

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API No. 30-015-42004	Pool Code 3250	Pool Name Atoka; Glorieta Yeso
Property Code 38804	Property Name ARABIAN 6 FEE	
OGRID No. 229137	Operator Name COG OPERATING, LLC	Well Number 10H
		Elevation 3446'

Surface Location

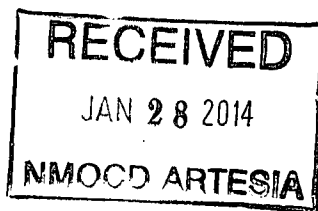
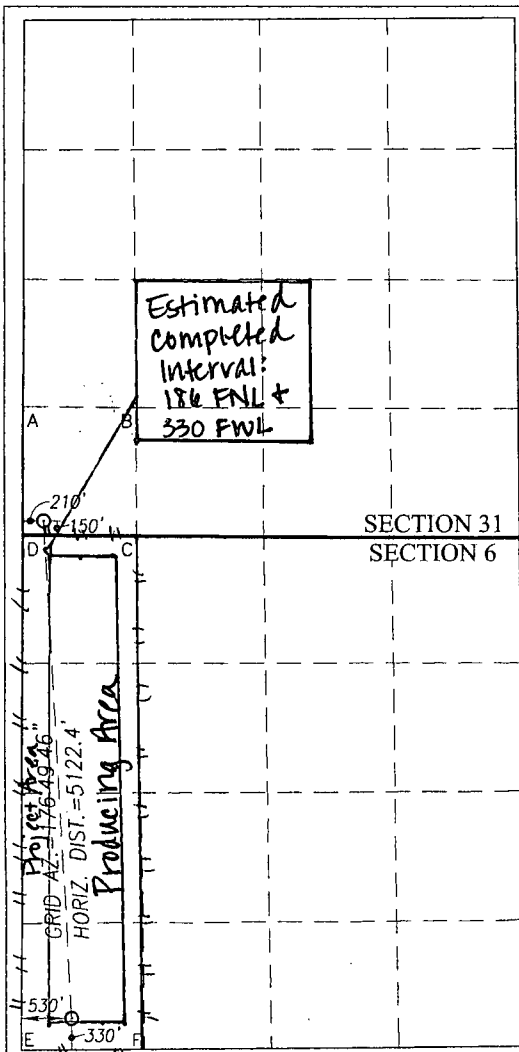
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	31	18-S	26-E		150	SOUTH	210	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	6	19-S	26-E		330	SOUTH	530	WEST	EDDY

Dedicated Acres 148.64	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION
Y=617366.0 N
X=470764.9 E

LAT.=32.697202° N
LONG.=104.428368° W

BOTTOM HOLE LOCATION
Y=612252.9 N
X=471048.1 E

CORNER COORDINATES TABLE

A - Y=618545.2 N, X=470558.1 E
B - Y=618543.6 N, X=471726.7 E
C - Y=617212.7 N, X=471734.5 E
D - Y=617216.7 N, X=470554.5 E
E - Y=611917.4 N, X=470515.8 E
F - Y=611930.8 N, X=471803.5 E

OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature
1-27-14
Date

Kelly J. Holly
Printed Name

kholly@concho.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

DECEMBER 17, 2013

Date of Survey
Signature & Seal of Professional Surveyor:

Certificate Number 12641
JWSC W.O.: 13.11.1430

30-015-42004



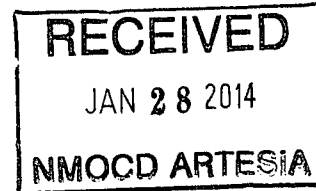
COG Operating LLC

Eddy County, NM (NAD 27 NME)

Arabian 6 Fee

#10H

Wellbore #1



Plan: Plan #1 01-08-14

Surface: 150' FSL, 210' FWL, Sec 31, T18S, R26E, Lot #4

PP: 186' FNL, 330' FWL, Sec 6, T19S, R26E, Lot #1

BHL: 330' FSL, 530' FWL, Sec 6, T19S, R26E, Lot #4

Standard Planning Report

09 January, 2014





Phoenix Technology Services
Planning Report



Database:	GCR-DB	Local Co-ordinate Reference:	Well #10H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3464.00usft (Original Well Elev)
Project:	Eddy County, NM (NAD 27/NME)	MD Reference:	WELL @ 3464.00usft (Original Well Elev)
Site:	Arabian 6 Fee	North Reference:	Grid
Well:	#10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 01-08-14		

Project:	Eddy County, NM (NAD 27/NME)		
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:	Arabian 6 Fee		
Site Position:		Northing:	612,084.20 usft
From:	Map	Easting:	472,131.70 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 40' 57.67030 N
		Longitude:	104° 25' 26.07641 W
		Grid Convergence:	-0.05 °

Well:	#10H		
Well Position	+N/-S	5,281.80 usft	Northing:
	+E/-W	-1,366.80 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level:
			3,446.00 usft

Wellbore:	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010_14	01/08/14	7.70
			Dip Angle
			60.41
			Field Strength
			48,549

Design:	Plan #1 01-08-14		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			176.83

Plan Sections:										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,360.00	0.00	360.00	2,360.00	0.00	0.00	0.00	0.00	0.00	360.00	
3,182.73	90.50	160.60	2,880.85	-495.58	174.52	11.00	11.00	0.00	160.60	
3,829.25	90.50	180.00	2,875.16	-1,129.80	282.95	3.00	0.00	3.00	89.91	
7,812.70	90.50	180.00	2,840.40	-5,113.10	283.20	0.00	0.00	0.00	0.00	BHL Arabian 6 Fee 1C



Phoenix Technology Services
Planning Report



Database:	GCR-DB	Local Co-ordinate Reference:	Well #10H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3464.00usft (Original Well Elev)
Project:	Eddy County NM (NAD 27 NME)	MD Reference:	WELL @ 3464.00usft (Original Well Elev)
Site:	Arabian 6 Fee	North Reference:	Grid
Well:	#10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1.01-08-14		

Planned 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,360.00	0.00	360.00	2,360.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP: 11.00°/100' Build									
2,400.00	4.40	160.60	2,399.96	-1.45	0.51	1.47	11.00	11.00	0.00
2,500.00	15.40	160.60	2,498.32	-17.64	6.21	17.96	11.00	11.00	0.00
2,600.00	26.40	160.60	2,591.60	-51.24	18.04	52.16	11.00	11.00	0.00
2,700.00	37.40	160.60	2,676.36	-101.00	35.57	102.82	11.00	11.00	0.00
2,800.00	48.40	160.60	2,749.51	-165.11	58.15	168.07	11.00	11.00	0.00
2,900.00	59.40	160.60	2,808.34	-241.21	84.94	245.53	11.00	11.00	0.00
3,000.00	70.40	160.60	2,850.69	-326.49	114.98	332.35	11.00	11.00	0.00
3,010.64	71.57	160.60	2,854.16	-335.98	118.32	342.01	11.00	11.00	0.00
PP: Arabian 6 Fee 10H									
3,100.00	81.40	160.60	2,875.01	-417.83	147.14	425.33	11.00	11.00	0.00
3,168.93	88.98	160.60	2,880.79	-482.58	169.94	491.23	11.00	11.00	0.00
TL: 2885° TVD @ 0.0° VZ: 90.5° Inc									
3,182.73	90.50	160.60	2,880.85	-495.59	174.52	504.48	11.00	11.00	0.00
LP: Hold 90.50° Inc: 3.00°/100' Turn									
3,200.00	90.50	161.12	2,880.70	-511.90	180.19	521.08	3.00	0.00	3.00
3,300.00	90.50	164.12	2,879.82	-607.32	210.06	618.01	3.00	0.00	3.00
3,400.00	90.51	167.12	2,878.94	-704.17	234.89	716.08	3.00	0.00	3.00
3,500.00	90.51	170.12	2,878.06	-802.19	254.62	815.04	3.00	0.00	3.00
3,600.00	90.51	173.12	2,877.17	-901.11	269.19	914.62	3.00	0.00	3.00
3,700.00	90.50	176.12	2,876.29	-1,000.65	278.57	1,014.53	3.00	0.00	3.00
3,800.00	90.50	179.12	2,875.41	-1,100.55	282.73	1,114.50	3.00	0.00	3.00
3,829.25	90.50	180.00	2,875.16	-1,129.80	282.95	1,143.72	3.00	0.00	3.00
Hold 90.50° Inc									
3,900.00	90.50	180.00	2,874.54	-1,200.54	282.96	1,214.36	0.00	0.00	0.00
4,000.00	90.50	180.00	2,873.67	-1,300.54	282.96	1,314.20	0.00	0.00	0.00
4,100.00	90.50	180.00	2,872.79	-1,400.54	282.97	1,414.04	0.00	0.00	0.00
4,200.00	90.50	180.00	2,871.92	-1,500.53	282.97	1,513.89	0.00	0.00	0.00
4,300.00	90.50	180.00	2,871.05	-1,600.53	282.98	1,613.73	0.00	0.00	0.00
4,400.00	90.50	180.00	2,870.18	-1,700.53	282.99	1,713.57	0.00	0.00	0.00
4,500.00	90.50	180.00	2,869.30	-1,800.52	282.99	1,813.42	0.00	0.00	0.00
4,600.00	90.50	180.00	2,868.43	-1,900.52	283.00	1,913.26	0.00	0.00	0.00
4,700.00	90.50	180.00	2,867.56	-2,000.51	283.01	2,013.10	0.00	0.00	0.00
4,800.00	90.50	180.00	2,866.69	-2,100.51	283.01	2,112.95	0.00	0.00	0.00
4,900.00	90.50	180.00	2,865.81	-2,200.51	283.02	2,212.79	0.00	0.00	0.00
5,000.00	90.50	180.00	2,864.94	-2,300.50	283.02	2,312.63	0.00	0.00	0.00
5,100.00	90.50	180.00	2,864.07	-2,400.50	283.03	2,412.48	0.00	0.00	0.00
5,200.00	90.50	180.00	2,863.20	-2,500.50	283.04	2,512.32	0.00	0.00	0.00
5,300.00	90.50	180.00	2,862.32	-2,600.49	283.04	2,612.16	0.00	0.00	0.00
5,400.00	90.50	180.00	2,861.45	-2,700.49	283.05	2,712.01	0.00	0.00	0.00
5,500.00	90.50	180.00	2,860.58	-2,800.48	283.06	2,811.85	0.00	0.00	0.00
5,600.00	90.50	180.00	2,859.71	-2,900.48	283.06	2,911.70	0.00	0.00	0.00
5,700.00	90.50	180.00	2,858.83	-3,000.48	283.07	3,011.54	0.00	0.00	0.00
5,800.00	90.50	180.00	2,857.96	-3,100.47	283.07	3,111.38	0.00	0.00	0.00
5,900.00	90.50	180.00	2,857.09	-3,200.47	283.08	3,211.23	0.00	0.00	0.00
6,000.00	90.50	180.00	2,856.22	-3,300.46	283.09	3,311.07	0.00	0.00	0.00
6,100.00	90.50	180.00	2,855.34	-3,400.46	283.09	3,410.91	0.00	0.00	0.00
6,200.00	90.50	180.00	2,854.47	-3,500.46	283.10	3,510.76	0.00	0.00	0.00
6,300.00	90.50	180.00	2,853.60	-3,600.45	283.11	3,610.60	0.00	0.00	0.00
6,400.00	90.50	180.00	2,852.73	-3,700.45	283.11	3,710.44	0.00	0.00	0.00
6,500.00	90.50	180.00	2,851.85	-3,800.45	283.12	3,810.29	0.00	0.00	0.00
6,600.00	90.50	180.00	2,850.98	-3,900.44	283.12	3,910.13	0.00	0.00	0.00



Phoenix Technology Services
Planning Report



Database:	GCR-DB	Local Co-ordinate Reference:	Well #10H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3464.00usft (Original Well Elev)
Project:	Eddy County NM (NAD 27 NME)	MD Reference:	WELL @ 3464.00usft (Original Well Elev)
Site:	Arabian 6 Fee	North Reference:	Grid
Well:	#10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 01-08-14		

Planned 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)
6,700.00	90.50	180.00	2,850.11	-4,000.44	283.13	4,009.97	0.00	0.00	0.00
6,800.00	90.50	180.00	2,849.24	-4,100.43	283.14	4,109.82	0.00	0.00	0.00
6,900.00	90.50	180.00	2,848.36	-4,200.43	283.14	4,209.66	0.00	0.00	0.00
7,000.00	90.50	180.00	2,847.49	-4,300.43	283.15	4,309.50	0.00	0.00	0.00
7,100.00	90.50	180.00	2,846.62	-4,400.42	283.16	4,409.35	0.00	0.00	0.00
7,200.00	90.50	180.00	2,845.75	-4,500.42	283.16	4,509.19	0.00	0.00	0.00
7,300.00	90.50	180.00	2,844.87	-4,600.42	283.17	4,609.03	0.00	0.00	0.00
7,400.00	90.50	180.00	2,844.00	-4,700.41	283.17	4,708.88	0.00	0.00	0.00
7,500.00	90.50	180.00	2,843.13	-4,800.41	283.18	4,808.72	0.00	0.00	0.00
7,600.00	90.50	180.00	2,842.26	-4,900.40	283.19	4,908.57	0.00	0.00	0.00
7,700.00	90.50	180.00	2,841.38	-5,000.40	283.19	5,008.41	0.00	0.00	0.00
7,800.00	90.50	180.00	2,840.51	-5,100.40	283.20	5,108.25	0.00	0.00	0.00
7,812.70	90.50	180.00	2,840.40	-5,113.10	283.20	5,120.93	0.00	0.00	0.00
TD at 7812.70 - BHL Arabian 6 Fee 10H									

Design Targets									
Target Name	hit/miss, target Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude
BHL Arabian 6 Fee 10H	- plan hits target center	0.00	360.00	2,840.40	-5,113.10	283.20	612,252.90	471,048.10	32° 40' 59.33036 N 104° 25' 38.75694 W
	- Point								
PP-Arabian 6 Fee 10H	- plan hits target center	0.00	360.00	2,854.16	-336.00	118.32	617,030.00	470,883.22	32° 41' 46.60131 N 104° 25' 40.73596 W
	- Point								

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,168.93	2,880.79	TL, 2885' TVD @ 0 VZ, 90.5° Inc		-0.50	180.00

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,360.00	2,360.00	0.00	0.00	KOP, 11.00°/100' Build
3,182.73	2,880.85	-495.59	174.52	LP, Hold 90.50° Inc, 3.00°/100' Turn
3,829.25	2,875.16	-1,129.80	282.95	Hold 90.50° Inc
7,812.70	2,840.40	-5,113.10	283.20	TD at 7812.70



Project: Eddy County, NM (NAD 27 NME)
Site: Arabian 6 Fee
Well: #10H
Wellbore: WB1
Design: Plan #1 01-08-14
Rig: Original Well Elev



PHOENIX
TECHNOLOGY SERVICES



Azimuths to Grid North
True North: 0.05°
Magnetic North: 7.75°

Magnetic Field
Strength: 48549.1nT
Dip Angle: 60.41°
Date: 01/08/2014
Model: IGRF2010_14

WELL DETAILS

+N/-S	+E/-W	Northing	Ground Level	Easting	Latitude	Longitude
0.00	0.00	617366.00	3446.00	470764.90	32° 41' 49.92519 N	104° 25' 42.12416 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP, 11.00°/100° Build
2	2360.00	0.00	360.00	2360.00	0.00	0.00	0.00	360.00	0.00	0.00	LP, Hold 90.50° Inc, 3.00°/100° Turn
3	3182.73	90.50	160.80	2880.95	-495.58	174.52	11.00	160.60	504.48	0.00	Hold 90.50° Inc
4	3829.25	90.50	180.00	2975.16	-1129.80	262.95	3.00	89.91	1143.72	0.00	TD at 7812.70
5	7812.70	90.50	180.00	2840.40	-5113.10	283.20	0.00	0.00	5120.94	0.00	BHL Arabian 6 Fee 10H

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BHL Arabian 6 Fee 10H	2840.40	-5113.10	283.20	612252.90	471048.10	32° 40' 59.33036 N	104° 25' 38.75694 W	Point
PP-Arabian 6 Fee 10H	-plan hits target center	2854.16	-536.00	118.32	617030.00	470883.22	32° 41' 46.60131 N	104° 25' 40.73596 W
	-plan hits target center							Point

PROJECT DETAILS: Eddy County, NM (NAD 27 NME)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001

System Datum: Mean Sea Level

SITE DETAILS: Arabian 6 Fee

Site Centre Northing: 612084.20
Easting: 472131.70

Positional Uncertainty: 0.00
Convergence: -0.05
Local North: Grid

LEGEND

- #1H, OH/Job #1310862, Surveys (JV 4) V0
- #1, WB1, Inc Surveys V0
- #5H, OH, Plan #1 09-04-13 V0
- Plan #1 01-08-14

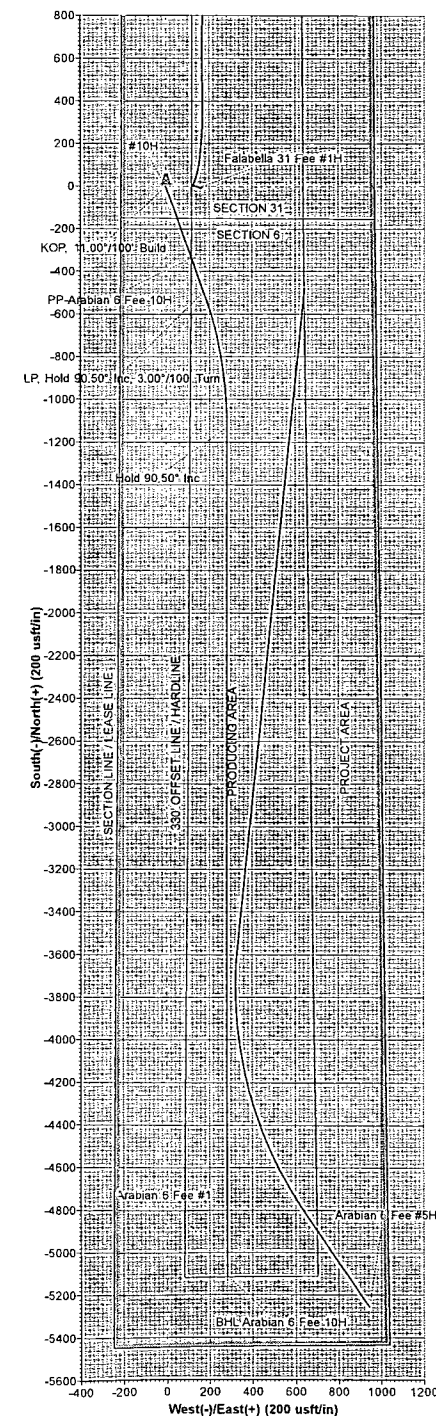
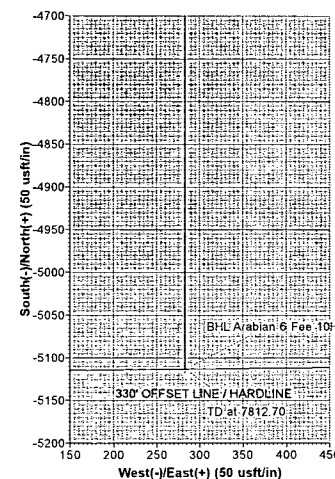
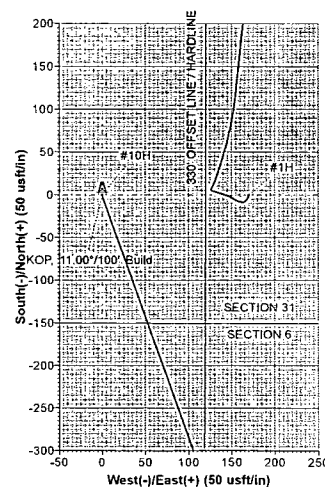
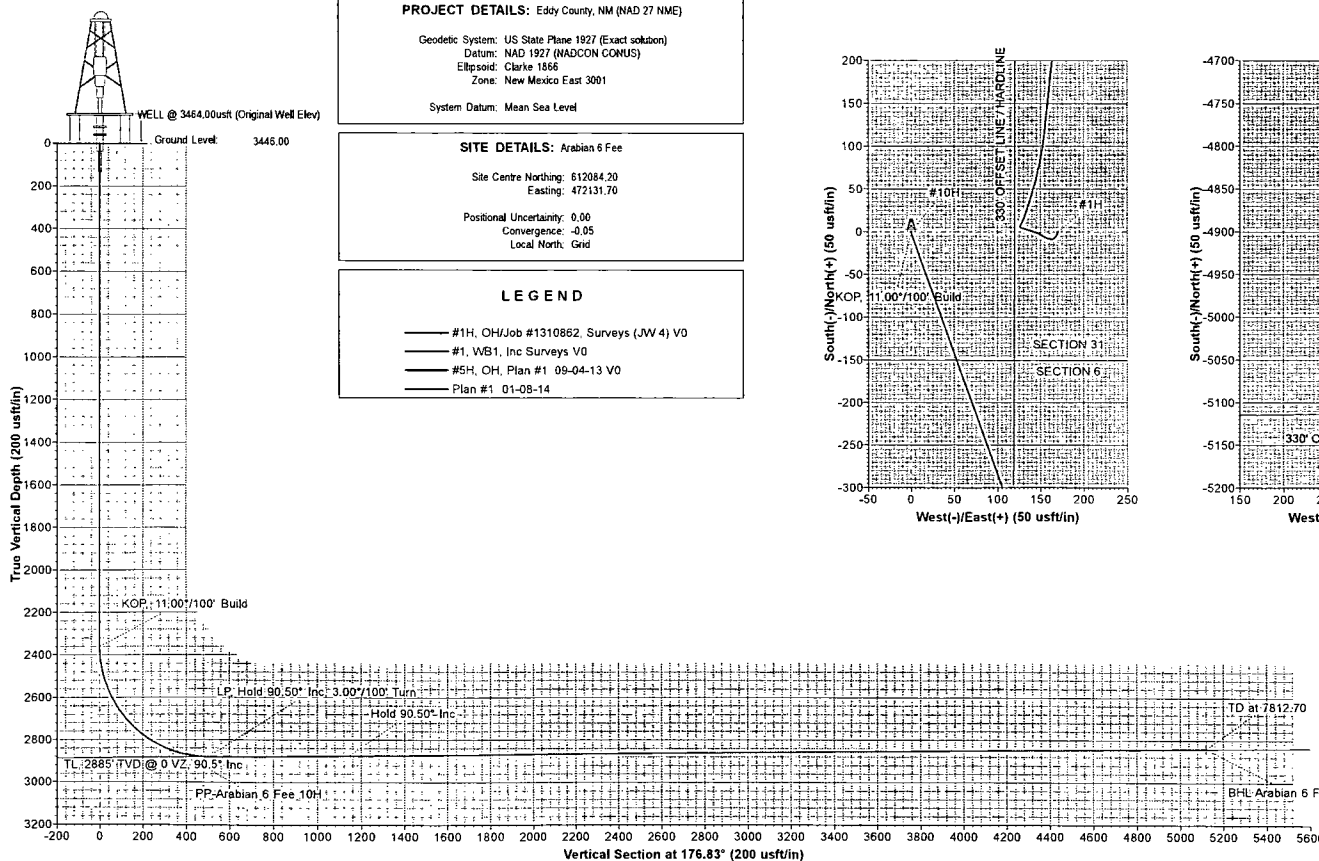
Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well #10H, Grid North
Latitude: 32° 41' 49.92519 N
Longitude: 104° 25' 42.12416 W
Grid East: 470764.90
Grid North: 617366.00
Scale Factor: 1.000

Geomagnetic Model: IGRF2010_14
Sample Date: 08-Jan-14
Magnetic Declination: 7.70°
Dip Angle from Horizontal: 60.41°
Magnetic Field Strength: 48549

To convert a Magnetic Direction to a Grid Direction, Add 7.75°
To convert a Magnetic Direction to a True Direction, Add 7.70° East
To convert a True Direction to a Grid Direction, Add 0.05°

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
2880.79	3168.93	TL, 2885 TVD @ 0 VZ, 90.5° Inc	-0.50	180.00



COG Operating LLC

Eddy County, NM (NAD 27 NME)

Arabian 6 Fee

#10H

WB1

Plan #1 01-08-14

Anticollision Report

14 January, 2014

Phoenix Technology Services

Anticollision Report

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County - NM (NAD 27 NME)	TVD Reference:	WELL @ 3464.00usft (Original Well Elev)
Reference Site:	Arabian 6 Fee	MD Reference:	WELL @ 3464.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	WB1	Database:	GCR DB
Reference Design:	Plan #1 01-08-14	Offset TVD Reference:	Offset Datum

Reference:	Plan #1-01-08-14		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Circular Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date: 01/14/14		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	7,812.70	Plan #1 01-08-14 (WB1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Arabian 6 Fee						
#1 - WB1 - Inc Surveys	7,599.46	2,765.46	148.39	-78.22	0.655	Level 1, CC
#1 - WB1 - Inc Surveys	7,600.00	2,765.45	148.39	-78.23	0.655	Level 1, ES, SF
#5H - OH - Plan #1 09-04-13	5,949.82	5,191.56	477.69	377.35	4.761	CC
#5H - OH - Plan #1 09-04-13	6,100.00	5,042.17	477.94	377.03	4.736	ES
#5H - OH - Plan #1 09-04-13	6,400.00	4,746.56	480.31	378.19	4.703	SF
Falabella 31 Fee						
#1H - OH/Job #1310862 - Surveys (JW 4)	2,266.38	2,256.12	126.20	117.36	14.269	CC, ES
#1H - OH/Job #1310862 - Surveys (JW 4)	2,300.00	2,284.56	126.86	117.93	14.214	SF

Offset Design: Arabian 6 Fee - #1 - WB1 - Inc Surveys												Offset Site Error: 0.00 usft	
Survey Program: 293-INC												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)					
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	Centre (usft)	Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	178.42	-4,899.70	134.80	4,902.16				
100.00	100.00	0.00	0.00	0.09	0.00	178.42	-4,899.70	134.80	4,901.61	4,901.52	0.09	N/A	
200.00	200.00	116.97	116.97	0.32	2.73	178.42	-4,900.13	134.80	4,901.99	4,898.94	3.05	1,607.683	
300.00	300.00	242.64	242.64	0.54	5.67	178.42	-4,899.95	134.80	4,901.85	4,895.64	6.21	789.478	
370.12	370.12	293.00	292.99	0.70	6.84	178.42	-4,899.70	134.80	4,901.55	4,894.01	7.54	649.832	
400.00	400.00	298.50	298.49	0.77	7.17	178.42	-4,899.73	134.80	4,901.64	4,893.71	7.93	617.902	
500.00	500.00	424.73	424.72	0.99	14.57	178.42	-4,900.02	134.80	4,901.88	4,886.31	15.56	314.998	
600.00	600.00	540.00	539.95	1.22	21.33	178.42	-4,899.70	134.80	4,901.58	4,879.04	22.55	217.385	
700.00	700.00	631.96	631.91	1.44	26.61	178.42	-4,899.38	134.80	4,901.24	4,873.18	28.06	174.697	
757.92	757.92	680.97	680.92	1.57	29.43	178.42	-4,899.33	134.80	4,901.19	4,870.18	31.00	158.096	
800.00	800.00	716.58	716.52	1.67	31.48	178.42	-4,899.35	134.80	4,901.21	4,868.07	33.14	147.887	
900.00	900.00	822.00	821.91	1.89	37.53	178.42	-4,899.70	134.80	4,901.55	4,862.13	39.42	124.335	
1,000.00	1,000.00	921.28	921.19	2.12	42.28	178.42	-4,899.81	134.80	4,901.66	4,857.26	44.40	110.399	
1,100.00	1,100.00	1,074.00	1,073.89	2.34	49.60	178.42	-4,899.70	134.80	4,901.82	4,849.88	51.94	94.384	
1,200.00	1,200.00	1,131.22	1,131.10	2.56	52.20	178.42	-4,899.58	134.80	4,901.44	4,846.67	54.76	89.501	
1,300.00	1,300.00	1,223.60	1,223.48	2.79	56.40	178.42	-4,899.50	134.80	4,901.35	4,842.16	59.19	82.802	
1,306.37	1,306.37	1,229.49	1,229.37	2.80	56.67	178.42	-4,899.50	134.80	4,901.35	4,841.88	59.48	82.409	
1,400.00	1,400.00	1,315.99	1,315.87	3.01	60.61	178.42	-4,899.56	134.80	4,901.42	4,837.80	63.62	77.038	
1,500.00	1,500.00	1,419.54	1,419.40	3.24	65.15	178.42	-4,899.73	134.80	4,901.58	4,833.19	68.39	71.669	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2:00 sigma
Reference Wellbore:	WB1	Database:	GCR-DB
Reference Design:	Plan #1, 01-08-14	Offset TVD Reference:	Offset Datum

Offset Design - Arabian 6 Fee - #1 - WB1 - Inc Surveys														Offset Site Error:	0.00 usft
Survey Program - 293 INC														Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Distance	Minimum	Separation	Warning							
Measured	Vertical	Measured	Vertical	Reference	Offset	Between	Between	Minimum	Separation	Factor					
Depth	Depth	Depth	Depth	Reference	Offset	Centres	Ellipses	Separation	Factor						
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)							
1,600.00	1,600.00	1,521.52	1,521.38	3.46	69.30	178.42	-4,899.78	134.80	4,901.64	4,828.88	72.76	67.367			
1,700.00	1,700.00	1,623.51	1,623.36	3.69	73.44	178.42	-4,899.80	134.80	4,901.65	4,824.52	77.13	63.552			
1,800.00	1,800.00	1,725.49	1,725.34	3.91	77.58	178.42	-4,899.77	134.80	4,901.62	4,820.13	81.50	60.146			
1,900.00	1,900.00	1,825.00	1,824.83	4.14	81.63	178.42	-4,899.70	134.80	4,901.55	4,815.79	85.76	57.152			
1,901.83	1,901.83	1,825.00	1,824.83	4.14	81.63	178.42	-4,899.70	134.80	4,901.55	4,815.79	85.77	57.149			
2,000.00	2,000.00	1,918.00	1,917.83	4.36	86.17	178.42	-4,899.83	134.80	4,901.69	4,811.15	90.53	54.142			
2,100.00	2,100.00	2,021.77	2,021.60	4.59	91.24	178.42	-4,899.90	134.80	4,901.75	4,805.93	95.83	51.151			
2,200.00	2,200.00	2,125.54	2,125.36	4.81	96.31	178.42	-4,899.89	134.80	4,901.74	4,800.62	101.12	48.472			
2,205.93	2,205.93	2,131.69	2,131.51	4.83	96.61	178.42	-4,899.89	134.80	4,901.74	4,800.30	101.44	48.322			
2,300.00	2,300.00	2,296.00	2,295.78	5.04	104.64	178.42	-4,899.70	134.80	4,902.09	4,792.41	109.68	44.695			
2,360.00	2,360.00	2,296.00	2,295.78	5.17	104.64	178.42	-4,899.70	134.80	4,901.57	4,791.76	109.81	44.635			
2,400.00	2,399.96	2,297.71	2,297.50	5.25	104.76	17.87	-4,899.71	134.80	4,900.17	4,790.16	110.01	44.542			
2,450.00	2,449.55	2,352.95	2,352.73	5.35	108.55	18.09	-4,899.96	134.80	4,894.48	4,780.58	113.90	42.972			
2,500.00	2,498.32	2,407.27	2,407.04	5.45	112.29	18.50	-4,900.15	134.80	4,884.23	4,766.49	117.73	41.485			
2,550.00	2,545.81	2,460.15	2,459.92	5.56	115.92	19.11	-4,900.28	134.80	4,869.53	4,748.05	121.48	40.087			
2,600.00	2,591.60	2,511.09	2,510.86	5.67	119.42	19.95	-4,900.35	134.80	4,850.52	4,725.43	125.09	38.776			
2,650.00	2,635.25	2,559.61	2,559.37	5.82	122.75	21.07	-4,900.36	134.80	4,827.38	4,698.81	128.57	37.546			
2,700.00	2,676.36	2,605.25	2,605.02	6.04	125.88	22.52	-4,900.33	134.80	4,800.35	4,668.43	131.93	36.387			
2,750.00	2,714.57	2,647.60	2,647.37	6.33	128.79	24.39	-4,900.26	134.80	4,769.69	4,634.57	135.12	35.299			
2,800.00	2,749.51	2,686.26	2,686.02	6.69	131.45	26.79	-4,900.16	134.80	4,735.69	4,597.55	138.14	34.282			
2,850.00	2,780.86	2,801.00	2,800.67	7.14	139.33	30.52	-4,899.70	134.80	4,699.30	4,552.84	146.47	32.084			
2,900.00	2,808.34	2,801.00	2,800.67	7.67	139.33	34.47	-4,899.70	134.80	4,659.28	4,512.28	147.00	31.696			
2,950.00	2,831.68	2,801.00	2,800.67	8.28	139.33	39.65	-4,899.70	134.80	4,617.17	4,469.56	147.61	31.280			
3,000.00	2,850.69	2,801.00	2,800.67	8.97	139.33	46.50	-4,899.70	134.80	4,573.33	4,425.04	148.30	30.839			
3,050.00	2,865.18	2,801.00	2,800.67	9.72	139.33	55.56	-4,899.70	134.80	4,528.11	4,379.06	149.05	30.381			
3,100.00	2,875.01	2,801.00	2,800.67	10.52	139.33	67.26	-4,899.70	134.80	4,481.89	4,332.04	149.85	29.910			
3,150.00	2,880.11	2,810.86	2,810.53	11.36	140.10	81.72	-4,899.68	134.80	4,435.06	4,283.59	151.46	29.281			
3,182.73	2,880.85	2,811.53	2,811.20	11.93	140.16	91.66	-4,899.68	134.80	4,404.28	4,252.20	152.08	28.960			
3,200.00	2,880.70	2,811.36	2,811.03	12.21	140.14	91.70	-4,899.68	134.80	4,388.02	4,235.67	152.36	28.801			
3,300.00	2,879.82	2,810.36	2,810.03	13.85	140.06	91.99	-4,899.68	134.80	4,293.03	4,139.12	153.91	27.893			
3,400.00	2,878.94	2,809.34	2,809.01	15.53	139.98	92.39	-4,899.69	134.80	4,196.71	4,041.20	155.51	26.986			
3,500.00	2,878.06	2,808.32	2,807.99	17.22	139.90	92.96	-4,899.69	134.80	4,099.25	3,942.13	157.13	26.088			
3,600.00	2,877.17	2,801.00	2,800.67	18.92	139.33	93.31	-4,899.70	134.80	4,000.85	3,842.60	158.25	25.282			
3,700.00	2,876.29	2,801.00	2,800.67	20.59	139.33	94.99	-4,899.70	134.80	3,901.70	3,741.78	159.92	24.398			
3,800.00	2,875.41	2,801.00	2,800.67	22.24	139.33	99.75	-4,899.70	134.80	3,802.03	3,640.46	161.57	23.532			
3,829.25	2,875.16	2,801.00	2,800.67	22.72	139.33	103.42	-4,899.70	134.80	3,772.81	3,610.77	162.05	23.282			
3,900.00	2,874.54	2,801.00	2,800.67	23.87	139.33	103.42	-4,899.70	134.80	3,702.12	3,538.92	163.20	22.685			
4,000.00	2,873.67	2,801.00	2,800.67	25.52	139.33	103.42	-4,899.70	134.80	3,602.21	3,437.36	164.85	21.852			
4,100.00	2,872.79	2,801.00	2,800.67	27.19	139.33	103.42	-4,899.70	134.80	3,502.30	3,335.79	166.52	21.033			
4,200.00	2,871.92	2,801.00	2,800.67	28.88	139.33	103.42	-4,899.70	134.80	3,402.40	3,234.19	168.21	20.228			
4,300.00	2,871.05	2,801.00	2,800.67	30.58	139.33	103.42	-4,899.70	134.80	3,302.50	3,132.59	169.91	19.437			
4,400.00	2,870.18	2,801.00	2,800.67	32.30	139.33	103.42	-4,899.70	134.80	3,202.61	3,030.98	171.63	18.660			
4,500.00	2,869.30	2,801.00	2,800.67	34.03	139.33	103.42	-4,899.70	134.80	3,102.73	2,929.37	173.36	17.897			
4,600.00	2,868.43	2,801.00	2,800.67	35.77	139.33	103.42	-4,899.70	134.80	3,002.86	2,827.75	175.10	17.149			
4,700.00	2,867.56	2,801.00	2,800.67	37.53	139.33	103.42	-4,899.70	134.80	2,902.99	2,726.13	176.86	16.415			
4,800.00	2,866.69	2,801.00	2,800.67	39.28	139.33	103.42	-4,899.70	134.80	2,803.13	2,624.52	178.61	15.694			
4,900.00	2,865.81	2,801.00	2,800.67	41.05	139.33	103.42	-4,899.70	134.80	2,703.29	2,522.91	180.38	14.987			
5,000.00	2,864.94	2,801.00	2,800.67	42.82	139.33	103.42	-4,899.70	134.80	2,603.45	2,421.30	182.15	14.293			
5,100.00	2,864.07	2,801.00	2,800.67	44.59	139.33	103.42	-4,899.70	134.80	2,503.63	2,319.71	183.92	13.612			
5,200.00	2,863.20	2,801.00	2,800.67	46.37	139.33	103.42	-4,899.70	134.80	2,403.82	2,218.12	185.70	12.945			
5,300.00	2,862.32	2,801.00	2,800.67	48.16	139.33	103.42	-4,899.70	134.80	2,304.03	2,116.55	187.49	12.289			
5,400.00	2,861.45	2,801.00	2,800.67	49.94	139.33	103.42	-4,899.70	134.80	2,204.26	2,014.99	189.27	11.646			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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Reference Design:	Plan #1, 01-08-14	Offset TVD Reference:	Offset Datum

Offset Design Arabian 6 Fee - #1 - WB1 - Inc Surveys													Offset Site Error:
Survey Program: 293-INC													Offset Well Error:
Reference	Offset		Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Minimum	Separation	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	N-S (usft)	E-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor	
5,500.00	2,860.58	2,801.00	2,800.67	51.73	139.33	103.42	-4,899.70	134.80	2,104.51	1,913.45	191.06	11.015	
5,600.00	2,859.71	2,801.00	2,800.67	53.53	139.33	103.42	-4,899.70	134.80	2,004.79	1,811.93	192.86	10.395	
5,700.00	2,858.83	2,801.00	2,800.67	55.32	139.33	103.42	-4,899.70	134.80	1,905.10	1,710.44	194.65	9.787	
5,800.00	2,857.96	2,801.00	2,800.67	57.12	139.33	103.42	-4,899.70	134.80	1,805.43	1,608.98	196.45	9.190	
5,900.00	2,857.09	2,801.00	2,800.67	58.92	139.33	103.42	-4,899.70	134.80	1,705.81	1,507.56	198.25	8.604	
6,000.00	2,856.22	2,801.00	2,800.67	60.72	139.33	103.42	-4,899.70	134.80	1,606.24	1,406.19	200.05	8.029	
6,100.00	2,855.34	2,801.00	2,800.67	62.53	139.33	103.42	-4,899.70	134.80	1,506.72	1,304.86	201.86	7.464	
6,200.00	2,854.47	2,801.00	2,800.67	64.33	139.33	103.42	-4,899.70	134.80	1,407.27	1,203.61	203.66	6.910	
6,300.00	2,853.60	2,801.00	2,800.67	66.14	139.33	103.42	-4,899.70	134.80	1,307.91	1,102.43	205.47	6.365	
6,400.00	2,852.73	2,801.00	2,800.67	67.95	139.33	103.42	-4,899.70	134.80	1,208.64	1,001.36	207.28	5.831	
6,500.00	2,851.85	2,801.00	2,800.67	69.76	139.33	103.42	-4,899.70	134.80	1,109.52	900.43	209.09	5.306	
6,600.00	2,850.98	2,778.95	2,778.71	71.57	137.82	95.18	-4,899.81	134.80	1,010.33	800.94	209.39	4.825	
6,700.00	2,850.11	2,777.57	2,777.34	73.38	137.72	94.65	-4,899.82	134.80	911.54	700.43	211.10	4.318	
6,800.00	2,849.24	2,776.20	2,775.97	75.20	137.63	94.13	-4,899.82	134.80	813.04	600.22	212.82	3.820	
6,900.00	2,848.36	2,774.84	2,774.60	77.01	137.53	93.60	-4,899.83	134.80	714.97	500.42	214.54	3.333	
7,000.00	2,847.49	2,773.48	2,773.24	78.82	137.44	93.08	-4,899.84	134.80	617.50	401.24	216.26	2.855	
7,100.00	2,846.62	2,772.13	2,771.89	80.64	137.35	92.56	-4,899.84	134.80	520.99	303.01	217.99	2.390	
7,200.00	2,845.75	2,770.78	2,770.54	82.46	137.25	92.04	-4,899.85	134.80	426.10	206.38	219.71	1.939	
7,300.00	2,844.87	2,769.44	2,769.20	84.27	137.16	91.52	-4,899.85	134.80	334.18	112.75	221.44	1.509	
7,400.00	2,844.00	2,768.10	2,767.87	86.09	137.07	91.01	-4,899.86	134.80	248.59	25.42	223.16	1.114 Level 2	
7,500.00	2,843.13	2,766.77	2,766.54	87.91	136.98	90.49	-4,899.87	134.80	178.63	-46.26	224.89	0.794 Level 1	
7,599.46	2,842.26	2,765.46	2,765.22	89.72	136.89	89.98	-4,899.87	134.80	148.39	-78.22	226.61	0.655 Level 1, CC	
7,600.00	2,842.26	2,765.45	2,765.21	89.73	136.89	89.98	-4,899.87	134.80	148.39	-78.23	226.62	0.655 Level 1, ES, SF	
7,700.00	2,841.38	2,764.13	2,763.89	91.55	136.80	89.47	-4,899.88	134.80	179.24	-49.11	228.35	0.785 Level 1	
7,800.00	2,840.51	2,762.82	2,762.58	93.37	136.71	88.97	-4,899.88	134.80	249.46	19.38	230.08	1.084 Level 2	
7,812.70	2,840.40	2,762.65	2,762.41	93.60	136.70	88.90	-4,899.89	134.80	259.78	29.48	230.30	1.128 Level 2	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Phoenix Technology Services

Anticollision Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	WELL @ 3464.00usft (Original Well Elev)
Reference Site:	Arabian 6 Fee	MD Reference:	WELL @ 3464.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey/Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	WB1	Database:	GCR DB
Reference Design:	Plan #1 01-08-14	Offset TVD Reference:	Offset Datum

Offset Design: Arabian 6 Fee - #5H - OH - Plan #1 09-04-13														Offset Site Error:	0.00 usft
Survey Program: O-MWD														Offset Well Error:	0.00 usft
Reference Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N/S (usft)	E/W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
0.00	0.00	7,978.57	3,218.40	0.00	86.41	126.80	-481.73	643.94	3,400.85						
100.00	100.00	7,978.57	3,218.40	0.09	86.41	126.80	-481.73	643.94	3,303.77	3,217.26	86.50	38.192			
200.00	200.00	7,978.57	3,218.40	0.32	86.41	126.80	-481.73	643.94	3,206.87	3,120.14	86.73	36.976			
300.00	300.00	7,978.57	3,218.40	0.54	86.41	126.80	-481.73	643.94	3,110.16	3,023.21	86.95	35.768			
400.00	400.00	7,978.57	3,218.40	0.77	86.41	126.80	-481.73	643.94	3,013.68	2,926.50	87.18	34.569			
500.00	500.00	7,978.57	3,218.40	0.99	86.41	126.80	-481.73	643.94	2,917.42	2,830.02	87.40	33.379			
600.00	600.00	7,978.57	3,218.40	1.22	86.41	126.80	-481.73	643.94	2,821.43	2,733.81	87.63	32.198			
700.00	700.00	7,978.57	3,218.40	1.44	86.41	126.80	-481.73	643.94	2,725.73	2,637.88	87.85	31.026			
800.00	800.00	7,978.57	3,218.40	1.67	86.41	126.80	-481.73	643.94	2,630.35	2,542.27	88.08	29.864			
900.00	900.00	7,978.57	3,218.40	1.89	86.41	126.80	-481.73	643.94	2,535.32	2,447.02	88.30	28.712			
1,000.00	1,000.00	7,978.57	3,218.40	2.12	86.41	126.80	-481.73	643.94	2,440.69	2,352.16	88.53	27.570			
1,100.00	1,100.00	7,978.57	3,218.40	2.34	86.41	126.80	-481.73	643.94	2,346.50	2,257.75	88.75	26.439			
1,200.00	1,200.00	7,978.57	3,218.40	2.56	86.41	126.80	-481.73	643.94	2,252.82	2,163.85	88.98	25.319			
1,300.00	1,300.00	7,978.57	3,218.40	2.79	86.41	126.80	-481.73	643.94	2,159.70	2,070.50	89.20	24.212			
1,400.00	1,400.00	7,978.57	3,218.40	3.01	86.41	126.80	-481.73	643.94	2,067.23	1,977.81	89.43	23.117			
1,500.00	1,500.00	7,978.57	3,218.40	3.24	86.41	126.80	-481.73	643.94	1,975.49	1,885.84	89.65	22.036			
1,600.00	1,600.00	7,978.57	3,218.40	3.46	86.41	126.80	-481.73	643.94	1,884.59	1,794.72	89.87	20.969			
1,700.00	1,700.00	7,978.57	3,218.40	3.69	86.41	126.80	-481.73	643.94	1,794.66	1,704.56	90.10	19.919			
1,800.00	1,800.00	7,978.57	3,218.40	3.91	86.41	126.80	-481.73	643.94	1,705.85	1,615.53	90.32	18.886			
1,900.00	1,900.00	7,978.57	3,218.40	4.14	86.41	126.80	-481.73	643.94	1,618.35	1,527.80	90.55	17.873			
2,000.00	2,000.00	7,978.57	3,218.40	4.36	86.41	126.80	-481.73	643.94	1,532.37	1,441.60	90.77	16.881			
2,100.00	2,100.00	7,978.57	3,218.40	4.59	86.41	126.80	-481.73	643.94	1,448.20	1,357.20	91.00	15.915			
2,200.00	2,200.00	7,978.57	3,218.40	4.81	86.41	126.80	-481.73	643.94	1,366.17	1,274.94	91.22	14.976			
2,300.00	2,300.00	7,978.57	3,218.40	5.04	86.41	126.80	-481.73	643.94	1,286.67	1,195.23	91.45	14.070			
2,360.00	2,360.00	7,978.57	3,218.40	5.17	86.41	126.80	-481.73	643.94	1,240.40	1,148.82	91.58	13.544			
2,400.00	2,399.96	7,978.57	3,218.40	5.25	86.41	-36.92	-481.73	643.94	1,209.41	1,117.75	91.66	13.194			
2,450.00	2,449.55	7,978.57	3,218.40	5.35	86.41	-41.61	-481.73	643.94	1,169.26	1,077.50	91.76	12.743			
2,500.00	2,498.32	7,978.57	3,218.40	5.45	86.41	-47.34	-481.73	643.94	1,127.76	1,035.90	91.86	12.277			
2,550.00	2,545.81	7,978.57	3,218.40	5.56	86.41	-54.28	-481.73	643.94	1,085.14	993.17	91.97	11.799			
2,600.00	2,591.60	7,978.57	3,218.40	5.67	86.41	-62.49	-481.73	643.94	1,041.71	949.62	92.09	11.312			
2,650.00	2,635.25	7,978.57	3,218.40	5.82	86.41	-71.82	-481.73	643.94	997.76	905.53	92.24	10.818			
2,700.00	2,676.36	7,978.57	3,218.40	6.04	86.41	-81.81	-481.73	643.94	953.67	861.22	92.45	10.315			
2,750.00	2,714.57	7,978.57	3,218.40	6.33	86.41	-91.80	-481.73	643.94	909.85	817.11	92.74	9.811			
2,800.00	2,749.51	7,978.57	3,218.40	6.69	86.41	-101.07	-481.73	643.94	866.78	773.67	93.10	9.310			
2,850.00	2,780.86	7,978.57	3,218.40	7.14	86.41	-109.15	-481.73	643.94	824.99	731.44	93.55	8.819			
2,900.00	2,808.34	7,978.57	3,218.40	7.67	86.41	-115.87	-481.73	643.94	785.11	691.03	94.08	8.345			
2,950.00	2,831.68	7,978.57	3,218.40	8.28	86.41	-121.28	-481.73	643.94	747.85	653.16	94.69	7.898			
3,000.00	2,850.69	7,978.57	3,218.40	8.97	86.41	-125.52	-481.73	643.94	713.97	618.59	95.38	7.486			
3,050.00	2,865.18	7,978.57	3,218.40	9.72	86.41	-128.76	-481.73	643.94	684.31	588.19	96.13	7.119			
3,100.00	2,875.01	7,978.57	3,218.40	10.52	86.41	-131.14	-481.73	643.94	659.74	562.81	96.93	6.806			
3,150.00	2,880.11	7,950.52	3,218.63	11.36	85.92	-133.49	-509.63	641.11	640.46	543.19	97.27	6.584			
3,182.73	2,880.85	7,920.91	3,218.88	11.93	85.40	-135.20	-539.08	638.12	629.77	532.44	97.33	6.471			
3,200.00	2,880.70	7,905.25	3,219.01	12.21	85.13	-135.54	-554.66	636.53	624.60	527.25	97.34	6.417			
3,300.00	2,879.82	7,813.35	3,219.78	13.85	83.53	-137.56	-646.09	627.25	597.49	500.11	97.38	6.136			
3,400.00	2,878.94	7,719.51	3,220.56	15.53	81.91	-139.56	-739.45	617.78	575.07	477.64	97.43	5.902			
3,500.00	2,878.06	7,624.00	3,221.36	17.22	80.25	-141.45	-834.47	608.13	557.06	459.58	97.48	5.715			
3,600.00	2,877.17	7,527.07	3,222.17	18.92	78.58	-143.17	-930.90	598.34	543.12	445.63	97.50	5.571			
3,700.00	2,876.29	7,428.99	3,222.99	20.59	76.89	-144.65	-1,028.47	588.44	532.94	435.45	97.48	5.467			
3,800.00	2,875.41	7,330.04	3,223.81	22.24	75.19	-145.81	-1,126.92	578.44	526.17	428.74	97.43	5.400			
3,829.25	2,875.16	7,300.96	3,224.06	22.72	74.69	-146.08	-1,155.84	575.51	524.79	427.38	97.41	5.387			
3,900.00	2,874.54	7,230.59	3,224.65	23.87	73.49	-146.81	-1,225.86	568.40	521.83	424.48	97.36	5.360			
4,000.00	2,873.67	7,131.11	3,225.48	25.52	71.79	-147.84	-1,324.82	558.36	517.79	420.49	97.31	5.321			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Phoenix Technology Services

Anticollision Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County NM (NAD 27-NME)	TVD Reference:	WELL @ 3464.00usft (Original Well Elev)
Reference Site:	Arabian 6 Fee	MD Reference:	WELL @ 3464.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	WB1	Database:	GCR DB
Reference Design:	Plan #1_01-08-14	Offset TVD Reference:	Offset Datum

Offset Design: Arabian 6 Fee - #5H - OH - Plan #1_09-04-13												Offset Site Error:	0.00 usft
Survey Program: O-MWD												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N/S (usft)	Offset Wellbore Centre E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,100.00	2,872.79	7,031.64	3,226.31	27.19	70.10	-148.89	-1,423.78	548.31	513.93	416.64	97.28	5.283	
4,200.00	2,871.92	6,932.17	3,227.14	28.88	68.41	-149.96	-1,522.74	538.26	510.23	412.95	97.28	5.245	
4,300.00	2,871.05	6,832.69	3,227.97	30.58	66.72	-151.04	-1,621.70	528.22	506.72	409.42	97.31	5.207	
4,400.00	2,870.18	6,733.22	3,228.80	32.30	65.05	-152.13	-1,720.67	518.17	503.40	406.05	97.35	5.171	
4,500.00	2,869.30	6,633.75	3,229.63	34.03	63.38	-153.24	-1,819.63	508.13	500.26	402.84	97.41	5.135	
4,600.00	2,868.43	6,534.27	3,230.46	35.77	61.72	-154.36	-1,918.59	498.08	497.31	399.82	97.50	5.101	
4,700.00	2,867.56	6,434.80	3,231.29	37.53	60.07	-155.50	-2,017.55	488.04	494.56	396.97	97.59	5.068	
4,800.00	2,866.69	6,335.32	3,232.12	39.28	58.43	-156.65	-2,116.51	477.99	492.01	394.30	97.71	5.035	
4,900.00	2,865.81	6,235.85	3,232.95	41.05	56.79	-157.80	-2,215.47	467.94	489.65	391.81	97.84	5.005	
5,000.00	2,864.94	6,136.38	3,233.79	42.82	55.17	-158.97	-2,314.44	457.90	487.50	389.52	97.99	4.975	
5,100.00	2,864.07	6,036.90	3,234.62	44.59	53.56	-160.15	-2,413.40	447.85	485.56	387.41	98.15	4.947	
5,200.00	2,863.20	5,937.43	3,235.45	46.37	51.96	-161.34	-2,512.36	437.81	483.83	385.50	98.33	4.920	
5,300.00	2,862.32	5,837.96	3,236.28	48.16	50.38	-162.54	-2,611.32	427.76	482.31	383.77	98.53	4.895	
5,400.00	2,861.45	5,738.48	3,237.11	49.94	48.81	-163.74	-2,710.28	417.72	481.00	382.25	98.75	4.871	
5,500.00	2,860.58	5,639.01	3,237.94	51.73	47.25	-164.95	-2,809.24	407.67	479.91	380.92	98.99	4.848	
5,600.00	2,859.71	5,539.54	3,238.77	53.53	45.72	-166.16	-2,908.20	397.63	479.03	379.78	99.25	4.827	
5,700.00	2,858.83	5,440.06	3,239.60	55.32	44.21	-167.38	-3,007.17	387.58	478.37	378.85	99.53	4.806	
5,800.00	2,857.96	5,340.59	3,240.43	57.12	42.71	-168.60	-3,106.13	377.53	477.93	378.10	99.83	4.787	
5,900.00	2,857.09	5,241.12	3,241.26	58.92	41.24	-169.82	-3,205.09	367.49	477.72	377.55	100.16	4.769	
5,949.82	2,856.65	5,191.56	3,241.68	59.82	40.52	-170.43	-3,254.39	362.48	477.69	377.35	100.34	4.761 CC	
6,000.00	2,856.22	5,141.64	3,242.10	60.72	39.80	-171.05	-3,304.05	357.44	477.72	377.19	100.52	4.752	
6,100.00	2,855.34	5,042.17	3,242.93	62.53	38.38	-172.27	-3,403.01	347.40	477.94	377.03	100.91	4.736 ES	
6,200.00	2,854.47	4,942.69	3,243.76	64.33	37.00	-173.49	-3,501.97	337.35	478.38	377.05	101.33	4.721	
6,300.00	2,853.60	4,844.19	3,244.58	66.14	35.61	-174.64	-3,600.01	327.83	479.08	377.32	101.75	4.708	
6,400.00	2,852.73	4,746.56	3,245.41	67.95	34.18	-175.30	-3,697.48	322.50	480.31	378.19	102.12	4.703 SF	
6,500.00	2,851.85	4,648.65	3,246.26	69.76	32.69	-175.35	-3,795.38	322.18	482.02	379.57	102.45	4.705	
6,600.00	2,850.98	4,550.96	3,247.12	71.57	31.15	-174.82	-3,892.94	326.85	484.18	381.45	102.72	4.713	
6,700.00	2,850.11	4,453.99	3,247.98	73.38	29.58	-173.71	-3,989.42	336.42	486.93	383.97	102.96	4.729	
6,800.00	2,849.24	4,358.24	3,248.84	75.20	27.97	-172.08	-4,084.09	350.66	490.55	387.39	103.16	4.755	
6,900.00	2,848.36	4,264.15	3,249.70	77.01	26.34	-169.97	-4,176.32	369.25	495.47	392.12	103.35	4.794	
7,000.00	2,847.49	4,172.12	3,250.53	78.82	24.71	-167.46	-4,265.52	391.81	502.18	398.65	103.53	4.850	
7,100.00	2,846.62	4,082.49	3,251.35	80.64	23.08	-164.63	-4,351.26	417.89	511.26	407.54	103.72	4.929	
7,200.00	2,845.75	3,995.56	3,252.14	82.46	21.47	-161.57	-4,433.16	447.00	523.27	419.35	103.93	5.035	
7,300.00	2,844.87	3,911.54	3,252.90	84.27	19.89	-158.38	-4,510.98	478.65	538.77	434.60	104.16	5.172	
7,400.00	2,844.00	3,830.60	3,253.63	86.09	18.35	-155.14	-4,584.57	512.35	558.20	453.75	104.45	5.344	
7,500.00	2,843.13	3,752.84	3,254.33	87.91	16.88	-151.93	-4,653.85	547.63	581.91	477.12	104.79	5.553	
7,600.00	2,842.26	3,678.33	3,254.99	89.73	15.47	-148.82	-4,718.84	584.06	610.10	504.90	105.20	5.799	
7,700.00	2,841.38	3,600.00	3,255.68	91.55	14.02	-145.55	-4,785.58	625.05	642.90	537.33	105.57	6.090	
7,800.00	2,840.51	3,500.00	3,256.30	93.37	12.61	-142.23	-4,850.00	673.44	671.88	571.36	106.03	6.684	
7,812.70	2,840.40	3,004.57	2,992.72	93.60	6.72	-111.06	-5,199.83	903.91	670.52	570.20	100.32	6.684	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Phoenix Technology Services

Anticollision Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD 27, NME)	TVD Reference:	WELL @ 3464.00usft (Original Well Elev)
Reference Site:	Arabian 6 Fee	MD Reference:	WELL @ 3464.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	WB1	Database:	GCR DB
Reference Design:	Plan #1-01-08-14	Offset TVD Reference:	Offset Datum

Offset Design Falabella 3.1 Fee - #1H - OH/Job.#1310862 - Surveys:(JW-4)														Offset Site Error:	0.00 usft
Survey Program: 100-VES-SCWSA-GYRO-3-2230-MWD														Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Minimum	Separation	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	N/S (usft)	E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor			
0.00	0.00	0.00	0.00	0.00	0.00	90.20	-0.60	169.90	170.26						
100.00	100.00	88.50	88.50	0.09	0.07	90.30	-0.89	170.03	170.03	169.86	0.17	1,022.334			
200.00	200.00	189.36	189.36	0.32	0.25	90.52	-1.55	170.11	170.12	169.56	0.56	301.178			
300.00	300.00	289.96	289.96	0.54	0.43	90.78	-2.31	169.70	169.72	168.74	0.98	173.987			
400.00	400.00	389.90	389.88	0.77	0.62	91.11	-3.28	169.12	169.16	167.77	1.39	121.982			
500.00	500.00	490.49	490.47	0.99	0.81	91.45	-4.26	168.42	168.48	166.68	1.80	93.638			
600.00	600.00	590.27	590.24	1.22	1.00	91.89	-5.54	167.55	167.65	165.44	2.21	75.826			
700.00	700.00	690.35	690.30	1.44	1.18	92.42	-7.04	166.75	166.90	164.28	2.62	63.613			
800.00	800.00	791.09	791.04	1.67	1.37	92.79	-8.08	165.71	165.92	162.89	3.03	54.679			
900.00	900.00	891.47	891.40	1.89	1.55	92.94	-8.44	164.33	164.57	161.13	3.44	47.832			
1,000.00	1,000.00	992.68	992.59	2.12	1.73	92.97	-8.44	162.50	162.76	158.91	3.85	42.320			
1,100.00	1,100.00	1,092.38	1,092.27	2.34	1.91	92.88	-8.08	160.36	160.60	156.35	4.25	37.814			
1,200.00	1,200.00	1,192.71	1,192.57	2.56	2.08	92.66	-7.34	158.26	158.47	153.82	4.65	34.091			
1,300.00	1,300.00	1,292.92	1,292.76	2.79	2.26	92.36	-6.44	155.96	156.14	151.09	5.05	30.911			
1,400.00	1,400.00	1,392.45	1,392.25	3.01	2.44	92.02	-5.41	153.73	153.86	148.41	5.45	28.218			
1,500.00	1,500.00	1,493.79	1,493.55	3.24	2.62	91.44	-3.81	151.23	151.35	145.49	5.86	25.840			
1,600.00	1,600.00	1,594.59	1,594.28	3.46	2.80	90.81	-2.09	147.94	148.05	141.78	6.26	23.637			
1,700.00	1,700.00	1,695.17	1,694.77	3.69	2.98	90.20	-0.51	144.14	144.26	137.59	6.67	21.622			
1,800.00	1,800.00	1,794.07	1,793.61	3.91	3.16	89.65	0.85	140.51	140.59	133.51	7.08	19.864			
1,900.00	1,900.00	1,894.46	1,893.93	4.14	3.35	89.11	2.13	137.09	137.19	129.70	7.49	18.323			
2,000.00	2,000.00	1,993.90	1,993.30	4.36	3.53	88.63	3.20	133.66	133.77	125.87	7.90	16.941			
2,100.00	2,100.00	2,094.19	2,093.52	4.59	3.72	88.18	4.13	130.30	130.45	122.14	8.31	15.703			
2,200.00	2,200.00	2,193.02	2,192.31	4.81	3.85	87.66	5.21	127.33	127.48	118.82	8.66	14.722			
2,266.38	2,266.38	2,256.12	2,255.38	4.96	3.88	87.27	6.01	126.06	126.20	117.36	8.84	14.269 CC, ES			
2,300.00	2,300.00	2,284.56	2,283.79	5.04	3.89	86.74	7.20	126.54	126.86	117.93	8.92	14.214 SF			
2,360.00	2,360.00	2,338.30	2,337.01	5.17	3.91	83.92	13.82	129.67	130.95	121.88	9.08	14.426			
2,400.00	2,399.96	2,373.39	2,371.11	5.25	3.93	-79.95	21.57	132.41	135.08	125.90	9.18	14.719			
2,450.00	2,449.55	2,413.54	2,409.35	5.35	3.96	-85.41	33.11	136.29	142.71	133.41	9.31	15.334			
2,500.00	2,498.32	2,448.00	2,441.31	5.45	4.00	-90.86	45.39	140.17	155.03	145.57	9.46	16.386			
2,550.00	2,545.81	2,479.00	2,469.22	5.56	4.06	-95.67	58.36	143.86	173.43	163.80	9.63	18.012			
2,600.00	2,591.60	2,507.50	2,494.17	5.67	4.13	-99.44	71.72	147.18	198.15	188.35	9.80	20.212			
2,650.00	2,635.25	2,528.79	2,512.37	5.82	4.19	-100.63	82.52	149.45	228.66	218.64	10.02	22.822			
2,700.00	2,676.36	2,542.00	2,523.46	6.04	4.24	-98.67	89.58	150.73	264.05	253.77	10.28	25.683			
2,750.00	2,714.57	2,555.47	2,534.60	6.33	4.30	-95.57	97.07	151.95	303.18	292.55	10.63	28.533			
2,800.00	2,749.51	2,562.27	2,540.15	6.69	4.33	-89.18	100.96	152.52	345.03	334.01	11.02	31.313			
2,850.00	2,780.86	2,565.54	2,542.80	7.14	4.34	-80.41	102.85	152.79	388.67	377.19	11.48	33.858			
2,900.00	2,808.34	2,565.82	2,543.02	7.67	4.34	-69.95	103.01	152.82	433.32	421.31	12.01	36.076			
2,950.00	2,831.68	2,563.56	2,541.19	8.28	4.33	-59.03	101.70	152.63	478.37	465.75	12.61	37.927			
3,000.00	2,850.69	2,559.14	2,537.60	8.97	4.31	-48.89	99.16	152.26	523.29	510.01	13.28	39.407			
3,050.00	2,865.18	2,552.90	2,532.48	9.72	4.29	-40.28	95.62	151.72	567.65	553.65	14.00	40.542			
3,100.00	2,875.01	2,542.00	2,523.46	10.52	4.24	-32.94	89.58	150.73	611.11	596.36	14.76	41.413			
3,150.00	2,880.11	2,542.00	2,523.46	11.36	4.24	-28.50	89.58	150.73	653.38	637.78	15.60	41.889			
3,182.73	2,880.85	2,529.52	2,512.99	11.93	4.20	-24.99	82.90	149.53	680.16	664.04	16.12	42.187			
3,200.00	2,880.70	2,526.00	2,510.01	12.21	4.19	-24.02	81.06	149.17	694.22	677.82	16.40	42.328			
3,300.00	2,879.82	2,511.00	2,497.19	13.85	4.14	-18.48	73.45	147.57	778.11	760.12	18.00	43.235			
3,400.00	2,878.94	2,479.00	2,469.22	15.53	4.06	-11.33	58.36	143.86	865.29	845.69	19.61	44.135			
3,500.00	2,878.06	2,479.00	2,469.22	17.22	4.06	-5.43	58.36	143.86	954.51	933.22	21.30	44.814			
3,600.00	2,877.17	2,459.02	2,451.33	18.92	4.02	1.74	49.80	141.46	1,045.29	1,022.34	22.95	45.545			
3,700.00	2,876.29	2,448.00	2,441.31	20.59	4.00	8.83	45.39	140.17	1,137.15	1,112.55	24.60	46.227			
3,800.00	2,875.41	2,435.69	2,430.00	22.24	3.99	15.88	40.74	138.76	1,229.62	1,203.40	26.23	46.885			
3,829.25	2,875.16	2,432.66	2,427.20	22.72	3.98	17.90	39.64	138.41	1,256.74	1,230.04	26.70	47.068			
3,900.00	2,874.54	2,417.00	2,412.60	23.87	3.96	17.57	34.24	136.67	1,322.66	1,294.83	27.83	47.522			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Phoenix Technology Services

Anticollision Report

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	WELL @ 3464.00usft (Original Well Elev)
Reference Site:	Arabian 6 Fee	MD Reference:	WELL @ 3464.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	WB1	Database:	GCR DB
Reference Design:	Plan #1_01-08-14	Offset TVD Reference:	Offset Datum

Offset Design: Falabella 31 Fee - #1H - OH/Job #1310862 - Surveys (JW 4)														Offset Site Error:	0.00 usft
Survey Program: 100-VES-HSCWSA-GYRO-3-2230-MWD														Offset Well Error:	0.00 usft
Reference	Vertical	Measured	Vertical	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Distance	Between	Between	Minimum	Separation	Warning		
Depth	Depth	Depth	Depth	Reference	Offset	Toolface	+N-S	+E-W	North	Ellipsoid	Separation	Factor			
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)				
4,000.00	2,873.67	2,417.00	2,412.60	25.52	3.96	17.57	34.24	136.67	1,416.19	1,386.71	29.48	48.040			
4,100.00	2,872.79	2,417.00	2,412.60	27.19	3.96	17.57	34.24	136.67	1,510.55	1,479.40	31.15	48.493			
4,200.00	2,871.92	2,399.57	2,396.16	28.88	3.95	17.20	28.77	134.84	1,605.22	1,572.39	32.82	48.906			
4,300.00	2,871.05	2,386.00	2,383.22	30.58	3.93	16.92	24.89	133.54	1,700.50	1,665.98	34.52	49.267			
4,400.00	2,870.18	2,386.00	2,383.22	32.30	3.93	16.92	24.89	133.54	1,796.09	1,759.85	36.24	49.567			
4,500.00	2,869.30	2,386.00	2,383.22	34.03	3.93	16.92	24.89	133.54	1,892.13	1,854.17	37.97	49.837			
4,600.00	2,868.43	2,372.37	2,370.12	35.77	3.92	16.63	21.31	132.32	1,988.37	1,948.67	39.70	50.086			
4,700.00	2,867.56	2,355.00	2,353.31	37.53	3.91	16.27	17.20	130.91	2,085.08	2,043.64	41.44	50.318			
4,800.00	2,866.69	2,355.00	2,353.31	39.28	3.91	16.27	17.20	130.91	2,181.79	2,138.60	43.20	50.509			
4,900.00	2,865.81	2,355.00	2,353.31	41.05	3.91	16.27	17.20	130.91	2,278.79	2,233.83	44.96	50.685			
5,000.00	2,864.94	2,355.00	2,353.31	42.82	3.91	16.27	17.20	130.91	2,376.03	2,329.30	46.73	50.846			
5,100.00	2,864.07	2,355.00	2,353.31	44.59	3.91	16.27	17.20	130.91	2,473.49	2,424.99	48.51	50.994			
5,200.00	2,863.20	2,355.00	2,353.31	46.37	3.91	16.27	17.20	130.91	2,571.15	2,520.87	50.28	51.132			
5,300.00	2,862.32	2,355.00	2,353.31	48.16	3.91	16.27	17.20	130.91	2,668.98	2,616.92	52.07	51.259			
5,400.00	2,861.45	2,340.61	2,339.26	49.94	3.91	15.97	14.24	129.83	2,766.69	2,712.84	53.85	51.378			
5,500.00	2,860.58	2,338.08	2,336.79	51.73	3.91	15.92	13.78	129.65	2,864.71	2,809.07	55.64	51.488			
5,600.00	2,859.71	2,324.00	2,322.93	53.53	3.90	15.63	11.44	128.69	2,963.03	2,905.60	57.43	51.597			
5,700.00	2,858.83	2,324.00	2,322.93	55.32	3.90	15.63	11.44	128.69	3,061.21	3,001.99	59.22	51.691			
5,800.00	2,857.96	2,324.00	2,322.93	57.12	3.90	15.63	11.44	128.69	3,159.50	3,098.48	61.02	51.778			
5,900.00	2,857.09	2,324.00	2,322.93	58.92	3.90	15.63	11.44	128.69	3,257.90	3,195.07	62.82	51.860			
6,000.00	2,856.22	2,324.00	2,322.93	60.72	3.90	15.63	11.44	128.69	3,356.39	3,291.76	64.62	51.938			
6,100.00	2,855.34	2,324.00	2,322.93	62.53	3.90	15.63	11.44	128.69	3,454.96	3,388.54	66.43	52.011			
6,200.00	2,854.47	2,324.00	2,322.93	64.33	3.90	15.63	11.44	128.69	3,553.62	3,485.39	68.23	52.081			
6,300.00	2,853.60	2,324.00	2,322.93	66.14	3.90	15.63	11.44	128.69	3,652.35	3,582.31	70.04	52.147			
6,400.00	2,852.73	2,324.00	2,322.93	67.95	3.90	15.63	11.44	128.69	3,751.15	3,679.30	71.85	52.209			
6,500.00	2,851.85	2,324.00	2,322.93	69.76	3.90	15.63	11.44	128.69	3,850.01	3,776.35	73.66	52.268			
6,600.00	2,850.98	2,324.00	2,322.93	71.57	3.90	15.63	11.44	128.69	3,948.92	3,873.45	75.47	52.325			
6,700.00	2,850.11	2,324.00	2,322.93	73.38	3.90	15.63	11.44	128.69	4,047.89	3,970.61	77.28	52.378			
6,800.00	2,849.24	2,324.00	2,322.93	75.20	3.90	15.63	11.44	128.69	4,146.91	4,067.82	79.10	52.429			
6,900.00	2,848.36	2,324.00	2,322.93	77.01	3.90	15.63	11.44	128.69	4,245.98	4,165.07	80.91	52.478			
7,000.00	2,847.49	2,324.00	2,322.93	78.82	3.90	15.63	11.44	128.69	4,345.09	4,262.36	82.72	52.525			
7,100.00	2,846.62	2,324.00	2,322.93	80.64	3.90	15.63	11.44	128.69	4,444.24	4,359.70	84.54	52.569			
7,200.00	2,845.75	2,309.16	2,308.26	82.46	3.89	15.33	9.46	127.77	4,543.16	4,456.81	86.35	52.612			
7,300.00	2,844.87	2,308.01	2,307.11	84.27	3.89	15.31	9.32	127.70	4,642.34	4,554.17	88.17	52.653			
7,400.00	2,844.00	2,306.89	2,306.01	86.09	3.89	15.28	9.20	127.64	4,741.55	4,651.57	89.99	52.692			
7,500.00	2,843.13	2,292.00	2,291.21	87.91	3.89	14.99	7.75	126.86	4,841.02	4,749.22	91.80	52.734			
7,600.00	2,842.26	2,292.00	2,291.21	89.73	3.89	14.99	7.75	126.86	4,940.25	4,846.63	93.62	52.769			
7,700.00	2,841.38	2,292.00	2,291.21	91.55	3.89	14.99	7.75	126.86	5,039.52	4,944.08	95.44	52.803			
7,800.00	2,840.51	2,292.00	2,291.21	93.37	3.89	14.99	7.75	126.86	5,138.81	5,041.55	97.26	52.836			
7,812.70	2,840.40	2,292.00	2,291.21	93.60	3.89	14.99	7.75	126.86	5,151.43	5,053.94	97.49	52.840			

Phoenix Technology Services

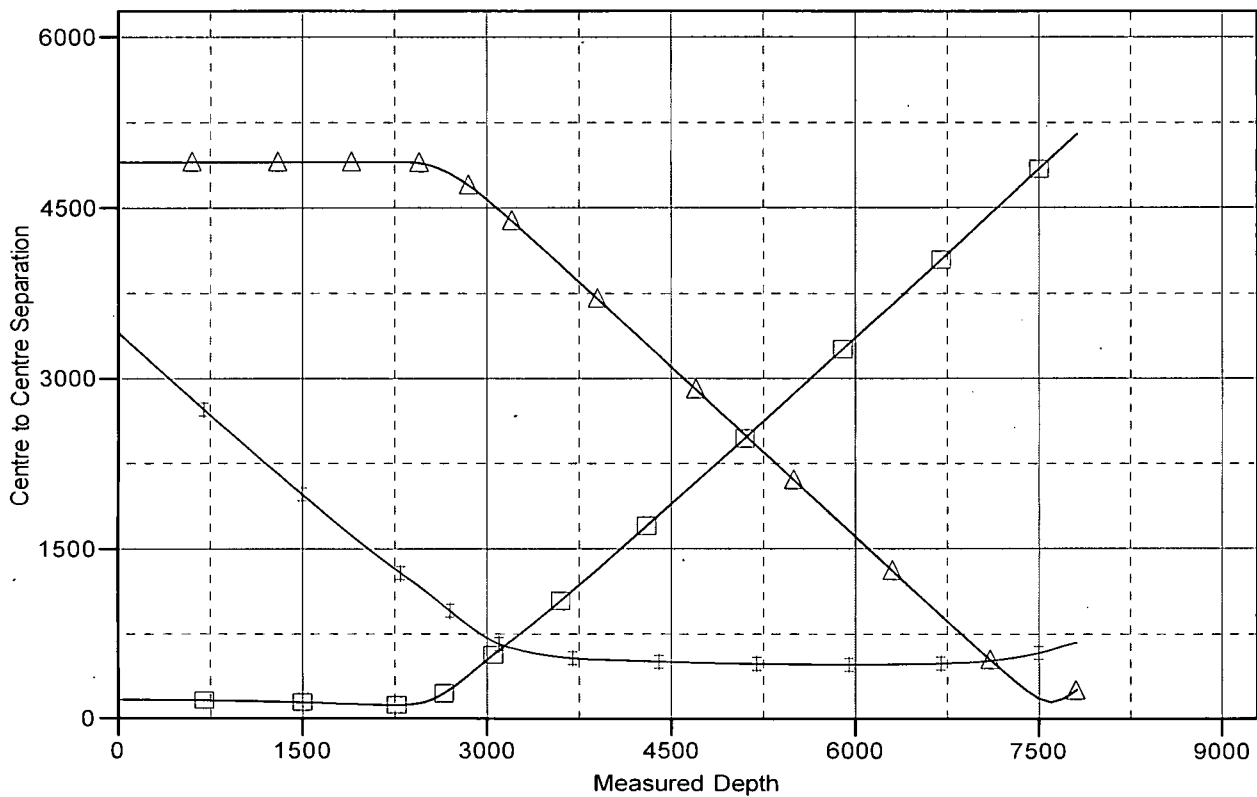
Anticollision Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	WELL @ 3464.00usft (Original Well Elev)
Reference Site:	Arabian 6 Fee	MD Reference:	WELL @ 3464.00usft (Original Well Elev)
Site Error:	0.00.usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00.usft	Output errors are at:	2.00 sigma
Reference Wellbore:	WB1	Database:	GCR DB
Reference Design:	Plan #1 01-08-14	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 3464.00usft (Original Well E
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: #10H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: -0.05°

Ladder Plot



LEGEND

#1H, OH/Job #1310862, Surveys (JW4) V0
 #1, WB1, Inc Surveys V0
 #5H, OH, Plan #1 09-04-13 V0

Phoenix Technology Services

Anticollision Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	WELL @ 3464.00usft (Original Well Elev)
Reference Site:	Arabian 6/Fee	MD Reference:	WELL @ 3464.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	200 sigma
Reference Wellbore:	WB1	Database:	GCR DB
Reference Design:	Plan #1 01-08-14	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 3464.00usft (Original Well E

Offset Depths are relative to Offset Datum

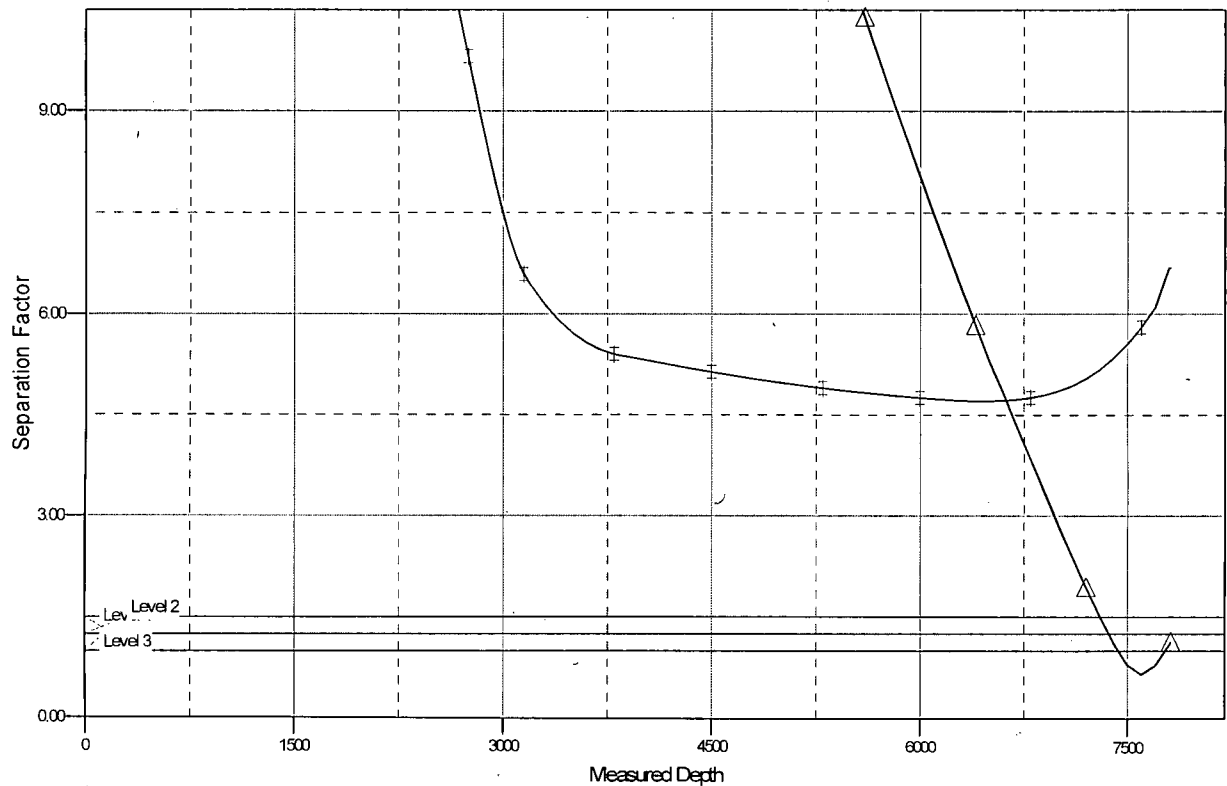
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: #10H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30

Grid Convergence at Surface is: -0.05°

Separation Factor Plot



LEGEND

■ #1H, OH/Job #1310862, Surveys (JW 4) V0

▲ #1, WB1, Inc Surveys V0

✚ #5H, OH, Plan #1 09-04-13 V0