

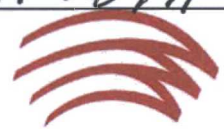


Project: Roosevelt Co., NM (NAD 83)  
 Site: Sec 27-6S-34E  
 Well: Tupelo Honey #5H  
 Wellbore: ST01 [233837]  
 Design: Final

HOBBS OCD

AUG 14 2017

RECEIVED CATHEDRAL



Azimuths to Grid North  
 True North: -0.49°  
 Magnetic North: 6.78°

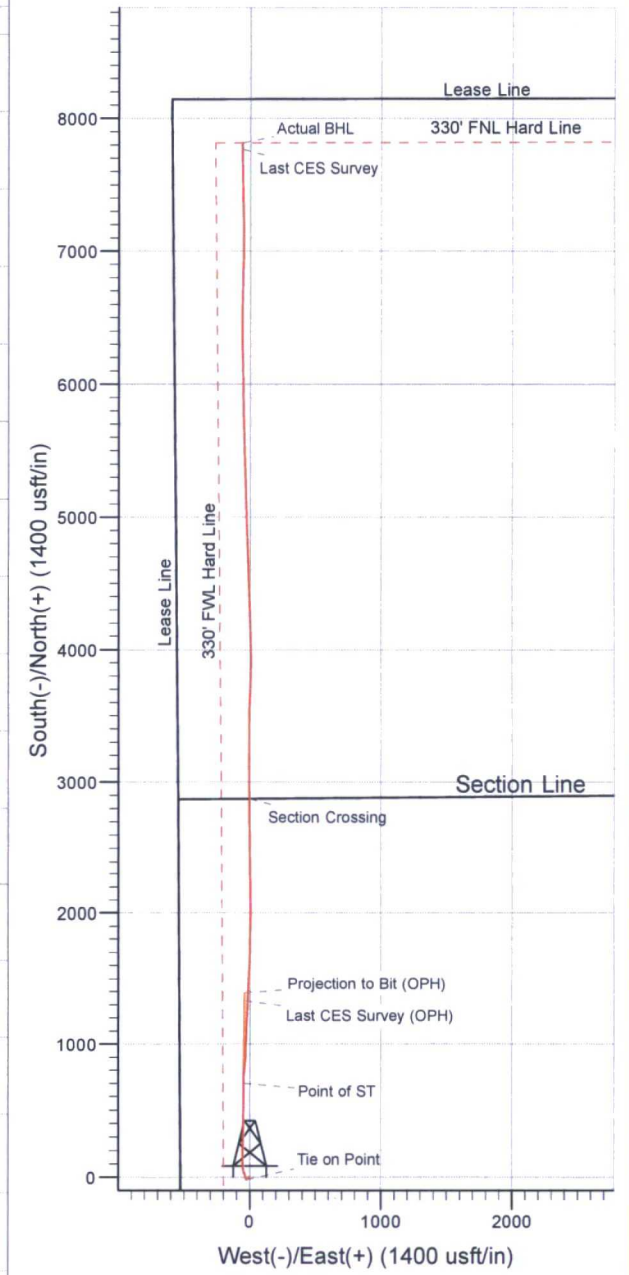
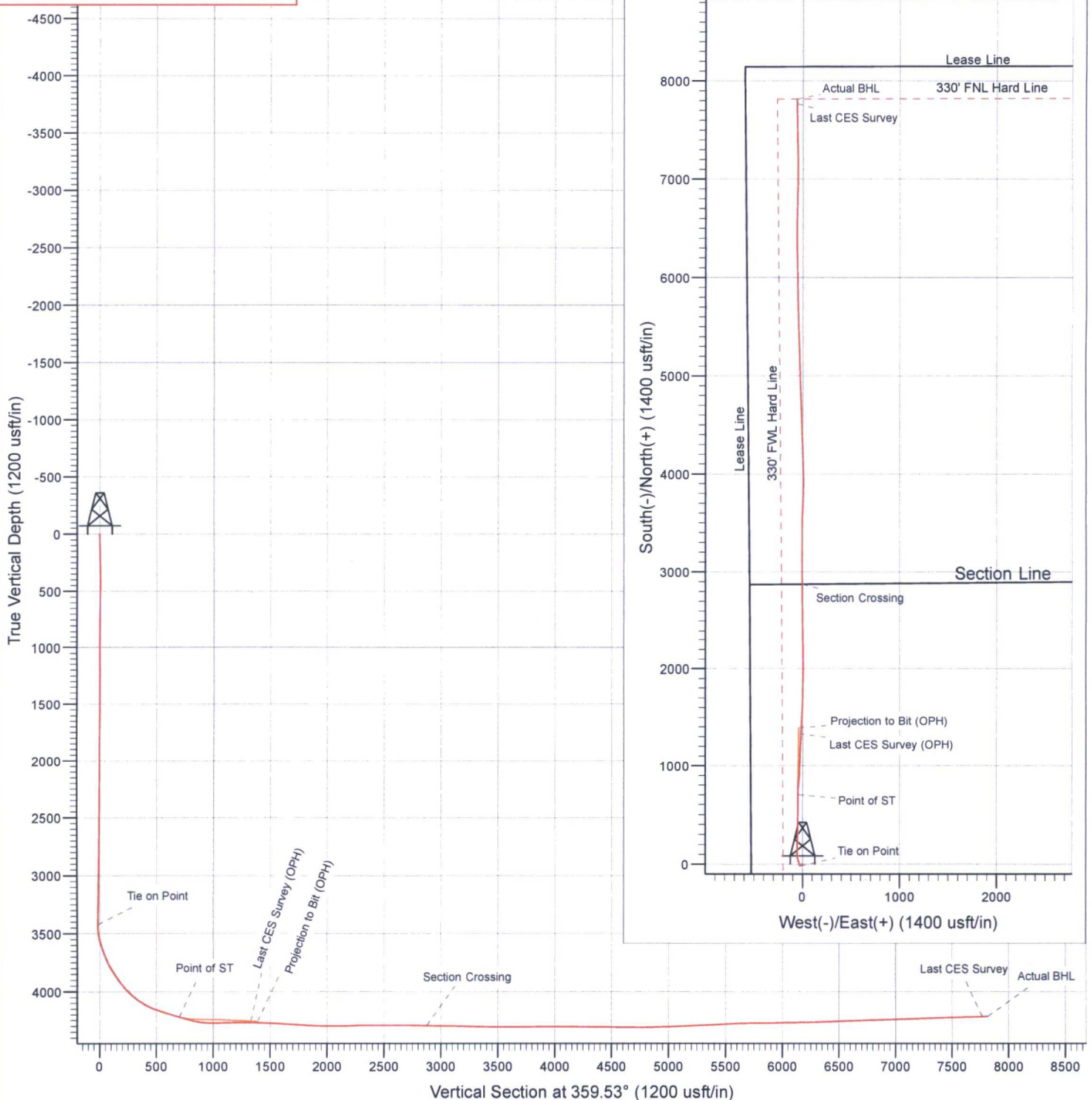
Magnetic Field  
 Strength: 48932.3snT  
 Dip Angle: 61.47°  
 Date: 5/18/2017  
 Model: HDGM

|       |       |            |                          |         |           |             |
|-------|-------|------------|--------------------------|---------|-----------|-------------|
| +N/-S | +E/-W | Northing   | Ground Level:<br>Easting | 4334.00 | Latitude  | Longitude   |
| 0.00  | 0.00  | 1007336.40 | 806843.80                |         | 33.765909 | -103.459684 |

### ANNOTATIONS

| MD       | Inc   | Azi    | TVD     | +N/-S   | +E/-W  | Vsect   | Annotation       |
|----------|-------|--------|---------|---------|--------|---------|------------------|
| 4585.00  | 74.60 | 0.30   | 4220.56 | 702.11  | -46.70 | 702.47  | Point of ST      |
| 6766.00  | 88.90 | 359.70 | 4296.41 | 2874.23 | -2.16  | 2874.15 | Section Crossing |
| 11662.00 | 92.60 | 0.10   | 4217.50 | 7766.89 | -57.22 | 7767.10 | Last CES Survey  |
| 11712.00 | 92.60 | 0.10   | 4215.23 | 7816.84 | -57.13 | 7817.04 | Actual BHL       |

Actual Bottom Hole Location  
 330' FNL / 535' FWL  
 X:806786.67 Y:1015153.24





# Cathedral Energy Services

## Survey Report



|           |                            |                              |                                   |
|-----------|----------------------------|------------------------------|-----------------------------------|
| Company:  | Manzano LLC                | Local Co-ordinate Reference: | Well Tupelo Honey #5H             |
| Project:  | Roosevelt Co., NM (NAD 83) | TVD Reference:               | 16' RKB @ 4350.00usft (Norton #6) |
| Site:     | Sec 27-6S-34E              | MD Reference:                | 16' RKB @ 4350.00usft (Norton #6) |
| Well:     | Tupelo Honey #5H           | North Reference:             | Grid                              |
| Wellbore: | ST01 [233837]              | Survey Calculation Method:   | Minimum Curvature                 |
| Design:   | Final                      | Database:                    | USA EDM 5000 Multi Users DB       |

|             |                            |               |                |
|-------------|----------------------------|---------------|----------------|
| Project     | Roosevelt Co., NM (NAD 83) |               |                |
| Map System: | US State Plane 1983        | System Datum: | Mean Sea Level |
| Geo Datum:  | North American Datum 1983  |               |                |
| Map Zone:   | New Mexico Eastern Zone    |               |                |

|                       |               |                   |                   |
|-----------------------|---------------|-------------------|-------------------|
| Site                  | Sec 27-6S-34E |                   |                   |
| Site Position:        |               | Northing:         | 1,007,582.33 usft |
| From:                 | Map           | Easting:          | 808,952.30 usft   |
| Position Uncertainty: | 0.00 usft     | Slot Radius:      | 13-3/16"          |
|                       |               | Latitude:         | 33.766536         |
|                       |               | Longitude:        | -103.452740       |
|                       |               | Grid Convergence: | 0.49 °            |

|                      |                  |                     |               |
|----------------------|------------------|---------------------|---------------|
| Well                 | Tupelo Honey #5H |                     |               |
| Well Position        | +N/-S            | 0.00 usft           | Northing:     |
|                      | +E/-W            | 0.00 usft           | Easting:      |
| Position Uncertainty | 0.00 usft        | Wellhead Elevation: | 0.00 usft     |
|                      |                  | Latitude:           | 33.765909     |
|                      |                  | Longitude:          | -103.459684   |
|                      |                  | Ground Level:       | 4,334.00 usft |

|           |               |             |                 |               |                     |
|-----------|---------------|-------------|-----------------|---------------|---------------------|
| Wellbore  | ST01 [233837] |             |                 |               |                     |
| Magnetics | Model Name    | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|           | HDGM          | 5/18/2017   | 7.27            | 61.47         | 48,932.30000000     |

|                   |                         |              |              |                        |
|-------------------|-------------------------|--------------|--------------|------------------------|
| Design            | Final                   |              |              |                        |
| Audit Notes:      |                         |              |              |                        |
| Version:          | 1.0                     | Phase:       | ACTUAL       | Tie On Depth: 4,585.00 |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°)          |
|                   | 0.00                    | 0.00         | 0.00         | 359.53                 |

|                |               |                           |            |                      |  |
|----------------|---------------|---------------------------|------------|----------------------|--|
| Survey Program | Date 6/4/2017 |                           |            |                      |  |
| From (usft)    | To (usft)     | Survey (Wellbore)         | Tool Name  | Description          |  |
| 144.00         | 3,422.00      | Gyro Surveys (Pilot Hole) | NS-GYRO-SS | NS Gyro single shots |  |
| 3,443.00       | 4,585.00      | CES MWD (OPH[233837])     | MWD+HDGM   | OWSG MWD + HDGM      |  |
| 4,615.00       | 11,712.00     | CES MWD (ST01 [233837])   | MWD+HDGM   | OWSG MWD + HDGM      |  |

|                       |                 |             |                       |              |              |                         |                        |                     |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|---------------------|-----------------------|
| Survey                |                 |             |                       |              |              |                         |                        |                     |                       |
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usf) | Build Rate (°/100u) | Formations / Comments |
| 0.00                  | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                |                       |
| 144.00                | 1.00            | 11.00       | 143.99                | 1.23         | 0.24         | 1.23                    | 0.69                   | 0.69                |                       |
| 235.00                | 0.70            | 13.00       | 234.98                | 2.55         | 0.52         | 2.55                    | 0.33                   | -0.33               |                       |
| 326.00                | 0.60            | 3.00        | 325.98                | 3.57         | 0.67         | 3.57                    | 0.17                   | -0.11               |                       |
| 421.00                | 0.30            | 333.00      | 420.97                | 4.29         | 0.58         | 4.29                    | 0.39                   | -0.32               |                       |
| 513.00                | 0.10            | 356.00      | 512.97                | 4.59         | 0.46         | 4.58                    | 0.23                   | -0.22               |                       |
| 604.00                | 0.40            | 82.00       | 603.97                | 4.71         | 0.77         | 4.70                    | 0.45                   | 0.33                |                       |
| 695.00                | 0.60            | 128.00      | 694.97                | 4.46         | 1.46         | 4.45                    | 0.47                   | 0.22                |                       |
| 789.00                | 0.30            | 210.00      | 788.97                | 3.94         | 1.73         | 3.93                    | 0.67                   | -0.32               |                       |
| 884.00                | 0.00            | 233.00      | 883.97                | 3.73         | 1.60         | 3.71                    | 0.32                   | -0.32               |                       |
| 979.00                | 0.40            | 152.00      | 978.97                | 3.44         | 1.76         | 3.42                    | 0.42                   | 0.42                |                       |



# Cathedral Energy Services

## Survey Report



|                  |                            |                                     |                                   |
|------------------|----------------------------|-------------------------------------|-----------------------------------|
| <b>Company:</b>  | Manzano LLC                | <b>Local Co-ordinate Reference:</b> | Well Tupelo Honey #5H             |
| <b>Project:</b>  | Roosevelt Co., NM (NAD 83) | <b>TVD Reference:</b>               | 16' RKB @ 4350.00usft (Norton #6) |
| <b>Site:</b>     | Sec 27-6S-34E              | <b>MD Reference:</b>                | 16' RKB @ 4350.00usft (Norton #6) |
| <b>Well:</b>     | Tupelo Honey #5H           | <b>North Reference:</b>             | Grid                              |
| <b>Wellbore:</b> | ST01 [233837]              | <b>Survey Calculation Method:</b>   | Minimum Curvature                 |
| <b>Design:</b>   | Final                      | <b>Database:</b>                    | USA EDM 5000 Multi Users DB       |

| Survey                |                 |             |                       |              |              |                         |                        |                     |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|---------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usf) | Build Rate (°/100u) | Formations / Comments |
| 1,074.00              | 0.30            | 244.00      | 1,073.96              | 3.03         | 1.69         | 3.02                    | 0.54                   | -0.11               |                       |
| 1,170.00              | 0.20            | 223.00      | 1,169.96              | 2.80         | 1.35         | 2.79                    | 0.14                   | -0.10               |                       |
| 1,265.00              | 0.40            | 289.00      | 1,264.96              | 2.79         | 0.93         | 2.78                    | 0.39                   | 0.21                |                       |
| 1,359.00              | 0.40            | 296.00      | 1,358.96              | 3.04         | 0.32         | 3.04                    | 0.05                   | 0.00                |                       |
| 1,455.00              | 0.60            | 295.00      | 1,454.96              | 3.40         | -0.44        | 3.40                    | 0.21                   | 0.21                |                       |
| 1,550.00              | 1.00            | 250.00      | 1,549.95              | 3.32         | -1.67        | 3.34                    | 0.75                   | 0.42                |                       |
| 1,645.00              | 0.90            | 269.00      | 1,644.94              | 3.03         | -3.19        | 3.05                    | 0.35                   | -0.11               |                       |
| 1,835.00              | 0.70            | 249.00      | 1,834.92              | 2.59         | -5.77        | 2.63                    | 0.18                   | -0.11               |                       |
| 1,930.00              | 0.50            | 216.00      | 1,929.91              | 2.04         | -6.55        | 2.10                    | 0.41                   | -0.21               |                       |
| 2,025.00              | 0.40            | 229.00      | 2,024.91              | 1.49         | -7.05        | 1.55                    | 0.15                   | -0.11               |                       |
| 2,039.00              | 0.30            | 195.00      | 2,038.91              | 1.42         | -7.09        | 1.48                    | 1.61                   | -0.71               |                       |
| 2,089.00              | 0.50            | 108.00      | 2,088.91              | 1.23         | -6.92        | 1.28                    | 1.14                   | 0.40                |                       |
| 2,185.00              | 0.40            | 141.00      | 2,184.91              | 0.84         | -6.31        | 0.89                    | 0.28                   | -0.10               |                       |
| 2,280.00              | 1.10            | 165.00      | 2,279.90              | -0.30        | -5.87        | -0.25                   | 0.79                   | 0.74                |                       |
| 2,375.00              | 1.60            | 257.00      | 2,374.88              | -1.48        | -6.92        | -1.42                   | 2.08                   | 0.53                |                       |
| 2,470.00              | 1.40            | 250.00      | 2,469.85              | -2.18        | -9.30        | -2.10                   | 0.29                   | -0.21               |                       |
| 2,566.00              | 1.60            | 242.00      | 2,565.81              | -3.21        | -11.59       | -3.11                   | 0.30                   | 0.21                |                       |
| 2,661.00              | 1.10            | 238.00      | 2,660.79              | -4.31        | -13.53       | -4.20                   | 0.54                   | -0.53               |                       |
| 2,756.00              | 1.20            | 259.00      | 2,755.77              | -4.98        | -15.28       | -4.86                   | 0.45                   | 0.11                |                       |
| 2,852.00              | 0.90            | 201.00      | 2,851.75              | -5.88        | -16.54       | -5.74                   | 1.10                   | -0.31               |                       |
| 2,947.00              | 1.40            | 181.00      | 2,946.74              | -7.74        | -16.83       | -7.60                   | 0.67                   | 0.53                |                       |
| 3,042.00              | 1.30            | 206.00      | 3,041.71              | -9.87        | -17.32       | -9.72                   | 0.62                   | -0.11               |                       |
| 3,137.00              | 1.40            | 209.00      | 3,136.68              | -11.85       | -18.36       | -11.70                  | 0.13                   | 0.11                |                       |
| 3,233.00              | 1.40            | 214.00      | 3,232.65              | -13.85       | -19.58       | -13.69                  | 0.13                   | 0.00                |                       |
| 3,326.00              | 0.90            | 211.00      | 3,325.64              | -15.42       | -20.59       | -15.25                  | 0.54                   | -0.54               |                       |
| 3,422.00              | 1.80            | 233.00      | 3,421.61              | -16.97       | -22.18       | -16.79                  | 1.07                   | 0.94                |                       |
| 3,443.00              | 1.90            | 275.80      | 3,442.60              | -17.13       | -22.79       | -16.94                  | 6.44                   | 0.48                |                       |
| 3,474.00              | 5.00            | 322.40      | 3,473.54              | -16.01       | -24.13       | -15.81                  | 12.72                  | 10.00               |                       |
| 3,506.00              | 8.90            | 337.90      | 3,505.30              | -12.61       | -25.91       | -12.40                  | 13.42                  | 12.19               |                       |
| 3,538.00              | 13.00           | 341.00      | 3,536.72              | -6.91        | -28.02       | -6.68                   | 12.94                  | 12.81               |                       |
| 3,570.00              | 16.70           | 343.60      | 3,567.64              | 0.91         | -30.49       | 1.16                    | 11.75                  | 11.56               |                       |
| 3,602.00              | 19.40           | 345.00      | 3,598.06              | 10.45        | -33.16       | 10.72                   | 8.55                   | 8.44                |                       |
| 3,634.00              | 21.10           | 342.60      | 3,628.09              | 21.08        | -36.26       | 21.38                   | 5.91                   | 5.31                |                       |
| 3,666.00              | 21.60           | 338.00      | 3,657.89              | 32.04        | -40.19       | 32.37                   | 5.46                   | 1.56                |                       |
| 3,697.00              | 21.80           | 340.00      | 3,686.70              | 42.74        | -44.30       | 43.10                   | 2.47                   | 0.65                |                       |
| 3,730.00              | 23.20           | 347.00      | 3,717.19              | 54.84        | -47.85       | 55.23                   | 9.15                   | 4.24                |                       |
| 3,761.00              | 25.80           | 353.80      | 3,745.40              | 67.50        | -49.96       | 67.90                   | 12.36                  | 8.39                |                       |
| 3,793.00              | 29.40           | 356.20      | 3,773.75              | 82.26        | -51.23       | 82.68                   | 11.77                  | 11.25               |                       |
| 3,824.00              | 31.90           | 355.30      | 3,800.42              | 98.02        | -52.41       | 98.45                   | 8.20                   | 8.06                |                       |
| 3,856.00              | 33.40           | 356.40      | 3,827.36              | 115.24       | -53.65       | 115.67                  | 5.04                   | 4.69                |                       |
| 3,888.00              | 34.20           | 358.80      | 3,853.96              | 133.02       | -54.39       | 133.46                  | 4.86                   | 2.50                |                       |
| 3,920.00              | 34.90           | 2.00        | 3,880.32              | 151.16       | -54.26       | 151.60                  | 6.08                   | 2.19                |                       |
| 3,951.00              | 37.10           | 3.30        | 3,905.39              | 169.36       | -53.41       | 169.79                  | 7.51                   | 7.10                |                       |
| 3,983.00              | 39.20           | 3.30        | 3,930.56              | 189.10       | -52.28       | 189.52                  | 6.56                   | 6.56                |                       |
| 4,015.00              | 41.30           | 2.70        | 3,954.98              | 209.74       | -51.20       | 210.15                  | 6.67                   | 6.56                |                       |
| 4,047.00              | 42.10           | 1.60        | 3,978.87              | 231.01       | -50.40       | 231.42                  | 3.39                   | 2.50                |                       |
| 4,078.00              | 44.30           | 0.60        | 4,001.47              | 252.23       | -50.00       | 252.63                  | 7.43                   | 7.10                |                       |
| 4,110.00              | 47.50           | 359.80      | 4,023.74              | 275.20       | -49.92       | 275.61                  | 10.16                  | 10.00               |                       |
| 4,142.00              | 51.10           | 0.00        | 4,044.60              | 299.46       | -49.96       | 299.86                  | 11.26                  | 11.25               |                       |
| 4,174.00              | 53.20           | 0.90        | 4,064.23              | 324.73       | -49.76       | 325.12                  | 6.93                   | 6.56                |                       |
| 4,205.00              | 56.50           | 1.90        | 4,082.08              | 350.06       | -49.14       | 350.45                  | 10.97                  | 10.65               |                       |
| 4,237.00              | 59.40           | 2.00        | 4,099.06              | 377.17       | -48.21       | 377.55                  | 9.07                   | 9.06                |                       |
| 4,269.00              | 61.70           | 1.80        | 4,114.79              | 405.01       | -47.29       | 405.39                  | 7.21                   | 7.19                |                       |



# Cathedral Energy Services

## Survey Report



|                  |                            |                                     |                                   |
|------------------|----------------------------|-------------------------------------|-----------------------------------|
| <b>Company:</b>  | Manzano LLC                | <b>Local Co-ordinate Reference:</b> | Well Tupelo Honey #5H             |
| <b>Project:</b>  | Roosevelt Co., NM (NAD 83) | <b>TVD Reference:</b>               | 16' RKB @ 4350.00usft (Norton #6) |
| <b>Site:</b>     | Sec 27-6S-34E              | <b>MD Reference:</b>                | 16' RKB @ 4350.00usft (Norton #6) |
| <b>Well:</b>     | Tupelo Honey #5H           | <b>North Reference:</b>             | Grid                              |
| <b>Wellbore:</b> | ST01 [233837]              | <b>Survey Calculation Method:</b>   | Minimum Curvature                 |
| <b>Design:</b>   | Final                      | <b>Database:</b>                    | USA EDM 5000 Multi Users DB       |

### Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usf) | Build Rate (°/100u) | Formations / Comments |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|---------------------|-----------------------|
| 4,301.00              | 63.30           | 1.40        | 4,129.57              | 433.39       | -46.50       | 433.75                  | 5.12                   | 5.00                |                       |
| 4,333.00              | 67.20           | 0.10        | 4,142.96              | 462.44       | -46.12       | 462.80                  | 12.73                  | 12.19               |                       |
| 4,365.00              | 70.70           | 0.20        | 4,154.45              | 492.30       | -46.05       | 492.66                  | 10.94                  | 10.94               |                       |
| 4,396.00              | 72.50           | 0.30        | 4,164.24              | 521.71       | -45.92       | 522.07                  | 5.81                   | 5.81                |                       |
| 4,428.00              | 72.30           | 359.90      | 4,173.91              | 552.21       | -45.86       | 552.57                  | 1.35                   | -0.62               |                       |
| 4,460.00              | 72.50           | 0.00        | 4,183.59              | 582.72       | -45.89       | 583.07                  | 0.69                   | 0.62                |                       |
| 4,490.00              | 72.50           | 359.60      | 4,192.61              | 611.33       | -45.99       | 611.68                  | 1.27                   | 0.00                |                       |
| 4,522.00              | 72.30           | 359.30      | 4,202.29              | 641.83       | -46.28       | 642.19                  | 1.09                   | -0.62               |                       |
| 4,553.00              | 72.80           | 359.40      | 4,211.58              | 671.40       | -46.62       | 671.76                  | 1.64                   | 1.61                |                       |
| 4,585.00              | 74.60           | 0.30        | 4,220.56              | 702.11       | -46.70       | 702.47                  | 6.24                   | 5.62                | Point of ST           |
| 4,615.00              | 72.70           | 2.60        | 4,229.01              | 730.88       | -45.97       | 731.24                  | 9.71                   | -6.33               |                       |
| 4,647.00              | 73.00           | 5.10        | 4,238.45              | 761.39       | -43.92       | 761.72                  | 7.52                   | 0.94                |                       |
| 4,679.00              | 74.50           | 6.60        | 4,247.40              | 791.95       | -40.79       | 792.26                  | 6.50                   | 4.69                |                       |
| 4,710.00              | 76.40           | 6.10        | 4,255.19              | 821.77       | -37.47       | 822.05                  | 6.32                   | 6.13                |                       |
| 4,742.00              | 79.00           | 4.70        | 4,262.01              | 852.89       | -34.53       | 853.15                  | 9.18                   | 8.12                |                       |
| 4,774.00              | 82.00           | 3.50        | 4,267.29              | 884.37       | -32.27       | 884.60                  | 10.08                  | 9.37                |                       |
| 4,805.00              | 85.00           | 2.30        | 4,270.80              | 915.13       | -30.72       | 915.35                  | 10.41                  | 9.68                |                       |
| 4,837.00              | 87.10           | 1.70        | 4,273.00              | 947.03       | -29.60       | 947.24                  | 6.82                   | 6.56                |                       |
| 4,869.00              | 89.10           | 2.10        | 4,274.06              | 978.99       | -28.54       | 979.19                  | 6.37                   | 6.25                |                       |
| 4,901.00              | 91.10           | 2.20        | 4,274.00              | 1,010.97     | -27.34       | 1,011.16                | 6.26                   | 6.25                |                       |
| 4,995.00              | 91.60           | 1.80        | 4,271.79              | 1,104.88     | -24.06       | 1,105.04                | 0.68                   | 0.53                |                       |
| 5,058.00              | 91.30           | 1.80        | 4,270.20              | 1,167.83     | -22.08       | 1,167.97                | 0.48                   | -0.48               |                       |
| 5,148.00              | 90.40           | 2.50        | 4,268.86              | 1,257.76     | -18.71       | 1,257.87                | 1.27                   | -1.00               |                       |
| 5,242.00              | 89.00           | 3.20        | 4,269.35              | 1,351.64     | -14.03       | 1,351.71                | 1.67                   | -1.49               |                       |
| 5,337.00              | 87.70           | 3.30        | 4,272.09              | 1,446.44     | -8.65        | 1,446.47                | 1.37                   | -1.37               |                       |
| 5,433.00              | 87.20           | 2.60        | 4,276.36              | 1,542.22     | -3.71        | 1,542.20                | 0.90                   | -0.52               |                       |
| 5,528.00              | 87.00           | 2.50        | 4,281.17              | 1,637.00     | 0.51         | 1,636.95                | 0.24                   | -0.21               |                       |
| 5,623.00              | 86.00           | 1.20        | 4,286.97              | 1,731.77     | 3.57         | 1,731.69                | 1.72                   | -1.05               |                       |
| 5,719.00              | 86.90           | 0.30        | 4,292.91              | 1,827.58     | 4.82         | 1,827.48                | 1.32                   | 0.94                |                       |
| 5,814.00              | 87.60           | 1.00        | 4,297.47              | 1,922.46     | 5.90         | 1,922.35                | 1.04                   | 0.74                |                       |
| 5,909.00              | 89.40           | 0.00        | 4,299.95              | 2,017.42     | 6.73         | 2,017.30                | 2.17                   | 1.89                |                       |
| 6,004.00              | 90.90           | 359.50      | 4,299.71              | 2,112.42     | 6.31         | 2,112.30                | 1.66                   | 1.58                |                       |
| 6,099.00              | 92.30           | 359.30      | 4,297.05              | 2,207.37     | 5.32         | 2,207.26                | 1.49                   | 1.47                |                       |
| 6,194.00              | 91.50           | 359.00      | 4,293.90              | 2,302.31     | 3.91         | 2,302.20                | 0.90                   | -0.84               |                       |
| 6,289.00              | 89.70           | 359.50      | 4,292.91              | 2,397.29     | 2.67         | 2,397.19                | 1.97                   | -1.89               |                       |
| 6,385.00              | 89.80           | 359.20      | 4,293.33              | 2,493.29     | 1.58         | 2,493.19                | 0.33                   | 0.10                |                       |
| 6,480.00              | 90.10           | 358.90      | 4,293.41              | 2,588.27     | 0.00         | 2,588.18                | 0.45                   | 0.32                |                       |
| 6,575.00              | 89.90           | 359.50      | 4,293.41              | 2,683.26     | -1.32        | 2,683.18                | 0.67                   | -0.21               |                       |
| 6,670.00              | 88.80           | 359.90      | 4,294.49              | 2,778.25     | -1.82        | 2,778.17                | 1.23                   | -1.16               |                       |
| 6,765.00              | 88.90           | 359.70      | 4,296.40              | 2,873.23     | -2.15        | 2,873.15                | 0.24                   | 0.11                |                       |
| 6,766.00              | 88.90           | 359.70      | 4,296.41              | 2,874.23     | -2.16        | 2,874.15                | 0.00                   | 0.00                | Section Crossing      |
| 6,860.00              | 89.10           | 359.60      | 4,298.05              | 2,968.22     | -2.73        | 2,968.14                | 0.24                   | 0.21                |                       |
| 6,956.00              | 89.60           | 0.10        | 4,299.14              | 3,064.21     | -2.98        | 3,064.13                | 0.74                   | 0.52                |                       |
| 7,051.00              | 88.20           | 0.10        | 4,300.97              | 3,159.19     | -2.82        | 3,159.11                | 1.47                   | -1.47               |                       |
| 7,146.00              | 89.70           | 0.30        | 4,302.71              | 3,254.17     | -2.49        | 3,254.08                | 1.59                   | 1.58                |                       |
| 7,241.00              | 88.40           | 359.90      | 4,304.28              | 3,349.16     | -2.32        | 3,349.06                | 1.43                   | -1.37               |                       |
| 7,337.00              | 88.70           | 0.50        | 4,306.71              | 3,445.12     | -1.99        | 3,445.02                | 0.70                   | 0.31                |                       |
| 7,432.00              | 89.90           | 1.00        | 4,307.87              | 3,540.11     | -0.74        | 3,539.99                | 1.37                   | 1.26                |                       |
| 7,527.00              | 90.80           | 1.80        | 4,307.29              | 3,635.07     | 1.58         | 3,634.94                | 1.27                   | 0.95                |                       |
| 7,622.00              | 90.90           | 2.40        | 4,305.88              | 3,730.00     | 5.06         | 3,729.83                | 0.64                   | 0.11                |                       |
| 7,717.00              | 90.10           | 2.00        | 4,305.05              | 3,824.93     | 8.71         | 3,824.72                | 0.94                   | -0.84               |                       |
| 7,812.00              | 89.10           | 359.30      | 4,305.72              | 3,919.91     | 9.78         | 3,919.69                | 3.03                   | -1.05               |                       |
| 7,907.00              | 90.20           | 358.30      | 4,306.30              | 4,014.88     | 7.79         | 4,014.68                | 1.56                   | 1.16                |                       |



Cathedral Energy Services  
Survey Report



|           |                            |                              |                                   |
|-----------|----------------------------|------------------------------|-----------------------------------|
| Company:  | Manzano LLC                | Local Co-ordinate Reference: | Well Tupelo Honey #5H             |
| Project:  | Roosevelt Co., NM (NAD 83) | TVD Reference:               | 16' RKB @ 4350.00usft (Norton #6) |
| Site:     | Sec 27-6S-34E              | MD Reference:                | 16' RKB @ 4350.00usft (Norton #6) |
| Well:     | Tupelo Honey #5H           | North Reference:             | Grid                              |
| Wellbore: | ST01 [233837]              | Survey Calculation Method:   | Minimum Curvature                 |
| Design:   | Final                      | Database:                    | USA EDM 5000 Multi Users DB       |

Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usf) | Build Rate (°/100u) | Formations / Comments |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|---------------------|-----------------------|
| 8,002.00              | 90.60           | 359.20      | 4,305.63              | 4,109.86     | 5.72         | 4,109.67                | 1.04                   | 0.42                |                       |
| 8,097.00              | 89.70           | 357.50      | 4,305.38              | 4,204.81     | 2.99         | 4,204.65                | 2.02                   | -0.95               |                       |
| 8,192.00              | 89.70           | 357.90      | 4,305.88              | 4,299.73     | -0.83        | 4,299.60                | 0.42                   | 0.00                |                       |
| 8,288.00              | 89.80           | 358.20      | 4,306.30              | 4,395.68     | -4.09        | 4,395.56                | 0.33                   | 0.10                |                       |
| 8,383.00              | 89.30           | 358.20      | 4,307.05              | 4,490.63     | -7.08        | 4,490.53                | 0.53                   | -0.53               |                       |
| 8,478.00              | 88.40           | 358.00      | 4,308.95              | 4,585.55     | -10.23       | 4,585.48                | 0.97                   | -0.95               |                       |
| 8,573.00              | 89.50           | 357.70      | 4,310.69              | 4,680.47     | -13.79       | 4,680.43                | 1.20                   | 1.16                |                       |
| 8,668.00              | 91.70           | 358.10      | 4,309.70              | 4,775.39     | -17.27       | 4,775.38                | 2.35                   | 2.32                |                       |
| 8,753.00              | 91.40           | 357.80      | 4,307.40              | 4,860.31     | -20.31       | 4,860.31                | 0.50                   | -0.35               |                       |
| 8,849.00              | 90.90           | 357.50      | 4,305.47              | 4,956.21     | -24.25       | 4,956.24                | 0.61                   | -0.52               |                       |
| 8,944.00              | 92.50           | 358.80      | 4,302.66              | 5,051.11     | -27.31       | 5,051.17                | 2.17                   | 1.68                |                       |
| 9,039.00              | 92.60           | 358.70      | 4,298.43              | 5,146.00     | -29.38       | 5,146.06                | 0.15                   | 0.11                |                       |
| 9,134.00              | 92.40           | 358.30      | 4,294.29              | 5,240.87     | -31.87       | 5,240.96                | 0.47                   | -0.21               |                       |
| 9,228.00              | 92.40           | 357.90      | 4,290.35              | 5,334.74     | -34.98       | 5,334.85                | 0.43                   | 0.00                |                       |
| 9,323.00              | 92.60           | 357.10      | 4,286.20              | 5,429.56     | -39.12       | 5,429.69                | 0.87                   | 0.21                |                       |
| 9,418.00              | 93.70           | 359.20      | 4,280.98              | 5,524.36     | -42.18       | 5,524.52                | 2.49                   | 1.16                |                       |
| 9,513.00              | 92.10           | 358.40      | 4,276.18              | 5,619.21     | -44.17       | 5,619.38                | 1.88                   | -1.68               |                       |
| 9,609.00              | 90.00           | 359.60      | 4,274.42              | 5,715.17     | -45.84       | 5,715.36                | 2.52                   | -2.19               |                       |
| 9,704.00              | 89.60           | 358.60      | 4,274.75              | 5,810.16     | -47.34       | 5,810.35                | 1.13                   | -0.42               |                       |
| 9,799.00              | 91.80           | 359.50      | 4,273.59              | 5,905.13     | -48.91       | 5,905.33                | 2.50                   | 2.32                |                       |
| 9,894.00              | 91.50           | 359.10      | 4,270.85              | 6,000.08     | -50.07       | 6,000.29                | 0.53                   | -0.32               |                       |
| 9,989.00              | 90.90           | 358.50      | 4,268.86              | 6,095.04     | -52.06       | 6,095.26                | 0.89                   | -0.63               |                       |
| 10,084.00             | 90.70           | 358.60      | 4,267.54              | 6,190.00     | -54.46       | 6,190.24                | 0.24                   | -0.21               |                       |
| 10,179.00             | 91.70           | 359.00      | 4,265.55              | 6,284.96     | -56.45       | 6,285.21                | 1.13                   | 1.05                |                       |
| 10,274.00             | 92.20           | 358.80      | 4,262.32              | 6,379.89     | -58.28       | 6,380.15                | 0.57                   | 0.53                |                       |
| 10,369.00             | 91.20           | 0.60        | 4,259.50              | 6,474.84     | -58.77       | 6,475.10                | 2.17                   | -1.05               |                       |
| 10,464.00             | 92.40           | 1.20        | 4,256.51              | 6,569.78     | -57.28       | 6,570.03                | 1.41                   | 1.26                |                       |
| 10,559.00             | 92.10           | 1.30        | 4,252.78              | 6,664.68     | -55.21       | 6,664.91                | 0.33                   | -0.32               |                       |
| 10,654.00             | 91.80           | 1.20        | 4,249.55              | 6,759.60     | -53.14       | 6,759.81                | 0.33                   | -0.32               |                       |
| 10,749.00             | 91.80           | 1.40        | 4,246.57              | 6,854.53     | -50.99       | 6,854.72                | 0.21                   | 0.00                |                       |
| 10,844.00             | 91.30           | 1.60        | 4,244.00              | 6,949.46     | -48.50       | 6,949.63                | 0.57                   | -0.53               |                       |
| 10,940.00             | 91.80           | 0.30        | 4,241.40              | 7,045.41     | -46.91       | 7,045.56                | 1.45                   | 0.52                |                       |
| 11,035.00             | 92.30           | 359.40      | 4,238.00              | 7,140.35     | -47.16       | 7,140.50                | 1.08                   | 0.53                |                       |
| 11,130.00             | 92.40           | 358.80      | 4,234.11              | 7,235.26     | -48.65       | 7,235.42                | 0.64                   | 0.11                |                       |
| 11,225.00             | 92.30           | 358.80      | 4,230.21              | 7,330.16     | -50.64       | 7,330.33                | 0.11                   | -0.11               |                       |
| 11,320.00             | 91.50           | 358.50      | 4,227.06              | 7,425.08     | -52.87       | 7,425.26                | 0.90                   | -0.84               |                       |
| 11,415.00             | 91.40           | 359.50      | 4,224.66              | 7,520.03     | -54.53       | 7,520.23                | 1.06                   | -0.11               |                       |
| 11,510.00             | 90.60           | 359.00      | 4,223.00              | 7,615.01     | -55.77       | 7,615.21                | 0.99                   | -0.84               |                       |
| 11,605.00             | 92.80           | 359.50      | 4,220.18              | 7,709.95     | -57.02       | 7,710.16                | 2.37                   | 2.32                |                       |
| 11,662.00             | 92.60           | 0.10        | 4,217.50              | 7,766.89     | -57.22       | 7,767.10                | 1.11                   | -0.35               | Last CES Survey       |
| 11,712.00             | 92.60           | 0.10        | 4,215.23              | 7,816.84     | -57.13       | 7,817.04                | 0.00                   | 0.00                | Actual BHL            |



Cathedral Energy Services  
Survey Report



|           |                            |                              |                                   |
|-----------|----------------------------|------------------------------|-----------------------------------|
| Company:  | Manzano LLC                | Local Co-ordinate Reference: | Well Tupelo Honey #5H             |
| Project:  | Roosevelt Co., NM (NAD 83) | TVD Reference:               | 16' RKB @ 4350.00usft (Norton #6) |
| Site:     | Sec 27-6S-34E              | MD Reference:                | 16' RKB @ 4350.00usft (Norton #6) |
| Well:     | Tupelo Honey #5H           | North Reference:             | Grid                              |
| Wellbore: | ST01 [233837]              | Survey Calculation Method:   | Minimum Curvature                 |
| Design:   | Final                      | Database:                    | USA EDM 5000 Multi Users DB       |

| Targets                                                                                                   |           |          |          |          |        |              |            |           |             |
|-----------------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|--------|--------------|------------|-----------|-------------|
| Target Name                                                                                               |           |          |          |          |        |              |            |           |             |
| - hit/miss target                                                                                         | Dip Angle | Dip Dir. | TVD      | +N/-S    | +E/-W  | Northing     | Easting    | Latitude  | Longitude   |
| - Shape                                                                                                   | (°)       | (°)      | (usft)   | (usft)   | (usft) | (usft)       | (usft)     |           |             |
| TH #5H - P5 PBHL                                                                                          | 0.00      | 0.00     | 4,125.00 | 7,818.90 | -64.80 | 1,015,155.30 | 806,779.00 | 33.787396 | -103.459679 |
| - actual wellpath misses target center by 90.58usft at 11712.00usft MD (4215.23 TVD, 7816.84 N, -57.13 E) |           |          |          |          |        |              |            |           |             |
| - Point                                                                                                   |           |          |          |          |        |              |            |           |             |
| TH #5H - P6 PBHL                                                                                          | 0.00      | 0.00     | 4,189.00 | 7,818.90 | -64.80 | 1,015,155.30 | 806,779.00 | 33.787396 | -103.459679 |
| - actual wellpath misses target center by 27.41usft at 11712.00usft MD (4215.23 TVD, 7816.84 N, -57.13 E) |           |          |          |          |        |              |            |           |             |
| - Point                                                                                                   |           |          |          |          |        |              |            |           |             |
| TH #5H - P6b PBHL                                                                                         | 0.00      | 0.00     | 4,210.00 | 7,818.90 | -64.80 | 1,015,155.30 | 806,779.00 | 33.787396 | -103.459679 |
| - actual wellpath misses target center by 9.51usft at 11712.00usft MD (4215.23 TVD, 7816.84 N, -57.13 E)  |           |          |          |          |        |              |            |           |             |
| - Point                                                                                                   |           |          |          |          |        |              |            |           |             |

| Design Annotations |                |                   |        |                  |
|--------------------|----------------|-------------------|--------|------------------|
| Measured Depth     | Vertical Depth | Local Coordinates |        |                  |
| (usft)             | (usft)         | +N/-S             | +E/-W  | Comment          |
|                    |                | (usft)            | (usft) |                  |
| 4,585.00           | 4,220.56       | 702.11            | -46.70 | Point of ST      |
| 6,766.00           | 4,296.41       | 2,874.23          | -2.16  | Section Crossing |
| 11,662.00          | 4,217.50       | 7,766.89          | -57.22 | Last CES Survey  |
| 11,712.00          | 4,215.23       | 7,816.84          | -57.13 | Actual BHL       |

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_