

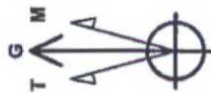
Well: #26Y
Wellbore: OH
Plan: Plan #4 (#26Y/OH)

WELL DETAILS: #26Y

Ground Elevation:: 3542.8
RKB Elevation: WELL @ 3560.8usft (Original Well Elev)

Rig Name: Original Well Elev

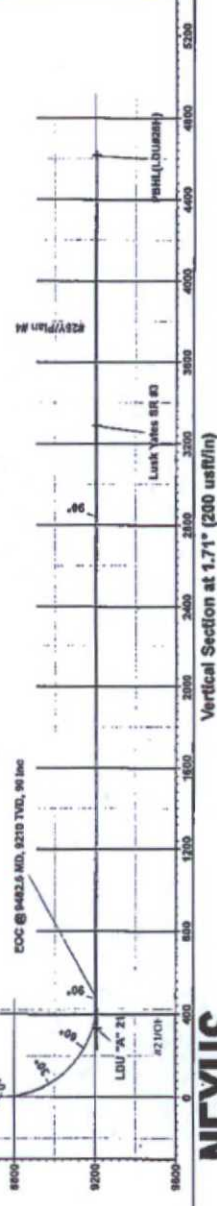
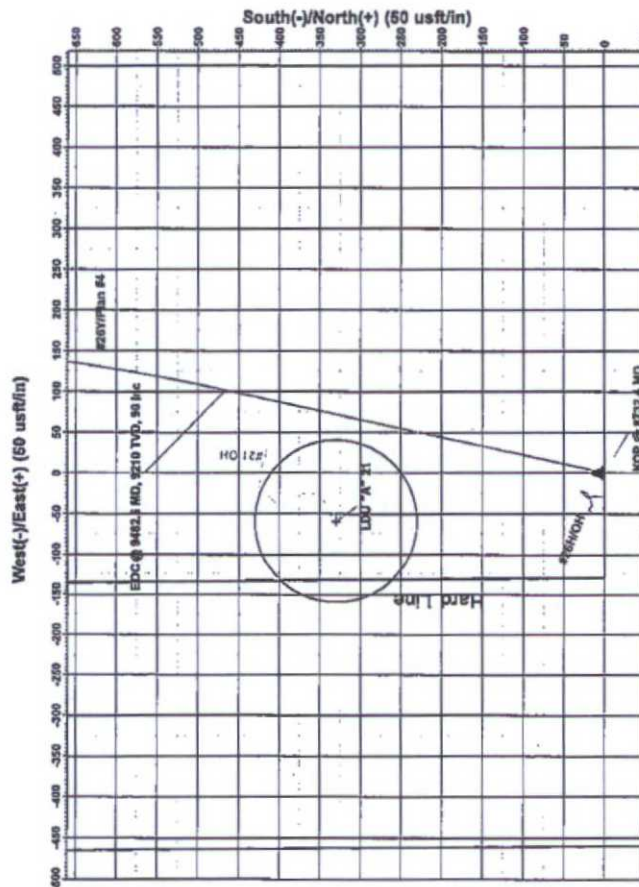
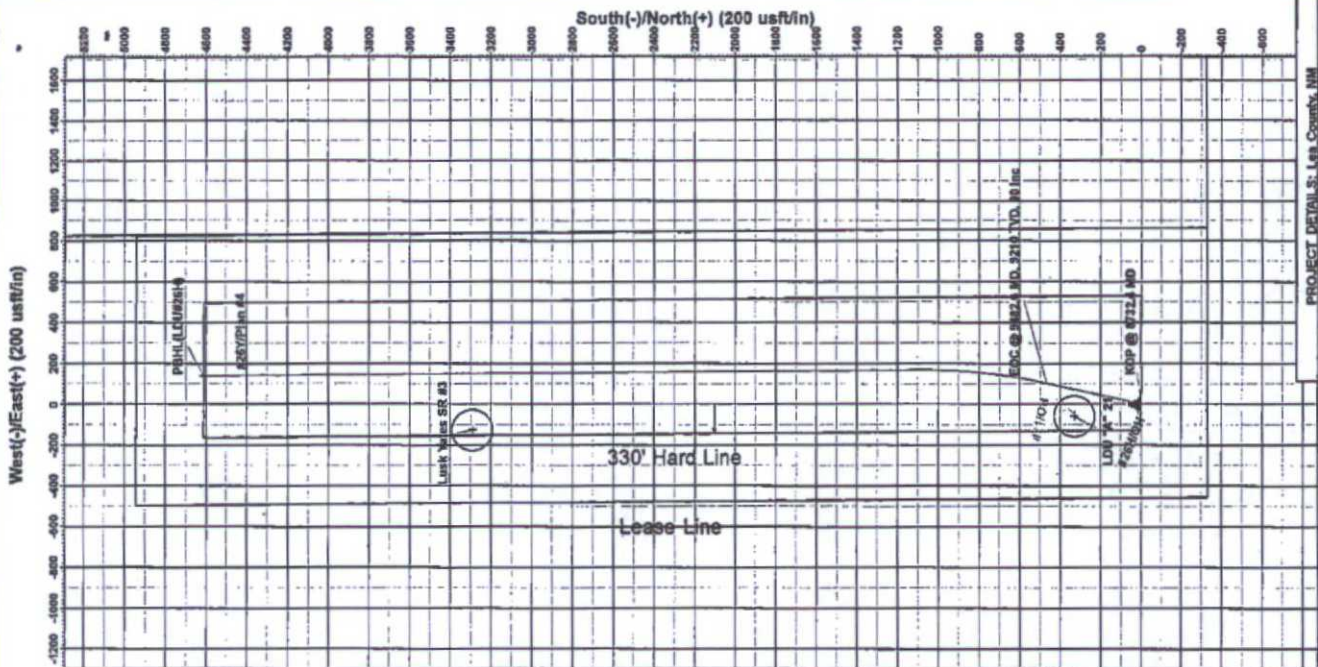
Northing	Easting	Latitude	Longitude
661767.80	661767.80	32° 38' 22.302 N	103° 48' 28.137 W
96771.80			



zimuths to Grid North
True North: -0.28°
Magnetic North: 5.94°

Magnetic Field
Strength: 48429.1snT
Dip Angle: 60.43°
Date: 7/22/2016
Model: IGRF2010

Sec	Section Details								
	MD	Inc	Azi	TYD	+N/-S	+E/-W	Dleg	TFace	Vsect
1	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	8732.4	0.00	0.00	8732.4	0.0	0.0	0.00	0.00	0.0
3	9482.6	90.00	12.22	9210.0	465.8	101.1	12.00	12.22	469.6
4	10116.4	90.00	359.54	9210.0	1036.0	185.9	2.00	-90.00	1100.5
5	13632.0	90.00	359.54	9210.0	4611.4	137.9	0.00	0.00	4813.5



NEXUS
DIRECTIONAL SOLUTIONS, L.P.

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

OCT 08 2015



COG Operating LLC

**Lea County, NM
Lusk Deep Unit A
#26Y**

OH

Plan: Plan #4

Standard Planning Report

01 October, 2015

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	Lusk Deep Unit A		
Site Position:		Northing:	603,696.00 usft
From:	Map	Easting:	660,099.70 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 38' 30.900 N
		Longitude:	103° 48' 47.247 W
		Grid Convergence:	0.28 °

Well	#26Y		
Well Position	+N/-S	-6,924.2 usft	Northing: 596,771.80 usft
	+E/-W	1,668.1 usft	Easting: 661,767.80 usft
Position Uncertainty	2.0 usft	Wellhead Elevation:	Ground Level: 3,542.8 usft
			Latitude: 32° 38' 22.302 N
			Longitude: 103° 48' 28.137 W

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	7/22/2015	(°)
			7.22
			Dip Angle
			(°)
			60.43
			Field Strength
			(nT)
			48,429

Design	Plan #4		
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
			(°)
			1.71

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	
8,732.4	0.00	0.00	8,732.4	0.0	0.0	0.00	0.00	0.00	0.00	
9,482.6	90.00	12.22	9,210.0	466.8	101.1	12.00	12.00	0.00	12.22	
10,116.4	90.00	359.54	9,210.0	1,096.0	165.9	2.00	0.00	-2.00	-90.00	
13,632.0	90.00	359.54	9,210.0	4,811.4	137.9	0.00	0.00	0.00	0.00	PBHL(LDU#26H)

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
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

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)
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
8,732.4	0.00	0.00	8,732.4	0.0	0.0	0.0	0.00	0.00	0.00
KOP @ 8732.4 MD									
8,750.0	2.11	12.22	8,750.0	0.3	0.1	0.3	12.00	12.00	0.00
8,775.0	5.11	12.22	8,774.9	1.9	0.4	1.9	12.00	12.00	0.00
8,800.0	8.11	12.22	8,799.8	4.7	1.0	4.7	12.00	12.00	0.00
8,825.0	11.11	12.22	8,824.4	8.7	1.9	8.8	12.00	12.00	0.00
8,850.0	14.11	12.22	8,848.8	14.1	3.0	14.2	12.00	12.00	0.00
8,875.0	17.11	12.22	8,872.9	20.7	4.5	20.8	12.00	12.00	0.00
8,900.0	20.11	12.22	8,898.6	28.4	6.2	28.6	12.00	12.00	0.00
8,925.0	23.11	12.22	8,919.8	37.4	8.1	37.7	12.00	12.00	0.00
8,950.0	26.10	12.22	8,942.5	47.6	10.3	47.9	12.00	12.00	0.00
8,975.0	29.10	12.22	8,964.7	58.9	12.8	59.3	12.00	12.00	0.00
9,000.0	32.10	12.22	8,986.2	71.4	15.5	71.8	12.00	12.00	0.00
9,025.0	35.10	12.22	9,007.0	84.9	18.4	85.4	12.00	12.00	0.00
9,050.0	38.10	12.22	9,027.1	99.5	21.5	100.1	12.00	12.00	0.00
9,075.0	41.10	12.22	9,048.4	115.0	24.9	115.7	12.00	12.00	0.00
9,100.0	44.10	12.22	9,064.8	131.6	28.5	132.4	12.00	12.00	0.00
9,125.0	47.10	12.22	9,082.3	149.0	32.3	149.9	12.00	12.00	0.00
9,150.0	50.10	12.22	9,098.8	167.3	36.2	168.4	12.00	12.00	0.00
9,175.0	53.10	12.22	9,114.3	186.5	40.4	187.6	12.00	12.00	0.00
9,200.0	56.10	12.22	9,128.8	206.4	44.7	207.7	12.00	12.00	0.00
9,225.0	59.10	12.22	9,142.2	227.0	49.2	228.4	12.00	12.00	0.00
9,250.0	62.09	12.22	9,154.5	248.3	53.8	249.8	12.00	12.00	0.00
9,275.0	65.09	12.22	9,165.6	270.2	58.5	271.8	12.00	12.00	0.00
9,300.0	68.09	12.22	9,175.5	292.6	63.4	294.4	12.00	12.00	0.00
9,325.0	71.09	12.22	9,184.2	315.5	68.3	317.4	12.00	12.00	0.00
9,350.0	74.09	12.22	9,191.7	338.8	73.4	340.9	12.00	12.00	0.00
9,375.0	77.09	12.22	9,197.9	362.5	78.5	364.7	12.00	12.00	0.00
9,400.0	80.09	12.22	9,202.9	386.4	83.7	388.8	12.00	12.00	0.00
9,425.0	83.09	12.22	9,206.5	410.6	88.9	413.1	12.00	12.00	0.00
9,450.0	86.09	12.22	9,208.9	434.9	94.2	437.6	12.00	12.00	0.00
9,475.0	89.09	12.22	9,209.9	459.3	99.5	462.1	12.00	12.00	0.00
9,482.6	90.00	12.22	9,210.0	486.8	101.1	469.6	12.00	12.00	0.00
EOC @ 9482.6 MD, 9210 TVD, 90 Inc									
9,500.0	90.00	11.87	9,210.0	483.8	104.7	486.7	2.00	0.01	-2.00
9,600.0	90.00	9.87	9,210.0	582.0	123.6	585.4	2.00	0.00	-2.00
9,700.0	90.00	7.87	9,210.0	680.8	138.0	684.6	2.00	0.00	-2.00
9,800.0	90.00	5.87	9,210.0	780.1	151.0	784.2	2.00	0.00	-2.00
9,900.0	90.00	3.87	9,210.0	879.7	159.5	884.1	2.00	0.00	-2.00
10,000.0	90.00	1.87	9,210.0	979.8	164.5	984.0	2.00	0.00	-2.00
10,100.0	90.00	359.87	9,210.0	1,079.5	168.0	1,084.0	2.00	0.00	-2.00
10,118.4	90.00	359.54	9,210.0	1,096.0	165.9	1,100.5	2.00	0.00	-2.00
10,200.0	90.00	359.54	9,210.0	1,179.5	165.2	1,184.0	0.00	0.00	0.00
10,300.0	90.00	359.54	9,210.0	1,279.5	164.4	1,283.9	0.00	0.00	0.00

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)
10,400.0	90.00	359.54	9,210.0	1,379.5	163.7	1,383.8	0.00	0.00	0.00
10,500.0	90.00	359.54	9,210.0	1,479.5	162.9	1,483.7	0.00	0.00	0.00
10,600.0	90.00	359.54	9,210.0	1,579.5	162.1	1,583.7	0.00	0.00	0.00
10,700.0	90.00	359.54	9,210.0	1,679.5	161.3	1,683.6	0.00	0.00	0.00
10,800.0	90.00	359.54	9,210.0	1,779.5	160.5	1,783.5	0.00	0.00	0.00
10,900.0	90.00	359.54	9,210.0	1,879.5	159.7	1,883.5	0.00	0.00	0.00
11,000.0	90.00	359.54	9,210.0	1,979.5	158.9	1,983.4	0.00	0.00	0.00
11,100.0	90.00	359.54	9,210.0	2,079.5	158.1	2,083.3	0.00	0.00	0.00
11,200.0	90.00	359.54	9,210.0	2,179.5	157.3	2,183.2	0.00	0.00	0.00
11,300.0	90.00	359.54	9,210.0	2,279.5	156.5	2,283.2	0.00	0.00	0.00
11,400.0	90.00	359.54	9,210.0	2,379.5	155.7	2,383.1	0.00	0.00	0.00
11,500.0	90.00	359.54	9,210.0	2,479.5	154.9	2,483.0	0.00	0.00	0.00
11,600.0	90.00	359.54	9,210.0	2,579.5	154.1	2,583.0	0.00	0.00	0.00
11,700.0	90.00	359.54	9,210.0	2,679.5	153.3	2,682.9	0.00	0.00	0.00
11,800.0	90.00	359.54	9,210.0	2,779.5	152.5	2,782.8	0.00	0.00	0.00
11,900.0	90.00	359.54	9,210.0	2,879.5	151.7	2,882.7	0.00	0.00	0.00
12,000.0	90.00	359.54	9,210.0	2,979.5	150.9	2,982.7	0.00	0.00	0.00
12,100.0	90.00	359.54	9,210.0	3,079.5	150.1	3,082.6	0.00	0.00	0.00
12,200.0	90.00	359.54	9,210.0	3,179.5	149.3	3,182.5	0.00	0.00	0.00
12,300.0	90.00	359.54	9,210.0	3,279.5	148.5	3,282.4	0.00	0.00	0.00
12,400.0	90.00	359.54	9,210.0	3,379.5	147.7	3,382.4	0.00	0.00	0.00
12,500.0	90.00	359.54	9,210.0	3,479.5	146.9	3,482.3	0.00	0.00	0.00
12,600.0	90.00	359.54	9,210.0	3,579.5	146.1	3,582.2	0.00	0.00	0.00
12,700.0	90.00	359.54	9,210.0	3,679.5	145.3	3,682.2	0.00	0.00	0.00
12,800.0	90.00	359.54	9,210.0	3,779.5	144.5	3,782.1	0.00	0.00	0.00
12,900.0	90.00	359.54	9,210.0	3,879.5	143.7	3,882.0	0.00	0.00	0.00
13,000.0	90.00	359.54	9,210.0	3,979.5	142.9	3,981.9	0.00	0.00	0.00
13,100.0	90.00	359.54	9,210.0	4,079.4	142.1	4,081.9	0.00	0.00	0.00
13,200.0	90.00	359.54	9,210.0	4,179.4	141.3	4,181.8	0.00	0.00	0.00
13,300.0	90.00	359.54	9,210.0	4,279.4	140.5	4,281.7	0.00	0.00	0.00
13,400.0	90.00	359.54	9,210.0	4,379.4	139.7	4,381.7	0.00	0.00	0.00
13,500.0	90.00	359.54	9,210.0	4,479.4	139.0	4,481.6	0.00	0.00	0.00
13,600.0	90.00	359.54	9,210.0	4,579.4	138.2	4,581.5	0.00	0.00	0.00
13,632.0	90.00	359.54	9,210.0	4,611.4	137.9	4,613.5	0.00	0.00	0.00

TD @ 13632 MD, 9210 TVD

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									
Lusk Yates SR #3	0.00	0.00	9,210.0	3,291.9	-129.1	600,063.73	661,636.72	32° 38' 54.883 N	103° 48' 29.456 W
- plan misses target center by 277.5usft at 12314.7usft MD (9210.0 TVD, 3294.1 N, 148.4 E)									
- Circle (radius 100.0)									
PBHL(LDU#26H)	0.00	0.00	9,210.0	4,611.4	137.9	601,383.20	661,905.70	32° 39' 7.926 N	103° 48' 26.257 W
- plan hits target center									
- Point									
LDU "A" 21	0.00	0.01	9,210.0	329.9	-59.9	597,101.70	661,707.90	32° 38' 25.569 N	103° 48' 28.818 W
- plan misses target center by 131.5usft at 9321.7usft MD (9183.2 TVD, 312.5 N, 67.7 E)									
- Circle (radius 100.0)									



COG Operating LLC

Lea County, NM

Lusk Deep Unit A

#26Y

OH

Plan #4

Anticollision Report

01 October, 2015

Reference	Plan #4		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 10.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum separation factor of 10.00	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 10/1/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
0.0	13,631.7	Plan #4 (OH)	MWD
			Description
			MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Lusk Deep Unit A						
#21 - OH - OH	9,418.8	9,184.7	107.0	3.4	1.032	Level 2, CC, ES, SF
#26H - OH - OH	486.4	486.4	29.8	22.6	4.118	CC
#26H - OH - OH	2,790.0	2,790.3	33.6	20.1	2.491	ES
#26H - OH - OH	2,830.0	2,830.2	33.8	20.2	2.483	SF

Offset Design Lusk Deep Unit A - #21 - OH - OH												
Survey Program: 10-CB-GYRO-MS												
Reference	Offset	Semi Major Axis		Distance		Warning		Offset Site Error: 0.0 usft				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
3,150.0	3,160.0	3,123.1	3,122.7	7.2	28.3	-4.68	353.1	-28.9	354.4	318.9	35.51	9.979
3,160.0	3,160.0	3,133.0	3,132.6	7.3	28.4	-4.68	353.3	-28.8	354.5	318.9	35.82	9.953
3,170.0	3,170.0	3,143.1	3,142.7	7.3	28.5	-4.64	353.5	-28.7	354.7	318.9	35.73	9.926
3,180.0	3,180.0	3,153.2	3,152.8	7.3	28.6	-4.62	353.6	-28.6	354.8	319.0	35.84	9.900
3,190.0	3,190.0	3,163.3	3,163.1	7.3	28.6	-4.60	353.8	-28.5	355.0	319.0	35.95	9.873
3,200.0	3,200.0	3,173.6	3,173.2	7.3	28.7	-4.58	353.9	-28.4	355.1	319.1	36.06	9.847
3,210.0	3,210.0	3,183.5	3,183.1	7.4	28.8	-4.56	354.1	-28.3	355.3	319.1	36.17	9.821
3,220.0	3,220.0	3,193.4	3,193.0	7.4	28.9	-4.54	354.2	-28.2	355.4	319.1	36.28	9.796
3,230.0	3,230.0	3,203.3	3,202.9	7.4	29.0	-4.53	354.4	-28.1	355.6	319.2	36.39	9.770
3,240.0	3,240.0	3,213.4	3,213.0	7.4	29.1	-4.51	354.6	-28.0	355.7	319.2	36.50	9.745
3,250.0	3,250.0	3,223.6	3,223.2	7.4	29.2	-4.49	354.7	-27.9	355.8	319.2	36.61	9.719
3,260.0	3,260.0	3,233.8	3,233.4	7.5	29.3	-4.48	354.9	-27.8	356.0	319.3	36.72	9.694
3,270.0	3,270.0	3,243.9	3,243.5	7.5	29.4	-4.46	355.0	-27.7	356.1	319.3	36.83	9.668
3,280.0	3,280.0	3,254.1	3,253.7	7.5	29.4	-4.45	355.1	-27.6	356.2	319.3	36.94	9.643
3,290.0	3,290.0	3,264.1	3,263.7	7.5	29.5	-4.43	355.3	-27.5	356.4	319.3	37.05	9.617
3,300.0	3,300.0	3,274.0	3,273.6	7.6	29.6	-4.42	355.4	-27.5	356.5	319.3	37.16	9.593
3,310.0	3,310.0	3,283.9	3,283.5	7.6	29.7	-4.41	355.5	-27.4	356.6	319.4	37.27	9.568
3,320.0	3,320.0	3,293.9	3,293.4	7.6	29.8	-4.39	355.7	-27.3	356.8	319.4	37.38	9.544
3,330.0	3,330.0	3,304.1	3,303.7	7.6	29.9	-4.38	355.8	-27.3	356.9	319.4	37.49	9.519
3,340.0	3,340.0	3,314.4	3,314.0	7.6	30.0	-4.37	356.0	-27.2	357.0	319.4	37.61	9.494
3,350.0	3,350.0	3,324.6	3,324.2	7.7	30.1	-4.36	356.1	-27.1	357.1	319.4	37.72	9.469
3,360.0	3,360.0	3,334.7	3,334.3	7.7	30.2	-4.35	356.2	-27.1	357.2	319.4	37.83	9.444
3,370.0	3,370.0	3,344.8	3,344.4	7.7	30.2	-4.34	356.3	-27.0	357.3	319.4	37.94	9.420
3,380.0	3,380.0	3,354.9	3,354.5	7.7	30.3	-4.33	356.4	-27.0	357.5	319.4	38.05	9.395
3,390.0	3,390.0	3,365.1	3,364.7	7.7	30.4	-4.32	356.5	-26.9	357.6	319.4	38.16	9.370
3,400.0	3,400.0	3,375.5	3,375.1	7.8	30.6	-4.31	356.6	-26.9	357.7	319.4	38.27	9.345
3,410.0	3,410.0	3,385.9	3,385.4	7.8	30.6	-4.31	356.7	-26.9	357.7	319.4	38.38	9.320
3,420.0	3,420.0	3,396.4	3,395.9	7.8	30.7	-4.30	356.8	-26.8	357.8	319.3	38.50	9.294
3,430.0	3,430.0	3,406.9	3,406.4	7.8	30.8	-4.30	356.9	-26.8	357.9	319.3	38.61	9.269
3,440.0	3,440.0	3,417.2	3,416.8	7.9	30.9	-4.30	356.9	-26.8	357.9	319.2	38.72	9.243
3,450.0	3,450.0	3,427.3	3,426.9	7.9	31.0	-4.29	356.9	-26.8	357.9	319.1	38.83	9.218
3,460.0	3,460.0	3,437.2	3,436.8	7.9	31.1	-4.29	357.0	-26.8	358.0	319.0	38.94	9.193
3,470.0	3,470.0	3,447.0	3,446.5	7.9	31.1	-4.29	357.0	-26.8	358.0	319.0	39.05	9.169
3,480.0	3,480.0	3,456.8	3,456.4	7.9	31.2	-4.28	357.1	-26.7	358.1	318.9	39.16	9.145
3,490.0	3,490.0	3,466.8	3,466.4	8.0	31.3	-4.28	357.1	-26.7	358.1	318.9	39.27	9.121
3,500.0	3,500.0	3,476.9	3,476.5	8.0	31.4	-4.28	357.2	-26.7	358.2	318.8	39.37	9.096
3,510.0	3,510.0	3,487.0	3,486.6	8.0	31.5	-4.28	357.2	-26.7	358.2	318.7	39.48	9.072

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

Offset Design Lusk Deep Unit A - #21 - OH - OH

Survey Program: 10-CB-GYRO-MS

Offset Site Error: 0.0 usft

Offset Well Error: 5.0 usft

Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipse (usft)	Minimum Separation (usft)	Separation Factor	
3,520.0	3,520.0	3,497.0	3,488.6	8.0	31.8	-4.28	357.3	-26.7	358.3	318.7	39.59	9.049	
3,530.0	3,530.0	3,507.1	3,506.7	8.1	31.7	-4.27	357.3	-26.7	358.3	318.6	39.70	9.025	
3,540.0	3,540.0	3,517.2	3,516.7	8.1	31.8	-4.27	357.3	-26.7	358.3	318.5	39.81	9.001	
3,550.0	3,550.0	3,527.1	3,526.7	8.1	31.8	-4.27	357.4	-26.7	358.4	318.5	39.92	8.977	
3,560.0	3,560.0	3,536.9	3,536.5	8.1	31.9	-4.26	357.4	-26.7	358.4	318.4	40.03	8.954	
3,570.0	3,570.0	3,546.8	3,546.3	8.1	32.0	-4.26	357.5	-26.6	358.5	318.3	40.14	8.932	
3,580.0	3,580.0	3,556.5	3,556.1	8.2	32.1	-4.26	357.5	-26.6	358.5	318.3	40.24	8.909	
3,590.0	3,590.0	3,566.4	3,566.0	8.2	32.2	-4.26	357.6	-26.6	358.6	318.2	40.35	8.887	
3,600.0	3,600.0	3,576.4	3,576.0	8.2	32.3	-4.26	357.7	-26.6	358.7	318.2	40.46	8.865	
3,610.0	3,610.0	3,586.4	3,586.0	8.2	32.4	-4.26	357.7	-26.6	358.7	318.1	40.57	8.842	
3,620.0	3,620.0	3,596.4	3,596.0	8.3	32.4	-4.26	357.8	-26.6	358.8	318.1	40.68	8.820	
3,630.0	3,630.0	3,606.3	3,605.8	8.3	32.5	-4.26	357.8	-26.6	358.8	318.1	40.78	8.799	
3,640.0	3,640.0	3,616.2	3,615.7	8.3	32.6	-4.25	357.9	-26.6	358.9	318.0	40.89	8.777	
3,650.0	3,650.0	3,626.0	3,625.6	8.3	32.7	-4.25	358.0	-26.6	359.0	318.0	41.00	8.758	
3,660.0	3,660.0	3,635.8	3,635.4	8.3	32.8	-4.25	358.1	-26.6	359.1	317.9	41.11	8.735	
3,670.0	3,670.0	3,645.7	3,645.3	8.4	32.9	-4.25	358.1	-26.6	359.1	317.9	41.21	8.714	
3,680.0	3,680.0	3,655.7	3,655.3	8.4	33.0	-4.25	358.2	-26.6	359.2	317.9	41.32	8.693	
3,690.0	3,690.0	3,665.7	3,665.3	8.4	33.0	-4.25	358.3	-26.6	359.3	317.9	41.43	8.672	
3,700.0	3,700.0	3,675.7	3,675.3	8.4	33.1	-4.25	358.4	-26.7	359.4	317.8	41.54	8.652	
3,710.0	3,710.0	3,685.6	3,685.2	8.4	33.2	-4.25	358.5	-26.7	359.5	317.8	41.65	8.631	
3,720.0	3,720.0	3,695.6	3,695.1	8.5	33.3	-4.25	358.5	-26.7	359.5	317.8	41.75	8.611	
3,730.0	3,730.0	3,705.4	3,705.0	8.5	33.4	-4.25	358.6	-26.7	359.6	317.8	41.86	8.591	
3,740.0	3,740.0	3,715.3	3,714.8	8.5	33.5	-4.25	358.7	-26.7	359.7	317.8	41.97	8.571	
3,750.0	3,750.0	3,725.1	3,724.7	8.5	33.6	-4.25	358.8	-26.7	359.8	317.7	42.08	8.552	
3,760.0	3,760.0	3,735.1	3,734.7	8.6	33.6	-4.25	358.9	-26.7	359.9	317.7	42.18	8.532	
3,770.0	3,770.0	3,745.2	3,744.7	8.6	33.7	-4.25	359.0	-26.7	360.0	317.7	42.29	8.512	
3,780.0	3,780.0	3,755.3	3,754.8	8.6	33.8	-4.25	359.1	-26.7	360.1	317.7	42.40	8.493	
3,790.0	3,790.0	3,765.4	3,764.9	8.6	33.9	-4.26	359.2	-26.7	360.2	317.7	42.51	8.473	
3,800.0	3,800.0	3,775.4	3,775.0	8.6	34.0	-4.26	359.3	-26.7	360.3	317.7	42.62	8.454	
3,810.0	3,810.0	3,785.4	3,785.0	8.7	34.1	-4.26	359.4	-26.8	360.4	317.7	42.73	8.434	
3,820.0	3,820.0	3,795.4	3,795.0	8.7	34.2	-4.26	359.5	-26.8	360.5	317.6	42.84	8.415	
3,830.0	3,830.0	3,805.3	3,804.9	8.7	34.3	-4.26	359.6	-26.8	360.6	317.6	42.94	8.396	
3,840.0	3,840.0	3,815.3	3,814.9	8.7	34.3	-4.26	359.6	-26.8	360.7	317.6	43.05	8.377	
3,850.0	3,850.0	3,825.3	3,825.2	8.8	34.4	-4.26	359.7	-26.8	360.7	317.6	43.16	8.357	
3,860.0	3,860.0	3,835.1	3,835.7	8.8	34.5	-4.26	359.8	-26.8	360.8	317.5	43.28	8.338	
3,870.0	3,870.0	3,845.2	3,845.8	8.8	34.6	-4.26	359.9	-26.8	360.9	317.5	43.39	8.318	
3,880.0	3,880.0	3,855.4	3,856.0	8.8	34.7	-4.26	359.9	-26.8	361.0	317.5	43.49	8.299	
3,890.0	3,890.0	3,865.8	3,866.4	8.8	34.8	-4.27	360.0	-26.9	361.0	317.4	43.61	8.279	
3,900.0	3,900.0	3,877.0	3,876.5	8.9	34.9	-4.27	360.1	-26.9	361.1	317.3	43.71	8.260	
3,910.0	3,910.0	3,887.1	3,886.7	8.9	35.0	-4.28	360.1	-26.9	361.1	317.3	43.82	8.240	
3,920.0	3,920.0	3,897.2	3,896.7	8.9	35.0	-4.28	360.1	-27.0	361.1	317.2	43.93	8.221	
3,930.0	3,930.0	3,907.3	3,906.9	8.9	35.1	-4.28	360.2	-27.0	361.2	317.1	44.04	8.202	
3,940.0	3,940.0	3,917.1	3,916.6	8.9	35.2	-4.29	360.2	-27.0	361.2	317.1	44.14	8.183	
3,950.0	3,950.0	3,927.0	3,926.6	9.0	35.3	-4.29	360.3	-27.0	361.3	317.0	44.25	8.164	
3,960.0	3,960.0	3,937.0	3,936.6	9.0	35.4	-4.29	360.3	-27.0	361.3	317.0	44.36	8.146	
3,970.0	3,970.0	3,946.9	3,946.4	9.0	35.5	-4.30	360.3	-27.1	361.4	316.9	44.46	8.127	
3,980.0	3,980.0	3,956.8	3,956.3	9.0	35.6	-4.30	360.4	-27.1	361.4	316.8	44.57	8.109	
3,990.0	3,990.0	3,966.7	3,966.2	9.1	35.6	-4.30	360.4	-27.1	361.5	316.8	44.68	8.090	
4,000.0	4,000.0	3,976.6	3,976.2	9.1	35.7	-4.30	360.5	-27.1	361.5	316.7	44.78	8.072	
4,010.0	4,010.0	3,986.8	3,986.3	9.1	35.8	-4.31	360.5	-27.2	361.6	316.7	44.89	8.054	
4,020.0	4,020.0	3,996.8	3,996.4	9.1	35.9	-4.31	360.6	-27.2	361.6	316.6	45.00	8.036	
4,030.0	4,030.0	4,007.0	4,006.6	9.1	36.0	-4.32	360.6	-27.2	361.7	316.6	45.11	8.018	
4,040.0	4,040.0	4,016.9	4,016.5	9.2	36.1	-4.32	360.7	-27.2	361.7	316.5	45.22	8.000	
4,050.0	4,050.0	4,026.9	4,026.4	9.2	36.2	-4.32	360.7	-27.3	361.8	316.4	45.32	7.982	
4,060.0	4,060.0	4,036.7	4,036.2	9.2	36.2	-4.32	360.8	-27.3	361.8	316.4	45.43	7.964	
4,070.0	4,070.0	4,046.3	4,045.9	9.2	36.3	-4.33	360.8	-27.3	361.9	316.3	45.54	7.947	
4,080.0	4,080.0	4,056.0	4,055.5	9.3	36.4	-4.33	360.9	-27.3	361.9	316.3	45.64	7.930	
4,090.0	4,090.0	4,065.9	4,065.5	9.3	36.5	-4.33	361.0	-27.3	362.0	316.3	45.75	7.913	
4,100.0	4,100.0	4,075.9	4,075.5	9.3	36.6	-4.33	361.0	-27.3	362.1	316.2	45.86	7.896	
4,110.0	4,110.0	4,085.7	4,085.3	9.3	36.7	-4.33	361.1	-27.3	362.2	316.2	45.97	7.879	
4,120.0	4,120.0	4,095.4	4,094.9	9.3	36.7	-4.33	361.2	-27.3	362.3	316.2	46.07	7.863	
4,130.0	4,130.0	4,105.3	4,104.9	9.4	36.8	-4.33	361.3	-27.3	362.3	316.2	46.18	7.846	
4,140.0	4,140.0	4,115.4	4,114.9	9.4	36.9	-4.33	361.4	-27.3	362.4	316.1	46.29	7.830	
4,150.0	4,150.0	4,125.3	4,124.9	9.4	37.0	-4.33	361.5	-27.4	362.5	316.1	46.40	7.813	
4,160.0	4,160.0	4,135.2	4,134.8	9.4	37.1	-4.33	361.6	-27.3	362.6	316.1	46.51	7.797	
4,170.0	4,170.0	4,145.0	4,144.6	9.5	37.2	-4.32	361.7	-27.3	362.7	316.1	46.62	7.781	

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

Offset Design Lusk Deep Unit A - #21 - OH - OH													Offset Site Error:	0.0 usf
Survey Program: 10-CB-GYRO-MS													Offset Well Error:	5.0 usf
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usf)	Between Ellipses (usf)	Minimum Separation (usf)	Separation Factor	Warning	
Measured Depth (usf)	Vertical Depth (usf)	Measured Depth (usf)	Vertical Depth (usf)	Reference (usf)	Offset (usf)		Offset Wellbore Centre +N/-S (usf)	+E/-W (usf)						
4,180.0	4,180.0	4,154.8	4,154.3	9.5	37.3	-4.32	361.8	-27.3	362.8	316.1	48.72	7.765		
4,190.0	4,190.0	4,164.6	4,164.2	9.5	37.4	-4.32	361.9	-27.3	362.9	316.1	48.83	7.750		
4,200.0	4,200.0	4,174.5	4,174.0	9.5	37.4	-4.31	362.0	-27.3	363.0	316.1	48.94	7.734		
4,210.0	4,210.0	4,184.3	4,183.9	9.5	37.5	-4.31	362.1	-27.3	363.2	316.1	47.06	7.719		
4,220.0	4,220.0	4,194.2	4,193.8	9.6	37.6	-4.31	362.2	-27.3	363.3	316.1	47.16	7.703		
4,230.0	4,230.0	4,204.1	4,203.6	9.6	37.7	-4.30	362.4	-27.3	363.4	316.1	47.27	7.688		
4,240.0	4,240.0	4,214.1	4,213.7	9.6	37.8	-4.30	362.5	-27.3	363.5	316.2	47.38	7.673		
4,250.0	4,250.0	4,224.2	4,223.8	9.6	37.9	-4.30	362.6	-27.3	363.7	316.2	47.49	7.658		
4,260.0	4,260.0	4,234.3	4,233.9	9.7	38.0	-4.30	362.7	-27.2	363.8	316.2	47.60	7.643		
4,270.0	4,270.0	4,244.3	4,243.9	9.7	38.1	-4.29	362.8	-27.2	363.9	316.2	47.71	7.628		
4,280.0	4,280.0	4,254.4	4,254.0	9.7	38.1	-4.29	363.0	-27.2	364.0	316.2	47.82	7.612		
4,290.0	4,290.0	4,264.5	4,264.0	9.7	38.2	-4.29	363.1	-27.2	364.1	316.2	47.93	7.597		
4,300.0	4,300.0	4,274.6	4,274.1	9.7	38.3	-4.28	363.2	-27.2	364.2	316.2	48.04	7.582		
4,310.0	4,310.0	4,284.5	4,284.1	9.8	38.4	-4.28	363.3	-27.2	364.4	316.2	48.15	7.567		
4,320.0	4,320.0	4,294.4	4,294.0	9.8	38.6	-4.28	363.4	-27.2	364.5	316.2	48.26	7.552		
4,330.0	4,330.0	4,304.3	4,303.9	9.8	38.6	-4.27	363.5	-27.2	364.6	316.2	48.37	7.536		
4,340.0	4,340.0	4,314.2	4,313.7	9.8	38.7	-4.27	363.7	-27.1	364.7	316.2	48.48	7.523		
4,350.0	4,350.0	4,324.0	4,323.6	9.8	38.8	-4.26	363.8	-27.1	364.8	316.2	48.59	7.509		
4,360.0	4,360.0	4,333.9	4,333.5	9.9	38.8	-4.26	363.9	-27.1	365.0	316.3	48.69	7.495		
4,370.0	4,370.0	4,344.0	4,343.6	9.9	38.9	-4.25	364.1	-27.1	365.1	316.3	48.81	7.480		
4,380.0	4,380.0	4,354.1	4,353.6	9.9	39.0	-4.25	364.2	-27.1	365.2	316.3	48.92	7.466		
4,390.0	4,390.0	4,364.1	4,363.6	9.9	39.1	-4.25	364.3	-27.1	365.3	316.3	49.03	7.452		
4,400.0	4,400.0	4,374.2	4,373.7	10.0	39.2	-4.24	364.4	-27.0	365.5	316.3	49.14	7.438		
4,410.0	4,410.0	4,384.3	4,383.8	10.0	39.3	-4.24	364.6	-27.0	365.6	316.3	49.25	7.423		
4,420.0	4,420.0	4,394.4	4,393.9	10.0	39.4	-4.24	364.7	-27.0	365.7	316.3	49.36	7.409		
4,430.0	4,430.0	4,404.4	4,404.0	10.0	39.5	-4.24	364.8	-27.0	365.8	316.3	49.47	7.395		
4,440.0	4,440.0	4,414.4	4,414.0	10.0	39.6	-4.23	364.9	-27.0	365.9	316.4	49.58	7.381		
4,450.0	4,450.0	4,424.4	4,423.9	10.1	39.6	-4.23	365.0	-27.0	366.0	316.4	49.69	7.367		
4,460.0	4,460.0	4,434.3	4,433.8	10.1	39.7	-4.22	365.1	-27.0	366.2	316.4	49.80	7.353		
4,470.0	4,470.0	4,444.2	4,443.8	10.1	39.8	-4.22	365.3	-26.9	366.3	316.4	49.91	7.339		
4,480.0	4,480.0	4,454.2	4,453.7	10.1	39.9	-4.21	365.4	-26.9	366.4	316.4	50.02	7.326		
4,490.0	4,490.0	4,464.0	4,463.6	10.2	40.0	-4.21	365.5	-26.9	366.5	316.4	50.13	7.312		
4,500.0	4,500.0	4,473.9	4,473.4	10.2	40.1	-4.20	365.6	-26.9	366.7	316.4	50.23	7.299		
4,510.0	4,510.0	4,483.9	4,483.4	10.2	40.2	-4.20	365.8	-26.9	366.8	316.5	50.34	7.286		
4,520.0	4,520.0	4,493.9	4,493.5	10.2	40.3	-4.19	365.9	-26.8	366.9	316.5	50.46	7.272		
4,530.0	4,530.0	4,504.0	4,503.5	10.2	40.3	-4.19	366.0	-26.8	367.1	316.5	50.57	7.259		
4,540.0	4,540.0	4,514.1	4,513.6	10.3	40.4	-4.19	366.2	-26.8	367.2	316.5	50.68	7.246		
4,550.0	4,550.0	4,524.2	4,523.8	10.3	40.5	-4.19	366.3	-26.8	367.3	316.5	50.79	7.232		
4,560.0	4,560.0	4,534.3	4,533.8	10.3	40.6	-4.18	366.4	-26.8	367.4	316.5	50.90	7.219		
4,570.0	4,570.0	4,544.3	4,543.8	10.3	40.7	-4.18	366.5	-26.8	367.5	316.5	51.01	7.205		
4,580.0	4,580.0	4,554.3	4,553.8	10.4	40.8	-4.17	366.7	-26.8	367.7	316.5	51.12	7.192		
4,590.0	4,590.0	4,564.2	4,563.7	10.4	40.9	-4.17	366.8	-26.7	367.8	316.6	51.23	7.179		
4,600.0	4,600.0	4,574.1	4,573.7	10.4	41.0	-4.17	366.9	-26.7	367.9	316.6	51.34	7.165		
4,610.0	4,610.0	4,584.1	4,583.6	10.4	41.1	-4.16	367.0	-26.7	368.0	316.6	51.45	7.153		
4,620.0	4,620.0	4,594.0	4,593.5	10.4	41.1	-4.16	367.2	-26.7	368.2	316.6	51.56	7.141		
4,630.0	4,630.0	4,603.9	4,603.4	10.5	41.2	-4.15	367.3	-26.7	368.3	316.6	51.67	7.128		
4,640.0	4,640.0	4,613.8	4,613.4	10.5	41.3	-4.15	367.4	-26.6	368.4	316.6	51.78	7.115		
4,650.0	4,650.0	4,623.9	4,623.4	10.5	41.4	-4.14	367.6	-26.6	368.6	316.7	51.89	7.103		
4,660.0	4,660.0	4,634.0	4,633.5	10.5	41.5	-4.14	367.7	-26.6	368.7	316.7	52.00	7.090		
4,670.0	4,670.0	4,644.1	4,643.6	10.6	41.6	-4.14	367.8	-26.6	368.8	316.7	52.11	7.077		
4,680.0	4,680.0	4,654.2	4,653.7	10.6	41.7	-4.14	367.9	-26.6	368.9	316.7	52.22	7.065		
4,690.0	4,690.0	4,664.3	4,663.8	10.6	41.8	-4.14	368.1	-26.6	369.0	316.7	52.33	7.052		
4,700.0	4,700.0	4,674.4	4,673.9	10.6	41.9	-4.14	368.2	-26.6	369.2	316.7	52.44	7.039		
4,710.0	4,710.0	4,684.4	4,683.9	10.6	41.9	-4.14	368.3	-26.6	369.3	316.7	52.55	7.027		
4,720.0	4,720.0	4,694.3	4,693.9	10.7	42.0	-4.14	368.4	-26.6	369.4	316.7	52.66	7.014		
4,730.0	4,730.0	4,704.3	4,703.8	10.7	42.1	-4.13	368.5	-26.6	369.5	316.7	52.77	7.002		
4,740.0	4,740.0	4,714.3	4,713.8	10.7	42.2	-4.13	368.6	-26.6	369.6	316.7	52.88	6.990		
4,750.0	4,750.0	4,724.2	4,723.7	10.7	42.3	-4.13	368.8	-26.7	369.8	316.8	52.99	6.978		
4,760.0	4,760.0	4,734.1	4,733.6	10.8	42.4	-4.14	368.9	-26.7	369.9	316.8	53.10	6.966		
4,770.0	4,770.0	4,744.2	4,743.7	10.8	42.5	-4.14	369.0	-26.7	370.0	316.8	53.21	6.954		
4,780.0	4,780.0	4,754.3	4,753.8	10.8	42.6	-4.14	369.1	-26.7	370.1	316.8	53.32	6.942		
4,790.0	4,790.0	4,764.4	4,763.9	10.8	42.6	-4.14	369.2	-26.7	370.2	316.8	53.43	6.929		
4,800.0	4,800.0	4,774.5	4,774.0	10.8	42.7	-4.15	369.4	-26.8	370.3	316.8	53.54	6.917		
4,810.0	4,810.0	4,784.6	4,784.1	10.9	42.8	-4.15	369.5	-26.8	370.5	316.8	53.65	6.905		
4,820.0	4,820.0	4,794.6	4,794.2	10.9	42.9	-4.15	369.6	-26.8	370.6	316.8	53.76	6.893		
4,830.0	4,830.0	4,804.7	4,804.2	10.9	43.0	-4.15	369.7	-26.9	370.7	316.8	53.87	6.881		

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

Offset Design Lusk Deep Unit A - #21 - OH - OH												Offset Site Error:	0.0 usft
Survey Program: 10-CB-GYRO-MS												Offset Well Error:	5.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
4,840.0	4,840.0	4,814.5	4,814.1	10.9	43.1	-4.16	369.8	-26.9	370.8	316.8	53.98	8.889	
4,850.0	4,850.0	4,824.4	4,824.0	11.0	43.2	-4.16	369.9	-26.9	370.9	316.8	54.09	8.858	
4,860.0	4,860.0	4,834.3	4,833.9	11.0	43.3	-4.16	370.0	-26.9	371.0	316.8	54.20	8.846	
4,870.0	4,870.0	4,844.3	4,843.8	11.0	43.3	-4.16	370.1	-26.9	371.1	316.8	54.30	8.834	
4,880.0	4,880.0	4,854.2	4,853.8	11.0	43.4	-4.18	370.2	-27.0	371.3	316.8	54.41	8.823	
4,890.0	4,890.0	4,864.3	4,863.8	11.0	43.5	-4.17	370.4	-27.0	371.4	316.9	54.52	8.811	
4,900.0	4,900.0	4,874.4	4,873.9	11.1	43.6	-4.17	370.5	-27.0	371.5	316.9	54.63	8.800	
4,910.0	4,910.0	4,884.6	4,884.1	11.1	43.7	-4.17	370.6	-27.0	371.6	316.9	54.74	8.788	
4,920.0	4,920.0	4,894.7	4,894.2	11.1	43.8	-4.18	370.7	-27.1	371.7	316.9	54.86	8.776	
4,930.0	4,930.0	4,904.8	4,904.1	11.1	43.9	-4.18	370.8	-27.1	371.8	316.9	54.96	8.765	
4,940.0	4,940.0	4,914.6	4,914.1	11.2	44.0	-4.18	370.9	-27.1	371.9	316.9	55.07	8.753	
4,950.0	4,950.0	4,924.5	4,924.0	11.2	44.0	-4.18	371.0	-27.1	372.0	316.9	55.18	8.742	
4,960.0	4,960.0	4,934.4	4,933.9	11.2	44.1	-4.18	371.1	-27.2	372.2	316.9	55.29	8.731	
4,970.0	4,970.0	4,944.3	4,943.8	11.2	44.2	-4.19	371.3	-27.2	372.3	316.9	55.40	8.720	
4,980.0	4,980.0	4,954.2	4,953.7	11.2	44.3	-4.19	371.4	-27.2	372.4	316.9	55.51	8.709	
4,990.0	4,990.0	4,964.1	4,963.6	11.3	44.4	-4.19	371.5	-27.2	372.5	316.9	55.62	8.698	
5,000.0	5,000.0	4,974.2	4,973.7	11.3	44.5	-4.20	371.6	-27.3	372.6	316.9	55.73	8.687	
5,010.0	5,010.0	4,984.4	4,983.9	11.3	44.6	-4.20	371.7	-27.3	372.8	316.9	55.84	8.676	
5,020.0	5,020.0	4,994.5	4,994.0	11.3	44.7	-4.20	371.8	-27.3	372.9	316.9	55.95	8.664	
5,030.0	5,030.0	5,004.6	5,004.1	11.4	44.7	-4.21	372.0	-27.4	373.0	316.9	56.06	8.653	
5,040.0	5,040.0	5,014.6	5,014.1	11.4	44.8	-4.21	372.1	-27.4	373.1	316.9	56.17	8.642	
5,050.0	5,050.0	5,024.6	5,024.1	11.4	44.9	-4.21	372.2	-27.4	373.2	316.9	56.28	8.631	
5,060.0	5,060.0	5,034.6	5,034.1	11.4	45.0	-4.22	372.3	-27.4	373.3	316.9	56.39	8.620	
5,070.0	5,070.0	5,044.5	5,044.0	11.4	45.1	-4.22	372.4	-27.5	373.4	316.9	56.50	8.609	
5,080.0	5,080.0	5,054.4	5,053.9	11.5	45.2	-4.22	372.5	-27.5	373.5	316.9	56.61	8.599	
5,090.0	5,090.0	5,064.3	5,063.8	11.5	45.3	-4.22	372.6	-27.5	373.7	316.9	56.72	8.588	
5,100.0	5,100.0	5,074.2	5,073.7	11.5	45.4	-4.22	372.7	-27.5	373.8	316.9	56.82	8.578	
5,110.0	5,110.0	5,084.1	5,083.6	11.5	45.4	-4.23	372.8	-27.6	373.9	317.0	56.93	8.567	
5,120.0	5,120.0	5,094.1	5,093.6	11.5	45.5	-4.23	373.0	-27.6	374.0	317.0	57.04	8.557	
5,130.0	5,130.0	5,104.1	5,103.6	11.6	45.6	-4.23	373.1	-27.6	374.1	317.0	57.15	8.546	
5,140.0	5,140.0	5,114.2	5,113.7	11.6	45.7	-4.24	373.2	-27.6	374.3	317.0	57.26	8.536	
5,150.0	5,150.0	5,124.3	5,123.8	11.6	45.8	-4.24	373.3	-27.7	374.4	317.0	57.37	8.525	
5,160.0	5,160.0	5,134.4	5,133.8	11.6	45.9	-4.24	373.4	-27.7	374.5	317.0	57.48	8.515	
5,170.0	5,170.0	5,144.4	5,143.9	11.7	46.0	-4.25	373.6	-27.8	374.6	317.0	57.59	8.504	
5,180.0	5,180.0	5,154.4	5,153.9	11.7	46.1	-4.25	373.7	-27.8	374.7	317.0	57.70	8.494	
5,190.0	5,190.0	5,164.4	5,163.9	11.7	46.2	-4.26	373.8	-27.8	374.8	317.0	57.81	8.484	
5,200.0	5,200.0	5,174.5	5,173.9	11.7	46.2	-4.26	373.9	-27.9	375.0	317.0	57.92	8.473	
5,210.0	5,210.0	5,184.5	5,184.0	11.7	46.3	-4.27	374.0	-27.9	375.1	317.0	58.03	8.463	
5,220.0	5,220.0	5,194.6	5,194.1	11.8	46.4	-4.27	374.1	-27.9	375.2	317.0	58.14	8.453	
5,230.0	5,230.0	5,204.5	5,204.0	11.8	46.5	-4.28	374.2	-28.0	375.3	317.0	58.25	8.443	
5,240.0	5,240.0	5,214.4	5,213.8	11.8	46.6	-4.28	374.3	-28.0	375.4	317.0	58.36	8.433	
5,250.0	5,250.0	5,224.3	5,223.8	11.8	46.7	-4.28	374.4	-28.0	375.5	317.0	58.47	8.423	
5,260.0	5,260.0	5,234.1	5,233.6	11.9	46.8	-4.29	374.6	-28.1	375.6	317.1	58.58	8.413	
5,270.0	5,270.0	5,244.0	5,243.4	11.9	46.8	-4.29	374.7	-28.1	375.8	317.1	58.68	8.403	
5,280.0	5,280.0	5,253.9	5,253.4	11.9	46.9	-4.30	374.8	-28.2	375.9	317.1	58.79	8.393	
5,290.0	5,290.0	5,263.9	5,263.4	11.9	47.0	-4.30	374.9	-28.2	376.0	317.1	58.90	8.384	
5,300.0	5,300.0	5,274.1	5,273.6	11.9	47.1	-4.31	375.1	-28.3	376.1	317.1	59.01	8.374	
5,310.0	5,310.0	5,284.2	5,283.7	12.0	47.2	-4.32	375.2	-28.3	376.3	317.1	59.12	8.364	
5,320.0	5,320.0	5,294.3	5,293.8	12.0	47.3	-4.33	375.3	-28.4	376.4	317.2	59.23	8.354	
5,330.0	5,330.0	5,304.3	5,303.8	12.0	47.4	-4.33	375.4	-28.5	376.5	317.2	59.34	8.345	
5,340.0	5,340.0	5,314.3	5,313.8	12.0	47.6	-4.34	375.6	-28.5	376.6	317.2	59.45	8.335	
5,350.0	5,350.0	5,324.3	5,323.7	12.1	47.5	-4.35	375.6	-28.6	376.7	317.2	59.56	8.325	
5,360.0	5,360.0	5,334.3	5,333.8	12.1	47.6	-4.36	375.7	-28.6	376.9	317.2	59.67	8.316	
5,370.0	5,370.0	5,344.2	5,343.7	12.1	47.7	-4.37	375.9	-28.7	377.0	317.2	59.78	8.306	
5,380.0	5,380.0	5,354.1	5,353.6	12.1	47.8	-4.37	376.0	-28.8	377.1	317.2	59.89	8.297	
5,390.0	5,390.0	5,363.9	5,363.4	12.1	47.9	-4.38	376.1	-28.8	377.2	317.2	59.99	8.288	
5,400.0	5,400.0	5,373.7	5,373.2	12.2	48.0	-4.39	376.2	-28.9	377.4	317.3	60.10	8.279	
5,410.0	5,410.0	5,383.6	5,383.1	12.2	48.1	-4.40	376.3	-29.0	377.5	317.3	60.21	8.270	
5,420.0	5,420.0	5,393.3	5,392.8	12.2	48.2	-4.41	376.5	-29.0	377.6	317.3	60.32	8.261	
5,430.0	5,430.0	5,403.2	5,402.7	12.2	48.2	-4.42	376.5	-29.1	377.8	317.3	60.42	8.252	
5,440.0	5,440.0	5,413.2	5,412.6	12.3	48.3	-4.43	376.7	-29.2	377.9	317.4	60.53	8.243	
5,450.0	5,450.0	5,423.1	5,422.6	12.3	48.4	-4.45	376.9	-29.3	378.1	317.4	60.64	8.235	
5,460.0	5,460.0	5,433.3	5,432.8	12.3	48.5	-4.46	377.0	-29.4	378.2	317.5	60.75	8.226	
5,470.0	5,470.0	5,443.4	5,442.9	12.3	48.6	-4.47	377.2	-29.5	378.4	317.5	60.86	8.217	
5,480.0	5,480.0	5,453.5	5,453.0	12.3	48.7	-4.49	377.3	-29.6	378.5	317.5	60.97	8.208	
5,490.0	5,490.0	5,463.5	5,462.9	12.4	48.8	-4.50	377.4	-29.7	378.6	317.6	61.08	8.199	

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

Offset Design Lusk Deep Unit A - #21 - OH - OH

Survey Program: 10-CB-GYRO-MS

Offset Site Error: 0.0 usf

Offset Well Error: 5.0 usf

Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Well Bore Centre		Distance		Minimum Separation (usf)	Separation Factor	Warning
Measured Depth (usf)	Vertical Depth (usf)	Measured Depth (usf)	Vertical Depth (usf)	Reference (usf)	Offset (usf)		+N-S (usf)	+E-W (usf)	Between Centres (usf)	Between Ellipses (usf)			
5,500.0	5,500.0	5,473.4	5,472.9	12.4	48.8	-4.51	377.6	-29.8	378.8	317.6	61.19	6.190	
5,510.0	5,510.0	5,483.4	5,482.9	12.4	48.9	-4.52	377.7	-29.9	378.9	317.6	61.29	6.182	
5,520.0	5,520.0	5,493.2	5,492.6	12.4	49.0	-4.54	377.8	-30.0	379.1	317.7	61.40	6.173	
5,530.0	5,530.0	5,502.9	5,502.4	12.5	49.1	-4.55	378.0	-30.1	379.2	317.7	61.51	6.165	
5,540.0	5,540.0	5,512.7	5,512.1	12.5	49.2	-4.55	378.1	-30.2	379.4	317.7	61.62	6.157	
5,550.0	5,550.0	5,522.6	5,522.1	12.5	49.3	-4.57	378.3	-30.3	379.5	317.8	61.72	6.149	
5,560.0	5,560.0	5,532.6	5,532.1	12.5	49.4	-4.59	378.4	-30.4	379.7	317.9	61.83	6.141	
5,570.0	5,570.0	5,542.8	5,542.2	12.5	49.5	-4.60	378.6	-30.5	379.8	317.9	61.94	6.132	
5,580.0	5,580.0	5,552.7	5,552.2	12.6	49.5	-4.62	378.7	-30.6	380.0	318.0	62.05	6.124	
5,590.0	5,590.0	5,562.7	5,562.2	12.6	49.6	-4.63	378.9	-30.7	380.2	318.0	62.16	6.116	
5,600.0	5,600.0	5,572.8	5,572.3	12.6	49.7	-4.65	379.0	-30.8	380.3	318.0	62.27	6.108	
5,610.0	5,610.0	5,582.9	5,582.4	12.6	49.8	-4.66	379.2	-30.9	380.5	318.1	62.38	6.099	
5,620.0	5,620.0	5,592.9	5,592.4	12.7	49.9	-4.68	379.3	-31.0	380.6	318.1	62.49	6.091	
5,630.0	5,630.0	5,602.9	5,602.4	12.7	50.0	-4.69	379.5	-31.1	380.8	318.2	62.60	6.083	
5,640.0	5,640.0	5,613.0	5,612.4	12.7	50.1	-4.71	379.6	-31.2	380.9	318.2	62.71	6.075	
5,650.0	5,650.0	5,622.9	5,622.3	12.7	50.2	-4.72	379.7	-31.3	381.1	318.3	62.81	6.067	
5,660.0	5,660.0	5,632.8	5,632.2	12.7	50.2	-4.73	379.9	-31.4	381.2	318.3	62.92	6.059	
5,670.0	5,670.0	5,642.6	5,642.0	12.8	50.3	-4.74	380.0	-31.5	381.4	318.4	63.03	6.051	
5,680.0	5,680.0	5,652.4	5,651.9	12.8	50.4	-4.76	380.2	-31.6	381.6	318.4	63.14	6.043	
5,690.0	5,690.0	5,662.4	5,661.8	12.8	50.5	-4.77	380.4	-31.7	381.7	318.5	63.24	6.036	
5,700.0	5,700.0	5,672.5	5,671.9	12.8	50.6	-4.79	380.5	-31.9	381.9	318.5	63.36	6.028	
5,710.0	5,710.0	5,682.6	5,682.0	12.9	50.7	-4.80	380.7	-32.0	382.1	318.6	63.46	6.020	
5,720.0	5,720.0	5,692.7	5,692.1	12.9	50.8	-4.82	380.8	-32.1	382.2	318.6	63.57	6.012	
5,730.0	5,730.0	5,702.8	5,702.2	12.9	50.8	-4.83	381.0	-32.2	382.4	318.7	63.68	6.004	
5,740.0	5,740.0	5,712.8	5,712.2	12.9	50.9	-4.85	381.1	-32.3	382.5	318.7	63.79	5.996	
5,750.0	5,750.0	5,722.8	5,722.2	12.9	51.0	-4.86	381.3	-32.4	382.7	318.8	63.90	5.989	
5,760.0	5,760.0	5,732.8	5,732.3	13.0	51.1	-4.87	381.4	-32.5	382.8	318.8	64.01	5.981	
5,770.0	5,770.0	5,742.7	5,742.1	13.0	51.2	-4.89	381.6	-32.6	383.0	318.9	64.12	5.973	
5,780.0	5,780.0	5,752.5	5,751.9	13.0	51.3	-4.90	381.7	-32.7	383.2	318.9	64.23	5.966	
5,790.0	5,790.0	5,762.3	5,761.8	13.0	51.4	-4.91	381.9	-32.8	383.3	319.0	64.33	5.958	
5,800.0	5,800.0	5,772.2	5,771.6	13.1	51.5	-4.93	382.0	-32.9	383.5	319.1	64.44	5.951	
5,810.0	5,810.0	5,782.2	5,781.6	13.1	51.5	-4.94	382.2	-33.0	383.7	319.1	64.55	5.944	
5,820.0	5,820.0	5,792.4	5,791.8	13.1	51.6	-4.96	382.4	-33.2	383.8	319.2	64.66	5.936	
5,830.0	5,830.0	5,802.5	5,801.9	13.1	51.7	-4.97	382.5	-33.3	384.0	319.2	64.77	5.929	
5,840.0	5,840.0	5,812.6	5,812.0	13.1	51.8	-4.99	382.7	-33.4	384.2	319.3	64.88	5.921	
5,850.0	5,850.0	5,822.8	5,822.2	13.2	51.9	-5.00	382.8	-33.5	384.3	319.3	64.99	5.913	
5,860.0	5,860.0	5,832.9	5,832.3	13.2	52.0	-5.02	383.0	-33.6	384.5	319.4	65.10	5.906	
5,870.0	5,870.0	5,843.0	5,842.4	13.2	52.1	-5.03	383.1	-33.7	384.6	319.4	65.21	5.898	
5,880.0	5,880.0	5,853.0	5,852.4	13.2	52.2	-5.04	383.3	-33.8	384.8	319.5	65.32	5.891	
5,890.0	5,890.0	5,863.0	5,862.4	13.3	52.2	-5.06	383.4	-33.9	384.9	319.5	65.43	5.883	
5,900.0	5,900.0	5,872.9	5,872.3	13.3	52.3	-5.07	383.5	-34.0	385.1	319.6	65.54	5.876	
5,910.0	5,910.0	5,882.9	5,882.3	13.3	52.4	-5.08	383.7	-34.1	385.2	319.6	65.65	5.868	
5,920.0	5,920.0	5,892.9	5,892.3	13.3	52.5	-5.09	383.8	-34.2	385.4	319.6	65.76	5.861	
5,930.0	5,930.0	5,903.0	5,902.4	13.3	52.6	-5.11	384.0	-34.3	385.6	319.7	65.87	5.853	
5,940.0	5,940.0	5,913.0	5,912.4	13.4	52.7	-5.12	384.1	-34.4	385.7	319.7	65.98	5.846	
5,950.0	5,950.0	5,923.2	5,922.6	13.4	52.8	-5.13	384.3	-34.5	385.8	319.8	66.09	5.838	
5,960.0	5,960.0	5,933.5	5,932.9	13.4	52.9	-5.15	384.4	-34.6	386.0	319.8	66.20	5.831	
5,970.0	5,970.0	5,943.7	5,943.0	13.4	53.0	-5.16	384.5	-34.7	386.1	319.8	66.31	5.823	
5,980.0	5,980.0	5,953.6	5,952.9	13.5	53.0	-5.17	384.7	-34.8	386.3	319.8	66.42	5.816	
5,990.0	5,990.0	5,963.5	5,962.9	13.5	53.1	-5.18	384.8	-34.9	386.4	319.9	66.53	5.808	
6,000.0	6,000.0	5,973.4	5,972.8	13.5	53.2	-5.19	384.9	-35.0	386.5	319.9	66.64	5.801	
6,010.0	6,010.0	5,983.3	5,982.7	13.5	53.3	-5.20	385.0	-35.1	386.7	319.9	66.74	5.793	
6,020.0	6,020.0	5,993.2	5,992.6	13.5	53.4	-5.22	385.2	-35.2	386.8	320.0	66.85	5.786	
6,030.0	6,030.0	6,003.3	6,002.6	13.6	53.5	-5.23	385.3	-35.3	387.0	320.0	66.96	5.779	
6,040.0	6,040.0	6,013.4	6,012.8	13.6	53.6	-5.24	385.5	-35.4	387.1	320.1	67.07	5.771	
6,050.0	6,050.0	6,023.6	6,023.0	13.6	53.7	-5.25	385.6	-35.5	387.2	320.1	67.18	5.764	
6,060.0	6,060.0	6,033.8	6,033.1	13.6	53.7	-5.27	385.7	-35.5	387.4	320.1	67.30	5.756	
6,070.0	6,070.0	6,043.8	6,043.2	13.7	53.8	-5.28	385.8	-35.6	387.5	320.1	67.41	5.749	
6,080.0	6,080.0	6,053.8	6,053.2	13.7	53.9	-5.29	386.0	-35.7	387.6	320.1	67.51	5.742	
6,090.0	6,090.0	6,063.7	6,063.0	13.7	54.0	-5.30	386.1	-35.8	387.8	320.1	67.62	5.734	
6,100.0	6,100.0	6,073.6	6,072.9	13.7	54.1	-5.31	386.2	-35.9	387.9	320.2	67.73	5.727	
6,110.0	6,110.0	6,083.5	6,082.9	13.7	54.2	-5.32	386.3	-36.0	388.0	320.2	67.84	5.720	
6,120.0	6,120.0	6,093.4	6,092.7	13.8	54.3	-5.33	386.5	-36.0	388.2	320.2	67.95	5.713	
6,130.0	6,130.0	6,103.5	6,102.8	13.8	54.4	-5.34	386.6	-36.1	388.3	320.3	68.06	5.706	
6,140.0	6,140.0	6,113.7	6,113.0	13.8	54.4	-5.35	386.7	-36.2	388.5	320.3	68.17	5.698	
6,150.0	6,150.0	6,123.8	6,123.1	13.8	54.5	-5.36	386.9	-36.3	388.6	320.3	68.28	5.691	

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

Offset Design Lusk Deep Unit A - #21 - OH - OH													Offset Bore Error:	0.0 uft
Survey Program: 10-CB-GYRO-MS													Offset Well Error:	5.0 uft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (uft)	Between Ellipses (uft)	Minimum Separation (uft)	Separation Factor	Warning	
Measured Depth (uft)	Vertical Depth (uft)	Measured Depth (uft)	Vertical Depth (uft)	Reference (uft)	Offset (uft)		Offset WellBore Centre +N-S (uft)	+E-W (uft)						
6,160.0	6,160.0	6,134.1	6,133.4	13.9	54.6	-5.37	387.0	-36.4	388.7	320.3	68.39	5.684		
6,170.0	6,170.0	6,144.1	6,143.5	13.9	54.7	-5.38	387.1	-36.5	388.8	320.3	68.50	5.676		
6,180.0	6,180.0	6,154.1	6,153.5	13.9	54.8	-5.39	387.2	-36.6	389.0	320.3	68.61	5.669		
6,190.0	6,190.0	6,164.0	6,163.4	13.9	54.9	-5.40	387.3	-36.6	389.1	320.4	68.72	5.662		
6,200.0	6,200.0	6,173.9	6,173.2	13.9	55.0	-5.41	387.4	-36.7	389.2	320.4	68.83	5.655		
6,210.0	6,210.0	6,183.7	6,183.1	14.0	55.1	-5.42	387.5	-36.8	389.3	320.4	68.94	5.648		
6,220.0	6,220.0	6,193.6	6,193.0	14.0	55.1	-5.43	387.7	-36.9	389.5	320.4	69.05	5.641		
6,230.0	6,230.0	6,203.6	6,203.0	14.0	55.2	-5.44	387.8	-36.9	389.6	320.4	69.16	5.634		
6,240.0	6,240.0	6,213.7	6,213.0	14.0	55.3	-5.45	387.9	-37.0	389.7	320.5	69.27	5.627		
6,250.0	6,250.0	6,223.7	6,223.0	14.1	55.4	-5.46	388.1	-37.1	389.9	320.5	69.38	5.620		
6,260.0	6,260.0	6,233.8	6,233.1	14.1	55.5	-5.47	388.2	-37.2	390.0	320.5	69.49	5.613		
6,270.0	6,270.0	6,244.0	6,243.3	14.1	55.6	-5.48	388.3	-37.3	390.1	320.5	69.60	5.605		
6,280.0	6,280.0	6,254.1	6,253.5	14.1	55.7	-5.49	388.4	-37.3	390.2	320.5	69.71	5.598		
6,290.0	6,290.0	6,264.1	6,263.4	14.1	55.8	-5.50	388.5	-37.4	390.4	320.6	69.82	5.591		
6,300.0	6,300.0	6,274.0	6,273.3	14.2	55.9	-5.51	388.7	-37.5	390.5	320.6	69.93	5.584		
6,310.0	6,310.0	6,283.8	6,283.1	14.2	55.9	-5.52	388.8	-37.5	390.6	320.6	70.03	5.578		
6,320.0	6,320.0	6,293.7	6,293.1	14.2	56.0	-5.52	388.9	-37.6	390.8	320.6	70.14	5.571		
6,330.0	6,330.0	6,303.7	6,303.0	14.2	56.1	-5.53	389.0	-37.7	390.9	320.6	70.25	5.564		
6,340.0	6,340.0	6,313.7	6,313.0	14.3	56.2	-5.54	389.2	-37.8	391.0	320.7	70.36	5.557		
6,350.0	6,350.0	6,323.8	6,323.1	14.3	56.3	-5.55	389.3	-37.8	391.1	320.7	70.47	5.550		
6,360.0	6,360.0	6,334.0	6,333.3	14.3	56.4	-5.56	389.4	-37.9	391.3	320.7	70.59	5.543		
6,370.0	6,370.0	6,344.1	6,343.4	14.3	56.5	-5.57	389.5	-38.0	391.4	320.7	70.70	5.536		
6,380.0	6,380.0	6,354.1	6,353.4	14.3	56.6	-5.58	389.6	-38.1	391.5	320.7	70.81	5.530		
6,390.0	6,390.0	6,364.2	6,363.5	14.4	56.6	-5.59	389.8	-38.1	391.6	320.7	70.92	5.523		
6,400.0	6,400.0	6,374.1	6,373.4	14.4	56.7	-5.60	389.9	-38.2	391.8	320.7	71.03	5.516		
6,410.0	6,410.0	6,384.0	6,383.3	14.4	56.8	-5.60	390.0	-38.3	391.9	320.8	71.13	5.509		
6,420.0	6,420.0	6,393.9	6,393.2	14.4	56.9	-5.61	390.1	-38.3	392.0	320.8	71.24	5.502		
6,430.0	6,430.0	6,403.7	6,403.1	14.5	57.0	-5.62	390.2	-38.4	392.1	320.8	71.35	5.496		
6,440.0	6,440.0	6,413.7	6,413.0	14.5	57.1	-5.62	390.4	-38.4	392.3	320.8	71.46	5.489		
6,450.0	6,450.0	6,423.7	6,423.1	14.5	57.2	-5.63	390.5	-38.5	392.4	320.8	71.57	5.483		
6,460.0	6,460.0	6,433.9	6,433.2	14.5	57.3	-5.64	390.6	-38.6	392.5	320.9	71.68	5.476		
6,470.0	6,470.0	6,444.0	6,443.4	14.5	57.3	-5.65	390.7	-38.7	392.7	320.9	71.80	5.469		
6,480.0	6,480.0	6,454.1	6,453.5	14.6	57.4	-5.66	390.8	-38.7	392.8	320.9	71.91	5.462		
6,490.0	6,490.0	6,464.3	6,463.6	14.6	57.5	-5.67	391.0	-38.8	392.9	320.9	72.02	5.456		
6,500.0	6,500.0	6,474.2	6,473.5	14.6	57.6	-5.67	391.1	-38.9	393.0	320.9	72.13	5.449		
6,510.0	6,510.0	6,483.9	6,483.3	14.6	57.7	-5.68	391.2	-38.9	393.1	320.9	72.23	5.443		
6,520.0	6,520.0	6,493.9	6,493.2	14.7	57.8	-5.69	391.3	-39.0	393.3	320.9	72.34	5.436		
6,530.0	6,530.0	6,503.9	6,503.2	14.7	57.9	-5.69	391.4	-39.0	393.4	320.9	72.45	5.430		
6,540.0	6,540.0	6,513.8	6,513.2	14.7	58.0	-5.70	391.6	-39.1	393.5	321.0	72.56	5.423		
6,550.0	6,550.0	6,523.9	6,523.2	14.7	58.1	-5.71	391.7	-39.1	393.6	321.0	72.67	5.417		
6,560.0	6,560.0	6,534.1	6,533.4	14.7	58.1	-5.71	391.8	-39.2	393.8	321.0	72.79	5.410		
6,570.0	6,570.0	6,544.2	6,543.6	14.8	58.2	-5.72	391.9	-39.3	393.9	321.0	72.90	5.403		
6,580.0	6,580.0	6,554.2	6,553.6	14.8	58.3	-5.73	392.0	-39.3	394.0	321.0	73.01	5.397		
6,590.0	6,590.0	6,564.2	6,563.5	14.8	58.4	-5.74	392.1	-39.4	394.1	321.0	73.12	5.390		
6,600.0	6,600.0	6,574.1	6,573.4	14.8	58.5	-5.74	392.2	-39.4	394.2	321.0	73.23	5.384		
6,610.0	6,610.0	6,584.0	6,583.3	14.9	58.6	-5.75	392.4	-39.5	394.4	321.0	73.34	5.378		
6,620.0	6,620.0	6,593.9	6,593.2	14.9	58.7	-5.75	392.5	-39.5	394.5	321.1	73.45	5.371		
6,630.0	6,630.0	6,603.9	6,603.2	14.9	58.8	-5.76	392.6	-39.6	394.6	321.1	73.56	5.365		
6,640.0	6,640.0	6,613.9	6,613.2	14.9	58.9	-5.76	392.7	-39.6	394.7	321.1	73.67	5.359		
6,650.0	6,650.0	6,624.0	6,623.3	14.9	58.9	-5.77	392.8	-39.7	394.8	321.1	73.78	5.352		
6,660.0	6,660.0	6,634.1	6,633.5	15.0	59.0	-5.77	393.0	-39.7	395.0	321.1	73.89	5.346		
6,670.0	6,670.0	6,644.3	6,643.6	15.0	59.1	-5.78	393.1	-39.8	395.1	321.1	74.00	5.339		
6,680.0	6,680.0	6,654.4	6,653.7	15.0	59.2	-5.79	393.2	-39.8	395.2	321.1	74.11	5.333		
6,690.0	6,690.0	6,664.2	6,663.5	15.0	59.3	-5.79	393.3	-39.9	395.3	321.1	74.22	5.327		
6,700.0	6,700.0	6,674.0	6,673.3	15.1	59.4	-5.79	393.4	-39.9	395.5	321.1	74.33	5.320		
6,710.0	6,710.0	6,683.9	6,683.2	15.1	59.5	-5.80	393.5	-40.0	395.6	321.2	74.44	5.314		
6,720.0	6,720.0	6,693.9	6,693.2	15.1	59.6	-5.80	393.7	-40.0	395.7	321.2	74.55	5.308		
6,730.0	6,730.0	6,703.9	6,703.2	15.1	59.6	-5.81	393.8	-40.0	395.8	321.2	74.66	5.302		
6,740.0	6,740.0	6,714.0	6,713.3	15.1	59.7	-5.81	393.9	-40.1	396.0	321.2	74.77	5.296		
6,750.0	6,750.0	6,724.1	6,723.4	15.2	59.8	-5.82	394.0	-40.1	396.1	321.2	74.88	5.289		
6,760.0	6,760.0	6,734.2	6,733.5	15.2	59.9	-5.82	394.1	-40.2	396.2	321.2	75.00	5.283		
6,770.0	6,770.0	6,744.3	6,743.6	15.2	60.0	-5.83	394.3	-40.2	396.3	321.2	75.11	5.277		
6,780.0	6,780.0	6,754.2	6,753.5	15.2	60.1	-5.83	394.4	-40.3	396.4	321.2	75.22	5.271		
6,790.0	6,790.0	6,764.1	6,763.4	15.3	60.2	-5.83	394.5	-40.3	396.6	321.2	75.33	5.265		
6,800.0	6,800.0	6,773.9	6,773.2	15.3	60.3	-5.84	394.6	-40.4	396.7	321.3	75.43	5.259		
6,810.0	6,810.0	6,783.7	6,783.0	15.3	60.4	-5.84	394.7	-40.4	396.8	321.3	75.54	5.253		

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

Offset Design Lusk Deep Unit A - #21 - OH - OH

Survey Program: 10-CB-GYRO-MS

Offset Site Error: 0.0 usft

Offset Well Error: 5.0 usft

Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/G (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,820.0	8,820.0	8,793.6	8,792.9	15.3	60.4	-5.85	394.9	-40.4	397.0	321.3	75.65	5.247	
8,830.0	8,830.0	8,803.7	8,803.0	15.3	60.5	-5.85	395.0	-40.5	397.1	321.3	75.77	5.241	
8,840.0	8,840.0	8,813.9	8,813.2	15.4	60.6	-5.85	395.1	-40.5	397.2	321.3	75.88	5.235	
8,850.0	8,850.0	8,824.2	8,823.5	15.4	60.7	-5.86	395.2	-40.6	397.3	321.3	75.99	5.229	
8,860.0	8,860.0	8,834.3	8,833.6	15.4	60.8	-5.86	395.4	-40.6	397.5	321.4	76.10	5.223	
8,870.0	8,870.0	8,844.3	8,843.6	15.4	60.9	-5.86	395.5	-40.6	397.6	321.4	76.21	5.217	
8,880.0	8,880.0	8,854.3	8,853.6	15.5	61.0	-5.87	395.6	-40.6	397.7	321.4	76.32	5.210	
8,890.0	8,890.0	8,864.1	8,863.4	15.5	61.1	-5.87	395.7	-40.7	397.8	321.4	76.43	5.205	
8,900.0	8,900.0	8,874.0	8,873.3	15.5	61.2	-5.87	395.8	-40.7	397.9	321.4	76.54	5.199	
8,910.0	8,910.0	8,883.9	8,883.2	15.5	61.2	-5.87	395.9	-40.7	398.1	321.4	76.65	5.193	
8,920.0	8,920.0	8,894.1	8,893.4	15.6	61.3	-5.87	396.1	-40.7	398.2	321.4	76.77	5.187	
8,930.0	8,930.0	8,904.4	8,903.7	15.6	61.4	-5.87	396.2	-40.7	398.3	321.4	76.88	5.181	
8,940.0	8,940.0	8,914.3	8,913.5	15.6	61.5	-5.87	396.3	-40.8	398.4	321.4	76.99	5.175	
8,950.0	8,950.0	8,923.9	8,923.2	15.6	61.6	-5.87	396.4	-40.8	398.5	321.4	77.10	5.169	
8,960.0	8,960.0	8,933.9	8,933.2	15.6	61.7	-5.87	396.5	-40.8	398.7	321.4	77.21	5.163	
8,970.0	8,970.0	8,944.0	8,943.3	15.7	61.8	-5.87	396.7	-40.8	398.8	321.5	77.32	5.157	
8,980.0	8,980.0	8,954.2	8,953.5	15.7	61.9	-5.87	396.8	-40.8	398.9	321.5	77.43	5.151	
8,990.0	8,990.0	8,964.4	8,963.7	15.7	62.0	-5.88	396.9	-40.8	399.0	321.5	77.55	5.145	
7,000.0	7,000.0	6,974.4	6,973.7	15.7	62.1	-5.88	397.0	-40.9	399.1	321.5	77.66	5.140	
7,010.0	7,010.0	6,984.3	6,983.6	15.8	62.1	-5.88	397.1	-40.9	399.2	321.5	77.77	5.134	
7,020.0	7,020.0	6,994.1	6,993.4	15.8	62.2	-5.87	397.2	-40.9	399.4	321.5	77.88	5.128	
7,030.0	7,030.0	7,004.0	7,003.3	15.8	62.3	-5.87	397.4	-40.9	399.5	321.5	77.99	5.122	
7,040.0	7,040.0	7,014.0	7,013.2	15.8	62.4	-5.87	397.5	-40.9	399.6	321.5	78.10	5.117	
7,050.0	7,050.0	7,024.0	7,023.3	15.8	62.5	-5.87	397.6	-40.9	399.7	321.5	78.21	5.111	
7,060.0	7,060.0	7,034.1	7,033.4	15.9	62.6	-5.87	397.7	-40.9	399.8	321.5	78.32	5.105	
7,070.0	7,070.0	7,044.2	7,043.5	15.9	62.7	-5.87	397.8	-40.9	400.0	321.5	78.43	5.099	
7,080.0	7,080.0	7,054.3	7,053.6	15.9	62.8	-5.86	398.0	-40.9	400.1	321.5	78.55	5.094	
7,090.0	7,090.0	7,064.2	7,063.5	15.9	62.9	-5.86	398.1	-40.9	400.2	321.5	78.66	5.088	
7,100.0	7,100.0	7,074.0	7,073.3	16.0	62.9	-5.86	398.2	-40.8	400.3	321.5	78.77	5.082	
7,110.0	7,110.0	7,083.9	7,083.2	16.0	63.0	-5.85	398.3	-40.8	400.4	321.5	78.88	5.077	
7,120.0	7,120.0	7,093.9	7,093.1	16.0	63.1	-5.85	398.5	-40.8	400.6	321.5	78.99	5.071	
7,130.0	7,130.0	7,104.0	7,103.3	16.0	63.2	-5.84	398.6	-40.8	400.7	321.5	79.10	5.066	
7,140.0	7,140.0	7,114.2	7,113.5	16.0	63.3	-5.84	398.7	-40.8	400.8	321.5	79.21	5.060	
7,150.0	7,150.0	7,124.3	7,123.6	16.1	63.4	-5.83	398.8	-40.7	400.9	321.5	79.33	5.054	
7,160.0	7,160.0	7,134.2	7,133.5	16.1	63.5	-5.83	398.9	-40.7	401.0	321.5	79.44	5.048	
7,170.0	7,170.0	7,144.0	7,143.3	16.1	63.6	-5.82	399.1	-40.7	401.2	321.5	79.55	5.043	
7,180.0	7,180.0	7,153.8	7,153.1	16.1	63.7	-5.81	399.2	-40.6	401.3	321.5	79.66	5.038	
7,190.0	7,190.0	7,163.9	7,163.2	16.2	63.8	-5.80	399.3	-40.6	401.4	321.5	79.77	5.032	
7,200.0	7,200.0	7,174.1	7,173.4	16.2	63.8	-5.79	399.5	-40.5	401.5	321.7	79.88	5.027	
7,210.0	7,210.0	7,184.3	7,183.6	16.2	63.9	-5.79	399.6	-40.5	401.7	321.7	80.00	5.021	
7,220.0	7,220.0	7,194.2	7,193.5	16.2	64.0	-5.78	399.7	-40.4	401.8	321.7	80.11	5.015	
7,230.0	7,230.0	7,204.0	7,203.2	16.2	64.1	-5.76	399.8	-40.4	401.9	321.7	80.22	5.010	
7,240.0	7,240.0	7,213.8	7,213.1	16.3	64.2	-5.75	400.0	-40.3	402.0	321.7	80.33	5.005	
7,250.0	7,250.0	7,223.8	7,223.0	16.3	64.3	-5.74	400.1	-40.2	402.1	321.7	80.44	5.000	
7,260.0	7,260.0	7,233.8	7,233.1	16.3	64.4	-5.73	400.2	-40.2	402.3	321.7	80.55	4.994	
7,270.0	7,270.0	7,244.1	7,243.3	16.3	64.5	-5.72	400.4	-40.1	402.4	321.7	80.66	4.989	
7,280.0	7,280.0	7,254.1	7,253.4	16.4	64.6	-5.71	400.5	-40.0	402.6	321.7	80.78	4.983	
7,290.0	7,290.0	7,264.0	7,263.3	16.4	64.6	-5.70	400.6	-40.0	402.6	321.8	80.89	4.978	
7,300.0	7,300.0	7,273.8	7,273.1	16.4	64.7	-5.69	400.8	-39.9	402.8	321.8	81.00	4.973	
7,310.0	7,310.0	7,283.7	7,282.9	16.4	64.8	-5.67	400.9	-39.8	402.9	321.8	81.11	4.967	
7,320.0	7,320.0	7,293.7	7,293.0	16.4	64.9	-5.66	401.0	-39.7	403.0	321.8	81.22	4.962	
7,330.0	7,330.0	7,303.9	7,303.2	16.5	65.0	-5.65	401.2	-39.7	403.2	321.8	81.33	4.957	
7,340.0	7,340.0	7,314.0	7,313.3	16.5	65.1	-5.63	401.3	-39.6	403.3	321.8	81.44	4.952	
7,350.0	7,350.0	7,324.0	7,323.3	16.5	65.2	-5.62	401.4	-39.5	403.4	321.8	81.56	4.946	
7,360.0	7,360.0	7,333.9	7,333.1	16.5	65.3	-5.60	401.6	-39.4	403.5	321.9	81.67	4.941	
7,370.0	7,370.0	7,343.7	7,342.9	16.6	65.4	-5.59	401.7	-39.3	403.6	321.9	81.78	4.936	
7,380.0	7,380.0	7,353.8	7,352.8	16.6	65.5	-5.57	401.8	-39.2	403.8	321.9	81.89	4.931	
7,390.0	7,390.0	7,363.8	7,363.0	16.6	65.5	-5.56	402.0	-39.1	403.9	321.9	82.00	4.926	
7,400.0	7,400.0	7,374.0	7,373.3	16.6	65.6	-5.54	402.1	-39.0	404.0	321.9	82.11	4.920	
7,410.0	7,410.0	7,384.0	7,383.2	16.6	65.7	-5.53	402.3	-38.9	404.2	321.9	82.22	4.915	
7,420.0	7,420.0	7,393.8	7,393.0	16.7	65.8	-5.51	402.4	-38.8	404.3	322.0	82.33	4.910	
7,430.0	7,430.0	7,403.6	7,402.8	16.7	65.9	-5.49	402.5	-38.7	404.4	322.0	82.44	4.905	
7,440.0	7,440.0	7,413.5	7,412.7	16.7	66.0	-5.48	402.7	-38.6	404.5	322.0	82.55	4.900	
7,450.0	7,450.0	7,423.7	7,422.9	16.7	66.1	-5.46	402.8	-38.5	404.7	322.0	82.67	4.895	
7,460.0	7,460.0	7,433.9	7,433.1	16.8	66.2	-5.45	403.0	-38.4	404.8	322.0	82.78	4.890	
7,470.0	7,470.0	7,443.9	7,443.1	16.8	66.3	-5.43	403.1	-38.3	404.9	322.0	82.89	4.885	

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

Offset Design Lusk Deep Unit A - #21 - OH - OH

Survey Program: 10-CB-GYRO-MS

Offset Site Error: 0.0 uft

Offset Well Error: 5.0 uft

Reference		Offset		Semi Major Axis			Distance				Warning	
Measured Depth (uoft)	Vertical Depth (uoft)	Measured Depth (uoft)	Vertical Depth (uoft)	Reference (uoft)	Offset (uoft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (uoft)	+E/-W (uoft)	Between Centres (uoft)	Between Ellipses (uoft)		Minimum Separation (uoft)
7,480.0	7,480.0	7,453.7	7,452.9	16.8	66.3	-5.41	403.2	-38.2	405.1	322.1	83.00	4.880
7,490.0	7,490.0	7,463.5	7,462.7	16.8	66.4	-5.40	403.4	-38.1	405.2	322.1	83.11	4.875
7,500.0	7,500.0	7,473.4	7,472.6	16.8	66.5	-5.38	403.5	-38.0	405.3	322.1	83.22	4.870
7,510.0	7,510.0	7,483.5	7,482.7	16.9	66.6	-5.37	403.7	-37.9	405.5	322.1	83.34	4.865
7,520.0	7,520.0	7,493.7	7,492.9	16.9	66.7	-5.35	403.8	-37.8	405.6	322.2	83.45	4.860
7,530.0	7,530.0	7,503.7	7,502.9	16.9	66.8	-5.33	403.9	-37.7	405.7	322.2	83.56	4.856
7,540.0	7,540.0	7,513.4	7,512.7	16.9	66.9	-5.32	404.1	-37.6	405.9	322.2	83.67	4.851
7,550.0	7,550.0	7,523.3	7,522.5	17.0	67.0	-5.30	404.2	-37.5	406.0	322.2	83.78	4.846
7,560.0	7,560.0	7,533.5	7,532.7	17.0	67.1	-5.28	404.4	-37.4	406.1	322.2	83.89	4.841
7,570.0	7,570.0	7,543.6	7,542.8	17.0	67.2	-5.26	404.5	-37.3	406.3	322.3	84.01	4.836
7,580.0	7,580.0	7,553.6	7,552.9	17.0	67.2	-5.25	404.7	-37.2	406.4	322.3	84.12	4.831
7,590.0	7,590.0	7,563.6	7,562.8	17.0	67.3	-5.23	404.8	-37.0	406.5	322.3	84.23	4.827
7,600.0	7,600.0	7,573.3	7,572.5	17.1	67.4	-5.21	405.0	-36.9	406.7	322.3	84.34	4.822
7,610.0	7,610.0	7,583.2	7,582.4	17.1	67.5	-5.19	405.1	-36.8	406.8	322.4	84.45	4.817
7,620.0	7,620.0	7,593.5	7,592.7	17.1	67.6	-5.17	405.3	-36.7	407.0	322.4	84.56	4.812
7,630.0	7,630.0	7,603.5	7,602.7	17.1	67.7	-5.15	405.4	-36.6	407.1	322.4	84.67	4.808
7,640.0	7,640.0	7,613.3	7,612.5	17.2	67.8	-5.13	405.6	-36.4	407.2	322.4	84.78	4.803
7,650.0	7,650.0	7,623.1	7,622.3	17.2	67.9	-5.11	405.7	-36.3	407.4	322.5	84.89	4.799
7,660.0	7,660.0	7,633.1	7,632.3	17.2	68.0	-5.09	405.9	-36.2	407.5	322.5	85.01	4.794
7,670.0	7,670.0	7,643.5	7,642.7	17.2	68.1	-5.07	406.0	-36.1	407.7	322.5	85.12	4.789
7,680.0	7,680.0	7,653.7	7,652.9	17.2	68.1	-5.05	406.2	-35.9	407.8	322.6	85.23	4.784
7,690.0	7,690.0	7,663.6	7,662.8	17.3	68.2	-5.03	406.3	-35.8	407.9	322.6	85.35	4.780
7,700.0	7,700.0	7,673.4	7,672.6	17.3	68.3	-5.01	406.5	-35.7	408.1	322.6	85.46	4.775
7,710.0	7,710.0	7,683.2	7,682.4	17.3	68.4	-4.99	406.6	-35.5	408.2	322.6	85.57	4.771
7,720.0	7,720.0	7,693.4	7,692.6	17.3	68.5	-4.97	406.8	-35.4	408.3	322.7	85.68	4.766
7,730.0	7,730.0	7,703.5	7,702.7	17.4	68.6	-4.95	406.9	-35.3	408.5	322.7	85.79	4.761
7,740.0	7,740.0	7,713.5	7,712.7	17.4	68.7	-4.93	407.1	-35.1	408.6	322.7	85.90	4.757
7,750.0	7,750.0	7,723.4	7,722.6	17.4	68.8	-4.91	407.2	-35.0	408.7	322.7	86.01	4.752
7,760.0	7,760.0	7,733.3	7,732.5	17.4	68.9	-4.89	407.4	-34.9	408.9	322.8	86.12	4.748
7,770.0	7,770.0	7,743.7	7,742.9	17.4	69.0	-4.87	407.5	-34.7	409.0	322.8	86.24	4.743
7,780.0	7,780.0	7,753.8	7,753.0	17.5	69.0	-4.85	407.6	-34.6	409.1	322.8	86.35	4.738
7,790.0	7,790.0	7,763.7	7,762.9	17.5	69.1	-4.83	407.8	-34.4	409.3	322.8	86.46	4.734
7,800.0	7,800.0	7,773.5	7,772.7	17.5	69.2	-4.81	407.9	-34.3	409.4	322.8	86.57	4.729
7,810.0	7,810.0	7,783.6	7,782.6	17.5	69.3	-4.79	408.1	-34.2	409.5	322.9	86.68	4.725
7,820.0	7,820.0	7,793.6	7,792.8	17.6	69.4	-4.76	408.2	-34.0	409.7	322.9	86.80	4.720
7,830.0	7,830.0	7,803.9	7,803.1	17.6	69.5	-4.74	408.4	-33.9	409.8	322.9	86.91	4.715
7,840.0	7,840.0	7,814.0	7,813.1	17.6	69.6	-4.72	408.5	-33.7	409.9	322.9	87.02	4.711
7,850.0	7,850.0	7,823.8	7,822.9	17.6	69.7	-4.70	408.6	-33.6	410.1	322.9	87.13	4.706
7,860.0	7,860.0	7,833.6	7,832.8	17.6	69.8	-4.68	408.8	-33.4	410.2	322.9	87.24	4.702
7,870.0	7,870.0	7,843.7	7,842.9	17.7	69.8	-4.66	408.9	-33.3	410.3	323.0	87.35	4.697
7,880.0	7,880.0	7,854.0	7,853.2	17.7	69.9	-4.64	409.1	-33.2	410.4	323.0	87.47	4.692
7,890.0	7,890.0	7,864.2	7,863.3	17.7	70.0	-4.61	409.2	-33.0	410.6	323.0	87.58	4.688
7,900.0	7,900.0	7,874.2	7,873.3	17.7	70.1	-4.59	409.3	-32.9	410.7	323.0	87.69	4.683
7,910.0	7,910.0	7,884.0	7,883.1	17.8	70.2	-4.57	409.5	-32.7	410.8	323.0	87.80	4.679
7,920.0	7,920.0	7,893.7	7,892.9	17.8	70.3	-4.55	409.6	-32.6	410.9	323.0	87.91	4.674
7,930.0	7,930.0	7,903.7	7,902.9	17.8	70.4	-4.53	409.7	-32.5	411.1	323.0	88.02	4.670
7,940.0	7,940.0	7,914.1	7,913.2	17.8	70.5	-4.51	409.9	-32.3	411.2	323.0	88.14	4.665
7,950.0	7,950.0	7,924.1	7,923.3	17.8	70.6	-4.49	410.0	-32.2	411.3	323.0	88.25	4.661
7,960.0	7,960.0	7,934.0	7,933.1	17.9	70.7	-4.47	410.1	-32.0	411.4	323.1	88.36	4.656
7,970.0	7,970.0	7,943.8	7,942.9	17.9	70.7	-4.45	410.3	-31.9	411.5	323.1	88.47	4.652
7,980.0	7,980.0	7,953.7	7,952.9	17.9	70.8	-4.43	410.4	-31.8	411.7	323.1	88.58	4.647
7,990.0	7,990.0	7,963.9	7,963.0	17.9	70.9	-4.40	410.6	-31.6	411.8	323.1	88.70	4.643
8,000.0	8,000.0	7,974.0	7,973.2	18.0	71.0	-4.38	410.7	-31.5	411.9	323.1	88.81	4.638
8,010.0	8,010.0	7,983.9	7,983.0	18.0	71.1	-4.36	410.8	-31.3	412.1	323.1	88.92	4.634
8,020.0	8,020.0	7,993.6	7,992.8	18.0	71.2	-4.34	411.0	-31.2	412.2	323.2	89.03	4.630
8,030.0	8,030.0	8,003.8	8,002.9	18.0	71.3	-4.32	411.1	-31.1	412.3	323.2	89.14	4.625
8,040.0	8,040.0	8,013.7	8,012.8	18.0	71.4	-4.30	411.2	-30.9	412.4	323.2	89.25	4.621
8,050.0	8,050.0	8,023.8	8,023.0	18.1	71.5	-4.28	411.4	-30.8	412.6	323.2	89.36	4.617
8,060.0	8,060.0	8,033.6	8,032.9	18.1	71.6	-4.26	411.5	-30.6	412.7	323.2	89.48	4.612
8,070.0	8,070.0	8,043.5	8,042.6	18.1	71.6	-4.24	411.7	-30.5	412.8	323.2	89.59	4.608
8,080.0	8,080.0	8,053.2	8,052.4	18.1	71.7	-4.22	411.8	-30.4	413.0	323.3	89.69	4.604
8,090.0	8,090.0	8,063.3	8,062.4	18.2	71.8	-4.20	412.0	-30.2	413.1	323.3	89.81	4.600
8,100.0	8,100.0	8,073.4	8,072.6	18.2	71.9	-4.18	412.1	-30.1	413.3	323.3	89.92	4.596
8,110.0	8,110.0	8,083.5	8,082.6	18.2	72.0	-4.16	412.3	-30.0	413.4	323.4	90.03	4.592
8,120.0	8,120.0	8,093.3	8,092.4	18.2	72.1	-4.14	412.4	-29.8	413.5	323.4	90.14	4.587
8,130.0	8,130.0	8,103.1	8,102.2	18.3	72.2	-4.12	412.6	-29.7	413.7	323.4	90.25	4.583

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

Offset Design Lusk Deep Unit A - #21 - OH - OH

Survey Program: 10-CB-GYRO-MS

Offset Site Error: 0.0 uft

Offset Well Error: 5.0 uft

Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (uft)	Separation Factor	Warning
Measured Depth (uft)	Vertical Depth (uft)	Measured Depth (uft)	Vertical Depth (uft)	Reference (uft)	Offset (uft)		+N-S (uft)	+E-W (uft)	Between Centres (uft)	Between Ellipses (uft)			
8,140.0	8,140.0	8,113.1	8,112.2	18.3	72.3	-4.10	412.7	-29.6	413.8	323.4	90.36	4.579	
8,150.0	8,150.0	8,123.5	8,122.6	18.3	72.4	-4.08	412.9	-29.4	414.0	323.5	90.48	4.575	
8,160.0	8,160.0	8,133.6	8,132.7	18.3	72.5	-4.06	413.0	-29.3	414.1	323.5	90.59	4.571	
8,170.0	8,170.0	8,143.4	8,142.5	18.3	72.5	-4.04	413.2	-29.2	414.2	323.5	90.70	4.567	
8,180.0	8,180.0	8,153.2	8,152.3	18.4	72.8	-4.02	413.3	-29.0	414.4	323.5	90.81	4.563	
8,190.0	8,190.0	8,163.2	8,162.3	18.4	72.7	-4.00	413.5	-28.9	414.5	323.5	90.92	4.559	
8,200.0	8,200.0	8,173.3	8,172.4	18.4	72.8	-3.98	413.6	-28.8	414.6	323.5	91.04	4.555	
8,210.0	8,210.0	8,183.2	8,182.3	18.4	72.9	-3.96	413.8	-28.8	414.8	323.5	91.15	4.551	
8,220.0	8,220.0	8,192.9	8,192.0	18.5	73.0	-3.94	413.9	-28.5	414.9	323.7	91.26	4.547	
8,230.0	8,230.0	8,203.0	8,202.1	18.5	73.1	-3.92	414.1	-28.3	415.1	323.7	91.37	4.543	
8,240.0	8,240.0	8,213.2	8,212.3	18.5	73.2	-3.90	414.2	-28.2	415.2	323.7	91.48	4.539	
8,250.0	8,250.0	8,223.5	8,222.6	18.5	73.3	-3.88	414.4	-28.1	415.4	323.8	91.60	4.535	
8,260.0	8,260.0	8,233.3	8,232.4	18.5	73.3	-3.86	414.5	-27.9	415.5	323.8	91.71	4.531	
8,270.0	8,270.0	8,243.1	8,242.2	18.6	73.4	-3.84	414.7	-27.8	415.6	323.8	91.82	4.527	
8,280.0	8,280.0	8,253.1	8,252.2	18.6	73.5	-3.81	414.8	-27.7	415.8	323.9	91.93	4.523	
8,290.0	8,290.0	8,263.8	8,262.8	18.6	73.6	-3.79	415.0	-27.5	415.9	323.9	92.05	4.519	
8,300.0	8,300.0	8,273.9	8,273.0	18.6	73.7	-3.77	415.1	-27.3	416.0	323.8	92.16	4.514	
8,310.0	8,310.0	8,283.8	8,282.8	18.7	73.8	-3.75	415.3	-27.2	416.2	323.9	92.27	4.510	
8,320.0	8,320.0	8,293.5	8,292.6	18.7	73.9	-3.72	415.4	-27.0	416.3	323.9	92.38	4.507	
8,330.0	8,330.0	8,303.5	8,302.6	18.7	74.0	-3.70	415.5	-26.9	416.4	324.0	92.49	4.503	
8,340.0	8,340.0	8,313.7	8,312.8	18.7	74.1	-3.68	415.7	-26.7	416.6	324.0	92.60	4.498	
8,350.0	8,350.0	8,323.9	8,322.9	18.7	74.2	-3.66	415.8	-26.6	416.7	324.0	92.72	4.494	
8,360.0	8,360.0	8,333.8	8,332.9	18.8	74.3	-3.64	416.0	-26.4	416.8	324.0	92.83	4.490	
8,370.0	8,370.0	8,343.5	8,342.6	18.8	74.3	-3.61	416.1	-26.3	417.0	324.0	92.94	4.486	
8,380.0	8,380.0	8,353.5	8,352.5	18.8	74.4	-3.59	416.2	-26.1	417.1	324.0	93.05	4.483	
8,390.0	8,390.0	8,363.7	8,362.8	18.8	74.5	-3.57	416.4	-26.0	417.2	324.1	93.16	4.479	
8,400.0	8,400.0	8,373.9	8,372.9	18.9	74.6	-3.55	416.5	-25.8	417.4	324.1	93.28	4.474	
8,410.0	8,410.0	8,383.7	8,382.8	18.9	74.7	-3.52	416.7	-25.7	417.5	324.1	93.39	4.470	
8,420.0	8,420.0	8,393.3	8,392.3	18.9	74.8	-3.50	416.8	-25.5	417.6	324.1	93.49	4.467	
8,430.0	8,430.0	8,403.1	8,402.2	18.9	74.9	-3.48	417.0	-25.3	417.8	324.2	93.61	4.463	
8,440.0	8,440.0	8,413.2	8,412.3	18.9	75.0	-3.46	417.1	-25.2	417.9	324.2	93.72	4.459	
8,450.0	8,450.0	8,423.5	8,422.5	19.0	75.1	-3.44	417.3	-25.0	418.0	324.2	93.83	4.455	
8,460.0	8,460.0	8,433.5	8,432.5	19.0	75.1	-3.41	417.4	-24.9	418.2	324.2	93.94	4.451	
8,470.0	8,470.0	8,443.3	8,442.3	19.0	75.2	-3.39	417.5	-24.7	418.3	324.3	94.05	4.448	
8,480.0	8,480.0	8,453.1	8,452.1	19.0	75.3	-3.37	417.7	-24.6	418.5	324.3	94.16	4.444	
8,490.0	8,490.0	8,463.3	8,462.3	19.1	75.4	-3.35	417.9	-24.4	418.6	324.3	94.28	4.440	
8,500.0	8,500.0	8,473.5	8,472.6	19.1	75.5	-3.32	418.0	-24.3	418.7	324.4	94.39	4.436	
8,510.0	8,510.0	8,483.6	8,482.6	19.1	75.6	-3.30	418.1	-24.1	418.9	324.4	94.50	4.432	
8,520.0	8,520.0	8,493.2	8,492.2	19.1	75.7	-3.28	418.3	-24.0	419.0	324.4	94.61	4.429	
8,530.0	8,530.0	8,503.1	8,502.2	19.1	75.8	-3.26	418.4	-23.8	419.2	324.4	94.72	4.425	
8,540.0	8,540.0	8,513.5	8,512.5	19.2	75.9	-3.24	418.6	-23.7	419.3	324.5	94.84	4.421	
8,550.0	8,550.0	8,523.5	8,522.5	19.2	76.0	-3.21	418.7	-23.5	419.4	324.5	94.95	4.417	
8,560.0	8,560.0	8,533.2	8,532.2	19.2	76.0	-3.19	418.9	-23.4	419.6	324.5	95.06	4.414	
8,570.0	8,570.0	8,543.1	8,542.1	19.2	76.1	-3.17	419.0	-23.2	419.7	324.6	95.17	4.410	
8,580.0	8,580.0	8,553.4	8,552.4	19.3	76.2	-3.15	419.2	-23.0	419.9	324.6	95.28	4.406	
8,590.0	8,590.0	8,563.4	8,562.4	19.3	76.3	-3.12	419.3	-22.9	420.0	324.6	95.40	4.403	
8,600.0	8,600.0	8,573.1	8,572.1	19.3	76.4	-3.10	419.5	-22.7	420.1	324.6	95.51	4.399	
8,610.0	8,610.0	8,583.0	8,582.0	19.3	76.5	-3.08	419.6	-22.6	420.3	324.7	95.62	4.396	
8,620.0	8,620.0	8,593.3	8,592.3	19.3	76.6	-3.05	419.8	-22.4	420.4	324.7	95.73	4.392	
8,630.0	8,630.0	8,603.4	8,602.4	19.4	76.7	-3.03	419.9	-22.2	420.6	324.7	95.84	4.388	
8,640.0	8,640.0	8,613.4	8,612.4	19.4	76.8	-3.01	420.1	-22.1	420.7	324.8	95.96	4.384	
8,650.0	8,650.0	8,623.3	8,622.3	19.4	76.9	-2.98	420.2	-21.9	420.9	324.8	96.07	4.381	
8,660.0	8,660.0	8,633.4	8,632.3	19.4	76.9	-2.96	420.4	-21.7	421.0	324.8	96.18	4.377	
8,670.0	8,670.0	8,643.6	8,642.6	19.5	77.0	-2.94	420.5	-21.6	421.1	324.8	96.29	4.373	
8,680.0	8,680.0	8,654.4	8,653.4	19.5	77.1	-2.91	420.7	-21.4	421.3	324.8	96.41	4.369	
8,690.0	8,690.0	8,665.1	8,664.1	19.5	77.2	-2.89	420.8	-21.3	421.4	324.8	96.53	4.365	
8,700.0	8,700.0	8,675.6	8,674.6	19.5	77.3	-2.87	420.9	-21.1	421.4	324.8	96.65	4.361	
8,710.0	8,710.0	8,686.1	8,685.1	19.5	77.4	-2.85	421.0	-21.0	421.5	324.8	96.76	4.356	
8,720.0	8,720.0	8,696.1	8,695.1	19.6	77.5	-2.83	421.1	-20.8	421.6	324.7	96.87	4.352	
8,730.0	8,730.0	8,706.9	8,704.9	19.6	77.6	-2.81	421.2	-20.7	421.7	324.7	96.98	4.348	
8,740.0	8,740.0	8,716.9	8,714.8	19.6	77.7	-15.01	421.2	-20.5	421.7	324.7	97.04	4.346	
8,750.0	8,750.0	8,726.0	8,725.0	19.6	77.8	-15.01	421.3	-20.4	421.5	324.4	97.13	4.340	
8,760.0	8,760.0	8,736.3	8,735.2	19.7	77.9	-15.02	421.4	-20.3	421.1	324.0	97.18	4.334	
8,770.0	8,770.0	8,746.2	8,745.1	19.7	78.0	-15.04	421.5	-20.1	420.5	323.3	97.20	4.327	
8,780.0	8,779.9	8,755.9	8,754.9	19.7	78.0	-15.08	421.6	-20.0	419.8	322.6	97.18	4.319	
8,790.0	8,789.9	8,766.0	8,765.0	19.7	78.1	-15.13	421.6	-19.9	419.8	321.6	97.14	4.311	

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

Offset Design Lusk Deep Unit A - #21 - OH - OH

Survey Program: 10-CB-GYRO-MS

Offset Site Error: 0.0 usft

Offset Well Error: 5.0 usft

Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Minimum Separation (usft)
8,800.0	8,799.8	8,776.1	8,775.0	19.7	78.2	-15.20	421.7	-19.7	417.6	320.5	97.06	4.302
8,810.0	8,809.7	8,786.0	8,785.0	19.8	78.3	-15.28	421.8	-19.6	416.2	319.2	96.95	4.293
8,820.0	8,819.5	8,795.8	8,794.7	19.8	78.4	-15.37	421.9	-19.5	414.8	317.8	96.81	4.283
8,830.0	8,829.3	8,805.3	8,804.3	19.8	78.5	-15.48	422.0	-19.4	412.8	316.2	96.63	4.272
8,840.0	8,839.1	8,814.7	8,813.7	19.8	78.6	-15.61	422.0	-19.2	410.8	314.4	96.43	4.261
8,850.0	8,848.8	8,824.3	8,823.3	19.9	78.7	-15.75	422.1	-19.1	408.7	312.5	96.19	4.249
8,860.0	8,858.5	8,834.1	8,833.1	19.9	78.7	-15.91	422.2	-19.0	406.3	310.4	95.92	4.236
8,870.0	8,868.1	8,843.9	8,842.9	19.9	78.8	-16.09	422.3	-18.9	403.8	308.1	95.63	4.222
8,880.0	8,877.7	8,853.4	8,852.4	19.9	78.9	-16.28	422.4	-18.8	401.0	305.7	95.31	4.208
8,890.0	8,887.2	8,862.8	8,861.7	20.0	79.0	-16.50	422.5	-18.7	398.1	303.1	94.95	4.192
8,900.0	8,896.6	8,872.0	8,871.0	20.0	79.1	-16.73	422.6	-18.6	394.9	300.4	94.57	4.176
8,910.0	8,905.9	8,881.4	8,880.3	20.0	79.2	-16.98	422.7	-18.5	391.6	297.5	94.16	4.159
8,920.0	8,915.2	8,890.9	8,889.9	20.0	79.2	-17.27	422.8	-18.4	388.1	294.4	93.73	4.141
8,930.0	8,924.4	8,900.3	8,899.3	20.0	79.3	-17.57	422.9	-18.4	384.4	291.2	93.26	4.121
8,940.0	8,933.5	8,909.1	8,908.0	20.1	79.4	-17.89	423.0	-18.3	380.6	287.8	92.80	4.101
8,950.0	8,942.5	8,918.1	8,917.0	20.1	79.5	-18.24	423.1	-18.2	376.5	284.2	92.30	4.080
8,960.0	8,951.5	8,927.1	8,926.1	20.1	79.6	-18.62	423.1	-18.1	372.3	280.5	91.78	4.057
8,970.0	8,960.3	8,936.2	8,935.2	20.1	79.7	-19.03	423.2	-18.1	367.9	276.7	91.25	4.032
8,980.0	8,969.1	8,945.1	8,944.0	20.1	79.7	-19.47	423.3	-18.0	363.4	272.7	90.70	4.006
8,990.0	8,977.7	8,953.7	8,952.6	20.2	79.8	-19.94	423.4	-17.9	358.6	268.5	90.14	3.979
9,000.0	8,986.2	8,962.2	8,961.1	20.2	79.9	-20.44	423.5	-17.8	353.7	264.1	89.56	3.949
9,010.0	8,994.6	8,970.6	8,969.6	20.2	80.0	-20.98	423.6	-17.8	348.6	259.7	88.99	3.918
9,020.0	9,002.9	8,978.2	8,978.1	20.2	80.0	-21.57	423.7	-17.7	343.4	255.0	88.41	3.884
9,030.0	9,011.1	8,987.7	8,986.6	20.2	80.1	-22.21	423.7	-17.7	338.0	250.2	87.85	3.848
9,040.0	9,019.2	8,996.8	8,994.7	20.3	80.2	-22.89	423.8	-17.6	332.5	245.2	87.28	3.809
9,050.0	9,027.1	9,003.8	9,002.7	20.3	80.3	-23.61	423.9	-17.6	326.8	240.1	86.73	3.768
9,060.0	9,034.9	9,011.8	9,010.8	20.3	80.3	-24.41	423.9	-17.6	320.9	234.7	86.20	3.723
9,070.0	9,042.6	9,019.8	9,018.8	20.3	80.4	-25.26	424.0	-17.6	314.9	229.2	85.70	3.675
9,080.0	9,050.1	9,027.4	9,026.3	20.4	80.5	-26.17	424.0	-17.6	308.8	223.6	85.23	3.623
9,090.0	9,057.5	9,034.8	9,033.7	20.4	80.5	-27.13	424.1	-17.6	302.6	217.8	84.80	3.568
9,100.0	9,064.8	9,042.1	9,041.0	20.4	80.6	-28.17	424.1	-17.6	296.2	211.8	84.42	3.508
9,110.0	9,071.9	9,049.2	9,048.1	20.4	80.7	-29.28	424.2	-17.5	289.7	205.6	84.10	3.444
9,120.0	9,078.8	9,056.2	9,055.1	20.5	80.7	-30.47	424.2	-17.5	283.1	199.2	83.86	3.376
9,130.0	9,085.6	9,063.1	9,062.0	20.5	80.8	-31.75	424.3	-17.5	276.3	192.6	83.70	3.302
9,140.0	9,092.3	9,069.9	9,068.8	20.5	80.9	-33.13	424.3	-17.5	269.5	185.9	83.63	3.223
9,150.0	9,098.8	9,076.5	9,075.4	20.6	80.9	-34.60	424.4	-17.5	262.6	178.9	83.68	3.138
9,160.0	9,105.1	9,082.8	9,081.8	20.6	81.0	-36.16	424.4	-17.5	255.6	171.8	83.83	3.049
9,170.0	9,111.3	9,088.9	9,087.9	20.6	81.0	-37.81	424.5	-17.5	248.5	164.4	84.10	2.955
9,180.0	9,117.3	9,094.9	9,093.9	20.7	81.1	-39.58	424.5	-17.5	241.3	156.8	84.51	2.856
9,190.0	9,123.1	9,100.8	9,099.7	20.7	81.1	-41.46	424.5	-17.5	234.1	149.1	85.06	2.752
9,200.0	9,128.8	9,106.5	9,105.4	20.7	81.2	-43.46	424.6	-17.5	226.9	141.1	85.76	2.646
9,210.0	9,134.3	9,112.0	9,111.0	20.8	81.2	-45.57	424.6	-17.5	219.6	133.0	86.60	2.535
9,220.0	9,139.6	9,117.5	9,116.5	20.8	81.3	-47.82	424.7	-17.5	212.3	124.7	87.59	2.423
9,230.0	9,144.7	9,122.7	9,121.7	20.8	81.3	-50.15	424.7	-17.5	204.9	116.2	88.68	2.310
9,240.0	9,149.7	9,127.7	9,126.7	20.9	81.4	-52.67	424.7	-17.5	197.5	107.7	89.89	2.198
9,250.0	9,154.5	9,132.5	9,131.5	20.9	81.4	-55.08	424.8	-17.5	190.3	99.1	91.17	2.087
9,260.0	9,159.1	9,137.2	9,136.1	21.0	81.5	-57.65	424.8	-17.5	183.0	90.5	92.50	1.979
9,270.0	9,163.5	9,141.6	9,140.5	21.0	81.5	-60.28	424.8	-17.5	175.9	82.0	93.85	1.874
9,280.0	9,167.7	9,145.9	9,144.8	21.1	81.5	-62.94	424.9	-17.5	168.8	73.6	95.20	1.773
9,290.0	9,171.7	9,150.0	9,148.9	21.1	81.6	-65.61	424.9	-17.5	161.8	65.3	96.49	1.677
9,300.0	9,175.5	9,154.0	9,152.9	21.1	81.6	-68.29	424.9	-17.5	155.0	57.3	97.73	1.586
9,310.0	9,179.1	9,157.7	9,156.7	21.2	81.6	-70.92	424.9	-17.5	148.5	49.6	98.86	1.502
9,320.0	9,182.6	9,161.3	9,160.2	21.2	81.7	-73.48	425.0	-17.5	142.1	42.3	99.96	1.423 Level 3
9,330.0	9,185.8	9,164.6	9,163.6	21.3	81.7	-75.92	425.0	-17.5	136.1	35.4	100.73	1.351 Level 3
9,340.0	9,188.9	9,167.8	9,166.7	21.3	81.7	-78.24	425.0	-17.4	130.4	29.0	101.46	1.286 Level 3
9,350.0	9,191.7	9,170.7	9,169.6	21.4	81.8	-80.40	425.0	-17.4	125.2	23.2	102.05	1.227 Level 2
9,360.0	9,194.3	9,173.4	9,172.3	21.5	81.8	-82.38	425.0	-17.4	120.5	18.0	102.52	1.175 Level 2
9,370.0	9,196.8	9,175.8	9,174.8	21.5	81.8	-84.19	425.0	-17.4	116.4	13.5	102.88	1.131 Level 2
9,380.0	9,199.0	9,178.1	9,177.0	21.6	81.8	-85.81	425.1	-17.4	112.9	9.7	103.15	1.094 Level 2
9,390.0	9,201.0	9,180.2	9,179.1	21.6	81.8	-87.22	425.1	-17.4	110.2	6.8	103.35	1.066 Level 2
9,400.0	9,202.9	9,182.0	9,181.0	21.7	81.9	-88.44	425.1	-17.4	108.2	4.8	103.49	1.046 Level 2
9,410.0	9,204.5	9,183.7	9,182.6	21.7	81.9	-89.46	425.1	-17.4	107.2	3.6	103.59	1.035 Level 2
9,418.6	9,205.4	9,184.7	9,183.6	21.8	81.9	-89.99	425.1	-17.4	107.0	3.4	103.64	1.032 Level 2, CC, ES, SF
9,420.0	9,205.9	9,185.2	9,184.1	21.8	81.9	-90.24	425.1	-17.4	107.1	3.4	103.67	1.033 Level 2
9,430.0	9,207.1	9,186.4	9,185.4	21.9	81.9	-90.81	425.1	-17.4	107.8	4.1	103.73	1.039 Level 2
9,440.0	9,208.1	9,187.5	9,186.4	21.9	81.9	-91.16	425.1	-17.4	109.5	5.7	103.80	1.055 Level 2

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

Offset Design Lusk Deep Unit A - #21 - OH - OH

Survey Program: 10-CS-GYRO-MS

Offset Site Error: 0.0 usft

Offset Well Error: 5.0 usft

Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,450.0	9,208.9	9,188.3	9,187.2	22.0	81.9	-91.29	425.1	-17.4	112.0	8.2	103.85	1.079 Level 2	
9,460.0	9,209.5	9,188.9	9,187.9	22.0	81.9	-91.20	425.1	-17.4	115.4	11.5	103.94	1.110 Level 2	
9,470.0	9,209.8	9,189.3	9,188.3	22.1	81.9	-90.88	425.1	-17.4	119.5	15.5	104.01	1.149 Level 2	
9,480.0	9,210.0	9,189.5	9,188.5	22.2	81.9	-90.34	425.1	-17.4	124.3	20.2	104.09	1.194 Level 2	
9,490.0	9,210.0	9,189.6	9,188.5	22.2	81.9	-90.18	425.1	-17.4	129.6	25.5	104.15	1.245 Level 2	
9,500.0	9,210.0	9,189.7	9,188.6	22.3	81.9	-90.21	425.1	-17.4	135.6	31.3	104.22	1.300 Level 3	
9,510.0	9,210.0	9,189.7	9,188.6	22.4	81.9	-90.24	425.1	-17.4	141.8	37.5	104.29	1.360 Level 3	
9,520.0	9,210.0	9,189.8	9,188.7	22.4	81.9	-90.26	425.1	-17.4	148.5	44.1	104.36	1.423 Level 3	
9,530.0	9,210.0	9,189.8	9,188.7	22.5	81.9	-90.28	425.1	-17.4	155.6	51.1	104.43	1.489 Level 3	
9,540.0	9,210.0	9,189.9	9,188.8	22.6	81.9	-90.31	425.1	-17.4	162.8	58.3	104.50	1.558	
9,550.0	9,210.0	9,189.9	9,188.8	22.7	81.9	-90.34	425.1	-17.4	170.3	65.8	104.67	1.629	
9,560.0	9,210.0	9,190.0	9,188.9	22.7	81.9	-90.38	425.1	-17.4	178.1	73.5	104.64	1.702	
9,570.0	9,210.0	9,190.0	9,188.9	22.8	81.9	-90.39	425.1	-17.4	186.1	81.4	104.71	1.777	
9,580.0	9,210.0	9,190.1	9,189.0	22.9	81.9	-90.41	425.1	-17.4	194.2	89.4	104.78	1.854	
9,590.0	9,210.0	9,190.1	9,189.0	22.9	81.9	-90.44	425.1	-17.4	202.5	97.7	104.85	1.931	
9,600.0	9,210.0	9,190.2	9,189.1	23.0	81.9	-90.46	425.1	-17.4	210.9	106.0	104.92	2.010	
9,610.0	9,210.0	9,190.2	9,189.1	23.1	81.9	-90.48	425.1	-17.4	219.4	114.4	105.00	2.090	
9,620.0	9,210.0	9,190.3	9,189.2	23.2	81.9	-90.51	425.1	-17.4	228.1	123.0	105.08	2.170	
9,630.0	9,210.0	9,190.3	9,189.3	23.3	81.9	-90.53	425.1	-17.4	236.8	131.6	105.16	2.252	
9,640.0	9,210.0	9,190.4	9,189.3	23.3	81.9	-90.55	425.1	-17.4	245.6	140.4	105.24	2.334	
9,650.0	9,210.0	9,190.4	9,189.4	23.4	81.9	-90.57	425.1	-17.4	254.5	149.2	105.32	2.416	
9,660.0	9,210.0	9,190.5	9,189.4	23.5	81.9	-90.59	425.1	-17.4	263.4	158.0	105.41	2.499	
9,670.0	9,210.0	9,190.5	9,189.5	23.6	81.9	-90.61	425.1	-17.4	272.4	166.9	105.49	2.583	
9,680.0	9,210.0	9,190.6	9,189.5	23.7	81.9	-90.63	425.1	-17.4	281.5	175.9	105.57	2.666	
9,690.0	9,210.0	9,190.6	9,189.6	23.7	81.9	-90.65	425.1	-17.4	290.6	184.9	105.65	2.750	
9,700.0	9,210.0	9,190.7	9,189.6	23.8	81.9	-90.67	425.1	-17.4	299.7	194.0	105.73	2.835	
9,710.0	9,210.0	9,190.7	9,189.7	23.9	81.9	-90.69	425.1	-17.4	308.9	203.1	105.82	2.919	
9,720.0	9,210.0	9,190.8	9,189.7	24.0	81.9	-90.71	425.1	-17.4	318.1	212.2	105.91	3.004	
9,730.0	9,210.0	9,190.8	9,189.8	24.1	81.9	-90.72	425.1	-17.4	327.4	221.4	106.00	3.088	
9,740.0	9,210.0	9,190.9	9,189.8	24.2	81.9	-90.74	425.1	-17.4	336.7	230.6	106.09	3.173	
9,750.0	9,210.0	9,190.9	9,189.9	24.3	81.9	-90.76	425.1	-17.4	346.0	239.8	106.18	3.258	
9,760.0	9,210.0	9,191.0	9,189.9	24.4	81.9	-90.77	425.1	-17.4	355.3	249.0	106.27	3.343	
9,770.0	9,210.0	9,191.0	9,190.0	24.5	81.9	-90.79	425.1	-17.4	364.7	258.3	106.36	3.428	
9,780.0	9,210.0	9,191.1	9,190.0	24.6	81.9	-90.80	425.1	-17.4	374.0	267.6	106.45	3.514	
9,790.0	9,210.0	9,191.1	9,190.1	24.7	81.9	-90.82	425.1	-17.4	383.4	276.9	106.54	3.599	
9,800.0	9,210.0	9,191.2	9,190.1	24.7	81.9	-90.83	425.1	-17.4	392.9	286.2	106.63	3.684	
9,810.0	9,210.0	9,191.2	9,190.2	24.8	81.9	-90.84	425.1	-17.4	402.3	295.6	106.73	3.769	
9,820.0	9,210.0	9,191.3	9,190.2	24.9	81.9	-90.86	425.1	-17.4	411.7	304.9	106.83	3.854	
9,830.0	9,210.0	9,191.3	9,190.3	25.0	81.9	-90.87	425.1	-17.4	421.2	314.3	106.93	3.939	
9,840.0	9,210.0	9,191.4	9,190.3	25.1	81.9	-90.88	425.1	-17.4	430.7	323.6	107.03	4.024	
9,850.0	9,210.0	9,191.4	9,190.4	25.3	81.9	-90.89	425.1	-17.4	440.2	333.0	107.13	4.109	
9,860.0	9,210.0	9,191.5	9,190.4	25.4	81.9	-90.90	425.1	-17.4	449.7	342.4	107.23	4.194	
9,870.0	9,210.0	9,191.5	9,190.4	25.5	81.9	-90.91	425.1	-17.4	459.2	351.9	107.32	4.278	
9,880.0	9,210.0	9,191.6	9,190.5	25.6	81.9	-90.92	425.1	-17.4	468.7	361.3	107.42	4.363	
9,890.0	9,210.0	9,191.6	9,190.5	25.7	81.9	-90.93	425.1	-17.4	478.2	370.7	107.52	4.448	
9,900.0	9,210.0	9,191.7	9,190.6	25.8	81.9	-90.94	425.1	-17.4	487.8	380.2	107.62	4.532	
9,910.0	9,210.0	9,191.7	9,190.6	25.9	81.9	-90.95	425.1	-17.4	497.3	389.6	107.72	4.617	
9,920.0	9,210.0	9,191.8	9,190.7	26.0	81.9	-90.96	425.1	-17.4	506.9	399.0	107.83	4.701	
9,930.0	9,210.0	9,191.8	9,190.7	26.1	81.9	-90.97	425.1	-17.4	516.4	408.5	107.94	4.785	
9,940.0	9,210.0	9,191.8	9,190.8	26.2	81.9	-90.97	425.1	-17.4	526.0	418.0	108.04	4.869	
9,950.0	9,210.0	9,191.9	9,190.8	26.3	81.9	-90.98	425.1	-17.4	535.6	427.4	108.15	4.952	
9,960.0	9,210.0	9,191.9	9,190.9	26.4	81.9	-90.99	425.1	-17.4	545.2	436.9	108.25	5.036	
9,970.0	9,210.0	9,192.0	9,190.9	26.5	81.9	-90.99	425.1	-17.4	554.7	446.4	108.35	5.120	
9,980.0	9,210.0	9,192.0	9,191.0	26.6	81.9	-91.00	425.1	-17.4	564.3	455.9	108.45	5.203	
9,990.0	9,210.0	9,192.1	9,191.0	26.7	81.9	-91.00	425.1	-17.4	573.9	465.3	108.57	5.286	
10,000.0	9,210.0	9,192.1	9,191.1	26.8	81.9	-91.01	425.1	-17.4	583.5	474.8	108.67	5.370	
10,010.0	9,210.0	9,192.2	9,191.1	27.0	81.9	-91.01	425.1	-17.4	593.1	484.3	108.78	5.452	
10,020.0	9,210.0	9,192.2	9,191.2	27.1	81.9	-91.02	425.1	-17.4	602.7	493.8	108.89	5.535	
10,030.0	9,210.0	9,192.3	9,191.2	27.2	81.9	-91.02	425.1	-17.4	612.3	503.3	109.01	5.617	
10,040.0	9,210.0	9,192.3	9,191.3	27.3	81.9	-91.02	425.1	-17.4	621.9	512.8	109.12	5.700	
10,050.0	9,210.0	9,192.4	9,191.3	27.4	81.9	-91.03	425.1	-17.4	631.5	522.3	109.23	5.782	
10,060.0	9,210.0	9,192.4	9,191.4	27.5	81.9	-91.03	425.1	-17.4	641.2	531.8	109.34	5.864	
10,070.0	9,210.0	9,192.5	9,191.4	27.7	81.9	-91.03	425.1	-17.4	650.8	541.3	109.45	5.946	
10,080.0	9,210.0	9,192.5	9,191.5	27.8	81.9	-91.04	425.1	-17.4	660.4	550.8	109.56	6.028	
10,090.0	9,210.0	9,192.6	9,191.5	27.9	81.9	-91.04	425.1	-17.4	670.0	560.3	109.67	6.109	
10,100.0	9,210.0	9,192.6	9,191.6	28.0	81.9	-91.04	425.1	-17.4	679.6	569.9	109.78	6.191	

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

Offset Design Lusk Deep Unit A - #21 - OH - OH													Offset Site Error:	0.0 usft
Survey Program: 10-CB-GYRO-MS													Offset Well Error:	5.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,110.0	9,210.0	9,192.7	9,191.8	28.1	81.9	-91.04	425.1	-17.4	689.3	579.4	109.89	6.272		
10,120.0	9,210.0	9,192.7	9,191.7	28.2	81.9	-91.05	425.1	-17.4	698.9	588.9	110.01	6.353		
10,130.0	9,210.0	9,192.8	9,191.7	28.4	81.9	-91.06	425.1	-17.4	708.5	598.4	110.13	6.433		
10,140.0	9,210.0	9,192.8	9,191.7	28.5	82.0	-91.08	425.1	-17.4	718.2	607.9	110.25	6.514		
10,150.0	9,210.0	9,192.8	9,191.8	28.6	82.0	-91.09	425.1	-17.4	727.8	617.4	110.37	6.594		
10,160.0	9,210.0	9,192.9	9,191.8	28.7	82.0	-91.10	425.1	-17.4	737.5	627.0	110.50	6.674		
10,170.0	9,210.0	9,192.9	9,191.9	28.8	82.0	-91.12	425.1	-17.4	747.2	636.5	110.62	6.754		
10,180.0	9,210.0	9,193.0	9,191.9	29.0	82.0	-91.13	425.1	-17.4	756.8	646.1	110.74	6.834		
10,190.0	9,210.0	9,193.0	9,192.0	29.1	82.0	-91.15	425.1	-17.4	766.5	655.7	110.86	6.914		
10,200.0	9,210.0	9,193.1	9,192.0	29.2	82.0	-91.16	425.1	-17.4	776.2	665.2	110.98	6.994		
10,210.0	9,210.0	9,193.1	9,192.1	29.3	82.0	-91.18	425.1	-17.4	785.9	674.8	111.10	7.074		
10,220.0	9,210.0	9,193.2	9,192.1	29.5	82.0	-91.19	425.1	-17.4	795.6	684.4	111.23	7.153		
10,230.0	9,210.0	9,193.2	9,192.2	29.6	82.0	-91.20	425.1	-17.4	805.3	694.0	111.35	7.233		
10,240.0	9,210.0	9,193.3	9,192.2	29.7	82.0	-91.22	425.1	-17.4	815.1	703.6	111.47	7.312		
10,250.0	9,210.0	9,193.3	9,192.3	29.8	82.0	-91.23	425.1	-17.4	824.8	713.2	111.60	7.391		
10,260.0	9,210.0	9,193.4	9,192.3	29.9	82.0	-91.25	425.1	-17.4	834.5	722.8	111.72	7.470		
10,270.0	9,210.0	9,193.4	9,192.3	30.1	82.0	-91.26	425.1	-17.4	844.3	732.4	111.85	7.549		
10,280.0	9,210.0	9,193.5	9,192.4	30.2	82.0	-91.27	425.1	-17.4	854.0	742.1	111.97	7.627		
10,290.0	9,210.0	9,193.5	9,192.4	30.3	82.0	-91.29	425.1	-17.4	863.8	751.7	112.09	7.706		
10,300.0	9,210.0	9,193.5	9,192.5	30.4	82.0	-91.30	425.1	-17.4	873.6	761.3	112.22	7.784		
10,310.0	9,210.0	9,193.6	9,192.5	30.6	82.0	-91.32	425.1	-17.4	883.3	771.0	112.35	7.862		
10,320.0	9,210.0	9,193.6	9,192.6	30.7	82.0	-91.33	425.1	-17.4	893.1	780.6	112.48	7.940		
10,330.0	9,210.0	9,193.7	9,192.6	30.8	82.0	-91.34	425.1	-17.4	902.9	790.3	112.61	8.018		
10,340.0	9,210.0	9,193.7	9,192.7	31.0	82.0	-91.36	425.1	-17.4	912.6	799.9	112.74	8.096		
10,350.0	9,210.0	9,193.8	9,192.7	31.1	82.0	-91.37	425.1	-17.4	922.4	809.6	112.86	8.173		
10,360.0	9,210.0	9,193.8	9,192.8	31.2	82.0	-91.39	425.1	-17.4	932.2	819.2	112.99	8.250		
10,370.0	9,210.0	9,193.9	9,192.8	31.3	82.0	-91.40	425.1	-17.4	942.0	828.9	113.12	8.327		
10,380.0	9,210.0	9,193.9	9,192.9	31.5	82.0	-91.41	425.1	-17.4	951.8	838.6	113.25	8.404		
10,390.0	9,210.0	9,194.0	9,192.9	31.6	82.0	-91.43	425.1	-17.4	961.6	848.2	113.38	8.481		
10,400.0	9,210.0	9,194.0	9,192.9	31.7	82.0	-91.44	425.1	-17.4	971.4	857.9	113.51	8.558		
10,410.0	9,210.0	9,194.0	9,193.0	31.9	82.0	-91.45	425.1	-17.4	981.2	867.6	113.65	8.634		
10,420.0	9,210.0	9,194.1	9,193.0	32.0	82.0	-91.47	425.1	-17.4	991.1	877.3	113.78	8.710		
10,430.0	9,210.0	9,194.1	9,193.1	32.1	82.0	-91.48	425.1	-17.4	1,000.9	887.0	113.92	8.786		
10,440.0	9,210.0	9,194.2	9,193.1	32.3	82.0	-91.50	425.1	-17.4	1,010.7	896.6	114.05	8.862		
10,450.0	9,210.0	9,194.2	9,193.2	32.4	82.0	-91.51	425.1	-17.4	1,020.5	906.3	114.19	8.937		
10,460.0	9,210.0	9,194.3	9,193.2	32.5	82.0	-91.52	425.1	-17.4	1,030.4	916.0	114.32	9.013		
10,470.0	9,210.0	9,194.3	9,193.3	32.7	82.0	-91.54	425.1	-17.4	1,040.2	925.7	114.45	9.088		
10,480.0	9,210.0	9,194.4	9,193.3	32.8	82.0	-91.55	425.1	-17.4	1,050.0	935.4	114.59	9.163		
10,490.0	9,210.0	9,194.4	9,193.3	32.9	82.0	-91.56	425.1	-17.4	1,059.9	945.1	114.72	9.238		
10,500.0	9,210.0	9,194.5	9,193.4	33.1	82.0	-91.58	425.1	-17.4	1,069.7	954.8	114.86	9.313		
10,510.0	9,210.0	9,194.5	9,193.4	33.2	82.0	-91.59	425.1	-17.4	1,079.5	964.6	115.00	9.388		
10,520.0	9,210.0	9,194.5	9,193.5	33.4	82.0	-91.60	425.1	-17.4	1,089.4	974.3	115.14	9.462		
10,530.0	9,210.0	9,194.6	9,193.5	33.5	82.0	-91.62	425.1	-17.4	1,099.2	984.0	115.28	9.536		
10,540.0	9,210.0	9,194.6	9,193.6	33.6	82.0	-91.63	425.1	-17.4	1,109.1	993.7	115.41	9.610		
10,550.0	9,210.0	9,194.7	9,193.6	33.8	82.0	-91.64	425.1	-17.4	1,119.0	1,003.4	115.55	9.683		
10,560.0	9,210.0	9,194.7	9,193.7	33.9	82.0	-91.66	425.1	-17.4	1,128.8	1,013.1	115.69	9.757		
10,570.0	9,210.0	9,194.8	9,193.7	34.0	82.0	-91.67	425.1	-17.4	1,138.7	1,022.8	115.83	9.830		
10,580.0	9,210.0	9,194.8	9,193.8	34.2	82.0	-91.69	425.1	-17.4	1,148.5	1,032.6	115.97	9.904		
10,590.0	9,210.0	9,194.9	9,193.8	34.3	82.0	-91.70	425.1	-17.4	1,158.4	1,042.3	116.11	9.977		

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

Offset Design Lusk Deep Unit A - #26H - OH - OH

Survey Program: 907-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 5.0 usft

Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	2.0	5.0	-90.19	-0.1	-29.9	29.9				
10.0	10.0	10.0	10.0	2.0	5.0	-90.19	-0.1	-29.9	29.9				
20.0	20.0	20.0	20.0	2.0	5.0	-90.19	-0.1	-29.9	29.9	22.9	7.00	4.271	
30.0	30.0	30.0	30.0	2.0	5.0	-90.18	-0.1	-29.9	29.9	22.9	7.00	4.271	
40.0	40.0	40.0	40.0	2.0	5.0	-90.17	-0.1	-29.9	29.9	22.9	7.00	4.271	
50.0	50.0	50.0	50.0	2.0	5.0	-90.15	-0.1	-29.9	29.9	22.9	7.00	4.271	
60.0	60.0	60.0	60.0	2.0	5.0	-90.14	-0.1	-29.9	29.9	22.9	7.00	4.271	
70.0	70.0	70.0	70.0	2.0	5.0	-90.12	-0.1	-29.9	29.9	22.9	7.00	4.270	
80.0	80.0	80.0	80.0	2.0	5.0	-90.10	-0.1	-29.9	29.9	22.9	7.00	4.270	
90.0	90.0	90.0	90.0	2.0	5.0	-90.07	0.0	-29.9	29.9	22.9	7.00	4.269	
100.0	100.0	100.0	100.0	2.0	5.0	-90.04	0.0	-29.9	29.9	22.9	7.00	4.269	
110.0	110.0	110.0	110.0	2.0	5.0	-90.01	0.0	-29.9	29.9	22.9	7.00	4.268	
120.0	120.0	120.0	120.0	2.0	5.0	-89.98	0.0	-29.9	29.9	22.9	7.01	4.267	
130.0	130.0	130.0	130.0	2.0	5.0	-89.94	0.0	-29.9	29.9	22.9	7.01	4.265	
140.0	140.0	140.0	140.0	2.0	5.0	-89.90	0.1	-29.9	29.9	22.9	7.01	4.264	
150.0	150.0	150.0	150.0	2.0	5.0	-89.86	0.1	-29.9	29.9	22.9	7.01	4.262	
160.0	160.0	160.0	160.0	2.0	5.0	-89.81	0.1	-29.9	29.9	22.9	7.02	4.260	
170.0	170.0	170.0	170.0	2.0	5.0	-89.77	0.1	-29.9	29.9	22.9	7.02	4.258	
180.0	180.0	180.0	180.0	2.0	5.0	-89.71	0.1	-29.9	29.9	22.9	7.02	4.256	
190.0	190.0	190.0	190.0	2.0	5.0	-89.68	0.2	-29.9	29.9	22.9	7.03	4.253	
200.0	200.0	200.0	200.0	2.0	5.0	-89.60	0.2	-29.9	29.9	22.9	7.03	4.251	
210.0	210.0	210.0	210.0	2.0	5.0	-89.54	0.2	-29.9	29.9	22.8	7.03	4.248	
220.0	220.0	220.0	220.0	2.0	5.0	-89.48	0.3	-29.9	29.9	22.8	7.04	4.245	
230.0	230.0	230.0	230.0	2.0	5.0	-89.41	0.3	-29.9	29.9	22.8	7.04	4.242	
240.0	240.0	240.0	240.0	2.0	5.0	-89.34	0.3	-29.9	29.9	22.8	7.05	4.239	
250.0	250.0	250.0	250.0	2.0	5.0	-89.27	0.4	-29.9	29.9	22.8	7.05	4.236	
260.0	260.0	260.0	260.0	2.1	5.0	-89.20	0.4	-29.9	29.9	22.8	7.06	4.232	
270.0	270.0	270.0	270.0	2.1	5.0	-89.12	0.5	-29.9	29.9	22.8	7.06	4.228	
280.0	280.0	280.0	280.0	2.1	5.0	-89.04	0.5	-29.9	29.9	22.8	7.07	4.225	
290.0	290.0	290.0	290.0	2.1	5.0	-88.95	0.5	-29.9	29.9	22.8	7.08	4.221	
300.0	300.0	300.0	300.0	2.1	5.0	-88.86	0.5	-29.9	29.9	22.8	7.08	4.217	
310.0	310.0	310.0	310.0	2.1	5.0	-88.77	0.6	-29.9	29.9	22.8	7.09	4.212	
320.0	320.0	320.0	320.0	2.1	5.0	-88.68	0.7	-29.9	29.9	22.8	7.10	4.208	
330.0	330.0	330.0	330.0	2.1	5.0	-88.59	0.7	-29.9	29.9	22.8	7.10	4.203	
340.0	340.0	340.0	340.0	2.1	5.0	-88.49	0.8	-29.8	29.9	22.7	7.11	4.199	
350.0	350.0	350.0	350.0	2.1	5.0	-88.39	0.8	-29.8	29.9	22.7	7.12	4.194	
360.0	360.0	360.0	360.0	2.1	5.0	-88.28	0.9	-29.8	29.9	22.7	7.13	4.189	
370.0	370.0	370.0	370.0	2.1	5.0	-88.17	1.0	-29.8	29.9	22.7	7.14	4.184	
380.0	380.0	380.0	380.0	2.1	5.0	-88.06	1.0	-29.8	29.9	22.7	7.14	4.179	
390.0	390.0	390.0	390.0	2.1	5.0	-87.95	1.1	-29.8	29.9	22.7	7.15	4.174	
400.0	400.0	400.0	400.0	2.1	5.0	-87.83	1.1	-29.8	29.9	22.7	7.16	4.168	
410.0	410.0	410.0	410.0	2.1	5.0	-87.71	1.2	-29.8	29.8	22.7	7.17	4.163	
420.0	420.0	420.0	420.0	2.2	5.0	-87.59	1.3	-29.8	29.8	22.7	7.18	4.157	
430.0	430.0	430.0	430.0	2.2	5.0	-87.46	1.3	-29.8	29.8	22.7	7.19	4.152	
440.0	440.0	440.0	440.0	2.2	5.0	-87.34	1.4	-29.8	29.8	22.6	7.20	4.146	
450.0	450.0	450.0	450.0	2.2	5.0	-87.20	1.5	-29.8	29.8	22.6	7.21	4.140	
460.0	460.0	460.0	460.0	2.2	5.0	-87.07	1.5	-29.8	29.8	22.5	7.22	4.134	
470.0	470.0	470.0	470.0	2.2	5.0	-86.93	1.6	-29.8	29.8	22.5	7.23	4.128	
480.0	480.0	480.0	480.0	2.2	5.0	-86.79	1.7	-29.8	29.8	22.5	7.24	4.122	
485.4	485.4	485.4	485.4	2.2	5.0	-86.70	1.7	-29.8	29.8	22.5	7.25	4.118 CC	
490.0	490.0	490.0	490.0	2.2	5.0	-86.65	1.7	-29.8	29.8	22.5	7.25	4.116	
500.0	500.0	500.0	500.0	2.2	5.0	-86.50	1.8	-29.8	29.8	22.5	7.26	4.109	
510.0	510.0	510.0	510.0	2.2	5.0	-86.35	1.9	-29.8	29.8	22.5	7.27	4.103	
520.0	520.0	520.0	520.0	2.3	5.0	-86.20	2.0	-29.8	29.8	22.5	7.29	4.097	
530.0	530.0	530.0	530.0	2.3	5.0	-86.05	2.1	-29.8	29.8	22.5	7.30	4.090	
540.0	540.0	540.0	540.0	2.3	5.0	-85.89	2.1	-29.8	29.8	22.5	7.31	4.084	
550.0	550.0	550.0	550.0	2.3	5.0	-85.73	2.2	-29.8	29.8	22.5	7.32	4.077	
560.0	560.0	560.0	560.0	2.3	5.0	-85.56	2.3	-29.8	29.9	22.5	7.33	4.071	
570.0	570.0	570.0	570.0	2.3	5.0	-85.40	2.4	-29.8	29.9	22.5	7.35	4.064	
580.0	580.0	580.0	580.0	2.3	5.0	-85.23	2.5	-29.8	29.9	22.5	7.36	4.057	
590.0	590.0	590.0	590.0	2.3	5.0	-85.05	2.6	-29.7	29.9	22.5	7.37	4.050	
600.0	600.0	600.0	600.0	2.3	5.0	-84.88	2.7	-29.7	29.9	22.5	7.38	4.044	
610.0	610.0	610.0	610.0	2.4	5.0	-84.70	2.8	-29.7	29.9	22.5	7.40	4.037	
620.0	620.0	620.0	620.0	2.4	5.0	-84.52	2.9	-29.7	29.9	22.5	7.41	4.030	
630.0	630.0	630.0	630.0	2.4	5.0	-84.33	2.9	-29.7	29.9	22.4	7.42	4.023	
640.0	640.0	640.0	640.0	2.4	5.0	-84.15	3.0	-29.7	29.9	22.4	7.44	4.016	

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

Offset Design Lusk Deep Unit A - #26H - OH - OH													Offset Site Error:	0.0 uft
Survey Program: 907-MWD													Offset Well Error:	5.0 uft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (uft)	Vertical Depth (uft)	Measured Depth (uft)	Vertical Depth (uft)	Reference (uft)	Offset (uft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (uft)	+E-W (uft)	Between Centres (uft)	Between Ellipses (uft)	Minimum Separation (uft)	Separation Factor		
650.0	650.0	650.0	650.0	2.4	5.1	-83.95	3.1	-29.7	29.9	22.4	7.45	4.009		
660.0	660.0	660.0	660.0	2.4	5.1	-83.76	3.2	-29.7	29.9	22.4	7.47	4.002		
670.0	670.0	670.0	670.0	2.4	5.1	-83.57	3.3	-29.7	29.9	22.4	7.48	3.996		
680.0	680.0	680.0	680.0	2.4	5.1	-83.37	3.5	-29.7	29.9	22.4	7.50	3.989		
690.0	690.0	690.0	690.0	2.5	5.1	-83.17	3.6	-29.7	29.9	22.4	7.51	3.982		
700.0	700.0	700.0	700.0	2.5	5.1	-82.96	3.7	-29.7	29.9	22.4	7.52	3.975		
710.0	710.0	710.0	710.0	2.5	5.1	-82.75	3.8	-29.7	29.9	22.4	7.54	3.968		
720.0	720.0	720.0	720.0	2.5	5.1	-82.54	3.9	-29.7	29.9	22.4	7.55	3.961		
730.0	730.0	730.0	730.0	2.5	5.1	-82.33	4.0	-29.7	29.9	22.4	7.57	3.954		
740.0	740.0	740.0	740.0	2.5	5.1	-82.11	4.1	-29.7	29.9	22.4	7.58	3.947		
750.0	750.0	750.0	750.0	2.5	5.1	-81.90	4.2	-29.7	29.9	22.3	7.60	3.941		
760.0	760.0	760.0	760.0	2.5	5.1	-81.67	4.3	-29.6	30.0	22.3	7.62	3.934		
770.0	770.0	770.0	770.0	2.6	5.1	-81.45	4.5	-29.6	30.0	22.3	7.63	3.927		
780.0	780.0	780.0	780.0	2.6	5.1	-81.22	4.6	-29.6	30.0	22.3	7.65	3.920		
790.0	790.0	790.0	790.0	2.6	5.1	-80.99	4.7	-29.6	30.0	22.3	7.66	3.914		
800.0	800.0	800.0	800.0	2.6	5.1	-80.76	4.8	-29.6	30.0	22.3	7.68	3.907		
810.0	810.0	810.0	810.0	2.6	5.1	-80.53	4.9	-29.6	30.0	22.3	7.70	3.900		
820.0	820.0	820.0	820.0	2.6	5.1	-80.29	5.1	-29.6	30.0	22.3	7.71	3.894		
830.0	830.0	830.0	830.0	2.6	5.1	-80.05	5.2	-29.6	30.0	22.3	7.73	3.887		
840.0	840.0	840.0	840.0	2.7	5.1	-79.80	5.3	-29.6	30.1	22.3	7.75	3.881		
850.0	850.0	850.0	850.0	2.7	5.1	-79.56	5.5	-29.6	30.1	22.3	7.76	3.874		
860.0	860.0	860.0	859.9	2.7	5.1	-79.31	5.6	-29.6	30.1	22.3	7.78	3.868		
870.0	870.0	870.0	859.9	2.7	5.1	-79.06	5.7	-29.6	30.1	22.3	7.80	3.862		
880.0	880.0	880.0	879.9	2.7	5.1	-78.80	5.8	-29.6	30.1	22.3	7.81	3.856		
890.0	890.0	890.0	889.9	2.7	5.1	-78.55	6.0	-29.5	30.1	22.3	7.83	3.849		
900.0	900.0	900.0	889.9	2.8	5.1	-78.29	6.1	-29.5	30.2	22.3	7.85	3.843		
910.0	910.0	910.0	909.9	2.8	5.1	-78.03	6.3	-29.5	30.2	22.3	7.87	3.837		
920.0	920.0	920.0	919.9	2.8	5.1	-77.77	6.4	-29.5	30.2	22.3	7.89	3.830		
930.0	930.0	930.0	929.9	2.8	5.1	-77.48	6.6	-29.5	30.2	22.3	7.91	3.823		
940.0	940.0	940.0	939.9	2.8	5.1	-77.18	6.7	-29.5	30.3	22.3	7.93	3.816		
950.0	950.0	950.0	949.9	2.8	5.1	-76.84	6.9	-29.5	30.3	22.3	7.95	3.808		
960.0	960.0	960.0	959.9	2.8	5.1	-76.50	7.1	-29.5	30.3	22.3	7.97	3.801		
970.0	970.0	970.0	959.9	2.9	5.1	-76.15	7.3	-29.4	30.3	22.3	7.99	3.794		
980.0	980.0	980.0	979.9	2.9	5.1	-75.78	7.5	-29.4	30.3	22.3	8.01	3.787		
990.0	990.0	990.0	989.9	2.9	5.1	-75.40	7.7	-29.4	30.4	22.3	8.03	3.780		
1,000.0	1,000.0	1,000.0	999.9	2.9	5.1	-75.00	7.9	-29.4	30.4	22.3	8.06	3.774		
1,010.0	1,010.0	1,010.0	1,009.9	2.9	5.2	-74.59	8.1	-29.3	30.4	22.4	8.08	3.767		
1,020.0	1,020.0	1,020.0	1,019.9	2.9	5.2	-74.16	8.3	-29.3	30.5	22.4	8.10	3.760		
1,030.0	1,030.0	1,030.0	1,029.9	3.0	5.2	-73.71	8.6	-29.3	30.5	22.4	8.12	3.754		
1,040.0	1,040.0	1,039.9	1,039.9	3.0	5.2	-73.26	8.8	-29.2	30.5	22.4	8.14	3.748		
1,050.0	1,050.0	1,049.9	1,049.9	3.0	5.2	-72.78	9.0	-29.2	30.6	22.4	8.17	3.742		
1,060.0	1,060.0	1,059.9	1,059.9	3.0	5.2	-72.30	9.3	-29.1	30.6	22.4	8.19	3.736		
1,070.0	1,070.0	1,059.9	1,069.9	3.0	5.2	-71.79	9.6	-29.1	30.6	22.4	8.21	3.731		
1,080.0	1,080.0	1,079.9	1,079.9	3.0	5.2	-71.26	9.8	-29.1	30.7	22.4	8.23	3.726		
1,090.0	1,090.0	1,089.9	1,089.9	3.1	5.2	-70.75	10.1	-29.0	30.7	22.5	8.26	3.721		
1,100.0	1,100.0	1,089.9	1,089.9	3.1	5.2	-70.21	10.4	-29.0	30.8	22.5	8.28	3.717		
1,110.0	1,110.0	1,109.9	1,109.9	3.1	5.2	-69.70	10.7	-28.9	30.8	22.5	8.30	3.714		
1,120.0	1,120.0	1,119.9	1,119.9	3.1	5.2	-69.22	11.0	-28.9	30.9	22.6	8.33	3.711		
1,130.0	1,130.0	1,129.9	1,129.9	3.1	5.2	-68.77	11.2	-28.9	31.0	22.6	8.35	3.708		
1,140.0	1,140.0	1,139.9	1,139.9	3.1	5.2	-68.33	11.4	-28.8	31.0	22.7	8.37	3.706		
1,150.0	1,150.0	1,149.9	1,149.9	3.2	5.2	-67.97	11.7	-28.8	31.1	22.7	8.40	3.704		
1,160.0	1,160.0	1,159.9	1,159.9	3.2	5.2	-67.62	11.9	-28.8	31.2	22.8	8.42	3.703		
1,170.0	1,170.0	1,159.9	1,169.9	3.2	5.2	-67.30	12.1	-28.8	31.3	22.8	8.44	3.702		
1,180.0	1,180.0	1,179.9	1,179.9	3.2	5.2	-67.01	12.2	-28.8	31.3	22.9	8.47	3.701		
1,190.0	1,190.0	1,189.9	1,189.9	3.2	5.3	-66.75	12.4	-28.9	31.4	22.9	8.49	3.701		
1,200.0	1,200.0	1,199.9	1,199.9	3.3	5.3	-66.52	12.5	-28.9	31.5	23.0	8.51	3.700		
1,210.0	1,210.0	1,209.9	1,209.9	3.3	5.3	-66.33	12.7	-28.9	31.6	23.1	8.54	3.700		
1,220.0	1,220.0	1,219.9	1,219.9	3.3	5.3	-66.17	12.8	-29.0	31.7	23.1	8.56	3.700		
1,230.0	1,230.0	1,229.9	1,229.9	3.3	5.3	-66.02	12.9	-29.0	31.8	23.2	8.59	3.700		
1,240.0	1,240.0	1,239.9	1,239.9	3.3	5.3	-65.87	13.0	-29.1	31.9	23.2	8.61	3.700		
1,250.0	1,250.0	1,249.9	1,249.9	3.3	5.3	-65.72	13.1	-29.1	31.9	23.3	8.63	3.699		
1,260.0	1,260.0	1,259.9	1,259.9	3.4	5.3	-65.56	13.2	-29.1	32.0	23.4	8.66	3.698		
1,270.0	1,270.0	1,269.9	1,269.9	3.4	5.3	-65.41	13.4	-29.2	32.1	23.4	8.68	3.696		
1,280.0	1,280.0	1,279.9	1,279.9	3.4	5.3	-65.26	13.5	-29.2	32.2	23.5	8.71	3.694		
1,290.0	1,290.0	1,289.9	1,289.9	3.4	5.3	-65.10	13.6	-29.2	32.2	23.5	8.73	3.691		
1,300.0	1,300.0	1,299.9	1,299.9	3.4	5.3	-64.94	13.7	-29.3	32.3	23.5	8.76	3.688		

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

Offset Design Lusk Deep Unit A - #26H - OH - OH

Survey Program: 907-MWD

Offset Site Error: 0.0 uft

Offset Well Error: 5.0 uft

Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (uft)	Separation Factor	Warning
Measured Depth (uft)	Vertical Depth (uft)	Measured Depth (uft)	Vertical Depth (uft)	Reference (uft)	Offset (uft)		+N/-S (uft)	+E/-W (uft)	Between Centres (uft)	Between Ellipses (uft)			
1,310.0	1,310.0	1,309.9	1,309.8	3.5	5.3	-64.78	13.8	-29.3	32.4	23.6	8.78	3.884	
1,320.0	1,320.0	1,319.9	1,319.8	3.5	5.3	-64.62	13.9	-29.3	32.4	23.6	8.81	3.881	
1,330.0	1,330.0	1,329.9	1,329.8	3.5	5.3	-64.46	14.0	-29.3	32.5	23.6	8.83	3.876	
1,340.0	1,340.0	1,340.0	1,339.8	3.5	5.4	-64.30	14.1	-29.3	32.5	23.7	8.86	3.872	
1,350.0	1,350.0	1,349.9	1,349.8	3.5	5.4	-64.14	14.2	-29.3	32.6	23.7	8.88	3.865	
1,360.0	1,360.0	1,359.9	1,359.8	3.5	5.4	-63.97	14.3	-29.3	32.6	23.7	8.91	3.862	
1,370.0	1,370.0	1,369.9	1,369.8	3.6	5.4	-63.81	14.4	-29.3	32.7	23.7	8.94	3.857	
1,380.0	1,380.0	1,379.9	1,379.8	3.6	5.4	-63.65	14.5	-29.3	32.7	23.8	8.96	3.853	
1,390.0	1,390.0	1,389.9	1,389.8	3.6	5.4	-63.48	14.6	-29.4	32.8	23.8	8.99	3.850	
1,400.0	1,400.0	1,399.9	1,399.8	3.6	5.4	-63.32	14.8	-29.4	32.9	23.9	9.01	3.847	
1,410.0	1,410.0	1,409.9	1,409.7	3.6	5.4	-63.16	14.9	-29.4	33.0	23.9	9.04	3.845	
1,420.0	1,420.0	1,419.8	1,419.7	3.7	5.4	-63.00	15.0	-29.4	33.0	24.0	9.07	3.843	
1,430.0	1,430.0	1,429.8	1,429.7	3.7	5.4	-62.84	15.1	-29.5	33.1	24.0	9.09	3.841	
1,440.0	1,440.0	1,439.8	1,439.7	3.7	5.4	-62.68	15.2	-29.5	33.2	24.1	9.12	3.840	
1,450.0	1,450.0	1,449.8	1,449.7	3.7	5.4	-62.53	15.4	-29.5	33.3	24.2	9.15	3.840	
1,460.0	1,460.0	1,459.8	1,459.7	3.7	5.4	-62.37	15.5	-29.6	33.4	24.2	9.18	3.840	
1,470.0	1,470.0	1,469.8	1,469.6	3.7	5.5	-62.21	15.6	-29.6	33.5	24.3	9.20	3.840	
1,480.0	1,480.0	1,479.8	1,479.5	3.8	5.5	-62.06	15.7	-29.7	33.6	24.4	9.23	3.841	
1,490.0	1,490.0	1,489.8	1,489.6	3.8	5.5	-61.90	15.9	-29.7	33.7	24.5	9.26	3.841	
1,500.0	1,500.0	1,499.8	1,499.6	3.8	5.5	-61.75	16.0	-29.8	33.8	24.5	9.29	3.842	
1,510.0	1,510.0	1,509.8	1,509.6	3.8	5.5	-61.59	16.1	-29.8	33.9	24.6	9.31	3.842	
1,520.0	1,520.0	1,519.8	1,519.6	3.8	5.5	-61.44	16.3	-29.9	34.0	24.7	9.34	3.842	
1,530.0	1,530.0	1,529.8	1,529.6	3.9	5.5	-61.28	16.4	-29.9	34.1	24.8	9.37	3.843	
1,540.0	1,540.0	1,539.8	1,539.6	3.9	5.5	-61.12	16.5	-30.0	34.2	24.8	9.40	3.843	
1,550.0	1,550.0	1,549.8	1,549.6	3.9	5.5	-60.97	16.7	-30.0	34.3	24.9	9.43	3.843	
1,560.0	1,560.0	1,559.8	1,559.6	3.9	5.5	-60.81	16.8	-30.1	34.4	25.0	9.45	3.843	
1,570.0	1,570.0	1,569.8	1,569.6	3.9	5.5	-60.65	16.9	-30.1	34.5	25.1	9.48	3.843	
1,580.0	1,580.0	1,579.8	1,579.6	4.0	5.6	-60.50	17.1	-30.2	34.6	25.1	9.51	3.843	
1,590.0	1,590.0	1,589.8	1,589.6	4.0	5.6	-60.34	17.2	-30.2	34.7	25.2	9.54	3.842	
1,600.0	1,600.0	1,589.8	1,589.6	4.0	5.6	-60.18	17.3	-30.2	34.9	25.3	9.57	3.842	
1,610.0	1,610.0	1,609.8	1,609.6	4.0	5.6	-60.01	17.5	-30.3	35.0	25.4	9.60	3.841	
1,620.0	1,620.0	1,619.8	1,619.7	4.0	5.6	-59.85	17.6	-30.3	35.1	25.4	9.63	3.841	
1,630.0	1,630.0	1,629.8	1,629.7	4.1	5.6	-59.69	17.8	-30.3	35.1	25.5	9.66	3.840	
1,640.0	1,640.0	1,639.8	1,639.7	4.1	5.6	-59.53	17.9	-30.3	35.2	25.6	9.69	3.839	
1,650.0	1,650.0	1,649.8	1,649.7	4.1	5.6	-59.38	18.1	-30.3	35.3	25.6	9.72	3.838	
1,660.0	1,660.0	1,659.8	1,659.7	4.1	5.6	-59.22	18.3	-30.3	35.4	25.7	9.75	3.837	
1,670.0	1,670.0	1,669.8	1,669.7	4.1	5.6	-59.06	18.5	-30.3	35.5	25.8	9.77	3.835	
1,680.0	1,680.0	1,679.8	1,679.7	4.2	5.6	-58.91	18.7	-30.3	35.6	25.8	9.80	3.834	
1,690.0	1,690.0	1,689.8	1,689.7	4.2	5.7	-58.75	18.9	-30.3	35.7	25.9	9.83	3.833	
1,700.0	1,700.0	1,689.8	1,689.7	4.2	5.7	-58.59	19.2	-30.3	35.8	26.0	9.86	3.831	
1,710.0	1,710.0	1,709.8	1,709.7	4.2	5.7	-58.43	19.4	-30.2	35.9	26.0	9.89	3.830	
1,720.0	1,720.0	1,719.8	1,719.7	4.2	5.7	-58.27	19.6	-30.2	36.0	26.1	9.92	3.829	
1,730.0	1,730.0	1,729.8	1,729.7	4.3	5.7	-58.11	19.9	-30.1	36.1	26.2	9.96	3.827	
1,740.0	1,740.0	1,739.8	1,739.7	4.3	5.7	-57.95	20.2	-30.1	36.2	26.2	9.99	3.825	
1,750.0	1,750.0	1,749.9	1,749.7	4.3	5.7	-57.79	20.4	-30.0	36.3	26.3	10.02	3.822	
1,760.0	1,760.0	1,759.9	1,759.8	4.3	5.7	-57.63	20.7	-29.9	36.3	26.3	10.05	3.818	
1,770.0	1,770.0	1,770.0	1,769.8	4.3	5.7	-57.47	20.9	-29.8	36.4	26.3	10.08	3.813	
1,780.0	1,780.0	1,780.0	1,779.8	4.4	5.8	-57.31	21.2	-29.7	36.5	26.3	10.11	3.807	
1,790.0	1,790.0	1,790.0	1,789.9	4.4	5.8	-57.15	21.4	-29.6	36.5	26.4	10.14	3.800	
1,800.0	1,800.0	1,800.1	1,799.9	4.4	5.8	-56.99	21.7	-29.4	36.5	26.4	10.17	3.792	
1,810.0	1,810.0	1,810.1	1,809.9	4.4	5.8	-56.83	21.9	-29.3	36.6	26.4	10.20	3.784	
1,820.0	1,820.0	1,820.2	1,820.0	4.4	5.8	-56.67	22.1	-29.1	36.6	26.3	10.23	3.774	
1,830.0	1,830.0	1,830.2	1,830.0	4.5	5.8	-56.51	22.4	-28.9	36.6	26.3	10.26	3.764	
1,840.0	1,840.0	1,840.2	1,840.0	4.5	5.8	-56.35	22.6	-28.7	36.6	26.3	10.29	3.753	
1,850.0	1,850.0	1,850.3	1,850.0	4.5	5.8	-56.19	22.9	-28.5	36.6	26.2	10.33	3.742	
1,860.0	1,860.0	1,860.3	1,860.0	4.5	5.8	-56.03	23.1	-28.3	36.6	26.2	10.36	3.730	
1,870.0	1,870.0	1,870.3	1,870.0	4.5	5.9	-55.87	23.3	-28.1	36.5	26.2	10.39	3.718	
1,880.0	1,880.0	1,880.3	1,880.0	4.6	5.9	-55.71	23.6	-27.9	36.5	26.1	10.42	3.707	
1,890.0	1,890.0	1,890.3	1,890.0	4.6	5.9	-55.55	23.8	-27.7	36.5	26.1	10.45	3.695	
1,900.0	1,900.0	1,900.2	1,900.0	4.6	5.9	-55.39	24.1	-27.5	36.5	26.0	10.48	3.684	
1,910.0	1,910.0	1,910.2	1,910.0	4.6	5.9	-55.23	24.3	-27.3	36.5	26.0	10.51	3.674	
1,917.8	1,917.8	1,918.0	1,917.8	4.6	5.9	-55.07	24.5	-27.1	36.5	26.0	10.54	3.665	
1,920.0	1,920.0	1,920.2	1,920.0	4.6	5.9	-54.91	24.5	-27.0	36.5	26.0	10.56	3.663	
1,930.0	1,930.0	1,930.2	1,930.0	4.7	5.9	-54.75	24.8	-26.8	36.5	25.9	10.58	3.653	
1,940.0	1,940.0	1,940.2	1,940.0	4.7	5.9	-54.59	25.0	-26.6	36.5	25.9	10.61	3.643	
1,950.0	1,950.0	1,950.2	1,950.0	4.7	5.9	-54.43	25.3	-26.4	36.5	25.9	10.64	3.633	

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

Offset Design Lusk Deep Unit A - #26H - OH - OH													Offset Site Error:	0.0 usft
Survey Program: 907-MWD													Offset Well Error:	5.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,960.0	1,960.0	1,960.2	1,960.0	4.7	6.0	-45.66	25.5	-26.1	36.5	25.9	10.67	3.423		
1,970.0	1,970.0	1,970.2	1,970.0	4.7	6.0	-45.15	25.8	-25.9	36.8	25.8	10.71	3.414		
1,980.0	1,980.0	1,980.2	1,979.9	4.8	6.0	-44.61	26.0	-25.7	36.8	25.8	10.74	3.405		
1,990.0	1,990.0	1,990.2	1,989.9	4.8	6.0	-44.07	26.3	-25.4	36.6	25.6	10.77	3.396		
2,000.0	2,000.0	2,000.2	1,999.9	4.8	6.0	-43.53	26.5	-25.2	36.6	25.6	10.80	3.388		
2,010.0	2,010.0	2,010.2	2,009.9	4.8	6.0	-42.99	26.8	-25.0	36.6	25.6	10.84	3.380		
2,020.0	2,020.0	2,020.2	2,019.9	4.8	6.0	-42.46	27.0	-24.7	36.7	25.6	10.87	3.372		
2,030.0	2,030.0	2,030.2	2,029.9	4.9	6.0	-41.94	27.3	-24.5	36.7	25.6	10.90	3.365		
2,040.0	2,040.0	2,040.2	2,039.9	4.9	6.1	-41.44	27.5	-24.3	36.7	25.6	10.93	3.359		
2,050.0	2,050.0	2,050.2	2,049.8	4.9	6.1	-40.96	27.8	-24.1	36.8	25.6	10.96	3.353		
2,060.0	2,060.0	2,060.1	2,059.8	4.9	6.1	-40.49	28.0	-23.9	36.8	25.6	11.00	3.347		
2,070.0	2,070.0	2,070.1	2,069.8	4.9	6.1	-40.04	28.2	-23.7	36.9	25.6	11.03	3.342		
2,080.0	2,080.0	2,080.1	2,079.8	5.0	6.1	-39.60	28.4	-23.5	36.9	25.9	11.06	3.337		
2,090.0	2,090.0	2,090.1	2,089.8	5.0	6.1	-39.18	28.7	-23.4	37.0	25.9	11.09	3.333		
2,100.0	2,100.0	2,100.1	2,099.8	5.0	6.1	-38.78	28.9	-23.2	37.0	25.9	11.13	3.328		
2,110.0	2,110.0	2,110.1	2,109.8	5.0	6.1	-38.40	29.1	-23.0	37.1	25.9	11.16	3.324		
2,120.0	2,120.0	2,120.2	2,119.8	5.0	6.1	-38.03	29.2	-22.9	37.1	25.0	11.19	3.319		
2,130.0	2,130.0	2,130.2	2,129.9	5.1	6.2	-37.60	29.4	-22.8	37.2	25.0	11.22	3.313		
2,140.0	2,140.0	2,140.3	2,139.9	5.1	6.2	-37.18	29.5	-22.7	37.2	25.9	11.25	3.305		
2,150.0	2,150.0	2,150.3	2,150.0	5.1	6.2	-37.41	29.6	-22.6	37.2	25.9	11.29	3.297		
2,160.0	2,160.0	2,160.4	2,160.1	5.1	6.2	-37.28	29.6	-22.5	37.2	25.9	11.32	3.287		
2,170.0	2,170.0	2,170.5	2,170.1	5.1	6.2	-37.21	29.6	-22.5	37.2	25.8	11.35	3.276		
2,180.0	2,180.0	2,180.5	2,180.2	5.2	6.2	-37.19	29.6	-22.5	37.1	25.8	11.38	3.263		
2,190.0	2,190.0	2,190.6	2,190.2	5.2	6.2	-37.22	29.5	-22.4	37.1	25.7	11.41	3.250		
2,200.0	2,200.0	2,200.6	2,200.3	5.2	6.2	-37.30	29.5	-22.4	37.0	25.6	11.45	3.235		
2,210.0	2,210.0	2,210.7	2,210.3	5.2	6.2	-37.43	29.3	-22.6	37.0	25.5	11.48	3.219		
2,220.0	2,220.0	2,220.7	2,220.4	5.3	6.3	-37.61	29.2	-22.5	36.9	25.3	11.51	3.202		
2,230.0	2,230.0	2,230.6	2,230.4	5.3	6.3	-37.84	29.0	-22.5	36.8	25.2	11.54	3.184		
2,240.0	2,240.0	2,240.8	2,240.4	5.3	6.3	-38.09	28.8	-22.6	36.6	25.1	11.58	3.165		
2,250.0	2,250.0	2,250.8	2,250.4	5.3	6.3	-38.35	28.6	-22.7	36.5	24.9	11.61	3.146		
2,260.0	2,260.0	2,260.8	2,260.4	5.3	6.3	-38.61	28.4	-22.7	36.4	24.8	11.64	3.128		
2,270.0	2,270.0	2,270.8	2,270.4	5.4	6.3	-38.88	28.2	-22.8	36.3	24.6	11.67	3.109		
2,280.0	2,280.0	2,280.8	2,280.4	5.4	6.3	-39.15	28.0	-22.8	36.2	24.5	11.71	3.090		
2,290.0	2,290.0	2,290.8	2,290.5	5.4	6.3	-39.43	27.8	-22.9	36.0	24.3	11.74	3.070		
2,300.0	2,300.0	2,300.8	2,300.5	5.4	6.4	-39.72	27.6	-22.9	35.9	24.1	11.77	3.051		
2,310.0	2,310.0	2,310.8	2,310.5	5.4	6.4	-40.01	27.4	-23.0	35.8	24.0	11.80	3.032		
2,320.0	2,320.0	2,320.8	2,320.5	5.5	6.4	-40.31	27.2	-23.1	35.7	23.8	11.84	3.012		
2,330.0	2,330.0	2,330.9	2,330.5	5.5	6.4	-40.62	27.0	-23.1	35.5	23.7	11.87	2.993		
2,340.0	2,340.0	2,340.9	2,340.5	5.5	6.4	-40.94	26.7	-23.2	35.4	23.5	11.90	2.973		
2,350.0	2,350.0	2,350.9	2,350.5	5.5	6.4	-41.28	26.5	-23.2	35.3	23.3	11.94	2.954		
2,360.0	2,360.0	2,360.9	2,360.5	5.5	6.4	-41.58	26.3	-23.3	35.1	23.1	11.97	2.934		
2,370.0	2,370.0	2,370.8	2,370.4	5.6	6.4	-41.91	26.0	-23.4	35.0	23.0	12.00	2.915		
2,380.0	2,380.0	2,380.8	2,380.4	5.6	6.5	-42.23	25.8	-23.4	34.9	22.8	12.04	2.897		
2,390.0	2,390.0	2,390.8	2,390.4	5.6	6.5	-42.55	25.6	-23.5	34.8	22.7	12.07	2.879		
2,400.0	2,400.0	2,400.7	2,400.4	5.6	6.5	-42.87	25.4	-23.6	34.6	22.5	12.10	2.862		
2,410.0	2,410.0	2,410.7	2,410.3	5.7	6.5	-43.18	25.2	-23.6	34.5	22.4	12.14	2.846		
2,420.0	2,420.0	2,420.7	2,420.3	5.7	6.5	-43.49	25.0	-23.7	34.5	22.3	12.17	2.831		
2,430.0	2,430.0	2,430.7	2,430.3	5.7	6.5	-43.80	24.8	-23.8	34.4	22.2	12.21	2.816		
2,440.0	2,440.0	2,440.6	2,440.2	5.7	6.5	-44.10	24.6	-23.9	34.3	22.1	12.24	2.802		
2,450.0	2,450.0	2,450.6	2,450.2	5.7	6.5	-44.40	24.5	-23.9	34.2	22.0	12.27	2.789		
2,460.0	2,460.0	2,460.6	2,460.2	5.8	6.6	-44.69	24.3	-24.0	34.2	21.9	12.31	2.777		
2,470.0	2,470.0	2,470.6	2,470.2	5.8	6.6	-44.98	24.1	-24.1	34.1	21.8	12.34	2.765		
2,480.0	2,480.0	2,480.6	2,480.1	5.8	6.6	-45.27	24.0	-24.2	34.1	21.7	12.38	2.753		
2,490.0	2,490.0	2,490.5	2,490.1	5.8	6.6	-45.56	23.8	-24.3	34.0	21.6	12.41	2.742		
2,500.0	2,500.0	2,500.5	2,500.1	5.8	6.6	-45.83	23.7	-24.4	34.0	21.5	12.45	2.731		
2,510.0	2,510.0	2,510.5	2,510.1	5.9	6.6	-46.11	23.5	-24.5	34.0	21.5	12.48	2.721		
2,520.0	2,520.0	2,520.5	2,520.1	5.9	6.6	-46.39	23.4	-24.6	33.9	21.4	12.52	2.710		
2,530.0	2,530.0	2,530.5	2,530.1	5.9	6.6	-46.67	23.3	-24.6	33.9	21.3	12.55	2.700		
2,540.0	2,540.0	2,540.5	2,540.1	5.9	6.7	-46.95	23.1	-24.7	33.9	21.3	12.59	2.689		
2,550.0	2,550.0	2,550.5	2,550.1	5.9	6.7	-47.22	23.0	-24.8	33.8	21.2	12.62	2.679		
2,560.0	2,560.0	2,560.5	2,560.1	6.0	6.7	-47.50	22.8	-24.9	33.8	21.1	12.66	2.670		
2,570.0	2,570.0	2,570.5	2,570.1	6.0	6.7	-47.77	22.7	-25.0	33.8	21.1	12.69	2.660		
2,580.0	2,580.0	2,580.5	2,580.1	6.0	6.7	-48.04	22.6	-25.1	33.7	21.0	12.73	2.650		
2,590.0	2,590.0	2,590.5	2,590.1	6.0	6.7	-48.30	22.4	-25.2	33.7	20.9	12.76	2.641		
2,600.0	2,600.0	2,600.5	2,600.1	6.1	6.7	-48.57	22.3	-25.3	33.7	20.9	12.80	2.632		
2,610.0	2,610.0	2,610.5	2,610.1	6.1	6.8	-48.83	22.2	-25.3	33.7	20.8	12.84	2.622		

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

Offset Design Lusk Deep Unit A - #26H - OH - OH														Offset Site Error: 0.0 usft	
Survey Program: 907-MWD														Offset Well Error: 5.0 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance				Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
2,620.0	2,620.0	2,620.5	2,620.1	6.1	6.8	-49.10	22.0	-25.4	33.6	20.8	12.87	2.814			
2,630.0	2,630.0	2,630.5	2,630.1	6.1	6.8	-49.35	21.9	-25.5	33.6	20.7	12.91	2.805			
2,640.0	2,640.0	2,640.5	2,640.1	6.1	6.8	-49.62	21.8	-25.6	33.6	20.7	12.94	2.595			
2,650.0	2,650.0	2,650.5	2,650.0	6.2	6.8	-49.88	21.6	-25.7	33.6	20.6	12.98	2.588			
2,660.0	2,660.0	2,660.5	2,660.0	6.2	6.8	-50.13	21.5	-25.8	33.6	20.6	13.01	2.580			
2,670.0	2,670.0	2,670.5	2,670.0	6.2	6.9	-50.39	21.4	-25.9	33.6	20.5	13.05	2.572			
2,680.0	2,680.0	2,680.5	2,680.0	6.2	6.9	-50.64	21.3	-25.9	33.6	20.5	13.09	2.564			
2,690.0	2,690.0	2,690.5	2,690.0	6.2	6.9	-50.90	21.2	-26.0	33.5	20.4	13.12	2.556			
2,700.0	2,700.0	2,700.5	2,700.0	6.3	6.9	-51.15	21.0	-26.1	33.5	20.4	13.16	2.548			
2,710.0	2,710.0	2,710.5	2,710.0	6.3	6.9	-51.40	20.9	-26.2	33.5	20.3	13.19	2.541			
2,720.0	2,720.0	2,720.4	2,720.0	6.3	6.9	-51.64	20.8	-26.3	33.5	20.3	13.23	2.534			
2,730.0	2,730.0	2,730.4	2,730.0	6.3	6.9	-51.89	20.7	-26.4	33.5	20.3	13.27	2.527			
2,731.9	2,731.9	2,732.4	2,731.9	6.3	6.9	-51.93	20.7	-26.4	33.5	20.3	13.27	2.526			
2,740.0	2,740.0	2,740.4	2,740.0	6.3	7.0	-52.13	20.6	-26.5	33.5	20.2	13.30	2.520			
2,750.0	2,750.0	2,750.4	2,750.0	6.4	7.0	-52.37	20.5	-26.6	33.5	20.2	13.34	2.513			
2,760.0	2,760.0	2,760.4	2,760.0	6.4	7.0	-52.61	20.4	-26.6	33.5	20.2	13.38	2.507			
2,770.0	2,770.0	2,770.4	2,770.0	6.4	7.0	-52.86	20.3	-26.7	33.5	20.1	13.41	2.501			
2,780.0	2,780.0	2,780.4	2,779.9	6.4	7.0	-53.11	20.1	-26.8	33.6	20.1	13.45	2.496			
2,790.0	2,790.0	2,790.3	2,789.9	6.5	7.0	-53.39	20.0	-27.0	33.6	20.1	13.48	2.491 ES			
2,800.0	2,800.0	2,800.3	2,799.8	6.5	7.0	-53.68	19.9	-27.1	33.6	20.1	13.52	2.488			
2,810.0	2,810.0	2,810.2	2,809.8	6.5	7.1	-53.98	19.8	-27.3	33.7	20.1	13.56	2.485			
2,820.0	2,820.0	2,820.2	2,819.8	6.5	7.1	-54.30	19.7	-27.4	33.8	20.2	13.59	2.484			
2,830.0	2,830.0	2,830.2	2,829.7	6.5	7.1	-54.64	19.6	-27.6	33.8	20.2	13.63	2.483 SF			
2,840.0	2,840.0	2,840.1	2,839.7	6.6	7.1	-54.99	19.5	-27.8	33.9	20.3	13.66	2.483			
2,850.0	2,850.0	2,850.1	2,849.6	6.6	7.1	-55.35	19.3	-28.0	34.0	20.3	13.70	2.484			
2,860.0	2,860.0	2,860.0	2,859.6	6.6	7.1	-55.73	19.2	-28.2	34.2	20.4	13.74	2.486			
2,870.0	2,870.0	2,870.0	2,869.5	6.6	7.1	-56.12	19.1	-28.5	34.3	20.5	13.77	2.489			
2,880.0	2,880.0	2,880.0	2,879.5	6.6	7.2	-56.52	19.0	-28.7	34.4	20.6	13.81	2.493			
2,890.0	2,890.0	2,889.9	2,889.4	6.7	7.2	-56.94	18.9	-29.0	34.6	20.7	13.85	2.498			
2,900.0	2,900.0	2,899.9	2,899.4	6.7	7.2	-57.36	18.7	-29.3	34.8	20.9	13.88	2.504			
2,910.0	2,910.0	2,909.8	2,909.3	6.7	7.2	-57.79	18.6	-29.6	34.9	21.0	13.92	2.510			
2,920.0	2,920.0	2,919.8	2,919.3	6.7	7.2	-58.24	18.5	-29.9	35.1	21.2	13.96	2.518			
2,930.0	2,930.0	2,929.7	2,929.2	6.8	7.2	-58.69	18.4	-30.2	35.4	21.4	13.99	2.527			
2,940.0	2,940.0	2,939.7	2,939.2	6.8	7.3	-59.15	18.2	-30.5	35.6	21.6	14.03	2.536			
2,950.0	2,950.0	2,949.6	2,949.1	6.8	7.3	-59.62	18.1	-30.9	35.8	21.8	14.06	2.547			
2,960.0	2,960.0	2,959.6	2,959.1	6.8	7.3	-60.10	18.0	-31.3	36.1	22.0	14.10	2.558			
2,970.0	2,970.0	2,969.5	2,969.0	6.8	7.3	-60.58	17.8	-31.6	36.3	22.2	14.14	2.571			
2,980.0	2,980.0	2,979.5	2,978.9	6.9	7.3	-61.07	17.7	-32.0	36.6	22.5	14.17	2.584			
2,990.0	2,990.0	2,989.4	2,988.9	6.9	7.3	-61.56	17.6	-32.5	36.9	22.7	14.21	2.599			
3,000.0	3,000.0	2,999.4	2,998.9	6.9	7.3	-62.04	17.4	-32.9	37.2	23.0	14.25	2.613			
3,010.0	3,010.0	3,009.4	3,008.9	6.9	7.4	-62.51	17.3	-33.3	37.5	23.2	14.28	2.627			
3,020.0	3,020.0	3,019.4	3,018.9	6.9	7.4	-62.98	17.2	-33.7	37.8	23.5	14.32	2.641			
3,030.0	3,030.0	3,029.4	3,028.9	7.0	7.4	-63.43	17.0	-34.1	38.1	23.8	14.36	2.655			
3,040.0	3,040.0	3,039.4	3,038.9	7.0	7.4	-63.87	16.9	-34.5	38.4	24.0	14.39	2.669			
3,050.0	3,050.0	3,049.4	3,048.8	7.0	7.4	-64.30	16.8	-34.9	38.7	24.3	14.43	2.683			
3,060.0	3,060.0	3,059.4	3,058.8	7.0	7.4	-64.72	16.7	-35.3	39.0	24.6	14.47	2.697			
3,070.0	3,070.0	3,069.4	3,068.8	7.1	7.4	-65.13	16.5	-35.7	39.3	24.8	14.51	2.711			
3,080.0	3,080.0	3,079.4	3,078.8	7.1	7.5	-65.53	16.4	-36.0	39.6	25.1	14.54	2.724			
3,090.0	3,090.0	3,089.4	3,088.8	7.1	7.5	-65.92	16.3	-36.4	39.9	25.3	14.58	2.738			
3,100.0	3,100.0	3,099.5	3,098.8	7.1	7.5	-66.31	16.2	-36.8	40.2	25.6	14.62	2.751			
3,110.0	3,110.0	3,109.5	3,108.8	7.1	7.5	-66.68	16.0	-37.2	40.5	25.9	14.65	2.764			
3,120.0	3,120.0	3,119.5	3,118.8	7.2	7.5	-67.05	15.9	-37.6	40.8	26.1	14.69	2.778			
3,130.0	3,130.0	3,129.5	3,128.8	7.2	7.5	-67.41	15.8	-37.9	41.1	26.4	14.73	2.790			
3,140.0	3,140.0	3,139.5	3,138.8	7.2	7.6	-67.76	15.7	-38.3	41.4	26.6	14.76	2.803			
3,150.0	3,150.0	3,149.5	3,148.8	7.2	7.6	-68.10	15.5	-38.7	41.7	26.9	14.80	2.815			
3,160.0	3,160.0	3,159.6	3,159.9	7.3	7.6	-68.41	15.4	-39.0	41.9	27.1	14.84	2.826			
3,170.0	3,170.0	3,169.7	3,169.0	7.3	7.6	-68.69	15.3	-39.3	42.2	27.3	14.88	2.836			
3,180.0	3,180.0	3,179.8	3,179.1	7.3	7.6	-68.94	15.2	-39.6	42.4	27.5	14.91	2.844			
3,190.0	3,190.0	3,189.9	3,189.2	7.3	7.6	-69.17	15.2	-39.8	42.6	27.7	14.95	2.851			
3,200.0	3,200.0	3,199.9	3,199.2	7.3	7.7	-69.37	15.1	-40.1	42.8	27.8	14.99	2.855			
3,210.0	3,210.0	3,210.0	3,209.3	7.4	7.7	-69.54	15.0	-40.3	43.0	28.0	15.03	2.860			
3,220.0	3,220.0	3,220.1	3,219.4	7.4	7.7	-69.68	15.0	-40.4	43.1	28.1	15.07	2.863			
3,230.0	3,230.0	3,230.2	3,229.5	7.4	7.7	-69.80	14.9	-40.6	43.3	28.2	15.10	2.864			
3,240.0	3,240.0	3,240.3	3,239.6	7.4	7.7	-69.90	14.9	-40.7	43.4	28.2	15.14	2.864			
3,250.0	3,250.0	3,250.3	3,249.6	7.4	7.7	-69.97	14.9	-40.8	43.5	28.3	15.18	2.863			
3,260.0	3,260.0	3,260.3	3,259.6	7.5	7.8	-70.03	14.9	-40.9	43.6	28.4	15.22	2.863			

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

Offset Design Lusk Deep Unit A - #26H - OH - OH

Offset Site Error: 0.0 usft

Survey Program: 907-MWD

Offset Well Error: 5.0 usft

Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
3,270.0	3,270.0	3,270.2	3,269.5	7.5	7.8	-70.08	14.9	-41.1	43.7	28.4	15.26	2.863	
3,280.0	3,280.0	3,280.2	3,279.5	7.5	7.8	-70.11	14.9	-41.2	43.8	28.5	15.29	2.862	
3,290.0	3,290.0	3,290.2	3,289.5	7.5	7.8	-70.12	14.9	-41.3	43.9	28.6	15.33	2.862	
3,300.0	3,300.0	3,300.2	3,299.5	7.6	7.8	-70.12	15.0	-41.4	44.0	28.6	15.37	2.862	
3,310.0	3,310.0	3,310.2	3,309.5	7.6	7.8	-70.11	15.0	-41.5	44.1	28.7	15.41	2.862	
3,320.0	3,320.0	3,320.2	3,319.5	7.6	7.9	-70.08	15.1	-41.6	44.2	28.8	15.45	2.862	
3,330.0	3,330.0	3,330.2	3,329.5	7.6	7.9	-70.03	15.1	-41.7	44.3	28.8	15.49	2.862	
3,340.0	3,340.0	3,340.2	3,339.5	7.6	7.9	-69.97	15.2	-41.7	44.4	28.9	15.52	2.862	
3,350.0	3,350.0	3,350.2	3,349.5	7.7	7.9	-69.90	15.3	-41.8	44.5	29.0	15.56	2.862	
3,360.0	3,360.0	3,360.2	3,359.5	7.7	7.9	-69.81	15.4	-41.9	44.7	29.1	15.60	2.863	
3,370.0	3,370.0	3,370.2	3,369.5	7.7	7.9	-69.71	15.5	-42.0	44.8	29.1	15.64	2.863	
3,380.0	3,380.0	3,380.1	3,379.4	7.7	8.0	-69.59	15.7	-42.1	44.9	29.2	15.68	2.864	
3,390.0	3,390.0	3,390.1	3,389.4	7.7	8.0	-69.46	15.8	-42.2	45.0	29.3	15.72	2.865	
3,400.0	3,400.0	3,400.1	3,399.4	7.8	8.0	-69.32	15.9	-42.3	45.2	29.4	15.76	2.867	
3,410.0	3,410.0	3,410.0	3,409.3	7.8	8.0	-69.17	16.1	-42.4	45.3	29.5	15.79	2.869	
3,420.0	3,420.0	3,420.0	3,419.3	7.8	8.0	-69.00	16.3	-42.5	45.5	29.6	15.83	2.872	
3,430.0	3,430.0	3,430.0	3,429.2	7.8	8.0	-68.83	16.5	-42.6	45.6	29.8	15.87	2.875	
3,440.0	3,440.0	3,439.9	3,439.2	7.9	8.1	-68.64	16.7	-42.7	45.8	29.9	15.91	2.879	
3,450.0	3,450.0	3,449.9	3,449.2	7.9	8.1	-68.44	16.9	-42.8	46.0	30.0	15.95	2.884	
3,460.0	3,460.0	3,459.8	3,459.1	7.9	8.1	-68.23	17.1	-42.9	46.2	30.2	15.99	2.888	
3,470.0	3,470.0	3,469.8	3,469.1	7.9	8.1	-68.01	17.4	-43.0	46.4	30.3	16.03	2.894	
3,480.0	3,480.0	3,479.8	3,479.0	7.9	8.1	-67.77	17.6	-43.1	46.6	30.5	16.07	2.899	
3,490.0	3,490.0	3,489.7	3,489.0	8.0	8.1	-67.53	17.9	-43.2	46.8	30.7	16.11	2.906	
3,500.0	3,500.0	3,499.8	3,499.0	8.0	8.2	-67.30	18.1	-43.4	47.0	30.9	16.14	2.912	
3,510.0	3,510.0	3,509.8	3,509.0	8.0	8.2	-67.11	18.4	-43.5	47.2	31.0	16.18	2.918	
3,520.0	3,520.0	3,519.8	3,519.1	8.0	8.2	-66.96	18.6	-43.6	47.4	31.2	16.22	2.923	
3,530.0	3,530.0	3,529.8	3,529.1	8.1	8.2	-66.84	18.7	-43.8	47.6	31.4	16.26	2.929	
3,540.0	3,540.0	3,539.9	3,539.1	8.1	8.2	-66.75	18.9	-43.9	47.8	31.5	16.30	2.933	
3,550.0	3,550.0	3,549.9	3,549.1	8.1	8.2	-66.69	19.0	-44.1	48.0	31.6	16.33	2.937	
3,560.0	3,560.0	3,559.9	3,559.2	8.1	8.3	-66.67	19.1	-44.2	48.2	31.8	16.37	2.941	
3,570.0	3,570.0	3,570.0	3,569.2	8.1	8.3	-66.68	19.1	-44.4	48.3	31.9	16.41	2.945	
3,580.0	3,580.0	3,580.0	3,579.2	8.2	8.3	-66.72	19.2	-44.5	48.5	32.0	16.45	2.948	
3,590.0	3,590.0	3,590.0	3,589.3	8.2	8.3	-66.79	19.2	-44.7	48.6	32.2	16.49	2.950	
3,600.0	3,600.0	3,600.1	3,599.3	8.2	8.3	-66.90	19.1	-44.9	48.6	32.3	16.53	2.952	
3,610.0	3,610.0	3,610.1	3,609.3	8.2	8.3	-67.03	19.1	-45.0	48.9	32.4	16.56	2.954	
3,620.0	3,620.0	3,620.1	3,619.4	8.3	8.4	-67.19	19.0	-45.2	49.1	32.5	16.60	2.955	
3,630.0	3,630.0	3,630.2	3,629.4	8.3	8.4	-67.36	18.9	-45.4	49.2	32.5	16.64	2.956	
3,640.0	3,640.0	3,640.2	3,639.4	8.3	8.4	-67.53	18.8	-45.6	49.3	32.6	16.68	2.956	
3,650.0	3,650.0	3,650.2	3,649.5	8.3	8.4	-67.71	18.7	-45.7	49.4	32.7	16.72	2.956	
3,660.0	3,660.0	3,660.3	3,659.5	8.3	8.4	-67.89	18.6	-45.9	49.5	32.8	16.75	2.956	
3,670.0	3,670.0	3,670.3	3,669.5	8.4	8.4	-68.07	18.5	-46.0	49.6	32.8	16.79	2.955	
3,680.0	3,680.0	3,680.4	3,679.6	8.4	8.5	-68.26	18.4	-46.2	49.7	32.9	16.83	2.954	
3,690.0	3,690.0	3,690.4	3,689.6	8.4	8.5	-68.46	18.3	-46.3	49.8	32.9	16.87	2.952	
3,700.0	3,700.0	3,700.4	3,699.6	8.4	8.5	-68.66	18.1	-46.4	49.9	33.0	16.90	2.950	
3,710.0	3,710.0	3,710.4	3,709.7	8.4	8.5	-68.86	18.0	-46.6	49.9	33.0	16.94	2.948	
3,720.0	3,720.0	3,720.4	3,719.6	8.5	8.5	-69.07	17.9	-46.7	50.0	33.0	16.98	2.945	
3,730.0	3,730.0	3,730.4	3,729.6	8.5	8.5	-69.29	17.7	-46.8	50.1	33.1	17.02	2.943	
3,740.0	3,740.0	3,740.4	3,739.6	8.5	8.6	-69.51	17.6	-47.0	50.2	33.1	17.06	2.941	
3,750.0	3,750.0	3,750.4	3,749.6	8.5	8.6	-69.73	17.4	-47.1	50.2	33.1	17.09	2.939	
3,760.0	3,760.0	3,760.4	3,759.6	8.6	8.6	-69.96	17.2	-47.3	50.3	33.2	17.13	2.938	
3,770.0	3,770.0	3,770.3	3,769.5	8.6	8.6	-70.19	17.1	-47.4	50.4	33.2	17.17	2.936	
3,780.0	3,780.0	3,780.3	3,779.5	8.6	8.6	-70.43	16.9	-47.6	50.5	33.3	17.21	2.935	
3,790.0	3,790.0	3,790.3	3,789.5	8.6	8.6	-70.67	16.7	-47.7	50.6	33.4	17.25	2.934	
3,800.0	3,800.0	3,800.3	3,799.5	8.6	8.6	-70.92	16.6	-47.9	50.7	33.4	17.28	2.934	
3,810.0	3,810.0	3,810.3	3,809.5	8.7	8.7	-71.17	16.4	-48.1	50.8	33.5	17.32	2.933	
3,820.0	3,820.0	3,820.3	3,819.5	8.7	8.7	-71.42	16.2	-48.2	50.9	33.5	17.36	2.932	
3,830.0	3,830.0	3,830.4	3,829.6	8.7	8.7	-71.67	16.0	-48.4	51.0	33.6	17.40	2.931	
3,840.0	3,840.0	3,840.4	3,839.6	8.7	8.7	-71.93	15.8	-48.6	51.1	33.6	17.44	2.929	
3,850.0	3,850.0	3,850.4	3,849.6	8.8	8.7	-72.18	15.7	-48.7	51.2	33.7	17.48	2.927	
3,860.0	3,860.0	3,860.5	3,859.7	8.8	8.7	-72.44	15.5	-48.8	51.2	33.7	17.51	2.924	
3,870.0	3,870.0	3,870.5	3,869.7	8.8	8.8	-72.70	15.3	-49.0	51.3	33.7	17.55	2.922	
3,880.0	3,880.0	3,880.5	3,879.7	8.8	8.8	-72.96	15.0	-49.1	51.3	33.8	17.59	2.919	
3,890.0	3,890.0	3,890.6	3,889.7	8.8	8.8	-73.22	14.8	-49.2	51.4	33.8	17.63	2.915	
3,900.0	3,900.0	3,900.6	3,899.8	8.9	8.8	-73.49	14.6	-49.3	51.4	33.8	17.67	2.911	
3,910.0	3,910.0	3,910.7	3,909.8	8.9	8.8	-73.75	14.4	-49.4	51.5	33.8	17.71	2.907	
3,920.0	3,920.0	3,920.7	3,919.8	8.9	8.8	-74.02	14.2	-49.5	51.5	33.8	17.75	2.903	

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

Offset Design Lusk Deep Unit A - #26H - OH - OH													Offset Site Error:	0.0 usft
Survey Program: 907-MWD													Offset Well Error:	5.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
3,920.4	3,920.4	3,921.1	3,920.2	8.9	8.8	-74.03	14.2	-49.5	51.5	33.8	17.76	2.903		
3,930.0	3,930.0	3,928.0	3,927.2	8.9	8.9	-74.22	14.0	-49.6	51.6	33.8	17.78	2.903		
3,940.0	3,940.0	3,928.0	3,927.2	8.9	8.9	-74.22	14.0	-49.6	53.1	35.3	17.80	2.984		
3,950.0	3,950.0	3,928.0	3,927.2	9.0	8.9	-74.22	14.0	-49.6	56.4	38.6	17.82	3.163		
3,960.0	3,960.0	3,928.0	3,927.2	9.0	8.9	-74.22	14.0	-49.6	61.1	43.3	17.85	3.425		
3,970.0	3,970.0	3,928.0	3,927.2	9.0	8.9	-74.22	14.0	-49.6	67.0	49.2	17.87	3.751		
3,980.0	3,980.0	3,928.0	3,927.2	9.0	8.9	-74.22	14.0	-49.6	73.8	55.9	17.89	4.126		
3,990.0	3,990.0	3,928.0	3,927.2	9.1	8.9	-74.22	14.0	-49.6	81.3	63.4	17.91	4.538		
4,000.0	4,000.0	3,928.0	3,927.2	9.1	8.9	-74.22	14.0	-49.6	89.2	71.3	17.93	4.976		
4,010.0	4,010.0	3,928.0	3,927.2	9.1	8.9	-74.22	14.0	-49.6	97.6	78.6	17.96	5.434		
4,020.0	4,020.0	3,928.0	3,927.2	9.1	8.9	-74.22	14.0	-49.6	106.2	86.2	17.98	5.907		
4,030.0	4,030.0	3,928.0	3,927.2	9.1	8.9	-74.22	14.0	-49.6	115.0	97.0	18.00	6.391		
4,040.0	4,040.0	3,928.0	3,927.2	9.2	8.9	-74.22	14.0	-49.6	124.1	106.0	18.02	6.884		
4,050.0	4,050.0	3,928.0	3,927.2	9.2	8.9	-74.22	14.0	-49.6	133.2	115.2	18.04	7.383		
4,060.0	4,060.0	3,928.0	3,927.2	9.2	8.9	-74.22	14.0	-49.6	142.5	124.4	18.07	7.888		
4,070.0	4,070.0	3,928.0	3,927.2	9.2	8.9	-74.22	14.0	-49.6	151.9	133.8	18.09	8.396		
4,080.0	4,080.0	3,928.0	3,927.2	9.3	8.9	-74.22	14.0	-49.6	161.3	143.2	18.11	8.907		
4,090.0	4,090.0	3,928.0	3,927.2	9.3	8.9	-74.22	14.0	-49.6	170.8	152.7	18.13	9.421		
4,100.0	4,100.0	3,928.0	3,927.2	9.3	8.9	-74.22	14.0	-49.6	180.4	162.2	18.15	9.936		

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