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.
NMNM117116

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.
KLEIN 33 FEDERAL COM
11H
40358

2. Name of Operator
CIMAREX ENERGY COMPANY

9. API Well No.
30-015-46437

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
600 N. Marienfeld St., Suite 600 Midland TX 79701	(432)620-1936	PURPLE SAGE WOLFCAMP GAS / PUR

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

At surface LOT 1 / 131 FSL / 750 FEL / LAT 32.000374 / LONG -104.188665

At proposed prod. zone NENE / 280 FNL / 380 FEL / LAT 32.019589 / LONG -104.187614

11. Sec. T. R. M. or Blk. and Survey or Area
SEC 33 / T26S / R27E / NMP

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

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
131 feet	1364.69	446.91

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
20 feet	9159 feet / 15909 feet	FED: NMB001188

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3213 feet	08/15/2019	30 days

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
(Electronic Submission)	Terri Stathem / Ph: (432)620-1936	06/23/2019

Title
Mngr Regulatory Compliance

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	10/25/2019

Title	Office
Assistant Field Manager Lands & Minerals	CARLSBAD

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.

APPROVED WITH CONDITIONS

11-8-19

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 10/25/2019

RWP

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Cimarex Energy Company**
LEASE NO.:	**NMNM117116**
WELL NAME & NO.:	**Klein 33 Federal Com 11H**
SURFACE HOLE FOOTAGE:	**131'/S & 750'/E**
BOTTOM HOLE FOOTAGE	**280'/N & 380'/E**
LOCATION:	**Section 33, T.26 S., R.27 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	○ Medium	◉ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **400** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface. **Excess cement calculates to 10%, additional cement might be required.**

    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 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.

2. The **9-5/8** inch intermediate casing shall be set at approximately **2,000** feet. 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 or potash.**

❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **7** inch production casing is:

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification. **Excess cement calculates to 22%, additional cement might be required.**

4. The minimum required fill of cement behind the **4-1/2** inch production liner is:

- Cement should tie-back **100 feet** into the previous casing. Operator shall provide method of verification. **Excess cement calculates to negative 2%, additional cement will be required.**

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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9 5/8"** intermediate casing shoe shall be **3000 (3M)** psi.

4. 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 **7"** production 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 OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

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
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

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.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 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 intergrity 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 Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

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 OOGO2.III.A.2.i 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 when specified), 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 plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 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 Onshore Order No. 2.

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.
JJP10222019

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy Company of CO
LEASE NO.:	NMNM117116
LOCATION:	Section 33, T. 26 S., R. 27 E.
COUNTY:	Eddy County, New Mexico

Legal Description:

Klein 33 Federal Com 11H
Surface Hole Location: 131' FSL & 750' FEL, Section 33, T. 26 S., R. 27 E.
Bottom Hole Location: 280' FNL & 380' FEL, Section 25, T. 24 S, R 27 E.

Klein 33 Federal Com 12H
Surface Hole Location: 131' FSL & 770' FEL, Section 33, T. 26 S., R. 27 E.
Bottom Hole Location: 280' FNL & 1027' FEL, Section 28, T. 26 S, R 27 E.

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Cave/Karst:

Drilling Mitigation

Federal regulations and standard Conditions of Approval applied to all APDs require that adequate measures are taken to prevent contamination to the environment. Due to the extreme sensitivity of the cave and karst resources in this project area, the following additional Conditions of Approval will be added to this APD.

To prevent cave and karst resource contamination the following will be required:

- Closed loop system using steel tanks - all fluids and cuttings will be hauled off-site and disposed of properly at an authorized site
- Rotary drilling with fresh water where cave or karst features are expected to prevent contamination of freshwater aquifers.
- Directional drilling is only allowed at depths greater than 100 feet below the cave occurrence zone to prevent additional impacts resulting from directional drilling.
- Lost circulation zones will be logged and reported in the drilling report so BLM can assess the situation and work with the operator on corrective actions.
- Additional drilling, casing, and cementing procedures to protect cave zones and fresh water aquifers. See drilling COAs.

Production Mitigation

In order to mitigate the impacts from production activities and due to the nature of karst terrane, the following Conditions of Approval will apply to this APD:

- Tank battery locations and facilities will be bermed and lined with a 20 mil thick permanent liner that has a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.
- Development and implementation of a leak detection system to provide an early alert to operators when a leak has occurred.
- Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Residual and Cumulative Mitigation

The operator will perform annual pressure monitoring on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be taken to correct the problem to the BLM's approval.

Plugging and Abandonment Mitigation

Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Watershed:

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

VI. CONSTRUCTION

A. NOTIFICATION

When construction operations are being conducted on these wells, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

C. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

AFMSS

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

Application Data Report

10/28/2019

APD ID: 10400042333 **Submission Date:** 06/23/2019

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400042333 **Tie to previous NOS?** N **Submission Date:** 06/23/2019

BLM Office: CARLSBAD **User:** Terri Stathem **Title:** Mngr Regulatory Compliance

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM117116 **Lease Acres:** 1364.69

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO **APD Operator:** CIMAREX ENERGY COMPANY

Operator letter of designation:

Operator Info

Operator Organization Name: CIMAREX ENERGY COMPANY

Operator Address: 600 N. Marienfeld St., Suite 600 **Zip:** 79701

Operator PO Box:

Operator City: Midland **State:** TX

Operator Phone: (432)620-1936

Operator Internet Address: tstathem@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: KLEIN 33 FEDERAL COM **Well Number:** 11H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** PURPLE SAGE WOLFCAMP GAS **Pool Name:** PURPLE SAGE WOLFCAMP GAS

Is the proposed well in an area containing other mineral resources? USEABLE WATER

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

Is the proposed well in an area containing other mineral resources? USEABLE WATER

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

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** KLEIN 33 FEDERAL COM **Number:** 10H-14H

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

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 16.9 Miles **Distance to nearest well:** 20 FT **Distance to lease line:** 131 FT

Reservoir well spacing assigned acres Measurement: 446.91 Acres

Well plat: Klein_33_Federal_Com_11H_C102_Plat_20190620121008.pdf

Well work start Date: 08/15/2019 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: **Reference Datum:**

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
SHL Leg #1	131	FSL	750	FEL	26S	27E	33	Lot 1	32.000374	-104.188665	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 117116	3213	0	0	
KOP Leg #1	130	FSL	380	FEL	26S	27E	33	Lot 1	32.000372	-104.187472	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 117116	-5411	8643	8624	
PPP Leg	1328	FNL	382	FEL	26S	27E	33	Aliquot NENE	32.016706	-104.1875	EDDY	NEW MEXI	NEW MEXI	F	NMNM 114350	-594	14860	9155	

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

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
PPP Leg #1	1331	FSL	387	FEL	26S	27E	28	Aliquot NESE	32.009447	-104.187539	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-5931	12220	9144	
PPP Leg #1	330	FSL	380	FEL	26S	27E	33	Lot 1	32.00921	-104.187472	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 117116	-5591	8827	8804	
PPP Leg #1	0	FSL	390	FEL	26S	27E	28	Aliquot SESE	32.005806	-104.187511	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 114350	-5926	10895	9139	
EXIT Leg #1	330	FNL	380	FEL	26S	27E	28	Aliquot NENE	32.019451	-104.187612	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 114350	-5946	15909	9159	
BHL Leg #1	280	FNL	380	FEL	26S	27E	28	Aliquot NENE	32.019589	-104.187614	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 114350	-5946	15909	9159	

AFMSS

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

Drilling Plan Data Report

10/28/2019

APD ID: 10400042333

Submission Date: 06/23/2019

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM

Well Number: 11H

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Highlighted data reflects the most recent changes

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Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER	3213	50	50		USEABLE WATER	N
2	TOP SALT	1860	1353	1353		NONE	N
3	BOTTOM SALT	1251	1962	1962		NONE	N
4	DELAWARE	1080	2133	2133		NONE	N
5	CHERRY CANYON	83	3130	3130		NONE	N
6	BRUSHY CANYON	-1077	4290	4290		NATURAL GAS,OIL	N
7	BRUSHY CANYON LOWER	-2328	5541	5541		NATURAL GAS,OIL	N
8	BONE SPRING	-2569	5782	5782		NATURAL GAS,OIL	N
9	BONE SPRING A ZONE	-2676	5889	5889	SHALE	NATURAL GAS,OIL	N
10	BONE SPRING C ZONE	-3115	6328	6328	SHALE	NATURAL GAS,OIL	N
11	BONE SPRING 1ST	-3455	6668	6668	SANDSTONE	NATURAL GAS,OIL	N
12	BONE SPRING 2ND	-4067	7280	7280	SANDSTONE	NATURAL GAS,OIL	N
13	BONE SPRING 3RD	-5256	8469	8469	SANDSTONE	NATURAL GAS,OIL	N
14	WOLFCAMP	-5591	8804	8804		NATURAL GAS,OIL	Y

Section 2 - Blowout Prevention

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

Pressure Rating (PSI): 2M **Rating Depth:** 400

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 50% 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. 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 50% 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:

Klein_33_Federal_Com_11H_Choke_2M3M_20190621075500.pdf

BOP Diagram Attachment:

Klein_33_Federal_Com_11H_BOP_2M_20190621075509.pdf

Pressure Rating (PSI): 3M **Rating Depth:** 2113

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 50% 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. 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

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

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:

Klein_33_Federal_Com_11H_Choke_2M3M_20190621075944.pdf

BOP Diagram Attachment:

Klein_33_Federal_Com_11H_BOP_3M_20190621075954.pdf

Pressure Rating (PSI): 5M **Rating Depth:** 15909

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 50% 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. 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 50% 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:

Klein_33_Federal_Com_11H_Choke_5M_20190621080334.pdf

BOP Diagram Attachment:

Klein_33_Federal_Com_11H_BOP_5M_20190621080429.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

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	400	0	400			400	H-40	48	ST&C	4.29	10.02	BUOY	16.7	BUOY	16.7
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2113	0	2113			2113	J-55	36	ST&C	1.8	3.14	BUOY	5.18	BUOY	5.18
3	PRODUCTION	8.75	7.0	NEW	API	N	0	8643	0	8643			8643	L-80	26	LT&C	1.34	1.79	BUOY	2.15	BUOY	2.15
4	PRODUCTION	8.75	7.0	NEW	API	N	8643	9637	8643	9159			994	L-80	26	BUTT	1.26	1.69	BUOY	45.02	BUOY	45.02
5	COMPLETION SYSTEM	6	4.5	NEW	API	N	8643	15909	8643	9159			7266	P-110	11.6	BUTT	1.47	2.08	BUOY	61.31	BUOY	61.31

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Klein_33_Federal_Com_11H_Spec_Sheet_for_H40Hybrid_surf_casing_20190621081455.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Klein_33_Federal_Com_11H_Casing_Assumptions_20190621081916.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

Casing Attachments

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Klein_33_Federal_Com_11H_Casing_Assumptions_20190621085637.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Klein_33_Federal_Com_11H_Casing_Assumptions_20190621090056.pdf

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Klein_33_Federal_Com_11H_Casing_Assumptions_20190621090158.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

Casing Attachments

Casing ID: 5 **String Type:** COMPLETION SYSTEM

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Klein_33_Federal_Com_11H_Casing_Assumptions_20190621090245.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	400	60	1.75	13.5	104	50	Class C	Bentonite + Calcium Chloride + LCM
SURFACE	Tail		0	400	195	1.34	14.8	260	25	Class C	LCM
INTERMEDIATE	Lead		0	2113	403	1.88	12.9	757	50	35:65 (Poz:C)	Salt + Bentonite
INTERMEDIATE	Tail		0	2113	124	1.34	14.8	165	25	Class C	LCM
PRODUCTION	Lead		0	8643	347	3.64	10.3	1261	25	Tuned Light	LCM
PRODUCTION	Tail		0	8643	144	1.3	14.2	187	25	50:50 (Poz:H)	Salt + Bentonite + Fluid Loss + Dispersant + SMS
PRODUCTION	Lead		8643	9637	347	3.64	10.3	1261	25	Tuned Light	LCM
PRODUCTION	Tail		8643	9637	144	1.3	14.2	187	25	50:50 (Poz:H)	Salt + Bentonite + Fluid Loss + Dispersant + SMS
COMPLETION SYSTEM	Lead		8643	15909	456	1.3	14.2	592	10	50:50 (Poz:H)	Salt + Bentonite + Fluid Loss + Dispersant + SMS

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

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
0	400	SPUD MUD	7.8	8.3							
9637	15909	OIL-BASED MUD	10.3	10.8							
400	2113	SALT SATURATED	9.7	10.2							
2113	9637	OTHER : FW/Cut Brine	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:

CNL,DS,GR

Coring operation description for the well:

N/A

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5143 **Anticipated Surface Pressure:** 3128.02

Anticipated Bottom Hole Temperature(F): 162

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 attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Klein_33_Federal_Com_11H_H2S_Plan_20190621095537.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Klein_33_Federal_Com_11H_AC_Report_20190621095803.pdf

Klein_33_Federal_Com_11H_Directional_Plan_20190621095811.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Klein_33_Federal_Com_11H_Drilling_plan_20190621095854.pdf

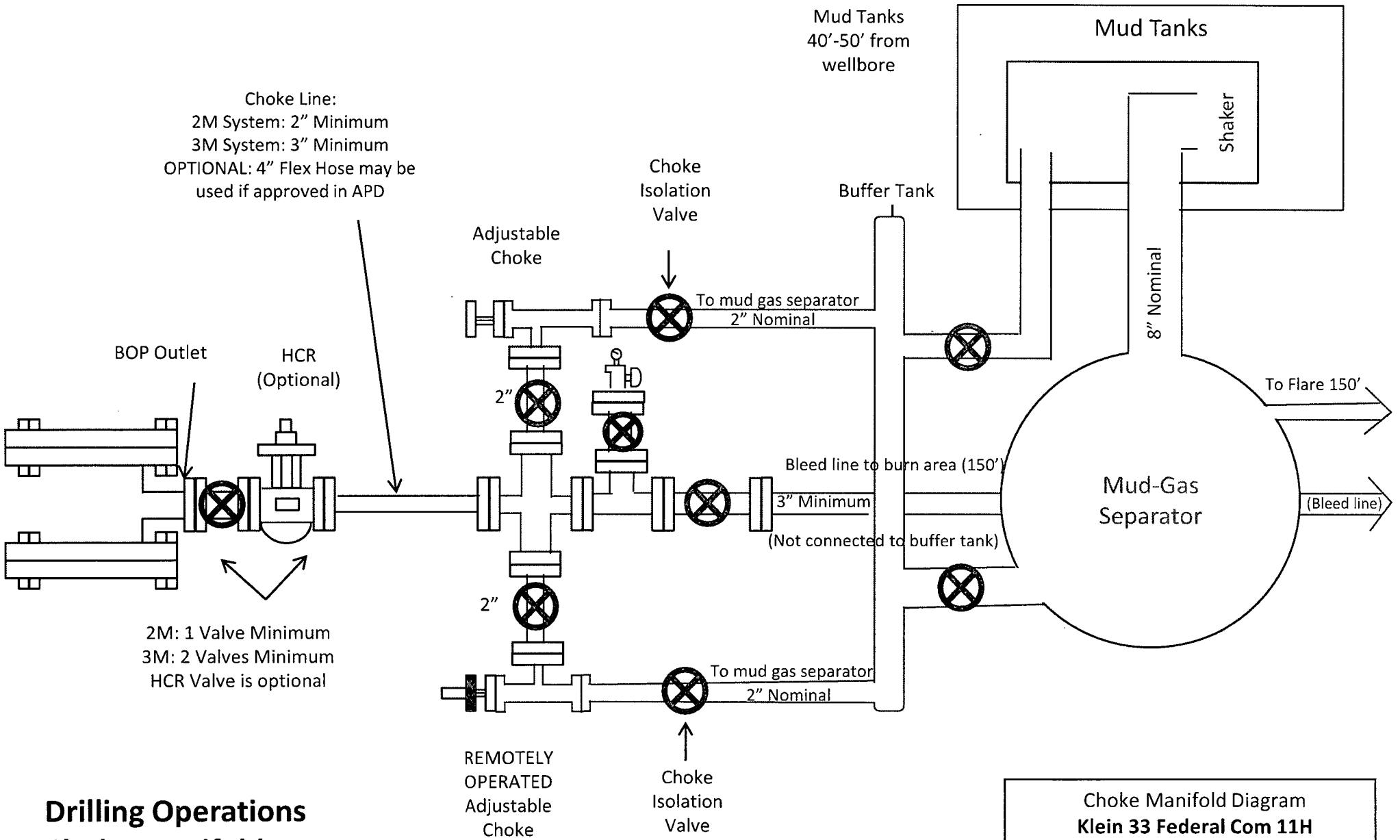
Klein_33_Federal_Com_11H_Flex_Hose_20190621095920.pdf

Klein_33_Federal_Com_11H_Gas_Capture_Plan_20190621122037.pdf

Other Variance attachment:

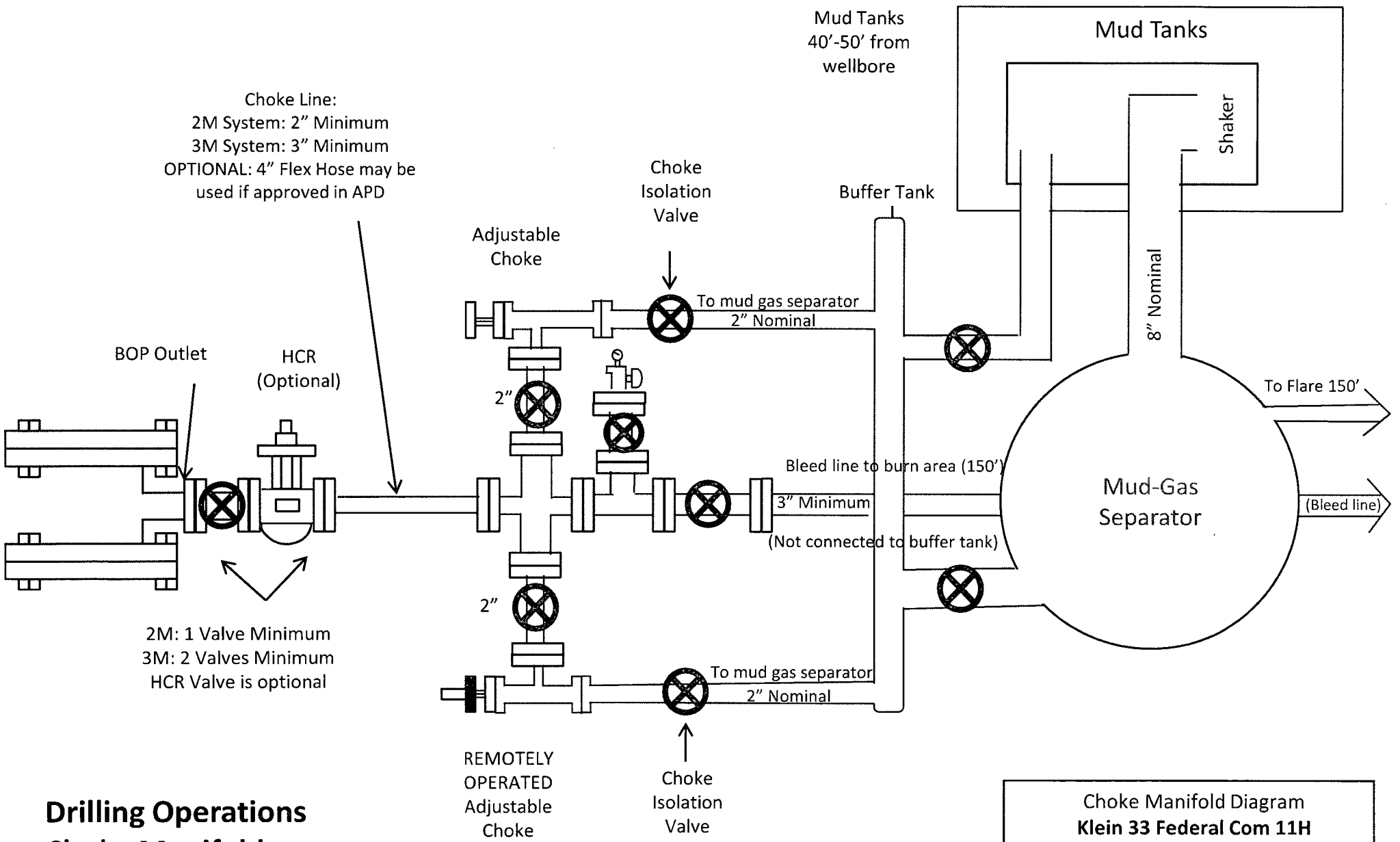
Klein_33_Federal_Com_11H_Multibowl_Procedure_20190621122057.pdf

Klein_33_Federal_Com_11H_Multibowl_Wellhead_20190621122106.pdf



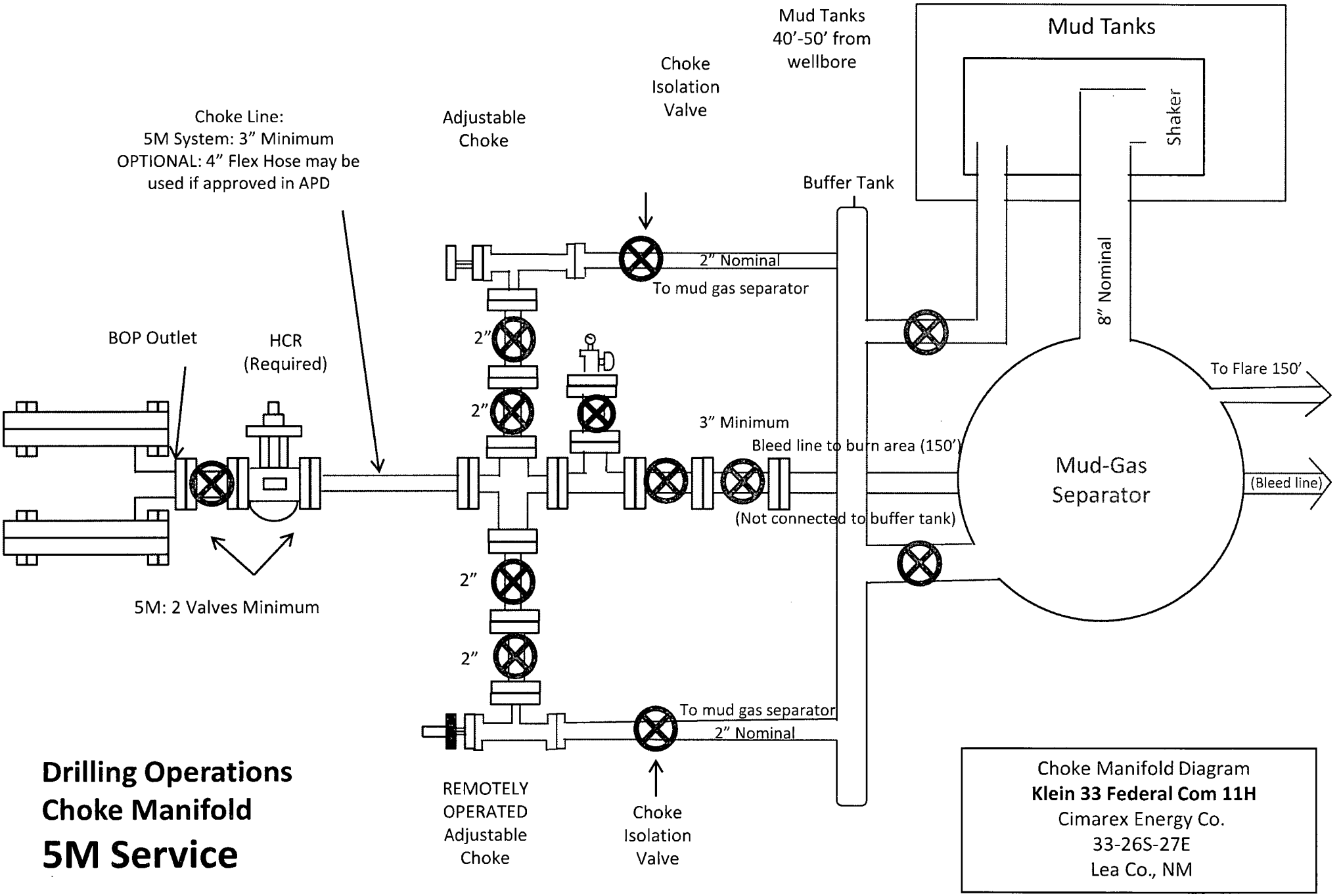
Drilling Operations
Choke Manifold
2M/3M Service

Choke Manifold Diagram
Klein 33 Federal Com 11H
Cimarex Energy Co.
33-26S-27E
Eddy Co., NM



Drilling Operations
Choke Manifold
2M/3M Service

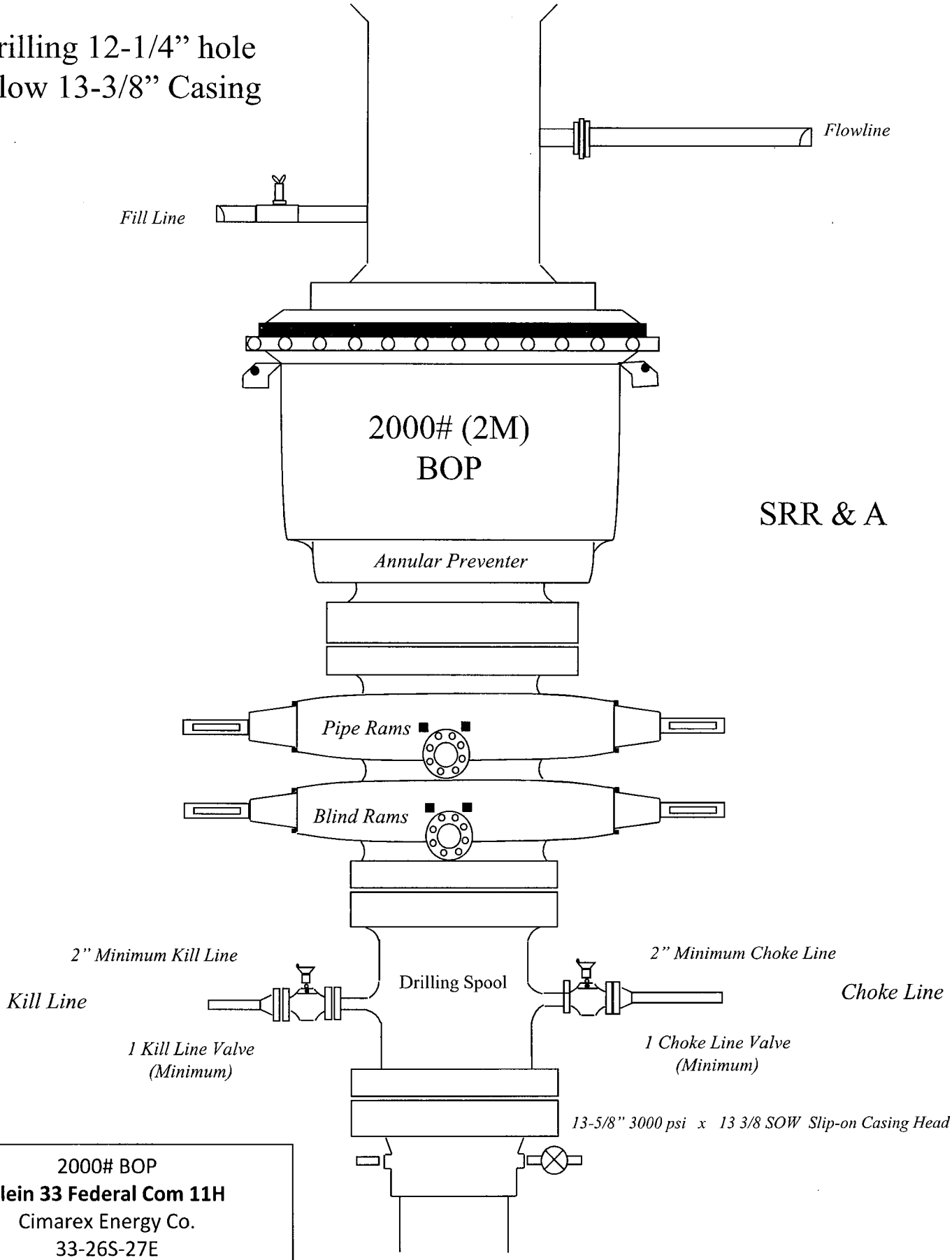
Choke Manifold Diagram
Klein 33 Federal Com 11H
Cimarex Energy Co.
33-26S-27E
Eddy Co., NM



Drilling Operations
Choke Manifold
5M Service

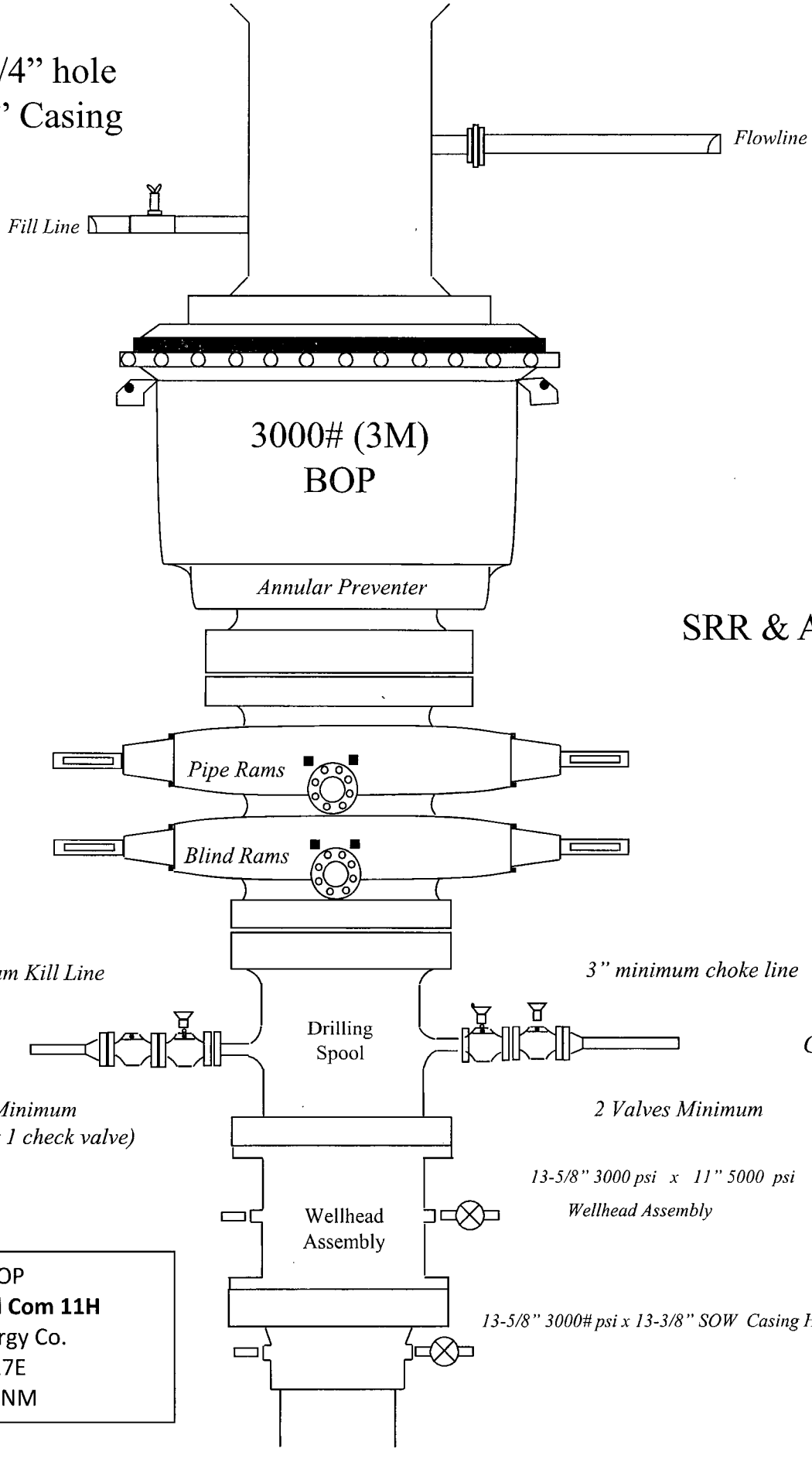
Choke Manifold Diagram
Klein 33 Federal Com 11H
Cimarex Energy Co.
33-26S-27E
Lea Co., NM

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



2000# BOP
Klein 33 Federal Com 11H
Cimarex Energy Co.
33-26S-27E
Eddy Co., NM

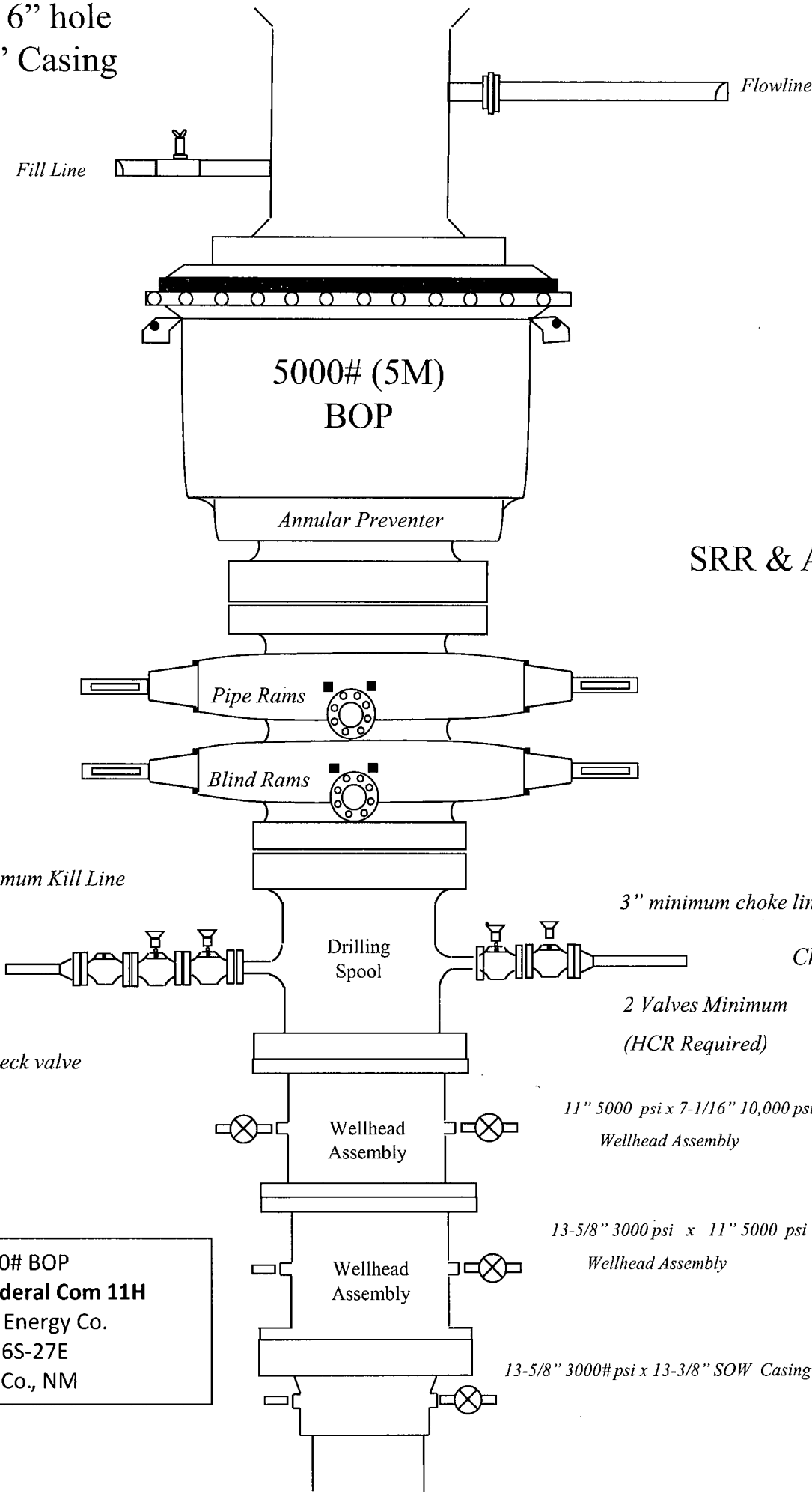
Drilling 8-3/4" hole
below 9-5/8" Casing



SRR & A

3000# BOP
Klein 33 Federal Com 11H
Cimarex Energy Co.
33-26S-27E
Eddy Co., NM

Drilling 6" hole
below 7" Casing



SRR & A

2000# BOP
Klein 33 Federal Com 11H
Cimarex Energy Co.
33-26S-27E
Eddy Co., NM

Print

EVRAZ

Klein 33 Federal Com 11H
Surface Casing Spec Sheet

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:	-		

Klein 33 Federal Com 11H

Casing Assumptions

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
17 1/2	0	400	400	13-3/8"	48.00	H-40	ST&C	4.29	10.02
12 1/4	0	2113	2113	9-5/8"	36.00	J-55	ST&C	1.80	3.14
8 3/4	0	8643	8643	7"	26.00	L-80	LT&C	1.34	1.79
8 3/4	8643	9637	9159	7"	26.00	L-80	BT&C	1.26	1.69
6	8643	15909	9159	4-1/2"	11.60	P-110	BT&C	1.47	2.08
						BLM Minimum Safety Factor		1.125	1

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

Klein 33 Federal Com 11H

Casing Assumptions

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Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst
17 1/2	0	400	400	13-3/8"	48.00	H-40	ST&C	4.29	10.02
12 1/4	0	2113	2113	9-5/8"	36.00	J-55	ST&C	1.80	3.14
8 3/4	0	8643	8643	7"	26.00	L-80	LT&C	1.34	1.79
8 3/4	8643	9637	9159	7"	26.00	L-80	BT&C	1.26	1.69
6	8643	15909	9159	4-1/2"	11.60	P-110	BT&C	1.47	2.08
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Klein 33 Federal Com 11H

Casing Assumptions

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12 1/4	0	2113	2113	9-5/8"	36.00	J-55	ST&C	1.80	3.14
8 3/4	0	8643	8643	7"	26.00	L-80	LT&C	1.34	1.79
8 3/4	8643	9637	9159	7"	26.00	L-80	BT&C	1.26	1.69
6	8643	15909	9159	4-1/2"	11.60	P-110	BT&C	1.47	2.08
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Klein 33 Federal Com 11H

Casing Assumptions

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12 1/4	0	2113	2113	9-5/8"	36.00	J-55	ST&C	1.80	3.14
8 3/4	0	8643	8643	7"	26.00	L-80	LT&C	1.34	1.79
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Klein 33 Federal Com 11H

Casing Assumptions

2. Casing Program

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17 1/2	0	400	400	13-3/8"	48.00	H-40	ST&C	4.29	10.02
12 1/4	0	2113	2113	9-5/8"	36.00	J-55	ST&C	1.80	3.14
8 3/4	0	8643	8643	7"	26.00	L-80	LT&C	1.34	1.79
8 3/4	8643	9637	9159	7"	26.00	L-80	BT&C	1.26	1.69
6	8643	15909	9159	4-1/2"	11.60	P-110	BT&C	1.47	2.08
						BLM Minimum Safety Factor		1.125	1

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

Hydrogen Sulfide Drilling Operations Plan
Klein 33 Federal Com 11H
Cimarex Energy Co.
UL: H, Sec. 33, 26S, 27E
Eddy 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
Klein 33 Federal Com 11H
Cimarex Energy Co.
UL: H, Sec. 33, 26S, 27E
Eddy 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
Klein 33 Federal Com 11H
Cimarex Energy Co.
UL: H, Sec. 33, 26S, 27E
Eddy Co., NM

Company Office			
Cimarex Energy Co. Office and After-Hours Menu		800-969-4789	
Key Personnel			
Name	**Title**	**Office**	**Mobile**
Larry Seigrist	Direc. of Drilling & Comp.Manag.	432-620-1934	580-243-8485
Charlie Pritchard	Drilling Manager	432-620-1975	432-238-7084
Spencer Bryant	Drilling Superintendent	432-620-7885	580-603-2611
Justin Taylor	Construction Superintendent		432-215-1283

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 Klein 33 Federal Com #11H Rev1 RM 14Jun19 Anti-Collision Summary Report

Analysis Date-24hr Time:	June 17, 2019 - 09:08	**Analysis Method:**	3D Least Distance
Client:	Cimarex Energy	**Reference Trajectory:**	Cimarex Klein 33 Federal Com #11H Rev1 RM 14Jun19 (Def Plan)
Field:	NM Eddy County (NAD 83)	**Depth Interval:**	Every 10.00 Measured Depth (ft)
Structure:	Cimarex Klein 33 Federal Com #11H	**Rule Set:**	NAL Procedure: D&M AntiCollision Standard S002
Slot:	New Slot	**Min Pts:**	All local minima indicated.
Well:	Klein 33 Federal Com #11H	**Version / Patch:**	2.10.760.0
Borehole:	Klein 33 Federal Com #11H	**Database \ Project:**	US1153APP452.dir.slb.com\drilling-NM Eddy County 2.10
Scan MD Range:	0.00ft ~ 15909.18ft		

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: Not performed!

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 Klein 33 Federal Com #12H Rev1 RM 14Jun19 (Def Plan)												Fail Minor	
	20.01	16.50	17.51	3.50	N/A	MAS = 5.03 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	20.00	16.50	17.50	3.50	N/A	MAS = 5.03 (m)	26.00	26.00				WRP	
	20.00	20.00	5.83	0.00	1.50	OSF1.50	1920.00	1920.00		OSF<1.50		Enter Minor	
	20.00	20.76	5.33	-0.76	1.44	OSF1.50	2000.00	2000.00				MinPt-CtCt	
	20.02	20.83	5.30	-0.81	1.43	OSF1.50	2010.00	2010.00				MINPT-O-EOU	
	20.07	20.90	5.30	-0.83	1.43	OSF1.50	2020.00	2020.00				MinPts	
	21.10	21.32	6.05	-0.22	1.48	OSF1.50	2080.00	2080.00		OSF>1.50		Exit Minor	
	73.69	24.03	56.84	49.66	4.96	OSF1.50	2640.00	2639.94	OSF>5.00			Exit Alert	
	631.06	41.74	602.40	589.32	24.03	OSF1.50	6018.38	6000.00				MinPt-O-SF	
	647.01	69.72	599.70	577.29	14.38	OSF1.50	9650.00	9134.05				MinPt-CtCt	
	647.01	195.90	515.58	451.12	5.00	OSF1.50	14310.00	9152.63	OSF<5.00			Enter Alert	
	647.01	245.87	482.27	401.14	3.97	OSF1.50	15909.18	9159.00				MinPts	
Cimarex Klein 33 Federal Com #10H MWD 0ft:14089ft (Def Survey)												Pass	
	164.51	32.81	162.01	131.70	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	163.15	32.81	160.46	130.34	867.66	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	162.23	32.81	159.70	129.42	4390.96	MAS = 10.00 (m)	26.00	26.00				MINPT-O-EOU	
	150.88	32.81	145.61	118.07	53.65	MAS = 10.00 (m)	660.00	660.00				MinPts	
	150.93	32.81	145.52	118.12	50.99	MAS = 10.00 (m)	690.00	690.00				MINPT-O-EOU	
	158.63	32.81	151.15	125.82	31.37	MAS = 10.00 (m)	1170.00	1170.00				MINPT-O-EOU	
	156.25	32.81	146.17	123.45	20.28	MAS = 10.00 (m)	1760.00	1760.00				MinPts	
	156.36	32.81	146.09	123.55	19.82	MAS = 10.00 (m)	1800.00	1800.00				MINPT-O-EOU	
	152.48	32.81	138.88	119.67	13.51	MAS = 10.00 (m)	2640.00	2639.94				MinPts	
	152.98	32.81	139.26	120.17	13.41	MAS = 10.00 (m)	2870.00	2869.06				MinPts	
	154.82	32.81	140.91	122.01	13.35	MAS = 10.00 (m)	3090.00	3087.84				MinPt-O-SF	
	155.30	32.81	141.35	122.49	13.35	MAS = 10.00 (m)	3120.00	3117.68				MinPt-O-SF	
	163.96	32.81	149.32	131.15	13.30	MAS = 10.00 (m)	3530.00	3525.41				MinPt-O-SF	
	218.95	32.81	201.11	186.14	14.12	MAS = 10.00 (m)	4790.00	4778.42				MinPt-O-SF	
	219.84	32.81	201.94	187.03	14.12	MAS = 10.00 (m)	4810.00	4798.31				MinPt-O-SF	
	228.94	32.81	210.39	196.13	14.11	MAS = 10.00 (m)	5010.00	4997.20				MinPt-O-SF	
	234.86	32.81	215.90	202.05	14.12	MAS = 10.00 (m)	5130.00	5116.54				MinPt-O-SF	
	253.32	32.81	232.94	220.51	14.03	MAS = 10.00 (m)	5530.00	5514.32				MinPt-O-SF	
	283.98	32.81	261.83	251.17	14.33	MAS = 10.00 (m)	6000.00	5981.72				MinPt-O-SF	
	283.31	32.81	260.96	250.50	14.15	MAS = 10.00 (m)	6640.00	6621.06				MinPts	
	283.39	32.86	260.65	250.53	13.88	OSF1.50	6770.00	6751.06				MinPt-CtCt	
	283.52	33.26	260.52	250.26	13.71	OSF1.50	6860.00	6841.06				MINPT-O-EOU	
	283.70	33.48	260.55	250.22	13.62	OSF1.50	6910.00	6891.06				MinPt-O-ADP	
	283.81	33.61	260.57	250.20	13.57	OSF1.50	6940.00	6921.06				MinPts	
	286.37	34.17	262.75	252.20	13.44	OSF1.50	7060.00	7041.06				MinPt-O-SF	
	1634.55	34.64	1610.63	1599.91	76.17	OSF1.50	9970.00	9135.33				MINPT-O-EOU	
	1635.07	35.23	1610.76	1599.85	74.83	OSF1.50	10000.00	9135.45				MinPt-O-ADP	
	1645.51	54.78	1608.16	1590.73	47.14	OSF1.50	10690.00	9138.20				MinPt-CtCt	
	1644.77	62.85	1602.03	1581.91	40.82	OSF1.50	10970.00	9139.31				MinPt-CtCt	
	1640.98	82.34	1585.25	1558.64	30.78	OSF1.50	11630.00	9141.94				MinPt-CtCt	
	1641.74	94.10	1578.18	1547.64	26.84	OSF1.50	12020.00	9143.50				MinPt-CtCt	
	1634.23	113.94	1557.44	1520.29	21.96	OSF1.50	12670.00	9146.09				MinPt-CtCt	
	1639.35	129.05	1552.49	1510.30	19.40	OSF1.50	13190.00	9148.16				MINPT-O-EOU	
	1641.83	143.95	1545.03	1497.88	17.38	OSF1.50	13660.00	9150.03				MinPt-CtCt	
	1643.64	161.47	1535.16	1482.17	15.49	OSF1.50	14240.00	9152.35				MinPt-CtCt	
	1646.00	170.69	1531.37	1475.31	14.66	OSF1.50	14560.00	9153.62				MINPT-O-EOU	
	1644.35	184.50	1520.52	1459.85	13.53	OSF1.50	14990.00	9155.34				MinPt-CtCt	
	1639.31	199.17	1505.70	1440.14	12.48	OSF1.50	15470.00	9157.25				MinPt-CtCt	
	1642.41	211.03	1500.89	1431.38	11.80	OSF1.50	15880.00	9158.88				MinPts	
	1642.60	211.12	1501.02	1431.47	11.79	OSF1.50	15890.00	9158.92				MinPt-O-SF	
	1643.13	211.18	1501.51	1431.95	11.79	OSF1.50	15909.18	9159.00				TD	
Cimarex Klein 33 Federal Com #8H 0ft:14227ft (Def Survey)												Pass	
	1797.12	32.81	1794.62	1764.32	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1797.05	32.81	1794.54	1764.24	222525.38	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	1797.03	32.81	1794.53	1764.22	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	1796.96	32.81	1793.33	1764.15	1587.74	MAS = 10.00 (m)	310.00	310.00				MinPts	
	1746.61	32.81	1734.76	1713.80	186.95	MAS = 10.00 (m)	2130.00	2130.00				MinPts	
	1747.41	32.81	1733.96	1714.60	159.73	MAS = 10.00 (m)	2500.00	2500.00				MINPT-O-EOU	
	1749.38	32.81	1735.73	1716.57	156.91	MAS = 10.00 (m)	2600.00	2599.98				MinPt-O-SF	
	1764.78	32.81	1751.11	1731.97	157.82	MAS = 10.00 (m)	2801.75	2801.19				MinPt-O-SF	
	1781.43	32.81	1767.68	1748.62	158.20	MAS = 10.00 (m)	2950.00	2948.62				MinPt-O-SF	
	1504.70	36.04	1479.72	1468.66	67.87	OSF1.50	6570.00	6551.06				MinPt-O-SF	
	1352.44	40.28	1324.53	1312.17	54.56	OSF1.50	7330.00	7311.06				MinPt-CtCt	

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		
	1352.46	40.32	1324.52	1312.14	54.49	OSF1.50	7340.00	7321.06				MinPts	
	1356.21	40.57	1328.11	1315.64	54.24	OSF1.50	7440.00	7421.06				MinPt-O-SF	
	2129.28	64.82	2085.23	2064.46	51.19	OSF1.50	10690.00	9138.20				MinPt-CtCt	
	2129.34	64.98	2085.18	2064.35	51.06	OSF1.50	10710.00	9138.28				MINPT-O-EOU	
	2129.41	65.07	2085.20	2064.35	50.99	OSF1.50	10720.00	9138.32				MinPt-O-ADP	
	2125.11	86.62	2066.52	2038.48	37.85	OSF1.50	11330.00	9140.75				MinPt-CtCt	
	2125.79	88.56	2065.92	2037.23	37.01	OSF1.50	11420.00	9141.11				MINPT-O-EOU	
	2094.83	121.54	2012.96	1973.28	26.36	OSF1.50	12310.00	9144.65				MinPt-CtCt	
	2094.93	121.91	2012.82	1973.02	26.28	OSF1.50	12340.00	9144.77				MINPT-O-EOU	
	2095.02	122.03	2012.83	1972.99	26.26	OSF1.50	12350.00	9144.81				MinPt-O-ADP	
	2087.85	142.85	1991.78	1945.00	22.29	OSF1.50	12900.00	9147.01				MinPt-CtCt	
	2089.01	145.84	1990.95	1943.17	21.83	OSF1.50	13020.00	9147.48				MINPT-O-EOU	
	2091.59	150.43	1990.47	1941.16	21.18	OSF1.50	13150.00	9148.00				MINPT-O-EOU	
	2092.83	162.90	1983.40	1929.94	19.55	OSF1.50	13440.00	9149.16				MinPt-CtCt	
	2087.48	177.93	1968.03	1909.55	17.83	OSF1.50	13860.00	9150.83				MinPt-CtCt	
	2087.96	179.37	1967.55	1908.60	17.69	OSF1.50	13930.00	9151.11				MINPT-O-EOU	
	2088.64	180.19	1967.68	1908.45	17.61	OSF1.50	13970.00	9151.27				MinPt-O-ADP	
	2091.97	183.63	1968.72	1908.34	17.30	OSF1.50	14090.00	9151.75				MinPt-O-ADP	
	2099.81	193.61	1969.90	1906.20	16.46	OSF1.50	14360.00	9152.82				MinPt-O-ADP	
	2099.78	205.16	1962.17	1894.62	15.52	OSF1.50	14610.00	9153.82				MinPt-CtCt	
	2100.11	206.25	1961.77	1893.86	15.44	OSF1.50	14670.00	9154.06				MINPT-O-EOU	
	2100.54	206.79	1961.84	1893.75	15.40	OSF1.50	14700.00	9154.18				MinPt-O-ADP	
	2104.17	213.43	1961.04	1890.73	14.95	OSF1.50	14890.00	9154.94				MINPT-O-EOU	
	2106.71	216.44	1961.58	1890.27	14.75	OSF1.50	15000.00	9155.38				MinPt-O-ADP	
	2132.57	250.04	1965.04	1882.53	12.91	OSF1.50	15870.00	9158.84				MinPts	
	2132.91	249.93	1965.46	1882.98	12.92	OSF1.50	15909.18	9159.00				TD	
Cimarex Klein 33 Federal Com #7H MWD 0ft to 14097ft (Def Survey)													Pass
	1817.05	32.81	1814.55	1784.24	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1816.97	32.81	1814.47	1784.17	227490.43	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	1816.95	32.81	1814.45	1784.15	N/A	MAS = 10.00 (m)	20.00	20.00				MinPts	
	1816.96	32.81	1814.45	1784.15	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	1817.35	32.81	1813.41	1784.55	1256.75	MAS = 10.00 (m)	370.00	370.00				MinPts	
	1817.79	32.81	1812.30	1784.98	607.11	MAS = 10.00 (m)	720.00	720.00				MINPT-O-EOU	
	1818.21	32.81	1808.82	1785.41	263.51	MAS = 10.00 (m)	1590.00	1590.00				MinPts	
	1818.48	32.81	1808.47	1785.68	241.76	MAS = 10.00 (m)	1730.00	1730.00				MINPT-O-EOU	
	1829.91	32.81	1816.28	1797.10	164.23	MAS = 10.00 (m)	2600.00	2599.98				MinPt-O-SF	
	1843.75	32.81	1830.07	1810.94	164.77	MAS = 10.00 (m)	2801.75	2801.19				MinPt-O-SF	
	2270.93	33.22	2247.95	2237.70	110.75	OSF1.50	6018.38	6000.00				MinPt-O-SF	
	2291.13	35.13	2266.88	2256.00	105.21	OSF1.50	7090.00	7071.06				MinPts	
	2291.16	35.16	2266.88	2256.00	105.10	OSF1.50	7100.00	7081.06				MinPt-O-ADP	
	2297.52	36.13	2272.60	2261.39	102.36	OSF1.50	7290.00	7271.06				MinPt-CtCt	
	2297.54	36.20	2272.58	2261.34	102.16	OSF1.50	7300.00	7281.06				MINPT-O-EOU	
	2297.59	36.26	2272.58	2261.33	101.97	OSF1.50	7310.00	7291.06				MinPt-O-ADP	
	2341.93	38.14	2315.67	2303.79	98.45	OSF1.50	7770.00	7751.06				MinPt-O-SF	
	2877.76	59.91	2836.99	2817.85	75.13	OSF1.50	10180.00	9136.16				MinPt-CtCt	
	2878.11	72.43	2828.99	2805.68	61.68	OSF1.50	10550.00	9137.64				MinPt-CtCt	
	2831.96	186.10	2707.06	2645.86	23.12	OSF1.50	13490.00	9149.36				MinPt-CtCt	
	2832.53	187.65	2706.59	2644.88	22.93	OSF1.50	13560.00	9149.64				MINPT-O-EOU	
	2833.93	195.53	2702.74	2638.40	22.00	OSF1.50	13720.00	9150.27				MinPt-CtCt	
	2805.50	263.44	2629.05	2542.07	16.11	OSF1.50	15390.00	9156.93				MinPt-CtCt	
	2807.30	268.05	2627.77	2539.25	15.84	OSF1.50	15550.00	9157.57				MINPT-O-EOU	
	2807.93	275.96	2623.12	2531.96	15.39	OSF1.50	15700.00	9158.17				MinPt-CtCt	
	2809.05	283.58	2619.16	2525.47	14.98	OSF1.50	15909.18	9159.00				MinPts	
Cimarex Klein 33 Federal Com #6H XEM + MWD 0ft to 9836ft (Def Survey)													Pass
	2540.59	32.81	2538.09	2507.78	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2540.50	32.81	2537.99	2507.69	196424.04	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	2540.43	32.81	2537.93	2507.62	507221.71	MAS = 10.00 (m)	26.00	26.00				WRP	
	2540.43	32.81	2537.92	2507.62	285423.54	MAS = 10.00 (m)	30.00	30.00				MinPts	
	2540.52	32.81	2537.86	2507.71	16131.46	MAS = 10.00 (m)	90.00	90.00				MINPT-O-EOU	
	2541.83	32.81	2536.03	2509.02	770.30	MAS = 10.00 (m)	800.00	800.00				MinPts	
	2542.16	32.81	2534.61	2509.36	502.24	MAS = 10.00 (m)	1200.00	1200.00				MinPts	
	2541.79	32.81	2532.58	2508.98	378.78	MAS = 10.00 (m)	1570.00	1570.00				MinPts	
	2541.59	32.81	2531.27	2508.78	325.09	MAS = 10.00 (m)	1820.00	1820.00				MinPts	
	2541.36	32.81	2529.94	2508.55	284.79	MAS = 10.00 (m)	2060.00	2060.00				MinPts	
	2541.30	32.81	2528.21	2508.49	239.88	MAS = 10.00 (m)	2430.00	2430.00				MinPts	
	2541.39	32.81	2527.99	2508.58	232.90	MAS = 10.00 (m)	2500.00	2500.00				MINPT-O-EOU	
	2575.40	32.81	2561.38	2542.59	223.30	MAS = 10.00 (m)	2940.00	2938.68				MinPt-O-SF	
	2692.56	32.81	2676.45	2659.76	197.59	MAS = 10.00 (m)	4030.00	4022.64				MinPt-O-SF	
	2908.90	32.86	2886.15	2876.03	143.58	OSF1.50	6100.00	6081.27				MinPt-O-SF	
	2928.74	34.68	2904.79	2894.06	136.41	OSF1.50	7090.00	7071.06				MinPt-CtCt	
	2928.88	35.14	2904.62	2893.74	134.50	OSF1.50	7170.00	7151.06				MINPT-O-EOU	
	2929.07	35.36	2904.66	2893.71	133.58	OSF1.50	7210.00	7191.06				MinPt-O-ADP	
	2914.35	40.44	2886.56	2873.91	115.12	OSF1.50	8210.00	8191.06				MinPt-CtCt	
	2914.47	40.81	2886.43	2873.66	114.02	OSF1.50	8270.00	8251.06				MINPT-O-EOU	
	2914.80	41.19	2886.51	2873.61	112.92	OSF1.50	8330.00	8311.06				MinPt-O-ADP	
	2918.57	44.54	2888.04	2874.03	104.04	OSF1.50	8920.00	8885.77				MINPT-O-EOU	
	2918.62	44.59	2888.05	2874.02	103.92	OSF1.50	8930.00	8894.08				MinPt-O-ADP	
	2981.79	151.23	2880.14	2830.56	30.05	OSF1.50	9620.00	9133.83				MinPts	
	7195.99	94.05	7132.46	7101.94	117.86	OSF1.50	15909.18	9159.00				TD	
Cimarex Klein 33 Federal Com 6H ST01 XEM + MWD 9836ft to 16393ft (Def Survey)													Pass
	2540.59	32.81	2538.09	2507.78	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2540.50	32.81	2537.99	2507.69	196424.04	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	2540.43	32.81	2537.93	2507.62	507221.71	MAS = 10.00 (m)	26.00	26.00				WRP	
	2540.43	32.81	2537.92	2507.62	285423.54	MAS = 10.00 (m)	30.00	30.00				MinPts	
	2540.52	32.81	2537.86	2507.71	16131.46	MAS = 10.00 (m)	90.00	90.00				MINPT-O-EOU	
	2541.83	32.81	2536.03	2509.02	770.30	MAS = 10.00 (m)	800.00	800.00				MinPts	
	2542.16	32.81	2534.61	2509.36	502.24	MAS = 10.00 (m)	1200.00	1200.00				MinPts	
	2541.79	32.81	2532.58	2508.98	378.78	MAS = 10.00 (m)	1570.00	1570.00				MinPts	
	2541.59	32.81	2531.27	2508.78	325.09	MAS = 10.00 (m)	1820.00	1820.00				MinPts	
	2541.36	32.81	2529.94	2508.55	284.79	MAS = 10.00 (m)	2060.00	2060.00				MinPts	
	2541.30	32.81	2528.21	2508.49	239.88	MAS = 10.00 (m)	2430.00	2430.00				MinPts	
	2541.39	32.81	2527.99	2508.58	232.90	MAS = 10.00 (m)	2500.00	2500.00				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		
	2575.40	32.81	2561.38	2542.59	223.30	MAS = 10.00 (m)	2940.00	2938.68				MinPt-O-SF	
	2692.56	32.81	2676.45	2659.76	197.59	MAS = 10.00 (m)	4030.00	4022.64				MinPt-O-SF	
	2908.90	32.86	2886.15	2876.03	143.58	OSF1.50	6100.00	6081.27				MinPt-O-SF	
	2928.74	34.68	2904.79	2894.06	136.41	OSF1.50	7090.00	7071.06				MinPt-CtCt	
	2928.88	35.14	2904.62	2893.74	134.50	OSF1.50	7170.00	7151.06				MINPT-O-EOU	
	2929.07	35.36	2904.66	2893.71	133.58	OSF1.50	7210.00	7191.06				MinPt-O-ADP	
	2914.35	40.44	2886.56	2873.91	115.12	OSF1.50	8210.00	8191.06				MinPt-CtCt	
	2914.47	40.81	2886.43	2873.66	114.02	OSF1.50	8270.00	8251.06				MINPT-O-EOU	
	2914.80	41.19	2886.51	2873.61	112.92	OSF1.50	8330.00	8311.06				MinPt-O-ADP	
	2918.57	44.54	2888.04	2874.03	104.04	OSF1.50	8920.00	8885.77				MINPT-O-EOU	
	2918.62	44.59	2888.05	2874.02	103.92	OSF1.50	8930.00	8894.08				MinPt-O-ADP	
	2912.08	73.54	2862.22	2838.54	61.44	OSF1.50	9850.00	9134.85				MinPt-CtCt	
	2912.64	75.09	2861.75	2837.55	60.13	OSF1.50	9930.00	9135.17				MINPT-O-EOU	
	2913.33	75.93	2861.87	2837.40	59.46	OSF1.50	9970.00	9135.33				MinPt-O-ADP	
	2924.86	85.18	2867.24	2839.68	53.02	OSF1.50	10270.00	9136.52				MinPt-O-ADP	
	2939.49	100.86	2871.42	2838.63	44.79	OSF1.50	10650.00	9138.04				MinPt-O-ADP	
	2955.95	118.16	2876.34	2837.78	38.30	OSF1.50	11050.00	9139.63				MinPt-O-ADP	
	2957.34	221.40	2808.91	2735.95	20.25	OSF1.50	12990.00	9147.36				MinPt-CtCt	
	2975.76	270.93	2794.31	2704.83	16.61	OSF1.50	13990.00	9151.35				MINPT-O-EOU	
	2955.45	340.29	2727.75	2615.15	13.11	OSF1.50	15220.00	9156.25				MinPt-CtCt	
	2958.39	351.45	2723.26	2606.94	12.71	OSF1.50	15490.00	9157.33				MINPT-O-EOU	
	2962.61	356.44	2724.15	2606.17	12.55	OSF1.50	15620.00	9157.85				MinPt-O-ADP	
	2976.33	370.76	2728.33	2605.58	12.11	OSF1.50	15909.18	9159.00				MinPts	
Cimarex Klein 33 Federal Com #5H XEM + MWD 0ft to 14134 (Def Survey)													Pass
	2560.64	32.81	2558.14	2527.83	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2560.55	32.81	2558.03	2527.74	204989.80	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	2560.48	32.81	2557.98	2527.67	627278.37	MAS = 10.00 (m)	26.00	26.00				WRP	
	2559.74	32.81	2556.90	2526.93	7620.96	MAS = 10.00 (m)	130.00	130.00				MinPts	
	2559.76	32.81	2556.88	2526.95	6777.12	MAS = 10.00 (m)	140.00	140.00				MINPT-O-EOU	
	2554.87	32.81	2550.23	2522.06	1192.81	MAS = 10.00 (m)	530.00	530.00				MinPts	
	2555.07	32.81	2548.21	2522.26	585.79	MAS = 10.00 (m)	1040.00	1040.00				MinPts	
	2554.85	32.81	2546.61	2522.04	444.56	MAS = 10.00 (m)	1350.00	1350.00				MinPts	
	2554.36	32.81	2543.41	2521.55	302.12	MAS = 10.00 (m)	1960.00	1960.00				MinPts	
	2554.67	32.81	2543.08	2521.86	280.84	MAS = 10.00 (m)	2100.00	2100.00				MINPT-O-EOU	
	2589.26	32.81	2575.36	2556.46	226.74	MAS = 10.00 (m)	2910.00	2908.84				MinPt-O-SF	
	2961.96	32.83	2939.24	2929.13	146.36	OSF1.50	6018.38	6000.00				MinPt-O-SF	
	3163.69	37.46	3137.89	3126.23	135.62	OSF1.50	8030.00	8011.06				MinPt-O-SF	
	3271.72	38.78	3245.04	3232.94	135.16	OSF1.50	8370.00	8351.06				MinPt-O-SF	
	3571.22	44.21	3540.92	3527.02	128.35	OSF1.50	9310.00	9095.49				MinPt-O-ADP	
	3585.80	49.62	3551.89	3536.18	114.06	OSF1.50	9490.00	9125.85				MinPts	
	3565.44	88.58	3505.56	3476.86	62.09	OSF1.50	10480.00	9137.36				MinPt-CtCt	
	3569.17	100.35	3501.44	3468.82	54.68	OSF1.50	10790.00	9138.59				MINPT-O-EOU	
	3555.01	146.76	3456.34	3408.25	36.94	OSF1.50	11680.00	9142.14				MinPt-CtCt	
	3555.71	148.84	3455.64	3406.86	36.42	OSF1.50	11770.00	9142.50				MINPT-O-EOU	
	3556.50	149.76	3455.83	3406.74	36.20	OSF1.50	11810.00	9142.66				MinPt-O-ADP	
	3570.98	162.30	3461.94	3408.68	33.50	OSF1.50	12120.00	9143.90				MINPT-O-EOU	
	3573.87	166.49	3462.04	3407.38	32.67	OSF1.50	12190.00	9144.18				MINPT-O-EOU	
	3582.21	175.58	3464.32	3406.63	31.02	OSF1.50	12390.00	9144.97				MinPt-O-ADP	
	3585.92	179.32	3465.53	3406.59	30.40	OSF1.50	12470.00	9145.29				MinPt-O-ADP	
	3592.59	186.46	3467.45	3406.12	29.27	OSF1.50	12610.00	9145.85				MinPt-O-ADP	
	3606.08	209.23	3465.76	3396.85	26.15	OSF1.50	13010.00	9147.44				MINPT-O-EOU	
	3609.65	213.40	3466.55	3396.25	25.66	OSF1.50	13120.00	9147.88				MinPt-O-ADP	
	3620.21	258.72	3446.90	3361.49	21.18	OSF1.50	13920.00	9151.07				MinPt-CtCt	
	3621.46	263.09	3445.23	3358.36	20.83	OSF1.50	14060.00	9151.63				MINPT-O-EOU	
	3622.86	264.80	3445.50	3358.06	20.70	OSF1.50	14120.00	9151.87				MinPt-O-ADP	
	3651.56	291.62	3456.32	3359.94	18.93	OSF1.50	14670.00	9154.06				MINPT-O-EOU	
	3646.52	342.07	3417.63	3304.44	16.10	OSF1.50	15560.00	9157.61				MinPt-CtCt	
	3648.55	381.83	3393.16	3266.72	14.42	OSF1.50	15909.18	9159.00				MinPts	
Cimarex Klein 33 Federal Com #1H MWD 0ft to 14011ft (Def Survey)													Pass
	3762.51	32.81	3760.01	3729.71	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	3762.47	32.81	3759.96	3729.66	658709.57	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	3762.45	32.81	3759.95	3729.64	N/A	MAS = 10.00 (m)	20.00	20.00				MINPT-O-EOU	
	3762.45	32.81	3759.95	3729.64	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	3761.89	32.81	3758.57	3729.08	4602.89	MAS = 10.00 (m)	230.00	230.00				MinPts	
	3761.99	32.81	3758.47	3729.19	3670.83	MAS = 10.00 (m)	280.00	280.00				MINPT-O-EOU	
	3765.22	32.81	3752.55	3732.41	370.12	MAS = 10.00 (m)	2330.00	2330.00				MinPts	
	3765.26	32.81	3752.47	3732.45	365.62	MAS = 10.00 (m)	2360.00	2360.00				MINPT-O-EOU	
	3772.38	32.81	3758.76	3739.57	339.02	MAS = 10.00 (m)	2650.00	2649.93				MinPt-O-SF	
	3777.92	32.81	3764.28	3745.11	339.02	MAS = 10.00 (m)	2720.00	2719.78				MinPt-O-SF	
	4176.07	33.53	4152.89	4142.54	201.76	OSF1.50	6018.38	6000.00				MinPt-O-SF	
	4523.25	39.54	4496.05	4483.70	183.05	OSF1.50	8540.00	8521.06				MinPt-O-SF	
	4755.98	128.68	4669.36	4627.30	56.51	OSF1.50	11280.00	9140.55				MinPt-CtCt	
	4760.47	142.48	4664.64	4617.98	50.98	OSF1.50	11640.00	9141.98				MINPT-O-EOU	
	4762.02	170.82	4647.30	4591.20	42.41	OSF1.50	12110.00	9143.86				MinPt-CtCt	
	4763.47	204.14	4626.54	4559.33	35.42	OSF1.50	12760.00	9146.45				MinPt-CtCt	
	4766.29	212.22	4623.97	4554.07	34.07	OSF1.50	13000.00	9147.40				MINPT-O-EOU	
	4729.02	282.49	4539.85	4446.52	25.32	OSF1.50	14270.00	9152.47				MinPt-CtCt	
	4729.82	284.77	4539.14	4445.05	25.12	OSF1.50	14370.00	9152.86				MINPT-O-EOU	
	4722.45	307.84	4516.39	4414.61	23.19	OSF1.50	14760.00	9154.42				MinPt-CtCt	
	4723.61	310.98	4515.45	4412.63	22.96	OSF1.50	14890.00	9154.94				MINPT-O-EOU	
	4724.92	312.54	4515.72	4412.37	22.85	OSF1.50	14950.00	9155.18				MinPt-O-ADP	
	4774.27	351.06	4539.40	4423.21	20.53	OSF1.50	15770.00	9158.45				MINPT-O-EOU	
	4781.07	358.42	4541.29	4422.65	20.14	OSF1.50	15909.18	9159.00				MinPts	

Schlumberger

Cimarex Klein 33 Federal Com #11H Rev1 RM 14Jun19 Proposal Geodetic Report

(Def Plan)

Report Date:	June 17, 2019 - 09:02 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex Energy	**Vertical Section Azimuth:**	359.561 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Klein 33 Federal Com #11H / New Slot	**TVD Reference Datum:**	RKB
Well:	Klein 33 Federal Com #11H	**TVD Reference Elevation:**	3239.300 ft above MSL
Borehole:	Klein 33 Federal Com #11H	**Seabed / Ground Elevation:**	3213.300 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.168 °
Survey Name:	Cimarex Klein 33 Federal Com #11H Rev1 RM 14Jun19	**Total Gravity Field Strength:**	998.4308mgn (9.80665 Based)
Survey Date:	May 23, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	101.841 ° / 7360.728 ft / 6.115 / 0.804	**Total Magnetic Field Strength:**	47744.027 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.586 °
Location Lat / Long:	N 32° 0' 1.34657", W 104° 11' 19.19244"	**Declination Date:**	June 17, 2019
Location Grid N/E Y/X:	N 363905.600 ftUS, E 586182.930 ftUS	**Magnetic Declination Model:**	HDGM 2019
CRS Grid Convergence Angle:	0.0767 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99991139	**Grid Convergence Used:**	0.0767 °
Version / Patch:	2.10.760.0	**Total Corr Mag North->Grid North:**	7.0911 °
		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 [131' FSL, 750' FEL]	0.00	0.00	3.00	0.00	0.00	0.00	0.00	N/A	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	100.00	0.00	89.96	100.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	200.00	0.00	89.96	200.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	300.00	0.00	89.96	300.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	400.00	0.00	89.96	400.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	500.00	0.00	89.96	500.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	600.00	0.00	89.96	600.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	700.00	0.00	89.96	700.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	800.00	0.00	89.96	800.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	900.00	0.00	89.96	900.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	1000.00	0.00	89.96	1000.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	1100.00	0.00	89.96	1100.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	1200.00	0.00	89.96	1200.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	1300.00	0.00	89.96	1300.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
Top Salt	*1353.00*	*0.00*	*89.96*	*1353.00*	*0.00*	*0.00*	*0.00*	*0.00*	*363905.60*	*586182.93*	*N 32 0 1.35*	*W 104 11 19.19*
	1400.00	0.00	89.96	1400.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	1500.00	0.00	89.96	1500.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	1600.00	0.00	89.96	1600.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	1700.00	0.00	89.96	1700.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	1800.00	0.00	89.96	1800.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	1900.00	0.00	89.96	1900.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
Base Salt	*1962.00*	*0.00*	*89.96*	*1962.00*	*0.00*	*0.00*	*0.00*	*0.00*	*363905.60*	*586182.93*	*N 32 0 1.35*	*W 104 11 19.19*
	2000.00	0.00	89.96	2000.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	2100.00	0.00	89.96	2100.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19

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 ° ' ")
Delaware	*2133.00*	*0.00*	*89.96*	*2133.00*	*0.00*	*0.00*	*0.00*	*0.00*	*363905.60*	*586182.93*	*N 32 0 1.35*	*W 104 11 19.19*
	2200.00	0.00	89.96	2200.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	2300.00	0.00	89.96	2300.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	2400.00	0.00	89.96	2400.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
Nudge 2°/100' DLS	2500.00	0.00	89.96	2500.00	0.00	0.00	0.00	0.00	363905.60	586182.93	N 32 0 1.35	W 104 11 19.19
	2600.00	2.00	89.96	2599.98	-0.01	0.00	1.75	2.00	363905.60	586184.67	N 32 0 1.35	W 104 11 19.17
	2700.00	4.00	89.96	2699.84	-0.05	0.00	6.98	2.00	363905.60	586189.91	N 32 0 1.35	W 104 11 19.11
	2800.00	6.00	89.96	2799.45	-0.11	0.01	15.69	2.00	363905.61	586198.62	N 32 0 1.35	W 104 11 19.01
Hold Nudge	2801.75	6.03	89.96	2801.19	-0.11	0.01	15.88	2.00	363905.61	586198.81	N 32 0 1.35	W 104 11 19.01
	2900.00	6.03	89.96	2898.90	-0.18	0.02	26.21	0.00	363905.62	586209.13	N 32 0 1.35	W 104 11 18.89
	3000.00	6.03	89.96	2998.34	-0.26	0.02	36.72	0.00	363905.62	586219.65	N 32 0 1.35	W 104 11 18.77
	3100.00	6.03	89.96	3097.79	-0.33	0.03	47.23	0.00	363905.63	586230.16	N 32 0 1.35	W 104 11 18.64
Cherry Canyon	*3132.39*	*6.03*	*89.96*	*3130.00*	*-0.36*	*0.03*	*50.64*	*0.00*	*363905.63*	*586233.56*	*N 32 0 1.35*	*W 104 11 18.60*
	3200.00	6.03	89.96	3197.24	-0.41	0.04	57.75	0.00	363905.64	586240.67	N 32 0 1.35	W 104 11 18.52
	3300.00	6.03	89.96	3296.68	-0.48	0.04	68.26	0.00	363905.64	586251.18	N 32 0 1.35	W 104 11 18.40
	3400.00	6.03	89.96	3396.13	-0.55	0.05	78.77	0.00	363905.65	586261.70	N 32 0 1.35	W 104 11 18.28
	3500.00	6.03	89.96	3495.57	-0.63	0.06	89.29	0.00	363905.66	586272.21	N 32 0 1.35	W 104 11 18.16
	3600.00	6.03	89.96	3595.02	-0.70	0.06	99.80	0.00	363905.66	586282.72	N 32 0 1.35	W 104 11 18.03
	3700.00	6.03	89.96	3694.46	-0.78	0.07	110.31	0.00	363905.67	586293.23	N 32 0 1.35	W 104 11 17.91
	3800.00	6.03	89.96	3793.91	-0.85	0.08	120.83	0.00	363905.68	586303.75	N 32 0 1.35	W 104 11 17.79
	3900.00	6.03	89.96	3893.36	-0.92	0.08	131.34	0.00	363905.68	586314.26	N 32 0 1.35	W 104 11 17.67
	4000.00	6.03	89.96	3992.80	-1.00	0.09	141.85	0.00	363905.69	586324.77	N 32 0 1.35	W 104 11 17.55
	4100.00	6.03	89.96	4092.25	-1.07	0.10	152.37	0.00	363905.70	586335.28	N 32 0 1.35	W 104 11 17.42
	4200.00	6.03	89.96	4191.69	-1.15	0.10	162.88	0.00	363905.70	586345.80	N 32 0 1.35	W 104 11 17.30
Brushy Canyon	*4298.85*	*6.03*	*89.96*	*4290.00*	*-1.22*	*0.11*	*173.27*	*0.00*	*363905.71*	*586356.19*	*N 32 0 1.35*	*W 104 11 17.18*
	4300.00	6.03	89.96	4291.14	-1.22	0.11	173.39	0.00	363905.71	586356.31	N 32 0 1.35	W 104 11 17.18
	4400.00	6.03	89.96	4390.58	-1.29	0.12	183.91	0.00	363905.72	586366.82	N 32 0 1.35	W 104 11 17.06
	4500.00	6.03	89.96	4490.03	-1.37	0.12	194.42	0.00	363905.72	586377.33	N 32 0 1.35	W 104 11 16.93
	4600.00	6.03	89.96	4589.48	-1.44	0.13	204.93	0.00	363905.73	586387.85	N 32 0 1.35	W 104 11 16.81
	4700.00	6.03	89.96	4688.92	-1.52	0.14	215.45	0.00	363905.74	586398.36	N 32 0 1.35	W 104 11 16.69
	4800.00	6.03	89.96	4788.37	-1.59	0.14	225.96	0.00	363905.74	586408.87	N 32 0 1.34	W 104 11 16.57
	4900.00	6.03	89.96	4887.81	-1.66	0.15	236.47	0.00	363905.75	586419.38	N 32 0 1.34	W 104 11 16.45
	5000.00	6.03	89.96	4987.26	-1.74	0.16	246.99	0.00	363905.76	586429.90	N 32 0 1.34	W 104 11 16.32
	5100.00	6.03	89.96	5086.71	-1.81	0.16	257.50	0.00	363905.76	586440.41	N 32 0 1.34	W 104 11 16.20
	5200.00	6.03	89.96	5186.15	-1.89	0.17	268.02	0.00	363905.77	586450.92	N 32 0 1.34	W 104 11 16.08
	5300.00	6.03	89.96	5285.60	-1.96	0.18	278.53	0.00	363905.77	586461.43	N 32 0 1.34	W 104 11 15.96
	5400.00	6.03	89.96	5385.04	-2.03	0.18	289.04	0.00	363905.78	586471.95	N 32 0 1.34	W 104 11 15.84
	5500.00	6.03	89.96	5484.49	-2.11	0.19	299.56	0.00	363905.79	586482.46	N 32 0 1.34	W 104 11 15.71
Brushy Canyon Lower	*5556.83*	*6.03*	*89.96*	*5541.00*	*-2.15*	*0.19*	*305.53*	*0.00*	*363905.79*	*586488.43*	*N 32 0 1.34*	*W 104 11 15.64*
	5600.00	6.03	89.96	5583.93	-2.18	0.19	310.07	0.00	363905.79	586492.97	N 32 0 1.34	W 104 11 15.59
	5700.00	6.03	89.96	5683.38	-2.25	0.20	320.58	0.00	363905.80	586503.48	N 32 0 1.34	W 104 11 15.47
Bone Spring	*5799.17*	*6.03*	*89.96*	*5782.00*	*-2.33*	*0.21*	*331.01*	*0.00*	*363905.81*	*586513.91*	*N 32 0 1.34*	*W 104 11 15.35*
	5800.00	6.03	89.96	5782.83	-2.33	0.21	331.10	0.00	363905.81	586514.00	N 32 0 1.34	W 104 11 15.35
	5900.00	6.03	89.96	5882.27	-2.40	0.21	341.61	0.00	363905.81	586524.51	N 32 0 1.34	W 104 11 15.23
Bone Spring "A" Shale	*5906.77*	*6.03*	*89.96*	*5889.00*	*-2.41*	*0.22*	*342.32*	*0.00*	*363905.82*	*586525.22*	*N 32 0 1.34*	*W 104 11 15.22*
	6000.00	6.03	89.96	5981.72	-2.48	0.22	352.12	0.00	363905.82	586535.02	N 32 0 1.34	W 104 11 15.10
Drop to Vertical 2°/100' DLS	6018.38	6.03	89.96	6000.00	-2.49	0.22	354.06	0.00	363905.82	586536.95	N 32 0 1.34	W 104 11 15.08
	6100.00	4.40	89.96	6081.27	-2.54	0.23	361.48	2.00	363905.83	586544.38	N 32 0 1.34	W 104 11 14.99
	6200.00	2.40	89.96	6181.09	-2.58	0.23	367.41	2.00	363905.83	586550.31	N 32 0 1.34	W 104 11 14.93
	6300.00	0.40	89.96	6281.06	-2.60	0.23	369.86	2.00	363905.83	586552.76	N 32 0 1.34	W 104 11 14.90

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	6320.13	0.00	89.96	6301.19	-2.60	0.23	369.93	2.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
Bone Spring "C" Shale	*6346.94*	*0.00*	*89.96*	*6328.00*	*-2.60*	*0.23*	*369.93*	*0.00*	*363905.83*	*586552.83*	*N 32 0 1.34*	*W 104 11 14.90*
	6400.00	0.00	89.96	6381.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	6500.00	0.00	89.96	6481.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	6600.00	0.00	89.96	6581.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
1st Bone Spring Ss	*6686.94*	*0.00*	*89.96*	*6668.00*	*-2.60*	*0.23*	*369.93*	*0.00*	*363905.83*	*586552.83*	*N 32 0 1.34*	*W 104 11 14.90*
	6700.00	0.00	89.96	6681.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	6800.00	0.00	89.96	6781.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	6900.00	0.00	89.96	6881.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	7000.00	0.00	89.96	6981.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	7100.00	0.00	89.96	7081.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	7200.00	0.00	89.96	7181.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
2nd Bone Spring Ss	*7298.94*	*0.00*	*89.96*	*7280.00*	*-2.60*	*0.23*	*369.93*	*0.00*	*363905.83*	*586552.83*	*N 32 0 1.34*	*W 104 11 14.90*
	7300.00	0.00	89.96	7281.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	7400.00	0.00	89.96	7381.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	7500.00	0.00	89.96	7481.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	7600.00	0.00	89.96	7581.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	7700.00	0.00	89.96	7681.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	7800.00	0.00	89.96	7781.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	7900.00	0.00	89.96	7881.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	8000.00	0.00	89.96	7981.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
2nd BS Ss Lower	*8015.94*	*0.00*	*89.96*	*7997.00*	*-2.60*	*0.23*	*369.93*	*0.00*	*363905.83*	*586552.83*	*N 32 0 1.34*	*W 104 11 14.90*
	8100.00	0.00	89.96	8081.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	8200.00	0.00	89.96	8181.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	8300.00	0.00	89.96	8281.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	8400.00	0.00	89.96	8381.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
3rd Bone Spring Ss	*8487.94*	*0.00*	*89.96*	*8469.00*	*-2.60*	*0.23*	*369.93*	*0.00*	*363905.83*	*586552.83*	*N 32 0 1.34*	*W 104 11 14.90*
	8500.00	0.00	89.96	8481.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	8600.00	0.00	89.96	8581.06	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
KOP - Build 12°/100' DLS	8642.95	0.00	89.96	8624.01	-2.60	0.23	369.93	0.00	363905.83	586552.83	N 32 0 1.34	W 104 11 14.90
	8700.00	6.85	359.56	8680.92	0.80	3.64	369.91	12.00	363909.24	586552.80	N 32 0 1.38	W 104 11 14.90
	8800.00	18.85	359.56	8778.24	22.99	25.83	369.74	12.00	363931.43	586552.63	N 32 0 1.60	W 104 11 14.90
Wolfcamp	*8827.50*	*22.15*	*359.56*	*8804.00*	*32.62*	*35.46*	*369.66*	*12.00*	*363941.05*	*586552.56*	*N 32 0 1.69*	*W 104 11 14.90*
	8900.00	30.85	359.56	8868.82	64.94	67.77	369.41	12.00	363973.36	586552.31	N 32 0 2.01	W 104 11 14.90
	9000.00	42.85	359.56	8948.70	124.79	127.62	368.96	12.00	364033.21	586551.85	N 32 0 2.60	W 104 11 14.91
	9100.00	54.85	359.56	9014.39	199.95	202.78	368.38	12.00	364108.36	586551.28	N 32 0 3.35	W 104 11 14.91
	9200.00	66.85	359.56	9063.01	287.12	289.95	367.71	12.00	364195.52	586550.61	N 32 0 4.21	W 104 11 14.92
Build 4°/100' DLS	9267.95	75.00	359.56	9085.20	351.29	354.11	367.22	12.00	364259.68	586550.12	N 32 0 4.85	W 104 11 14.92
	9300.00	76.28	359.56	9093.15	382.33	385.16	366.98	4.00	364290.72	586549.88	N 32 0 5.15	W 104 11 14.92
	9400.00	80.28	359.56	9113.46	480.23	483.05	366.23	4.00	364388.61	586549.13	N 32 0 6.12	W 104 11 14.93
	9500.00	84.28	359.56	9126.88	579.30	582.12	365.47	4.00	364487.67	586548.37	N 32 0 7.10	W 104 11 14.94
Wolfcamp A LZ	*9523.10*	*85.21*	*359.56*	*9129.00*	*602.30*	*605.12*	*365.30*	*4.00*	*364510.66*	*586548.19*	*N 32 0 7.33*	*W 104 11 14.94*
	9600.00	88.28	359.56	9133.37	679.07	681.89	364.71	4.00	364587.43	586547.61	N 32 0 8.09	W 104 11 14.95
Landing Point	9637.24	89.77	359.56	9134.00	716.31	719.12	364.42	4.00	364624.66	586547.32	N 32 0 8.46	W 104 11 14.95
	9700.00	89.77	359.56	9134.25	779.07	781.88	363.94	0.00	364687.41	586546.84	N 32 0 9.08	W 104 11 14.95
	9800.00	89.77	359.56	9134.65	879.07	881.87	363.18	0.00	364787.39	586546.07	N 32 0 10.07	W 104 11 14.96
	9900.00	89.77	359.56	9135.05	979.06	981.87	362.41	0.00	364887.38	586545.31	N 32 0 11.06	W 104 11 14.97

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 ° ' ")
	10000.00	89.77	359.56	9135.45	1079.06	1081.87	361.64	0.00	364987.37	586544.54	N 32 0 12.05	W 104 11 14.98
	10100.00	89.77	359.56	9135.84	1179.06	1181.86	360.88	0.00	365087.36	586543.78	N 32 0 13.04	W 104 11 14.98
	10200.00	89.77	359.56	9136.24	1279.06	1281.86	360.11	0.00	365187.34	586543.01	N 32 0 14.03	W 104 11 14.99
	10300.00	89.77	359.56	9136.64	1379.06	1381.86	359.35	0.00	365287.33	586542.24	N 32 0 15.02	W 104 11 15.00
	10400.00	89.77	359.56	9137.04	1479.06	1481.85	358.58	0.00	365387.32	586541.48	N 32 0 16.01	W 104 11 15.01
	10500.00	89.77	359.56	9137.44	1579.06	1581.85	357.81	0.00	365487.30	586540.71	N 32 0 16.99	W 104 11 15.01
	10600.00	89.77	359.56	9137.84	1679.06	1681.84	357.05	0.00	365587.29	586539.94	N 32 0 17.98	W 104 11 15.02
	10700.00	89.77	359.56	9138.24	1779.06	1781.84	356.28	0.00	365687.28	586539.18	N 32 0 18.97	W 104 11 15.03
	10800.00	89.77	359.56	9138.63	1879.06	1881.84	355.51	0.00	365787.27	586538.41	N 32 0 19.96	W 104 11 15.03
Lease Line Crossing 114350-117116	*10895.00*	*89.77*	*359.56*	*9139.01*	*1974.06*	*1976.83*	*354.79*	*0.00*	*365882.25*	*586537.68*	*N 32 0 20.90*	*W 104 11 15.04*
	10900.00	89.77	359.56	9139.03	1979.06	1981.83	354.75	0.00	365887.25	586537.65	N 32 0 20.95	W 104 11 15.04
	11000.00	89.77	359.56	9139.43	2079.06	2081.83	353.98	0.00	365987.24	586536.88	N 32 0 21.94	W 104 11 15.05
	11100.00	89.77	359.56	9139.83	2179.06	2181.83	353.22	0.00	366087.23	586536.11	N 32 0 22.93	W 104 11 15.06
	11200.00	89.77	359.56	9140.23	2279.05	2281.82	352.45	0.00	366187.22	586535.35	N 32 0 23.92	W 104 11 15.06
	11300.00	89.77	359.56	9140.63	2379.05	2381.82	351.68	0.00	366287.20	586534.58	N 32 0 24.91	W 104 11 15.07
	11400.00	89.77	359.56	9141.03	2479.05	2481.81	350.92	0.00	366387.19	586533.82	N 32 0 25.90	W 104 11 15.08
	11500.00	89.77	359.56	9141.42	2579.05	2581.81	350.15	0.00	366487.18	586533.05	N 32 0 26.89	W 104 11 15.09
	11600.00	89.77	359.56	9141.82	2679.05	2681.81	349.39	0.00	366587.16	586532.28	N 32 0 27.88	W 104 11 15.09
	11700.00	89.77	359.56	9142.22	2779.05	2781.80	348.62	0.00	366687.15	586531.52	N 32 0 28.87	W 104 11 15.10
	11800.00	89.77	359.56	9142.62	2879.05	2881.80	347.85	0.00	366787.14	586530.75	N 32 0 29.86	W 104 11 15.11
	11900.00	89.77	359.56	9143.02	2979.05	2981.80	347.09	0.00	366887.13	586529.99	N 32 0 30.85	W 104 11 15.12
	12000.00	89.77	359.56	9143.42	3079.05	3081.79	346.32	0.00	366987.11	586529.22	N 32 0 31.84	W 104 11 15.12
	12100.00	89.77	359.56	9143.82	3179.05	3181.79	345.55	0.00	367087.10	586528.45	N 32 0 32.83	W 104 11 15.13
	12200.00	89.77	359.56	9144.22	3279.05	3281.78	344.79	0.00	367187.09	586527.69	N 32 0 33.82	W 104 11 15.14
Lease Line Crossing 114350 - FEE	*12220.00*	*89.77*	*359.56*	*9144.29*	*3299.05*	*3301.78*	*344.63*	*0.00*	*367207.08*	*586527.53*	*N 32 0 34.01*	*W 104 11 15.14*
	12300.00	89.77	359.56	9144.61	3379.05	3381.78	344.02	0.00	367287.07	586526.92	N 32 0 34.81	W 104 11 15.14
	12400.00	89.77	359.56	9145.01	3479.05	3481.78	343.26	0.00	367387.06	586526.15	N 32 0 35.80	W 104 11 15.15
	12500.00	89.77	359.56	9145.41	3579.04	3581.77	342.49	0.00	367487.05	586525.39	N 32 0 36.79	W 104 11 15.16
	12600.00	89.77	359.56	9145.81	3679.04	3681.77	341.72	0.00	367587.04	586524.62	N 32 0 37.77	W 104 11 15.17
	12700.00	89.77	359.56	9146.21	3779.04	3781.77	340.96	0.00	367687.02	586523.86	N 32 0 38.76	W 104 11 15.17
	12800.00	89.77	359.56	9146.61	3879.04	3881.76	340.19	0.00	367787.01	586523.09	N 32 0 39.75	W 104 11 15.18
	12900.00	89.77	359.56	9147.01	3979.04	3981.76	339.42	0.00	367887.00	586522.32	N 32 0 40.74	W 104 11 15.19
	13000.00	89.77	359.56	9147.40	4079.04	4081.75	338.66	0.00	367986.99	586521.56	N 32 0 41.73	W 104 11 15.20
	13100.00	89.77	359.56	9147.80	4179.04	4181.75	337.89	0.00	368086.97	586520.79	N 32 0 42.72	W 104 11 15.20
	13200.00	89.77	359.56	9148.20	4279.04	4281.75	337.13	0.00	368186.96	586520.03	N 32 0 43.71	W 104 11 15.21
	13300.00	89.77	359.56	9148.60	4379.04	4381.74	336.36	0.00	368286.95	586519.26	N 32 0 44.70	W 104 11 15.22
	13400.00	89.77	359.56	9149.00	4479.04	4481.74	335.59	0.00	368386.93	586518.49	N 32 0 45.69	W 104 11 15.23
	13500.00	89.77	359.56	9149.40	4579.04	4581.74	334.83	0.00	368486.92	586517.73	N 32 0 46.68	W 104 11 15.23
	13600.00	89.77	359.56	9149.80	4679.04	4681.73	334.06	0.00	368586.91	586516.96	N 32 0 47.67	W 104 11 15.24
	13700.00	89.77	359.56	9150.19	4779.03	4781.73	333.30	0.00	368686.90	586516.19	N 32 0 48.66	W 104 11 15.25
	13800.00	89.77	359.56	9150.59	4879.03	4881.73	332.53	0.00	368786.88	586515.43	N 32 0 49.65	W 104 11 15.25
	13900.00	89.77	359.56	9150.99	4979.03	4981.72	331.76	0.00	368886.87	586514.66	N 32 0 50.64	W 104 11 15.26
	14000.00	89.77	359.56	9151.39	5079.03	5081.72	331.00	0.00	368986.86	586513.90	N 32 0 51.63	W 104 11 15.27
	14100.00	89.77	359.56	9151.79	5179.03	5181.71	330.23	0.00	369086.84	586513.13	N 32 0 52.62	W 104 11 15.28
	14200.00	89.77	359.56	9152.19	5279.03	5281.71	329.46	0.00	369186.83	586512.36	N 32 0 53.61	W 104 11 15.28
	14300.00	89.77	359.56	9152.59	5379.03	5381.71	328.70	0.00	369286.82	586511.60	N 32 0 54.60	W 104 11 15.29
	14400.00	89.77	359.56	9152.98	5479.03	5481.70	327.93	0.00	369386.81	586510.83	N 32 0 55.59	W 104 11 15.30
	14500.00	89.77	359.56	9153.38	5579.03	5581.70	327.17	0.00	369486.79	586510.07	N 32 0 56.58	W 104 11 15.31
	14600.00	89.77	359.56	9153.78	5679.03	5681.70	326.40	0.00	369586.78	586509.30	N 32 0 57.57	W 104 11 15.31
	14700.00	89.77	359.56	9154.18	5779.03	5781.69	325.63	0.00	369686.77	586508.53	N 32 0 58.55	W 104 11 15.32

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 ° ' ")
	14800.00	89.77	359.56	9154.58	5879.03	5881.69	324.87	0.00	369786.75	586507.77	N 32 0 59.54	W 104 11 15.33
Lease Line Crossing Fee-114350	*14860.50*	*89.77*	*359.56*	*9154.82*	*5939.53*	*5942.19*	*324.40*	*0.00*	*369847.25*	*586507.30*	*N 32 1 0.14*	*W 104 11 15.33*
	14900.00	89.77	359.56	9154.98	5979.03	5981.68	324.10	0.00	369886.74	586507.00	N 32 1 0.53	W 104 11 15.34
	15000.00	89.77	359.56	9155.38	6079.02	6081.68	323.33	0.00	369986.73	586506.24	N 32 1 1.52	W 104 11 15.34
	15100.00	89.77	359.56	9155.77	6179.02	6181.68	322.57	0.00	370086.72	586505.47	N 32 1 2.51	W 104 11 15.35
	15200.00	89.77	359.56	9156.17	6279.02	6281.67	321.80	0.00	370186.70	586504.70	N 32 1 3.50	W 104 11 15.36
	15300.00	89.77	359.56	9156.57	6379.02	6381.67	321.04	0.00	370286.69	586503.94	N 32 1 4.49	W 104 11 15.36
	15400.00	89.77	359.56	9156.97	6479.02	6481.67	320.27	0.00	370386.68	586503.17	N 32 1 5.48	W 104 11 15.37
	15500.00	89.77	359.56	9157.37	6579.02	6581.66	319.50	0.00	370486.67	586502.40	N 32 1 6.47	W 104 11 15.38
	15600.00	89.77	359.56	9157.77	6679.02	6681.66	318.74	0.00	370586.65	586501.64	N 32 1 7.46	W 104 11 15.39
	15700.00	89.77	359.56	9158.17	6779.02	6781.65	317.97	0.00	370686.64	586500.87	N 32 1 8.45	W 104 11 15.39
	15800.00	89.77	359.56	9158.56	6879.02	6881.65	317.21	0.00	370786.63	586500.11	N 32 1 9.44	W 104 11 15.40
	15900.00	89.77	359.56	9158.96	6979.02	6981.65	316.44	0.00	370886.61	586499.34	N 32 1 10.43	W 104 11 15.41
Cimarex Klein 33 Federal Com #11H - PBHL [280' FNL, 380' FEL]	15909.18	89.77	359.56	9159.00	6988.19	6990.82	316.37	0.00	370895.79	586499.27	N 32 1 10.52	W 104 11 15.41

Survey Type: 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	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Klein 33 Federal Com #11H / Cimarex Klein 33 Federal Com #11H Rev1 RM 14Jun19
	1	26.000	15909.177	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Klein 33 Federal Com #11H / Cimarex Klein 33 Federal Com

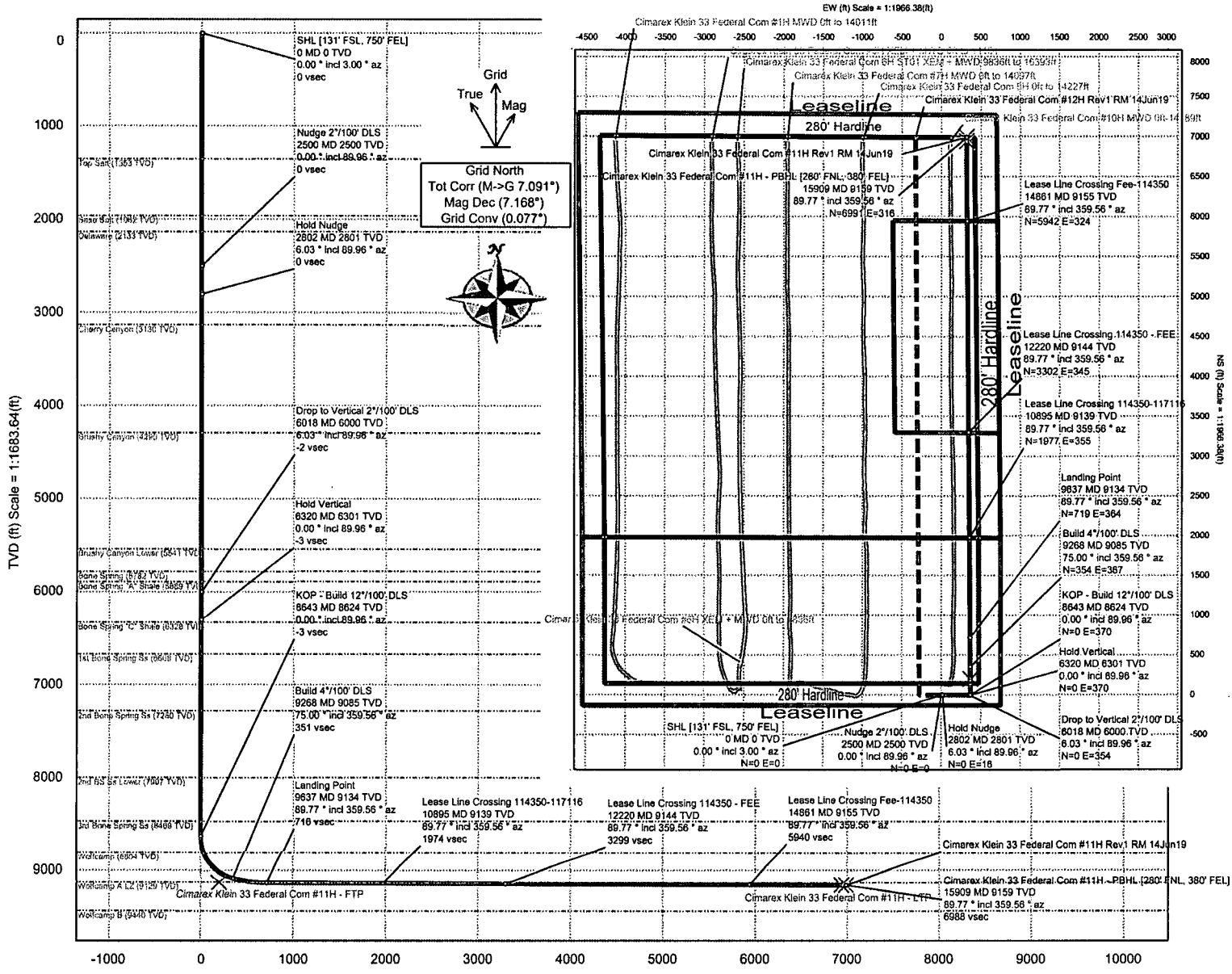
Schlumberger

Cimarex Energy Rev 1

CIMAREX

Borehole:	Well:	Field:	Structure:
Klein 33 Federal Com #11H	Klein 33 Federal Com #11H	NM Eddy County (NAD 83)	Cimarex Klein 33 Federal Com #11H

Gravity & Magnetic Parameters						Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet					Miscellaneous			
Model:	HDGM 2019	Dip:	59.586°	Date:	17-Jun-2019	Lat:	N 32 0 1.35	Northing:	363905.6ftUS	Grid Conv:	0.0767°	Slot:	New Slot	TVD Ref:	RKB(3239.3ft above MSL)
MagDec:	7.168°	FS:	47744.027nT	Gravity FS:	999.431mgn (9.80665 Based)	Lon:	W 104 11 19.19	Easting:	586182.93ftUS	Scale Fact:	0.99991139	Plan:	Cimarex Klein 33 Federal Com #11H Rev1 RM 14Jun19		



Vertical Section (ft) Azim = 359.56° Scale = 1:1683.64(ft) Origin = 0N/-S, 0E/-W

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [131' FSL, 750' FEL]	0.00	0.00	3.00	0.00	0.00	0.00	0.00	
Top Salt	1353.00	0.00	89.96	1353.00	0.00	0.00	0.00	0.00
Base Salt	1962.00	0.00	89.96	1962.00	0.00	0.00	0.00	0.00
Delaware	2133.00	0.00	89.96	2133.00	0.00	0.00	0.00	0.00
Nudge 2°/100' DLS	2500.00	0.00	89.96	2500.00	0.00	0.00	0.00	0.00
Hold Nudge	2801.75	6.03	89.96	2801.19	-0.11	0.01	15.88	2.00
Cherry Canyon	3132.39	6.03	89.96	3130.00	-0.36	0.03	50.64	0.00
Brushy Canyon	4298.85	6.03	89.96	4290.00	-1.22	0.11	173.27	0.00
Brushy Canyon Lower	5556.83	6.03	89.96	5541.00	-2.15	0.19	305.53	0.00
Bone Spring	5799.17	6.03	89.96	5782.00	-2.33	0.21	331.01	0.00
Bone Spring "A" Shale	5906.77	6.03	89.96	5889.00	-2.41	0.22	342.32	0.00
Drop to Vertical 2°/100' DLS	6018.38	6.03	89.96	6000.00	-2.49	0.22	354.06	0.00
Hold Vertical	6320.13	0.00	89.96	6301.19	-2.60	0.23	369.93	2.00
Bone Spring "C" Shale	6346.94	0.00	89.96	6328.00	-2.60	0.23	369.93	0.00
1st Bone Spring Ss	6686.94	0.00	89.96	6668.00	-2.60	0.23	369.93	0.00
2nd Bone Spring Ss	7298.94	0.00	89.96	7280.00	-2.60	0.23	369.93	0.00
2nd BS Ss Lower	8015.94	0.00	89.96	7997.00	-2.60	0.23	369.93	0.00
3rd Bone Spring Ss	8487.94	0.00	89.96	8469.00	-2.60	0.23	369.93	0.00
KOP - Build 12°/100' DLS	8642.95	0.00	89.96	8624.01	-2.60	0.23	369.93	0.00
Wolfcamp	8827.50	22.15	359.56	8804.00	32.62	35.46	369.66	12.00
Build 4°/100' DLS	9267.95	75.00	359.56	9085.20	351.29	354.11	367.22	12.00
Wolfcamp A LZ	9523.10	85.21	359.56	9129.00	602.30	605.12	365.30	4.00
Landing Point	9637.24	89.77	359.56	9134.00	716.31	719.12	364.42	4.00
Lease Line Crossing 114350-117116	10895.00	89.77	359.56	9139.01	1974.06	1976.83	354.79	0.00
Lease Line Crossing 114350 - FEE	12220.00	89.77	359.56	9144.29	3299.05	3301.78	344.63	0.00
Lease Line Crossing Fee-114350	14860.50	89.77	359.56	9154.82	5939.53	5942.19	324.40	0.00
Cimarex Klein 33 Federal Com #11H - PBHL [280' FNL, 380' FEL]	15909.18	89.77	359.56	9159.00	6988.19	6990.82	316.37	0.00
Wolfcamp B	NaN			9440.00				

1. Geological Formations

TVD of target 9,159 Pilot Hole TD N/A
MD at TD 15,909 Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	50	N/A	
Top Salt	1353	N/A	
Bottom Salt	1962	N/A	
Delaware	2133	N/A	
Cherry Canyon	3130	N/A	
Brushy Canyon	4290	Hydrocarbons	
Brushy Canyon Lower	5541	Hydrocarbons	
Bone Spring	5782	Hydrocarbons	
Bone Spring "A" Shale	5889	Hydrocarbons	
Bone Spring "C" Shale	6328	Hydrocarbons	
1st Bone Spring Ss	6668	Hydrocarbons	
2nd Bone Spring Ss	7280	Hydrocarbons	
2nd BS Ss Lower	7997	Hydrocarbons	
3rd Bone Spring Ss	8469	Hydrocarbons	
Wolfcamp	8804	Hydrocarbons	
Wolfcamp A LZ	9129	Hydrocarbons	
Wolfcamp B	9440	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	400	400	13-3/8"	48.00	H-40	ST&C	4.29	10.02	16.77
12 1/4	0	2113	2113	9-5/8"	36.00	J-55	ST&C	1.80	3.14	5.18
8 3/4	0	8643	8643	7"	26.00	L-80	LT&C	1.34	1.79	2.15
8 3/4	8643	9637	9159	7"	26.00	L-80	BT&C	1.26	1.69	45.02
6	8643	15909	9159	4-1/2"	11.60	P-110	BT&C	1.47	2.08	61.31
					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?	N
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	60	13.50	1.75	8.83	15.5	Lead: Class C + Bentonite + Calcium Chloride + LCM
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	403	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	124	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	347	10.30	3.64	22.18		Lead: Tuned Light + LCM
	144	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS
Completion System	456	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	31
Intermediate	0	49
Production	1913	25
Completion System	9637	10

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	50% of working pressure
			Blind Ram		2M
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other		
6	13 5/8	5M	Annular	X	50% of working pressure
			Blind Ram		5M
			Pipe Ram		
			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 400'	FW Spud Mud	7.80 - 8.30	30-32	N/C
400' to 2113'	Brine Water	9.70 - 10.20	30-32	N/C
2113' to 9637'	FW/Cut Brine	8.50 - 9.00	30-32	N/C
9637' to 15909'	Oil Based Mud	10.30 - 10.80	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	5143 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.	
X	H2S is present
X	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 50% 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.

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

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

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: Windmill Spraying Service hauls trash to Lea County Landfill

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: Trucked to an approved disposal facility

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

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? NO

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?

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Klein_33_Federal__Com_11H_Wellsite_Layout_20190621124832.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: No New Surface Disturbance **Multiple Well Pad Name:** KLEIN 33 FEDERAL COM

Multiple Well Pad Number: 10H-14H

Recontouring attachment:

Klein_33_Federal_Com_11H_Interim_Reclaim_20190621125612.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: KLEIN 33 FEDERAL COM **Well Number:** 11H

Well pad proposed disturbance (acres): 0
Road proposed disturbance (acres): 0
Powerline proposed disturbance (acres): 0
Pipeline proposed disturbance (acres): 0
Other proposed disturbance (acres): 0
Total proposed disturbance: 0

Well pad interim reclamation (acres):
Road interim reclamation (acres):
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres):
Other interim reclamation (acres):
Total interim reclamation:

Well pad long term disturbance (acres):
Road long term disturbance (acres):
Powerline long term disturbance (acres): 0
Pipeline long term disturbance (acres):
Other long term disturbance (acres):
Total long term disturbance:

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: Salvaged topsoil, if any, would be re-spread evenly over the surfaces to be re-vegetated.

Soil treatment: 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.
Existing Vegetation at the well pad:

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road:

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type: **Seed source:**

Seed name:

Source name: **Source address:**

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre: **Proposed seeding season:**

Total pounds/Acre:

Seed Summary	
Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: **Last Name:**

Phone: **Email:**

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: na

Weed treatment plan attachment:

Monitoring plan description: na

Monitoring plan attachment:

Success standards: na

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

Pit closure description: na

Pit closure attachment:

Section 11 - Surface Ownership

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:**

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information: Previously approved APD, expired 03/05/2018.

Use a previously conducted onsite? YES

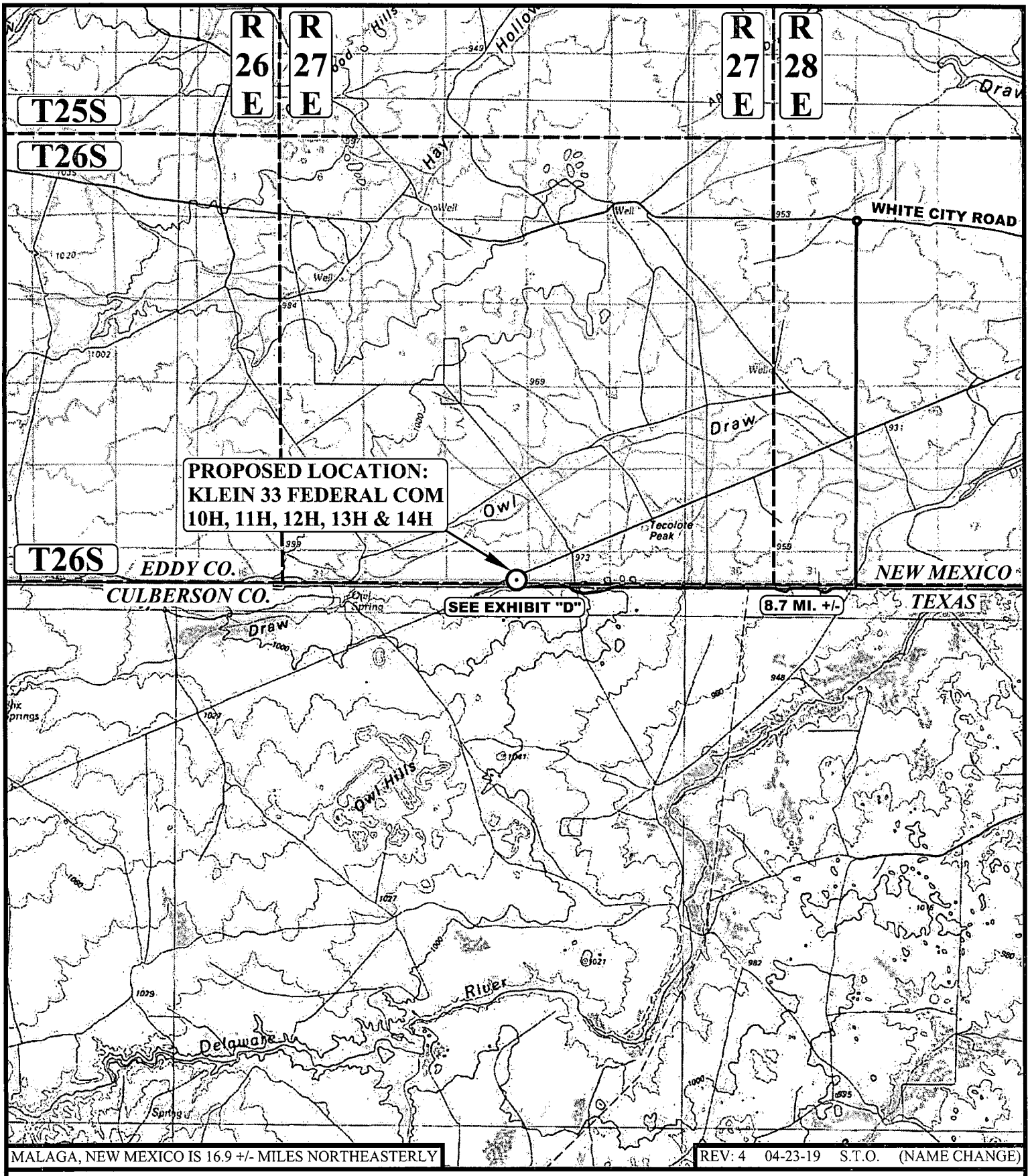
Previous Onsite information: 08/23/2013 - Legion Brumley - BLM Onsite Klein 33 Federal Com #10H

Operator Name: CIMAREX ENERGY COMPANY

Well Name: KLEIN 33 FEDERAL COM **Well Number:** 11H

Other SUPO Attachment

Klein_33_Fed_com_11H_SUPO_20190621130459.pdf



MALAGA, NEW MEXICO IS 16.9 +/- MILES NORTHEASTERLY

REV: 4 04-23-19 S.T.O. (NAME CHANGE)

LEGEND:

⊙ PROPOSED LOCATION

N

CIMAREX ENERGY CO.

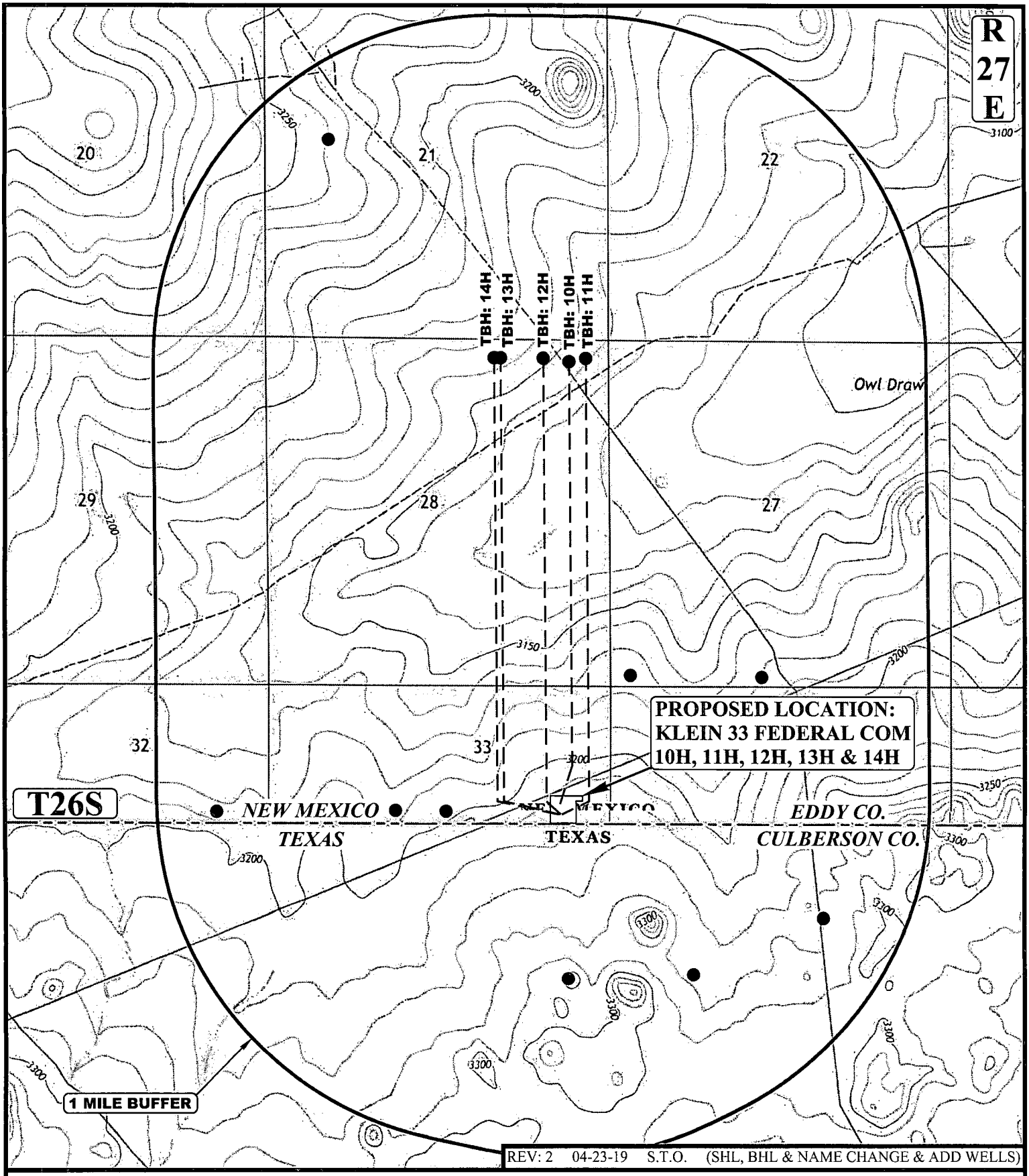
KLEIN 33 FEDERAL COM 10H, 11H, 12H, 13H & 14H
LOT 1, SECTION 33, T26S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING

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

DRAWN BY	J.L.H.	09-12-13	SCALE 1 : 100,000

PUBLIC ACCESS ROAD MAP **EXHIBIT B**



REV: 2 04-23-19 S.T.O. (SHL, BHL & NAME CHANGE & ADD WELLS)

LEGEND:

● EXISTING WELLS

N

CIMAREX ENERGY CO.

KLEIN 33 FEDERAL COM 10H, 11H, 12H, 13H & 14H
LOT 1, SECTION 33, T26S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DRAWN BY	J.L.H.	09-12-13	SCALE 1 : 24,000
1 MILE RADIUS MAP			EXHIBIT E

UINTAH ENGINEERING & LAND SURVEYING

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