



Plan #1

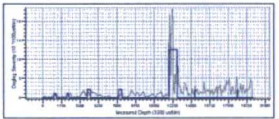
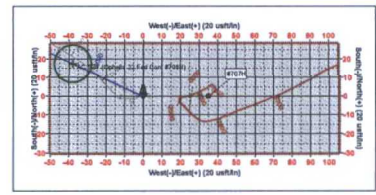
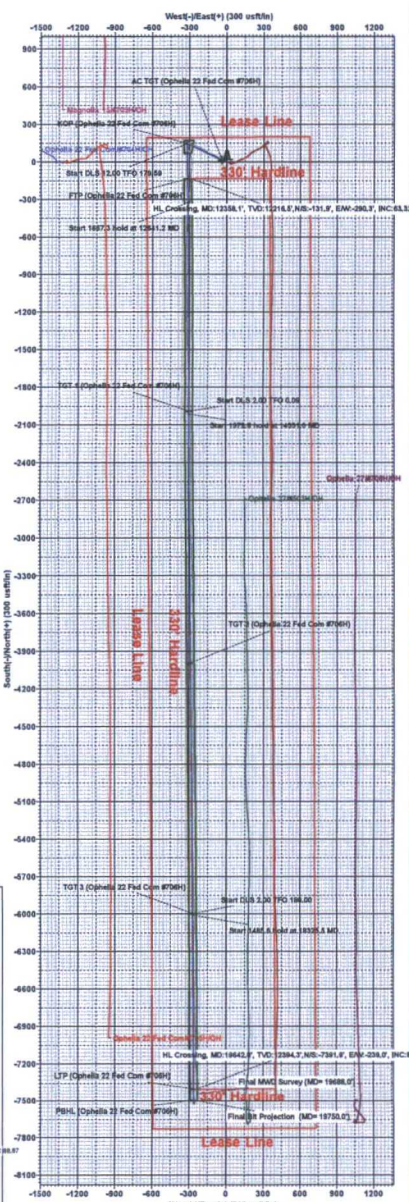
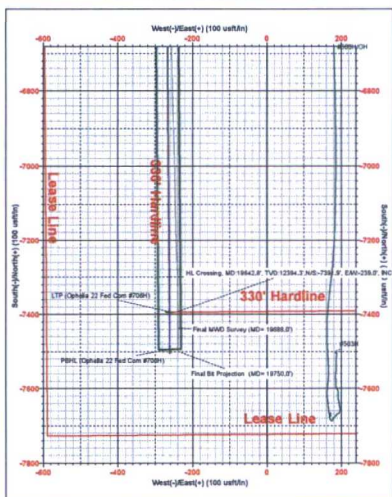
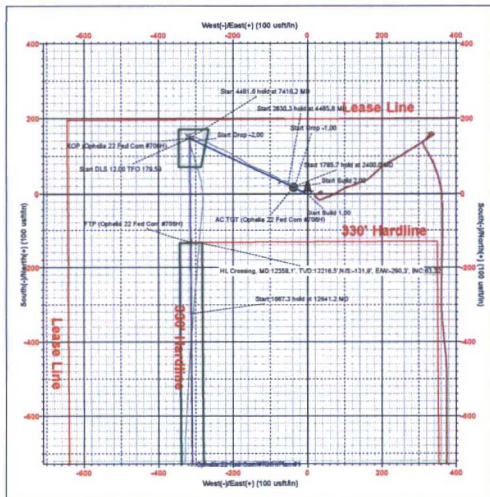
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

Ground Level:		3302.0	
KB = 25' @ 3327.0usft (HP 610)			
Northing	Easting	Latitude	Longitude
377566.00	780238.00	32° 2' 8.394 N	103° 33' 44.527 W

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSet	Target
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2	1000.0	0.0	0.0	1000.0	0.0	0.0	0.0	0.0	0.0	
3	1200.0	2.00	295.00	1200.0	1.5	-3.2	1.00	295.00	-1.4	
4	2200.0	2.00	295.00	2199.4	16.2	-34.8	0.00	0.00	-15.0	
5	2400.0	0.00	0.00	2399.3	17.7	-38.0	1.00	180.00	-16.4	
6	4185.7	0.00	0.00	4185.7	17.7	-38.0	0.00	0.00	-16.0	
7	4485.8	6.00	295.00	4484.4	24.3	-52.2	2.00	295.00	-15.5	
8	7116.1	6.00	295.00	7100.4	140.6	-301.5	0.00	0.00	-130.4	
9	7416.2	0.00	0.00	7400.0	147.2	-315.7	2.00	180.00	-136.1	
10	11897.8	0.00	0.00	11881.6	147.2	-315.7	0.00	0.00	-136.1	KOP (Ophelia 22 Fed Com #706H)
11	12341.2	89.21	179.59	12359.0	-323.7	-312.3	12.00	179.59	326.4	
12	14308.6	89.21	179.59	12382.0	-1990.8	-300.4	0.00	0.00	2000.0	TGT 1 (Ophelia 22 Fed Com #706H)
13	14331.0	89.66	179.59	12382.2	-201.32	-300.2	2.00	0.00	2022.5	
14	16310.9	89.66	179.59	12394.0	-9993.0	-271.7	0.00	400.00	400.0	TGT 2 (Ophelia 22 Fed Com #706H)
15	18317.1	89.65	179.59	12406.0	-5994.2	-271.7	0.00	-179.92	6000.0	TGT 3 (Ophelia 22 Fed Com #706H)
16	18325.5	89.39	179.59	12406.1	-6007.5	-271.6	2.00	180.00	6013.3	
17	19811.1	89.39	179.59	12422.0	-7493.0	-261.0	0.00	0.00	7497.5	PBHL (Ophelia 22 Fed Com #706H)

No casing data is available

Name	TVD	+N+E	+E+W	Northing	Easting
AC TGP (Ophella 22 Fed Com #706H)	2799.3	17.7	-38.0	77588.70	780200.04
KOP (Ophella 22 Fed Com #706H)	11891.6	147.2	-315.7	377713.21	779922.30
FIP (Ophella 22 Fed Com #706H)	12359.0	-132.0	-313.7	377434.00	779225.00
TOT 1 (Ophella 22 Fed Com #706H)	12382.0	-198.0	-300.4	376575.20	779397.63
TOT 2 (Ophella 22 Fed Com #706H)	12384.0	-3993.0	-386.0	373673.00	779591.95
TOT 3 (Ophella 22 Fed Com #706H)	12406.0	-9894.2	-271.7	371077.00	778964.27
TPH (Ophella 22 Fed Com #706H)	12432.0	-2393.0	-261.7	370973.00	778976.28
TPH (Ophella 22 Fed Com #706H)	12422.0	-4983.0	-261.0	370973.00	778977.00



Lee County, WA (942 83 1046)
Cynthia J. Field, Curator
Alison
MP 410
Ch
PhD in
8-18, November 07 2017



30-025-44009

EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Ophelia 22 Fed Com

#706H

OH

Design: OH

PVA Report

07 November, 2017

HOBBS OCD
JAN 08 2017
RECEIVED

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #706H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3327.0usft (HP 610)
Site:	Ophelia 22 Fed Com	MD Reference:	KB = 25' @ 3327.0usft (HP 610)
Well:	#706H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Ophelia 22 Fed Com		
Site Position:		Northing:	377,559.00 usft
From:	Map	Easting:	778,915.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 2' 8.418 N
		Longitude:	103° 33' 59.896 W
		Grid Convergence:	0.41 °

Well	#706H					
Well Position	+N/-S	0.0 usft	Northing:	377,566.00 usft	Latitude:	32° 2' 8.394 N
	+E/-W	0.0 usft	Easting:	780,238.00 usft	Longitude:	103° 33' 44.527 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,302.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/27/2017	6.96	59.89	47,850.97021799

Design		OH		
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	181.99

Survey Program		Date 11/7/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
149.0	19,750.0	Intrepid MWD (OH)	MWD	MWD - Standard

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Ophelia 22 Fed Com
 Well: #706H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #706H
 TVD Reference: KB = 25' @ 3327.0usft (HP 610)
 MD Reference: KB = 25' @ 3327.0usft (HP 610)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	
149.0	0.60	252.70	149.0	-0.2	-0.7	0.40	0.40	0.00	-0.8	0.0	
328.0	0.60	251.40	328.0	-0.8	-2.5	0.01	0.00	-0.73	-2.7	0.0	
508.0	0.80	259.50	508.0	-1.3	-4.7	0.12	0.11	4.50	-4.8	0.5	
684.0	0.80	275.90	684.0	-1.4	-7.1	0.13	0.00	9.32	-6.9	2.2	
875.0	1.00	268.10	874.9	-1.4	-10.1	0.12	0.10	-4.08	-10.1	1.0	
950.0	1.30	263.90	949.9	-1.5	-11.6	0.42	0.40	-5.60	-11.7	0.2	
1,057.0	0.20	324.30	1,056.9	-1.4	-12.9	1.13	-1.03	56.45	-6.1	11.2	
1,252.0	1.90	314.80	1,251.9	1.1	-15.4	0.87	0.87	-4.87	-6.7	8.3	
1,438.0	2.50	319.30	1,437.7	6.4	-20.2	0.34	0.32	2.42	-7.3	6.3	
1,625.0	2.30	314.00	1,624.6	12.1	-25.6	0.16	-0.11	-2.83	-9.5	3.1	
1,813.0	2.50	307.10	1,812.4	17.2	-31.6	0.19	0.11	-3.67	-11.2	0.1	
2,001.0	2.80	299.90	2,000.2	21.9	-38.8	0.24	0.16	-3.83	-13.2	-2.3	
2,188.0	2.90	301.50	2,187.0	26.7	-46.8	0.07	0.05	0.86	-16.1	-2.6	
2,374.0	3.10	300.70	2,372.7	31.7	-55.1	0.11	0.11	-0.43	-22.0	-3.3	
2,561.0	1.40	265.10	2,559.6	34.1	-61.8	1.14	-0.91	-19.04	-22.3	-18.4	
2,747.0	1.40	267.70	2,745.5	33.8	-66.3	0.03	0.00	1.40	-27.7	-17.2	
2,800.2	1.34	267.50	2,798.7	33.7	-67.6	0.11	-0.11	-0.38	-28.9	-17.3	
AC TGT (Ophelia 22 Fed Com #706H)											
2,933.0	1.20	266.90	2,931.5	33.6	-70.5	0.11	-0.11	-0.45	-31.7	-17.6	
3,119.0	0.90	247.70	3,117.4	32.9	-73.8	0.25	-0.16	-10.32	-27.4	-27.7	
3,307.0	0.80	214.20	3,305.4	31.3	-75.9	0.27	-0.05	-17.82	-10.1	-39.0	
3,494.0	1.00	218.00	3,492.4	28.9	-77.7	0.11	0.11	2.03	-15.6	-38.2	
3,681.0	1.60	117.50	3,679.4	26.4	-76.3	1.09	0.32	-53.74	38.1	-10.0	
3,868.0	2.40	14.60	3,866.3	29.0	-73.0	1.69	0.43	-55.03	-2.1	36.8	
4,055.0	1.90	358.40	4,053.2	35.9	-72.1	0.42	-0.27	-8.66	-19.1	33.7	
4,242.0	3.10	288.20	4,240.0	40.6	-77.0	1.62	0.64	-37.54	-43.7	-9.5	

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Ophelia 22 Fed Com
Well: #706H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #706H
TVD Reference: KB = 25' @ 3327.0usft (HP 610)
MD Reference: KB = 25' @ 3327.0usft (HP 610)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
4,430.0	2.50	302.00	4,427.8	44.3	-85.3	0.48	-0.32	7.34	-43.9	1.2	
4,619.0	5.20	299.30	4,616.4	50.7	-96.3	1.43	1.43	-1.43	-37.4	-2.5	
4,806.0	3.10	293.20	4,802.9	56.9	-108.3	1.15	-1.12	-3.26	-30.8	-6.7	
4,994.0	5.10	290.80	4,990.4	61.8	-120.8	1.07	1.06	-1.28	-24.3	-6.8	
5,181.0	4.80	289.10	5,176.7	67.3	-136.0	0.18	-0.16	-0.91	-20.8	-5.7	
5,369.0	5.80	300.00	5,363.9	74.7	-151.7	0.75	0.53	5.80	-19.1	-1.9	
5,556.0	6.40	302.30	5,549.8	85.0	-168.6	0.35	0.32	1.23	-19.6	-3.3	
5,744.0	6.20	301.30	5,736.7	95.8	-186.2	0.12	-0.11	-0.53	-20.7	-6.0	
5,930.0	5.90	297.80	5,921.6	105.5	-203.2	0.26	-0.16	-1.88	-20.4	-8.8	
6,118.0	5.20	295.40	6,108.7	113.7	-219.5	0.39	-0.37	-1.28	-18.5	-10.1	
6,305.0	4.70	293.80	6,295.1	120.4	-234.1	0.28	-0.27	-0.86	-14.8	-10.5	
6,493.0	4.60	293.90	6,482.4	126.6	-248.1	0.05	-0.05	0.05	-10.4	-10.1	
6,680.0	4.60	294.30	6,668.8	132.7	-261.8	0.02	0.00	0.21	-5.9	-9.7	
6,867.0	4.40	296.40	6,855.3	139.0	-275.0	0.14	-0.11	1.12	-1.4	-9.7	
7,054.0	4.00	294.40	7,041.8	144.8	-287.4	0.23	-0.21	-1.07	4.9	-9.8	
7,242.0	3.30	294.70	7,229.4	149.8	-298.3	0.37	-0.37	0.16	9.6	-9.7	
7,429.0	1.40	277.50	7,416.2	152.4	-305.4	1.07	-1.02	-9.20	9.5	-6.4	
7,616.0	1.50	273.30	7,603.1	152.8	-310.1	0.08	0.05	-2.25	5.2	-5.9	
7,803.0	1.30	263.20	7,790.1	152.7	-314.7	0.17	-0.11	-5.40	1.7	-5.3	
7,991.0	0.90	279.00	7,978.1	152.7	-318.3	0.27	-0.21	8.40	-3.4	-5.0	
8,178.0	2.00	258.40	8,165.0	152.2	-322.9	0.64	0.59	-11.02	-6.0	-6.4	
8,352.0	1.90	11.30	8,338.9	154.5	-325.3	1.87	-0.06	64.89	-5.2	10.8	
8,539.0	0.30	99.00	8,525.9	157.4	-324.2	1.02	-0.86	46.90	10.0	8.7	
8,725.0	0.90	68.20	8,711.9	157.9	-322.4	0.36	0.32	-16.56	2.2	12.4	
8,913.0	3.50	75.30	8,899.7	159.9	-315.5	1.39	1.38	3.78	-3.4	12.2	
9,100.0	2.90	66.70	9,086.4	163.2	-305.6	0.41	-0.32	-4.60	-15.6	10.7	
9,286.0	1.50	74.30	9,272.3	165.7	-298.9	0.77	-0.75	4.09	-21.2	13.3	



PVA Report

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Ophelia 22 Fed Com
Well: #706H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #706H
TVD Reference: KB = 25' @ 3327.0usft (HP 610)
MD Reference: KB = 25' @ 3327.0usft (HP 610)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
9,473.0	1.30	255.30	9,459.3	165.9	-298.6	1.50	-0.11	-95.72	21.2	-13.7	
9,660.0	1.40	243.60	9,646.2	164.3	-302.7	0.16	0.05	-6.26	19.2	-9.5	
9,847.0	1.90	248.70	9,833.2	162.2	-307.7	0.28	0.27	2.73	12.9	-11.0	
10,034.0	1.60	218.60	10,020.1	159.0	-312.2	0.51	-0.16	-16.10	11.4	-4.6	
10,221.0	2.20	263.50	10,207.0	156.5	-317.4	0.83	0.32	24.01	-0.6	-9.5	
10,409.0	1.00	285.20	10,394.9	156.6	-322.5	0.70	-0.64	11.54	-9.1	-7.2	
10,596.0	1.10	298.20	10,581.9	157.8	-325.7	0.14	0.05	6.95	-13.8	-4.6	
10,781.0	0.30	63.00	10,766.9	158.9	-326.8	0.70	-0.43	67.46	4.6	15.5	
10,967.0	1.50	316.80	10,952.8	160.9	-328.1	0.87	0.65	-57.10	-18.4	-0.4	
11,153.0	1.40	135.10	11,138.8	161.1	-328.1	1.56	-0.05	95.86	18.6	1.0	
11,342.0	1.50	130.60	11,327.8	157.8	-324.6	0.08	0.05	-2.38	13.7	2.3	
11,530.0	1.00	170.70	11,515.7	154.6	-322.5	0.52	-0.27	21.33	8.4	-5.5	
11,640.0	0.20	125.90	11,625.7	153.5	-322.2	0.79	-0.73	-40.73	9.0	1.3	
11,738.0	0.50	56.70	11,723.7	153.7	-321.7	0.48	0.31	-70.61	1.4	8.7	
11,832.0	0.90	110.60	11,817.7	153.6	-320.6	0.77	0.43	57.34	6.9	4.3	
11,879.0	6.90	164.30	11,864.6	150.8	-319.5	13.63	12.77	114.26	4.5	-2.7	
11,896.5	8.53	166.58	11,881.9	148.5	-318.9	9.50	9.33	13.04	2.0	-2.9	
KOP (Ophelia 22 Fed Com #706H)											
11,927.0	11.40	169.00	11,912.0	143.4	-317.8	9.50	9.40	7.93	-2.4	-2.7	
11,974.0	21.00	165.00	11,957.0	130.6	-314.8	20.55	20.43	-8.51	-10.3	-1.9	
12,020.0	28.30	162.40	11,998.8	112.2	-309.3	16.04	15.87	-5.65	-20.7	0.2	
12,067.0	30.80	161.60	12,039.7	90.2	-302.2	5.38	5.32	-1.70	-30.9	4.4	
12,113.0	37.90	163.10	12,077.7	65.5	-294.3	15.54	15.43	3.26	-40.0	11.1	
12,160.0	46.60	167.30	12,112.4	34.9	-286.4	19.45	18.51	8.94	-49.7	20.5	
12,207.0	53.80	176.90	12,142.5	-0.7	-281.6	21.90	15.32	20.43	-58.0	31.9	
12,254.0	60.60	184.70	12,168.0	-40.2	-282.2	20.08	14.47	16.60	-67.4	37.3	
12,300.0	62.30	185.10	12,190.0	-80.4	-285.7	3.77	3.70	0.87	-78.7	33.5	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #706H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3327.0usft (HP 610)
Site:	Ophelia 22 Fed Com	MD Reference:	KB = 25' @ 3327.0usft (HP 610)
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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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Survey										
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12,347.0	63.20	185.10	12,211.5	-122.0	-289.4	1.91	1.91	0.00	-86.1	28.8
12,358.1	63.32	185.05	12,216.5	-131.9	-290.3	1.13	1.06	-0.43	-87.1	27.6
HL Crossing, MD:12358.1', TVD:12216.5', N/S:-131.9', E/W:-290.3', INC:63.32										
12,394.0	63.70	184.90	12,232.5	-163.9	-293.1	1.13	1.06	-0.43	-88.3	23.9
12,420.0	65.19	184.73	12,243.7	-187.3	-295.0	5.77	5.74	-0.64	-87.5	21.2
FTP (Ophelia 22 Fed Com #706H)										
12,441.0	66.40	184.60	12,252.3	-206.4	-296.6	5.77	5.75	-0.63	-86.1	19.0
12,486.0	68.70	184.90	12,269.5	-247.8	-300.0	5.15	5.11	0.67	-80.6	14.6
12,533.0	70.20	184.40	12,286.0	-291.7	-303.6	3.34	3.19	-1.06	-71.1	9.8
12,580.0	72.90	184.60	12,300.9	-336.1	-307.1	5.76	5.74	0.43	-58.3	5.4
12,627.0	77.50	184.60	12,312.9	-381.4	-310.7	9.79	9.79	0.00	-46.9	1.3
12,674.0	81.10	183.80	12,321.6	-427.5	-314.1	7.84	7.66	-1.70	-38.8	-2.5
12,721.0	84.10	183.90	12,327.7	-474.0	-317.2	6.39	6.38	0.21	-33.4	-6.0
12,768.0	87.20	183.30	12,331.2	-520.7	-320.2	6.72	6.60	-1.28	-30.5	-9.2
12,812.0	88.80	183.50	12,332.8	-564.6	-322.8	3.66	3.64	0.45	-29.6	-12.1
12,867.0	89.90	182.60	12,333.4	-619.6	-325.7	2.58	2.00	-1.64	-29.7	-15.5
12,961.0	88.70	180.60	12,334.5	-713.5	-328.3	2.48	-1.28	-2.13	-29.8	-18.8
13,055.0	88.40	179.70	12,336.9	-807.5	-328.6	1.01	-0.32	-0.96	-28.8	-19.7
13,149.0	88.90	178.60	12,339.1	-901.4	-327.2	1.29	0.53	-1.17	-27.8	-19.0
13,242.0	89.10	177.90	12,340.8	-994.4	-324.4	0.78	0.22	-0.75	-27.5	-16.8
13,336.0	91.70	180.00	12,340.1	-1,088.3	-322.6	3.56	2.77	2.23	-29.4	-15.8
13,428.0	88.60	179.30	12,339.9	-1,180.3	-322.1	3.45	-3.37	-0.76	-31.0	-15.9
13,522.0	87.60	178.10	12,343.0	-1,274.3	-319.9	1.66	-1.06	-1.28	-29.1	-14.4
13,615.0	89.80	178.10	12,345.1	-1,367.2	-316.9	2.37	2.37	0.00	-28.3	-12.0
13,708.0	90.20	177.90	12,345.1	-1,460.1	-313.6	0.48	0.43	-0.22	-29.6	-9.4
13,803.0	90.20	177.00	12,344.8	-1,555.0	-309.4	0.95	0.00	-0.95	-31.2	-5.9
13,896.0	90.30	176.50	12,344.4	-1,647.9	-304.1	0.55	0.11	-0.54	-32.9	-1.3

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TVD Reference: KB = 25' @ 3327.0usft (HP 610)
MD Reference: KB = 25' @ 3327.0usft (HP 610)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Survey										
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
13,989.0	89.80	176.90	12,344.3	-1,740.7	-298.8	0.69	-0.54	0.43	-34.3	3.4
14,083.0	88.80	178.50	12,345.4	-1,834.6	-295.0	2.01	-1.06	1.70	-34.4	6.5
14,175.0	88.50	177.70	12,347.6	-1,926.5	-291.9	0.93	-0.33	-0.87	-33.5	8.9
14,239.9	88.15	178.05	12,349.5	-1,991.4	-289.5	0.75	-0.53	0.53	-32.5	10.8
TGT 1 (Ophelia 22 Fed Com #706H)										
14,269.0	88.00	178.20	12,350.5	-2,020.4	-288.6	0.75	-0.53	0.53	-31.8	11.6
14,362.0	89.80	180.00	12,352.2	-2,113.4	-287.1	2.74	1.94	1.94	-30.6	12.4
14,455.0	89.70	178.60	12,352.7	-2,206.4	-286.0	1.51	-0.11	-1.51	-30.7	12.8
14,548.0	89.60	180.50	12,353.2	-2,299.4	-285.3	2.05	-0.11	2.04	-30.7	12.9
14,642.0	89.00	179.60	12,354.4	-2,393.4	-285.3	1.15	-0.64	-0.96	-30.1	12.2
14,735.0	88.80	179.00	12,356.2	-2,486.4	-284.2	0.68	-0.22	-0.65	-28.9	12.6
14,829.0	90.00	179.70	12,357.1	-2,580.3	-283.1	1.48	1.28	0.74	-28.5	13.0
14,921.0	90.60	180.50	12,356.7	-2,672.3	-283.3	1.09	0.65	0.87	-29.5	12.2
15,016.0	89.80	179.80	12,356.3	-2,767.3	-283.5	1.12	-0.84	-0.74	-30.4	11.3
15,109.0	90.70	180.00	12,355.9	-2,860.3	-283.4	0.99	0.97	0.22	-31.3	10.8
15,203.0	87.60	178.00	12,357.3	-2,954.3	-281.7	3.92	-3.30	-2.13	-30.5	11.7
15,297.0	87.30	179.00	12,361.5	-3,048.2	-279.3	1.11	-0.32	1.06	-26.9	13.5
15,391.0	88.70	178.60	12,364.8	-3,142.1	-277.3	1.55	1.49	-0.43	-24.2	14.8
15,485.0	90.40	179.10	12,365.5	-3,236.1	-275.4	1.89	1.81	0.53	-24.0	16.0
15,577.0	91.70	178.80	12,363.8	-3,328.0	-273.7	1.45	1.41	-0.33	-26.2	17.1
15,671.0	90.00	177.80	12,362.4	-3,422.0	-271.0	2.10	-1.81	-1.06	-28.2	19.2
15,765.0	89.30	177.80	12,363.0	-3,515.9	-267.3	0.74	-0.74	0.00	-28.2	22.1
15,796.0	89.80	178.10	12,363.3	-3,546.9	-266.2	1.88	1.61	0.97	-28.1	23.0
15,889.0	89.20	179.00	12,364.1	-3,639.8	-263.9	1.16	-0.65	0.97	-27.8	24.7
15,982.0	89.70	180.70	12,365.0	-3,732.8	-263.6	1.91	0.54	1.83	-27.5	24.3
16,076.0	90.00	181.10	12,365.2	-3,826.8	-265.1	0.53	0.32	0.43	-27.8	22.1
16,169.0	91.00	181.10	12,364.4	-3,919.8	-266.9	1.08	1.08	0.00	-29.2	19.7



PVA Report

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Site: Ophelia 22 Fed Com
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Wellbore: OH
Design: OH

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TVD Reference: KB = 25' @ 3327.0usft (HP 610)
MD Reference: KB = 25' @ 3327.0usft (HP 610)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Survey										
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
16,242.4	89.82	181.02	12,363.9	-3,993.2	-268.3	1.62	-1.61	-0.11	-30.1	17.8
TGT 2 (Ophelia 22 Fed Com #706H)										
16,262.0	89.50	181.00	12,364.0	-4,012.8	-268.6	1.62	-1.61	-0.11	-30.1	17.3
16,355.0	87.80	179.20	12,366.2	-4,105.7	-268.8	2.66	-1.83	-1.94	-28.5	16.5
16,447.0	87.70	179.00	12,369.8	-4,197.7	-267.3	0.24	-0.11	-0.22	-25.4	17.3
16,541.0	89.80	179.80	12,371.8	-4,291.6	-266.3	2.39	2.23	0.85	-23.9	17.6
16,635.0	92.20	180.40	12,370.2	-4,385.6	-266.5	2.63	2.55	0.64	-26.1	16.7
16,728.0	89.80	179.00	12,368.6	-4,478.6	-266.0	2.99	-2.58	-1.51	-28.3	16.6
16,822.0	90.30	178.90	12,368.5	-4,572.6	-264.3	0.54	0.53	-0.11	-29.0	17.6
16,916.0	88.70	179.60	12,369.3	-4,666.6	-263.1	1.86	-1.70	0.74	-28.7	18.2
17,009.0	89.80	179.30	12,370.5	-4,759.5	-262.2	1.23	1.18	-0.32	-28.0	18.4
17,102.0	89.90	181.90	12,370.8	-4,852.5	-263.1	2.80	0.11	2.80	-28.4	16.7
17,195.0	88.50	182.00	12,372.1	-4,945.5	-266.3	1.51	-1.51	0.11	-27.6	12.9
17,288.0	92.30	182.40	12,371.4	-5,038.4	-269.9	4.11	4.09	0.43	-28.8	8.7
17,382.0	89.30	181.70	12,370.1	-5,132.3	-273.2	3.28	-3.19	-0.74	-30.7	4.7
17,475.0	86.70	179.30	12,373.4	-5,225.2	-274.1	3.80	-2.80	-2.58	-28.0	3.2
17,569.0	91.30	179.60	12,375.0	-5,319.2	-273.2	4.90	4.89	0.32	-26.9	3.4
17,662.0	89.40	179.40	12,374.4	-5,412.2	-272.3	2.05	-2.04	-0.22	-28.1	3.6
17,755.0	89.80	178.80	12,375.1	-5,505.2	-270.9	0.78	0.43	-0.65	-28.0	4.3
17,849.0	87.60	178.00	12,377.2	-5,599.1	-268.3	2.49	-2.34	-0.85	-26.4	6.3
17,942.0	89.90	177.90	12,379.2	-5,692.0	-264.9	2.48	2.47	-0.11	-24.9	9.0
18,036.0	89.90	178.70	12,379.4	-5,786.0	-262.1	0.85	0.00	0.85	-25.3	11.1
18,129.0	89.00	178.70	12,380.3	-5,878.9	-260.0	0.97	-0.97	0.00	-25.0	12.5
18,222.0	86.10	179.40	12,384.3	-5,971.8	-258.5	3.21	-3.12	0.75	-21.6	13.4
18,245.0	87.20	179.74	12,385.6	-5,994.8	-258.3	5.01	4.79	1.49	-20.4	13.4
TGT 3 (Ophelia 22 Fed Com #706H)										
18,316.0	90.60	180.80	12,387.0	-6,065.8	-258.7	5.01	4.79	1.49	-19.8	12.6

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Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
18,410.0	90.10	181.00	12,386.4	-6,159.7	-260.1	0.57	-0.53	0.21	-21.3	10.4	
18,503.0	91.60	181.40	12,385.0	-6,252.7	-262.1	1.67	1.61	0.43	-23.7	7.8	
18,597.0	91.20	180.10	12,382.7	-6,346.7	-263.3	1.45	-0.43	-1.38	-27.0	5.9	
18,690.0	88.50	178.80	12,383.0	-6,439.7	-262.4	3.22	-2.90	-1.40	-27.8	6.1	
18,783.0	88.30	177.70	12,385.6	-6,532.6	-259.6	1.20	-0.22	-1.18	-26.2	8.3	
18,876.0	90.90	178.90	12,386.2	-6,625.5	-256.8	3.08	2.80	1.29	-26.5	10.4	
18,969.0	89.50	178.80	12,385.9	-6,718.5	-255.0	1.51	-1.51	-0.11	-27.8	11.6	
19,063.0	88.70	179.10	12,387.4	-6,812.5	-253.2	0.91	-0.85	0.32	-27.4	12.6	
19,156.0	89.90	177.50	12,388.5	-6,905.4	-250.5	2.15	1.29	-1.72	-27.2	14.7	
19,250.0	90.20	178.80	12,388.4	-6,999.4	-247.4	1.42	0.32	1.38	-28.3	17.1	
19,343.0	88.80	179.50	12,389.2	-7,092.3	-246.1	1.68	-1.51	0.75	-28.5	17.8	
19,436.0	90.10	178.10	12,390.1	-7,185.3	-244.1	2.05	1.40	-1.51	-28.6	19.1	
19,529.0	87.80	177.10	12,391.8	-7,278.2	-240.2	2.70	-2.47	-1.08	-27.9	22.3	
19,622.0	89.50	181.00	12,394.0	-7,371.2	-238.7	4.57	1.83	4.19	-26.7	23.2	
19,642.8	88.87	180.53	12,394.3	-7,391.9	-239.0	3.79	-3.03	-2.27	-26.6	22.8	
HL Crossing, MD:19642.8', TVD:12394.3',N/S:-7391.9', E/W:-239.0', INC:88.87											
19,644.7	88.81	180.48	12,394.4	-7,393.8	-239.0	3.79	-3.03	-2.27	-26.6	22.7	
LTP (Ophelia 22 Fed Com #706H)											
19,688.0	87.50	179.50	12,395.7	-7,437.1	-239.0	3.79	-3.03	-2.27	-25.6	22.4	
Final MWD Survey (MD= 19688.0')											
19,744.8	87.50	179.50	12,398.2	-7,493.8	-238.5	0.00	0.00	0.00	-23.8	22.5	
PBHL (Ophelia 22 Fed Com #706H)											
19,750.0	87.50	179.50	12,398.5	-7,499.1	-238.4	0.00	0.00	0.00	-24.1	22.8	
Final Bit Projection (MD= 19750.0')											

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Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,358.1	12,216.5	-131.9	-290.3	HL Crossing, MD:12358.1', TVD:12216.5',N/S:-131.9', E/W:-290.3', INC:63.32
19,642.8	12,394.3	-7,391.9	-239.0	HL Crossing, MD:19642.8', TVD:12394.3',N/S:-7391.9', E/W:-239.0', INC:88.87
19,688.0	12,395.7	-7,437.1	-239.0	Final MWD Survey (MD= 19688.0')
19,750.0	12,398.5	-7,499.1	-238.4	Final Bit Projection (MD= 19750.0')

Checked By: _____ Approved By: _____ Date: _____