



COG Operating, LLC

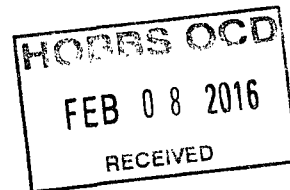
Lea County, NM
Sec 28, T22S, R34E
Smalls Federal 8H

Wellbore #1

Plan: Design #1

DDC Well Planning Report

07 July, 2015



FEB 11 2016



HP
Well Planning Report



Database:	Compass	Local Co-ordinate Reference:	Well Smalls Federal 8H
Company:	COG Operating, LLC	TVD Reference:	Well @ 3447.0usft (Ensign #772)
Project:	Lea County, NM	MD Reference:	Well @ 3447.0usft (Ensign #772)
Site:	Sec 28, T22S, R34E	North Reference:	Grid
Well:	Smalls Federal 8H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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	Sec 28, T22S, R34E		
Site Position:	From: Map	Northing:	494,242.70 usft
		Easting:	767,268.60 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 21' 20.947 N
		Longitude:	103° 28' 4.141 W
		Grid Convergence:	0.46 °

Well	Smalls Federal 8H		
Well Position	+N/-S	-36.2 usft	Northing:
	+E/-W	-4,315.1 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Ground Level:	3,416.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	7/7/2015	7.13
			Dip Angle
			60.22
			Field Strength
			48,227

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
			(°)
			359.26

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	
9,847.5	0.00	0.00	9,847.5	0.0	0.0	0.00	0.00	0.00	0.00	
10,594.7	89.67	359.26	10,325.0	474.6	-6.2	12.00	12.00	-0.10	359.26	
14,879.9	89.67	359.26	10,350.0	4,759.4	-61.7	0.00	0.00	0.00	0.00	PBHL Smalls Federal



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Well Planning Report



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Well:	Smalls Federal 8H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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)
KOP 12°/100'									
9,847.5	0.00	0.00	9,847.5	0.0	0.0	0.0	0.00	0.00	0.00
9,900.0	6.30	359.26	9,899.9	2.9	0.0	2.9	12.00	12.00	0.00
10,000.0	18.30	359.26	9,997.4	24.1	-0.3	24.1	12.00	12.00	0.00
SBSG_sand									
10,003.9	18.77	359.26	10,001.1	25.4	-0.3	25.4	12.00	12.00	0.00
10,100.0	30.30	359.26	10,088.4	65.2	-0.8	65.2	12.00	12.00	0.00
10,200.0	42.30	359.26	10,168.8	124.3	-1.6	124.3	12.00	12.00	0.00
10,300.0	54.30	359.26	10,235.2	198.8	-2.6	198.8	12.00	12.00	0.00
10,400.0	66.30	359.26	10,284.7	285.5	-3.7	285.5	12.00	12.00	0.00
10,500.0	78.30	359.26	10,315.0	380.6	-4.9	380.6	12.00	12.00	0.00
End of Curve / 89.67° Inc / 359.26° Azm / 10325' TVD									
10,594.7	89.67	359.26	10,325.0	474.6	-6.2	474.7	12.00	12.00	0.00
10,600.0	89.67	359.26	10,325.0	479.9	-6.2	480.0	0.00	0.00	0.00
10,700.0	89.67	359.26	10,325.6	579.9	-7.5	580.0	0.00	0.00	0.00
10,800.0	89.67	359.26	10,326.2	679.9	-8.8	680.0	0.00	0.00	0.00
10,900.0	89.67	359.26	10,326.7	779.9	-10.1	780.0	0.00	0.00	0.00
11,000.0	89.67	359.26	10,327.3	879.9	-11.4	880.0	0.00	0.00	0.00
11,100.0	89.67	359.26	10,327.9	979.9	-12.7	980.0	0.00	0.00	0.00
11,200.0	89.67	359.26	10,328.5	1,079.9	-14.0	1,080.0	0.00	0.00	0.00
11,300.0	89.67	359.26	10,329.1	1,179.9	-15.3	1,180.0	0.00	0.00	0.00
11,400.0	89.67	359.26	10,329.7	1,279.8	-16.6	1,280.0	0.00	0.00	0.00
11,500.0	89.67	359.26	10,330.2	1,379.8	-17.9	1,379.9	0.00	0.00	0.00
11,600.0	89.67	359.26	10,330.8	1,479.8	-19.2	1,479.9	0.00	0.00	0.00
11,700.0	89.67	359.26	10,331.4	1,579.8	-20.5	1,579.9	0.00	0.00	0.00
11,800.0	89.67	359.26	10,332.0	1,679.8	-21.8	1,679.9	0.00	0.00	0.00
11,900.0	89.67	359.26	10,332.6	1,779.8	-23.1	1,779.9	0.00	0.00	0.00
12,000.0	89.67	359.26	10,333.2	1,879.8	-24.4	1,879.9	0.00	0.00	0.00
12,100.0	89.67	359.26	10,333.8	1,979.8	-25.7	1,979.9	0.00	0.00	0.00
12,200.0	89.67	359.26	10,334.3	2,079.8	-27.0	2,079.9	0.00	0.00	0.00
12,300.0	89.67	359.26	10,334.9	2,179.8	-28.3	2,179.9	0.00	0.00	0.00
12,400.0	89.67	359.26	10,335.5	2,279.7	-29.6	2,279.9	0.00	0.00	0.00
12,500.0	89.67	359.26	10,336.1	2,379.7	-30.9	2,379.9	0.00	0.00	0.00
12,600.0	89.67	359.26	10,336.7	2,479.7	-32.1	2,479.9	0.00	0.00	0.00
12,700.0	89.67	359.26	10,337.3	2,579.7	-33.4	2,579.9	0.00	0.00	0.00
12,800.0	89.67	359.26	10,337.8	2,679.7	-34.7	2,679.9	0.00	0.00	0.00
12,900.0	89.67	359.26	10,338.4	2,779.7	-36.0	2,779.9	0.00	0.00	0.00
13,000.0	89.67	359.26	10,339.0	2,879.7	-37.3	2,879.9	0.00	0.00	0.00
13,100.0	89.67	359.26	10,339.6	2,979.7	-38.6	2,979.9	0.00	0.00	0.00
13,200.0	89.67	359.26	10,340.2	3,079.7	-39.9	3,079.9	0.00	0.00	0.00
13,300.0	89.67	359.26	10,340.8	3,179.7	-41.2	3,179.9	0.00	0.00	0.00
13,400.0	89.67	359.26	10,341.4	3,279.6	-42.5	3,279.9	0.00	0.00	0.00
13,500.0	89.67	359.26	10,341.9	3,379.6	-43.8	3,379.9	0.00	0.00	0.00
13,600.0	89.67	359.26	10,342.5	3,479.6	-45.1	3,479.9	0.00	0.00	0.00
13,700.0	89.67	359.26	10,343.1	3,579.6	-46.4	3,579.9	0.00	0.00	0.00
13,800.0	89.67	359.26	10,343.7	3,679.6	-47.7	3,679.9	0.00	0.00	0.00
13,900.0	89.67	359.26	10,344.3	3,779.6	-49.0	3,779.9	0.00	0.00	0.00
14,000.0	89.67	359.26	10,344.9	3,879.6	-50.3	3,879.9	0.00	0.00	0.00
14,100.0	89.67	359.26	10,345.4	3,979.6	-51.6	3,979.9	0.00	0.00	0.00
14,200.0	89.67	359.26	10,346.0	4,079.6	-52.9	4,079.9	0.00	0.00	0.00
14,300.0	89.67	359.26	10,346.6	4,179.6	-54.2	4,179.9	0.00	0.00	0.00
14,400.0	89.67	359.26	10,347.2	4,279.5	-55.5	4,279.9	0.00	0.00	0.00
14,500.0	89.67	359.26	10,347.8	4,379.5	-56.8	4,379.9	0.00	0.00	0.00



HP
Well Planning Report



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Company:	COG Operating, LLC	TVD Reference:	Well @ 3447.0usft (Ensign #772)
Project:	Lea County, NM.	MD Reference:	Well @ 3447.0usft (Ensign #772)
Site:	Sec 28, T22S, R34E	North Reference:	Grid
Well:	Smalls Federal 8H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
14,600.0	89.67	359.26	10,348.4	4,479.5	-58.1	4,479.9	0.00	0.00	0.00
14,700.0	89.67	359.26	10,348.9	4,579.5	-59.4	4,579.9	0.00	0.00	0.00
14,800.0	89.67	359.26	10,349.5	4,679.5	-60.7	4,679.9	0.00	0.00	0.00
PBHL @ 14880' MD / 10350' TVD									
14,879.9	89.67	359.26	10,350.0	4,759.4	-61.7	4,759.8	0.00	0.00	0.00

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 Smalls Federal 8H	0.00	0.00	10,350.0	4,759.4	-61.7	498,965.90	762,891.80	32° 22' 8.031 N	103° 28' 54.723 W
- plan hits target center									
- Point									

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,382.0	2,382.0	Rustler		0.33	359.26
2,645.0	2,645.0	TOS		0.33	359.26
3,604.0	3,604.0	BOS / Tansill		0.33	359.26
3,675.0	3,675.0	Yates		0.33	359.26
3,810.0	3,810.0	Seven Rivers		0.33	359.26
3,979.0	3,979.0	Captain Reef		0.33	359.26
5,176.0	5,176.0	Base of Reef (BLCN)		0.33	359.26
5,867.0	5,867.0	CYCN		0.33	359.26
7,070.0	7,070.0	BYCN		0.33	359.26
8,472.0	8,472.0	Bone Spring (BSGL)		0.33	359.26
8,764.0	8,764.0	U Avalon Sh		0.33	359.26
9,005.0	9,005.0	L Avalon Sh		0.33	359.26
9,535.0	9,535.0	FBSG_sand		0.33	359.26
10,003.9	10,001.1	SBSG_sand		0.33	359.26

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,847.5	9,847.5	0.0	0.0	KOP 12°/100'
10,594.7	10,325.0	474.6	-6.2	End of Curve / 89.67° Inc / 359.26° Azm / 10325' TVD
14,879.9	10,350.0	4,759.4	-61.7	PBHL @ 14880' MD / 10350' TVD



COG Operating, LLC

Lea County, NM

Sec 28, T22S, R34E

Smalls Federal 8H

Wellbore #1

Design #1

DDC Anticollision Report

07 July, 2015





HP
Anticollision Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Smalls Federal 8H
Project:	Lea County, NM	TVD Reference:	Well @ 3447.0usft (Ensign #772)
Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3447.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 8H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference	Design #1		
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 10,000.0 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date 7/7/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	14,879.9	Design #1 (Wellbore #1)	MWD default	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 28, T22S, R34E						
Smalls Federal 4H - Wellbore #1 - Design #1	9,856.7	9,857.7	30.0	-14.0	0.682	Level 1, CC
Smalls Federal 4H - Wellbore #1 - Design #1	9,875.0	9,876.0	30.0	-14.1	0.681	Level 1, ES, SF

Offset Design												
Sec 28, T22S, R34E - Smalls Federal 4H - Wellbore #1 - Design #1												Offset Site Error: 0.0 usft
Survey Program: 0:MWD default												Offset Well Error: 0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset 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)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-90.57	-0.3	-30.0	30.0			
100.0	100.0	101.0	101.0	0.1	0.1	-90.57	-0.3	-30.0	30.0	29.8	190.684	
200.0	200.0	201.0	201.0	0.3	0.3	-90.57	-0.3	-30.0	30.0	29.4	49.437	
300.0	300.0	301.0	301.0	0.5	0.5	-90.57	-0.3	-30.0	30.0	28.9	28.400	
400.0	400.0	401.0	401.0	0.8	0.8	-90.57	-0.3	-30.0	30.0	28.5	19.922	
500.0	500.0	501.0	501.0	1.0	1.0	-90.57	-0.3	-30.0	30.0	28.0	15.342	
600.0	600.0	601.0	601.0	1.2	1.2	-90.57	-0.3	-30.0	30.0	27.6	12.475	
700.0	700.0	701.0	701.0	1.4	1.4	-90.57	-0.3	-30.0	30.0	27.1	10.510	
800.0	800.0	801.0	801.0	1.7	1.7	-90.57	-0.3	-30.0	30.0	26.7	9.080	
900.0	900.0	901.0	901.0	1.9	1.9	-90.57	-0.3	-30.0	30.0	26.2	7.993	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-90.57	-0.3	-30.0	30.0	25.8	7.138	
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.3	-90.57	-0.3	-30.0	30.0	25.3	6.448	
1,200.0	1,200.0	1,201.0	1,201.0	2.5	2.6	-90.57	-0.3	-30.0	30.0	24.9	5.880	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	-90.57	-0.3	-30.0	30.0	24.4	5.404	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	-90.57	-0.3	-30.0	30.0	24.0	4.999	
1,500.0	1,500.0	1,501.0	1,501.0	3.2	3.2	-90.57	-0.3	-30.0	30.0	23.6	4.651	
1,600.0	1,600.0	1,601.0	1,601.0	3.4	3.5	-90.57	-0.3	-30.0	30.0	23.1	4.348	
1,700.0	1,700.0	1,701.0	1,701.0	3.7	3.7	-90.57	-0.3	-30.0	30.0	22.7	4.082	
1,800.0	1,800.0	1,801.0	1,801.0	3.9	3.9	-90.57	-0.3	-30.0	30.0	22.2	3.847	
1,900.0	1,900.0	1,901.0	1,901.0	4.1	4.1	-90.57	-0.3	-30.0	30.0	21.8	3.637	
2,000.0	2,000.0	2,001.0	2,001.0	4.3	4.4	-90.57	-0.3	-30.0	30.0	21.3	3.449	
2,100.0	2,100.0	2,101.0	2,101.0	4.6	4.6	-90.57	-0.3	-30.0	30.0	20.9	3.280	
2,200.0	2,200.0	2,201.0	2,201.0	4.8	4.8	-90.57	-0.3	-30.0	30.0	20.4	3.126	
2,300.0	2,300.0	2,301.0	2,301.0	5.0	5.0	-90.57	-0.3	-30.0	30.0	20.0	2.986	
2,400.0	2,400.0	2,401.0	2,401.0	5.2	5.2	-90.57	-0.3	-30.0	30.0	19.5	2.858	

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



HP
Anticollision Report



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Project:	Lea County, NM	TVD Reference:	Well @ 3447.0usft (Ensign #772)
Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3447.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 8H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28, T22S, R34E - Smalls Federal 4H - Wellbore #1 - Design #1												Offset Site Error:	0.0 usft
Survey Program: 0-MWD default												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset 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)	Separation Factor	Warning	
2,500.0	2,500.0	2,501.0	2,501.0	5.5	5.5	-90.57	-0.3	-30.0	30.0	19.1	2.741		
2,600.0	2,600.0	2,601.0	2,601.0	5.7	5.7	-90.57	-0.3	-30.0	30.0	18.6	2.633		
2,700.0	2,700.0	2,701.0	2,701.0	5.9	5.9	-90.57	-0.3	-30.0	30.0	18.2	2.533		
2,800.0	2,800.0	2,801.0	2,801.0	6.1	6.1	-90.57	-0.3	-30.0	30.0	17.7	2.440		
2,900.0	2,900.0	2,901.0	2,901.0	6.4	6.4	-90.57	-0.3	-30.0	30.0	17.3	2.354		
3,000.0	3,000.0	3,001.0	3,001.0	6.6	6.6	-90.57	-0.3	-30.0	30.0	16.8	2.274		
3,100.0	3,100.0	3,101.0	3,101.0	6.8	6.8	-90.57	-0.3	-30.0	30.0	16.4	2.199		
3,200.0	3,200.0	3,201.0	3,201.0	7.0	7.0	-90.57	-0.3	-30.0	30.0	15.9	2.129		
3,300.0	3,300.0	3,301.0	3,301.0	7.3	7.3	-90.57	-0.3	-30.0	30.0	15.5	2.063		
3,400.0	3,400.0	3,401.0	3,401.0	7.5	7.5	-90.57	-0.3	-30.0	30.0	15.0	2.001		
3,500.0	3,500.0	3,501.0	3,501.0	7.7	7.7	-90.57	-0.3	-30.0	30.0	14.6	1.943		
3,600.0	3,600.0	3,601.0	3,601.0	7.9	7.9	-90.57	-0.3	-30.0	30.0	14.1	1.888		
3,700.0	3,700.0	3,701.0	3,701.0	8.2	8.2	-90.57	-0.3	-30.0	30.0	13.7	1.836		
3,800.0	3,800.0	3,801.0	3,801.0	8.4	8.4	-90.57	-0.3	-30.0	30.0	13.2	1.787		
3,900.0	3,900.0	3,901.0	3,901.0	8.6	8.6	-90.57	-0.3	-30.0	30.0	12.8	1.740		
4,000.0	4,000.0	4,001.0	4,001.0	8.8	8.8	-90.57	-0.3	-30.0	30.0	12.3	1.696		
4,100.0	4,100.0	4,101.0	4,101.0	9.1	9.1	-90.57	-0.3	-30.0	30.0	11.9	1.654		
4,200.0	4,200.0	4,201.0	4,201.0	9.3	9.3	-90.57	-0.3	-30.0	30.0	11.4	1.614		
4,300.0	4,300.0	4,301.0	4,301.0	9.5	9.5	-90.57	-0.3	-30.0	30.0	11.0	1.576		
4,400.0	4,400.0	4,401.0	4,401.0	9.7	9.7	-90.57	-0.3	-30.0	30.0	10.5	1.540		
4,500.0	4,500.0	4,501.0	4,501.0	10.0	10.0	-90.57	-0.3	-30.0	30.0	10.1	1.505		
4,600.0	4,600.0	4,601.0	4,601.0	10.2	10.2	-90.57	-0.3	-30.0	30.0	9.6	1.472	Level 3	
4,700.0	4,700.0	4,701.0	4,701.0	10.4	10.4	-90.57	-0.3	-30.0	30.0	9.2	1.440	Level 3	
4,800.0	4,800.0	4,801.0	4,801.0	10.6	10.6	-90.57	-0.3	-30.0	30.0	8.7	1.409	Level 3	
4,900.0	4,900.0	4,901.0	4,901.0	10.9	10.9	-90.57	-0.3	-30.0	30.0	8.3	1.380	Level 3	
5,000.0	5,000.0	5,001.0	5,001.0	11.1	11.1	-90.57	-0.3	-30.0	30.0	7.8	1.352	Level 3	
5,100.0	5,100.0	5,101.0	5,101.0	11.3	11.3	-90.57	-0.3	-30.0	30.0	7.4	1.326	Level 3	
5,200.0	5,200.0	5,201.0	5,201.0	11.5	11.5	-90.57	-0.3	-30.0	30.0	6.9	1.300	Level 3	
5,300.0	5,300.0	5,301.0	5,301.0	11.8	11.8	-90.57	-0.3	-30.0	30.0	6.5	1.275	Level 3	
5,400.0	5,400.0	5,401.0	5,401.0	12.0	12.0	-90.57	-0.3	-30.0	30.0	6.0	1.251	Level 3	
5,500.0	5,500.0	5,501.0	5,501.0	12.2	12.2	-90.57	-0.3	-30.0	30.0	5.6	1.228	Level 2	
5,600.0	5,600.0	5,601.0	5,601.0	12.4	12.4	-90.57	-0.3	-30.0	30.0	5.1	1.206	Level 2	
5,700.0	5,700.0	5,701.0	5,701.0	12.7	12.7	-90.57	-0.3	-30.0	30.0	4.7	1.184	Level 2	
5,800.0	5,800.0	5,801.0	5,801.0	12.9	12.9	-90.57	-0.3	-30.0	30.0	4.2	1.164	Level 2	
5,900.0	5,900.0	5,901.0	5,901.0	13.1	13.1	-90.57	-0.3	-30.0	30.0	3.8	1.144	Level 2	
6,000.0	6,000.0	6,001.0	6,001.0	13.3	13.3	-90.57	-0.3	-30.0	30.0	3.3	1.125	Level 2	
6,100.0	6,100.0	6,101.0	6,101.0	13.6	13.6	-90.57	-0.3	-30.0	30.0	2.9	1.106	Level 2	
6,200.0	6,200.0	6,201.0	6,201.0	13.8	13.8	-90.57	-0.3	-30.0	30.0	2.4	1.088	Level 2	
6,300.0	6,300.0	6,301.0	6,301.0	14.0	14.0	-90.57	-0.3	-30.0	30.0	2.0	1.070	Level 2	
6,400.0	6,400.0	6,401.0	6,401.0	14.2	14.2	-90.57	-0.3	-30.0	30.0	1.5	1.054	Level 2	
6,500.0	6,500.0	6,501.0	6,501.0	14.5	14.5	-90.57	-0.3	-30.0	30.0	1.1	1.037	Level 2	
6,600.0	6,600.0	6,601.0	6,601.0	14.7	14.7	-90.57	-0.3	-30.0	30.0	0.6	1.021	Level 2	
6,700.0	6,700.0	6,701.0	6,701.0	14.9	14.9	-90.57	-0.3	-30.0	30.0	0.2	1.006	Level 2	
6,800.0	6,800.0	6,801.0	6,801.0	15.1	15.1	-90.57	-0.3	-30.0	30.0	-0.3	0.991	Level 1	
6,900.0	6,900.0	6,901.0	6,901.0	15.4	15.4	-90.57	-0.3	-30.0	30.0	-0.7	0.976	Level 1	
7,000.0	7,000.0	7,001.0	7,001.0	15.6	15.6	-90.57	-0.3	-30.0	30.0	-1.2	0.962	Level 1	
7,100.0	7,100.0	7,101.0	7,101.0	15.8	15.8	-90.57	-0.3	-30.0	30.0	-1.6	0.949	Level 1	
7,200.0	7,200.0	7,201.0	7,201.0	16.0	16.0	-90.57	-0.3	-30.0	30.0	-2.1	0.935	Level 1	
7,300.0	7,300.0	7,301.0	7,301.0	16.3	16.3	-90.57	-0.3	-30.0	30.0	-2.5	0.922	Level 1	
7,400.0	7,400.0	7,401.0	7,401.0	16.5	16.5	-90.57	-0.3	-30.0	30.0	-3.0	0.910	Level 1	
7,500.0	7,500.0	7,501.0	7,501.0	16.7	16.7	-90.57	-0.3	-30.0	30.0	-3.4	0.898	Level 1	
7,600.0	7,600.0	7,601.0	7,601.0	16.9	16.9	-90.57	-0.3	-30.0	30.0	-3.9	0.886	Level 1	

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



HP
Anticollision Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Smalls Federal 8H
Project:	Lea County, NM	TVD Reference:	Well @ 3447.0usft (Ensign #772)
Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3447.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 8H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28, T22S, R34E - Smalls Federal 4H - Wellbore #1 - Design #1													Offset Site Error:	0.0 usft
Survey Program: 0-MWD default													Offset Well Error:	0.0 usft
Reference 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)	+E-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning		
7,700.0	7,700.0	7,701.0	7,701.0	17.2	17.2	-90.57	-0.3	-30.0	30.0	-4.3	0.874	Level 1		
7,800.0	7,800.0	7,801.0	7,801.0	17.4	17.4	-90.57	-0.3	-30.0	30.0	-4.8	0.863	Level 1		
7,900.0	7,900.0	7,901.0	7,901.0	17.6	17.6	-90.57	-0.3	-30.0	30.0	-5.2	0.852	Level 1		
8,000.0	8,000.0	8,001.0	8,001.0	17.8	17.8	-90.57	-0.3	-30.0	30.0	-5.7	0.841	Level 1		
8,100.0	8,100.0	8,101.0	8,101.0	18.1	18.1	-90.57	-0.3	-30.0	30.0	-6.1	0.831	Level 1		
8,200.0	8,200.0	8,201.0	8,201.0	18.3	18.3	-90.57	-0.3	-30.0	30.0	-6.6	0.820	Level 1		
8,300.0	8,300.0	8,301.0	8,301.0	18.5	18.5	-90.57	-0.3	-30.0	30.0	-7.0	0.810	Level 1		
8,400.0	8,400.0	8,401.0	8,401.0	18.7	18.7	-90.57	-0.3	-30.0	30.0	-7.5	0.801	Level 1		
8,500.0	8,500.0	8,501.0	8,501.0	19.0	19.0	-90.57	-0.3	-30.0	30.0	-7.9	0.791	Level 1		
8,600.0	8,600.0	8,601.0	8,601.0	19.2	19.2	-90.57	-0.3	-30.0	30.0	-8.4	0.782	Level 1		
8,700.0	8,700.0	8,701.0	8,701.0	19.4	19.4	-90.57	-0.3	-30.0	30.0	-8.8	0.773	Level 1		
8,800.0	8,800.0	8,801.0	8,801.0	19.6	19.6	-90.57	-0.3	-30.0	30.0	-9.3	0.764	Level 1		
8,900.0	8,900.0	8,901.0	8,901.0	19.9	19.9	-90.57	-0.3	-30.0	30.0	-9.7	0.755	Level 1		
9,000.0	9,000.0	9,001.0	9,001.0	20.1	20.1	-90.57	-0.3	-30.0	30.0	-10.2	0.747	Level 1		
9,100.0	9,100.0	9,101.0	9,101.0	20.3	20.3	-90.57	-0.3	-30.0	30.0	-10.6	0.739	Level 1		
9,200.0	9,200.0	9,201.0	9,201.0	20.5	20.5	-90.57	-0.3	-30.0	30.0	-11.1	0.731	Level 1		
9,300.0	9,300.0	9,301.0	9,301.0	20.8	20.8	-90.57	-0.3	-30.0	30.0	-11.5	0.723	Level 1		
9,400.0	9,400.0	9,401.0	9,401.0	21.0	21.0	-90.57	-0.3	-30.0	30.0	-12.0	0.715	Level 1		
9,500.0	9,500.0	9,501.0	9,501.0	21.2	21.2	-90.57	-0.3	-30.0	30.0	-12.4	0.707	Level 1		
9,600.0	9,600.0	9,601.0	9,601.0	21.4	21.4	-90.57	-0.3	-30.0	30.0	-12.9	0.700	Level 1		
9,700.0	9,700.0	9,701.0	9,701.0	21.7	21.7	-90.57	-0.3	-30.0	30.0	-13.3	0.693	Level 1		
9,800.0	9,800.0	9,801.0	9,801.0	21.9	21.9	-90.57	-0.3	-30.0	30.0	-13.8	0.686	Level 1		
9,847.5	9,847.5	9,848.5	9,848.5	22.0	22.0	-90.57	-0.3	-30.0	30.0	-14.0	0.682	Level 1		
9,850.0	9,850.0	9,851.0	9,851.0	22.0	22.0	-89.84	-0.3	-30.0	30.0	-14.0	0.682	Level 1		
9,856.7	9,856.7	9,857.7	9,857.7	22.0	22.0	-90.00	-0.3	-30.0	30.0	-14.0	0.682	Level 1, CC		
9,875.0	9,875.0	9,876.0	9,876.0	22.0	22.1	-91.34	-0.3	-30.0	30.0	-14.1	0.681	Level 1, ES, SF		
9,900.0	9,899.9	9,900.9	9,900.9	22.1	22.1	-95.29	-0.3	-30.0	30.1	-14.1	0.682	Level 1		
9,925.0	9,924.7	9,925.7	9,925.7	22.2	22.2	-101.50	-0.3	-30.0	30.6	-13.7	0.692	Level 1		
9,950.0	9,949.2	9,950.2	9,950.2	22.2	22.2	-109.50	-0.3	-30.0	31.9	-12.4	0.720	Level 1		
9,975.0	9,973.5	9,974.5	9,974.5	22.3	22.3	-118.42	-0.3	-30.0	34.4	-9.8	0.778	Level 1		
10,000.0	9,997.4	9,998.4	9,998.4	22.3	22.3	-127.28	-0.3	-30.0	38.5	-5.4	0.877	Level 1		
10,025.0	10,020.9	10,021.9	10,021.9	22.4	22.4	-135.29	-0.3	-30.0	44.2	1.0	1.023	Level 2		
10,050.0	10,044.0	10,045.0	10,045.0	22.4	22.4	-142.05	-0.3	-30.0	51.8	9.3	1.219	Level 2		
10,075.0	10,066.5	10,067.5	10,067.5	22.5	22.5	-147.55	-0.3	-30.0	61.0	19.4	1.468	Level 3		
10,100.0	10,088.4	10,089.4	10,089.4	22.5	22.5	-151.92	-0.3	-30.0	71.7	31.2	1.771			
10,125.0	10,109.6	10,110.6	10,110.6	22.6	22.6	-155.37	-0.3	-30.0	83.9	44.5	2.133			
10,150.0	10,130.2	10,131.2	10,131.2	22.6	22.6	-158.09	-0.3	-30.0	97.3	59.3	2.557			
10,175.0	10,149.9	10,150.9	10,150.9	22.7	22.7	-160.24	-0.3	-30.0	112.0	75.3	3.051			
10,200.0	10,168.8	10,169.8	10,169.8	22.8	22.7	-161.92	-0.3	-30.0	127.8	92.5	3.623			
10,225.0	10,186.9	10,187.9	10,187.9	22.8	22.8	-163.23	-0.3	-30.0	144.7	110.9	4.282			
10,250.0	10,204.0	10,205.0	10,205.0	22.9	22.8	-164.24	-0.3	-30.0	162.5	130.3	5.043			
10,275.0	10,220.1	10,221.1	10,221.1	23.0	22.8	-164.98	-0.3	-30.0	181.3	150.7	5.922			
10,300.0	10,235.2	10,236.2	10,236.2	23.0	22.9	-165.50	-0.3	-30.0	201.0	172.0	6.936			
10,325.0	10,249.3	10,250.3	10,250.3	23.1	22.9	-165.80	-0.3	-30.0	221.5	194.2	8.107			
10,350.0	10,262.2	10,263.2	10,263.2	23.2	22.9	-165.89	-0.3	-30.0	242.7	217.0	9.455			
10,375.0	10,274.1	10,275.1	10,275.1	23.3	22.9	-165.75	-0.3	-30.0	264.5	240.5	10.996			
10,400.0	10,284.7	10,285.7	10,285.7	23.4	23.0	-165.35	-0.3	-30.0	287.0	264.5	12.726			
10,425.0	10,294.1	10,295.1	10,295.1	23.5	23.0	-164.62	-0.3	-30.0	310.1	288.8	14.597			
10,450.0	10,302.4	10,303.4	10,303.4	23.6	23.0	-163.46	-0.3	-30.0	333.6	313.3	16.460			
10,475.0	10,309.3	10,310.3	10,310.3	23.7	23.0	-161.64	-0.3	-30.0	357.5	337.6	17.998			
10,500.0	10,315.0	10,316.0	10,316.0	23.9	23.0	-158.76	-0.3	-30.0	381.7	361.3	18.675			
10,525.0	10,319.5	10,320.5	10,320.5	24.0	23.0	-153.92	-0.3	-30.0	406.3	383.5	17.873			

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



HP
Anticollision Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Smalls Federal 8H
Project:	Lea County, NM	TVD Reference:	Well @ 3447.0usft (Ensign #772)
Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3447.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 8H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28, T22S, R34E - Smalls Federal 4H - Wellbore #1 - Design #1											Offset Site Error:	0.0 usft
Survey Program: 0-MWD default											Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset 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)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
10,550.0	10,322.6	10,323.6	10,323.6	24.1	23.1	-144.91	-0.3	-30.0	431.0	402.9	15.325	
10,575.0	10,324.4	10,325.4	10,325.4	24.3	23.1	-125.54	-0.3	-30.0	455.9	416.9	11.706	
10,594.7	10,325.0	10,326.0	10,326.0	24.4	23.1	-95.28	-0.3	-30.0	475.5	428.0	10.005	
10,600.0	10,325.0	10,326.0	10,326.0	24.4	23.1	-95.34	-0.3	-30.0	480.8	433.3	10.110	
10,700.0	10,325.6	10,326.6	10,326.6	25.1	23.1	-96.44	-0.3	-30.0	580.6	532.4	12.046	
10,800.0	10,326.2	10,327.2	10,327.2	25.9	23.1	-97.54	-0.3	-30.0	680.5	631.6	13.907	
10,900.0	10,326.7	11,666.2	11,103.5	26.7	28.2	-178.14	770.7	-35.1	776.2	763.9	63.003	
11,000.0	10,327.3	11,766.2	11,104.7	27.7	29.1	-178.19	870.7	-35.8	776.8	763.3	57.421	
11,100.0	10,327.9	11,866.2	11,105.8	28.8	30.1	-178.24	970.7	-36.5	777.4	762.6	52.586	
11,200.0	10,328.5	11,966.1	11,107.0	29.9	31.1	-178.29	1,070.6	-37.1	777.9	761.8	48.398	
11,300.0	10,329.1	12,066.1	11,108.2	31.1	32.3	-178.33	1,170.6	-37.8	778.5	761.1	44.760	
11,400.0	10,329.7	12,166.1	11,109.3	32.3	33.5	-178.38	1,270.6	-38.5	779.0	760.3	41.586	
11,500.0	10,330.2	12,266.1	11,110.5	33.7	34.7	-178.43	1,370.6	-39.1	779.6	759.5	38.803	
11,600.0	10,330.8	12,366.1	11,111.7	35.0	36.0	-178.48	1,470.6	-39.8	780.2	758.7	36.348	
11,700.0	10,331.4	12,466.1	11,112.8	36.4	37.4	-178.52	1,570.6	-40.5	780.7	757.9	34.171	
11,800.0	10,332.0	12,566.1	11,114.0	37.8	38.7	-178.57	1,670.6	-41.1	781.3	757.1	32.229	
11,900.0	10,332.6	12,666.1	11,115.2	39.3	40.2	-178.62	1,770.6	-41.8	781.9	756.2	30.490	
12,000.0	10,333.2	12,766.1	11,116.3	40.8	41.6	-178.67	1,870.5	-42.5	782.4	755.4	28.923	
12,100.0	10,333.8	12,866.1	11,117.5	42.3	43.1	-178.71	1,970.5	-43.1	783.0	754.5	27.506	
12,200.0	10,334.3	12,966.1	11,118.7	43.8	44.6	-178.76	2,070.5	-43.8	783.6	753.7	26.219	
12,300.0	10,334.9	13,066.1	11,119.8	45.4	46.1	-178.81	2,170.5	-44.5	784.1	752.8	25.045	
12,400.0	10,335.5	13,166.1	11,121.0	47.0	47.7	-178.85	2,270.5	-45.1	784.7	752.0	23.971	
12,500.0	10,336.1	13,266.1	11,122.2	48.6	49.2	-178.90	2,370.5	-45.8	785.3	751.1	22.984	
12,600.0	10,336.7	13,366.1	11,123.3	50.2	50.8	-178.95	2,470.5	-46.5	785.8	750.2	22.075	
12,700.0	10,337.3	13,466.1	11,124.5	51.8	52.4	-178.99	2,570.5	-47.1	786.4	749.4	21.235	
12,800.0	10,337.8	13,566.1	11,125.7	53.5	54.0	-179.04	2,670.4	-47.8	787.0	748.5	20.456	
12,900.0	10,338.4	13,666.1	11,126.8	55.1	55.7	-179.09	2,770.4	-48.5	787.5	747.6	19.733	
13,000.0	10,339.0	13,766.1	11,128.0	56.8	57.3	-179.13	2,870.4	-49.1	788.1	746.8	19.059	
13,100.0	10,339.6	13,866.1	11,129.2	58.5	59.0	-179.18	2,970.4	-49.8	788.7	745.9	18.430	
13,200.0	10,340.2	13,966.1	11,130.3	60.1	60.6	-179.23	3,070.4	-50.5	789.3	745.0	17.841	
13,300.0	10,340.8	14,066.1	11,131.5	61.8	62.3	-179.27	3,170.4	-51.1	789.8	744.1	17.289	
13,400.0	10,341.4	14,166.1	11,132.6	63.5	64.0	-179.32	3,270.4	-51.8	790.4	743.3	16.770	
13,500.0	10,341.9	14,266.1	11,133.8	65.2	65.6	-179.37	3,370.4	-52.4	791.0	742.4	16.282	
13,600.0	10,342.5	14,366.1	11,135.0	66.9	67.3	-179.41	3,470.3	-53.1	791.6	741.5	15.822	
13,700.0	10,343.1	14,466.1	11,136.1	68.7	69.0	-179.46	3,570.3	-53.8	792.1	740.6	15.388	
13,800.0	10,343.7	14,566.1	11,137.3	70.4	70.7	-179.50	3,670.3	-54.4	792.7	739.8	14.977	
13,900.0	10,344.3	14,666.0	11,138.5	72.1	72.4	-179.55	3,770.3	-55.1	793.3	738.9	14.588	
14,000.0	10,344.9	14,766.0	11,139.6	73.8	74.2	-179.60	3,870.3	-55.8	793.9	738.0	14.218	
14,100.0	10,345.4	14,866.0	11,140.8	75.6	75.9	-179.64	3,970.3	-56.4	794.4	737.1	13.868	
14,200.0	10,346.0	14,966.0	11,142.0	77.3	77.6	-179.69	4,070.3	-57.1	795.0	736.3	13.534	
14,300.0	10,346.6	15,066.0	11,143.1	79.1	79.3	-179.73	4,170.3	-57.8	795.6	735.4	13.217	
14,400.0	10,347.2	15,166.0	11,144.3	80.8	81.1	-179.78	4,270.2	-58.4	796.2	734.5	12.914	
14,500.0	10,347.8	15,266.0	11,145.5	82.6	82.8	-179.82	4,370.2	-59.1	796.7	733.6	12.625	
14,600.0	10,348.4	15,366.0	11,146.6	84.3	84.6	-179.87	4,470.2	-59.8	797.3	732.8	12.349	
14,700.0	10,348.9	15,466.0	11,147.8	86.1	86.3	-179.91	4,570.2	-60.4	797.9	731.9	12.086	
14,800.0	10,349.5	15,566.0	11,149.0	87.8	88.1	-179.96	4,670.2	-61.1	798.5	731.0	11.833	
14,879.9	10,350.0	15,645.9	11,149.9	89.2	89.5	-180.00	4,750.1	-61.6	798.9	730.3	11.639	
14,880.4	10,350.0	15,646.4	11,149.9	89.3	89.5	-180.00	4,750.6	-61.6	798.9	730.3	11.638	

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

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Smalls Federal 8H
Project:	Lea County, NM	TVD Reference:	Well @ 3447.0usft (Ensign #772)
Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3447.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 8H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 3447.0usft (Ensign #772)

Offset Depths are relative to Offset Datum

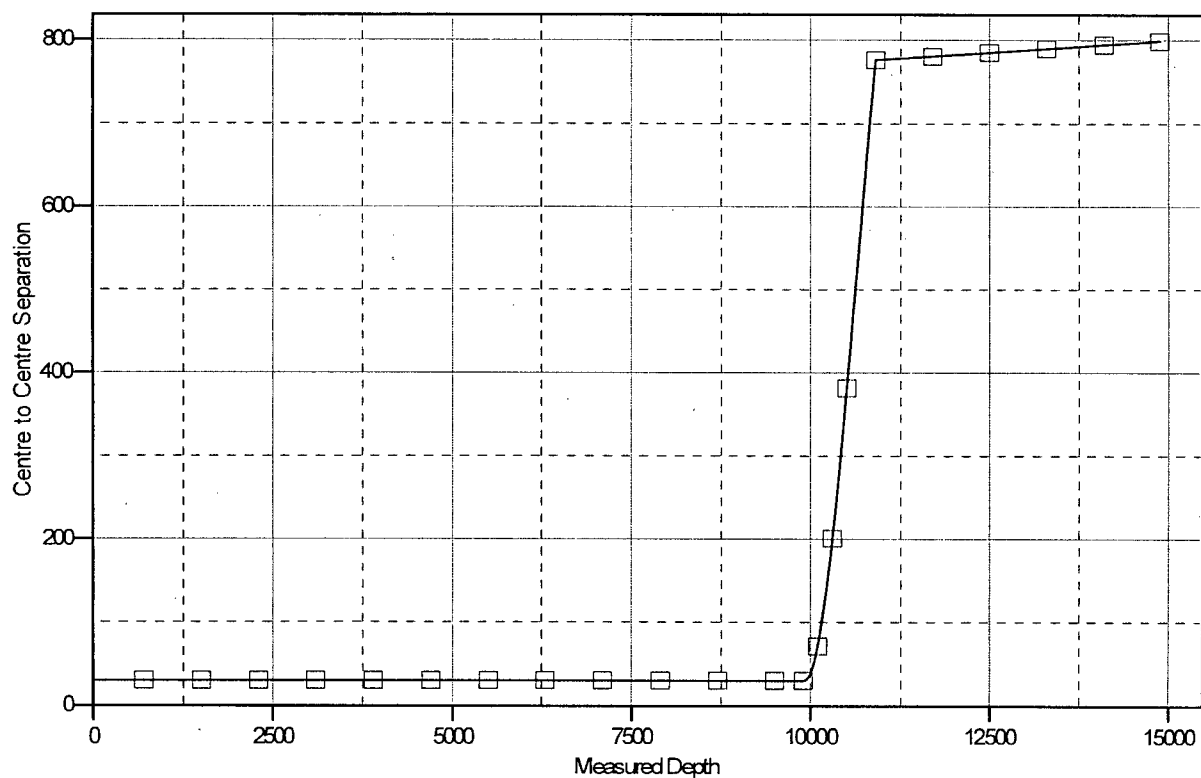
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Smalls Federal 8H

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

Grid Convergence at Surface is: 0.46°

Ladder Plot



LEGEND

Smalls Federal 4H, Wellbore #1, Design #1 V0



HP
Anticollision Report

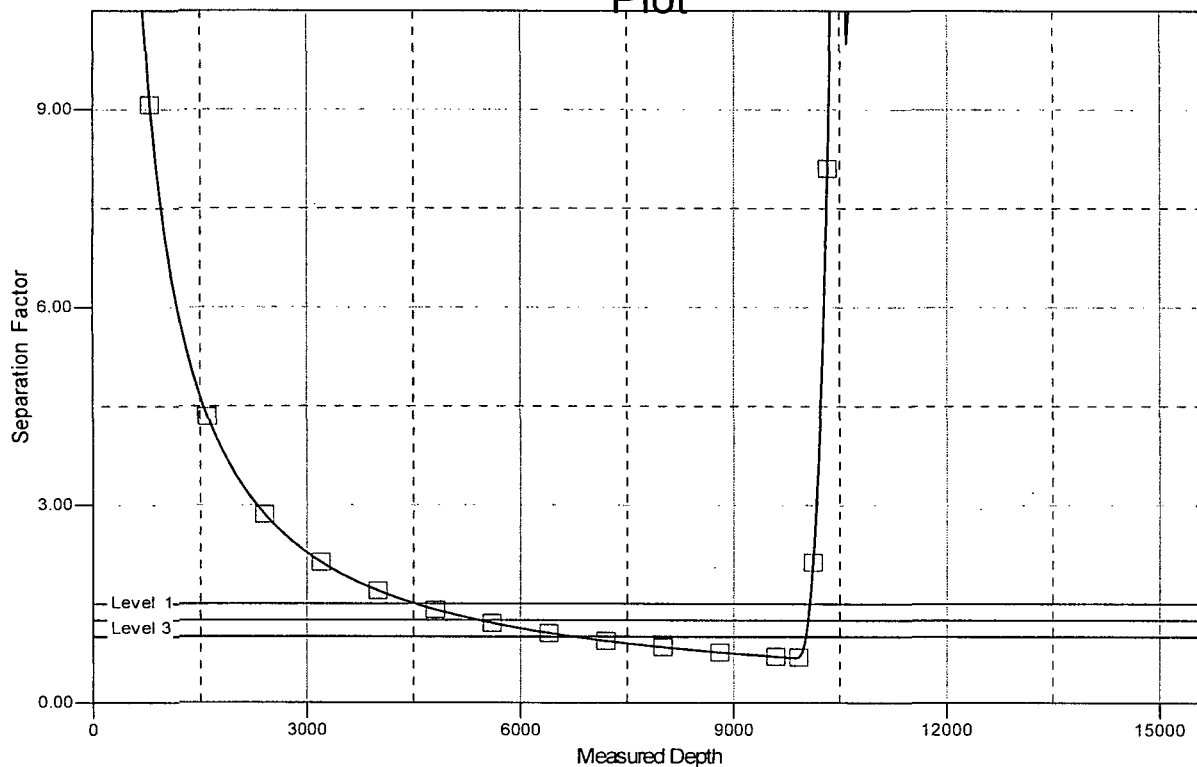


Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Smalls Federal 8H
Project:	Lea County, NM	TVD Reference:	Well @ 3447.0usft (Ensign #772)
Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3447.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 8H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 3447.0usft (Ensign #772)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Smalls Federal 8H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.46°

Separation Factor Plot

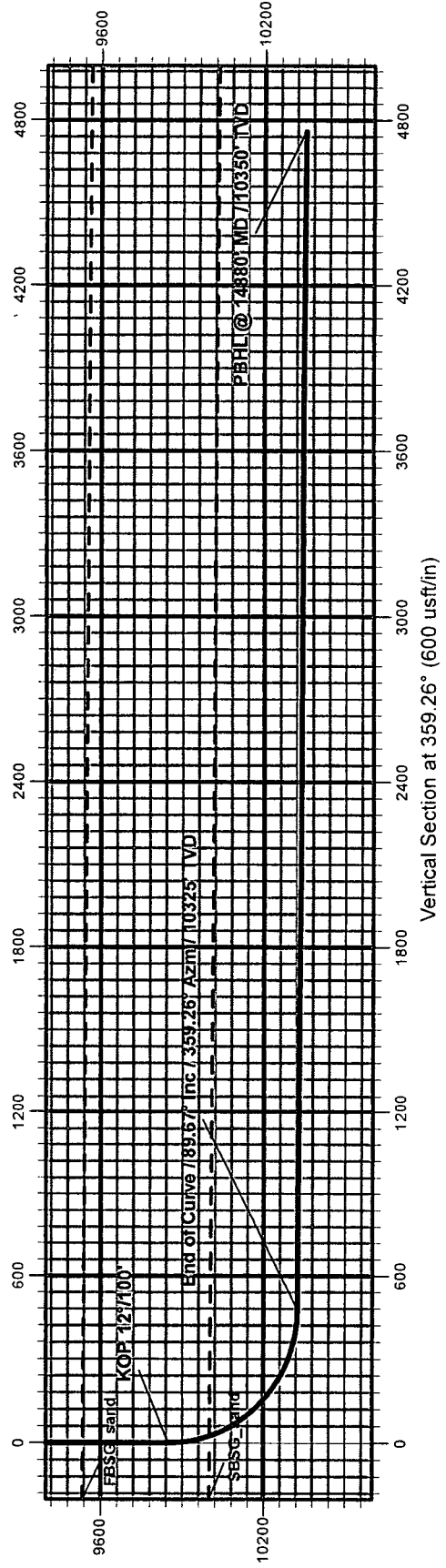


LEGEND

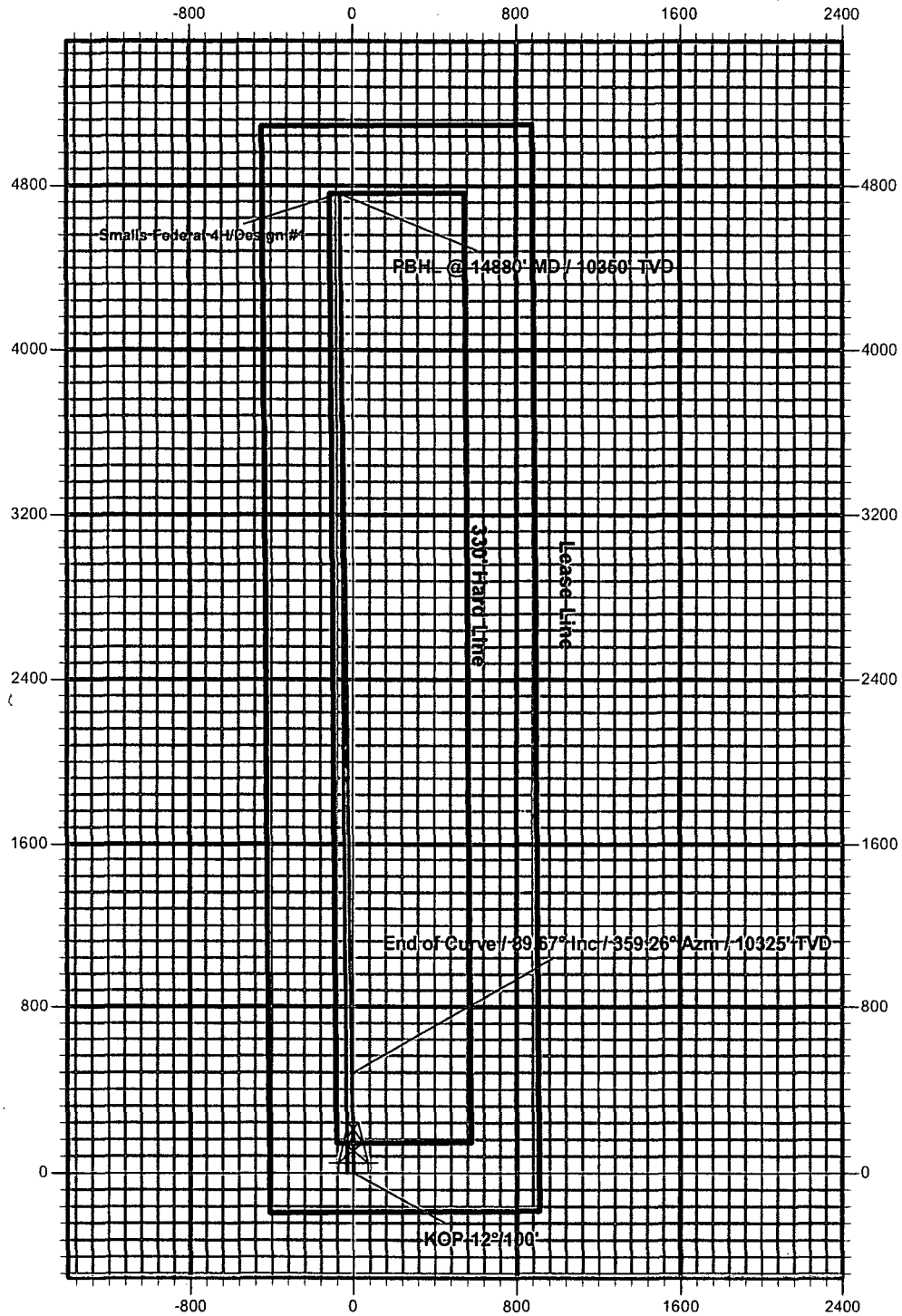
Smalls Federal 4H, Wellbore #1, Design #1 V0



Lea County, NM
Sec 28, T22S, R34E
Smalls Federal 8H
Design #1



Lea County, NM
Sec 28, T22S, R34E
Smalls Federal 8H
Design #1





New Mexico Office of the State Engineer **Water Column/Average Depth to Water**

No records found.

PLSS Search:

Section(s): 28

Township: 22S

Range: 34E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the
POD suffix indicates the
POD has been replaced
& no longer serves a
water right file.)

(R=POD has
been replaced,
O=orphaned,
C=the file is

closed) (quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00380		LE		4	2	11	22S	34E		647245	3586739*	45	30	15
CP 00596		LE		4	2	11	22S	34E		647245	3586739*	50		
CP 00597		LE		2	2	08	22S	34E		642410	3587074*	35		
CP 00598		LE		4	1	23	22S	34E		646480	3583511*	70		
CP 00599		LE		1	1	12	22S	34E		647642	3587147*	62	50	12
CP 00604		LE		1	4	4	01	22S	34E	648743	3587666*	135		
CP 00704		LE		2	4	22	22S	34E		645681	3583097*	600		
CP 00744		LE		1	2	09	22S	34E		643618	3587091*	460		
CP 00751		LE		4	2	11	22S	34E		647245	3586739*		45	
CP 00865		LE		4	1	3	20	22S	34E	641957	3583146	885	605	280
CP 00933		LE		1	1	1	12	22S	34E	647541	3587246*	60		
CP 00934		LE		2	1	2	01	22S	34E	648682	3588822	60	42	18
CP 01362 POD1		LE		3	4	4	18	22S	34E	640809	3584182	1032	613	419
CP 01455 POD1		LE		4	1	4	18	22S	34E	640574	3584515	1033	615	418

Average Depth to Water: **285 feet**

Minimum Depth: **30 feet**

Maximum Depth: **615 feet**

Record Count: 14

PLSS Search:

Township: 22S

Range: 34E

*UTM location was derived from PLSS - see Help

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