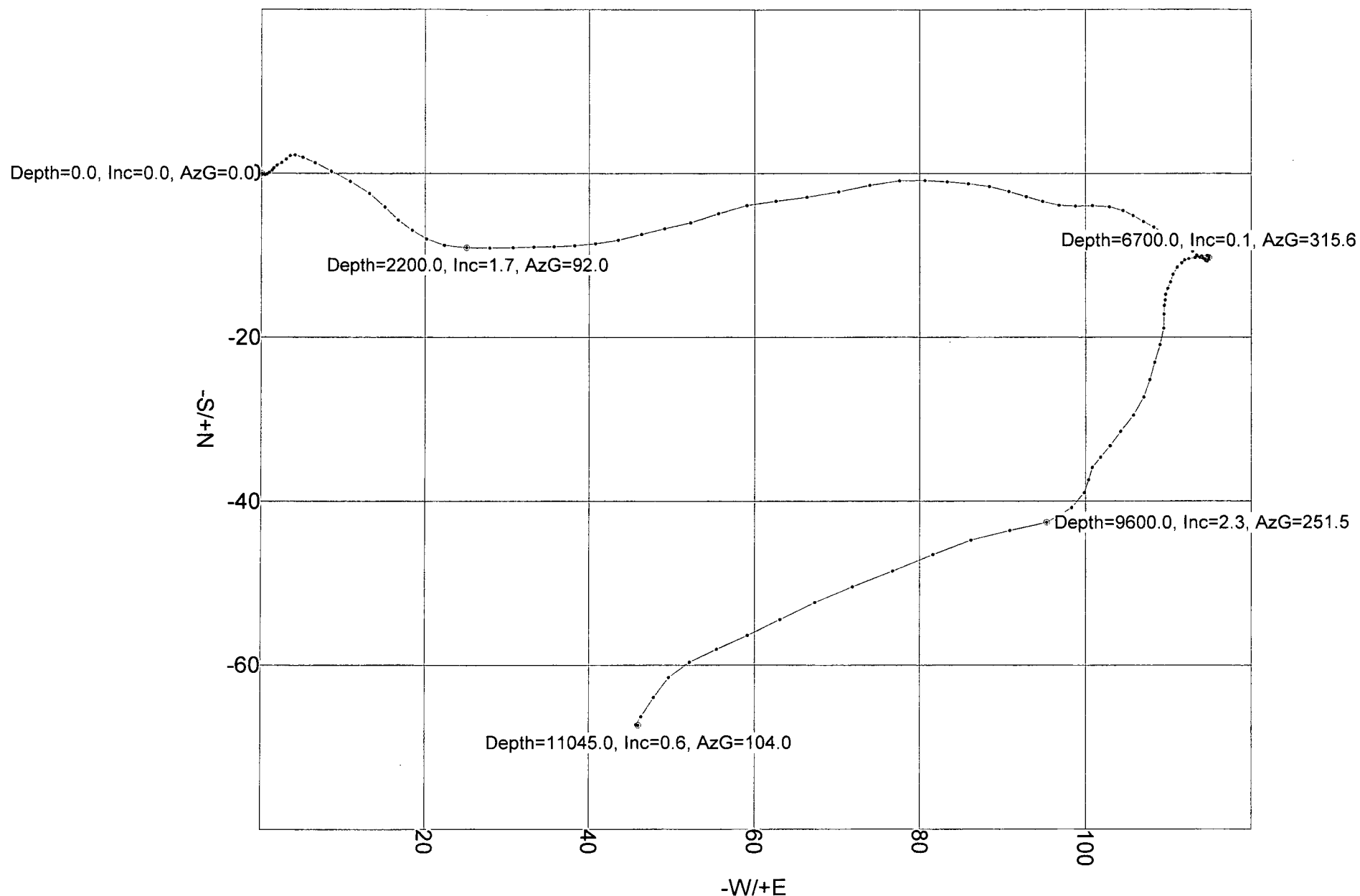
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	1.16	120.38	1899.79	-6.95	18.41	19.67	110.68	0.27
2000.00	1.20	120.54	1999.77	-7.99	20.18	21.71	111.60	0.03
2100.00	1.49	99.91	2099.74	-8.75	22.37	24.02	111.36	0.56
2200.00	1.68	92.04	2199.70	-9.02	25.12	26.69	109.76	0.29
2300.00	1.63	90.08	2299.66	-9.08	28.00	29.44	107.96	0.08
2400.00	1.54	88.31	2399.62	-9.04	30.77	32.07	106.37	0.10
2500.00	1.37	87.89	2499.59	-8.96	33.31	34.49	105.05	0.17
2600.00	1.41	89.52	2599.56	-8.90	35.74	36.83	103.99	0.06
2700.00	1.44	85.75	2699.53	-8.80	38.23	39.23	102.96	0.10
2800.00	1.50	83.60	2799.50	-8.56	40.78	41.67	101.86	0.09
2900.00	1.72	78.16	2899.46	-8.11	43.55	44.29	100.55	0.26
3000.00	1.62	74.05	2999.41	-7.41	46.37	46.96	99.08	0.15
3100.00	1.67	78.20	3099.37	-6.72	49.15	49.61	97.79	0.13
3200.00	2.01	75.80	3199.32	-6.00	52.28	52.62	96.54	0.34
3300.00	2.06	68.63	3299.26	-4.91	55.65	55.86	95.05	0.26
3400.00	2.02	78.29	3399.20	-3.90	59.04	59.17	93.78	0.35
3500.00	2.07	84.81	3499.13	-3.38	62.56	62.66	93.09	0.24
3600.00	2.22	80.55	3599.06	-2.90	66.27	66.34	92.51	0.22
3700.00	2.25	80.05	3698.99	-2.24	70.11	70.15	91.83	0.03
3800.00	2.18	76.15	3798.91	-1.45	73.89	73.90	91.12	0.17
3900.00	2.01	87.53	3898.85	-0.92	77.49	77.49	90.68	0.45
4000.00	1.60	91.06	3998.80	-0.87	80.63	80.63	90.62	0.43
4100.00	1.48	95.05	4098.76	-1.01	83.31	83.32	90.69	0.16
4200.00	1.46	96.29	4198.73	-1.26	85.87	85.88	90.84	0.04
4300.00	1.47	98.68	4298.69	-1.60	88.40	88.42	91.03	0.06
4400.00	1.33	110.21	4398.66	-2.19	90.76	90.79	91.38	0.31
4500.00	1.16	104.23	4498.64	-2.84	92.84	92.88	91.75	0.21
4600.00	1.19	108.91	4598.62	-3.43	94.80	94.87	92.07	0.10
4700.00	1.13	96.68	4698.60	-3.88	96.77	96.85	92.30	0.25
4800.00	1.17	88.47	4798.58	-3.97	98.78	98.86	92.30	0.17
4900.00	1.16	88.56	4898.56	-3.92	100.81	100.88	92.22	0.01
5000.00	1.18	99.55	4998.54	-4.06	102.83	102.91	92.26	0.22
5100.00	0.79	113.16	5098.52	-4.50	104.48	104.58	92.47	0.45
5200.00	0.76	122.10	5198.51	-5.13	105.68	105.80	92.78	0.12
5300.00	0.93	118.82	5298.50	-5.87	106.95	107.11	93.14	0.18
5400.00	0.72	117.66	5398.49	-6.55	108.22	108.41	93.46	0.21
5500.00	0.74	121.62	5498.48	-7.18	109.32	109.56	93.76	0.05
5600.00	0.84	124.82	5598.47	-7.94	110.47	110.75	94.11	0.11
5700.00	0.49	107.56	5698.47	-8.49	111.48	111.80	94.35	0.40

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	0.52	130.96	5798.46	-8.91	112.23	112.59	94.54	0.21
5900.00	0.46	131.21	5898.46	-9.48	112.88	113.28	94.80	0.06
6000.00	0.37	136.83	5998.46	-9.98	113.40	113.84	95.03	0.11
6100.00	0.18	102.86	6098.46	-10.24	113.78	114.24	95.15	0.24
6200.00	0.17	89.48	6198.46	-10.28	114.08	114.54	95.15	0.04
6300.00	0.19	147.87	6298.46	-10.41	114.31	114.79	95.21	0.17
6400.00	0.14	126.38	6398.46	-10.63	114.50	114.99	95.30	0.08
6500.00	0.07	61.98	6498.46	-10.67	114.65	115.15	95.32	0.13
6600.00	0.22	34.62	6598.46	-10.48	114.81	115.29	95.22	0.16
6700.00	0.09	315.58	6698.45	-10.27	114.87	115.33	95.11	0.22
6800.00	0.16	29.93	6798.45	-10.09	114.89	115.33	95.02	0.16
6900.00	0.36	265.47	6898.45	-10.00	114.64	115.08	94.98	0.47
7000.00	0.42	263.00	6998.45	-10.07	113.97	114.41	95.05	0.07
7100.00	0.50	251.66	7098.45	-10.25	113.19	113.65	95.17	0.12
7200.00	0.41	270.08	7198.45	-10.38	112.42	112.90	95.28	0.17
7300.00	0.23	220.68	7298.44	-10.54	111.93	112.42	95.38	0.31
7400.00	0.35	226.84	7398.44	-10.90	111.57	112.11	95.58	0.12
7500.00	0.53	225.03	7498.44	-11.44	111.02	111.61	95.88	0.19
7600.00	0.62	199.11	7598.43	-12.28	110.51	111.19	96.34	0.27
7700.00	0.51	194.45	7698.43	-13.22	110.23	111.02	96.84	0.11
7800.00	0.48	213.05	7798.43	-14.00	109.89	110.78	97.26	0.16
7900.00	0.43	184.11	7898.42	-14.73	109.63	110.62	97.65	0.23
8000.00	0.38	185.81	7998.42	-15.43	109.57	110.66	98.02	0.06
8100.00	0.38	192.86	8098.42	-16.09	109.47	110.64	98.36	0.05
8200.00	0.86	176.25	8198.41	-17.16	109.44	110.78	98.91	0.50
8300.00	1.12	185.94	8298.40	-18.88	109.39	111.01	99.79	0.31
8400.00	1.26	197.34	8398.38	-20.90	108.96	110.95	100.86	0.27
8500.00	1.31	196.66	8498.35	-23.05	108.30	110.73	102.01	0.06
8600.00	1.22	194.62	8598.33	-25.17	107.71	110.61	103.16	0.10
8700.00	1.36	203.46	8698.30	-27.29	106.97	110.39	104.31	0.24
8800.00	1.54	214.99	8798.27	-29.49	105.72	109.76	105.58	0.34
8900.00	1.35	219.87	8898.24	-31.49	104.19	108.85	106.82	0.23
9000.00	1.12	212.37	8998.21	-33.22	102.92	108.14	107.89	0.28
9100.00	0.96	226.34	9098.20	-34.63	101.78	107.51	108.79	0.30
9200.00	0.89	209.46	9198.18	-35.89	100.79	106.99	109.60	0.28
9300.00	0.97	185.10	9298.17	-37.41	100.34	107.08	110.45	0.40
9400.00	0.94	211.94	9398.16	-38.95	99.83	107.16	111.31	0.44
9500.00	1.83	223.56	9498.13	-40.80	98.29	106.42	112.54	0.93
9600.00	2.31	251.55	9598.07	-42.60	95.28	104.37	114.09	1.10

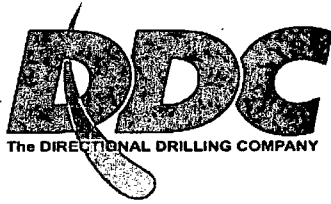
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
9700.00	2.90	262.22	9697.96	-43.58	90.86	100.77	115.62	0.77
9800.00	2.65	249.27	9797.85	-44.74	86.19	97.11	117.43	0.68
9900.00	2.97	248.55	9897.73	-46.50	81.62	93.93	119.67	0.32
10000.00	3.16	246.96	9997.58	-48.53	76.67	90.74	122.33	0.21
10100.00	2.88	250.36	10097.44	-50.45	71.77	87.73	125.10	0.33
10200.00	2.70	243.76	10197.33	-52.33	67.29	85.25	127.87	0.37
10300.00	2.69	243.12	10297.21	-54.44	63.08	83.33	130.79	0.03
10400.00	2.35	244.05	10397.12	-56.40	59.15	81.73	133.64	0.34
10500.00	2.31	246.75	10497.04	-58.09	55.46	80.31	136.33	0.12
10600.00	1.83	241.79	10596.97	-59.64	52.20	79.26	138.81	0.50
10700.00	1.79	224.64	10696.92	-61.50	49.69	79.07	141.06	0.54
10800.00	1.75	208.58	10796.87	-63.96	47.86	79.89	143.19	0.50
10900.00	1.45	218.31	10896.83	-66.29	46.35	80.89	145.04	0.41
11000.00	0.17	85.51	10996.82	-67.27	45.71	81.33	145.80	1.56
11045.00	0.57	104.04	11041.82	-67.32	46.00	81.53	145.66	0.92



Vaughn Energy Services
Gardendale, Texas
432-563-5444
Survey Engineer: Dustin Wedel
Corazon State Unit No. 008H / API 30-025-40950



VES Survey Date: 04/20/2013



Survey Certification Sheet

COG Operating, LLC
Company

WT-13285
Job Number

4/26/13
Date

Sec 10,T21S,R33E
Lease

Corazon State Unit #8H
Well Name

Lea, NM
County & State

API: 30-025-40950

Surveyed from a depth of: 11045 feet to 16135 feet MD

Type of Survey: MWD

Directional Supervisor/Surveyor: Clayton Keck

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by **The Directional Drilling Company (DDC)**. This report represents a true and correct Directional survey of this well based on the original data obtained at the well site. Wellbore Coordinates are calculated using minimum curvature.

Digitally signed by Larry Wright
DN: cn=Larry Wright, o=The
Directional Drilling Company,
ou=GM of Guidance Services,
email=larryw@directionaldrillers.c
om, c=US
Date: 2013.05.03 09:59:28 -05'00'

Larry Wright
MWD General Manager



COG Operating, LLC

Lea County, NM

Sec 10, T21S, R33E

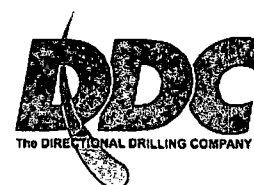
Corazon State Unit #8H

Wellbore #1

Survey: MWD

DDC Survey Report

26 April, 2013





ADC
Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Corazon State Unit #8H
Project:	Lea County, NM	TVD Reference:	WELL @ 3848.0usft (Precision #105)
Site:	Sec 10, T21S, R33E	MD Reference:	WELL @ 3848.0usft (Precision #105)
Well:	Corazon State Unit #8H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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	Sec 10, T21S, R33E				
Site Position:		Northing:	546,554.30 usft	Latitude:	32° 30' 0.712 N
From:	Map	Easting:	739,115.90 usft	Longitude:	103° 33' 27.895 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.42 °

Well	Corazon State Unit #8H					
Well Position	+N/-S	0.0 usft	Northing:	546,554.30 usft	Latitude:	32° 30' 0.712 N
	+E/-W	0.0 usft	Easting:	739,115.90 usft	Longitude:	103° 33' 27.895 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,821.5 usft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/26/2013	7.38	60.40	48,603

Design	Wellbore #1				
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	179.47	

Survey Program	Date	4/25/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	11,045.0	Gyro (Wellbore #1)	Good_gyro	Good Gyro
11,058.0	16,135.0	MWD (Wellbore #1)	MWD default	MWD - Standard

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)
TIE IN @ 11045' MD / 11042' TVD									
11,045.0	0.57	104.04	11,041.8	-67.3	46.0	67.7	0.00	0.00	0.00
11,058.0	2.60	185.40	11,054.8	-67.6	46.1	68.0	19.82	15.62	625.85
11,090.0	7.60	185.40	11,086.7	-70.4	45.8	70.8	15.63	15.63	0.00
11,121.0	11.70	185.60	11,117.2	-75.6	45.3	76.0	13.23	13.23	0.65
11,153.0	14.80	181.50	11,148.4	-82.9	44.9	83.3	10.12	9.69	-12.81
11,185.0	17.40	176.40	11,179.1	-91.8	45.1	92.2	9.24	8.13	-15.94
11,216.0	21.10	176.80	11,208.4	-102.0	45.7	102.4	11.94	11.94	1.29
11,248.0	23.30	180.80	11,238.0	-114.0	45.9	114.5	8.34	6.88	12.50
11,280.0	25.80	183.40	11,267.1	-127.3	45.4	127.7	8.51	7.81	8.13

Company: COG Operating, LLC
Project: Lea County, NM
Site: Sec 10, T21S, R33E
Well: Corazon State Unit #8H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Corazon State Unit #8H
TVD Reference: WELL @ 3848.0usft (Precision #105)
MD Reference: WELL @ 3848.0usft (Precision #105)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User 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)
11,311.0	29.20	184.70	11,294.6	-141.6	44.4	142.0	11.14	10.97	4.19
11,343.0	31.70	183.60	11,322.2	-157.8	43.2	158.2	8.00	7.81	-3.44
11,374.0	34.30	180.10	11,348.2	-174.6	42.7	175.0	10.40	8.39	-11.29
11,406.0	36.10	174.70	11,374.4	-193.1	43.5	193.5	11.23	5.63	-16.88
11,438.0	40.00	178.70	11,399.5	-212.7	44.6	213.1	14.41	12.19	12.50
11,469.0	41.90	179.40	11,423.0	-233.0	45.0	233.5	6.31	6.13	2.26
11,501.0	43.80	179.60	11,446.4	-254.8	45.2	255.2	5.95	5.94	0.63
11,533.0	47.80	179.80	11,468.7	-277.7	45.3	278.2	12.51	12.50	0.63
11,564.0	51.40	180.10	11,488.8	-301.4	45.3	301.8	11.64	11.61	0.97
11,596.0	54.40	181.70	11,508.1	-326.9	44.9	327.3	10.19	9.38	5.00
11,627.0	59.30	183.40	11,525.1	-352.8	43.7	353.2	16.46	15.81	5.48
11,659.0	63.70	184.90	11,540.3	-380.8	41.7	381.2	14.35	13.75	4.69
11,691.0	70.20	185.40	11,552.9	-410.1	39.1	410.5	20.36	20.31	1.56
11,723.0	74.00	185.20	11,562.7	-440.4	36.2	440.8	11.89	11.88	-0.63
11,754.0	74.00	184.30	11,571.2	-470.1	33.8	470.4	2.79	0.00	-2.90
11,786.0	75.20	184.30	11,579.7	-500.9	31.5	501.2	3.75	3.75	0.00
11,818.0	76.90	182.90	11,587.4	-531.9	29.5	532.2	6.80	5.31	-4.38
11,850.0	79.60	181.30	11,594.0	-563.2	28.4	563.4	9.75	8.44	-5.00
11,881.0	82.70	181.00	11,598.7	-593.8	27.8	594.1	10.05	10.00	-0.97
11,913.0	86.40	178.90	11,601.8	-625.7	27.8	625.9	13.28	11.56	-6.56
11,976.0	87.80	181.00	11,605.0	-688.6	27.8	688.8	4.00	2.22	3.33
12,071.0	87.40	179.20	11,608.9	-783.5	27.7	783.7	1.94	-0.42	-1.89
12,166.0	87.40	180.30	11,613.2	-878.4	28.1	878.6	1.16	0.00	1.16
12,261.0	87.00	179.20	11,617.9	-973.3	28.5	973.5	1.23	-0.42	-1.16
12,356.0	86.70	179.00	11,623.1	-1,068.1	30.0	1,068.4	0.38	-0.32	-0.21
12,451.0	89.20	180.10	11,626.5	-1,163.1	30.7	1,163.3	2.87	2.63	1.16
12,546.0	89.80	180.80	11,627.3	-1,258.1	30.0	1,258.3	0.97	0.63	0.74
12,641.0	89.60	179.80	11,627.8	-1,353.0	29.5	1,353.3	1.07	-0.21	-1.05
12,736.0	89.70	181.30	11,628.4	-1,448.0	28.6	1,448.2	1.58	0.11	1.58
12,830.0	88.50	181.20	11,629.9	-1,542.0	26.5	1,542.2	1.28	-1.28	-0.11
12,926.0	89.10	179.60	11,631.9	-1,638.0	25.9	1,638.1	1.78	0.63	-1.67
13,021.0	89.00	180.80	11,633.5	-1,733.0	25.5	1,733.1	1.27	-0.11	1.26
13,116.0	87.40	179.80	11,636.5	-1,827.9	25.0	1,828.1	1.99	-1.68	-1.05
13,211.0	87.40	181.30	11,640.8	-1,922.8	24.1	1,922.9	1.58	0.00	1.58
13,306.0	87.50	179.20	11,645.0	-2,017.7	23.7	2,017.8	2.21	0.11	-2.21
13,401.0	87.90	180.30	11,648.8	-2,112.6	24.1	2,112.8	1.23	0.42	1.16
13,496.0	88.70	178.30	11,651.6	-2,207.6	25.3	2,207.7	2.27	0.84	-2.11
13,591.0	89.20	180.30	11,653.4	-2,302.5	26.4	2,302.7	2.17	0.53	2.11
13,686.0	89.40	180.30	11,654.5	-2,397.5	25.9	2,397.7	0.21	0.21	0.00
13,780.0	89.50	178.30	11,655.4	-2,491.5	27.1	2,491.7	2.13	0.11	-2.13
13,876.0	88.90	179.40	11,656.8	-2,587.5	29.0	2,587.6	1.31	-0.63	1.15
13,971.0	88.50	178.90	11,658.9	-2,682.4	30.4	2,682.6	0.67	-0.42	-0.53
14,066.0	88.10	179.40	11,661.7	-2,777.4	31.8	2,777.6	0.67	-0.42	0.53



ADC
Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Corazon State Unit #8H
Project:	Lea County, NM	TVD Reference:	WELL @ 3848.0usft (Precision #105)
Site:	Sec 10, T21S, R33E	MD Reference:	WELL @ 3848.0usft (Precision #105)
Well:	Corazon State Unit #8H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User 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)
14,161.0	89.40	180.10	11,663.8	-2,872.4	32.2	2,872.5	1.55	1.37	0.74
14,256.0	89.70	178.30	11,664.6	-2,967.4	33.6	2,967.5	1.92	0.32	-1.89
14,351.0	89.50	179.20	11,665.2	-3,062.3	35.6	3,062.5	0.97	-0.21	0.95
14,446.0	89.40	178.30	11,666.1	-3,157.3	37.7	3,157.5	0.95	-0.11	-0.95
14,541.0	88.90	179.60	11,667.5	-3,252.3	39.5	3,252.5	1.47	-0.53	1.37
14,636.0	88.60	179.00	11,669.6	-3,347.2	40.6	3,347.5	0.71	-0.32	-0.63
14,731.0	88.20	178.30	11,672.3	-3,442.2	42.9	3,442.4	0.85	-0.42	-0.74
14,826.0	88.10	180.50	11,675.3	-3,537.1	43.8	3,537.4	2.32	-0.11	2.32
14,921.0	88.10	179.00	11,678.5	-3,632.1	44.3	3,632.3	1.58	0.00	-1.58
15,015.0	88.50	179.20	11,681.3	-3,726.0	45.7	3,726.3	0.48	0.43	0.21
15,110.0	88.80	178.20	11,683.5	-3,821.0	47.9	3,821.2	1.10	0.32	-1.05
15,205.0	88.50	179.40	11,685.8	-3,915.9	49.9	3,916.2	1.30	-0.32	1.26
15,300.0	88.50	177.80	11,688.2	-4,010.8	52.2	4,011.2	1.68	0.00	-1.68
15,395.0	89.30	178.30	11,690.1	-4,105.8	55.4	4,106.1	0.99	0.84	0.53
15,490.0	89.90	178.00	11,690.7	-4,200.7	58.5	4,201.1	0.71	0.63	-0.32
15,585.0	89.80	178.30	11,691.0	-4,295.7	61.6	4,296.1	0.33	-0.11	0.32
15,680.0	89.80	178.70	11,691.3	-4,390.6	64.1	4,391.0	0.42	0.00	0.42
15,775.0	90.10	178.90	11,691.4	-4,485.6	66.0	4,486.0	0.38	0.32	0.21
15,870.0	90.50	177.80	11,690.9	-4,580.6	68.8	4,581.0	1.23	0.42	-1.16
15,965.0	90.00	178.70	11,690.5	-4,675.5	71.7	4,676.0	1.08	-0.53	0.95
16,060.0	90.40	178.50	11,690.1	-4,770.5	74.0	4,771.0	0.47	0.42	-0.21
16,085.0	90.40	177.30	11,690.0	-4,795.5	74.9	4,796.0	4.80	0.00	-4.80
TD @ 16135' MD / 11690' TVD									
16,135.0	90.40	178.50	11,689.6	-4,845.4	76.8	4,845.9	2.40	0.00	2.40

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,045.0	11,041.8	-67.3	46.0	TIE IN @ 11045' MD / 11042' TVD
16,135.0	11,689.6	-4,845.4	76.8	TD @ 16135' MD / 11690' TVD

Checked By: _____	Approved By: _____	Date: _____
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