

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

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
October 13, 2009

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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.)		WELL API NO. 30-015-37255
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator COG Operating LLC		6. State Oil & Gas Lease No.
3. Address of Operator 2208 W. Main Street, Artesia, NM 88210		7. Lease Name or Unit Agreement Name Down South State Com
4. Well Location Unit Letter <u>I</u> : <u>2180</u> feet from the <u>South</u> line and <u>330</u> feet from the <u>East</u> line Section <u>19</u> Township <u>26S</u> Range <u>28E</u> NMPM <u>Eddy</u> County		8. Well Number 3H
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3030'		9. OGRID Number 229137
		10. Pool name or Wildcat Hay Hollow; Bone Spring

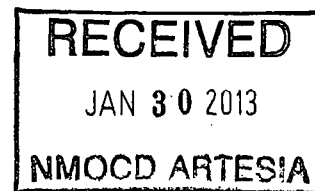
12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO: PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐ TEMPORARILY ABANDON ☐ CHANGE PLANS ☐ PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐ DOWNHOLE COMMINGLE ☐ OTHER: Drilling Program Changes ☒	SUBSEQUENT REPORT OF: REMEDIAL WORK ☐ ALTERING CASING ☐ COMMENCE DRILLING OPNS. ☐ P AND A ☐ CASING/CEMENT JOB ☐ OTHER: ☐
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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 approval for the following drilling program changes to the original APD.

- Int TD @ 2310'
- Prod TD @ 12,246 MD / 7,680' TVD
- There will be NO PH drilled on the well. It is permitted for a PH.
- It will be a 2nd BSS well



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: 1/25/2013
Type or print name: Mayte Reyes E-mail address: mreyes1@conchoresources.com PHONE: (575) 748-6945
For State Use Only
APPROVED BY: T.C. Shepard TITLE: Podgrist DATE: 1/31/2013
Conditions of Approval (if any):



COG Operating LLC

**Eddy County, NM
Down South State Com
#3H**

OH

Plan: Plan #1

Standard Planning Report

19 October, 2012



Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #3H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3047.5usft (Silver Oak #7 - 17.5' KB)
Project:	Eddy County, NM	MD Reference:	WELL @ 3047.5usft (Silver Oak #7 - 17.5' KB)
Site:	Down South State Com	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Eddy 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	Down South State Com		
Site Position:		Northing:	374,555.85 usft
From:	Map	Easting:	566,529.67 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	32° 1' 46.512 N
		Longitude:	104° 7' 7.137 W
		Grid Convergence:	0.11 °

Well	#3H					
Well Position	+N/-S	-1,042.8 usft	Northing:	373,513.10 usft	Latitude:	32° 1' 36.192 N
	+E/-W	2.2 usft	Easting:	566,531.90 usft	Longitude:	104° 7' 7.135 W
Position Uncertainty		2.0 usft	Wellhead Elevation:		Ground Level:	3,030.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/19/2012	7.66	59.88	48,305

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	265.76

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,322.8	0.00	0.00	7,322.8	0.0	0.0	0.00	0.00	0.00	0.00	
8,086.4	91.65	265.76	7,800.0	-36.3	-489.8	12.00	12.00	0.00	265.76	
12,245.9	91.65	265.76	7,680.2	-343.7	-4,636.2	0.00	0.00	0.00	0.00	PBHL (DS#3H)

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Site:	Down South State Com	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00



Planning Report



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Wellbore:	OH		
Design:	Plan #1		

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)	
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,322.8	0.00	0.00	7,322.8	0.0	0.0	0.0	0.00	0.00	0.00	
KOP - 7322.8' MD, 7322.8' TVD, 0.00° INC, 0.00° AZI, 0.0° VS										
7,325.0	0.26	265.76	7,325.0	0.0	0.0	0.0	12.00	12.00	0.00	
7,350.0	3.26	265.76	7,350.0	-0.1	-0.8	0.8	12.00	12.00	0.00	
7,375.0	6.26	265.76	7,374.9	-0.2	-2.8	2.9	12.00	12.00	0.00	
7,400.0	9.27	265.76	7,399.7	-0.5	-6.2	6.2	12.00	12.00	0.00	
7,425.0	12.27	265.76	7,424.2	-0.8	-10.9	10.9	12.00	12.00	0.00	
7,450.0	15.27	265.76	7,448.5	-1.2	-16.8	16.8	12.00	12.00	0.00	
7,475.0	18.27	265.76	7,472.4	-1.8	-24.0	24.1	12.00	12.00	0.00	
7,500.0	21.27	265.76	7,496.0	-2.4	-32.4	32.5	12.00	12.00	0.00	
7,525.0	24.27	265.76	7,519.0	-3.1	-42.1	42.2	12.00	12.00	0.00	
7,550.0	27.27	265.76	7,541.5	-3.9	-52.9	53.1	12.00	12.00	0.00	
7,575.0	30.27	265.76	7,563.4	-4.8	-64.9	65.1	12.00	12.00	0.00	
7,600.0	33.27	265.76	7,584.7	-5.8	-78.0	78.2	12.00	12.00	0.00	
7,625.0	36.27	265.76	7,605.2	-6.8	-92.2	92.5	12.00	12.00	0.00	
7,650.0	39.27	265.76	7,625.0	-8.0	-107.5	107.8	12.00	12.00	0.00	
7,675.0	42.27	265.76	7,643.9	-9.2	-123.8	124.1	12.00	12.00	0.00	
7,700.0	45.27	265.76	7,662.0	-10.5	-141.0	141.4	12.00	12.00	0.00	
7,725.0	48.27	265.76	7,679.1	-11.8	-159.2	159.6	12.00	12.00	0.00	
7,750.0	51.27	265.76	7,695.2	-13.2	-178.2	178.7	12.00	12.00	0.00	
7,775.0	54.27	265.76	7,710.3	-14.7	-198.1	198.6	12.00	12.00	0.00	
7,800.0	57.27	265.76	7,724.4	-16.2	-218.7	219.3	12.00	12.00	0.00	
7,825.0	60.27	265.76	7,737.4	-17.8	-240.0	240.7	12.00	12.00	0.00	
7,850.0	63.27	265.76	7,749.2	-19.4	-262.0	262.7	12.00	12.00	0.00	
7,875.0	66.27	265.76	7,759.8	-21.1	-284.5	285.3	12.00	12.00	0.00	
7,900.0	69.27	265.76	7,769.3	-22.8	-307.6	308.4	12.00	12.00	0.00	
7,925.0	72.27	265.76	7,777.5	-24.5	-331.1	332.0	12.00	12.00	0.00	
7,950.0	75.27	265.76	7,784.5	-26.3	-355.1	356.0	12.00	12.00	0.00	
7,975.0	78.27	265.76	7,790.2	-28.1	-379.3	380.4	12.00	12.00	0.00	
8,000.0	81.28	265.76	7,794.7	-29.9	-403.9	405.0	12.00	12.00	0.00	

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Site:	Down South State Com	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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)	
8,025.0	84.28	265.76	7,797.8	-31.8	-428.6	429.8	12.00	12.00	0.00	
8,050.0	87.28	265.76	7,799.7	-33.6	-453.5	454.7	12.00	12.00	0.00	
8,075.0	90.28	265.76	7,800.2	-35.5	-478.4	479.7	12.00	12.00	0.00	
8,086.4	91.64	265.76	7,800.0	-36.3	-489.8	491.1	12.00	12.00	0.00	
EOC - 8086.4' MD, 7800.0' TVD, 91.64° INC, 265.76° AZI, 491.1' VS										
8,100.0	91.65	265.76	7,799.6	-37.3	-503.3	504.7	0.04	0.04	0.00	
8,200.0	91.65	265.76	7,796.7	-44.7	-603.0	604.7	0.00	0.00	0.00	
8,300.0	91.65	265.76	7,793.9	-52.1	-702.7	704.6	0.00	0.00	0.00	
8,400.0	91.65	265.76	7,791.0	-59.5	-802.4	804.6	0.00	0.00	0.00	
8,500.0	91.65	265.76	7,788.1	-66.9	-902.1	904.5	0.00	0.00	0.00	
8,600.0	91.65	265.76	7,785.2	-74.3	-1,001.7	1,004.5	0.00	0.00	0.00	
8,700.0	91.65	265.76	7,782.3	-81.7	-1,101.4	1,104.4	0.00	0.00	0.00	
8,800.0	91.65	265.76	7,779.5	-89.0	-1,201.1	1,204.4	0.00	0.00	0.00	
8,900.0	91.65	265.76	7,776.6	-96.4	-1,300.8	1,304.4	0.00	0.00	0.00	
9,000.0	91.65	265.76	7,773.7	-103.8	-1,400.5	1,404.3	0.00	0.00	0.00	
9,100.0	91.65	265.76	7,770.8	-111.2	-1,500.2	1,504.3	0.00	0.00	0.00	
9,200.0	91.65	265.76	7,767.9	-118.6	-1,599.8	1,604.2	0.00	0.00	0.00	
9,300.0	91.65	265.76	7,765.1	-126.0	-1,699.5	1,704.2	0.00	0.00	0.00	
9,400.0	91.65	265.76	7,762.2	-133.4	-1,799.2	1,804.2	0.00	0.00	0.00	
9,500.0	91.65	265.76	7,759.3	-140.8	-1,898.9	1,904.1	0.00	0.00	0.00	
9,600.0	91.65	265.76	7,756.4	-148.2	-1,998.6	2,004.1	0.00	0.00	0.00	
9,700.0	91.65	265.76	7,753.5	-155.6	-2,098.3	2,104.0	0.00	0.00	0.00	
9,800.0	91.65	265.76	7,750.7	-163.0	-2,198.0	2,204.0	0.00	0.00	0.00	
9,900.0	91.65	265.76	7,747.8	-170.3	-2,297.6	2,303.9	0.00	0.00	0.00	
10,000.0	91.65	265.76	7,744.9	-177.7	-2,397.3	2,403.9	0.00	0.00	0.00	
10,100.0	91.65	265.76	7,742.0	-185.1	-2,497.0	2,503.9	0.00	0.00	0.00	
10,200.0	91.65	265.76	7,739.1	-192.5	-2,596.7	2,603.8	0.00	0.00	0.00	
10,300.0	91.65	265.76	7,736.3	-199.9	-2,696.4	2,703.8	0.00	0.00	0.00	
10,400.0	91.65	265.76	7,733.4	-207.3	-2,796.1	2,803.7	0.00	0.00	0.00	
10,500.0	91.65	265.76	7,730.5	-214.7	-2,895.8	2,903.7	0.00	0.00	0.00	
10,600.0	91.65	265.76	7,727.6	-222.1	-2,995.4	3,003.7	0.00	0.00	0.00	
10,700.0	91.65	265.76	7,724.7	-229.5	-3,095.1	3,103.6	0.00	0.00	0.00	
10,800.0	91.65	265.76	7,721.9	-236.9	-3,194.8	3,203.6	0.00	0.00	0.00	
10,900.0	91.65	265.76	7,719.0	-244.2	-3,294.5	3,303.5	0.00	0.00	0.00	
11,000.0	91.65	265.76	7,716.1	-251.6	-3,394.2	3,403.5	0.00	0.00	0.00	
11,100.0	91.65	265.76	7,713.2	-259.0	-3,493.9	3,503.5	0.00	0.00	0.00	
11,200.0	91.65	265.76	7,710.3	-266.4	-3,593.5	3,603.4	0.00	0.00	0.00	
11,300.0	91.65	265.76	7,707.5	-273.8	-3,693.2	3,703.4	0.00	0.00	0.00	
11,400.0	91.65	265.76	7,704.6	-281.2	-3,792.9	3,803.3	0.00	0.00	0.00	
11,500.0	91.65	265.76	7,701.7	-288.6	-3,892.6	3,903.3	0.00	0.00	0.00	
11,600.0	91.65	265.76	7,698.8	-296.0	-3,992.3	4,003.2	0.00	0.00	0.00	
11,700.0	91.65	265.76	7,696.0	-303.4	-4,092.0	4,103.2	0.00	0.00	0.00	
11,800.0	91.65	265.76	7,693.1	-310.8	-4,191.7	4,203.2	0.00	0.00	0.00	
11,900.0	91.65	265.76	7,690.2	-318.1	-4,291.3	4,303.1	0.00	0.00	0.00	
12,000.0	91.65	265.76	7,687.3	-325.5	-4,391.0	4,403.1	0.00	0.00	0.00	
12,100.0	91.65	265.76	7,684.4	-332.9	-4,490.7	4,503.0	0.00	0.00	0.00	
12,200.0	91.65	265.76	7,681.6	-340.3	-4,590.4	4,603.0	0.00	0.00	0.00	
12,245.9	91.65	265.76	7,680.2	-343.7	-4,636.2	4,648.9	0.00	0.00	0.00	
TD @ 12245.9' MD, 7680.2' TVD										

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #3H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3047.5usft (Silver Oak #7 - 17.5' KB)
Project:	Eddy County, NM	MD Reference:	WELL @ 3047.5usft (Silver Oak #7 - 17.5' KB)
Site:	Down South State Com	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
PBHL (DS#3H)	0.00	0.00	7,680.0	-343.7	-4,636.2	373,169.40	561,895.70	32° 1' 32.879 N	104° 8' 0.998 W
- plan misses target center by 0.2usft at 12245.9usft MD (7680.2 TVD, -343.7 N, -4636.2 E)									
- Point									

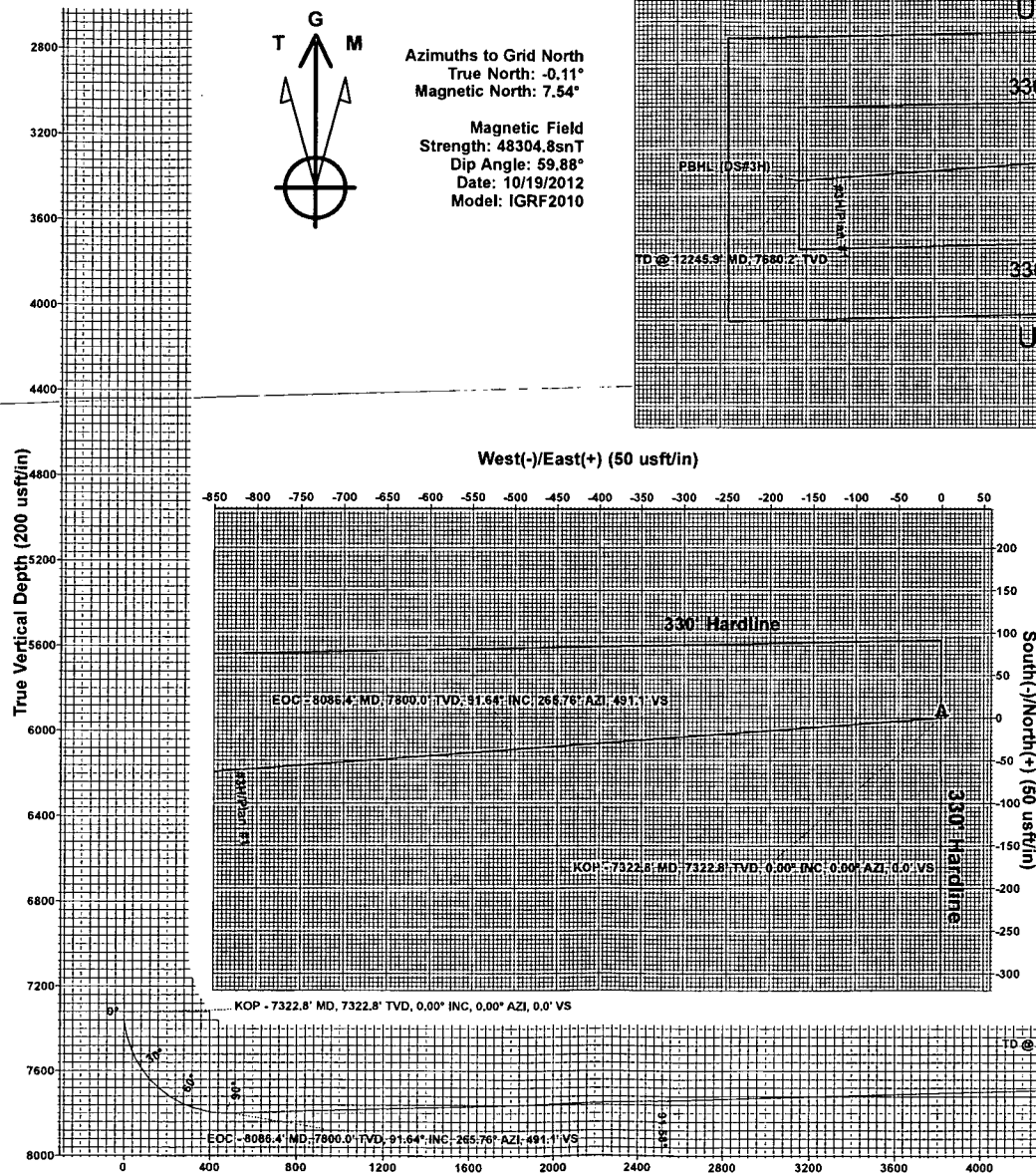
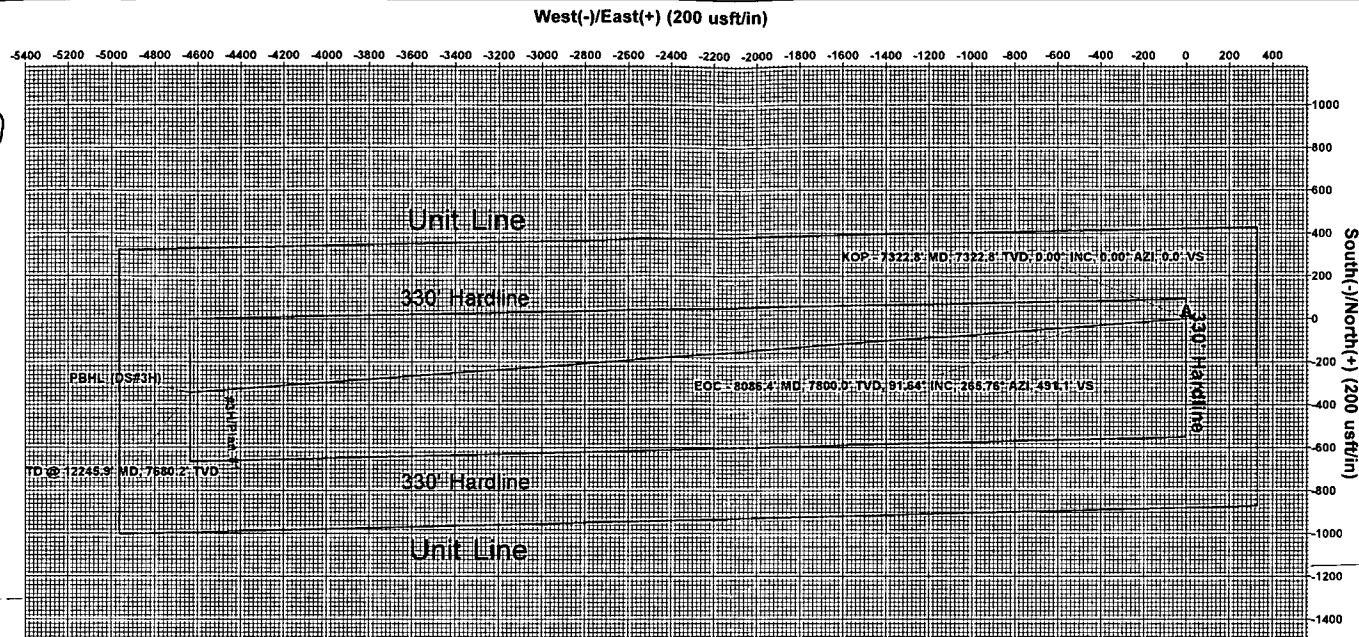
Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		
(usft)	(usft)	+N/-S	+E/-W	Comment
(usft)	(usft)	(usft)	(usft)	
7,322.8	7,322.8	0.0	0.0	KOP - 7322.8' MD, 7322.8' TVD, 0.00° INC, 0.00° AZI, 0.0' VS
8,086.4	7,800.0	-36.3	-489.8	EOC - 8086.4' MD, 7800.0' TVD, 91.64° INC, 265.76° AZI, 491.1' VS
12,245.9	7,680.2	-343.7	-4,636.2	TD @ 12245.9' MD, 7680.2' TVD

COG Operating LLC
 Project: Eddy County, NM
 Site: Down South State Com
 Well: #3H
 Wellbore: OH
 Plan: Plan #1 (#3H/OH)



Azimuths to Grid North
 True North: -0.11°
 Magnetic North: 7.54°

Magnetic Field
 Strength: 48304.8nT
 Dip Angle: 59.88°
 Date: 10/19/2012
 Model: IGRF2010



Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	7322.8	0.00	0.00	7322.8	0.0	0.0	0.00	0.00	0.0	
3	8086.4	91.65	265.76	7800.0	-36.3	-489.8	12.00	265.76	491.1	
4	12245.9	91.65	265.76	7680.2	-343.7	-4636.2	0.00	0.00	4648.9	PBHL (DS#3H)

WELL DETAILS: #3H

Ground Elevation:: 3030.0
 RKB Elevation: WELL @ 3047.5usft (Silver Oak #7 - 17.5' KB)
 Rig Name: Silver Oak #7 - 17.5' KB

Surface Hole Location
 Northing: 373513.10
 Easting: 566531.90
 Latitude: 32° 1' 36.192 N
 Longitude: 104° 7' 7.135 W

DESIGN TARGET DETAILS

Name: PBHL (DS#3H)
 TVD: 7680.0
 +N/-S: -343.7
 +E/-W: -4636.2
 Northing: 373169.40
 Easting: 561895.70

PROJECT DETAILS: Eddy 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 #1 (#3H/OH)
 Created By: Matt Higgins Date: 14:23, October 23 2012