CONCHO



# Concho Resources, Inc.

**Lea County, NM (NAD 27 NME)**
**(Van Gogh) Sec-11_T-24-S_R-34-E**
**Van Gogh Fee #101H**

**OWB**

**Design: AWB**

# Standard Survey Report

**30 July, 2019**

INTREPID

| | | | |
|---|---|---|---|
| **Company:** | Concho Resources, Inc. | **Local Co-ordinate Reference:** | Well Van Gogh Fee #101H |
| **Project:** | Lea County, NM (NAD 27 NME) | **TVD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Site:** | (Van Gogh) Sec-11_T-24-S_R-34-E | **MD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Well:** | Van Gogh Fee #101H | **North Reference:** | Grid |
| **Wellbore:** | OWB | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | AWB | **Database:** | EDM 5000.15 Single User Db |

**Project** Lea County, NM (NAD 27 NME)

| | | | |
|---|---|---|---|
| **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** (Van Gogh) Sec-11_T-24-S_R-34-E

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 451,669.30 usft | **Latitude:** | 32° 14' 18.959 N |
| **From:** | Map | **Easting:** | 776,140.50 usft | **Longitude:** | 103° 26' 24.855 W |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.48 ° |

**Well** Van Gogh Fee #101H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 usft | **Northing:** | 451,669.30 usfl | **Latitude:** | 32° 14' 18.959 N |
| | **+E/-W** | 0.0 usft | **Easting:** | 776,140.50 usfl | **Longitude:** | 103° 26' 24.855 W |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | usfl | **Ground Level:** | 3,469.9 usfl |

**Wellbore** OWB

| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
|---|---|---|---|---|---|
| | IGRF2015 | 06/12/19 | 6.68 | 60.07 | 47,755.75838515 |

**Design** AWB

**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 | 179.51 |

**Survey Program** **Date** 07/30/19

| **From (usft)** | **To (usft)** | **Survey (Wellbore)** | **Tool Name** | **Description** |
|---|---|---|---|---|
| 100.0 | 8,363.0 | SDI Gyro Svys (OWB) | Standard Keeper 104 | Standard Wireline Keeper ver 1.0.4 |
| 8,437.0 | 8,437.0 | Intrepid MWD-1 (OWB) | MWD | OWSG MWD - Standard |
| 8,534.0 | 14,030.0 | Intrepid MWD Crv/Lat (OWB) | MWD+IFR1+MS | MWD + IFR1 + Multi-Station Correction |

**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 | 0.16 | 15.35 | 100.0 | 0.1 | 0.0 | -0.1 | 0.16 | 0.16 | 0.00 |
| 125.0 | 0.29 | 27.00 | 125.0 | 0.2 | 0.1 | -0.2 | 0.55 | 0.52 | 46.60 |
| 150.0 | 0.18 | 14.34 | 150.0 | 0.3 | 0.1 | -0.3 | 0.48 | -0.44 | -50.64 |
| 175.0 | 0.25 | 14.81 | 175.0 | 0.4 | 0.1 | -0.4 | 0.28 | 0.28 | 1.88 |
| 200.0 | 0.19 | 356.46 | 200.0 | 0.5 | 0.1 | -0.5 | 0.37 | -0.24 | -73.40 |
| 225.0 | 0.13 | 30.05 | 225.0 | 0.6 | 0.2 | -0.6 | 0.44 | -0.24 | 134.36 |
| 250.0 | 0.06 | 72.36 | 250.0 | 0.6 | 0.2 | -0.6 | 0.38 | -0.28 | 169.24 |
| 275.0 | 0.08 | 88.16 | 275.0 | 0.6 | 0.2 | -0.6 | 0.11 | 0.08 | 63.20 |

| | | | |
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| **Site:** | (Van Gogh) Sec-11_T-24-S_R-34-E | **MD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Well:** | Van Gogh Fee #101H | **North Reference:** | Grid |
| **Wellbore:** | OWB | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | AWB | **Database:** | EDM 5000.15 Single User Db |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 300.0 | 0.19 | 119.46 | 300.0 | 0.6 | 0.3 | -0.6 | 0.51 | 0.44 | 125.20 |
| 325.0 | 0.12 | 100.87 | 325.0 | 0.6 | 0.3 | -0.6 | 0.34 | -0.28 | -74.36 |
| 350.0 | 0.21 | 97.50 | 350.0 | 0.5 | 0.4 | -0.5 | 0.36 | 0.36 | -13.48 |
| 375.0 | 0.25 | 79.43 | 375.0 | 0.6 | 0.5 | -0.5 | 0.33 | 0.16 | -72.28 |
| 400.0 | 0.28 | 80.22 | 400.0 | 0.6 | 0.6 | -0.6 | 0.12 | 0.12 | 3.16 |
| 425.0 | 0.21 | 68.57 | 425.0 | 0.6 | 0.7 | -0.6 | 0.34 | -0.28 | -46.60 |
| 450.0 | 0.19 | 99.95 | 450.0 | 0.6 | 0.8 | -0.6 | 0.44 | -0.08 | 125.52 |
| 475.0 | 0.29 | 66.43 | 475.0 | 0.6 | 0.9 | -0.6 | 0.67 | 0.40 | -134.08 |
| 500.0 | 0.38 | 68.61 | 500.0 | 0.7 | 1.0 | -0.7 | 0.36 | 0.36 | 8.72 |
| 525.0 | 0.37 | 75.21 | 525.0 | 0.7 | 1.2 | -0.7 | 0.18 | -0.04 | 26.40 |
| 550.0 | 0.49 | 73.69 | 550.0 | 0.8 | 1.4 | -0.8 | 0.48 | 0.48 | -6.08 |
| 575.0 | 0.51 | 76.05 | 575.0 | 0.8 | 1.6 | -0.8 | 0.11 | 0.08 | 9.44 |
| 600.0 | 0.69 | 80.49 | 600.0 | 0.9 | 1.8 | -0.9 | 0.74 | 0.72 | 17.76 |
| 625.0 | 0.88 | 82.54 | 625.0 | 0.9 | 2.2 | -0.9 | 0.77 | 0.76 | 8.20 |
| 650.0 | 1.06 | 83.71 | 650.0 | 1.0 | 2.6 | -1.0 | 0.72 | 0.72 | 4.68 |
| 675.0 | 1.15 | 84.42 | 675.0 | 1.0 | 3.1 | -1.0 | 0.36 | 0.36 | 2.84 |
| 692.0 | 1.20 | 81.89 | 692.0 | 1.1 | 3.4 | -1.1 | 0.41 | 0.28 | -14.87 |
| **Rustler** | | | | | | | | | |
| 700.0 | 1.22 | 80.77 | 700.0 | 1.1 | 3.6 | -1.1 | 0.41 | 0.29 | -14.02 |
| 725.0 | 1.22 | 81.36 | 725.0 | 1.2 | 4.1 | -1.2 | 0.05 | 0.00 | 2.36 |
| 750.0 | 1.32 | 80.73 | 750.0 | 1.3 | 4.7 | -1.2 | 0.40 | 0.40 | -2.52 |
| 775.0 | 1.20 | 86.29 | 775.0 | 1.3 | 5.2 | -1.3 | 0.68 | -0.48 | 22.24 |
| 800.0 | 1.32 | 81.54 | 800.0 | 1.4 | 5.8 | -1.4 | 0.64 | 0.48 | -19.00 |
| 825.0 | 1.11 | 78.75 | 824.9 | 1.5 | 6.3 | -1.4 | 0.87 | -0.84 | -11.16 |
| 850.0 | 1.12 | 79.55 | 849.9 | 1.6 | 6.8 | -1.5 | 0.07 | 0.04 | 3.20 |
| 875.0 | 1.05 | 80.96 | 874.9 | 1.7 | 7.2 | -1.6 | 0.30 | -0.28 | 5.64 |
| 900.0 | 1.05 | 78.39 | 899.9 | 1.7 | 7.7 | -1.7 | 0.19 | 0.00 | -10.28 |
| 925.0 | 1.11 | 80.17 | 924.9 | 1.8 | 8.1 | -1.8 | 0.27 | 0.24 | 7.12 |
| 950.0 | 1.09 | 77.14 | 949.9 | 1.9 | 8.6 | -1.9 | 0.25 | -0.08 | -12.12 |
| 975.0 | 1.09 | 77.36 | 974.9 | 2.0 | 9.1 | -2.0 | 0.02 | 0.00 | 0.88 |
| 1,000.0 | 1.11 | 75.03 | 999.9 | 2.1 | 9.5 | -2.1 | 0.20 | 0.08 | -9.32 |
| 1,025.0 | 1.09 | 74.52 | 1,024.9 | 2.3 | 10.0 | -2.2 | 0.09 | -0.08 | -2.04 |
| 1,050.0 | 1.09 | 73.58 | 1,049.9 | 2.4 | 10.5 | -2.3 | 0.07 | 0.00 | -3.76 |
| 1,075.0 | 1.08 | 76.19 | 1,074.9 | 2.5 | 10.9 | -2.4 | 0.20 | -0.04 | 10.44 |
| 1,100.0 | 0.98 | 78.66 | 1,099.9 | 2.6 | 11.4 | -2.5 | 0.44 | -0.40 | 9.88 |
| 1,125.0 | 1.12 | 74.27 | 1,124.9 | 2.7 | 11.8 | -2.6 | 0.65 | 0.56 | -17.56 |
| 1,150.0 | 1.10 | 72.12 | 1,149.9 | 2.9 | 12.3 | -2.8 | 0.18 | -0.08 | -8.60 |
| 1,175.0 | 1.10 | 67.57 | 1,174.9 | 3.0 | 12.7 | -2.9 | 0.35 | 0.00 | -18.20 |
| 1,200.0 | 1.11 | 68.55 | 1,199.9 | 3.2 | 13.2 | -3.1 | 0.09 | 0.04 | 3.92 |
| 1,225.0 | 1.19 | 69.75 | 1,224.9 | 3.4 | 13.6 | -3.3 | 0.33 | 0.32 | 4.80 |
| 1,243.1 | 1.16 | 70.70 | 1,243.0 | 3.5 | 14.0 | -3.4 | 0.19 | -0.16 | 5.23 |
| **TOS** | | | | | | | | | |
| 1,250.0 | 1.15 | 71.07 | 1,249.9 | 3.6 | 14.1 | -3.4 | 0.19 | -0.16 | 5.41 |

| | | | |
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| **Wellbore:** | OWB | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | AWB | **Database:** | EDM 5000.15 Single User Db |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 1,275.0 | 1.32 | 68.88 | 1,274.9 | 3.8 | 14.6 | -3.6 | 0.71 | 0.68 | -8.76 |
| 1,300.0 | 1.34 | 66.37 | 1,299.9 | 4.0 | 15.1 | -3.8 | 0.25 | 0.08 | -10.04 |
| 1,325.0 | 1.29 | 64.14 | 1,324.9 | 4.2 | 15.7 | -4.1 | 0.29 | -0.20 | -8.92 |
| 1,350.0 | 1.34 | 66.64 | 1,349.8 | 4.5 | 16.2 | -4.3 | 0.30 | 0.20 | 10.00 |
| 1,375.0 | 1.47 | 64.66 | 1,374.8 | 4.7 | 16.7 | -4.6 | 0.56 | 0.52 | -7.92 |
| 1,400.0 | 1.46 | 61.27 | 1,399.8 | 5.0 | 17.3 | -4.8 | 0.35 | -0.04 | -13.56 |
| 1,425.0 | 1.47 | 62.09 | 1,424.8 | 5.3 | 17.9 | -5.1 | 0.09 | 0.04 | 3.28 |
| 1,450.0 | 1.40 | 59.70 | 1,449.8 | 5.6 | 18.4 | -5.4 | 0.37 | -0.28 | -9.56 |
| 1,475.0 | 1.37 | 53.53 | 1,474.8 | 5.9 | 18.9 | -5.8 | 0.61 | -0.12 | -24.68 |
| 1,500.0 | 1.39 | 48.89 | 1,499.8 | 6.3 | 19.4 | -6.1 | 0.45 | 0.08 | -18.56 |
| 1,525.0 | 1.28 | 45.36 | 1,524.8 | 6.7 | 19.8 | -6.5 | 0.55 | -0.44 | -14.12 |
| 1,550.0 | 1.35 | 44.85 | 1,549.8 | 7.1 | 20.2 | -6.9 | 0.28 | 0.28 | -2.04 |
| 1,575.0 | 1.37 | 47.14 | 1,574.8 | 7.5 | 20.7 | -7.3 | 0.23 | 0.08 | 9.16 |
| 1,600.0 | 1.50 | 41.09 | 1,599.8 | 8.0 | 21.1 | -7.8 | 0.80 | 0.52 | -24.20 |
| 1,625.0 | 1.42 | 41.77 | 1,624.8 | 8.5 | 21.5 | -8.3 | 0.33 | -0.32 | 2.72 |
| 1,650.0 | 1.46 | 40.20 | 1,649.8 | 8.9 | 21.9 | -8.7 | 0.22 | 0.16 | -6.28 |
| 1,675.0 | 1.45 | 36.81 | 1,674.7 | 9.4 | 22.3 | -9.2 | 0.35 | -0.04 | -13.56 |
| 1,700.0 | 1.56 | 37.21 | 1,699.7 | 9.9 | 22.7 | -9.8 | 0.44 | 0.44 | 1.60 |
| 1,725.0 | 1.54 | 35.07 | 1,724.7 | 10.5 | 23.1 | -10.3 | 0.24 | -0.08 | -8.56 |
| 1,750.0 | 1.48 | 35.32 | 1,749.7 | 11.0 | 23.5 | -10.8 | 0.24 | -0.24 | 1.00 |
| 1,775.0 | 1.54 | 32.35 | 1,774.7 | 11.6 | 23.9 | -11.4 | 0.39 | 0.24 | -11.88 |
| 1,800.0 | 1.50 | 30.38 | 1,799.7 | 12.1 | 24.2 | -11.9 | 0.26 | -0.16 | -7.88 |
| 1,825.0 | 1.39 | 27.92 | 1,824.7 | 12.7 | 24.5 | -12.5 | 0.51 | -0.44 | -9.84 |
| 1,850.0 | 1.43 | 27.93 | 1,849.7 | 13.2 | 24.8 | -13.0 | 0.16 | 0.16 | 0.04 |
| 1,875.0 | 1.50 | 33.03 | 1,874.7 | 13.8 | 25.1 | -13.6 | 0.59 | 0.28 | 20.40 |
| 1,900.0 | 1.47 | 30.41 | 1,899.7 | 14.3 | 25.5 | -14.1 | 0.30 | -0.12 | -10.48 |
| 1,925.0 | 1.45 | 26.26 | 1,924.7 | 14.9 | 25.8 | -14.7 | 0.43 | -0.08 | -16.60 |
| 1,950.0 | 1.46 | 28.07 | 1,949.7 | 15.5 | 26.1 | -15.2 | 0.19 | 0.04 | 7.24 |
| 1,975.0 | 1.67 | 24.74 | 1,974.6 | 16.1 | 26.4 | -15.8 | 0.92 | 0.84 | -13.32 |
| 2,000.0 | 1.70 | 19.82 | 1,999.6 | 16.8 | 26.6 | -16.5 | 0.59 | 0.12 | -19.68 |
| 2,025.0 | 1.66 | 21.48 | 2,024.6 | 17.4 | 26.9 | -17.2 | 0.25 | -0.16 | 6.64 |
| 2,050.0 | 1.69 | 21.22 | 2,049.6 | 18.1 | 27.2 | -17.9 | 0.12 | 0.12 | -1.04 |
| 2,075.0 | 1.74 | 20.52 | 2,074.6 | 18.8 | 27.4 | -18.6 | 0.22 | 0.20 | -2.80 |
| 2,100.0 | 1.77 | 18.84 | 2,099.6 | 19.5 | 27.7 | -19.3 | 0.24 | 0.12 | -6.72 |
| 2,125.0 | 1.85 | 18.59 | 2,124.6 | 20.3 | 27.9 | -20.0 | 0.32 | 0.32 | -1.00 |
| 2,150.0 | 1.85 | 17.55 | 2,149.6 | 21.1 | 28.2 | -20.8 | 0.13 | 0.00 | -4.16 |
| 2,175.0 | 1.89 | 18.25 | 2,174.6 | 21.8 | 28.4 | -21.6 | 0.18 | 0.16 | 2.80 |
| 2,200.0 | 1.91 | 16.48 | 2,199.5 | 22.6 | 28.7 | -22.4 | 0.25 | 0.08 | -7.08 |
| 2,225.0 | 1.94 | 14.63 | 2,224.5 | 23.4 | 28.9 | -23.2 | 0.28 | 0.12 | -7.40 |
| 2,250.0 | 1.95 | 16.07 | 2,249.5 | 24.3 | 29.1 | -24.0 | 0.20 | 0.04 | 5.76 |
| 2,275.0 | 1.99 | 15.49 | 2,274.5 | 25.1 | 29.4 | -24.8 | 0.18 | 0.16 | -2.32 |
| 2,300.0 | 2.10 | 17.06 | 2,299.5 | 25.9 | 29.6 | -25.7 | 0.49 | 0.44 | 6.28 |
| 2,325.0 | 1.94 | 12.76 | 2,324.5 | 26.8 | 29.9 | -26.5 | 0.88 | -0.64 | -17.20 |
| 2,350.0 | 1.51 | 3.80 | 2,349.5 | 27.5 | 30.0 | -27.3 | 2.03 | -1.72 | -35.84 |

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|---|---|---|---|---|---|---|---|---|---|
| 2,375.0 | 1.16 | 348.24 | 2,374.4 | 28.1 | 29.9 | -27.8 | 2.00 | -1.40 | -62.24 |
| 2,400.0 | 1.07 | 337.01 | 2,399.4 | 28.6 | 29.8 | -28.3 | 0.94 | -0.36 | -44.92 |
| 2,425.0 | 1.01 | 334.61 | 2,424.4 | 29.0 | 29.6 | -28.7 | 0.30 | -0.24 | -9.60 |
| 2,450.0 | 0.98 | 325.26 | 2,449.4 | 29.4 | 29.4 | -29.1 | 0.66 | -0.12 | -37.40 |
| 2,475.0 | 1.02 | 323.67 | 2,474.4 | 29.7 | 29.1 | -29.5 | 0.19 | 0.16 | -6.36 |
| 2,500.0 | 0.98 | 321.70 | 2,499.4 | 30.1 | 28.9 | -29.8 | 0.21 | -0.16 | -7.88 |
| 2,525.0 | 1.04 | 322.53 | 2,524.4 | 30.4 | 28.6 | -30.2 | 0.25 | 0.24 | 3.32 |
| 2,550.0 | 1.04 | 322.85 | 2,549.4 | 30.8 | 28.3 | -30.5 | 0.02 | 0.00 | 1.28 |
| 2,575.0 | 1.03 | 322.41 | 2,574.4 | 31.1 | 28.1 | -30.9 | 0.05 | -0.04 | -1.76 |
| 2,600.0 | 1.03 | 319.61 | 2,599.4 | 31.5 | 27.8 | -31.2 | 0.20 | 0.00 | -11.20 |
| 2,625.0 | 0.89 | 313.51 | 2,624.4 | 31.8 | 27.5 | -31.5 | 0.69 | -0.56 | -24.40 |
| 2,650.0 | 0.85 | 312.77 | 2,649.4 | 32.0 | 27.2 | -31.8 | 0.17 | -0.16 | -2.96 |
| 2,675.0 | 0.85 | 311.74 | 2,674.4 | 32.3 | 26.9 | -32.1 | 0.06 | 0.00 | -4.12 |
| 2,700.0 | 0.82 | 311.89 | 2,699.4 | 32.5 | 26.7 | -32.3 | 0.12 | -0.12 | 0.60 |
| 2,725.0 | 0.60 | 302.13 | 2,724.4 | 32.7 | 26.4 | -32.5 | 1.00 | -0.88 | -39.04 |
| 2,750.0 | 0.19 | 314.37 | 2,749.4 | 32.8 | 26.3 | -32.6 | 1.67 | -1.64 | 48.96 |
| 2,775.0 | 0.15 | 15.22 | 2,774.4 | 32.9 | 26.3 | -32.7 | 0.70 | -0.16 | 243.40 |
| 2,800.0 | 0.16 | 24.81 | 2,799.4 | 32.9 | 26.3 | -32.7 | 0.11 | 0.04 | 38.36 |
| 2,825.0 | 0.21 | 18.13 | 2,824.4 | 33.0 | 26.3 | -32.8 | 0.22 | 0.20 | -26.72 |
| 2,850.0 | 0.15 | 356.86 | 2,849.4 | 33.1 | 26.3 | -32.9 | 0.36 | -0.24 | -85.08 |
| 2,875.0 | 0.10 | 42.65 | 2,874.4 | 33.1 | 26.3 | -32.9 | 0.43 | -0.20 | 183.16 |
| 2,900.0 | 0.15 | 20.31 | 2,899.4 | 33.2 | 26.4 | -33.0 | 0.28 | 0.20 | -89.36 |
| 2,925.0 | 0.14 | 33.88 | 2,924.4 | 33.2 | 26.4 | -33.0 | 0.14 | -0.04 | 54.28 |
| 2,950.0 | 0.17 | 56.06 | 2,949.4 | 33.3 | 26.4 | -33.1 | 0.27 | 0.12 | 88.72 |
| 2,975.0 | 0.41 | 64.77 | 2,974.4 | 33.3 | 26.6 | -33.1 | 0.97 | 0.96 | 34.84 |
| 3,000.0 | 0.49 | 63.06 | 2,999.4 | 33.4 | 26.7 | -33.2 | 0.32 | 0.32 | -6.84 |
| 3,025.0 | 0.56 | 67.32 | 3,024.4 | 33.5 | 26.9 | -33.3 | 0.32 | 0.28 | 17.04 |
| 3,050.0 | 0.60 | 62.64 | 3,049.4 | 33.6 | 27.2 | -33.4 | 0.25 | 0.16 | -18.72 |
| 3,075.0 | 0.60 | 62.14 | 3,074.4 | 33.8 | 27.4 | -33.5 | 0.02 | 0.00 | -2.00 |
| 3,100.0 | 0.61 | 50.01 | 3,099.4 | 33.9 | 27.6 | -33.7 | 0.51 | 0.04 | -48.52 |
| 3,125.0 | 0.64 | 50.08 | 3,124.4 | 34.1 | 27.8 | -33.8 | 0.12 | 0.12 | 0.28 |
| 3,150.0 | 0.73 | 55.00 | 3,149.4 | 34.3 | 28.1 | -34.0 | 0.43 | 0.36 | 19.68 |
| 3,175.0 | 0.96 | 53.66 | 3,174.4 | 34.5 | 28.4 | -34.2 | 0.92 | 0.92 | -5.36 |
| 3,200.0 | 0.94 | 54.07 | 3,199.4 | 34.7 | 28.7 | -34.5 | 0.08 | -0.08 | 1.64 |
| 3,225.0 | 1.05 | 55.18 | 3,224.4 | 35.0 | 29.0 | -34.7 | 0.45 | 0.44 | 4.44 |
| 3,250.0 | 1.23 | 55.71 | 3,249.4 | 35.3 | 29.5 | -35.0 | 0.72 | 0.72 | 2.12 |
| 3,275.0 | 1.33 | 53.65 | 3,274.4 | 35.6 | 29.9 | -35.3 | 0.44 | 0.40 | -8.24 |
| 3,300.0 | 1.39 | 55.11 | 3,299.4 | 35.9 | 30.4 | -35.7 | 0.28 | 0.24 | 5.84 |
| 3,325.0 | 1.53 | 53.98 | 3,324.3 | 36.3 | 30.9 | -36.0 | 0.57 | 0.56 | -4.52 |
| 3,350.0 | 1.55 | 56.46 | 3,349.3 | 36.7 | 31.5 | -36.4 | 0.28 | 0.08 | 9.92 |
| 3,375.0 | 1.75 | 64.94 | 3,374.3 | 37.0 | 32.1 | -36.7 | 1.26 | 0.80 | 33.92 |
| 3,400.0 | 2.13 | 76.26 | 3,399.3 | 37.3 | 32.9 | -37.0 | 2.15 | 1.52 | 45.28 |
| 3,425.0 | 2.47 | 84.86 | 3,424.3 | 37.5 | 33.9 | -37.2 | 1.93 | 1.36 | 34.40 |

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|---|---|---|---|
| **Company:** | Concho Resources, Inc. | **Local Co-ordinate Reference:** | Well Van Gogh Fee #101H |
| **Project:** | Lea County, NM (NAD 27 NME) | **TVD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Site:** | (Van Gogh) Sec-11_T-24-S_R-34-E | **MD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Well:** | Van Gogh Fee #101H | **North Reference:** | Grid |
| **Wellbore:** | OWB | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | AWB | **Database:** | EDM 5000.15 Single User Db |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 3,450.0 | 2.60 | 93.31 | 3,449.3 | 37.5 | 35.0 | -37.2 | 1.58 | 0.52 | 33.80 |
| 3,475.0 | 2.54 | 102.00 | 3,474.2 | 37.3 | 36.1 | -37.0 | 1.58 | -0.24 | 34.76 |
| 3,500.0 | 2.55 | 110.20 | 3,499.2 | 37.0 | 37.2 | -36.7 | 1.46 | 0.04 | 32.80 |
| 3,525.0 | 2.70 | 118.69 | 3,524.2 | 36.5 | 38.2 | -36.2 | 1.67 | 0.60 | 33.96 |
| 3,550.0 | 2.79 | 121.83 | 3,549.2 | 35.9 | 39.2 | -35.6 | 0.70 | 0.36 | 12.56 |
| 3,575.0 | 2.67 | 123.21 | 3,574.1 | 35.3 | 40.2 | -35.0 | 0.55 | -0.48 | 5.52 |
| 3,600.0 | 2.78 | 121.89 | 3,599.1 | 34.7 | 41.2 | -34.3 | 0.51 | 0.44 | -5.28 |
| 3,625.0 | 2.82 | 120.33 | 3,624.1 | 34.0 | 42.3 | -33.7 | 0.34 | 0.16 | -6.24 |
| 3,650.0 | 2.86 | 122.39 | 3,649.0 | 33.4 | 43.3 | -33.0 | 0.44 | 0.16 | 8.24 |
| 3,675.0 | 2.70 | 129.89 | 3,674.0 | 32.7 | 44.3 | -32.3 | 1.59 | -0.64 | 30.00 |
| 3,700.0 | 2.42 | 147.55 | 3,699.0 | 31.8 | 45.0 | -31.5 | 3.33 | -1.12 | 70.64 |
| 3,725.0 | 2.35 | 165.51 | 3,724.0 | 30.9 | 45.5 | -30.5 | 2.99 | -0.28 | 71.84 |
| 3,750.0 | 2.36 | 176.90 | 3,749.0 | 29.9 | 45.6 | -29.5 | 1.87 | 0.04 | 45.56 |
| 3,775.0 | 2.37 | 179.05 | 3,773.9 | 28.9 | 45.7 | -28.5 | 0.36 | 0.04 | 8.60 |
| 3,800.0 | 2.48 | 179.48 | 3,798.9 | 27.8 | 45.7 | -27.4 | 0.45 | 0.44 | 1.72 |
| 3,825.0 | 2.43 | 179.28 | 3,823.9 | 26.7 | 45.7 | -26.3 | 0.20 | -0.20 | -0.80 |
| 3,850.0 | 2.26 | 183.27 | 3,848.9 | 25.7 | 45.7 | -25.3 | 0.94 | -0.68 | 15.96 |
| 3,875.0 | 2.03 | 197.43 | 3,873.8 | 24.8 | 45.5 | -24.4 | 2.30 | -0.92 | 56.64 |
| 3,900.0 | 1.88 | 213.97 | 3,898.8 | 24.0 | 45.1 | -23.7 | 2.33 | -0.60 | 66.16 |
| 3,925.0 | 1.84 | 225.51 | 3,923.8 | 23.4 | 44.6 | -23.0 | 1.50 | -0.16 | 46.16 |
| 3,950.0 | 1.96 | 226.61 | 3,948.8 | 22.8 | 44.0 | -22.5 | 0.50 | 0.48 | 4.40 |
| 3,975.0 | 2.00 | 228.37 | 3,973.8 | 22.3 | 43.4 | -21.9 | 0.29 | 0.16 | 7.04 |
| 4,000.0 | 2.20 | 226.05 | 3,998.8 | 21.6 | 42.7 | -21.3 | 0.87 | 0.80 | -9.28 |
| 4,025.0 | 1.82 | 227.83 | 4,023.8 | 21.0 | 42.1 | -20.7 | 1.54 | -1.52 | 7.12 |
| 4,050.0 | 2.10 | 225.38 | 4,048.7 | 20.4 | 41.5 | -20.1 | 1.17 | 1.12 | -9.80 |
| 4,075.0 | 1.71 | 222.42 | 4,073.7 | 19.9 | 40.9 | -19.5 | 1.61 | -1.56 | -11.84 |
| 4,100.0 | 1.71 | 225.17 | 4,098.7 | 19.3 | 40.4 | -19.0 | 0.33 | 0.00 | 11.00 |
| 4,125.0 | 1.59 | 225.43 | 4,123.7 | 18.8 | 39.8 | -18.5 | 0.48 | -0.48 | 1.04 |
| 4,150.0 | 1.44 | 221.13 | 4,148.7 | 18.3 | 39.4 | -18.0 | 0.75 | -0.60 | -17.20 |
| 4,175.0 | 1.36 | 215.55 | 4,173.7 | 17.8 | 39.0 | -17.5 | 0.63 | -0.32 | -22.32 |
| 4,200.0 | 1.29 | 207.42 | 4,198.7 | 17.4 | 38.7 | -17.0 | 0.80 | -0.28 | -32.52 |
| 4,225.0 | 1.23 | 204.33 | 4,223.7 | 16.9 | 38.5 | -16.5 | 0.36 | -0.24 | -12.36 |
| 4,250.0 | 1.27 | 196.83 | 4,248.7 | 16.4 | 38.3 | -16.0 | 0.67 | 0.16 | -30.00 |
| 4,275.0 | 1.33 | 181.07 | 4,273.7 | 15.8 | 38.2 | -15.5 | 1.45 | 0.24 | -63.04 |
| 4,300.0 | 1.41 | 171.72 | 4,298.7 | 15.2 | 38.2 | -14.9 | 0.95 | 0.32 | -37.40 |
| 4,325.0 | 1.65 | 154.74 | 4,323.7 | 14.6 | 38.4 | -14.2 | 2.04 | 0.96 | -67.92 |
| 4,350.0 | 2.02 | 149.75 | 4,348.6 | 13.9 | 38.8 | -13.5 | 1.61 | 1.48 | -19.96 |
| 4,375.0 | 2.33 | 144.08 | 4,373.6 | 13.1 | 39.3 | -12.7 | 1.51 | 1.24 | -22.68 |
| 4,400.0 | 2.51 | 142.27 | 4,398.6 | 12.2 | 40.0 | -11.9 | 0.78 | 0.72 | -7.24 |
| 4,425.0 | 2.68 | 142.90 | 4,423.6 | 11.3 | 40.6 | -11.0 | 0.69 | 0.68 | 2.52 |
| 4,450.0 | 3.04 | 144.79 | 4,448.5 | 10.3 | 41.4 | -10.0 | 1.49 | 1.44 | 7.56 |
| 4,475.0 | 3.26 | 147.67 | 4,473.5 | 9.2 | 42.1 | -8.8 | 1.08 | 0.88 | 11.52 |
| 4,500.0 | 3.20 | 149.58 | 4,498.5 | 8.0 | 42.9 | -7.6 | 0.49 | -0.24 | 7.64 |

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|---|---|---|---|
| **Company:** | Concho Resources, Inc. | **Local Co-ordinate Reference:** | Well Van Gogh Fee #101H |
| **Project:** | Lea County, NM (NAD 27 NME) | **TVD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Site:** | (Van Gogh) Sec-11_T-24-S_R-34-E | **MD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Well:** | Van Gogh Fee #101H | **North Reference:** | Grid |
| **Wellbore:** | OWB | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | AWB | **Database:** | EDM 5000.15 Single User Db |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 4,525.0 | 2.73 | 163.45 | 4,523.4 | 6.8 | 43.4 | -6.4 | 3.42 | -1.88 | 55.48 |
| 4,550.0 | 2.33 | 180.74 | 4,548.4 | 5.7 | 43.6 | -5.4 | 3.43 | -1.60 | 69.16 |
| 4,575.0 | 2.14 | 190.57 | 4,573.4 | 4.8 | 43.5 | -4.4 | 1.71 | -0.76 | 39.32 |
| 4,600.0 | 2.03 | 195.29 | 4,598.4 | 3.9 | 43.3 | -3.5 | 0.82 | -0.44 | 18.88 |
| 4,625.0 | 2.06 | 198.44 | 4,623.4 | 3.0 | 43.0 | -2.7 | 0.47 | 0.12 | 12.60 |
| 4,650.0 | 1.84 | 190.24 | 4,648.3 | 2.2 | 42.8 | -1.8 | 1.42 | -0.88 | -32.80 |
| 4,675.0 | 1.76 | 181.46 | 4,673.3 | 1.4 | 42.7 | -1.1 | 1.15 | -0.32 | -35.12 |
| 4,700.0 | 1.90 | 174.83 | 4,698.3 | 0.6 | 42.7 | -0.3 | 1.01 | 0.56 | -26.52 |
| 4,725.0 | 2.08 | 164.57 | 4,723.3 | -0.2 | 42.9 | 0.6 | 1.59 | 0.72 | -41.04 |
| 4,750.0 | 2.21 | 157.12 | 4,748.3 | -1.1 | 43.2 | 1.5 | 1.23 | 0.52 | -29.80 |
| 4,775.0 | 2.25 | 156.51 | 4,773.3 | -2.0 | 43.6 | 2.4 | 0.19 | 0.16 | -2.44 |
| 4,800.0 | 2.25 | 159.02 | 4,798.2 | -2.9 | 44.0 | 3.3 | 0.39 | 0.00 | 10.04 |
| 4,825.0 | 2.10 | 163.45 | 4,823.2 | -3.8 | 44.3 | 4.2 | 0.90 | -0.60 | 17.72 |
| 4,850.0 | 2.00 | 174.45 | 4,848.2 | -4.7 | 44.4 | 5.1 | 1.62 | -0.40 | 44.00 |
| 4,863.8 | 1.96 | 175.98 | 4,862.0 | -5.2 | 44.5 | 5.5 | 0.50 | -0.32 | 11.11 |
| **BOS (Fletcher)** | | | | | | | | | |
| 4,875.0 | 1.92 | 177.28 | 4,873.2 | -5.5 | 44.5 | 5.9 | 0.50 | -0.31 | 11.57 |
| 4,900.0 | 1.83 | 188.39 | 4,898.2 | -6.3 | 44.5 | 6.7 | 1.50 | -0.36 | 44.44 |
| 4,925.0 | 1.78 | 206.53 | 4,923.2 | -7.1 | 44.2 | 7.5 | 2.28 | -0.20 | 72.56 |
| 4,950.0 | 1.93 | 223.41 | 4,948.2 | -7.7 | 43.8 | 8.1 | 2.26 | 0.60 | 67.52 |
| 4,975.0 | 2.24 | 232.50 | 4,973.1 | -8.3 | 43.1 | 8.7 | 1.81 | 1.24 | 36.36 |
| 5,000.0 | 2.37 | 238.33 | 4,998.1 | -8.9 | 42.3 | 9.3 | 1.07 | 0.52 | 23.32 |
| 5,025.0 | 1.93 | 254.67 | 5,023.1 | -9.3 | 41.4 | 9.7 | 3.00 | -1.76 | 65.36 |
| 5,050.0 | 1.88 | 282.66 | 5,048.1 | -9.3 | 40.6 | 9.7 | 3.69 | -0.20 | 111.96 |
| 5,075.0 | 2.07 | 312.35 | 5,073.1 | -8.9 | 39.9 | 9.3 | 4.11 | 0.76 | 118.76 |
| 5,100.0 | 2.37 | 324.29 | 5,098.1 | -8.2 | 39.2 | 8.5 | 2.20 | 1.20 | 47.76 |
| 5,125.0 | 2.41 | 324.79 | 5,123.0 | -7.4 | 38.6 | 7.7 | 0.18 | 0.16 | 2.00 |
| 5,148.0 | 2.40 | 326.40 | 5,146.0 | -6.6 | 38.1 | 6.9 | 0.30 | -0.04 | 7.00 |
| **LMAR (Top Delaware)** | | | | | | | | | |
| 5,150.0 | 2.40 | 326.54 | 5,148.0 | -6.5 | 38.1 | 6.8 | 0.30 | -0.04 | 7.02 |
| 5,174.0 | 2.39 | 326.18 | 5,172.0 | -5.6 | 37.5 | 6.0 | 0.07 | -0.04 | -1.50 |
| **BLCN** | | | | | | | | | |
| 5,175.0 | 2.39 | 326.16 | 5,173.0 | -5.6 | 37.5 | 5.9 | 0.10 | -0.05 | -1.93 |
| 5,200.0 | 2.51 | 326.67 | 5,198.0 | -4.7 | 36.9 | 5.0 | 0.49 | 0.48 | 2.04 |
| 5,225.0 | 2.47 | 327.64 | 5,222.9 | -3.8 | 36.3 | 4.1 | 0.23 | -0.16 | 3.88 |
| 5,250.0 | 2.45 | 327.40 | 5,247.9 | -2.9 | 35.7 | 3.2 | 0.09 | -0.08 | -0.96 |
| 5,275.0 | 2.51 | 326.90 | 5,272.9 | -2.0 | 35.1 | 2.3 | 0.26 | 0.24 | -2.00 |
| 5,300.0 | 2.50 | 325.27 | 5,297.9 | -1.1 | 34.5 | 1.4 | 0.29 | -0.04 | -6.52 |
| 5,325.0 | 2.45 | 324.66 | 5,322.9 | -0.2 | 33.9 | 0.5 | 0.23 | -0.20 | -2.44 |
| 5,350.0 | 2.42 | 323.64 | 5,347.8 | 0.7 | 33.3 | -0.4 | 0.21 | -0.12 | -4.08 |
| 5,375.0 | 2.46 | 317.75 | 5,372.8 | 1.5 | 32.6 | -1.2 | 1.02 | 0.16 | -23.56 |
| 5,400.0 | 2.37 | 310.30 | 5,397.8 | 2.2 | 31.8 | -1.9 | 1.31 | -0.36 | -29.80 |
| 5,425.0 | 2.25 | 300.38 | 5,422.8 | 2.8 | 31.0 | -2.5 | 1.67 | -0.48 | -39.68 |
| 5,450.0 | 2.28 | 294.49 | 5,447.7 | 3.2 | 30.2 | -3.0 | 0.94 | 0.12 | -23.56 |

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|---|---|---|---|
| **Company:** | Concho Resources, Inc. | **Local Co-ordinate Reference:** | Well Van Gogh Fee #101H |
| **Project:** | Lea County, NM (NAD 27 NME) | **TVD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Site:** | (Van Gogh) Sec-11_T-24-S_R-34-E | **MD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Well:** | Van Gogh Fee #101H | **North Reference:** | Grid |
| **Wellbore:** | OWB | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | AWB | **Database:** | EDM 5000.15 Single User Db |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 5,475.0 | 2.29 | 293.38 | 5,472.7 | 3.6 | 29.2 | -3.4 | 0.18 | 0.04 | -4.44 |
| 5,500.0 | 2.25 | 293.17 | 5,497.7 | 4.0 | 28.3 | -3.8 | 0.16 | -0.16 | -0.84 |
| 5,525.0 | 2.35 | 291.59 | 5,522.7 | 4.4 | 27.4 | -4.2 | 0.47 | 0.40 | -6.32 |
| 5,550.0 | 2.81 | 296.03 | 5,547.7 | 4.9 | 26.4 | -4.7 | 2.00 | 1.84 | 17.76 |
| 5,575.0 | 4.45 | 305.73 | 5,572.6 | 5.7 | 25.0 | -5.5 | 6.98 | 6.56 | 38.80 |
| 5,600.0 | 5.33 | 314.57 | 5,597.5 | 7.1 | 23.4 | -6.9 | 4.62 | 3.52 | 35.36 |
| 5,625.0 | 5.62 | 316.80 | 5,622.4 | 8.8 | 21.8 | -8.6 | 1.44 | 1.16 | 8.92 |
| 5,650.0 | 5.71 | 316.53 | 5,647.3 | 10.6 | 20.1 | -10.4 | 0.38 | 0.36 | -1.08 |
| 5,675.0 | 5.83 | 317.29 | 5,672.2 | 12.4 | 18.4 | -12.3 | 0.57 | 0.48 | 3.04 |
| 5,700.0 | 5.90 | 317.33 | 5,697.0 | 14.3 | 16.6 | -14.2 | 0.28 | 0.28 | 0.16 |
| 5,725.0 | 5.81 | 316.53 | 5,721.9 | 16.2 | 14.9 | -16.0 | 0.49 | -0.36 | -3.20 |
| 5,750.0 | 5.75 | 317.41 | 5,746.8 | 18.0 | 13.2 | -17.9 | 0.43 | -0.24 | 3.52 |
| 5,775.0 | 5.91 | 318.07 | 5,771.6 | 19.9 | 11.5 | -19.8 | 0.69 | 0.64 | 2.64 |
| 5,800.0 | 5.90 | 317.32 | 5,796.5 | 21.8 | 9.7 | -21.7 | 0.31 | -0.04 | -3.00 |
| 5,825.0 | 5.91 | 317.38 | 5,821.4 | 23.7 | 8.0 | -23.6 | 0.05 | 0.04 | 0.24 |
| 5,850.0 | 5.67 | 318.01 | 5,846.2 | 25.6 | 6.3 | -25.5 | 0.99 | -0.96 | 2.52 |
| 5,875.0 | 5.86 | 318.16 | 5,871.1 | 27.4 | 4.6 | -27.4 | 0.76 | 0.76 | 0.60 |
| 5,900.0 | 6.01 | 317.52 | 5,896.0 | 29.3 | 2.9 | -29.3 | 0.66 | 0.60 | -2.56 |
| 5,925.0 | 6.00 | 317.91 | 5,920.8 | 31.3 | 1.1 | -31.3 | 0.17 | -0.04 | 1.56 |
| 5,950.0 | 6.04 | 323.96 | 5,945.7 | 33.3 | -0.5 | -33.3 | 2.54 | 0.16 | 24.20 |
| 5,975.0 | 6.08 | 334.56 | 5,970.6 | 35.6 | -1.9 | -35.6 | 4.47 | 0.16 | 42.40 |
| 6,000.0 | 6.24 | 340.78 | 5,995.4 | 38.0 | -2.9 | -38.1 | 2.74 | 0.64 | 24.88 |
| 6,025.0 | 6.25 | 342.20 | 6,020.3 | 40.6 | -3.8 | -40.7 | 0.62 | 0.04 | 5.68 |
| 6,050.0 | 6.31 | 342.05 | 6,045.1 | 43.2 | -4.6 | -43.3 | 0.25 | 0.24 | -0.60 |
| 6,075.0 | 5.94 | 341.40 | 6,070.0 | 45.8 | -5.4 | -45.8 | 1.51 | -1.48 | -2.60 |
| 6,081.0 | 5.94 | 341.57 | 6,076.0 | 46.4 | -5.6 | -46.4 | 0.30 | 0.00 | 2.88 |
| **CYCN** | | | | | | | | | |
| 6,100.0 | 5.94 | 342.12 | 6,094.9 | 48.2 | -6.2 | -48.3 | 0.30 | 0.00 | 2.88 |
| 6,125.0 | 5.90 | 341.22 | 6,119.7 | 50.7 | -7.1 | -50.7 | 0.40 | -0.16 | -3.60 |
| 6,150.0 | 5.86 | 341.94 | 6,144.6 | 53.1 | -7.9 | -53.2 | 0.34 | -0.16 | 2.88 |
| 6,175.0 | 5.89 | 342.19 | 6,169.5 | 55.5 | -8.7 | -55.6 | 0.16 | 0.12 | 1.00 |
| 6,200.0 | 5.86 | 343.97 | 6,194.3 | 58.0 | -9.4 | -58.1 | 0.74 | -0.12 | 7.12 |
| 6,225.0 | 5.87 | 347.53 | 6,219.2 | 60.4 | -10.0 | -60.5 | 1.46 | 0.04 | 14.24 |
| 6,250.0 | 5.58 | 359.78 | 6,244.1 | 62.9 | -10.3 | -63.0 | 5.01 | -1.16 | 49.00 |
| 6,275.0 | 5.66 | 13.54 | 6,268.9 | 65.3 | -10.0 | -65.4 | 5.39 | 0.32 | 55.04 |
| 6,300.0 | 5.62 | 14.99 | 6,293.8 | 67.7 | -9.4 | -67.8 | 0.59 | -0.16 | 5.80 |
| 6,325.0 | 5.58 | 14.13 | 6,318.7 | 70.1 | -8.8 | -70.1 | 0.37 | -0.16 | -3.44 |
| 6,350.0 | 5.42 | 14.16 | 6,343.6 | 72.4 | -8.2 | -72.5 | 0.64 | -0.64 | 0.12 |
| 6,375.0 | 5.60 | 13.75 | 6,368.5 | 74.7 | -7.6 | -74.8 | 0.74 | 0.72 | -1.64 |
| 6,400.0 | 5.59 | 13.43 | 6,393.4 | 77.1 | -7.1 | -77.1 | 0.13 | -0.04 | -1.28 |
| 6,425.0 | 5.47 | 13.40 | 6,418.2 | 79.4 | -6.5 | -79.5 | 0.48 | -0.48 | -0.12 |
| 6,450.0 | 5.50 | 13.30 | 6,443.1 | 81.8 | -6.0 | -81.8 | 0.13 | 0.12 | -0.40 |
| 6,475.0 | 5.46 | 13.28 | 6,468.0 | 84.1 | -5.4 | -84.1 | 0.16 | -0.16 | -0.08 |
| 6,500.0 | 5.54 | 14.10 | 6,492.9 | 86.4 | -4.8 | -86.5 | 0.45 | 0.32 | 3.28 |

| | | | |
|---|---|---|---|
| **Company:** | Concho Resources, Inc. | **Local Co-ordinate Reference:** | Well Van Gogh Fee #101H |
| **Project:** | Lea County, NM (NAD 27 NME) | **TVD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Site:** | (Van Gogh) Sec-11_T-24-S_R-34-E | **MD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Well:** | Van Gogh Fee #101H | **North Reference:** | Grid |
| **Wellbore:** | OWB | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | AWB | **Database:** | EDM 5000.15 Single User Db |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 6,525.0 | 5.54 | 13.39 | 6,517.8 | 88.8 | -4.3 | -88.8 | 0.27 | 0.00 | -2.84 |
| 6,550.0 | 5.49 | 13.39 | 6,542.7 | 91.1 | -3.7 | -91.1 | 0.20 | -0.20 | 0.00 |
| 6,575.0 | 5.52 | 13.13 | 6,567.6 | 93.4 | -3.2 | -93.5 | 0.16 | 0.12 | -1.04 |
| 6,600.0 | 5.60 | 13.58 | 6,592.4 | 95.8 | -2.6 | -95.8 | 0.36 | 0.32 | 1.80 |
| 6,625.0 | 5.58 | 13.67 | 6,617.3 | 98.2 | -2.0 | -98.2 | 0.09 | -0.08 | 0.36 |
| 6,650.0 | 5.73 | 13.20 | 6,642.2 | 100.5 | -1.5 | -100.6 | 0.63 | 0.60 | -1.88 |
| 6,675.0 | 5.44 | 13.36 | 6,667.1 | 102.9 | -0.9 | -102.9 | 1.16 | -1.16 | 0.64 |
| 6,700.0 | 5.45 | 13.10 | 6,692.0 | 105.2 | -0.4 | -105.2 | 0.11 | 0.04 | -1.04 |
| 6,725.0 | 5.66 | 13.40 | 6,716.8 | 107.6 | 0.2 | -107.6 | 0.85 | 0.84 | 1.20 |
| 6,750.0 | 5.49 | 14.19 | 6,741.7 | 109.9 | 0.8 | -109.9 | 0.75 | -0.68 | 3.16 |
| 6,775.0 | 5.40 | 13.96 | 6,766.6 | 112.2 | 1.4 | -112.2 | 0.37 | -0.36 | -0.92 |
| 6,800.0 | 4.44 | 16.71 | 6,791.5 | 114.3 | 1.9 | -114.3 | 3.95 | -3.84 | 11.00 |
| 6,825.0 | 3.11 | 17.14 | 6,816.5 | 115.9 | 2.4 | -115.9 | 5.32 | -5.32 | 1.72 |
| 6,850.0 | 2.49 | 14.85 | 6,841.4 | 117.1 | 2.7 | -117.0 | 2.52 | -2.48 | -9.16 |
| 6,875.0 | 2.42 | 14.06 | 6,866.4 | 118.1 | 3.0 | -118.1 | 0.31 | -0.28 | -3.16 |
| 6,900.0 | 2.33 | 15.02 | 6,891.4 | 119.1 | 3.3 | -119.1 | 0.39 | -0.36 | 3.84 |
| 6,925.0 | 2.32 | 14.01 | 6,916.4 | 120.1 | 3.5 | -120.0 | 0.17 | -0.04 | -4.04 |
| 6,950.0 | 2.41 | 13.60 | 6,941.3 | 121.1 | 3.8 | -121.0 | 0.37 | 0.36 | -1.64 |
| 6,975.0 | 2.33 | 13.88 | 6,966.3 | 122.1 | 4.0 | -122.0 | 0.32 | -0.32 | 1.12 |
| 7,000.0 | 2.30 | 14.62 | 6,991.3 | 123.1 | 4.3 | -123.0 | 0.17 | -0.12 | 2.96 |
| 7,025.0 | 2.26 | 12.64 | 7,016.3 | 124.0 | 4.5 | -124.0 | 0.35 | -0.16 | -7.92 |
| 7,050.0 | 2.14 | 13.48 | 7,041.3 | 125.0 | 4.7 | -124.9 | 0.50 | -0.48 | 3.36 |
| 7,075.0 | 2.16 | 12.77 | 7,066.3 | 125.9 | 4.9 | -125.8 | 0.13 | 0.08 | -2.84 |
| 7,100.0 | 2.10 | 10.48 | 7,091.2 | 126.8 | 5.1 | -126.7 | 0.42 | -0.24 | -9.16 |
| 7,125.0 | 2.10 | 12.10 | 7,116.2 | 127.7 | 5.3 | -127.6 | 0.24 | 0.00 | 6.48 |
| 7,150.0 | 2.12 | 13.11 | 7,141.2 | 128.6 | 5.5 | -128.5 | 0.17 | 0.08 | 4.04 |
| 7,175.0 | 2.14 | 12.45 | 7,166.2 | 129.5 | 5.7 | -129.4 | 0.13 | 0.08 | -2.64 |
| 7,200.0 | 2.22 | 8.83 | 7,191.2 | 130.4 | 5.9 | -130.4 | 0.64 | 0.32 | -14.48 |
| 7,225.0 | 2.16 | 6.08 | 7,216.1 | 131.4 | 6.0 | -131.3 | 0.48 | -0.24 | -11.00 |
| 7,250.0 | 2.06 | 9.66 | 7,241.1 | 132.3 | 6.1 | -132.2 | 0.66 | -0.40 | 14.32 |
| 7,275.0 | 2.02 | 7.81 | 7,266.1 | 133.2 | 6.3 | -133.1 | 0.31 | -0.16 | -7.40 |
| 7,300.0 | 2.08 | 9.41 | 7,291.1 | 134.0 | 6.4 | -134.0 | 0.33 | 0.24 | 6.40 |
| 7,325.0 | 2.01 | 9.37 | 7,316.1 | 134.9 | 6.5 | -134.9 | 0.28 | -0.28 | -0.16 |
| 7,350.0 | 2.09 | 8.68 | 7,341.1 | 135.8 | 6.7 | -135.7 | 0.33 | 0.32 | -2.76 |
| 7,375.0 | 2.18 | 7.37 | 7,366.0 | 136.7 | 6.8 | -136.7 | 0.41 | 0.36 | -5.24 |
| 7,400.0 | 2.11 | 6.12 | 7,391.0 | 137.7 | 6.9 | -137.6 | 0.34 | -0.28 | -5.00 |
| 7,425.0 | 2.24 | 7.89 | 7,416.0 | 138.6 | 7.0 | -138.5 | 0.59 | 0.52 | 7.08 |
| 7,450.0 | 2.11 | 6.47 | 7,441.0 | 139.5 | 7.1 | -139.5 | 0.56 | -0.52 | -5.68 |
| 7,475.0 | 2.23 | 9.28 | 7,466.0 | 140.5 | 7.3 | -140.4 | 0.64 | 0.48 | 11.24 |
| 7,500.0 | 2.16 | 5.47 | 7,491.0 | 141.4 | 7.4 | -141.4 | 0.65 | -0.28 | -15.24 |
| 7,525.0 | 2.21 | 6.85 | 7,515.9 | 142.4 | 7.5 | -142.3 | 0.29 | 0.20 | 5.52 |
| 7,529.1 | 2.17 | 7.23 | 7,520.0 | 142.5 | 7.5 | -142.5 | 1.07 | -1.01 | 9.32 |
| **BYCN** | | | | | | | | | |

| | | | |
|---|---|---|---|
| **Company:** | Concho Resources, Inc. | **Local Co-ordinate Reference:** | Well Van Gogh Fee #101H |
| **Project:** | Lea County, NM (NAD 27 NME) | **TVD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Site:** | (Van Gogh) Sec-11_T-24-S_R-34-E | **MD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Well:** | Van Gogh Fee #101H | **North Reference:** | Grid |
| **Wellbore:** | OWB | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | AWB | **Database:** | EDM 5000.15 Single User Db |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 7,550.0 | 1.96 | 9.43 | 7,540.9 | 143.3 | 7.6 | -143.2 | 1.07 | -1.00 | 10.51 |
| 7,575.0 | 2.19 | 7.07 | 7,565.9 | 144.2 | 7.8 | -144.1 | 0.98 | 0.92 | -9.44 |
| 7,600.0 | 1.99 | 9.17 | 7,590.9 | 145.1 | 7.9 | -145.0 | 0.86 | -0.80 | 8.40 |
| 7,625.0 | 2.04 | 8.97 | 7,615.9 | 145.9 | 8.0 | -145.9 | 0.20 | 0.20 | -0.80 |
| 7,650.0 | 2.02 | 10.99 | 7,640.9 | 146.8 | 8.2 | -146.7 | 0.30 | -0.08 | 8.08 |
| 7,675.0 | 1.98 | 12.18 | 7,665.8 | 147.7 | 8.4 | -147.6 | 0.23 | -0.16 | 4.76 |
| 7,700.0 | 2.02 | 13.47 | 7,690.8 | 148.5 | 8.5 | -148.4 | 0.24 | 0.16 | 5.16 |
| 7,725.0 | 1.98 | 16.17 | 7,715.8 | 149.4 | 8.8 | -149.3 | 0.41 | -0.16 | 10.80 |
| 7,750.0 | 1.98 | 14.84 | 7,740.8 | 150.2 | 9.0 | -150.1 | 0.18 | 0.00 | -5.32 |
| 7,775.0 | 2.05 | 14.83 | 7,765.8 | 151.0 | 9.2 | -151.0 | 0.28 | 0.28 | -0.04 |
| 7,800.0 | 2.01 | 14.08 | 7,790.8 | 151.9 | 9.4 | -151.8 | 0.19 | -0.16 | -3.00 |
| 7,825.0 | 2.00 | 15.31 | 7,815.8 | 152.8 | 9.7 | -152.7 | 0.18 | -0.04 | 4.92 |
| 7,850.0 | 1.90 | 18.83 | 7,840.7 | 153.6 | 9.9 | -153.5 | 0.62 | -0.40 | 14.08 |
| 7,875.0 | 2.03 | 19.38 | 7,865.7 | 154.4 | 10.2 | -154.3 | 0.53 | 0.52 | 2.20 |
| 7,900.0 | 1.91 | 20.12 | 7,890.7 | 155.2 | 10.5 | -155.1 | 0.49 | -0.48 | 2.96 |
| 7,925.0 | 2.06 | 20.99 | 7,915.7 | 156.0 | 10.8 | -155.9 | 0.61 | 0.60 | 3.48 |
| 7,950.0 | 2.21 | 19.17 | 7,940.7 | 156.9 | 11.1 | -156.8 | 0.66 | 0.60 | -7.28 |
| 7,975.0 | 2.09 | 26.21 | 7,965.7 | 157.7 | 11.5 | -157.6 | 1.16 | -0.48 | 28.16 |
| 8,000.0 | 2.23 | 28.13 | 7,990.6 | 158.6 | 11.9 | -158.5 | 0.63 | 0.56 | 7.68 |
| 8,025.0 | 2.47 | 50.82 | 8,015.6 | 159.3 | 12.6 | -159.2 | 3.82 | 0.96 | 90.76 |
| 8,050.0 | 2.81 | 79.78 | 8,040.6 | 159.8 | 13.6 | -159.7 | 5.44 | 1.36 | 115.84 |
| 8,075.0 | 3.05 | 86.81 | 8,065.6 | 159.9 | 14.8 | -159.8 | 1.73 | 0.96 | 28.12 |
| 8,100.0 | 3.17 | 91.48 | 8,090.5 | 160.0 | 16.2 | -159.8 | 1.12 | 0.48 | 18.68 |
| 8,125.0 | 3.05 | 101.95 | 8,115.5 | 159.8 | 17.5 | -159.6 | 2.32 | -0.48 | 41.88 |
| 8,150.0 | 3.01 | 110.90 | 8,140.5 | 159.4 | 18.8 | -159.3 | 1.90 | -0.16 | 35.80 |
| 8,175.0 | 3.03 | 115.68 | 8,165.4 | 158.9 | 20.0 | -158.7 | 1.01 | 0.08 | 19.12 |
| 8,200.0 | 3.00 | 117.82 | 8,190.4 | 158.3 | 21.2 | -158.1 | 0.47 | -0.12 | 8.56 |
| 8,225.0 | 3.03 | 134.46 | 8,215.4 | 157.5 | 22.2 | -157.3 | 3.49 | 0.12 | 66.56 |
| 8,250.0 | 3.57 | 155.91 | 8,240.3 | 156.4 | 23.0 | -156.2 | 5.35 | 2.16 | 85.80 |
| 8,275.0 | 4.10 | 163.48 | 8,265.3 | 154.8 | 23.6 | -154.6 | 2.93 | 2.12 | 30.28 |
| 8,300.0 | 4.27 | 163.91 | 8,290.2 | 153.1 | 24.1 | -152.8 | 0.69 | 0.68 | 1.72 |
| 8,325.0 | 4.12 | 163.58 | 8,315.1 | 151.3 | 24.6 | -151.1 | 0.61 | -0.60 | -1.32 |
| 8,350.0 | 3.92 | 160.88 | 8,340.1 | 149.6 | 25.2 | -149.4 | 1.10 | -0.80 | -10.80 |
| 8,363.0 | 3.91 | 161.67 | 8,353.0 | 148.8 | 25.4 | -148.6 | 0.42 | -0.08 | 6.08 |
| 8,437.0 | 3.47 | 192.04 | 8,426.9 | 144.2 | 25.8 | -144.0 | 2.67 | -0.59 | 41.04 |
| 8,534.0 | 3.12 | 204.66 | 8,523.7 | 138.9 | 24.0 | -138.7 | 0.83 | -0.36 | 13.01 |
| 8,565.0 | 5.44 | 196.44 | 8,554.6 | 136.8 | 23.3 | -136.6 | 7.72 | 7.48 | -26.52 |
| 8,597.0 | 8.45 | 191.03 | 8,586.4 | 133.0 | 22.4 | -132.8 | 9.62 | 9.41 | -16.91 |
| 8,629.0 | 11.55 | 187.17 | 8,617.9 | 127.5 | 21.6 | -127.3 | 9.91 | 9.69 | -12.06 |
| 8,660.0 | 15.06 | 185.19 | 8,648.1 | 120.4 | 20.8 | -120.2 | 11.42 | 11.32 | -6.39 |
| 8,692.0 | 17.37 | 184.02 | 8,678.8 | 111.5 | 20.1 | -111.3 | 7.29 | 7.22 | -3.66 |
| 8,696.7 | 17.73 | 184.21 | 8,683.3 | 110.1 | 20.0 | -109.9 | 7.86 | 7.76 | 3.98 |
| **FTP @ 8696.7'MD, 100'FNL & 1289.5'FEL** | | | | | | | | | |
| 8,723.0 | 19.78 | 185.13 | 8,708.2 | 101.7 | 19.3 | -101.5 | 7.86 | 7.78 | 3.51 |

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|---|---|---|---|
| **Company:** | Concho Resources, Inc. | **Local Co-ordinate Reference:** | Well Van Gogh Fee #101H |
| **Project:** | Lea County, NM (NAD 27 NME) | **TVD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Site:** | (Van Gogh) Sec-11_T-24-S_R-34-E | **MD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Well:** | Van Gogh Fee #101H | **North Reference:** | Grid |
| **Wellbore:** | OWB | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | AWB | **Database:** | EDM 5000.15 Single User Db |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 8,755.0 | 21.42 | 189.28 | 8,738.1 | 90.5 | 17.9 | -90.3 | 6.86 | 5.13 | 12.97 |
| 8,786.0 | 24.03 | 189.91 | 8,766.7 | 78.7 | 15.9 | -78.6 | 8.46 | 8.42 | 2.03 |
| 8,817.0 | 26.16 | 188.68 | 8,794.8 | 65.7 | 13.8 | -65.6 | 7.07 | 6.87 | -3.97 |
| 8,849.0 | 29.32 | 186.99 | 8,823.1 | 51.0 | 11.7 | -50.9 | 10.18 | 9.88 | -5.28 |
| 8,880.0 | 31.64 | 187.47 | 8,849.8 | 35.4 | 9.8 | -35.3 | 7.52 | 7.48 | 1.55 |
| 8,911.1 | 33.84 | 188.44 | 8,876.0 | 18.7 | 7.4 | -18.6 | 7.28 | 7.08 | 3.11 |
| **Bone Sprg (BSGL)** | | | | | | | | | |
| 8,915.0 | 34.12 | 188.55 | 8,879.2 | 16.6 | 7.1 | -16.5 | 7.28 | 7.10 | 2.91 |
| 8,947.0 | 37.48 | 187.08 | 8,905.2 | -2.0 | 4.6 | 2.0 | 10.84 | 10.50 | -4.59 |
| 8,968.5 | 39.18 | 186.05 | 8,922.0 | -15.2 | 3.0 | 15.2 | 8.46 | 7.93 | -4.79 |
| **U Avalon Sh** | | | | | | | | | |
| 8,978.0 | 39.94 | 185.62 | 8,929.4 | -21.2 | 2.4 | 21.3 | 8.46 | 7.96 | -4.54 |
| 9,009.0 | 42.77 | 184.49 | 8,952.6 | -41.6 | 0.6 | 41.7 | 9.44 | 9.13 | -3.65 |
| 9,038.0 | 46.00 | 183.71 | 8,973.4 | -61.9 | -0.8 | 61.9 | 11.30 | 11.14 | -2.69 |
| 9,070.0 | 50.72 | 182.16 | 8,994.6 | -85.8 | -2.0 | 85.7 | 15.19 | 14.75 | -4.84 |
| 9,101.0 | 55.52 | 181.49 | 9,013.2 | -110.5 | -2.8 | 110.5 | 15.58 | 15.48 | -2.16 |
| 9,133.0 | 61.71 | 180.63 | 9,029.9 | -137.8 | -3.3 | 137.8 | 19.48 | 19.34 | -2.69 |
| 9,165.0 | 67.87 | 179.65 | 9,043.5 | -166.8 | -3.4 | 166.7 | 19.45 | 19.25 | -3.06 |
| 9,196.0 | 74.14 | 180.18 | 9,053.6 | -196.1 | -3.3 | 196.0 | 20.29 | 20.23 | 1.71 |
| 9,216.0 | 78.31 | 180.93 | 9,058.3 | -215.5 | -3.5 | 215.4 | 21.17 | 20.85 | 3.75 |
| 9,296.0 | 88.70 | 181.90 | 9,067.4 | -294.8 | -5.5 | 294.8 | 13.04 | 12.99 | 1.21 |
| 9,390.0 | 89.51 | 180.93 | 9,068.8 | -388.8 | -7.8 | 388.7 | 1.34 | 0.86 | -1.03 |
| 9,485.0 | 91.65 | 180.52 | 9,067.9 | -483.8 | -9.0 | 483.7 | 2.29 | 2.25 | -0.43 |
| 9,580.0 | 90.03 | 178.81 | 9,066.5 | -578.8 | -8.5 | 578.7 | 2.48 | -1.71 | -1.80 |
| 9,674.0 | 90.71 | 178.61 | 9,065.9 | -672.7 | -6.3 | 672.7 | 0.75 | 0.72 | -0.21 |
| 9,769.0 | 89.50 | 178.55 | 9,065.7 | -767.7 | -4.0 | 767.6 | 1.28 | -1.27 | -0.06 |
| 9,863.0 | 89.43 | 178.19 | 9,066.6 | -861.7 | -1.3 | 861.6 | 0.39 | -0.07 | -0.38 |
| 9,958.0 | 89.55 | 178.40 | 9,067.4 | -956.6 | 1.5 | 956.6 | 0.25 | 0.13 | 0.22 |
| 10,053.0 | 91.53 | 178.23 | 9,066.5 | -1,051.6 | 4.3 | 1,051.6 | 2.09 | 2.08 | -0.18 |
| 10,147.0 | 90.67 | 178.89 | 9,064.7 | -1,145.5 | 6.7 | 1,145.5 | 1.15 | -0.91 | 0.70 |
| 10,240.0 | 87.66 | 178.95 | 9,066.1 | -1,238.5 | 8.4 | 1,238.5 | 3.24 | -3.24 | 0.06 |
| 10,335.0 | 88.05 | 178.58 | 9,069.6 | -1,333.4 | 10.5 | 1,333.4 | 0.57 | 0.41 | -0.39 |
| 10,430.0 | 88.14 | 178.67 | 9,072.8 | -1,428.3 | 12.7 | 1,428.4 | 0.13 | 0.09 | 0.09 |
| 10,524.0 | 88.40 | 178.46 | 9,075.6 | -1,522.2 | 15.1 | 1,522.3 | 0.36 | 0.28 | -0.22 |
| 10,618.0 | 88.94 | 178.84 | 9,077.8 | -1,616.2 | 17.3 | 1,616.3 | 0.70 | 0.57 | 0.40 |
| 10,712.0 | 90.10 | 179.06 | 9,078.6 | -1,710.2 | 19.0 | 1,710.3 | 1.26 | 1.23 | 0.23 |
| 10,806.0 | 88.06 | 179.53 | 9,080.1 | -1,804.1 | 20.2 | 1,804.2 | 2.23 | -2.17 | 0.50 |
| 10,900.0 | 86.40 | 180.35 | 9,084.7 | -1,898.0 | 20.3 | 1,898.1 | 1.97 | -1.77 | 0.87 |
| 10,994.0 | 87.00 | 180.34 | 9,090.1 | -1,991.9 | 19.7 | 1,992.0 | 0.64 | 0.64 | -0.01 |
| 11,089.0 | 86.24 | 180.44 | 9,095.7 | -2,086.7 | 19.1 | 2,086.8 | 0.81 | -0.80 | 0.11 |
| 11,184.0 | 87.54 | 181.72 | 9,100.8 | -2,181.5 | 17.3 | 2,181.6 | 1.92 | 1.37 | 1.35 |
| 11,278.0 | 85.59 | 180.59 | 9,106.5 | -2,275.3 | 15.4 | 2,275.4 | 2.40 | -2.07 | -1.20 |
| 11,372.0 | 84.82 | 179.68 | 9,114.3 | -2,369.0 | 15.2 | 2,369.1 | 1.27 | -0.82 | -0.97 |

| | | | |
|---|---|---|---|
| **Company:** | Concho Resources, Inc. | **Local Co-ordinate Reference:** | Well Van Gogh Fee #101H |
| **Project:** | Lea County, NM (NAD 27 NME) | **TVD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Site:** | (Van Gogh) Sec-11_T-24-S_R-34-E | **MD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Well:** | Van Gogh Fee #101H | **North Reference:** | Grid |
| **Wellbore:** | OWB | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | AWB | **Database:** | EDM 5000.15 Single User Db |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 11,467.0 | 85.51 | 179.79 | 9,122.3 | -2,463.7 | 15.6 | 2,463.7 | 0.74 | 0.73 | 0.12 |
| 11,560.0 | 87.08 | 179.81 | 9,128.3 | -2,556.5 | 15.9 | 2,556.5 | 1.69 | 1.69 | 0.02 |
| 11,655.0 | 84.47 | 179.74 | 9,135.3 | -2,651.2 | 16.3 | 2,651.3 | 2.75 | -2.75 | -0.07 |
| 11,749.0 | 84.96 | 179.28 | 9,144.0 | -2,744.8 | 17.1 | 2,744.9 | 0.71 | 0.52 | -0.49 |
| 11,844.0 | 84.68 | 179.20 | 9,152.6 | -2,839.4 | 18.4 | 2,839.5 | 0.31 | -0.29 | -0.08 |
| 11,938.0 | 85.33 | 179.40 | 9,160.7 | -2,933.0 | 19.5 | 2,933.1 | 0.72 | 0.69 | 0.21 |
| 12,032.0 | 85.77 | 179.89 | 9,168.0 | -3,026.8 | 20.1 | 3,026.8 | 0.70 | 0.47 | 0.52 |
| 12,127.0 | 85.31 | 180.48 | 9,175.4 | -3,121.5 | 19.8 | 3,121.5 | 0.79 | -0.48 | 0.62 |
| 12,222.0 | 82.80 | 179.90 | 9,185.3 | -3,216.0 | 19.5 | 3,216.0 | 2.71 | -2.64 | -0.61 |
| 12,316.0 | 84.32 | 178.47 | 9,195.8 | -3,309.3 | 20.8 | 3,309.4 | 2.21 | 1.62 | -1.52 |
| 12,409.0 | 86.60 | 178.04 | 9,203.2 | -3,402.0 | 23.6 | 3,402.1 | 2.49 | 2.45 | -0.46 |
| 12,504.0 | 89.85 | 178.34 | 9,206.1 | -3,496.9 | 26.6 | 3,497.0 | 3.44 | 3.42 | 0.32 |
| 12,597.0 | 87.85 | 178.80 | 9,208.0 | -3,589.8 | 28.9 | 3,590.0 | 2.21 | -2.15 | 0.49 |
| 12,691.0 | 87.84 | 179.00 | 9,211.5 | -3,683.8 | 30.7 | 3,683.9 | 0.21 | -0.01 | 0.21 |
| 12,786.0 | 87.35 | 178.02 | 9,215.5 | -3,778.6 | 33.2 | 3,778.8 | 1.15 | -0.52 | -1.03 |
| 12,879.0 | 85.23 | 178.68 | 9,221.5 | -3,871.4 | 35.9 | 3,871.6 | 2.39 | -2.28 | 0.71 |
| 12,973.0 | 85.24 | 179.20 | 9,229.3 | -3,965.1 | 37.6 | 3,965.2 | 0.55 | 0.01 | 0.55 |
| 13,067.0 | 85.39 | 178.88 | 9,237.0 | -4,058.7 | 39.2 | 4,058.9 | 0.37 | 0.16 | -0.34 |
| 13,161.0 | 88.16 | 179.31 | 9,242.3 | -4,152.6 | 40.7 | 4,152.8 | 2.98 | 2.95 | 0.46 |
| 13,256.0 | 85.95 | 180.66 | 9,247.2 | -4,247.4 | 40.7 | 4,247.6 | 2.72 | -2.33 | 1.42 |
| 13,281.8 | 85.91 | 180.68 | 9,249.0 | -4,273.1 | 40.4 | 4,273.3 | 0.16 | -0.14 | 0.09 |
| **L Avalon Sh** | | | | | | | | | |
| 13,350.0 | 85.82 | 180.74 | 9,253.9 | -4,341.2 | 39.5 | 4,341.4 | 0.16 | -0.14 | 0.09 |
| 13,444.0 | 85.41 | 180.96 | 9,261.1 | -4,434.9 | 38.2 | 4,435.1 | 0.49 | -0.44 | 0.23 |
| 13,538.0 | 85.99 | 181.61 | 9,268.2 | -4,528.6 | 36.1 | 4,528.8 | 0.93 | 0.62 | 0.69 |
| 13,632.0 | 85.73 | 182.19 | 9,274.9 | -4,622.3 | 32.9 | 4,622.4 | 0.67 | -0.28 | 0.62 |
| 13,726.0 | 84.96 | 180.82 | 9,282.6 | -4,716.0 | 30.5 | 4,716.1 | 1.67 | -0.82 | -1.46 |
| 13,821.0 | 89.54 | 180.43 | 9,287.1 | -4,810.8 | 29.5 | 4,810.9 | 4.84 | 4.82 | -0.41 |
| 13,915.0 | 88.25 | 180.79 | 9,288.9 | -4,904.8 | 28.5 | 4,904.9 | 1.42 | -1.37 | 0.38 |
| 13,968.0 | 86.05 | 180.84 | 9,291.6 | -4,957.7 | 27.7 | 4,957.8 | 4.15 | -4.15 | 0.09 |
| **LAST SVY** | | | | | | | | | |
| 13,979.9 | 86.05 | 180.84 | 9,292.4 | -4,969.6 | 27.5 | 4,969.6 | 0.00 | 0.00 | 0.00 |
| **LTP @ 13979.9'MD, 100'FSL & 1325'FEL** | | | | | | | | | |
| 14,030.0 | 86.05 | 180.84 | 9,295.8 | -5,019.6 | 26.8 | 5,019.6 | 0.00 | 0.00 | 0.00 |
| **Projection to TD @ 14030'MD, 50'FSL & 1326'FEL** | | | | | | | | | |

| | | | |
|---|---|---|---|
| **Company:** | Concho Resources, Inc. | **Local Co-ordinate Reference:** | Well Van Gogh Fee #101H |
| **Project:** | Lea County, NM (NAD 27 NME) | **TVD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Site:** | (Van Gogh) Sec-11_T-24-S_R-34-E | **MD Reference:** | KB @ 3494.9usft (Latshaw 44) |
| **Well:** | Van Gogh Fee #101H | **North Reference:** | Grid |
| **Wellbore:** | OWB | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | AWB | **Database:** | EDM 5000.15 Single User Db |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| FTP (Van Gogh Fee # | 0.00 | 0.00 | 9,036.0 | 109.9 | -1.0 | 451,779.20 | 776,139.50 | 32° 14' 20.047 N | 103° 26' 24.856 W |
| - actual wellpath misses target center by 169.1usft at 8977.3usft MD (8928.9 TVD, -20.8 N, 2.5 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| WP1 (Van Gogh Fee ; | 1.02 | 179.51 | 9,079.0 | -1,889.9 | 16.4 | 449,779.40 | 776,156.85 | 32° 14' 0.257 N | 103° 26' 24.848 W |
| - actual wellpath misses target center by 6.5usft at 10891.6usft MD (9084.1 TVD, -1889.6 N, 20.3 E) | | | | | | | | | |
| - Rectangle (sides W60.0 H2,000.0 D20.0) | | | | | | | | | |
| PBHL (Van Gogh Fee | 4.20 | 179.51 | 9,306.0 | -5,019.5 | 43.0 | 446,649.80 | 776,183.50 | 32° 13' 29.287 N | 103° 26' 24.840 W |
| - actual wellpath misses target center by 19.1usft at 14030.0usft MD (9295.8 TVD, -5019.6 N, 26.8 E) | | | | | | | | | |
| - Rectangle (sides W60.0 H3,130.0 D20.0) | | | | | | | | | |
| LTP (Van Gogh Fee # | 0.00 | 0.00 | 9,306.0 | -4,969.5 | 42.6 | 446,699.80 | 776,183.10 | 32° 13' 29.782 N | 103° 26' 24.840 W |
| - actual wellpath misses target center by 20.3usft at 13979.9usft MD (9292.4 TVD, -4969.6 N, 27.5 E) | | | | | | | | | |
| - Point | | | | | | | | | |

**Formations**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 692.0 | 692.0 | Rustler | | | |
| 1,243.1 | 1,243.0 | TOS | | | |
| 4,863.8 | 4,862.0 | BOS (Fletcher) | | | |
| 5,148.0 | 5,146.0 | LMAR (Top Delaware) | | | |
| 5,174.0 | 5,172.0 | BLCN | | | |
| 6,081.0 | 6,076.0 | CYCN | | | |
| 7,529.1 | 7,520.0 | BYCN | | | |
| 8,911.1 | 8,876.0 | Bone Sprg (BSGL) | | | |
| 8,968.5 | 8,922.0 | U Avalon Sh | | | |
| 13,281.8 | 9,249.0 | L Avalon Sh | | | |

**Design Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 8,696.7 | 8,683.3 | 110.1 | 20.0 | FTP @ 8696.7'MD, 100'FNL & 1289.5'FEL |
| 13,968.0 | 9,291.6 | -4,957.7 | 27.7 | LAST SVY |
| 13,979.9 | 9,292.4 | -4,969.6 | 27.5 | LTP @ 13979.9'MD, 100'FSL & 1325'FEL |
| 14,030.0 | 9,295.8 | -5,019.6 | 26.8 | Projection to TD @ 14030'MD, 50'FSL & 1326'FEL |

Checked By: _____ Approved By: _____ Date: _____

| | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 13,918 | 25 | 3 | 13,640 | 53 | 3 | 13,418 | 23 | 3 | 13,165 | 28 | 3 | 12,908 | 36 | 3 |
| | 13,893 | 25 | 3 | 13,620 | 13 | 3 | 13,393 | 29 | 3 | 13,143 | 24 | 3 | 12,894 | 25 | 3 |
| From Bottom to Top | 13,868 | 25 | 3 | 13,607 | 14 | 3 | 13,364 | 21 | 3 | 13,119 | 25 | 3 | 12,869 | 31 | 3 |
| | 13,843 | 75 | 3 | 13,593 | 75 | 3 | 13,343 | 75 | 3 | 13,094 | 79 | 3 | 12,838 | 69 | 3 |
| | 13,768 | 25 | 3 | 13,518 | 30 | 3 | 13,268 | 25 | 3 | 13,015 | 21 | 3 | 12,769 | 25 | 3 |
| | 13,743 | 25 | 3 | 13,488 | 20 | 3 | 13,243 | 25 | 3 | 12,994 | 25 | 3 | 12,744 | 25 | 3 |
| | 13,718 | 25 | 3 | 13,468 | 27 | 3 | 13,218 | 25 | 3 | 12,969 | 25 | 3 | 12,719 | 25 | 3 |
| | 13,693 | | 3 | 13,441 | | 3 | 13,193 | | 3 | 12,944 | | 3 | 12,694 | | 3 |
| | Plug to Plu | 100 | 24 | Plug to Plu | 60 | 24 | Plug to Plu | 88 | 24 | Plug to Plu | 83 | 24 | Plug to Plu | 82 | 24 |
| | Frac Plug | 13,943 | Total Shots | Frac Plug | 13,653 | Total Shots | Frac Plug | 13,431 | Total Shots | Frac Plug | 13,177 | Total Shots | Frac Plug | 12,920 | Total Shots |

| | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12,658 | 36 | 3 | 12,419 | 25 | 3 | 12,163 | 31 | 3 | 11,912 | 32 | 3 | 11,661 | 31 | 3 |
| | 12,644 | 32 | 3 | 12,394 | 24 | 3 | 12,145 | 26 | 3 | 11,894 | 25 | 3 | 11,644 | 25 | 3 |
| From Bottom to Top | 12,612 | 18 | 3 | 12,370 | 26 | 3 | 12,119 | 30 | 3 | 11,869 | 25 | 3 | 11,619 | 25 | 3 |
| | 12,594 | 75 | 3 | 12,344 | 75 | 3 | 12,089 | 70 | 3 | 11,844 | 75 | 3 | 11,594 | 74 | 3 |
| | 12,519 | 32 | 3 | 12,269 | 25 | 3 | 12,019 | 25 | 3 | 11,769 | 23 | 3 | 11,520 | 25 | 3 |
| | 12,487 | 18 | 3 | 12,244 | 25 | 3 | 11,994 | 25 | 3 | 11,746 | 27 | 3 | 11,495 | 22 | 3 |
| | 12,469 | 25 | 3 | 12,219 | 25 | 3 | 11,969 | 25 | 3 | 11,719 | 27 | 3 | 11,473 | 28 | 3 |
| | 12,444 | | 3 | 12,194 | | 3 | 11,944 | | 3 | 11,692 | | 3 | 11,445 | | 3 |
| | Plug to Plu | 85 | 24 | Plug to Plu | 87 | 24 | Plug to Plu | 86 | 24 | Plug to Plu | 88 | 24 | Plug to Plu | 83 | 24 |
| | Frac Plug | 12,679 | Total Shots | Frac Plug | 12,431 | Total Shots | Frac Plug | 12,175 | Total Shots | Frac Plug | 11,932 | Total Shots | Frac Plug | 11,677 | Total Shots |

| | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 11,401 | 44 | 3 | 11,164 | 31 | 3 | 10,918 | 27 | 3 | 10,660 | 35 | 3 | 10,415 | 80 | 3 |
| | 11,389 | 19 | 3 | 11,145 | 27 | 3 | 10,895 | 25 | 3 | 10,645 | 25 | 3 | 10,395 | 25 | 3 |
| From Bottom to Top | 11,370 | 25 | 3 | 11,118 | 23 | 3 | 10,870 | 25 | 3 | 10,620 | 21 | 3 | 10,370 | 25 | 3 |
| | 11,345 | 75 | 3 | 11,095 | 75 | 3 | 10,845 | 76 | 3 | 10,599 | 29 | 3 | 10,345 | 25 | 3 |
| | 11,270 | 25 | 3 | 11,020 | 25 | 3 | 10,769 | 24 | 3 | 10,570 | 25 | 3 | 10,320 | 24 | 3 |
| | 11,245 | 25 | 3 | 10,995 | 25 | 3 | 10,745 | 25 | 3 | 10,545 | 25 | 3 | 10,296 | 26 | 3 |
| | 11,220 | 25 | 3 | 10,970 | 25 | 3 | 10,720 | 25 | 3 | 10,520 | 25 | 3 | 10,270 | 30 | 3 |
| | 11,195 | | 3 | 10,945 | | 3 | 10,695 | | 3 | 10,495 | | 3 | 10,240 | | 3 |
| | Plug to Plu | 71 | 24 | Plug to Plu | 85 | 24 | Plug to Plu | 85 | 24 | Plug to Plu | 73 | 24 | Plug to Plu | 88 | 24 |
| | Frac Plug | 11,416 | Total Shots | Frac Plug | 11,180 | Total Shots | Frac Plug | 10,930 | Total Shots | Frac Plug | 10,672 | Total Shots | Frac Plug | 10,433 | Total Shots |

| | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots | | Distance Between Perfs | Shots | Stage 20 | Distance Between Perfs | Shots |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10,164 | 76 | 3 | 9,900 | 96 | 3 | 9,663 | 31 | 3 | 9,405 | 41 | 3 | | 9196 | |
| | 10,145 | 25 | 3 | 9,888 | 17 | 3 | 9,646 | 25 | 3 | 9,395 | 24 | 3 | | | |
| From Bottom to Top | 10,120 | 25 | 3 | 9,871 | 25 | 3 | 9,621 | 25 | 3 | 9,371 | 25 | 3 | | | |
| | 10,095 | 25 | 3 | 9,846 | 75 | 3 | 9,596 | 72 | 3 | 9,346 | 75 | 3 | | | |
| | 10,070 | 25 | 3 | 9,771 | 22 | 3 | 9,524 | 28 | 3 | 9,271 | 28 | 3 | | | |
| | 10,045 | 22 | 3 | 9,749 | 28 | 3 | 9,496 | 28 | 3 | 9,243 | 22 | 3 | | | |
| | 10,023 | 27 | 3 | 9,721 | 27 | 3 | 9,468 | 22 | 3 | 9,221 | 25 | 3 | | | |
| | 9,996 | | 3 | 9,694 | | 3 | 9,446 | | 3 | 9,196 | | 3 | | | |
| | Plug to Plu | 85 | 24 | Plug to Plu | 70 | 24 | Plug to Plu | 83 | 24 | Plug to Plu | 71 | 24 | Plug to Plu | 0 | 0 |
| | Frac Plug | 10,180 | Total Shots | Frac Plug | 9,916 | Total Shots | Frac Plug | 9,679 | Total Shots | Frac Plug | 9,417 | Total Shots | Frac Plug | | Total Shots |

# Van Gogh Fee #101H

| Perfs | 7 1/2% Acid (Gal) | Sand (#) | Fluid (Gal) |
|---|---|---|---|
| 1 | 5502 | 500280 | 493206 |
| 2 | 3024 | 500420 | 459564 |
| 3 | 3024 | 502840 | 461580 |
| 4 | 3024 | 504820 | 469854 |
| 5 | 3024 | 500980 | 452214 |
| 6 | 3024 | 490720 | 440496 |
| 7 | 3024 | 500620 | 447132 |
| 8 | 3024 | 500120 | 453474 |
| 9 | 3024 | 504240 | 448266 |
| 10 | 3024 | 515400 | 451206 |
| 11 | 3024 | 512660 | 434574 |
| 12 | 3024 | 500820 | 440622 |
| 13 | 3024 | 499530 | 441210 |
| 14 | 3024 | 500140 | 447132 |
| 15 | 3024 | 500060 | 446796 |
| 16 | 3024 | 501300 | 431004 |
| 17 | 3024 | 500720 | 459816 |
| 18 | 3024 | 502300 | 429534 |
| 19 | 3024 | 513100 | 451710 |
| **Totals** | **54,432** | **9,050,790** | **8,559,390** |