

30-025-40560

HOBBS OCD

MAY 09 2012

RECEIVED



COG Operating LLC

Eddy County, NM (NAN27 NME)

Tres State #1H

Tres State #1H

OH

Plan: Plan #1 8-3/4" Hole

SHL = 330' FSL & 330' FWL

BHL = 330' FSL & 330' FEL

Standard Planning Report

06 December, 2011



MAY 10 2012



Scientific Drilling
Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Tres State #1H
Well: Tres State #1H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference: Site Tres State #1H
TVD Reference: GL Elev @ 4111.00usft
MD Reference: GL Elev @ 4111.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy County, NM (NAN27 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	Tres State #1H		
Site Position:	Northing:	811,904.23 usft	Latitude: 33° 13' 43.421 N
From: Map	Easting:	774,129.39 usft	Longitude: 103° 26' 12.785 W
Position Uncertainty:	0.00 usft	Slot Radius: 13-3/16"	Grid Convergence: 0.49°

Well	Tres State #1H		
Well Position	+N/-S	0.00 usft	Northing: 811,904.23 usft
	+E/-W	0.00 usft	Easting: 774,129.39 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level: 4,111.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	2011/12/06	7.54
			Dip Angle (°)
			61.12
			Field Strength (nT)
			49,183

Design	Plan #1 8-3/4" Hole		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			89.48

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,992.00	0.00	0.00	8,992.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,737.13	89.31	89.48	9,470.00	4.28	472.25	11.99	11.99	0.00	89.48	
13,883.86	89.31	89.48	9,520.00	41.84	4,818.51	0.00	0.00	0.00	0.00	PBHL-Tres State #1H



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Site: Tres State #1H
Well: Tres State #1H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference:
TYD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Site Tres State #1H
GL Elev @ 4111.00usft
GL Elev @ 4111.00usft
Grid
Minimum Curvature

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
8,992.00	0.00	0.00	8,992.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start Build 11.99°/100'									
9,000.00	0.96	89.48	9,000.00	0.00	0.07	0.07	11.99	11.99	0.00
9,100.00	12.94	89.48	9,099.08	0.11	12.15	12.15	11.99	11.99	0.00
9,200.00	24.93	89.48	9,193.50	0.40	44.54	44.54	11.99	11.99	0.00
9,300.00	36.92	89.48	9,279.13	0.87	95.83	95.84	11.99	11.99	0.00
9,400.00	48.90	89.48	9,352.24	1.48	163.79	163.80	11.99	11.99	0.00
9,500.00	60.89	89.48	9,409.64	2.22	245.45	245.46	11.99	11.99	0.00
9,600.00	72.87	89.48	9,448.84	3.05	337.25	337.26	11.99	11.99	0.00
9,700.00	84.86	89.48	9,468.11	3.94	435.18	435.20	11.99	11.99	0.00
9,737.13	89.31	89.48	9,470.00	4.28	472.25	472.27	11.99	11.99	0.00
Land EOC hold 89.31°									
9,800.00	89.31	89.48	9,470.76	4.85	535.11	535.14	0.00	0.00	0.00
9,900.00	89.31	89.48	9,471.96	5.75	635.10	635.13	0.00	0.00	0.00
10,000.00	89.31	89.48	9,473.17	6.66	735.09	735.12	0.00	0.00	0.00
10,100.00	89.31	89.48	9,474.37	7.56	835.08	835.11	0.00	0.00	0.00
10,200.00	89.31	89.48	9,475.58	8.47	935.07	935.11	0.00	0.00	0.00
10,300.00	89.31	89.48	9,476.79	9.38	1,035.06	1,035.10	0.00	0.00	0.00
10,400.00	89.31	89.48	9,477.99	10.28	1,135.05	1,135.09	0.00	0.00	0.00
10,500.00	89.31	89.48	9,479.20	11.19	1,235.03	1,235.08	0.00	0.00	0.00
10,600.00	89.31	89.48	9,480.40	12.09	1,335.02	1,335.08	0.00	0.00	0.00
10,700.00	89.31	89.48	9,481.61	13.00	1,435.01	1,435.07	0.00	0.00	0.00
10,800.00	89.31	89.48	9,482.81	13.90	1,535.00	1,535.06	0.00	0.00	0.00
10,900.00	89.31	89.48	9,484.02	14.81	1,634.99	1,635.06	0.00	0.00	0.00
11,000.00	89.31	89.48	9,485.23	15.72	1,734.98	1,735.05	0.00	0.00	0.00
11,100.00	89.31	89.48	9,486.43	16.62	1,834.97	1,835.04	0.00	0.00	0.00
11,200.00	89.31	89.48	9,487.64	17.53	1,934.95	1,935.03	0.00	0.00	0.00
11,300.00	89.31	89.48	9,488.84	18.43	2,034.94	2,035.03	0.00	0.00	0.00
11,400.00	89.31	89.48	9,490.05	19.34	2,134.93	2,135.02	0.00	0.00	0.00
11,500.00	89.31	89.48	9,491.26	20.24	2,234.92	2,235.01	0.00	0.00	0.00
11,600.00	89.31	89.48	9,492.46	21.15	2,334.91	2,335.00	0.00	0.00	0.00
11,700.00	89.31	89.48	9,493.67	22.06	2,434.90	2,435.00	0.00	0.00	0.00
11,800.00	89.31	89.48	9,494.87	22.96	2,534.89	2,534.99	0.00	0.00	0.00
11,900.00	89.31	89.48	9,496.08	23.87	2,634.88	2,634.98	0.00	0.00	0.00
12,000.00	89.31	89.48	9,497.28	24.77	2,734.86	2,734.96	0.00	0.00	0.00
12,100.00	89.31	89.48	9,498.49	25.68	2,834.85	2,834.97	0.00	0.00	0.00
12,200.00	89.31	89.48	9,499.70	26.58	2,934.84	2,934.96	0.00	0.00	0.00
12,300.00	89.31	89.48	9,500.90	27.49	3,034.83	3,034.95	0.00	0.00	0.00
12,400.00	89.31	89.48	9,502.11	28.40	3,134.82	3,134.95	0.00	0.00	0.00
12,500.00	89.31	89.48	9,503.31	29.30	3,234.81	3,234.94	0.00	0.00	0.00
12,600.00	89.31	89.48	9,504.52	30.21	3,334.80	3,334.93	0.00	0.00	0.00
12,700.00	89.31	89.48	9,505.73	31.11	3,434.78	3,434.93	0.00	0.00	0.00
12,800.00	89.31	89.48	9,506.93	32.02	3,534.77	3,534.92	0.00	0.00	0.00
12,900.00	89.31	89.48	9,508.14	32.92	3,634.76	3,634.91	0.00	0.00	0.00
13,000.00	89.31	89.48	9,509.34	33.83	3,734.75	3,734.90	0.00	0.00	0.00
13,100.00	89.31	89.48	9,510.55	34.74	3,834.74	3,834.90	0.00	0.00	0.00
13,200.00	89.31	89.48	9,511.75	35.64	3,934.73	3,934.89	0.00	0.00	0.00
13,300.00	89.31	89.48	9,512.96	36.55	4,034.72	4,034.88	0.00	0.00	0.00
13,400.00	89.31	89.48	9,514.17	37.45	4,134.70	4,134.87	0.00	0.00	0.00
13,500.00	89.31	89.48	9,515.37	38.36	4,234.69	4,234.87	0.00	0.00	0.00
13,600.00	89.31	89.48	9,516.58	39.26	4,334.68	4,334.86	0.00	0.00	0.00
13,700.00	89.31	89.48	9,517.78	40.17	4,434.67	4,434.85	0.00	0.00	0.00
13,800.00	89.31	89.48	9,518.99	41.08	4,534.66	4,534.85	0.00	0.00	0.00



Scientific Drilling
Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Tres State #1H
Well: Tres State #1H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Site Tres State #1H
GL Elev @ 4111.00usft
GL Elev @ 4111.00usft
Grid
Minimum Curvature

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)
13,883.86	89.31	89.48	9,520.00	41.84	4,618.51	4,618.70	0.00	0.00	0.00
PBHL-Tres State #1H									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N-S (usft)	+E-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/mis target									
- Shape									
PBHL-Tres State #1H	0.00	0.00	9,520.00	41.84	4,618.51	811,946.07	778,747.90	33° 13' 43.440 N	103° 25' 18.414 W
- plan hits target center									
- Point									

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N-S (usft)	+E-W (usft)	Comment	
8,992.00	8,992.00	0.00	0.00	KOP Start Build 11.99°/100'	
9,737.13	9,470.00	4.28	472.25	Land EOC hold 89.31°	



Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Tres State #1H
Wellbore: OH
Design: Plan #1 8-3/4" Hole



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dipg	TFace	VSecl	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	8992.00	0.00	0.00	8992.00	0.00	0.00	0.00	0.00	0.00	
3	9737.13	89.31	89.48	9470.00	4.28	472.25	11.99	89.48	472.27	
4	13883.86	89.31	89.48	9520.00	41.83	4618.51	0.00	0.00	4618.70	PBHL-Tres State #1H

WELL DETAILS: Tres State #1H

+N/-S	+E/-W	Northing	Ground Level:	Easting	Latitude	Longitude	Slot
0.00	0.00	811904.23	4111.00	774129.39	33°13' N	103°26' W	12.785 W

LEGEND

— Plan #1 8-3/4" Hole

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL-Tres State #1H	9520.00	41.83	4618.51	811948.07	778747.90	33°13' N	103°25' W	Point

Plan: Plan #1 8-3/4" Hole (Tres State #1H/OH)

Created By: Julio Pina Date: 06-Dec-11

Checked: Date:

Reviewed: Date:

PROJECT DETAILS: Eddy County, NM (NAN27 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

