NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 16 2018
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Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

5. Lease Serial No.: NMNM119754

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

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

1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.: RB NE 5 32 FED 13H 320646

2. Name of Operator: CHEVRON USA INCORPORATED 4323

9. API Well No.: 30-015-44639

3a. Address: 6301 Deauville Blvd. Midland TX 79706

3b. Phone No. *(include area code)*: (432)687-7866

10. Field and Pool, or Exploratory: PURPLE SAGE / WOLFCAMP, (GAS)

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

At surface: SESE / 380 FSL / 1250 FEL / LAT 32.240522 / LONG -104.002104

At proposed prod. zone: NENE / 280 FNL / 330 FEL / LAT 32.267805 / LONG -104.99463

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 5 / T24S / R29E / NMP

14. Distance in miles and direction from nearest town or post office*: 3 miles

12. County or Parish: EDDY

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 330 feet

16. No. of acres in lease: 359.88

17. Spacing Unit dedicated to this well: 640 639.77

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 1652 feet

19. Proposed Depth: 10450 feet / 20076 feet

20. BLM/BIA Bond No. on file: FED: CA0329

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3029 feet

22. Approximate date work will start*: 06/01/2017

23. Estimated duration: 130 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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 required by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Dorian K Fuentes / Ph: (432)687-7631	12/20/2016

Title: Permitting Specialist

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	01/11/2018
Title: Supervisor Multiple Resources	Office: 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.

(Continued on page 2)

*(Instructions on page 2)

NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 16 2018
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APPROVED WITH CONDITIONS

Approval Date: 01/11/2018

RWP 1-18-2018

OCD Artesia 17-278

AFMSS

U.S. Department of the Interior
Bureau of Land Management

Application for Permit to Drill

APD Package Report

Date Printed: 01/12/2018 08:35 AM

APD ID: 10400009295	Well Status: AAPD
APD Received Date: 12/20/2016 06:01 AM	Well Name: RB NE 5 32 FED
Operator: CHEVRON USA INCORPORATED	Well Number: 13H

APD Package Report Contents

- Form 3160-3
- Operator Certification Report
- Application Report
- Application Attachments
  -- Well Plat: 1 file(s)
- Drilling Plan Report
- Drilling Plan Attachments
  -- Blowout Prevention Choke Diagram Attachment: 1 file(s)
  -- Blowout Prevention BOP Diagram Attachment: 1 file(s)
  -- Casing Taperd String Specs: 1 file(s)
  -- Casing Design Assumptions and Worksheet(s): 3 file(s)
  -- Hydrogen sulfide drilling operations plan: 1 file(s)
  -- Proposed horizontal/directional/multi-lateral plan submission: 3 file(s)
- SUPO Report
- SUPO Attachments
  -- Existing Road Map: 1 file(s)
  -- New Road Map: 1 file(s)
  -- Attach Well map: 1 file(s)
  -- Water source and transportation map: 1 file(s)
  -- Well Site Layout Diagram: 1 file(s)
  -- Recontouring attachment: 2 file(s)
- PWD Report
- PWD Attachments
  -- None
- Bond Report
- Bond Attachments
  -- None

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Chevron USA Inc.
LEASE NO.:	NMNM119754
WELL NAME & NO.:	13H-RB NE 5 32 Fed
SURFACE HOLE FOOTAGE:	380'/S & 1250'/E
BOTTOM HOLE FOOTAGE	280'/N & 330'/E
LOCATION:	Section 5, T.24 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

Generate

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave Karst Potential	○ Low	◉ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

1. 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 **450 feet** (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

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

❖ In Medium 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.

Operator must keep casing 1/3 fill while running intermediate casing in order to maintain collapse safety factor.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
Operator has proposed DV tool at depth of 2500', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool: Cement to surface. If cement does not circulate, contact the appropriate BLM office.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

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

C. PRESSURE CONTROL

D.

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

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 surface 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.**

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.

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

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).

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 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.

3. 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.

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

5. 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.

6. 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.

7. 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: 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. Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.
    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.
    f. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

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.

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 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.

ZS 0920517

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Chevron USA Inc.
LEASE NO.:	NMNM119754
WELL NAME & NO.:	13H-RB NE 5 32 Fed
SURFACE HOLE FOOTAGE:	380'/S & 1250'/E
BOTTOM HOLE FOOTAGE	280'/N & 330'/E
LOCATION:	Section 5, T.24 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Cave/Karst
  - Watershed/Water Quality
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

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 and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
The entire perimeter of the well pad 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 24 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- 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.
- 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 access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery Liners and Berms:
Tank battery locations and all facilities 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.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
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.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
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.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Watershed/Water Quality:

The entire perimeter of the well pad 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 24 inches high with impermeable mineral material (e.g. caliche).

- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- 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.
- 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 access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Affected Environment

The proposed project is located in a limestone karst terrain, a landform that is characterized by underground drainage through solutionally enlarged conduits. Limestone karst terrain may contain sinkholes, sinking streams, caves, springs and lineaments. These karst features, as well as occasional fissures and discontinuities in the bedrock, provide the primary sources for rapid recharge of the groundwater aquifers of the region. Lineaments, linear or curvilinear surface features that indicate joints or fractures at depth which have reached the surface, may be present. In the Guadalupe Mountains, these features are often found in association with caves.

The BLM categorizes all areas within the Carlsbad Field Office as having either low, medium, high or critical cave potential based on geology, occurrence of known caves, density of karst features, and potential impacts to fresh water aquifers. This project occurs within a medium karst zone. A medium karst zone is defined as an area in known soluble rock types but may have a shallow insoluble overburden. These areas may contain isolates karst features such as caves and sinkholes. Groundwater recharge may not be wholly dependent on karst features but the karst features still provide the most rapid aquifer recharge in response to surface runoff.

Sinkholes and cave entrances collect water and can accumulate rich organic materials and soils. This, in conjunction with the stable microclimate near cave entrances, support a greater diversity and density of plant life which provides habitat for a greater diversity and density of wildlife such as raptors, rodents, mammals, and reptiles.

The interior of the caves support a large variety of troglobitic, or cave environment-dependent species. The troglobitic species have adapted specifically to the cave environment due to constant temperatures, constant high humidity, and total darkness. Many of the caves in this area contain fragile cave formations known as speleothems.

Impacts from the Proposed Action

Direct and Indirect Impacts

General Impact Analysis

Cave and karst features provide direct conduits leading to groundwater. These conduits can quickly transport surface and subsurface contaminants directly into underground water systems and freshwater aquifers without filtration or biodegradation. In addition, contaminates spilled or

leaked into or onto cave/karst zone surfaces and subsurfaces may lead directly to the disruption, displacement, or extermination of cave species and critical biological processes. In extreme or rare cases, a buildup of hydrocarbons in cave systems due to surface leaks or spills could potentially cause underground ignitions or asphyxiation of wildlife or humans within the cave.

In cave and karst terrains, rainfall and surface runoff is directly channeled into natural underground water systems and aquifers. Changes in geologic formation integrity, runoff quantity/quality, drainage course, rainfall percolation factors, vegetation, surface contour, and other surface factors can negatively impact cave ecosystems and aquifer recharge processes. Blasting, heavy vibrations, and focusing of surface drainages can lead to slow subsidence, sudden collapse of subsurface voids, and/or cave ecosystem damage.

A more complete discussion of the impacts of oil and gas drilling can be found in the *Dark Canyon Environmental Impact Statement of 1993*, published by the U.S. Department of the Interior, Bureau of Land Management.

To mitigate or lessen the probability of impacts associated with the drilling and production of oil and gas wells in karst areas, the guidelines listed in Appendix 3, Practices for Oil and Gas Drilling and Production in Cave and Karst Areas, as approved in the Carlsbad Resource Management Plan Amendment of 1997, page AP3-4 through AP 3-7 will be followed.

BLM maintains up to date locations and surveys of known cave and karst features. Projects will be located away from these features whenever possible. Drilling pads, roads, utilities, pipelines and flowlines will be routed around cave and karst features at an adequate distance to mitigate adverse impacts. Wellbore engineering plans will incorporate required cave and aquifer protection protocols.

Highly sensitive cave and karst areas with critical freshwater aquifer recharge concerns may have a number of special surface and subsurface planning and construction requirements based upon the risk of adverse impacts created by a specific location or process.

Construction Impact Analysis

The construction of roads, pipelines, well pads and utilities can impact bedrock integrity and reroute, impede, focus, or erode natural surface drainage systems. Increased silting and sedimentation from construction can plug downstream sinkholes, caves, springs, and other components of aquifer recharge systems and result in adverse impacts to aquifer quality and cave environments. Any contaminants released into the environment during or after construction can impact aquifers and cave systems. A possibility exists for slow subsidence or sudden surface collapse during construction operations due to collapse of underlying cave passages and voids. This would cause associated safety hazards to the operator and the potential for increased environmental impact. Subsidence processes can be triggered by blasting, intense vibrations, rerouting of surface drainages, focusing of surface drainage, and general surface disturbance.

Blasting fractures in bedrock can serve as direct conduits for transfer of contaminants into cave and groundwater systems. Blasting also creates an expanded volume of rock rubble that cannot be reclaimed to natural contours, soil condition, or native vegetative condition. As such, surface and subsurface disruptions from blasting procedures can lead to permanent changes in vegetation, rainfall percolation, silting/erosion factors, aquifer recharge, and freshwater quality and can increase the risk of contaminant migration from drilling/production facilities built atop the blast area.

Drilling Impact Analysis

During drilling, previously unknown cave and karst features could be encountered. If a void is encountered while drilling and a loss of circulation occurs, lost drilling fluids can directly contaminate groundwater recharge areas, aquifers, and groundwater quality. Drilling operations can also lead to sudden collapse of underground voids. Cementing operations may plug or alter

groundwater flow, potentially reducing the water quantity at springs and water wells. Inadequate subsurface cementing, casing, and cave/aquifer protection measures can lead to the migration of oil, gas, drilling fluids, and produced saltwater into cave systems and freshwater aquifers.

Production Impact Analysis

Production facilities such as tank batteries, pump-jacks, compressors, transfer stations, and piping may fail and allow contaminants to enter caves and freshwater systems. Downhole casing and cementing failures can allow migration of fluids and/or gas between formations and aquifers. Facilities may also be subject to slow subsidence or sudden collapse of the underlying bedrock.

Residual and Cumulative Impact Analysis

Any industrial activities that take place upon or within karst terrains or freshwater aquifer zones have the potential to create both short-term and long-term negative impacts to freshwater aquifers and cave systems. While a number of mitigation measures can be implemented to mitigate many impacts, it is still possible for impacts to occur from containment failures, well blowouts, accidents, spills, and structural collapses. It is therefore necessary to implement long-term monitoring studies to determine if current mitigations measures are sufficient enough to prevent long-term or cumulative impacts.

Plugging and Abandonment Impact Analysis

Failure of a plugged and abandoned well can lead to migration of contaminants to karst resources and fresh water aquifers. While this action does not specifically approve plugging and abandonment procedures, the operator should be made aware that additional or special Conditions of Approval may apply at that time.

Mitigation Measures and Residual Impacts

Construction Mitigation

In order to mitigate the impacts from construction activities on cave and karst resources, the following Conditions of Approval will apply to this APD:

- In the event that any underground voids are encountered during construction activities, construction activities will be halted and the BLM will be notified immediately.
- No blasting to prevent geologic structure instabilities.
- The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. 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 berm shall be maintained through the life of the well and 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.

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 Mud System Using Steel Tanks with All Fluids and Cuttings Hauled Off.
- Rotary drilling with fresh water where cave or karst features are expected to prevent contamination of freshwater aquifers.
- Directional Drilling allowed after at least 100 feet below the cave occurrence zone to prevent additional impacts resulting from directional drilling.
- Lost Circulation zones 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 terrain, the following Conditions of Approval will apply to this APD:

- Tank battery liners and berms to minimize the impact resulting from leaks.
- 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 line failures used in production or drilling.

Residual and Cumulative Mitigation

Annual pressure monitoring will be performed by the operator. If the test results indicate a casing failure has occurred, remedial action will be undertaken 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/Water Quality:

The entire perimeter of the well pad 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 high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- 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.
- 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 access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, 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. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. 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.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

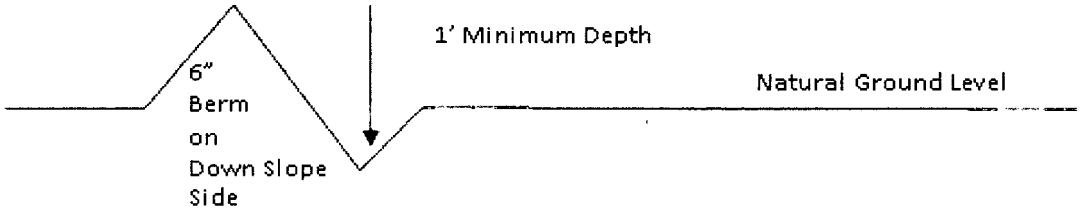
Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Cattle guards
An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement
Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

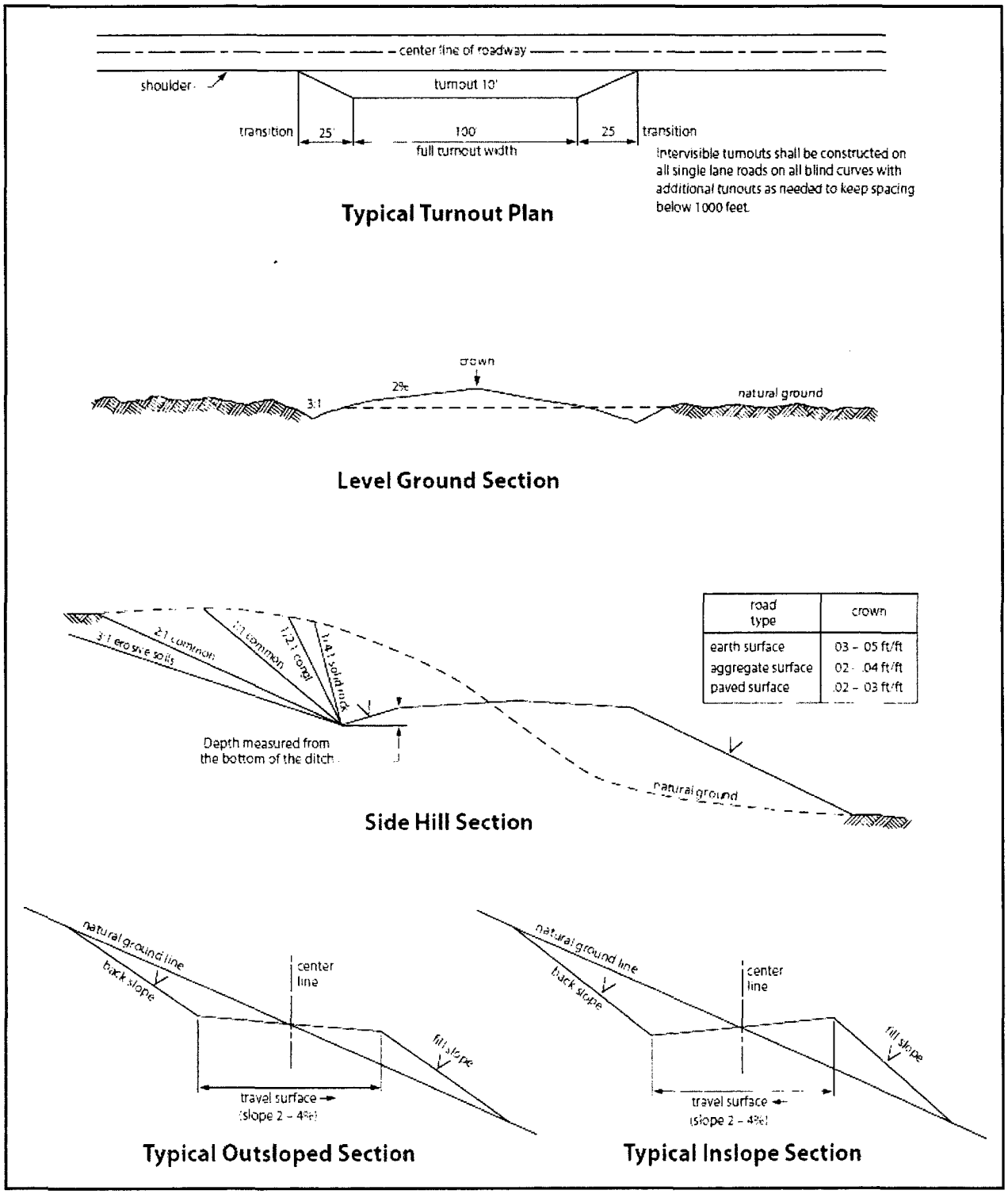


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

IX. 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).

Seed Mixture 3, for Shallow Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

	Species lb/acre
Plains Bristlegrass (*Setaria macrostachya*)	1.0
Green Sprangletop (*Leptochloa dubia*)	2.0
Sideoats Grama (*Bouteloua curtipendula)*	5.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

AFMSS

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

ator Certification Data Report

01/12/2018

Operator Certification

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

NAME: Dorian K Fuentes **Signed on:** 12/20/2016

Title: Permitting Specialist

Street Address: 6301 Deauville Blvd

City: Midland **State:** TX **Zip:** 79706

Phone: (432)687-7631

Email address: djvo@chevron.com

Field Representative

Representative Name:

Street Address:

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

Phone:

Email address:

APD ID: 10400009295 **Submission Date:** 12/20/2016

Operator Name: CHEVRON USA INCORPORATED

Well Name: RB NE 5 32 FED **Well Number:** 13H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400009295 **Tie to previous NOS?** **Submission Date:** 12/20/2016

BLM Office: CARLSBAD **User:** Dorian K Fuentes **Title:** Permitting Specialist

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

Lease number: NMNM119754 **Lease Acres:** 359.88

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

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

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? NO **APD Operator:** CHEVRON USA INCORPORATED

Operator letter of designation:

Operator Info

Operator Organization Name: CHEVRON USA INCORPORATED

Operator Address: 6301 Deauville Blvd.

Zip: 79706

Operator PO Box:

Operator City: Midland **State:** TX

Operator Phone: (432)687-7866

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO **Mater Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: RB NE 5 32 FED **Well Number:** 13H **Well API Number:**

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

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

Operator Name: CHEVRON USA INCORPORATED

Well Name: RB NE 5 32 FED **Well Number:** 13H

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** RB NE 5 32 FED **Number:** 11H 12H 13H

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

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 3 Miles **Distance to nearest well:** 1652 FT **Distance to lease line:** 330 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: RB NE 5 32 FED 13H_C-102_03-01-2017.pdf

Well work start Date: 06/01/2017 **Duration:** 130 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 0

	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
SHL Leg #1	380	FSL	1250	FEL	24S	29E	5	Aliquot SESE	32.240522	-104.002104	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 119754	3029	0	0
KOP Leg #1	0	FSL	0	FWL	24S	29E	5	Aliquot SESE	15	-60	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 119754	3028	0	0
PPP Leg #1	330	FSL	330	FEL	24S	29E	5	Aliquot SESE	32.240522	-104.002104	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 119754	-7422	20076	10450

Operator Name: CHEVRON USA INCORPORATED

Well Name: RB NE 5 32 FED **Well Number:** 13H

	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
EXIT Leg #1	330	FNL	330	FEL	23S	29E	32	Aliquot NENE	32.267805	-104.999463	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-7422	20076	10450
BHL Leg #1	280	FNL	330	FEL	23S	29E	32	Aliquot NENE	32.267805	-104.999463	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-7422	20076	10450

Operator Name: CHEVRON USA INCORPORATED

Well Name: RB NE 5 32 FED **Well Number:** 13H

Choke Diagram Attachment:

RB NE 5 32 FED 13WA_BOP-Choke_03-01-2017.pdf

BOP Diagram Attachment:

RB NE 5 32 FED 13WA_BOP Diagram_12-19-2016.pdf

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	API	N	0	450	0	450	-7422	-7872	450	K-55	54.5	STC	5.11	1.82	DRY	3.97	DRY	2.31
2	INTERMEDIATE	12.25	9.625	NEW	API	Y	0	9000	0	9000	-7422	-17872	9000	L-80	43.5	OTHER - TXP	1.34	2.9	DRY	2.22	DRY	1.79
3	PRODUCTION	8.5	5.5	NEW	API	N	0	20402	0	20402	-7422	-27498	20402	P-110	20	OTHER - TXP	1.66	1.26	DRY	1.31	DRY	2.54

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

RB NE 5 32 FED 13WA_9ppt plan_12-19-2016.pdf

Operator Name: CHEVRON USA INCORPORATED

Well Name: RB NE 5 32 FED **Well Number:** 13H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

RB_NE_5_32_FED_11H_9.625_TXP_08-21-2017.PDF

Casing Design Assumptions and Worksheet(s):

RB NE 5 32 FED 13H_9.625 TXP_03-01-2017.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

RB NE 5 32 FED 13H_P110 TenarisXP BTC_03-01-2017.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	450	356	1.33	14.8	6.37	50	C	Class C
INTERMEDIATE	Lead	2500	0	1600	367	2.41	11.9	2.43	100	CL C	50/50 Poz Class H + Extender, Antifoam, Retarder, Salt, Viscosifier
INTERMEDIATE	Tail		1600	2500	318	1.33	14.8	1.33	50	C	CLASS C + ANTIFOAM, RETARDER,

Operator Name: CHEVRON USA INCORPORATED

Well Name: RB NE 5 32 FED **Well Number:** 13H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											VISCOSIFIER
INTERMEDIATE	Lead	2500	2500	8000	1063	2.43	11.9	13.66	50	H	50/50 Poz Class H + Antifoam, Extender, Salt, Retarder
INTERMEDIATE	Tail		8000	9000	259	1.21	15.6	5.34	0	H	Class H + Retarder, Dispersant
PRODUCTION	Lead		8000	20402	3476	1.2	15.6	7.62	50	H	50/50 Poz: Class H + Extender, Antifoam, Dispersant, Retarder

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: A closed system will be utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill. All fluids and cuttings will be disposed of in accordance with NMOCD regulations.

Describe the mud monitoring system utilized: A mud test shall be performed every 24 hours after mudding up to determine, as applicale density, viscosity, gel strength, filtration, and pH. Visual Mud monitoring Equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated a PVT, Stroke counter, Flow Sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume - in compliance with onshore order #2

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	450	SPUD MUD	8.3	8.7							

Operator Name: CHEVRON USA INCORPORATED

Well Name: RB NE 5 32 FED **Well Number:** 13H

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
450	9000	OIL-BASED MUD	8.8	9.8							
9000	20402	OIL-BASED MUD	9.5	13							The mud weights will range depending on the targeted formation. The Wolfcamp A pore pressure will not exceed 9.5 ppg, but due to wellbore stability, the mud program will exceed the pore pressure. To control pressure we are using 13.0 and may end up using heavier mud weight to 14.0.

Section 6 - Test, Logging, Coring

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

Drill Stem Tests are not planned
The logging program will be as follows:
Type - Mudlogs Logs - 2 man mudlog Interval- Csg to TD timing- Drillout of Int Csg Vendor- TBD
Type - LWD Logs - MWD Gamma Interval- Int. and Prod. Hole Timing - While drilling vendor-TBD.

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

GR,MWD,MUDLOG

Coring operation description for the well:

Conventional whole core samples are not planned; directional survey will be run - will send log(s) when run

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6918 **Anticipated Surface Pressure:** 4619

Anticipated Bottom Hole Temperature(F): 150

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

RB NE 5 32 FED 13WA_H2S_12-19-2016.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

RB_NE_5_32_FED_13H_AC_Report_04-12-2017.pdf
RB_NE_5_32_FED_13H_Stand_Report_04-12-2017.pdf
RB_NE_5_32_FED_11H_Rig_Layout_08-21-2017.pdf

Other proposed operations facets description:

FTP specified from Standard Report attached to reflect the C-102.

Other proposed operations facets attachment:

Other Variance attachment:

CHOKE MANIFOLD SCHEMATIC

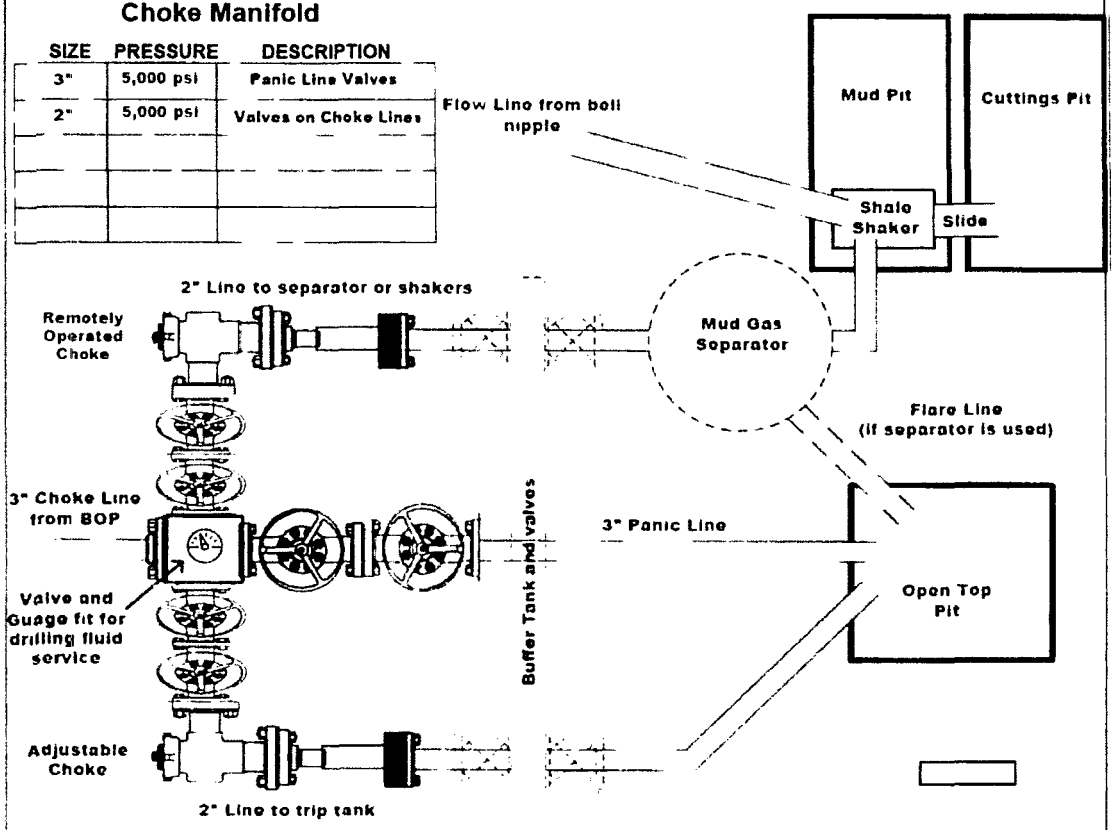
Minimum Requirements

OPERATION : Bone Spring wells/ Intermediate section SWD

Minimum System Pressure Rating : 5,000 psi

Choke Manifold

SIZE	PRESSURE	DESCRIPTION
3"	5,000 psi	Panic Line Valves
2"	5,000 psi	Valves on Choke Lines



Installation Checklist

The following item must be verified and checked off prior to pressure testing of BOP equipment.

- ☐ **The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.**
- ☐ **Adjustable Chokes may be Remotely Operated but will have backup hand pump for hydraulic actuation in case of loss of rig air pressure or power.**
- ☐ **Flare and Panic lines will terminate a minimum of 150' from the wellhead. These lines will terminate at a location as per approved APD.**
- ☐ **The choke line, kill line, and choke manifold lines will be straight unless turns use tee blocks or are targeted with running tess, and will be anchored to prevent whip and reduce vibration. This excludes the line between mud gas separator and shale shaker.**
- ☐ **All valves (except chokes) on choke line, kill line, and choke manifold will be full opening and will allow straight through flow. This excludes any valves between mud gas separator and shale shakers.**
- ☐ **All manual valves will have hand wheels installed.**
- ☐ **If used, flare system will have effective method for ignition**
- ☐ **All connections will be flanged, welded, or clamped (no threaded connections like hammer unions)**
- ☐ **If buffer tank is used, a valve will be used on all lines at any entry or exit point to or from the buffer tank.**

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

Wellname: _____

Representative: _____

Date: _____

Diagram B

BLOWOUT PREVENTOR SCHEMATIC

Minimum Requirements

OPERATION : Bone Spring wells/ Intermediate section SWD

Minimum System Pressure Rating : 5,000 psi

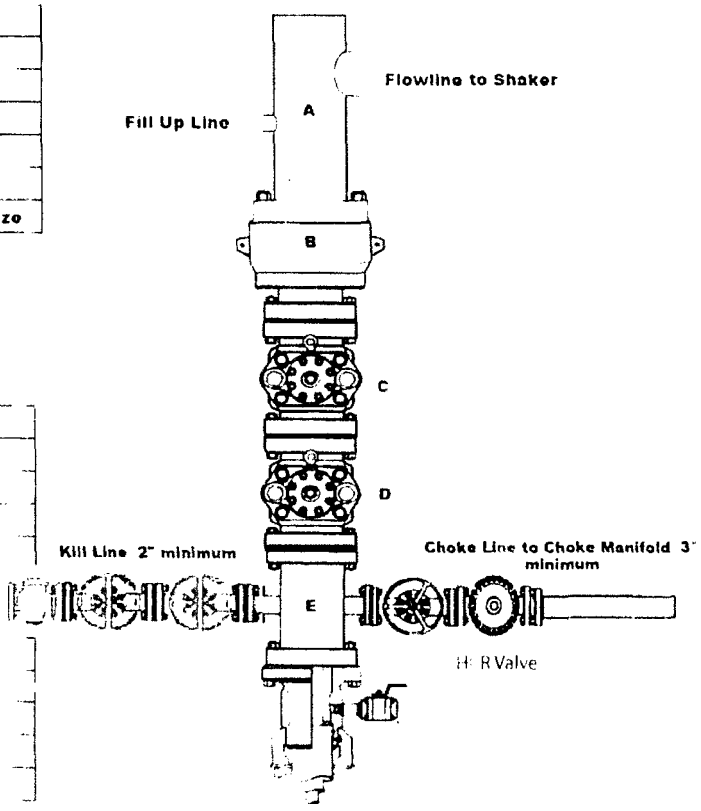
	SIZE	PRESSURE	DESCRIPTION
A		N/A	Bell Nipple
B	13 5/8"	5,000 psi	Annular
C	13 5/8"	5,000 psi	Pipe Ram
D	13 5/8"	5,000 psi	Blind Ram
E	13 5/8"	5,000 psi	Mud Cross
F			
DSA		As required for each hole size	

Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	5,000 psi	Gate Valve
2"	5,000 psi	Gate Valve
2"	5,000 psi	Check Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
3"	5,000 psi	Gate Valve
3"	5,000 psi	HCR Valve



Installation Checklist

The following item must be verified and checked off prior to pressure testing of BOP equipment.

- ☐ **The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.**
- ☐ **All valves on the kill line and choke line will be full opening and will allow straight though flow.**
- ☐ **The kill line and choke line will be straight unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and reduce vibration.**
- ☐ **Manual (hand wheels) or automatic locking devices will be installed on all ram preventers. Hand wheels will also be installed on all manual valves on the choke line and kill line.**
- ☐ **A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will remain open unless accumulator is inoperative.**
- ☐ **Upper kelly cock valve with handle will be available on rig floor along with safety valve and subs to fit all drill string connections in use.**

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

Wellname: _____

Representative: _____

Date: _____

Diagram A

For the latest performance data, always visit our website: www.tenaris.com

February 08 2017

Tenaris

Size: 9.625 in.
Wall: 0.435 in.
Weight: 43.50 lbs/ft
Grade: L80.1
Min. Wall Thickness: 87.5 %

Connection: TenarisXP® BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

PIPE BODY DATA

GEOMETRY

Nominal OD	**9.625** in.	Nominal Weight	**43.50** lbs/ft	Standard Drift Diameter	**8.599** in.
Nominal ID	**8.755** in.	Wall Thickness	**0.435** in.	Special Drift Diameter	**N/A**
Plain End Weight	**42.73** lbs/ft				

PERFORMANCE

Body Yield Strength	**1005** x 1000 lbs	Internal Yield	**6330** psi	SMYS	**80000** psi
Collapse	**3810** psi				

TENARISXP® BTC CONNECTION DATA

GEOMETRY

Connection OD	**10.625** in.	Coupling Length	**10.825** in.	Connection ID	**8.743** in.
Critical Section Area	**12.559** sq. in.	Threads per in.	**5.00**	Make-Up Loss	**4.891** in.

PERFORMANCE

Tension Efficiency	**100** %	Joint Yield Strength	**1005** x 1000 lbs	Internal Pressure Capacity[1]	**6330** psi
Structural Compression Efficiency	**100** %	Structural Compression Strength	**1005** x 1000 lbs	Structural Bending[2]	**38** °/100 ft
External Pressure Capacity	**3810** psi				

ESTIMATED MAKE-UP TORQUES[3]

Minimum	**20240** ft-lbs	Optimum	**22490** ft-lbs	Maximum	**24740** ft-lbs

OPERATIONAL LIMIT TORQUES

Operating Torque	**ASK**	Yield Torque	**45900** ft-lbs		

BLANKING DIMENSIONS

Blanking Dimensions

(1) Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.

(2) Structural rating, pure bending to yield (i.e no other loads applied)

(3) Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed.

For additional information, please contact us at contact-tenarishydril@tenaris.com

Eddy County, NM

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:
The formation tops are just an overview of the area TVD and are subjected to change.

FORMATION	SUB-SEA TVD	KBTVD	MD
Castille		505	
Lamar		2395	
Bell		2310	
Cherry		3208	
Brushy		4450	
Bone Spring/Avalon		6299	
First Bone Spring Sand		6888	
First Bone Spring Shale		6914	
Second Bone Spring Sand		7621	
Harkey Sand		8123	
Third Bone Spring Sand		8617	
Wolfcamp A		9014	
Lateral TVD Wolfcamp A		9014	14,014'-22,000'

2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Deepest Expected Base of Fresh Water		450
Water	Castille	505
Water	Cherry Canyon	3208
Oil/Gas	Brushy Canyon	4450
Oil/Gas	Bone Spring Limestone	6888
Oil/Gas	First Bone Spring Shale	6914
Oil/Gas	Second Bone Spring Sand	7621
Oil/Gas	Harkey Sand	8123
Oil/Gas	Wolfcamp A	9014

All shows of fresh water and minerals will be reported and protected.

3. BOP EQUIPMENT

Will have a minimum of a 5000 psi rig stack (see proposed schematic) for drill out below surface casing. Stack will be tested as specified in the attached testing requirements. Chevron requests a variance to use a CoFlex hose with a metal protective covering that will be utilized between the BOP and Choke manifold. Please refer to the testing and specification documents.

Chevron requests a variance to use a FMC Technologies UH-2 Multibowl wellhead, which will be run through the rig foor on surface casing. BOPE will be nippled up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days. The field report from FMC Technologies and BOP test information will be provided in a subsequent report at the end of the well. Please see the attached wellhead schematic. An installation manual has been placed on file with the BLM office and remains unchanged from previous submittal.

4. **CASING PROGRAM**

a. The proposed casing program will be as follows:The proposed casing program will be as follows: The ranges of the production casing will range from 5000' -10,000' laterals. The targeted formations will be the Wolfcamp A. The casing loads were based on the worst case senerio (10,000' lateral)

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	450'	17-1/2"	13-3/8"	54.5 #	K-55	STC	New
Intermediate	0'	9,015'	12-1/4"	9-5/8"	40.0 #	L-80	TXP	New
Production	0'	14,014'-22,000'	8-1/2"	5-1/2"	20.0 #	P-110	TXP	New

b. Casing design subject to revision based on geologic conditions encountered.

c. *****A "Worst Case" casing design for wells in a particular area is used below to calculate the Casing Safety Factors. If for any reason the casing design for a particular well requires setting casing deeper than the following "worst case" design, then the Casing Safety Factors will be recalcuated & sent to the BLM prior to drilling.**

d. **Chevron will fill casing at a minimum of every 20 jts (840') while running for intermediate and production casing in order to maintain collapse SF.**

SF Calculations based on the following "Worst Case" casing design:

Surface Casing: 450'
Intermediate Casing: 9015'
Production Casing: 14,014'-22,000' MD/9,014' TVD (5,000'-10,000' VS @ 90 deg inc)

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	1.82	5.11	3.97	2.31
Intermediate	2.9	1.34	1.79	2.22
Production	1.26	1.66	2.54	1.31

Min SF is the smallest of a group of safety factors that include the following considerations:

	Surf	Int	Prod
Burst Design			
Pressure Test- Surface, Int, Prod Csg P external: Water P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Water P internal: Dry Gas from Next Csg Point	X		
Frac at Shoe, Gas to Surf- Int Csg P external: Water P internal: Dry Gas, 15 ppg Frac Gradient		X	
Stimulation (Frac) Pressures- Prod Csg P external: Water P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg (packer at KOP) P external: Water P internal: Leak just below surf, 8.7 ppg packer fluid			X
Collapse Design			
Full Evacuation P external: Water gradient in cement, mud above TOC P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: water	X	X	X
Tension Design			
100k lb overpull	X	X	X

5. **CEMENTING PROGRAM**

Slurry	Type	Cement Top	Cement Bottom	Weight (ppg)	Yield (sx/cu ft)	%Excess Open Hole	Sacks	Water gal/sk
Surface								
Tail	Class C	0'	450'	14.8	1.33	50-100		6.37
Intermediate								
Stage 2 Lead	50:50 Poz: Class C + Antifoam, Extender, Salt, Retarder	0'	1,100'	11.9	2.43	50-100	150-250	14.21
Stage 2 Tail	Class C + Antifoam, Retarder, Viscosifier	1,100'	2,100'	14.8	1.33	50-100	250-350	6.37
DV Tool		Tool Depth: 2,100'						
Stage 1 Lead	50:50 Poz: Class H + Extender, Antifoam, Retarder, Salt, Viscosifier	2,100'	8,015'	11.9	2.43	50-100	600-850	13.76
Stage 1 Tail	Class H + Retarder, Extender, Dispersant	8,015'	9,015'	15.6	1.21	50-100	250-450	5.54
Production								
Lead	50:50 Poz: Class H + Extender, Antifoam, Dispersant, , Retarder	7,015'	8,015'	14.5	1.21	50-100	150-250	5.54
Tail	Class H + Viscosifier, Antifoam, Dispersant, Fluid Loss, Retarder, Expanding Agent	8,015'	TD	15.6	1.2	50-100	2000-3000	5.30

1. Final cement volumes will be determined by caliper. Also, due to the surface location not being staked, the cement
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.

3. Production casing will have one horizontal type centralizer on every joint for the first 1000' from TD, then every other joint to EOB, and then every third joint to KOP. Bowspring type centralizers will be run from KOP to intermediate casing

6. **MUD PROGRAM**

From	To	Type	Weight	F. Vis	Filtrate
0'	450'	Spud Mud	8.3 - 8.7	32 - 34	NC - NC
450'	9015'	OBM	9.0 - 9.5	50 -70	5.0 - 10
9015'	TD	OBM	10.0 - 13.5	50 -70	5.0 - 10

* The mud weights will range depending on the targeted formation. The Wolfcamp A pore pressure will not exceed 9.5 ppg, but due to wellbore stability, the mud program will exceed the pore pressure.
A closed system will by utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated -- a pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions

7 **TESTING, LOGGING, AND CORING**

The anticipated type and amount of testing, logging, and coring are as follows:

a. Drill stem tests are not planned.
b. The logging program will be as follows:

TYPE	Logs	Interval	Timing	Vendor
Mudlogs	2 man mudlog	Int Csg to TD	Drillout of Int Csg	TBD
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling	TBD

c. Conventional whole core samples are not planned.
d. A Directional Survey will be run.

8. **ABNORMAL PRESSURES AND HYDROGEN SULFIDE**

a. There is a pressure ramp that will be seen in the Wolfcamp A formation expected. Estimated BHP is: **4218 psi**
b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan will be attached with this MPD in the event that H2S is encountered

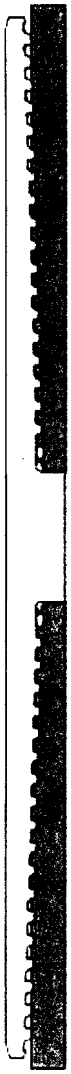
For the latest performance data, always visit our website: www.tenaris.com

July 07 2015

Tenaris

Size: 5.500 in.
Wall: 0.361 in.
Weight: 20.00 lbs/ft
Grade: P110
Min. Wall Thickness: 87.5 %

Connection: TenarisXP™ BTC
Casing/Tubing: CAS
Coupling Option: REGULAR



PIPE BODY DATA

GEOMETRY

Nominal OD	**5.500** in.	Nominal Weight	**20.00** lbs/ft	Standard Drift Diameter	**4.653** in.
Nominal ID	**4.778** in.	Wall Thickness	**0.361** in.	Special Drift Diameter	**N/A**
Plain End Weight	**19.83** lbs/ft				

PERFORMANCE

Body Yield Strength	**641** x 1000 lbs	Internal Yield	**12630** psi	SMYS	**110000** psi
Collapse	**11100** psi				

TENARISXP™ BTC CONNECTION DATA

GEOMETRY

Connection OD	**6.100** in.	Coupling Length	**9.450** in.	Connection ID	**4.766** in.
Critical Section Area	**5.828** sq in.	Threads per in.	**5.00**	Make-Up Loss	**4.204** in.

PERFORMANCE

Tension Efficiency	**100** %	Joint Yield Strength	**641** x 1000 lbs	Internal Pressure Capacity[1]	**12630** psi
Structural Compression Efficiency	**100** %	Structural Compression Strength	**641** x 1000 lbs	Structural Bending[2]	**92** °/100 ft
External Pressure Capacity	**11100** psi				

ESTIMATED MAKE-UP TORQUES[3]

Minimum	**11270** ft-lbs	Optimum	**12520** ft-lbs	Maximum	**13770** ft-lbs

OPERATIONAL LIMIT TORQUES

Operating Torque	**21500** ft-lbs	Yield Torque	**23900** ft-lbs		

BLANKING DIMENSIONS

Blanking Dimensions

(1) Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.

(2) Structural rating, pure bending to yield (i.e no other loads applied)

(3) Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed.

For additional information, please contact us at contact-tenarishydril@tenaris.com

H_2S Preparedness and Contingency Plan Summary

Chevron

Hayhurst Eddy County, New Mexico

Training

MCBU Drilling and Completions H_2S training requirements are intended to define the minimum level of training required for employees, contractors and visitors to enter or perform work at MCBU Drilling and Completions locations that have known concentrations of H_2S.

Awareness Level

Employees and visitors to MCBU Drilling and Completions locations that have known concentrations of H_2S, who are not required to perform work in H_2S areas, will be provided with an awareness level of H_2S training prior to entering any H_2S areas. At a minimum, awareness level training will include

1. Physical and chemical properties of H_2S
2. Health hazards of H_2S
3. Personal protective equipment
4. Information regarding potential sources of H_2S
5. Alarms and emergency evacuation procedures

Awareness level training will be developed and conducted by personnel who are qualified either by specific training educational experience and/or work-related background

Advanced Level H_2S Training

Employees and contractors required to work in areas that may contain H_2S will be provided with Advanced Level H_2S training prior to initial assignment In addition to the Awareness Level requirements Advanced Level H_2S training will include:

1. H_2S safe work practice procedures;
2. Emergency contingency plan procedures;
3. Methods to detect the presence or release of H_2S (e g., alarms, monitoring equipment), including hands-on training with direct reading and personal monitoring H_2S equipment.
4. Basic overview of respiratory protective equipment suitable for use in H_2S environments. Note Employees who work at sites that participate in the Chevron Respirator User program will require separate respirator training as required by the MCBU Respiratory Protection Program;
5. Basic overview of emergency rescue techniques, first aid, CPR and medical evaluation procedures Employees who may be required to perform "standby" duties are required to receive additional first aid and CPR training, which is not covered in the Advanced Level H_2S training;
6. Proficiency examination covering all course material

Advanced H_2S training courses will be instructed by personnel who have successfully completed an appropriate H_2S train-the-trainer development course (ANSI/ASSE Z390 1-2006) or who possess significant past experience through educational or work-related background

H_2S Training Certification

All employees and visitors will be issued an H_2S training certification card (or certificate) upon successful completion of the appropriate H_2S training course. Personnel working in an H_2S environment will carry a current H_2S training certification card as proof of having received the proper training on their person at all times.

Briefing Area

A minimum of two briefing areas will be established in locations that at least one area will be up-wind from the well at all times. Upon recognition of an emergency situation, all personnel should assemble at the designated upwind briefing areas for instructions.

H_2S Equipment

Respiratory Protection

a) Six 30 minute SCBAs – 2 at each briefing area and 2 in the Safety Trailer.

b) Eight 5 minute EBAs – 5 in the dog house at the rig floor, 1 at the accumulator, 1 at the shale shakers and 1 at the mud pits.

Visual Warning System

a) One color code sign, displaying all possible conditions, will be placed at the entrance to the location with a flag displaying the current condition.

b) Two windsocks will be on location, one on the dog house and one on the Drill Site Manager's Trailer.

H_2S Detection and Monitoring System

a) H_2S monitoring system (sensor head, warning light and siren) placed throughout rig.

- Drilling Rig Locations: at a minimum, in the area of the Shale shaker, rig floor, and bell nipple.
- Workover Rig Locations: at a minimum, in the area of the Cellar, rig floor and circulating tanks or shale shaker.

Well Control Equipment

a) Flare Line 150' from wellhead with igniter.

b) Choke manifold with a remotely operated choke.

c) Mud / gas separator

Mud Program

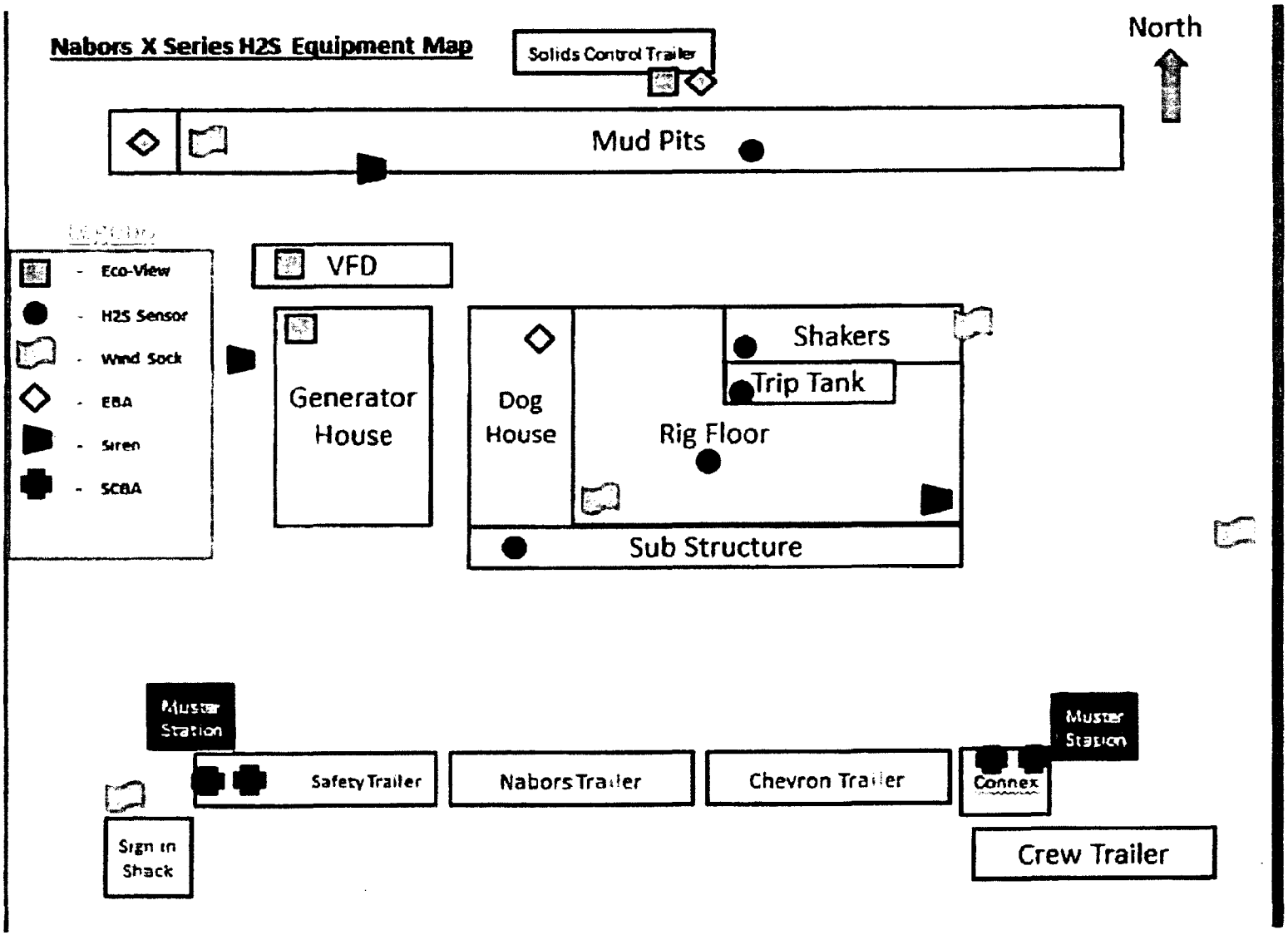
In the event of drilling, completions, workover and well servicing operations involving a hydrogen sulfide concentration of 100 ppm or greater the following shall be considered:

1. Use of a degasser
2. Use of a zinc based mud treatment
3. Increasing mud weight

Public Safety - Emergency Assistance

Agency	Telephone Number
Eddy County Sheriff's Department	575-887-7551
Fire Department:	
Carlsbad	575-885-3125
Artesia	575-746-5050
Carlsbad Medical Center	575-887-4100
Eddy County Emergency Management	575-628-5450
Poison Control Center	800-222-1222

H_2S Preparedness and Contingency Plan Summary



Chevron

Chevron

Eddy County, NM (NAD27 NME)
RB NE 5 32 Fed
13WA

OH
Plan 2 03-08-17

Anticollision Report

08 March, 2017

PHOENIX
TECHNOLOGY SERVICES

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Reference	Plan 2 03-08-17		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 15,000.00 usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	3.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 3/8/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	20,402.47	Plan 2 03-08-17 (OH)	MWD+HDGM	OWSG Rev.2 MWD + HDGM

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Macho Grande State						
#2H - WB1 / Job #1512777 - Surveys (Patriot 5)	20,402.47	10,246.53	444.11	167.89	1.608	CC, ES, SF
RB NE 5 32 Fed						
11WA - OH - Plan 2 03-08-17	2,300.00	2,300.00	50.00	25.94	2.078	CC, ES, SF
12WA - OH - Plan 2 03-08-17	2,300.00	2,300.00	25.00	0.94	1.039	Level 2, CC, ES, SF

Offset Design Macho Grande State - #2H - WB1 / Job #1512777 - Surveys (Patriot 5)

Offset Site Error: 0.00 usft

Survey Program: 515- **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	15.50	0.00	0.00	1.80	10,006.90	314.00	10,011.84				
100.00	100.00	75.35	90.85	0.20	0.20	1.80	10,006.94	313.81	10,011.86	10,011.47	0.40	N/A	
200.00	200.00	164.52	180.02	0.74	0.43	1.79	10,007.09	313.10	10,012.01	10,010.84	1.17	8,579.554	
300.00	300.00	253.68	269.17	1.28	0.66	1.78	10,007.36	311.87	10,012.26	10,010.33	1.94	5,170.554	
400.00	400.00	342.82	358.29	1.81	0.90	1.77	10,007.74	310.11	10,012.63	10,009.92	2.71	3,700.442	
500.00	500.00	431.94	447.38	2.35	1.13	1.76	10,008.23	307.82	10,013.10	10,009.62	3.48	2,881.368	
600.00	600.00	529.80	545.18	2.89	1.43	1.74	10,008.89	304.70	10,013.67	10,009.37	4.31	2,324.315	
700.00	700.00	662.83	678.13	3.43	2.16	1.72	10,009.39	300.00	10,013.91	10,008.35	5.56	1,800.752	
800.00	800.00	785.08	800.34	3.97	2.82	1.70	10,009.68	296.87	10,014.08	10,007.33	6.75	1,482.540	
900.00	900.00	893.79	909.01	4.50	3.41	1.68	10,009.70	294.03	10,014.02	10,006.14	7.88	1,271.361	
999.88	999.88	984.68	999.88	5.04	3.91	1.67	10,009.71	291.65	10,013.96	10,005.06	8.90	1,124.865	
1,000.00	1,000.00	984.78	999.97	5.04	3.91	1.67	10,009.71	291.65	10,013.96	10,005.06	8.90	1,124.716	
1,100.00	1,100.00	1,060.00	1,075.17	5.58	4.32	1.66	10,009.85	289.68	10,014.07	10,004.23	9.85	1,017.066	
1,200.00	1,200.00	1,149.00	1,164.14	6.12	4.80	1.64	10,010.21	287.46	10,014.40	10,003.54	10.86	921.882	
1,300.00	1,300.00	1,233.34	1,248.45	6.65	5.26	1.63	10,010.67	285.53	10,014.88	10,003.02	11.85	844.792	
1,400.00	1,400.00	1,332.00	1,347.10	7.19	5.79	1.62	10,011.12	283.99	10,015.28	10,002.36	12.92	775.022	
1,500.00	1,500.00	1,403.33	1,418.43	7.73	6.15	1.62	10,011.51	283.74	10,015.86	10,002.03	13.83	724.147	
1,600.00	1,600.00	1,473.29	1,488.39	8.27	6.51	1.63	10,012.20	284.04	10,016.85	10,002.13	14.73	680.208	
1,700.00	1,700.00	1,550.76	1,565.84	8.80	6.90	1.63	10,013.14	284.56	10,018.08	10,002.42	15.66	639.839	
1,800.00	1,800.00	1,625.05	1,640.13	9.34	7.27	1.63	10,014.20	285.23	10,019.54	10,002.96	16.57	604.554	
1,900.00	1,900.00	1,702.00	1,717.06	9.88	7.66	1.64	10,015.54	286.34	10,021.30	10,003.80	17.50	572.514	
2,000.00	2,000.00	1,750.99	1,766.03	10.42	7.91	1.64	10,016.57	287.31	10,023.42	10,005.13	18.29	547.947	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design Macho Grande State - #2H - WB1 / Job #1512777 - Surveys (Patriot 5)

Offset Site Error: 0.00 usft

Survey Program: 515- **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,100.00	2,100.00	1,849.45	1,864.43	10.96	8.41	1.66	10,018.97	289.63	10,025.92	10,006.59	19.34	518.498	
2,200.00	2,200.00	2,014.42	2,029.36	11.49	9.26	1.67	10,022.05	291.79	10,027.75	10,007.02	20.73	483.686	
2,300.00	2,300.00	2,082.00	2,096.92	12.03	9.61	1.67	10,023.28	292.47	10,029.60	10,007.98	21.62	463.822	
2,400.00	2,399.98	2,151.52	2,166.41	12.55	9.97	-111.89	10,024.74	293.85	10,032.42	10,009.90	22.51	445.604	
2,500.00	2,499.84	2,612.78	2,627.02	13.05	12.33	-111.84	10,024.87	317.42	10,033.29	10,007.92	25.37	395.413	
2,600.00	2,599.45	15,427.00	10,985.60	13.56	160.00	-117.24	5,386.99	445.82	9,980.03	9,909.01	71.02	140.529	
2,700.00	2,698.70	15,427.00	10,985.60	14.08	160.00	-119.67	5,386.99	445.82	9,898.96	9,826.66	72.30	136.923	
2,800.00	2,797.47	15,427.00	10,985.60	14.60	160.00	-121.94	5,386.99	445.82	9,819.27	9,745.26	74.01	132.672	
2,900.00	2,895.62	15,427.00	10,985.60	15.14	160.00	-124.04	5,386.99	445.82	9,741.10	9,665.12	75.98	128.199	
3,000.00	2,993.06	15,427.00	10,985.60	15.70	160.00	-125.99	5,386.99	445.82	9,664.59	9,586.52	78.07	123.797	
3,100.00	3,089.64	15,427.00	10,985.60	16.28	160.00	-127.79	5,386.99	445.82	9,589.85	9,509.70	80.15	119.650	
3,200.00	3,185.28	15,427.00	10,985.60	16.88	160.00	-129.23	5,386.99	445.82	9,517.02	9,435.06	81.96	116.114	
3,300.00	3,280.53	15,427.00	10,985.60	17.51	160.00	-129.23	5,386.99	445.82	9,445.25	9,362.70	82.55	114.414	
3,400.00	3,375.78	15,427.00	10,985.60	18.16	160.00	-129.23	5,386.99	445.82	9,374.00	9,290.85	83.16	112.727	
3,500.00	3,471.03	15,427.00	10,985.60	18.82	160.00	-129.23	5,386.99	445.82	9,303.28	9,219.51	83.77	111.053	
3,600.00	3,566.28	15,427.00	10,985.60	19.50	160.00	-129.23	5,386.99	445.82	9,233.10	9,148.70	84.40	109.395	
3,700.00	3,661.53	15,427.00	10,985.60	20.20	160.00	-129.23	5,386.99	445.82	9,163.48	9,078.44	85.04	107.756	
3,800.00	3,756.78	15,427.00	10,985.60	20.91	160.00	-129.23	5,386.99	445.82	9,094.42	9,008.74	85.69	106.135	
3,900.00	3,852.03	15,427.00	10,985.60	21.62	160.00	-129.23	5,386.99	445.82	9,025.94	8,939.60	86.34	104.536	
4,000.00	3,947.28	15,427.00	10,985.60	22.35	160.00	-129.23	5,386.99	445.82	8,958.06	8,871.05	87.01	102.958	
4,100.00	4,042.53	15,427.00	10,985.60	23.09	160.00	-129.23	5,386.99	445.82	8,890.78	8,803.10	87.68	101.403	
4,200.00	4,137.78	15,427.00	10,985.60	23.84	160.00	-129.23	5,386.99	445.82	8,824.12	8,735.77	88.35	99.872	
4,300.00	4,233.03	15,427.00	10,985.60	24.59	160.00	-129.23	5,386.99	445.82	8,758.10	8,669.06	89.04	98.364	
4,400.00	4,328.28	15,427.00	10,985.60	25.36	160.00	-129.23	5,386.99	445.82	8,692.72	8,603.00	89.73	96.881	
4,500.00	4,423.53	15,427.00	10,985.60	26.12	160.00	-129.23	5,386.99	445.82	8,628.01	8,537.59	90.42	95.423	
4,600.00	4,518.78	15,427.00	10,985.60	26.90	160.00	-129.23	5,386.99	445.82	8,563.98	8,472.86	91.12	93.989	
4,700.00	4,614.03	15,427.00	10,985.60	27.68	160.00	-129.23	5,386.99	445.82	8,500.64	8,408.82	91.82	92.581	
4,800.00	4,709.28	15,427.00	10,985.60	28.46	160.00	-129.23	5,386.99	445.82	8,438.01	8,345.48	92.52	91.198	
4,900.00	4,804.53	15,427.00	10,985.60	29.25	160.00	-129.23	5,386.99	445.82	8,376.10	8,282.87	93.23	89.840	
5,000.00	4,899.78	15,427.00	10,985.60	30.04	160.00	-129.23	5,386.99	445.82	8,314.94	8,221.00	93.95	88.508	
5,100.00	4,995.03	15,427.00	10,985.60	30.84	160.00	-129.23	5,386.99	445.82	8,254.54	8,159.88	94.66	87.201	
5,200.00	5,090.28	15,427.00	10,985.60	31.64	160.00	-129.23	5,386.99	445.82	8,194.91	8,099.53	95.38	85.919	
5,300.00	5,185.73	15,427.00	10,985.60	32.43	160.00	-128.53	5,386.99	445.82	8,135.75	8,040.12	95.62	85.080	
5,400.00	5,282.08	15,427.00	10,985.60	33.19	160.00	-127.35	5,386.99	445.82	8,075.76	7,980.29	95.48	84.584	
5,500.00	5,379.30	15,427.00	10,985.60	33.91	160.00	-126.12	5,386.99	445.82	8,014.88	7,919.64	95.24	84.154	
5,600.00	5,477.29	15,427.00	10,985.60	34.58	160.00	-124.84	5,386.99	445.82	7,953.15	7,858.21	94.95	83.765	
5,700.00	5,575.91	15,427.00	10,985.60	35.22	160.00	-123.52	5,386.99	445.82	7,890.63	7,796.00	94.63	83.387	
5,800.00	5,675.04	15,427.00	10,985.60	35.81	160.00	-122.15	5,386.99	445.82	7,827.38	7,733.05	94.32	82.983	
5,900.00	5,774.58	15,427.00	10,985.60	36.36	160.00	-120.73	5,386.99	445.82	7,763.45	7,669.37	94.08	82.516	
6,000.00	5,874.38	15,427.00	10,985.60	36.87	160.00	-119.26	5,386.99	445.82	7,698.92	7,604.97	93.95	81.944	
6,100.00	5,974.34	15,427.00	10,985.60	37.35	160.00	-117.76	5,386.99	445.82	7,633.84	7,539.85	93.98	81.225	
6,200.00	6,074.34	15,427.00	10,985.60	37.79	160.00	-3.75	5,386.99	445.82	7,568.61	7,474.30	94.31	80.250	
6,300.00	6,174.34	15,427.00	10,985.60	38.24	160.00	-3.75	5,386.99	445.82	7,504.11	7,409.34	94.77	79.182	
6,400.00	6,274.34	15,427.00	10,985.60	38.68	160.00	-3.75	5,386.99	445.82	7,440.39	7,345.16	95.23	78.131	
6,500.00	6,374.34	15,427.00	10,985.60	39.13	160.00	-3.75	5,386.99	445.82	7,377.47	7,281.78	95.69	77.097	
6,600.00	6,474.34	15,427.00	10,985.60	39.59	160.00	-3.75	5,386.99	445.82	7,315.38	7,219.23	96.15	76.080	
6,700.00	6,574.34	15,427.00	10,985.60	40.04	160.00	-3.75	5,386.99	445.82	7,254.14	7,157.53	96.62	75.080	
6,800.00	6,674.34	15,427.00	10,985.60	40.50	160.00	-3.75	5,386.99	445.82	7,193.77	7,096.69	97.09	74.098	
6,900.00	6,774.34	15,427.00	10,985.60	40.96	160.00	-3.75	5,386.99	445.82	7,134.29	7,036.74	97.55	73.132	
7,000.00	6,874.34	15,427.00	10,985.60	41.42	160.00	-3.75	5,386.99	445.82	7,075.72	6,977.70	98.02	72.184	
7,100.00	6,974.34	15,427.00	10,985.60	41.88	160.00	-3.75	5,386.99	445.82	7,018.09	6,919.59	98.50	71.253	
7,200.00	7,074.34	15,427.00	10,985.60	42.34	160.00	-3.75	5,386.99	445.82	6,961.42	6,862.45	98.97	70.339	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design Macho Grande State - #2H - WB1 / Job #1512777 - Surveys (Patriot 5)

Offset Site Error: 0.00 usft

Survey Program: 515- **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,300.00	7,174.34	15,427.00	10,985.60	42.81	160.00	-3.75	5,386.99	445.82	6,905.73	6,806.28	99.44	69.443	
7,400.00	7,274.34	15,427.00	10,985.60	43.28	160.00	-3.75	5,386.99	445.82	6,851.05	6,751.13	99.92	68.564	
7,500.00	7,374.34	15,427.00	10,985.60	43.74	160.00	-3.75	5,386.99	445.82	6,797.40	6,697.00	100.40	67.704	
7,600.00	7,474.34	15,427.00	10,985.60	44.21	160.00	-3.75	5,386.99	445.82	6,744.80	6,643.92	100.88	66.860	
7,700.00	7,574.34	15,427.00	10,985.60	44.69	160.00	-3.75	5,386.99	445.82	6,693.29	6,591.93	101.36	66.035	
7,800.00	7,674.34	15,427.00	10,985.60	45.16	160.00	-3.75	5,386.99	445.82	6,642.88	6,541.04	101.84	65.227	
7,900.00	7,774.34	15,427.00	10,985.60	45.63	160.00	-3.75	5,386.99	445.82	6,593.60	6,491.28	102.33	64.438	
8,000.00	7,874.34	15,427.00	10,985.60	46.11	160.00	-3.75	5,386.99	445.82	6,545.48	6,442.67	102.81	63.666	
8,100.00	7,974.34	15,427.00	10,985.60	46.59	160.00	-3.75	5,386.99	445.82	6,498.54	6,395.25	103.30	62.912	
8,200.00	8,074.34	15,427.00	10,985.60	47.07	160.00	-3.75	5,386.99	445.82	6,452.82	6,349.03	103.78	62.176	
8,300.00	8,174.34	15,427.00	10,985.60	47.55	160.00	-3.75	5,386.99	445.82	6,408.32	6,304.05	104.27	61.459	
8,400.00	8,274.34	15,427.00	10,985.60	48.03	160.00	-3.75	5,386.99	445.82	6,365.09	6,260.33	104.76	60.759	
8,500.00	8,374.34	15,427.00	10,985.60	48.51	160.00	-3.75	5,386.99	445.82	6,323.14	6,217.89	105.25	60.077	
8,600.00	8,474.34	15,427.00	10,985.60	49.00	160.00	-3.75	5,386.99	445.82	6,282.50	6,176.76	105.74	59.414	
8,700.00	8,574.34	15,427.00	10,985.60	49.48	160.00	-3.75	5,386.99	445.82	6,243.20	6,136.97	106.23	58.769	
8,800.00	8,674.34	15,427.00	10,985.60	49.97	160.00	-3.75	5,386.99	445.82	6,205.27	6,098.54	106.73	58.142	
8,900.00	8,774.34	15,427.00	10,985.60	50.45	160.00	-3.75	5,386.99	445.82	6,168.72	6,061.50	107.22	57.533	
9,000.00	8,874.34	15,427.00	10,985.60	50.94	160.00	-3.75	5,386.99	445.82	6,133.58	6,025.87	107.72	56.942	
9,100.00	8,974.34	15,427.00	10,985.60	51.43	160.00	-3.75	5,386.99	445.82	6,099.88	5,991.67	108.21	56.370	
9,200.00	9,074.34	15,427.00	10,985.60	51.92	160.00	-3.75	5,386.99	445.82	6,067.64	5,958.94	108.71	55.816	
9,300.00	9,174.34	15,427.00	10,985.60	52.41	160.00	-3.75	5,386.99	445.82	6,036.89	5,927.69	109.21	55.280	
9,400.00	9,274.34	15,427.00	10,985.60	52.90	160.00	-3.75	5,386.99	445.82	6,007.65	5,897.94	109.70	54.762	
9,500.00	9,374.34	15,427.00	10,985.60	53.40	160.00	-3.75	5,386.99	445.82	5,979.93	5,869.73	110.20	54.263	
9,600.00	9,474.34	15,427.00	10,985.60	53.89	160.00	-3.75	5,386.99	445.82	5,953.76	5,843.06	110.70	53.782	
9,700.00	9,574.34	15,427.00	10,985.60	54.38	160.00	-3.75	5,386.99	445.82	5,929.17	5,817.97	111.20	53.318	
9,800.00	9,674.34	15,427.00	10,985.60	54.88	160.00	-3.47	5,386.99	445.82	5,906.02	5,794.26	111.76	52.846	
9,900.00	9,773.61	15,427.00	10,985.60	55.35	160.00	-3.68	5,386.99	445.82	5,874.02	5,762.49	111.53	52.669	
10,000.00	9,869.45	15,427.00	10,985.60	55.76	160.00	-4.03	5,386.99	445.82	5,827.48	5,717.48	110.00	52.977	
10,100.00	9,958.96	15,427.00	10,985.60	56.11	160.00	-4.60	5,386.99	445.82	5,767.48	5,660.22	107.27	53.768	
10,200.00	10,039.42	15,427.00	10,985.60	56.37	160.00	-5.52	5,386.99	445.82	5,695.46	5,591.90	103.57	54.993	
10,300.00	10,108.38	15,427.00	10,985.60	56.54	160.00	-7.12	5,386.99	445.82	5,613.19	5,513.69	99.49	56.417	
10,400.00	10,163.75	15,427.00	10,985.60	56.63	160.00	-10.37	5,386.99	445.82	5,522.76	5,425.87	96.89	57.002	
10,500.00	*10,203.85*	*15,427.00*	*10,985.60*	*56.65*	*160.00*	*-19.57*	*5,386.99*	*445.82*	*5,426.58*	*5,320.78*	*105.80*	*51.290*	
10,600.00	10,227.45	15,427.00	10,985.60	56.61	160.00	-82.81	5,386.99	445.82	5,327.36	5,114.91	212.46	25.075	
10,700.00	10,234.00	15,427.00	10,985.60	56.54	160.00	-155.25	5,386.99	445.82	5,228.00	5,107.96	120.04	43.552	
10,800.00	10,234.00	15,427.00	10,985.60	56.49	160.00	-155.25	5,386.99	445.82	5,129.29	5,008.78	120.50	42.566	
10,900.00	10,234.00	15,427.00	10,985.60	56.50	160.00	-155.25	5,386.99	445.82	5,030.62	4,909.61	121.01	41.571	
11,000.00	10,234.00	15,427.00	10,985.60	56.65	160.00	-155.25	5,386.99	445.82	4,932.01	4,810.44	121.57	40.568	
11,100.00	10,234.00	15,427.00	10,985.60	57.06	160.00	-155.25	5,386.99	445.82	4,833.46	4,711.28	122.18	39.561	
11,200.00	10,234.00	15,427.00	10,985.60	57.65	160.00	-155.25	5,386.99	445.82	4,734.97	4,612.14	122.83	38.550	
11,300.00	10,234.00	15,427.00	10,985.60	58.36	160.00	-155.25	5,386.99	445.82	4,636.54	4,513.02	123.52	37.537	
11,400.00	10,234.00	15,427.00	10,985.60	59.14	160.00	-155.25	5,386.99	445.82	4,538.18	4,413.93	124.25	36.525	
11,500.00	10,234.00	15,427.00	10,985.60	60.00	160.00	-155.25	5,386.99	445.82	4,439.89	4,314.88	125.01	35.515	
11,600.00	10,234.00	15,427.00	10,985.60	60.92	160.00	-155.25	5,386.99	445.82	4,341.69	4,215.87	125.81	34.509	
11,700.00	10,234.00	15,427.00	10,985.60	61.90	160.00	-155.25	5,386.99	445.82	4,243.56	4,116.92	126.65	33.507	
11,800.00	10,234.00	15,427.00	10,985.60	62.94	160.00	-155.25	5,386.99	445.82	4,145.53	4,018.02	127.51	32.511	
11,900.00	10,234.00	15,427.00	10,985.60	64.04	160.00	-155.25	5,386.99	445.82	4,047.59	3,919.19	128.40	31.523	
12,000.00	10,234.00	15,427.00	10,985.60	65.19	160.00	-155.25	5,386.99	445.82	3,949.76	3,820.44	129.32	30.542	
12,100.00	10,234.00	15,427.00	10,985.60	66.38	160.00	-155.25	5,386.99	445.82	3,852.03	3,721.77	130.27	29.570	
12,200.00	10,234.00	15,427.00	10,985.60	67.63	160.00	-155.25	5,386.99	445.82	3,754.43	3,623.20	131.24	28.608	
12,300.00	10,234.00	15,427.00	10,985.60	68.92	160.00	-155.25	5,386.99	445.82	3,656.96	3,524.73	132.23	27.657	
12,400.00	10,234.00	15,427.00	10,985.60	70.25	160.00	-155.25	5,386.99	445.82	3,559.62	3,426.39	133.24	26.716	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design Macho Grande State - #2H - WB1 / Job #1512777 - Surveys (Patriot 5)

Offset Site Error: 0.00 usft

Survey Program: 515- **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,500.00	10,234.00	15,427.00	10,985.60	71.62	160.00	-155.25	5,386.99	445.82	3,462.44	3,328.17	134.27	25.787	
12,600.00	10,234.00	15,427.00	10,985.60	73.02	160.00	-155.25	5,386.99	445.82	3,365.43	3,230.11	135.32	24.870	
12,700.00	10,234.00	15,427.00	10,985.60	74.47	160.00	-155.25	5,386.99	445.82	3,268.59	3,132.20	136.39	23.966	
12,800.00	10,234.00	15,427.00	10,985.60	75.94	160.00	-155.25	5,386.99	445.82	3,171.95	3,034.48	137.47	23.074	
12,900.00	10,234.00	15,427.00	10,985.60	77.45	160.00	-155.25	5,386.99	445.82	3,075.52	2,936.96	138.57	22.195	
13,000.00	10,234.00	15,427.00	10,985.60	78.99	160.00	-155.25	5,386.99	445.82	2,979.33	2,839.66	139.68	21.330	
13,100.00	10,234.00	15,427.00	10,985.60	80.56	160.00	-155.25	5,386.99	445.82	2,883.40	2,742.60	140.80	20.478	
13,200.00	10,234.00	15,427.00	10,985.60	82.15	160.00	-155.25	5,386.99	445.82	2,787.76	2,645.82	141.94	19.640	
13,300.00	10,234.00	15,427.00	10,985.60	83.77	160.00	-155.25	5,386.99	445.82	2,692.43	2,549.34	143.09	18.816	
13,400.00	10,234.00	15,427.00	10,985.60	85.41	160.00	-155.25	5,386.99	445.82	2,597.45	2,453.20	144.25	18.006	
13,500.00	10,234.00	15,427.00	10,985.60	87.08	160.00	-155.25	5,386.99	445.82	2,502.87	2,357.45	145.42	17.211	
13,600.00	10,234.00	15,427.00	10,985.60	88.76	160.00	-155.25	5,386.99	445.82	2,408.72	2,262.12	146.60	16.430	
13,700.00	10,234.00	15,427.00	10,985.60	90.47	160.00	-155.25	5,386.99	445.82	2,315.06	2,167.27	147.79	15.664	
13,800.00	10,234.00	15,427.00	10,985.60	92.20	160.00	-155.25	5,386.99	445.82	2,221.96	2,072.97	148.99	14.913	
13,900.00	10,234.00	15,427.00	10,985.60	93.94	160.00	-155.25	5,386.99	445.82	2,129.48	1,979.28	150.20	14.178	
14,000.00	10,234.00	15,427.00	10,985.60	95.70	160.00	-155.25	5,386.99	445.82	2,037.71	1,886.30	151.41	13.458	
14,100.00	10,234.00	15,427.00	10,985.60	97.47	160.00	-155.25	5,386.99	445.82	1,946.75	1,794.12	152.64	12.754	
14,200.00	10,234.00	15,427.00	10,985.60	99.26	160.00	-155.25	5,386.99	445.82	1,856.73	1,702.86	153.86	12.067	
14,300.00	10,234.00	15,427.00	10,985.60	101.07	160.00	-155.25	5,386.99	445.82	1,767.77	1,612.67	155.10	11.398	
14,400.00	10,234.00	15,427.00	10,985.60	102.89	160.00	-155.25	5,386.99	445.82	1,680.06	1,523.72	156.34	10.746	
14,500.00	10,234.00	15,427.00	10,985.60	104.72	160.00	-155.25	5,386.99	445.82	1,593.80	1,436.21	157.59	10.114	
14,600.00	10,234.00	15,427.00	10,985.60	106.57	160.00	-155.25	5,386.99	445.82	1,509.23	1,350.39	158.84	9.501	
14,700.00	10,234.00	15,427.00	10,985.60	108.42	160.00	-155.25	5,386.99	445.82	1,426.66	1,266.56	160.10	8.911	
14,800.00	10,234.00	15,427.00	10,985.60	110.29	160.00	-155.25	5,386.99	445.82	1,346.46	1,185.09	161.36	8.344	
14,900.00	10,234.00	15,427.00	10,985.60	112.17	160.00	-155.25	5,386.99	445.82	1,269.07	1,106.43	162.63	7.803	
15,000.00	10,234.00	15,427.00	10,985.60	114.05	160.00	-155.25	5,386.99	445.82	1,195.04	1,031.13	163.91	7.291	
15,100.00	10,234.00	15,427.00	10,985.60	115.95	160.00	-155.25	5,386.99	445.82	1,125.03	959.85	165.18	6.811	
15,200.00	10,234.00	15,427.00	10,985.60	117.86	160.00	-155.25	5,386.99	445.82	1,059.85	893.38	166.47	6.367	
15,300.00	10,234.00	15,427.00	10,985.60	119.77	160.00	-155.25	5,386.99	445.82	1,000.43	832.68	167.75	5.964	
15,400.00	10,234.00	15,427.00	10,985.60	121.70	160.00	-155.32	5,386.99	445.82	947.86	779.01	168.85	5.613	
15,500.00	10,234.00	15,427.00	10,985.60	123.63	160.00	-155.72	5,386.99	445.82	902.82	733.77	169.05	5.340	
15,600.00	10,234.00	15,427.00	10,985.60	125.57	160.00	-155.72	5,386.99	445.82	866.91	696.57	170.35	5.089	
15,700.00	10,234.00	15,427.00	10,985.60	127.52	160.00	-155.72	5,386.99	445.82	841.42	669.78	171.64	4.902	
15,800.00	10,234.00	15,427.00	10,985.60	129.48	160.00	-155.72	5,386.99	445.82	827.30	654.36	172.94	4.784	
15,867.77	10,234.00	15,427.00	10,985.60	130.81	160.00	-155.72	5,386.99	445.82	824.52	650.70	173.82	4.743	
15,900.00	10,234.00	15,427.00	10,985.60	131.44	160.00	-155.72	5,386.99	445.82	825.15	650.91	174.24	4.736	
16,000.00	10,234.00	15,328.13	10,986.94	133.41	156.97	-155.34	5,485.46	437.07	829.16	654.19	174.98	4.739	
16,100.00	10,234.00	15,227.65	10,989.60	135.39	153.92	-155.17	5,585.71	430.87	833.24	658.09	175.15	4.757	
16,200.00	10,234.00	15,109.00	10,991.70	137.37	150.34	-154.93	5,704.10	423.53	836.62	661.43	175.19	4.776	
16,300.00	10,234.00	14,995.34	10,989.99	139.36	146.91	-154.55	5,817.48	415.65	837.25	661.56	175.69	4.765	
16,400.00	10,234.00	14,904.17	10,988.84	141.35	144.17	-154.29	5,908.47	410.09	837.82	661.60	176.22	4.754	
16,500.00	10,234.00	14,809.65	10,988.45	143.35	141.34	-154.02	6,002.78	403.74	839.42	662.66	176.75	4.749	
16,600.00	10,234.00	14,705.74	10,988.54	145.35	138.26	-153.78	6,106.50	397.61	841.14	664.12	177.03	4.751	
16,700.00	10,234.00	14,600.13	10,989.23	147.36	135.16	-153.73	6,212.04	394.15	842.22	665.40	176.82	4.763	
16,800.00	10,234.00	14,495.20	10,989.97	149.38	132.11	-153.78	6,316.95	392.22	842.70	666.31	176.39	4.777	
16,900.00	10,234.00	14,384.43	10,988.94	151.39	128.89	-153.69	6,427.67	388.84	842.25	666.04	176.22	4.780	
17,000.00	10,234.00	14,276.94	10,985.88	153.41	125.77	-153.48	6,535.02	384.59	840.48	664.08	176.40	4.765	
17,100.00	10,234.00	14,175.59	10,982.74	155.44	122.85	-153.27	6,636.25	380.62	838.49	661.83	176.66	4.746	
17,200.00	10,234.00	14,079.62	10,979.55	157.47	120.10	-153.07	6,732.09	376.87	836.31	659.30	177.01	4.725	
17,300.00	10,234.00	13,988.59	10,977.94	159.50	117.52	-152.96	6,823.05	373.80	835.27	658.03	177.24	4.713	
17,389.83	10,234.00	13,903.81	10,977.28	161.33	115.13	-152.89	6,907.79	371.26	834.99	657.68	177.31	4.709	
17,400.00	10,234.00	13,894.29	10,977.25	161.54	114.86	-152.89	6,917.31	370.99	834.99	657.68	177.31	4.709	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design Macho Grande State - #2H - WB1 / Job #1512777 - Surveys (Patriot 5)

Offset Site Error: 0.00 usft

Survey Program: 515- **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,500.00	10,234.00	13,800.65	10,977.51	163.57	112.25	-152.87	7,010.91	368.51	835.45	658.16	177.29	4.712	
17,600.00	10,234.00	13,701.23	10,978.75	165.62	109.50	-152.91	7,110.30	366.42	836.52	659.48	177.04	4.725	
17,700.00	10,234.00	13,600.51	10,980.40	167.66	106.75	-153.07	7,211.01	365.97	837.20	660.68	176.52	4.743	
17,800.00	10,234.00	13,488.06	10,982.12	169.71	103.72	-153.25	7,323.44	365.60	837.78	661.98	175.80	4.765	
17,874.84	10,234.00	13,419.36	10,982.01	171.25	101.88	-153.31	7,392.14	365.09	837.22	661.53	175.69	4.765	
17,900.00	10,234.00	13,399.86	10,982.26	171.76	101.36	-153.34	7,411.64	364.99	837.32	661.64	175.69	4.766	
18,000.00	10,234.00	13,277.85	10,984.18	173.82	98.14	-153.55	7,533.62	364.79	838.07	663.25	174.82	4.794	
18,100.00	10,234.00	13,185.85	10,983.01	175.88	95.75	-153.58	7,625.61	363.95	836.39	661.59	174.80	4.785	
18,171.92	10,234.00	13,121.57	10,982.61	177.36	94.08	-153.56	7,689.87	362.35	836.08	661.13	174.95	4.779	
18,200.00	10,234.00	13,096.27	10,982.59	177.94	93.43	-153.55	7,715.16	361.68	836.13	661.12	175.00	4.778	
18,300.00	10,234.00	13,001.52	10,983.21	180.00	91.02	-153.55	7,809.88	359.35	836.83	661.77	175.07	4.780	
18,400.00	10,234.00	12,913.61	10,984.55	182.07	88.81	-153.57	7,897.75	357.02	838.42	663.20	175.22	4.785	
18,500.00	10,234.00	12,804.52	10,985.82	184.13	86.11	-153.42	8,006.70	351.69	840.71	665.24	175.47	4.791	
18,600.00	10,234.00	12,694.44	10,985.20	186.20	83.44	-153.23	8,116.64	346.44	841.36	665.51	175.85	4.785	
18,700.00	10,234.00	12,595.14	10,984.43	188.28	81.10	-153.10	8,215.87	342.47	841.49	665.22	176.27	4.774	
18,800.00	10,234.00	12,505.54	10,984.55	190.35	79.04	-153.02	8,305.41	339.12	842.32	665.60	176.72	4.766	
18,900.00	10,234.00	12,397.66	10,984.78	192.43	76.64	-152.93	8,413.21	335.29	843.12	666.12	177.00	4.763	
19,000.00	10,234.00	12,308.67	10,986.06	194.51	74.73	-152.98	8,502.17	333.40	844.37	667.10	177.26	4.763	
19,100.00	10,234.00	12,201.87	10,986.78	196.59	72.51	-152.91	8,608.89	329.52	845.62	668.00	177.62	4.761	
19,200.00	10,234.00	12,107.85	10,986.13	198.67	70.63	-152.63	8,702.69	323.30	847.03	668.43	178.60	4.743	
19,300.00	10,234.00	12,009.96	10,985.19	200.75	68.75	-152.25	8,800.25	315.28	848.97	669.13	179.83	4.721	
19,400.00	10,234.00	11,911.89	10,984.79	202.84	66.97	-151.94	8,898.05	308.14	851.01	670.04	180.97	4.703	
19,500.00	10,234.00	11,784.67	10,985.66	204.93	64.82	-151.85	9,025.17	303.38	852.53	671.13	181.41	4.700	
19,600.00	10,234.00	11,677.75	10,984.07	207.02	63.18	-151.84	9,132.06	301.68	850.93	668.98	181.95	4.677	
19,700.00	10,234.00	11,576.73	10,982.46	209.11	61.77	-151.84	9,233.07	300.42	849.09	666.51	182.58	4.651	
19,800.00	10,234.00	11,473.63	10,980.36	211.20	60.48	-151.79	9,336.12	298.42	847.18	663.78	183.40	4.619	
19,900.00	10,234.00	10,535.02	10,529.29	213.30	53.94	-128.86	10,093.66	315.87	823.81	594.38	229.43	3.591	
20,000.00	10,234.00	10,466.66	10,466.39	215.39	53.66	-122.46	10,120.35	316.34	742.23	499.91	242.32	3.063	
20,100.00	10,234.00	10,377.54	10,381.65	217.49	53.27	-111.97	10,147.84	315.20	661.02	402.37	258.65	2.556	
20,200.00	10,234.00	10,320.80	10,326.77	219.59	53.02	-104.27	10,162.16	315.95	582.60	314.86	267.74	2.176	
20,300.00	10,234.00	10,277.36	10,284.16	221.69	52.83	-97.85	10,170.56	316.68	509.51	236.35	273.16	1.865	
20,400.00	10,234.00	10,247.09	10,254.23	223.79	52.69	-93.19	10,174.96	317.44	445.54	169.37	276.17	1.613	
20,402.47	10,234.00	10,246.53	10,253.67	223.84	52.68	-93.10	10,175.03	317.46	444.11	167.89	276.22	1.608	CC, ES, SF

CC - Min centre to center distance or covergent point, SF - min separation factor ES - min ellipse separation

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design RB NE 5 32 Fed - 11WA - OH - Plan 2 03-08-17 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-50.00	50.00				
100.00	100.00	100.00	100.00	0.20	0.20	-90.00	0.00	-50.00	50.00	49.60	0.40	123.983	
200.00	200.00	200.00	200.00	0.74	0.74	-90.00	0.00	-50.00	50.00	48.52	1.48	33.814	
300.00	300.00	300.00	300.00	1.28	1.28	-90.00	0.00	-50.00	50.00	47.45	2.55	19.576	
400.00	400.00	400.00	400.00	1.81	1.81	-90.00	0.00	-50.00	50.00	46.37	3.63	13.776	
500.00	500.00	500.00	500.00	2.35	2.35	-90.00	0.00	-50.00	50.00	45.30	4.70	10.627	
600.00	600.00	600.00	600.00	2.89	2.89	-90.00	0.00	-50.00	50.00	44.22	5.78	8.650	
700.00	700.00	700.00	700.00	3.43	3.43	-90.00	0.00	-50.00	50.00	43.14	6.86	7.293	
800.00	800.00	800.00	800.00	3.97	3.97	-90.00	0.00	-50.00	50.00	42.07	7.93	6.304	
900.00	900.00	900.00	900.00	4.50	4.50	-90.00	0.00	-50.00	50.00	40.99	9.01	5.551	
1,000.00	1,000.00	1,000.00	1,000.00	5.04	5.04	-90.00	0.00	-50.00	50.00	39.92	10.08	4.959	
1,100.00	1,100.00	1,100.00	1,100.00	5.58	5.58	-90.00	0.00	-50.00	50.00	38.84	11.16	4.481	
1,200.00	1,200.00	1,200.00	1,200.00	6.12	6.12	-90.00	0.00	-50.00	50.00	37.77	12.23	4.087	
1,300.00	1,300.00	1,300.00	1,300.00	6.65	6.65	-90.00	0.00	-50.00	50.00	36.69	13.31	3.757	
1,400.00	1,400.00	1,400.00	1,400.00	7.19	7.19	-90.00	0.00	-50.00	50.00	35.62	14.38	3.476	
1,500.00	1,500.00	1,500.00	1,500.00	7.73	7.73	-90.00	0.00	-50.00	50.00	34.54	15.46	3.234	
1,600.00	1,600.00	1,600.00	1,600.00	8.27	8.27	-90.00	0.00	-50.00	50.00	33.47	16.53	3.024	
1,700.00	1,700.00	1,700.00	1,700.00	8.80	8.80	-90.00	0.00	-50.00	50.00	32.39	17.61	2.839	
1,800.00	1,800.00	1,800.00	1,800.00	9.34	9.34	-90.00	0.00	-50.00	50.00	31.31	18.69	2.676	
1,900.00	1,900.00	1,900.00	1,900.00	9.88	9.88	-90.00	0.00	-50.00	50.00	30.24	19.76	2.530	
2,000.00	2,000.00	2,000.00	2,000.00	10.42	10.42	-90.00	0.00	-50.00	50.00	29.16	20.84	2.400	
2,100.00	2,100.00	2,100.00	2,100.00	10.96	10.96	-90.00	0.00	-50.00	50.00	28.09	21.91	2.282	
2,200.00	2,200.00	2,200.00	2,200.00	11.49	11.49	-90.00	0.00	-50.00	50.00	27.01	22.99	2.175	
2,300.00	2,300.00	2,300.00	2,300.00	12.03	12.03	-90.00	0.00	-50.00	50.00	25.94	24.06	2.078	CC, ES, SF
2,400.00	2,399.98	2,398.28	2,398.26	12.55	12.54	156.49	-0.57	-51.59	53.21	28.13	25.08	2.122	
2,500.00	2,499.84	2,495.96	2,495.80	13.05	13.04	156.72	-2.25	-56.31	62.83	36.80	26.04	2.413	
2,600.00	2,599.45	2,592.44	2,591.93	13.56	13.53	156.97	-5.02	-64.04	78.79	51.83	26.96	2.923	
2,700.00	2,698.70	2,687.16	2,685.99	14.08	14.02	157.15	-8.79	-74.60	100.98	73.13	27.85	3.626	
2,800.00	2,797.47	2,779.62	2,777.38	14.60	14.50	157.24	-13.47	-87.72	129.23	100.54	28.69	4.504	
2,900.00	2,895.62	2,869.34	2,865.60	15.14	14.98	157.25	-18.97	-103.10	163.36	133.87	29.49	5.540	
3,000.00	2,993.06	2,955.93	2,950.22	15.70	15.46	157.19	-25.15	-120.41	203.15	172.91	30.23	6.720	
3,100.00	3,089.64	3,039.06	3,030.88	16.28	15.93	157.06	-31.89	-139.28	248.34	217.41	30.93	8.030	
3,200.00	3,185.28	3,118.45	3,107.36	16.88	16.39	156.93	-39.06	-159.35	298.64	267.03	31.61	9.448	
3,300.00	3,280.53	3,200.00	3,185.27	17.51	16.89	157.06	-47.17	-182.04	352.18	319.65	32.53	10.827	
3,400.00	3,375.78	3,268.99	3,250.62	18.16	17.33	157.02	-54.60	-202.86	407.66	374.26	33.40	12.206	
3,500.00	3,471.03	3,340.71	3,317.97	18.82	17.80	156.89	-62.89	-226.07	465.14	430.84	34.29	13.564	
3,600.00	3,566.28	3,413.53	3,385.73	19.50	18.29	156.69	-71.86	-251.16	524.38	489.18	35.20	14.896	
3,700.00	3,661.53	3,493.73	3,460.21	20.20	18.86	156.49	-81.88	-279.21	584.09	547.94	36.15	16.159	
3,800.00	3,756.78	3,573.94	3,534.68	20.91	19.45	156.33	-91.89	-307.26	643.80	606.69	37.10	17.352	
3,900.00	3,852.03	3,654.15	3,609.15	21.62	20.05	156.20	-101.91	-335.30	703.51	665.44	38.07	18.481	
4,000.00	3,947.28	3,734.35	3,683.62	22.35	20.67	156.09	-111.93	-363.35	763.22	724.18	39.04	19.548	
4,100.00	4,042.53	3,814.56	3,758.09	23.09	21.29	155.99	-121.95	-391.40	822.93	782.91	40.03	20.560	
4,200.00	4,137.78	3,894.77	3,832.57	23.84	21.93	155.91	-131.97	-419.45	882.65	841.63	41.02	21.518	
4,300.00	4,233.03	3,974.97	3,907.04	24.59	22.58	155.84	-141.99	-447.49	942.36	900.34	42.02	22.426	
4,400.00	4,328.28	4,055.18	3,981.51	25.36	23.24	155.78	-152.01	-475.54	1,002.08	959.05	43.03	23.288	
4,500.00	4,423.53	4,135.39	4,055.98	26.12	23.90	155.72	-162.03	-503.59	1,061.80	1,017.75	44.05	24.107	
4,600.00	4,518.78	4,215.59	4,130.45	26.90	24.58	155.67	-172.05	-531.64	1,121.52	1,076.45	45.07	24.885	
4,700.00	4,614.03	4,295.80	4,204.92	27.68	25.26	155.62	-182.06	-559.68	1,181.24	1,135.14	46.10	25.626	
4,800.00	4,709.28	4,376.01	4,279.40	28.46	25.95	155.58	-192.08	-587.73	1,240.96	1,193.83	47.13	26.330	
4,900.00	4,804.53	4,456.21	4,353.87	29.25	26.65	155.55	-202.10	-615.78	1,300.68	1,252.51	48.17	27.001	
5,000.00	4,899.78	4,536.42	4,428.34	30.04	27.35	155.51	-212.12	-643.83	1,360.40	1,311.18	49.22	27.642	
5,100.00	4,995.03	4,616.63	4,502.81	30.84	28.05	155.48	-222.14	-671.87	1,420.12	1,369.85	50.27	28.253	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design RB NE 5 32 Fed - 11WA - OH - Plan 2 03-08-17 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,090.28	4,696.83	4,577.28	31.64	28.77	155.45	-232.16	-699.92	1,479.84	1,428.52	51.32	28.836	
5,300.00	5,185.73	4,777.38	4,652.08	32.43	29.49	155.78	-242.22	-728.09	1,539.08	1,486.45	52.63	29.241	
5,400.00	5,282.08	4,859.62	4,728.43	33.19	30.22	156.25	-252.49	-756.85	1,595.94	1,541.84	54.10	29.502	
5,500.00	5,379.30	4,943.57	4,806.38	33.91	30.98	156.62	-262.98	-786.21	1,650.14	1,594.61	55.53	29.718	
5,600.00	5,477.29	5,029.16	4,885.85	34.58	31.76	156.90	-273.67	-816.13	1,701.63	1,644.71	56.92	29.893	
5,700.00	5,575.91	5,160.27	5,007.96	35.22	32.94	156.99	-289.72	-861.08	1,749.95	1,691.42	58.54	29.895	
5,800.00	5,675.04	5,377.38	5,214.29	35.81	34.75	156.88	-312.40	-924.55	1,790.44	1,729.85	60.59	29.549	
5,900.00	5,774.58	5,610.36	5,440.69	36.36	36.44	156.79	-330.80	-976.08	1,821.07	1,758.41	62.66	29.063	
6,000.00	5,874.38	5,855.55	5,682.91	36.87	37.94	156.73	-343.43	-1,011.42	1,841.02	1,776.35	64.67	28.468	
6,100.00	5,974.34	6,108.02	5,934.74	37.35	39.22	156.70	-349.10	-1,027.30	1,849.73	1,783.17	66.56	27.789	
6,200.00	6,074.34	6,247.63	6,074.34	37.79	39.82	-89.69	-349.35	-1,028.00	1,850.11	1,782.37	67.74	27.314	
6,300.00	6,174.34	6,347.63	6,174.34	38.24	40.24	-89.69	-349.35	-1,028.00	1,850.11	1,781.41	68.70	26.931	
6,400.00	6,274.34	6,447.63	6,274.34	38.68	40.67	-89.69	-349.35	-1,028.00	1,850.11	1,780.45	69.66	26.558	
6,500.00	6,374.34	6,547.63	6,374.34	39.13	41.10	-89.69	-349.35	-1,028.00	1,850.11	1,779.48	70.63	26.193	
6,600.00	6,474.34	6,647.63	6,474.34	39.59	41.53	-89.69	-349.35	-1,028.00	1,850.11	1,778.50	71.60	25.838	
6,700.00	6,574.34	6,747.63	6,574.34	40.04	41.97	-89.69	-349.35	-1,028.00	1,850.11	1,777.53	72.58	25.491	
6,800.00	6,674.34	6,847.63	6,674.34	40.50	42.40	-89.69	-349.35	-1,028.00	1,850.11	1,776.55	73.56	25.152	
6,900.00	6,774.34	6,947.63	6,774.34	40.96	42.84	-89.69	-349.35	-1,028.00	1,850.11	1,775.57	74.54	24.821	
7,000.00	6,874.34	7,047.63	6,874.34	41.42	43.28	-89.69	-349.35	-1,028.00	1,850.11	1,774.59	75.52	24.498	
7,100.00	6,974.34	7,147.63	6,974.34	41.88	43.73	-89.69	-349.35	-1,028.00	1,850.11	1,773.60	76.51	24.183	
7,200.00	7,074.34	7,247.63	7,074.34	42.34	44.17	-89.69	-349.35	-1,028.00	1,850.11	1,772.62	77.49	23.874	
7,300.00	7,174.34	7,347.63	7,174.34	42.81	44.62	-89.69	-349.35	-1,028.00	1,850.11	1,771.62	78.48	23.573	
7,400.00	7,274.34	7,447.63	7,274.34	43.28	45.07	-89.69	-349.35	-1,028.00	1,850.11	1,770.63	79.48	23.279	
7,500.00	7,374.34	7,547.63	7,374.34	43.74	45.52	-89.69	-349.35	-1,028.00	1,850.11	1,769.64	80.47	22.991	
7,600.00	7,474.34	7,647.63	7,474.34	44.21	45.97	-89.69	-349.35	-1,028.00	1,850.11	1,768.64	81.47	22.710	
7,700.00	7,574.34	7,747.63	7,574.34	44.69	46.43	-89.69	-349.35	-1,028.00	1,850.11	1,767.64	82.47	22.435	
7,800.00	7,674.34	7,847.63	7,674.34	45.16	46.88	-89.69	-349.35	-1,028.00	1,850.11	1,766.64	83.47	22.166	
7,900.00	7,774.34	7,947.63	7,774.34	45.63	47.34	-89.69	-349.35	-1,028.00	1,850.11	1,765.64	84.47	21.903	
8,000.00	7,874.34	8,047.63	7,874.34	46.11	47.80	-89.69	-349.35	-1,028.00	1,850.11	1,764.64	85.47	21.646	
8,100.00	7,974.34	8,147.63	7,974.34	46.59	48.27	-89.69	-349.35	-1,028.00	1,850.11	1,763.63	86.48	21.394	
8,200.00	8,074.34	8,247.63	8,074.34	47.07	48.73	-89.69	-349.35	-1,028.00	1,850.11	1,762.62	87.49	21.148	
8,300.00	8,174.34	8,347.63	8,174.34	47.55	49.19	-89.69	-349.35	-1,028.00	1,850.11	1,761.61	88.49	20.906	
8,400.00	8,274.34	8,447.63	8,274.34	48.03	49.66	-89.69	-349.35	-1,028.00	1,850.11	1,760.60	89.51	20.670	
8,500.00	8,374.34	8,547.63	8,374.34	48.51	50.13	-89.69	-349.35	-1,028.00	1,850.11	1,759.59	90.52	20.439	
8,600.00	8,474.34	8,647.63	8,474.34	49.00	50.60	-89.69	-349.35	-1,028.00	1,850.11	1,758.58	91.53	20.213	
8,700.00	8,574.34	8,747.63	8,574.34	49.48	51.07	-89.69	-349.35	-1,028.00	1,850.11	1,757.56	92.55	19.991	
8,800.00	8,674.34	8,847.63	8,674.34	49.97	51.54	-89.69	-349.35	-1,028.00	1,850.11	1,756.55	93.56	19.774	
8,900.00	8,774.34	8,947.63	8,774.34	50.45	52.01	-89.69	-349.35	-1,028.00	1,850.11	1,755.53	94.58	19.561	
9,000.00	8,874.34	9,047.63	8,874.34	50.94	52.49	-89.69	-349.35	-1,028.00	1,850.11	1,754.51	95.60	19.353	
9,100.00	8,974.34	9,147.63	8,974.34	51.43	52.96	-89.69	-349.35	-1,028.00	1,850.11	1,753.49	96.62	19.149	
9,200.00	9,074.34	9,247.63	9,074.34	51.92	53.44	-89.69	-349.35	-1,028.00	1,850.11	1,752.47	97.64	18.948	
9,300.00	9,174.34	9,347.63	9,174.34	52.41	53.92	-89.69	-349.35	-1,028.00	1,850.11	1,751.45	98.66	18.752	
9,400.00	9,274.34	9,447.63	9,274.34	52.90	54.40	-89.69	-349.35	-1,028.00	1,850.11	1,750.42	99.69	18.559	
9,500.00	9,374.34	9,547.63	9,374.34	53.40	54.88	-89.69	-349.35	-1,028.00	1,850.11	1,749.40	100.71	18.371	
9,600.00	9,474.34	9,647.63	9,474.34	53.89	55.36	-89.69	-349.35	-1,028.00	1,850.11	1,748.37	101.74	18.185	
9,700.00	9,574.34	9,747.63	9,574.34	54.38	55.84	-89.69	-349.35	-1,028.00	1,850.11	1,747.35	102.76	18.004	
9,800.00	9,674.34	9,844.86	9,671.39	54.88	56.30	-89.26	-345.01	-1,028.02	1,850.16	1,746.40	103.76	17.831	
9,900.00	9,773.61	9,939.63	9,764.05	55.35	56.71	-88.96	-325.67	-1,028.12	1,850.31	1,745.63	104.68	17.676	
10,000.00	9,869.45	10,033.08	9,851.09	55.76	57.05	-88.70	-291.91	-1,028.29	1,850.48	1,744.99	105.49	17.541	
10,100.00	9,958.96	10,125.43	9,930.58	56.11	57.32	-88.47	-245.10	-1,028.53	1,850.66	1,744.46	106.20	17.427	
10,200.00	10,039.42	10,216.89	10,000.89	56.37	57.52	-88.29	-186.76	-1,028.84	1,850.82	1,744.01	106.81	17.328	
10,300.00	10,108.38	10,307.69	10,060.64	56.54	57.65	-88.16	-118.52	-1,029.19	1,850.96	1,743.60	107.35	17.242	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design RB NE 5 32 Fed - 11WA - OH - Plan 2 03-08-17 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,400.00	10,163.75	10,400.00	10,109.57	56.63	57.71	-88.07	-40.37	-1,029.59	1,851.04	1,743.19	107.85	17.163	
10,409.65	10,168.31	10,406.73	10,112.64	56.63	57.71	-88.07	-34.37	-1,029.62	1,851.05	1,743.15	107.89	17.156	
10,500.00	10,203.85	10,488.15	10,144.02	56.65	57.71	-88.04	40.68	-1,030.01	1,851.07	1,742.75	108.32	17.089	
10,600.00	10,227.45	10,578.25	10,165.96	56.61	57.69	-88.07	127.97	-1,030.46	1,851.04	1,742.26	108.79	17.015	
10,700.00	10,234.00	10,668.57	10,173.97	56.54	57.67	-88.14	217.84	-1,030.92	1,850.96	1,741.71	109.25	16.942	
10,740.70	10,234.00	10,708.66	10,174.00	56.51	57.67	-88.14	257.93	-1,031.13	1,850.96	1,741.48	109.48	16.907	
10,800.00	10,234.00	10,767.96	10,174.00	56.49	57.67	-88.14	317.23	-1,031.44	1,850.96	1,741.12	109.84	16.851	
10,900.00	10,234.00	10,867.96	10,174.00	56.50	57.75	-88.14	417.23	-1,031.95	1,850.96	1,740.36	110.59	16.737	
11,000.00	10,234.00	10,967.96	10,174.00	56.65	57.90	-88.14	517.23	-1,032.47	1,850.95	1,739.45	111.50	16.600	
11,100.00	10,234.00	11,067.96	10,174.00	57.06	58.17	-88.14	617.23	-1,032.98	1,850.95	1,738.38	112.57	16.443	
11,200.00	10,234.00	11,167.96	10,174.00	57.65	58.56	-88.14	717.22	-1,033.50	1,850.95	1,737.15	113.79	16.266	
11,300.00	10,234.00	11,267.96	10,174.00	58.36	59.09	-88.14	817.22	-1,034.02	1,850.94	1,735.78	115.17	16.072	
11,400.00	10,234.00	11,367.96	10,174.00	59.14	59.73	-88.14	917.22	-1,034.53	1,850.94	1,734.26	116.68	15.863	
11,500.00	10,234.00	11,467.96	10,174.00	60.00	60.47	-88.14	1,017.22	-1,035.05	1,850.94	1,732.60	118.34	15.641	
11,600.00	10,234.00	11,567.96	10,174.00	60.92	61.30	-88.14	1,117.22	-1,035.56	1,850.94	1,730.81	120.13	15.408	
11,700.00	10,234.00	11,667.96	10,174.00	61.90	62.21	-88.14	1,217.22	-1,036.08	1,850.93	1,728.89	122.04	15.166	
11,800.00	10,234.00	11,767.96	10,174.00	62.94	63.18	-88.14	1,317.22	-1,036.60	1,850.93	1,726.85	124.08	14.917	
11,900.00	10,234.00	11,867.96	10,174.00	64.04	64.22	-88.14	1,417.22	-1,037.11	1,850.93	1,724.69	126.23	14.663	
12,000.00	10,234.00	11,967.96	10,174.00	65.19	65.32	-88.14	1,517.21	-1,037.63	1,850.92	1,722.43	128.49	14.405	
12,100.00	10,234.00	12,067.96	10,174.00	66.38	66.48	-88.14	1,617.21	-1,038.14	1,850.92	1,720.06	130.86	14.144	
12,200.00	10,234.00	12,167.96	10,174.00	67.63	67.68	-88.14	1,717.21	-1,038.66	1,850.92	1,717.60	133.32	13.883	
12,300.00	10,234.00	12,267.96	10,174.00	68.92	68.93	-88.14	1,817.21	-1,039.17	1,850.92	1,715.04	135.88	13.622	
12,400.00	10,234.00	12,367.96	10,174.00	70.25	70.23	-88.14	1,917.21	-1,039.69	1,850.91	1,712.39	138.52	13.362	
12,500.00	10,234.00	12,467.96	10,174.00	71.62	71.57	-88.14	2,017.21	-1,040.21	1,850.91	1,709.66	141.25	13.104	
12,600.00	10,234.00	12,567.96	10,174.00	73.02	72.95	-88.14	2,117.21	-1,040.72	1,850.91	1,706.85	144.05	12.849	
12,700.00	10,234.00	12,667.96	10,174.00	74.47	74.36	-88.14	2,217.21	-1,041.24	1,850.91	1,703.97	146.93	12.597	
12,800.00	10,234.00	12,767.96	10,174.00	75.94	75.82	-88.14	2,317.20	-1,041.75	1,850.90	1,701.02	149.88	12.349	
12,900.00	10,234.00	12,867.96	10,174.00	77.45	77.30	-88.14	2,417.20	-1,042.27	1,850.90	1,698.00	152.89	12.106	
13,000.00	10,234.00	12,967.96	10,174.00	78.99	78.82	-88.14	2,517.20	-1,042.79	1,850.90	1,694.93	155.97	11.867	
13,100.00	10,234.00	13,067.96	10,174.00	80.56	80.36	-88.14	2,617.20	-1,043.30	1,850.89	1,691.79	159.10	11.633	
13,200.00	10,234.00	13,167.96	10,174.00	82.15	81.93	-88.14	2,717.20	-1,043.82	1,850.89	1,688.60	162.29	11.405	
13,300.00	10,234.00	13,267.96	10,174.00	83.77	83.53	-88.14	2,817.20	-1,044.33	1,850.89	1,685.36	165.53	11.182	
13,400.00	10,234.00	13,367.96	10,174.00	85.41	85.16	-88.14	2,917.20	-1,044.85	1,850.89	1,682.07	168.82	10.964	
13,500.00	10,234.00	13,467.96	10,174.00	87.08	86.80	-88.14	3,017.19	-1,045.37	1,850.88	1,678.73	172.15	10.751	
13,600.00	10,234.00	13,567.96	10,174.00	88.76	88.47	-88.14	3,117.19	-1,045.88	1,850.88	1,675.35	175.53	10.545	
13,700.00	10,234.00	13,667.96	10,174.00	90.47	90.16	-88.14	3,217.19	-1,046.40	1,850.88	1,671.93	178.95	10.343	
13,800.00	10,234.00	13,767.96	10,174.00	92.20	91.87	-88.14	3,317.19	-1,046.91	1,850.87	1,668.47	182.40	10.147	
13,900.00	10,234.00	13,867.96	10,174.00	93.94	93.60	-88.14	3,417.19	-1,047.43	1,850.87	1,664.98	185.89	9.957	
14,000.00	10,234.00	13,967.96	10,174.00	95.70	95.34	-88.14	3,517.19	-1,047.94	1,850.87	1,661.45	189.42	9.771	
14,100.00	10,234.00	14,067.96	10,174.00	97.47	97.11	-88.14	3,617.19	-1,048.46	1,850.87	1,657.89	192.98	9.591	
14,200.00	10,234.00	14,167.96	10,174.00	99.26	98.88	-88.14	3,717.19	-1,048.98	1,850.86	1,654.29	196.57	9.416	
14,300.00	10,234.00	14,267.96	10,174.00	101.07	100.68	-88.14	3,817.18	-1,049.49	1,850.86	1,650.67	200.19	9.246	
14,400.00	10,234.00	14,367.96	10,174.00	102.89	102.48	-88.14	3,917.18	-1,050.01	1,850.86	1,647.02	203.83	9.080	
14,500.00	10,234.00	14,467.96	10,174.00	104.72	104.30	-88.14	4,017.18	-1,050.52	1,850.86	1,643.35	207.51	8.920	
14,600.00	10,234.00	14,567.96	10,174.00	106.57	106.14	-88.14	4,117.18	-1,051.04	1,850.85	1,639.65	211.20	8.763	
14,700.00	10,234.00	14,667.96	10,174.00	108.42	107.98	-88.14	4,217.18	-1,051.56	1,850.85	1,635.93	214.92	8.612	
14,800.00	10,234.00	14,767.96	10,174.00	110.29	109.84	-88.14	4,317.18	-1,052.07	1,850.85	1,632.18	218.67	8.464	
14,900.00	10,234.00	14,867.96	10,174.00	112.17	111.71	-88.14	4,417.18	-1,052.59	1,850.84	1,628.42	222.43	8.321	
15,000.00	10,234.00	14,967.96	10,174.00	114.05	113.59	-88.14	4,517.17	-1,053.10	1,850.84	1,624.63	226.21	8.182	
15,100.00	10,234.00	15,067.96	10,174.00	115.95	115.47	-88.14	4,617.17	-1,053.62	1,850.84	1,620.82	230.01	8.047	
15,200.00	10,234.00	15,167.96	10,174.00	117.86	117.37	-88.14	4,717.17	-1,054.14	1,850.84	1,617.00	233.83	7.915	
15,300.00	10,234.00	15,267.96	10,174.00	119.77	119.28	-88.14	4,817.17	-1,054.65	1,850.83	1,613.16	237.67	7.787	

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design RB NE 5 32 Fed - 11WA - OH - Plan 2 03-08-17 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,400.00	10,234.00	15,367.96	10,174.00	121.70	121.19	-88.14	4,917.17	-1,055.17	1,850.82	1,609.29	241.53	7.663	
15,499.74	10,234.00	15,436.80	10,174.00	123.62	122.52	-88.14	4,986.00	-1,056.01	1,850.62	1,605.79	244.83	7.559	
15,500.00	10,234.00	15,437.06	10,174.00	123.63	122.52	-88.14	4,986.26	-1,056.01	1,850.20	1,605.36	244.84	7.557	
15,600.00	10,234.00	15,537.06	10,174.00	125.57	124.46	-88.14	5,086.24	-1,058.20	1,850.21	1,601.47	248.74	7.438	
15,700.00	10,234.00	15,637.06	10,174.00	127.52	126.41	-88.14	5,186.21	-1,060.38	1,850.21	1,597.56	252.65	7.323	
15,800.00	10,234.00	15,737.06	10,174.00	129.48	128.36	-88.14	5,286.19	-1,062.57	1,850.22	1,593.65	256.57	7.211	
15,900.00	10,234.00	15,837.06	10,174.00	131.44	130.32	-88.14	5,386.17	-1,064.76	1,850.23	1,589.72	260.51	7.102	
16,000.00	10,234.00	15,937.06	10,174.00	133.41	132.29	-88.14	5,486.14	-1,066.94	1,850.24	1,585.78	264.46	6.996	
16,100.00	10,234.00	16,037.06	10,174.00	135.39	134.26	-88.14	5,586.12	-1,069.13	1,850.25	1,581.82	268.43	6.893	
16,200.00	10,234.00	16,137.06	10,174.00	137.37	136.24	-88.14	5,686.10	-1,071.32	1,850.26	1,577.86	272.40	6.792	
16,300.00	10,234.00	16,237.06	10,174.00	139.36	138.22	-88.14	5,786.07	-1,073.50	1,850.27	1,573.88	276.38	6.695	
16,400.00	10,234.00	16,337.06	10,174.00	141.35	140.21	-88.14	5,886.05	-1,075.69	1,850.27	1,569.89	280.38	6.599	
16,500.00	10,234.00	16,437.06	10,174.00	143.35	142.21	-88.14	5,986.02	-1,077.88	1,850.28	1,565.90	284.39	6.506	
16,600.00	10,234.00	16,537.06	10,174.00	145.35	144.21	-88.14	6,086.00	-1,080.06	1,850.29	1,561.89	288.40	6.416	
16,700.00	10,234.00	16,637.06	10,174.00	147.36	146.21	-88.14	6,185.98	-1,082.25	1,850.30	1,557.87	292.42	6.327	
16,800.00	10,234.00	16,737.06	10,174.00	149.38	148.22	-88.14	6,285.95	-1,084.43	1,850.31	1,553.85	296.46	6.241	
16,900.00	10,234.00	16,837.06	10,174.00	151.39	150.24	-88.14	6,385.93	-1,086.62	1,850.32	1,549.82	300.50	6.157	
17,000.00	10,234.00	16,937.06	10,174.00	153.41	152.26	-88.14	6,485.90	-1,088.81	1,850.32	1,545.77	304.55	6.076	
17,100.00	10,234.00	17,037.06	10,174.00	155.44	154.28	-88.14	6,585.88	-1,090.99	1,850.33	1,541.73	308.61	5.996	
17,200.00	10,234.00	17,137.06	10,174.00	157.47	156.30	-88.14	6,685.86	-1,093.18	1,850.34	1,537.67	312.67	5.918	
17,300.00	10,234.00	17,237.06	10,174.00	159.50	158.33	-88.14	6,785.83	-1,095.37	1,850.35	1,533.60	316.75	5.842	
17,400.00	10,234.00	17,337.06	10,174.00	161.54	160.37	-88.14	6,885.81	-1,097.55	1,850.36	1,529.53	320.83	5.767	
17,500.00	10,234.00	17,437.06	10,174.00	163.57	162.41	-88.14	6,985.78	-1,099.74	1,850.37	1,525.46	324.91	5.695	
17,600.00	10,234.00	17,537.06	10,174.00	165.62	164.45	-88.14	7,085.76	-1,101.93	1,850.38	1,521.37	329.00	5.624	
17,700.00	10,234.00	17,637.06	10,174.00	167.66	166.49	-88.14	7,185.74	-1,104.11	1,850.38	1,517.28	333.10	5.555	
17,800.00	10,234.00	17,737.06	10,174.00	169.71	168.54	-88.14	7,285.71	-1,106.30	1,850.39	1,513.18	337.21	5.487	
17,900.00	10,234.00	17,837.06	10,174.00	171.76	170.59	-88.14	7,385.69	-1,108.48	1,850.40	1,509.08	341.32	5.421	
18,000.00	10,234.00	17,937.06	10,174.00	173.82	172.64	-88.14	7,485.67	-1,110.67	1,850.41	1,504.97	345.44	5.357	
18,100.00	10,234.00	18,037.06	10,174.00	175.88	174.70	-88.14	7,585.64	-1,112.86	1,850.42	1,500.86	349.56	5.294	
18,200.00	10,234.00	18,137.06	10,174.00	177.94	176.76	-88.14	7,685.62	-1,115.04	1,850.43	1,496.74	353.69	5.232	
18,300.00	10,234.00	18,237.06	10,174.00	180.00	178.82	-88.14	7,785.59	-1,117.23	1,850.44	1,492.62	357.82	5.171	
18,400.00	10,234.00	18,337.06	10,174.00	182.07	180.88	-88.14	7,885.57	-1,119.42	1,850.44	1,488.49	361.95	5.112	
18,500.00	10,234.00	18,437.06	10,174.00	184.13	182.95	-88.14	7,985.55	-1,121.60	1,850.45	1,484.36	366.10	5.055	
18,600.00	10,234.00	18,537.06	10,174.00	186.20	185.02	-88.14	8,085.52	-1,123.79	1,850.46	1,480.22	370.24	4.998	
18,700.00	10,234.00	18,637.06	10,174.00	188.28	187.09	-88.14	8,185.50	-1,125.98	1,850.47	1,476.08	374.39	4.943	
18,800.00	10,234.00	18,737.06	10,174.00	190.35	189.16	-88.14	8,285.47	-1,128.16	1,850.48	1,471.93	378.55	4.888	
18,900.00	10,234.00	18,837.06	10,174.00	192.43	191.24	-88.14	8,385.45	-1,130.35	1,850.49	1,467.78	382.71	4.835	
19,000.00	10,234.00	18,937.06	10,174.00	194.51	193.31	-88.14	8,485.43	-1,132.54	1,850.49	1,463.63	386.87	4.783	
19,100.00	10,234.00	19,037.06	10,174.00	196.59	195.39	-88.14	8,585.40	-1,134.72	1,850.50	1,459.47	391.04	4.732	
19,200.00	10,234.00	19,137.06	10,174.00	198.67	197.48	-88.14	8,685.38	-1,136.91	1,850.51	1,455.31	395.21	4.682	
19,300.00	10,234.00	19,237.06	10,174.00	200.75	199.56	-88.14	8,785.35	-1,139.09	1,850.52	1,451.14	399.38	4.633	
19,400.00	10,234.00	19,337.06	10,174.00	202.84	201.64	-88.14	8,885.33	-1,141.28	1,850.53	1,446.97	403.56	4.586	
19,500.00	10,234.00	19,437.06	10,174.00	204.93	203.73	-88.14	8,985.31	-1,143.47	1,850.54	1,442.80	407.74	4.539	
19,600.00	10,234.00	19,537.06	10,174.00	207.02	205.82	-88.14	9,085.28	-1,145.65	1,850.55	1,438.62	411.92	4.492	
19,700.00	10,234.00	19,637.06	10,174.00	209.11	207.91	-88.14	9,185.26	-1,147.84	1,850.55	1,434.44	416.11	4.447	
19,800.00	10,234.00	19,737.06	10,174.00	211.20	210.00	-88.14	9,285.24	-1,150.03	1,850.56	1,430.26	420.30	4.403	
19,900.00	10,234.00	19,837.06	10,174.00	213.30	212.09	-88.14	9,385.21	-1,152.21	1,850.57	1,426.08	424.49	4.359	
20,000.00	10,234.00	19,937.06	10,174.00	215.39	214.19	-88.14	9,485.19	-1,154.40	1,850.58	1,421.89	428.69	4.317	
20,100.00	10,234.00	20,037.06	10,174.00	217.49	216.29	-88.14	9,585.16	-1,156.59	1,850.59	1,417.70	432.89	4.275	
20,200.00	10,234.00	20,137.06	10,174.00	219.59	218.38	-88.14	9,685.14	-1,158.77	1,850.60	1,413.51	437.09	4.234	
20,300.00	10,234.00	20,237.06	10,174.00	221.69	220.48	-88.14	9,785.12	-1,160.96	1,850.60	1,409.31	441.29	4.194	
20,400.00	10,234.00	20,337.06	10,174.00	223.79	222.58	-88.14	9,885.09	-1,163.14	1,850.61	1,405.11	445.50	4.154	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design RB NE 5 32 Fed - 11WA - OH - Plan 2 03-08-17 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
20,402.47	10,234.00	20,339.53	10,174.00	223.84	222.64	-88.14	9,887.56	-1,163.20	1,850.61	1,405.01	445.61	4.153	

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design RB NE 5 32 Fed - 12WA - OH - Plan 2 03-08-17 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-25.00	25.00				
100.00	100.00	100.00	100.00	0.20	0.20	-90.00	0.00	-25.00	25.00	24.60	0.40	61.992	
200.00	200.00	200.00	200.00	0.74	0.74	-90.00	0.00	-25.00	25.00	23.52	1.48	16.907	
300.00	300.00	300.00	300.00	1.28	1.28	-90.00	0.00	-25.00	25.00	22.45	2.55	9.788	
400.00	400.00	400.00	400.00	1.81	1.81	-90.00	0.00	-25.00	25.00	21.37	3.63	6.888	
500.00	500.00	500.00	500.00	2.35	2.35	-90.00	0.00	-25.00	25.00	20.30	4.70	5.314	
600.00	600.00	600.00	600.00	2.89	2.89	-90.00	0.00	-25.00	25.00	19.22	5.78	4.325	
700.00	700.00	700.00	700.00	3.43	3.43	-90.00	0.00	-25.00	25.00	18.14	6.86	3.647	
800.00	800.00	800.00	800.00	3.97	3.97	-90.00	0.00	-25.00	25.00	17.07	7.93	3.152	
900.00	900.00	900.00	900.00	4.50	4.50	-90.00	0.00	-25.00	25.00	15.99	9.01	2.776	
1,000.00	1,000.00	1,000.00	1,000.00	5.04	5.04	-90.00	0.00	-25.00	25.00	14.92	10.08	2.480	
1,100.00	1,100.00	1,100.00	1,100.00	5.58	5.58	-90.00	0.00	-25.00	25.00	13.84	11.16	2.241	
1,200.00	1,200.00	1,200.00	1,200.00	6.12	6.12	-90.00	0.00	-25.00	25.00	12.77	12.23	2.044	
1,300.00	1,300.00	1,300.00	1,300.00	6.65	6.65	-90.00	0.00	-25.00	25.00	11.69	13.31	1.879	
1,400.00	1,400.00	1,400.00	1,400.00	7.19	7.19	-90.00	0.00	-25.00	25.00	10.62	14.38	1.738	
1,500.00	1,500.00	1,500.00	1,500.00	7.73	7.73	-90.00	0.00	-25.00	25.00	9.54	15.46	1.617	
1,600.00	1,600.00	1,600.00	1,600.00	8.27	8.27	-90.00	0.00	-25.00	25.00	8.47	16.53	1.512	
1,700.00	1,700.00	1,700.00	1,700.00	8.80	8.80	-90.00	0.00	-25.00	25.00	7.39	17.61	1.420	Level 3
1,800.00	1,800.00	1,800.00	1,800.00	9.34	9.34	-90.00	0.00	-25.00	25.00	6.31	18.69	1.338	Level 3
1,900.00	1,900.00	1,900.00	1,900.00	9.88	9.88	-90.00	0.00	-25.00	25.00	5.24	19.76	1.265	Level 3
2,000.00	2,000.00	2,000.00	2,000.00	10.42	10.42	-90.00	0.00	-25.00	25.00	4.16	20.84	1.200	Level 2
2,100.00	2,100.00	2,100.00	2,100.00	10.96	10.96	-90.00	0.00	-25.00	25.00	3.09	21.91	1.141	Level 2
2,200.00	2,200.00	2,200.00	2,200.00	11.49	11.49	-90.00	0.00	-25.00	25.00	2.01	22.99	1.088	Level 2
2,300.00	2,300.00	2,300.00	2,300.00	12.03	12.03	-90.00	0.00	-25.00	25.00	0.94	24.06	1.039	Level 2, CC, ES, SF
2,400.00	2,399.98	2,399.76	2,399.74	12.55	12.54	154.24	-1.70	-25.37	26.99	1.91	25.08	1.076	Level 2
2,500.00	2,499.84	2,499.24	2,499.08	13.05	13.03	149.39	-6.76	-26.49	33.13	7.10	26.03	1.273	Level 3
2,600.00	2,599.45	2,598.13	2,597.59	13.56	13.51	144.38	-15.14	-28.33	43.66	16.68	26.97	1.619	
2,700.00	2,698.70	2,697.02	2,695.93	14.08	14.00	141.65	-25.40	-30.59	57.97	30.07	27.90	2.077	
2,800.00	2,797.47	2,795.55	2,793.90	14.60	14.49	141.62	-35.62	-32.84	75.04	46.22	28.82	2.604	
2,900.00	2,895.62	2,893.55	2,891.34	15.14	14.99	142.81	-45.80	-35.07	94.82	65.12	29.70	3.193	
3,000.00	2,993.06	2,990.89	2,988.13	15.70	15.49	144.51	-55.90	-37.30	117.41	86.87	30.54	3.844	
3,100.00	3,089.64	3,087.47	3,084.16	16.28	15.99	146.36	-65.93	-39.50	142.91	111.56	31.35	4.558	
3,200.00	3,185.28	3,183.17	3,179.31	16.88	16.49	148.22	-75.86	-41.69	171.37	139.21	32.16	5.329	
3,300.00	3,280.53	3,278.51	3,274.11	17.51	16.99	149.94	-85.76	-43.86	201.06	167.91	33.15	6.066	
3,400.00	3,375.78	3,373.85	3,368.91	18.16	17.49	151.22	-95.66	-46.04	230.88	196.72	34.16	6.758	
3,500.00	3,471.03	3,469.19	3,463.71	18.82	18.00	152.20	-105.56	-48.22	260.78	225.59	35.19	7.410	
3,600.00	3,566.28	3,564.53	3,558.51	19.50	18.51	152.99	-115.45	-50.39	290.74	254.50	36.24	8.023	
3,700.00	3,661.53	3,659.87	3,653.31	20.20	19.03	153.63	-125.35	-52.57	320.73	283.44	37.29	8.601	
3,800.00	3,756.78	3,755.21	3,748.11	20.91	19.54	154.15	-135.25	-54.75	350.76	312.40	38.36	9.144	
3,900.00	3,852.03	3,850.55	3,842.91	21.62	20.06	154.60	-145.15	-56.92	380.81	341.37	39.43	9.657	
4,000.00	3,947.28	3,945.89	3,937.71	22.35	20.58	154.98	-155.04	-59.10	410.87	370.36	40.51	10.141	
4,100.00	4,042.53	4,041.23	4,032.51	23.09	21.10	155.31	-164.94	-61.28	440.95	399.35	41.60	10.599	
4,200.00	4,137.78	4,136.57	4,127.31	23.84	21.63	155.59	-174.84	-63.45	471.05	428.34	42.70	11.031	
4,300.00	4,233.03	4,231.91	4,222.11	24.59	22.15	155.85	-184.74	-65.63	501.15	457.34	43.80	11.441	
4,400.00	4,328.28	4,327.25	4,316.91	25.36	22.68	156.07	-194.63	-67.81	531.26	486.35	44.91	11.829	
4,500.00	4,423.53	4,422.59	4,411.71	26.12	23.21	156.27	-204.53	-69.99	561.37	515.35	46.02	12.198	
4,600.00	4,518.78	4,517.93	4,506.51	26.90	23.74	156.45	-214.43	-72.16	591.49	544.35	47.14	12.548	
4,700.00	4,614.03	4,613.27	4,601.31	27.68	24.27	156.61	-224.32	-74.34	621.62	573.36	48.26	12.881	
4,800.00	4,709.28	4,708.61	4,696.11	28.46	24.80	156.76	-234.22	-76.52	651.75	602.37	49.39	13.197	
4,900.00	4,804.53	4,803.95	4,790.91	29.25	25.33	156.89	-244.12	-78.69	681.88	631.37	50.51	13.499	
5,000.00	4,899.78	4,899.29	4,885.71	30.04	25.86	157.01	-254.02	-80.87	712.02	660.38	51.65	13.787	
5,100.00	4,995.03	4,994.63	4,980.51	30.84	26.40	157.12	-263.91	-83.05	742.16	689.38	52.78	14.061	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design RB NE 5 32 Fed - 12WA - OH - Plan 2 03-08-17 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,090.28	5,089.97	5,075.31	31.64	26.94	157.23	-273.81	-85.22	772.30	718.38	53.92	14.323	
5,300.00	5,185.73	5,185.49	5,170.29	32.43	27.47	157.45	-283.73	-87.40	801.88	746.61	55.26	14.510	
5,400.00	5,282.08	5,281.85	5,266.11	33.19	28.02	157.64	-293.73	-89.60	828.60	771.89	56.70	14.613	
5,500.00	5,379.30	5,379.01	5,362.71	33.91	28.57	157.72	-303.82	-91.82	852.19	794.10	58.10	14.669	
5,600.00	5,477.29	5,476.85	5,460.00	34.58	29.12	157.69	-313.98	-94.06	872.64	813.21	59.43	14.683	
5,700.00	5,575.91	5,575.25	5,557.85	35.22	29.68	157.55	-324.19	-96.30	889.94	829.23	60.71	14.658	
5,800.00	5,675.04	5,674.09	5,656.13	35.81	30.24	157.31	-334.45	-98.56	904.07	842.14	61.93	14.598	
5,900.00	5,774.58	5,777.40	5,758.92	36.36	30.82	157.00	-344.49	-100.77	914.92	851.82	63.10	14.499	
6,000.00	5,874.38	5,864.11	5,865.39	36.87	31.40	156.79	-351.32	-102.27	921.90	857.71	64.20	14.361	
6,100.00	5,974.34	5,991.25	5,972.48	37.35	31.97	156.70	-354.28	-102.92	924.92	859.72	65.19	14.187	
6,200.00	6,074.34	6,093.11	6,074.34	37.79	32.48	-89.69	-354.41	-102.95	925.05	858.91	66.14	13.986	
6,300.00	6,174.34	6,193.11	6,174.34	38.24	32.98	-89.69	-354.41	-102.95	925.05	857.92	67.13	13.781	
6,400.00	6,274.34	6,293.11	6,274.34	38.68	33.48	-89.69	-354.41	-102.95	925.05	856.93	68.11	13.581	
6,500.00	6,374.34	6,393.11	6,374.34	39.13	33.99	-89.69	-354.41	-102.95	925.05	855.94	69.10	13.386	
6,600.00	6,474.34	6,493.11	6,474.34	39.59	34.49	-89.69	-354.41	-102.95	925.05	854.95	70.10	13.197	
6,700.00	6,574.34	6,593.11	6,574.34	40.04	34.99	-89.69	-354.41	-102.95	925.05	853.96	71.09	13.012	
6,800.00	6,674.34	6,693.11	6,674.34	40.50	35.50	-89.69	-354.41	-102.95	925.05	852.96	72.09	12.832	
6,900.00	6,774.34	6,793.11	6,774.34	40.96	36.01	-89.69	-354.41	-102.95	925.05	851.96	73.09	12.656	
7,000.00	6,874.34	6,893.11	6,874.34	41.42	36.51	-89.69	-354.41	-102.95	925.05	850.96	74.09	12.485	
7,100.00	6,974.34	6,993.11	6,974.34	41.88	37.02	-89.69	-354.41	-102.95	925.05	849.95	75.10	12.318	
7,200.00	7,074.34	7,093.11	7,074.34	42.34	37.53	-89.69	-354.41	-102.95	925.05	848.95	76.10	12.155	
7,300.00	7,174.34	7,193.11	7,174.34	42.81	38.04	-89.69	-354.41	-102.95	925.05	847.94	77.11	11.997	
7,400.00	7,274.34	7,293.11	7,274.34	43.28	38.55	-89.69	-354.41	-102.95	925.05	846.93	78.12	11.841	
7,500.00	7,374.34	7,393.11	7,374.34	43.74	39.06	-89.69	-354.41	-102.95	925.05	845.92	79.13	11.690	
7,600.00	7,474.34	7,493.11	7,474.34	44.21	39.57	-89.69	-354.41	-102.95	925.05	844.91	80.14	11.542	
7,700.00	7,574.34	7,593.11	7,574.34	44.69	40.08	-89.69	-354.41	-102.95	925.05	843.89	81.16	11.398	
7,800.00	7,674.34	7,693.11	7,674.34	45.16	40.60	-89.69	-354.41	-102.95	925.05	842.87	82.17	11.257	
7,900.00	7,774.34	7,793.11	7,774.34	45.63	41.11	-89.69	-354.41	-102.95	925.05	841.86	83.19	11.119	
8,000.00	7,874.34	7,893.11	7,874.34	46.11	41.62	-89.69	-354.41	-102.95	925.05	840.84	84.21	10.985	
8,100.00	7,974.34	7,993.11	7,974.34	46.59	42.14	-89.69	-354.41	-102.95	925.05	839.82	85.23	10.853	
8,200.00	8,074.34	8,093.11	8,074.34	47.07	42.66	-89.69	-354.41	-102.95	925.05	838.80	86.25	10.725	
8,300.00	8,174.34	8,193.11	8,174.34	47.55	43.17	-89.69	-354.41	-102.95	925.05	837.77	87.28	10.599	
8,400.00	8,274.34	8,293.11	8,274.34	48.03	43.69	-89.69	-354.41	-102.95	925.05	836.75	88.30	10.476	
8,500.00	8,374.34	8,393.11	8,374.34	48.51	44.20	-89.69	-354.41	-102.95	925.05	835.72	89.33	10.356	
8,600.00	8,474.34	8,493.11	8,474.34	49.00	44.72	-89.69	-354.41	-102.95	925.05	834.70	90.35	10.238	
8,700.00	8,574.34	8,593.11	8,574.34	49.48	45.24	-89.69	-354.41	-102.95	925.05	833.67	91.38	10.123	
8,800.00	8,674.34	8,693.11	8,674.34	49.97	45.76	-89.69	-354.41	-102.95	925.05	832.64	92.41	10.010	
8,900.00	8,774.34	8,793.11	8,774.34	50.45	46.28	-89.69	-354.41	-102.95	925.05	831.61	93.44	9.900	
9,000.00	8,874.34	8,893.11	8,874.34	50.94	46.80	-89.69	-354.41	-102.95	925.05	830.58	94.47	9.792	
9,100.00	8,974.34	8,993.11	8,974.34	51.43	47.32	-89.69	-354.41	-102.95	925.05	829.55	95.50	9.686	
9,200.00	9,074.34	9,093.11	9,074.34	51.92	47.84	-89.69	-354.41	-102.95	925.05	828.51	96.53	9.583	
9,300.00	9,174.34	9,193.11	9,174.34	52.41	48.36	-89.69	-354.41	-102.95	925.05	827.48	97.57	9.481	
9,400.00	9,274.34	9,293.11	9,274.34	52.90	48.88	-89.69	-354.41	-102.95	925.05	826.45	98.60	9.382	
9,500.00	9,374.34	9,393.11	9,374.34	53.40	49.40	-89.69	-354.41	-102.95	925.05	825.41	99.64	9.284	
9,600.00	9,474.34	9,493.11	9,474.34	53.89	49.92	-89.69	-354.41	-102.95	925.05	824.37	100.67	9.188	
9,700.00	9,574.34	9,593.11	9,574.34	54.38	50.44	-89.69	-354.41	-102.95	925.05	823.34	101.71	9.095	
9,733.56	9,607.90	9,626.66	9,607.90	54.55	50.62	-89.40	-354.41	-102.95	925.05	822.97	102.07	9.063	
9,800.00	9,674.34	9,692.31	9,673.50	54.88	50.96	-89.30	-352.84	-102.96	925.07	822.32	102.75	9.003	
9,900.00	9,773.61	9,789.84	9,769.69	55.35	51.43	-89.00	-337.38	-103.04	925.14	821.46	103.68	8.923	
10,000.00	9,869.45	9,886.63	9,861.18	55.76	51.85	-88.73	-306.16	-103.20	925.23	820.71	104.51	8.853	
10,100.00	9,958.96	9,982.78	9,945.59	56.11	52.23	-88.49	-260.35	-103.44	925.32	820.07	105.25	8.792	
10,200.00	10,039.42	10,078.40	10,020.77	56.37	52.56	-88.30	-201.45	-103.74	925.40	819.51	105.89	8.739	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design RB NE 5 32 Fed - 12WA - OH - Plan 2 03-08-17

Survey Program: 0-MWD+HDGM

Offset Site Error: 0.00 usft

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,300.00	10,108.38	10,173.62	10,084.88	56.54	52.87	-88.16	-131.20	-104.11	925.47	818.99	106.48	8.691	
10,400.00	10,163.75	10,268.56	10,136.35	56.63	53.15	-88.08	-51.55	-104.52	925.52	818.48	107.03	8.647	
10,500.00	10,203.85	10,363.36	10,173.93	56.65	53.44	-88.04	35.37	-104.97	925.53	817.96	107.57	8.604	
10,600.00	10,227.45	10,458.16	10,196.69	56.61	53.72	-88.07	127.28	-105.44	925.52	817.41	108.11	8.561	
10,700.00	10,234.00	10,553.26	10,204.00	56.54	54.00	-88.14	221.99	-105.93	925.48	816.82	108.65	8.518	
10,800.00	10,234.00	10,653.26	10,204.00	56.49	54.36	-88.14	321.99	-106.45	925.48	816.16	109.31	8.466	
10,900.00	10,234.00	10,753.26	10,204.00	56.50	54.79	-88.14	421.98	-106.97	925.47	815.35	110.13	8.404	
11,000.00	10,234.00	10,853.26	10,204.00	56.65	55.30	-88.14	521.98	-107.49	925.47	814.37	111.11	8.330	
11,100.00	10,234.00	10,953.26	10,204.00	57.06	55.89	-88.14	621.98	-108.01	925.47	813.23	112.24	8.245	
11,200.00	10,234.00	11,053.26	10,204.00	57.65	56.56	-88.14	721.98	-108.52	925.47	811.94	113.53	8.152	
11,300.00	10,234.00	11,153.26	10,204.00	58.36	57.30	-88.14	821.98	-109.04	925.47	810.50	114.97	8.050	
11,400.00	10,234.00	11,253.26	10,204.00	59.14	58.12	-88.14	921.98	-109.56	925.47	808.92	116.55	7.941	
11,500.00	10,234.00	11,353.26	10,204.00	60.00	59.00	-88.14	1,021.98	-110.08	925.47	807.20	118.27	7.825	
11,600.00	10,234.00	11,453.26	10,204.00	60.92	59.94	-88.14	1,121.98	-110.59	925.47	805.35	120.12	7.705	
11,700.00	10,234.00	11,553.26	10,204.00	61.90	60.95	-88.14	1,221.97	-111.11	925.47	803.38	122.09	7.580	
11,800.00	10,234.00	11,653.26	10,204.00	62.94	62.02	-88.14	1,321.97	-111.63	925.47	801.28	124.18	7.453	
11,900.00	10,234.00	11,753.26	10,204.00	64.04	63.14	-88.14	1,421.97	-112.15	925.47	799.08	126.39	7.322	
12,000.00	10,234.00	11,853.26	10,204.00	65.19	64.32	-88.14	1,521.97	-112.66	925.46	796.76	128.70	7.191	
12,100.00	10,234.00	11,953.26	10,204.00	66.38	65.54	-88.14	1,621.97	-113.18	925.46	794.35	131.12	7.058	
12,200.00	10,234.00	12,053.26	10,204.00	67.63	66.82	-88.14	1,721.97	-113.70	925.46	791.83	133.63	6.926	
12,300.00	10,234.00	12,153.26	10,204.00	68.92	68.14	-88.14	1,821.97	-114.22	925.46	789.23	136.23	6.793	
12,400.00	10,234.00	12,253.26	10,204.00	70.25	69.50	-88.14	1,921.96	-114.74	925.46	786.54	138.92	6.662	
12,500.00	10,234.00	12,353.26	10,204.00	71.62	70.90	-88.14	2,021.96	-115.25	925.46	783.77	141.69	6.532	
12,600.00	10,234.00	12,453.26	10,204.00	73.02	72.34	-88.14	2,121.96	-115.77	925.46	780.93	144.53	6.403	
12,700.00	10,234.00	12,553.26	10,204.00	74.47	73.81	-88.14	2,221.96	-116.29	925.46	778.01	147.45	6.276	
12,800.00	10,234.00	12,653.26	10,204.00	75.94	75.32	-88.14	2,321.96	-116.81	925.46	775.02	150.43	6.152	
12,900.00	10,234.00	12,753.26	10,204.00	77.45	76.85	-88.14	2,421.96	-117.32	925.46	771.97	153.48	6.030	
13,000.00	10,234.00	12,853.26	10,204.00	78.99	78.42	-88.14	2,521.96	-117.84	925.45	768.86	156.59	5.910	
13,100.00	10,234.00	12,953.26	10,204.00	80.56	80.02	-88.14	2,621.96	-118.36	925.45	765.70	159.76	5.793	
13,200.00	10,234.00	13,053.26	10,204.00	82.15	81.64	-88.14	2,721.95	-118.88	925.45	762.48	162.97	5.678	
13,300.00	10,234.00	13,153.26	10,204.00	83.77	83.28	-88.14	2,821.95	-119.39	925.45	759.21	166.24	5.567	
13,400.00	10,234.00	13,253.26	10,204.00	85.41	84.95	-88.14	2,921.95	-119.91	925.45	755.89	169.56	5.458	
13,500.00	10,234.00	13,353.26	10,204.00	87.08	86.65	-88.14	3,021.95	-120.43	925.45	752.53	172.92	5.352	
13,600.00	10,234.00	13,453.26	10,204.00	88.76	88.36	-88.14	3,121.95	-120.95	925.45	749.13	176.32	5.249	
13,700.00	10,234.00	13,553.26	10,204.00	90.47	90.09	-88.14	3,221.95	-121.47	925.45	745.68	179.76	5.148	
13,800.00	10,234.00	13,653.26	10,204.00	92.20	91.84	-88.14	3,321.95	-121.98	925.45	742.20	183.24	5.050	
13,900.00	10,234.00	13,753.26	10,204.00	93.94	93.60	-88.14	3,421.94	-122.50	925.45	738.69	186.76	4.955	
14,000.00	10,234.00	13,853.26	10,204.00	95.70	95.39	-88.14	3,521.94	-123.02	925.44	735.14	190.30	4.863	
14,100.00	10,234.00	13,953.26	10,204.00	97.47	97.18	-88.14	3,621.94	-123.54	925.44	731.56	193.88	4.773	
14,200.00	10,234.00	14,053.26	10,204.00	99.26	99.00	-88.14	3,721.94	-124.05	925.44	727.95	197.49	4.686	
14,300.00	10,234.00	14,153.26	10,204.00	101.07	100.82	-88.14	3,821.94	-124.57	925.44	724.31	201.13	4.601	
14,400.00	10,234.00	14,253.26	10,204.00	102.89	102.66	-88.14	3,921.94	-125.09	925.44	720.65	204.79	4.519	
14,500.00	10,234.00	14,353.26	10,204.00	104.72	104.52	-88.14	4,021.94	-125.61	925.44	716.96	208.48	4.439	
14,600.00	10,234.00	14,453.26	10,204.00	106.57	106.38	-88.14	4,121.94	-126.12	925.44	713.24	212.19	4.361	
14,700.00	10,234.00	14,553.26	10,204.00	108.42	108.25	-88.14	4,221.93	-126.64	925.44	709.51	215.93	4.286	
14,800.00	10,234.00	14,653.26	10,204.00	110.29	110.14	-88.14	4,321.93	-127.16	925.44	705.75	219.69	4.213	
14,900.00	10,234.00	14,753.26	10,204.00	112.17	112.04	-88.14	4,421.93	-127.68	925.44	701.97	223.47	4.141	
15,000.00	10,234.00	14,853.26	10,204.00	114.05	113.94	-88.14	4,521.93	-128.20	925.43	698.17	227.26	4.072	
15,100.00	10,234.00	14,953.26	10,204.00	115.95	115.85	-88.14	4,621.93	-128.71	925.43	694.36	231.08	4.005	
15,200.00	10,234.00	15,053.26	10,204.00	117.86	117.78	-88.14	4,721.93	-129.23	925.43	690.52	234.91	3.939	
15,300.00	10,234.00	15,153.26	10,204.00	119.77	119.71	-88.14	4,821.93	-129.75	925.43	686.67	238.76	3.876	
15,400.00	10,234.00	15,253.26	10,204.00	121.70	121.64	-88.14	4,921.92	-130.27	925.42	682.82	242.61	3.815	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Offset Design RB NE 5 32 Fed - 12WA - OH - Plan 2 03-08-17 — **Offset Site Error:** 0.00 usft

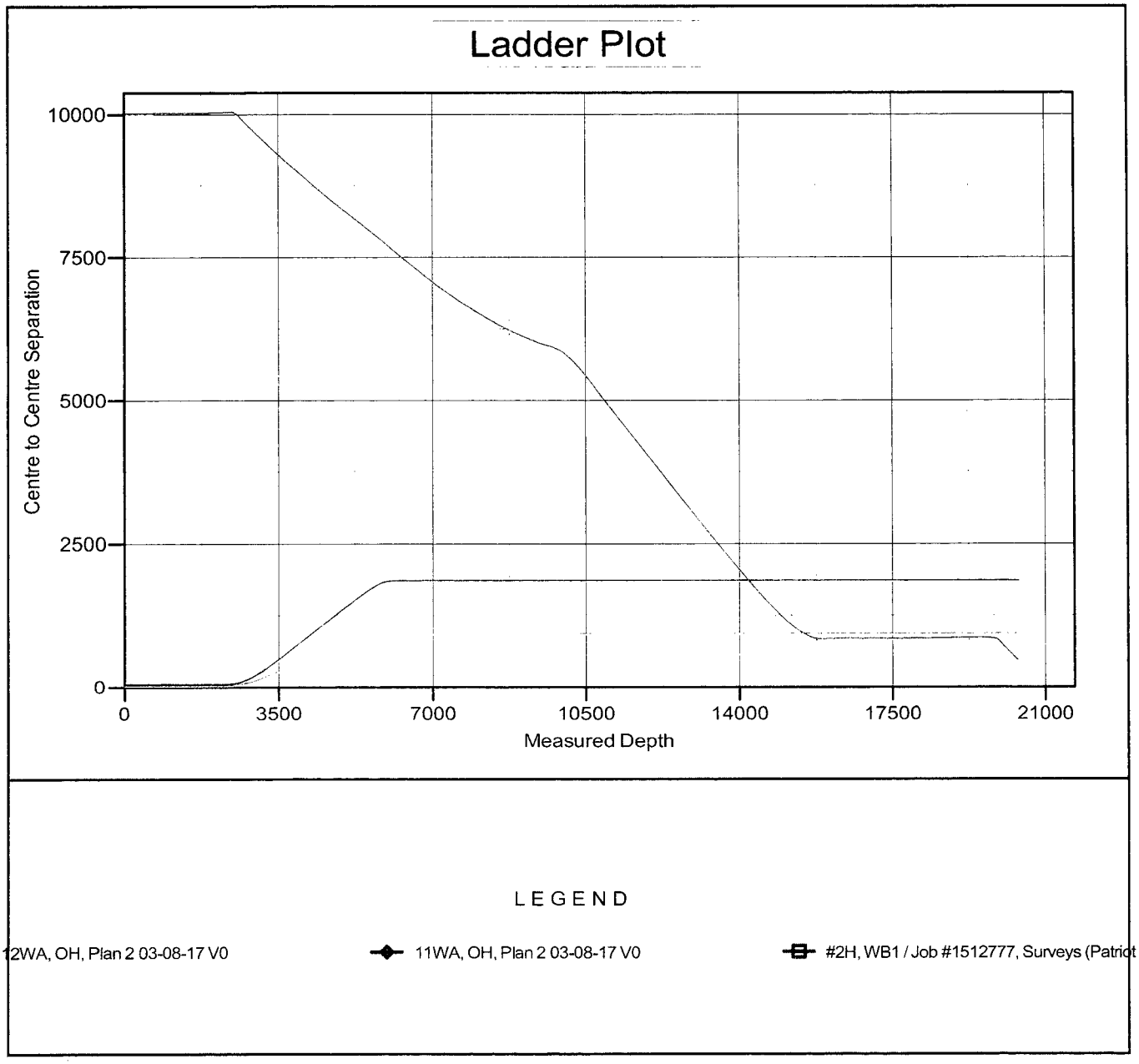
Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,499.71	10,234.00	15,337.58	10,204.00	123.62	123.29	-88.14	5,006.23	-131.63	925.54	679.49	246.04	3.762	
15,500.00	10,234.00	15,337.86	10,204.00	123.63	123.29	-88.14	5,006.52	-131.64	925.12	679.06	246.05	3.760	
15,600.00	10,234.00	15,437.86	10,204.00	125.57	125.25	-88.14	5,106.50	-133.82	925.12	675.16	249.96	3.701	
15,700.00	10,234.00	15,537.86	10,204.00	127.52	127.22	-88.14	5,206.47	-136.00	925.12	671.24	253.88	3.644	
15,800.00	10,234.00	15,637.86	10,204.00	129.48	129.19	-88.14	5,306.45	-138.18	925.13	667.31	257.82	3.588	
15,900.00	10,234.00	15,737.86	10,204.00	131.44	131.17	-88.14	5,406.42	-140.37	925.13	663.36	261.77	3.534	
16,000.00	10,234.00	15,837.86	10,204.00	133.41	133.15	-88.14	5,506.40	-142.55	925.14	659.41	265.73	3.481	
16,100.00	10,234.00	15,937.86	10,204.00	135.39	135.14	-88.14	5,606.38	-144.73	925.14	655.44	269.70	3.430	
16,200.00	10,234.00	16,037.86	10,204.00	137.37	137.14	-88.14	5,706.35	-146.91	925.14	651.46	273.69	3.380	
16,300.00	10,234.00	16,137.86	10,204.00	139.36	139.14	-88.14	5,806.33	-149.09	925.15	647.47	277.68	3.332	
16,400.00	10,234.00	16,237.86	10,204.00	141.35	141.15	-88.14	5,906.31	-151.28	925.15	643.47	281.68	3.284	
16,500.00	10,234.00	16,337.86	10,204.00	143.35	143.16	-88.14	6,006.28	-153.46	925.16	639.46	285.70	3.238	
16,600.00	10,234.00	16,437.86	10,204.00	145.35	145.17	-88.14	6,106.26	-155.64	925.16	635.44	289.72	3.193	
16,700.00	10,234.00	16,537.86	10,204.00	147.36	147.19	-88.14	6,206.23	-157.82	925.16	631.41	293.76	3.149	
16,800.00	10,234.00	16,637.86	10,204.00	149.38	149.22	-88.14	6,306.21	-160.00	925.17	627.37	297.80	3.107	
16,900.00	10,234.00	16,737.86	10,204.00	151.39	151.24	-88.14	6,406.19	-162.18	925.17	623.33	301.85	3.065	
17,000.00	10,234.00	16,837.86	10,204.00	153.41	153.28	-88.14	6,506.16	-164.37	925.18	619.27	305.90	3.024	
17,100.00	10,234.00	16,937.86	10,204.00	155.44	155.31	-88.14	6,606.14	-166.55	925.18	615.21	309.97	2.985	
17,200.00	10,234.00	17,037.86	10,204.00	157.47	157.35	-88.14	6,706.12	-168.73	925.18	611.14	314.04	2.946	
17,300.00	10,234.00	17,137.86	10,204.00	159.50	159.39	-88.14	6,806.09	-170.91	925.19	607.07	318.12	2.908	
17,400.00	10,234.00	17,237.86	10,204.00	161.54	161.44	-88.14	6,906.07	-173.09	925.19	602.98	322.21	2.871	
17,500.00	10,234.00	17,337.86	10,204.00	163.57	163.49	-88.14	7,006.04	-175.28	925.20	598.90	326.30	2.835	
17,600.00	10,234.00	17,437.86	10,204.00	165.62	165.54	-88.14	7,106.02	-177.46	925.20	594.80	330.40	2.800	
17,700.00	10,234.00	17,537.86	10,204.00	167.66	167.60	-88.14	7,206.00	-179.64	925.20	590.70	334.50	2.766	
17,800.00	10,234.00	17,637.86	10,204.00	169.71	169.66	-88.14	7,305.97	-181.82	925.21	586.59	338.61	2.732	
17,900.00	10,234.00	17,737.86	10,204.00	171.76	171.72	-88.14	7,405.95	-184.00	925.21	582.48	342.73	2.700	
18,000.00	10,234.00	17,837.86	10,204.00	173.82	173.78	-88.14	7,505.92	-186.18	925.21	578.36	346.85	2.667	
18,100.00	10,234.00	17,937.86	10,204.00	175.88	175.85	-88.14	7,605.90	-188.37	925.22	574.24	350.98	2.636	
18,200.00	10,234.00	18,037.86	10,204.00	177.94	177.91	-88.14	7,705.88	-190.55	925.22	570.11	355.11	2.605	
18,300.00	10,234.00	18,137.86	10,204.00	180.00	179.99	-88.14	7,805.85	-192.73	925.23	565.98	359.25	2.575	
18,400.00	10,234.00	18,237.86	10,204.00	182.07	182.06	-88.14	7,905.83	-194.91	925.23	561.84	363.39	2.546	
18,500.00	10,234.00	18,337.86	10,204.00	184.13	184.14	-88.14	8,005.81	-197.09	925.23	557.70	367.54	2.517	
18,600.00	10,234.00	18,437.86	10,204.00	186.20	186.21	-88.14	8,105.78	-199.28	925.24	553.55	371.69	2.489	
18,700.00	10,234.00	18,537.86	10,204.00	188.28	188.29	-88.14	8,205.76	-201.46	925.24	549.40	375.84	2.462	
18,800.00	10,234.00	18,637.86	10,204.00	190.35	190.37	-88.14	8,305.73	-203.64	925.25	545.24	380.00	2.435	
18,900.00	10,234.00	18,737.86	10,204.00	192.43	192.46	-88.14	8,405.71	-205.82	925.25	541.08	384.17	2.408	
19,000.00	10,234.00	18,837.86	10,204.00	194.51	194.54	-88.14	8,505.69	-208.00	925.25	536.92	388.33	2.383	
19,100.00	10,234.00	18,937.86	10,204.00	196.59	196.63	-88.14	8,605.66	-210.19	925.26	532.75	392.50	2.357	
19,200.00	10,234.00	19,037.86	10,204.00	198.67	198.72	-88.14	8,705.64	-212.37	925.26	528.58	396.68	2.333	
19,300.00	10,234.00	19,137.86	10,204.00	200.75	200.81	-88.14	8,805.62	-214.55	925.27	524.41	400.86	2.308	
19,400.00	10,234.00	19,237.86	10,204.00	202.84	202.91	-88.14	8,905.59	-216.73	925.27	520.23	405.04	2.284	
19,500.00	10,234.00	19,337.86	10,204.00	204.93	205.00	-88.14	9,005.57	-218.91	925.27	516.05	409.22	2.261	
19,600.00	10,234.00	19,437.86	10,204.00	207.02	207.10	-88.14	9,105.54	-221.09	925.28	511.87	413.41	2.238	
19,700.00	10,234.00	19,537.86	10,204.00	209.11	209.19	-88.14	9,205.52	-223.28	925.28	507.68	417.60	2.216	
19,800.00	10,234.00	19,637.86	10,204.00	211.20	211.29	-88.14	9,305.50	-225.46	925.29	503.49	421.79	2.194	
19,900.00	10,234.00	19,737.86	10,204.00	213.30	213.39	-88.14	9,405.47	-227.64	925.29	499.30	425.99	2.172	
20,000.00	10,234.00	19,837.86	10,204.00	215.39	215.49	-88.14	9,505.45	-229.82	925.29	495.10	430.19	2.151	
20,100.00	10,234.00	19,937.86	10,204.00	217.49	217.60	-88.14	9,605.42	-232.00	925.30	490.91	434.39	2.130	
20,200.00	10,234.00	20,037.86	10,204.00	219.59	219.70	-88.14	9,705.40	-234.19	925.30	486.70	438.60	2.110	
20,300.00	10,234.00	20,137.86	10,204.00	221.69	221.81	-88.14	9,805.38	-236.37	925.31	482.50	442.80	2.090	
20,400.00	10,234.00	20,237.86	10,204.00	223.79	223.91	-88.14	9,905.35	-238.55	925.31	478.30	447.01	2.070	
20,402.47	10,234.00	20,240.33	10,204.00	223.84	223.97	-88.14	9,907.82	-238.60	925.31	478.19	447.12	2.069	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

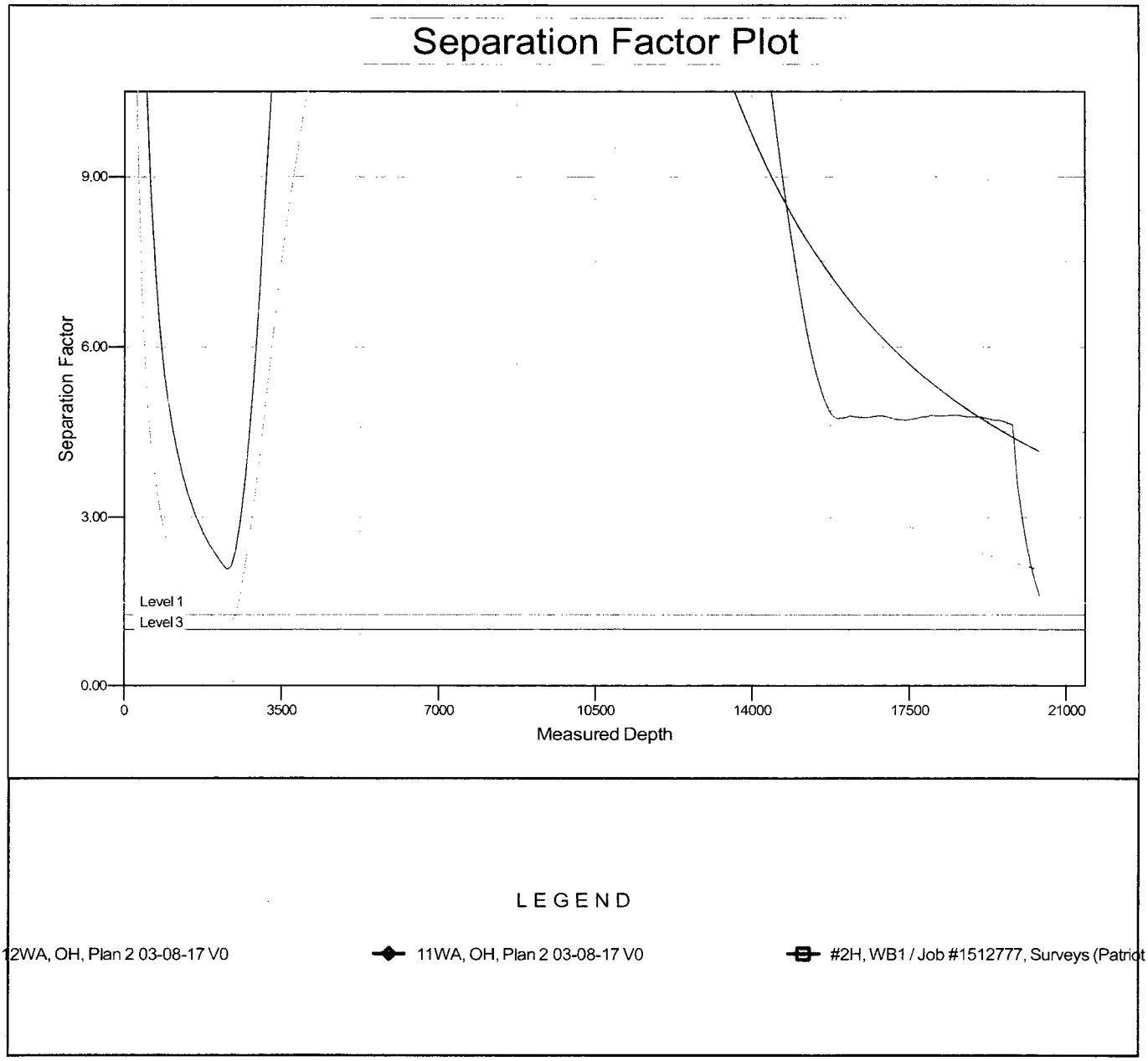
Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to RKB @ 3053.00usft (TBD)	Coordinates are relative to: 13WA
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Central Meridian is 104° 19' 60.00000 W	Grid Convergence at Surface is: 0.18°



Company:	Chevron	**Local Co-ordinate Reference:**	Well 13WA
Project:	Eddy County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Reference Site:	RB NE 5 32 Fed	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	3.00 sigma
Reference Wellbore	OH	**Database:**	Compass 5000 GCR
Reference Design:	Plan 2 03-08-17	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to RKB @ 3053.00usft (TBD)	Coordinates are relative to: 13WA
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Central Meridian is 104° 19' 60.00000 W	Grid Convergence at Surface is: 0.18°



Chevron

Project: Eddy County, NM (NAD27 NME)
Site: RB NE 5 32 Fed
Well: 13WA
Wellbore: OH
Design: Plan 2 03-08-17
Rig: *TBD*

PHOENIX TECHNOLOGY SERVICES

Azimuths to Grid North
True North: -0.18°
Magnetic North: 7.09°

Magnetic Field
Strength: 48194.0snT
Dip Angle: 60.10°
Date: 11/7/2016
Model: HDGM

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

Local Origin: Well 13WA, Grid North

Latitude: 32° 14' 25.43262 N
Longitude: 104° 0' 4.64937 W

Grid East: 602662.00
Grid North: 451334.00
Scale Factor: 1.000

Geomagnetic Model: HDGM
Sample Date: 07-Nov-16
Magnetic Declination: 7.27°
Dip Angle from Horizontal: 60.10°
Magnetic Field Strength: 48194

To convert a Magnetic Direction to a Grid Direction, Add 7.09°
To convert a Magnetic Direction to a True Direction, Add 7.27° East
To convert a True Direction to a Grid Direction, Subtract 0.18°

WELL DETAILS

Ground Level: 3028.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	451334.00	602662.00	32° 14' 25.43262 N	104° 0' 4.64937 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00		KOP1, Begin 2.00°/100' Build
3	3186.50	17.73	113.62	3172.42	-54.52	124.67	2.00	113.62	-45.79		Hold 17.73° Inc at 113.62° Azm
4	5239.16	17.73	113.62	5127.58	-304.96	697.41	0.00	0.00	-256.16		Begin 2.00°/100' Drop
5	6125.66	0.00	0.00	6000.00	-359.47	822.08	2.00	180.00	-301.95		Begin Vertical Hold
6	9786.70	0.00	0.00	9661.04	-359.47	822.08	0.00	0.00	-301.95		KOP2, Begin 10.00°/100' Build
7	10686.70	90.00	359.70	10234.00	213.48	819.11	10.00	359.70	269.43		LP, Hold 90.00° Inc at 359.70° Azm
8	15393.31	90.00	359.70	10234.00	4920.02	794.70	0.00	0.00	4963.10	MP - RB NE 5 32 Fed 13WA	Begin 2.00°/100' Turn
9	15440.85	90.00	358.75	10234.00	4967.55	794.06	2.00	-90.00	5010.47		Hold 358.75° Azm
10	20402.47	90.00	358.75	10234.00	9928.00	686.00	0.00	0.00	9951.67	BHL - RB NE 5 32 Fed 13WA	TD at 20402.47

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP - RB NE 5 32 Fed 13WA	10199.45	17.52	820.13	451351.52	603482.13	32° 14' 25.58081 N	103° 59' 55.09966 W
BHL - RB NE 5 32 Fed 13WA	10234.00	9928.00	686.00	461262.00	603348.00	32° 16' 3.66071 N	103° 59' 56.30200 W
LTP - RB NE 5 32 Fed 13WA	10234.00	9877.55	687.30	461211.55	603349.30	32° 16' 3.16141 N	103° 59' 56.28869 W
MP - RB NE 5 32 Fed 13WA	10234.00	4920.02	794.70	456254.02	603456.70	32° 15' 14.09761 N	103° 59' 55.21783 W

FORMATION TOP DETAILS

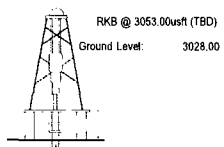
No formation data is available

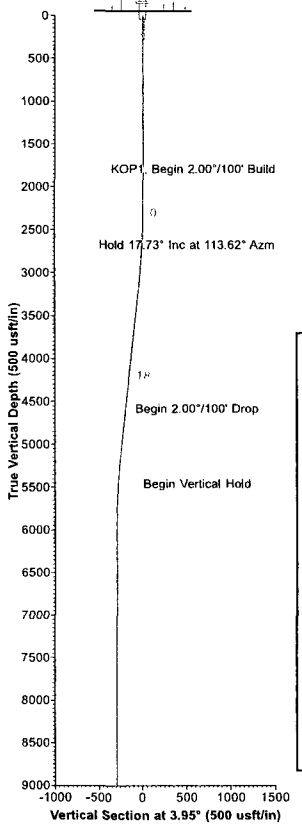
CASING DETAILS

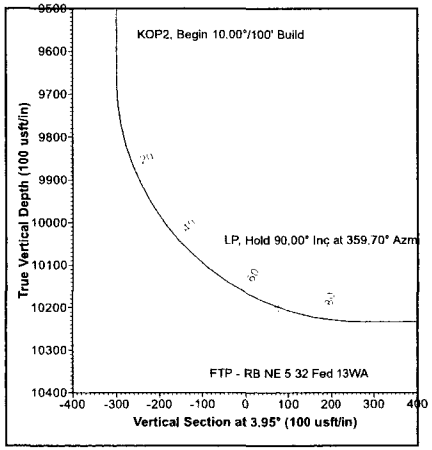
No casing data is available

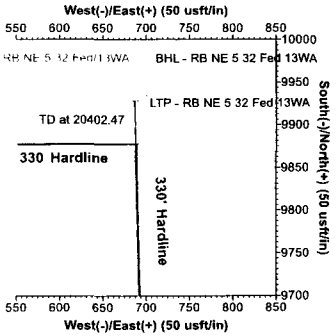
LEGEND

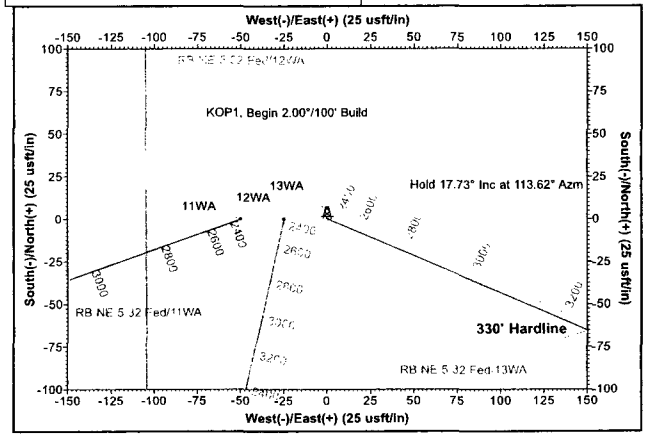
- 12WA, OH, Plan 2 03-08-17 V0
- 11WA, OH, Plan 2 03-08-17 V0
- #2H, WB1 / Job #1512777, Surveys (Patriot 5) V0
- Plan 2 03-08-17

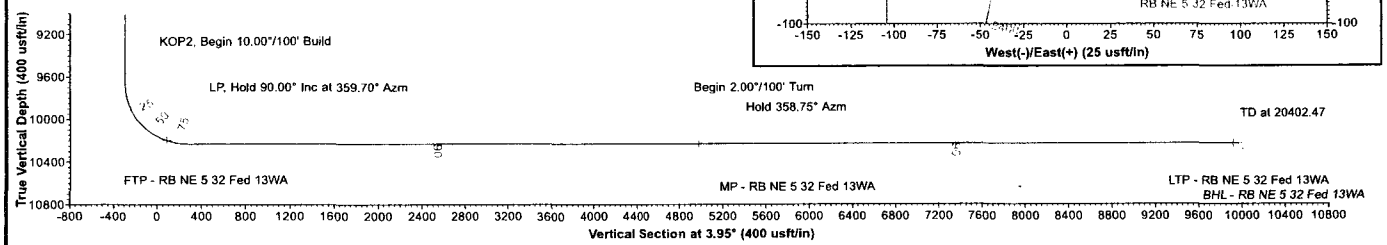


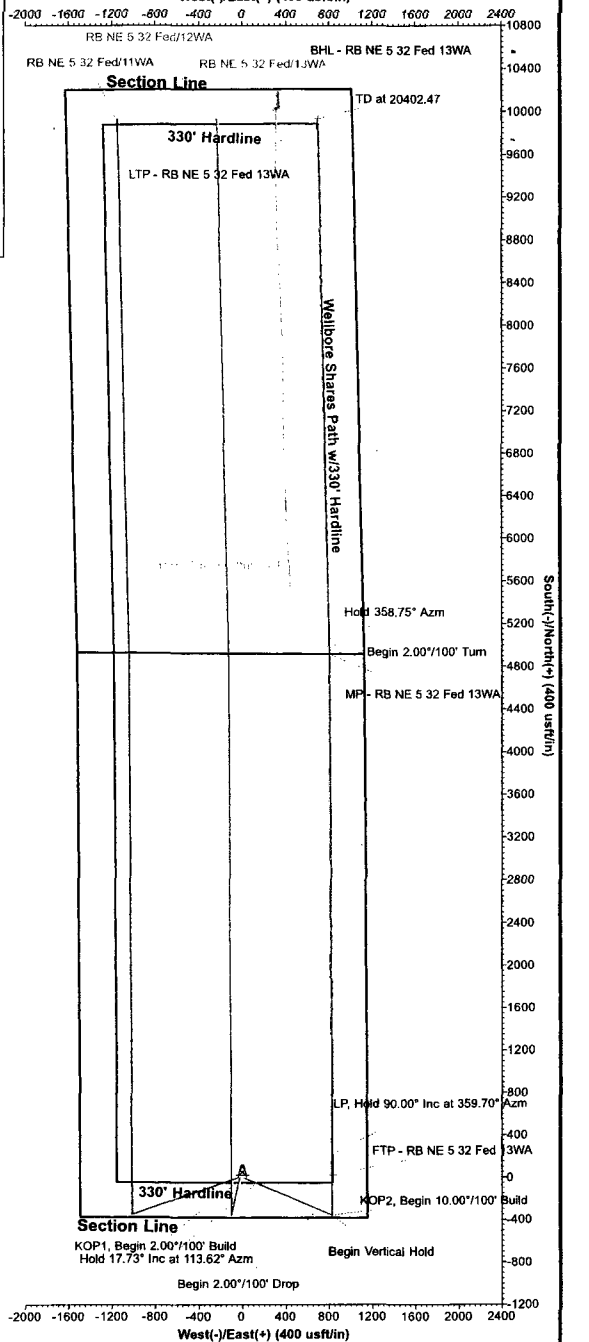












Created By: Bianca LaCombe Date: 8:49, March 10 2017

Chevron

Chevron

Eddy County, NM (NAD27 NME)
RB NE 5 32 Fed
13WA

OH

Plan: Plan 2 03-08-17

Standard Planning Report

10 March, 2017

PHOENIX
TECHNOLOGY SERVICES

Database:	Compass 5000 GCR	**Local Co-ordinate Reference:**	Well 13WA
Company:	Chevron	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Project:	Eddy County, NM (NAD27 NME)	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site:	RB NE 5 32 Fed	**North Reference:**	Grid
Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 03-08-17		

Project	Eddy County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site RB NE 5 32 Fed

Site Position:		**Northing:**	451,334.00 usft	**Latitude:**	32° 14' 25.43415 N
From:	Map	**Easting:**	602,612.00 usft	**Longitude:**	104° 0' 5.23154 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.18 °

Well 13WA

Well Position	**+N/-S**	0.00 usft	**Northing:**	451,334.00 usft	**Latitude:**	32° 14' 25.43262 N
	+E/-W	50.00 usft	**Easting:**	602,662.00 usft	**Longitude:**	104° 0' 4.64937 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,028.00 usft

Wellbore OH

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	11/7/2016	7.27	60.10	48,194

Design Plan 2 03-08-17

Audit Notes:

Version:	**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.00	0.00	0.00	3.95

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,186.50	17.73	113.62	3,172.42	-54.52	124.67	2.00	2.00	0.00	113.62	
5,239.16	17.73	113.62	5,127.58	-304.96	697.41	0.00	0.00	0.00	0.00	
6,125.66	0.00	0.00	6,000.00	-359.47	822.08	2.00	-2.00	0.00	180.00	
9,786.70	0.00	0.00	9,661.04	-359.47	822.08	0.00	0.00	0.00	0.00	
10,686.70	90.00	359.70	10,234.00	213.48	819.11	10.00	10.00	0.00	359.70	
15,393.31	90.00	359.70	10,234.00	4,920.02	794.70	0.00	0.00	0.00	0.00	MP - RB NE 5 32 F
15,440.85	90.00	358.75	10,234.00	4,967.55	794.06	2.00	0.00	-2.00	-90.00	
20,402.47	90.00	358.75	10,234.00	9,928.00	686.00	0.00	0.00	0.00	0.00	BHL - RB NE 5 32 I

Database:	Compass 5000 GCR	**Local Co-ordinate Reference:**	Well 13WA
Company:	Chevron	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Project:	Eddy County, NM (NAD27 NME)	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site:	RB NE 5 32 Fed	**North Reference:**	Grid
Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 03-08-17		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP1, Begin 2.00°/100' Build									
2,400.00	2.00	113.62	2,399.98	-0.70	1.60	-0.59	2.00	2.00	0.00
2,500.00	4.00	113.62	2,499.84	-2.80	6.39	-2.35	2.00	2.00	0.00
2,600.00	6.00	113.62	2,599.45	-6.29	14.38	-5.28	2.00	2.00	0.00
2,700.00	8.00	113.62	2,698.70	-11.17	25.54	-9.38	2.00	2.00	0.00
2,800.00	10.00	113.62	2,797.47	-17.44	39.88	-14.65	2.00	2.00	0.00
2,900.00	12.00	113.62	2,895.62	-25.08	57.36	-21.07	2.00	2.00	0.00
3,000.00	14.00	113.62	2,993.06	-34.09	77.97	-28.64	2.00	2.00	0.00
3,100.00	16.00	113.62	3,089.64	-44.46	101.68	-37.35	2.00	2.00	0.00
3,186.50	17.73	113.62	3,172.42	-54.52	124.67	-45.79	2.00	2.00	0.00
Hold 17.73° Inc at 113.62° Azm									
3,200.00	17.73	113.62	3,185.28	-56.16	128.44	-47.18	0.00	0.00	0.00
3,300.00	17.73	113.62	3,280.53	-68.36	156.34	-57.42	0.00	0.00	0.00
3,400.00	17.73	113.62	3,375.78	-80.56	184.24	-67.67	0.00	0.00	0.00
3,500.00	17.73	113.62	3,471.03	-92.77	212.15	-77.92	0.00	0.00	0.00
3,600.00	17.73	113.62	3,566.28	-104.97	240.05	-88.17	0.00	0.00	0.00
3,700.00	17.73	113.62	3,661.53	-117.17	267.95	-98.42	0.00	0.00	0.00
3,800.00	17.73	113.62	3,756.78	-129.37	295.85	-108.67	0.00	0.00	0.00
3,900.00	17.73	113.62	3,852.03	-141.57	323.76	-118.91	0.00	0.00	0.00
4,000.00	17.73	113.62	3,947.28	-153.77	351.66	-129.16	0.00	0.00	0.00
4,100.00	17.73	113.62	4,042.53	-165.97	379.56	-139.41	0.00	0.00	0.00
4,200.00	17.73	113.62	4,137.78	-178.17	407.46	-149.66	0.00	0.00	0.00
4,300.00	17.73	113.62	4,233.03	-190.37	435.36	-159.91	0.00	0.00	0.00
4,400.00	17.73	113.62	4,328.28	-202.57	463.27	-170.16	0.00	0.00	0.00
4,500.00	17.73	113.62	4,423.53	-214.77	491.17	-180.41	0.00	0.00	0.00
4,600.00	17.73	113.62	4,518.78	-226.98	519.07	-190.65	0.00	0.00	0.00
4,700.00	17.73	113.62	4,614.03	-239.18	546.97	-200.90	0.00	0.00	0.00
4,800.00	17.73	113.62	4,709.28	-251.38	574.88	-211.15	0.00	0.00	0.00
4,900.00	17.73	113.62	4,804.53	-263.58	602.78	-221.40	0.00	0.00	0.00
5,000.00	17.73	113.62	4,899.78	-275.78	630.68	-231.65	0.00	0.00	0.00
5,100.00	17.73	113.62	4,995.03	-287.98	658.58	-241.90	0.00	0.00	0.00
5,200.00	17.73	113.62	5,090.28	-300.18	686.48	-252.14	0.00	0.00	0.00
5,239.16	17.73	113.62	5,127.58	-304.96	697.41	-256.16	0.00	0.00	0.00
Begin 2.00°/100' Drop									
5,300.00	16.51	113.62	5,185.73	-312.13	713.82	-262.19	2.00	-2.00	0.00
5,400.00	14.51	113.62	5,282.08	-322.85	738.33	-271.19	2.00	-2.00	0.00
5,500.00	12.51	113.62	5,379.30	-332.21	759.73	-279.05	2.00	-2.00	0.00
5,600.00	10.51	113.62	5,477.29	-340.21	778.02	-285.77	2.00	-2.00	0.00
5,700.00	8.51	113.62	5,575.91	-346.83	793.16	-291.33	2.00	-2.00	0.00
5,800.00	6.51	113.62	5,675.04	-352.07	805.14	-295.73	2.00	-2.00	0.00
5,900.00	4.51	113.62	5,774.58	-355.92	813.95	-298.96	2.00	-2.00	0.00
6,000.00	2.51	113.62	5,874.38	-358.37	819.56	-301.02	2.00	-2.00	0.00
6,100.00	0.51	113.62	5,974.34	-359.43	821.98	-301.91	2.00	-2.00	0.00
6,125.66	0.00	0.00	6,000.00	-359.47	822.08	-301.95	2.00	-2.00	0.00
Begin Vertical Hold									
9,786.70	0.00	0.00	9,661.04	-359.47	822.08	-301.95	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build									
9,800.00	1.33	359.70	9,674.34	-359.32	822.08	-301.80	10.00	10.00	0.00
9,900.00	11.33	359.70	9,773.61	-348.31	822.03	-290.81	10.00	10.00	0.00
10,000.00	21.33	359.70	9,869.45	-320.23	821.88	-262.81	10.00	10.00	0.00
10,100.00	31.33	359.70	9,958.96	-275.93	821.65	-218.64	10.00	10.00	0.00
10,200.00	41.33	359.70	10,039.42	-216.76	821.34	-159.63	10.00	10.00	0.00

Database:	Compass 5000 GCR	**Local Co-ordinate Reference:**	Well 13WA
Company:	Chevron	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Project:	Eddy County, NM (NAD27 NME)	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site:	RB NE 5 32 Fed	**North Reference:**	Grid
Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 03-08-17		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,300.00	51.33	359.70	10,108.38	-144.52	820.97	-87.59	10.00	10.00	0.00
10,400.00	61.33	359.70	10,163.75	-61.40	820.54	-4.70	10.00	10.00	0.00
10,500.00	71.33	359.70	10,203.85	30.06	820.06	86.52	10.00	10.00	0.00
10,600.00	81.33	359.70	10,227.45	127.11	819.56	183.30	10.00	10.00	0.00
10,686.70	90.00	359.70	10,234.00	213.48	819.11	269.43	10.00	10.00	0.00
LP, Hold 90.00° Inc at 359.70° Azm									
10,700.00	90.00	359.70	10,234.00	226.78	819.04	282.70	0.00	0.00	0.00
10,800.00	90.00	359.70	10,234.00	326.77	818.52	382.42	0.00	0.00	0.00
10,900.00	90.00	359.70	10,234.00	426.77	818.01	482.15	0.00	0.00	0.00
11,000.00	90.00	359.70	10,234.00	526.77	817.49	581.87	0.00	0.00	0.00
11,100.00	90.00	359.70	10,234.00	626.77	816.97	681.60	0.00	0.00	0.00
11,200.00	90.00	359.70	10,234.00	726.77	816.45	781.32	0.00	0.00	0.00
11,300.00	90.00	359.70	10,234.00	826.77	815.93	881.05	0.00	0.00	0.00
11,400.00	90.00	359.70	10,234.00	926.77	815.41	980.77	0.00	0.00	0.00
11,500.00	90.00	359.70	10,234.00	1,026.77	814.89	1,080.50	0.00	0.00	0.00
11,600.00	90.00	359.70	10,234.00	1,126.76	814.38	1,180.22	0.00	0.00	0.00
11,700.00	90.00	359.70	10,234.00	1,226.76	813.86	1,279.95	0.00	0.00	0.00
11,800.00	90.00	359.70	10,234.00	1,326.76	813.34	1,379.67	0.00	0.00	0.00
11,900.00	90.00	359.70	10,234.00	1,426.76	812.82	1,479.40	0.00	0.00	0.00
12,000.00	90.00	359.70	10,234.00	1,526.76	812.30	1,579.12	0.00	0.00	0.00
12,100.00	90.00	359.70	10,234.00	1,626.76	811.78	1,678.85	0.00	0.00	0.00
12,200.00	90.00	359.70	10,234.00	1,726.76	811.26	1,778.57	0.00	0.00	0.00
12,300.00	90.00	359.70	10,234.00	1,826.75	810.74	1,878.30	0.00	0.00	0.00
12,400.00	90.00	359.70	10,234.00	1,926.75	810.23	1,978.02	0.00	0.00	0.00
12,500.00	90.00	359.70	10,234.00	2,026.75	809.71	2,077.75	0.00	0.00	0.00
12,600.00	90.00	359.70	10,234.00	2,126.75	809.19	2,177.47	0.00	0.00	0.00
12,700.00	90.00	359.70	10,234.00	2,226.75	808.67	2,277.20	0.00	0.00	0.00
12,800.00	90.00	359.70	10,234.00	2,326.75	808.15	2,376.92	0.00	0.00	0.00
12,900.00	90.00	359.70	10,234.00	2,426.75	807.63	2,476.65	0.00	0.00	0.00
13,000.00	90.00	359.70	10,234.00	2,526.74	807.11	2,576.37	0.00	0.00	0.00
13,100.00	90.00	359.70	10,234.00	2,626.74	806.59	2,676.10	0.00	0.00	0.00
13,200.00	90.00	359.70	10,234.00	2,726.74	806.08	2,775.82	0.00	0.00	0.00
13,300.00	90.00	359.70	10,234.00	2,826.74	805.56	2,875.55	0.00	0.00	0.00
13,400.00	90.00	359.70	10,234.00	2,926.74	805.04	2,975.27	0.00	0.00	0.00
13,500.00	90.00	359.70	10,234.00	3,026.74	804.52	3,075.00	0.00	0.00	0.00
13,600.00	90.00	359.70	10,234.00	3,126.74	804.00	3,174.72	0.00	0.00	0.00
13,700.00	90.00	359.70	10,234.00	3,226.74	803.48	3,274.45	0.00	0.00	0.00
13,800.00	90.00	359.70	10,234.00	3,326.73	802.96	3,374.17	0.00	0.00	0.00
13,900.00	90.00	359.70	10,234.00	3,426.73	802.45	3,473.90	0.00	0.00	0.00
14,000.00	90.00	359.70	10,234.00	3,526.73	801.93	3,573.62	0.00	0.00	0.00
14,100.00	90.00	359.70	10,234.00	3,626.73	801.41	3,673.35	0.00	0.00	0.00
14,200.00	90.00	359.70	10,234.00	3,726.73	800.89	3,773.07	0.00	0.00	0.00
14,300.00	90.00	359.70	10,234.00	3,826.73	800.37	3,872.80	0.00	0.00	0.00
14,400.00	90.00	359.70	10,234.00	3,926.73	799.85	3,972.52	0.00	0.00	0.00
14,500.00	90.00	359.70	10,234.00	4,026.72	799.33	4,072.25	0.00	0.00	0.00
14,600.00	90.00	359.70	10,234.00	4,126.72	798.81	4,171.97	0.00	0.00	0.00
14,700.00	90.00	359.70	10,234.00	4,226.72	798.30	4,271.70	0.00	0.00	0.00
14,800.00	90.00	359.70	10,234.00	4,326.72	797.78	4,371.42	0.00	0.00	0.00
14,900.00	90.00	359.70	10,234.00	4,426.72	797.26	4,471.15	0.00	0.00	0.00
15,000.00	90.00	359.70	10,234.00	4,526.72	796.74	4,570.87	0.00	0.00	0.00
15,100.00	90.00	359.70	10,234.00	4,626.72	796.22	4,670.60	0.00	0.00	0.00
15,200.00	90.00	359.70	10,234.00	4,726.72	795.70	4,770.32	0.00	0.00	0.00
15,300.00	90.00	359.70	10,234.00	4,826.71	795.18	4,870.05	0.00	0.00	0.00

Database:	Compass 5000 GCR	**Local Co-ordinate Reference:**	Well 13WA
Company:	Chevron	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Project:	Eddy County, NM (NAD27 NME)	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site:	RB NE 5 32 Fed	**North Reference:**	Grid
Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 03-08-17		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,393.31	90.00	359.70	10,234.00	4,920.02	794.70	4,963.10	0.00	0.00	0.00
Begin 2.00°/100' Turn									
15,400.00	90.00	359.57	10,234.00	4,926.71	794.66	4,969.77	2.00	0.00	-2.00
15,440.85	90.00	358.75	10,234.00	4,967.56	794.06	5,010.48	2.00	0.00	-2.00
Hold 358.75° Azm									
15,500.00	90.00	358.75	10,234.00	5,026.69	792.77	5,069.38	0.00	0.00	0.00
15,600.00	90.00	358.75	10,234.00	5,126.67	790.59	5,168.97	0.00	0.00	0.00
15,700.00	90.00	358.75	10,234.00	5,226.65	788.41	5,268.56	0.00	0.00	0.00
15,800.00	90.00	358.75	10,234.00	5,326.62	786.24	5,368.15	0.00	0.00	0.00
15,900.00	90.00	358.75	10,234.00	5,426.60	784.06	5,467.74	0.00	0.00	0.00
16,000.00	90.00	358.75	10,234.00	5,526.58	781.88	5,567.33	0.00	0.00	0.00
16,100.00	90.00	358.75	10,234.00	5,626.55	779.70	5,666.91	0.00	0.00	0.00
16,200.00	90.00	358.75	10,234.00	5,726.53	777.53	5,766.50	0.00	0.00	0.00
16,300.00	90.00	358.75	10,234.00	5,826.50	775.35	5,866.09	0.00	0.00	0.00
16,400.00	90.00	358.75	10,234.00	5,926.48	773.17	5,965.68	0.00	0.00	0.00
16,500.00	90.00	358.75	10,234.00	6,026.46	770.99	6,065.27	0.00	0.00	0.00
16,600.00	90.00	358.75	10,234.00	6,126.43	768.81	6,164.86	0.00	0.00	0.00
16,700.00	90.00	358.75	10,234.00	6,226.41	766.64	6,264.44	0.00	0.00	0.00
16,800.00	90.00	358.75	10,234.00	6,326.39	764.46	6,364.03	0.00	0.00	0.00
16,900.00	90.00	358.75	10,234.00	6,426.36	762.28	6,463.62	0.00	0.00	0.00
17,000.00	90.00	358.75	10,234.00	6,526.34	760.10	6,563.21	0.00	0.00	0.00
17,100.00	90.00	358.75	10,234.00	6,626.31	757.92	6,662.80	0.00	0.00	0.00
17,200.00	90.00	358.75	10,234.00	6,726.29	755.75	6,762.39	0.00	0.00	0.00
17,300.00	90.00	358.75	10,234.00	6,826.27	753.57	6,861.98	0.00	0.00	0.00
17,400.00	90.00	358.75	10,234.00	6,926.24	751.39	6,961.56	0.00	0.00	0.00
17,500.00	90.00	358.75	10,234.00	7,026.22	749.21	7,061.15	0.00	0.00	0.00
17,600.00	90.00	358.75	10,234.00	7,126.20	747.03	7,160.74	0.00	0.00	0.00
17,700.00	90.00	358.75	10,234.00	7,226.17	744.86	7,260.33	0.00	0.00	0.00
17,800.00	90.00	358.75	10,234.00	7,326.15	742.68	7,359.92	0.00	0.00	0.00
17,900.00	90.00	358.75	10,234.00	7,426.12	740.50	7,459.51	0.00	0.00	0.00
18,000.00	90.00	358.75	10,234.00	7,526.10	738.32	7,559.09	0.00	0.00	0.00
18,100.00	90.00	358.75	10,234.00	7,626.08	736.15	7,658.68	0.00	0.00	0.00
18,200.00	90.00	358.75	10,234.00	7,726.05	733.97	7,758.27	0.00	0.00	0.00
18,300.00	90.00	358.75	10,234.00	7,826.03	731.79	7,857.86	0.00	0.00	0.00
18,400.00	90.00	358.75	10,234.00	7,926.01	729.61	7,957.45	0.00	0.00	0.00
18,500.00	90.00	358.75	10,234.00	8,025.98	727.43	8,057.04	0.00	0.00	0.00
18,600.00	90.00	358.75	10,234.00	8,125.96	725.26	8,156.62	0.00	0.00	0.00
18,700.00	90.00	358.75	10,234.00	8,225.93	723.08	8,256.21	0.00	0.00	0.00
18,800.00	90.00	358.75	10,234.00	8,325.91	720.90	8,355.80	0.00	0.00	0.00
18,900.00	90.00	358.75	10,234.00	8,425.89	718.72	8,455.39	0.00	0.00	0.00
19,000.00	90.00	358.75	10,234.00	8,525.86	716.54	8,554.98	0.00	0.00	0.00
19,100.00	90.00	358.75	10,234.00	8,625.84	714.37	8,654.57	0.00	0.00	0.00
19,200.00	90.00	358.75	10,234.00	8,725.82	712.19	8,754.15	0.00	0.00	0.00
19,300.00	90.00	358.75	10,234.00	8,825.79	710.01	8,853.74	0.00	0.00	0.00
19,400.00	90.00	358.75	10,234.00	8,925.77	707.83	8,953.33	0.00	0.00	0.00
19,500.00	90.00	358.75	10,234.00	9,025.75	705.65	9,052.92	0.00	0.00	0.00
19,600.00	90.00	358.75	10,234.00	9,125.72	703.48	9,152.51	0.00	0.00	0.00
19,700.00	90.00	358.75	10,234.00	9,225.70	701.30	9,252.10	0.00	0.00	0.00
19,800.00	90.00	358.75	10,234.00	9,325.67	699.12	9,351.68	0.00	0.00	0.00
19,900.00	90.00	358.75	10,234.00	9,425.65	696.94	9,451.27	0.00	0.00	0.00
20,000.00	90.00	358.75	10,234.00	9,525.63	694.77	9,550.86	0.00	0.00	0.00
20,100.00	90.00	358.75	10,234.00	9,625.60	692.59	9,650.45	0.00	0.00	0.00
20,200.00	90.00	358.75	10,234.00	9,725.58	690.41	9,750.04	0.00	0.00	0.00
20,300.00	90.00	358.75	10,234.00	9,825.56	688.23	9,849.63	0.00	0.00	0.00

Database:	Compass 5000 GCR	**Local Co-ordinate Reference:**	Well 13WA
Company:	Chevron	**TVD Reference:**	RKB @ 3053.00usft (TBD)
Project:	Eddy County, NM (NAD27 NME)	**MD Reference:**	RKB @ 3053.00usft (TBD)
Site:	RB NE 5 32 Fed	**North Reference:**	Grid
Well:	13WA	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 03-08-17		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,400.00	90.00	358.75	10,234.00	9,925.53	686.05	9,949.21	0.00	0.00	0.00
20,402.47	90.00	358.75	10,234.00	9,928.00	686.00	9,951.67	0.00	0.00	0.00
TD at 20402.47									

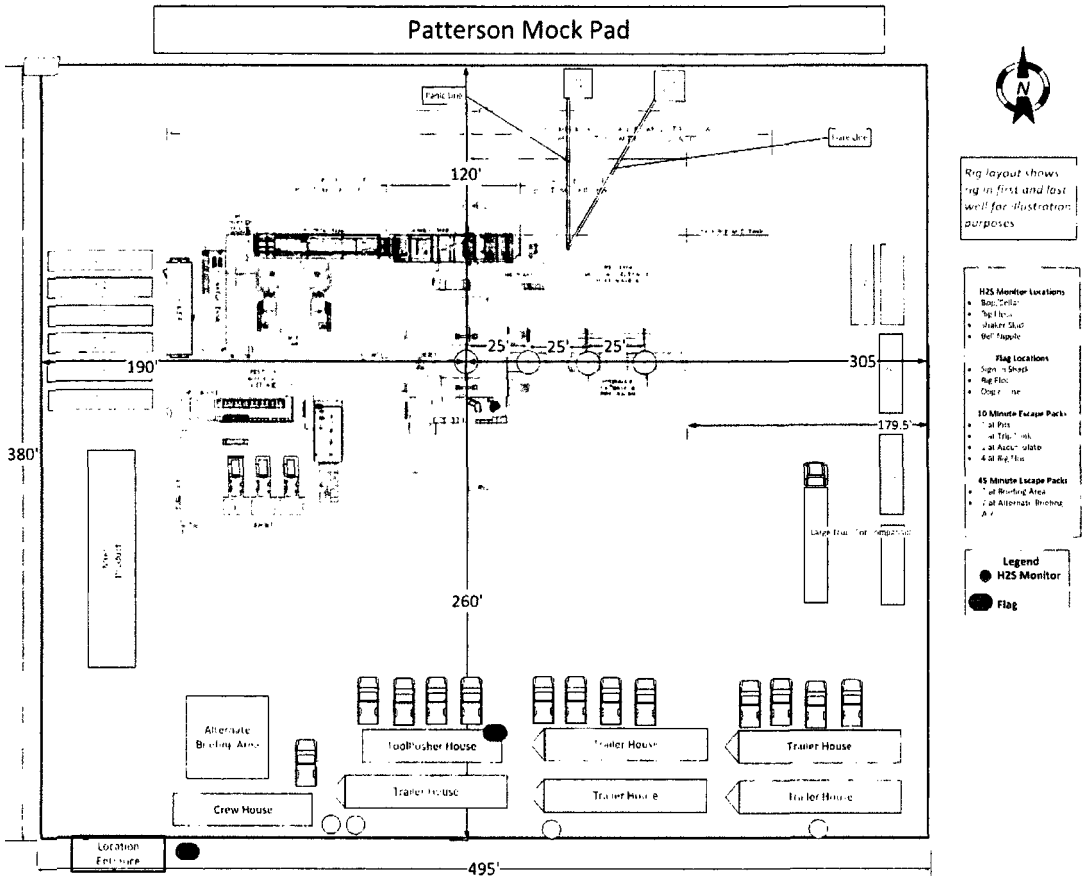
Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP - RB NE 5 32 Fe	0.00	0.00	10,199.45	17.52	820.13	451,351.52	603,482.13	32° 14' 25.58081 N	03° 59' 55.09966 W
- plan misses target center by 0.02usft at 10486.73usft MD (10199.46 TVD, 17.54 N, 820.13 E)									
- Point									
BHL - RB NE 5 32 Fe	0.00	0.00	10,234.00	9,928.00	686.00	461,262.00	603,348.00	32° 16' 3.66071 N	03° 59' 56.30200 W
- plan hits target center									
- Point									
LTP - RB NE 5 32 Fe	0.00	0.00	10,234.00	9,877.55	687.30	461,211.55	603,349.30	32° 16' 3.16141 N	03° 59' 56.28869 W
- plan misses target center by 0.20usft at 20352.00usft MD (10234.00 TVD, 9877.55 N, 687.10 E)									
- Point									
MP - RB NE 5 32 Fed	0.00	0.00	10,234.00	4,920.02	794.70	456,254.02	603,456.70	32° 15' 14.09761 N	03° 59' 55.21784 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,300.00	2,300.00	0.00	0.00	KOP1, Begin 2.00°/100' Build
3,186.50	3,172.42	-54.52	124.67	Hold 17.73° Inc at 113.62° Azm
5,239.16	5,127.58	-304.96	697.41	Begin 2.00°/100' Drop
6,125.66	6,000.00	-359.47	822.08	Begin Vertical Hold
9,786.70	9,661.04	-359.47	822.08	KOP2, Begin 10.00°/100' Build
10,686.70	10,234.00	213.48	819.11	LP, Hold 90.00° Inc at 359.70° Azm
15,393.31	10,234.00	4,920.02	794.70	Begin 2.00°/100' Turn
15,440.85	10,234.00	4,967.56	794.06	Hold 358.75° Azm
20,402.47	10,234.00	9,928.00	686.00	TD at 20402.47

Patterson Mock Pad



APD ID: 10400009295 **Submission Date:** 12/20/2016

Operator Name: CHEVRON USA INCORPORATED

Well Name: RB NE 5 32 FED **Well Number:** 13H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

RB NE 5 32 FED 13H_ROADS_02-28-2017.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? YES

Existing Road Improvement Description: The operator will improve or maintain existing roads in a condition the same as or better that before operations begin. The Operator will also repair any pot holes, clear ditches, repair crown; etc. All existing structures on the entire access route such as cattle guards, other range improvement project, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. We will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

RB NE 5 32 FED 13H_New Roads_02-28-2017.pdf

New road type: LOCAL

Length: 145 Feet **Width (ft.):** 20

Max slope (%): 2 **Max grade (%):** 3

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 20

New road access erosion control: Erosion / Drainage: Drainage control system shall be constructed on the entire length of road by the use of any of the following: ditches, side hill out-sloping and in-sloping, lead-off ditches, culvert installation, or low water crossings.

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: NONE

Access topsoil source: ONSITE

Access surfacing type description:

Access onsite topsoil source depth: 0

Offsite topsoil source description:

Onsite topsoil removal process: none needed

Access other construction information: Exclosure fencing will be installed around open cellar to prevent livestock or large wildlife from being trapped after installation. Fencing will remain in place while no activity is present and until back-filling takes place.

Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: CULVERT,OTHER

Drainage Control comments: Sediment traps (hay bales suggested by BLM) we don't use every time but keep handy.

Road Drainage Control Structures (DCS) description: Ditching will be constructed on both sides of road.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

RB NE 5 32 FED 13H_Radius Map_02-28-2017.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Facilities: New production facilities are to be constructed at a location to be determined with proposed pipeline: buried pipeline will be laid from well to facility to new production facility to be determined. This will require additional on-site.

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING, SURFACE CASING
Water source type: GW WELL
Describe type:
Source latitude:
Source longitude:
Source datum:
Water source permit type: PRIVATE CONTRACT
Source land ownership: FEDERAL
Water source transport method: PIPELINE
Source transportation land ownership: FEDERAL
Water source volume (barrels): 416000
Source volume (acre-feet): 53.61953
Source volume (gal): 17472000

Water source and transportation map:

RB NE 5 32 FED 13H_WELL PLAT_02-28-2017.pdf

Water source comments: Fresh water will be obtained from a private water source (Currently MMX Inc. and Desert Ranch Inc.) the specific location of which to be provided before use. A temporary 10" expanding pipe transfer line will run south from pond along the fence line the west along proposed access road. Fresh water line will run parallel to existing disturbance and will stay within 10' of access road. A BLM ROW will be applied for through the BLM.
New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**
Well target aquifer:
Est. depth to top of aquifer(ft): **Est thickness of aquifer:**
Aquifer comments:
Aquifer documentation:
Well depth (ft): **Well casing type:**
Well casing outside diameter (in.): **Well casing inside diameter (in.):**
New water well casing? **Used casing source:**
Drilling method: **Drill material:**
Grout material: **Grout depth:**
Casing length (ft.): **Casing top depth (ft.):**
Well Production type: **Completion Method:**

Operator Name: CHEVRON USA INCORPORATED

Well Name: RB NE 5 32 FED **Well Number:** 13H

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Caliche will be sourced from a Chevron operated NMSLO pit in S2 NW4 Section 16 T26S R27E, or an alternate private pit in Section 13, T24S R27E in Eddy County, NM.
Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: GARBAGE

Waste content description: Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly in an NMOCD approved disposal facility. All trash on and around the well site will be collected for disposal. Human waste and grey water will be properly contained and disposed of properly a state approved disposal facility.
Amount of waste: 200 pounds

Waste disposal frequency : Daily

Safe containment description: Drilling fluids and produced oil and water from the well during drilling and completion operations will be stored safely, collected in a trash container and disposed of properly in an NMOCD approved facility. After drilling and completion operations, trash, chemicals, salts, frac sand, and other waste material will be removed and disposed of properly at a state approved disposal facility.
Safe containmant attachment:

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

Disposal location description: State approved 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

Operator Name: CHEVRON USA INCORPORATED

Well Name: RB NE 5 32 FED **Well Number:** 13H

Are you storing cuttings on location? YES

Description of cuttings location The well will be drilled utilizing a closed loop system. Drill cutting will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

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

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

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments: A compressor station will be constructed adjacent to the new Tank Battery in Section 24 to provide compression for gas lift.

Section 9 - Well Site Layout

Well Site Layout Diagram:

RB_NE_5_32_FED_13H_Well_Pad_Layout_03-20-2017.pdf

Comments: o Exterior well pad dimensions are 470' X 380'. o Interior well pad dimensions from point of entry (well head) of the easternmost well are N-120', S-260', E-230', W-240'. The length to the west includes 25' spacing for next well on multi-well pad (four wells). Total disturbance area needed for construction of well pad will be 4.1 acres. o Topsoil placement is on the west where interim reclamation is planned to be completed upon completion of well and evaluation of best management practices. o Cut and fill: will be minimal.

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** RB NE 5 32 FED

Multiple Well Pad Number: 11H 12H 13H

Recontouring attachment:

RB NE 5 32 FED 13H_APD SUP_02-28-2017.pdf

RB_NE_5_32_FED_12H_InterimRE_Plat_04-18-2017.pdf

Drainage/Erosion control construction: Proper erosion control methods will be used on the area to control erosion, runoff, and siltation of the surrounding area.

Drainage/Erosion control reclamation: The well pad, road, and surrounding area will be cleared of material, trash, and equipment. All surfacing material will be removed and returned to the original mineral pit or recycled to repair ofr build roads and well pads. All disturbed areas will be re-contoured to the contour existing prior to initial construction. The areas will be seeded with the proper BLM seed mixture (BLM #2), free of noxious weeds.

Operator Name: CHEVRON USA INCORPORATED

Well Name: RB NE 5 32 FED **Well Number:** 13H

Wellpad long term disturbance (acres): 1.2

Wellpad short term disturbance (acres): 4.1

Access road long term disturbance (acres): 0.07

Access road short term disturbance (acres): 0.07

Pipeline long term disturbance (acres): 0

Pipeline short term disturbance (acres): 0

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 1.27

Total short term disturbance: 4.17

Reconstruction method: o reducing the pad size to approximately 1.2 acres from the proposed size of 4 acres. o withing 30 days of well completion, the well location and surrounding areas well be cleared of, and maintained free of, all materials, trash, and equipment not required for production. o all disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be re-contoured to the contour existing prior to initial landscape.
Topsoil redistribution: Topsoil will be evenly re-spread and aggressively re-vegetated over the entire disturbed area not needed for all-weather operations including cuts and fills.
Soil treatment: To seed the area, the proper BLM mixture free of noxious weeds, will be used.

Existing Vegetation at the well pad: mesquite, shrubs, grass

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: mesquite, shrubs, grass

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: mesquite, shrubs, grass

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: mesquite, shrubs, grass

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:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Operator Name: CHEVRON USA INCORPORATED

Well Name: RB NE 5 32 FED **Well Number:** 13H

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:***

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Kevin **Last Name:** Dickerson

Phone: **Email:** lfuh@chevron.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: treat with BLM seed mixture (BLM #2) free of noxious weeds.

Weed treatment plan attachment:

Monitoring plan description: The interim reclamation will be monitored periodically to ensure that vegetation has re-established.

Monitoring plan attachment:

Success standards: As per BLM requirements

Pit closure description: None

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? YES **Use APD as ROW?** YES

ROW Type(s): 281001 ROW - ROADS,287001 ROW – Water Facility,Other

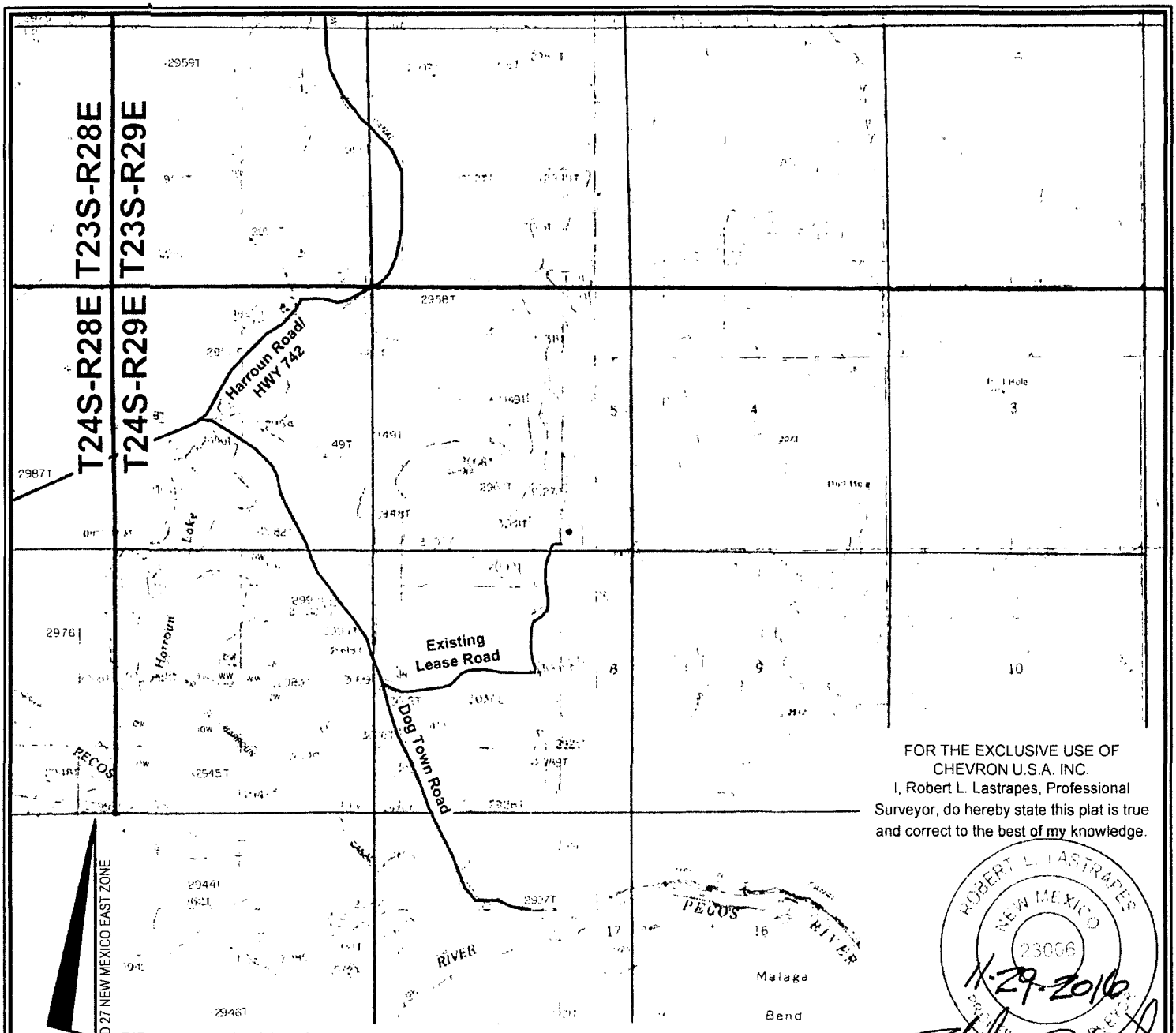
ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: On-site performed by Paul Murphy 02/10/2017.

Other SUPO Attachment



DIRECTIONS TO LOCATION:
From Harroun Road(Hwy742), head East on Dog Town Road for approximately 1.30 miles to a Lease road on East side of Dog Town Road. Head East on said Lease road for approximately 0.60 miles to a Lease road on North side of road. Head North on said Lease road for approximately 0.50 miles to proposed access located on East side of Lease road.

FOR THE EXCLUSIVE USE OF CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Professional Surveyor, do hereby state this plat is true and correct to the best of my knowledge.

ROBERT L. LASTRAPES NEW MEXICO 23006 11-29-2016

Robert L. Lastrapes
Registration No. 23006

VICINITY MAP

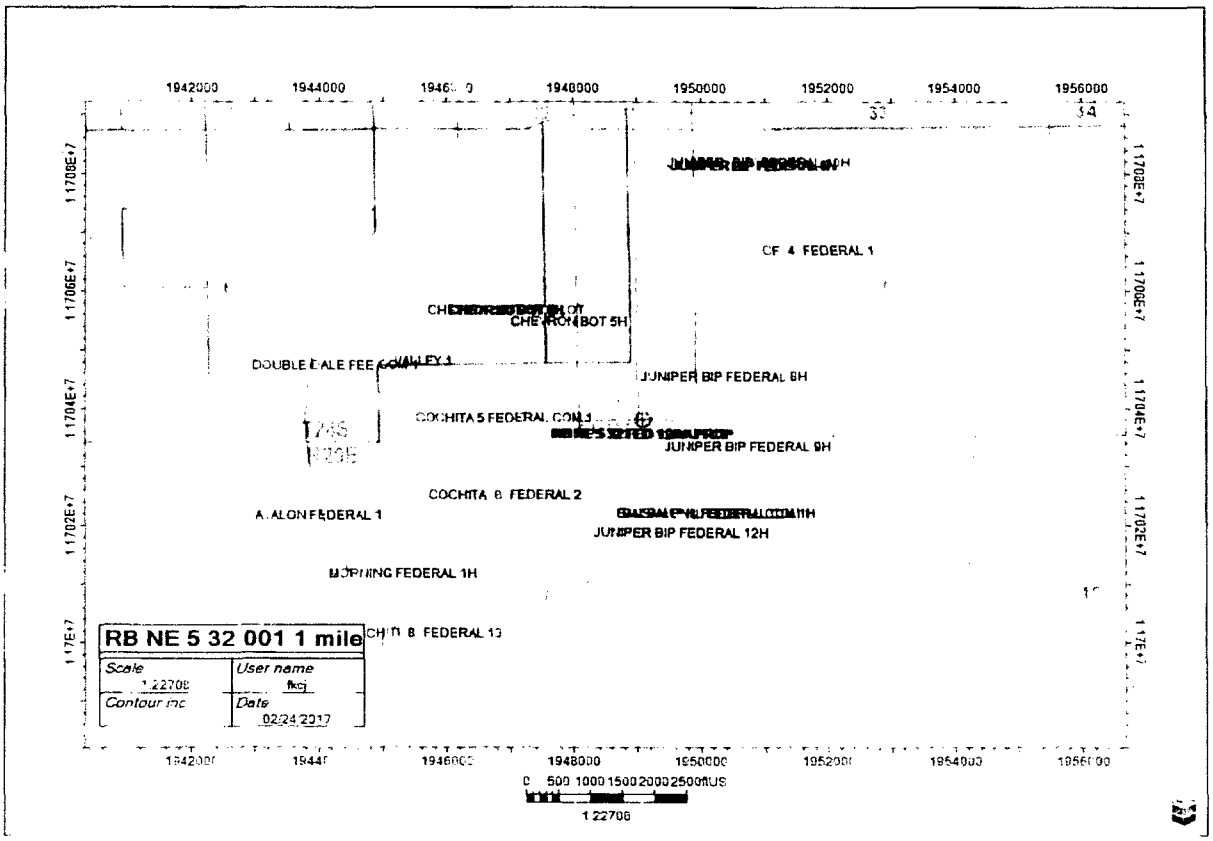
SCALE: 1" = 3000'
3000' 0 1500' 3000'

LEGEND
- Proposed Well
- Proposed Access Road
- Proposed Drillsite
- Existing Road
- Section Line
- Township & Range

CHEVRON U.S.A. INC.
RB NE 5 32 FED NO. 13WA WELL
LOCATED 380' FSL AND 1,250' FEL
SECTION 5, T24S-R29E
EDDY COUNTY, NEW MEXICO

FENSTERMAKER
C H Fenstermaker & Associates, L L C
135 Regency Sq. Lafayette, LA 70508
Ph 337-237-2200 Fax 337-232-3299
www.fenstermaker.com

DRAWN BY: BOR	REVISIONS		
PROJ. MGR.: GDG	No. 1	DATE: 11/15/2016	REVISED BY: TBD
DATE: 10/26/2016	No.	DATE:	REVISED BY
FILENAME: T:\2016\2164810\DWG\RB NE 5 32 FED 13WA APD.dwg			


1942000
1944000
1946000
1948000
1950000
1952000
1954000
1956000
33
34
1706E+7
1704E+7
1702E+7
1700E+7
CF 4 FEDERAL 1
DOUBLE EAGLE FEE COMANCHE 1
JUNIPER BIP FEDERAL 8H
COCHITA 5 FEDERAL COM 1
JUNIPER BIP FEDERAL 9H
COCHITA 8 FEDERAL 2
A ALON FEDERAL 1
JUNIPER BIP FEDERAL 12H
MORNING FEDERAL 1H
RB NE 5 32 001 1 mile
Scale
1:22708
User name
Contour inc
Date
02/24/2017
0 500 1000 1500 2000 2500 US
1:22708

Name	API	Type	Distance to SHL
JUNIPER BIP FEDERAL 8H	30015372520000	Oil	1652
JUNIPER BIP FEDERAL 9H	30015374070000	Oil	1686
JUNIPER BIP FEDERAL 12H	30015407540000	Oil	1790
BALSAM BNL FEDERAL COM 1H	30015370350100	Oil	1800
BALSAM BNL FEDERAL COM 1	30015370350000	Undefined	1837
COCHITA 5 FEDERAL COM 1	30015279960000	Abandoned gas residual oil	2172
CHEVRON BOT 5H	30015377860000	Oil	2235
COCHITA `8` FEDERAL 2	30015286180000	Abandoned oil minor gas	2373
CHEVRON BOT 6H	30015379310000	Gas	3002
CHEVRON BOT 6H PILOT	30015379317000	Undefined	3002
CHEVRON BOT 6	3001537931000P	Undefined	3002
VALLEY 1	30015102230000	Dry, plugged and abandoned	3644
CF `4` FEDERAL 1	30015285770000	Dry, plugged and abandoned	4207
MORNING FEDERAL 1H	30015376440000	Oil	4423
COCHITI `8` FEDERAL 13	30015291370000	Dry, plugged and abandoned	4808
JUNIPER BIP FEDERAL 6Y	30015370760100	Oil	4928
JUNIPER `BIP` FEDERAL 10H	30015379680000	Oil	4928
JUNIPER BIP FEDERAL 6H	30015370540000	Abandoned for techn. reasons	4928
JUNIPER BIP FEDERAL 6Y	30015370760000	Undefined	4928
DOUBLE DALE FEE COM 1	30015355390000	Gas	4951
AVALON FEDERAL 1	30015253200000	Dry, plugged and abandoned	5275

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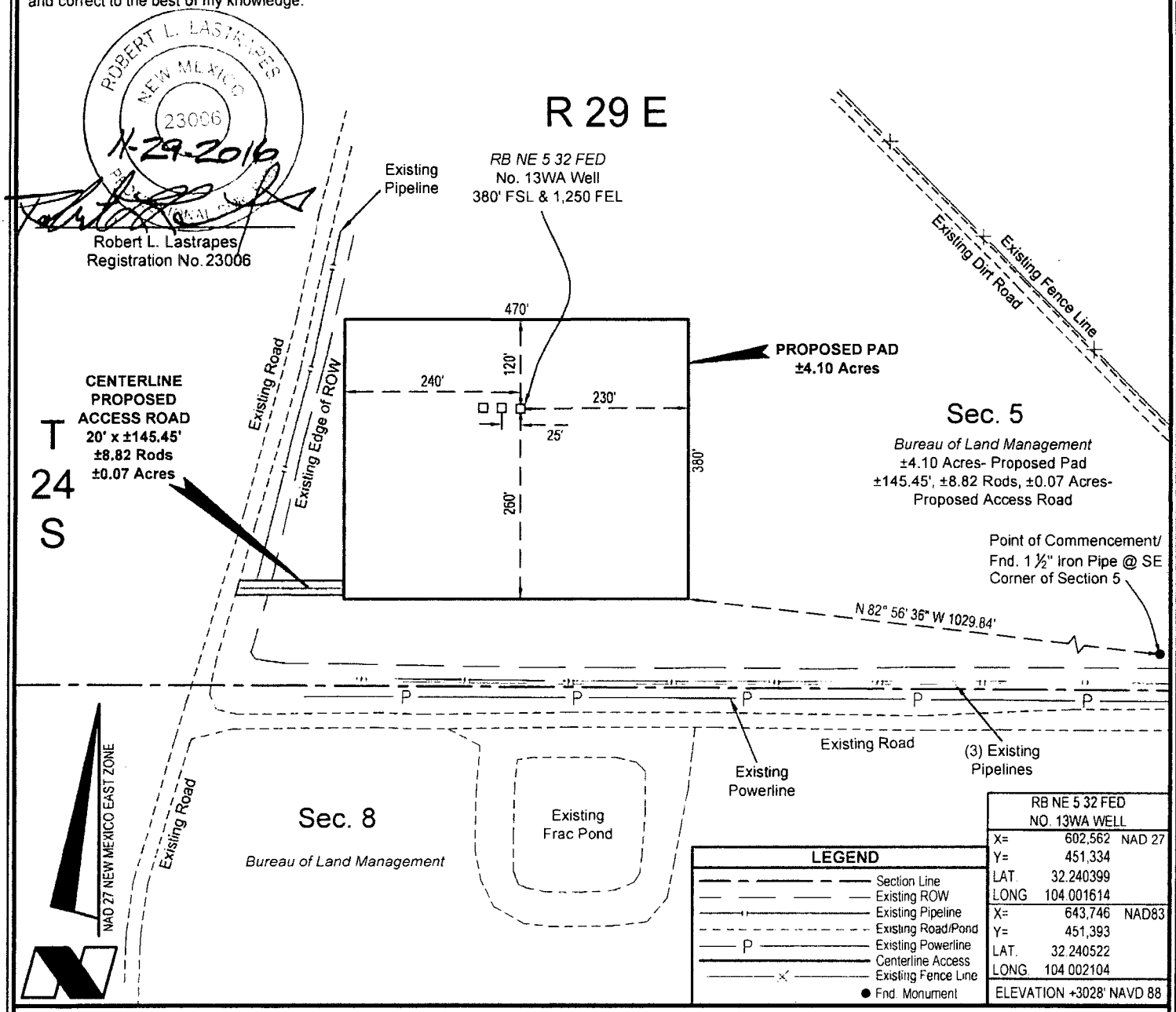
ROBERT L. LASTRAPES
NEW MEXICO
23006
11-29-2016

Robert L. Lastrapes
Registration No. 23006

NW PAD CORNER	NE PAD CORNER	SE PAD CORNER	SW PAD CORNER
X= 602,322 NAD 27	X= 602,792 NAD 27	X= 602,792 NAD 27	X= 602,322 NAD 27
Y= 451,454	Y= 451,454	Y= 451,074	Y= 451,074
ELEVATION +3025' NAVD 88	ELEVATION +3021' NAVD 88	ELEVATION +3029' NAVD 88	ELEVATION +3028' NAVD 88



RB NE 5 32 FED NO. 13WA WELL	
X=	602,562 NAD 27
Y=	451,334
LAT.	32.240399
LONG	104.001614
X=	643,746 NAD83
Y=	451,393
LAT.	32.240522
LONG.	104.002104
ELEVATION +3028' NAVD 88	

LEGEND

- Section Line
- Existing ROW
- Existing Pipeline
- Existing Road/Pond
- Existing Powerline
- Centerline Access
- Existing Fence Line
- Fnd. Monument

PAGE 1 OF 2

SURFACE USE PLAT

Scale: 1" = 200'

200' 0 100' 200'

CHEVRON U.S.A. INC.

PROPOSED PAD & ACCESS ROAD
RB NE 5 32 FED NO. 13WA WELL
SECTION 5, T24S-R29E
EDDY COUNTY, NEW MEXICO

FENSTERMAKER
C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph 337-237-2200 Fax 337-232-3299
www.fenstermaker.com

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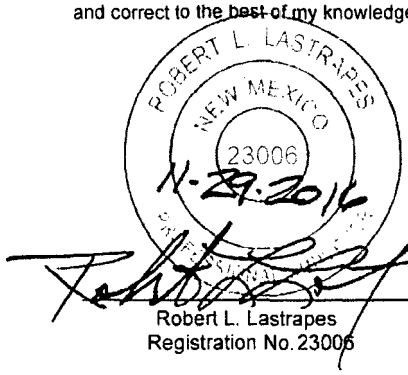
PROJ. MGR.: GDG	No. 1	DATE: 11/15/2016	REVISED BY: TBD
DATE: 10/26/2016	No.	DATE:	REVISED BY:
FILENAME: T:\2016\2164810\DWG\RB NE 5 32 FED 13WA SUP.dwg			

DISCLAIMER: At this time, C. H. Fenstermaker & Associates, L.L.C. has not performed nor was asked to perform any type of engineering, hydrological modeling, flood plain, or "No Rise" certification analyses, including but not limited to determining whether the project will impact flood hazards in connection with federal/FEMA, state, and/or local laws, ordinances and regulations. Accordingly, Fenstermaker makes no warranty or representation of any kind as to the foregoing issues, and persons or entities using this information shall do so at their own risk.

NOTE:
Please be advised, that while reasonable efforts are made to locate and verify pipelines and anomalies using our standard pipeline locating equipment, it is impossible to be 100 % effective. As such, we advise using caution when performing work as there is a possibility that pipelines and other hazards, such as fiber optic cables, PVC pipelines, etc. may exist undetected on site.

NOTE:
Many states maintain information centers that establish links between those who dig (excavators) and those who own and operate underground facilities (operators). It is advisable and in most states, law, for the contractor to contact the center for assistance in locating and marking underground utilities. For guidance New Mexico One Call. www.nmonecall.org

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Professional Surveyor, do hereby state this plat is true and correct to the best of my knowledge.



Robert L. Lastrapes
Registration No. 23006

PAGE 2 OF 2

SURFACE USE PLAT

CHEVRON U.S.A. INC.

PROPOSED PAD & ACCESS ROAD
RB NE 5 32 FED NO. 13WA WELL
SECTION 5, T24S-R29E
EDDY COUNTY, NEW MEXICO

FENSTERMAKER
C H Fenstermaker & Associates, L L C
135 Regency Sq Lafayette, LA 70508
Ph 337-237-2200 Fax 337-232-3299
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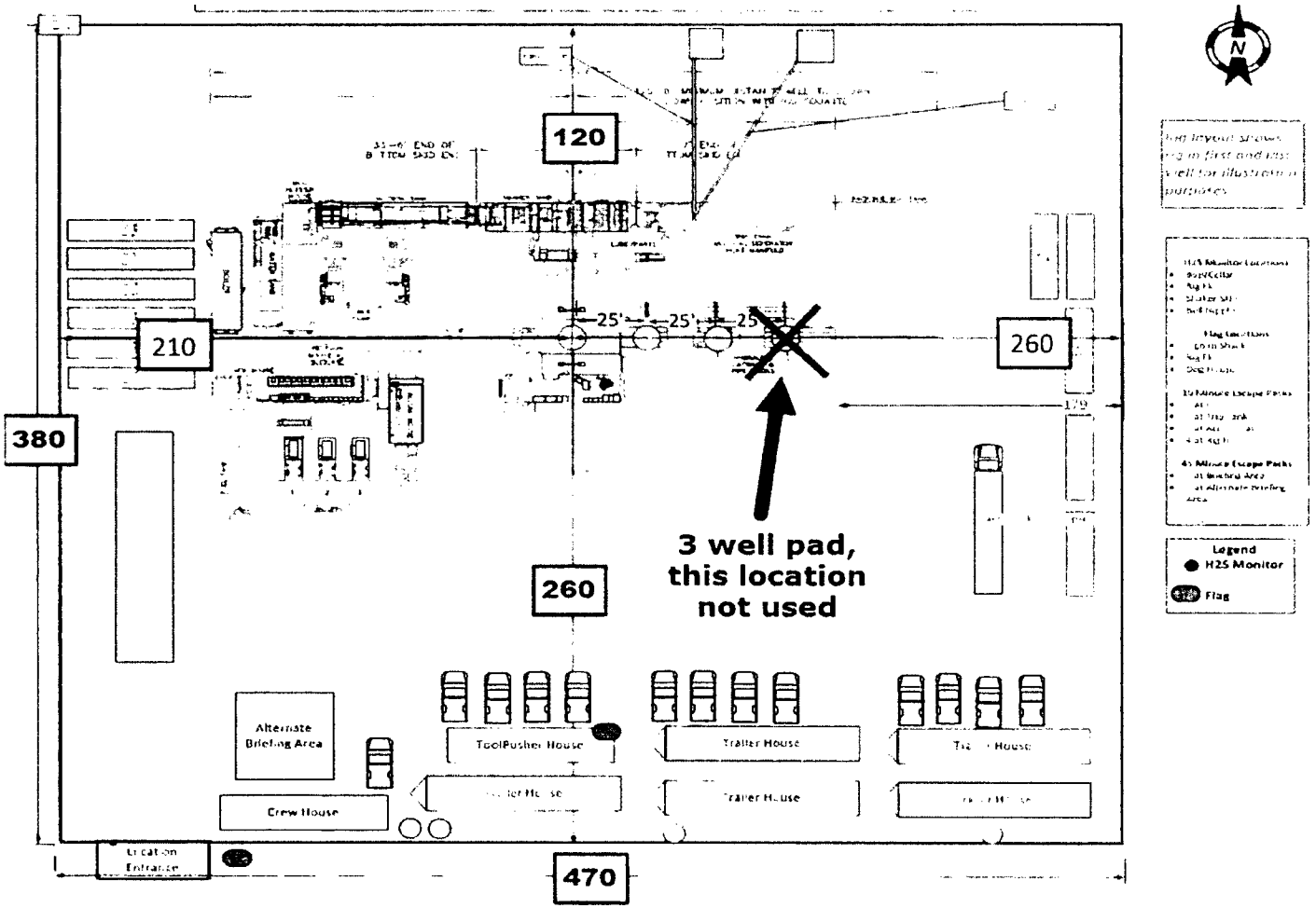
FILENAME: T:\2016\2164810\DWG\RB NE 5 32 FED 13WA SUP.dwg			

Standardized Drilling Pad Size & Design Schematic (Pad Layout)

Simplified Pad Layout Schematic



CHEVRON U.S.A. Inc
HH NE 5 32 FED 13H
NMNM 119754
SECTION 5, T24S-R29E
SHL 380' FSL & 1250' FEL

SECTION 32, T23S-R29E
BHL 280' FNL & 330' FEL

APD Surface Use Plan of Operations

Existing Roads

- The operator will improve or maintain existing roads in a condition the same as or better than before operations begin. The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattle guards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. We will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.
- Driving Directions – From Malaga, New Mexico. The location is approximately 3 miles from the nearest town, which is Malaga, New Mexico. From the intersection of HWY 285 (Pecos Highway) and Black River Village Road (in Malaga) head north for 100 yards and veer right onto Onsurez Road (County Road 731). Follow CR 731 for .6 miles then turn right onto Bramble Road (becomes Harroun Road, or CR 745) Follow this road through a low water crossing then keep traveling until the intersection of Harroun and Dog Town Roads (3.5 miles). Once on Dog Town Road, travel 1.25 miles to the junction of a lease road. Turn left on lease road and head .6 miles to a fork in the road. Follow the road left (north) for .5 miles and the location in on the NE corner of the intersection.

New or Reconstructed Access Roads – Survey plat

- There will be 145' of road re-construction for the well pad and facilities.
- Road Width: The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed 20'. The maximum width of surface disturbance shall not exceed 25'.
- Maximum Grade: 3%
- Crown Design: Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2%. The road shall conform to cross section and plans for typical road construction found in the BLM Gold Book.
- Turnouts: none needed

- Ditch Design: Ditching will be constructed on both sides of road.
- Cattle guards: none needed
- Major Cuts and Fills: 2:1 during drilling and completions. Cuts and fills taken back to 3:1 at interim.
- Type of Surfacing Material: Caliche

Location of Existing Wells

- 1-Mile radius map is attached

Location of Existing and/or Proposed Production Facilities

- Facilities: New production facilities are to be constructed at a location to be determined
    - Gas purchaser pipeline will be brought to the tank battery.
    - Open top tanks or open containments will be netted.
    - Open vent exhaust stacks will be modified to prevent birds or bats from entering, discourage perching, roosting, and nesting.
    - Facilities will have a secondary containment 1.5 times the holding capacity of largest storage tank.
    - All above ground structures will be painted non-reflective shale green for blending with surrounding environment.
    - The tank battery will be connected to the existing water gathering system in the field for permanent water disposal. The system design will be determined and approved prior to construction of any water transfer pipeline. Until permanent water takeaway is available, produced water will be hauled off location in trucks.
- Pipelines: Buried pipelines will be laid from well to facility to new production facility.
    - A ROW will be applied for through the BLM.
    - All construction activity will be confined to the approved ROW.
    - Pipeline will run parallel to the road and will stay within approved ROW.

Location and Types of Water Supply

- Fresh water will be obtained from a private water source (Currently MMX Inc. & Desert Ranch Inc.) the specific location of which to be provided before use.
- A temporary 10" expanding pipe transfer line will run south from pond along fenceline then west along proposed access road.

- Fresh water line will run parallel to existing disturbance and will stay within 10' of access road.
- A BLM ROW will be applied for through the BLM.

Construction Material

- Caliche will be used to construct well pad and roads. Material will be purchased from the nearest federal, state, or private permitted pit. 2 specific locations will be provided prior to APD approval.
- The proposed source of construction material will be located and purchased by construction contractor.
  - Payment shall be made by contractor prior to any removal of federal minerals material by contacting agent at (575) 234-5972.
  - Notification shall be given to BLM at (575) 234-5909 at least 3 working days prior to commencing construction of access road and/or well pad.

Methods for Handling Waste

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

Ancillary Facilities

A compressor station will be constructed adjacent to the new Tank Battery in Section 24 to provide compression for gas lift.

Well Site Layout

- Surveyor Plat (Exhibit 6a)
  - Exterior well pad dimensions are 380' x 470'.

- Interior well pad dimensions from point of entry (well head) of the easternmost well are N-120', S-260', E-190', W-280'. The length to the west includes 25' spacing for next well on multi-well pad (four wells). Total disturbance area needed for construction of well pad will be 4.1 acres.
- Topsoil placement is on the west where interim reclamation is planned to be completed upon completion of well and evaluation of best management practices.
- Cut and fill: will be minimal.

Plans for Surface Reclamation

Reclamation Objectives

- The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat and forage loss, visual impact, and weed infestation, during the life of the well or facilities.
- The long-term objective of final reclamation is to return the land to a condition similar to what existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning, and vegetative productivity.
- The BLM will be notified at least 3 days prior to commencement of any reclamation procedures.
- If circumstances allow, interim reclamation and/or final reclamation actions will be completed no later than 6 months from when the final well on the location has been completed or plugged. We will gain written permission from the BLM if more time is needed.
- Reclamation will be performed by using the following procedures:

Interim Reclamation Procedures

- Within 6 months, Chevron will contact BLM Surface Management Specialists to devise the best strategies to reduce the size of the location. Current plans for interim reclamation include reducing the pad size to approximately 1.2 acres from the proposed size of 4 acres. Within 30 days of well completion, the well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not required for production. A plan will be submitted showing where interim reclamation will be completed in order to allow for safe operations, protection of the environment outside of drilled well, and following best management practices found in the BLM "Gold Book".
- In areas planned for interim reclamation, all the surfacing material will be removed

and returned to the original mineral pit or recycled to repair or build roads and well pads.

- The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.
- Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. To seed the area, the proper BLM seed mixture (BLM #2), free of noxious weeds, will be used.
- Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.
- The interim reclamation will be monitored periodically to ensure that vegetation has reestablished

Final Reclamation (well pad, buried pipelines, and power lines, etc.)

- Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment.
- All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.
- All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends in distinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.
- After all the disturbed areas have been properly prepared; the areas will be seeded with the proper BLM seed mixture (BLM #2), free of noxious weeds.
- Proper erosion control methods will be used on the entire area to control erosion, runoff and siltation of the surrounding area.

Surface Ownership

- Private Surface
    - Surface Owner – BLM

- **Nearest Post Office:** Malaga Post Office; 3 Miles West

CHEVRON U.S.A. Inc
HH NE 5 32 FED 13H
NMNM 119754
SECTION 5, T24S-R29E SECTION 32, T23S-R29E
SHL 380' FSL & 1250' FEL BHL 280' FNL & 330' FEL

Other Information

- On-site performed by BLM NRS: Paul Murphy on 02/10/2017
- Cultural report attached: In Progress
- Participating Agreement attached: N/A
- Erosion / Drainage: Drainage control system shall be constructed on the entire length of road by the use of any of the following: ditches, side hill out-sloping and in-sloping, lead-off ditches, culvert installation, or low water crossings.
- Exclosure fencing will be installed around open cellar to prevent livestock or large wildlife from being trapped after installation. Fencing will remain in place while no activity is present and until backfilling takes place.

Chevron Representatives

Primary point of contact:
Kevin Dickerson
kevin.dickerson@chevron.com
M- 432-250-4489

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.

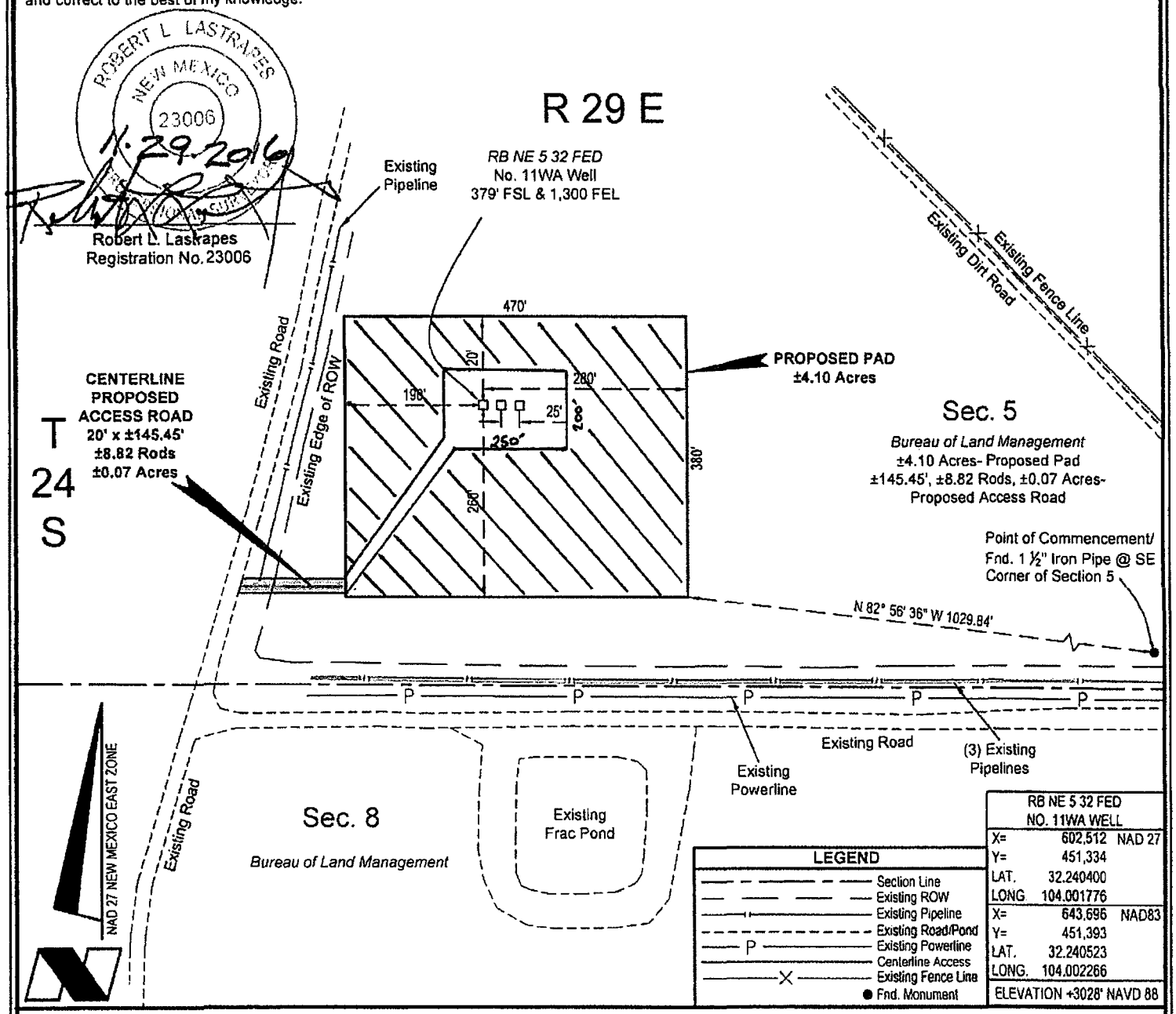
I, Robert L. Lastrapes, Professional Surveyor, do hereby state this plat is true and correct to the best of my knowledge.

ROBERT L LASTRAPES
NEW MEXICO
23006
PROFESSIONAL SURVEYOR

1-29-2016

Robert L. Lastrapes
Registration No. 23006

NW PAD CORNER	NE PAD CORNER	SE PAD CORNER	SW PAD CORNER
X= 602,322 NAD 27	X= 602,792 NAD 27	X= 602,792 NAD 27	X= 602,322 NAD 27
Y= 451,454	Y= 451,454	Y= 451,074	Y= 451,074
ELEVATION +3025' NAVD 88	ELEVATION +3021' NAVD 88	ELEVATION +3029' NAVD 88	ELEVATION +3028' NAVD 88



LEGEND

- Section Line
- Existing ROW
- Existing Pipeline
- Existing Road/Pond
- P — Existing Powerline
- Centerline Access
- X — Existing Fence Line
- ● Fnd. Monument

RB NE 5 32 FED NO. 11WA WELL		
X=	602,512	NAD 27
Y=	451,334	
LAT.	32.240400	
LONG	104.001776	
X=	643,696	NAD83
Y=	451,393	
LAT.	32.240523	
LONG.	104.002266	
ELEVATION +3028' NAVD 88		

PAGE 1 OF 2 INTERIM RECLAMATION ~~SURFACE USE~~ PLAT

Scale: 1" = 200'

200' 0 100' 200'

CHEVRON U.S.A. INC.

PROPOSED PAD & ACCESS ROAD
RB NE 5 32 FED NO. 11WA WELL
SECTION 5, T24S-R29E
EDDY COUNTY, NEW MEXICO

FENSTERMAKER

C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax 337-232-3299
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DATE: 10/26/2016	No.	DATE:	REVISED BY:
FILENAME: T:\2016\2164788\DWG\RB NE 5 32 FED 11WA SUP.dwg			

Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

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

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

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

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

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

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

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

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

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

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

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

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

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

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

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

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

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

01/12/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: CA0329

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: