



EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Neptune 10 State Com

#704H

OH

Design: OH

PVA Report

20 November, 2017

30-025-43807

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Neptune 10 State Com
Well: #704H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #704H
TVD Reference: KB= 25' @ 3632.0usft (H&P 642)
MD Reference: KB= 25' @ 3632.0usft (H&P 642)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Project Lea County, NM (NAD 83 NME)

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site Neptune 10 State Com

Site Position:		Northing:	446,557.00 usft	Latitude:	32° 13' 31.172 N
From:	Map	Easting:	778,964.00 usft	Longitude:	103° 33' 53.609 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well #704H

Well Position	+N/-S	0.0 usft	Northing:	447,027.00 usft	Latitude:	32° 13' 35.764 N
	+E/-W	0.0 usft	Easting:	779,791.00 usft	Longitude:	103° 33' 43.943 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,607.0 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/14/2017	6.94	60.07	47,931.75124636

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	357.06

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Survey Program **Date** 11/20/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
179.0	1,298.0	OleBrook MWD (OH)	MWD	MWD - Standard
1,457.0	22,665.0	Intrepid MWD (OH)	MWD	MWD - Standard

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
179.0	0.35	234.85	179.0	-0.3	-0.4	0.20	0.20	0.00	-0.5	0.0
242.0	0.70	236.11	242.0	-0.6	-0.9	0.56	0.56	2.00	-1.1	0.0
365.0	0.79	129.49	365.0	-1.6	-0.9	0.97	0.07	-86.68	-0.3	-1.8
541.0	0.53	234.79	541.0	-2.8	-0.6	0.60	-0.15	59.83	-2.1	2.0
730.0	0.70	231.80	730.0	-4.1	-2.2	0.09	0.09	-1.58	-4.3	1.8
920.0	0.44	251.05	920.0	-5.0	-3.8	0.17	-0.14	10.13	-5.3	3.5
1,109.0	0.88	225.64	1,109.0	-6.3	-5.6	0.27	0.23	-13.44	-8.4	0.6
1,203.0	0.88	235.54	1,202.9	-7.2	-6.7	0.16	0.00	10.53	-9.6	2.1
1,298.0	0.79	265.99	1,297.9	-7.6	-7.9	0.47	-0.09	32.05	-8.4	7.1
1,457.0	1.00	259.40	1,456.9	-8.0	-10.4	0.15	0.13	-4.14	-11.7	5.9
1,643.0	0.80	312.50	1,642.9	-7.4	-12.9	0.44	-0.11	28.55	-4.6	14.2
1,830.0	0.70	324.30	1,829.9	-5.6	-14.6	0.10	-0.05	6.31	-4.0	15.1
2,018.0	1.80	253.80	2,017.8	-5.5	-18.1	0.90	0.59	-37.50	-18.8	0.2
2,205.0	6.40	226.20	2,204.3	-13.5	-28.4	2.61	2.46	-14.76	-22.6	-11.2
2,393.0	8.00	225.20	2,390.8	-30.0	-45.3	0.85	0.85	-0.53	-26.6	-14.9
2,580.0	8.60	232.90	2,575.9	-47.6	-65.7	0.67	0.32	4.12	-31.9	-16.4
2,768.0	8.40	207.40	2,761.9	-68.3	-83.2	1.99	-0.11	-13.56	-24.0	-30.7
2,956.0	8.10	205.70	2,947.9	-92.4	-95.3	0.21	-0.16	-0.90	-26.0	-27.4
3,143.0	7.60	209.40	3,133.2	-115.0	-107.0	0.38	-0.27	1.98	-28.9	-21.9
3,330.0	6.90	217.00	3,318.7	-134.8	-119.9	0.63	-0.37	4.06	-30.6	-16.6

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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)
3,518.0	7.50	212.30	3,505.2	-154.2	-133.2	0.45	0.32	-2.50	-28.2	-18.3
3,705.0	6.70	216.90	3,690.8	-173.2	-146.3	0.52	-0.43	2.46	-28.2	-15.2
3,893.0	6.70	214.80	3,877.5	-191.0	-159.1	0.13	0.00	-1.12	-25.0	-16.0
4,081.0	7.60	208.60	4,064.0	-210.9	-171.4	0.63	0.48	-3.30	-22.2	-16.6
4,268.0	7.30	208.70	4,249.4	-232.2	-183.0	0.16	-0.16	0.05	-22.3	-13.3
4,456.0	5.80	200.80	4,436.2	-251.5	-192.1	0.93	-0.80	-4.20	-17.9	-11.3
4,644.0	6.80	212.80	4,623.1	-269.8	-201.5	0.88	0.53	6.38	-15.7	-3.9
4,832.0	8.40	205.90	4,809.4	-291.5	-213.5	0.98	0.85	-3.67	-15.8	-2.7
5,019.0	8.40	199.30	4,994.4	-316.7	-224.0	0.52	0.00	-3.53	-19.3	1.1
5,206.0	7.30	219.00	5,179.7	-338.8	-236.0	1.54	-0.59	10.53	-18.2	10.9
5,393.0	7.80	217.40	5,365.1	-358.1	-251.2	0.29	0.27	-0.86	-18.7	9.6
5,581.0	9.20	220.60	5,551.0	-379.7	-268.7	0.79	0.74	1.70	-21.4	9.4
5,768.0	9.40	221.00	5,735.6	-402.5	-288.5	0.11	0.11	0.21	-27.3	7.7
5,956.0	9.80	220.30	5,920.9	-426.3	-308.9	0.22	0.21	-0.37	-34.4	5.4
6,144.0	7.70	211.10	6,106.7	-449.3	-325.7	1.34	-1.12	-4.89	-38.8	-0.5
6,332.0	6.40	209.80	6,293.3	-469.2	-337.4	0.70	-0.69	-0.69	-37.4	1.1
6,519.0	6.40	211.80	6,479.2	-487.1	-348.1	0.12	0.00	1.07	-33.9	4.7
6,706.0	6.60	211.00	6,665.0	-505.2	-359.1	0.12	0.11	-0.43	-30.8	6.3
6,894.0	5.40	204.80	6,851.9	-522.5	-368.4	0.72	-0.64	-3.30	-26.8	6.7
7,082.0	3.10	208.60	7,039.4	-534.9	-374.6	1.23	-1.22	2.02	-15.8	12.3
7,269.0	3.10	206.90	7,226.1	-543.9	-379.3	0.05	0.00	-0.91	-2.1	15.6
7,457.0	1.90	238.00	7,413.9	-550.1	-384.2	0.94	-0.64	16.54	21.5	8.1
7,644.0	2.00	238.60	7,600.8	-553.4	-389.6	0.05	0.05	0.32	31.5	1.1
7,831.0	1.10	238.40	7,787.8	-556.1	-393.9	0.48	-0.48	-0.11	31.4	-0.8
8,019.0	1.20	227.60	7,975.7	-558.3	-396.9	0.13	0.05	-5.74	27.2	4.8
8,207.0	1.20	221.30	8,163.7	-561.1	-399.7	0.07	0.00	-3.35	22.6	7.5
8,395.0	1.10	219.90	8,351.6	-564.0	-402.1	0.06	-0.05	-0.74	18.6	8.0

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8,583.0	1.40	215.60	8,539.6	-567.3	-404.6	0.17	0.16	-2.29	13.9	9.3
8,771.0	2.20	237.10	8,727.5	-571.1	-409.0	0.55	0.43	11.44	10.6	4.4
8,958.0	2.00	234.00	8,914.4	-575.0	-414.7	0.12	-0.11	-1.66	3.5	4.7
9,146.0	2.00	268.20	9,102.3	-577.0	-420.6	0.63	0.00	18.19	-0.5	3.8
9,327.0	2.40	271.20	9,283.1	-577.0	-427.5	0.23	0.22	1.66	-7.2	4.0
9,514.0	1.90	350.70	9,470.0	-573.9	-432.0	1.48	-0.27	42.51	-1.2	11.7
9,701.0	0.50	90.80	9,657.0	-570.8	-431.6	1.10	-0.75	53.53	11.4	2.2
9,889.0	0.70	140.10	9,845.0	-571.7	-430.1	0.28	0.11	26.22	7.4	-6.6
10,075.0	0.80	184.70	10,031.0	-573.9	-429.5	0.31	0.05	23.98	-1.5	-9.1
10,263.0	1.10	224.40	10,219.0	-576.5	-430.8	0.37	0.16	21.12	-9.8	-5.2
10,450.0	0.90	204.80	10,405.9	-579.1	-432.7	0.21	-0.11	-10.48	-10.6	-8.8
10,638.0	1.20	218.70	10,593.9	-582.0	-434.6	0.21	0.16	7.39	-15.8	-5.7
10,827.0	1.10	153.00	10,782.9	-585.1	-435.0	0.66	-0.05	-34.76	-4.0	-18.5
11,013.0	1.20	145.60	10,968.8	-588.3	-433.1	0.10	0.05	-3.98	-5.3	-19.1
11,201.0	0.70	308.50	11,156.8	-589.2	-432.8	1.00	-0.27	86.65	0.2	20.4
11,389.0	0.90	71.60	11,344.8	-588.0	-432.3	0.75	0.11	65.48	16.2	-10.3
11,576.0	2.80	71.90	11,531.7	-586.2	-426.6	1.02	1.02	0.16	10.1	-10.4
11,763.0	1.60	126.20	11,718.6	-586.3	-420.2	1.22	-0.64	29.04	-7.8	-10.5
11,836.0	1.70	122.60	11,791.6	-587.5	-418.4	0.20	0.14	-4.93	-9.3	-11.1
11,944.0	2.10	154.30	11,899.5	-590.1	-416.2	1.02	0.37	29.35	-17.0	-3.7
12,072.9	1.33	2.67	12,028.4	-590.8	-415.1	2.58	-0.60	-117.60	17.4	-5.9
KOP (Nep 10 SC 704H)										
12,084.0	1.60	359.60	12,039.5	-590.5	-415.1	2.58	2.48	-27.73	17.5	-5.0
12,131.0	9.40	4.70	12,086.2	-586.0	-414.8	16.61	16.60	10.85	15.7	-6.8
12,178.0	16.40	5.80	12,132.0	-575.6	-413.8	14.90	14.89	2.34	12.7	-7.8
12,225.0	20.70	0.30	12,176.6	-560.6	-413.1	9.87	9.15	-11.70	10.4	-7.4
12,272.0	24.00	2.50	12,220.0	-542.8	-412.6	7.24	7.02	4.68	8.6	-8.2

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12,318.0	27.30	6.10	12,261.5	-522.9	-411.1	7.93	7.17	7.83	8.2	-10.4
12,364.0	30.80	6.10	12,301.7	-500.7	-408.7	7.61	7.61	0.00	10.0	-13.1
12,411.0	30.80	5.90	12,342.1	-476.8	-406.2	0.22	0.00	-0.43	14.7	-16.2
12,442.0	33.80	1.60	12,368.3	-460.3	-405.2	12.18	9.68	-13.87	20.4	-16.6
12,473.0	37.20	357.40	12,393.5	-442.3	-405.4	13.49	10.97	-13.55	26.3	-15.3
12,504.0	42.10	352.30	12,417.4	-422.6	-407.2	18.96	15.81	-16.45	31.7	-11.7
12,536.0	47.60	350.90	12,440.0	-400.3	-410.5	17.46	17.19	-4.37	35.5	-7.9
12,567.0	53.40	349.60	12,459.8	-376.7	-414.5	18.99	18.71	-4.19	37.8	-3.6
12,599.0	57.50	348.00	12,477.9	-350.9	-419.7	13.46	12.81	-5.00	39.4	1.7
12,630.0	65.10	346.80	12,492.8	-324.4	-425.6	24.75	24.52	-3.87	39.5	7.3
12,654.0	70.44	346.88	12,501.9	-302.8	-430.7	22.26	22.26	0.33	38.3	11.6
FTP (Nep 10 SC 704H)										
12,654.8	70.62	346.88	12,502.1	-302.0	-430.8	22.26	22.26	0.31	38.3	11.8
FTP Crossing, MD:12654.8', TVD:12502.1', N/S:-302.0', E/W:-430.8', INC:70.62										
12,661.0	72.00	346.90	12,504.1	-296.3	-432.2	22.26	22.26	0.31	37.8	12.9
12,692.0	78.40	348.70	12,512.0	-267.0	-438.5	21.39	20.65	5.81	34.5	17.9
12,728.0	87.60	352.00	12,516.4	-231.8	-444.5	27.12	25.56	9.17	28.3	22.6
12,900.0	93.50	3.00	12,514.8	-60.3	-452.0	7.25	3.43	6.40	8.7	27.9
12,994.0	91.90	2.50	12,510.3	33.4	-447.5	1.78	-1.70	-0.53	4.4	22.6
13,088.0	90.20	2.40	12,508.6	127.3	-443.4	1.81	-1.81	-0.11	2.7	17.9
13,181.0	89.80	2.60	12,508.6	220.3	-439.4	0.48	-0.43	0.22	2.8	13.1
13,274.0	89.00	2.70	12,509.6	313.1	-435.1	0.87	-0.86	0.11	3.8	8.1
13,368.0	88.70	3.20	12,511.5	407.0	-430.2	0.62	-0.32	0.53	5.7	2.6
13,461.0	88.70	2.70	12,513.6	499.9	-425.5	0.54	0.00	-0.54	7.9	-2.9
13,554.0	88.40	1.50	12,515.9	592.8	-422.0	1.33	-0.32	-1.29	10.3	-7.0
13,647.0	89.80	1.10	12,517.4	685.7	-419.9	1.57	1.51	-0.43	11.8	-9.8
13,741.0	89.10	1.10	12,518.3	779.7	-418.1	0.74	-0.74	0.00	12.7	-12.4

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13,834.0	90.70	359.50	12,518.5	872.7	-417.6	2.43	1.72	-1.72	12.9	-13.5
13,928.0	90.10	358.70	12,517.8	966.7	-419.1	1.06	-0.64	-0.85	12.3	-12.8
14,022.0	90.80	357.50	12,517.1	1,060.6	-422.2	1.48	0.74	-1.28	11.6	-10.4
14,116.0	90.60	356.90	12,515.9	1,154.5	-426.8	0.67	-0.21	-0.64	10.5	-6.5
14,210.0	91.30	357.40	12,514.4	1,248.4	-431.5	0.92	0.74	0.53	9.0	-2.5
14,303.0	92.20	356.90	12,511.5	1,341.2	-436.1	1.11	0.97	-0.54	6.2	1.4
14,397.0	90.10	357.70	12,509.6	1,435.1	-440.6	2.39	-2.23	0.85	4.3	5.1
14,491.0	89.10	357.90	12,510.3	1,529.0	-444.2	1.08	-1.06	0.21	5.0	8.0
14,584.0	90.10	358.90	12,510.9	1,622.0	-446.8	1.52	1.08	1.08	5.7	9.9
14,678.0	89.70	359.50	12,511.1	1,716.0	-448.1	0.77	-0.43	0.64	5.9	10.5
14,772.0	92.50	0.10	12,509.3	1,809.9	-448.4	3.05	2.98	0.64	4.2	10.1
14,866.0	94.60	0.40	12,503.5	1,903.7	-448.0	2.26	2.23	0.32	-1.6	9.0
14,960.0	90.90	359.50	12,499.0	1,997.6	-448.1	4.05	-3.94	-0.96	-6.1	8.4
15,042.5	88.97	358.71	12,499.1	2,080.1	-449.4	2.53	-2.34	-0.96	-5.9	9.0
TGT 1(Nep 10 SC 704H)										
15,054.0	88.70	358.60	12,499.3	2,091.6	-449.6	2.53	-2.34	-0.96	-5.7	9.2
15,147.0	87.40	358.90	12,502.5	2,184.5	-451.7	1.43	-1.40	0.32	-2.3	10.5
15,240.0	86.60	358.60	12,507.3	2,277.4	-453.7	0.92	-0.86	-0.32	2.8	11.9
15,334.0	87.00	359.60	12,512.6	2,371.2	-455.2	1.14	0.43	1.06	8.3	12.6
15,427.0	88.40	0.40	12,516.3	2,464.1	-455.2	1.73	1.51	0.86	12.3	11.9
15,521.0	89.50	0.60	12,518.0	2,558.1	-454.3	1.19	1.17	0.21	14.3	10.4
15,614.0	91.40	1.20	12,517.3	2,651.1	-452.9	2.14	2.04	0.65	13.8	8.2
15,708.0	91.50	359.60	12,514.9	2,745.1	-452.2	1.70	0.11	-1.70	11.7	6.9
15,802.0	89.10	359.50	12,514.4	2,839.0	-453.0	2.56	-2.55	-0.11	11.5	6.9
15,896.0	85.00	0.30	12,519.3	2,932.9	-453.1	4.44	-4.36	0.85	16.5	6.4
15,990.0	88.20	1.30	12,524.8	3,026.7	-451.8	3.57	3.40	1.06	22.4	4.3
16,084.0	90.20	1.10	12,526.1	3,120.7	-449.8	2.14	2.13	-0.21	23.9	1.6



PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Neptune 10 State Com
 Well: #704H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #704H
 TVD Reference: KB= 25' @ 3632.0usft (H&P 642)
 MD Reference: KB= 25' @ 3632.0usft (H&P 642)
 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)
16,177.0	91.60	359.20	12,524.7	3,213.7	-449.6	2.54	1.51	-2.04	22.7	0.7
16,271.0	92.00	358.90	12,521.7	3,307.6	-451.2	0.53	0.43	-0.32	20.0	1.5
16,366.0	88.40	358.50	12,521.4	3,402.6	-453.3	3.81	-3.79	-0.42	20.0	3.0
16,459.0	86.00	358.00	12,525.9	3,495.4	-456.2	2.64	-2.58	-0.54	24.7	5.1
16,553.0	87.50	358.80	12,531.3	3,589.2	-458.8	1.81	1.60	0.85	30.3	7.0
16,647.0	88.40	356.10	12,534.6	3,683.0	-463.0	3.03	0.96	-2.87	33.9	10.5
16,741.0	88.10	357.90	12,537.5	3,776.9	-467.9	1.94	-0.32	1.91	37.1	14.7
16,835.0	87.50	358.50	12,541.1	3,870.8	-470.8	0.90	-0.64	0.64	40.9	16.9
17,000.0	91.50	359.10	12,542.6	4,035.7	-474.3	2.45	2.42	0.36	42.8	19.1
17,094.0	93.30	359.10	12,538.6	4,129.6	-475.7	1.91	1.91	0.00	39.1	19.9
17,188.0	91.20	0.50	12,534.9	4,223.5	-476.1	2.68	-2.23	1.49	35.7	19.5
17,281.0	89.50	1.20	12,534.4	4,316.5	-474.7	1.98	-1.83	0.75	35.4	17.4
17,375.0	88.80	1.20	12,535.8	4,410.5	-472.7	0.74	-0.74	0.00	37.0	14.7
17,468.0	89.10	2.20	12,537.5	4,503.4	-470.0	1.12	0.32	1.08	39.0	11.3
17,562.0	89.60	3.30	12,538.5	4,597.3	-465.5	1.29	0.53	1.17	40.3	6.1
17,647.7	90.78	3.30	12,538.2	4,682.8	-460.5	1.38	1.38	0.00	40.2	0.5
TGT 2(Nep 10 SC 704H)										
17,656.0	90.90	3.30	12,538.1	4,691.1	-460.0	1.38	1.38	0.00	40.1	0.0
17,749.0	92.20	3.30	12,535.6	4,783.9	-454.7	1.40	1.40	0.00	38.0	-6.1
17,843.0	92.20	1.10	12,532.0	4,877.8	-451.1	2.34	0.00	-2.34	34.8	-10.4
17,937.0	90.70	0.20	12,529.6	4,971.7	-450.0	1.86	-1.60	-0.96	32.8	-12.2
18,031.0	89.10	357.30	12,529.8	5,065.7	-452.1	3.52	-1.70	-3.09	33.3	-10.9
18,125.0	88.30	356.70	12,531.9	5,159.6	-457.0	1.06	-0.85	-0.64	35.8	-6.7
18,219.0	89.80	356.10	12,533.5	5,253.4	-462.9	1.72	1.60	-0.64	37.7	-1.5
18,313.0	88.40	357.90	12,534.9	5,347.2	-467.8	2.43	-1.49	1.91	39.6	2.7
18,407.0	88.00	358.40	12,537.9	5,441.1	-470.8	0.68	-0.43	0.53	42.9	5.1
18,500.0	89.10	358.50	12,540.2	5,534.0	-473.4	1.19	1.18	0.11	45.6	6.9

Company: EOG Resources - Midland
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TVD Reference: KB= 25' @ 3632.0usft (H&P 642)
MD Reference: KB= 25' @ 3632.0usft (H&P 642)
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)
18,593.0	89.10	358.70	12,541.7	5,627.0	-475.6	0.22	0.00	0.22	47.5	8.4
18,687.0	90.10	359.90	12,542.4	5,721.0	-476.8	1.66	1.06	1.28	48.5	8.9
18,781.0	89.10	1.80	12,543.0	5,815.0	-475.4	2.28	-1.06	2.02	49.5	6.8
18,875.0	91.40	1.80	12,542.6	5,908.9	-472.4	2.45	2.45	0.00	49.5	3.1
18,968.0	95.30	2.30	12,537.2	6,001.7	-469.1	4.23	4.19	0.54	44.4	-0.9
19,062.0	93.80	2.40	12,529.7	6,095.3	-465.3	1.60	-1.60	0.11	37.4	-5.5
19,156.0	91.50	0.10	12,525.4	6,189.2	-463.2	3.46	-2.45	-2.45	33.4	-8.2
19,250.0	89.40	358.20	12,524.6	6,283.1	-464.6	3.01	-2.23	-2.02	33.0	-7.5
19,343.0	86.70	358.50	12,527.8	6,376.0	-467.3	2.92	-2.90	0.32	36.6	-5.6
19,437.0	88.00	359.60	12,532.1	6,469.9	-468.9	1.81	1.38	1.17	41.3	-4.7
19,530.0	89.50	358.90	12,534.2	6,562.9	-470.1	1.78	1.61	-0.75	43.7	-4.2
19,624.0	88.20	359.20	12,536.1	6,656.9	-471.6	1.42	-1.38	0.32	45.9	-3.4
19,718.0	91.90	359.90	12,536.0	6,750.8	-472.4	4.01	3.94	0.74	46.2	-3.3
19,812.0	90.60	358.80	12,533.9	6,844.8	-473.4	1.81	-1.38	-1.17	44.6	-3.0
19,905.0	92.20	0.20	12,531.7	6,937.8	-474.2	2.29	1.72	1.51	42.7	-2.9
19,999.0	92.60	359.20	12,527.7	7,031.7	-474.7	1.14	0.43	-1.06	39.1	-3.1
20,088.0	94.50	359.30	12,522.2	7,120.5	-475.9	2.14	2.13	0.11	34.0	-2.6
20,154.4	93.02	359.02	12,517.9	7,186.7	-476.9	2.27	-2.23	-0.43	29.9	-2.1
TGT 3(Nep 10 SC 704H)										
20,182.0	92.40	358.90	12,516.6	7,214.3	-477.4	2.27	-2.23	-0.42	28.5	-1.8
20,275.0	91.10	358.90	12,513.7	7,307.3	-479.2	1.40	-1.40	0.00	24.3	-0.7
20,369.0	90.30	359.80	12,512.6	7,401.2	-480.2	1.28	-0.85	0.96	21.6	-0.4
20,462.0	89.70	0.50	12,512.6	7,494.2	-480.0	0.99	-0.65	0.75	20.1	-1.3
20,556.0	89.20	0.20	12,513.5	7,588.2	-479.4	0.62	-0.53	-0.32	19.5	-2.6
20,650.0	88.70	359.60	12,515.2	7,682.2	-479.6	0.83	-0.53	-0.64	19.7	-3.2
20,744.0	88.80	0.00	12,517.2	7,776.2	-479.9	0.44	0.11	0.43	20.3	-3.6
20,837.0	88.10	0.10	12,519.8	7,869.2	-479.8	0.76	-0.75	0.11	21.3	-4.3

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TVD Reference: KB= 25' @ 3632.0usft (H&P 642)
MD Reference: KB= 25' @ 3632.0usft (H&P 642)
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)
20,932.0	89.80	359.70	12,521.5	7,964.1	-480.0	1.84	1.79	-0.42	21.5	-4.9
21,025.0	89.60	359.60	12,522.0	8,057.1	-480.6	0.24	-0.22	-0.11	20.5	-5.0
21,119.0	89.30	359.80	12,522.9	8,151.1	-481.0	0.38	-0.32	0.21	19.9	-5.3
21,212.0	90.20	359.20	12,523.3	8,244.1	-481.9	1.16	0.97	-0.65	18.8	-5.1
21,306.0	88.60	359.20	12,524.3	8,338.1	-483.2	1.70	-1.70	0.00	18.2	-4.5
21,400.0	89.70	359.40	12,525.7	8,432.1	-484.3	1.19	1.17	0.21	18.1	-4.1
21,493.0	90.60	0.00	12,525.4	8,525.1	-484.8	1.16	0.97	0.65	16.4	-4.3
21,588.0	90.30	359.80	12,524.7	8,620.1	-485.0	0.38	-0.32	-0.21	14.1	-4.9
21,682.0	89.50	359.20	12,524.8	8,714.1	-485.8	1.06	-0.85	-0.64	12.7	-4.8
21,775.0	91.70	358.80	12,523.9	8,807.1	-487.4	2.40	2.37	-0.43	10.2	-3.9
21,869.0	91.90	358.90	12,520.9	8,901.0	-489.3	0.24	0.21	0.11	5.8	-2.7
21,962.0	91.70	358.20	12,518.0	8,993.9	-491.7	0.78	-0.22	-0.75	1.4	-1.0
22,056.0	91.00	357.90	12,515.8	9,087.8	-494.8	0.81	-0.74	-0.32	-2.4	1.5
22,150.0	90.50	358.20	12,514.6	9,181.8	-498.0	0.62	-0.53	0.32	-5.1	3.9
22,243.0	90.60	358.30	12,513.7	9,274.7	-500.9	0.15	0.11	0.11	-7.5	6.1
22,337.0	89.00	358.10	12,514.0	9,368.7	-503.8	1.72	-1.70	-0.21	-8.7	8.3
22,430.0	88.80	358.20	12,515.8	9,461.6	-506.8	0.24	-0.22	0.11	-8.4	10.6
22,525.0	88.80	358.60	12,517.8	9,556.5	-509.5	0.42	0.00	0.42	-8.0	12.6
22,565.3	88.64	358.71	12,518.7	9,596.9	-510.4	0.48	-0.40	0.27	-7.7	13.2
LTP (Nep 10 SC 704H)										
22,565.5	88.64	358.71	12,518.7	9,597.0	-510.4	0.48	-0.40	0.27	-7.7	13.2
LTP Crossing, MD:22565.5', TVD:12518.7', N/S:9597.0', E/W:-510.4', INC:88.64										
22,600.0	88.50	358.80	12,519.5	9,631.5	-511.2	0.48	-0.40	0.27	-7.4	13.7
Final MWD Survey (MD= 22600.0')										
22,665.0	88.50	358.80	12,521.2	9,696.5	-512.6	0.00	0.00	0.00	-6.8	14.6
Final Bit Projection (MD= 22665.0') - PBHL (Nep 10 SC 704H)										

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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)	
12,654.8	12,502.1	-302.0	-430.8	FTP Crossing, MD:12654.8', TVD:12502.1', N/S:-302.0', E/W:-430.8', INC:70.62
22,565.5	12,518.7	9,597.0	-510.4	LTP Crossing, MD:22565.5', TVD:12518.7', N/S:9597.0', E/W:-510.4', INC:88.64
22,600.0	12,519.5	9,631.5	-511.2	Final MWD Survey (MD= 22600.0')
22,665.0	12,521.2	9,696.5	-512.6	Final Bit Projection (MD= 22665.0')

Checked By: _____ Approved By: _____ Date: _____



Neptune 10 State Com #704H Drilling Well Sketch.xls