

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240  
DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210  
DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410  
DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised July 16, 2010

Submit one copy to appropriate  
District Office

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

|                                   |                                                 |                               |
|-----------------------------------|-------------------------------------------------|-------------------------------|
| API Number<br><b>30-025-40008</b> | Pool Code<br>27220                              | Pool Name<br>Gem; Bone Spring |
| Property Code<br>300556           | Property Name<br>STATE HH                       | Well Number<br>4              |
| GRID No.<br>162683                | Operator Name<br>CIMAREX ENERGY CO. OF COLORADO | Elevation<br>3576'            |

Surface Location

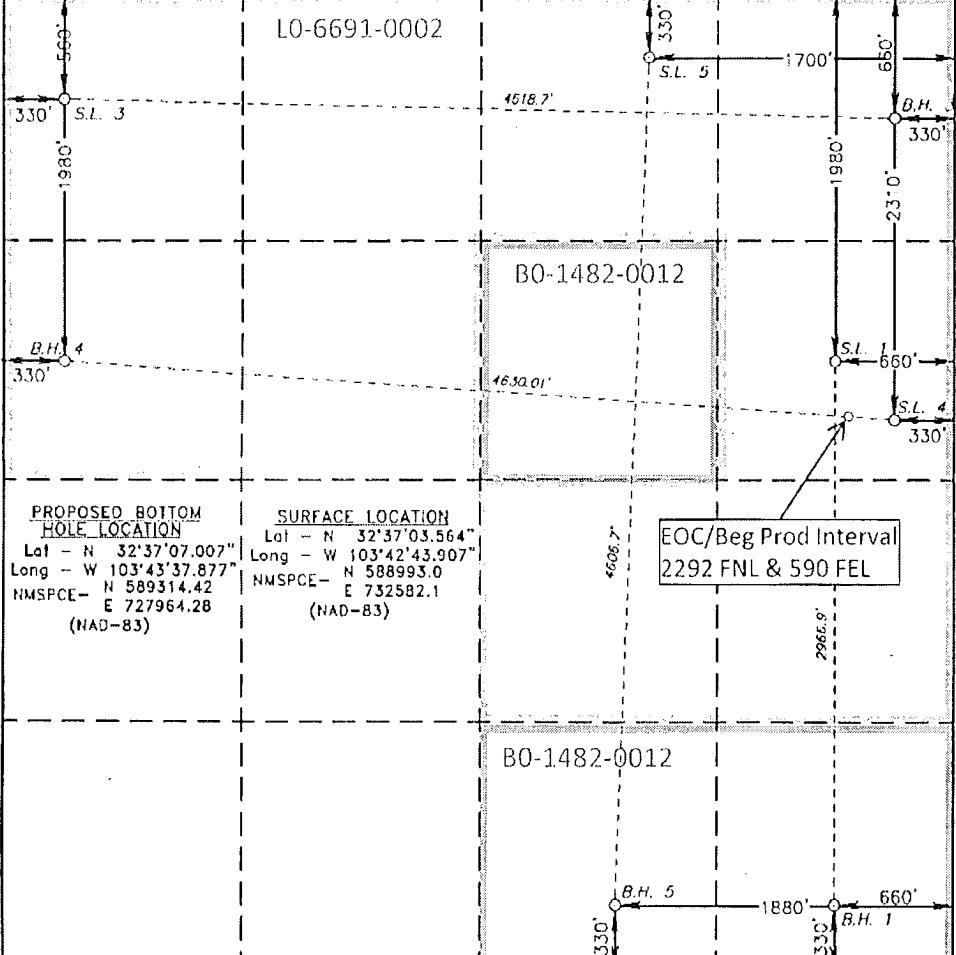
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| H             | 36      | 19 S     | 32 E  |         | 2310          | NORTH            | 330           | EAST           | LEA    |

Bottom Hole Location If Different From Surface

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| E             | 36      | 19 S     | 32 E  |         | 1980          | NORTH            | 330           | WEST           | LEA    |

| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|-----------------|-----------------|--------------------|-----------|
| 480             |                 | P                  |           |

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

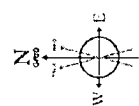
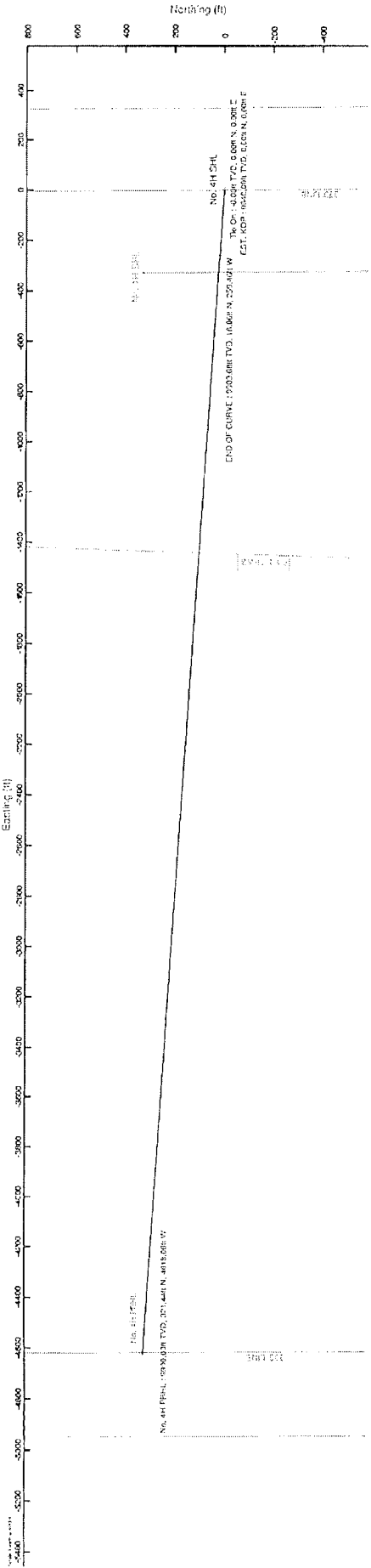
|                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p><b>PROPOSED BOTTOM HOLE LOCATION</b><br/>Lat - N 32°37'07.007"<br/>Long - W 103°43'37.877"<br/>NMSPC - N 589314.42<br/>E 727964.28<br/>(NAD-83)</p> <p><b>SURFACE LOCATION</b><br/>Lat - N 32°37'03.564"<br/>Long - W 103°42'43.907"<br/>NMSPC - N 588993.0<br/>E 732582.1<br/>(NAD-83)</p> <p><b>EOC/Beg Prod Interval</b><br/>2292 FNL &amp; 590 FEL</p> | <p><b>OPERATOR CERTIFICATION</b><br/>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><u>Zeno Farris</u> 6/2011<br/>Signature Date</p> <p>Zeno Farris<br/>Printed Name<br/>zfarris@cimarex.com<br/>Email Address</p> <p><b>SURVEYOR CERTIFICATION</b><br/>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.</p> <p>DECEMBER 09 2010<br/>Date Surveyed<br/>Signature &amp; Seal of Professional Surveyor<br/>W.C. No. 23800<br/>Certificate No. Gary L. Jones 7977<br/>BASIN SURVEYS 23800</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



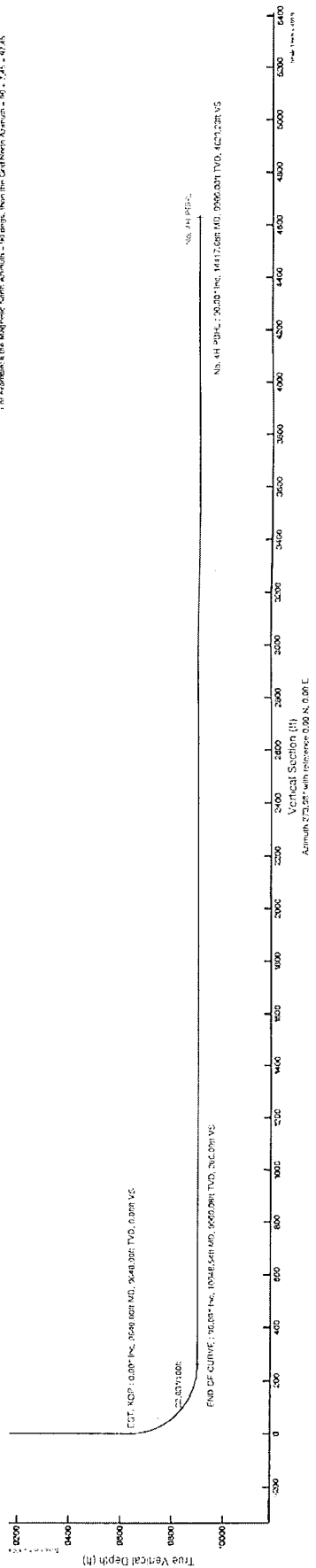
Cimarex Energy Co.

Location: Los County, NM  
Field: (State HH) Soc 36, T18S, R32E  
Facility: State HH No. 4H  
Stair: No. 4H SKL  
Well: No. 4H  
Wellbore: No. 4H PV2A

| Well Profile Data |          |           |         |          |              |              |              |         |
|-------------------|----------|-----------|---------|----------|--------------|--------------|--------------|---------|
| Design Comment    | MD (ft)  | Incl. (°) | Az. (°) | TVD (ft) | Local N (ft) | Local E (ft) | DLS (7700ft) | VS (ft) |
| Tie Cn            | 0.00     | 3.000     | 273.982 | 6.03     | 0.00         | 2.00         | 0.00         | 0.00    |
| EST. NCP          | 9840.30  | 0.000     | 273.982 | 9540.00  | 0.00         | 0.00         | 0.00         | 0.00    |
| END OF CURVE      | 10048.54 | 90.001    | 273.982 | 9300.08  | 19.06        | -265.46      | 22.03        | 280.95  |
| No. 4H PBHL       | 14117.62 | 90.001    | 273.982 | 9900.00  | 321.44       | -4618.05     | 33.00        | 4619.23 |



USCGA (1964, 0 to 20) 1.0 Dip (60.22°) Rise: 4200 ft  
Magnetic North is 7.70 degrees East of True North lat (162201)  
Circ North is 2.32 degrees East of True North  
To correct azimuth from True to Circ subtract 0.23 degrees  
To correct azimuth from Magnetic to Circ add 7.45 degrees  
For example if the Magnetic azimuth is 160 deg, then the Circ North Azimuth is 160 - 7.45 = 152.55





# Planned Wellpath Report

Prelim\_2  
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## REFERENCE WELLPATH IDENTIFICATION

|          |                               |          |            |
|----------|-------------------------------|----------|------------|
| Operator | Cimarex Energy Co.            | Slot     | No. 4H SHL |
| Area     | Lea County, NM                | Well     | No. 4H     |
| Field    | (State HH) Sec 36, T19S, R32E | Wellbore | No. 4H PWB |
| Facility | State HH No. 4H               |          |            |

## REPORT SETUP INFORMATION

|                     |                                                                  |                      |                           |
|---------------------|------------------------------------------------------------------|----------------------|---------------------------|
| Projection System   | NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet | Software System      | WellArchitect® 2.0        |
| North Reference     | Grid                                                             | User                 | Gomeoscr                  |
| Scale               | 0.999951                                                         | Report Generated     | 1/6/2011 at 2:20:59 PM    |
| Convergence at slot | 0.33° East                                                       | Database/Source file | WA Midland/No. 4H_PWB.xml |

## WELLPATH LOCATION

|                       | Local coordinates |          | Grid coordinates |                | Geographic coordinates |                 |
|-----------------------|-------------------|----------|------------------|----------------|------------------------|-----------------|
|                       | North[ft]         | East[ft] | Easting[USft]    | Northing[USft] | Latitude               | Longitude       |
| Slot Location         | 0.00              | 0.00     | 732582.10        | 588993.00      | 32°37'03.563"N         | 103°42'43.908"W |
| Facility Reference Pt |                   |          | 732582.10        | 588993.00      | 32°37'03.563"N         | 103°42'43.908"W |
| Field Reference Pt    |                   |          | 730941.22        | 588045.42      | 32°36'54.281"N         | 103°43'03.157"W |

## WELLPATH DATUM

|                          |                        |                                                   |                   |
|--------------------------|------------------------|---------------------------------------------------|-------------------|
| Calculation method       | Minimum curvature      | Rig on No. 4H SHL (KB) to Facility Vertical Datum | 0.00ft            |
| Horizontal Reference Pt  | Slot                   | Rig on No. 4H SHL (KB) to Mean Sea Level          | 3576.00ft         |
| Vertical Reference Pt    | Rig on No. 4H SHL (KB) | Facility Vertical Datum to Mud Line (Facility)    | 0.00ft            |
| MD Reference Pt          | Rig on No. 4H SHL (KB) | Section Origin                                    | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level         | Section Azimuth                                   | 273.98°           |



# Planned Wellpath Report

Prelim\_2

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## REFERENCE WELLPATH IDENTIFICATION

|          |                               |          |            |
|----------|-------------------------------|----------|------------|
| Operator | Cimarex Energy Co.            | Slot     | No. 4H SHL |
| Area     | Lea County, NM                | Well     | No. 4H     |
| Field    | (State HH) Sec 36, T19S, R32E | Wellbore | No. 4H PWB |
| Facility | State HH No. 4H               |          |            |

## WELLPATH DATA (148 stations) † = interpolated/extrapolated station

| MD<br>[ft] | Inclination<br>[°] | Azimuth<br>[°] | TVD<br>[ft] | Vert Sect<br>[ft] | North<br>[ft] | East<br>[ft] | Grid East<br>[srv ft] | Grid North<br>[srv ft] | Latitude       | Longitude       | DLS<br>[°/100ft] | Comments |
|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|-----------------------|------------------------|----------------|-----------------|------------------|----------|
| 0.00       | 0.000              | 273.982        | 0.00        | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             | Tie On   |
| 100.00†    | 0.000              | 273.982        | 100.00      | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 200.00†    | 0.000              | 273.982        | 200.00      | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 300.00†    | 0.000              | 273.982        | 300.00      | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 400.00†    | 0.000              | 273.982        | 400.00      | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 500.00†    | 0.000              | 273.982        | 500.00      | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 600.00†    | 0.000              | 273.982        | 600.00      | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 700.00†    | 0.000              | 273.982        | 700.00      | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 800.00†    | 0.000              | 273.982        | 800.00      | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 900.00†    | 0.000              | 273.982        | 900.00      | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 1000.00†   | 0.000              | 273.982        | 1000.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 1100.00†   | 0.000              | 273.982        | 1100.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 1200.00†   | 0.000              | 273.982        | 1200.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 1300.00†   | 0.000              | 273.982        | 1300.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 1400.00†   | 0.000              | 273.982        | 1400.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 1500.00†   | 0.000              | 273.982        | 1500.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 1600.00†   | 0.000              | 273.982        | 1600.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 1700.00†   | 0.000              | 273.982        | 1700.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 1800.00†   | 0.000              | 273.982        | 1800.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 1900.00†   | 0.000              | 273.982        | 1900.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 2000.00†   | 0.000              | 273.982        | 2000.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 2100.00†   | 0.000              | 273.982        | 2100.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 2200.00†   | 0.000              | 273.982        | 2200.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 2300.00†   | 0.000              | 273.982        | 2300.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 2400.00†   | 0.000              | 273.982        | 2400.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 2500.00†   | 0.000              | 273.982        | 2500.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 2600.00†   | 0.000              | 273.982        | 2600.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 2700.00†   | 0.000              | 273.982        | 2700.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 2800.00†   | 0.000              | 273.982        | 2800.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 2900.00†   | 0.000              | 273.982        | 2900.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 3000.00†   | 0.000              | 273.982        | 3000.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 3100.00†   | 0.000              | 273.982        | 3100.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 3200.00†   | 0.000              | 273.982        | 3200.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 3300.00†   | 0.000              | 273.982        | 3300.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 3400.00†   | 0.000              | 273.982        | 3400.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 3500.00†   | 0.000              | 273.982        | 3500.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 3600.00†   | 0.000              | 273.982        | 3600.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 3700.00†   | 0.000              | 273.982        | 3700.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 3800.00†   | 0.000              | 273.982        | 3800.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 3900.00†   | 0.000              | 273.982        | 3900.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 4000.00†   | 0.000              | 273.982        | 4000.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 4100.00†   | 0.000              | 273.982        | 4100.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 4200.00†   | 0.000              | 273.982        | 4200.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 4300.00†   | 0.000              | 273.982        | 4300.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 4400.00†   | 0.000              | 273.982        | 4400.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |



# Planned Wellpath Report

Prelim\_2

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INTEQ

| REFERENCE WELLPATH IDENTIFICATION |                               |          |            |
|-----------------------------------|-------------------------------|----------|------------|
| Operator                          | Cimarex Energy Co.            | Slot     | No. 4H SHL |
| Area                              | Lea County, NM                | Well     | No. 4H     |
| Field                             | (State HH) Sec 36, T19S, R32E | Wellbore | No. 4H PWB |
| Facility                          | State HH No. 4H               |          |            |

| WELLPATH DATA (148 stations) † = interpolated/extrapolated station |                    |                |             |                   |               |              |                       |                        |                |                 |                  |          |
|--------------------------------------------------------------------|--------------------|----------------|-------------|-------------------|---------------|--------------|-----------------------|------------------------|----------------|-----------------|------------------|----------|
| MD<br>[ft]                                                         | Inclination<br>[°] | Azimuth<br>[°] | TVD<br>[ft] | Vert Sect<br>[ft] | North<br>[ft] | East<br>[ft] | Grid East<br>[srv ft] | Grid North<br>[srv ft] | Latitude       | Longitude       | DLS<br>[°/100ft] | Comments |
| 4500.00†                                                           | 0.000              | 273.982        | 4500.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 4600.00†                                                           | 0.000              | 273.982        | 4600.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 4700.00†                                                           | 0.000              | 273.982        | 4700.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 4800.00†                                                           | 0.000              | 273.982        | 4800.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 4900.00†                                                           | 0.000              | 273.982        | 4900.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 5000.00†                                                           | 0.000              | 273.982        | 5000.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 5100.00†                                                           | 0.000              | 273.982        | 5100.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 5200.00†                                                           | 0.000              | 273.982        | 5200.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 5300.00†                                                           | 0.000              | 273.982        | 5300.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 5400.00†                                                           | 0.000              | 273.982        | 5400.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 5500.00†                                                           | 0.000              | 273.982        | 5500.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 5600.00†                                                           | 0.000              | 273.982        | 5600.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 5700.00†                                                           | 0.000              | 273.982        | 5700.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 5800.00†                                                           | 0.000              | 273.982        | 5800.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 5900.00†                                                           | 0.000              | 273.982        | 5900.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 6000.00†                                                           | 0.000              | 273.982        | 6000.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 6100.00†                                                           | 0.000              | 273.982        | 6100.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 6200.00†                                                           | 0.000              | 273.982        | 6200.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 6300.00†                                                           | 0.000              | 273.982        | 6300.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 6400.00†                                                           | 0.000              | 273.982        | 6400.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 6500.00†                                                           | 0.000              | 273.982        | 6500.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 6600.00†                                                           | 0.000              | 273.982        | 6600.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 6700.00†                                                           | 0.000              | 273.982        | 6700.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 6800.00†                                                           | 0.000              | 273.982        | 6800.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 6900.00†                                                           | 0.000              | 273.982        | 6900.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 7000.00†                                                           | 0.000              | 273.982        | 7000.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 7100.00†                                                           | 0.000              | 273.982        | 7100.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 7200.00†                                                           | 0.000              | 273.982        | 7200.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 7300.00†                                                           | 0.000              | 273.982        | 7300.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 7400.00†                                                           | 0.000              | 273.982        | 7400.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 7500.00†                                                           | 0.000              | 273.982        | 7500.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 7600.00†                                                           | 0.000              | 273.982        | 7600.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 7700.00†                                                           | 0.000              | 273.982        | 7700.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 7800.00†                                                           | 0.000              | 273.982        | 7800.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 7900.00†                                                           | 0.000              | 273.982        | 7900.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 8000.00†                                                           | 0.000              | 273.982        | 8000.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 8100.00†                                                           | 0.000              | 273.982        | 8100.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 8200.00†                                                           | 0.000              | 273.982        | 8200.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 8300.00†                                                           | 0.000              | 273.982        | 8300.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 8400.00†                                                           | 0.000              | 273.982        | 8400.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 8500.00†                                                           | 0.000              | 273.982        | 8500.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 8600.00†                                                           | 0.000              | 273.982        | 8600.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 8700.00†                                                           | 0.000              | 273.982        | 8700.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 8800.00†                                                           | 0.000              | 273.982        | 8800.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |
| 8900.00†                                                           | 0.000              | 273.982        | 8900.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |          |



# Planned Wellpath Report

Prelim\_2  
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INTEQ

| REFERENCE WELLBATH IDENTIFICATION |                               |          |            |
|-----------------------------------|-------------------------------|----------|------------|
| Operator                          | Cimarex Energy Co.            | Slot     | No. 4H SHL |
| Area                              | Lea County, NM                | Well     | No. 4H     |
| Field                             | (State HH) Sec 36, T19S, R32E | Wellbore | No. 4H PWB |
| Facility                          | State HH No. 4H               |          |            |

## WELLPATH DATA (148 stations) † = interpolated/extrapolated station

| MD<br>[ft] | Inclination<br>[°] | Azimuth<br>[°] | TVD<br>[ft] | Vert Sect<br>[ft] | North<br>[ft] | East<br>[ft] | Grid East<br>[srv ft] | Grid North<br>[srv ft] | Latitude       | Longitude       | DLS<br>[°/100ft] | Comments     |
|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|-----------------------|------------------------|----------------|-----------------|------------------|--------------|
| 9000.00†   | 0.000              | 273.982        | 9000.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |              |
| 9100.00†   | 0.000              | 273.982        | 9100.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |              |
| 9200.00†   | 0.000              | 273.982        | 9200.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |              |
| 9300.00†   | 0.000              | 273.982        | 9300.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |              |
| 9400.00†   | 0.000              | 273.982        | 9400.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |              |
| 9500.00†   | 0.000              | 273.982        | 9500.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |              |
| 9600.00†   | 0.000              | 273.982        | 9600.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             |              |
| 9640.00    | 0.000              | 273.982        | 9640.00     | 0.00              | 0.00          | 0.00         | 732582.10             | 588993.00              | 32°37'03.563"N | 103°42'43.908"W | 0.00             | EST. KOP     |
| 9700.00†   | 13.218             | 273.982        | 9699.47     | 6.89              | 0.48          | -6.87        | 732575.23             | 588993.48              | 32°37'03.568"N | 103°42'43.988"W | 22.03            |              |
| 9800.00†   | 35.248             | 273.982        | 9790.10     | 47.68             | 3.31          | -47.57       | 732534.53             | 588996.31              | 32°37'03.599"N | 103°42'44.464"W | 22.03            |              |
| 9900.00†   | 57.278             | 273.982        | 9858.81     | 119.49            | 8.30          | -119.20      | 732462.90             | 589001.30              | 32°37'03.652"N | 103°42'45.301"W | 22.03            |              |
| 10000.00†  | 79.308             | 273.982        | 9895.57     | 211.83            | 14.71         | -211.32      | 732370.79             | 589007.71              | 32°37'03.721"N | 103°42'46.378"W | 22.03            |              |
| 10048.54   | 90.001             | 273.982        | 9900.08     | 260.09            | 18.06         | -259.46      | 732322.66             | 589011.06              | 32°37'03.757"N | 103°42'46.940"W | 22.03            | END OF CURVE |
| 10100.00†  | 90.001             | 273.982        | 9900.08     | 311.55            | 21.63         | -310.79      | 732271.32             | 589014.63              | 32°37'03.795"N | 103°42'47.540"W | 0.00             |              |
| 10200.00†  | 90.001             | 273.982        | 9900.08     | 411.55            | 28.58         | -410.55      | 732171.57             | 589021.57              | 32°37'03.870"N | 103°42'48.706"W | 0.00             |              |
| 10300.00†  | 90.001             | 273.982        | 9900.08     | 511.55            | 35.52         | -510.31      | 732071.81             | 589028.52              | 32°37'03.944"N | 103°42'49.872"W | 0.00             |              |
| 10400.00†  | 90.001             | 273.982        | 9900.07     | 611.55            | 42.46         | -610.07      | 731972.06             | 589035.46              | 32°37'04.019"N | 103°42'51.038"W | 0.00             |              |
| 10500.00†  | 90.001             | 273.982        | 9900.07     | 711.55            | 49.41         | -709.83      | 731872.31             | 589042.40              | 32°37'04.093"N | 103°42'52.203"W | 0.00             |              |
| 10600.00†  | 90.001             | 273.982        | 9900.07     | 811.55            | 56.35         | -809.59      | 731772.55             | 589049.35              | 32°37'04.167"N | 103°42'53.369"W | 0.00             |              |
| 10700.00†  | 90.001             | 273.982        | 9900.07     | 911.55            | 63.29         | -909.35      | 731672.80             | 589056.29              | 32°37'04.242"N | 103°42'54.535"W | 0.00             |              |
| 10800.00†  | 90.001             | 273.982        | 9900.07     | 1011.55           | 70.24         | -1009.11     | 731573.05             | 589063.23              | 32°37'04.316"N | 103°42'55.701"W | 0.00             |              |
| 10900.00†  | 90.001             | 273.982        | 9900.06     | 1111.55           | 77.18         | -1108.86     | 731473.29             | 589070.18              | 32°37'04.391"N | 103°42'56.867"W | 0.00             |              |
| 11000.00†  | 90.001             | 273.982        | 9900.06     | 1211.55           | 84.13         | -1208.62     | 731373.54             | 589077.12              | 32°37'04.465"N | 103°42'58.032"W | 0.00             |              |
| 11100.00†  | 90.001             | 273.982        | 9900.06     | 1311.55           | 91.07         | -1308.38     | 731273.79             | 589084.06              | 32°37'04.540"N | 103°42'59.198"W | 0.00             |              |
| 11200.00†  | 90.001             | 273.982        | 9900.06     | 1411.55           | 98.01         | -1408.14     | 731174.03             | 589091.01              | 32°37'04.614"N | 103°43'00.364"W | 0.00             |              |
| 11300.00†  | 90.001             | 273.982        | 9900.06     | 1511.55           | 104.96        | -1507.90     | 731074.28             | 589097.95              | 32°37'04.689"N | 103°43'01.530"W | 0.00             |              |
| 11400.00†  | 90.001             | 273.982        | 9900.06     | 1611.55           | 111.90        | -1607.66     | 730974.52             | 589104.89              | 32°37'04.763"N | 103°43'02.696"W | 0.00             |              |
| 11500.00†  | 90.001             | 273.982        | 9900.05     | 1711.55           | 118.84        | -1707.42     | 730874.77             | 589111.84              | 32°37'04.837"N | 103°43'03.862"W | 0.00             |              |
| 11600.00†  | 90.001             | 273.982        | 9900.05     | 1811.55           | 125.79        | -1807.17     | 730775.02             | 589118.78              | 32°37'04.912"N | 103°43'05.027"W | 0.00             |              |
| 11700.00†  | 90.001             | 273.982        | 9900.05     | 1911.55           | 132.73        | -1906.93     | 730675.26             | 589125.72              | 32°37'04.986"N | 103°43'06.193"W | 0.00             |              |
| 11800.00†  | 90.001             | 273.982        | 9900.05     | 2011.55           | 139.67        | -2006.69     | 730575.51             | 589132.67              | 32°37'05.061"N | 103°43'07.359"W | 0.00             |              |
| 11900.00†  | 90.001             | 273.982        | 9900.05     | 2111.55           | 146.62        | -2106.45     | 730475.76             | 589139.61              | 32°37'05.135"N | 103°43'08.525"W | 0.00             |              |
| 12000.00†  | 90.001             | 273.982        | 9900.04     | 2211.55           | 153.56        | -2206.21     | 730376.00             | 589146.55              | 32°37'05.209"N | 103°43'09.691"W | 0.00             |              |
| 12100.00†  | 90.001             | 273.982        | 9900.04     | 2311.55           | 160.51        | -2305.97     | 730276.25             | 589153.50              | 32°37'05.284"N | 103°43'10.857"W | 0.00             |              |
| 12200.00†  | 90.001             | 273.982        | 9900.04     | 2411.55           | 167.45        | -2405.73     | 730176.50             | 589160.44              | 32°37'05.358"N | 103°43'12.022"W | 0.00             |              |
| 12300.00†  | 90.001             | 273.982        | 9900.04     | 2511.55           | 174.39        | -2505.48     | 730076.74             | 589167.38              | 32°37'05.433"N | 103°43'13.188"W | 0.00             |              |
| 12400.00†  | 90.001             | 273.982        | 9900.04     | 2611.55           | 181.34        | -2605.24     | 729976.99             | 589174.33              | 32°37'05.507"N | 103°43'14.354"W | 0.00             |              |
| 12500.00†  | 90.001             | 273.982        | 9900.04     | 2711.55           | 188.28        | -2705.00     | 729877.24             | 589181.27              | 32°37'05.581"N | 103°43'15.520"W | 0.00             |              |
| 12600.00†  | 90.001             | 273.982        | 9900.03     | 2811.55           | 195.22        | -2804.76     | 729777.48             | 589188.21              | 32°37'05.656"N | 103°43'16.686"W | 0.00             |              |
| 12700.00†  | 90.001             | 273.982        | 9900.03     | 2911.55           | 202.17        | -2904.52     | 729677.73             | 589195.16              | 32°37'05.730"N | 103°43'17.852"W | 0.00             |              |
| 12800.00†  | 90.001             | 273.982        | 9900.03     | 3011.55           | 209.11        | -3004.28     | 729577.98             | 589202.10              | 32°37'05.805"N | 103°43'19.017"W | 0.00             |              |
| 12900.00†  | 90.001             | 273.982        | 9900.03     | 3111.55           | 216.05        | -3104.04     | 729478.22             | 589209.04              | 32°37'05.879"N | 103°43'20.183"W | 0.00             |              |
| 13000.00†  | 90.001             | 273.982        | 9900.03     | 3211.55           | 223.00        | -3203.80     | 729378.47             | 589215.99              | 32°37'05.953"N | 103°43'21.349"W | 0.00             |              |
| 13100.00†  | 90.001             | 273.982        | 9900.02     | 3311.55           | 229.94        | -3303.55     | 729278.71             | 589222.93              | 32°37'06.028"N | 103°43'22.515"W | 0.00             |              |
| 13200.00†  | 90.001             | 273.982        | 9900.02     | 3411.55           | 236.89        | -3403.31     | 729178.96             | 589229.87              | 32°37'06.102"N | 103°43'23.681"W | 0.00             |              |



# Planned Wellpath Report

Prelim\_2

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**BAKER  
HUGHES**

**INTEQ**

## REFERENCE WELLPATH IDENTIFICATION

|          |                               |          |            |
|----------|-------------------------------|----------|------------|
| Operator | Cimarex Energy Co.            | Slot     | No. 4H SHL |
| Area     | Lea County, NM                | Well     | No. 4H     |
| Field    | (State HH) Sec 36, T19S, R32E | Wellbore | No. 4H PWB |
| Facility | State HH No. 4H               |          |            |

## WELLPATH DATA (148 stations) † = interpolated/extrapolated station

| MD<br>[ft] | Inclination<br>[°] | Azimuth<br>[°] | TVD<br>[ft] | Vert Sect<br>[ft] | North<br>[ft] | East<br>[ft] | Grid East<br>[srv ft] | Grid North<br>[srv ft] | Latitude       | Longitude       | DLS<br>[°/100ft] | Comments    |
|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|-----------------------|------------------------|----------------|-----------------|------------------|-------------|
| 13300.00†  | 90.001             | 273.982        | 9900.02     | 3511.55           | 243.83        | -3503.07     | 729079.21             | 589236.82              | 32°37'06.176"N | 103°43'24.847"W | 0.00             |             |
| 13400.00†  | 90.001             | 273.982        | 9900.02     | 3611.55           | 250.77        | -3602.83     | 728979.45             | 589243.76              | 32°37'06.251"N | 103°43'26.012"W | 0.00             |             |
| 13500.00†  | 90.001             | 273.982        | 9900.02     | 3711.55           | 257.72        | -3702.59     | 728879.70             | 589250.70              | 32°37'06.325"N | 103°43'27.178"W | 0.00             |             |
| 13600.00†  | 90.001             | 273.982        | 9900.02     | 3811.55           | 264.66        | -3802.35     | 728779.95             | 589257.65              | 32°37'06.400"N | 103°43'28.344"W | 0.00             |             |
| 13700.00†  | 90.001             | 273.982        | 9900.01     | 3911.55           | 271.60        | -3902.11     | 728680.19             | 589264.59              | 32°37'06.474"N | 103°43'29.510"W | 0.00             |             |
| 13800.00†  | 90.001             | 273.982        | 9900.01     | 4011.55           | 278.55        | -4001.86     | 728580.44             | 589271.53              | 32°37'06.548"N | 103°43'30.676"W | 0.00             |             |
| 13900.00†  | 90.001             | 273.982        | 9900.01     | 4111.55           | 285.49        | -4101.62     | 728480.69             | 589278.48              | 32°37'06.623"N | 103°43'31.842"W | 0.00             |             |
| 14000.00†  | 90.001             | 273.982        | 9900.01     | 4211.55           | 292.43        | -4201.38     | 728380.93             | 589285.42              | 32°37'06.697"N | 103°43'33.007"W | 0.00             |             |
| 14100.00†  | 90.001             | 273.982        | 9900.01     | 4311.55           | 299.38        | -4301.14     | 728281.18             | 589292.36              | 32°37'06.771"N | 103°43'34.173"W | 0.00             |             |
| 14200.00†  | 90.001             | 273.982        | 9900.00     | 4411.55           | 306.32        | -4400.90     | 728181.43             | 589299.31              | 32°37'06.846"N | 103°43'35.339"W | 0.00             |             |
| 14300.00†  | 90.001             | 273.982        | 9900.00     | 4511.55           | 313.27        | -4500.66     | 728081.67             | 589306.25              | 32°37'06.920"N | 103°43'36.505"W | 0.00             |             |
| 14400.00†  | 90.001             | 273.982        | 9900.00     | 4611.55           | 320.21        | -4600.42     | 727981.92             | 589313.19              | 32°37'06.994"N | 103°43'37.671"W | 0.00             |             |
| 14417.68   | 90.001             | 273.982        | 9900.00†    | 4629.23           | 321.44        | -4618.06     | 727964.28             | 589314.42              | 32°37'07.007"N | 103°43'37.877"W | 0.00             | No. 4H PBHL |

## HOLE & CASING SECTIONS Ref Wellbore: No. 4H PWB Ref Wellpath: Prelim\_2

| String/Diameter  | Start MD<br>[ft] | End MD<br>[ft] | Interval<br>[ft] | Start TVD<br>[ft] | End TVD<br>[ft] | Start N/S<br>[ft] | Start E/W<br>[ft] | End N/S<br>[ft] | End E/W<br>[ft] |
|------------------|------------------|----------------|------------------|-------------------|-----------------|-------------------|-------------------|-----------------|-----------------|
| 9.625in Casing   | 0.00             | 4500.00        | 4500.00          | 0.00              | 4500.00         | 0.00              | 0.00              | 0.00            | 0.00            |
| 8.75in Open Hole | 4500.00          | 14417.68       | 9917.68          | 4500.00           | 9900.00         | 0.00              | 0.00              | 321.44          | -4618.05        |

## TARGETS

| Name                 | MD<br>[ft] | TVD<br>[ft] | North<br>[ft] | East<br>[ft] | Grid East<br>[srv ft] | Grid North<br>[srv ft] | Latitude       | Longitude       | Shape |
|----------------------|------------|-------------|---------------|--------------|-----------------------|------------------------|----------------|-----------------|-------|
| 1) No. 4H PBHL       | 14417.68   | 9900.00     | 321.44        | -4618.06     | 727964.28             | 589314.42              | 32°37'07.007"N | 103°43'37.877"W | point |
| 2nd Bone Spring Sand |            |             |               |              |                       |                        |                |                 |       |

## SURVEY PROGRAM Ref Wellbore: No. 4H PWB Ref Wellpath: Prelim\_2

| Start MD<br>[ft] | End MD<br>[ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore   |
|------------------|----------------|------------------------------|------------------|------------|
| 0.00             | 14417.68       | NaviTrak (Standard)          |                  | No. 4H PWB |