

HOBBS OCD

APR 21 2016

RECEIVED



COG Production LLC

Lea County, NM

Dos XX 27 Federal Com

#4H

OH

Plan: Design #1

Standard Planning Report

01 June, 2015

APR 22 2016



Wellplanning Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #4H
Company:	COG Production LLC	TVD Reference:	WELL @ 3607.4usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 3607.4usft (Original Well Elev)
Site:	Dos XX 27 Federal Com	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Design #1		

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	Dos XX 27 Federal Com		
Site Position:		Northing:	435,387.70 usft
From:	Map	Easting:	709,948.90 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 11' 42.635 N
		Longitude:	103° 39' 16.677 W
		Grid Convergence:	0.36 °

Well	#4H		
Well Position	+N/-S	-17.8 usft	Northing:
	+E/-W	-1,829.5 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	
		Latitude:	32° 11' 42.573 N
		Longitude:	103° 39' 37.968 W
		Ground Level:	3,589.4 usft

Wellbore	OH		
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Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/28/2015	7.14	60.05	48,193

Design	Design #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			180.66

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)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
10,432.5	0.00	0.00	10,432.5	0.0	0.0	0.00	0.00	0.00	0.00	
11,182.6	90.00	180.66	10,910.0	-477.5	-5.5	12.00	12.00	0.00	180.66	
15,461.7	90.00	180.66	10,910.0	-4,756.3	-54.8	0.00	0.00	0.00	0.00	PBHL(DosXX#4H)



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Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Design #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
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



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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)	
5,400.0	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	
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,000.0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,200.0	0.00	0.00	9,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,500.0	0.00	0.00	9,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,000.0	0.00	0.00	10,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,100.0	0.00	0.00	10,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,200.0	0.00	0.00	10,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,300.0	0.00	0.00	10,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,400.0	0.00	0.00	10,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,432.5	0.00	0.00	10,432.5	0.0	0.0	0.0	0.00	0.00	0.00	

KOP - 10432.5 'MD, 0.00° INC, 0.00° AZI



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Wellbore:	OH		
Design:	Design #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)	
10,450.0	2.10	180.66	10,450.0	-0.3	0.0	0.3	12.00	12.00	0.00	
10,475.0	5.10	180.66	10,474.9	-1.9	0.0	1.9	12.00	12.00	0.00	
10,500.0	8.10	180.66	10,499.8	-4.8	-0.1	4.8	12.00	12.00	0.00	
10,525.0	11.10	180.66	10,524.4	-8.9	-0.1	8.9	12.00	12.00	0.00	
10,550.0	14.10	180.66	10,548.8	-14.4	-0.2	14.4	12.00	12.00	0.00	
10,575.0	17.10	180.66	10,572.9	-21.1	-0.2	21.1	12.00	12.00	0.00	
10,600.0	20.10	180.66	10,596.6	-29.1	-0.3	29.1	12.00	12.00	0.00	
10,625.0	23.10	180.66	10,619.8	-38.3	-0.4	38.3	12.00	12.00	0.00	
10,650.0	26.10	180.66	10,642.6	-48.7	-0.6	48.7	12.00	12.00	0.00	
10,675.0	29.10	180.66	10,664.7	-60.3	-0.7	60.3	12.00	12.00	0.00	
10,700.0	32.10	180.66	10,686.2	-73.0	-0.8	73.0	12.00	12.00	0.00	
10,725.0	35.10	180.66	10,707.0	-86.8	-1.0	86.8	12.00	12.00	0.00	
10,750.0	38.10	180.66	10,727.1	-101.7	-1.2	101.7	12.00	12.00	0.00	
10,775.0	41.10	180.66	10,746.4	-117.6	-1.4	117.7	12.00	12.00	0.00	
10,800.0	44.10	180.66	10,764.8	-134.6	-1.6	134.6	12.00	12.00	0.00	
10,825.0	47.10	180.66	10,782.3	-152.4	-1.8	152.4	12.00	12.00	0.00	
10,850.0	50.10	180.66	10,798.8	-171.2	-2.0	171.2	12.00	12.00	0.00	
10,875.0	53.10	180.66	10,814.3	-190.8	-2.2	190.8	12.00	12.00	0.00	
10,900.0	56.10	180.66	10,828.8	-211.1	-2.4	211.1	12.00	12.00	0.00	
10,925.0	59.10	180.66	10,842.2	-232.2	-2.7	232.3	12.00	12.00	0.00	
10,950.0	62.10	180.66	10,854.5	-254.0	-2.9	254.0	12.00	12.00	0.00	
10,975.0	65.10	180.66	10,865.6	-276.4	-3.2	276.4	12.00	12.00	0.00	
11,000.0	68.09	180.66	10,875.5	-299.3	-3.4	299.4	12.00	12.00	0.00	
11,025.0	71.09	180.66	10,884.2	-322.8	-3.7	322.8	12.00	12.00	0.00	
11,050.0	74.09	180.66	10,891.7	-346.6	-4.0	346.6	12.00	12.00	0.00	
11,075.0	77.09	180.66	10,897.9	-370.8	-4.3	370.9	12.00	12.00	0.00	
11,100.0	80.09	180.66	10,902.9	-395.3	-4.6	395.4	12.00	12.00	0.00	
11,125.0	83.09	180.66	10,906.5	-420.1	-4.8	420.1	12.00	12.00	0.00	
11,150.0	86.09	180.66	10,908.9	-444.9	-5.1	445.0	12.00	12.00	0.00	
11,175.0	89.09	180.66	10,909.9	-469.9	-5.4	469.9	12.00	12.00	0.00	
11,182.6	90.00	180.66	10,910.0	-477.5	-5.5	477.5	12.00	12.00	0.00	
EOC- 11182.6 'MD, 90.00° INC, 180.66° AZI										
11,200.0	90.00	180.66	10,910.0	-494.9	-5.7	494.9	0.00	0.00	0.00	
11,300.0	90.00	180.66	10,910.0	-594.9	-6.9	594.9	0.00	0.00	0.00	
11,400.0	90.00	180.66	10,910.0	-694.9	-8.0	694.9	0.00	0.00	0.00	
11,500.0	90.00	180.66	10,910.0	-794.9	-9.2	794.9	0.00	0.00	0.00	
11,600.0	90.00	180.66	10,910.0	-894.9	-10.3	894.9	0.00	0.00	0.00	
11,700.0	90.00	180.66	10,910.0	-994.9	-11.5	994.9	0.00	0.00	0.00	
11,800.0	90.00	180.66	10,910.0	-1,094.9	-12.6	1,094.9	0.00	0.00	0.00	
11,900.0	90.00	180.66	10,910.0	-1,194.9	-13.8	1,194.9	0.00	0.00	0.00	
12,000.0	90.00	180.66	10,910.0	-1,294.9	-14.9	1,294.9	0.00	0.00	0.00	
12,100.0	90.00	180.66	10,910.0	-1,394.9	-16.1	1,394.9	0.00	0.00	0.00	
12,200.0	90.00	180.66	10,910.0	-1,494.8	-17.2	1,494.9	0.00	0.00	0.00	
12,300.0	90.00	180.66	10,910.0	-1,594.8	-18.4	1,594.9	0.00	0.00	0.00	
12,400.0	90.00	180.66	10,910.0	-1,694.8	-19.5	1,694.9	0.00	0.00	0.00	
12,500.0	90.00	180.66	10,910.0	-1,794.8	-20.7	1,794.9	0.00	0.00	0.00	
12,600.0	90.00	180.66	10,910.0	-1,894.8	-21.8	1,894.9	0.00	0.00	0.00	
12,700.0	90.00	180.66	10,910.0	-1,994.8	-23.0	1,994.9	0.00	0.00	0.00	
12,800.0	90.00	180.66	10,910.0	-2,094.8	-24.1	2,094.9	0.00	0.00	0.00	
12,900.0	90.00	180.66	10,910.0	-2,194.8	-25.3	2,194.9	0.00	0.00	0.00	
13,000.0	90.00	180.66	10,910.0	-2,294.8	-26.4	2,294.9	0.00	0.00	0.00	
13,100.0	90.00	180.66	10,910.0	-2,394.8	-27.6	2,394.9	0.00	0.00	0.00	
13,200.0	90.00	180.66	10,910.0	-2,494.8	-28.7	2,494.9	0.00	0.00	0.00	
13,300.0	90.00	180.66	10,910.0	-2,594.8	-29.9	2,594.9	0.00	0.00	0.00	



Wellplanning Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #4H
Company:	COG Production LLC	TVD Reference:	WELL @ 3607.4usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 3607.4usft (Original Well Elev)
Site:	Dos XX 27 Federal Com	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Design #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)
13,400.0	90.00	180.66	10,910.0	-2,694.8	-31.0	2,694.9	0.00	0.00	0.00
13,500.0	90.00	180.66	10,910.0	-2,794.8	-32.2	2,794.9	0.00	0.00	0.00
13,600.0	90.00	180.66	10,910.0	-2,894.8	-33.3	2,894.9	0.00	0.00	0.00
13,700.0	90.00	180.66	10,910.0	-2,994.7	-34.5	2,994.9	0.00	0.00	0.00
13,800.0	90.00	180.66	10,910.0	-3,094.7	-35.7	3,094.9	0.00	0.00	0.00
13,900.0	90.00	180.66	10,910.0	-3,194.7	-36.8	3,194.9	0.00	0.00	0.00
14,000.0	90.00	180.66	10,910.0	-3,294.7	-38.0	3,294.9	0.00	0.00	0.00
14,100.0	90.00	180.66	10,910.0	-3,394.7	-39.1	3,394.9	0.00	0.00	0.00
14,200.0	90.00	180.66	10,910.0	-3,494.7	-40.3	3,494.9	0.00	0.00	0.00
14,300.0	90.00	180.66	10,910.0	-3,594.7	-41.4	3,594.9	0.00	0.00	0.00
14,400.0	90.00	180.66	10,910.0	-3,694.7	-42.6	3,694.9	0.00	0.00	0.00
14,500.0	90.00	180.66	10,910.0	-3,794.7	-43.7	3,794.9	0.00	0.00	0.00
14,600.0	90.00	180.66	10,910.0	-3,894.7	-44.9	3,894.9	0.00	0.00	0.00
14,700.0	90.00	180.66	10,910.0	-3,994.7	-46.0	3,994.9	0.00	0.00	0.00
14,800.0	90.00	180.66	10,910.0	-4,094.7	-47.2	4,094.9	0.00	0.00	0.00
14,900.0	90.00	180.66	10,910.0	-4,194.7	-48.3	4,194.9	0.00	0.00	0.00
15,000.0	90.00	180.66	10,910.0	-4,294.7	-49.5	4,294.9	0.00	0.00	0.00
15,100.0	90.00	180.66	10,910.0	-4,394.7	-50.6	4,394.9	0.00	0.00	0.00
15,200.0	90.00	180.66	10,910.0	-4,494.6	-51.8	4,494.9	0.00	0.00	0.00
15,300.0	90.00	180.66	10,910.0	-4,594.6	-52.9	4,594.9	0.00	0.00	0.00
15,400.0	90.00	180.66	10,910.0	-4,694.6	-54.1	4,694.9	0.00	0.00	0.00
15,461.7	90.00	180.66	10,910.0	-4,756.3	-54.8	4,756.6	0.00	0.00	0.00
TD at 15461.7 - PBHL(DosXX#4H)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL(DosXX#4H)	0.00	0.00	10,910.0	-4,756.3	-54.5	430,613.60	708,064.90	32° 10' 55.509 N	103° 39' 38.949 W
- plan misses target center by 0.3usft at 15461.7usft MD (10910.0 TVD, -4756.3 N, -54.8 E)									
- Point									

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,432.5	10,432.5	0.0	0.0	KOP - 10432.5 'MD, 0.00° INC, 0.00° AZI
11,182.6	10,910.0	-477.5	-5.5	EOC- 11182.6 'MD, 90.00° INC, 180.66° AZI
15,461.7	10,910.0	-4,756.3	-54.8	TD at 15461.7



COG Production LLC
Project: Lea County, NM
Site: Dos XX 27 Federal Com

Well: #4H
Wellbore: OH
Plan: Design #1 (#4H/OH)

Section Details

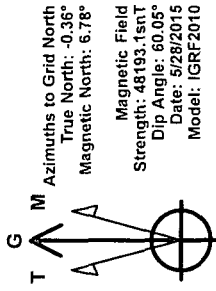
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	10432.5	0.00	0.00	10432.5	0.0	0.0	0.00	0.00	0.0
3	11182.6	90.00	180.66	10910.0	-477.5	-5.5	12.00	180.66	477.5
4	15461.7	90.00	180.66	10910.0	-4756.3	-54.8	0.00	0.00	4756.6

PBHL(DosXX#4H)

WELL DETAILS: #4H

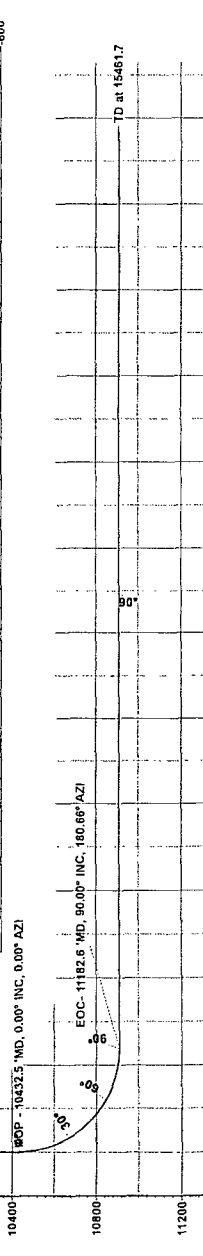
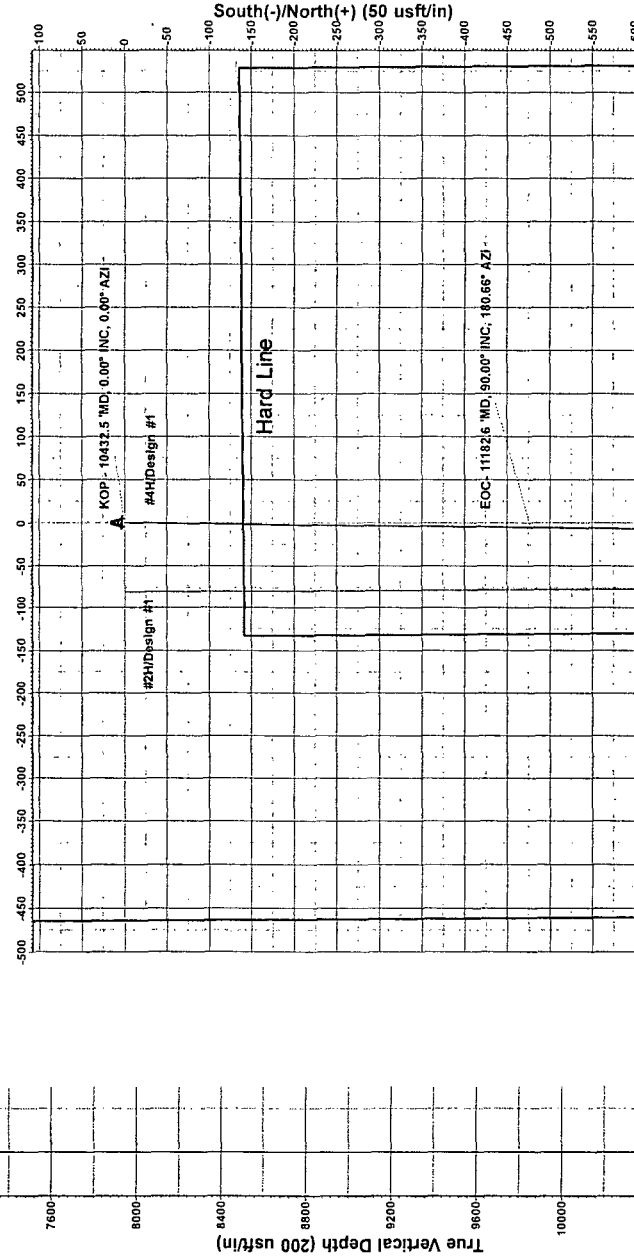
Ground Elevation:: 3589.4
RKB Elevation: WELL @ 3607.4usft (Original Well Elev)
Rig Name: Original Well Elev

Northing 435369.90
Easting 708119.40
Latitude 32° 11' 42.573 N
Longitude 103° 39' 37.968 W



Magnetic Field
Strength: 48193.1nT
Dip Angle: 60.05°
Date: 5/29/2015
Model: IGRF2010

Vertical Section at 180.66° (200 usft/in)



Vertical Section at 180.66° (200 usft/in)

Nexus Directional Solutions

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