

Application to Drill  
**Maduro Unit No. 9**  
 Cimarex Energy Co. of Colorado  
 Unit D, Section 29  
 T19S-R33E, Eddy County, NM

30-025-40437

In response to questions asked under Section II B of Bulletin NTL-6, the following information is provided for your consideration:

- 1 Location: SHL 29-19S-33E 330 FNL & 1060 FWL  
 BHL 32-19S-33E 2310 FNL & 660 FWL
- 2 Elevation above sea level: 3598' GR
- 3 Geologic name of surface formation: Quaternary Alluvium Deposits
- 4 Drilling tools and associated equipment: Conventional rotary drilling rig using fluid as a circulating medium for solids removal.
- 5 Proposed drilling depth: MD 17086 TVD 9900
- 6 Estimated tops of geological markers:

|          |       |             |       |
|----------|-------|-------------|-------|
| Rustler  | 1255' | Bone Spring | 7700' |
| T. Salt  | 1350' | FBSS        | 8920' |
| B. Salt  | 2665' | SBSS        | 9650' |
| Queen    | 4147' |             |       |
| Delaware | 5300' |             |       |
- 7 Possible mineral bearing formation:  
 Bone Spring Oil

8 Proposed Mud Circulating System:

| Depth               | Mud Wt    | Visc  | Fluid Loss | Type Mud    |
|---------------------|-----------|-------|------------|-------------|
| 0' to 1350'<br>1300 | 8.4 - 8.6 | 28    | NC         | FW          |
| 1350' to 5200'      | 10.0      | 30-32 | NC         | Brine water |
| 5200' to 17086'     | 8.4 - 9.5 | 30-32 | NC         | FW, brine   |

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

8a. Proposed drilling Plan

After setting surface and intermediate casing, drill 8¾" hole to KOP @ 9696 and kick off to drill and drill through the curve to lateral TD @ 17086. Run and cement dual casing string. Use 5½" 17# P110 LTC from 17086-9731, then cross over to 7" 26# P110 LTC from 9731-0. Cement as shown on following page.

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9 Casing & Cementing Program:

*see COA*

| String              | Hole Size | Depth           | Casing OD | Weight | Collar | Grade |
|---------------------|-----------|-----------------|-----------|--------|--------|-------|
| <b>Surface</b>      | 17½"      | 0' to 1350'     | New 13¾"  | 48#    | STC    | H-40  |
| <b>Intermediate</b> | 12¼"      | 0' to 5200'     | New 9¾"   | 40#    | LTC    | N-80  |
| <b>Production</b>   | 8¾"       | 0' to 9731'     | New 7"    | 26#    | LTC    | P-110 |
| <b>Production</b>   | 8¾"       | 9731' to 17086' | New 5½"   | 17#    | LTC    | P-110 |

10 Cementing:

**Surface**

Lead: 913SKS Halcem C + 4% Bentomite + 2% CaCl 13.5ppg 1.75yield 100% Excess

Tail: 235SKS Halcem C + 2% CaCl 14.2ppg 1.34 yield 25% Excess

**TOC Surface Centralizers per Onshore Order 2.III.B.1f**

**Intermediate**

Lead: 1182SKS EconoCem + 5% salt + 5 lbm gilsonite 12.9ppg 1.85yield 70% % Excess

Tail: 172SKS HalCem + 1% CaCl 14.8ppg 1.34 yield 25% Excess

**TOC Surface**

**Production**

Lead: 538SKS EconoCem - H + 0.2 % HR-601 2.44 11.9ppg 2.44yield 50% % Excess

Tail: 2051SKS Versacem - H + 0.5% Halad(R)-344 + 0.4% CFR-3 + 1 lbm/sk salt + 0.1% HR-601 14.5ppg

1.22 yield 25% Excess

*see COA*

**TOC 5000'  
4700'**

**Centralizers every 3rd joint in lateral and curve to provide adequate cement coverage every 100' unless lateral doglegs require greater spacing between centralizers.**

According to the State Engineer, average depth to groundwater is 250. Fresh water zones will be protected by setting 13¾" casing at 1350' and cementing to surface. Hydrocarbon zones will be protected by setting 9¾" casing at 5200 and cementing to surface, and by setting 7" and 5½" casing at 17086 and cementing to 5000.

| <u>Collapse Factor</u> | <u>Burst Factor</u> | <u>Tension Factor</u> |
|------------------------|---------------------|-----------------------|
| 1.125                  | 1.125               | 1.6                   |

11 Pressure control Equipment:

Exhibit "E". A 13¾" 5000 PSI working pressure B.O.P. tested to 3000 PSI consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 5200.' A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. Mud-Gas separator will be utilized if drilling in potential H2S area.

BOP unit will be hydraulically operated. BOP will be nipped up and operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling. From the base of the surface pipe through the running of production casing, the well will be equipped with a 5000 psi BOP system tested to 3000 psi.

BOPS will be tested by an independent service company to 250 psi low and 3000 psi high. Hydril will be tested to 250 psi low and 1500 psi high.

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12 Testing, Logging and Coring Program: *see COM*

- A. Mud logging program: 2 man unit from 5200 to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. No DSTs or cores are planned at this time.

13 Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough H<sub>2</sub>S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H<sub>2</sub>S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H<sub>2</sub>S Safety package on all wells, attached is an "H<sub>2</sub>S Drilling Operations Plan." Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP      **3000 psi**      Estimated BHT      **130°**

14 Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.

Drilling expected to take      30-35 days

If production casing is run an additional 30 days will be required to complete and construct surface facilities.

15 Other Facets of Operations:

After running casing, cased hole gamma ray neutron collar logs will be run from total depth over possible pay intervals.

Bone Spring pay will be perforated and stimulated.

The proposed well will be tested and potentialized as      **an oil well.**



# Cimarex Energy Co.

Location: Lea County, NM  
Field: (Maduro) Sec 29, T19S, R33E  
Facility: Maduro Unit No. 9H

Slot: No. 9H SHL  
Well: No. 9H  
Wellbore: No. 9H PWB



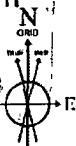
## Well Profile Data

| Design Comment | MD (ft)  | Inc (°) | Az (°)  | TVD (ft) | Local N (ft) | Local E (ft) | DLS (°/100ft) | VS (ft) |
|----------------|----------|---------|---------|----------|--------------|--------------|---------------|---------|
| Tie On         | 0.00     | 0.000   | 182.857 | 0.00     | 0.00         | 0.00         | 0.00          | 0.00    |
| Est. KOP       | 9695.50  | 0.000   | 182.857 | 9695.50  | 0.00         | 0.00         | 0.00          | 0.00    |
| End of Curve   | 10016.93 | 90.001  | 182.857 | 9900.13  | -204.38      | -10.20       | 28.00         | 204.63  |
| No. 9H PBHL    | 17086.04 | 90.001  | 182.857 | 9900.00  | -7264.70     | -362.57      | 0.00          | 7273.74 |

HOBBS OGD

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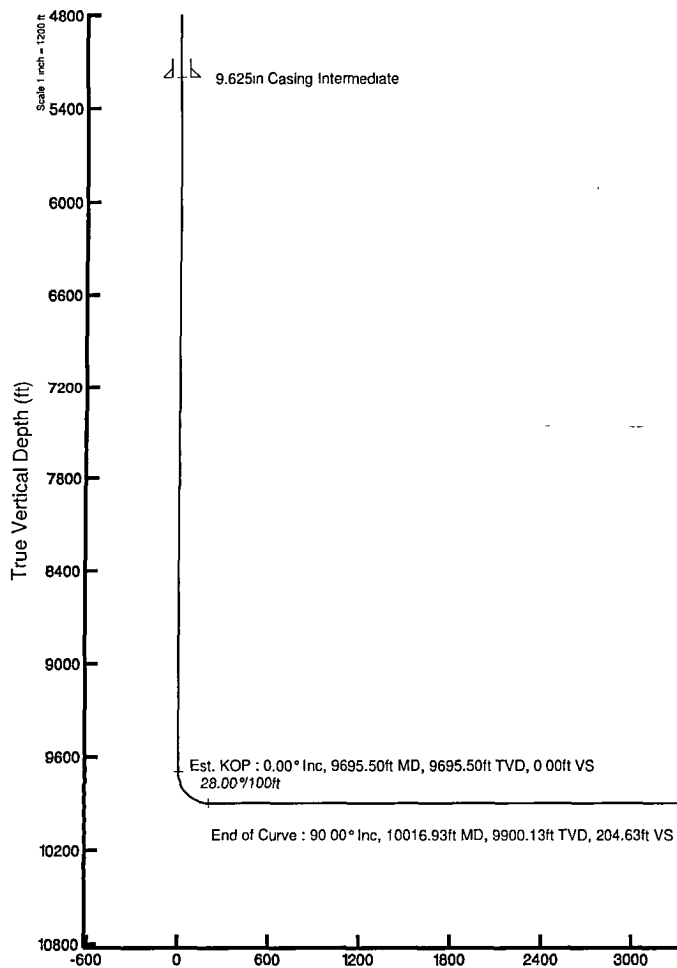
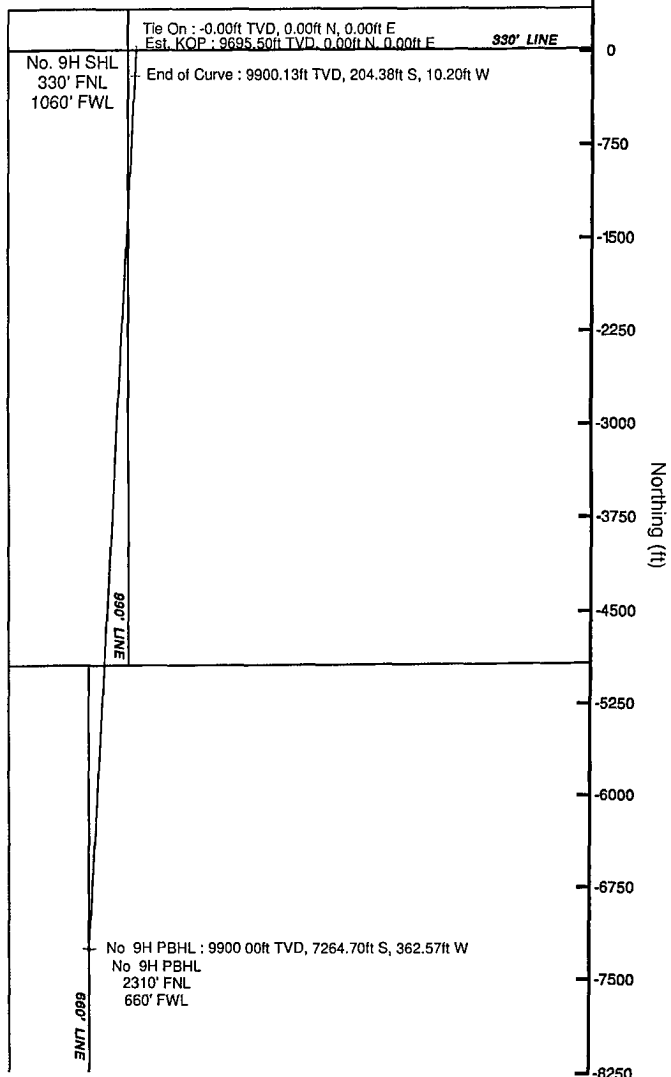
GGOM (1945 to 2012) Dg. 60.57° Field: 48929.1 nT  
Magnetic North is 7.77 degrees East of True North (at 1/21/2011)  
Grid North is 0.35 degrees East of True North

To correct azimuth from True to Grid subtract 0.35 degrees  
To correct azimuth from Magnetic to Grid add 7.43 degrees

For example: If the Magnetic North Azimuth = 90 degrees, then the Grid North Azimuth = 90 + 7.43 = 97.43

|                                                                      |                                                                               |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Plot reference wellpath as Profile                                   | Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (2011), US feet |
| True vertical depths are referenced to Rig on No. 9 SHL (K3)         | North Reference: Grid north                                                   |
| Measured depths are referenced to Rig on No. 9 SHL (K3)              | Scale: True distance                                                          |
| Rig on No. 9 SHL (K3) to Mean Sea Level: 3558 feet                   | Depths are in feet                                                            |
| Mean Sea Level to Mud line (Facility: Maduro Unit No. 9H): 3598 feet | Coordinates are in feet referenced to Slot                                    |
| Coordinates are in feet referenced to Slot                           | Created by: Pommel on 12/21/2011                                              |

Scale 1 inch = 1500 ft  
Easting (ft)  
-1500 -750 0 750 1500 2250 3000 3750 750



Vertical Section (ft)  
Azimuth 182.86° with reference 0.00 N, 0.00 E  
Scale 1 inch = 1200 ft



# Planned Wellpath Report

Prelim\_1

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| REFERENCE WELLPATH IDENTIFICATION |                            |          |            |
|-----------------------------------|----------------------------|----------|------------|
| Operator                          | Cimarex Energy Co.         | Slot     | No. 9H SHL |
| Area                              | Lea County, NM             | Well     | No. 9H     |
| Field                             | (Maduro) Sec 29, T19S,R33E | Wellbore | No. 9H PWB |
| Facility                          | Maduro Unit No. 9H         |          |            |

| 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                 | Florroll                        |
| Scale                    | 0.999954                                                         | Report Generated     | 1/21/2011 at 2:38:21 PM         |
| Convergence at slot      | 0.35° East                                                       | Database/Source file | WellArchitect DB/No. 9H_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     | 739238.20        | 596293.80      | 32°38'15.412"N         | 103°41'25.571"W |
| Facility Reference Pt |                   |          | 739238.20        | 596293.80      | 32°38'15.412"N         | 103°41'25.571"W |
| Field Reference Pt    |                   |          | 739238.20        | 596293.80      | 32°38'15.412"N         | 103°41'25.571"W |

| WELLPATH DATUM           |                       |                                         |                   |
|--------------------------|-----------------------|-----------------------------------------|-------------------|
| Calculation method       | Minimum curvature     | Rig on No. 9 SHL (KB) to Ground Level   | 0.00ft            |
| Horizontal Reference Pt  | Slot                  | Rig on No. 9 SHL (KB) to Mean Sea Level | 3598.00ft         |
| Vertical Reference Pt    | Rig on No. 9 SHL (KB) | Ground Level to Mud Line (Facility)     | 0.00ft            |
| MD Reference Pt          | Rig on No. 9 SHL (KB) | Section Origin                          | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level        | Section Azimuth                         | 182.86°           |



# Planned Wellpath Report

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| REFERENCE WELLPATH IDENTIFICATION |                            |          |            |
|-----------------------------------|----------------------------|----------|------------|
| Operator                          | Cimarex Energy Co.         | Slot     | No. 9H SHL |
| Area                              | Lea County, NM             | Well     | No. 9H     |
| Field                             | (Maduro) Sec 29, T19S,R33E | Wellbore | No. 9H PWB |
| Facility                          | Maduro Unit No. 9H         |          |            |

| WELLPATH DATA (174 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              | 182.857        | 0.00        | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             | Tie On   |
| 100.00†                                                            | 0.000              | 182.857        | 100.00      | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 200.00†                                                            | 0.000              | 182.857        | 200.00      | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 300.00†                                                            | 0.000              | 182.857        | 300.00      | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 400.00†                                                            | 0.000              | 182.857        | 400.00      | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 500.00†                                                            | 0.000              | 182.857        | 500.00      | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 600.00†                                                            | 0.000              | 182.857        | 600.00      | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 700.00†                                                            | 0.000              | 182.857        | 700.00      | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 800.00†                                                            | 0.000              | 182.857        | 800.00      | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 900.00†                                                            | 0.000              | 182.857        | 900.00      | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 1000.00†                                                           | 0.000              | 182.857        | 1000.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 1100.00†                                                           | 0.000              | 182.857        | 1100.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 1200.00†                                                           | 0.000              | 182.857        | 1200.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 1300.00†                                                           | 0.000              | 182.857        | 1300.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 1400.00†                                                           | 0.000              | 182.857        | 1400.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 1500.00†                                                           | 0.000              | 182.857        | 1500.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 1600.00†                                                           | 0.000              | 182.857        | 1600.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 1700.00†                                                           | 0.000              | 182.857        | 1700.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 1800.00†                                                           | 0.000              | 182.857        | 1800.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 1900.00†                                                           | 0.000              | 182.857        | 1900.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 2000.00†                                                           | 0.000              | 182.857        | 2000.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 2100.00†                                                           | 0.000              | 182.857        | 2100.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 2200.00†                                                           | 0.000              | 182.857        | 2200.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 2300.00†                                                           | 0.000              | 182.857        | 2300.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 2400.00†                                                           | 0.000              | 182.857        | 2400.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 2500.00†                                                           | 0.000              | 182.857        | 2500.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 2600.00†                                                           | 0.000              | 182.857        | 2600.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 2700.00†                                                           | 0.000              | 182.857        | 2700.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 2800.00†                                                           | 0.000              | 182.857        | 2800.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 2900.00†                                                           | 0.000              | 182.857        | 2900.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 3000.00†                                                           | 0.000              | 182.857        | 3000.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 3100.00†                                                           | 0.000              | 182.857        | 3100.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 3200.00†                                                           | 0.000              | 182.857        | 3200.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 3300.00†                                                           | 0.000              | 182.857        | 3300.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 3400.00†                                                           | 0.000              | 182.857        | 3400.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 3500.00†                                                           | 0.000              | 182.857        | 3500.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 3600.00†                                                           | 0.000              | 182.857        | 3600.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 3700.00†                                                           | 0.000              | 182.857        | 3700.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 3800.00†                                                           | 0.000              | 182.857        | 3800.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 3900.00†                                                           | 0.000              | 182.857        | 3900.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 4000.00†                                                           | 0.000              | 182.857        | 4000.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 4100.00†                                                           | 0.000              | 182.857        | 4100.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 4200.00†                                                           | 0.000              | 182.857        | 4200.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 4300.00†                                                           | 0.000              | 182.857        | 4300.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 4400.00†                                                           | 0.000              | 182.857        | 4400.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |



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|-----------------------------------|----------------------------|----------|------------|
| Operator                          | Cimarex Energy Co.         | Slot     | No. 9H SHL |
| Area                              | Lea County, NM             | Well     | No. 9H     |
| Field                             | (Maduro) Sec 29, T19S,R33E | Wellbore | No. 9H PWB |
| Facility                          | Maduro Unit No. 9H         |          |            |

| WELLPATH DATA (174 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              | 182.857        | 4500.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 4600.00†                                                           | 0.000              | 182.857        | 4600.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 4700.00†                                                           | 0.000              | 182.857        | 4700.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 4800.00†                                                           | 0.000              | 182.857        | 4800.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 4900.00†                                                           | 0.000              | 182.857        | 4900.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 5000.00†                                                           | 0.000              | 182.857        | 5000.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 5100.00†                                                           | 0.000              | 182.857        | 5100.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 5200.00†                                                           | 0.000              | 182.857        | 5200.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 5300.00†                                                           | 0.000              | 182.857        | 5300.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 5400.00†                                                           | 0.000              | 182.857        | 5400.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 5500.00†                                                           | 0.000              | 182.857        | 5500.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 5600.00†                                                           | 0.000              | 182.857        | 5600.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 5700.00†                                                           | 0.000              | 182.857        | 5700.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 5800.00†                                                           | 0.000              | 182.857        | 5800.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 5900.00†                                                           | 0.000              | 182.857        | 5900.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 6000.00†                                                           | 0.000              | 182.857        | 6000.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 6100.00†                                                           | 0.000              | 182.857        | 6100.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 6200.00†                                                           | 0.000              | 182.857        | 6200.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 6300.00†                                                           | 0.000              | 182.857        | 6300.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 6400.00†                                                           | 0.000              | 182.857        | 6400.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 6500.00†                                                           | 0.000              | 182.857        | 6500.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 6600.00†                                                           | 0.000              | 182.857        | 6600.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 6700.00†                                                           | 0.000              | 182.857        | 6700.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 6800.00†                                                           | 0.000              | 182.857        | 6800.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 6900.00†                                                           | 0.000              | 182.857        | 6900.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 7000.00†                                                           | 0.000              | 182.857        | 7000.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 7100.00†                                                           | 0.000              | 182.857        | 7100.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 7200.00†                                                           | 0.000              | 182.857        | 7200.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 7300.00†                                                           | 0.000              | 182.857        | 7300.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 7400.00†                                                           | 0.000              | 182.857        | 7400.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 7500.00†                                                           | 0.000              | 182.857        | 7500.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 7600.00†                                                           | 0.000              | 182.857        | 7600.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 7700.00†                                                           | 0.000              | 182.857        | 7700.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 7800.00†                                                           | 0.000              | 182.857        | 7800.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 7900.00†                                                           | 0.000              | 182.857        | 7900.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 8000.00†                                                           | 0.000              | 182.857        | 8000.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 8100.00†                                                           | 0.000              | 182.857        | 8100.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 8200.00†                                                           | 0.000              | 182.857        | 8200.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 8300.00†                                                           | 0.000              | 182.857        | 8300.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 8400.00†                                                           | 0.000              | 182.857        | 8400.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 8500.00†                                                           | 0.000              | 182.857        | 8500.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 8600.00†                                                           | 0.000              | 182.857        | 8600.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 8700.00†                                                           | 0.000              | 182.857        | 8700.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 8800.00†                                                           | 0.000              | 182.857        | 8800.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |
| 8900.00†                                                           | 0.000              | 182.857        | 8900.00     | 0.00              | 0.00          | 0.00         | 739238.20             | 596293.80              | 32°38'15.412"N | 103°41'25.571"W | 0.00             |          |



# Planned Wellpath Report

Prelim\_1  
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INTEQ

| REFERENCE WELLPATH IDENTIFICATION |                             |          |            |
|-----------------------------------|-----------------------------|----------|------------|
| Operator                          | Cimarex Energy Co.          | Slot     | No. 9H SHL |
| Area                              | Lea County, NM              | Well     | No. 9H     |
| Field                             | (Maduro) Sec 29, T19S, R33E | Wellbore | No. 9H PWB |
| Facility                          | Maduro Unit No. 9H          |          |            |

| WELLPATH DATA (174 stations) † = interpolated/extrapolated station. |                 |             |          |                |            |           |                    |                     |                |                 |               |              |
|---------------------------------------------------------------------|-----------------|-------------|----------|----------------|------------|-----------|--------------------|---------------------|----------------|-----------------|---------------|--------------|
| MD [ft]                                                             | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [srv ft] | Grid North [srv ft] | Latitude       | Longitude       | DLS [°/100ft] | Comments     |
| 9000.00†                                                            | 0.000           | 182.857     | 9000.00  | 0.00           | 0.00       | 0.00      | 739238.20          | 596293.80           | 32°38'15.412"N | 103°41'25.571"W | 0.00          |              |
| 9100.00†                                                            | 0.000           | 182.857     | 9100.00  | 0.00           | 0.00       | 0.00      | 739238.20          | 596293.80           | 32°38'15.412"N | 103°41'25.571"W | 0.00          |              |
| 9200.00†                                                            | 0.000           | 182.857     | 9200.00  | 0.00           | 0.00       | 0.00      | 739238.20          | 596293.80           | 32°38'15.412"N | 103°41'25.571"W | 0.00          |              |
| 9300.00†                                                            | 0.000           | 182.857     | 9300.00  | 0.00           | 0.00       | 0.00      | 739238.20          | 596293.80           | 32°38'15.412"N | 103°41'25.571"W | 0.00          |              |
| 9400.00†                                                            | 0.000           | 182.857     | 9400.00  | 0.00           | 0.00       | 0.00      | 739238.20          | 596293.80           | 32°38'15.412"N | 103°41'25.571"W | 0.00          |              |
| 9500.00†                                                            | 0.000           | 182.857     | 9500.00  | 0.00           | 0.00       | 0.00      | 739238.20          | 596293.80           | 32°38'15.412"N | 103°41'25.571"W | 0.00          |              |
| 9600.00†                                                            | 0.000           | 182.857     | 9600.00  | 0.00           | 0.00       | 0.00      | 739238.20          | 596293.80           | 32°38'15.412"N | 103°41'25.571"W | 0.00          |              |
| 9695.50                                                             | 0.000           | 182.857     | 9695.50  | 0.00           | 0.00       | 0.00      | 739238.20          | 596293.80           | 32°38'15.412"N | 103°41'25.571"W | 0.00          | Est. KOP     |
| 9700.00†                                                            | 1.260           | 182.857     | 9700.00  | 0.05           | -0.05      | 0.00      | 739238.20          | 596293.75           | 32°38'15.411"N | 103°41'25.571"W | 28.00         |              |
| 9800.00†                                                            | 29.260          | 182.857     | 9795.52  | -26.11         | -26.08     | -1.30     | 739236.90          | 596267.73           | 32°38'15.154"N | 103°41'25.588"W | 28.00         |              |
| 9900.00†                                                            | 57.260          | 182.857     | 9867.62  | 93.96          | -93.84     | -4.68     | 739233.52          | 596199.96           | 32°38'14.483"N | 103°41'25.632"W | 28.00         |              |
| 10000.00†                                                           | 85.260          | 182.857     | 9899.43  | 187.72         | -187.49    | -9.36     | 739228.84          | 596106.32           | 32°38'13.557"N | 103°41'25.693"W | 28.00         |              |
| 10016.93                                                            | 90.001          | 182.857     | 9900.13  | 204.63         | -204.38    | -10.20    | 739228.00          | 596089.43           | 32°38'13.390"N | 103°41'25.704"W | 28.00         | End of Curve |
| 10100.00†                                                           | 90.001          | 182.857     | 9900.13  | 287.70         | -287.34    | -14.34    | 739223.86          | 596006.47           | 32°38'12.569"N | 103°41'25.759"W | 0.00          |              |
| 10200.00†                                                           | 90.001          | 182.857     | 9900.12  | 387.70         | -387.22    | -19.33    | 739218.88          | 595906.60           | 32°38'11.582"N | 103°41'25.824"W | 0.00          |              |
| 10300.00†                                                           | 90.001          | 182.857     | 9900.12  | 487.70         | -487.09    | -24.31    | 739213.89          | 595806.73           | 32°38'10.594"N | 103°41'25.889"W | 0.00          |              |
| 10400.00†                                                           | 90.001          | 182.857     | 9900.12  | 587.70         | -586.97    | -29.29    | 739208.91          | 595706.86           | 32°38'09.606"N | 103°41'25.955"W | 0.00          |              |
| 10500.00†                                                           | 90.001          | 182.857     | 9900.12  | 687.70         | -686.84    | -34.28    | 739203.92          | 595606.99           | 32°38'08.618"N | 103°41'26.020"W | 0.00          |              |
| 10600.00†                                                           | 90.001          | 182.857     | 9900.12  | 787.70         | -786.72    | -39.26    | 739198.94          | 595507.12           | 32°38'07.630"N | 103°41'26.085"W | 0.00          |              |
| 10700.00†                                                           | 90.001          | 182.857     | 9900.12  | 887.70         | -886.60    | -44.25    | 739193.95          | 595407.25           | 32°38'06.642"N | 103°41'26.151"W | 0.00          |              |
| 10800.00†                                                           | 90.001          | 182.857     | 9900.11  | 987.70         | -986.47    | -49.23    | 739188.97          | 595307.38           | 32°38'05.654"N | 103°41'26.216"W | 0.00          |              |
| 10900.00†                                                           | 90.001          | 182.857     | 9900.11  | 1087.70        | -1086.35   | -54.22    | 739183.98          | 595207.51           | 32°38'04.666"N | 103°41'26.281"W | 0.00          |              |
| 11000.00†                                                           | 90.001          | 182.857     | 9900.11  | 1187.70        | -1186.22   | -59.20    | 739179.00          | 595107.63           | 32°38'03.678"N | 103°41'26.347"W | 0.00          |              |
| 11100.00†                                                           | 90.001          | 182.857     | 9900.11  | 1287.70        | -1286.10   | -64.19    | 739174.02          | 595007.76           | 32°38'02.690"N | 103°41'26.412"W | 0.00          |              |
| 11200.00†                                                           | 90.001          | 182.857     | 9900.11  | 1387.70        | -1385.97   | -69.17    | 739169.03          | 594907.89           | 32°38'01.702"N | 103°41'26.477"W | 0.00          |              |
| 11300.00†                                                           | 90.001          | 182.857     | 9900.10  | 1487.70        | -1485.85   | -74.16    | 739164.05          | 594808.02           | 32°38'00.715"N | 103°41'26.543"W | 0.00          |              |
| 11400.00†                                                           | 90.001          | 182.857     | 9900.10  | 1587.70        | -1585.73   | -79.14    | 739159.06          | 594708.15           | 32°37'59.727"N | 103°41'26.608"W | 0.00          |              |
| 11500.00†                                                           | 90.001          | 182.857     | 9900.10  | 1687.70        | -1685.60   | -84.13    | 739154.08          | 594608.28           | 32°37'58.739"N | 103°41'26.674"W | 0.00          |              |
| 11600.00†                                                           | 90.001          | 182.857     | 9900.10  | 1787.70        | -1785.48   | -89.11    | 739149.09          | 594508.41           | 32°37'57.751"N | 103°41'26.739"W | 0.00          |              |
| 11700.00†                                                           | 90.001          | 182.857     | 9900.10  | 1887.70        | -1885.35   | -94.10    | 739144.11          | 594408.54           | 32°37'56.763"N | 103°41'26.804"W | 0.00          |              |
| 11800.00†                                                           | 90.001          | 182.857     | 9900.10  | 1987.70        | -1985.23   | -99.08    | 739139.12          | 594308.67           | 32°37'55.775"N | 103°41'26.870"W | 0.00          |              |
| 11900.00†                                                           | 90.001          | 182.857     | 9900.09  | 2087.70        | -2085.10   | -104.06   | 739134.14          | 594208.80           | 32°37'54.787"N | 103°41'26.935"W | 0.00          |              |
| 12000.00†                                                           | 90.001          | 182.857     | 9900.09  | 2187.70        | -2184.98   | -109.05   | 739129.16          | 594108.93           | 32°37'53.799"N | 103°41'27.000"W | 0.00          |              |
| 12100.00†                                                           | 90.001          | 182.857     | 9900.09  | 2287.70        | -2284.86   | -114.03   | 739124.17          | 594009.05           | 32°37'52.811"N | 103°41'27.066"W | 0.00          |              |
| 12200.00†                                                           | 90.001          | 182.857     | 9900.09  | 2387.70        | -2384.73   | -119.02   | 739119.19          | 593909.18           | 32°37'51.823"N | 103°41'27.131"W | 0.00          |              |
| 12300.00†                                                           | 90.001          | 182.857     | 9900.09  | 2487.70        | -2484.61   | -124.00   | 739114.20          | 593809.31           | 32°37'50.836"N | 103°41'27.196"W | 0.00          |              |
| 12400.00†                                                           | 90.001          | 182.857     | 9900.08  | 2587.70        | -2584.48   | -128.99   | 739109.22          | 593709.44           | 32°37'49.848"N | 103°41'27.262"W | 0.00          |              |
| 12500.00†                                                           | 90.001          | 182.857     | 9900.08  | 2687.70        | -2684.36   | -133.97   | 739104.23          | 593609.57           | 32°37'48.860"N | 103°41'27.327"W | 0.00          |              |
| 12600.00†                                                           | 90.001          | 182.857     | 9900.08  | 2787.70        | -2784.23   | -138.96   | 739099.25          | 593509.70           | 32°37'47.872"N | 103°41'27.392"W | 0.00          |              |
| 12700.00†                                                           | 90.001          | 182.857     | 9900.08  | 2887.70        | -2884.11   | -143.94   | 739094.26          | 593409.83           | 32°37'46.884"N | 103°41'27.458"W | 0.00          |              |
| 12800.00†                                                           | 90.001          | 182.857     | 9900.08  | 2987.70        | -2983.99   | -148.93   | 739089.28          | 593309.96           | 32°37'45.896"N | 103°41'27.523"W | 0.00          |              |
| 12900.00†                                                           | 90.001          | 182.857     | 9900.08  | 3087.70        | -3083.86   | -153.91   | 739084.30          | 593210.09           | 32°37'44.908"N | 103°41'27.588"W | 0.00          |              |
| 13000.00†                                                           | 90.001          | 182.857     | 9900.07  | 3187.70        | -3183.74   | -158.90   | 739079.31          | 593110.22           | 32°37'43.920"N | 103°41'27.654"W | 0.00          |              |
| 13100.00†                                                           | 90.001          | 182.857     | 9900.07  | 3287.70        | -3283.61   | -163.88   | 739074.33          | 593010.35           | 32°37'42.932"N | 103°41'27.719"W | 0.00          |              |
| 13200.00†                                                           | 90.001          | 182.857     | 9900.07  | 3387.70        | -3383.49   | -168.87   | 739069.34          | 592910.47           | 32°37'41.944"N | 103°41'27.784"W | 0.00          |              |





# Planned Wellpath Report

Prelim\_1  
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| REFERENCE WELLPATH IDENTIFICATION |                            |          |            |
|-----------------------------------|----------------------------|----------|------------|
| Operator                          | Cimarex Energy Co.         | Slot     | No. 9H SHL |
| Area                              | Lea County, NM             | Well     | No. 9H     |
| Field                             | (Maduro) Sec 29, T19S,R33E | Wellbore | No. 9H PWB |
| Facility                          | Maduro Unit No. 9H         |          |            |

| WELLPATH DATA (174 stations) † = interpolated/extrapolated station |                 |             |          |                |            |           |                    |                     |                |                 |               |             |
|--------------------------------------------------------------------|-----------------|-------------|----------|----------------|------------|-----------|--------------------|---------------------|----------------|-----------------|---------------|-------------|
| MD [ft]                                                            | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [srv ft] | Grid North [srv ft] | Latitude       | Longitude       | DLS [°/100ft] | Comments    |
| 13300.00†                                                          | 90.001          | 182.857     | 9900.07  | 3487.70        | -3483.36   | -173.85   | 739064.36          | 592810.60           | 32°37'40.956"N | 103°41'27.850"W | 0.00          |             |
| 13400.00†                                                          | 90.001          | 182.857     | 9900.07  | 3587.70        | -3583.24   | -178.83   | 739059.37          | 592710.73           | 32°37'39.969"N | 103°41'27.915"W | 0.00          |             |
| 13500.00†                                                          | 90.001          | 182.857     | 9900.06  | 3687.70        | -3683.11   | -183.82   | 739054.39          | 592610.86           | 32°37'38.981"N | 103°41'27.980"W | 0.00          |             |
| 13600.00†                                                          | 90.001          | 182.857     | 9900.06  | 3787.70        | -3782.99   | -188.80   | 739049.40          | 592510.99           | 32°37'37.993"N | 103°41'28.046"W | 0.00          |             |
| 13700.00†                                                          | 90.001          | 182.857     | 9900.06  | 3887.70        | -3882.87   | -193.79   | 739044.42          | 592411.12           | 32°37'37.005"N | 103°41'28.111"W | 0.00          |             |
| 13800.00†                                                          | 90.001          | 182.857     | 9900.06  | 3987.70        | -3982.74   | -198.77   | 739039.44          | 592311.25           | 32°37'36.017"N | 103°41'28.176"W | 0.00          |             |
| 13900.00†                                                          | 90.001          | 182.857     | 9900.06  | 4087.70        | -4082.62   | -203.76   | 739034.45          | 592211.38           | 32°37'35.029"N | 103°41'28.242"W | 0.00          |             |
| 14000.00†                                                          | 90.001          | 182.857     | 9900.06  | 4187.70        | -4182.49   | -208.74   | 739029.47          | 592111.51           | 32°37'34.041"N | 103°41'28.307"W | 0.00          |             |
| 14100.00†                                                          | 90.001          | 182.857     | 9900.05  | 4287.70        | -4282.37   | -213.73   | 739024.48          | 592011.64           | 32°37'33.053"N | 103°41'28.372"W | 0.00          |             |
| 14200.00†                                                          | 90.001          | 182.857     | 9900.05  | 4387.70        | -4382.24   | -218.71   | 739019.50          | 591911.77           | 32°37'32.065"N | 103°41'28.438"W | 0.00          |             |
| 14300.00†                                                          | 90.001          | 182.857     | 9900.05  | 4487.70        | -4482.12   | -223.70   | 739014.51          | 591811.89           | 32°37'31.077"N | 103°41'28.503"W | 0.00          |             |
| 14400.00†                                                          | 90.001          | 182.857     | 9900.05  | 4587.70        | -4582.00   | -228.68   | 739009.53          | 591712.02           | 32°37'30.090"N | 103°41'28.568"W | 0.00          |             |
| 14500.00†                                                          | 90.001          | 182.857     | 9900.05  | 4687.70        | -4681.87   | -233.67   | 739004.55          | 591612.15           | 32°37'29.102"N | 103°41'28.634"W | 0.00          |             |
| 14600.00†                                                          | 90.001          | 182.857     | 9900.04  | 4787.70        | -4781.75   | -238.65   | 738999.56          | 591512.28           | 32°37'28.114"N | 103°41'28.699"W | 0.00          |             |
| 14700.00†                                                          | 90.001          | 182.857     | 9900.04  | 4887.70        | -4881.62   | -243.64   | 738994.58          | 591412.41           | 32°37'27.126"N | 103°41'28.764"W | 0.00          |             |
| 14800.00†                                                          | 90.001          | 182.857     | 9900.04  | 4987.70        | -4981.50   | -248.62   | 738989.59          | 591312.54           | 32°37'26.138"N | 103°41'28.830"W | 0.00          |             |
| 14900.00†                                                          | 90.001          | 182.857     | 9900.04  | 5087.70        | -5081.37   | -253.60   | 738984.61          | 591212.67           | 32°37'25.150"N | 103°41'28.895"W | 0.00          |             |
| 15000.00†                                                          | 90.001          | 182.857     | 9900.04  | 5187.70        | -5181.25   | -258.59   | 738979.62          | 591112.80           | 32°37'24.162"N | 103°41'28.960"W | 0.00          |             |
| 15100.00†                                                          | 90.001          | 182.857     | 9900.04  | 5287.70        | -5281.13   | -263.57   | 738974.64          | 591012.93           | 32°37'23.174"N | 103°41'29.026"W | 0.00          |             |
| 15200.00†                                                          | 90.001          | 182.857     | 9900.03  | 5387.70        | -5381.00   | -268.56   | 738969.65          | 590913.06           | 32°37'22.186"N | 103°41'29.091"W | 0.00          |             |
| 15300.00†                                                          | 90.001          | 182.857     | 9900.03  | 5487.70        | -5480.88   | -273.54   | 738964.67          | 590813.19           | 32°37'21.198"N | 103°41'29.156"W | 0.00          |             |
| 15400.00†                                                          | 90.001          | 182.857     | 9900.03  | 5587.70        | -5580.75   | -278.53   | 738959.69          | 590713.32           | 32°37'20.210"N | 103°41'29.222"W | 0.00          |             |
| 15500.00†                                                          | 90.001          | 182.857     | 9900.03  | 5687.70        | -5680.63   | -283.51   | 738954.70          | 590613.44           | 32°37'19.223"N | 103°41'29.287"W | 0.00          |             |
| 15600.00†                                                          | 90.001          | 182.857     | 9900.03  | 5787.70        | -5780.50   | -288.50   | 738949.72          | 590513.57           | 32°37'18.235"N | 103°41'29.352"W | 0.00          |             |
| 15700.00†                                                          | 90.001          | 182.857     | 9900.03  | 5887.70        | -5880.38   | -293.48   | 738944.73          | 590413.70           | 32°37'17.247"N | 103°41'29.418"W | 0.00          |             |
| 15800.00†                                                          | 90.001          | 182.857     | 9900.02  | 5987.70        | -5980.26   | -298.47   | 738939.75          | 590313.83           | 32°37'16.259"N | 103°41'29.483"W | 0.00          |             |
| 15900.00†                                                          | 90.001          | 182.857     | 9900.02  | 6087.70        | -6080.13   | -303.45   | 738934.76          | 590213.96           | 32°37'15.271"N | 103°41'29.548"W | 0.00          |             |
| 16000.00†                                                          | 90.001          | 182.857     | 9900.02  | 6187.70        | -6180.01   | -308.44   | 738929.78          | 590114.09           | 32°37'14.283"N | 103°41'29.614"W | 0.00          |             |
| 16100.00†                                                          | 90.001          | 182.857     | 9900.02  | 6287.70        | -6279.88   | -313.42   | 738924.79          | 590014.22           | 32°37'13.295"N | 103°41'29.679"W | 0.00          |             |
| 16200.00†                                                          | 90.001          | 182.857     | 9900.02  | 6387.70        | -6379.76   | -318.41   | 738919.81          | 589914.35           | 32°37'12.307"N | 103°41'29.744"W | 0.00          |             |
| 16300.00†                                                          | 90.001          | 182.857     | 9900.01  | 6487.70        | -6479.63   | -323.39   | 738914.83          | 589814.48           | 32°37'11.319"N | 103°41'29.810"W | 0.00          |             |
| 16400.00†                                                          | 90.001          | 182.857     | 9900.01  | 6587.70        | -6579.51   | -328.37   | 738909.84          | 589714.61           | 32°37'10.331"N | 103°41'29.875"W | 0.00          |             |
| 16500.00†                                                          | 90.001          | 182.857     | 9900.01  | 6687.70        | -6679.39   | -333.36   | 738904.86          | 589614.74           | 32°37'09.344"N | 103°41'29.940"W | 0.00          |             |
| 16600.00†                                                          | 90.001          | 182.857     | 9900.01  | 6787.70        | -6779.26   | -338.34   | 738899.87          | 589514.86           | 32°37'08.356"N | 103°41'30.006"W | 0.00          |             |
| 16700.00†                                                          | 90.001          | 182.857     | 9900.01  | 6887.70        | -6879.14   | -343.33   | 738894.89          | 589414.99           | 32°37'07.368"N | 103°41'30.071"W | 0.00          |             |
| 16800.00†                                                          | 90.001          | 182.857     | 9900.01  | 6987.70        | -6979.01   | -348.31   | 738889.90          | 589315.12           | 32°37'06.380"N | 103°41'30.136"W | 0.00          |             |
| 16900.00†                                                          | 90.001          | 182.857     | 9900.00  | 7087.70        | -7078.89   | -353.30   | 738884.92          | 589215.25           | 32°37'05.392"N | 103°41'30.202"W | 0.00          |             |
| 17000.00†                                                          | 90.001          | 182.857     | 9900.00  | 7187.70        | -7178.76   | -358.28   | 738879.93          | 589115.38           | 32°37'04.404"N | 103°41'30.267"W | 0.00          |             |
| 17086.04                                                           | 90.001          | 182.857     | 9900.00† | 7273.74        | -7264.70   | -362.57   | 738875.65          | 589029.45           | 32°37'03.554"N | 103°41'30.323"W | 0.00          | No. 9H PBHL |



# Planned Wellpath Report

Prelim\_1

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INTEQ

## REFERENCE WELLPATH IDENTIFICATION

|          |                            |          |            |
|----------|----------------------------|----------|------------|
| Operator | Cimarex Energy Co.         | Slot     | No. 9H SHL |
| Area     | Lea County, NM             | Well     | No. 9H     |
| Field    | (Maduro) Sec 29, T19S,R33E | Wellbore | No. 9H PWB |
| Facility | Maduro Unit No. 9H         |          |            |

## HOLE & CASING SECTIONS Ref Wellbore: No. 9H PWB Ref Wellpath: Prelim\_1

| 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] |
|-----------------------------|------------------|----------------|------------------|-------------------|-----------------|-------------------|-------------------|-----------------|-----------------|
| 17.5in Open Hole            | 0.00             | 1380.00        | 1380.00          | 0.00              | 1380.00         | 0.00              | 0.00              | 0.00            | 0.00            |
| 13.375in Casing Surface     | 0.00             | 1380.00        | 1380.00          | 0.00              | 1380.00         | 0.00              | 0.00              | 0.00            | 0.00            |
| 12.25in Open Hole           | 0.00             | 5200.00        | 5200.00          | 0.00              | 5200.00         | 0.00              | 0.00              | 0.00            | 0.00            |
| 9.625in Casing Intermediate | 0.00             | 5200.00        | 5200.00          | 0.00              | 5200.00         | 0.00              | 0.00              | 0.00            | 0.00            |
| 8.75in Open Hole            | 0.00             | 17087.00       | 17087.00         | 0.00              | NA              | 0.00              | 0.00              | NA              | NA              |

## 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. 9H PBHL | 17086.04   | 9900.00     | 7264.70       | 362.57       | 738875.65             | 589029.45              | 32°37'03.554"N | 103°41'30.323"W | point |

## SURVEY PROGRAM Ref Wellbore: No. 9H PWB Ref Wellpath: Prelim\_1

| Start MD<br>[ft] | End MD<br>[ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore   |
|------------------|----------------|------------------------------|------------------|------------|
| 0.00             | 17086.04       | NaviTrak (Standard)          |                  | No. 9H PWB |

SR & A

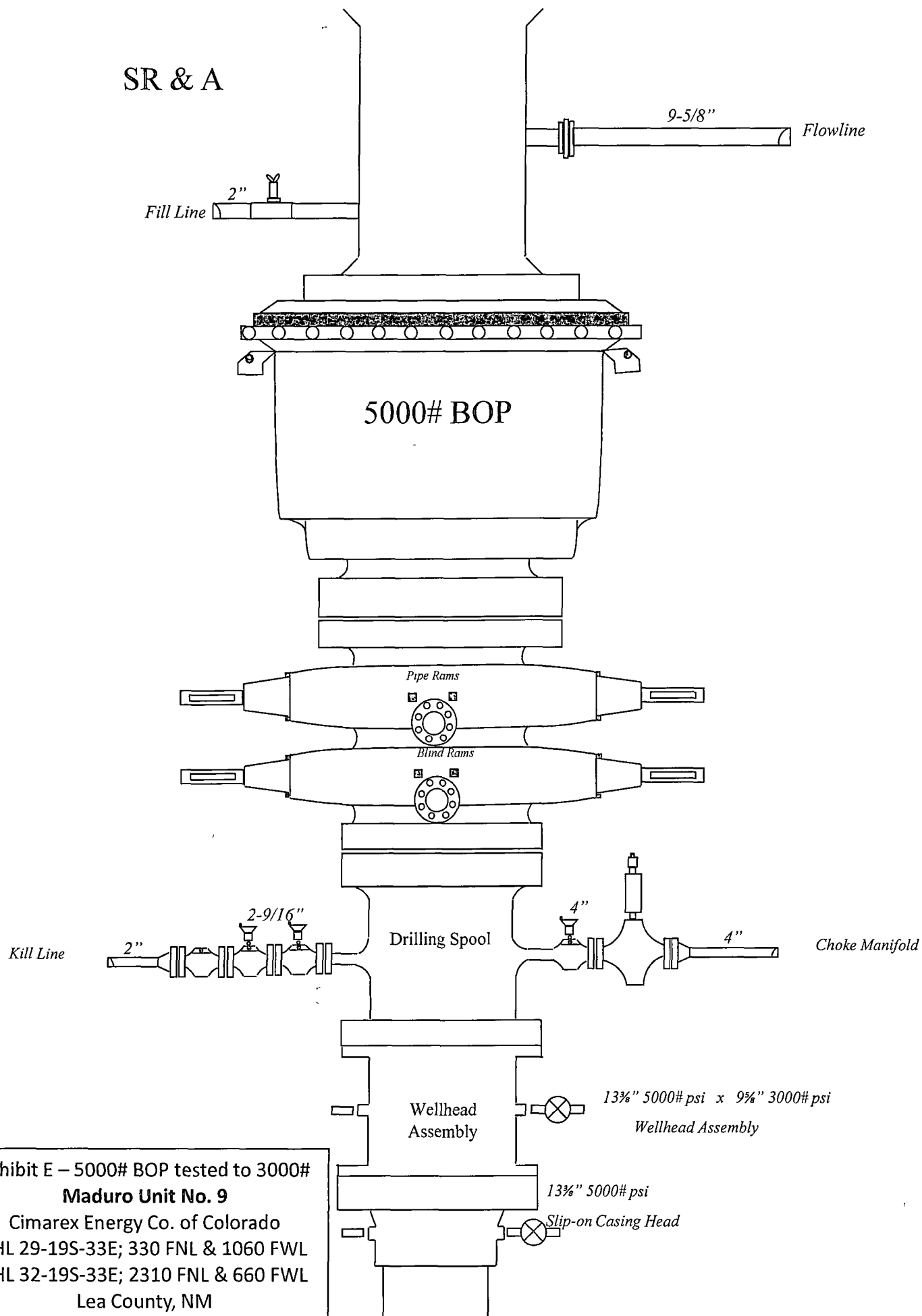


Exhibit E – 5000# BOP tested to 3000#

**Maduro Unit No. 9**

Cimarex Energy Co. of Colorado

SHL 29-19S-33E; 330 FNL & 1060 FWL

BHL 32-19S-33E; 2310 FNL & 660 FWL

Lea County, NM

# Drilling Operations Choke Manifold 5M Service tested to 3M

Exhibit E-2 – Choke Manifold Diagram

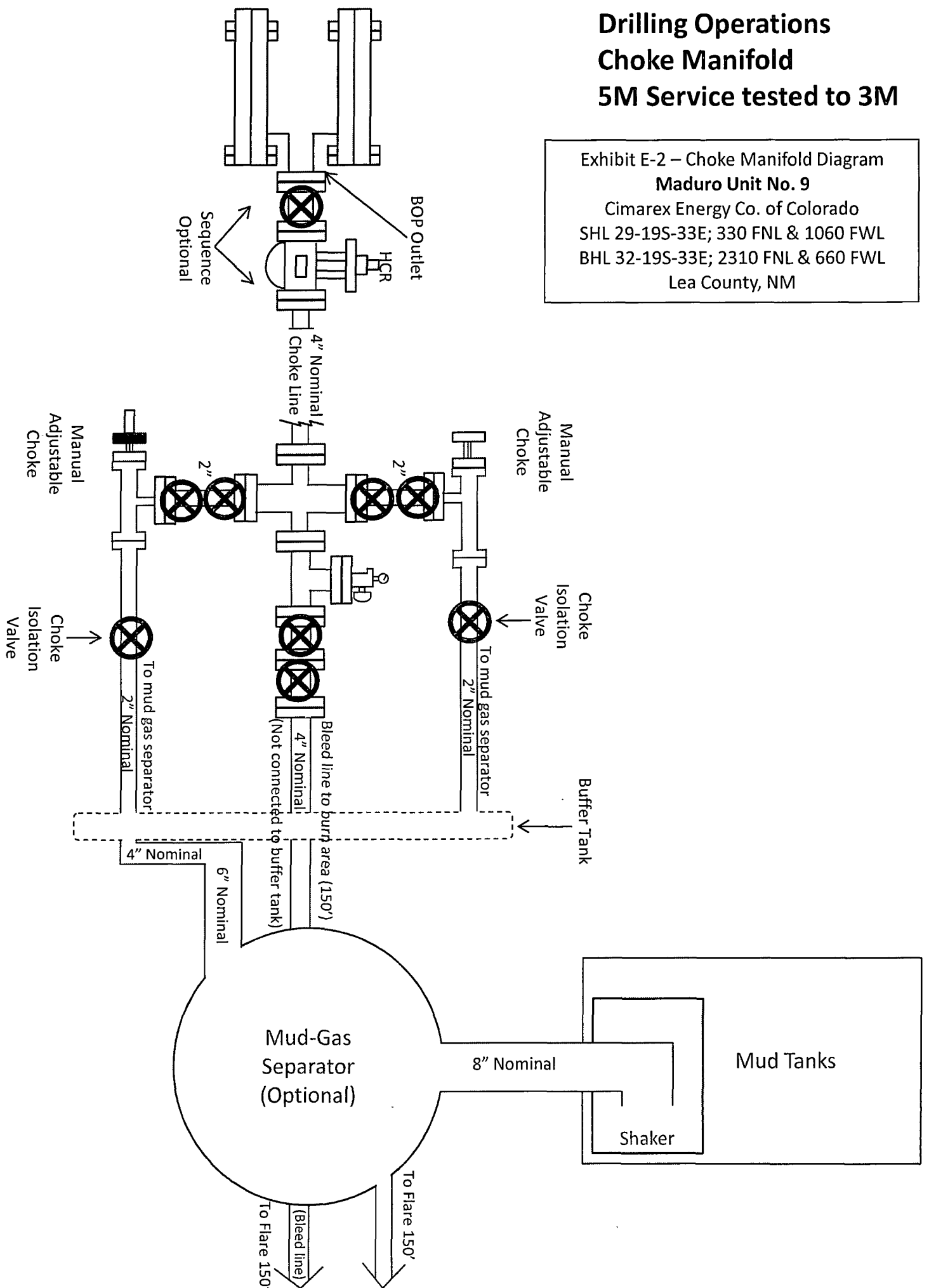
**Maduro Unit No. 9**

Cimarex Energy Co. of Colorado

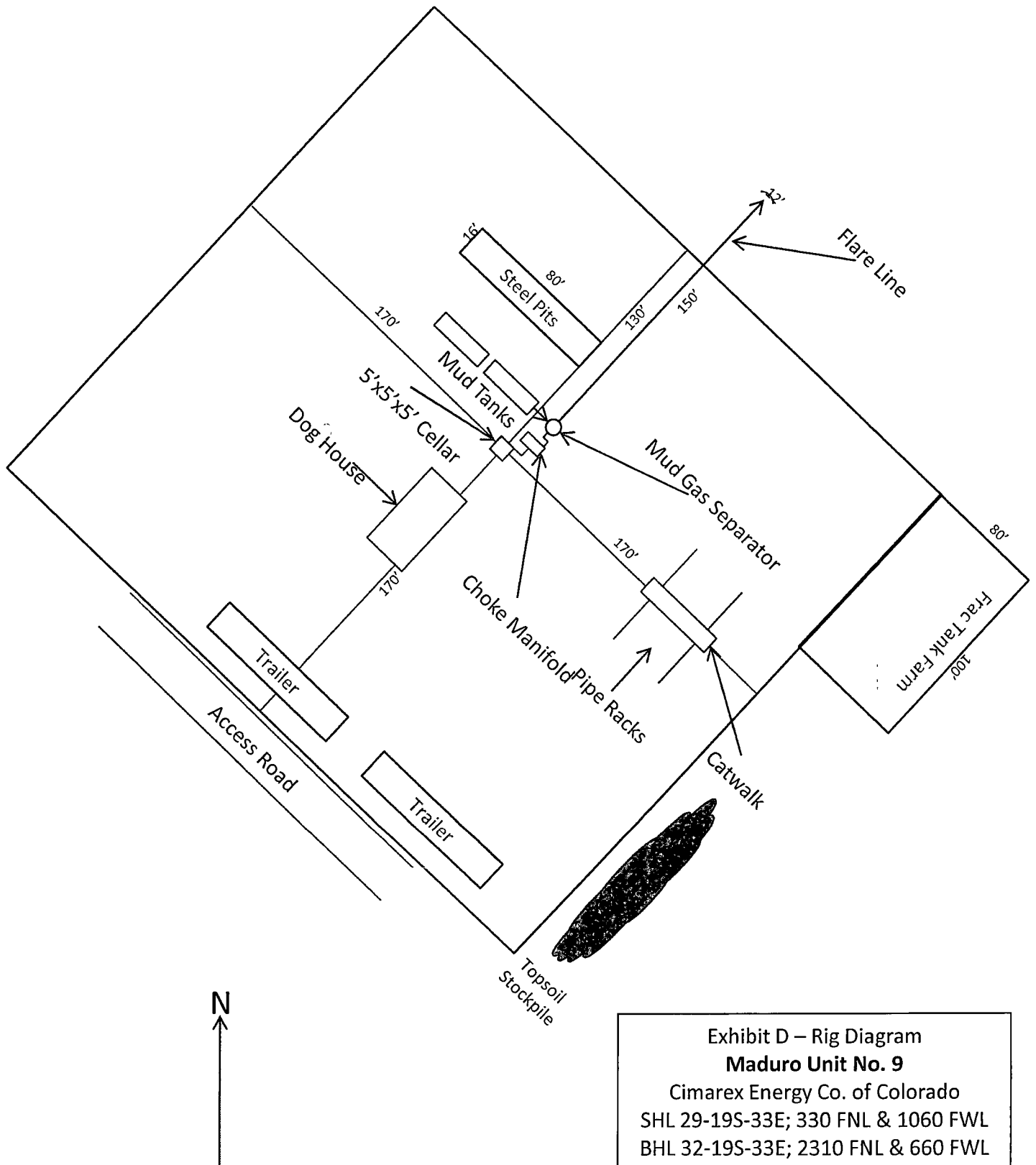
SHL 29-19S-33E; 330 FNL & 1060 FWL

BHL 32-19S-33E; 2310 FNL & 660 FWL

Lea County, NM



# Key 881



## Exhibit D – Rig Diagram

### Maduro Unit No. 9

Cimarex Energy Co. of Colorado  
SHL 29-19S-33E; 330 FNL & 1060 FWL  
BHL 32-19S-33E; 2310 FNL & 660 FWL  
Lea County, NM

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- 1 All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:
  - A. Characteristics of H<sub>2</sub>S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems.
  - D. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
  - E. Evacuation procedure, routes and first aid.
  - F. Proper use of 30 minute pressure demand air pack.
- 2 H<sub>2</sub>S Detection and Alarm Systems:
  - A. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, end of flow line (mud pit) and on derrick floor or doghouse.
- 3 Windsock and/or wind streamers:
  - A. Windsock at mudpit area should be high enough to be visible.
  - B. Windsock at briefing area should be high enough to be visible.
- 4 Condition Flags and Signs:
  - A. Warning sign on access road to location.
  - B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H<sub>2</sub>S present in dangerous concentration). Only emergency personnel admitted to location.
- 5 Well control equipment:
  - A. See exhibit "E"
- 6 Communication:
  - A. While working under masks chalkboards will be used for communication.
  - B. Hand signals will be used where chalk board is inappropriate.
  - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
- 7 Drillstem Testing:

No DSTs or cores are planned at this time.
- 8 Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubular goods and other mechanical equipment.
- 9 If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers if necessary.

H<sub>2</sub>S Contingency Plan  
**Maduro Unit No. 9**  
Cimarex Energy Co. of Colorado  
Unit D, Section 29  
T19S-R33E, Eddy County, NM

**Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must:

- ★ Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- ★ Evacuate any public places encompassed by the 100 ppm ROE.
- ★ Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- ★ Use the "buddy system" to ensure no injuries occur during the response.
- ★ Take precautions to avoid personal injury during this operation.
- ★ Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- ★ Have received training in the:
  - ♦ Detection of H<sub>2</sub>S, and
  - ♦ Measures for protection against the gas,
  - ♦ Equipment used for protection and emergency response.

**Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

**Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

| Common Name      | Chemical Formula | Specific Gravity | Threshold Limit | Hazardous Limit | Lethal Concentration |
|------------------|------------------|------------------|-----------------|-----------------|----------------------|
| Hydrogen Sulfide | H <sub>2</sub> S | 1.189 Air=1      | 10 ppm          | 100 ppm/hr      | 600 ppm              |
| Sulfur Dioxide   | SO <sub>2</sub>  | 2.21 Air=1       | 2 ppm           | N/A             | 1000 ppm             |

**Contacting Authorities**

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H<sub>2</sub>S Contingency Plan Emergency Contacts

**Maduro Unit No. 9**

Cimarex Energy Co. of Colorado

Unit D, Section 29

T19S-R33E, Eddy County, NM

**Company Office**

|                                 |              |
|---------------------------------|--------------|
| Cimarex Energy Co. of Colorado  | 800-969-4789 |
| Co. Office and After-Hours Menu |              |

**Key Personnel**

| Name        | Title            | Office       | Mobile       |
|-------------|------------------|--------------|--------------|
| Doug Park   | Drilling Manager | 432-620-1934 | 972-333-1407 |
| Dee Smith   | Drilling Super   | 432-620-1933 | 972-882-1010 |
| Jim Evans   | Drilling Super   | 432-620-1929 | 972-465-0564 |
| Roy Shirley | Field Super      |              | 432-634-2136 |

**Artesia**

|                  |              |
|------------------|--------------|
| Ambulance        | 911          |
| State Police     | 575-746-2703 |
| City Police      | 575-746-2703 |
| Sheriff's Office | 575-746-9888 |

**Fire Department** 575-746-2701

|                                      |              |
|--------------------------------------|--------------|
| Local Emergency Planning Committee   | 575-746-2122 |
| New Mexico Oil Conservation Division | 575-748-1283 |

**Carlsbad**

|                  |              |
|------------------|--------------|
| Ambulance        | 911          |
| State Police     | 575-885-3137 |
| City Police      | 575-885-2111 |
| Sheriff's Office | 575-887-7551 |

**Fire Department** 575-887-3798

|                                    |              |
|------------------------------------|--------------|
| Local Emergency Planning Committee | 575-887-6544 |
| US Bureau of Land Management       | 575-887-6544 |

**Santa Fe**

|                                                            |              |
|------------------------------------------------------------|--------------|
| New Mexico Emergency Response Commission (Santa Fe)        | 505-476-9600 |
| New Mexico Emergency Response Commission (Santa Fe) 24 Hrs | 505-827-9126 |
| New Mexico State Emergency Operations Center               | 505-476-9635 |

**National**

|                                                       |              |
|-------------------------------------------------------|--------------|
| National Emergency Response Center (Washington, D.C.) | 800-424-8802 |
|-------------------------------------------------------|--------------|

**Medical**

|                                                                 |              |
|-----------------------------------------------------------------|--------------|
| Flight for Life - 4000 24th St.; Lubbock, TX                    | 806-743-9911 |
| Aerocare - R3, Box 49F; Lubbock, TX                             | 806-747-8923 |
| Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM  | 505-842-4433 |
| SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM | 505-842-4949 |

**Other**

|                       |              |    |              |
|-----------------------|--------------|----|--------------|
| Boots & Coots IWC     | 800-256-9688 | or | 281-931-8884 |
| Cudd Pressure Control | 432-699-0139 | or | 432-563-3356 |
| Halliburton           | 575-746-2757 |    |              |
| B.J. Services         | 575-746-3569 |    |              |





Surface Use Plan  
**Maduro Unit No. 9**  
Cimarex Energy Co. of Colorado  
Unit D, Section 29  
T19S-R33E, Eddy County, NM

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1. Existing Roads: Area maps, Exhibit "A" shows the proposed well site as staked. Exhibit "B" is a reproduction of Eddy Co. General Highway Map. Exhibit "C" is a reproduction of a USGS Topographic Map, and Exhibit "C-1" is a well site layout map, showing proposed road to location and existing road to nearest county road.
  - A. The maximum width of the driving surface will be 15.' The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1' deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.
  - B. From the junction of Dry Lake and Maljamar, go East on lease road for 5.2 miles to lease road. On lease road, go southeasterly 2.2 miles to proposed location.
2. Planned Access Roads: No new roads are proposed.
3. Planned Pipelines and Electric Lines:  
E-line ROW will be provided by nearest service provider and follow existing lease roads where possible. Separate pipeline ROW will be obtained by gas purchaser.
4. Location of Existing Wells in a One-Mile Radius - Exhibit A
  - A. Water wells - None known
  - B. Disposal wells - None known
  - C. Drilling wells - None known
  - D. Producing wells - As shown on Exhibits "A"
  - E. Abandoned wells - As shown on Exhibits "A"
5. Location of Proposed Production Facilities:  
If on completion this well is a producer, a tank battery will be used and the necessary production equipment will be installed at the wellsite. See production facilities layout diagram. Any changes to the facilities or off-site facilities will be accompanied by a Sundry Notice.
6. Location and Type of Water Supply:  
Water will be purchased locally from a commercial source and trucked over the access roads.
7. Source of Construction Material:  
If possible, native caliche will be obtained from the excavation of drill site. Topsoil will be pushed back from the drill site and existing caliche will be ripped and compacted. Then topsoil will be stockpiled on location as depicted on Exhibit "D" (rig layout). If additional material is needed, it will be purchased from a BLM-approved pit as near as possible to the well
8. Methods of Handling Waste Material:
  - A. Drill cuttings will be separated by a series of solids removal equipment and stored in steel containment pits and then hauled to a state-approved disposal facility.
  - B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
  - C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
  - D. Sewage from living quarters will drain into holding tanks and be cleaned out periodically and hauled to a waste disposal facility. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.

Surface Use Plan  
**Maduro Unit No. 9**  
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T19S-R33E, Eddy County, NM

9. Ancillary Facilities:

- A. No camps or airstrips to be constructed.

10. Well Site Layout:

- A. Exhibit "D" shows location and rig layout.
- B. Mud pits in the closed circulating system will be steel pits and the cuttings will be stored in steel containment pits.
- C. Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- D. If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

11. Plans for Restoration of Surface:

Rehabilitation of the location will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be recountoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, those areas of the location not essential to production facilities and operations will be reclaimed and seeded per BLM requirements. Please see Production Facilities Layout Diagram, exhibit D-1.

12. Other Information

- A. Topography consists of a sloping plane with loose tan sands. Vegetation is mainly yucca, mesquite and shin oak.
- B. The wellsite is on surface owned by Department of the Interior, Bureau of Land Management. The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.
- C. In lieu of an archaeological survey report, Cimarex will be submitting an MOA application for this well pad and access road since they are within the MOA boundary.
- D. There are no known dwellings within 1½ miles of this location.

Operator Certification Statement  
**Maduro Unit No. 9**  
Cimarex Energy Co. of Colorado  
Unit D, Section 29  
T19S-R33E, Eddy County, NM

Operator's Representative

Cimarex Energy Co. of Colorado  
600 N. Marienfeld St., Ste. 600  
Midland, TX 79701  
Office Phone: (432) 571-7800  
Zeno Farris

**CERTIFICATION:** I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 22nd day of June, 2011

NAME: Zeno Farris  
Zeno Farris

TITLE: Manager Operations Administration

ADDRESS: 600 N. Marienfeld St., Ste. 600  
Midland, TX 79701

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Field Representative: Same as above