Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.

[323150]

2. Name of Operator

[215099]

9. API Well No. **30-025-51926**

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory **[97741]**

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date

Title

Approved by *(Signature)*	Name *(Printed/Typed)*	Date

Title	Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NGMP Rec 08/24/2023

KZ
08/31/2023

SL

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 08/18/2023

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-025-51926	97741	WC G-09 S253335K;LOWER BONE SPRING

[4] Property Code	[5] Property Name	[6] Well Number
323150	RED HILLS UNIT	77H

[7] OGRID No.	[8] Operator Name	[9] Elevation
215099	CIMAREX ENERGY CO.	3343.1'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	33	25S	33E		388	NORTH	949	EAST	LEA

[11] 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
P	4	26S	33E		100	SOUTH	440	EAST	LEA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320			

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.

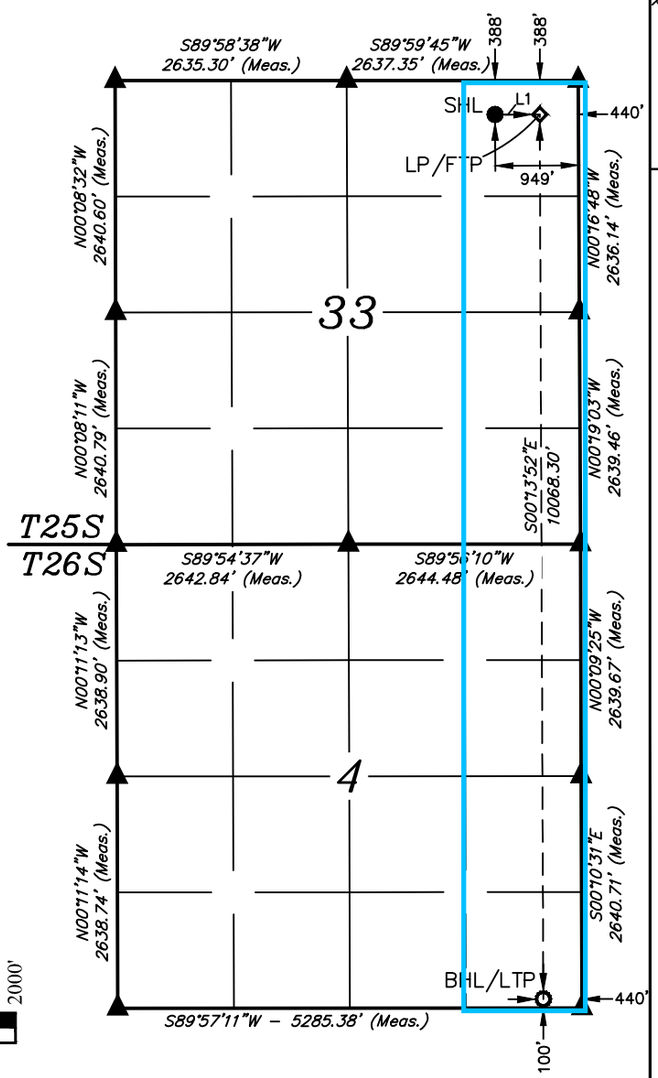
[16] NOTE:
- Distances referenced on plat to section lines are perpendicular.
- Basis of Bearing is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°05'35.56" (32.093210°)
LONGITUDE = 103°34'18.55" (103.571818°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°05'35.11" (32.093085°)
LONGITUDE = 103°34'16.85" (103.571348°)
STATE PLANE NAD 83 (N.M. EAST)
N: 398479.31' E: 777162.00'
STATE PLANE NAD 27 (N.M. EAST)
N: 398421.71' E: 735975.48'

NAD 83 (LP/FTP)
LATITUDE = 32°05'35.54" (32.093207°)
LONGITUDE = 103°34'12.62" (103.570174°)
NAD 27 (LP/FTP)
LATITUDE = 32°05'35.09" (32.093082°)
LONGITUDE = 103°34'10.93" (103.569703°)
STATE PLANE NAD 83 (N.M. EAST)
N: 398481.65' E: 777671.36'
STATE PLANE NAD 27 (N.M. EAST)
N: 398424.05' E: 736484.84'

NAD 83 (BHL/LTP)
LATITUDE = 32°03'55.93" (32.065536°)
LONGITUDE = 103°34'12.49" (103.570137°)
NAD 27 (BHL/LTP)
LATITUDE = 32°03'55.48" (32.065411°)
LONGITUDE = 103°34'10.81" (103.569668°)
STATE PLANE NAD 83 (N.M. EAST)
N: 388415.40' E: 777753.97'
STATE PLANE NAD 27 (N.M. EAST)
N: 388358.05' E: 736566.96'

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N89°58'34"E	509.45'



2000' 1000' 0' 2000'

SCALE

DRAWN BY: T.S. 02-13-20

● = SURFACE HOLE LOCATION
○ = BOTTOM HOLE LOCATION/LAST TAKE POINT
▲ = SECTION CORNER LOCATED
◇ = LANDING POINT/FIRST TAKE POINT

[17] OPERATOR CERTIFICATION

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.

Amithy Crawford 8/5/20
Signature Date

Amithy Crawford
Printed Name

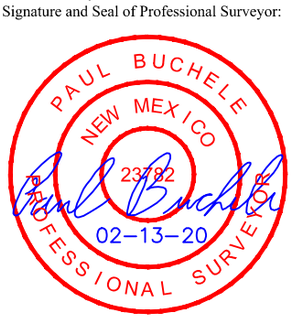
acrawford@cimarex.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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.

May 05, 2017
Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number:

Intent ☐ As Drilled ☐

API #
30-025-51926

Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County

Latitude	Longitude	NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County

Latitude	Longitude	NAD

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County

Latitude	Longitude	NAD

Is this well the defining well for the Horizontal Spacing Unit? ☐

Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number

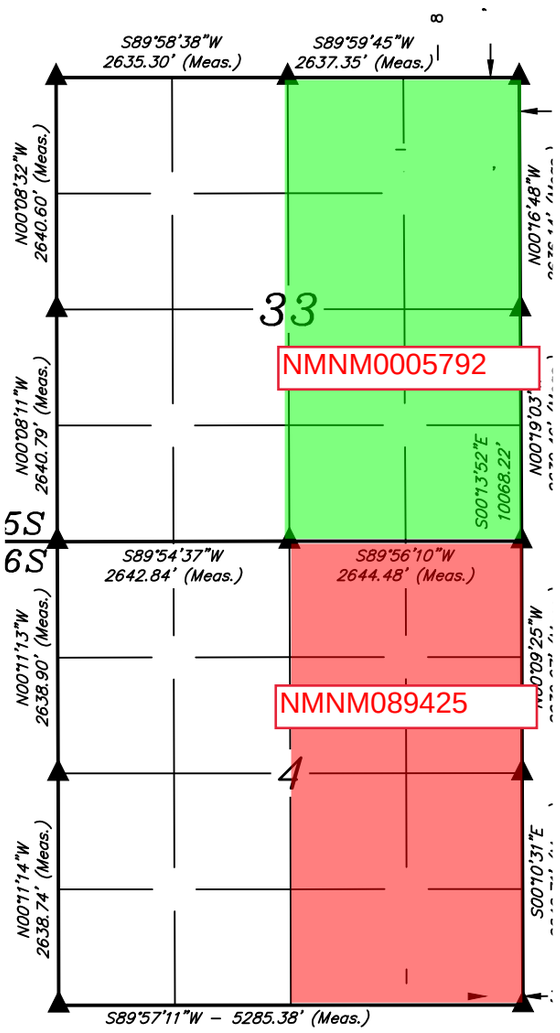
Estimated Formation Tops

Formation:	Top:	Formation:	Top:

RED HILLS UNIT E2

LEASE MAP

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N89°58'47"E	599.45'



TAKE POINT

OINT

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: Cimarex Energy Company **OGRID:** 215099 **Date:** 08/3/2023

II. Type: X Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Red Hills Unit 77H		A, Sec 33 T25S, R33E	388 FNL/949 FEL	2000	3000	4000

IV. Central Delivery Point Name: _Red Hills 33-4 CDP Sales_____ [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Red Hills Unit 77H		7/1/24	1/1/2025	2/1/25	4/1/25	4/1/25

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	Sarah Jordan
Printed Name:	Sarah Jordan
Title:	Regulatory Analyst
E-mail Address:	sarah.jordan@coterra.com
Date:	8/3/23
Phone:	432/620-1909

OIL CONSERVATION DIVISION

(Only applicable when submitted as a standalone form)

Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

From State of New Mexico, Natural Gas Management Plan

VI. Separation Equipment: Attach a complete description of how Operator will size separation equipment to optimize gas capture.

XEC Standard Response

Standard facility gas process flow begins at the inlet separator. These vessels are designed based off of forecasted rates and residence times in accordance with, and often greater than, API 12J. The separated gas is then routed to an additional separation vessel (ie sales scrubber) in order to extract liquids that may have carried over or developed due to the decrease in pressure. The sales scrubber is sized based on API 521. From the sales scrubber, the gas leaves the facility and enters the gas midstream gathering network.

Cimarex
VII. Operational Practices

Cimarex values the sustainable development of New Mexico's natural resources. Venting and flaring of natural gas is a source of waste in the industry, and Cimarex will ensure that its values are aligned with those of NMOCD. As such, Cimarex plans to take pointed steps to ensure compliance with Subsection A through F of 19.15.27.8 NMAC.

Specifically, below are the steps Cimarex will plan to follow under routine well commissioning and operations.

1. Capture or combust natural gas during drilling operations where technically feasible, using the best industry practices and control technologies.
    a. All flares during these operations will be a minimum of 100ft away from the nearest surface-hole location.
2. All gas present during post-completion drill-out and flow back will be routed through separation equipment, and, if technically feasible, flare unsellable vapors rather than vent. Lastly, formal sales separator commissioning to process well-stream fluids and send gas to a gas flow line/collection system or use the gas for on-site fuel or beneficial usage, gas as soon as is safe and technically feasible.
3. Cimarex will ensure the flare or combustion equipment is properly sized to handle expected flow rates, ensure this equipment is equipped with an automatic or continuous ignition source, and ensure this equipment is designed for proper combustion efficiency.
4. If Cimarex must flare because gas is not meeting pipeline specifications, Cimarex will limit flaring to <60 days, analyze gas composition at least twice per week, and route gas into a gathering pipeline as soon as pipeline specifications are met.
5. Under routine production operations, Cimarex will not flare/vent unless:
    a. Venting or flaring occurs due to an emergency or equipment malfunction.
    b. Venting or flaring occurs as a result of unloading practices, and an operator is onsite (or within 30 minutes of drive time and posts contact information at the wellsite) until the end of unloading practice.
    c. The venting or flaring occurs during automated plungerlift operations, in which case the Cimarex operator will work to optimize the plungerlift system to minimize venting/flaring.
    d. The venting or flaring occurs during downhole well maintenance, in which case Cimarex will work to minimize venting or flaring operations to the extent that it does not pose a risk to safe operations.
    e. The well is an exploratory well, the division has approved the well as an exploratory well, venting or flaring is limited to 12 months, as approved by the division, and venting/flaring does not cause Cimarex to breach its State-wide 98% gas capture requirement.
    f. Venting or flaring occurs because the stock tanks or other low-pressure vessels are being gauged, sampled, or liquids are being loaded out.
    g. The venting or flaring occurs because pressurized vessels are being maintained and are being blown-down or depressurized.
    h. Venting or flaring occurs as a result of normal dehydration unit operations.

i. Venting or flaring occurs as a result of bradenhead testing.
j. Venting or flaring occurs as a result of normal compressor operations, including general compressor operations, compressor engines and turbines.
k. Venting or flaring occurs as a result of a packer leakage test.
l. Venting or flaring occurs as a result of a production test lasting less than 24 hours unless otherwise approved by the division.
m. Venting or flaring occurs as a result of new equipment commissioning and is necessary to purge impurities from the pipeline or production equipment.

6. Cimarex will maintain its equipment in accordance with its Operations and Maintenance Program, to ensure venting or flaring events are minimized and that equipment is properly functioning.
7. Cimarex will install automatic tank gauging equipment on all production facilities constructed after May 25, 2021, to ensure minimal emissions from tank gauging practices.
8. By November 25, 2022, all Cimarex facilities equipped with flares or combustors will be equipped with continuous pilots or automatic igniters, and technology to ensure proper function, i.e. thermocouple, fire-eye, etc…
9. Cimarex will perform AVO (audio, visual, olfactory) facility inspections in accordance with NMOCD requirements. Specifically, Cimarex will:
    a. Perform weekly inspections during the first year of production, and so long as production is greater than 60 MCFD.
    b. If production is less than 60 MCFD, Cimarex will perform weekly AVO inspections when an operator is present on location, and inspections at least once per calendar month with at least 20 calendar days between inspections.
10. Cimarex will measure or estimate the volume of vented, flared or beneficially used natural gas, regardless of the reason or authorization for such venting or flaring.
11. On all facilities constructed after May 25, 2021, Cimarex will install metering where feasible and in accordance with available technology and best engineering practices, in an effort to measure how much gas could have been vented or flared.
    a. In areas where metering is not technically feasible, such as low-pressure/low volume venting or flaring applications, engineering estimates will be used such that the methodology could be independently verified.
12. Cimarex will fulfill the division's requirements for reporting and filing of venting or flaring that exceeds 50 MCF in volume or last eight hours or more cumulatively within any 24-hour period.

VIII. Best Management Practices to minimize venting during active and planned maintenance

Cimarex strives to ensure minimal venting occurs during active and planned maintenance activities. Below is a description of common maintenance practices, and the steps Cimarex takes to limit venting exposure.

- **Workovers:**
  - Always strive to kill well when performing downhole maintenance.
  - If vapors or trapped pressure is present and must be relieved then:
    - Initial blowdown to production facility:
      - Route vapors to LP flare if possible/applicable
    - Blowdown to portable gas buster tank:
      - Vent to existing or portable flare if applicable.

- **Stock tank servicing:**
  - Minimize time spent with thief hatches open.
  - When cleaning or servicing via manway, suck tank bottoms to ensure minimal volatiles exposed to atmosphere.
    - Connect vacuum truck to low pressure flare while cleaning bottoms to limit venting.
  - Isolate the vent lines and overflows on the tank being serviced from other tanks.

- **Pressure vessel/compressor servicing and associated blowdowns:**
  - Route to flare where possible.
  - Blow vessel down to minimum available pressure via pipeline, prior to venting vessel.
  - Preemptively changing anodes to reduce failures and extended corrosion related servicing.
  - When cleaning or servicing via manway, suck vessel bottoms to ensure minimal volatiles exposed to atmosphere.

- **Flare/combustor maintenance:**
  - Minimize downtime by coordinating with vendor and Cimarex staff travel logistics.
  - Utilizing preventative and predictive maintenance programs to replace high wear components before failure.
  - Because the flare/combustor is the primary equipment used to limit venting practices, ensure flare/combustor is properly maintained and fully operational at all times via routine maintenance, temperature telemetry, onsite visual inspections.

The Cimarex expectation is to limit all venting exposure. Equipment that may not be listed on this document is still expected to be maintained and associated venting during such maintenance minimized.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex
LEASE NO.:	**NMNM05792**
LOCATION:	Section 33, T.25 S, R.33 E., NMPM
COUNTY:	Lea County, New Mexico
WELL NAME & NO.:	Red Hills Unit 77H
SURFACE HOLE FOOTAGE:	388'/N & 949'/E
BOTTOM HOLE FOOTAGE:	100'/S & 440'/E

COA

H_2S	◉ Yes	○ No		
Potash / WIPP	◉ None	○ Secretary	○ R-111-P	☐ WIPP
Cave / Karst	◉ Low	○ Medium	○ High	○ Critical
Wellhead	○ Conventional	◉ Multibowl	○ Both	○ Diverter
Cementing	☐ Primary Squeeze	☐ Cont. Squeeze	☐ EchoMeter	☐ DV Tool
Special Req	☐ Break Testing	☐ Water Disposal	☐ COM	☑ Unit
Variance	☑ Flex Hose	☐ Casing Clearance	☐ Pilot Hole	☐ Capitan Reef
Variance	☐ Four-String	☐ Offline Cementing	☑ Fluid-Filled	☐ Open Annulus
☐ **Batch APD / Sundry**				

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Bone Springs and Wolfcamp** formations. As a result, the Hydrogen Sulfide area must meet all requirements from **43 CFR 3176**, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1050** feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to

Approval Date: 08/18/2023

include the lead cement)

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
   - Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.

3. The minimum required fill of cement behind the **5-1/2 inch** production casing is:
   - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the casing shoe shall be **5000 (5M)** psi.
a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 must be followed.

Approval Date: 08/18/2023

SPECIAL REQUIREMENT (S)

Unit Wells

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

Commercial Well Determination

A commercial well determination shall be submitted after production has been established for at least six months. (This is not necessary for secondary recovery unit wells)

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Eddy County
Email **or** call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, **BLM_NM_CFO_DrillingNotifications@BLM.GOV**
(575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.

 Approval Date: 08/18/2023

- BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.

c. Manufacturer representative shall install the test plug for the initial BOP test.
d. Whenever any seal subject to test pressure is broken, all the tests in **43 CFR part 3170 Subpart 3172** must be followed.
e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR part 3170 Subpart 3172**.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

ZS 8/6/2023

Approval Date: 08/18/2023

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U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report
08/23/2023

Operator

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.

NAME: AMITHY CRAWFORD **Signed on:** 04/22/2021

Title: Regulatory Analyst

Street Address: 600 N MARIENFELD STE 600

City: MIDLAND **State:** TX **Zip:** 79701

Phone: (432)620-1909

Email address: AMITHY.CRAWFORD@COTERRA.COM

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

AFMSS
U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data
08/23/2023

APD ID: 10400059629
Submission Date: 04/22/2021
Operator Name: CIMAREX ENERGY COMPANY
Well Name: RED HILLS UNIT
Well Number: 77H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - General

APD ID: 10400059629
Tie to previous NOS? Y
Submission Date: 04/22/2021
BLM Office: Carlsbad
User: AMITHY CRAWFORD
Title: Regulatory Analyst
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMNM005792
Lease Acres:
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? NO
Federal or Indian agreement:
Agreement number:
Agreement name:
Keep application confidential? Y
Permitting Agent? NO
APD Operator: CIMAREX ENERGY COMPANY
Operator letter of

Operator Info

Operator Organization Name: CIMAREX ENERGY COMPANY
Operator Address: 6001 DEAUVILLE BLVD STE 300N
Zip: 79706
Operator PO Box:
Operator City: MIDLAND
State: TX
Operator Phone: (303)295-3995
Operator Internet Address: hknauls@cimarex.com

Section 2 - Well Information

Well in Master Development Plan? NO
Master Development Plan name:
Well in Master SUPO? NO
Master SUPO name:
Well in Master Drilling Plan? NO
Master Drilling Plan name:
Well Name: RED HILLS UNIT
Well Number: 77H
Well API Number:
Field/Pool or Exploratory? Field and Pool
Field Name: WC-025 G-06 S253329D
Pool Name: WC-025 G-06 S253329D

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** Y **New surface disturbance?** N

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** Red Hills Unit **Number:** E2E2

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 23 Miles **Distance to nearest well:** 20 FT **Distance to lease line:** 388 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: Red_HIlls_Unit_77H_C102_20200805092432.pdf

Red_Hills_Unit_Lease_Plat_20200805092452.pdf

Well work start Date: 11/30/2020 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: **Reference Datum:** GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
SHL Leg #1	388	FNL	949	FEL	25S	33E	33	Aliquot NENE	32.09321	-103.571818	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 0005792	3342	0	0	Y
KOP Leg #1	388	FNL	949	FEL	25S	33E	33	Aliquot NENE	32.09321	-103.571818	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 0005792	-6580	9953	9922	Y

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
PPP Leg #1-1	388	FNL	440	FEL	25S	33E	33	Aliquot NENE	32.093207	-103.570174	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 0005792	-7058	10703	10400	Y
EXIT Leg #1	100	FSL	440	FEL	26S	33E	4	Aliquot SESE	32.065536	-103.570137	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 89425	-7058	20293	10400	Y
BHL Leg #1	100	FSL	440	FEL	26S	33E	4	Aliquot SESE	32.065536	-103.570137	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 89425	-7058	20293	10400	Y

AFMSS
U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report
08/23/2023

APD ID: 10400059629
Submission Date: 04/22/2021
Operator Name: CIMAREX ENERGY COMPANY
Well Name: RED HILLS UNIT
Well Number: 77H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
11977486	RUSTLER	3608	920	920	LIMESTONE	USEABLE WATER	N
11977487	TOP SALT	2274	1334	1334	ANHYDRITE	NONE	N
11977488	BASE OF SALT	-1284	4892	4892	ANHYDRITE	NONE	N
11977489	BELL CANYON	-1311	4919	4919	SANDSTONE	NONE	N
11977490	CHERRY CANYON	-2411	6019	6019	SANDSTONE	NONE	N
11977491	BRUSHY CANYON	-3970	7578	7578	SANDSTONE	NONE	N
11977492	BONE SPRING	-5439	9047	9047	LIMESTONE	NATURAL GAS, OIL	N
11977483	UPPER AVALON SHALE	-5730	9338	9338	SHALE	NATURAL GAS, OIL	N
11977484	BONE SPRING 1ST	-6422	10030	10030	SANDSTONE	NATURAL GAS, OIL	N
11977485	BONE SPRING 2ND	-6622	10230	10230	SANDSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M
Rating Depth: 4850

Equipment: A BOP consisting of three rams, including one blind ram and two pipe rams and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock 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.
Requesting Variance? YES

Variance request: Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

Testing Procedure: A multi-bowl wellhead system will be utilized. After running the 13-3/8" surface casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 2000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 2000 psi test. Annular will be tested to 100%

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The multi-bowl wellhead will be installed by vendors representative. A copy of the installation instructions has been sent to the BLM field office. The wellhead will be installed by a third-party welder, monitored by the wellhead vendor representative. All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type. A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 2000 psi. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing strings utilizing steel body pack-off will be tested to 70% of casing burst. If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

Choke Diagram Attachment:

Red_Hills_Unit_77H_Choke_2M_20210422085429.pdf

BOP Diagram Attachment:

Red_Hills_Unit_77H_BOP_2M_20210422085439.pdf

Pressure Rating (PSI): 5M **Rating Depth:** 21005

Equipment: A BOP consisting of three rams, including one blind ram and two pipe rams and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock 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.
Requesting Variance? YES

Variance request: Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

Testing Procedure: A multi-bowl wellhead system will be utilized. After running the 13-3/8" surface casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The multi-bowl wellhead will be installed by vendors representative. A copy of the installation instructions has been sent to the BLM field office. The wellhead will be installed by a third-party welder, monitored by the wellhead vendor representative. .All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type. A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi. Slips will be utilized after running and cementing the production casing. After installation of the slips and wellhead on the production casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 70% of casing burst. If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

Choke Diagram Attachment:

Red_Hills_Unit_77H_Choke_5M_20210422085455.pdf

BOP Diagram Attachment:

Red_Hills_Unit_77H_BOP_5M_20210422085502.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	NON API	N	0	970	0	970	3342	2372	970	OTHER	48	ST&C	1.76	4.12	BUOY	6.92	BUOY	6.92
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4850	0	4850	3608	-1508	4850	J-55	40	LT&C	1.43	1.57	BUOY	2.68	BUOY	2.68
3	PRODUCTION	6.75	5.5	NEW	API	N	0	9954	0	9954	3608	-6612	9954	L-80	20	LT&C	1.9	1.97	BUOY	2	BUOY	2
4	PRODUCTION	8.75	5.5	NEW	API	N	9954	20293	9954	10400	-6612	-7058	10339	L-80	20	BUTT	1.81	1.85	BUOY	52.24	BUOY	52.24

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Red_Hills_Unit_77H_Spec_Sheet_for_H40Hybrid_surf_casing_20210422085345.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Red_Hills_Unit_77H_Casing_Assumptions_20210422085404.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Casing Attachments

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Red_Hills_Unit_77H_Casing_Assumptions_20210422090220.pdf

Casing ID: 3 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Red_Hills_Unit_77H_Casing_Assumptions_20210422090257.pdf

Casing ID: 4 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Red_Hills_Unit_77H_Casing_Assumptions_20210422090134.pdf

Section 4 - Cement

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		0	0	0	0	0	0	0	0	0
SURFACE	Lead		0	970	406	1.72	13.5	698	42	Class C	Bentonite
SURFACE	Tail		0	970	195	1.34	14.8	261	42	Class C	LCM
INTERMEDIATE	Lead		0	4850	1008	1.72	13.5	1733	49	Class C	Bentonite
INTERMEDIATE	Tail		0	4850	283	1.34	14.8	379	49	Class C	LCM
PRODUCTION	Lead		0	20293	546	3.64	10.3	1987	25	Tuned Light	LCM
PRODUCTION	Tail		0	20293	3014	1.3	14.2	3918	25	50:50 (POZ H)	Salt, Bentonite, Fluid Loss, Dispersant, SMS

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: 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.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	970	OTHER : Fresh Water	7.83	8.33							
970	4850	SALT SATURATED	9.5	10							
4850	20293	OIL-BASED MUD	8.5	9							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

No DST Planned

List of open and cased hole logs run in the well:

GAMMA RAY LOG,DIRECTIONAL SURVEY,COMPENSATED NEUTRON LOG,

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4867 **Anticipated Surface Pressure:** 2579

Anticipated Bottom Hole Temperature(F): 173

Anticipated abnormal pressures, temperatures, or potential geologic hazards? YES

Describe:

Lost circulation may be encountered in the Delaware mountain group. Abnormal pressure as well as hole stability issues may be encountered in the Wolfcamp.

Contingency Plans geoharzards description:

Lost circulation material will be available, as well as additional drilling fluid along with the fluid volume in the drilling rig pit system. Drilling fluid can be mixed on location or mixed in vendor mud plant and trucked to location if needed. Sufficient barite will be available to maintain appropriate mud weight for the Wolfcamp interval.

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations

Red_Hills_Unit_E2E2_Pad_5_H2S_Plan_20210422090850.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Red_HIlls_Unit_77H_Directional_Survey_AC_Report_20210422090912.pdf

Red_Hills_Unit_77H_Directional_Survey__20210422090922.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

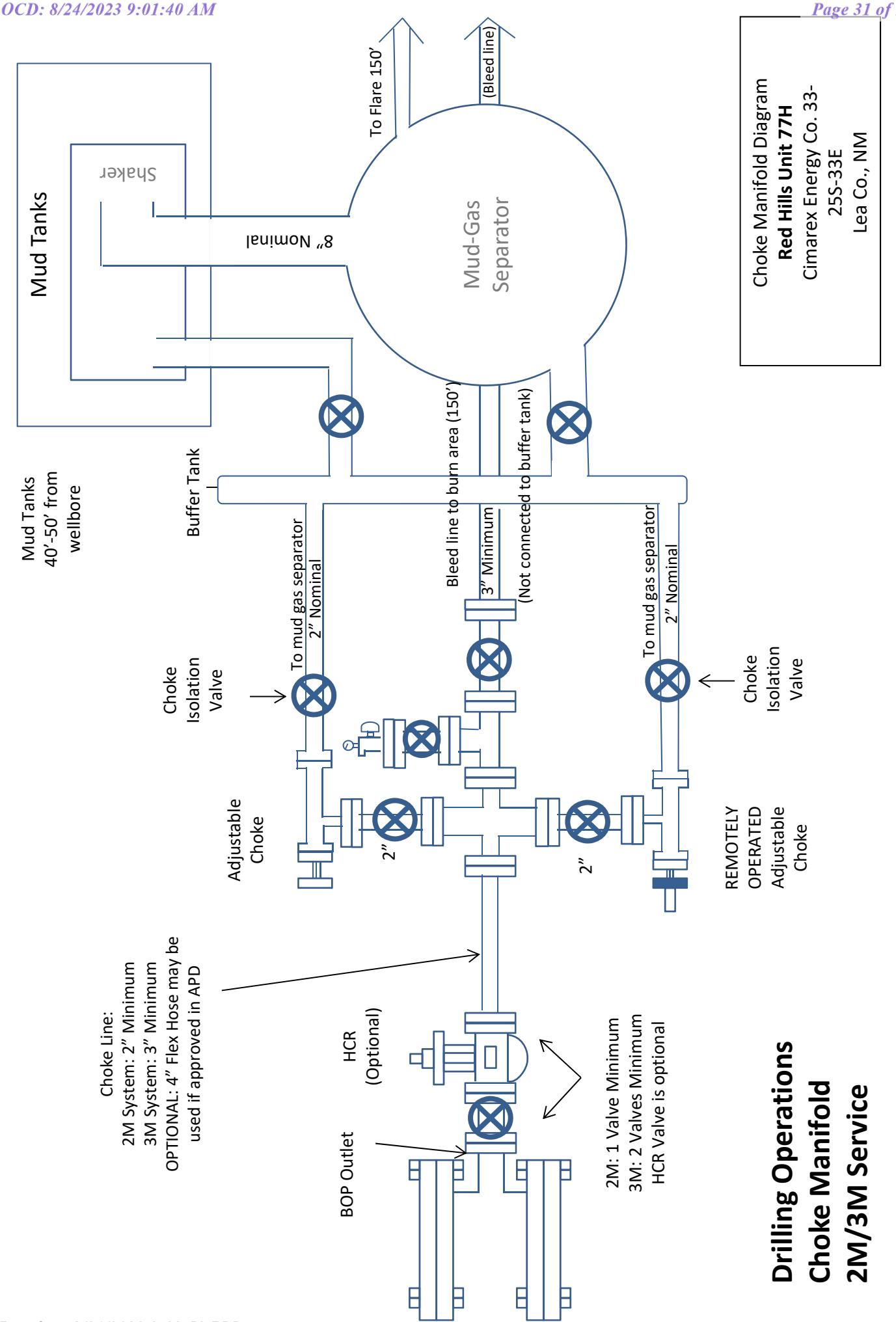
Red_HIlls_Unit_77H_Drilling_Plan_20210422090938.pdf

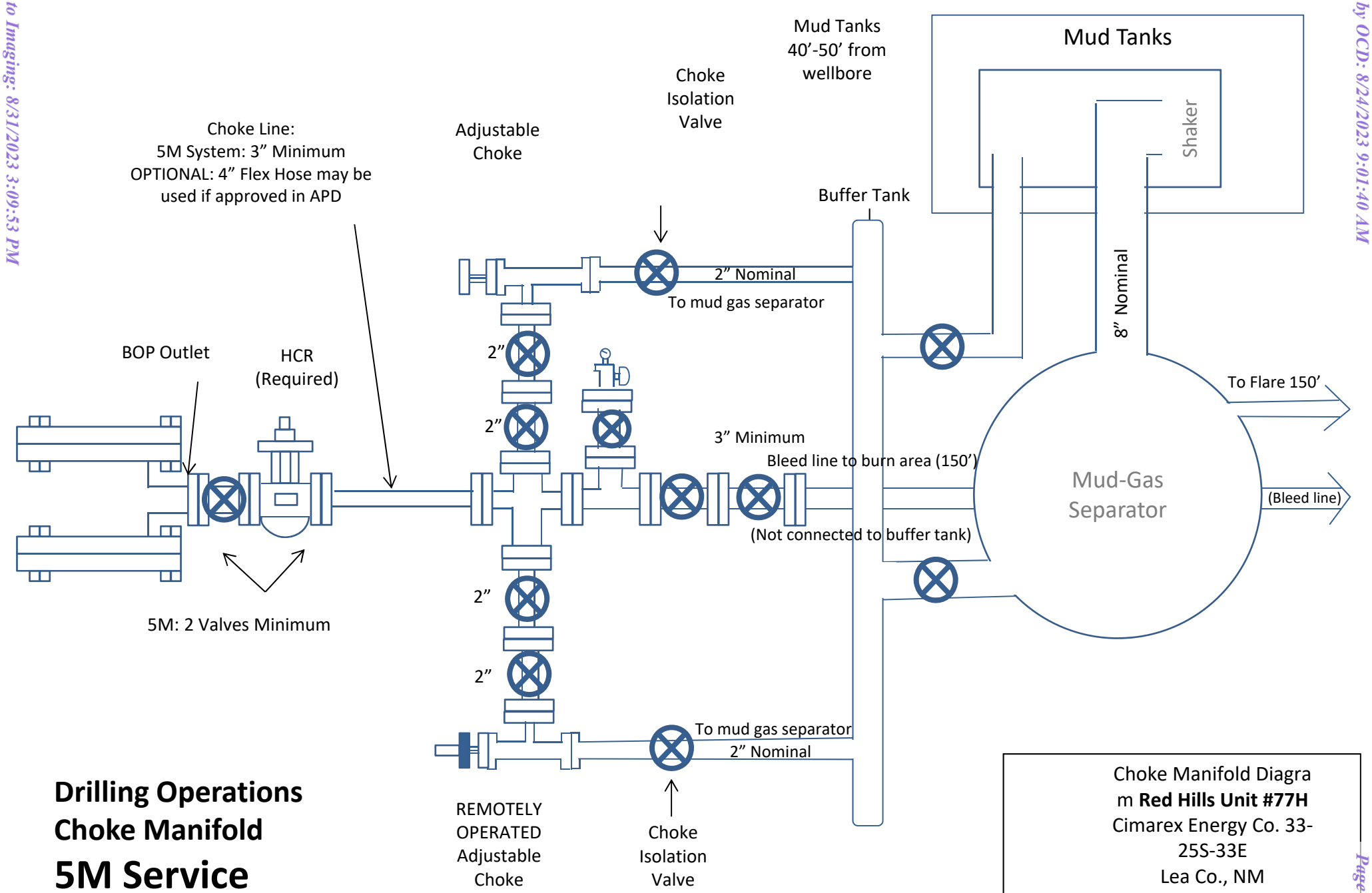
Red_Hills_Unit_77H_Gas_Capture_20210422090943.pdf

Other Variance attachment:

Red_Hills_Unit_77H_Multibowl_Wellhead_20210422090957.pdf

Red_Hills_Unit_E2E2_Pad_5_Flex_Hose_20210422091021.pdf

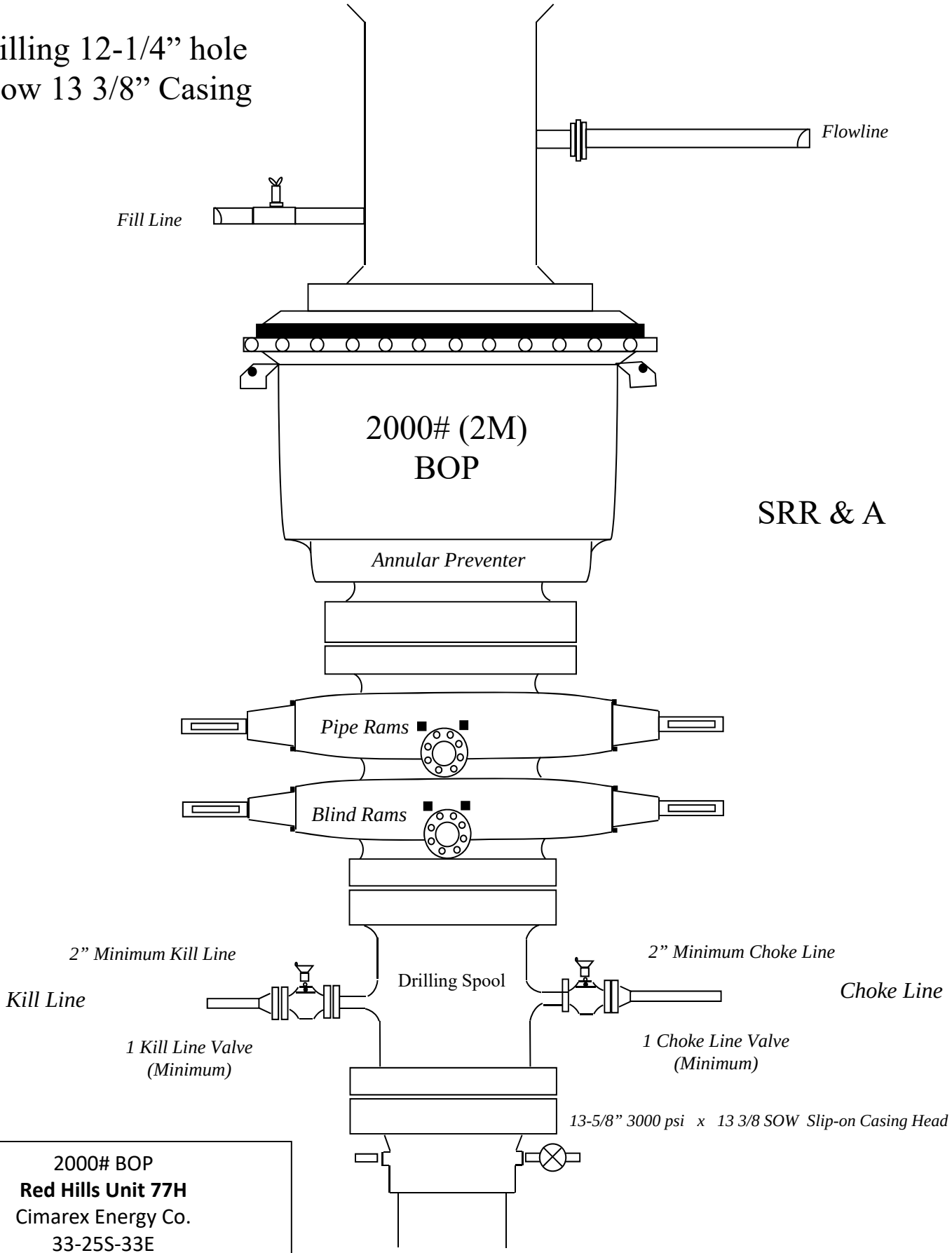

Mud Tanks
Shaker
8" Nominal
To Flare 150'
(Bleed line)
Mud-Gas Separator
Choke Manifold Diagram
Red Hills Unit 77H
Cimarex Energy Co. 33-25S-33E
Lea Co., NM
Mud Tanks 40'-50' from wellbore
Buffer Tank
To mud gas separator 2" Nominal
Bleed line to burn area (150')
3" Minimum
(Not connected to buffer tank)
To mud gas separator 2" Nominal
Choke Isolation Valve
Choke Isolation Valve
Adjustable Choke
2"
2"
REMOTELY OPERATED Adjustable Choke
Choke Line:
2M System: 2" Minimum
3M System: 3" Minimum
OPTIONAL: 4" Flex Hose may be used if approved in APD
HCR (Optional)
BOP Outlet
2M: 1 Valve Minimum
3M: 2 Valves Minimum
HCR Valve is optional
Drilling Operations
Choke Manifold
2M/3M Service



Drilling Operations
Choke Manifold
5M Service

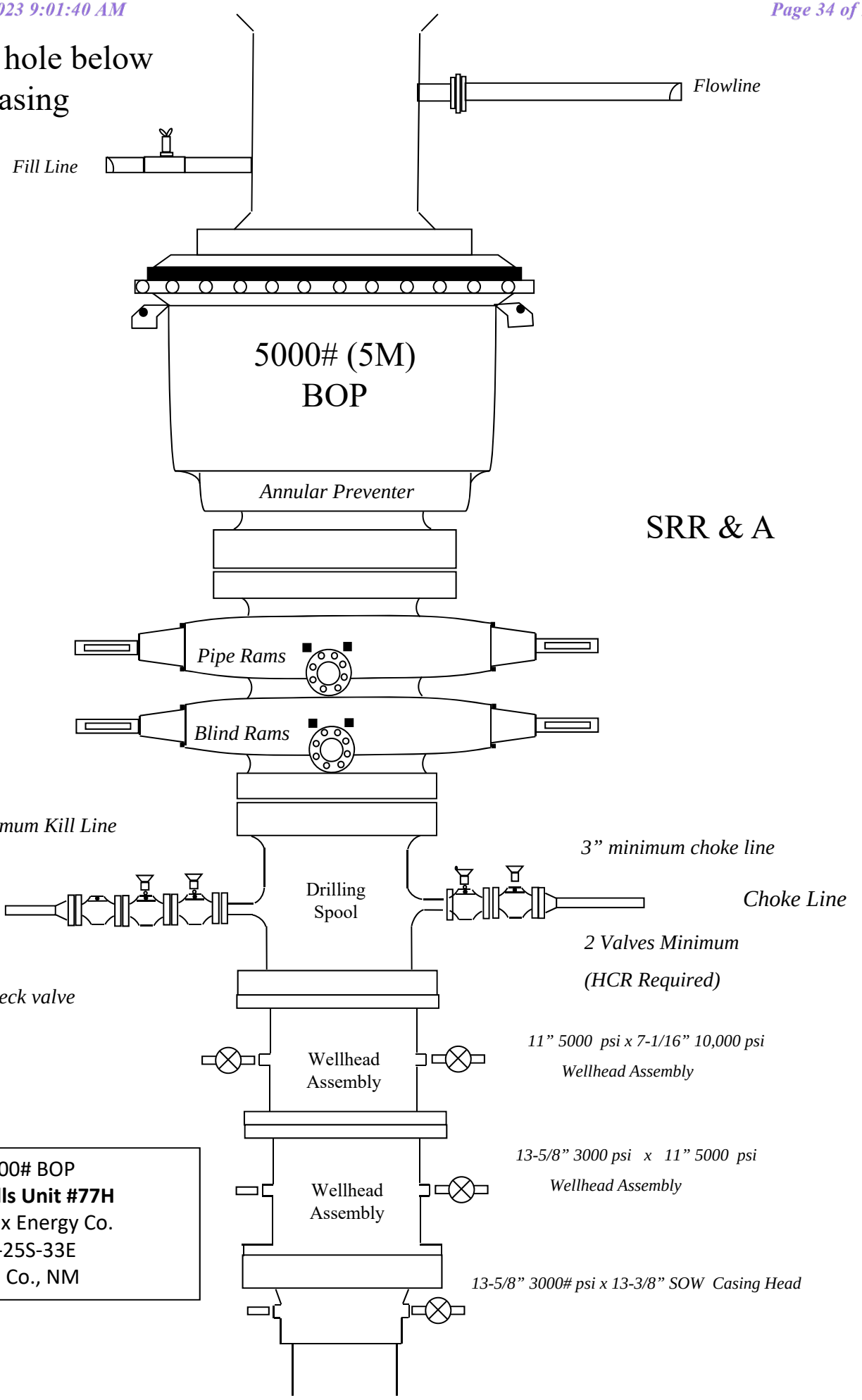
Choke Manifold Diagra
m **Red Hills Unit #77H**
Cimarex Energy Co. 33-
25S-33E
Lea Co., NM

Drilling 12-1/4" hole
below 13 3/8" Casing



2000# BOP
Red Hills Unit 77H
Cimarex Energy Co.
33-25S-33E
Lea Co., NM

Drilling 8 3/4” hole below 9 5/8” Casing



SRR & A

5000# BOP
Red Hills Unit #77H
Cimarex Energy Co.
33-25S-33E
Lea Co., NM

Print

EVRAZ

OCTG Performance Data

Casing Performance

Availability: ERW

Pipe Body Geometry

Outside Diameter:	13.375 in	Inside Diameter:	12.715 in
Wall Thickness:	0.330 in	Cross Section Area:	13.524 sq in
Nominal Weight:	48.00 lb/ft	Drift Diameter:	12.559 in
Plain End Weight:	46.02 lb/ft	Alternate Drift Diameter:	-

Pipe Body Performance

Grade:	H40	Collapse Strength (ERW):	740 psi
Pipe Body Yield Strength:	541000 lbf	Collapse Strength (SMLS):	-

SC Connection

Connection Geometry

	Optimum	Minimum	Maximum
Make Up Torque:	3220 lb·ft	2420 lb·ft	4030 lb·ft
Coupling Outside Diameter:	14.375 in		

Connection Performance

Grade:	H40	Minimum Internal Yield Pressure:	1730 psi
Joint Strength:	322000 lbf		

LC Connection

Connection Geometry

	Optimum	Minimum	Maximum
Make Up Torque:	-	-	-
Coupling Outside Diameter:	14.375 in		

Connection Performance

Grade:	H40	Minimum Internal Yield Pressure:	-
Joint Strength:	-		

BC Connection

Connection Geometry

	Optimum	Minimum	Maximum
Make Up Torque:	-	-	-
Coupling Outside Diameter:	14.375 in		

Connection Performance

Grade:	H40	Minimum Internal Yield Pressure:	-
Joint Strength:	-		

PE Connection

Connection Geometry

	Optimum	Minimum	Maximum
Make Up Torque:	-	-	-
Coupling Outside Diameter:	14.375 in		

Connection Performance

Grade:	H40	Minimum Internal Yield Pressure:	1730 psi
Joint Strength:	-		

Red Hills Unit 77H

Casing Assumptions

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	970	970	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	1.76	4.12	6.92
12 1/4	0	4850	4850	9-5/8"	40.00	J-55	LT&C	1.43	1.57	2.68
8 3/4	0	9954	9954	5-1/2"	20.00	L-80	LT&C	1.90	1.97	2.00
8 3/4	9954	20293	10400	5-1/2"	20.00	L-80	BT&C	1.81	1.85	52.24
						BLM Minimum Safety Factor		1.125	1	1.6 Dry 1.8 Wet

Red Hills Unit 77H

Casing Assumptions

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	970	970	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	1.76	4.12	6.92
12 1/4	0	4850	4850	9-5/8"	40.00	J-55	LT&C	1.43	1.57	2.68
8 3/4	0	9954	9954	5-1/2"	20.00	L-80	LT&C	1.90	1.97	2.00
8 3/4	9954	20293	10400	5-1/2"	20.00	L-80	BT&C	1.81	1.85	52.24
						BLM Minimum Safety Factor		1.125	1	1.6 Dry 1.8 Wet

Red Hills Unit 77H

Casing Assumptions

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	970	970	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	1.76	4.12	6.92
12 1/4	0	4850	4850	9-5/8"	40.00	J-55	LT&C	1.43	1.57	2.68
8 3/4	0	9954	9954	5-1/2"	20.00	L-80	LT&C	1.90	1.97	2.00
8 3/4	9954	20293	10400	5-1/2"	20.00	L-80	BT&C	1.81	1.85	52.24
						BLM Minimum Safety Factor		1.125	1	1.6 Dry 1.8 Wet

Red Hills Unit 77H

Casing Assumptions

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	970	970	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	1.76	4.12	6.92
12 1/4	0	4850	4850	9-5/8"	40.00	J-55	LT&C	1.43	1.57	2.68
8 3/4	0	9954	9954	5-1/2"	20.00	L-80	LT&C	1.90	1.97	2.00
8 3/4	9954	20293	10400	5-1/2"	20.00	L-80	BT&C	1.81	1.85	52.24
						BLM Minimum Safety Factor		1.125	1	1.6 Dry 1.8 Wet

Hydrogen Sulfide Drilling Operations Plan
Red Hills Unit E2E2 Pad 5
Cimarex Energy Co. of Colorado
UL: A, Sec. 33, 25S, 33E
Lea Co., NM

1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:

A. Characteristics of H_2S
B. Physical effects and hazards
C. Principal and operation of H2S detectors, warning system and briefing areas.
D. Evacuation procedure, routes and first aid.
E. Proper use of safety equipment & life support systems
F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

H_2S Detection and Alarm Systems:

A. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.

B. An audio alarm system will be installed on the derrick floor and in the top doghouse.

3 Windsock and/or wind streamers:

A. Windsock at mudpit area should be high enough to be visible.
B. Windsock on the rig floor and / or top doghouse 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_2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5 Well control equipment:

A. See exhibit "E-1"

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 r cores are planned at this time.

8 Drilling contractor supervisor will be required to be familiar with the effects H_2S has on tubular goods and other mechanical equipment.

9 If H2S 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 H2S scavengers if necessary.

H_2S Contingency Plan
Red Hills Unit E2E2 Pad 5
Cimarex Energy Co. of Colorado
UL: A, Sec. 33, 25S, 33E
Lea Co., NM

Emergency Procedures

In the event of a release of gas containing H_2S, 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_2S monitors and air packs in order to control the release.
« Use the "buddy system" to ensure no injuries occur during the 432-620-1975
« 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_2S, 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_2). 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_2S and SO_2

Please see attached International Chemical Safety Cards.

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_2S Contingency Plan Emergency Contacts
Red Hills Unit E2E2 Pad 5
Cimarex Energy Co. of Colorado
UL: A, Sec. 33, 25S, 33E
Lea Co., NM

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

Key Personnel

Name	**Title**	**Office**	**Mobile**
Larry Seigrist	Drilling Manager	432-620-1934	580-243-8485
Charlie Pritchard	Drilling Superintendent	432-620-1975	432-238-7084
Roy Shirley	Construction Superintendent		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	

Schlumberger

CIMAREX

Cimarex Red Hills 33-4 Unit #77H Rev0 RM 27Mar20 Anti-Collision Summary Report

Analysis Date-24hr Time:	April 07, 2020 - 15:13	**Analysis Method:**	3D Least Distance
Client:	Cimarex Energy	**Reference Trajectory:**	Cimarex Red Hills 33-4 Unit #77H Rev0 RM 27Mar20 (Non-Def Plan)
Field:	NM Lea County (NAD 83)	**Depth Interval:**	Every 10.00 Measured Depth (ft)
Structure:	Cimarex Red Hills 33-4 Unit #77H	**Rule Set:**	NAL Procedure: D&M AntiCollision Standard S002
Slot:	New Slot	**Min Pts:**	All local minima indicated.
Well:	Red Hills 33-4 Unit #77H	**Version / Patch:**	2.10.787.0
Borehole:	Red Hills 33-4 Unit #77H	**Database \ Project:**	us1153APP452.DIR.SLB.COM\DRILLING-NM Lea County 2.10
Scan MD Range:	0.00ft ~ 20293.10ft		

Trajectory Error Model: ISCWSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria

Wellhead distance scan: Restricted within 61303.6 ft

Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans
- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Cimarex Red Hills 33-4 Unit #78H Rev0 RM 27Mar20 (Non-Def Plan)													Warning Alert
	19.99	16.25	18.70	3.74	N/A	MAS = 4.95 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	19.99	16.25	18.70	3.74	28061.42	MAS = 4.95 (m)	26.00	26.00				WRP	
	19.99	17.66	7.79	2.33	1.71	OSF1.50	1800.00	1800.00				MinPt-CtCt	
	20.01	17.73	7.76	2.28	1.71	OSF1.50	1810.00	1810.00				MINPT-O-EOU	
	20.06	17.80	7.76	2.26	1.70	OSF1.50	1820.00	1820.00				MinPts	
	44.55	21.58	29.73	22.96	3.20	OSF1.50	2840.00	2833.60				MinPt-CtCt	
	46.00	25.32	28.69	20.68	2.79	OSF1.50	3460.00	3448.64				MINPT-O-EOU	
	49.22	29.12	29.37	20.09	2.58	OSF1.50	3970.00	3954.55				MinPt-O-ADP	
	71.06	45.64	40.21	25.42	2.36	OSF1.50	5830.36	5800.00				MinPt-O-SF	
	71.74	46.03	40.63	25.71	2.36	OSF1.50	5900.00	5869.19				MinPt-O-SF	
	71.51	46.23	40.26	25.28	2.34	OSF1.50	6080.00	6048.70				MinPt-O-SF	
	71.48	46.21	40.25	25.27	2.34	OSF1.50	6090.00	6058.70				MinPts	
	71.41	45.91	40.38	25.50	2.36	OSF1.50	6150.00	6118.68				MinPt-CtCt	
	72.05	68.21	26.15	3.84	1.59	OSF1.50	9953.86	9922.54				MinPts	
	219.86	68.81	173.56	151.05	4.86	OSF1.50	10340.00	10267.94	OSF>5.00			Exit Alert	
	649.70	195.89	518.68	453.81	5.00	OSF1.50	16470.00	10400.00	OSF<5.00			Enter Alert	
	649.70	312.97	440.63	336.73	3.12	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #76H Rev0 RM 27Mar20 (Non-Def Plan)													Warning Alert
	20.01	16.26	18.73	3.76	N/A	MAS = 4.96 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	20.00	16.26	18.71	3.74	N/A	MAS = 4.96 (m)	26.00	26.00				WRP	
	20.00	16.26	9.69	3.74	2.07	MAS = 4.96 (m)	1500.00	1500.00				MinPts	
	20.02	16.26	9.65	3.76	2.06	MAS = 4.96 (m)	1510.00	1510.00				MINPT-O-EOU	
	20.15	16.26	9.70	3.89	2.06	MAS = 4.96 (m)	1530.00	1530.00				MinPt-O-SF	
	52.45	16.67	40.90	35.78	4.99	OSF1.50	1980.00	1979.88	OSF>5.00			Exit Alert	
	84.52	26.27	66.58	58.25	5.00	OSF1.50	3780.00	3766.07	OSF<5.00			Enter Alert	
	127.23	44.61	97.06	82.61	4.36	OSF1.50	5830.36	5800.00				MinPt-O-SF	
	145.06	44.67	114.84	100.38	4.97	OSF1.50	6160.00	6128.68	OSF>5.00			Exit Alert	
	154.69	47.35	122.70	107.34	5.00	OSF1.50	7350.00	7318.67	OSF<5.00			Enter Alert	
	154.71	60.17	114.17	94.54	3.91	OSF1.50	9560.00	9528.67				MinPts	
	189.48	58.21	150.25	131.27	4.96	OSF1.50	9790.00	9758.67	OSF>5.00			Exit Alert	
	414.17	36.40	389.47	377.77	17.64	OSF1.50	10820.00	10400.00				MinPt-CtCt	
	414.17	125.41	330.13	288.76	4.99	OSF1.50	14010.00	10400.00	OSF<5.00			Enter Alert	
	414.17	317.74	201.92	96.43	1.96	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #79H Rev0 RM 27Mar20 (Non-Def Plan)													Warning Alert
	39.99	32.25	38.71	7.74	N/A	MAS = 9.83 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	39.99	32.25	38.71	7.74	N/A	MAS = 9.83 (m)	26.00	26.00				WRP	
	39.99	32.25	27.79	7.74	3.55	MAS = 9.83 (m)	1800.00	1800.00				MinPts	
	40.01	32.25	27.76	7.76	3.53	MAS = 9.83 (m)	1810.00	1810.00				MINPT-O-EOU	
	40.43	32.25	27.99	8.18	3.51	MAS = 9.83 (m)	1850.00	1850.00				MinPt-O-SF	
	60.26	32.25	47.02	28.01	4.93	MAS = 9.83 (m)	2120.00	2119.33	OSF>5.00			Exit Alert	
	709.95	41.71	681.72	668.25	26.30	OSF1.50	5830.36	5800.00				MinPt-O-SF	
	732.92	70.67	685.38	662.25	15.82	OSF1.50	10000.00	9968.60				MINPT-O-EOU	
	732.94	70.70	685.38	662.24	15.81	OSF1.50	10020.00	9988.46				MinPt-O-ADP	
	733.33	70.79	685.71	662.54	15.80	OSF1.50	10100.00	10066.40				MinPt-O-SF	
	812.35	244.89	648.67	567.46	4.99	OSF1.50	17970.00	10400.00	OSF<5.00			Enter Alert	
	812.35	317.64	600.16	494.71	3.85	OSF1.50	20290.00	10400.00				MinPt-CtCt	
	812.36	317.67	600.15	494.69	3.85	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills Unit #75H Rev0 RM 11Sept19 (Non-Def Plan)													Warning Alert
	84.74	32.81	82.77	51.94	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	84.74	32.81	82.76	51.93	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	65.27	32.81	50.59	32.46	4.98	MAS = 10.00 (m)	2250.00	2248.33	OSF<5.00			Enter Alert	
	59.87	32.81	44.28	27.06	4.25	MAS = 10.00 (m)	2460.00	2456.65				MinPts	
	59.89	32.81	44.25	27.08	4.24	MAS = 10.00 (m)	2470.00	2466.57				MINPT-O-EOU	
	60.59	32.81	44.68	27.79	4.21	MAS = 10.00 (m)	2530.00	2526.09				MinPt-O-SF	
	78.99	32.81	61.58	46.18	4.99	MAS = 10.00 (m)	2860.00	2853.44	OSF>5.00			Exit Alert	
	729.90	68.44	683.61	661.45	16.43	OSF1.50	10190.00	10149.16				MinPts	
	2017.84	313.18	1808.39	1704.66	9.72	OSF1.50	20290.00	10400.00				MinPt-CtCt	
	2017.84	313.20	1808.37	1704.63	9.72	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills Unit #74H Rev0 RM 11Sept19 (Non-Def Plan)													Warning Alert
	99.94	32.81	97.96	67.13	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	99.93	32.81	97.95	67.12	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	67.37	32.81	52.17	34.56	4.95	MAS = 10.00 (m)	2370.00	2367.37	OSF<5.00			Enter Alert	
	59.87	32.81	43.59	27.07	4.05	MAS = 10.00 (m)	2610.00	2605.45				MinPts	
	59.90	32.81	43.52	27.10	4.02	MAS = 10.00 (m)	2630.00	2625.29				MINPT-O-EOU	

Results highlighted: Sep-Factor separation <= 1.50 ft

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	60.63	32.81	43.95	27.82	3.99	MAS = 10.00 (m)	2690.00	2684.81				MinPt-O-SF	
	85.71	32.81	66.97	52.91	5.00	MAS = 10.00 (m)	3100.00	3091.52	OSF>5.00			Exit Alert	
	429.47	82.59	373.76	346.88	7.95	OSF1.50	10190.00	10149.16				MinPts	
	429.57	82.62	373.82	346.94	7.95	OSF1.50	10210.00	10166.56				MinPt-O-SF	
	1906.66	312.68	1697.55	1593.98	9.20	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #82H Rev0 RM 06Apr20 (Non-Def Plan)													Warning Alert
	84.85	32.81	83.57	52.04	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	84.85	32.81	83.56	52.04	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	64.92	32.81	50.88	32.11	4.99	MAS = 10.00 (m)	2260.00	2258.25	OSF<5.00			Enter Alert	
	60.02	32.81	45.12	27.21	4.31	MAS = 10.00 (m)	2460.00	2456.65				MinPts	
	60.04	32.81	45.10	27.24	4.30	MAS = 10.00 (m)	2470.00	2466.57				MINPT-O-EOU	
	60.74	32.81	45.52	27.93	4.27	MAS = 10.00 (m)	2530.00	2526.09				MinPt-O-SF	
	78.79	32.81	62.00	45.98	5.00	MAS = 10.00 (m)	2860.00	2853.44	OSF>5.00			Exit Alert	
	452.42	72.13	403.90	380.29	9.55	OSF1.50	8930.00	8898.67				MinPt-O-SF	
	449.58	71.78	401.30	377.80	9.54	OSF1.50	9050.00	9018.67				MinPt-O-SF	
	449.28	71.71	401.05	377.58	9.54	OSF1.50	9080.00	9048.67				MinPts	
	449.28	71.68	401.06	377.59	9.55	OSF1.50	9090.00	9058.67				MinPt-CtCt	
	1187.72	307.15	982.52	880.57	5.82	OSF1.50	20290.00	10400.00				MinPt-CtCt	
	1187.72	307.23	982.47	880.49	5.82	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills Unit #21H Rev0 RM 11Sept19 (Non-Def Plan)													Warning Alert
	116.61	32.81	114.63	83.80	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	116.60	32.81	114.62	83.79	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	70.44	32.81	54.75	37.63	5.00	MAS = 10.00 (m)	2480.00	2476.49	OSF<5.00			Enter Alert	
	60.87	32.81	44.30	28.06	4.04	MAS = 10.00 (m)	2870.00	2863.36				MinPts	
	62.62	44.48	32.30	18.14	2.14	OSF1.50	5850.00	5819.50				MINPT-O-EOU	
	62.69	44.57	32.32	18.12	2.14	OSF1.50	5870.00	5839.36				MinPt-O-ADP	
	62.75	44.61	32.34	18.13	2.14	OSF1.50	5880.00	5849.30				MinPt-O-SF	
	109.99	66.21	65.19	43.78	2.52	OSF1.50	10200.00	10157.92				MinPts	
	214.09	67.76	168.26	146.33	4.84	OSF1.50	10460.00	10339.07	OSF>5.00			Exit Alert	
	1884.91	310.20	1677.46	1574.72	9.16	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #81H RM 06Apr20 (Non-Def Plan)													Warning Alert
	99.99	32.81	98.70	67.18	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	99.99	32.81	98.70	67.18	88846.98	MAS = 10.00 (m)	26.00	26.00				WRP	
	82.91	32.81	68.92	50.10	6.43	MAS = 10.00 (m)	2260.00	2258.25				MinPts	
	82.92	32.81	68.89	50.11	6.41	MAS = 10.00 (m)	2270.00	2268.17				MINPT-O-EOU	
	83.90	32.81	69.58	51.09	6.34	MAS = 10.00 (m)	2340.00	2337.61				MinPt-O-SF	
	473.08	75.22	422.50	397.86	9.57	OSF1.50	9600.00	9568.67				MinPt-O-SF	
	436.42	74.45	386.36	361.98	8.92	OSF1.50	9920.00	9888.67				MinPts	
	587.59	177.34	468.93	410.24	5.00	OSF1.50	16040.00	10400.00	OSF<5.00			Enter Alert	
	587.58	308.35	381.59	279.23	2.86	OSF1.50	20290.00	10400.00				MinPt-CtCt	
	587.58	308.42	381.54	279.16	2.86	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #80H Rev0 RM 06Apr20 (Non-Def Plan)													Warning Alert
	116.61	32.81	115.32	83.80	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	116.61	32.81	115.32	83.80	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	97.33	32.81	83.07	64.52	7.41	MAS = 10.00 (m)	2330.00	2327.69				MinPts	
	97.38	32.81	83.04	64.57	7.36	MAS = 10.00 (m)	2350.00	2347.53				MINPT-O-EOU	
	100.55	32.81	85.50	67.74	7.21	MAS = 10.00 (m)	2510.00	2506.25				MinPt-O-SF	
	169.30	32.81	150.72	136.49	9.72	MAS = 10.00 (m)	3490.00	3478.40				MinPt-O-SF	
	400.86	74.64	350.67	326.22	8.17	OSF1.50	9870.00	9838.67				MinPt-O-SF	
	400.82	74.62	350.65	326.20	8.17	OSF1.50	9880.00	9848.67				MinPts	
	572.28	172.69	456.72	399.59	5.00	OSF1.50	15900.00	10400.00	OSF<5.00			Enter Alert	
	572.27	307.91	366.57	264.36	2.79	OSF1.50	20290.00	10400.00				MinPt-CtCt	
	572.27	307.99	366.52	264.28	2.79	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #19H Rev0 RM 06Apr20 (Non-Def Plan)													Pass
	653.43	32.81	652.14	620.62	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	653.43	32.81	652.13	620.62	59900.83	MAS = 10.00 (m)	26.00	26.00				WRP	
	653.43	32.81	641.21	620.62	59.66	MAS = 10.00 (m)	1800.00	1800.00				MinPts	
	653.44	32.81	641.18	620.63	59.40	MAS = 10.00 (m)	1810.00	1810.00				MINPT-O-EOU	
	793.49	32.81	775.99	760.68	48.86	MAS = 10.00 (m)	3020.00	3012.16				MinPt-O-SF	
	1158.14	48.36	1125.48	1109.79	36.87	OSF1.50	5900.00	5869.19				MinPt-O-SF	
	1173.19	78.96	1120.12	1094.23	22.63	OSF1.50	10000.00	9968.60				MinPts	
	1174.93	79.28	1121.65	1095.65	22.57	OSF1.50	10160.00	10122.33				MinPt-O-SF	
	2292.78	316.79	2081.15	1975.98	10.89	OSF1.50	20280.00	10400.00				MinPt-CtCt	
	2292.78	317.11	2080.95	1975.67	10.88	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #20H Rev0 RM 06Apr20 (Non-Def Plan)													Pass
	673.32	32.81	672.03	640.51	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	673.32	32.81	672.02	640.51	67215.15	MAS = 10.00 (m)	26.00	26.00				WRP	
	673.32	32.81	661.10	640.51	61.49	MAS = 10.00 (m)	1800.00	1800.00				MinPts	
	673.34	32.81	661.07	640.53	61.22	MAS = 10.00 (m)	1810.00	1810.00				MINPT-O-EOU	
	717.66	32.81	703.52	684.86	55.73	MAS = 10.00 (m)	2320.00	2317.77				MinPt-O-SF	
	1554.65	45.83	1523.67	1508.82	52.31	OSF1.50	5760.00	5730.21				MinPt-O-SF	
	1596.03	72.42	1547.32	1523.61	33.63	OSF1.50	9970.00	9938.67				MinPts	
	1597.49	72.64	1548.63	1524.85	33.56	OSF1.50	10060.00	10027.80				MinPt-O-SF	
	2528.09	316.51	2316.65	2211.57	12.02	OSF1.50	20280.00	10400.00				MinPt-CtCt	
	2528.09	316.81	2316.46	2211.28	12.01	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #62H Rev0 RM 06Apr20 (Non-Def Plan)													Pass
	693.23	32.81	691.94	660.42	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	693.23	32.81	691.93	660.42	66261.54	MAS = 10.00 (m)	26.00	26.00				WRP	
	693.23	32.81	682.96	660.42	77.03	MAS = 10.00 (m)	1490.00	1490.00				MinPts	
	693.26	32.81	682.88	660.45	76.14	MAS = 10.00 (m)	1510.00	1510.00				MINPT-O-EOU	
	715.83	32.81	703.87	683.02	66.97	MAS = 10.00 (m)	1900.00	1899.98				MinPt-O-SF	
	1729.21	46.61	1697.71	1682.60	57.18	OSF1.50	5830.36	5800.00				MinPt-O-SF	
	2004.29	58.68	1964.75	1945.61	52.35	OSF1.50	7620.00	7588.67				MinPt-O-SF	
	2012.76	71.42	1964.72	1941.34	43.02	OSF1.50	9960.00	9928.67				MINPT-O-EOU	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	2012.80	71.46	1964.73	1941.34	43.00	OSF1.50	9970.00	9938.67				MinPt-O-ADP	
	2013.06	71.57	1964.92	1941.49	42.94	OSF1.50	10000.00	9968.60				MinPt-O-SF	
	2803.75	314.52	2593.64	2489.23	13.42	OSF1.50	20280.00	10400.00				MinPt-CtCt	
	2803.76	314.81	2593.45	2488.94	13.41	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills Unit #99H Rev0 RM 11Sept19 (Non-Def Plan)													Pass
	1281.86	32.81	1279.88	1249.05	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1281.86	32.81	1279.86	1249.05	59386.39	MAS = 10.00 (m)	26.00	26.00				WRP	
	1281.86	32.81	1268.94	1249.05	116.92	MAS = 10.00 (m)	1800.00	1800.00				MinPts	
	1281.88	32.81	1268.91	1249.07	116.42	MAS = 10.00 (m)	1810.00	1810.00				MINPT-O-EOU	
	1152.24	54.11	1115.40	1098.13	33.30	OSF1.50	7810.00	7778.67				MinPt-O-SF	
	1151.42	66.57	1106.26	1084.85	26.83	OSF1.50	10000.00	9968.60				MinPt-O-SF	
	1149.86	66.39	1104.83	1083.47	26.87	OSF1.50	10190.00	10149.16				MinPt-O-ADP	
	1149.85	66.38	1104.82	1083.47	26.87	OSF1.50	10200.00	10157.92				MinPts	
	2195.49	325.61	1977.75	1869.87	10.17	OSF1.50	20290.00	10400.00				MinPt-CtCt	
	2195.49	325.63	1977.74	1869.86	10.17	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills Unit #100H Rev0 RM 11Sept19 (Non-Def Plan)													Pass
	1301.82	32.81	1299.85	1269.02	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1301.82	32.81	1299.82	1269.02	55717.45	MAS = 10.00 (m)	26.00	26.00				WRP	
	1301.82	32.81	1288.90	1269.02	118.72	MAS = 10.00 (m)	1800.00	1800.00				MinPts	
	1301.84	32.81	1288.87	1269.03	118.21	MAS = 10.00 (m)	1810.00	1810.00				MINPT-O-EOU	
	1505.20	39.79	1478.01	1465.41	59.64	OSF1.50	5480.00	5452.45				MinPt-O-SF	
	1555.97	42.26	1527.13	1513.71	57.87	OSF1.50	5900.00	5869.19				MinPt-O-SF	
	1569.78	70.00	1522.45	1499.78	34.57	OSF1.50	10200.00	10157.92				MinPts	
	1570.03	70.03	1522.69	1500.01	34.57	OSF1.50	10250.00	10200.05				MinPt-O-SF	
	2441.15	321.64	2226.07	2119.52	11.45	OSF1.50	20290.00	10400.00				MinPt-CtCt	
	2441.16	321.66	2226.06	2119.50	11.45	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #102H Rev0 RM 06Apr20 (Non-Def Plan)													Pass
	1360.10	32.81	1358.81	1327.29	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1360.10	32.81	1358.79	1327.29	55597.54	MAS = 10.00 (m)	26.00	26.00				WRP	
	1315.64	32.81	1303.41	1282.83	120.27	MAS = 10.00 (m)	2130.00	2129.27				MinPts	
	1356.47	38.09	1330.64	1318.38	55.23	OSF1.50	5070.00	5045.74				MinPt-O-SF	
	1443.84	41.78	1415.56	1402.06	53.44	OSF1.50	5830.36	5800.00				MinPt-O-SF	
	1466.79	66.23	1422.21	1400.56	33.85	OSF1.50	9953.86	9922.54				MinPts	
	1466.83	316.77	1255.23	1150.06	6.97	OSF1.50	20280.00	10400.00				MinPt-CtCt	
	1466.84	317.04	1255.05	1149.80	6.96	OSF1.50	20290.00	10400.00				MinPts	
	1466.84	317.04	1255.05	1149.80	6.96	OSF1.50	20293.10	10400.00				MinPt-O-SF	
Cimarex Red Hills Unit #101H Rev0 RM 11Sept19 (Non-Def Plan)													Pass
	1321.80	32.81	1319.82	1288.99	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1321.80	32.81	1319.80	1288.99	57117.62	MAS = 10.00 (m)	26.00	26.00				WRP	
	1321.80	32.81	1308.87	1288.99	120.55	MAS = 10.00 (m)	1800.00	1800.00				MinPts	
	1321.82	32.81	1308.84	1289.01	120.03	MAS = 10.00 (m)	1810.00	1810.00				MINPT-O-EOU	
	1815.59	51.48	1780.61	1764.10	54.95	OSF1.50	5900.00	5869.19				MinPt-O-SF	
	1829.60	82.67	1773.83	1746.93	33.97	OSF1.50	10200.00	10157.92				MinPt-CtCt	
	1829.61	82.68	1773.83	1746.93	33.97	OSF1.50	10203.86	10161.27				MINPT-O-EOU	
	1829.62	82.69	1773.83	1746.93	33.97	OSF1.50	10210.00	10166.56				MinPt-O-ADP	
	1831.40	82.88	1775.48	1748.52	33.92	OSF1.50	10330.00	10260.96				MinPt-O-SF	
	2730.28	317.76	2517.78	2412.52	12.96	OSF1.50	20290.00	10400.00				MinPt-CtCt	
	2730.28	317.79	2517.76	2412.49	12.96	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #103H Rev0 RM 06Apr20 (Non-Def Plan)													Pass
	1380.10	32.81	1378.81	1347.29	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1380.10	32.81	1378.79	1347.29	54918.12	MAS = 10.00 (m)	26.00	26.00				WRP	
	1356.15	32.81	1343.31	1323.34	117.26	MAS = 10.00 (m)	2150.00	2149.13				MinPts	
	1356.16	32.81	1343.29	1323.35	117.05	MAS = 10.00 (m)	2160.00	2159.05				MINPT-O-EOU	
	1366.12	38.90	1339.76	1327.22	54.43	OSF1.50	4950.00	4926.70				MinPts	
	1374.06	39.64	1347.21	1334.42	53.69	OSF1.50	5190.00	5164.78				MinPt-O-SF	
	1445.62	42.72	1416.71	1402.90	52.29	OSF1.50	5830.36	5800.00				MinPt-O-SF	
	1453.57	42.95	1424.50	1410.62	52.29	OSF1.50	5900.00	5869.19				MinPt-O-SF	
	1468.58	68.68	1422.37	1399.90	32.66	OSF1.50	9980.00	9948.66				MINPT-O-EOU	
	1468.66	68.77	1422.38	1399.89	32.62	OSF1.50	10000.00	9968.60				MinPt-O-ADP	
	1469.17	68.80	1422.87	1400.36	32.61	OSF1.50	10060.00	10027.80				MinPt-O-SF	
	1599.82	323.82	1383.51	1276.00	7.43	OSF1.50	20280.00	10400.00				MinPt-CtCt	
	1599.82	324.08	1383.34	1275.74	7.43	OSF1.50	20290.00	10400.00				MinPts	
	1599.83	324.08	1383.34	1275.74	7.43	OSF1.50	20293.10	10400.00				MinPt-O-SF	
Cimarex Red Hills 33-4 Unit #104H Rev0 RM 06Apr20 (Non-Def Plan)													Pass
	1400.09	32.81	1398.80	1367.28	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1400.09	32.81	1398.78	1367.28	54273.45	MAS = 10.00 (m)	26.00	26.00				WRP	
	1400.09	32.81	1387.85	1367.28	127.72	MAS = 10.00 (m)	1800.00	1800.00				MinPts	
	1400.11	32.81	1387.82	1367.30	127.17	MAS = 10.00 (m)	1810.00	1810.00				MINPT-O-EOU	
	1507.41	32.81	1489.95	1474.61	93.09	MAS = 10.00 (m)	3060.00	3051.84				MinPt-O-SF	
	1862.95	48.10	1830.45	1814.85	59.65	OSF1.50	5900.00	5869.19				MinPt-O-SF	
	1877.73	75.11	1827.23	1802.62	38.13	OSF1.50	9600.00	9568.67				MinPt-O-SF	
	1875.75	74.54	1825.63	1801.21	38.38	OSF1.50	9810.00	9778.67				MinPt-O-ADP	
	1875.74	74.53	1825.63	1801.21	38.39	OSF1.50	9820.00	9788.67				MinPts	
	1920.37	311.95	1711.97	1608.41	9.27	OSF1.50	20280.00	10400.00				MinPt-CtCt	
	1920.38	312.24	1711.79	1608.14	9.26	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #105H Rev0 RM 06Apr20 (Non-Def Plan)													Pass
	1420.09	32.81	1418.80	1387.28	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1420.09	32.81	1418.78	1387.28	54116.43	MAS = 10.00 (m)	26.00	26.00				WRP	
	1420.09	32.81	1407.85	1387.28	129.54	MAS = 10.00 (m)	1800.00	1800.00				MinPts	
	1420.11	32.81	1407.82	1387.30	128.98	MAS = 10.00 (m)	1810.00	1810.00				MINPT-O-EOU	
	1914.34	50.79	1880.05	1863.55	57.97	OSF1.50	5900.00	5869.19				MinPt-O-SF	
	1929.31	71.93	1880.93	1857.38	40.94	OSF1.50	8840.00	8808.67				MinPts	
	1900.67	71.02	1852.89	1829.65	40.86	OSF1.50	9240.00	9208.67				MinPts	
	1901.08	71.04	1853.29	1830.04	40.85	OSF1.50	9280.00	9248.67				MinPt-O-SF	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	2180.48	307.45	1975.09	1873.03	10.68	OSF1.50	20280.00	10400.00				MinPt-CtCt	
	2180.49	307.75	1974.89	1872.74	10.67	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills Unit #47H Rev0 RM 27Aug18 (Non-Def Plan)													Pass
	2265.83	32.81	2263.85	2233.02	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2265.83	32.81	2263.81	2233.02	55984.22	MAS = 10.00 (m)	26.00	26.00				WRP	
	2217.30	32.81	2204.24	2184.49	200.27	MAS = 10.00 (m)	2120.00	2119.33				MinPts	
	2373.20	42.66	2344.10	2330.54	87.44	OSF1.50	5900.00	5869.19				MinPt-O-SF	
	2388.18	63.29	2345.32	2324.88	58.38	OSF1.50	9490.00	9458.67				MINPT-O-EOU	
	2388.19	63.32	2345.32	2324.88	58.35	OSF1.50	9500.00	9468.67				MinPt-O-ADP	
	2389.35	63.36	2346.45	2325.98	58.34	OSF1.50	9630.00	9598.67				MinPt-O-SF	
	2433.46	58.58	2393.75	2374.89	64.44	OSF1.50	10820.00	10400.00				MinPts	
	2433.46	58.57	2393.75	2374.89	64.45	OSF1.50	10830.00	10400.00				MinPt-CtCt	
	2461.95	311.68	2253.50	2150.27	11.91	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #50H Rev0 RM 27Mar20 (Non-Def Plan)													Pass
	2342.88	32.81	2341.60	2310.07	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2342.88	32.81	2341.55	2310.07	54324.91	MAS = 10.00 (m)	26.00	26.00				WRP	
	2251.73	46.84	2220.06	2204.89	74.19	OSF1.50	5750.00	5720.29				MinPt-CtCt	
	2251.74	46.89	2220.04	2204.86	74.11	OSF1.50	5760.00	5730.21				MINPT-O-EOU	
	2251.77	46.94	2220.04	2204.84	74.04	OSF1.50	5770.00	5740.13				MinPt-O-ADP	
	2252.39	47.20	2220.48	2205.19	73.63	OSF1.50	5830.36	5800.00				MinPt-O-SF	
	2244.06	65.58	2199.88	2178.48	52.41	OSF1.50	10000.00	9968.60				MinPt-O-SF	
	2243.04	65.46	2198.94	2177.58	52.48	OSF1.50	10210.00	10166.56				MinPts	
	2243.04	65.45	2198.94	2177.58	52.48	OSF1.50	10220.00	10175.11				MinPt-CtCt	
	2279.18	320.82	2064.87	1958.36	10.69	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills Unit #48H Rev0 RM 27Aug18 (Non-Def Plan)													Pass
	2285.77	32.81	2283.79	2252.97	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2285.77	32.81	2283.75	2252.97	55561.51	MAS = 10.00 (m)	26.00	26.00				WRP	
	2285.77	32.81	2272.82	2252.97	208.11	MAS = 10.00 (m)	1800.00	1800.00				MinPts	
	2285.79	32.81	2272.79	2252.98	207.21	MAS = 10.00 (m)	1810.00	1810.00				MINPT-O-EOU	
	2794.26	78.02	2741.59	2716.25	55.08	OSF1.50	9490.00	9458.67				MinPts	
	2794.54	78.14	2741.78	2716.40	55.00	OSF1.50	9540.00	9508.67				MinPt-O-SF	
	2846.45	72.90	2797.19	2773.55	60.16	OSF1.50	10810.00	10400.00				MinPts	
	2846.44	72.88	2797.19	2773.56	60.18	OSF1.50	10820.00	10400.00				MinPt-CtCt	
	2875.10	311.03	2667.08	2564.06	13.94	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills Unit #49H Rev0 RM 27Aug18 (Non-Def Plan)													Pass
	2305.77	32.81	2303.79	2272.96	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2305.77	32.81	2303.75	2272.96	53724.77	MAS = 10.00 (m)	26.00	26.00				WRP	
	2305.77	32.81	2294.83	2272.96	256.96	MAS = 10.00 (m)	1480.00	1480.00				MinPts	
	2305.81	32.81	2294.78	2273.00	254.63	MAS = 10.00 (m)	1500.00	1500.00				MINPT-O-EOU	
	2324.46	32.81	2312.13	2291.65	224.42	MAS = 10.00 (m)	1900.00	1899.98				MinPt-O-SF	
	3142.18	39.79	3115.00	3102.39	124.59	OSF1.50	5350.00	5323.49				MinPt-O-SF	
	3211.85	42.67	3182.74	3169.17	118.32	OSF1.50	5900.00	5869.19				MinPt-O-SF	
	3226.84	63.29	3183.99	3163.55	78.90	OSF1.50	9490.00	9458.67				MinPts	
	3237.94	63.72	3194.80	3174.22	78.62	OSF1.50	9953.86	9922.54				MinPt-O-SF	
	3262.20	60.21	3221.40	3201.99	83.99	OSF1.50	10710.00	10400.00				MinPt-O-SF	
	3261.29	60.19	3220.50	3201.09	83.98	OSF1.50	10820.00	10400.00				MinPts	
	3290.04	315.53	3079.02	2974.50	15.73	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #51H Rev0 RM 27Mar20 (Non-Def Plan)													Pass
	2362.86	32.81	2361.58	2330.05	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2362.86	32.81	2361.53	2330.05	53144.78	MAS = 10.00 (m)	26.00	26.00				WRP	
	2362.86	32.81	2350.60	2330.05	215.10	MAS = 10.00 (m)	1800.00	1800.00				MinPts	
	2362.88	32.81	2350.57	2330.07	214.18	MAS = 10.00 (m)	1810.00	1810.00				MINPT-O-EOU	
	2871.89	81.17	2817.34	2790.72	53.90	OSF1.50	9940.00	9908.67				MinPts	
	2871.94	81.21	2817.37	2790.73	53.88	OSF1.50	9953.86	9922.54				MinPt-O-SF	
	2938.05	313.25	2728.79	2624.80	14.12	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #52H Rev0 RM 27Mar20 (Non-Def Plan)													Pass
	2382.85	32.81	2381.56	2350.04	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2382.85	32.81	2381.52	2350.04	52802.58	MAS = 10.00 (m)	26.00	26.00				WRP	
	2382.85	32.81	2370.59	2350.04	216.90	MAS = 10.00 (m)	1800.00	1800.00				MinPts	
	2382.87	32.81	2370.55	2350.06	215.97	MAS = 10.00 (m)	1810.00	1810.00				MINPT-O-EOU	
	2624.64	32.81	2604.28	2591.83	137.52	MAS = 10.00 (m)	3630.00	3617.27				MinPt-O-SF	
	2926.58	78.81	2873.61	2847.77	56.60	OSF1.50	10000.00	9968.60				MinPts	
	2932.60	79.37	2879.26	2853.23	56.31	OSF1.50	10320.00	10253.83				MinPt-O-SF	
	3004.71	316.38	2793.36	2688.33	14.30	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills 33-4 Unit #53H Rev0 RM 27Mar20 (Non-Def Plan)													Pass
	2402.84	32.81	2401.55	2370.03	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2402.84	32.81	2401.51	2370.03	51965.84	MAS = 10.00 (m)	26.00	26.00				WRP	
	2402.84	32.81	2392.65	2370.03	269.61	MAS = 10.00 (m)	1470.00	1470.00				MinPts	
	2402.88	32.81	2392.54	2370.07	265.20	MAS = 10.00 (m)	1500.00	1500.00				MINPT-O-EOU	
	3527.52	45.62	3496.67	3481.90	119.31	OSF1.50	5900.00	5869.19				MinPt-O-SF	
	3664.83	49.65	3631.30	3615.18	113.62	OSF1.50	6650.00	6618.67				MinPt-O-SF	
	3666.02	70.03	3618.91	3595.99	79.96	OSF1.50	9980.00	9948.66				MINPT-O-EOU	
	3666.06	70.07	3618.92	3595.99	79.92	OSF1.50	9990.00	9958.64				MinPt-O-ADP	
	3667.00	70.14	3619.81	3596.86	79.86	OSF1.50	10080.00	10047.21				MinPt-O-SF	
	3675.10	65.66	3630.90	3609.44	85.60	OSF1.50	10690.00	10399.80				MinPts	
	3675.10	65.64	3630.91	3609.45	85.63	OSF1.50	10700.00	10399.98				MinPt-CtCt	
	3686.61	317.09	3474.79	3369.52	17.50	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills Unit#36H Rev0 RM 27Aug18 (Non-Def Plan)													Pass
	3813.69	32.81	3811.69	3780.88	188524.29	MAS = 10.00 (m)	0.00	0.00				Surface	
	3813.69	32.81	3811.63	3780.88	48876.67	MAS = 10.00 (m)	26.00	26.00				WRP	
	3699.85	51.79	3664.64	3648.06	111.48	OSF1.50	6000.00	5968.82				MinPt-O-SF	
	3650.11	51.16	3615.27	3598.94	111.71	OSF1.50	6670.00	6638.67				MinPt-O-SF	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	3646.33	51.12	3611.52	3595.21	111.72	OSF1.50	6880.00	6848.67				MinPt-O-SF	
	3646.06	66.59	3600.93	3579.47	84.87	OSF1.50	9530.00	9498.67				MinPt-O-SF	
	3643.97	66.48	3598.92	3577.49	84.98	OSF1.50	9790.00	9758.67				MinPts	
	3646.18	66.62	3601.04	3579.57	84.84	OSF1.50	9953.86	9922.54				MinPt-O-SF	
	3708.08	315.69	3496.96	3392.40	17.72	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills Unit #16H MWD Final (Surcon Corrected) (Def Survey)													Pass
	3740.89	32.81	3738.89	3708.09	139459.85	MAS = 10.00 (m)	0.00	0.00				Surface	
	3740.87	32.81	3738.80	3708.06	41756.65	MAS = 10.00 (m)	26.00	26.00				WRP	
	3724.67	32.81	3717.27	3691.86	686.42	MAS = 10.00 (m)	1260.00	1260.00				MinPts	
	3725.42	32.81	3716.45	3692.61	532.82	MAS = 10.00 (m)	1610.00	1610.00				MINPT-O-EOU	
	3726.47	32.81	3716.72	3693.66	479.38	MAS = 10.00 (m)	1790.00	1790.00				MINPT-O-EOU	
	3733.56	32.81	3723.50	3700.76	461.39	MAS = 10.00 (m)	1980.00	1979.88				MinPt-O-SF	
	4215.95	32.81	4193.49	4183.14	205.73	MAS = 10.00 (m)	5830.36	5800.00				MinPt-O-SF	
	4459.45	46.25	4427.96	4413.21	151.05	OSF1.50	9953.86	9922.54				MinPt-O-SF	
	4523.29	44.95	4492.66	4478.34	157.83	OSF1.50	10210.00	10166.56				MinPt-O-SF	
	4556.37	44.43	4526.09	4511.94	160.93	OSF1.50	10380.00	10294.31				MinPt-O-SF	
	4569.95	45.16	4539.18	4524.79	158.66	OSF1.50	10490.00	10352.90				MinPts	
	4570.65	45.47	4539.67	4525.17	157.56	OSF1.50	10910.00	10400.00				MinPt-CtCt	
	4570.66	45.51	4539.66	4525.15	157.43	OSF1.50	10920.00	10400.00				MINPT-O-EOU	
	4570.68	45.55	4539.66	4525.14	157.29	OSF1.50	10930.00	10400.00				MinPt-O-ADP	
	4590.60	52.36	4555.03	4538.24	136.61	OSF1.50	11500.00	10400.00				MinPt-CtCt	
	4590.98	53.51	4554.64	4537.47	133.58	OSF1.50	11590.00	10400.00				MINPT-O-EOU	
	4591.56	56.20	4553.43	4535.35	126.96	OSF1.50	11720.00	10400.00				MinPt-CtCt	
	4579.83	80.21	4525.70	4499.62	87.78	OSF1.50	12770.00	10400.00				MinPt-CtCt	
	4580.58	87.33	4521.70	4493.25	80.47	OSF1.50	13040.00	10400.00				MinPt-CtCt	
	4580.09	98.65	4513.67	4481.44	71.04	OSF1.50	13460.00	10400.00				MinPt-CtCt	
	4580.76	100.80	4512.90	4479.96	69.50	OSF1.50	13570.00	10400.00				MINPT-O-EOU	
	4581.55	101.74	4513.06	4479.81	68.86	OSF1.50	13620.00	10400.00				MinPt-O-ADP	
	4588.97	108.60	4515.92	4480.38	64.53	OSF1.50	13880.00	10400.00				MinPt-O-ADP	
	4593.66	115.05	4516.31	4478.62	60.91	OSF1.50	14090.00	10400.00				MINPT-O-EOU	
	4590.69	133.11	4501.29	4457.58	52.49	OSF1.50	14690.00	10400.00				MinPt-CtCt	
	4594.16	145.28	4496.65	4448.88	48.07	OSF1.50	15150.00	10400.00				MINPT-O-EOU	
	4595.39	146.75	4496.90	4448.64	47.59	OSF1.50	15220.00	10400.00				MinPt-O-ADP	
	4602.59	172.06	4487.22	4430.52	40.57	OSF1.50	16030.00	10400.00				MinPt-CtCt	
	4603.56	174.85	4486.33	4428.71	39.93	OSF1.50	16160.00	10400.00				MINPT-O-EOU	
	4605.74	177.36	4486.84	4428.38	39.37	OSF1.50	16270.00	10400.00				MinPt-O-ADP	
	4599.56	197.97	4466.92	4401.59	35.19	OSF1.50	16910.00	10400.00				MinPt-CtCt	
	4600.10	199.46	4466.46	4400.63	34.93	OSF1.50	16990.00	10400.00				MINPT-O-EOU	
	4600.74	200.20	4466.61	4400.54	34.80	OSF1.50	17030.00	10400.00				MinPt-O-ADP	
	4607.09	209.21	4466.95	4397.88	33.33	OSF1.50	17330.00	10400.00				MINPT-O-EOU	
	4607.64	209.81	4467.11	4397.83	33.24	OSF1.50	17360.00	10400.00				MinPt-O-ADP	
	4614.37	215.61	4469.97	4398.76	32.39	OSF1.50	17560.00	10400.00				MINPT-O-EOU	
	4616.55	218.08	4470.50	4398.47	32.03	OSF1.50	17650.00	10400.00				MinPt-O-ADP	
	4619.13	244.28	4455.62	4374.85	28.58	OSF1.50	18470.00	10400.00				MinPt-CtCt	
	4619.67	245.78	4455.16	4373.90	28.41	OSF1.50	18550.00	10400.00				MINPT-O-EOU	
	4620.31	246.51	4455.30	4373.79	28.33	OSF1.50	18590.00	10400.00				MinPt-O-ADP	
	4577.64	269.78	4397.12	4307.85	25.63	OSF1.50	19320.00	10400.00				MinPt-CtCt	
	4578.13	271.24	4396.65	4306.89	25.49	OSF1.50	19400.00	10400.00				MINPT-O-EOU	
	4578.58	271.78	4396.74	4306.80	25.44	OSF1.50	19430.00	10400.00				MinPt-O-ADP	
	4596.73	282.95	4407.43	4313.77	24.53	OSF1.50	19840.00	10400.00				MinPts	
	4623.39	293.92	4426.78	4329.46	23.74	OSF1.50	20293.10	10400.00				MinPt-O-SF	
Cimarex Red Hills Unit #17H MWD Final(Surcon Corrected) (Def Survey)													Pass
	3760.82	32.81	3758.82	3728.01	224174.55	MAS = 10.00 (m)	0.00	0.00				MinPts	
	3760.83	32.81	3758.78	3728.02	51854.31	MAS = 10.00 (m)	26.00	26.00				WRP	
	3761.71	32.81	3757.78	3728.90	1929.35	MAS = 10.00 (m)	470.00	470.00				MINPT-O-EOU	
	3774.82	32.81	3764.65	3742.01	460.63	MAS = 10.00 (m)	1820.00	1820.00				MinPts	
	3823.48	32.81	3812.60	3790.67	429.60	MAS = 10.00 (m)	2390.00	2387.21				MinPt-O-SF	
	4079.81	32.81	4064.52	4047.00	306.47	MAS = 10.00 (m)	4010.00	3994.23				MinPt-O-SF	
	4380.67	32.90	4358.08	4347.77	212.42	OSF1.50	5830.36	5800.00				MinPt-O-SF	
	4418.04	34.25	4394.55	4383.79	205.24	OSF1.50	7020.00	6988.67				MinPt-CtCt	
	4418.20	34.71	4394.40	4383.49	202.40	OSF1.50	7130.00	7098.67				MINPT-O-EOU	
	4418.42	34.97	4394.45	4383.46	200.82	OSF1.50	7190.00	7158.67				MinPt-O-ADP	
	4418.52	35.06	4394.48	4383.46	200.28	OSF1.50	7210.00	7178.67				MinPt-O-ADP	
	4419.20	42.99	4389.88	4376.21	161.57	OSF1.50	8920.00	8888.67				MinPt-CtCt	
	4419.41	43.65	4389.65	4375.76	159.02	OSF1.50	9050.00	9018.67				MINPT-O-EOU	
	4420.38	44.80	4389.85	4375.58	154.78	OSF1.50	9260.00	9228.67				MinPt-O-ADP	
	4412.36	48.03	4379.69	4364.34	143.67	OSF1.50	10000.00	9968.60				MinPt-O-SF	
	4408.79	46.65	4377.03	4362.14	147.99	OSF1.50	10260.00	10208.13				MinPt-O-ADP	
	4408.75	46.60	4377.03	4362.15	148.15	OSF1.50	10270.00	10216.08				MINPT-O-EOU	
	4408.70	46.45	4377.07	4362.25	148.64	OSF1.50	10300.00	10239.14				MinPt-CtCt	
	4465.36	45.31	4434.50	4420.05	154.51	OSF1.50	11050.00	10400.00				MinPt-O-SF	
	4836.99	90.32	4776.12	4746.67	82.09	OSF1.50	12900.00	10400.00				MinPt-CtCt	
	4836.90	96.68	4771.79	4740.22	76.58	OSF1.50	13140.00	10400.00				MinPt-CtCt	
	4836.33	102.79	4767.15	4733.54	71.93	OSF1.50	13370.00	10400.00				MinPt-CtCt	
	4827.34	122.24	4745.19	4705.11	60.19	OSF1.50	14070.00	10400.00				MinPt-CtCt	
	4828.07	124.39	4744.48	4703.68	59.14	OSF1.50	14180.00	10400.00				MINPT-O-EOU	
	4828.88	125.37	4744.64	4703.51	58.68	OSF1.50	14230.00	10400.00				MinPt-O-ADP	
	4840.77	140.68	4746.33	4700.09	52.33	OSF1.50	14710.00	10400.00				MinPt-CtCt	
	4841.67	143.43	4745.39	4698.24	51.32	OSF1.50	14840.00	10400.00				MINPT-O-EOU	
	4848.77	152.95	4746.14	4695.81	48.16	OSF1.50	15180.00	10400.00				MINPT-O-EOU	
	4849.86	154.16	4746.43	4695.70	47.78	OSF1.50	15230.00	10400.00				MinPt-O-ADP	
	4853.82	158.66	4747.38	4695.15	46.45	OSF1.50	15380.00	10400.00				MINPT-O-EOU	
	4844.52	180.98	4723.20	4663.53	40.58	OSF1.50	16090.00	10400.00				MinPt-CtCt	
	4845.58	184.58	4721.86	4661.00	39.79	OSF1.50	16250.00	10400.00				MINPT-O-EOU	
	4848.29	187.63	4722.55	4660.67	39.16	OSF1.50	16380.00	10400.00				MinPt-O-ADP	
	4850.58	191.10	4722.52	4659.48	38.46	OSF1.50	16470.00	10400.00				MINPT-O-EOU	
	4851.45	192.10	4722.72	4659.35	38.26	OSF1.50	16520.00	10400.00				MinPt-O-ADP	
	4850.13	214.98	4706.15	4635.15	34.14	OSF1.50	17240.00	10400.00				MinPt-CtCt	
	4851.31	220.74	4703.49	4630.57	33.25	OSF1.50	17470.00	10400.00				MINPT-O-EOU	
	4852.59	222.27	4703.75	4630.32	33.03	OSF1.50	17540.00	10400.00				MinPt-O-ADP	
	4857.29	229.18	4703.84	4628.11	32.05	OSF1.50	17760.00	10400.00				MINPT-O-EOU	
	4864.89	257.99	4692.23	4606.89	28.49	OSF1.50	18680.00	10400.00				MinPt-CtCt	
	4866.06	264.25	4689.23	4601.81	27.82	OSF1.50	18890.00	10400.00				MinPt-CtCt	
	4865.30	275.66	4680.87	4589.64	26.66	OSF1.50	19270.00	10400.00				MinPt-CtCt	
	4868.40	295.07	4671.02	4573.33	24.91	OSF1.50	19920.00	10400.00				MinPt-CtCt	
	4869.41	299.23	4669.26	4570.18	24.56	OSF1.50	20080.00	10400.00				MINPT-O-EOU	
	4869.64	299.52	4669.30	4570.12	24.54	OSF1.50	20100.00	10400.00				MinPt-O-ADP	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	4876.05	302.05	4674.03	4574.00	24.36	OSF1.50	20293.10	10400.00				MinPt-O-SF	
Cimarex Red Hills Unit #37H Rev0 RM 27Aug18 (Non-Def Plan)													Pass
	3833.55	32.81	3831.55	3800.74	183458.41	MAS = 10.00 (m)	0.00	0.00				Surface	
	3833.55	32.81	3831.49	3800.74	48714.95	MAS = 10.00 (m)	26.00	26.00				WRP	
	3797.33	32.81	3783.46	3764.52	319.53	MAS = 10.00 (m)	2020.00	2019.78				MinPts	
	3797.34	32.81	3783.45	3764.53	318.76	MAS = 10.00 (m)	2030.00	2029.75				MINPT-O-EOU	
	4097.51	45.67	4066.40	4051.84	140.61	OSF1.50	5900.00	5869.19				MinPt-O-SF	
	4112.49	69.75	4065.33	4042.75	90.99	OSF1.50	9480.00	9448.67				MinPts	
	4111.91	69.33	4065.03	4042.58	91.54	OSF1.50	9690.00	9658.67				MinPt-O-ADP	
	4111.90	69.32	4065.03	4042.59	91.55	OSF1.50	9700.00	9668.67				MINPT-O-EOU	
	4111.90	69.31	4065.04	4042.59	91.57	OSF1.50	9710.00	9678.67				MinPt-CtCt	
	4115.16	69.31	4068.30	4045.85	91.64	OSF1.50	9953.86	9922.54				MinPt-O-SF	
	4172.33	314.17	3962.23	3858.16	20.04	OSF1.50	20293.10	10400.00				MinPts	
Cimarex Red Hills Unit #5H (Offset) Gyro 0ft-12608ft (Def Survey)													Pass
	3806.52	32.81	3804.54	3773.71	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	3806.56	32.81	3804.53	3773.75	72286.71	MAS = 10.00 (m)	26.00	26.00				WRP	
	3808.90	32.81	3803.56	3776.09	1132.28	MAS = 10.00 (m)	630.00	630.00				MINPT-O-EOU	
	3809.80	32.81	3803.63	3776.99	910.35	MAS = 10.00 (m)	790.00	790.00				MINPT-O-EOU	
	3811.19	32.81	3803.50	3778.38	667.78	MAS = 10.00 (m)	1110.00	1110.00				MINPT-O-EOU	
	3813.91	32.81	3802.85	3781.10	419.81	MAS = 10.00 (m)	1800.00	1800.00				MINPT-O-EOU	
	3824.41	32.81	3812.97	3791.61	403.79	MAS = 10.00 (m)	2050.00	2049.68				MinPt-O-SF	
	3848.55	32.81	3836.86	3815.74	396.24	MAS = 10.00 (m)	2270.00	2268.17				MinPt-O-SF	
	3889.18	32.81	3876.79	3856.37	373.55	MAS = 10.00 (m)	2610.00	2605.45				MinPt-O-SF	
	3906.66	32.81	3894.27	3873.86	374.75	MAS = 10.00 (m)	2760.00	2754.25				MinPt-O-SF	
	3921.55	32.81	3909.11	3888.74	374.53	MAS = 10.00 (m)	2890.00	2883.20				MinPt-O-SF	
	4235.88	33.16	4213.12	4202.73	203.71	OSF1.50	5860.00	5829.43				MinPt-O-SF	
	4240.11	33.18	4217.33	4206.93	203.73	OSF1.50	5900.00	5869.19				MinPt-O-SF	
	4285.49	44.75	4254.99	4240.74	150.23	OSF1.50	9180.00	9148.67				MINPT-O-EOU	
	4285.57	44.85	4255.01	4240.72	149.89	OSF1.50	9200.00	9168.67				MinPt-O-ADP	
	4287.16	46.43	4255.55	4240.73	144.61	OSF1.50	9460.00	9428.67				MINPT-O-EOU	
	4287.02	48.03	4254.35	4239.00	139.58	OSF1.50	9760.00	9728.67				MinPt-CtCt	
	4284.51	48.94	4251.23	4235.58	136.80	OSF1.50	9953.86	9922.54				MinPt-O-SF	
	4055.06	49.55	4021.37	4005.51	127.81	OSF1.50	11600.00	10400.00				MinPt-CtCt	
	4055.09	49.70	4021.30	4005.39	127.40	OSF1.50	11620.00	10400.00				MINPT-O-EOU	
	4055.15	49.78	4021.31	4005.37	127.20	OSF1.50	11630.00	10400.00				MinPt-O-ADP	
	4794.25	74.21	4744.11	4720.03	99.52	OSF1.50	14160.00	10400.00				MinPt-O-SF	
	9589.99	93.36	9527.09	9496.63	157.38	OSF1.50	20293.10	10400.00				TD	
Cimarex Red Hills Unit #38H Rev1 RM 16Oct18 (Def Plan)													Pass
	3853.47	32.81	3851.47	3820.66	182470.94	MAS = 10.00 (m)	0.00	0.00				Surface	
	3853.47	32.81	3851.41	3820.66	48830.25	MAS = 10.00 (m)	26.00	26.00				WRP	
	3853.47	32.81	3842.60	3820.66	433.17	MAS = 10.00 (m)	1460.00	1460.00				MinPts	
	3853.54	32.81	3842.48	3820.73	423.99	MAS = 10.00 (m)	1500.00	1500.00				MINPT-O-EOU	
	4197.78	32.81	4177.04	4164.98	223.57	MAS = 10.00 (m)	3740.00	3726.39				MinPt-O-SF	
	4485.00	73.58	4435.29	4411.42	93.91	OSF1.50	9480.00	9448.67				MinPts	
	4483.86	72.85	4434.63	4411.01	94.86	OSF1.50	9740.00	9708.67				MinPts	
	4483.85	72.83	4434.63	4411.02	94.88	OSF1.50	9750.00	9718.67				MinPt-CtCt	
	4486.16	72.80	4436.97	4413.36	94.98	OSF1.50	9953.86	9922.54				MinPt-O-SF	
	4541.88	314.70	4331.42	4227.18	21.78	OSF1.50	20293.10	10400.00				MinPts	
Texaco G W Miller Federal N #1 (Offset) Plugged Oil Blind 0ft-5258ft (Def Survey)													Pass
	9511.19	32.81	9509.21	9478.38	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	9511.16	32.81	9509.18	9478.36	N/A	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	9511.15	32.81	9509.16	9478.34	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	9504.82	1457.42	8532.55	8047.41	9.79	OSF1.50	4730.00	4708.46				MinPt-CtCt	
	9505.12	1639.32	8411.58	7865.80	8.71	OSF1.50	5320.00	5293.73				MinPts	
	7203.60	1157.49	6431.28	6046.11	9.35	OSF1.50	14660.00	10400.00				MinPt-O-SF	
	5289.50	455.03	4985.49	4834.47	17.51	OSF1.50	18390.00	10400.00				MinPt-O-ADP	
	5174.51	315.93	4963.23	4858.58	24.71	OSF1.50	18960.00	10400.00				MINPT-O-EOU	
	5116.82	218.53	4970.48	4898.29	35.43	OSF1.50	19730.00	10400.00				MinPt-CtCt	
	5147.66	291.37	4952.75	4856.29	26.67	OSF1.50	20293.10	10400.00				MinPts	

Schlumberger

Cimarex Red Hills 33-4 Unit #77H Rev0 RM 27Mar20 Proposal Geodetic Report

(Non-Def Plan)

CIMAREX

Report Date:	April 07, 2020 - 03:12 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex Energy	**Vertical Section Azimuth:**	179.529 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Red Hills 33-4 Unit #77H / New Slot	**TVD Reference Datum:**	RKB
Well:	Red Hills 33-4 Unit #77H	**TVD Reference Elevation:**	3369.100 ft above MSL
Borehole:	Red Hills 33-4 Unit #77H	**Seabed / Ground Elevation:**	3343.100 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.547 °
Survey Name:	Cimarex Red Hills 33-4 Unit #77H Rev0 RM 27Mar20	**Total Gravity Field Strength:**	998.4376mgn (9.80665 Based)
Survey Date:	March 27, 2020	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	104.516 ° / 10575.950 ft / 6.334 / 1.017	**Total Magnetic Field Strength:**	47670.047 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.685 °
Location Lat / Long:	N 32° 5' 35.55645", W 103° 34' 18.54584"	**Declination Date:**	March 27, 2020
Location Grid N/E Y/X:	N 398479.310 ftUS, E 777162.000 ftUS	**Magnetic Declination Model:**	HDGM 2020
CRS Grid Convergence Angle:	0.4046 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99997279	**Grid Convergence Used:**	0.4046 °
Version / Patch:	2.10.787.0	**Total Corr Mag North->Grid North:**	6.1424 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [388' FNL, 949' FEL]	0.00	0.00	176.63	0.00	0.00	0.00	0.00	N/A	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	100.00	0.00	89.76	100.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	200.00	0.00	89.76	200.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	300.00	0.00	89.76	300.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	400.00	0.00	89.76	400.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	500.00	0.00	89.76	500.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	600.00	0.00	89.76	600.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	700.00	0.00	89.76	700.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	800.00	0.00	89.76	800.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	900.00	0.00	89.76	900.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
Rustler	*926.00*	*0.00*	*89.76*	*926.00*	*0.00*	*0.00*	*0.00*	*0.00*	*398479.31*	*777162.00*	*N 32 5 35.56*	*W 103 34 18.55*
	1000.00	0.00	89.76	1000.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	1100.00	0.00	89.76	1100.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	1200.00	0.00	89.76	1200.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
Top of Salt	*1260.00*	*0.00*	*89.76*	*1260.00*	*0.00*	*0.00*	*0.00*	*0.00*	*398479.31*	*777162.00*	*N 32 5 35.56*	*W 103 34 18.55*
	1300.00	0.00	89.76	1300.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	1400.00	0.00	89.76	1400.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	1500.00	0.00	89.76	1500.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	1600.00	0.00	89.76	1600.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	1700.00	0.00	89.76	1700.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
Nudge 2°/100' DLS	1800.00	0.00	89.76	1800.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
	1900.00	2.00	89.76	1899.98	0.01	0.01	1.75	2.00	398479.32	777163.75	N 32 5 35.56	W 103 34 18.53
	2000.00	4.00	89.76	1999.84	0.03	0.03	6.98	2.00	398479.34	777168.98	N 32 5 35.56	W 103 34 18.46
	2100.00	6.00	89.76	2099.45	0.06	0.07	15.69	2.00	398479.38	777177.69	N 32 5 35.56	W 103 34 18.36
Hold Nudge	2162.90	7.26	89.76	2161.93	0.09	0.10	22.95	2.00	398479.41	777184.95	N 32 5 35.56	W 103 34 18.28
	2200.00	7.26	89.76	2198.73	0.11	0.12	27.64	0.00	398479.43	777189.64	N 32 5 35.56	W 103 34 18.22
	2300.00	7.26	89.76	2297.93	0.16	0.17	40.28	0.00	398479.48	777202.27	N 32 5 35.56	W 103 34 18.08
	2400.00	7.26	89.76	2397.13	0.21	0.22	52.91	0.00	398479.53	777214.91	N 32 5 35.55	W 103 34 17.93
	2500.00	7.26	89.76	2496.33	0.26	0.28	65.54	0.00	398479.59	777227.54	N 32 5 35.55	W 103 34 17.78
	2600.00	7.26	89.76	2595.53	0.31	0.33	78.18	0.00	398479.64	777240.17	N 32 5 35.55	W 103 34 17.64
	2700.00	7.26	89.76	2694.73	0.36	0.39	90.81	0.00	398479.70	777252.81	N 32 5 35.55	W 103 34 17.49
	2800.00	7.26	89.76	2793.93	0.41	0.44	103.44	0.00	398479.75	777265.44	N 32 5 35.55	W 103 34 17.34
	2900.00	7.26	89.76	2893.12	0.46	0.49	116.08	0.00	398479.80	777278.07	N 32 5 35.55	W 103 34 17.20
	3000.00	7.26	89.76	2992.32	0.51	0.55	128.71	0.00	398479.86	777290.71	N 32 5 35.55	W 103 34 17.05
	3100.00	7.26	89.76	3091.52	0.56	0.60	141.34	0.00	398479.91	777303.34	N 32 5 35.55	W 103 34 16.90
	3200.00	7.26	89.76	3190.72	0.61	0.65	153.98	0.00	398479.96	777315.97	N 32 5 35.55	W 103 34 16.76
	3300.00	7.26	89.76	3289.92	0.66	0.71	166.61	0.00	398480.02	777328.61	N 32 5 35.55	W 103 34 16.61
	3400.00	7.26	89.76	3389.12	0.71	0.76	179.25	0.00	398480.07	777341.24	N 32 5 35.55	W 103 34 16.46
	3500.00	7.26	89.76	3488.32	0.76	0.81	191.88	0.00	398480.12	777353.87	N 32 5 35.55	W 103 34 16.32
	3600.00	7.26	89.76	3587.52	0.81	0.87	204.51	0.00	398480.18	777366.51	N 32 5 35.55	W 103 34 16.17
	3700.00	7.26	89.76	3686.71	0.86	0.92	217.15	0.00	398480.23	777379.14	N 32 5 35.55	W 103 34 16.02
	3800.00	7.26	89.76	3785.91	0.91	0.97	229.78	0.00	398480.28	777391.77	N 32 5 35.55	W 103 34 15.87
	3900.00	7.26	89.76	3885.11	0.96	1.03	242.41	0.00	398480.34	777404.41	N 32 5 35.55	W 103 34 15.73
	4000.00	7.26	89.76	3984.31	1.01	1.08	255.05	0.00	398480.39	777417.04	N 32 5 35.55	W 103 34 15.58
	4100.00	7.26	89.76	4083.51	1.07	1.14	267.68	0.00	398480.45	777429.67	N 32 5 35.55	W 103 34 15.43
	4200.00	7.26	89.76	4182.71	1.12	1.19	280.31	0.00	398480.50	777442.31	N 32 5 35.55	W 103 34 15.29
	4300.00	7.26	89.76	4281.91	1.17	1.24	292.95	0.00	398480.55	777454.94	N 32 5 35.55	W 103 34 15.14
	4400.00	7.26	89.76	4381.11	1.22	1.30	305.58	0.00	398480.61	777467.57	N 32 5 35.55	W 103 34 14.99
	4500.00	7.26	89.76	4480.30	1.27	1.35	318.22	0.00	398480.66	777480.21	N 32 5 35.55	W 103 34 14.85
	4600.00	7.26	89.76	4579.50	1.32	1.40	330.85	0.00	398480.71	777492.84	N 32 5 35.55	W 103 34 14.70
Base of Salt	*4673.08*	*7.26*	*89.76*	*4652.00*	*1.35*	*1.44*	*340.08*	*0.00*	*398480.75*	*777502.07*	*N 32 5 35.55*	*W 103 34 14.59*
	4700.00	7.26	89.76	4678.70	1.37	1.46	343.48	0.00	398480.77	777505.47	N 32 5 35.55	W 103 34 14.55
	4800.00	7.26	89.76	4777.90	1.42	1.51	356.12	0.00	398480.82	777518.11	N 32 5 35.55	W 103 34 14.41
	4900.00	7.26	89.76	4877.10	1.47	1.56	368.75	0.00	398480.87	777530.74	N 32 5 35.55	W 103 34 14.26
Lamar	*4910.99*	*7.26*	*89.76*	*4888.00*	*1.47*	*1.57*	*370.14*	*0.00*	*398480.88*	*777532.13*	*N 32 5 35.55*	*W 103 34 14.24*
Bell Canyon	*4955.34*	*7.26*	*89.76*	*4932.00*	*1.50*	*1.59*	*375.74*	*0.00*	*398480.90*	*777537.73*	*N 32 5 35.55*	*W 103 34 14.18*
	5000.00	7.26	89.76	4976.30	1.52	1.62	381.38	0.00	398480.93	777543.37	N 32 5 35.55	W 103 34 14.11
	5100.00	7.26	89.76	5075.50	1.57	1.67	394.02	0.00	398480.98	777556.01	N 32 5 35.55	W 103 34 13.97
	5200.00	7.26	89.76	5174.69	1.62	1.72	406.65	0.00	398481.03	777568.64	N 32 5 35.55	W 103 34 13.82
	5300.00	7.26	89.76	5273.89	1.67	1.78	419.28	0.00	398481.09	777581.27	N 32 5 35.54	W 103 34 13.67
	5400.00	7.26	89.76	5373.09	1.72	1.83	431.92	0.00	398481.14	777593.91	N 32 5 35.54	W 103 34 13.53
	5500.00	7.26	89.76	5472.29	1.77	1.89	444.55	0.00	398481.20	777606.54	N 32 5 35.54	W 103 34 13.38
	5600.00	7.26	89.76	5571.49	1.82	1.94	457.19	0.00	398481.25	777619.17	N 32 5 35.54	W 103 34 13.23
	5700.00	7.26	89.76	5670.69	1.87	1.99	469.82	0.00	398481.30	777631.80	N 32 5 35.54	W 103 34 13.08
	5800.00	7.26	89.76	5769.89	1.92	2.05	482.45	0.00	398481.36	777644.44	N 32 5 35.54	W 103 34 12.94
Drop to Vertical 2°/100' DLS	5830.36	7.26	89.76	5800.00	1.94	2.06	486.29	0.00	398481.37	777648.27	N 32 5 35.54	W 103 34 12.89
	5900.00	5.87	89.76	5869.19	1.97	2.10	494.25	2.00	398481.41	777656.23	N 32 5 35.54	W 103 34 12.80
	6000.00	3.87	89.76	5968.82	2.00	2.13	502.73	2.00	398481.44	777664.71	N 32 5 35.54	W 103 34 12.70
Cherry Canyon	*6048.26*	*2.90*	*89.76*	*6017.00*	*2.01*	*2.14*	*505.57*	*2.00*	*398481.45*	*777667.56*	*N 32 5 35.54*	*W 103 34 12.67*
	6100.00	1.87	89.76	6068.69	2.02	2.15	507.72	2.00	398481.46	777669.71	N 32 5 35.54	W 103 34 12.64

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Hold Vertical	6193.26	0.00	89.76	6161.93	2.03	2.16	509.24	2.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	6200.00	0.00	89.76	6168.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	6300.00	0.00	89.76	6268.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	6400.00	0.00	89.76	6368.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	6500.00	0.00	89.76	6468.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	6600.00	0.00	89.76	6568.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	6700.00	0.00	89.76	6668.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	6800.00	0.00	89.76	6768.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	6900.00	0.00	89.76	6868.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	7000.00	0.00	89.76	6968.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	7100.00	0.00	89.76	7068.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	7200.00	0.00	89.76	7168.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	7300.00	0.00	89.76	7268.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	7400.00	0.00	89.76	7368.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	7500.00	0.00	89.76	7468.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
Brushy Canyon	*7521.33*	*0.00*	*89.76*	*7490.00*	*2.03*	*2.16*	*509.24*	*0.00*	*398481.47*	*777671.23*	*N 32 5 35.54*	*W 103 34 12.63*
	7600.00	0.00	89.76	7568.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	7700.00	0.00	89.76	7668.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	7800.00	0.00	89.76	7768.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	7900.00	0.00	89.76	7868.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	8000.00	0.00	89.76	7968.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	8100.00	0.00	89.76	8068.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	8200.00	0.00	89.76	8168.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	8300.00	0.00	89.76	8268.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	8400.00	0.00	89.76	8368.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	8500.00	0.00	89.76	8468.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	8600.00	0.00	89.76	8568.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	8700.00	0.00	89.76	8668.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	8800.00	0.00	89.76	8768.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	8900.00	0.00	89.76	8868.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	9000.00	0.00	89.76	8968.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
Bone Spring	*9070.33*	*0.00*	*89.76*	*9039.00*	*2.03*	*2.16*	*509.24*	*0.00*	*398481.47*	*777671.23*	*N 32 5 35.54*	*W 103 34 12.63*
	9100.00	0.00	89.76	9068.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
Leonard Shale	*9125.33*	*0.00*	*89.76*	*9094.00*	*2.03*	*2.16*	*509.24*	*0.00*	*398481.47*	*777671.23*	*N 32 5 35.54*	*W 103 34 12.63*
	9200.00	0.00	89.76	9168.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	9300.00	0.00	89.76	9268.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
Avalon Shale	*9387.33*	*0.00*	*89.76*	*9356.00*	*2.03*	*2.16*	*509.24*	*0.00*	*398481.47*	*777671.23*	*N 32 5 35.54*	*W 103 34 12.63*
	9400.00	0.00	89.76	9368.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	9500.00	0.00	89.76	9468.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	9600.00	0.00	89.76	9568.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	9700.00	0.00	89.76	9668.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
Lower Avalon Shale	*9762.33*	*0.00*	*89.76*	*9731.00*	*2.03*	*2.16*	*509.24*	*0.00*	*398481.47*	*777671.23*	*N 32 5 35.54*	*W 103 34 12.63*
	9800.00	0.00	89.76	9768.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	9900.00	0.00	89.76	9868.67	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
KOP - Build 12°/100' DLS	9953.86	0.00	89.76	9922.54	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
	10000.00	5.54	179.53	9968.60	4.25	-0.07	509.26	12.00	398479.24	777671.25	N 32 5 35.52	W 103 34 12.63
1st Bone Spring Sand	*10068.42*	*13.75*	*179.53*	*10036.00*	*15.70*	*-11.52*	*509.35*	*12.00*	*398467.79*	*777671.34*	*N 32 5 35.41*	*W 103 34 12.63*
	10100.00	17.54	179.53	10066.40	24.22	-20.03	509.42	12.00	398459.28	777671.41	N 32 5 35.32	W 103 34 12.63
	10200.00	29.54	179.53	10157.92	64.08	-59.89	509.75	12.00	398419.42	777671.74	N 32 5 34.93	W 103 34 12.63
2nd Bone Spring Carb	*10278.84*	*39.00*	*179.53*	*10223.00*	*108.42*	*-104.23*	*510.12*	*12.00*	*398375.08*	*777672.10*	*N 32 5 34.49*	*W 103 34 12.62*
	10300.00	41.54	179.53	10239.14	122.09	-117.90	510.23	12.00	398361.41	777672.21	N 32 5 34.35	W 103 34 12.62
	10400.00	53.54	179.53	10306.53	195.73	-191.54	510.83	12.00	398287.78	777672.82	N 32 5 33.63	W 103 34 12.62
	10500.00	65.54	179.53	10357.14	281.77	-277.57	511.54	12.00	398201.75	777673.53	N 32 5 32.77	W 103 34 12.62
	10600.00	77.54	179.53	10388.75	376.45	-372.25	512.32	12.00	398107.07	777674.30	N 32 5 31.84	W 103 34 12.62
	10700.00	89.54	179.53	10399.98	475.63	-471.43	513.13	12.00	398007.90	777675.12	N 32 5 30.86	W 103 34 12.62
Landing Point	10703.86	90.00	179.53	10400.00	479.49	-475.29	513.17	12.00	398004.03	777675.15	N 32 5 30.82	W 103 34 12.62
	10800.00	90.00	179.53	10400.00	575.63	-571.42	513.96	0.00	397907.90	777675.94	N 32 5 29.87	W 103 34 12.62
	10900.00	90.00	179.53	10400.00	675.63	-671.42	514.78	0.00	397807.91	777676.76	N 32 5 28.88	W 103 34 12.62
	11000.00	90.00	179.53	10400.00	775.63	-771.42	515.60	0.00	397707.91	777677.59	N 32 5 27.89	W 103 34 12.62
	11100.00	90.00	179.53	10400.00	875.63	-871.41	516.42	0.00	397607.92	777678.41	N 32 5 26.90	W 103 34 12.61
	11200.00	90.00	179.53	10400.00	975.63	-971.41	517.24	0.00	397507.93	777679.23	N 32 5 25.91	W 103 34 12.61
	11300.00	90.00	179.53	10400.00	1075.63	-1071.41	518.07	0.00	397407.93	777680.05	N 32 5 24.92	W 103 34 12.61
	11400.00	90.00	179.53	10400.00	1175.63	-1171.40	518.89	0.00	397307.94	777680.87	N 32 5 23.93	W 103 34 12.61
	11500.00	90.00	179.53	10400.00	1275.63	-1271.40	519.71	0.00	397207.95	777681.70	N 32 5 22.94	W 103 34 12.61
	11600.00	90.00	179.53	10400.00	1375.63	-1371.40	520.53	0.00	397107.95	777682.52	N 32 5 21.95	W 103 34 12.61
	11700.00	90.00	179.53	10400.00	1475.63	-1471.39	521.35	0.00	397007.96	777683.34	N 32 5 20.96	W 103 34 12.61
	11800.00	90.00	179.53	10400.00	1575.63	-1571.39	522.18	0.00	396907.96	777684.16	N 32 5 19.97	W 103 34 12.61
	11900.00	90.00	179.53	10400.00	1675.63	-1671.39	523.00	0.00	396807.97	777684.98	N 32 5 18.98	W 103 34 12.60
	12000.00	90.00	179.53	10400.00	1775.63	-1771.38	523.82	0.00	396707.98	777685.81	N 32 5 17.99	W 103 34 12.60
	12100.00	90.00	179.53	10400.00	1875.63	-1871.38	524.64	0.00	396607.98	777686.63	N 32 5 17.00	W 103 34 12.60
	12200.00	90.00	179.53	10400.00	1975.63	-1971.38	525.46	0.00	396507.99	777687.45	N 32 5 16.01	W 103 34 12.60
	12300.00	90.00	179.53	10400.00	2075.63	-2071.37	526.29	0.00	396408.00	777688.27	N 32 5 15.02	W 103 34 12.60
	12400.00	90.00	179.53	10400.00	2175.63	-2171.37	527.11	0.00	396308.00	777689.09	N 32 5 14.03	W 103 34 12.60
	12500.00	90.00	179.53	10400.00	2275.63	-2271.37	527.93	0.00	396208.01	777689.91	N 32 5 13.04	W 103 34 12.60
	12600.00	90.00	179.53	10400.00	2375.63	-2371.36	528.75	0.00	396108.02	777690.74	N 32 5 12.05	W 103 34 12.59
	12700.00	90.00	179.53	10400.00	2475.63	-2471.36	529.57	0.00	396008.02	777691.56	N 32 5 11.07	W 103 34 12.59
	12800.00	90.00	179.53	10400.00	2575.63	-2571.36	530.40	0.00	395908.03	777692.38	N 32 5 10.08	W 103 34 12.59
	12900.00	90.00	179.53	10400.00	2675.63	-2671.35	531.22	0.00	395808.03	777693.20	N 32 5 9.09	W 103 34 12.59
	13000.00	90.00	179.53	10400.00	2775.63	-2771.35	532.04	0.00	395708.04	777694.02	N 32 5 8.10	W 103 34 12.59
	13100.00	90.00	179.53	10400.00	2875.63	-2871.35	532.86	0.00	395608.05	777694.85	N 32 5 7.11	W 103 34 12.59
	13200.00	90.00	179.53	10400.00	2975.63	-2971.34	533.68	0.00	395508.05	777695.67	N 32 5 6.12	W 103 34 12.59
	13300.00	90.00	179.53	10400.00	3075.63	-3071.34	534.51	0.00	395408.06	777696.49	N 32 5 5.13	W 103 34 12.59
	13400.00	90.00	179.53	10400.00	3175.63	-3171.34	535.33	0.00	395308.07	777697.31	N 32 5 4.14	W 103 34 12.58
	13500.00	90.00	179.53	10400.00	3275.63	-3271.33	536.15	0.00	395208.07	777698.13	N 32 5 3.15	W 103 34 12.58
	13600.00	90.00	179.53	10400.00	3375.63	-3371.33	536.97	0.00	395108.08	777698.96	N 32 5 2.16	W 103 34 12.58
	13700.00	90.00	179.53	10400.00	3475.63	-3471.33	537.79	0.00	395008.08	777699.78	N 32 5 1.17	W 103 34 12.58
	13800.00	90.00	179.53	10400.00	3575.63	-3571.32	538.62	0.00	394908.09	777700.60	N 32 5 0.18	W 103 34 12.58
	13900.00	90.00	179.53	10400.00	3675.63	-3671.32	539.44	0.00	394808.10	777701.42	N 32 4 59.19	W 103 34 12.58
	14000.00	90.00	179.53	10400.00	3775.63	-3771.32	540.26	0.00	394708.10	777702.24	N 32 4 58.20	W 103 34 12.58
	14100.00	90.00	179.53	10400.00	3875.63	-3871.31	541.08	0.00	394608.11	777703.07	N 32 4 57.21	W 103 34 12.57
	14200.00	90.00	179.53	10400.00	3975.63	-3971.31	541.90	0.00	394508.12	777703.89	N 32 4 56.22	W 103 34 12.57
	14300.00	90.00	179.53	10400.00	4075.63	-4071.31	542.73	0.00	394408.12	777704.71	N 32 4 55.23	W 103 34 12.57
	14400.00	90.00	179.53	10400.00	4175.63	-4171.30	543.55	0.00	394308.13	777705.53	N 32 4 54.24	W 103 34 12.57
	14500.00	90.00	179.53	10400.00	4275.63	-4271.30	544.37	0.00	394208.14	777706.35	N 32 4 53.25	W 103 34 12.57
	14600.00	90.00	179.53	10400.00	4375.63	-4371.30	545.19	0.00	394108.14	777707.18	N 32 4 52.26	W 103 34 12.57
	14700.00	90.00	179.53	10400.00	4475.63	-4471.29	546.01	0.00	394008.15	777708.00	N 32 4 51.27	W 103 34 12.57
	14800.00	90.00	179.53	10400.00	4575.63	-4571.29	546.84	0.00	393908.15	777708.82	N 32 4 50.28	W 103 34 12.57
	14900.00	90.00	179.53	10400.00	4675.63	-4671.29	547.66	0.00	393808.16	777709.64	N 32 4 49.30	W 103 34 12.56
	15000.00	90.00	179.53	10400.00	4775.63	-4771.28	548.48	0.00	393708.17	777710.46	N 32 4 48.31	W 103 34 12.56

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	15100.00	90.00	179.53	10400.00	4875.63	-4871.28	549.30	0.00	393608.17	777711.29	N 32 4 47.32	W 103 34 12.56
NMNM0005792 - NMNM089425 Crossing	*15113.60*	*90.00*	*179.53*	*10400.00*	*4889.23*	*-4884.88*	*549.41*	*0.00*	*393594.57*	*777711.40*	*N 32 4 47.18*	*W 103 34 12.56*
	15200.00	90.00	179.53	10400.00	4975.63	-4971.28	550.12	0.00	393508.18	777712.11	N 32 4 46.33	W 103 34 12.56
	15300.00	90.00	179.53	10400.00	5075.63	-5071.27	550.95	0.00	393408.19	777712.93	N 32 4 45.34	W 103 34 12.56
	15400.00	90.00	179.53	10400.00	5175.63	-5171.27	551.77	0.00	393308.19	777713.75	N 32 4 44.35	W 103 34 12.56
	15500.00	90.00	179.53	10400.00	5275.63	-5271.27	552.59	0.00	393208.20	777714.57	N 32 4 43.36	W 103 34 12.56
	15600.00	90.00	179.53	10400.00	5375.63	-5371.26	553.41	0.00	393108.20	777715.40	N 32 4 42.37	W 103 34 12.55
	15700.00	90.00	179.53	10400.00	5475.63	-5471.26	554.23	0.00	393008.21	777716.22	N 32 4 41.38	W 103 34 12.55
	15800.00	90.00	179.53	10400.00	5575.63	-5571.26	555.06	0.00	392908.22	777717.04	N 32 4 40.39	W 103 34 12.55
	15900.00	90.00	179.53	10400.00	5675.63	-5671.25	555.88	0.00	392808.22	777717.86	N 32 4 39.40	W 103 34 12.55
	16000.00	90.00	179.53	10400.00	5775.63	-5771.25	556.70	0.00	392708.23	777718.68	N 32 4 38.41	W 103 34 12.55
	16100.00	90.00	179.53	10400.00	5875.63	-5871.25	557.52	0.00	392608.24	777719.50	N 32 4 37.42	W 103 34 12.55
	16200.00	90.00	179.53	10400.00	5975.63	-5971.24	558.34	0.00	392508.24	777720.33	N 32 4 36.43	W 103 34 12.55
	16300.00	90.00	179.53	10400.00	6075.63	-6071.24	559.17	0.00	392408.25	777721.15	N 32 4 35.44	W 103 34 12.55
	16400.00	90.00	179.53	10400.00	6175.63	-6171.24	559.99	0.00	392308.25	777721.97	N 32 4 34.45	W 103 34 12.54
	16500.00	90.00	179.53	10400.00	6275.63	-6271.23	560.81	0.00	392208.26	777722.79	N 32 4 33.46	W 103 34 12.54
	16600.00	90.00	179.53	10400.00	6375.63	-6371.23	561.63	0.00	392108.27	777723.61	N 32 4 32.47	W 103 34 12.54
	16700.00	90.00	179.53	10400.00	6475.63	-6471.23	562.45	0.00	392008.27	777724.44	N 32 4 31.48	W 103 34 12.54
	16800.00	90.00	179.53	10400.00	6575.63	-6571.22	563.27	0.00	391908.28	777725.26	N 32 4 30.49	W 103 34 12.54
	16900.00	90.00	179.53	10400.00	6675.63	-6671.22	564.10	0.00	391808.29	777726.08	N 32 4 29.50	W 103 34 12.54
	17000.00	90.00	179.53	10400.00	6775.63	-6771.22	564.92	0.00	391708.29	777726.90	N 32 4 28.51	W 103 34 12.54
	17100.00	90.00	179.53	10400.00	6875.63	-6871.21	565.74	0.00	391608.30	777727.72	N 32 4 27.53	W 103 34 12.53
	17200.00	90.00	179.53	10400.00	6975.63	-6971.21	566.56	0.00	391508.31	777728.55	N 32 4 26.54	W 103 34 12.53
	17300.00	90.00	179.53	10400.00	7075.63	-7071.21	567.38	0.00	391408.31	777729.37	N 32 4 25.55	W 103 34 12.53
	17400.00	90.00	179.53	10400.00	7175.63	-7171.20	568.21	0.00	391308.32	777730.19	N 32 4 24.56	W 103 34 12.53
	17500.00	90.00	179.53	10400.00	7275.63	-7271.20	569.03	0.00	391208.32	777731.01	N 32 4 23.57	W 103 34 12.53
	17600.00	90.00	179.53	10400.00	7375.63	-7371.20	569.85	0.00	391108.33	777731.83	N 32 4 22.58	W 103 34 12.53
	17700.00	90.00	179.53	10400.00	7475.63	-7471.19	570.67	0.00	391008.34	777732.66	N 32 4 21.59	W 103 34 12.53
	17800.00	90.00	179.53	10400.00	7575.63	-7571.19	571.49	0.00	390908.34	777733.48	N 32 4 20.60	W 103 34 12.53
	17900.00	90.00	179.53	10400.00	7675.63	-7671.18	572.32	0.00	390808.35	777734.30	N 32 4 19.61	W 103 34 12.52
	18000.00	90.00	179.53	10400.00	7775.63	-7771.18	573.14	0.00	390708.36	777735.12	N 32 4 18.62	W 103 34 12.52
	18100.00	90.00	179.53	10400.00	7875.63	-7871.18	573.96	0.00	390608.36	777735.94	N 32 4 17.63	W 103 34 12.52
	18200.00	90.00	179.53	10400.00	7975.63	-7971.17	574.78	0.00	390508.37	777736.77	N 32 4 16.64	W 103 34 12.52
	18300.00	90.00	179.53	10400.00	8075.63	-8071.17	575.60	0.00	390408.37	777737.59	N 32 4 15.65	W 103 34 12.52
	18400.00	90.00	179.53	10400.00	8175.63	-8171.17	576.43	0.00	390308.38	777738.41	N 32 4 14.66	W 103 34 12.52
	18500.00	90.00	179.53	10400.00	8275.63	-8271.16	577.25	0.00	390208.39	777739.23	N 32 4 13.67	W 103 34 12.52
	18600.00	90.00	179.53	10400.00	8375.63	-8371.16	578.07	0.00	390108.39	777740.05	N 32 4 12.68	W 103 34 12.51
	18700.00	90.00	179.53	10400.00	8475.63	-8471.16	578.89	0.00	390008.40	777740.88	N 32 4 11.69	W 103 34 12.51
	18800.00	90.00	179.53	10400.00	8575.63	-8571.15	579.71	0.00	389908.41	777741.70	N 32 4 10.70	W 103 34 12.51
	18900.00	90.00	179.53	10400.00	8675.63	-8671.15	580.54	0.00	389808.41	777742.52	N 32 4 9.71	W 103 34 12.51
	19000.00	90.00	179.53	10400.00	8775.63	-8771.15	581.36	0.00	389708.42	777743.34	N 32 4 8.72	W 103 34 12.51
NMNM089425 - NMNM0000127 H Crossing	*19073.00*	*90.00*	*179.53*	*10400.00*	*8848.63*	*-8844.15*	*581.96*	*0.00*	*389635.42*	*777743.94*	*N 32 4 8.00*	*W 103 34 12.51*
	19100.00	90.00	179.53	10400.00	8875.63	-8871.14	582.18	0.00	389608.42	777744.16	N 32 4 7.73	W 103 34 12.51
	19200.00	90.00	179.53	10400.00	8975.63	-8971.14	583.00	0.00	389508.43	777744.99	N 32 4 6.75	W 103 34 12.51
	19300.00	90.00	179.53	10400.00	9075.63	-9071.14	583.82	0.00	389408.44	777745.81	N 32 4 5.76	W 103 34 12.51
	19400.00	90.00	179.53	10400.00	9175.63	-9171.13	584.65	0.00	389308.44	777746.63	N 32 4 4.77	W 103 34 12.50
	19500.00	90.00	179.53	10400.00	9275.63	-9271.13	585.47	0.00	389208.45	777747.45	N 32 4 3.78	W 103 34 12.50
	19600.00	90.00	179.53	10400.00	9375.63	-9371.13	586.29	0.00	389108.46	777748.27	N 32 4 2.79	W 103 34 12.50
	19700.00	90.00	179.53	10400.00	9475.63	-9471.12	587.11	0.00	389008.46	777749.10	N 32 4 1.80	W 103 34 12.50
	19800.00	90.00	179.53	10400.00	9575.63	-9571.12	587.93	0.00	388908.47	777749.92	N 32 4 0.81	W 103 34 12.50
	19900.00	90.00	179.53	10400.00	9675.63	-9671.12	588.76	0.00	388808.48	777750.74	N 32 3 59.82	W 103 34 12.50
	20000.00	90.00	179.53	10400.00	9775.63	-9771.11	589.58	0.00	388708.48	777751.56	N 32 3 58.83	W 103 34 12.50
	20100.00	90.00	179.53	10400.00	9875.63	-9871.11	590.40	0.00	388608.49	777752.38	N 32 3 57.84	W 103 34 12.49
	20200.00	90.00	179.53	10400.00	9975.63	-9971.11	591.22	0.00	388508.49	777753.20	N 32 3 56.85	W 103 34 12.49
Cimarex Red Hills 33-4 Unit #77H - PBHL [100' FSL, 440' FEL]	20293.10	90.00	179.53	10400.00	10068.73	-10064.20	591.99	0.00	388415.40	777753.97	N 32 3 55.93	W 103 34 12.49

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS-Depth Only	Red Hills 33-4 Unit #77H / Cimarex Red Hills 33-4 Unit #77H Rev0 RM 27Mar20
	1	26.000	20293.100	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS	Red Hills 33-4 Unit #77H / Cimarex Red Hills 33-4 Unit #77H

Schlumberger

Cimarex Red Hills 33-4 Unit #77H Rev0 RM 27Mar20 Proposal Geodetic Report

(Non-Def Plan)

Report Date:	April 07, 2020 - 03:12 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex Energy	**Vertical Section Azimuth:**	179.529 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Red Hills 33-4 Unit #77H / New Slot	**TVD Reference Datum:**	RKB
Well:	Red Hills 33-4 Unit #77H	**TVD Reference Elevation:**	3369.100 ft above MSL
Borehole:	Red Hills 33-4 Unit #77H	**Seabed / Ground Elevation:**	3343.100 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.547 °
Survey Name:	Cimarex Red Hills 33-4 Unit #77H Rev0 RM 27Mar20	**Total Gravity Field Strength:**	998.4376mgn (9.80665 Based)
Survey Date:	March 27, 2020	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	104.516 ° / 10575.950 ft / 6.334 / 1.017	**Total Magnetic Field Strength:**	47670.047 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.685 °
Location Lat / Long:	N 32° 5' 35.55645", W 103° 34' 18.54584"	**Declination Date:**	March 27, 2020
Location Grid N/E Y/X:	N 398479.310 ftUS, E 777162.000 ftUS	**Magnetic Declination Model:**	HDGM 2020
CRS Grid Convergence Angle:	0.4046 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99997279	**Grid Convergence Used:**	0.4046 °
Version / Patch:	2.10.787.0	**Total Corr Mag North->Grid North:**	6.1424 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [388' FNL, 949' FEL]	0.00	0.00	176.63	0.00	0.00	0.00	0.00	N/A	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
Nudge 2°/100' DLS	1800.00	0.00	89.76	1800.00	0.00	0.00	0.00	0.00	398479.31	777162.00	N 32 5 35.56	W 103 34 18.55
Hold Nudge	2162.90	7.26	89.76	2161.93	0.09	0.10	22.95	2.00	398479.41	777184.95	N 32 5 35.56	W 103 34 18.28
Drop to Vertical 2°/100' DLS	5830.36	7.26	89.76	5800.00	1.94	2.06	486.29	0.00	398481.37	777648.27	N 32 5 35.54	W 103 34 12.89
Hold Vertical	6193.26	0.00	89.76	6161.93	2.03	2.16	509.24	2.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
KOP - Build 12°/100' DLS	9953.86	0.00	89.76	9922.54	2.03	2.16	509.24	0.00	398481.47	777671.23	N 32 5 35.54	W 103 34 12.63
Landing Point Cimarex Red	10703.86	90.00	179.53	10400.00	479.49	-475.29	513.17	12.00	398004.03	777675.15	N 32 5 30.82	W 103 34 12.62
Hills 33-4 Unit #77H - PBHL [100' FSL, 440' FEL]	20293.10	90.00	179.53	10400.00	10068.73	-10064.20	591.99	0.00	388415.40	777753.97	N 32 3 55.93	W 103 34 12.49

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS-Depth Only	Red Hills 33-4 Unit #77H / Cimarex Red Hills 33-4 Unit #77H Rev0 RM 27Mar20
	1	26.000	20293.100	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS	Red Hills 33-4 Unit #77H / Cimarex Red Hills 33-4 Unit #77H

Schlumberger

Cimarex Energy

Rev 0

CIMAREX

Borehole:	Well:	Field:	Structure:
Red Hills 33-4 Unit #77H	Red Hills 33-4 Unit #77H	NM Lea County (NAD 83)	Cimarex Red Hills 33-4 Unit #77H

Gravity & Magnetic Parameters						Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet					Miscellaneous			
Model:	HDGM 2020	Dip:	59.685°	Date:	27-Mar-2020	Lat:	N 32 5 35.56	Northing:	398479.31ftUS	Grid Conv:	0.4046°	Slot:	New Slot	TVD Ref:	RKB(3369.1ft above MSL)
MagDec:	6.547°	FS:	47670.047nT	Gravity FS:	998.438mgn (9.80665 Based)	Lon:	W 103 34 18.55	Easting:	777162ftUS	Scale Fact:	0.99997279	Plan:	Cimarex Red Hills 33-4 Unit #77H Rev0 RM 27Mar20		

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [388' FNL, 949' FEL]	0.00	0.00	176.63	0.00	0.00	0.00	0.00	
Rustler	926.00	0.00	89.76	926.00	0.00	0.00	0.00	0.00
Top of Salt	1260.00	0.00	89.76	1260.00	0.00	0.00	0.00	0.00
Nudge 2°/100' DLS	1800.00	0.00	89.76	1800.00	0.00	0.00	0.00	0.00
Hold Nudge	2162.90	7.26	89.76	2161.93	0.09	0.10	22.95	2.00
Base of Salt	4673.08	7.26	89.76	4652.00	1.35	1.44	340.08	0.00
Lamar	4910.99	7.26	89.76	4888.00	1.47	1.57	370.14	0.00
Bell Canyon	4955.34	7.26	89.76	4932.00	1.50	1.59	375.74	0.00
Drop to Vertical 2°/100' DLS	5830.36	7.26	89.76	5800.00	1.94	2.06	486.29	0.00
Cherry Canyon	6048.26	2.90	89.76	6017.00	2.01	2.14	505.57	2.00
Hold Vertical	6193.26	0.00	89.76	6161.93	2.03	2.16	509.24	2.00
Brushy Canyon	7521.33	0.00	89.76	7490.00	2.03	2.16	509.24	0.00
Bone Spring	9070.33	0.00	89.76	9039.00	2.03	2.16	509.24	0.00
Leonard Shale	9125.33	0.00	89.76	9094.00	2.03	2.16	509.24	0.00
Avalon Shale	9387.33	0.00	89.76	9356.00	2.03	2.16	509.24	0.00
Lower Avalon Shale	9762.33	0.00	89.76	9731.00	2.03	2.16	509.24	0.00
KOP - Build 12°/100' DLS	9953.86	0.00	89.76	9922.54	2.03	2.16	509.24	0.00
1st Bone Spring Sand	10068.42	13.75	179.53	10036.00	15.70	-11.52	509.35	12.00
2nd Bone Spring Carb	10278.84	39.00	179.53	10223.00	108.42	-104.23	510.12	12.00
Landing Point	10703.86	90.00	179.53	10400.00	479.49	-475.29	513.17	12.00
NMNM0005792 - NMNM089425 Crossing	15113.60	90.00	179.53	10400.00	4889.23	-4884.88	549.41	0.00
NMNM089425 - NMNM0000127H Crossing	19073.00	90.00	179.53	10400.00	8848.63	-8844.15	581.96	0.00
Cimarex Red Hills 33-4 Unit #77H - PBHL [100' FSL, 440' FEL]	20293.10	90.00	179.53	10400.00	10068.73	-10064.20	591.99	0.00
Wolfcamp	NaN			12210.00				
3rd Bone Spring Carb	NaN			11017.00				
3rd Bone Spring Sand	NaN			11682.00				
Wolfcamp A1	NaN			12302.00				
Wolfcamp A2	NaN			12848.00				
Wolfcamp Y Sand	NaN			12280.00				
2nd Bone Spring Sand	NaN			10564.00				
Wolfcamp Y SS Target	NaN			12300.00				

Grid
True
Mag

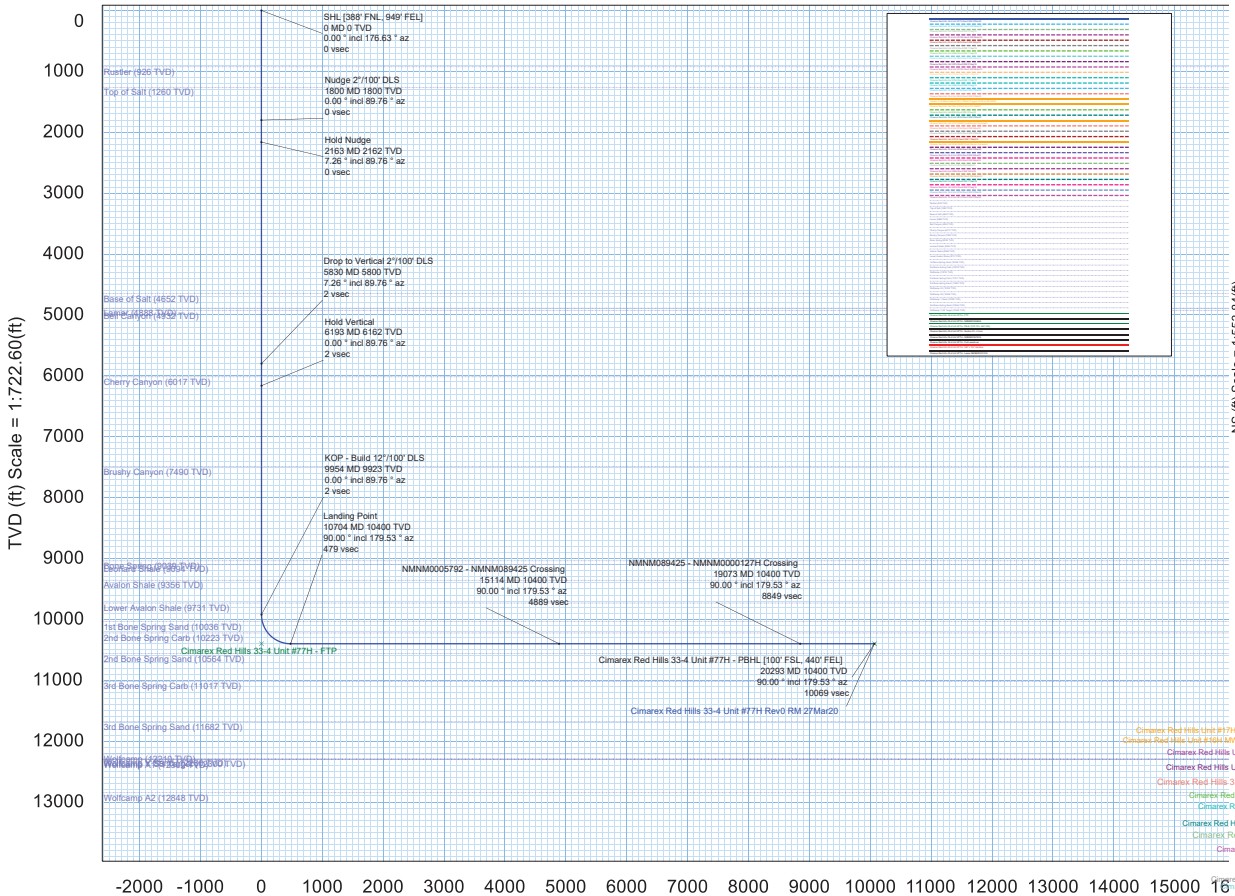
Grid North
Tot Corr (M->G 6.142°)
Mag Dec (6.547°)
Grid Conv (0.405°)

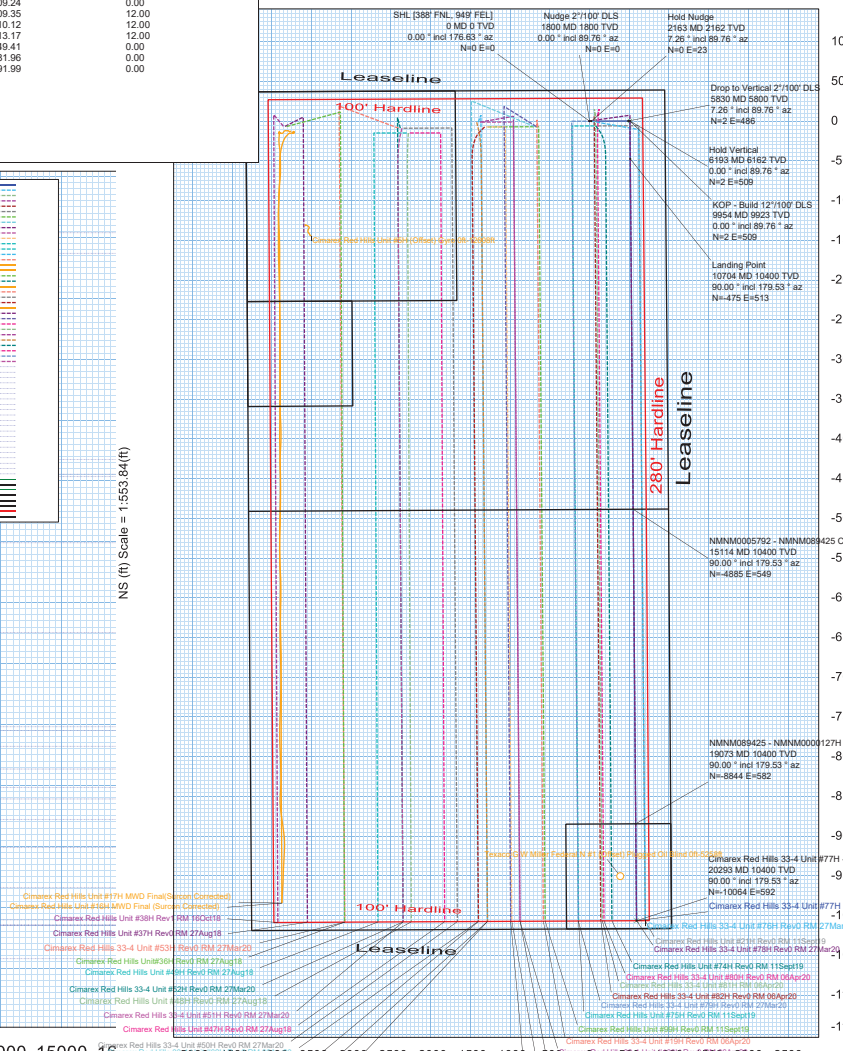
CONTROLLED

Plan ref	Cimarex Red Hills 33-4 Unit #77H Rev0 RM 27Mar20
Drawing ref	
Copy number	of 3
Date	07-Apr-2020

1	Client	
2	Client	
3	Office	
4	Office	

Copy number for





1. Geological Formations

TVD of target 10,400
MD at TD 20,293

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Ruslter	920	Useable Water	
Top of Salt	1334	N/A	
Base of Salt	4892	N/A	
Bell Canyon	4919	N/A	
Cherry Canyon	6019	N/A	
Brushy Canyon	7578	N/A	
Bone Spring	9047	Hydrocarbons	
Upper Avalon Shale	9338	Hydrocarbons	
1st Bone Spring	10030	Hydrocarbons	
2nd Bone Spring	10230	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	970	970	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	1.76	4.12	6.92
12 1/4	0	4850	4850	9-5/8"	40.00	J-55	LT&C	1.43	1.57	2.68
8 3/4	0	9954	9954	5-1/2"	20.00	L-80	LT&C	1.90	1.97	2.00
8 3/4	9954	20293	10400	5-1/2"	20.00	L-80	BT&C	1.81	1.85	52.24
					BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	N
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N
Is AC Report included?	N

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft3/sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	406	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	1008	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	283	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	546	10.30	3.64	22.18		Lead: Tuned Light + LCM
	3014	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	42
Intermediate	0	49
Production	4650	25

Cimarex request the ability to perform casing integrity tests after plug bump of cement job.

4. Pressure Control Equipment

	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	2M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	5M	Annular	X	5M
			Blind Ram		
			Pipe Ram	X	
			Double Ram	X	
			Other		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.	
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.	
	N	Are anchors required by manufacturer?

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 970'	Fresh Water	7.83 - 8.33	28	N/C
970' to 4850'	Brine Water	9.50 - 10.00	30-32	N/C
4850' to 20293'	OBM	8.50 - 9.00	50-70	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing	
	Will run GR/CNL fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No logs are planned based on well control or offset log information.
	Drill stem test?
	Coring?

Additional Logs Planned	Interval

7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	4867 psi
Abnormal Temperature	No

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
	H2S is present
	H2S plan is attached

8. Other Facets of Operation

9. Wellhead

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

The multi-bowl wellhead will be installed by vendor's representative. A copy of the installation instructions has been sent to the BLM field office.

The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

All casing strings will be tested as per Onshore Order No.2 to atleast 0.22 psi/ft or 1,500 whichever is greater and not to exceed 70% of casing burst.

If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original to Appropriate District Office

GAS CAPTURE PLAN

Date: 08/24/20

☒ Original Operator & OGRID No.: Cimarex Energy Co of Colorado- 162683
☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Red Hills Unit 77H	Pending	33-25S-33E	388'FNL & 949' FEL	4000		

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Enlink and will be connected to Enlink low/high pressure gathering system located in _Lea___ County, New Mexico. It will require _(no additional feet) of pipeline to connect the facility to low/high pressure gathering system. Cimarex provides (periodically) to Enlink a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Cimarex and Enlink have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at EnLink Lobo Processing Plant located in Sec 30, BLk 29 Loving Co, TX. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Enlink system at that time. Based on current information, it is Cimarex belief the system can take this gas upon completion of the well(s).

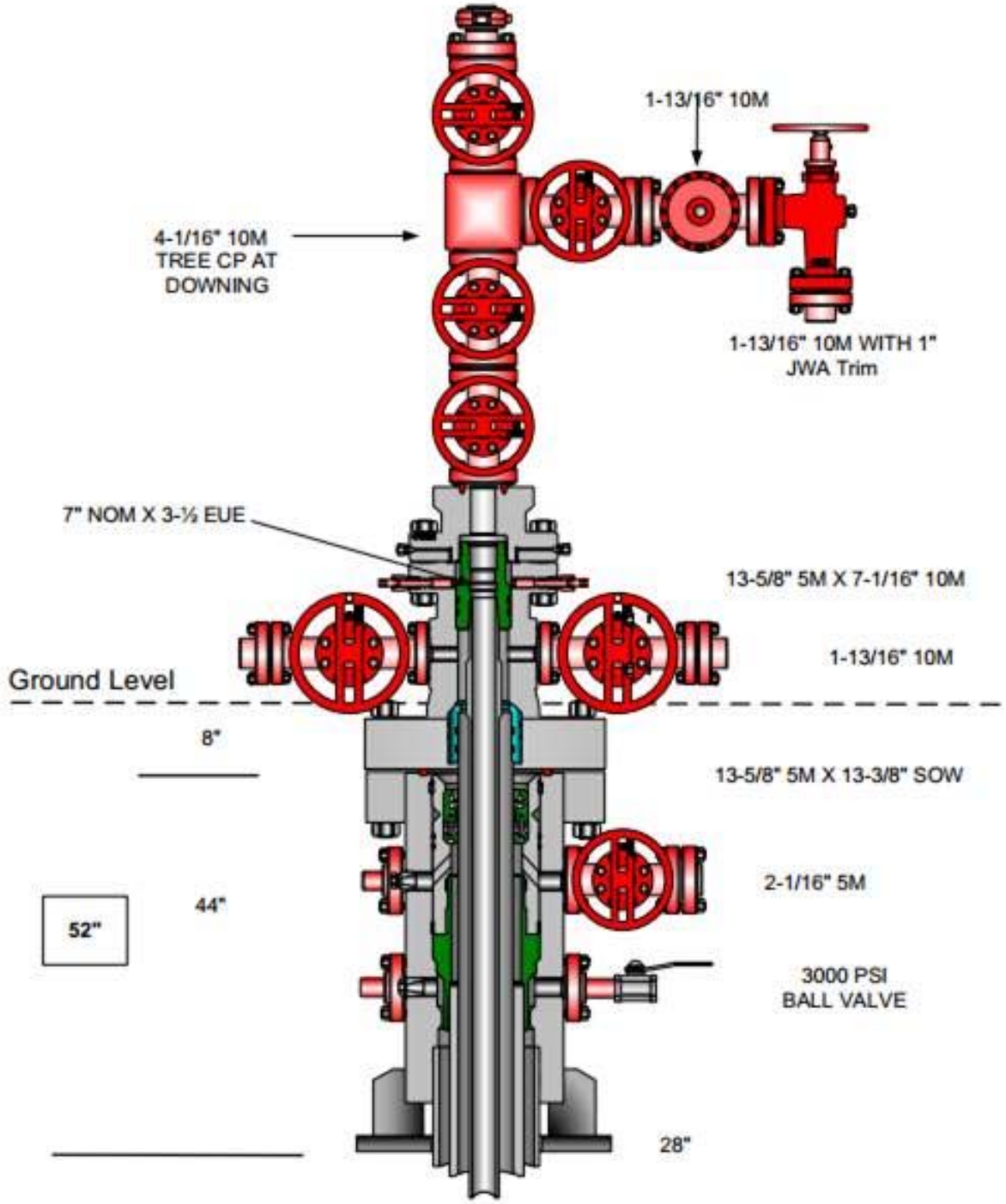
Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

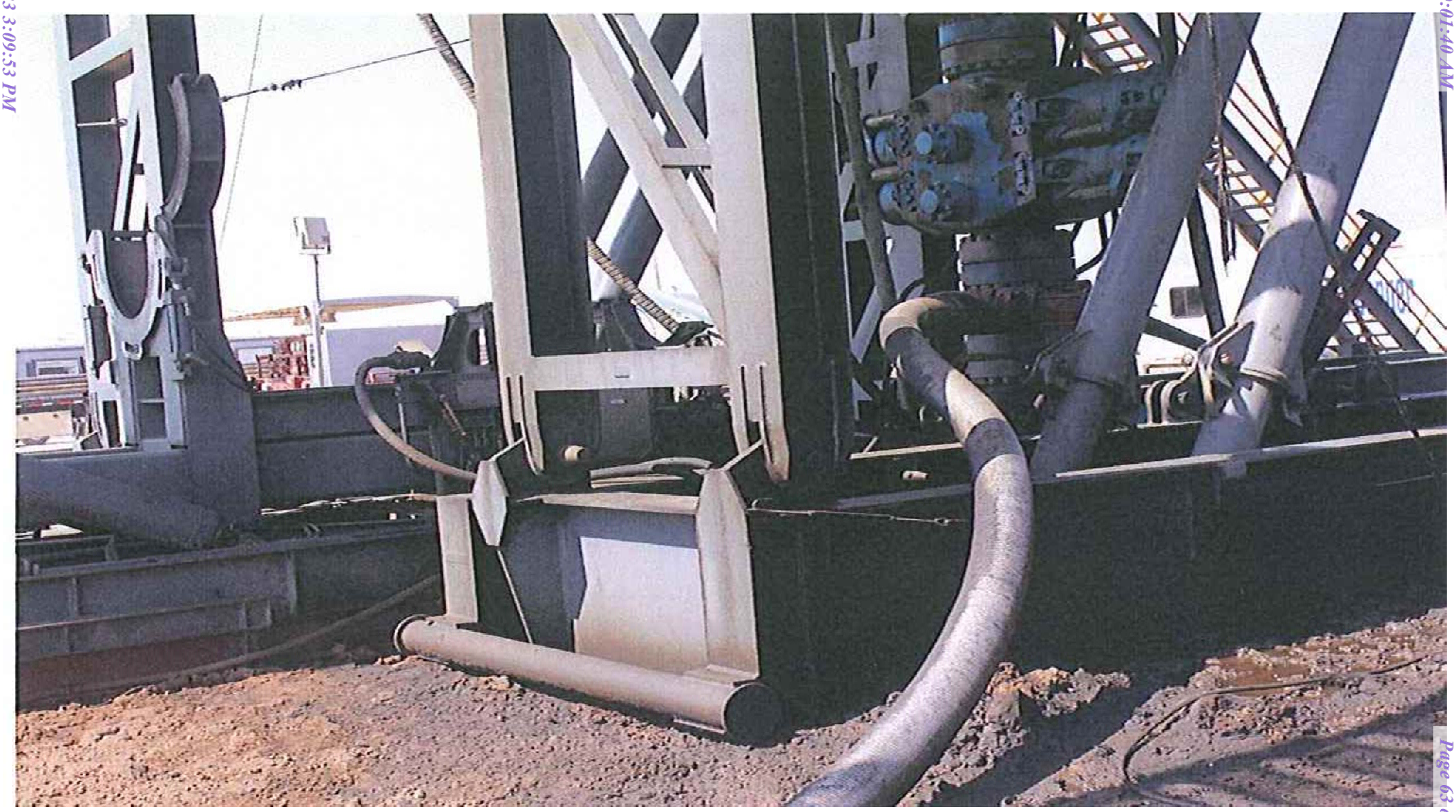
Multi-bowl Wellhead Diagram



Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	970	970	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	1.76	4.12	6.92
12 1/4	0	4850	4850	9-5/8"	40.00	J-55	LT&C	1.43	1.57	2.68
8 3/4	0	9954	9954	5-1/2"	20.00	L-80	LT&C	1.90	1.97	2.00
8 3/4	9954	20293	10400	5-1/2"	20.00	L-80	BT&C	1.81	1.85	52.24
							BLM Minimum Safety Factor	1.125	1	1.6 Dry 1.8 Wet

Multi-bowl Wellhead Diagram
Red Hills Unit 77H
Cimarex Energy Co.
33-25S-33E
Lea Co., NM

Co-Flex Hose
Red Hills Unit E2E2 Pad
Cimarex Energy Co.of Colorado
33-25S-33E
Lea Co., NM



Co-Flex Hose Hydrostatic Test
Red Hills Unit E2E2 Pad
Cimarex Energy Co. of Colorado
33-25S-33E
Lea Co., NM

Midwest Hose & Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT

Customer:	P.O. Number:
Oderco Inc	odyd-271

HOSE SPECIFICATIONS

Type:	Hose Length:
Stainless Steel Armor Choke & Kill Hose	45'ft.

I.D.	O.D.
4 INCHES	9 INCHES

WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE
10,000 PSI	15,000 PSI	0 PSI

COUPLINGS

Stem Part No.	Ferrule No.
OKC OKC	OKC OKC
Type of Coupling: Swage-It	

PROCEDURE

Hose assembly pressure tested with water at ambient temperature.

TIME HELD AT TEST PRESSURE	ACTUAL BURST PRESSURE:
15 MIN.	0 PSI

Hose Assembly Serial Number:	Hose Serial Number:
79793	OKC

Comments:

Date:	Tested:	Approved:
3/8/2011	A. Jaime Sanchez	

Co-Flex Hose Hydrostatic Test
Red Hills Unit E2E2 Pad
Cimarex Energy Co. of Colorado
33-25S-33E
Lea Co., NM

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

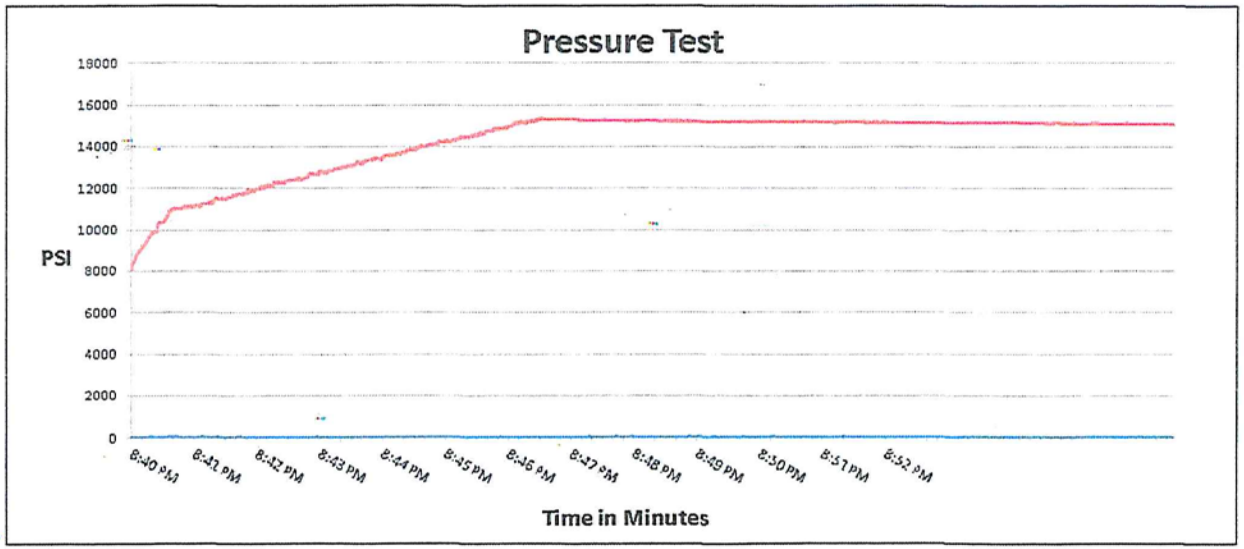
Pick Ticket #: 94260

Hose Specifications

Hose Type	Length
C & K	45'
I.D.	O.D.
4"	6.09"
Working Pressure	Burst Pressure
10000 PSI	Standard Safety Multiplier Applies

Verification

Type of Fitting	Coupling Method
4 1/16 10K	Swage
Die Size	Final O.D.
6.38"	6.25"
Hose Serial #	Hose Assembly Serial #
5544	79793



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	11 Minutes		15483 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: *Zac Mcconnell*

Approved By: *Kim Thomas*

Co-Flex Hose
Red Hills Unit E2E2 Pad
Cimarex Energy Co. of Colorado
33-25S-33E
Lea Co., NM

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer:	PO
DEM	ODYD-271

SPECIFICATIONS

Sales Order	Dated:
79793	3/8/2011

We hereby cerify that the material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards

Supplier:
Midwest Hose & Specialty, Inc.
10640 Tanner Road
Houston, Texas 77041

Comments:

Approved:	Date:
Jamal Garcia	3/8/2011

Midwest Hose & Specialty, Inc.

Co-Flex Hose
Red Hills Unit E2E2 Pad
Cimarex Energy Co. of Colorado
33-25S-33E
Lea Co., NM

Specification Sheet
Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium componets.The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male threads, hubs, hammer unions or other special fittings upon request. Hose assembly is manufactured to API 7K. This assembly is wrapped with fire resistant vermculite coated fiberglass insulation, rated at 2000 degrees with stainless steel armor cover.

Working Pressure:	5,000 or 10,000 psi working pressure
Test Pressure:	10,000 or 15,000 psi test pressure
Reinforcement:	Multiple steel cables
Cover:	Stainless Steel Armor
Inner Tube:	Petroleum resistant, Abrasion resistant
End Fitting:	API flanges, API male threads, threaded or butt weld hammer unions, unibolt and other special connections
Maximum Length:	110 Feet
ID:	2-1/2", 3", 3-1/2", 4"
Operating Temperature:	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

P.O. Box 96558 – 1421 S.E. 29th St. Oklahoma City, OK 73143 * (405) 670-6718 * Fax: (405) 670-6816

AFMSS
U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

SUPO Data Report
08/23/2023

APD ID: 10400059629
Submission Date: 04/22/2021
Operator Name: CIMAREX ENERGY COMPANY
Well Name: RED HILLS UNIT
Well Number: 77H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Red_Hills_Unit_E2E2_Existing_Road_Route_20200730125700.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? YES

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Red_Hills_Unit_E2E2_One_Mile_Radius_20200730125734.pdf

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: 2- 550 X 450 pads were staked with the BLM for construction and use as a central tank batteries (CTB), please see Exhibit F. Batteries have been previously approved in the Red Hill Unit 21H APD. Roads have all been previously approved in the Red Hills Unit 21H APD. Power ROW has been submitted. Bulklines have been previously approved in the Red hills Unit 99H APD.
Production Facilities map:

Red_Hills_Unit__Zone_1_West_CTB_Btty_Layout_20200708120443.pdf

Red_Hills_Unit__Zone_2_West_CTB_Btty_Layout_20200708120436.pdf

Red_Hills_Unit_77H_SUPO_20210820101741.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: MUNICIPAL

Water source use type: SURFACE CASING

INTERMEDIATE/PRODUCTION CASING

Source latitude: **Source longitude:**

Source datum:

Water source permit type: WATER RIGHT

Permit Number:

Water source transport method: TRUCKING

Source land ownership: FEDERAL

Source transportation land ownership: FEDERAL

Water source volume (barrels): 5000 **Source volume (acre-feet):** 0.64446548

Source volume (gal): 210000

Water source and transportation

Red_Hills_Unit_E2E2_Drilling_Source_Water_20200807101822.pdf

Water source comments:

New water well? N

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Using any construction materials: YES

Construction Materials description: Caliche will be obtained from the actual well site if available. If not available onsite caliche will be obtained for a pit located in Sec 6, 26S 34E, NWNE.
Construction Materials source location

Section 7 - Methods for Handling

Waste type: DRILLING

Waste content description: Drilling Fluids, drill cuttings, water and other waste produced from the well during drilling operations
Amount of waste: 15000 barrels

Waste disposal frequency : Weekly

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
Disposal type description:

Disposal location description: Haul to R360 Environmental Solutions, 4507 Carlsbad Hwy, Hobbs, NM 88240

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Waste type: SEWAGE

Waste content description: Human Waste

Amount of waste: 300 gallons

Waste disposal frequency : Weekly

Safe containment description: Waste will be properly contained and disposed of properly at a state approved disposal facility.

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: A licensed 3rd party contractor will be used to haul and dispose human waste to City of Toyah TX waste water facility.

Waste type: GARBAGE

Waste content description: Garbage and trash produced during drilling and completion operations

Amount of waste: 32500 pounds

Waste disposal frequency : Weekly

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: A licensed 3rd party hauls trash to Lea County Landfill

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit? NO

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? N

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Description of cuttings location

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary

Are you requesting any Ancillary Facilities?: N

Ancillary Facilities

Comments:

Section 9 - Well Site

Well Site Layout Diagram:

Red_Hills_Unit_pad_5_E2E2__Wellsite_Pad_Info_20200730130834.docx

Red_Hills_Unit_77H_Wellsite_layout_20210820101835.pdf

Comments: Well Pad is 500' by 560' with a 100' x 250' satellite pad on the south. This well pad has wells Red Hills Unit 21H 74H 75H 76H 77H 78H 79H 80H 81H 82H 83H 84H 85H 86H

Section 10 - Plans for Surface

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** Red Hills Unit

Multiple Well Pad Number: E2E2

Recontouring

Red_Hills_Unit_E2E2_Pad_5_Interim_Reclaim_20210820101924.pdf

Drainage/Erosion control construction: To control and prevent potentially contaminated precipitation from leaving the pad site, a perimeter berm and settlement pond will be installed. Contaminated water will be removed from pond, stored in waste tanks, and disposed of at a state approved facility. Standing water or puddles will not be allowed. Drainage ditches would be established and maintained on the pad and along access roads to divert water away from operations. Natural drainage areas disturbed during construction would be re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured, and reclaimed to near original condition to re-establish natural drainage.

Drainage/Erosion control reclamation: All disturbed and re-contoured areas would be reseeded according to specifications. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Well pad proposed disturbance (acres): 6.69	**Well pad interim reclamation (acres):** 3	**Well pad long term disturbance (acres):** 3.69
Road proposed disturbance (acres): 4.034	**Road interim reclamation (acres):** 0	**Road long term disturbance (acres):** 4.034
Powerline proposed disturbance (acres): 2.476	**Powerline interim reclamation (acres):** 0	**Powerline long term disturbance (acres):** 2.476
Pipeline proposed disturbance (acres): 7.028	**Pipeline interim reclamation (acres):** 0	**Pipeline long term disturbance (acres):** 7.028
Other proposed disturbance (acres): 0	**Other interim reclamation (acres):** 0	**Other long term disturbance (acres):** 0
Total proposed disturbance: 20.227999999999998	**Total interim reclamation:** 3	**Total long term disturbance:** 17.227999999999998

Disturbance Comments:

Reconstruction method: After well plugging, all disturbed areas would be returned to the original contour or a contour that blends with the surrounding landform including roads unless the surface owner requests that they be left intact. In consultation with the surface owners it will be determined if any gravel or similar materials used to reinforce an area are to be removed, buried, or left in place during final reclamation. Salvaged topsoil, if any, would be re-spread evenly over the surfaces to be re-vegetated. As necessary, the soil surface would be prepared to provide a seedbed for re-establishment of desirable vegetation. Site preparation may include gouging, scarifying, dozer track-walking, mulching, or fertilizing. Reclamation, Re-vegetation, and Drainage: All disturbed and re-contoured areas would be reseeded using techniques outlined under Phase I and II of this plan or as specified by the land owner. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

Topsoil redistribution: The original stock piled topsoil, if any, will be spread evenly over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pad, production facilities, roads, pipelines, and power line corridors as close as possible to the original topography. The location will then be seeded.

Soil treatment: The soil surface would be prepared to provide a seedbed for reestablishment of desirable vegetation. Establish control of erosion and invasion of non-native plants to reestablish plant community.
Existing Vegetation at the well pad: N/A

Existing Vegetation at the well pad

Existing Vegetation Community at the road: N/A

Existing Vegetation Community at the road

Existing Vegetation Community at the pipeline: N/A

Existing Vegetation Community at the pipeline

Existing Vegetation Community at other disturbances: N/A

Existing Vegetation Community at other disturbances

Non native seed used? N

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? N

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Seedling transplant description

Will seed be harvested for use in site reclamation? N

Seed harvest description:

Seed harvest description attachment:

Seed

Seed Table

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation

Operator Contact/Responsible Official

First Name: Amithy **Last Name:** Crawford

Phone: (432)620-1909 **Email:** acrawford@cimarex.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? N

Existing invasive species treatment description:

Existing invasive species treatment

Weed treatment plan description: N/A

Weed treatment plan

Monitoring plan description: N/A

Monitoring plan

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT,PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Surface use plan certification: YES

Surface use plan certification document:

Red_Hills_Unit__Surface_owner_Agreement_20200807101957.pdf

Surface access agreement or bond: AGREEMENT

Surface Access Agreement Need description: N/A

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: TRANSMISSION LINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT,PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Surface use plan certification: YES

Surface use plan certification document:

Red_Hills_Unit__Surface_owner_Agreement_20200807101938.pdf

Surface access agreement or bond: AGREEMENT

Surface Access Agreement Need description: N/A

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Section 12 - Other

Right of Way needed? Y **Use APD as ROW?** Y

ROW Type(s): 281001 ROW - ROADS,288100 ROW – O&G Pipeline,289001 ROW- O&G Well Pad,FLPMA (Powerline)

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

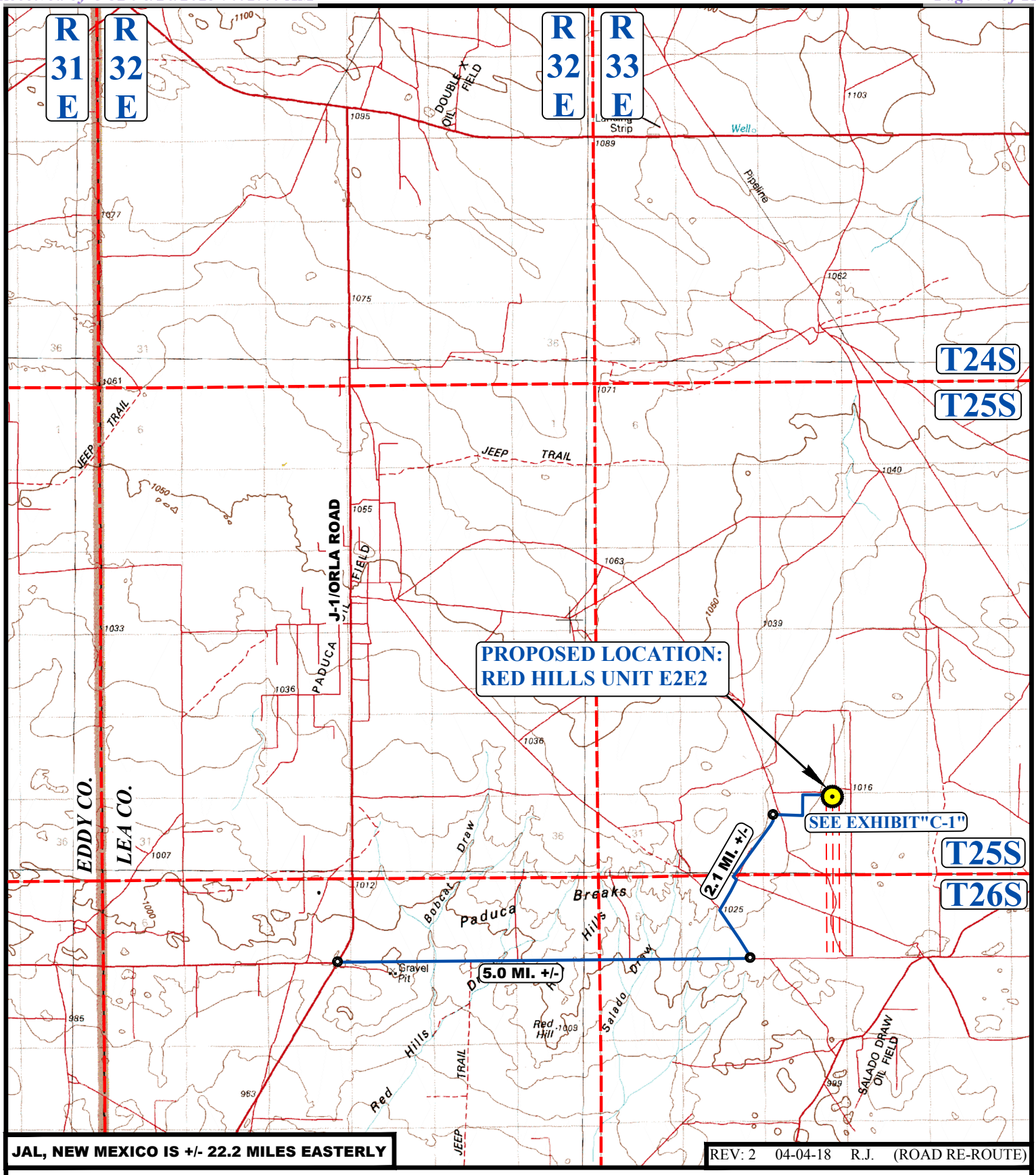
ROW

SUPO Additional Information:

Use a previously conducted onsite? Y

Previous Onsite information: Location was moved 20 ft. south to avoid pipeline to north. V-Door West. Tops soil west. Interim reclamation: All sides. Access road is from Red Hills Unit 33 West Zone 2 CTB, north and then east (Following existing pipeline) to the NE corner of this proposed pad. Pad size is 500' (East/West) x 560' (North/South)

Other SUPO



REV: 2 04-04-18 R.J. (ROAD RE-ROUTE)

LEGEND:

⊙ PROPOSED LOCATION

N

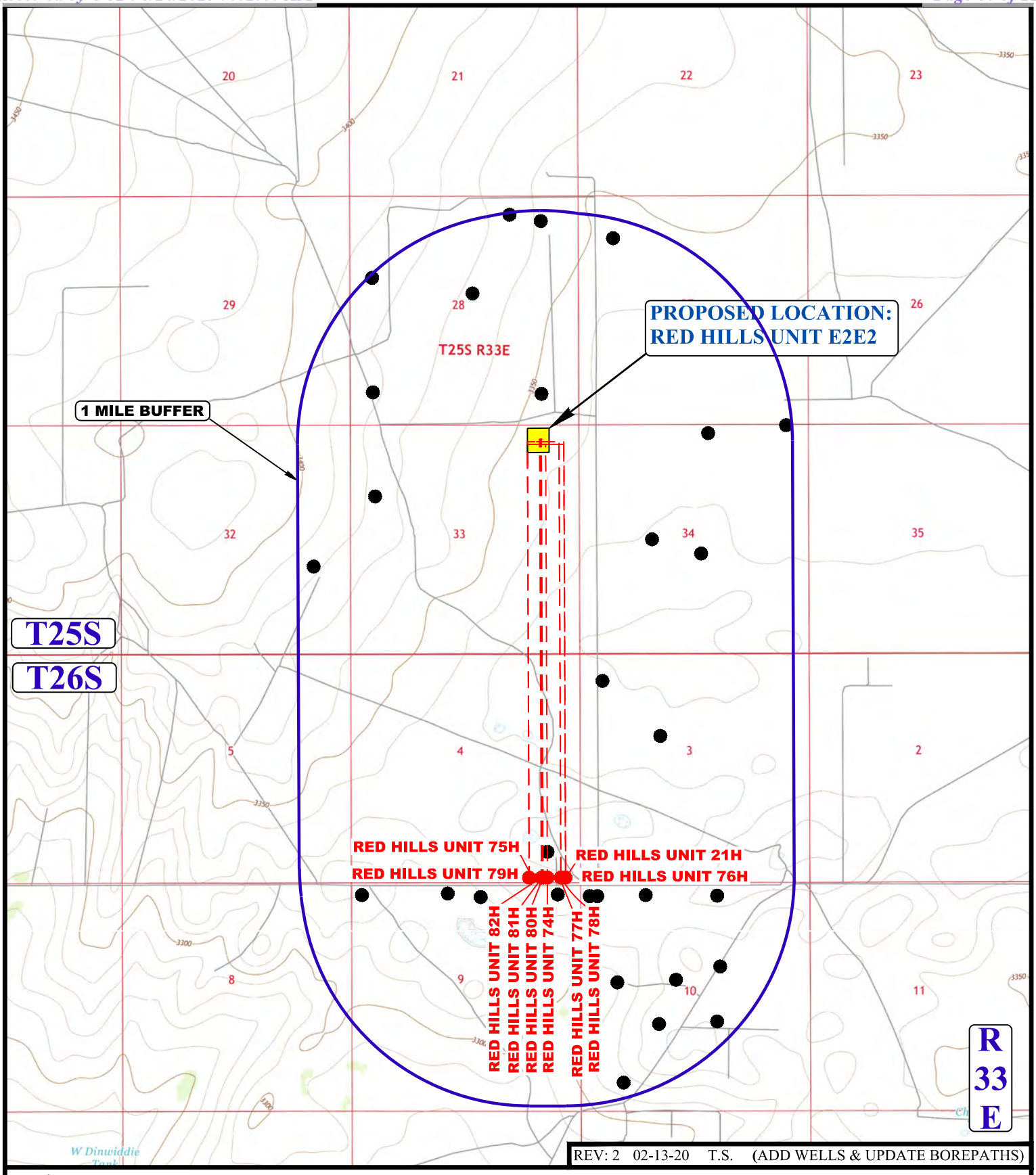
CIMAREX ENERGY CO.

RED HILLS UNIT E2E2
NE 1/4 NE 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.J., A.H.	05-05-17	SCALE
DRAWN BY	V.L.D.	05-25-17	1 : 100,000

PUBLIC ACCESS ROAD MAP **EXHIBIT B**

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



REV: 2 02-13-20 T.S. (ADD WELLS & UPDATE BOREPATHS)

LEGEND:

● EXISTING WELLS

N

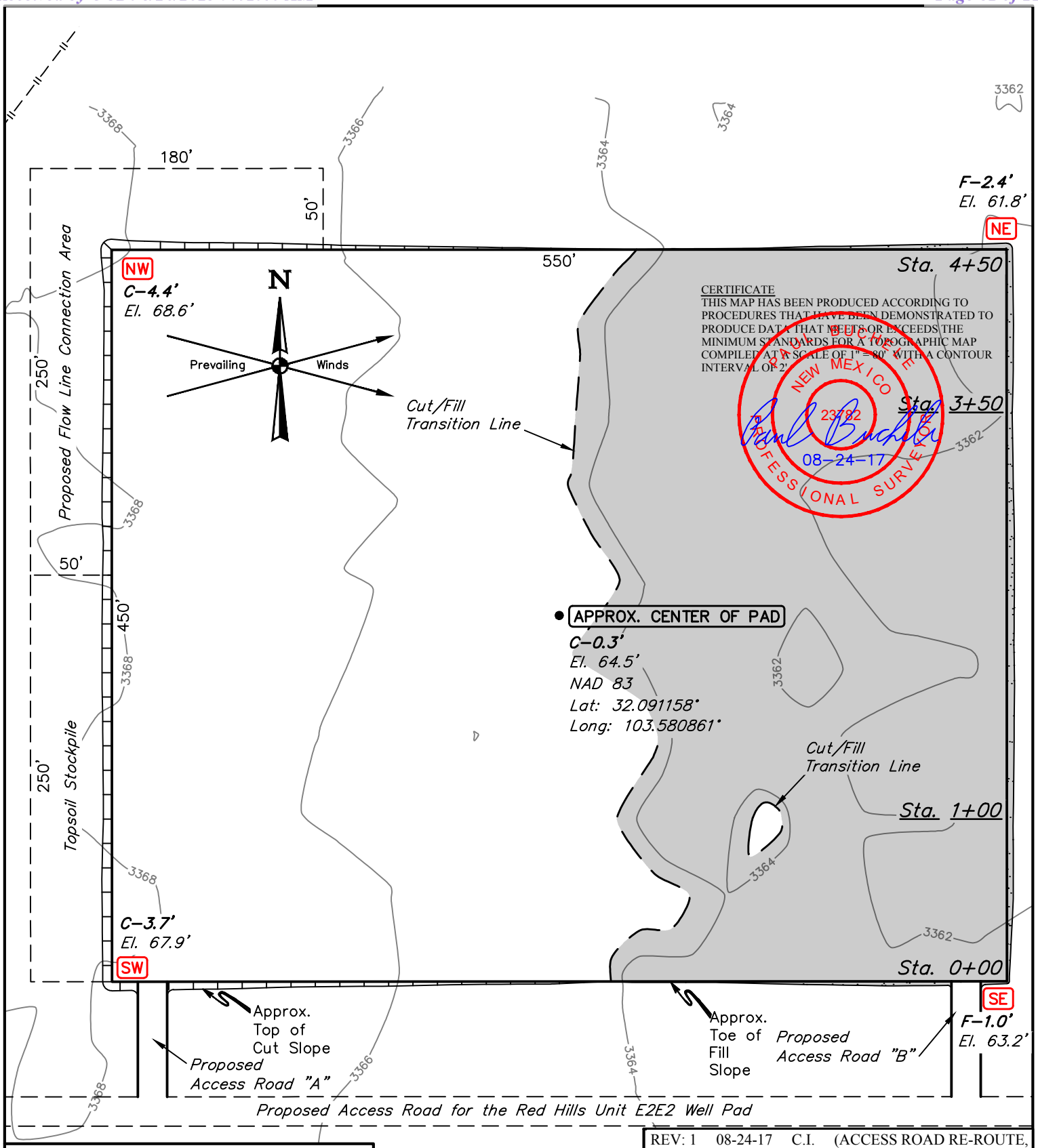
CIMAREX ENERGY CO.

RED HILLS UNIT E2E2
NE 1/4 NE 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.J., A.H.	05-05-17	SCALE
DRAWN BY	V.L.D.	05-25-17	1 : 36,000
ONE MILE RADIUS PLAT			EXHIBIT A

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



CERTIFICATE
THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1" = 80' WITH A CONTOUR INTERVAL OF 2'.

PAUL BUCHELE
NEW MEXICO
23782
PROFESSIONAL SURVEYOR
08-24-17

FINISHED GRADE ELEVATION = **3364.2**

REV: 1 08-24-17 C.I. (ACCESS ROAD RE-ROUTE, FLOW LINE CONNECTION AREA MOVE)

NOTES:

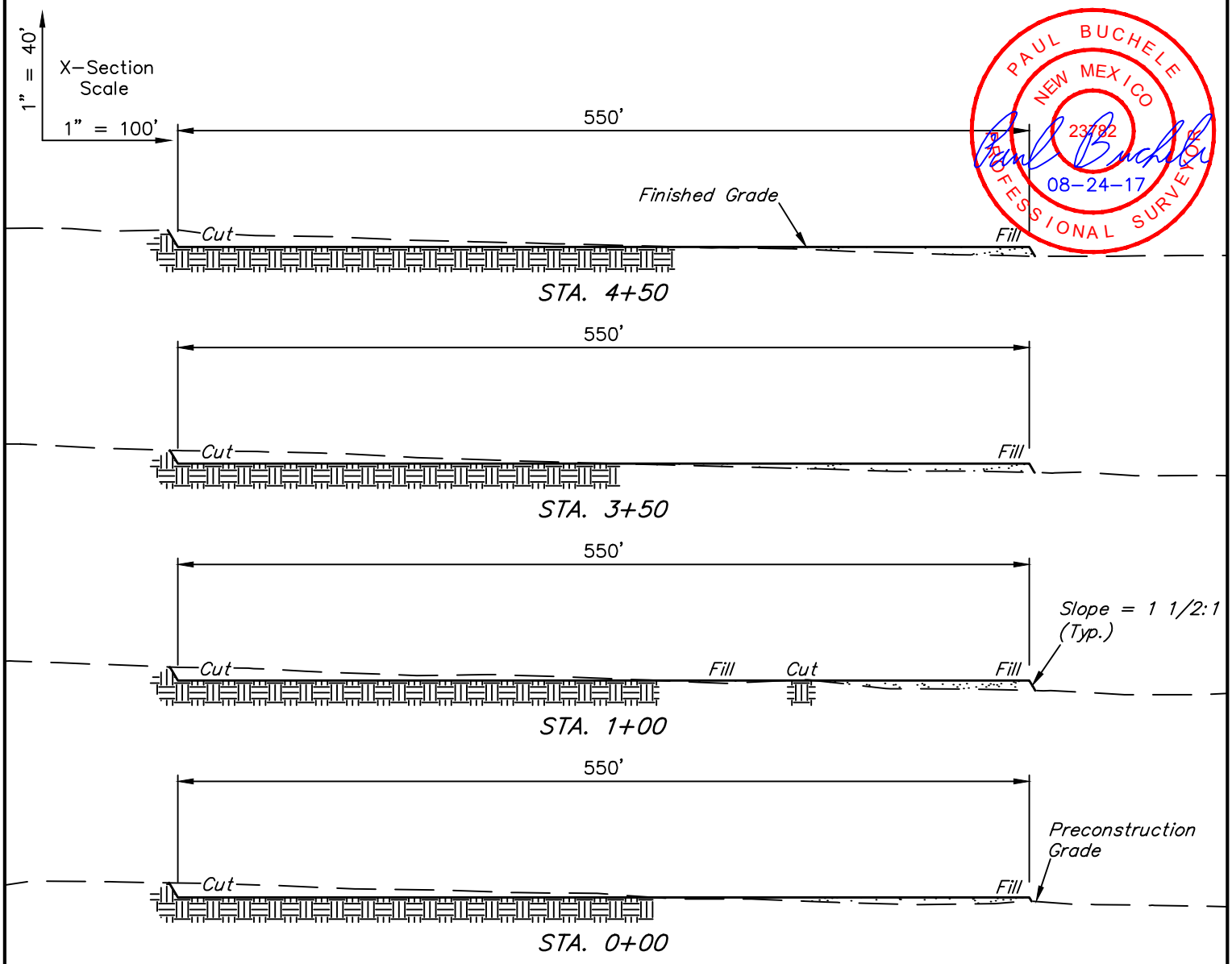
- Contours shown at 2' intervals.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)
- Topsoil stockpile to be seeded in place prior to reclamation.

CIMAREX ENERGY CO.

RED HILLS UNIT 33 ONE 1 WEST CTB
NW 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.J., A.H., P.R.	05-04-17	SCALE
DRAWN BY	S.F.	06-02-17	1" = 80'
LOCATION LAYOUT			EXHIBIT F

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



PAUL BUCHELE NEW MEXICO 23782 08-24-17 PROFESSIONAL SURVEYOR

APPROXIMATE EARTHWORK QUANTITIES	
(4") TOPSOIL STRIPPING	3,140 Cu. Yds.
REMAINING LOCATION	7,910 Cu. Yds.
TOTAL CUT	**11,050 Cu. Yds.**
FILL	**7,910 Cu. Yds.**
EXCESS MATERIAL	3,140 Cu. Yds.
TOPSOIL	3,140 Cu. Yds.
EXCESS UNBALANCE (After Interim Rehabilitation)	**0 Cu. Yds.**

APPROXIMATE SURFACE DISTURBANCE AREAS		
	DISTANCE	**ACRES**
WELL SITE DISTURBANCE	NA	±6.301
FLOW LINE CONNECTION AREA DISTURBANCE	NA	±0.436
30' WIDE ACCESS ROAD "A" R-O-W DISTURBANCE	±79.80'	±0.055
30' WIDE ACCESS ROAD "B" R-O-W DISTURBANCE	±79.92'	±0.055
30' WIDE POWER LINE R-O-W DISTURBANCE	±109.91'	±0.076
TOTAL		±6.868

REV: 1 08-24-17 C.I. (RE-ROUTE)

NOTES:

- Fill quantity includes 5% for compaction.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)

CIMAREX ENERGY CO.

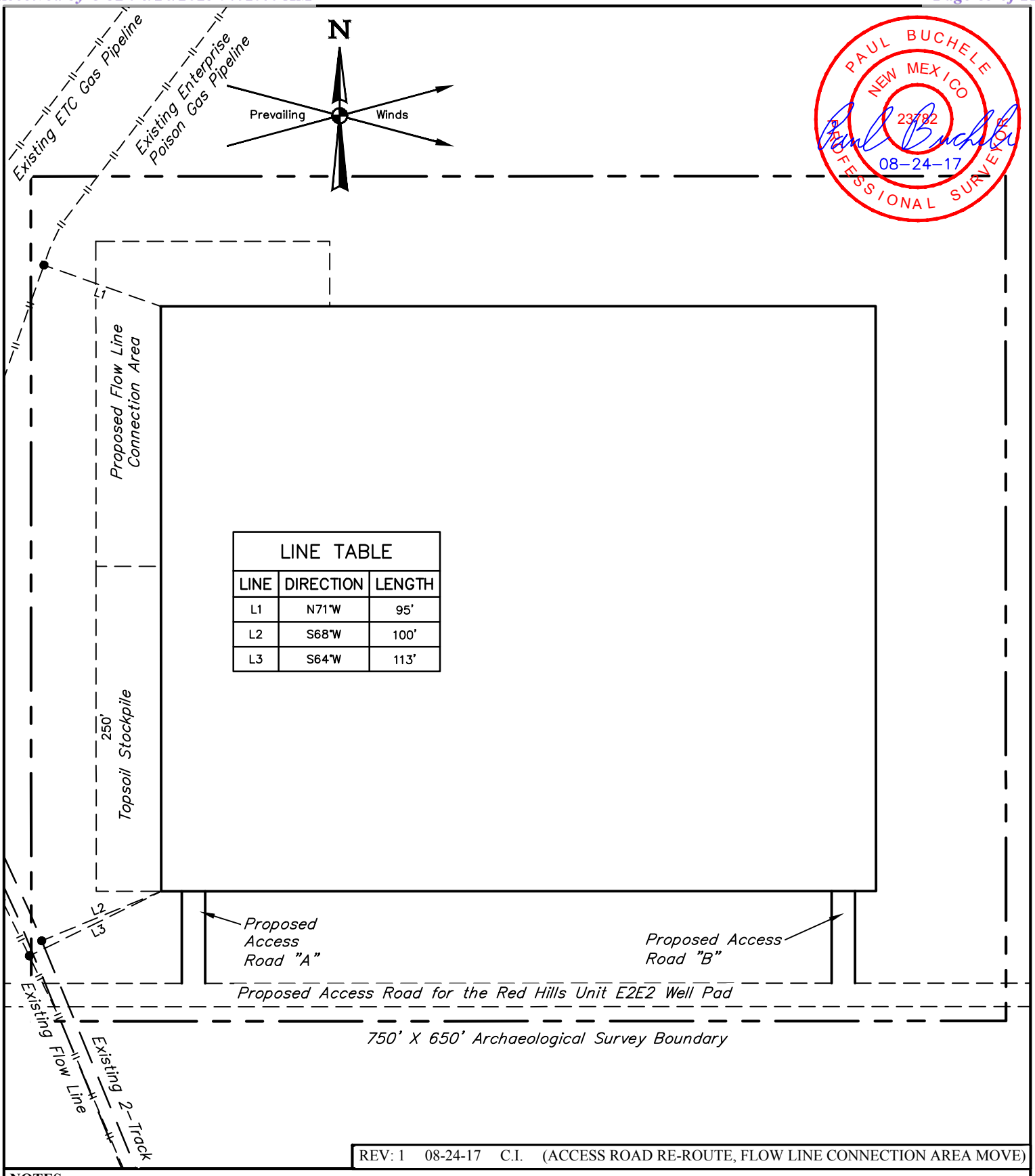
RED HILLS UNIT 33 ONE 1 WEST CTB
NW 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

SURVEYED BY	C.J., A.H., P.R.	05-04-17	SCALE
DRAWN BY	S.F.	06-02-17	AS SHOWN

TYPICAL CROSS SECTIONS **EXHIBIT F**



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N71°W	95'
L2	S68°W	100'
L3	S64°W	113'

REV: 1 08-24-17 C.I. (ACCESS ROAD RE-ROUTE, FLOW LINE CONNECTION AREA MOVE)

NOTES:

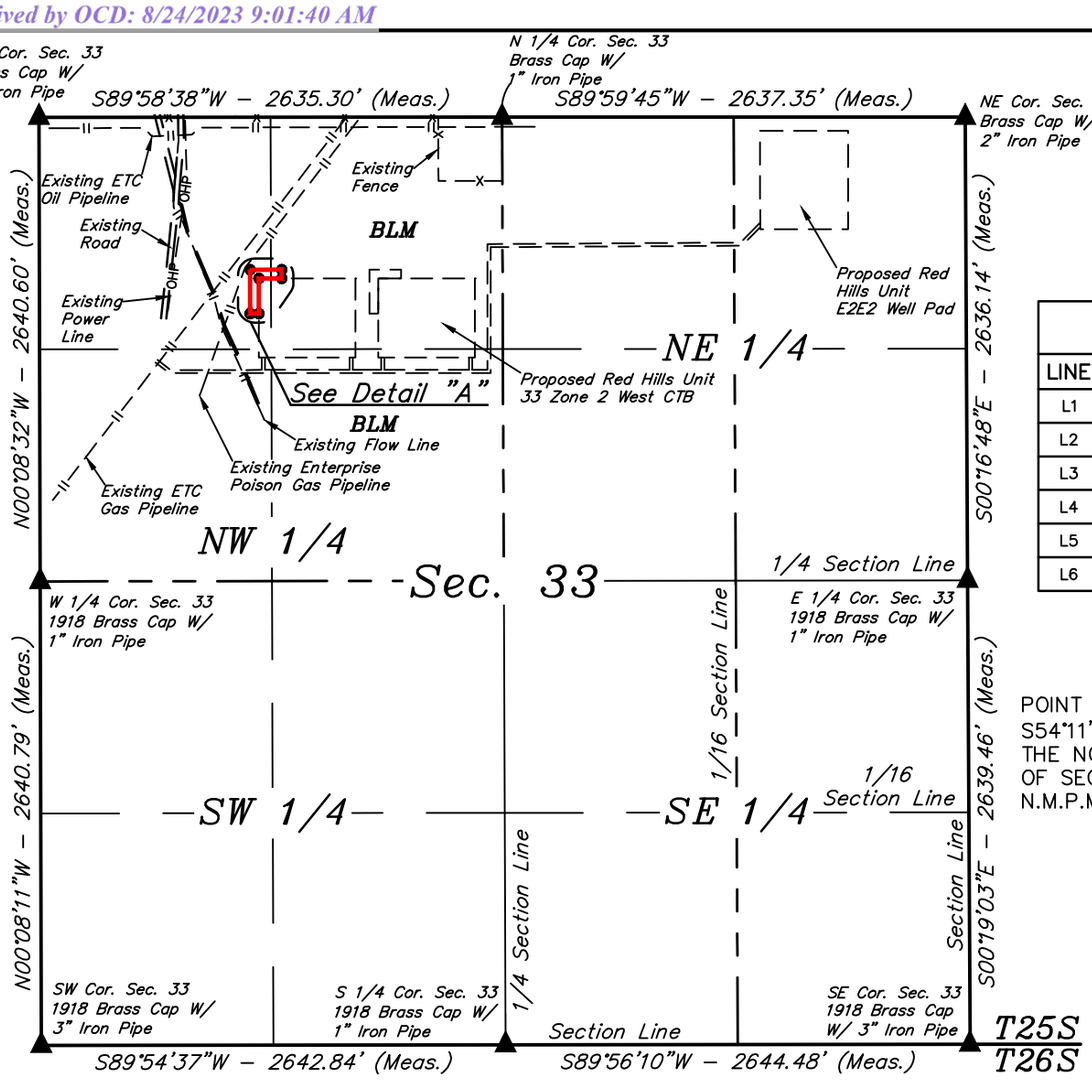
- Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.

CIMAREX ENERGY CO.

RED HILLS UNIT 33 ONE 1 WEST CTB
NW 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

SURVEYED BY	C.J., A.H., P.R.	05-04-17	**SCALE**
DRAWN BY	S.F.	06-02-17	1" = 100'
ARCHAEOLOGICAL SURVEY BOUNDARY			**EXHIBIT F**

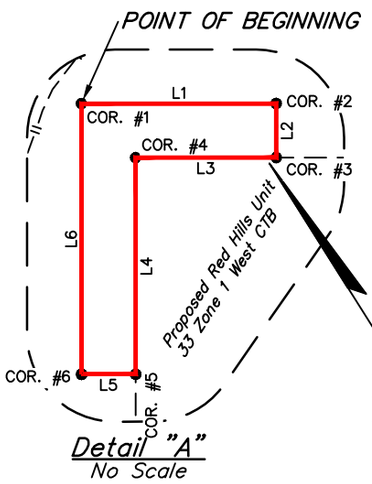


LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N89°58'17"E	180.00'
L2	S00°01'43"E	50.00'
L3	S89°58'18"W	130.00'
L4	S00°01'43"E	200.00'
L5	S89°58'17"W	50.00'
L6	N00°01'43"W	250.00'

POINT OF BEGINNING BEARS S54°11'34"E 1481.40' FROM THE NORTHWEST CORNER OF SECTION 3, T25S, R33E, N.M.P.M.

FLOW LINE CONNECTION SURFACE USE AREA DESCRIPTION

BEGINNING AT A POINT IN THE NW 1/4 NW 1/4 OF SECTION 33, T25S, R33E, N.M.P.M., WHICH BEARS S54°11'34"E 1481.40' FROM THE NORTHWEST CORNER OF SAID SECTION 33, THENCE N89°58'17"E 180.00'; THENCE S00°01'43"E 50.00'; THENCE S89°58'18"W 130.00'; THENCE S00°01'43"E 200.00'; THENCE S89°58'17"W 50.00'; THENCE N00°01'43"W 250.00' TO THE POINT OF BEGINNING. CONTAINS 0.436 ACRES MORE OR LESS.



Detail "A"
No Scale

PROPOSED FLOW LINE CONNECTION SURFACE USE AREA
Acres = 0.436 ±

CERTIFICATE
THIS IS TO CERTIFY THAT THIS EASEMENT PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BASIN SURVEYS
23782
PROFESSIONAL SURVEYOR
08-24-17

1000' 500' 0' 1000'

▲ = SECTION CORNERS LOCATED.

FILE: 6 1 7 3 6-A

Sheet 1 of 2

REV: 1 08-24-17 C.I. (FLOW LINE CONNECTION SUA MOVE)

NOTES:
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

N

CIMAREX ENERGY CO.

RED HILLS UNIT 33 ONE 1 WEST CTB
SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.J., A.H., P.R.	05-04-17	SCALE
DRAWN BY	B.D.H.	06-06-17	1" = 1000'

FLOW LINE CONNECTION EXHIBIT F

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

BEGINNING AT THE INTERSECTION OF J-1/ORLA ROAD AND PIPELINE ROAD TO THE EAST (LOCATED AT NAD83 LATITUDE N32.064964° AND LONGITUDE W103.674262°) PROCEED IN AN EASTERLY DIRECTION APPROXIMATELY 5.0 TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST; TURN LEFT AND PROCEED IN A NORTHWESTERLY, THEN NORTHEASTERLY, THEN NORTHWESTERLY DIRECTION APPROXIMATELY 2.1 MILES TO THE BEGINNING OF THE PROPOSED ACCESS FOR THE RED HILLS UNIT E2E2; FOLLOW ROAD FLAGS IN AN SOUTHEASTERLY, THEN EASTERLY DIRECTION FOR APPROXIMATELY 629' TO THE BEGINNING OF THE PROPOSED ACCESS "A" TO THE NORTH; FOLLOW ROAD FLAGS IN A NORTHERLY DIRECTION APPROXIMATELY 80' TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM THE INTERSECTION OF J-1/ORLA ROAD AND PIPELINE ROAD TO THE EAST (LOCATED AT NAD 83 LATITUDE N32.064964° AND LONGITUDE W103.674262°), TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 7.2 MILES.

REV: 01	08-24-17	L.W.	(ROAD RE-ROUTE)

CIMAREX ENERGY CO.

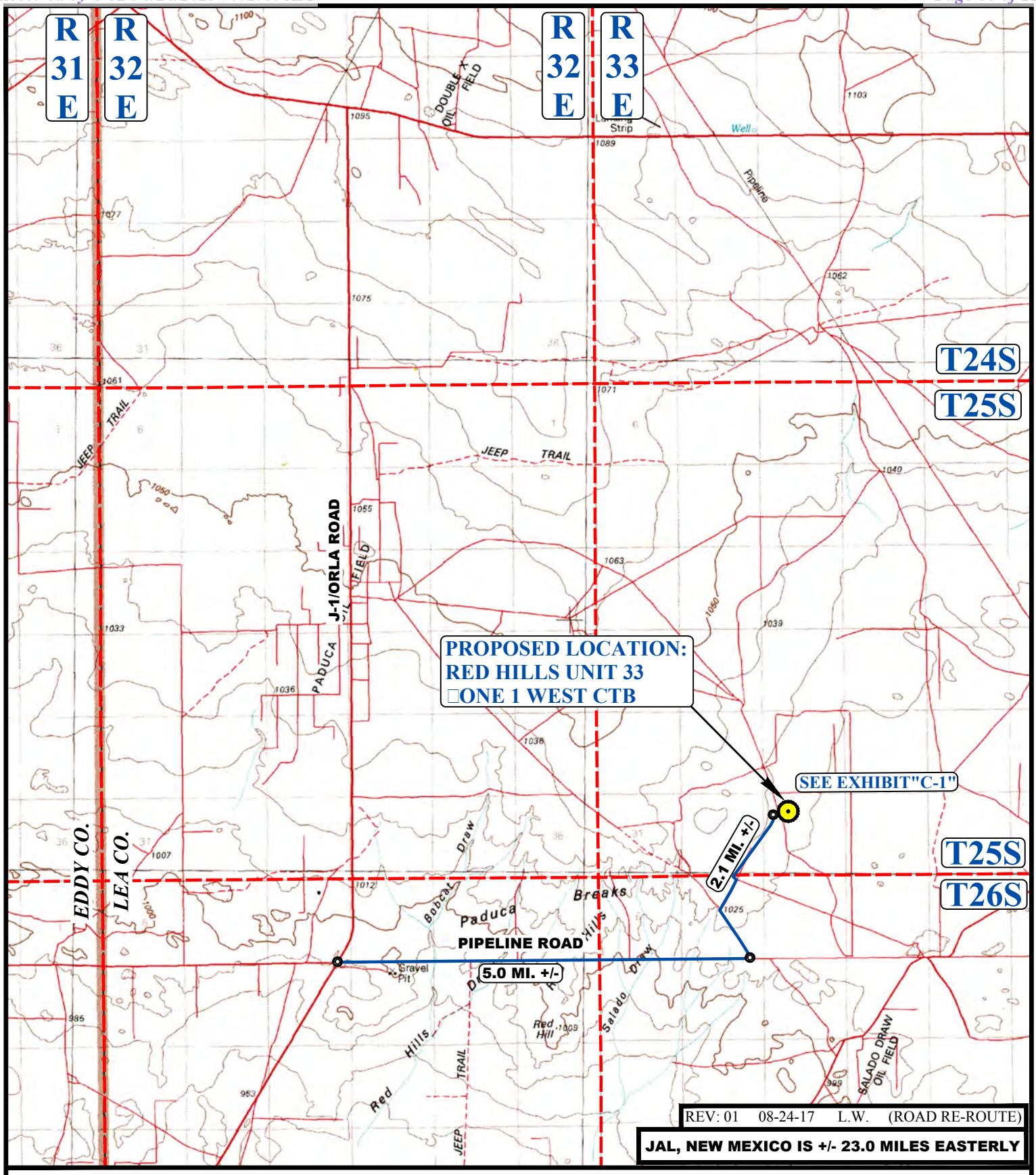
RED HILLS UNIT 33 □ONE 1 WEST CTB
NW 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

SURVEYED BY	C.J., A.H.	05-05-17	
DRAWN BY	V.E.D.	05-26-17	

ROAD DESCRIPTION EXHIBIT F



REV: 01 08-24-17 L.W. (ROAD RE-ROUTE)

JAL, NEW MEXICO IS +/- 23.0 MILES EASTERLY

LEGEND:

PROPOSED LOCATION

N

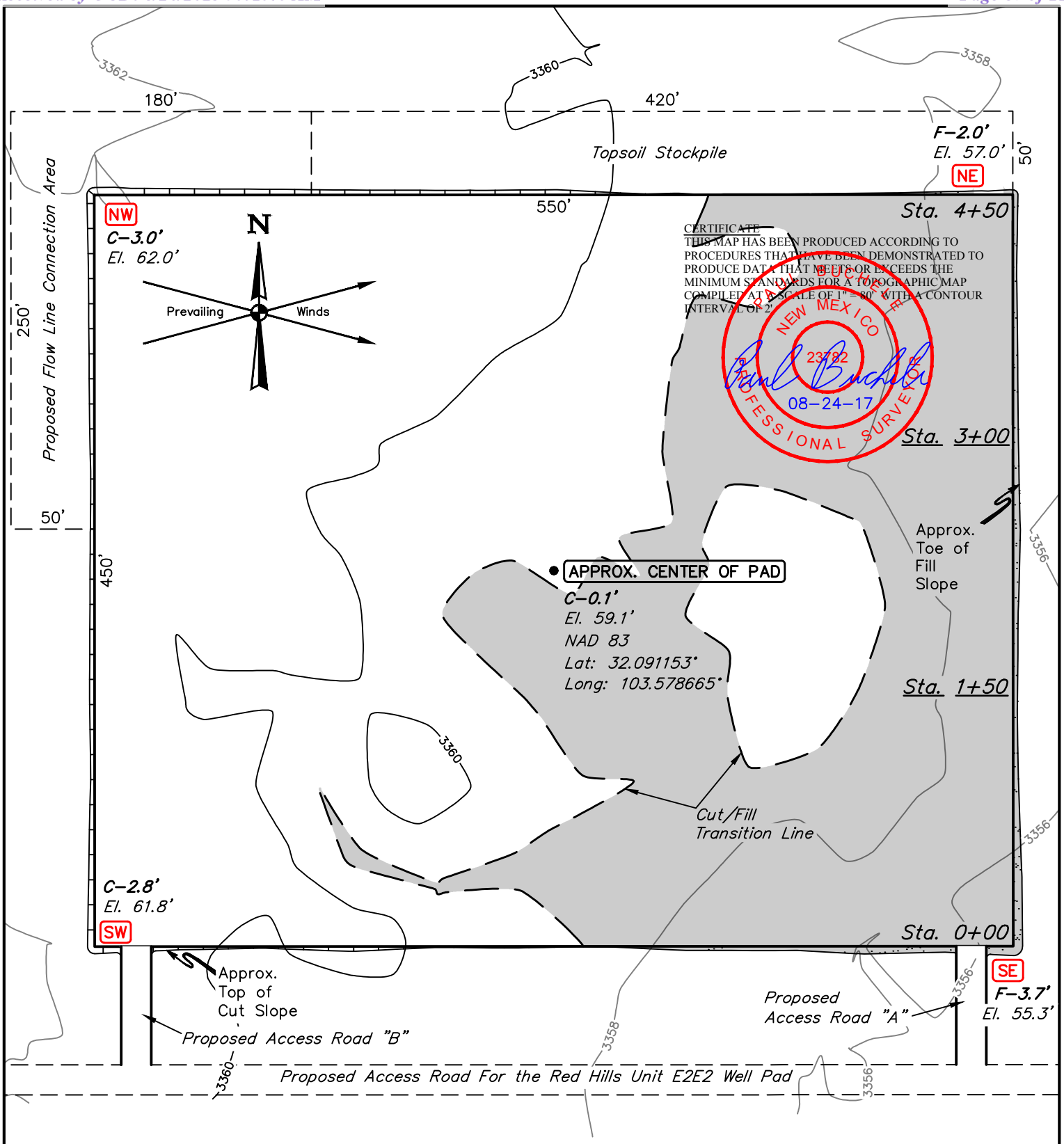
CIMAREX ENERGY CO.

RED HILLS UNIT 33 ONE 1 WEST CTB
NW 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.J., A.H.	05-05-17	SCALE
DRAWN BY	V.L.D.	05-26-17	1 : 100,000

PUBLIC ACCESS ROAD MAP **EXHIBIT B**

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



FINISHED GRADE ELEVATION = **3359.0'**

REV: 1 08-24-17 C.I. (ACCESS ROAD RE-ROUTE, FLOW LINE CONNECTION AREA MOVE)

NOTES:

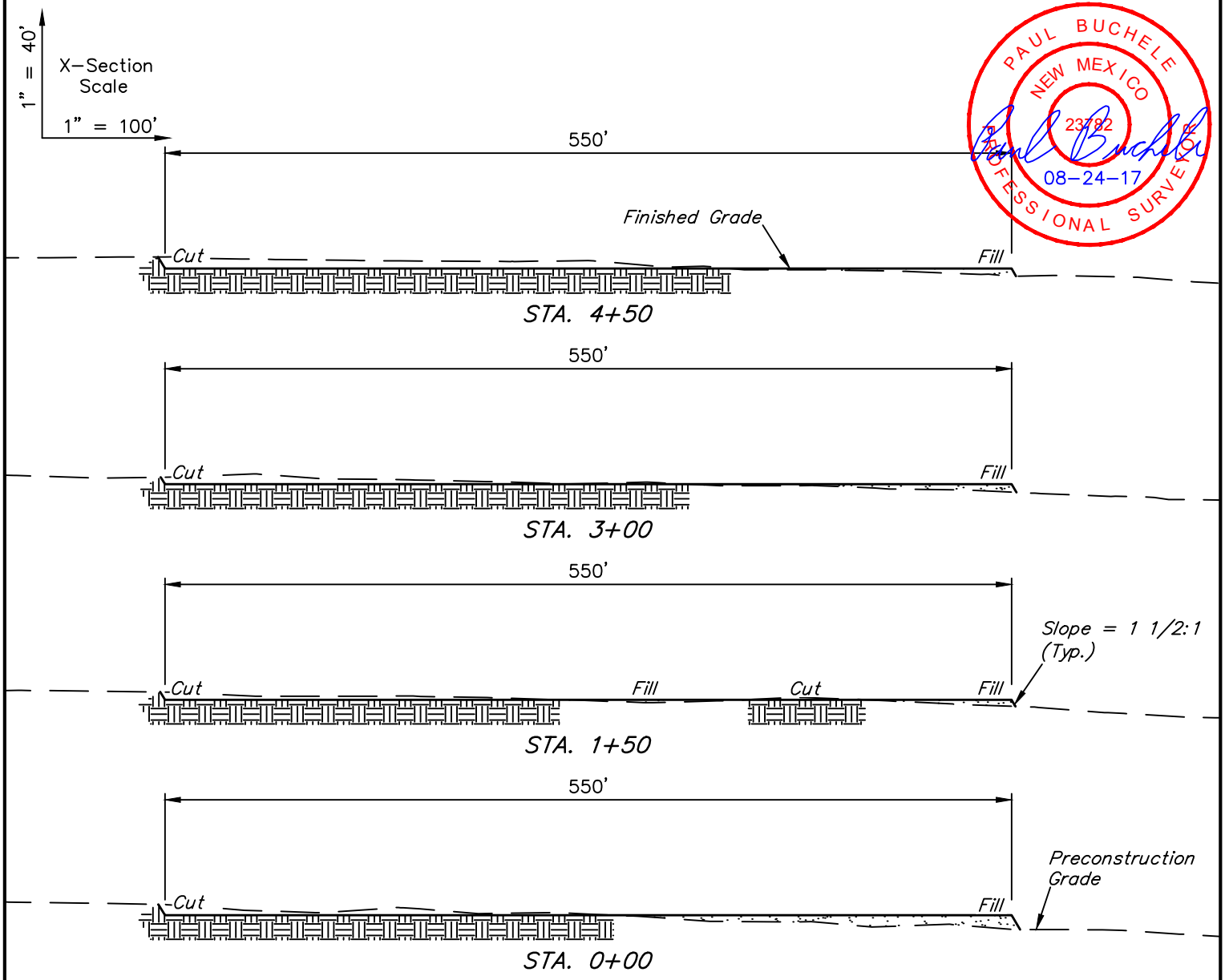
- Contours shown at 2' intervals.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)
- Topsoil stockpile to be seeded in place prior to reclamation.

CIMAREX ENERGY CO.

RED HILLS UNIT 33 ZONE 2 WEST CTB
E 1/2 NW 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

SURVEYED BY	C.J., A.H., P.R.	05-04-17	**SCALE**
DRAWN BY	S.F.	06-02-17	1" = 80'
LOCATION LAYOUT			**EXHIBIT F**



PAUL BUCHELE NEW MEXICO 23782 PROFESSIONAL SURVEYOR 08-24-17

APPROXIMATE EARTHWOR□ □UANTITIES	
(4") TOPSOIL STRIPPING	3,120 Cu. Yds.
REMAINING LOCATION	4,790 Cu. Yds.
TOTAL CUT	**7,910 Cu. Yds.**
□ILL	**4,790 Cu. Yds.**
EXCESS MATERIAL	3,120 Cu. Yds.
TOPSOIL	3,120 Cu. Yds.
EXCESS UNBALANCE (After Interim Rehabilitation)	**0 Cu. Yds.**

APPROXIMATE SUR□ACE DISTURBANCE AREAS		
	DISTANCE	**ACRES**
WELL SITE DISTURBANCE	NA	±6.273
FLOW LINE CONNECTION AREA DISTURBANCE	NA	±0.436
30' WIDE ACCESS ROAD "A" R-O-W DISTURBANCE	±79.97'	±0.055
30' WIDE ACCESS ROAD "B" R-O-W DISTURBANCE	±79.85'	±0.055
30' WIDE POWER LINE R-O-W DISTURBANCE	±1,563.59'	±1.077
TOTAL		±7.896

REV: 1 08-24-17 C.I. (RE-ROUTE)

NOTES:
- Fill quantity includes 5% for compaction.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)

CIMAREX ENERGY CO.

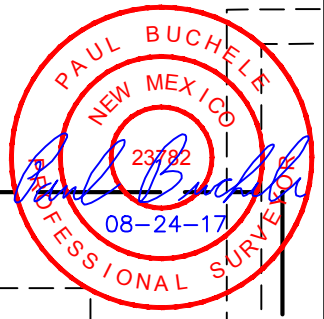
RED HILLS UNIT 33 ZONE 2 WEST CTB
E 1/2 NW 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

SURVEYED BY	C.J., A.H., P.R.	05-04-17	**SCALE**
DRAWN BY	S.F.	06-02-17	AS SHOWN

TYPICAL CROSS SECTIONS **EXHIBIT F**



750' X 650' Archaeological Survey Boundary

Topsoil Stockpile

Proposed Flow Line Connection Area

N

Prevailing Winds

Proposed Access Road "B"

Proposed Access Road "A"

Proposed Access Road For the Red Hills Unit E2E2 Well Pad

REV: 1 08-24-17 C.I. (ACCESS ROAD RE-ROUTE, FLOW LINE CONNECTION AREA MOVE)

NOTES:

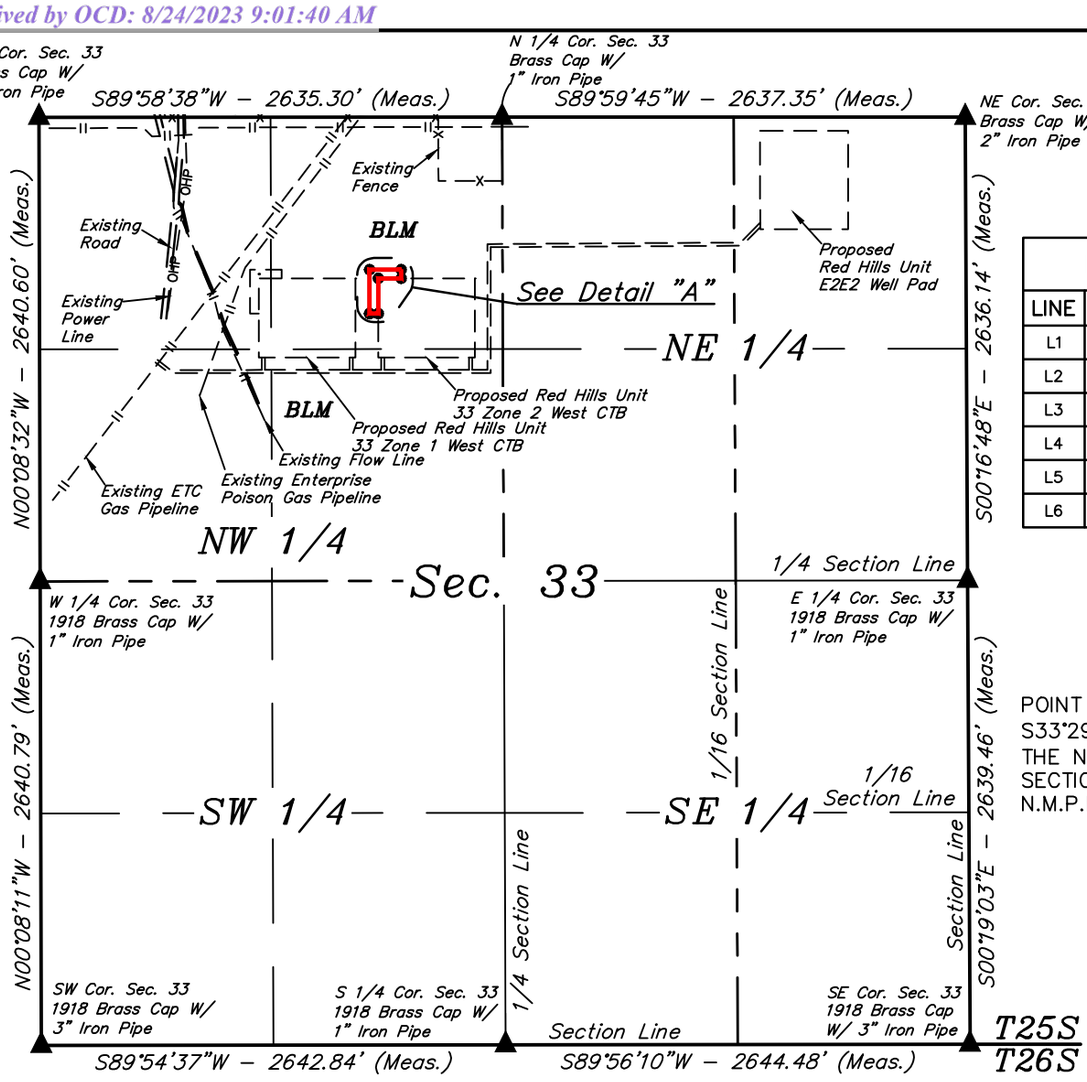
CIMAREX ENERGY CO.

RED HILLS UNIT 33 ZONE 2 WEST CTB
E 1/2 NW 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

SURVEYED BY	C.J., A.H., P.R.	05-04-17	SCALE
DRAWN BY	S.F.	06-02-17	1" = 100'
ARCHAEOLOGICAL SURVEY BOUNDARY			EXHIBIT F

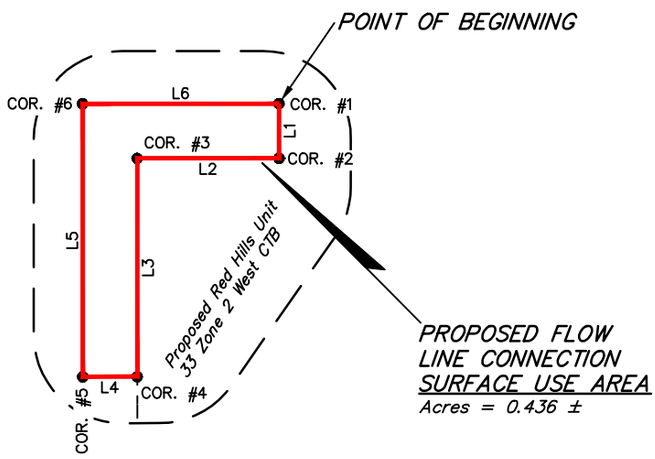


LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S00°01'43"E	50.00'
L2	S89°58'17"W	130.00'
L3	S00°01'43"E	200.00'
L4	S89°58'17"W	50.00'
L5	N00°01'43"W	250.00'
L6	N89°58'17"E	180.00'

POINT OF BEGINNING BEARS S33°29'31"W 1040.14' FROM THE NORTH 1/4 CORNER OF SECTION 33, T25S, R33E, N.M.P.M.

FLOW LINE CONNECTION SURFACE USE AREA DESCRIPTION

BEGINNING AT A POINT IN THE NE 1/4 NW 1/4 OF SECTION 33, T25S, R33E, N.M.P.M., WHICH BEARS S33°29'31"W 1040.14' FROM THE NORTH 1/4 CORNER OF SAID SECTION 33, THENCE S00°01'43"E 50.00'; THENCE S89°58'17"W 130.00'; THENCE S00°01'43"E 200.00'; THENCE S89°58'17"W 50.00'; THENCE N00°01'43"W 250.00'; THENCE N89°58'17"E 180.00' TO THE POINT OF BEGINNING. CONTAINS 0.436 ACRES MORE OR LESS.



CERTIFICATE
THIS IS TO CERTIFY THAT THIS EASEMENT PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

STATE OF NEW MEXICO
23782
PROFESSIONAL SURVEYOR
08-24-17

1000' 500' 0' 1000'

▲ = SECTION CORNERS LOCATED.

FILE: 61747-A

Sheet 1 of 2

REV: 1 08-24-17 C.I. (FLOW LINE CONNECTION SUA MOVE)

NOTES:
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

N

CIMAREX ENERGY CO.

RED HILLS UNIT 33 ZONE 2 WEST CTB
SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.J., A.H., P.R.	05-04-17	SCALE
DRAWN BY	B.D.H.	06-07-17	1" = 1000'

FLOW LINE CONNECTION EXHIBIT F

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

BEGINNING AT THE INTERSECTION OF J-1/ORLA ROAD AND PIPELINE ROAD TO THE EAST (LOCATED AT NAD83 LATITUDE N32.064964° AND LONGITUDE W103.674262°) PROCEED IN AN EASTERLY DIRECTION APPROXIMATELY 5.0 TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST; TURN LEFT AND PROCEED IN A NORTHWESTERLY, THEN NORTHEASTERLY, THEN NORTHWESTERLY DIRECTION APPROXIMATELY 2.1 MILES TO THE BEGINNING OF THE PROPOSED ACCESS FOR THE RED HILLS UNIT E2E2; FOLLOW ROAD FLAGS IN A SOUTHEASTERLY DIRECTION THEN EASTERLY DIRECTION FOR APPROXIMATELY 1,809' TO THE PROPOSED ACCESS "A"; FOLLOW ROAD FLAGS IN A NORTHERLY DIRECTION APPROXIMATELY 80' TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM THE INTERSECTION OF J-1/ORLA ROAD AND PIPELINE ROAD TO THE SOUTH (LOCATED AT NAD83 LATITUDE N32.064964° AND LONGITUDE W103.674262°) TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 7.5 MILES.

REV: 01	08-24-17	L.W.	(ROAD RE-ROUTE)

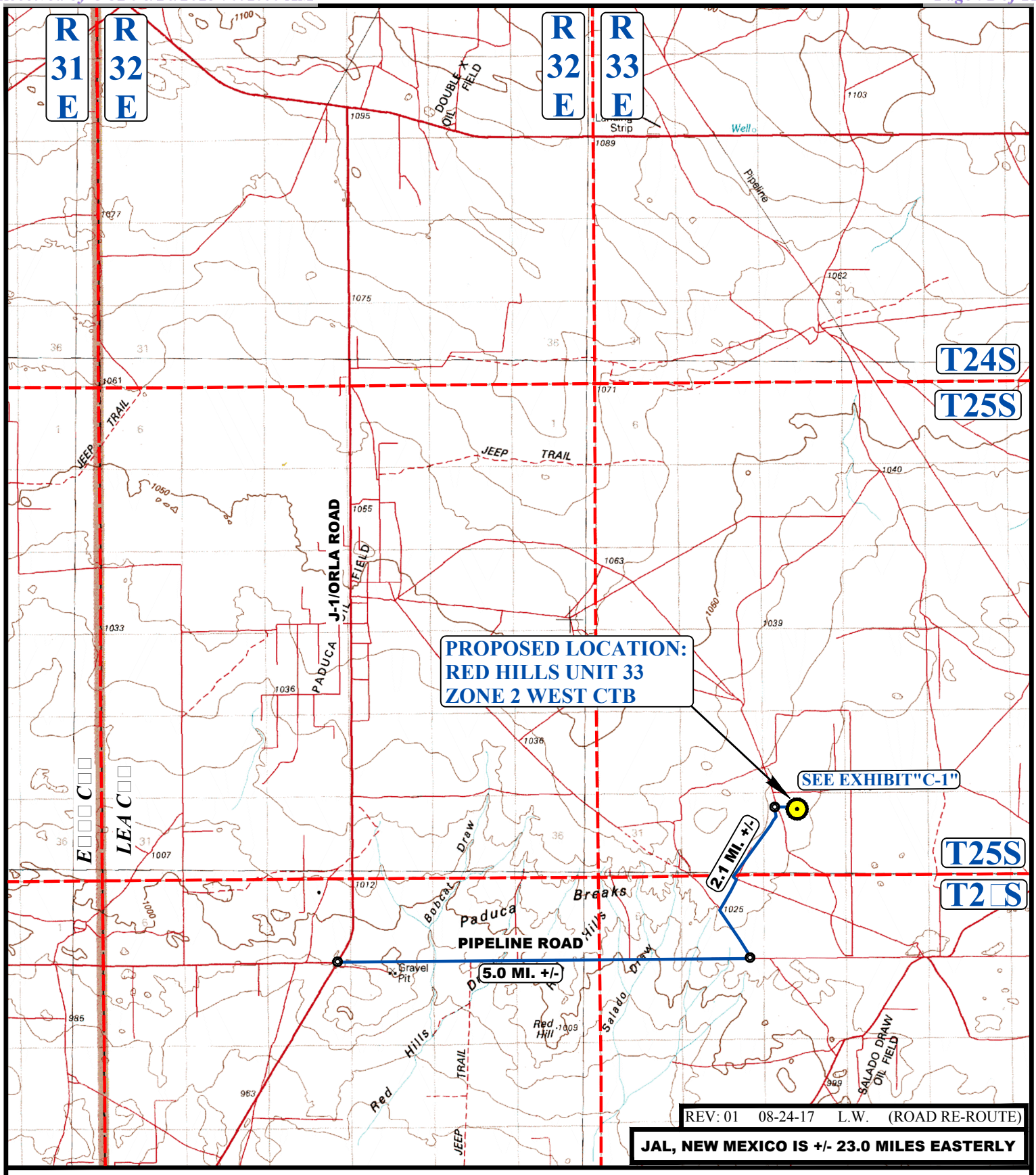
CIMAREX ENERGY CO.

RED HILLS UNIT 33 ZONE 2 WEST CTB
E 1/2 NW 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

SURVEYED BY	C.J., A.H.	05-05-17	
DRAWN BY			

ROAD DESCRIPTION **EXHIBIT F**



REV: 01 08-24-17 L.W. (ROAD RE-ROUTE)

JAL, NEW MEXICO IS +/- 23.0 MILES EASTERLY

LEGEND:

⊙ **PROPOSED LOCATION**

N

CIMAREX ENERGY CO.

RED HILLS UNIT 33 ZONE 2 WEST CTB
E 1/2 NW 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.J., A.H.	05-05-17	SCALE
DRAWN BY	V.L.D.V.L.D.	05-26-17	1 : 100,000

PUBLIC ACCESS ROAD MAP **EXHIBIT B**

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

Cimarex Red Hills Unit 77H
Surface Use Plan

Upon approval of the Application for Permit to Drill (APD) the following surface use plan of operations will be followed and carried out. The surface use plan outlines the proposed surface disturbance. If any other disturbance is needed after the APD is approved, a BLM sundry notice or right of way application will be submitted for approval prior to any additional surface disturbance.

Existing Roads

- Directions to location - Exhibit A.
- Public access route - Exhibit B.
- Existing access road for the proposed project. Please see Exhibit B and C.
- Cimarex Energy will:
  - Improve and/or maintain existing road(s) condition the same as or better than before the operations began.
  - Provide plans for improvement and /or maintenance of existing roads if requested.
  - Repair or replace damaged or deteriorated structures as needed. Including cattle guards and culverts.
  - Prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or other events.
  - Obtain written BLM approval prior to the application of surfactants, binding agents, or other dust suppression chemicals on the roadways.
- The maximum width of the driving surface will be 18'. 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.

New or Reconstructed Access Roads

Roads have been previously approved in the Red Hills Unit 21H APD.

Well Radius Map

Please see Exhibit E for wells within one mile or proposed well SHL and BHL.

Proposed or Existing Production Facility

An existing battery will be utilized for the project if the well is productive.

- Red Hills Unit West CTB 1 & West CTB 2
  - Battery Pad diagram - Exhibit F
  - Battery will not require an expansion in order to accomodate additional production equipment for the project.
  - Battery Pad location previously approved
    - APD: Reed Hills Unit 16H.

Gas Pipeline Specifications

- No new gas pipelines are required for this project.

Salt Water Disposal Specifications

- No new SWD pipelines are required for this project.

Power Lines

Power ROW has been submitted.

Cimarex Red Hills Unit 77H
Surface Use Plan

Well Site Location

- Proposed well pad/location layout - Exhibit J.
- Proposed Rig layout - Exhibit K
    - The rig layout, including V-door and flare line may change depending on rig availability. The pad dimensions and orientation will remain the same. No additional disturbance is anticipated if a rig layout change is necessary to accommodate the drilling rig. If additional disturbance is required a sundry notice will be submitted to the BLM for approval.
    - Mud pits in the closed circulation system will be steel pits and the cuttings will be stored in the steel containment pits.
    - Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- Archeological boundary - Exhibit L
- Multi well pad: Red Hills Unit 21H 74H-86H
- Pad Size: 500 x 560 with a 100' x 250' satellite pad.
- Construction Material
    - If possible, native caliche will be obtained from the excavation of drill site. The primary way of obtaining caliche will be by "turning over" the location. This means caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2,400 cu yds is the max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:
        - The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
        - An approximate 120' x 120' area is used within the proposed well site to remove caliche.
        - Subsoil is removed and piled alongside the 120' x 120' area within the pad site.
        - When caliche is found, material will be stockpiled within the pad site to build the location and road.
        - Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
        - Once well is drilled, the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in Exhibit J - Layout Diagram.
        - In the event that no caliche is found onsite, caliche will be hauled in from BLM-approved caliche pit in Sec 3 26S 33E or .
    - Mud pits in the closed circulation system will be steel pits and the cuttings will be stored in steel containment pits.
- Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements. Exhibit P: Interim Reclamation Diagram.
- There are no known dwellings within 1.5 miles of this location.

Bulklines Pipelines

Bulkline Route has been previosuly approved in the Red Hills Unit 21H APD.

Water Resources

No temporary fresh water pipelines are proposed for this project.

Methods of Handling Waste

- Drilling fluids, produced oil, and water from the well during drilling and completion operations will be stored safely and disposed of properly in a NMOCD approved disposal facility.
- Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility. All trash on and around well site will be collected for disposal.
- Human waste and grey water will be contained and disposed of properly at a state approved disposal site.
- After drilling and completion operations, trash, chemicals, salts, frac sand and other waste will be removed and disposed of properly at a state approved disposal site.
- The well will be drilled utilizing a closed loop system. Drill cuttings will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

Cimarex Red Hills Unit 77H
Surface Use Plan

Ancillary Facilities
No camps or airstrips to be constructed.

Interim and Final Reclamation

- Rehabilitation of the location will start in a timely manner after all proposed drilling wells have been drilled from the pad or if drilling operations have ceased as outlined below:
  - No approved or pending drill permits for wells located on the drill pad
  - No drilling activity for 5 years from the drill pad
- Surfacing materials will be removed and returned to a mineral pit or recycled to repair or build roads and well pads.
- 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.
- Exhibit P illustrates the proposed Surface Reclamation plans after cessation of drilling operations as outlined above.
  - The areas of the location not essential to production facilities and operations will be reclaimed and seeded per BLM requirements.
- Operator will amend the surface reclamation plan if well is a dry hole and/or a single well pad.

Surface Ownership

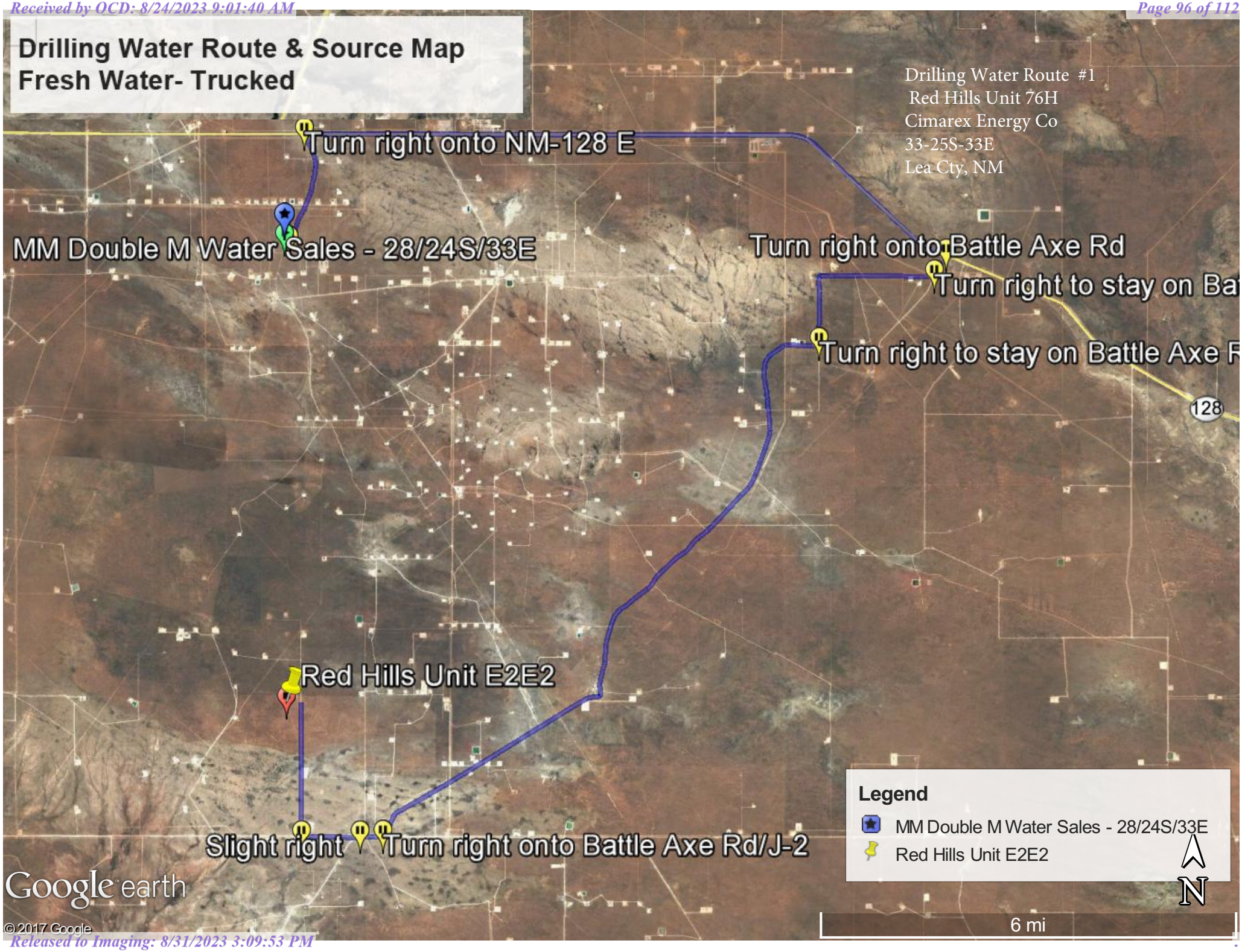
- The wellsite is on surface owned by BLM.
- A copy of Surface Use Agreement has been given to the surface owner.
- The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.

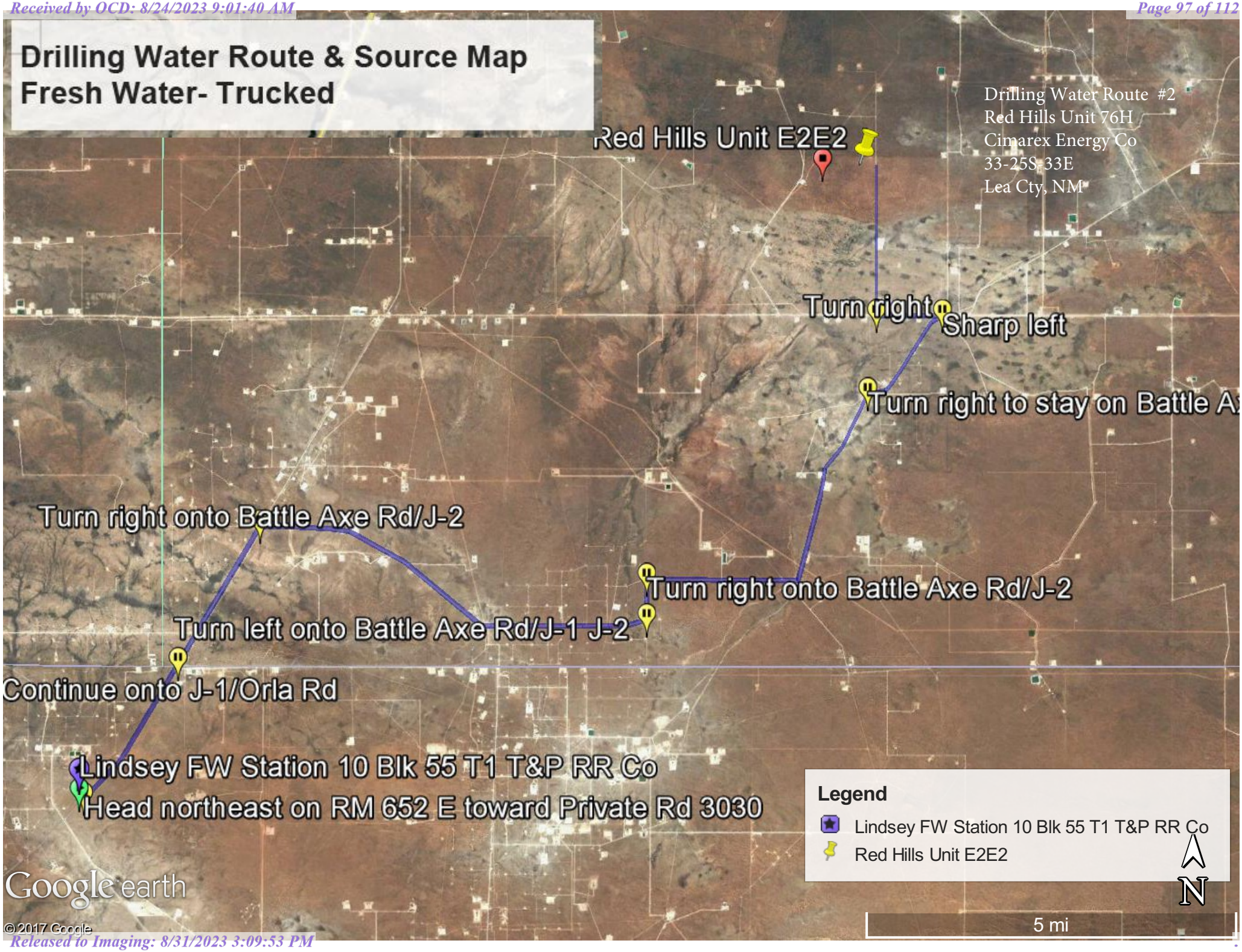
Cultural Resource Survey - Archeology

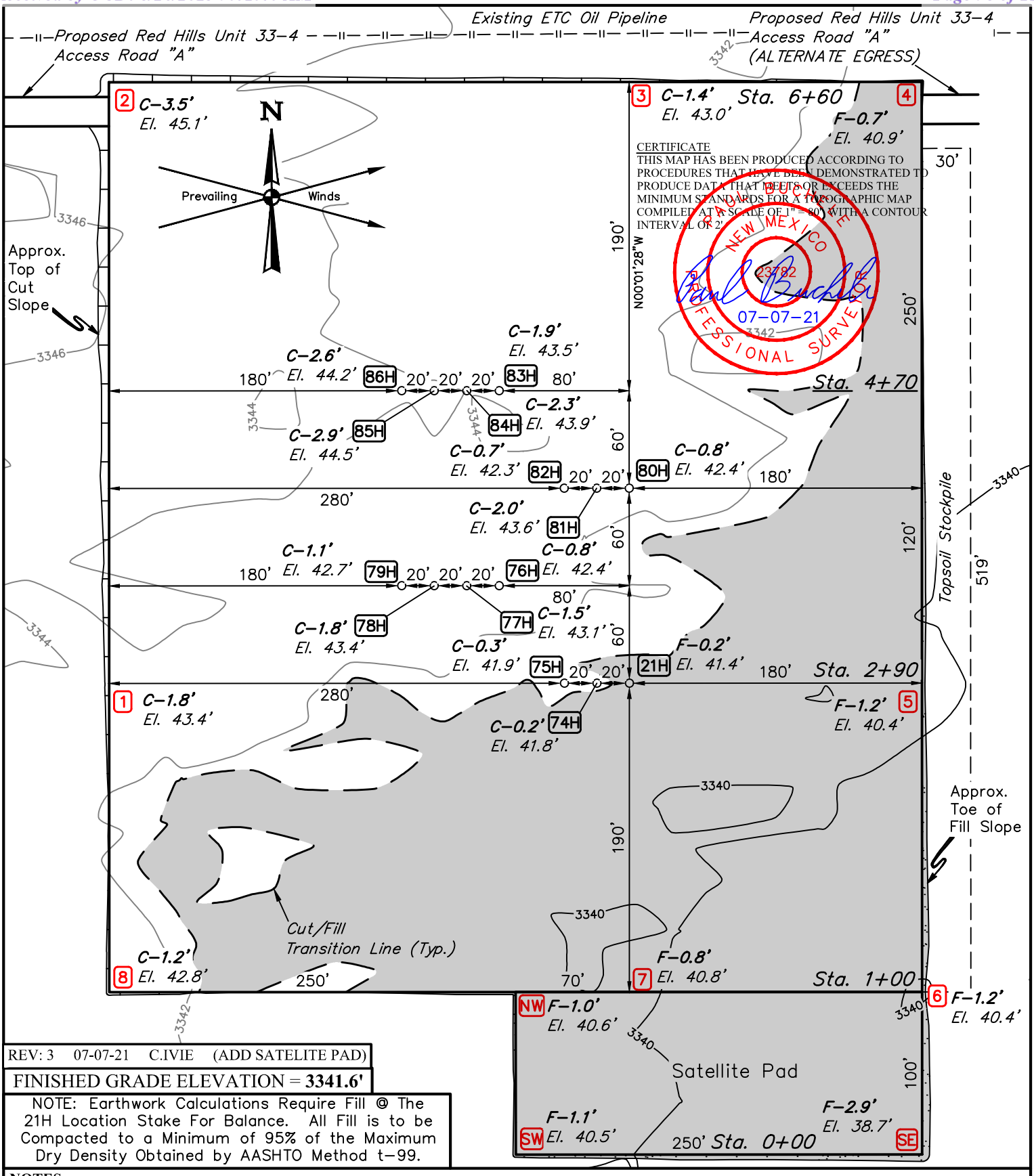
- Cultural Resources Survey will be conducted for the entire project as proposed in the APD and submitted to the BLM for review and approval.

On Site Notes and Information
Onsite Date: 3/20/2018
BLM Personnel on site: Jeff Robertson
Cimarex Energy personnel on site: Barry Hunt
Pertinent information from onsite:

Drilling Water Route & Source Map
Fresh Water- Trucked




Drilling Water Route & Source Map
Fresh Water- Trucked
Drilling Water Route #2
Red Hills Unit 76H
Cimarex Energy Co
33-25S-33E
Lea Cty, NM
Red Hills Unit E2E2
Turn right
Sharp left
Turn right to stay on Battle A
Turn right onto Battle Axe Rd/J-2
Turn right onto Battle Axe Rd/J-2
Turn left onto Battle Axe Rd/J-1 J-2
Continue onto J-1/Orla Rd
Lindsey FW Station 10 Blk 55 T1 T&P RR Co
Head northeast on RM 652 E toward Private Rd 3030
Legend
Lindsey FW Station 10 Blk 55 T1 T&P RR Co
Red Hills Unit E2E2
N
5 mi
Google earth
© 2017 Google



REV: 3 07-07-21 C.IVIE (ADD SATELITE PAD)

FINISHED GRADE ELEVATION = **3341.6'**

NOTE: Earthwork Calculations Require Fill @ The 21H Location Stake For Balance. All Fill is to be Compacted to a Minimum of 95% of the Maximum Dry Density Obtained by AASHTO Method t-99.

NOTES:

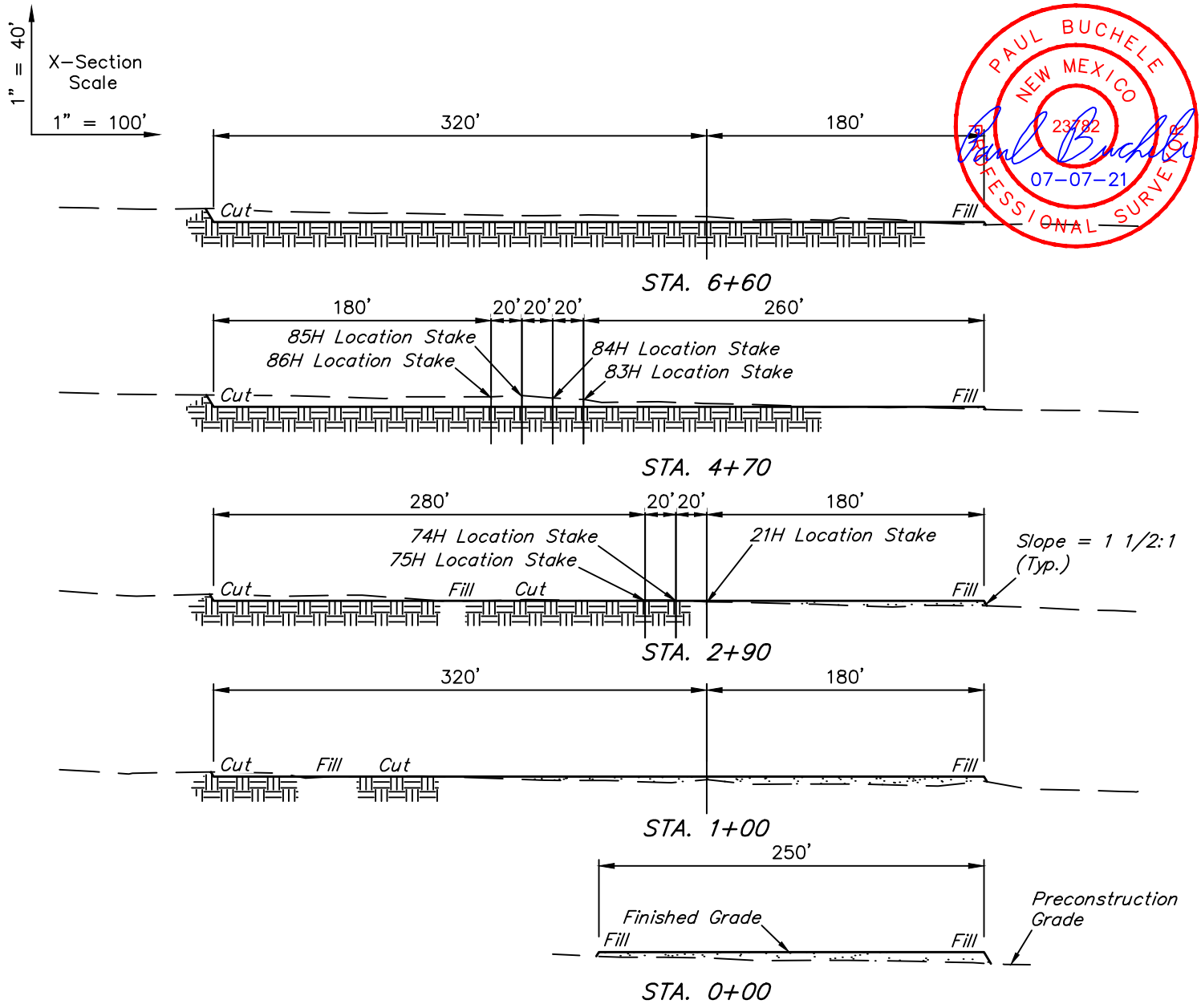
- Contours shown at 2' intervals.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)
- Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.

CIMAREX ENERGY CO.

RED HILLS UNIT E2E2
NE 1/4 NE 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.J., A.H.	05-05-17	SCALE
DRAWN BY	S.F.	06-07-17	1" = 80'
LOCATION LAYOUT			EXHIBIT D

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



PAUL BUCHELE NEW MEXICO 23782 07-07-21 PROFESSIONAL SURVEYOR

APPROXIMATE EARTHWORK QUANTITIES	
(4") TOPSOIL STRIPPING	3,840 Cu. Yds.
REMAINING LOCATION	7,720 Cu. Yds.
TOTAL CUT	**11,560 Cu. Yds.**
FILL	**7,720 Cu. Yds.**
EXCESS MATERIAL	3,840 Cu. Yds.
TOPSOIL	3,840 Cu. Yds.
EXCESS UNBALANCE (After Interim Rehabilitation)	**0 Cu. Yds.**

APPROXIMATE SURFACE DISTURBANCE AREAS	
	ACRES
WELL SITE DISTURBANCE	±7.472

REV: 3 07-07-21 C.IVIE (ADD SATELITE PAD)

NOTES:

- Fill quantity includes 5% for compaction.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)

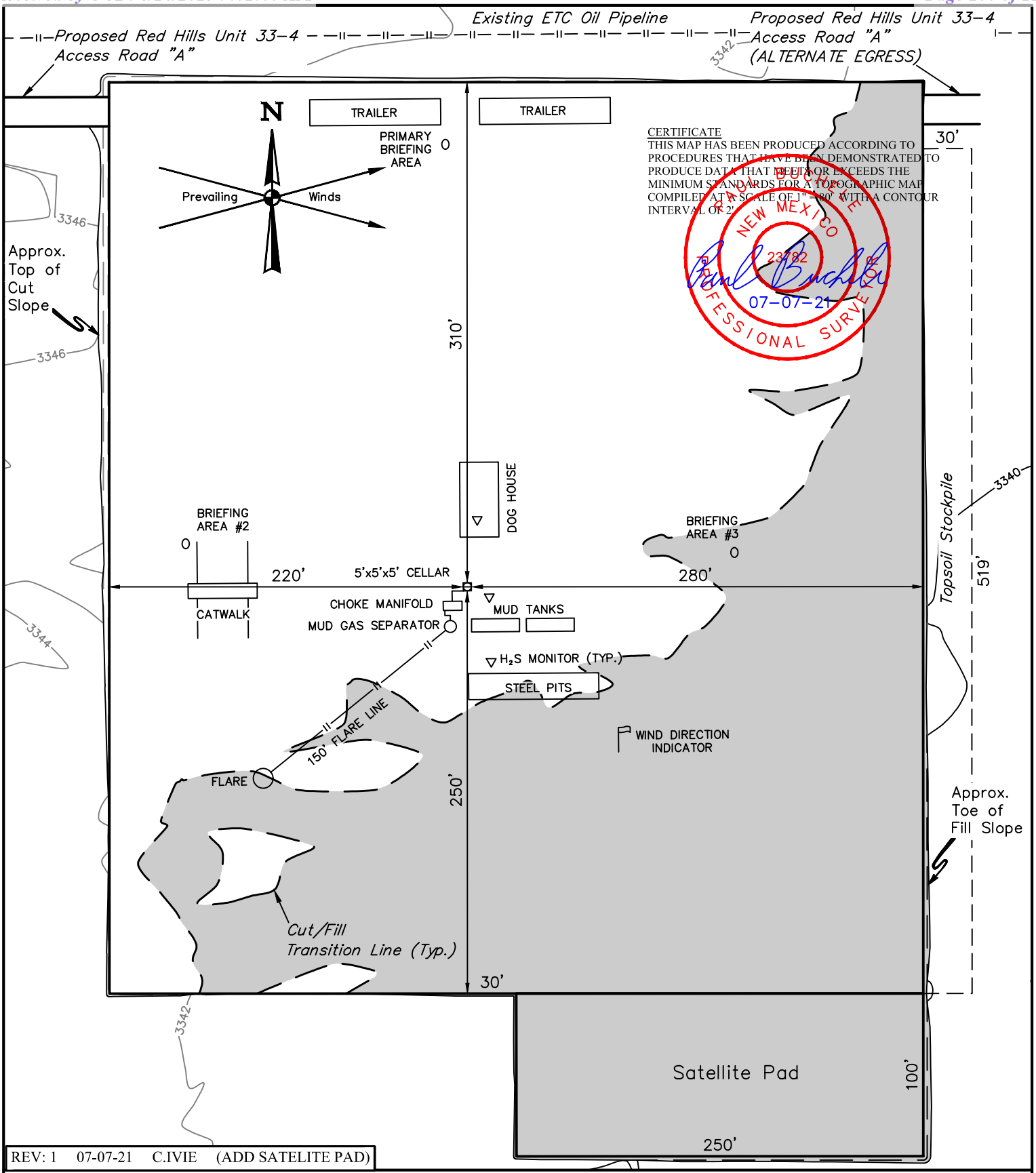
CIMAREX ENERGY CO.

RED HILLS UNIT E2E2
NE 1/4 NE 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

SURVEYED BY	C.J., A.H.	05-05-17	SCALE
DRAWN BY	S.F.	06-07-17	AS SHOWN

TYPICAL CROSS SECTIONS **EXHIBIT D**



REV: 1 07-07-21 C.IVIE (ADD SATELITE PAD)

NOTES:

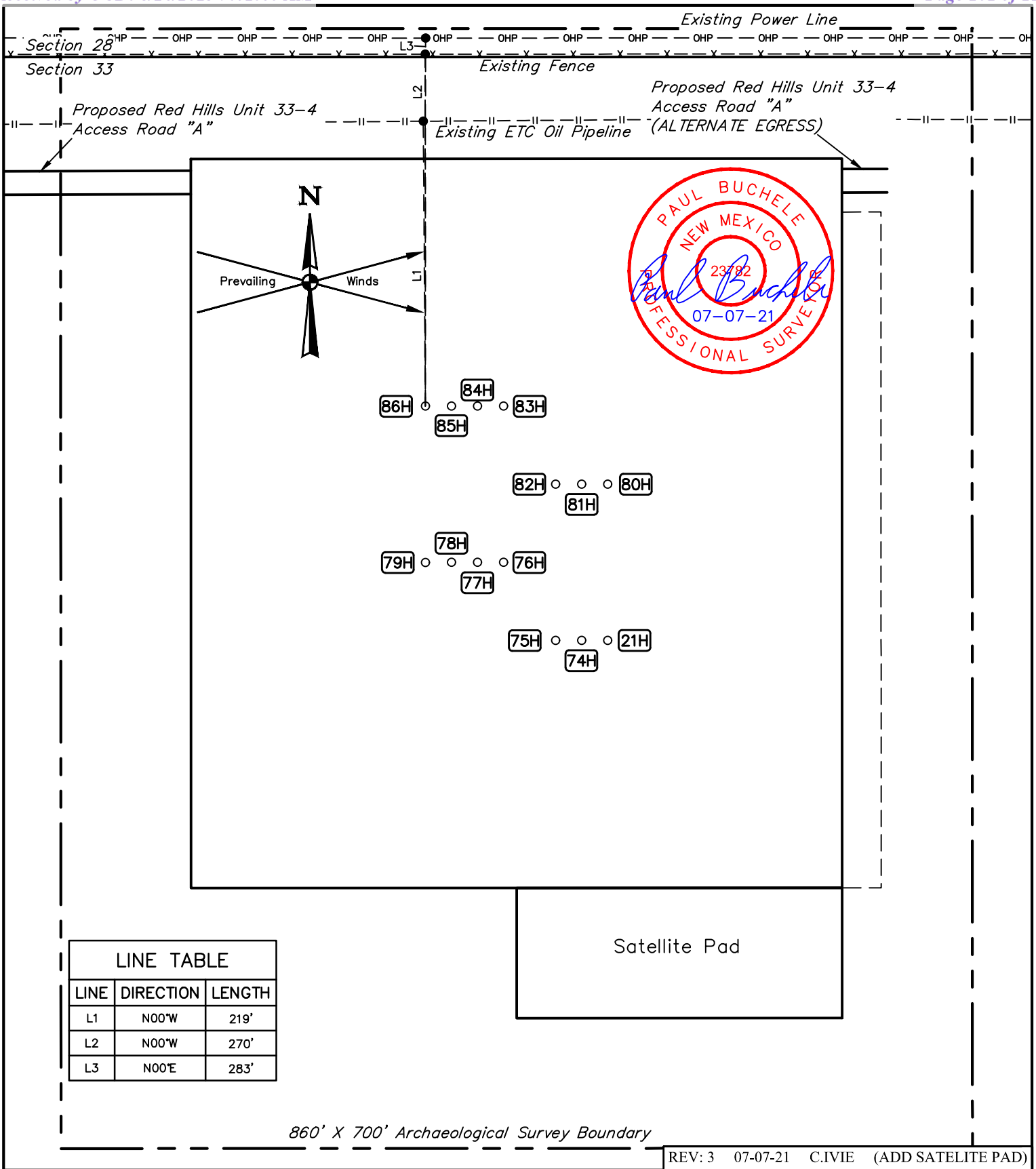
- Contours shown at 2' intervals.

CIMAREX ENERGY CO.

RED HILLS UNIT 77H
388' FNL 949' FEL
NE 1/4 NE 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.J., A.H.	05-05-17	SCALE
DRAWN BY	T.S.	02-13-20	1" = 80'
TYPICAL RIG LAYOUT			EXHIBIT D

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N00°W	219'
L2	N00°W	270'
L3	N00°E	283'

REV: 3 07-07-21 C.IVIE (ADD SATELITE PAD)

NOTES:

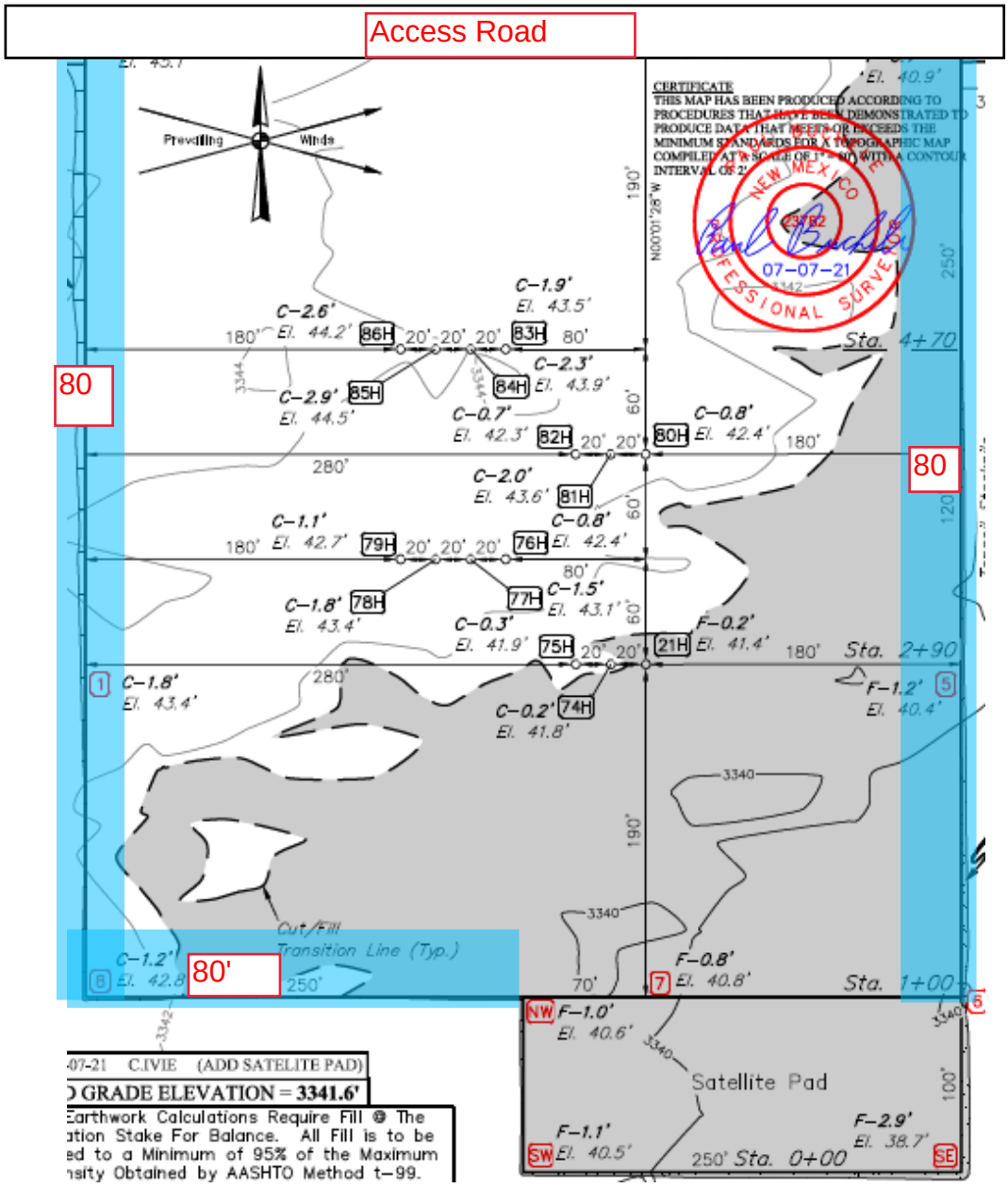
CIMAREX ENERGY CO.

RED HILLS UNIT E2E2
NE 1/4 NE 1/4, SECTION 33, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

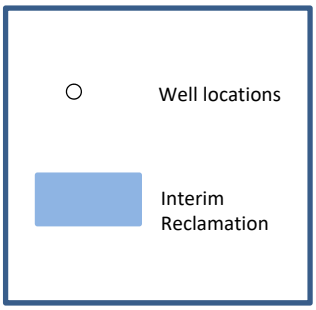
UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

SURVEYED BY	C.J., A.H.	05-05-17	SCALE
DRAWN BY	S.F.	06-07-17	1" = 100'
ARCHAEOLOGICAL SURVEY BOUNDARY			EXHIBIT D



Pad will be reclaimed after cessation of drilling operations.
Please see Surface Use Plan for pad reclamation plans.



N

Exhibit P
Interim Reclamation Diagram
Red Hills Unit E2E2 pad
Cimarex Energy Co.
Sec 33-25S-33E
Lea Cty, NM

SELF-CERTIFICATION STATEMENT
SURFACE OWNER SURFACE USE PLAN

Federal Lease Number: NMNM5792

Well Name & Number: Red Hills Unit

I hereby certify to the Authorized Officer of the Bureau of Land Management that I have reached one of the following agreements with the Surface Owner; after failure of my good-faith effort to come to an agreement of any kind with the Surface Owner, have provided a Federal Bond and will provide evidence of service of such Federal Bond to the Surface Owner:

1. _____ I have a signed access agreement to enter the leased lands;

2. _____ I have a signed waiver from the Surface Owner;

3. __X__ I have entered into an agreement regarding compensation to the Surface Owner for damages for loss of crops and tangible improvements;

4. _____ Because I have been unable to reach either 1, 2 or 3 with the Surface Owner, I have obtained a Federal Bond to cover loss of crops and damages to tangible improvements and served the surface owner with a copy of the surface owner with a copy of the Federal Bond.

Cimarex Energy Co.
Name of Operator or Agent for Operator

Signature of Operator

7/16/2020
Date

ACCESS AGREEMENT
Section 33-25S-33E
Lea County, NM

"Surface Owner name", ("Surface Owner"), has granted authority to Cimarex Energy Co. ("Cimarex") to enter onto the below described lands for all purposes necessary allowing Cimarex to proceed with its required permitting with the Bureau of Land Management.

Well name & # Red Hills Unit
Section 33, 25S-33E
Lea County, NM

The Surface Owner and Cimarex have also entered into negotiations for a Surface Damage Agreement to allow permanent access to the proposed location.

Executed this 16th day of July 2020

BY: _____
Jim Suchecki
Surface Landman

SELF-CERTIFICATION STATEMENT
SURFACE OWNER SURFACE USE PLAN

Federal Lease Number: NMNM5792

Well Name & Number: Red Hills Unit

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Cimarex Energy Co.
Name of Operator or Agent for Operator

Signature of Operator

7/16/2020
Date

ACCESS AGREEMENT
Section 33-25S-33E
Lea County, NM

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Section 33, 25S-33E
Lea County, NM

The Surface Owner and Cimarex have also entered into negotiations for a Surface Damage Agreement to allow permanent access to the proposed location.

Executed this 16th day of July 2020

BY: _____
Jim Suchecki
Surface Landman

AFMSS
U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

PWD Data Report
08/23/2023

APD ID: 10400059629 **Submission Date:** 04/22/2021

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Well Type: OIL WELL **Well Work Type:** Drill

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined

Would you like to utilize Lined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit

Pit liner description:

Pit liner manufacturers

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule

Lined pit reclamation description:

Lined pit reclamation

Leak detection system description:

Leak detection system

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Lined pit Monitor description:

Lined pit Monitor

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information

Section 3 - Unlined

Would you like to utilize Unlined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD disturbance (acres): **PWD surface owner:**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule

Unlined pit reclamation description:

Unlined pit reclamation

Unlined pit Monitor description:

Unlined pit Monitor

Do you propose to put the produced water to beneficial use?

Beneficial use user

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic

State

Unlined Produced Water Pit Estimated

Unlined pit: do you have a reclamation bond for the pit?

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information

Section 4 -

Would you like to utilize Injection PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection

Underground Injection Control (UIC) Permit?

UIC Permit

Section 5 - Surface

Would you like to utilize Surface Discharge PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 -

Would you like to utilize Other PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RED HILLS UNIT **Well Number:** 77H

Other PWD type description:

Other PWD type

Have other regulatory requirements been met?

Other regulatory requirements

AFMSS
U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data
08/23/2023

APD ID: 10400059629
Submission Date: 04/22/2021
Operator Name: CIMAREX ENERGY COMPANY
Well Name: RED HILLS UNIT
Well Number: 77H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Bond

Federal/Indian APD: FED

BLM Bond number: NMB001188

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 257093

CONDITIONS

Operator:	OGRID:
CIMAREX ENERGY CO. 6001 Deauville Blvd Midland, TX 79706	215099
	Action Number: 257093
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	8/31/2023
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	8/31/2023
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	8/31/2023
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	8/31/2023
pkautz	IF ON ANY STRING CEMENT DOES NOT CIRCULATE, A RCBL MUST BE RUN ON THAT STRING OF CASING.	8/31/2023