



Lea County, NM (NAD 83 NME)

Ophelia 22 Fed Com #705H

HP 621

Plan #1

PROJECT DETAILS: Lea County, NM (NAD 83 NME)

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

WELL DETAILS: #705H

Ground Level: 3295.0
KB = 25' @ 3320.0usft (HP 621)
Northing: 377559.00 Easting: 778950.00 Longitude: 32° 2' 8.416 N 103° 33' 59.490 W

SECTION DETAILS

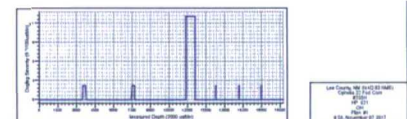
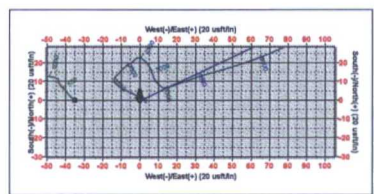
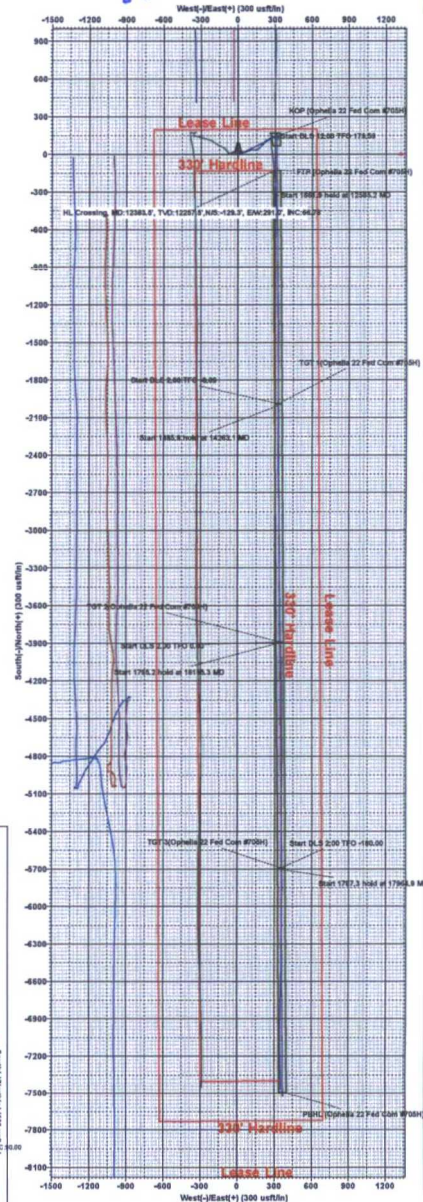
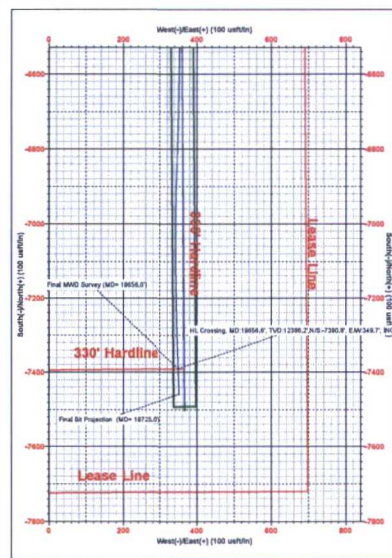
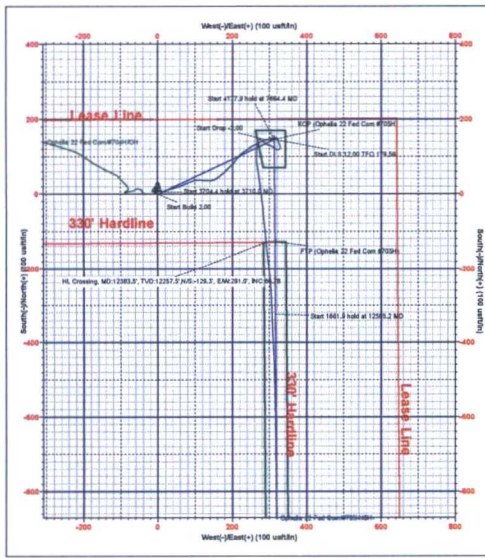
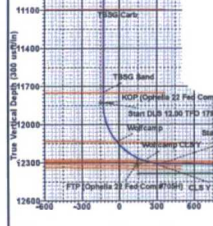
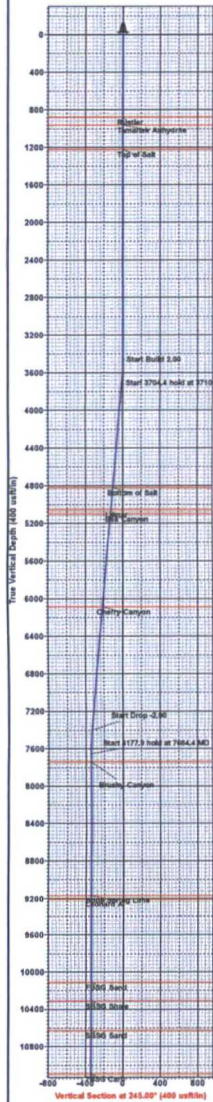
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	3460.0	0.00	0.00	3460.0	0.0	0.0	0.00	0.00	0.0	
3	3710.0	5.00	65.00	3709.7	4.6	9.9	2.00	65.00	-4.1	
4	7414.4	5.00	65.00	7400.0	141.1	302.5	0.00	0.00	-126.1	
5	7664.4	0.00	0.00	7649.7	145.7	312.4	2.00	180.00	-130.2	
6	11842.3	0.00	0.00	11827.6	145.7	312.4	0.00	0.00	-130.2	
7	12585.2	89.14	179.59	12305.0	-324.6	315.7	12.00	179.59	339.7	
8	14247.1	89.14	179.59	12330.0	-1986.3	327.6	0.00	0.00	2000.0	TGT 1(Ophelia 22 Fed Com #705H)
9	14263.1	89.46	179.59	12330.2	-2002.3	327.7	2.00	-0.09	2016.0	
10	16148.9	89.46	179.59	12348.0	-3888.0	341.2	0.00	0.00	3900.0	TGT 2(Ophelia 22 Fed Com #705H)
11	16155.3	89.59	179.59	12348.1	-3894.4	341.3	2.00	0.00	3906.4	
12	17950.5	89.59	179.59	12361.0	-5689.5	354.1	0.00	0.00	5700.0	TGT 3(Ophelia 22 Fed Com #705H)
13	17964.9	89.30	179.59	12361.1	-5703.9	354.2	2.00	-180.00	5714.4	
14	19752.2	89.30	179.59	12383.0	-7491.0	367.0	0.00	0.00	7500.0	PBHL (Ophelia 22 Fed Com #705H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
KOP (Ophelia 22 Fed Com #705H)	11827.6	145.7	312.4	37704.66	778262.37
FTP (Ophelia 22 Fed Com #705H)	12305.0	-128.0	315.0	377431.00	778265.00
TGT 1(Ophelia 22 Fed Com #705H)	12330.0	-1986.3	327.4	378572.70	778277.61
TGT 2(Ophelia 22 Fed Com #705H)	12348.0	-3888.0	341.2	373671.00	778291.22
TGT 3(Ophelia 22 Fed Com #705H)	12361.0	-5689.5	354.1	371869.50	778304.11
PBHL (Ophelia 22 Fed Com #705H)	12383.0	-7491.0	367.0	370068.00	778317.00



Lea County, NM (NAD 83 NME)
Ophelia 22 Fed Com #705H
HP 621
Plan #1
30-025-44007
JAN 08 2017
HOBBS OCD
RECEIVED



30-025-44007

EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Ophelia 22 Fed Com

#705H

OH

Design: OH

PVA Report

07 November, 2017

HOBBBS OCD
JAN 08 2017
RECEIVED

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #705H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3320.0usft (HP 621)
Site:	Ophelia 22 Fed Com	MD Reference:	KB = 25' @ 3320.0usft (HP 621)
Well:	#705H	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		#705H				
Well Position	+N/-S	0.0 usft	Northing:	377,559.00 usft	Latitude:	32° 2' 8.416 N
	+E/-W	0.0 usft	Easting:	778,950.00 usft	Longitude:	103° 33' 59.490 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,295.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/27/2017	6.96	59.89	47,850.58551141

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	177.20

Survey Program		Date 11/7/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
198.0	19,725.0	Intrepid MWD (OH)	MWD	MWD - Standard

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Site: Ophelia 22 Fed Com
Well: #705H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #705H
TVD Reference: KB = 25' @ 3320.0usft (HP 621)
MD Reference: KB = 25' @ 3320.0usft (HP 621)
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	
198.0	0.70	331.40	198.0	1.1	-0.6	0.35	0.35	0.00	-1.2	0.0	
332.0	0.80	310.80	332.0	2.4	-1.7	0.21	0.07	-15.37	-2.8	-0.7	
513.0	0.70	297.90	513.0	3.7	-3.6	0.11	-0.06	-7.13	-4.9	-1.6	
690.0	0.90	282.70	690.0	4.5	-5.9	0.16	0.11	-8.59	-6.8	-3.1	
879.0	1.20	302.10	878.9	5.9	-9.0	0.24	0.16	10.26	-10.8	-0.2	
957.0	1.00	303.60	956.9	6.7	-10.3	0.26	-0.26	1.92	-12.3	0.1	
1,157.0	0.80	313.20	1,156.9	8.7	-12.8	0.12	-0.10	4.80	-15.2	2.4	
1,345.0	0.70	323.00	1,344.9	10.5	-14.4	0.09	-0.05	5.21	-17.0	5.2	
1,530.0	1.60	51.10	1,529.8	13.0	-13.1	0.93	0.49	47.62	2.0	18.3	
1,717.0	1.40	34.60	1,716.8	16.5	-9.8	0.25	-0.11	-8.82	-8.0	17.4	
1,904.0	1.20	60.50	1,903.7	19.4	-6.8	0.33	-0.11	13.85	-3.6	20.2	
2,092.0	0.90	61.60	2,091.7	21.0	-3.8	0.16	-0.16	0.59	-6.7	20.3	
2,279.0	0.70	26.70	2,278.7	22.8	-1.9	0.28	-0.11	-18.66	-19.4	12.0	
2,467.0	1.00	115.80	2,466.7	23.1	0.0	0.64	0.16	47.39	10.0	20.8	
2,654.0	1.00	135.30	2,653.6	21.2	2.7	0.18	0.00	10.43	13.2	16.8	
2,841.0	0.90	146.10	2,840.6	18.8	4.6	0.11	-0.05	5.78	13.0	14.3	
3,026.0	1.50	161.50	3,025.6	15.3	6.2	0.37	0.32	8.32	12.6	10.7	
3,213.0	1.70	155.70	3,212.5	10.5	8.1	0.14	0.11	-3.10	6.2	11.7	
3,400.0	1.50	110.70	3,399.4	7.1	11.6	0.66	-0.11	-24.06	-8.3	10.7	
3,587.0	5.30	68.40	3,586.1	9.4	21.9	2.30	2.03	-22.62	-21.0	0.5	
3,774.0	7.40	74.80	3,771.9	15.7	41.5	1.18	1.12	3.42	-28.0	1.5	
3,961.0	6.00	69.80	3,957.6	22.3	62.3	0.81	-0.75	-2.67	-33.6	-3.4	
4,149.0	4.90	65.20	4,144.8	29.0	78.8	0.63	-0.59	-2.45	-34.6	-6.9	
4,243.0	4.80	65.40	4,238.5	32.3	86.1	0.11	-0.11	0.21	-34.4	-6.8	
4,430.0	5.80	81.00	4,424.7	37.1	102.5	0.93	0.53	8.34	-36.3	0.3	
4,617.0	6.50	98.10	4,610.6	37.1	122.3	1.04	0.37	9.14	-40.6	4.8	

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Wellbore: OH
Design: OH

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TVD Reference: KB = 25' @ 3320.0usft (HP 621)
MD Reference: KB = 25' @ 3320.0usft (HP 621)
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)	
4,803.0	4.10	86.70	4,795.8	36.0	139.4	1.40	-1.29	-6.13	-42.7	-11.4	
4,990.0	3.60	68.20	4,982.4	38.5	151.5	0.71	-0.27	-9.89	-32.8	-27.3	
5,178.0	3.90	52.10	5,170.0	44.6	162.0	0.58	0.16	-8.56	-20.0	-33.3	
5,365.0	4.50	48.20	5,356.5	53.4	172.5	0.36	0.32	-2.09	-15.8	-30.3	
5,553.0	4.30	46.00	5,543.9	63.3	183.1	0.14	-0.11	-1.17	-13.6	-25.8	
5,740.0	4.60	45.30	5,730.4	73.4	193.5	0.16	0.16	-0.37	-12.4	-20.6	
5,927.0	4.50	41.00	5,916.8	84.2	203.6	0.19	-0.05	-2.30	-10.7	-15.4	
6,114.0	4.10	37.40	6,103.3	95.1	212.5	0.26	-0.21	-1.93	-9.3	-9.0	
6,302.0	3.90	44.60	6,290.8	104.9	221.1	0.29	-0.11	3.83	-8.0	-1.2	
6,489.0	6.10	55.50	6,477.1	115.1	233.7	1.28	1.18	5.83	-8.2	4.3	
6,676.0	6.90	57.80	6,662.9	126.7	251.4	0.45	0.43	1.23	-13.1	7.0	
6,862.0	6.30	65.80	6,847.6	136.9	270.2	0.59	-0.32	4.30	-17.0	10.1	
7,050.0	6.20	69.30	7,034.5	144.7	289.1	0.21	-0.05	1.86	-20.5	10.5	
7,238.0	2.60	77.30	7,221.9	149.2	302.7	1.94	-1.91	4.26	-17.2	11.2	
7,425.0	1.90	85.60	7,408.8	150.4	310.0	0.41	-0.37	4.44	-7.4	8.4	
7,600.0	1.50	87.00	7,583.7	150.7	315.1	0.23	-0.23	0.80	-3.7	5.2	
7,788.0	1.10	105.60	7,771.7	150.4	319.3	0.31	-0.21	9.89	-5.4	6.4	
7,976.0	0.90	154.50	7,959.7	148.5	321.7	0.45	-0.11	26.01	-1.4	9.7	
8,162.0	1.20	168.10	8,145.6	145.3	322.7	0.21	0.16	7.31	-2.5	10.1	
8,350.0	1.30	163.50	8,333.6	141.3	323.7	0.08	0.05	-2.45	-7.4	9.7	
8,538.0	1.50	162.80	8,521.5	136.9	325.1	0.11	0.11	-0.37	-12.1	9.6	
8,726.0	1.30	153.60	8,709.5	132.7	326.8	0.16	-0.11	-4.89	-18.0	7.1	
8,912.0	0.80	166.00	8,895.4	129.5	328.0	0.29	-0.27	6.67	-19.4	11.3	
9,100.0	0.70	183.50	9,083.4	127.1	328.3	0.13	-0.05	9.31	-17.5	17.0	
9,287.0	0.70	166.10	9,270.4	124.9	328.5	0.11	0.00	-9.30	-24.1	10.6	
9,475.0	0.40	172.20	9,458.4	123.1	328.8	0.16	-0.16	3.24	-24.6	13.2	
9,662.0	1.40	234.00	9,645.4	121.1	327.1	0.67	0.53	33.05	-2.5	28.5	



PVA Report

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Ophelia 22 Fed Com
Well: #705H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #705H
TVD Reference: KB = 25' @ 3320.0usft (HP 621)
MD Reference: KB = 25' @ 3320.0usft (HP 621)
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)
9,848.0	1.00	263.30	9,831.3	119.6	323.6	0.39	-0.22	15.75	8.1	27.2
10,036.0	1.50	264.00	10,019.3	119.1	319.5	0.27	0.27	0.37	4.4	27.1
10,224.0	2.80	315.50	10,207.2	122.2	313.9	1.17	0.69	27.39	17.8	15.4
10,412.0	2.80	297.20	10,394.9	127.5	306.6	0.47	0.00	-9.73	3.1	18.8
10,599.0	1.60	285.80	10,581.8	130.3	300.0	0.68	-0.64	-6.10	-7.7	18.1
10,786.0	1.40	283.70	10,768.7	131.6	295.3	0.11	-0.11	-1.12	-13.3	17.7
10,973.0	1.80	301.00	10,955.7	133.6	290.5	0.33	0.21	9.25	-12.5	21.6
11,161.0	1.70	314.80	11,143.6	137.1	286.0	0.23	-0.05	7.34	-12.7	24.6
11,348.0	1.80	311.40	11,330.5	141.0	281.8	0.08	0.05	-1.82	-19.8	23.7
11,534.0	1.90	295.50	11,516.4	144.3	276.9	0.28	0.05	-8.55	-31.4	16.5
11,609.0	1.60	296.90	11,591.4	145.3	274.8	0.40	-0.40	1.87	-33.3	17.3
11,741.0	1.80	307.90	11,723.3	147.4	271.5	0.29	0.15	8.33	-33.3	23.7
11,835.0	2.50	212.50	11,817.3	146.6	269.3	3.42	0.74	-101.49	-22.4	-36.8
11,844.3	3.47	203.23	11,826.6	146.1	269.1	11.60	10.41	-99.46	-16.6	-40.0
KOP (Ophelia 22 Fed Com #705H)										
11,882.0	7.70	191.00	11,864.1	142.6	268.1	11.60	11.22	-32.45	-10.0	-43.2
11,929.0	11.10	189.80	11,910.4	135.1	266.7	7.25	7.23	-2.55	-10.9	-44.5
11,960.0	14.90	185.70	11,940.6	128.2	265.8	12.61	12.26	-13.23	-8.3	-46.0
11,991.0	18.60	183.90	11,970.3	119.3	265.1	12.05	11.94	-5.81	-7.4	-47.0
12,022.0	21.70	181.30	11,999.4	108.6	264.6	10.41	10.00	-8.39	-5.8	-47.8
12,054.0	25.00	177.10	12,028.8	95.9	264.9	11.54	10.31	-13.12	-2.6	-48.0
12,085.0	27.80	173.80	12,056.5	82.2	266.0	10.19	9.03	-10.65	0.1	-47.0
12,116.0	31.20	171.60	12,083.5	67.0	267.9	11.51	10.97	-7.10	2.1	-45.1
12,148.0	35.40	170.90	12,110.3	49.7	270.6	13.18	13.12	-2.19	2.8	-42.4
12,179.0	39.80	172.00	12,134.8	31.0	273.4	14.36	14.19	3.55	2.2	-39.8
12,210.0	43.60	172.50	12,158.0	10.6	276.2	12.30	12.26	1.61	1.8	-37.1
12,241.0	47.30	173.40	12,179.7	-11.4	278.9	12.11	11.94	2.90	1.3	-34.6

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Wellbore: OH
Design: OH

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12,273.0	51.50	174.10	12,200.5	-35.5	281.5	13.23	13.12	2.19	0.9		-32.1
12,304.0	55.10	174.70	12,219.0	-60.2	283.9	11.72	11.61	1.94	0.5		-29.9
12,350.0	62.00	174.10	12,243.0	-99.3	287.8	15.04	15.00	-1.30	-0.1		-26.4
12,383.5	66.78	173.52	12,257.5	-129.3	291.0	14.34	14.25	-1.73	-1.2		-23.4
HL Crossing, MD:12383.5', TVD:12257.5', N/S:-129.3', E/W:291.0', INC:66.78											
12,397.0	68.70	173.30	12,262.6	-141.7	292.5	14.34	14.26	-1.64	-1.8		-22.0
12,400.6	69.00	173.34	12,263.9	-145.0	292.9	8.36	8.30	1.09	-2.0		-21.7
FTP (Ophelia 22 Fed Com #705H)											
12,444.0	72.60	173.80	12,278.2	-185.8	297.4	8.36	8.30	1.06	-3.2		-17.4
12,491.0	77.00	175.40	12,290.5	-230.9	301.7	9.92	9.36	3.40	-3.4		-13.4
12,537.0	79.80	177.10	12,299.8	-275.9	304.7	7.08	6.09	3.70	-1.9		-10.7
12,584.0	82.50	177.80	12,307.0	-322.3	306.7	5.93	5.74	1.49	2.1		-9.0
12,631.0	86.90	177.30	12,311.3	-369.0	308.7	9.42	9.36	-1.06	5.7		-7.3
12,678.0	89.10	177.20	12,313.0	-415.9	311.0	4.69	4.68	-0.21	6.6		-5.4
12,772.0	91.40	178.70	12,312.6	-509.8	314.3	2.92	2.45	1.60	4.8		-2.7
12,806.0	92.30	179.00	12,311.5	-543.8	315.0	2.79	2.65	0.88	3.2		-2.3
12,900.0	91.70	178.60	12,308.2	-637.7	317.0	0.77	-0.64	-0.43	-1.5		-1.0
12,993.0	86.10	179.80	12,310.0	-730.7	318.3	6.16	-6.02	1.29	-1.1		-0.4
13,087.0	85.40	179.80	12,316.9	-824.4	318.6	0.74	-0.74	0.00	4.4		-0.7
13,180.0	87.90	179.10	12,322.4	-917.2	319.5	2.79	2.69	-0.75	8.5		-0.5
13,274.0	87.30	178.60	12,326.3	-1,011.1	321.4	0.83	-0.64	-0.53	11.0		0.8
13,367.0	88.00	178.00	12,330.1	-1,104.0	324.1	0.99	0.75	-0.65	13.4		2.8
13,461.0	89.60	178.90	12,332.1	-1,198.0	326.7	1.95	1.70	0.96	13.9		4.7
13,555.0	89.40	178.40	12,332.9	-1,291.9	328.9	0.57	-0.21	-0.53	13.4		6.3
13,649.0	91.00	180.80	12,332.6	-1,385.9	329.6	3.07	1.70	2.55	11.6		6.2
13,742.0	89.20	180.60	12,332.4	-1,478.9	328.4	1.95	-1.94	-0.22	10.1		4.4
13,835.0	89.90	181.40	12,333.2	-1,571.9	326.8	1.14	0.75	0.86	9.4		2.1



PVA Report

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Ophelia 22 Fed Com
Well: #705H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #705H
TVD Reference: KB = 25' @ 3320.0usft (HP 621)
MD Reference: KB = 25' @ 3320.0usft (HP 621)
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)
13,929.0	88.50	180.40	12,334.5	-1,665.9	325.3	1.83	-1.49	-1.06	9.3	0.0
14,023.0	88.70	180.20	12,336.8	-1,759.8	324.8	0.30	0.21	-0.21	10.2	-1.2
14,117.0	88.80	179.50	12,338.8	-1,853.8	325.1	0.75	0.11	-0.74	10.8	-1.6
14,210.0	88.60	179.60	12,340.9	-1,946.8	325.8	0.24	-0.22	0.11	11.5	-1.5
14,249.2	88.56	179.60	12,341.9	-1,986.0	326.1	0.11	-0.11	0.00	11.9	-1.5
TGT 1(Ophelia 22 Fed Com #705H)										
14,304.0	88.50	179.60	12,343.3	-2,040.8	326.5	0.11	-0.11	0.00	12.7	-1.5
14,398.0	89.00	180.10	12,345.4	-2,134.7	326.7	0.75	0.53	0.53	13.9	-2.0
14,492.0	90.90	180.80	12,345.4	-2,228.7	326.0	2.15	2.02	0.74	13.1	-3.4
14,586.0	87.90	180.30	12,346.4	-2,322.7	325.1	3.24	-3.19	-0.53	13.2	-5.0
14,680.0	87.20	179.10	12,350.4	-2,416.6	325.6	1.48	-0.74	-1.28	16.3	-5.1
14,773.0	88.00	178.30	12,354.3	-2,509.5	327.7	1.22	0.86	-0.86	19.3	-3.7
14,867.0	91.10	178.80	12,355.1	-2,603.5	330.0	3.34	3.30	0.53	19.2	-2.0
14,960.0	91.00	178.60	12,353.4	-2,696.4	332.2	0.24	-0.11	-0.22	16.6	-0.5
15,053.0	90.90	180.30	12,351.8	-2,789.4	333.0	1.83	-0.11	1.83	14.2	-0.3
15,147.0	85.60	179.00	12,354.7	-2,883.3	333.6	5.81	-5.64	-1.38	16.2	-0.4
15,240.0	87.80	179.20	12,360.0	-2,976.1	335.1	2.38	2.37	0.22	20.7	0.4
15,334.0	89.80	180.40	12,362.0	-3,070.1	335.4	2.48	2.13	1.28	21.7	0.0
15,428.0	88.80	180.10	12,363.2	-3,164.1	335.0	1.11	-1.06	-0.32	22.0	-1.0
15,522.0	89.50	179.30	12,364.6	-3,258.1	335.5	1.13	0.74	-0.85	22.5	-1.2
15,616.0	90.90	178.80	12,364.2	-3,352.1	337.0	1.58	1.49	-0.53	21.3	-0.3
15,709.0	91.20	178.50	12,362.5	-3,445.0	339.2	0.46	0.32	-0.32	18.7	1.2
15,803.0	88.60	178.90	12,362.7	-3,539.0	341.4	2.80	-2.77	0.43	18.0	2.7
15,897.0	88.80	180.40	12,364.8	-3,633.0	341.9	1.61	0.21	1.60	19.2	2.5
15,991.0	87.30	178.70	12,368.0	-3,726.9	342.7	2.41	-1.60	-1.81	21.5	2.6
16,084.0	90.80	178.60	12,369.6	-3,819.9	344.9	3.76	3.76	-0.11	22.2	4.1

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Ophelia 22 Fed Com
 Well: #705H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #705H
 TVD Reference: KB = 25' @ 3320.0usft (HP 621)
 MD Reference: KB = 25' @ 3320.0usft (HP 621)
 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)
16,151.9	89.43	178.02	12,369.4	-3,887.8	346.9	2.19	-2.02	-0.85	21.4	5.7
TGT 2(Ophelia 22 Fed Com #705H)										
16,178.0	88.90	177.80	12,369.8	-3,913.8	347.8	2.19	-2.02	-0.85	21.6	6.4
16,271.0	94.00	178.40	12,367.5	-4,006.7	350.9	5.52	5.48	0.65	18.6	8.9
16,365.0	94.20	179.00	12,360.7	-4,100.4	353.0	0.67	0.21	0.64	11.2	10.3
16,458.0	91.90	179.60	12,355.8	-4,193.3	354.2	2.56	-2.47	0.65	5.6	10.8
16,552.0	89.60	179.20	12,354.6	-4,287.3	355.1	2.48	-2.45	-0.43	3.7	11.1
16,646.0	87.50	180.10	12,356.9	-4,381.2	355.7	2.43	-2.23	0.96	5.4	11.0
16,740.0	89.20	180.20	12,359.6	-4,475.2	355.5	1.81	1.81	0.11	7.4	10.1
16,833.0	88.80	179.90	12,361.3	-4,568.2	355.4	0.54	-0.43	-0.32	8.4	9.3
16,927.0	90.30	179.50	12,362.0	-4,662.2	355.9	1.65	1.60	-0.43	8.4	9.1
17,020.0	90.40	179.60	12,361.4	-4,755.2	356.6	0.15	0.11	0.11	7.2	9.2
17,114.0	89.60	180.60	12,361.4	-4,849.2	356.5	1.36	-0.85	1.06	6.5	8.4
17,207.0	89.40	181.10	12,362.2	-4,942.1	355.1	0.58	-0.22	0.54	6.6	6.3
17,301.0	89.10	180.90	12,363.5	-5,036.1	353.4	0.38	-0.32	-0.21	7.2	4.0
17,394.0	88.70	179.90	12,365.3	-5,129.1	352.8	1.16	-0.43	-1.08	8.3	2.7
17,487.0	89.10	180.20	12,367.0	-5,222.1	352.7	0.54	0.43	0.32	9.4	1.9
17,581.0	90.30	179.50	12,367.5	-5,316.1	353.0	1.48	1.28	-0.74	9.2	1.5
17,673.0	90.40	179.00	12,367.0	-5,408.1	354.2	0.55	0.11	-0.54	8.0	2.1
17,766.0	88.90	178.60	12,367.5	-5,501.0	356.1	1.67	-1.61	-0.43	7.9	3.3
17,860.0	90.20	180.00	12,368.3	-5,595.0	357.3	2.03	1.38	1.49	8.0	3.8
17,954.0	89.60	179.40	12,368.4	-5,689.0	357.7	0.90	-0.64	-0.64	7.5	3.6
17,954.4	89.60	179.40	12,368.5	-5,689.4	357.7	0.00	0.00	0.00	7.5	3.6
TGT 3(Ophelia 22 Fed Com #705H)										
18,047.0	90.00	179.70	12,368.8	-5,782.0	358.5	0.54	0.43	0.32	6.7	3.7
18,140.0	90.90	180.00	12,368.0	-5,875.0	358.7	1.02	0.97	0.32	4.8	3.3
18,234.0	90.90	182.20	12,366.6	-5,969.0	356.9	2.34	0.00	2.34	2.2	0.8

Company: EOG Resources - Midland
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Site: Ophelia 22 Fed Com
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TVD Reference: KB = 25' @ 3320.0usft (HP 621)
MD Reference: KB = 25' @ 3320.0usft (HP 621)
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)	
18,328.0	86.80	181.20	12,368.5	-6,062.9	354.1	4.49	-4.36	-1.06	2.9	-2.7	
18,422.0	89.10	179.80	12,371.8	-6,156.8	353.3	2.86	2.45	-1.49	5.1	-4.1	
18,516.0	91.50	179.20	12,371.3	-6,250.8	354.1	2.63	2.55	-0.64	3.5	-4.0	
18,609.0	89.50	180.10	12,370.5	-6,343.8	354.7	2.36	-2.15	0.97	1.5	-4.1	
18,703.0	88.40	180.50	12,372.2	-6,437.8	354.2	1.25	-1.17	0.43	2.1	-5.3	
18,797.0	89.50	180.60	12,374.0	-6,531.8	353.3	1.18	1.17	0.11	2.7	-6.8	
18,890.0	90.40	180.70	12,374.0	-6,624.8	352.2	0.97	0.97	0.11	1.6	-8.6	
18,984.0	89.30	181.60	12,374.3	-6,718.7	350.4	1.51	-1.17	0.96	0.7	-11.1	
19,078.0	92.00	181.80	12,373.2	-6,812.7	347.6	2.88	2.87	0.21	-1.5	-14.6	
19,172.0	89.50	181.90	12,372.0	-6,906.6	344.5	2.66	-2.66	0.11	-3.9	-18.3	
19,265.0	90.00	180.70	12,372.4	-6,999.6	342.4	1.40	0.54	-1.29	-4.6	-21.1	
19,359.0	87.40	179.30	12,374.5	-7,093.6	342.4	3.14	-2.77	-1.49	-3.6	-21.7	
19,453.0	86.70	178.90	12,379.4	-7,187.4	343.9	0.86	-0.74	-0.43	0.1	-20.9	
19,547.0	87.70	178.20	12,384.0	-7,281.3	346.3	1.30	1.06	-0.74	3.5	-19.2	
19,640.0	89.60	178.20	12,386.1	-7,374.2	349.2	2.04	2.04	0.00	4.6	-17.0	
19,656.0	90.00	178.20	12,386.2	-7,390.2	349.7	2.50	2.50	0.00	4.4	-16.6	
Final MWD Survey (MD= 19656.0')											
19,656.6	90.00	178.20	12,386.2	-7,390.8	349.7	0.00	0.00	0.00	4.4	-16.6	
HL Crossing, MD:19656.6', TVD:12386.2', N/S:-7390.8', E/W:349.7', INC:90.00											
19,725.0	90.00	178.20	12,386.2	-7,459.2	351.9	0.00	0.00	0.00	3.6	-14.9	
Final Bit Projection (MD= 19725.0') - PBHL (Ophelia 22 Fed Com #705H)											

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Local Co-ordinate Reference: Well #705H
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,383.5	12,257.5	-129.3	291.0	HL Crossing, MD:12383.5', TVD:12257.5', N/S:-129.3', E/W:291.0', INC:66.78
19,656.0	12,386.2	-7,390.2	349.7	Final MWD Survey (MD= 19656.0')
19,656.6	12,386.2	-7,390.8	349.7	HL Crossing, MD:19656.6', TVD:12386.2', N/S:-7390.8', E/W:349.7', INC:90.00
19,725.0	12,386.2	-7,459.2	351.9	Final Bit Projection (MD= 19725.0')

Checked By: _____ Approved By: _____ Date: _____