

Results of Directional Survey

API number:	30-025-40689		
OGRID:		Operator:	COG OPERATING LLC
		Property:	QUESO STATE # 2H

surface	ULSTR:	P	36	T	23S	R	32E
				373	FSL	380	FEL

BH Loc	ULSTR:	A	36	T	23S	R	32E
15277	MD	10910.2	TVD	349	FNL	463	FEL
				4931	FSL		

Top Perf/OH	ULSTR:	P	36	T	23S	R	32E
11008	MD	10872.8	TVD	673	FSL	350	FEL

Bot Perf/OH	ULSTR:	A	36	T	23S	R	32E
15180	MD	10901.8	TVD	445	FNL	457	FEL
				4835	FSL		

	MD	N/S	E/W	VD
	10977	271.93	28.45	10860.52
TOP PERFS/OH	11008	300.35	29.79	10872.80
	11008	300.35	29.79	10872.80
	15151	4433.11	-74.64	10899.49
BOT PERFS/OH	15180	4461.95	-76.53	10901.84
	15228	4509.69	-79.66	10905.73

NEXT TO LAST	15228	4509.69	-79.66	10905.73
LAST READING	15272	4553.41	-82.71	10909.72
TD	15277	4558.38	-83.06	10910.17

Surface Location	373	FS	380	FE
Projected BHL	4931	FS	463	FE
Location of				
Top Perfs/OH	673	FS	350	FE
Bottom Perfs/OH	4835	FS	457	FE

SUMMARY of Subsurface Locations

Surface Location	P-36-23S-32E	373	FS	380	FE	Vert. Depth
Top Perfs/OH	P-36-23S-32E	673	FS	350	FE	10872.80
Bottom Perfs/OH	A-36-23S-32E	4835	FS	457	FE	10901.84
Projected TD	A-36-23S-32E	4931	FS	463	FE	10910.17

JUN 27 2013

OPERATOR _____ COG 3D-025-40689
WELL/LEASE Queso State #002H
COUNTY Lea

HOBBS OCD

JUN 03 2013

RECEIVED

STATE OF NEW MEXICO
DEVIATION REPORT

307	0.57
610	0.93
875	0.23
1184	0.57
1332	0.60
1427	0.70
1521	0.70
1615	0.80
1710	0.70
1805	0.60
1994	0.60
2134	0.40
2372	0.60
2563	0.70
2753	0.90
2848	1.00
3037	1.00
3228	1.10
3417	1.30
3607	0.80
3702	0.40
3797	0.30
3892	0.20
4081	0.50
4176	0.40
4271	1.10
4461	1.80
4651	2.10
4840	2.20
4994	1.50
5450	1.80
5900	1.40
6400	1.00
6900	0.80
7400	0.60
7900	0.60
8400	0.50
8900	0.80
9377	1.40
9868	2.40

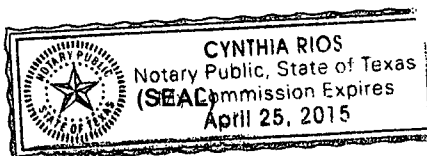
SIGNED BY: _____

RON SCANDOLARI, VP CONTRACT DRILLING

STATE OF TEXAS

COUNTY OF MIDLAND

ON THIS 12th DAY OF February, 2013, BEFORE ME, C RIOS, A NOTARY PUBLIC, PERSONALLY APPEARED RON SCANDOLARI, WHO ACKNOWLEDGED AND EXECUTED THIS DOCUMENT. WITNESS MY HAND AND OFFICIAL SEAL.



Cynthia Rios
NOTARY PUBLIC



A GYRO TECHNOLOGIES INC. COMPANY

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

HOBBS OCD
JUN 03 2013
RECEIVED

January 25, 2013

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

Attn: Kanicia Castillo

Re: Queso State No 002H

3D-025-40689

Please find enclosed a copy of the survey from 0' to 10,268' ran on the above referenced well.

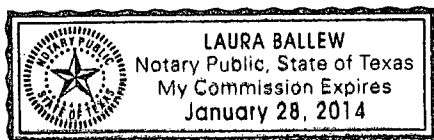
If I can be of any further service, please do not hesitate to call me at 800-606-4976.

Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

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




Laura Ballew
Notary Public, State of Texas



Company: COG Operating LLC (Concho)

Lease/Well: Queso State/No 002H

Rig Name: Basic 46

State/County: New Mexico/Lea

Latitude: 32.25, Longitude: -103.62

GRID North is 0.38 Degrees East of True North

VS-Azi: 0.00 Degrees

30-025-40689

MOB3S-0CD
JUN 03 2013
RECEIVED

VES
VAUGHN ENERGY SERVICES

Depth Reference : RKB=22 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: survey.ut

Minimum Curvature Method

Report Date/Time: 1/30/2013 / 14:56

Vaughn Energy Services

432-563-5444

Gardendale, Texas

Surveyor: Kyle Willis

Queso State No 002H / API 30-025-40689

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	0.26	359.37	100.00	0.22	0.00	0.22	0.22	359.37	0.26
200.00	0.15	333.97	200.00	0.57	-0.06	0.57	0.57	353.62	0.14
300.00	0.25	57.72	300.00	0.80	0.06	0.80	0.81	4.26	0.28
400.00	0.33	74.77	400.00	0.99	0.52	0.99	1.12	27.59	0.12
500.00	0.56	87.15	499.99	1.09	1.28	1.09	1.69	49.52	0.24
600.00	0.53	77.30	599.99	1.22	2.22	1.22	2.53	61.20	0.10
700.00	0.38	91.63	699.99	1.31	3.00	1.31	3.28	66.37	0.19
800.00	0.55	57.69	799.98	1.56	3.74	1.56	4.05	67.33	0.32
900.00	0.60	72.57	899.98	1.97	4.64	1.97	5.04	66.96	0.16
1000.00	0.59	57.16	999.97	2.41	5.57	2.41	6.07	66.61	0.16
1100.00	0.39	76.16	1099.97	2.77	6.34	2.77	6.91	66.39	0.25
1200.00	0.39	46.81	1199.97	3.08	6.92	3.08	7.57	65.97	0.20
1300.00	0.52	46.79	1299.96	3.63	7.49	3.63	8.33	64.17	0.14
1400.00	0.57	40.79	1399.96	4.32	8.15	4.32	9.22	62.10	0.07
1500.00	0.46	29.85	1499.96	5.04	8.68	5.04	10.03	59.85	0.15
1600.00	0.65	33.77	1599.95	5.85	9.19	5.85	10.89	57.50	0.19
1700.00	0.68	39.18	1699.94	6.79	9.88	6.79	11.98	55.51	0.07
1800.00	0.60	31.24	1799.94	7.70	10.53	7.70	13.04	53.83	0.12

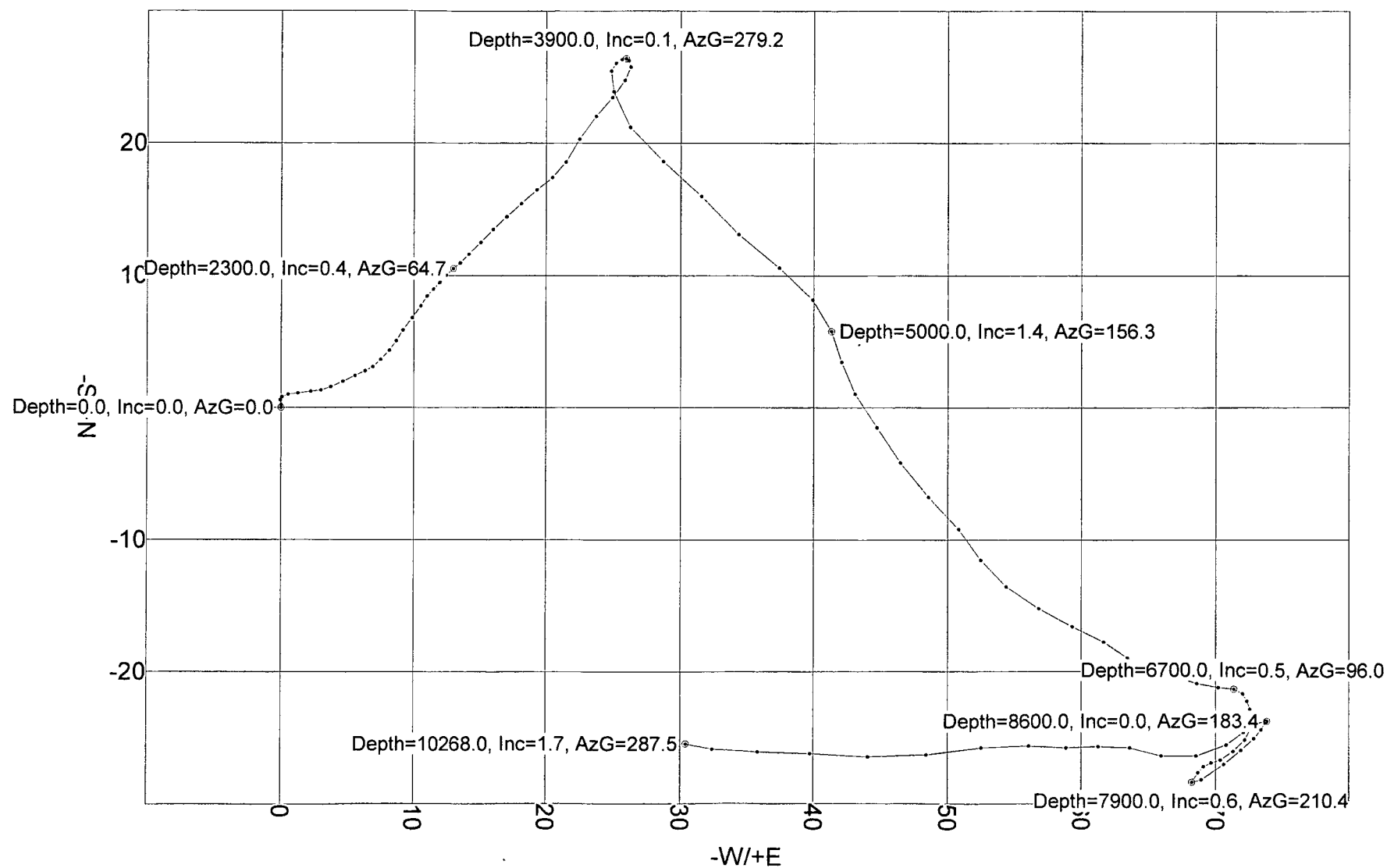
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.40	35.48	1899.93	8.43	11.00	8.43	13.86	52.54	0.20
2000.00	0.44	47.45	1999.93	8.98	11.49	8.98	14.58	52.00	0.09
2100.00	0.35	42.91	2099.93	9.46	11.97	9.46	15.26	51.71	0.10
2200.00	0.49	37.47	2199.93	10.01	12.44	10.01	15.97	51.17	0.14
2300.00	0.44	64.65	2299.92	10.51	13.04	10.51	16.75	51.13	0.22
2400.00	0.37	31.31	2399.92	10.95	13.56	10.95	17.43	51.07	0.24
2500.00	0.70	49.83	2499.92	11.62	14.19	11.62	18.34	50.69	0.38
2600.00	0.75	42.43	2599.91	12.50	15.10	12.50	19.60	50.39	0.11
2700.00	0.79	44.65	2699.90	13.48	16.03	13.48	20.95	49.95	0.05
2800.00	0.81	48.27	2799.89	14.44	17.05	14.44	22.34	49.73	0.05
2900.00	0.90	46.72	2899.88	15.45	18.14	15.45	23.83	49.59	0.09
3000.00	0.89	49.61	2999.87	16.48	19.30	16.48	25.38	49.50	0.05
3100.00	0.82	53.40	3099.86	17.41	20.46	17.41	26.87	49.61	0.09
3200.00	1.01	30.84	3199.84	18.59	21.49	18.59	28.41	49.13	0.41
3300.00	1.25	29.87	3299.82	20.30	22.48	20.30	30.29	47.93	0.24
3400.00	1.21	41.35	3399.80	22.04	23.72	22.04	32.38	47.11	0.25
3500.00	0.91	38.09	3499.78	23.45	24.91	23.45	34.22	46.73	0.30
3600.00	0.93	33.41	3599.77	24.76	25.85	24.76	35.79	46.24	0.08
3700.00	0.37	355.05	3699.76	25.76	26.27	25.76	36.79	45.56	0.68
3800.00	0.20	325.41	3799.76	26.23	26.14	26.23	37.03	44.90	0.22
3900.00	0.14	279.22	3899.76	26.39	25.93	26.39	37.00	44.49	0.14
4000.00	0.23	244.51	3999.76	26.33	25.63	26.33	36.74	44.23	0.14
4100.00	0.39	233.45	4099.76	26.04	25.18	26.04	36.22	44.04	0.17
4200.00	0.45	191.98	4199.76	25.45	24.83	25.45	35.55	44.29	0.31
4300.00	1.37	166.15	4299.74	23.90	25.03	23.90	34.61	46.32	0.98
4400.00	2.05	148.91	4399.70	21.21	26.24	21.21	33.74	51.06	0.85
4500.00	2.13	124.32	4499.64	18.63	28.70	18.63	34.21	57.01	0.89
4600.00	2.36	139.97	4599.56	16.00	31.55	16.00	35.38	63.10	0.65
4700.00	2.27	131.72	4699.48	13.11	34.35	13.11	36.77	69.11	0.34
4800.00	2.28	127.19	4799.40	10.59	37.41	10.59	38.89	74.19	0.18
4900.00	1.76	143.57	4899.34	8.16	39.91	8.16	40.73	78.45	0.77
5000.00	1.45	156.29	4999.30	5.76	41.33	5.76	41.73	82.06	0.47
5100.00	1.38	167.85	5099.27	3.43	42.09	3.43	42.23	85.33	0.29
5200.00	1.65	148.72	5199.23	1.03	43.09	1.03	43.10	88.63	0.57
5300.00	1.80	145.80	5299.19	-1.50	44.72	-1.50	44.74	91.92	0.18
5400.00	1.86	147.86	5399.14	-4.17	46.47	-4.17	46.65	95.13	0.09
5500.00	2.00	134.31	5499.08	-6.77	48.58	-6.77	49.05	97.93	0.48
5600.00	1.79	141.08	5599.03	-9.20	50.81	-9.20	51.64	100.26	0.31
5700.00	1.50	149.34	5698.99	-11.54	52.46	-11.54	53.71	102.41	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	1.74	125.61	5798.95	-13.56	54.36	-13.56	56.03	104.00	0.71
5900.00	1.65	122.79	5898.90	-15.22	56.81	-15.22	58.81	105.00	0.12
6000.00	1.63	114.73	5998.86	-16.60	59.31	-16.60	61.59	105.63	0.23
6100.00	1.39	117.78	6098.83	-17.75	61.67	-17.75	64.17	106.06	0.25
6200.00	1.09	133.22	6198.80	-18.97	63.43	-18.97	66.21	106.65	0.44
6300.00	1.08	103.62	6298.79	-19.84	65.04	-19.84	68.00	106.97	0.56
6400.00	1.10	108.86	6398.77	-20.38	66.87	-20.38	69.91	106.95	0.10
6500.00	0.99	106.75	6498.75	-20.94	68.61	-20.94	71.73	106.97	0.12
6600.00	0.86	94.71	6598.74	-21.25	70.18	-21.25	73.33	106.84	0.23
6700.00	0.47	96.01	6698.73	-21.35	71.34	-21.35	74.47	106.66	0.39
6800.00	0.46	141.17	6798.73	-21.70	72.00	-21.70	75.20	106.78	0.36
6900.00	0.28	165.44	6898.73	-22.25	72.31	-22.25	75.66	107.10	0.23
7000.00	0.48	158.20	6998.73	-22.87	72.53	-22.87	76.05	107.50	0.20
7100.00	0.44	178.91	7098.72	-23.63	72.69	-23.63	76.43	108.01	0.17
7200.00	0.49	200.37	7198.72	-24.41	72.55	-24.41	76.54	108.60	0.18
7300.00	0.54	211.73	7298.72	-25.21	72.15	-25.21	76.43	109.26	0.11
7400.00	0.89	232.71	7398.71	-26.08	71.28	-26.08	75.91	110.10	0.43
7500.00	0.42	245.06	7498.70	-26.71	70.34	-26.71	75.24	110.79	0.49
7600.00	0.41	256.67	7598.70	-26.94	69.66	-26.94	74.69	111.15	0.08
7700.00	0.33	231.74	7698.70	-27.20	69.09	-27.20	74.25	111.49	0.18
7800.00	0.40	213.61	7798.69	-27.67	68.67	-27.67	74.04	111.95	0.13
7900.00	0.58	210.40	7898.69	-28.39	68.22	-28.39	73.90	112.60	0.18
8000.00	1.31	56.38	7998.68	-28.19	68.92	-28.19	74.47	112.25	1.85
8100.00	0.99	54.65	8098.66	-27.06	70.58	-27.06	75.59	110.97	0.33
8200.00	0.91	45.83	8198.65	-26.00	71.86	-26.00	76.42	109.89	0.16
8300.00	0.58	48.42	8298.64	-25.11	72.81	-25.11	77.02	109.03	0.34
8400.00	0.44	27.04	8398.64	-24.44	73.36	-24.44	77.32	108.42	0.23
8500.00	0.25	37.58	8498.64	-23.92	73.67	-23.92	77.45	107.99	0.20
8600.00	0.04	183.38	8598.63	-23.78	73.80	-23.78	77.54	107.86	0.29
8700.00	0.11	316.88	8698.63	-23.75	73.73	-23.75	77.47	107.86	0.14
8800.00	0.67	246.49	8798.63	-23.92	73.13	-23.92	76.94	108.11	0.65
8900.00	0.82	227.64	8898.62	-24.64	72.06	-24.64	76.16	108.87	0.29
9000.00	1.03	238.73	8998.61	-25.59	70.76	-25.59	75.25	109.88	0.28
9100.00	1.70	256.48	9098.58	-26.40	68.55	-26.40	73.46	111.07	0.78
9200.00	1.37	286.88	9198.55	-26.41	65.96	-26.41	71.05	111.82	0.87
9300.00	1.41	282.23	9298.52	-25.80	63.61	-25.80	68.65	112.07	0.12
9400.00	1.32	261.42	9398.49	-25.71	61.27	-25.71	66.45	112.76	0.50
9500.00	1.45	273.30	9498.46	-25.81	58.87	-25.81	64.28	113.67	0.32
9600.00	1.79	273.42	9598.42	-25.64	56.05	-25.64	61.64	114.58	0.33

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	2.30	263.02	9698.36	-25.79	52.50	-25.79	58.49	116.16	0.63
9800.00	2.43	261.90	9798.27	-26.33	48.41	-26.33	55.11	118.55	0.14
9900.00	2.57	274.14	9898.18	-26.47	44.07	-26.47	51.41	120.99	0.55
10000.00	2.38	272.84	9998.08	-26.21	39.75	-26.21	47.61	123.39	0.20
10100.00	2.13	270.81	10098.01	-26.08	35.81	-26.08	44.30	126.06	0.26
10200.00	1.77	276.66	10197.95	-25.87	32.42	-25.87	41.48	128.59	0.42
10268.00	1.69	287.45	10265.92	-25.45	30.43	-25.45	39.67	129.91	0.49



Vaughn Energy Services
432-563-5444
Gardendale, Texas
Surveyor: Kyle Willis
Queso State No 002H / API 30-025-40689



VES Survey Date: 01/22/2013



COG Operating, LLC

Lea County, NM (NAD27)

Queso State

#2H

30-025-40688

Wellbore #1

Design: Surveys

Survey Report - Geographic

06 February, 2013





Childress Directional Drilling
Survey Report - Geographic



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Site Queso State
Project:	Lea County, NM (NAD27)	TVD Reference:	WELL @ 3660.00usft (Basic 46)
Site:	Queso State	MD Reference:	WELL @ 3660.00usft (Basic 46)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.1 Single User Db

Project	Lea County, NM (NAD27)		
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	Queso State		
Site Position:		Northing:	457,173.90 usft
From:	Map	Easting:	720,357.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 15' 17.557 N
		Longitude:	103° 37' 13.873 W
		Grid Convergence:	0.38 °

Well	#2H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 15' 17.557 N
		Longitude:	103° 37' 13.873 W
		Ground Level:	3,638.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2012/12/27	7.42	60.17	48,475

Design	Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00		359.70

Survey Program	Date 2013/02/05				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	10,268.00	VES gyro surveys (Wellbore #1)	NS-GYRO-MS	North sensing gyrocompassing m/s	
10,383.00	15,272.00	Childress MWD (Wellbore #1)	MWD	MWD - CHILDRESS MWD	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	457,173.90	720,357.30	32° 15' 17.557 N	103° 37' 13.873 W
100.00	0.26	359.37	100.00	0.23	0.00	457,174.13	720,357.29	32° 15' 17.559 N	103° 37' 13.873 W
200.00	0.15	333.97	200.00	0.57	-0.06	457,174.47	720,357.23	32° 15' 17.563 N	103° 37' 13.874 W
300.00	0.25	57.72	300.00	0.81	0.06	457,174.71	720,357.36	32° 15' 17.565 N	103° 37' 13.872 W
400.00	0.33	74.77	400.00	1.00	0.53	457,174.90	720,357.82	32° 15' 17.567 N	103° 37' 13.867 W
500.00	0.56	87.15	499.99	1.10	1.29	457,175.00	720,358.59	32° 15' 17.568 N	103° 37' 13.858 W
600.00	0.53	77.30	599.99	1.22	2.23	457,175.12	720,359.53	32° 15' 17.569 N	103° 37' 13.847 W
700.00	0.38	91.63	699.99	1.32	3.01	457,175.22	720,360.31	32° 15' 17.570 N	103° 37' 13.838 W
800.00	0.55	57.69	799.98	1.56	3.75	457,175.46	720,361.05	32° 15' 17.572 N	103° 37' 13.829 W
900.00	0.60	72.57	899.98	1.98	4.66	457,175.88	720,361.95	32° 15' 17.576 N	103° 37' 13.819 W
1,000.00	0.59	57.16	999.97	2.41	5.59	457,176.31	720,362.89	32° 15' 17.581 N	103° 37' 13.808 W



Childress Directional Drilling
Survey Report - Geographic



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Site Queso State
Project:	Lea County, NM (NAD27)	TVD Reference:	WELL @ 3660.00usft (Basic 46)
Site:	Queso State	MD Reference:	WELL @ 3660.00usft (Basic 46)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	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
1,100.00	0.39	76.16	1,099.97	2.77	6.35	457,176.67	720,363.65	32° 15' 17.584 N	103° 37' 13.799 W
1,200.00	0.39	46.81	1,199.97	3.09	6.93	457,176.99	720,364.23	32° 15' 17.587 N	103° 37' 13.792 W
1,300.00	0.52	46.79	1,299.96	3.63	7.51	457,177.53	720,364.81	32° 15' 17.592 N	103° 37' 13.785 W
1,400.00	0.57	40.79	1,399.96	4.32	8.17	457,178.22	720,365.46	32° 15' 17.599 N	103° 37' 13.778 W
1,500.00	0.46	29.85	1,499.96	5.04	8.69	457,178.94	720,365.99	32° 15' 17.606 N	103° 37' 13.771 W
1,600.00	0.65	33.77	1,599.95	5.86	9.21	457,179.76	720,366.50	32° 15' 17.614 N	103° 37' 13.765 W
1,700.00	0.68	39.18	1,699.94	6.79	9.90	457,180.69	720,367.19	32° 15' 17.624 N	103° 37' 13.757 W
1,800.00	0.60	31.24	1,799.94	7.70	10.54	457,181.60	720,367.84	32° 15' 17.633 N	103° 37' 13.750 W
1,900.00	0.40	35.48	1,899.93	8.43	11.02	457,182.33	720,368.31	32° 15' 17.640 N	103° 37' 13.744 W
2,000.00	0.44	47.45	1,999.93	8.98	11.50	457,182.88	720,368.80	32° 15' 17.645 N	103° 37' 13.738 W
2,100.00	0.35	42.91	2,099.93	9.46	11.99	457,183.36	720,369.29	32° 15' 17.650 N	103° 37' 13.733 W
2,200.00	0.49	37.47	2,199.93	10.02	12.46	457,183.92	720,369.76	32° 15' 17.655 N	103° 37' 13.727 W
2,300.00	0.44	64.65	2,299.92	10.53	13.07	457,184.43	720,370.36	32° 15' 17.660 N	103° 37' 13.720 W
2,400.00	0.37	31.31	2,399.92	10.97	13.58	457,184.87	720,370.88	32° 15' 17.665 N	103° 37' 13.714 W
2,500.00	0.70	49.83	2,499.92	11.64	14.22	457,185.54	720,371.51	32° 15' 17.671 N	103° 37' 13.707 W
2,600.00	0.75	42.43	2,599.91	12.52	15.13	457,186.42	720,372.42	32° 15' 17.680 N	103° 37' 13.696 W
2,700.00	0.79	44.65	2,699.90	13.49	16.05	457,187.39	720,373.35	32° 15' 17.689 N	103° 37' 13.685 W
2,800.00	0.81	48.27	2,799.89	14.45	17.06	457,188.35	720,374.36	32° 15' 17.699 N	103° 37' 13.673 W
2,900.00	0.90	46.72	2,899.88	15.46	18.16	457,189.36	720,375.46	32° 15' 17.709 N	103° 37' 13.660 W
3,000.00	0.89	49.61	2,999.87	16.50	19.33	457,190.40	720,376.62	32° 15' 17.719 N	103° 37' 13.647 W
3,100.00	0.82	53.40	3,099.86	17.43	20.49	457,191.33	720,377.79	32° 15' 17.728 N	103° 37' 13.633 W
3,200.00	1.01	30.84	3,199.84	18.61	21.52	457,192.51	720,378.81	32° 15' 17.740 N	103° 37' 13.621 W
3,300.00	1.25	29.87	3,299.82	20.32	22.51	457,194.22	720,379.81	32° 15' 17.757 N	103° 37' 13.609 W
3,400.00	1.21	41.35	3,399.80	22.05	23.75	457,195.95	720,381.05	32° 15' 17.774 N	103° 37' 13.595 W
3,500.00	0.91	38.09	3,499.78	23.47	24.94	457,197.37	720,382.24	32° 15' 17.788 N	103° 37' 13.581 W
3,600.00	0.93	33.41	3,599.77	24.77	25.88	457,198.67	720,383.17	32° 15' 17.800 N	103° 37' 13.570 W
3,700.00	0.37	355.05	3,699.76	25.77	26.30	457,199.67	720,383.59	32° 15' 17.810 N	103° 37' 13.565 W
3,800.00	0.20	325.41	3,799.76	26.24	26.17	457,200.14	720,383.47	32° 15' 17.815 N	103° 37' 13.566 W
3,900.00	0.14	279.22	3,899.76	26.40	25.95	457,200.30	720,383.25	32° 15' 17.817 N	103° 37' 13.569 W
4,000.00	0.23	244.51	3,999.76	26.34	25.65	457,200.24	720,382.94	32° 15' 17.816 N	103° 37' 13.572 W
4,100.00	0.39	233.45	4,099.76	26.05	25.19	457,199.95	720,382.49	32° 15' 17.813 N	103° 37' 13.578 W
4,200.00	0.45	191.98	4,199.76	25.46	24.84	457,199.36	720,382.14	32° 15' 17.807 N	103° 37' 13.582 W
4,300.00	1.37	166.15	4,299.74	23.91	25.04	457,197.81	720,382.34	32° 15' 17.792 N	103° 37' 13.580 W
4,400.00	2.05	148.91	4,399.70	21.22	26.25	457,195.12	720,383.55	32° 15' 17.765 N	103° 37' 13.566 W
4,500.00	2.13	124.32	4,499.64	18.64	28.71	457,192.54	720,386.01	32° 15' 17.740 N	103° 37' 13.537 W
4,600.00	2.36	139.97	4,599.56	16.02	31.57	457,189.92	720,388.87	32° 15' 17.713 N	103° 37' 13.504 W
4,700.00	2.27	131.72	4,699.48	13.12	34.37	457,187.02	720,391.67	32° 15' 17.685 N	103° 37' 13.472 W
4,800.00	2.28	127.19	4,799.40	10.60	37.44	457,184.50	720,394.73	32° 15' 17.659 N	103° 37' 13.436 W
4,900.00	1.76	143.57	4,899.34	8.17	39.93	457,182.07	720,397.23	32° 15' 17.635 N	103° 37' 13.407 W
5,000.00	1.45	156.29	4,999.30	5.77	41.35	457,179.67	720,398.65	32° 15' 17.611 N	103° 37' 13.391 W
5,100.00	1.38	167.85	5,099.27	3.44	42.12	457,177.34	720,399.41	32° 15' 17.588 N	103° 37' 13.382 W
5,200.00	1.65	148.72	5,199.23	1.03	43.12	457,174.93	720,400.41	32° 15' 17.564 N	103° 37' 13.371 W
5,300.00	1.80	145.80	5,299.19	-1.50	44.75	457,172.40	720,402.04	32° 15' 17.539 N	103° 37' 13.352 W
5,400.00	1.86	147.86	5,399.14	-4.17	46.49	457,169.73	720,403.79	32° 15' 17.513 N	103° 37' 13.332 W
5,500.00	2.00	134.31	5,499.08	-6.77	48.61	457,167.13	720,405.90	32° 15' 17.487 N	103° 37' 13.308 W
5,600.00	1.79	141.08	5,599.03	-9.20	50.84	457,164.70	720,408.13	32° 15' 17.463 N	103° 37' 13.282 W
5,700.00	1.50	149.34	5,698.99	-11.54	52.48	457,162.36	720,409.78	32° 15' 17.439 N	103° 37' 13.263 W
5,800.00	1.74	125.61	5,798.95	-13.55	54.39	457,160.35	720,411.68	32° 15' 17.419 N	103° 37' 13.241 W
5,900.00	1.65	122.79	5,898.90	-15.22	56.83	457,158.68	720,414.13	32° 15' 17.403 N	103° 37' 13.212 W
6,000.00	1.63	114.73	5,998.86	-16.59	59.33	457,157.31	720,416.63	32° 15' 17.389 N	103° 37' 13.183 W
6,100.00	1.39	117.78	6,098.83	-17.75	61.70	457,156.15	720,418.99	32° 15' 17.377 N	103° 37' 13.156 W
6,200.00	1.09	133.22	6,198.80	-18.97	63.46	457,154.93	720,420.76	32° 15' 17.365 N	103° 37' 13.136 W
6,300.00	1.08	103.62	6,298.79	-19.84	65.07	457,154.06	720,422.37	32° 15' 17.356 N	103° 37' 13.117 W
6,400.00	1.10	108.86	6,398.77	-20.37	66.90	457,153.53	720,424.19	32° 15' 17.351 N	103° 37' 13.096 W
6,500.00	0.99	106.75	6,498.75	-20.93	68.63	457,152.97	720,425.93	32° 15' 17.345 N	103° 37' 13.075 W



Childress Directional Drilling

Survey Report - Geographic



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Site Queso State
Project:	Lea County, NM (NAD27)	TVD Reference:	WELL @ 3660.00usft (Basic 46)
Site:	Queso State	MD Reference:	WELL @ 3660.00usft (Basic 46)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	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
6,600.00	0.86	94.71	6,598.74	-21.24	70.21	457,152.66	720,427.50	32° 15' 17.342 N	103° 37' 13.057 W
6,700.00	0.47	96.01	6,698.73	-21.35	71.36	457,152.55	720,428.66	32° 15' 17.341 N	103° 37' 13.044 W
6,800.00	0.46	141.17	6,798.73	-21.70	72.02	457,152.20	720,429.32	32° 15' 17.338 N	103° 37' 13.036 W
6,900.00	0.28	165.44	6,898.73	-22.25	72.34	457,151.65	720,429.63	32° 15' 17.332 N	103° 37' 13.032 W
7,000.00	0.48	158.20	6,998.73	-22.88	72.55	457,151.02	720,429.85	32° 15' 17.326 N	103° 37' 13.030 W
7,100.00	0.44	178.91	7,098.72	-23.65	72.72	457,150.25	720,430.01	32° 15' 17.318 N	103° 37' 13.028 W
7,200.00	0.49	200.37	7,198.72	-24.44	72.57	457,149.46	720,429.87	32° 15' 17.310 N	103° 37' 13.030 W
7,300.00	0.54	211.73	7,298.71	-25.24	72.18	457,148.66	720,429.47	32° 15' 17.303 N	103° 37' 13.035 W
7,400.00	0.89	232.71	7,398.71	-26.11	71.31	457,147.79	720,428.61	32° 15' 17.294 N	103° 37' 13.045 W
7,500.00	0.42	245.06	7,498.70	-26.73	70.36	457,147.17	720,427.66	32° 15' 17.288 N	103° 37' 13.056 W
7,600.00	0.41	256.67	7,598.70	-26.97	69.68	457,146.93	720,426.98	32° 15' 17.286 N	103° 37' 13.064 W
7,700.00	0.33	231.74	7,698.70	-27.23	69.11	457,146.67	720,426.40	32° 15' 17.283 N	103° 37' 13.070 W
7,800.00	0.40	213.61	7,798.69	-27.70	68.69	457,146.20	720,425.98	32° 15' 17.278 N	103° 37' 13.075 W
7,900.00	0.58	210.40	7,898.69	-28.43	68.24	457,145.47	720,425.53	32° 15' 17.271 N	103° 37' 13.081 W
8,000.00	1.31	56.38	7,998.68	-28.23	68.93	457,145.67	720,426.23	32° 15' 17.273 N	103° 37' 13.073 W
8,100.00	0.99	54.65	8,098.66	-27.10	70.59	457,146.80	720,427.89	32° 15' 17.284 N	103° 37' 13.053 W
8,200.00	0.91	45.83	8,198.65	-26.05	71.86	457,147.85	720,429.16	32° 15' 17.295 N	103° 37' 13.038 W
8,300.00	0.58	48.42	8,298.64	-25.16	72.81	457,148.74	720,430.11	32° 15' 17.303 N	103° 37' 13.027 W
8,400.00	0.44	27.04	8,398.64	-24.48	73.37	457,149.42	720,430.66	32° 15' 17.310 N	103° 37' 13.021 W
8,500.00	0.25	37.58	8,498.63	-23.96	73.67	457,149.94	720,430.97	32° 15' 17.315 N	103° 37' 13.017 W
8,600.00	0.04	183.38	8,598.63	-23.83	73.80	457,150.08	720,431.10	32° 15' 17.316 N	103° 37' 13.015 W
8,700.00	0.11	316.88	8,698.63	-23.79	73.74	457,150.11	720,431.03	32° 15' 17.317 N	103° 37' 13.016 W
8,800.00	0.67	246.49	8,798.63	-23.95	73.14	457,149.95	720,430.43	32° 15' 17.315 N	103° 37' 13.023 W
8,900.00	0.82	227.64	8,898.62	-24.67	72.07	457,149.23	720,429.37	32° 15' 17.308 N	103° 37' 13.036 W
9,000.00	1.03	238.73	8,998.61	-25.62	70.77	457,148.28	720,428.07	32° 15' 17.299 N	103° 37' 13.051 W
9,100.00	1.70	256.48	9,098.58	-26.43	68.56	457,147.47	720,425.86	32° 15' 17.291 N	103° 37' 13.077 W
9,200.00	1.37	286.88	9,198.55	-26.43	65.98	457,147.47	720,423.27	32° 15' 17.291 N	103° 37' 13.107 W
9,300.00	1.41	282.23	9,298.52	-25.82	63.63	457,148.08	720,420.93	32° 15' 17.297 N	103° 37' 13.134 W
9,400.00	1.32	261.42	9,398.49	-25.73	61.29	457,148.17	720,418.59	32° 15' 17.298 N	103° 37' 13.161 W
9,500.00	1.45	273.30	9,498.46	-25.83	58.89	457,148.07	720,416.18	32° 15' 17.298 N	103° 37' 13.189 W
9,600.00	1.79	273.42	9,598.42	-25.67	56.06	457,148.23	720,413.36	32° 15' 17.299 N	103° 37' 13.222 W
9,700.00	2.30	263.02	9,698.36	-25.82	52.51	457,148.08	720,409.81	32° 15' 17.298 N	103° 37' 13.264 W
9,800.00	2.43	261.90	9,798.27	-26.36	48.42	457,147.54	720,405.72	32° 15' 17.293 N	103° 37' 13.311 W
9,900.00	2.57	274.14	9,898.18	-26.50	44.09	457,147.40	720,401.38	32° 15' 17.292 N	103° 37' 13.362 W
10,000.00	2.38	272.84	9,998.08	-26.23	39.78	457,147.67	720,397.07	32° 15' 17.295 N	103° 37' 13.412 W
10,100.00	2.13	270.81	10,098.01	-26.10	35.85	457,147.80	720,393.14	32° 15' 17.296 N	103° 37' 13.458 W
10,200.00	1.77	276.66	10,197.95	-25.90	32.45	457,148.00	720,389.75	32° 15' 17.299 N	103° 37' 13.497 W
10,268.00	1.69	287.45	10,265.92	-25.47	30.45	457,148.43	720,387.75	32° 15' 17.303 N	103° 37' 13.520 W
10,383.00	1.90	260.50	10,380.86	-25.28	26.96	457,148.62	720,384.25	32° 15' 17.305 N	103° 37' 13.561 W
10,415.00	2.50	334.50	10,412.85	-24.74	26.13	457,149.16	720,383.43	32° 15' 17.311 N	103° 37' 13.571 W
10,446.00	7.00	354.00	10,443.73	-22.25	25.64	457,151.65	720,382.94	32° 15' 17.335 N	103° 37' 13.576 W
10,477.00	11.00	2.10	10,474.35	-17.41	25.56	457,156.49	720,382.85	32° 15' 17.383 N	103° 37' 13.577 W
10,509.00	15.70	1.60	10,505.47	-10.03	25.79	457,163.87	720,383.08	32° 15' 17.456 N	103° 37' 13.574 W
10,540.00	19.20	1.90	10,535.04	-0.74	26.07	457,173.16	720,383.37	32° 15' 17.548 N	103° 37' 13.569 W
10,572.00	21.40	2.80	10,565.05	10.35	26.53	457,184.25	720,383.83	32° 15' 17.658 N	103° 37' 13.563 W
10,602.00	23.10	2.10	10,592.82	21.70	27.02	457,195.60	720,384.31	32° 15' 17.770 N	103° 37' 13.557 W
10,634.00	26.20	359.70	10,621.90	35.04	27.21	457,208.94	720,384.51	32° 15' 17.902 N	103° 37' 13.553 W
10,667.00	30.20	357.90	10,650.98	50.63	26.87	457,224.53	720,384.16	32° 15' 18.056 N	103° 37' 13.556 W
10,696.00	33.50	356.30	10,675.61	65.91	26.08	457,239.81	720,383.38	32° 15' 18.207 N	103° 37' 13.564 W
10,727.00	36.10	356.10	10,701.06	83.56	24.91	457,257.46	720,382.21	32° 15' 18.382 N	103° 37' 13.577 W
10,758.00	38.30	357.50	10,725.75	102.27	23.87	457,276.17	720,381.17	32° 15' 18.567 N	103° 37' 13.587 W
10,790.00	40.80	0.20	10,750.43	122.64	23.47	457,296.54	720,380.77	32° 15' 18.769 N	103° 37' 13.590 W
10,822.00	45.20	2.10	10,773.82	144.45	23.93	457,318.35	720,381.22	32° 15' 18.985 N	103° 37' 13.583 W
10,853.00	49.70	1.90	10,794.78	167.27	24.72	457,341.17	720,382.02	32° 15' 19.211 N	103° 37' 13.572 W
10,885.00	54.50	2.30	10,814.43	192.49	25.65	457,366.39	720,382.95	32° 15' 19.460 N	103° 37' 13.559 W



Childress Directional Drilling

Survey Report - Geographic



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Site Queso State
Project:	Lea County, NM (NAD27)	TVD Reference:	WELL @ 3660.00usft (Basic 46)
Site:	Queso State	MD Reference:	WELL @ 3660.00usft (Basic 46)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	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
10,916.00	58.50	1.40	10,831.54	218.32	26.48	457,392.22	720,383.78	32° 15' 19.716 N	103° 37' 13.548 W
10,947.00	61.60	2.10	10,847.02	245.17	27.30	457,419.07	720,384.60	32° 15' 19.981 N	103° 37' 13.536 W
10,977.00	64.90	2.80	10,860.52	271.93	28.45	457,445.83	720,385.75	32° 15' 20.246 N	103° 37' 13.521 W
11,008.00	68.40	2.60	10,872.80	300.35	29.79	457,474.25	720,387.09	32° 15' 20.527 N	103° 37' 13.503 W
11,061.00	78.30	359.70	10,887.97	351.05	30.77	457,524.95	720,388.07	32° 15' 21.029 N	103° 37' 13.488 W
11,093.00	80.70	357.00	10,893.80	382.50	29.87	457,556.40	720,387.16	32° 15' 21.340 N	103° 37' 13.496 W
11,125.00	82.40	355.40	10,898.51	414.08	27.77	457,587.98	720,385.06	32° 15' 21.653 N	103° 37' 13.518 W
11,156.00	84.20	355.10	10,902.12	444.76	25.22	457,618.66	720,382.51	32° 15' 21.957 N	103° 37' 13.545 W
11,188.00	86.70	356.00	10,904.66	476.56	22.74	457,650.46	720,380.04	32° 15' 22.271 N	103° 37' 13.571 W
11,220.00	87.50	356.00	10,906.28	508.44	20.51	457,682.34	720,377.81	32° 15' 22.587 N	103° 37' 13.595 W
11,251.00	88.50	356.70	10,907.36	539.36	18.54	457,713.26	720,375.84	32° 15' 22.893 N	103° 37' 13.615 W
11,282.00	87.80	356.50	10,908.36	570.29	16.70	457,744.19	720,374.00	32° 15' 23.199 N	103° 37' 13.634 W
11,313.00	89.80	356.50	10,909.01	601.22	14.81	457,775.12	720,372.11	32° 15' 23.505 N	103° 37' 13.654 W
11,344.00	91.60	357.00	10,908.63	632.17	13.05	457,806.07	720,370.35	32° 15' 23.812 N	103° 37' 13.672 W
11,438.00	91.80	357.50	10,905.84	726.02	8.55	457,899.92	720,365.84	32° 15' 24.741 N	103° 37' 13.717 W
11,532.00	90.60	358.60	10,903.88	819.94	5.35	457,993.84	720,362.64	32° 15' 25.670 N	103° 37' 13.747 W
11,623.00	89.70	358.60	10,903.64	910.91	3.13	458,084.81	720,360.42	32° 15' 26.571 N	103° 37' 13.766 W
11,718.00	88.50	358.40	10,905.13	1,005.87	0.64	458,179.77	720,357.94	32° 15' 27.511 N	103° 37' 13.788 W
11,792.00	85.30	358.10	10,909.13	1,079.71	-1.62	458,253.61	720,355.68	32° 15' 28.242 N	103° 37' 13.808 W
11,885.00	85.60	357.40	10,916.51	1,172.35	-5.26	458,346.25	720,352.04	32° 15' 29.158 N	103° 37' 13.844 W
11,979.00	85.80	356.00	10,923.56	1,265.93	-10.65	458,439.83	720,346.64	32° 15' 30.085 N	103° 37' 13.899 W
12,073.00	86.00	356.30	10,930.28	1,359.47	-16.95	458,533.37	720,340.35	32° 15' 31.011 N	103° 37' 13.965 W
12,166.00	88.60	356.80	10,934.66	1,452.19	-22.54	458,626.09	720,334.76	32° 15' 31.929 N	103° 37' 14.023 W
12,258.00	89.30	357.20	10,936.34	1,544.05	-27.35	458,717.95	720,329.94	32° 15' 32.838 N	103° 37' 14.072 W
12,351.00	91.60	357.40	10,935.61	1,636.94	-31.73	458,810.84	720,325.56	32° 15' 33.758 N	103° 37' 14.116 W
12,445.00	92.60	357.00	10,932.17	1,730.76	-36.32	458,904.66	720,320.98	32° 15' 34.686 N	103° 37' 14.162 W
12,538.00	92.30	357.00	10,928.19	1,823.55	-41.18	458,997.45	720,316.11	32° 15' 35.605 N	103° 37' 14.212 W
12,632.00	91.70	356.80	10,924.91	1,917.35	-46.26	459,091.26	720,311.03	32° 15' 36.533 N	103° 37' 14.264 W
12,723.00	91.20	356.80	10,922.61	2,008.18	-51.34	459,182.08	720,305.95	32° 15' 37.432 N	103° 37' 14.316 W
12,820.00	87.60	355.80	10,923.63	2,104.96	-57.60	459,278.86	720,299.70	32° 15' 38.391 N	103° 37' 14.381 W
12,913.00	88.10	355.40	10,927.11	2,197.62	-64.73	459,371.52	720,292.57	32° 15' 39.308 N	103° 37' 14.457 W
13,008.00	88.90	355.30	10,929.60	2,292.27	-72.43	459,466.17	720,284.87	32° 15' 40.245 N	103° 37' 14.539 W
13,101.00	90.20	356.80	10,930.33	2,385.04	-78.83	459,558.95	720,278.46	32° 15' 41.164 N	103° 37' 14.607 W
13,193.00	89.30	356.80	10,930.73	2,476.90	-83.97	459,650.80	720,273.33	32° 15' 42.073 N	103° 37' 14.659 W
13,286.00	90.80	357.50	10,930.65	2,569.78	-88.59	459,743.68	720,268.70	32° 15' 42.992 N	103° 37' 14.706 W
13,377.00	91.50	358.30	10,928.83	2,660.70	-91.93	459,834.60	720,265.37	32° 15' 43.892 N	103° 37' 14.738 W
13,471.00	92.60	358.40	10,925.46	2,754.60	-94.63	459,928.50	720,262.66	32° 15' 44.822 N	103° 37' 14.762 W
13,566.00	91.50	359.80	10,922.07	2,849.52	-96.12	460,023.42	720,261.17	32° 15' 45.761 N	103° 37' 14.772 W
13,658.00	91.50	1.40	10,919.66	2,941.48	-95.16	460,115.38	720,262.14	32° 15' 46.671 N	103° 37' 14.754 W
13,753.00	91.50	1.60	10,917.17	3,036.42	-92.67	460,210.32	720,264.62	32° 15' 47.610 N	103° 37' 14.717 W
13,846.00	92.20	1.80	10,914.17	3,129.33	-89.92	460,303.23	720,267.38	32° 15' 48.529 N	103° 37' 14.678 W
13,938.00	90.30	1.20	10,912.16	3,221.27	-87.51	460,395.17	720,269.79	32° 15' 49.439 N	103° 37' 14.643 W
14,032.00	91.70	1.60	10,910.52	3,315.23	-85.21	460,489.13	720,272.08	32° 15' 50.369 N	103° 37' 14.609 W
14,126.00	91.50	1.10	10,907.90	3,409.16	-83.00	460,583.06	720,274.30	32° 15' 51.298 N	103° 37' 14.576 W
14,221.00	92.30	1.20	10,904.75	3,504.09	-81.09	460,677.99	720,276.20	32° 15' 52.237 N	103° 37' 14.546 W
14,315.00	94.20	1.20	10,899.42	3,597.91	-79.13	460,771.81	720,278.17	32° 15' 53.166 N	103° 37' 14.516 W
14,406.00	92.70	1.20	10,893.94	3,688.73	-77.23	460,862.63	720,280.07	32° 15' 54.064 N	103° 37' 14.487 W
14,501.00	92.20	0.90	10,889.88	3,783.62	-75.49	460,957.52	720,281.81	32° 15' 55.003 N	103° 37' 14.460 W
14,594.00	90.50	1.80	10,887.69	3,876.57	-73.30	461,050.47	720,284.00	32° 15' 55.923 N	103° 37' 14.427 W
14,686.00	90.10	1.60	10,887.21	3,968.53	-70.57	461,142.43	720,286.73	32° 15' 56.832 N	103° 37' 14.388 W
14,780.00	89.40	0.50	10,887.62	4,062.51	-68.84	461,236.41	720,288.45	32° 15' 57.762 N	103° 37' 14.361 W
14,872.00	88.80	0.70	10,889.06	4,154.49	-67.88	461,328.39	720,289.41	32° 15' 58.672 N	103° 37' 14.342 W
14,966.00	88.80	359.30	10,891.03	4,248.47	-67.88	461,422.37	720,289.41	32° 15' 59.602 N	103° 37' 14.335 W
15,059.00	87.40	357.90	10,894.11	4,341.38	-70.15	461,515.28	720,287.14	32° 16' 0.522 N	103° 37' 14.354 W
15,151.00	85.90	356.50	10,899.49	4,433.11	-74.64	461,607.01	720,282.66	32° 16' 1.430 N	103° 37' 14.399 W



Childress Directional Drilling
Survey Report - Geographic



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Site Queso State
Project:	Lea County, NM (NAD27)	TVD Reference:	WELL @ 3660.00usft (Basic 46)
Site:	Queso State	MD Reference:	WELL @ 3660.00usft (Basic 46)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	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
15,228.00	84.80	356.00	10,905.73	4,509.69	-79.66	461,683.59	720,277.64	32° 16' 2.188 N	103° 37' 14.452 W
15,272.00	84.80	356.00	10,909.72	4,553.41	-82.71	461,727.31	720,274.58	32° 16' 2.621 N	103° 37' 14.484 W
PTB at TD @ 15272' MD 84.80° INC 356.00° AZM 10909.72 TVD									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
15,272.00	10,909.72	4,553.41	-82.71	PTB at TD @ 15272' MD 84.80° INC 356.00° AZM 10909.72 TVD	

Checked By: _____	Approved By: _____	Date: _____
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