

Submit 1 Copy To Appropriate District

Office

District I

1625 N. French Dr., Hobbs, NM 88240

District II

1301 W. Grand Ave., Artesia, NM 88210

District III

1000 Rio Brazos Rd., Aztec, NM 87410

District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

87505

State of New Mexico

Energy, Minerals and Natural Resources

Form C-103

October 13, 2009

HOBBS OCD

SEP 28 2012

RECEIVED

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

WELL API NO.

30-025-39884

5. Indicate Type of Lease

STATE ☒ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name

Macho State

8. Well Number

1

9. OGRID Number

229137

10. Pool name or Wildcat

Bell Lake; Bone Spring

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐

2. Name of Operator

COG Operating LLC

3. Address of Operator

2208 W. Main Street, Artesia, NM 88210

4. Well Location

Unit Letter D : 660 feet from the North line and 190 feet from the West line
Section 2 Township 24S Range 33E NMPM Lea County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

3649.1'

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐

TEMPORARILY ABANDON ☐ CHANGE PLANS ☐

PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐

DOWNHOLE COMMINGLE ☐

OTHER: APD Change ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐

COMMENCE DRILLING OPNS. ☐ P AND A ☐

CASING/CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

COG Operating LLC respectfully requests the following SHL and BHL changes to the original approved APD.

From: SHL: 330' FNL & 330' FWL

BHL: 380' FNL & 330' FEL

* To: SHL: 660' FNL & 190' FWL *
BHL: 330' FNL & 330' FEL

The change is requested due to the discovery of an active buried gas line.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE

Mayte Reyes

TITLE: Regulatory Analyst

DATE: 9/27/2012

Type or print name: Mayte Reyes

E-mail address: mreyes1@conchoresources.com

PHONE: (575) 748-6945

For State Use Only

APPROVED BY:

[Signature]

TITLE

Petroleum Engineer

DATE

OCT 01 2012

Conditions of Approval (if any):

OCT 01 2012

DISTRICT I

1125 N. FRENCH DR., HOBBS, NM 88240

State of New Mexico

Energy, Minerals and Natural Resources Department

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III

1000 RIO BRAZOS RD., AZTEC, NM 87410

DISTRICT IV

11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

OIL CONSERVATION DIVISION

11885 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

HOBBS OCD

Form C-102

Revised October 12, 2010

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

SEP 28 2012

WELL LOCATION AND ACREAGE DEDICATION PLAT

RECEIVED

☐ AMENDED REPORT

API Number 30-025-39884	Pool Code 5130	Pool Name Bell Lake; Bone Spring
Property Code	Property Name MACHO STATE	Well Number 1H
GRID No.	Operator Name COG OPERATING, LLC	Elevation 3649.1'

Surface Location

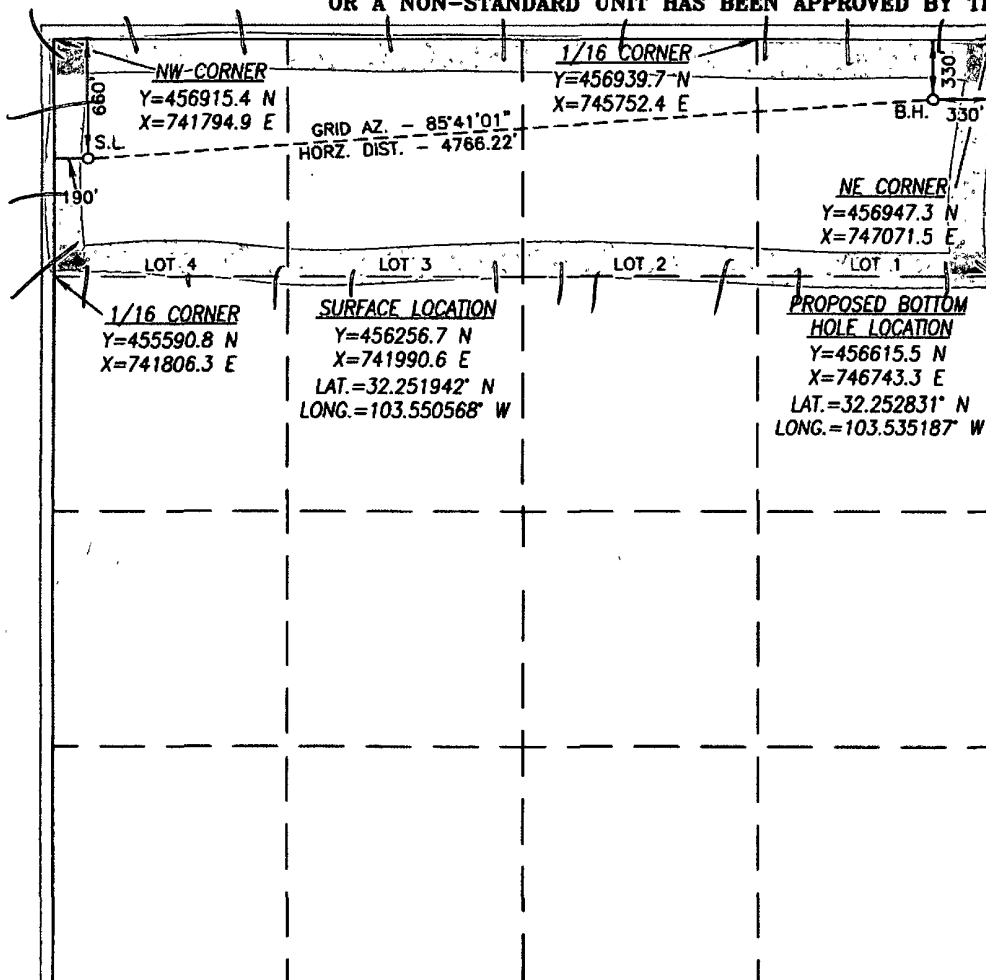
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	2	24-S	33-E		660	NORTH	190	WEST	LEA

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
1	2	24-S	33-E		330	NORTH	330	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
159.16			

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



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.

Melanie Barker 9/27/12
Signature Date
Melanie J. Barker
Printed Name

SURVEYOR CERTIFICATION

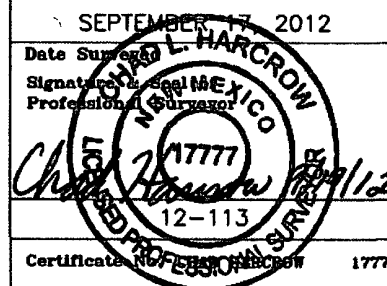
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

SEPTEMBER 17, 2012

Date Surveyed

Signature

Professional Surveyor

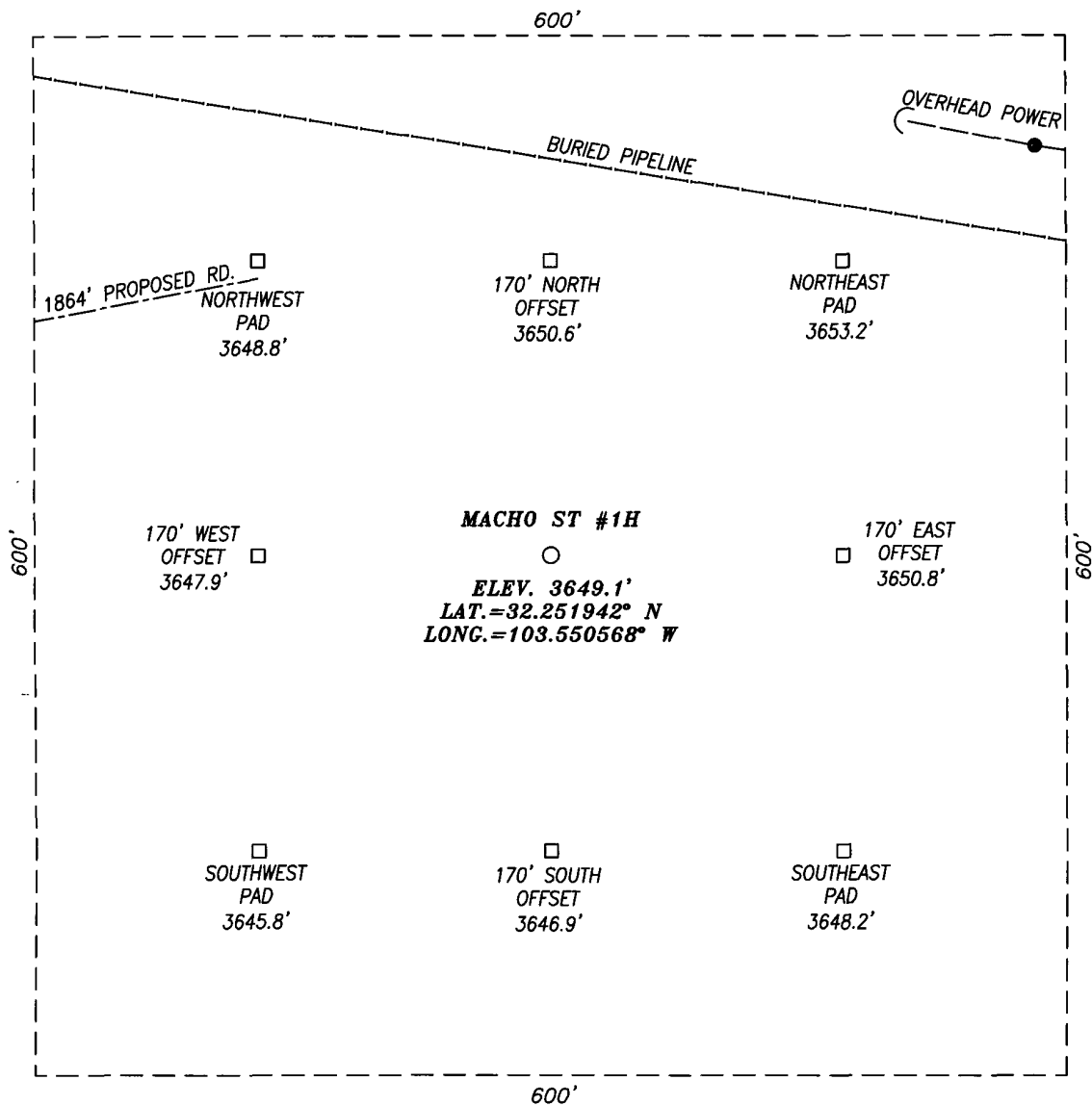


Certificate No. F-130-113

17777

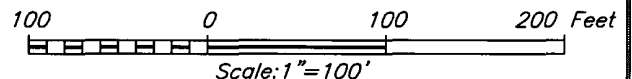
2012-037

SECTION 2, TOWNSHIP 24 SOUTH, RANGE 33 EAST, N.M.P.M.,
LEA COUNTY NEW MEXICO



DIRECTIONS TO LOCATION:

HEADING EAST ON HWY. 128 TURN LEFT ONTO CALICHE LEASE ROAD 0.6 MILES PAST MILE MARKER 28. FOLLOW CALICHE LEASE ROAD FOR 2.8 MILES THEN TURN RIGHT ONTO A CALICHE ROAD. FOLLOW CALICHE ROAD FOR 0.7 MILES TO THE EXISTING JACKSON 3 ST. COM #2 WELL PAD. PROPOSED ROAD BEGINS AT SOUTHEAST CORNER OF EXISTING PAD AND GOES NORTHEAST APPROX. 0.3 MILES TO PROPOSED WELL.

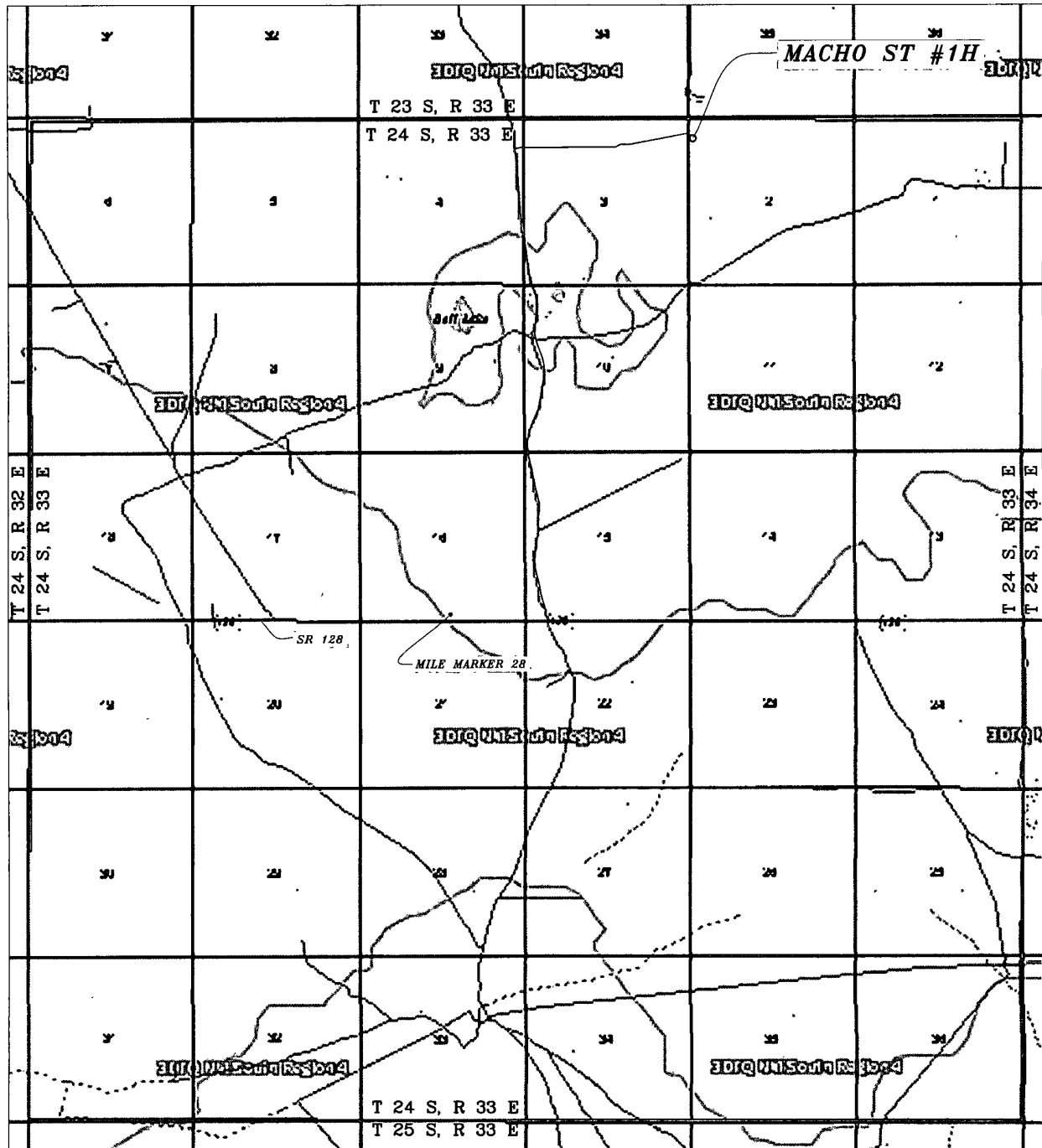


COG OPERATING, LLC

MACHO ST #1H WELL
LOCATED 660 FEET FROM THE NORTH LINE
AND 190 FEET FROM THE WEST LINE OF SECTION 2,
TOWNSHIP 24 SOUTH, RANGE 33 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO

SURVEY DATE: SEPTEMBER 13, 2012	PAGE: 1 OF 1
DRAFTING DATE: SEPTEMBER 17, 2012	
APPROVED BY: CH	DRAWN BY: DDSI FILE: 12-113

VICINITY MAP



SEC. 2 TWP. 24-S RGE. 33-E
 SURVEY N.M.P.M.
 COUNTY LEA STATE NEW MEXICO
 DESCRIPTION 660' FNL & 190' FWL
 ELEVATION 3649'
 OPERATOR COG OPERATING, LLC
 LEASE MACHO ST

SCALE: 1" = 1 MILE

HARCROW SURVEYING
 1107 WATSON, ARTESIA N.M. 88210
 PH (575) 513-2570
 FAX (575) 746-2808
 EST 2007



COG OPERATING, LLC

SURVEY DATE: SEPT. 13, 2012

PAGE: 1 OF 1

DRAFTING DATE: SEPT. 17, 2012

APPROVED BY: CH

DRAWN BY: DDSI

FILE: 12-113



HOBBS OCD

SEP 28 2012

RECEIVED

COG Operating LLC

Lea County, NM

Macho State

#1H

OH

Plan: Plan #2

Standard Planning Report

20 September, 2012



Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	Well @ 3671 10ft (Basic #46 - 22' KB)
Project:	Lea County, NM	MD Reference:	Well @ 3671 10ft (Basic #46 - 22' KB)
Site:	Macho State	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Project	Lea County, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Macho State		
Site Position:		Northing:	456,256 70 ft
From:	Map	Easting:	741,990 60 ft
Position Uncertainty:	2 00 ft	Slot Radius:	13 200 in
		Latitude:	32 251939
		Longitude:	-103 550573
		Grid Convergence:	0.42 °

Well	#1H		
Well Position	+N/-S	0 00 ft	Northing: 456,256 70 ft
	+E/-W	0 00 ft	Easting: 741,990 60 ft
Position Uncertainty	0 00 ft	Wellhead Elevation:	Latitude: 32 251939
			Longitude: -103 550573
			Ground Level: 3,649 10 ft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF200510	5/21/2012	7 46
			Dip Angle
			(°)
			60.22
			Field Strength
			(nT)
			48,580

Design	Plan #2		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0 00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0 00	0.00	0 00
			Direction
			(°)
			85 68

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
0 00	0 00	0 00	0.00	0 00	0 00	0 00	0 00	0 00	0 00	
10,648 50	0 00	0 00	10,648 50	0 00	0 00	0 00	0 00	0 00	0 00	
11,426 27	93 36	85 68	11,125 00	38 06	503 86	12 00	12 00	0 00	85 68	
15,694 53	93.36	85 68	10,874 84	359 02	4,752.68	0 00	0 00	0 00	0 00 PBHL (M#1H)	



Planning Report



Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	Well @ 3671 10ft (Basic #46 - 22' KB)
Project:	Lea County, NM	MD Reference:	Well @ 3671 10ft (Basic #46 - 22' KB)
Site:	Macho State	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
100 00	0 00	0 00	100 00	0 00	0 00	0 00	0 00	0 00	0 00
200 00	0 00	0 00	200 00	0 00	0 00	0 00	0 00	0 00	0 00
300 00	0 00	0 00	300 00	0 00	0 00	0 00	0 00	0 00	0 00
400 00	0 00	0 00	400 00	0 00	0 00	0 00	0 00	0 00	0 00
500 00	0 00	0 00	500 00	0 00	0 00	0 00	0 00	0 00	0 00
600 00	0 00	0 00	600 00	0 00	0 00	0 00	0 00	0 00	0 00
700 00	0 00	0 00	700 00	0 00	0 00	0 00	0 00	0 00	0 00
800 00	0 00	0 00	800 00	0 00	0 00	0 00	0 00	0 00	0 00
900 00	0 00	0 00	900 00	0 00	0 00	0 00	0 00	0 00	0 00
1,000 00	0 00	0 00	1,000 00	0 00	0 00	0 00	0 00	0 00	0 00
1,100 00	0 00	0 00	1,100 00	0 00	0 00	0 00	0 00	0 00	0 00
1,200 00	0 00	0 00	1,200 00	0 00	0 00	0 00	0 00	0 00	0 00
1,300 00	0 00	0 00	1,300 00	0 00	0 00	0 00	0 00	0 00	0 00
1,400 00	0 00	0 00	1,400 00	0 00	0 00	0 00	0 00	0 00	0 00
1,500 00	0 00	0 00	1,500 00	0 00	0 00	0 00	0 00	0 00	0 00
1,600 00	0 00	0 00	1,600 00	0 00	0 00	0 00	0 00	0 00	0 00
1,700 00	0 00	0 00	1,700 00	0 00	0 00	0 00	0 00	0 00	0 00
1,800 00	0 00	0 00	1,800 00	0 00	0 00	0 00	0 00	0 00	0 00
1,900 00	0 00	0 00	1,900 00	0 00	0 00	0 00	0 00	0 00	0 00
2,000 00	0 00	0 00	2,000 00	0 00	0 00	0 00	0 00	0 00	0 00
2,100 00	0 00	0 00	2,100 00	0 00	0 00	0 00	0 00	0 00	0 00
2,200 00	0 00	0 00	2,200 00	0 00	0 00	0 00	0 00	0 00	0 00
2,300 00	0 00	0 00	2,300 00	0 00	0 00	0 00	0 00	0 00	0 00
2,400 00	0 00	0 00	2,400 00	0 00	0 00	0 00	0 00	0 00	0 00
2,500 00	0 00	0 00	2,500 00	0 00	0 00	0 00	0 00	0 00	0 00
2,600 00	0 00	0 00	2,600 00	0 00	0 00	0 00	0 00	0 00	0 00
2,700 00	0 00	0 00	2,700 00	0 00	0 00	0 00	0 00	0 00	0 00
2,800 00	0 00	0 00	2,800 00	0 00	0 00	0 00	0 00	0 00	0 00
2,900 00	0 00	0 00	2,900 00	0 00	0 00	0 00	0 00	0 00	0 00
3,000 00	0 00	0 00	3,000 00	0 00	0 00	0 00	0 00	0 00	0 00
3,100 00	0 00	0 00	3,100 00	0 00	0 00	0 00	0 00	0 00	0 00
3,200 00	0 00	0 00	3,200 00	0 00	0 00	0 00	0 00	0 00	0 00
3,300 00	0 00	0 00	3,300 00	0 00	0 00	0 00	0 00	0 00	0 00
3,400 00	0 00	0 00	3,400 00	0 00	0 00	0 00	0 00	0 00	0 00
3,500 00	0 00	0 00	3,500 00	0 00	0 00	0 00	0 00	0 00	0 00
3,600 00	0 00	0 00	3,600 00	0 00	0 00	0 00	0 00	0 00	0 00
3,700 00	0 00	0 00	3,700 00	0 00	0 00	0 00	0 00	0 00	0 00
3,800 00	0 00	0 00	3,800 00	0 00	0 00	0 00	0 00	0 00	0 00
3,900 00	0 00	0 00	3,900 00	0 00	0 00	0 00	0 00	0 00	0 00
4,000 00	0 00	0 00	4,000 00	0 00	0 00	0 00	0 00	0 00	0 00
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4,200 00	0 00	0 00	4,200 00	0 00	0 00	0 00	0 00	0 00	0 00
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4,500 00	0 00	0 00	4,500 00	0 00	0 00	0 00	0 00	0 00	0 00
4,600 00	0 00	0 00	4,600 00	0 00	0 00	0 00	0 00	0 00	0 00
4,700 00	0 00	0 00	4,700 00	0 00	0 00	0 00	0 00	0 00	0 00
4,800 00	0 00	0 00	4,800 00	0 00	0 00	0 00	0 00	0 00	0 00
4,900 00	0 00	0 00	4,900 00	0 00	0 00	0 00	0 00	0 00	0 00
5,000 00	0 00	0 00	5,000 00	0 00	0 00	0 00	0 00	0 00	0 00
5,100 00	0 00	0 00	5,100 00	0 00	0 00	0 00	0 00	0 00	0 00
5,200 00	0 00	0 00	5,200 00	0 00	0 00	0 00	0 00	0 00	0 00
5,300 00	0 00	0 00	5,300 00	0 00	0 00	0 00	0 00	0 00	0 00

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	Well @ 3671 10ft (Basic #46 - 22' KB)
Project:	Lea County, NM	MD Reference:	Well @ 3671 10ft (Basic #46 - 22' KB)
Site:	Macho State	North Reference:	Grd
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00
9,900.00	0.00	0.00	9,900.00	0.00	0.00	0.00	0.00	0.00	0.00
10,000.00	0.00	0.00	10,000.00	0.00	0.00	0.00	0.00	0.00	0.00
10,100.00	0.00	0.00	10,100.00	0.00	0.00	0.00	0.00	0.00	0.00
10,200.00	0.00	0.00	10,200.00	0.00	0.00	0.00	0.00	0.00	0.00
10,300.00	0.00	0.00	10,300.00	0.00	0.00	0.00	0.00	0.00	0.00
10,400.00	0.00	0.00	10,400.00	0.00	0.00	0.00	0.00	0.00	0.00
10,500.00	0.00	0.00	10,500.00	0.00	0.00	0.00	0.00	0.00	0.00
10,600.00	0.00	0.00	10,600.00	0.00	0.00	0.00	0.00	0.00	0.00
10,648.50	0.00	0.00	10,648.50	0.00	0.00	0.00	0.00	0.00	0.00

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	Well @ 3671 10ft (Basic #46 - 22' KB)
Project:	Lea County, NM	MD Reference:	Well @ 3671 10ft (Basic #46 - 22' KB)
Site:	Macho State	North Reference:	Grd
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
KOP - 10648.50' MD, 10648.50' TVD, 0.00° INC, 0.00° AZI, 0.00' VS									
10,650.00	0 18	85 68	10,650.00	0 00	0 00	0 00	12 00	12 00	0 00
10,675.00	3 18	85 68	10,674.99	0 06	0 73	0 74	12 00	12 00	0 00
10,700.00	6 18	85 68	10,699.90	0 21	2 77	2 78	12 00	12 00	0 00
10,725.00	9 18	85 68	10,724.67	0 46	6 10	6 12	12 00	12 00	0 00
10,750.00	12 18	85 68	10,749.24	0 81	10 72	10 75	12 00	12 00	0 00
10,775.00	15 18	85 68	10,773.52	1 26	16 62	16 66	12 00	12 00	0 00
10,800.00	18 19	85 68	10,797.47	1 80	23 77	23 84	12 00	12 00	0 00
10,825.00	21 19	85 68	10,821.01	2 43	32 17	32 26	12 00	12 00	0 00
10,850.00	24 19	85 68	10,844.07	3 16	41 78	41 90	12 00	12 00	0 00
10,875.00	27 19	85 68	10,866.60	3 97	52 59	52 74	12 00	12 00	0 00
10,900.00	30 19	85 68	10,888.52	4 88	64 55	64 74	12 00	12 00	0 00
10,925.00	33 19	85 68	10,909.79	5 87	77 65	77 87	12 00	12 00	0 00
10,950.00	36 19	85 68	10,930.35	6 94	91 84	92 10	12 00	12 00	0 00
10,975.00	39 19	85 68	10,950.13	8 09	107 08	107 38	12 00	12 00	0 00
11,000.00	42 19	85 68	10,969.08	9 32	123 33	123 68	12 00	12 00	0 00
11,025.00	45 19	85 68	10,987.16	10 62	140 55	140 95	12 00	12 00	0 00
11,050.00	48 19	85 68	11,004.30	11 99	158 69	159 14	12 00	12 00	0 00
11,075.00	51 20	85 68	11,020.47	13 42	177 69	178 20	12 00	12 00	0 00
11,100.00	54 20	85 68	11,035.62	14 92	197 52	198 08	12 00	12 00	0 00
11,125.00	57 20	85 68	11,049.71	16 48	218 11	218 73	12 00	12 00	0 00
11,150.00	60 20	85 68	11,062.70	18 09	239 41	240 09	12 00	12 00	0 00
11,175.00	63 20	85 68	11,074.55	19 74	261 36	262 10	12 00	12 00	0 00
11,200.00	66 20	85 68	11,085.23	21 45	283 89	284 70	12 00	12 00	0 00
11,225.00	69 20	85 68	11,094.71	23 19	306 95	307 83	12 00	12 00	0 00
11,250.00	72 20	85 68	11,102.98	24 96	330 48	331 42	12 00	12 00	0 00
11,275.00	75 20	85 68	11,109.99	26 77	354 40	355 41	12 00	12 00	0 00
11,300.00	78 20	85 68	11,115.74	28 60	378 66	379 74	12 00	12 00	0 00
11,325.00	81 20	85 68	11,120.21	30 46	403 19	404 33	12 00	12 00	0 00
11,350.00	84 21	85 68	11,123.38	32 32	427 91	429 13	12 00	12 00	0 00
11,375.00	87 21	85 68	11,125.25	34 20	452 77	454 06	12 00	12 00	0 00
11,400.00	90 21	85 68	11,125.82	36 09	477 69	479 05	12 00	12 00	0 00
11,426.26	93 36	85 68	11,125.00	38 06	503 86	505 29	12 00	12 00	0 00
EOC - 11426.26' MD, 11125.00' TVD, 93.36° INC, 85.68° AZI, 505.29' VS									
11,500.00	93 36	85 68	11,120.68	43 61	577 26	578 90	0 00	0 00	0 00
11,600.00	93 36	85 68	11,114.82	51 13	676 80	678 73	0 00	0 00	0 00
11,700.00	93 36	85 68	11,108.96	58 65	776 35	778 56	0 00	0 00	0 00
11,800.00	93 36	85 68	11,103.10	66 17	875 89	878 39	0 00	0 00	0 00
11,900.00	93 36	85 68	11,097.23	73 69	975 44	978 22	0 00	0 00	0 00
12,000.00	93 36	85 68	11,091.37	81 21	1,074 98	1,078 04	0 00	0 00	0 00
12,100.00	93 36	85 68	11,085.51	88 73	1,174 53	1,177 87	0 00	0 00	0 00
12,200.00	93 36	85 68	11,079.65	96 25	1,274 07	1,277 70	0 00	0 00	0 00
12,300.00	93 36	85 68	11,073.79	103 76	1,373 62	1,377 53	0 00	0 00	0 00
12,400.00	93 36	85 68	11,067.93	111 28	1,473 16	1,477 36	0 00	0 00	0 00
12,500.00	93 36	85 68	11,062.07	118 80	1,572 70	1,577 19	0 00	0 00	0 00
12,600.00	93 36	85 68	11,056.21	126 32	1,672 25	1,677 01	0 00	0 00	0 00
12,700.00	93 36	85 68	11,050.35	133 84	1,771 79	1,776 84	0 00	0 00	0 00
12,800.00	93 36	85 68	11,044.49	141 36	1,871 34	1,876 67	0 00	0 00	0 00
12,900.00	93 36	85 68	11,038.63	148 88	1,970 88	1,976 50	0 00	0 00	0 00
13,000.00	93 36	85 68	11,032.76	156 40	2,070 43	2,076 33	0 00	0 00	0 00
13,100.00	93 36	85 68	11,026.90	163 92	2,169 97	2,176 15	0 00	0 00	0 00
13,200.00	93 36	85 68	11,021.04	171 44	2,269 52	2,275 98	0 00	0 00	0 00
13,300.00	93 36	85 68	11,015.18	178 96	2,369 06	2,375 81	0 00	0 00	0 00
13,400.00	93 36	85 68	11,009.32	186 48	2,468 60	2,475 64	0 00	0 00	0 00

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	Well @ 3671 10ft (Basic #46 - 22' KB)
Project:	Lea County, NM	MD Reference:	Well @ 3671 10ft (Basic #46 - 22' KB)
Site:	Macho State	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,500 00	93 36	85 68	11,003 46	194 00	2,568 15	2,575 47	0.00	0 00	0 00
13,600 00	93 36	85 68	10,997 60	201 52	2,667 69	2,675 29	0 00	0 00	0 00
13,700 00	93 36	85 68	10,991 74	209 04	2,767 24	2,775 12	0.00	0 00	0 00
13,800 00	93 36	85 68	10,985 88	216 56	2,866 78	2,874 95	0.00	0 00	0 00
13,900 00	93 36	85 68	10,980 02	224 08	2,966 33	2,974 78	0 00	0 00	0 00
14,000 00	93 36	85 68	10,974 16	231 60	3,065 87	3,074 61	0 00	0 00	0 00
14,100 00	93 36	85 68	10,968 29	239 12	3,165 42	3,174 44	0 00	0 00	0 00
14,200 00	93 36	85 68	10,962 43	246 64	3,264 96	3,274 26	0 00	0 00	0 00
14,300 00	93 36	85 68	10,956 57	254 16	3,364 51	3,374 09	0 00	0 00	0 00
14,400 00	93 36	85 68	10,950 71	261 68	3,464 05	3,473 92	0 00	0 00	0 00
14,500 00	93 36	85 68	10,944 85	269 20	3,563 59	3,573 75	0 00	0 00	0 00
14,600 00	93 36	85 68	10,938 99	276 72	3,663 14	3,673 58	0 00	0 00	0 00
14,700 00	93 36	85 68	10,933 13	284 24	3,762 68	3,773 40	0 00	0 00	0 00
14,800 00	93 36	85 68	10,927 27	291 76	3,862 23	3,873 23	0 00	0 00	0 00
14,900 00	93 36	85 68	10,921 41	299 28	3,961 77	3,973 06	0 00	0 00	0 00
15,000 00	93 36	85 68	10,915 55	306 80	4,061 32	4,072 89	0 00	0 00	0 00
15,100 00	93 36	85 68	10,909 68	314 32	4,160 86	4,172 72	0 00	0 00	0 00
15,200 00	93 36	85 68	10,903 82	321 84	4,260 41	4,272 54	0 00	0 00	0 00
15,300 00	93 36	85 68	10,897 96	329 36	4,359 95	4,372 37	0 00	0 00	0 00
15,400 00	93 36	85 68	10,892 10	336 88	4,459 49	4,472 20	0 00	0 00	0 00
15,500 00	93 36	85 68	10,886 24	344 40	4,559 04	4,572 03	0 00	0 00	0 00
15,600 00	93 36	85 68	10,880 38	351 92	4,658 58	4,671 86	0 00	0 00	0 00
15,694 53	93 36	85 68	10,874 84	359 02	4,752 68	4,766 22	0 00	0 00	0 00
TD @ 15694.53' MD, 10874.84' TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL (M#1H)	0 00	0 00	10,875 00	358 80	4,752 70	456,615.50	746,743 30	32 252829	-103 535192
- plan misses target center by 0 28ft at 15694 52ft MD (10874 84 TVD, 359 02 N, 4752 67 E)									
- Point									

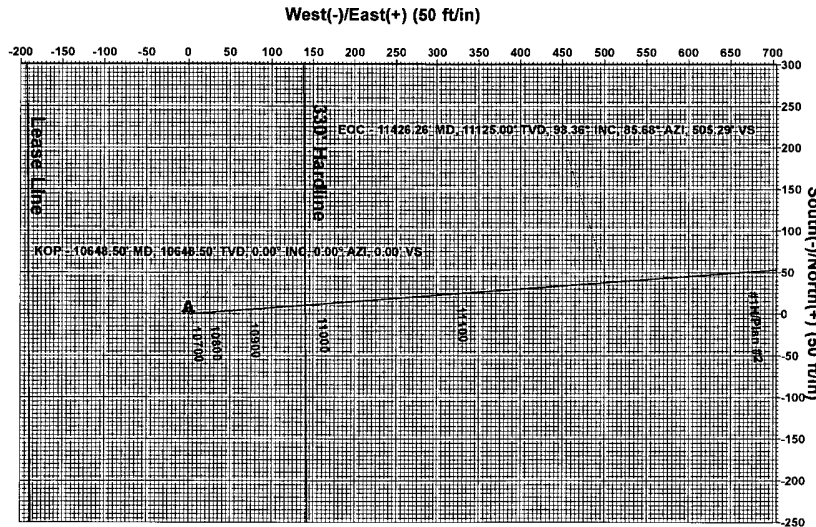
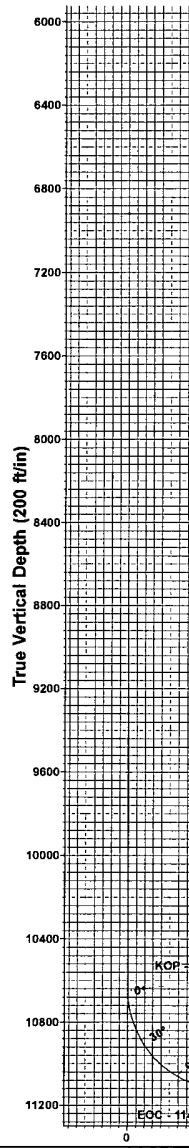
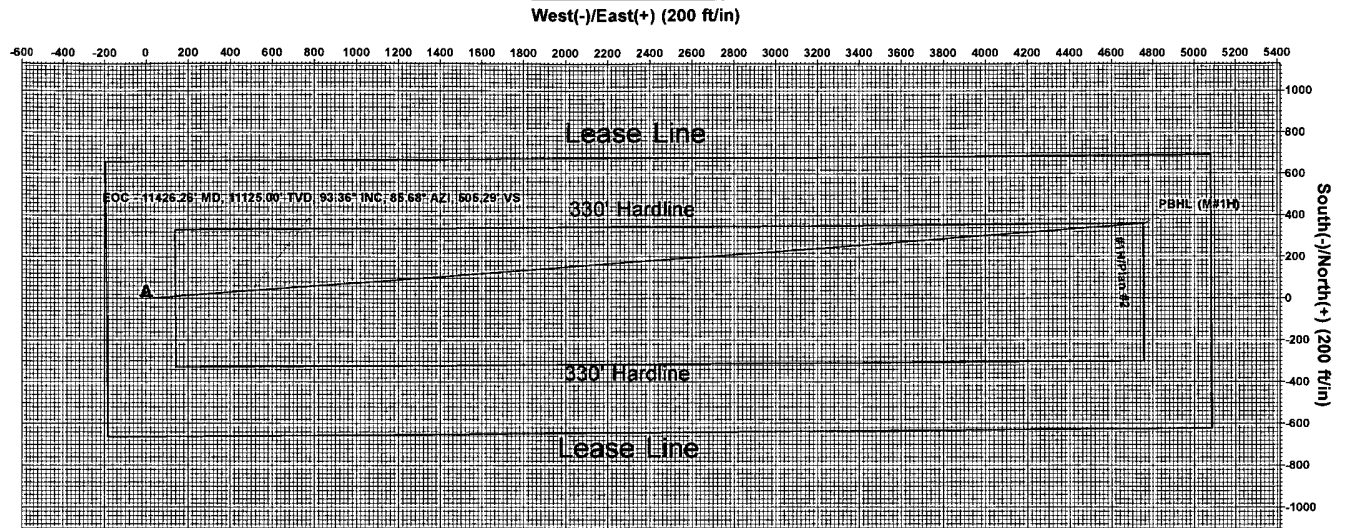
Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
10,648 50	10,648 50	0 00	0 00	KOP - 10648 50' MD, 10648 50' TVD, 0 00° INC, 0 00° AZI, 0 00' VS
11,426 26	11,125 00	38 06	503 86	EOC - 11426 26' MD, 11125 00' TVD, 93 36° INC, 85 68° AZI, 505 29' VS
15,694 53	10,874 84	359 02	4,752 68	TD @ 15694 53' MD, 10874.84' TVD

COG Operating LLC
 Project: Lea County, NM
 Site: Macho State
 Well: #1H
 Wellbore: OH
 Plan: Plan #2 (#1H/OH)



Azimuths to Grid North
 True North: -0.42°
 Magnetic North: 7.04°

Magnetic Field
 Strength: 48580.3snT
 Dip Angle: 60.22°
 Date: 5/21/2012
 Model: IGRF200510



Section Details										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	10648.50	0.00	0.00	10648.50	0.00	0.00	0.00	0.00	0.00	
3	11426.26	93.36	85.68	11125.00	38.06	503.86	12.00	85.68	505.30	
4	15694.53	93.36	85.68	10874.84	359.02	4752.68	0.00	0.00	4766.22	PBHL (M#1H)

WELL DETAILS: #1H

Ground Elevation:: 3649.10
 RKB Elevation: Well @ 3671.10ft (Basic #46 - 22' KB)
 Rig Name: Basic #46 - 22' KB

Surface Hole Location		Latitude	Longitude
Northing	Easting		
456256.70	741990.60	32.251939	-103.550573

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (M#1H)	10875.00	358.80	4752.70	456615.50	746743.30

PROJECT DETAILS: Lea County, NM
 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
 Local North: Grid



Crescent Directional Drilling
 7715 West Industrial Ave. Midland, Tx 79706
 Phone: 432-618-1135

Plan: Plan #2 (#1H/OH)
 Created By: Matt Higgins Date: 11:51, September 20 2012