NM OIL CONSERVATION
ARTESIA DISTRICT
FEB 26 2018
RECEIVED

Form 3160-3
(March 2012)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM03677

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. 320831
CUEVA DE ORO FEDERAL 202H

2. Name of Operator
MATADOR PRODUCTION COMPANY 228-937

9. API Well No.
30-015-44769

3a. Address
5400 LBJ Freeway, Suite 1500 Dallas TX 752

3b. Phone No. *(include area code)*
(972)371-5200

10. Field and Pool, or Exploratory
BURTON FLAT; WOLFCAMP, EAST / E

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NENW / 248 FNL / 1859 FWL / LAT 32.5655225 / LONG -104.0825815
At proposed prod. zone SESW / 240 FSL / 1870 FWL / LAT 32.5523408 / LONG -104.0825432

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 21 / T20S / R29E / NMP

14. Distance in miles and direction from nearest town or post office*
12 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)
248 feet

16. No. of acres in lease
2150.97

17. Spacing Unit dedicated to this well
320

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

19. Proposed Depth
9465 feet / 14221 feet

20. BLM/BIA Bond No. on file
FED: NMB001079

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3272 feet

22. Approximate date work will start*
05/01/2017

23. Estimated duration
90 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)	Brian Wood / Ph: (505)466-8120	03/31/2017

Title
President

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	02/08/2018

Title	Office
Supervisor Multiple Resources	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)

APPROVED WITH CONDITIONS

Approval Date: 02/08/2018

RW 3-1-18.

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: NENW / 248 FNL / 1859 FWL / TWSP: 20S / RANGE: 29E / SECTION: 21 / LAT: 32.5655225 / LONG: -104.0825815 (TVD: 0 feet, MD: 0 feet)
   PPP: NENW / 248 FNL / 1859 FWL / TWSP: 20S / RANGE: 29E / SECTION: 21 / LAT: 32.5655225 / LONG: -104.0825815 (TVD: 0 feet, MD: 0 feet)
   BHL: SESW / 240 FSL / 1870 FWL / TWSP: 20S / RANGE: 29E / SECTION: 21 / LAT: 32.5523408 / LONG: -104.0825432 (TVD: 9465 feet, MD: 14221 feet)

BLM Point of Contact

Name: Judith Yeager
Title: Legal Instruments Examiner
Phone: 5752345936
Email: jyeager@blm.gov

Approval Date: 02/08/2018

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Matador Production Company**
LEASE NO.:	**NMNM-03677**
WELL NAME & NO.:	**Cueva De Oro Federal 202H**
SURFACE HOLE FOOTAGE:	**0248' FNL & 1859' FWL**
BOTTOM HOLE FOOTAGE	**0240' FSL & 1870' FWL**
LOCATION:	**Section 21, T. 20 S., R 29 E., NMPM**
COUNTY:	**County, New Mexico**

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

A. **Hydrogen Sulfide**

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Yates** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. 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 is located, this does not include the dog house or stairway area.

4. **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

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.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

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.

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.

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

High Cave/Karst
Capitan Reef
Possibility of water flows in the Artesia Group and Salado.
Possibility of lost circulation in the Artesia Group, Rustler, Capitan Reef, and Delaware.
Abnormal pressure may be encountered upon penetrating the 3rd Bone Spring Sandstone and all subsequent formations.

A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH. IF THE PRIMARY CEMENT JOB ON THE SURFACE CASING DOES NOT CIRCULATE, THEN THE NEXT TWO CASING STRINGS MUST BE CEMENTED TO SURFACE.

1. The **20** inch surface casing shall be set at approximately **400** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

    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 is to include the lead cement slurry.**

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **13-3/8** inch 1st intermediate casing is:

    ☐ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

3. The minimum required fill of cement behind the **9-5/8** inch 2nd intermediate casing is:

    ☐ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.**

4. The minimum required fill of cement behind the **7-5/8 X 7** inch 3rd intermediate casing is:

☐ Cement should tie-back at least **50 feet above the Capitan Reef** (Top of Capitan Reef estimated at 1610'). Operator shall provide method of verification.

Formation below the 7" 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.

Centralizers required through the curve and a minimum of one every other joint.

5. The minimum required fill of cement behind the **5-1/2 X 4-1/2** inch production casing is:

☐ Cement as proposed by operator. Operator shall provide method of verification. **Excess calculates to negative 45% - Additional cement will be required.**

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.

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 53.

2. Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. **A variance is granted for the use of a diverter on the 20" surface casing.**

4. **In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).**

5. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8** 1st intermediate casing shoe shall be psi.

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

7. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7-5/8 X 7** intermediate casing shoe shall be psi.

5M 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.

8. The appropriate BLM office shall be notified a minimum of 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).

    a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

    b. 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.

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

    d. 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.

e. 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.

f. 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. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. 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.

JAM 012618

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Matador Production Company
LEASE NO.:	NMNM03677
WELL NAME & NO.:	202H-Cueva De Oro Federal
SURFACE HOLE FOOTAGE:	248'/N & 1859'/W
BOTTOM HOLE FOOTAGE	240'/S & 1870'/W
LOCATION:	Section 21, T.20 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

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

Approval Date: 02/08/2018

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 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.)

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

- 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.

Range

A water well, windmill, and livestock water tank are located approximately 0.10 miles northwest of the proposed Cueva de Oro Federal Slot 2 well pad and would not be impacted by the construction of the well pad.

Any damage to fences, cattle guards, and pipelines or structures that provide water to livestock during construction and throughout the life of the project as caused by its operation, must be immediately corrected by the Applicant. The Applicant must notify the grazing allottee or the private surface landowner and the BLM-CFO (575-234-5972) if any damage occurs to pipelines or structures that provide water to livestock.

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.

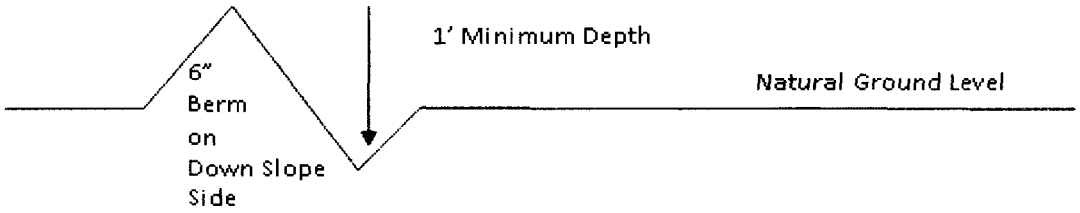
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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:

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

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

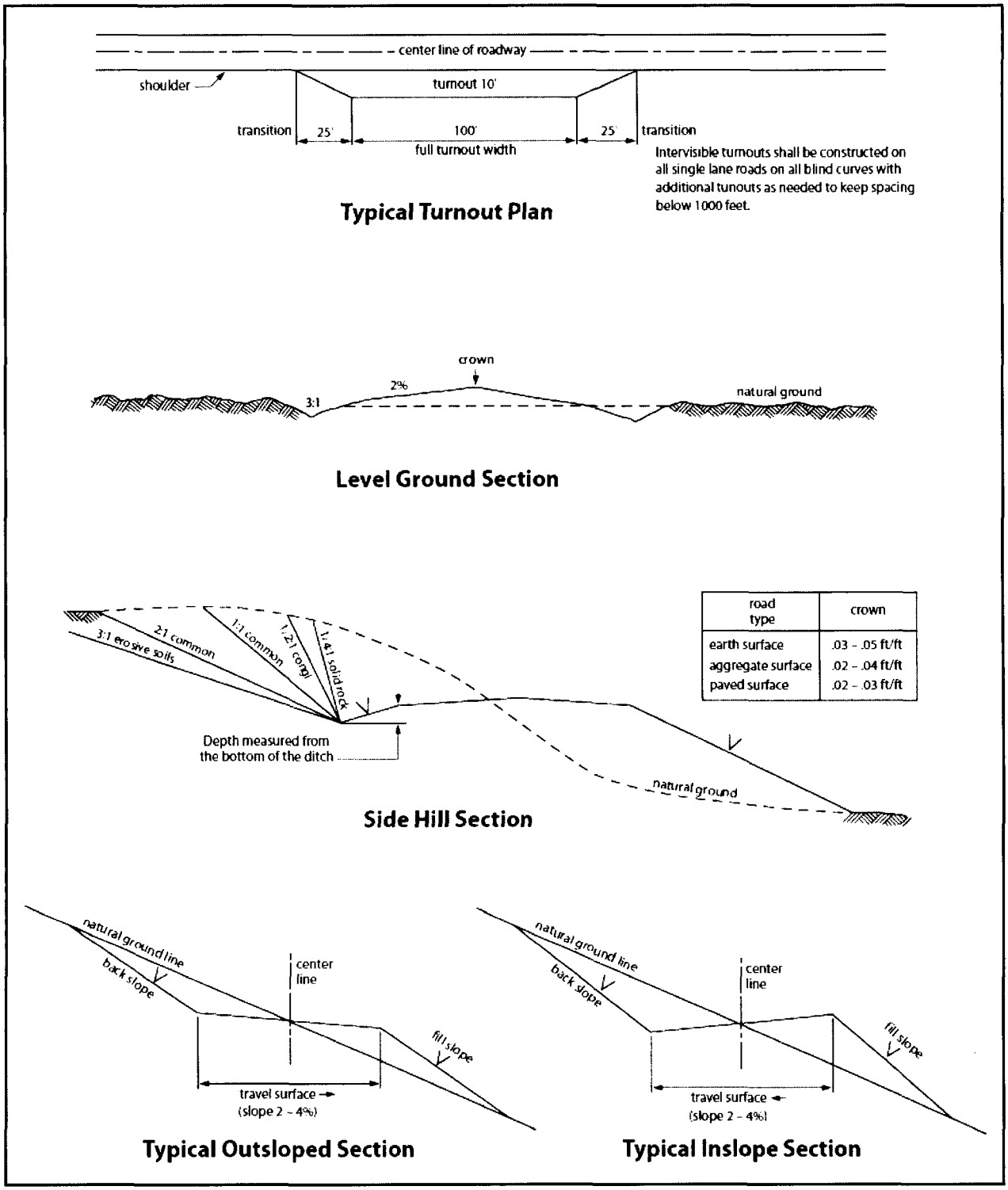


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

Mixture 4, for Gypsum Sites

The holder shall seed all the 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
Alkli Sacaton (*Sporobolus airoides*)	1.5
DWS~ Four-wing saltbush (*Atriplex canescens*)	8.0

~DWS: DeWinged Seed

*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

rator Certification Data Report

02/14/2018

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: Brian Wood **Signed on:** 03/31/2017

Title: President

Street Address: 37 Verano Loop

City: Santa Fe **State:** NM **Zip:** 87508

Phone: (505)466-8120

Email address: afmss@permitswest.com

Field Representative

Representative Name:

Street Address:

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

Phone:

Email address:

APD ID: 10400012427 **Submission Date:** 03/31/2017

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400012427 **Tie to previous NOS?** **Submission Date:** 03/31/2017

BLM Office: CARLSBAD **User:** Brian Wood **Title:** President

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

Lease number: NMNM03677 **Lease Acres:** 2150.97

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? YES **APD Operator:** MATADOR PRODUCTION COMPANY

Operator letter of designation:

Operator Info

Operator Organization Name: MATADOR PRODUCTION COMPANY

Operator Address: 5400 LBJ Freeway, Suite 1500 **Zip:** 75240

Operator PO Box:

Operator City: Dallas **State:** TX

Operator Phone: (972)371-5200

Operator Internet Address: amonroe@matadorresources.com

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: CUEVA DE ORO FEDERAL **Well Number:** 202H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** BURTON FLAT; WOLFCAMP, EAST **Pool Name:** EAST (GAS)

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,CO2,OIL

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

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:** CUEVA DE ORO **Number:** SLOT 2

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

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 12 Miles **Distance to nearest well:** 30 FT **Distance to lease line:** 248 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: Cueva_202H_Plat_03-30-2017.pdf

Well work start Date: 05/01/2017 **Duration:** 90 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

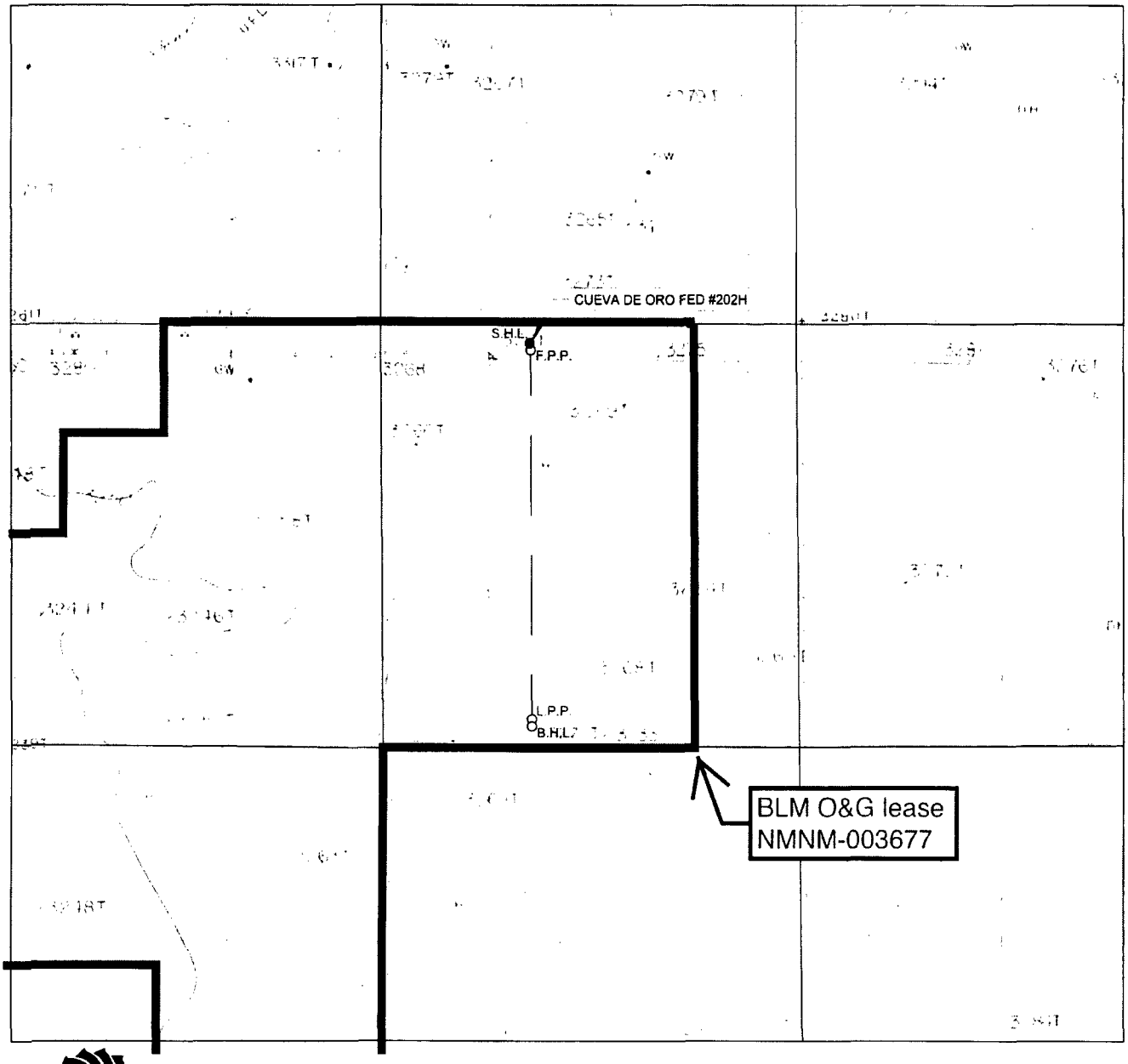
Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 18329

	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	248	FNL	1859	FWL	20S	29E	21	Aliquot NENW	32.5655225	-104.0825815	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 03677	3272	0	0
KOP Leg #1	248	FNL	1859	FWL	20S	29E	21	Aliquot NENW	32.5655225	-104.0825815	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 03677	2672	600	600
PPP Leg #1	248	FNL	1859	FWL	20S	29E	21	Aliquot NENW	32.5655225	-104.0825815	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 03677	3272	0	0

LOCATION & ELEVATION VERIFICATION MAP



LEASE NAME & WELL NO.: CUEVA DE ORO FED #202H

SECTION 21 TWP 20-S RGE 29-E SURVEY N.M.P.M.
COUNTY EDDY STATE NM ELEVATION 3272'
DESCRIPTION 248' FNL & 1859' FWL

LATITUDE N 32.5654039 LONGITUDE W 104.0820774

-N-

SCALE: 1" = 2000'

0' 1000' 2000'

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY MATADOR PRODUCTION COMPANY. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1927, U.S. SURVEY FEET.

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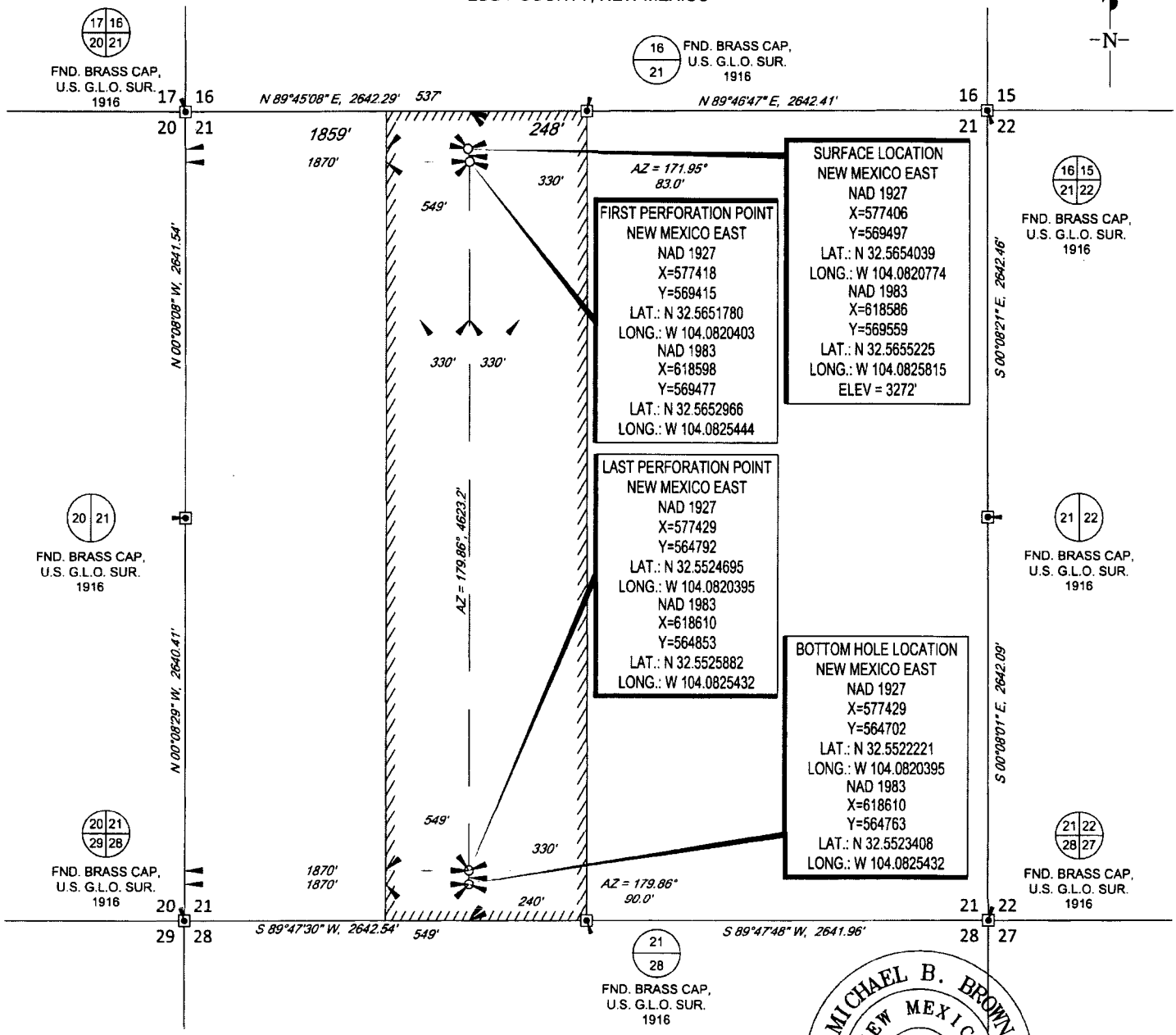
WWW.TOPOGRAPHIC.COM

SCALE: 1" = 1000'

0' 500' 1000'

Matador PRODUCTION COMPANY

SECTION 21, TOWNSHIP 20-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: CUEVA DE ORO FED #202H

SECTION 21 TWP 20-S RGE 29-E SURVEY N.M.P.M.

COUNTY EDDY STATE NM

DESCRIPTION 248' FNL & 1859' FWL

DISTANCE & DIRECTION

FROM INT. OF US-62 W. & NM-360 S. GO WEST ON US-62 W ±1.3 MILES, THENCE NORTH (RIGHT) ON BURTON FLATS RD. ±2.1 MILES, THENCE WEST (LEFT) ON BURTON FLATS RD. ±2.7 MILES TO A POINT 200 FEET SOUTH OF THE LOCATION.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1927, U.S. SURVEY FEET

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY MATADOR PRODUCTION COMPANY. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

AS OF THE DATE OF SURVEY, ALL ABOVE GROUND APPURTENANCES WITHIN 300' OF THE STAKED LOCATION ARE SHOWN HEREON.

MICHAEL B. BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR

Michael Blake Brown, P.S. No. 18329
AUGUST 23, 2016

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WWW.TOPOGRAPHIC.COM

APD ID: 10400012427 **Submission Date:** 03/31/2017

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	---	3272	0	0	OTHER : Caliche	USEABLE WATER	No
2	SALADO	2829	440	440	SALT	NONE	No
3	YATES	2059	1210	1212	GYPSUM	NONE	No
4	SEVEN RIVERS	1744	1525	1527	DOLOMITE	NONE	No
5	CAPITAN REEF	1659	1610	1612	LIMESTONE	USEABLE WATER	No
6	CHERRY CANYON	189	3080	3099	SANDSTONE	NATURAL GAS,OIL	No
7	BRUSHY CANYON	-1051	4320	4324	SANDSTONE	NATURAL GAS,OIL	No
8	BONE SPRING LIME	-2641	5910	5913	LIMESTONE	NATURAL GAS,OIL	No
9	BONE SPRING 1ST	-3293	6565	6573	OTHER : Carbonate	NATURAL GAS,OIL	No
10	BONE SPRING 1ST	-3733	7005	7006	SANDSTONE	NATURAL GAS,OIL	No
11	BONE SPRING 2ND	-4013	7285	7300	OTHER : Carbonate	NATURAL GAS,OIL	No
12	BONE SPRING 2ND	-4473	7745	7752	SANDSTONE	NATURAL GAS,OIL	No
13	BONE SPRING 3RD	-4798	8070	8099	OTHER : Carbonate	NATURAL GAS,OIL	No
14	BONE SPRING 3RD	-5608	8880	8898	SANDSTONE	NATURAL GAS,OIL	No
15	WOLFCAMP	-5966	9235	9260	OTHER : Carbonate	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

Pressure Rating (PSI): 5M **Rating Depth:** 10000

Equipment: After 20" surface casing, a 5M BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be installed. The BOP will be used below intermediate casing 1 to TD. See attached BOP and choke manifold diagrams. An accumulator complying with Onshore Order 2 requirements for the BOP stack pressure rating will be present. Rotating head will be installed as needed

Requesting Variance? YES

Variance request: Matador requests a variance for a 2000-psi annular to be installed after running 20" surface casing. Matador requests a variance to use a speed head. Speed head diameter range is from 13.375" to 2.375". Matador requests a variance to use a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. If the specific hose is unavailable, then one of equal or higher rating will be used.

Testing Procedure: Pressure tests will be conducted before drilling out from under all casing strings. BOP will be inspected and operated as required by Onshore Order 2. Kelly cock and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position. A third party company will test the BOPs. Intermediate 1 casing pressure tests will be made to 250 psi low and 2000 psi high. Intermediate 2 casing pressure tests will be made to 250 psi low and 3000 psi high. Intermediate 3 casing pressure tests will be made t 250 psi low and 7500 psi high. Annular preventer will be tested to 250 psi low and 2500 psi high on the intermediate 1 casing and tested to 250 psi low and 2500 psi high on the intermediate 2 and 3 casing. In the case of running a speed head with landing mandrel for 9.625" and 7.625" x 7"casing, initial intermediate 1 casing test pressures will be 250 psi low and 3000 psi high, with wellhead seals tested to 5000 psi once the 9.625" casing has been landed and cemented. BOP will then be lifted to install the D-section of the wellhead. Matador will nipple the BOP back up and pressure tests will be made to 250 psi low and 7500 psi high. Annular will be tested to 250 psi low and 2500 psi high.

Choke Diagram Attachment:

Cueva_202H_Choke_03-17-2017.pdf

BOP Diagram Attachment:

Cueva_202H_BOP_03-17-2017.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	26	20.0	NEW	API	N	0	400	0	400	3272	2872	400	K-55	94	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	1200	0	1197	3272	2075	1200	J-55	54.5	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
3	INTERMEDIATE	8.75	7.625	NEW	API	Y	0	3000	0	2987	3272	285	3000	P-110	29.7	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
4	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3100	0	3087	3272	185	3100	J-55	40	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

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
5	PRODUCTION	6.125	5.5	NEW	API	Y	0	8749	0	8737	3272	-5465	8749	P-110	20	OTHER - Tenaris XP	1.125	1.125	DRY	1.8	DRY	1.8
6	INTERMEDIATE	8.75	7.625	NEW	API	Y	3000	8849	2987	8836	285	-5564	5849	P-110	29.7	OTHER - Hydril 513	1.125	1.125	DRY	1.8	DRY	1.8
7	INTERMEDIATE	8.75	7.0	NEW	API	Y	8849	9699	8836	9450	-5564	-6178	850	P-110	29	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
8	PRODUCTION	6.125	4.5	NEW	API	Y	8749	14221	8737	9465	-5465	-6193	5472	P-110	13.5	OTHER - Tenaris XP	1.125	1.125	DRY	1.8	DRY	1.8

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

BLM_Casing_Design_Assumptions_Cueva202H_Surface_03-31-2017.docx

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_Cueva202H_Surface_03-23-2017.docx

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_Cueva202H_Intermediate_03-24-2017.docx

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

Casing Attachments

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

BLM_Casing_Design_Assumptions_Cueva202H_Intermediate_03-31-2017.docx

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_Cueva202H_Intermediate_03-24-2017.docx

Casing ID: 4 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_Cueva202H_Intermediate_03-24-2017.docx

Casing ID: 5 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

BLM_Casing_Design_Assumptions_Cueva202H_Production_03-31-2017.docx

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_Cueva202H_Production_03-24-2017.docx

Casing Attachments

Casing ID: 6 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

BLM_Casing_Design_Assumptions_Cueva202H_Intermediate_03-31-2017.docx

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_Cueva202H_Intermediate_03-24-2017.docx

Casing ID: 7 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

BLM_Casing_Design_Assumptions_Cueva202H_Intermediate_03-31-2017.docx

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_Cueva202H_Intermediate_03-24-2017.docx

Casing ID: 8 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

BLM_Casing_Design_Assumptions_Cueva202H_Production_03-31-2017.docx

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_Cueva202H_Production_03-24-2017.docx

Section 4 - Cement

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	400	873	1.38	14.8	1204	100	Class C	5% NaCl + LCM
INTERMEDIATE	Lead		0	1200	528	2.09	12.6	1103	100	Class C	Bentonite + 1% CaCl2 + 8% NaCl + LCM
INTERMEDIATE	Tail		0	1200	322	1.38	14.8	444	100	Class C	5% NaCl + LCM
INTERMEDIATE	Lead		2100	3000	641	2.36	11.5	1512	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		2100	3000	248	1.38	13.2	342	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		0	3100	499	2.48	11.9	1237	100	Class C	Bentonite + 2% CaCl2 + 3% NaCl + LCM
INTERMEDIATE	Tail		0	3100	308	1.26	14.4	388	100	Class C	5% NaCl + LCM
PRODUCTION	Lead		0	8749	415	1.38	15.8	572	10	Class H	Fluid loss + Dispersant + Retarder +LCM
INTERMEDIATE	Lead		3000	8849	641	2.36	11.5	1512	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		3000	8849	248	1.38	13.2	342	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		8849	9699	641	2.36	11.5	1512	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		8849	9699	248	1.38	13.2	342	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
PRODUCTION	Lead		8749	14221	415	1.38	15.8	572	10	Class H	Fluid loss + Dispersant + Retarder +LCM

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

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: Barite, bentonite, LCM

Describe the mud monitoring system utilized: An electronic Pason mud monitoring system complying with Onshore Order 1 will be used. All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions. A closed loop system will be used.

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
9699	14221	OIL-BASED MUD	12.5	12.5							
400	1220	SALT SATURATED	10	10							
1220	3100	WATER-BASED MUD	8.4	8.6							
3100	9699	OTHER : Fresh water & cut brine	9	9							
0	400	SPUD MUD	8.4	8.4							

Section 6 - Test, Logging, Coring

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

A 2-person mud-logging program will be used from 1220' to TD.

No electric logs are planned at this time. GR will be collected through the MWD tools from intermediate 2 casing to TD. CBL with CCL will be run as far as gravity will let it fall to TOC.

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

CBL,GR,MUDLOG

Coring operation description for the well:

No coring planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7099 **Anticipated Surface Pressure:** 5016.7

Anticipated Bottom Hole Temperature(F): 135

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:

Cueva_202H_H2S_Plan_03-24-2017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Cueva_202H_Horizontal_Drilling_Plan_03-24-2017.pdf

Other proposed operations facets description:

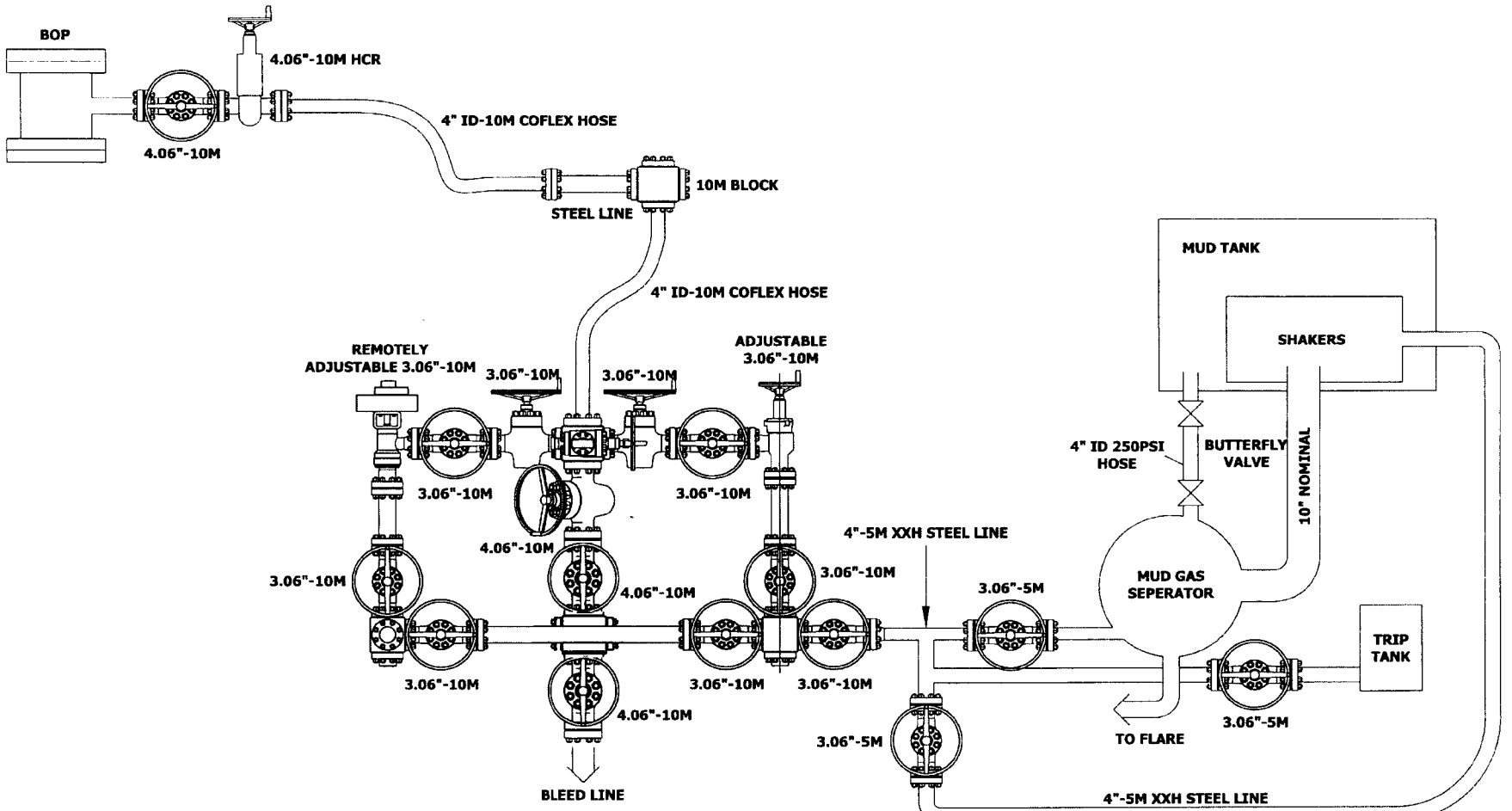
Wellhead Casing; General Drilling Plan; Note: Note: See General Drilling Plan - Pg 4 for correct cement quantities for Intermediate 3 Casings due to limitations of AFMSS.

Other proposed operations facets attachment:

Cueva_202H_Wellhead_Casing_Spec_03-24-2017.pdf

Cueva_202H_General_Drilling_Plan_03-24-2017.pdf

Other Variance attachment:



WELDING NOTE & TOLERANCES UNLESS OTHERWISE SPECIFIED.

GENERAL WELDING NOTE:
ALL ACCESSIBLE CONTACT SURFACES SHALL BE JOINED WITH CONTINOUS 45 DEGREE FILLET WELDS. WELD SIZE TO BE 1/16 INCH SMALLER THAN THINNER MEMBER JOINED UP TO 5/16 INCH THICKNESS AND 1/8 INCH SMALLER THAN THINNER MEMBER JOINED UP TO 3/4 INCH THICKNESS
WELDMENT TOLERANCES = +/- 1/16

MACHINING TOLERANCES
1 PLACE DECIMAL = ±.1
2 PLACE DECIMAL = ±.03
3 PLACE DECIMAL = ±.015
FRACTIONAL TOLERANCES = 1/64
INSIDE MACHINED CORNER RADII = ±.031
CHAMFER OUTSIDE CORNERS .03 X 45 DEG
ANGLE TOLERANCES = ±1 DEGREE
MACHINED SURFACE FINISH 125 RMS
ALL UNSPECIFIED DIMENSIONS ARE IN INCHES

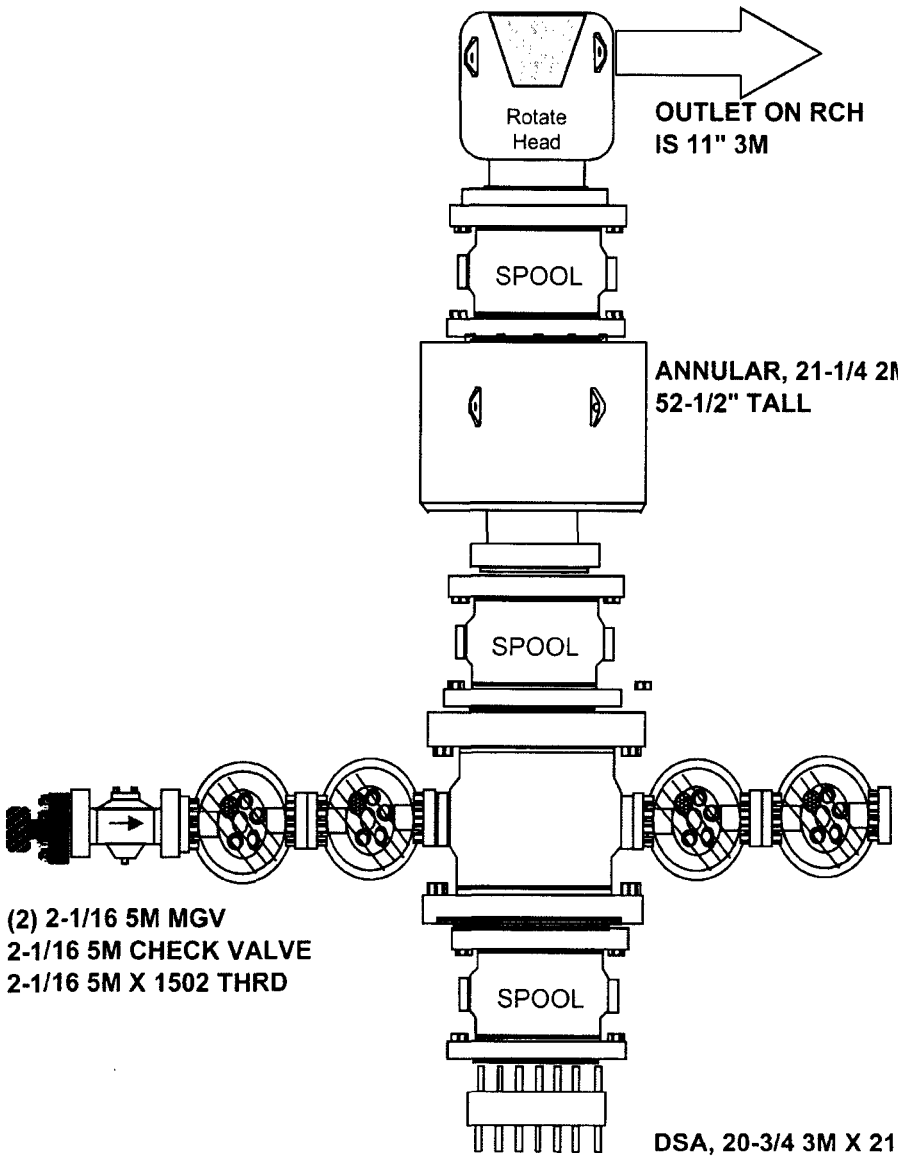
REV	DATE	DESCRIPTION	DRWN BY	CHK BY	APRVD ENG.
02	8-3-15	ISSUED FOR INFORMATION	CP	CSL	
01	7-9-15	ISSUED FOR INFORMATION	CSL		

PATTERSON-UTI DRILLING COMPANY LLC

CHOKE MANIFOLD

10M CHOKE ARRANGEMENT
RIG 809

DWG No R0809-D.001.LAY.09 | SHT 1 OF 1 | REV 02



21-1/4 2M ROTATING HEAD
TOTAL HEIGHT: 33-1/2"
HEIGHT FROM BOTTOM FLG
TO CENTER OUTLET: 16"

OUTLET ON RCH
IS 11" 3M

ANNULAR, 21-1/4 2M
52-1/2" TALL

DRILLING SPOOL, 21-1/4 2M
TOTAL HEIGHT; 29"
BOTTOM FLANGE TO CENTER
14-1/2"
4-1/16 10M MGV
4-1/16 10M HCR

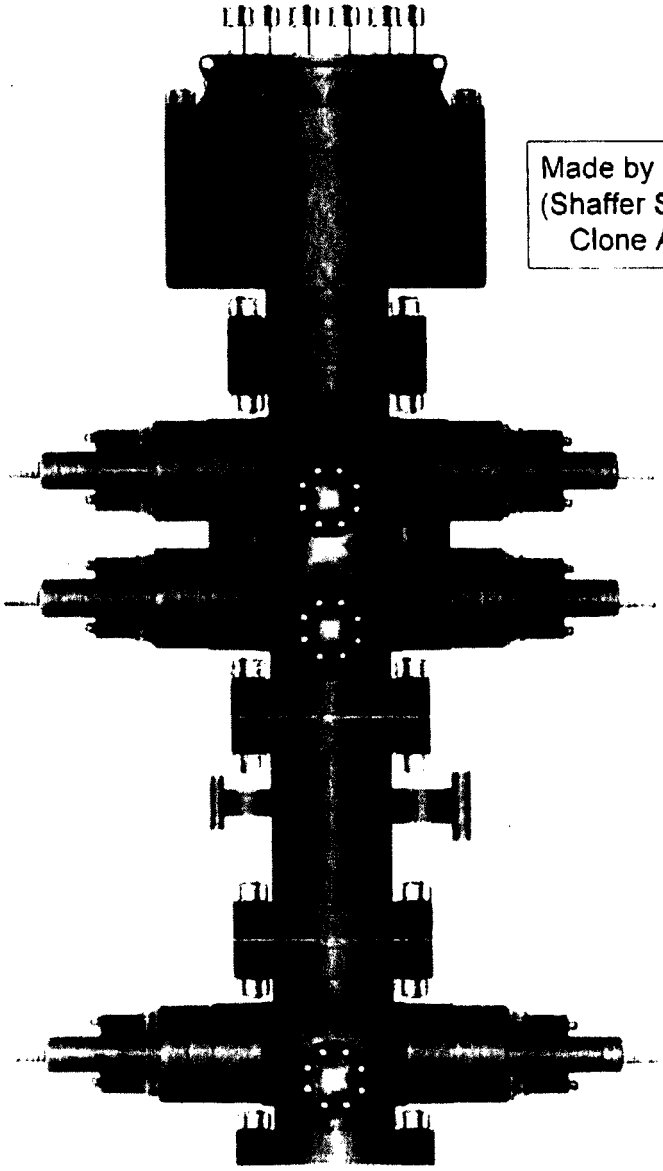
(2) 2-1/16 5M MGV
2-1/16 5M CHECK VALVE
2-1/16 5M X 1502 THRD

DSA, 20-3/4 3M X 21-1/4 2M
5-1/2" TALL

SPOOL HEIGHTS CAN BE ADJUSTED AS NEEDED*

PATTERSON-UTI
Well Control

RIG 809



Made by Cameron
(Shaffer Spherical)
Clone Annular

PATTERSON-UTI # PS2-628
STYLE: New Shaffer Spherical
BORE 13 5/8" **PRESSURE** 5,000
HEIGHT: 48 ½" **WEIGHT:** 13,800 lbs

PATTERSON-UTI # PC2-128
STYLE: New Cameron Type U
BORE 13 5/8" **PRESSURE** 10,000
RAMS: TOP 5" Pipe BTM Blinds
HEIGHT: 66 5/8" **WEIGHT:** 24,000 lbs

Length 40" **Outlets** 4" 10M
DSA 4" 10M x 2" 10M

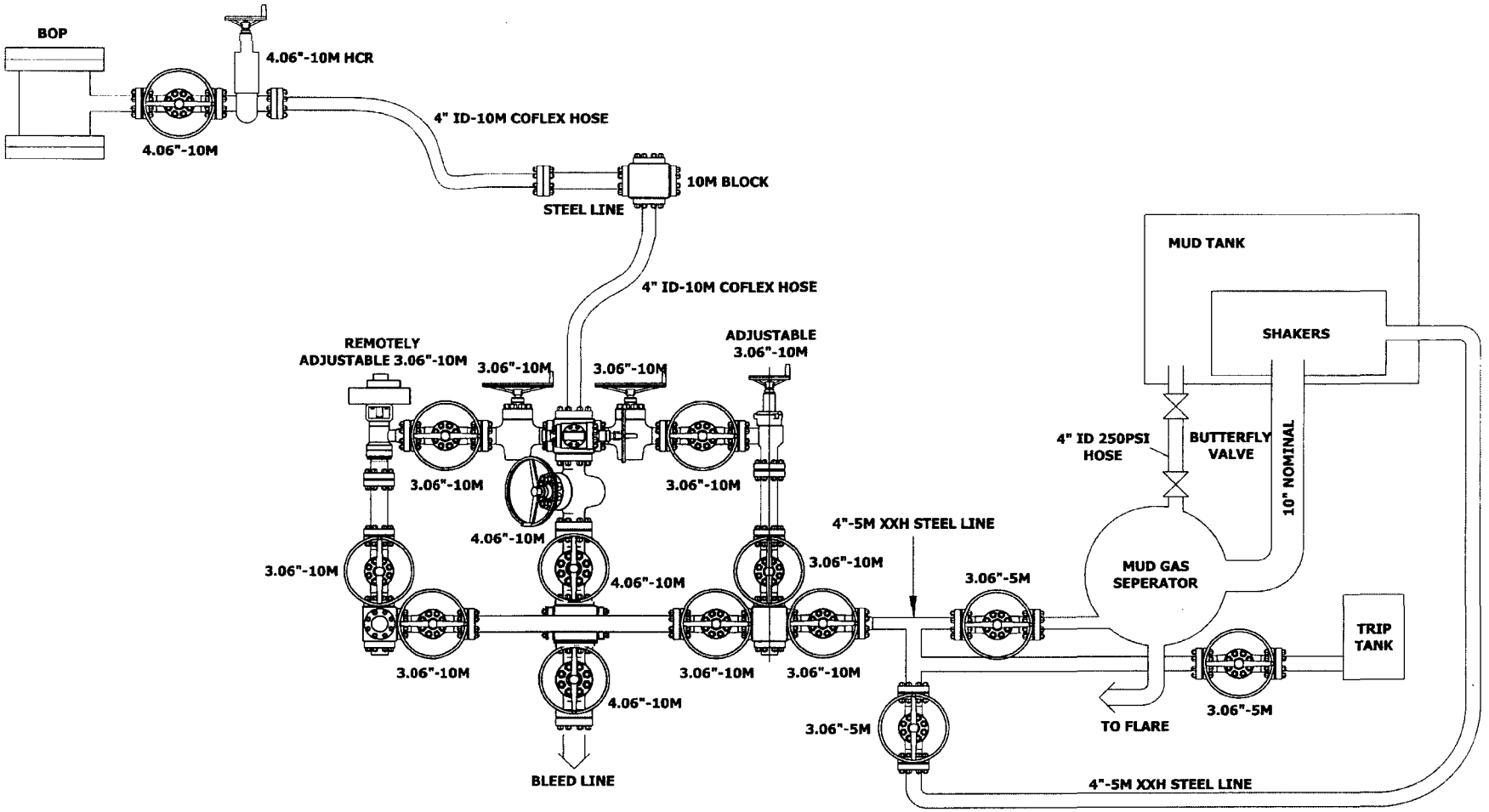
PATTERSON-UTI # PC2-228
STYLE: New Cameron Type U
BORE 13 5/8" **PRESSURE** 10,000
RAMS: 5" Pipe
HEIGHT: 41 5/8" **WEIGHT:** 13,000 lbs

2" Minimum Kill Line

WING VALVES

3" Minimum Choke Line

2" Check Valve | 2" Manual Valve | 2" Manual Valve | 4" Manual Valve | 4" Hydraulic Valve



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ALL ACCESSIBLE CONTACT SURFACES SHALL BE JOINED WITH CONTINOUS 45 DEGREE FILLET WELDS. WELD SIZE TO BE 1/16 INCH SMALLER THAN THINNER MEMBER JOINED UP TO 5/16 INCH THICKNESS AND 1/8 INCH SMALLER THAN THINNER MEMBER JOINED UP TO 3/4 INCH THICKNESS
WELDMENT TOLERANCES = +/- 1/16

MACHINING TOLERANCES
1 PLACE DECIMAL = ± 1
2 PLACE DECIMAL = ± .03
3 PLACE DECIMAL = ± .015
FRACTIONAL TOLERANCES = 1/64
INSIDE MACHINED CORNER RADII = ± .031
CHAMFER OUTSIDE CORNERS .03 X 45 DEG
ANGLE TOLERANCES = ±1 DEGREE
MACHINED SURFACE FINISH 125 RMS
ALL UNSPECIFIED DIMENSIONS ARE IN INCHES

REV	DATE	DESCRIPTION	DRWN BY	CHK BY	APRVD ENG.
02	8-3-15	ISSUED FOR INFORMATION	CP	CSL	
01	7-9-15	ISSUED FOR INFORMATION	CSL		

PATTERSON-UTI
DRILLING COMPANY LLC

CHOKE MANIFOLD

10M CHOKE ARRANGEMENT
RIG 809

DWG No. R0809-D.001.LAY.09 | SHT 1 OF 1 | REV 02

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

March 10, 2015

Customer: Patterson B&F

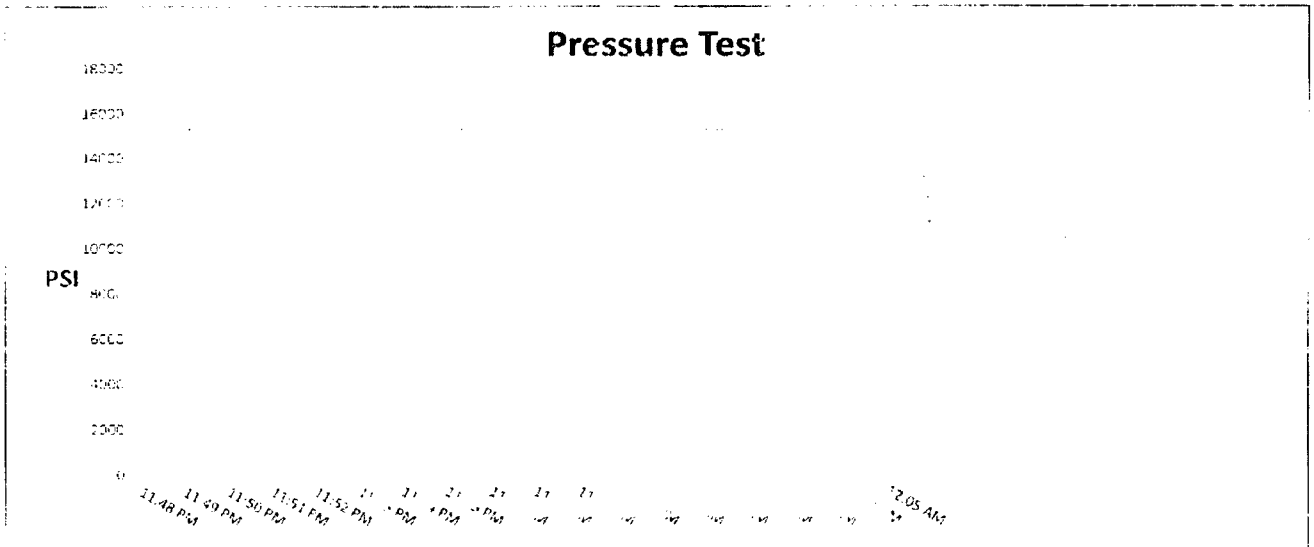
Pick Ticket #: 296283

Hose Specifications

Hose Type	Length
Mud	50'
I.D.	**O.D.**
2"	3 4/7"
Working Pressure	**Burst Pressure**
10000 PSI	

Verification

Type of Fitting	Coupling Method
2"1502	Swage
Die Size	**Final O.D.**
97MM	4.03"
Hose Serial #	**Hose Assembly Serial #**
11839	296283



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	17 3/4 Minutes		15361 PSI

Comments: Hose assembly pressure tested with water at ambient temperature

Tested By: *Richard Davis*

Approved By: *Ryan Adams*

Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	**PATTERSON B&E**	*Hose Assembly Type*	**Choke & Kill**
MWH Sales Representative	**AMY WHITE**	*Certification*	**API 7K/FSL Level 2**
Date Assembled	**3/10/2015**	*Hose Grade*	**MUD**
Location Assembled	**OKC**	*Hose Working Pressure*	**10000**
Sales Order #	**245805**	*Hose Lot # and Date Code*	**11839-11/14**
Customer Purchase Order #	**270590**	*Hose I.D. (Inches)*	**2"**
Assembly Serial # (Pick Ticket #)	**296283**	*Hose O.D. (Inches)*	**3.99"**
Hose Assembly Length	**50'**	*Armor* (yes/no)	YES

Fittings			
End A		**End B**	
Stem (Part and Revision #)	R[illegible]0K32M15[illegible]2	*Ste[illegible]* (Part and [illegible])	RF2.0 32F1502
Stem (Heat #)	1[illegible]1046[illegible]6	*Ster[illegible]* (Heat #)	**A144853**
Ferrule (Part and Revision #)	**RF2.0 10K**	*Ferrule* (Part and Revision #)	**RF2.0 10K**
Ferrule (Heat #)	**41044**	*Ferrule* (Heat #)	**41044**
Connection - Flange Hammer Union Part		[illegible]	
Connection (Heat #)		*Cor[illegible]* (Heat	
Nut (Part #)	**2" 1502 H2S**	*Nut* (Part #)	
Nut (Heat #)		*Nut* (Heat #)	
Dies Used	[illegible]	*Dies Used*	**97MM**

Hydrostatic Test Requirements		
Test Pressure (psi)	15,000	***Hose assembly was tested with ambient water temperature.***
Test Pressure Hold Time (minutes)	17 3/4	

Date Tested	*Tested By*	*Approved By*
3/10/2015		

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: **PATTERSON B&E**	*Customer P.O.#* **270590**
Sales Order # **245805**	*Date Assembled:* **3/10/2015**

Specifications

Hose Assembly Type:	**Choke & Kill**		
Assembly Serial #	**296283**	*Hose Lot # and Date Code*	**11839-11/14**
Hose Working Pressure (psi)	**10000**	*Test Pressure (psi)*	**15000**

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

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

Approved By	***Date***
	3/19/2015

R 809 · Chuck & Kelly Hoses

December 24, 2014

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

Customer: Patterson

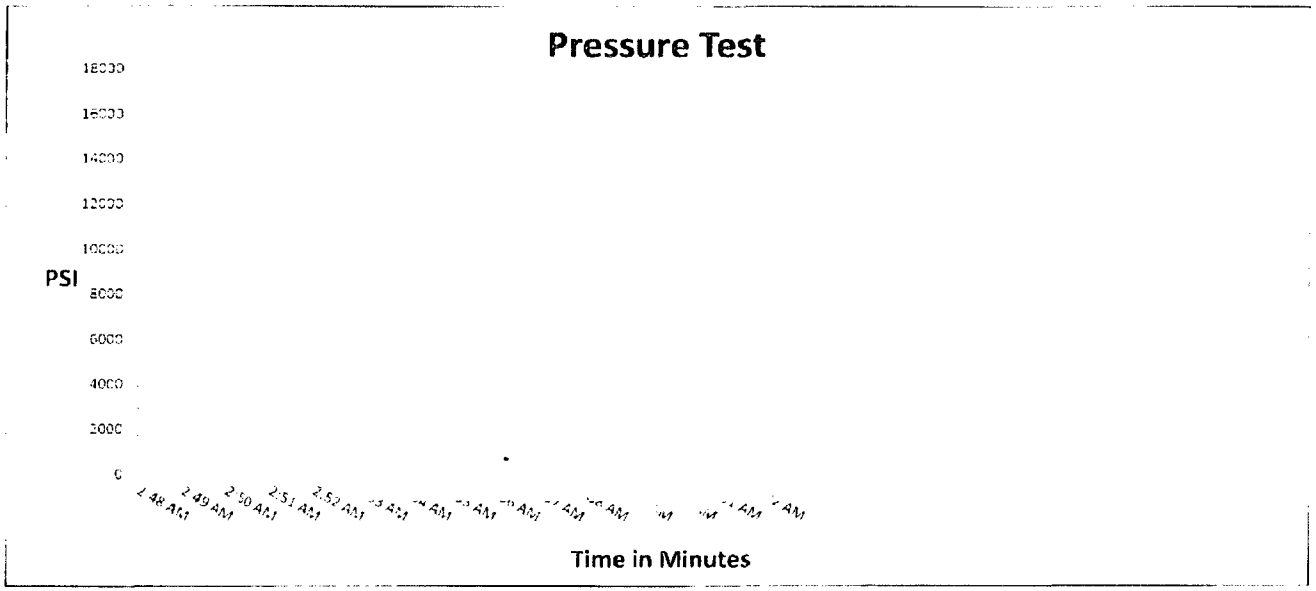
Pick Ticket #: 286159

Hose Specifications

Hose Type	Length
Ck	50'
I.D.	**O.D.**
2"	3.55"
Working Pressure	**Burst Pressure**
10000 PSI	standard Safety Multiplier Applied

Verification

Type of Fitting	Coupling Method
2" 1502	Swage
Die Size	**Final O.D.**
97MM	3.98"
Hose Serial #	**Hose Assembly Serial #**
11784	286159



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	15 1/4 Minutes		15410 PSI

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

Tested By: *Tyler Hill*

Approved By: *Ryan Adams*

Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	**PATTERSON B&E**	*Hose Assembly Type*	**Choke & Kill**
MWH Sales Representative	**AMY WHITE**	*Certification*	**API 7K/FSL Level 2**
Date Assembled	**12/23/2014**	*Hose Grade*	**MUD**
Location Assembled	**OKC**	*Hose Working Pressure*	**10000**
Sales Order #	**237566**	*Hose Lot # and Date Code*	**11784-10/14**
Customer Purchase Order #	**261581**	*Hose I.D. (Inches)*	**2"**
Assembly Serial # (Pick Ticket #)	**286159**	*Hose O.D. (Inches)*	**4.00"**
Hose Assembly Length	**50'**	*Armor (yes/no)*	YES

Fittings

End A		End B	
Stem (Part and Revision #)	**R2.0X32M1502**	*Stem (Part and Revision #)*	**R2.0X32M1502**
Stem (Heat #)	**M14104546**	*Stem (Heat #)*	**M14101226**
Ferrule (Part and Revision #)	**RF2.0 10K**	*Ferrule (Part and Revision #)*	**RF2.0 10K**
Ferrule (Heat #)	**41044**	*Ferrule (Heat #)*	**41044**
Connection (Flange Hammer Union)	**2"1502**	*Connection*	
Connection (Heat #)	**2866**	*Connection*	
Nut (Part #)		*Nut (Part #)*	
Nut (Heat #)		*Nut (Heat #)*	
Dies Used	**97MM**	*Dies Used*	**97MM**

Hydrostatic Test Requirements

Test Pressure (psi)	**15,000**	***Hose assembly was tested with ambient water temperature.***
Test Pressure Hold Time (minutes)	**15 1/4**	

Date Tested	*Tested By*	*Approved By*
12/24/2014		

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: **PATTERSON B&E**	*Customer P.O.#* **261581**
Sales Order # **237566**	*Date Assembled:* **12/23/2014**

Specifications

Hose Assembly Type:	**Choke & Kill**		
Assembly Serial #	**286159**	*Hose Lot # and Date Code*	**11784-10/14**
Hose Working Pressure (psi)	**10000**	*Test Pressure (psi)*	**15000**

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

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

Approved By	***Date***
	12/29/2014

Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K/FSL Level 2
Date Assembled	3/10/2015	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	245805	Hose Lot # and Date Code	11839-11/14
Customer Purchase Order #	270590	Hose I.D. (Inches)	2"
Assembly Serial # (Pick Ticket #)	296283	Hose O.D. (Inches)	3.99"
Hose Assembly Length	50'	Armor (yes/no)	YES

Fittings			
End A		End B	
Stem (Part and Revision #)	R2.0X32M1502	Stem (Part and Revision #)	RF2.0 32F1502
Stem (Heat #)	14104546	Stem (Heat #)	A144853
Ferrule (Part and Revision #)	RF2.0 10K	Ferrule (Part and Revision #)	RF2.0 10K
Ferrule (Heat #)	41044	Ferrule (Heat #)	41044
Connection . Flange Hammer Union Part		Connection (Part #)	
Connection (Heat #)		Connection (Heat #)	
Nut (Part #)	2" 1502 H2S	Nut (Part #)	
Nut (Heat #)		Nut (Heat #)	
Dies Used	97MM	Dies Used	97MM

Hydrostatic Test Requirements		
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.
Test Pressure Hold Time (minutes)	17 3/4	

Date Tested	Tested By	Approved By
3/10/2015		

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Casing Design Criteria and Load Case Assumptions

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.4 ppg).

Intermediate #3 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Casing Design Criteria and Load Case Assumptions

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.4 ppg).

Intermediate #3 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Casing Design Criteria and Load Case Assumptions

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.4 ppg).

Intermediate #3 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Casing Design Criteria and Load Case Assumptions

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.4 ppg).

Intermediate #3 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Casing Design Criteria and Load Case Assumptions

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.4 ppg).

Intermediate #3 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Casing Design Criteria and Load Case Assumptions

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.4 ppg).

Intermediate #3 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Casing Design Criteria and Load Case Assumptions

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.4 ppg).

Intermediate #3 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Casing Design Criteria and Load Case Assumptions

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.4 ppg).

Intermediate #3 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Hydrogen Sulfide Drilling

Operations Plan

Matador Resources

1 H2S safety instructions to the following:

- Characteristics of H2S
- Physical effects and hazards
- Principal and operation of H2S detectors, warning system, and briefing areas
- Evacuation procedures, routes, and first aid
- Proper use of safety equipment & life support systems
- Essential personnel meeting medical evaluation criteria will receive additional training on the proper use of 30-minute pressure demand air packs.

2 H2S Detection and Alarm Systems:

- H2S sensor/detectors to be located on the drilling rig floor, in the base of the sub structure / cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may be placed as deemed necessary.
- An audio alarm system will be installed on the derrick floor and in the doghouse.

3 Windsocks and / Wind Streamers:

- Windsocks at mud pit area should be high enough to be visible.
- Windsock on the rig floor and / top of doghouse should be high enough to be visible.

4 Condition Flags and Signs:

- Warning sign on access road to location
- Flags to be displayed on sign at entrance to location
    - Green Flag – Normal Safe Operation Condition
    - Yellow Flag – Potential Pressure and Danger
    - Red Flag – Danger (H2S present in dangerous concentrations) Only H2S trained personnel admitted on location

5 Well Control Equipment:

- See APD

6 Communications:

- While working under masks, chalkboards will be used for communications.
- Hand signals will be used where chalkboard is inappropriate.
- Two-way radio will be used to communicate off location in case emergency help is required. In most cases, cellular telephones will be available at most drilling foreman's trailer or living quarters.

7 Drilling Stem Testing:

- No DSTs or cores are planned at this time

8 Drilling contractor supervisor will be familiar with the effects H2S has on tubulars good and other mechanical equipment.

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

11 Emergency Contacts

- See next page

H2S Contingency Plan Emergency Contacts
Matador Production Company
Cueva de Oro Fed wells
Sec. 21, T20S, R29E, Eddy County, NM

Company Office			
Matador Production Company	(972)-371-5200		
Key Personnel			
Name	**Title**	**Office**	**Mobile**
Billy Goodwin	Vice President Drilling	972-371-5210	817-522-2928
Gary Martin	Drilling Superintendent		601-669-1774
Dee Smith	Drilling Superintendent	972-371-5447	972-822-1010
Aaron Byrd	Drilling Engineer	972-371-5267	214-507-2333
Larry Seegers	Construction Superintendent		318-840-4364
Jimmy Benefield	Construction Superintendent		318-548-6659

Artesia	
Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283
Carlsbad	
Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-885-3581
Santa Fe	
New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 24 hrs	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635
National	
Carlsbad BLM	575-234-5972
National Emergency Response Center (Washington, D.C.)	800-424-8802
Medical	
Flight for Life- 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare- R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Ambulance- 2301 Yale Blvd S.E., D3; Albuquerque, NM	505-842-4433
SB Air Med Service- 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

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

Matador Resources
Eddy County, NM
Cueva De Oro Fed (111-121-131-201)
No. 201H
Prelim Plan A

PRODIRECTIONAL

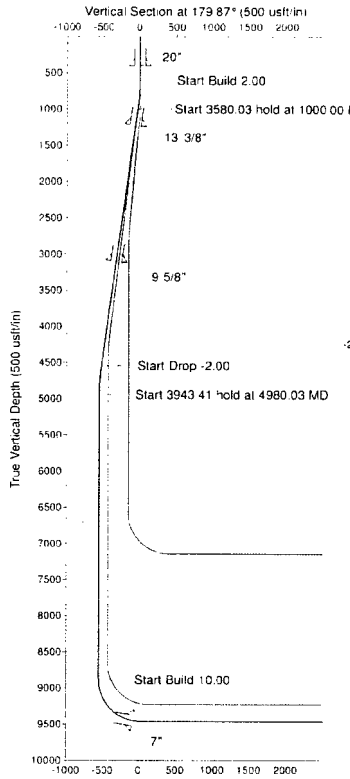
US State Plane 1927 (Exact solution)
NAD 1927 (NADCON CONUS)
Clarke 1866
New Mexico East 3001
Mean Sea Level

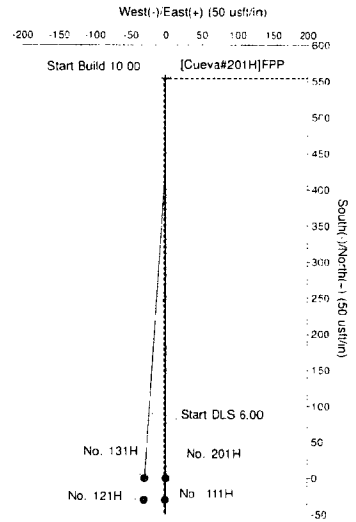
RKB Elevation: well @ 3297.50usft

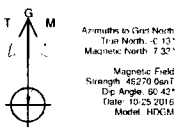
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	568854.00	575880.00	32° 33' 49.124 N	104° 5' 13.332 W	

SECTION DETAILS- Lateral

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00
3	1000.00	8.00	359.79	998.70	27.88	-0.10	2.00	-27.88
4	4580.03	8.00	359.79	4513.89	526.12	-1.90	0.00	-526.12
5	4980.03	0.00	0.00	4342.53	554.00	-2.00	2.00	-554.00
6	8923.44	0.00	0.00	8885.00	554.00	-2.00	0.00	-554.00
7	9723.44	80.00	179.87	9450.25	80.54	-0.93	10.00	-80.54
8	9890.05	90.00	179.87	9464.76	85.23	0.54	6.00	85.23
9	13962.83	90.00	179.87	9465.00	-4158.00	9.00	0.00	4158.01



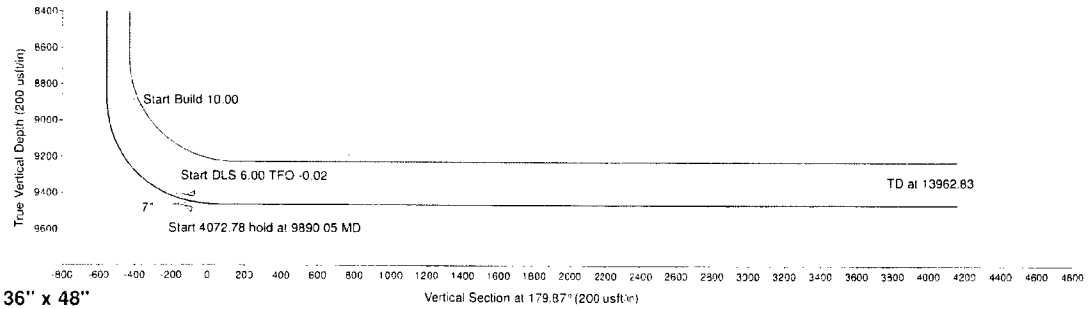


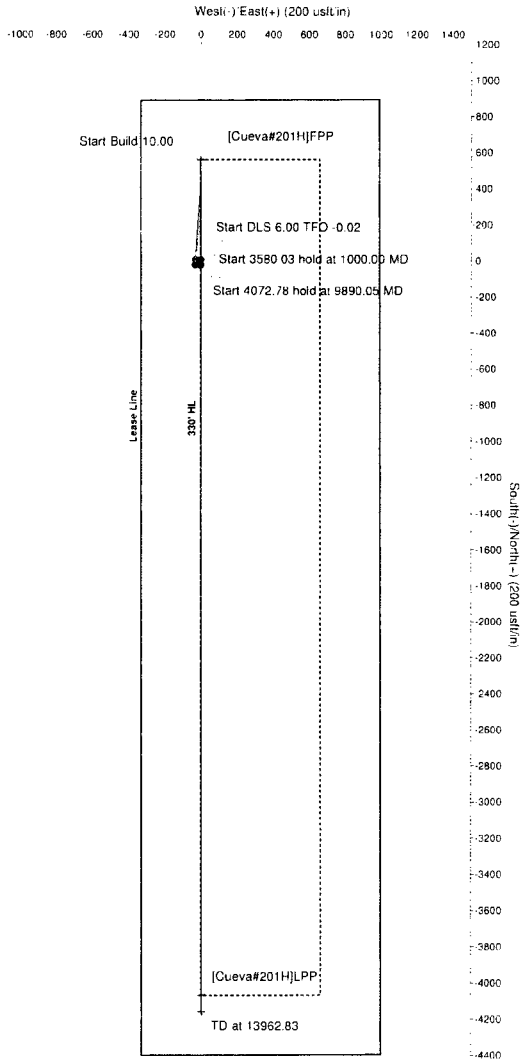


Azimuths to Grid North
True North: -0.13°
Magnetic North: 7.32°

Magnetic Field
Strength: 48270.0snT
Dip Angle: 60.42°
Date: 10-25-2016
Model: HDGM

Azimuth Corrections
Total Magnetic Corr (M to G): 7.33°
Declination (M to T): 7.47° East





36" x 48"

Pro Directional
Survey Report

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Well:	No. 201H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

Project	Eddy County, NM		
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 Cueva De Oro Fed (111-121-131-201)

Site Position:		**Northing:**	569,408.00 usft	**Latitude:**	32° 33' 54.606 N
From:	Map	**Easting:**	575,878.00 usft	**Longitude:**	104° 5' 13.341 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.13 °

Well No. 201H

Well Position	**+N/-S**	0.00 usft	**Northing:**	568,854.00 usft	**Latitude:**	32° 33' 49.124 N
	+E/-W	0.00 usft	**Easting:**	575,880.00 usft	**Longitude:**	104° 5' 13.332 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,269.00 usft

Wellbore OH

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	10/25/2016	7.47	60.43	48,270.00

Design Prelim Plan A

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	179.87

Survey Tool Program **Date** 10/26/2016

From (usft)	**To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.00	400.00	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG
400.00	1,220.00	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG
1,220.00	3,100.00	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG
3,100.00	9,724.00	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG
9,724.00	13,962.83	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG

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
[Cueva#201H]LPP									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
20"									

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Well:	No. 201H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

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)
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	2.00	359.79	699.98	1.75	-0.01	-1.75	2.00	2.00	0.00
800.00	4.00	359.79	799.84	6.98	-0.03	-6.98	2.00	2.00	0.00
900.00	6.00	359.79	899.45	15.69	-0.06	-15.69	2.00	2.00	0.00
1,000.00	8.00	359.79	998.70	27.88	-0.10	-27.88	2.00	2.00	0.00
1,100.00	8.00	359.79	1,097.73	41.80	-0.15	-41.80	0.00	0.00	0.00
1,200.00	8.00	359.79	1,196.76	55.71	-0.20	-55.71	0.00	0.00	0.00
1,223.47	8.00	359.79	1,220.00	58.98	-0.21	-58.98	0.00	0.00	0.00
13 3/8"									
1,300.00	8.00	359.79	1,295.78	69.63	-0.25	-69.63	0.00	0.00	0.00
1,400.00	8.00	359.79	1,394.81	83.55	-0.30	-83.55	0.00	0.00	0.00
1,500.00	8.00	359.79	1,493.84	97.47	-0.35	-97.47	0.00	0.00	0.00
1,600.00	8.00	359.79	1,592.86	111.38	-0.40	-111.38	0.00	0.00	0.00
1,700.00	8.00	359.79	1,691.89	125.30	-0.45	-125.30	0.00	0.00	0.00
1,800.00	8.00	359.79	1,790.92	139.22	-0.50	-139.22	0.00	0.00	0.00
1,900.00	8.00	359.79	1,889.94	153.13	-0.55	-153.14	0.00	0.00	0.00
2,000.00	8.00	359.79	1,988.97	167.05	-0.60	-167.05	0.00	0.00	0.00
2,100.00	8.00	359.79	2,088.00	180.97	-0.65	-180.97	0.00	0.00	0.00
2,200.00	8.00	359.79	2,187.02	194.89	-0.70	-194.89	0.00	0.00	0.00
2,300.00	8.00	359.79	2,286.05	208.80	-0.75	-208.80	0.00	0.00	0.00
2,400.00	8.00	359.79	2,385.08	222.72	-0.80	-222.72	0.00	0.00	0.00
2,500.00	8.00	359.79	2,484.10	236.64	-0.85	-236.64	0.00	0.00	0.00
2,600.00	8.00	359.79	2,583.13	250.56	-0.90	-250.56	0.00	0.00	0.00
2,700.00	8.00	359.79	2,682.16	264.47	-0.95	-264.47	0.00	0.00	0.00
2,800.00	8.00	359.79	2,781.18	278.39	-1.01	-278.39	0.00	0.00	0.00
2,900.00	8.00	359.79	2,880.21	292.31	-1.06	-292.31	0.00	0.00	0.00
3,000.00	8.00	359.79	2,979.24	306.22	-1.11	-306.23	0.00	0.00	0.00
3,100.00	8.00	359.79	3,078.26	320.14	-1.16	-320.14	0.00	0.00	0.00
3,121.95	8.00	359.79	3,100.00	323.20	-1.17	-323.20	0.00	0.00	0.00
9 5/8"									
3,200.00	8.00	359.79	3,177.29	334.06	-1.21	-334.06	0.00	0.00	0.00
3,300.00	8.00	359.79	3,276.32	347.98	-1.26	-347.98	0.00	0.00	0.00
3,400.00	8.00	359.79	3,375.35	361.89	-1.31	-361.90	0.00	0.00	0.00
3,500.00	8.00	359.79	3,474.37	375.81	-1.36	-375.81	0.00	0.00	0.00
3,600.00	8.00	359.79	3,573.40	389.73	-1.41	-389.73	0.00	0.00	0.00
3,700.00	8.00	359.79	3,672.43	403.64	-1.46	-403.65	0.00	0.00	0.00
3,800.00	8.00	359.79	3,771.45	417.56	-1.51	-417.56	0.00	0.00	0.00
3,900.00	8.00	359.79	3,870.48	431.48	-1.56	-431.48	0.00	0.00	0.00
4,000.00	8.00	359.79	3,969.51	445.40	-1.61	-445.40	0.00	0.00	0.00
4,100.00	8.00	359.79	4,068.53	459.31	-1.66	-459.32	0.00	0.00	0.00
4,200.00	8.00	359.79	4,167.56	473.23	-1.71	-473.23	0.00	0.00	0.00
4,300.00	8.00	359.79	4,266.59	487.15	-1.76	-487.15	0.00	0.00	0.00

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Well:	No. 201H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

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)
4,400.00	8.00	359.79	4,365.61	501.07	-1.81	-501.07	0.00	0.00	0.00
4,500.00	8.00	359.79	4,464.64	514.98	-1.86	-514.99	0.00	0.00	0.00
4,580.03	8.00	359.79	4,543.89	526.12	-1.90	-526.12	0.00	0.00	0.00
4,600.00	7.60	359.79	4,563.68	528.83	-1.91	-528.83	2.00	-2.00	0.00
4,700.00	5.60	359.79	4,663.01	540.32	-1.95	-540.33	2.00	-2.00	0.00
4,800.00	3.60	359.79	4,762.68	548.35	-1.98	-548.35	2.00	-2.00	0.00
4,900.00	1.60	359.79	4,862.57	552.88	-2.00	-552.89	2.00	-2.00	0.00
4,980.03	0.00	0.00	4,942.59	554.00	-2.00	-554.00	2.00	-2.00	0.00
5,000.00	0.00	0.00	4,962.56	554.00	-2.00	-554.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,062.56	554.00	-2.00	-554.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,162.56	554.00	-2.00	-554.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,262.56	554.00	-2.00	-554.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,362.56	554.00	-2.00	-554.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,462.56	554.00	-2.00	-554.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,562.56	554.00	-2.00	-554.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,662.56	554.00	-2.00	-554.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,762.56	554.00	-2.00	-554.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,862.56	554.00	-2.00	-554.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,962.56	554.00	-2.00	-554.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,062.56	554.00	-2.00	-554.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,162.56	554.00	-2.00	-554.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,262.56	554.00	-2.00	-554.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,362.56	554.00	-2.00	-554.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,462.56	554.00	-2.00	-554.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,562.56	554.00	-2.00	-554.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,662.56	554.00	-2.00	-554.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,762.56	554.00	-2.00	-554.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,862.56	554.00	-2.00	-554.00	0.00	0.00	0.00
7,000.00	0.00	0.00	6,962.56	554.00	-2.00	-554.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,062.56	554.00	-2.00	-554.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,162.56	554.00	-2.00	-554.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,262.56	554.00	-2.00	-554.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,362.56	554.00	-2.00	-554.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,462.56	554.00	-2.00	-554.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,562.56	554.00	-2.00	-554.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,662.56	554.00	-2.00	-554.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,762.56	554.00	-2.00	-554.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,862.56	554.00	-2.00	-554.00	0.00	0.00	0.00
8,000.00	0.00	0.00	7,962.56	554.00	-2.00	-554.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,062.56	554.00	-2.00	-554.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,162.56	554.00	-2.00	-554.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,262.56	554.00	-2.00	-554.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,362.56	554.00	-2.00	-554.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,462.56	554.00	-2.00	-554.00	0.00	0.00	0.00

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Well:	No. 201H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

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)
8,600.00	0.00	0.00	8,562.56	554.00	-2.00	-554.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,662.56	554.00	-2.00	-554.00	0.00	0.00	0.00
8,703.44	0.00	0.00	8,666.00	554.00	-2.00	-554.00	0.00	0.00	0.00
[Cueva#201H]FPP									
8,800.00	0.00	0.00	8,762.56	554.00	-2.00	-554.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,862.56	554.00	-2.00	-554.00	0.00	0.00	0.00
8,923.44	0.00	0.00	8,886.00	554.00	-2.00	-554.00	0.00	0.00	0.00
8,950.00	2.66	179.87	8,912.55	553.38	-2.00	-553.39	10.00	10.00	0.00
9,000.00	7.66	179.87	8,962.34	548.89	-1.99	-548.90	10.00	10.00	0.00
9,050.00	12.66	179.87	9,011.54	540.08	-1.97	-540.08	10.00	10.00	0.00
9,100.00	17.66	179.87	9,059.78	527.01	-1.94	-527.01	10.00	10.00	0.00
9,150.00	22.66	179.87	9,106.70	509.79	-1.90	-509.79	10.00	10.00	0.00
9,200.00	27.66	179.87	9,151.95	488.54	-1.85	-488.54	10.00	10.00	0.00
9,250.00	32.66	179.87	9,195.17	463.43	-1.79	-463.43	10.00	10.00	0.00
9,300.00	37.66	179.87	9,236.03	434.65	-1.73	-434.65	10.00	10.00	0.00
9,350.00	42.66	179.87	9,274.24	402.41	-1.66	-402.42	10.00	10.00	0.00
9,400.00	47.66	179.87	9,309.48	366.97	-1.58	-366.98	10.00	10.00	0.00
9,450.00	52.66	179.87	9,341.51	328.60	-1.49	-328.60	10.00	10.00	0.00
9,500.00	57.66	179.87	9,370.07	287.57	-1.40	-287.58	10.00	10.00	0.00
9,550.00	62.66	179.87	9,394.94	244.22	-1.30	-244.22	10.00	10.00	0.00
9,600.00	67.66	179.87	9,415.94	198.86	-1.19	-198.86	10.00	10.00	0.00
9,650.00	72.66	179.87	9,432.91	151.84	-1.09	-151.85	10.00	10.00	0.00
9,700.00	77.66	179.87	9,445.71	103.53	-0.98	-103.53	10.00	10.00	0.00
9,723.44	80.00	179.87	9,450.25	80.53	-0.93	-80.54	10.00	10.00	0.00
7"									
9,750.00	81.59	179.87	9,454.50	54.32	-0.87	-54.32	6.00	6.00	0.00
9,800.00	84.59	179.87	9,460.51	4.69	-0.75	-4.69	6.00	6.00	0.00
9,850.00	87.59	179.87	9,463.92	-45.19	-0.64	45.19	6.00	6.00	0.00
9,890.05	90.00	179.87	9,464.76	-85.23	-0.54	85.23	6.00	6.00	0.00
9,900.00	90.00	179.87	9,464.76	-95.18	-0.52	95.18	0.00	0.00	0.00
10,000.00	90.00	179.87	9,464.77	-195.18	-0.29	195.18	0.00	0.00	0.00
10,100.00	90.00	179.87	9,464.77	-295.18	-0.05	295.18	0.00	0.00	0.00
10,200.00	90.00	179.87	9,464.78	-395.18	0.18	395.18	0.00	0.00	0.00
10,300.00	90.00	179.87	9,464.79	-495.18	0.42	495.18	0.00	0.00	0.00
10,400.00	90.00	179.87	9,464.79	-595.18	0.65	595.18	0.00	0.00	0.00
10,500.00	90.00	179.87	9,464.80	-695.18	0.89	695.18	0.00	0.00	0.00
10,600.00	90.00	179.87	9,464.80	-795.18	1.12	795.18	0.00	0.00	0.00
10,700.00	90.00	179.87	9,464.81	-895.18	1.35	895.18	0.00	0.00	0.00
10,800.00	90.00	179.87	9,464.81	-995.18	1.59	995.18	0.00	0.00	0.00
10,900.00	90.00	179.87	9,464.82	-1,095.18	1.82	1,095.18	0.00	0.00	0.00
11,000.00	90.00	179.87	9,464.83	-1,195.18	2.06	1,195.18	0.00	0.00	0.00
11,100.00	90.00	179.87	9,464.83	-1,295.18	2.29	1,295.18	0.00	0.00	0.00
11,200.00	90.00	179.87	9,464.84	-1,395.18	2.53	1,395.18	0.00	0.00	0.00

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Well:	No. 201H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

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)
11,300.00	90.00	179.87	9,464.84	-1,495.18	2.76	1,495.18	0.00	0.00	0.00
11,400.00	90.00	179.87	9,464.85	-1,595.18	2.99	1,595.18	0.00	0.00	0.00
11,500.00	90.00	179.87	9,464.86	-1,695.18	3.23	1,695.18	0.00	0.00	0.00
11,600.00	90.00	179.87	9,464.86	-1,795.18	3.46	1,795.18	0.00	0.00	0.00
11,700.00	90.00	179.87	9,464.87	-1,895.18	3.70	1,895.18	0.00	0.00	0.00
11,800.00	90.00	179.87	9,464.87	-1,995.18	3.93	1,995.18	0.00	0.00	0.00
11,900.00	90.00	179.87	9,464.88	-2,095.18	4.17	2,095.18	0.00	0.00	0.00
12,000.00	90.00	179.87	9,464.88	-2,195.17	4.40	2,195.18	0.00	0.00	0.00
12,100.00	90.00	179.87	9,464.89	-2,295.17	4.63	2,295.18	0.00	0.00	0.00
12,200.00	90.00	179.87	9,464.90	-2,395.17	4.87	2,395.18	0.00	0.00	0.00
12,300.00	90.00	179.87	9,464.90	-2,495.17	5.10	2,495.18	0.00	0.00	0.00
12,400.00	90.00	179.87	9,464.91	-2,595.17	5.34	2,595.18	0.00	0.00	0.00
12,500.00	90.00	179.87	9,464.91	-2,695.17	5.57	2,695.18	0.00	0.00	0.00
12,600.00	90.00	179.87	9,464.92	-2,795.17	5.81	2,795.18	0.00	0.00	0.00
12,700.00	90.00	179.87	9,464.93	-2,895.17	6.04	2,895.18	0.00	0.00	0.00
12,800.00	90.00	179.87	9,464.93	-2,995.17	6.28	2,995.18	0.00	0.00	0.00
12,900.00	90.00	179.87	9,464.94	-3,095.17	6.51	3,095.18	0.00	0.00	0.00
13,000.00	90.00	179.87	9,464.94	-3,195.17	6.74	3,195.18	0.00	0.00	0.00
13,100.00	90.00	179.87	9,464.95	-3,295.17	6.98	3,295.18	0.00	0.00	0.00
13,200.00	90.00	179.87	9,464.96	-3,395.17	7.21	3,395.18	0.00	0.00	0.00
13,300.00	90.00	179.87	9,464.96	-3,495.17	7.45	3,495.18	0.00	0.00	0.00
13,400.00	90.00	179.87	9,464.97	-3,595.17	7.68	3,595.18	0.00	0.00	0.00
13,500.00	90.00	179.87	9,464.97	-3,695.17	7.92	3,695.18	0.00	0.00	0.00
13,600.00	90.00	179.87	9,464.98	-3,795.17	8.15	3,795.18	0.00	0.00	0.00
13,700.00	90.00	179.87	9,464.98	-3,895.17	8.38	3,895.18	0.00	0.00	0.00
13,800.00	90.00	179.87	9,464.99	-3,995.17	8.62	3,995.18	0.00	0.00	0.00
13,900.00	90.00	179.87	9,465.00	-4,095.17	8.85	4,095.18	0.00	0.00	0.00
13,962.83	90.00	179.87	9,465.00	-4,158.00	9.00	4,158.01	0.00	0.00	0.00
[Cueva#201H]BHL									

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
[Cueva#201H]LPP	0.00	0.00	0.00	-4,068.00	9.00	564,786.00	575,889.00	32° 33' 8.868 N	104° 5' 13.337 W
- plan misses target center by 4068.01usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
[Cueva#201H]FPP	0.00	0.00	8,666.00	554.00	-2.00	569,408.00	575,878.00	32° 33' 54.606 N	104° 5' 13.341 W
- plan hits target center									
- Point									
[Cueva#201H]BHL	0.00	0.00	9,465.00	-4,158.00	9.00	564,696.00	575,889.00	32° 33' 7.977 N	104° 5' 13.339 W
- plan hits target center									
- Point									

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Well:	No. 201H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
400.00	400.00	20"	20	26
1,223.47	1,220.00	13 3/8"	13-3/8	17-1/2
3,121.95	3,100.00	9 5/8"	9-5/8	12-1/4
9,723.44	9,450.25	7"	7	7-1/2

Checked By: _____ Approved By: _____ Date: _____

Pro Directional
Anticollision Report

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Reference Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	No. 201H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	WellPlanner1
Reference Design:	Prelim Plan A	**Offset TVD Reference:**	Offset Datum

Reference	Prelim Plan A		
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 20,000.00 usft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 10/25/2016

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	400.00	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG
400.00	1,220.00	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG
1,220.00	3,100.00	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG
3,100.00	9,724.00	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG
9,724.00	13,962.83	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG

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
Cueva De Oro Fed (111-121-131-201)						
No. 111H - OH - Prelim Plan A	852.64	855.31	29.90	25.89	7.461	CC, ES
No. 111H - OH - Prelim Plan A	1,000.00	1,002.55	33.82	28.99	6.997	SF
No. 121H - OH - Prelim Plan A	928.14	931.57	41.82	37.39	9.436	CC, ES
No. 121H - OH - Prelim Plan A	3,100.00	3,101.97	106.20	91.11	7.039	SF
No. 131H - OH - Prelim Plan A	1,598.98	1,600.90	25.49	18.09	3.447	CC
No. 131H - OH - Prelim Plan A	1,900.00	1,900.06	26.17	17.58	3.046	ES
No. 131H - OH - Prelim Plan A	3,100.00	3,100.18	39.02	23.77	2.558	SF

Offset Design Cueva De Oro Fed (111-121-131-201) - No. 111H - OH - Prelim Plan A — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD - OWSG, 400-MWD - OWSG, 1220-MWD - OWSG, 3100-MWD - OWSG — **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	-178.09	-30.00	-1.00	30.02				
100.00	100.00	100.00	100.00	0.13	0.13	-178.09	-30.00	-1.00	30.02	29.76	0.26	117.112	
200.00	200.00	200.00	200.00	0.49	0.49	-178.09	-30.00	-1.00	30.02	29.04	0.97	30.842	
300.00	300.00	300.00	300.00	0.85	0.85	-178.09	-30.00	-1.00	30.02	28.33	1.69	17.759	
400.00	400.00	400.00	400.00	1.20	1.20	-178.09	-30.00	-1.00	30.02	27.61	2.41	12.470	
500.00	500.00	500.00	500.00	1.39	1.39	-178.09	-30.00	-1.00	30.02	27.23	2.79	10.764	
600.00	600.00	600.00	600.00	1.48	1.48	-178.09	-30.00	-1.00	30.02	27.05	2.97	10.116	
700.00	699.98	701.06	701.04	1.65	1.65	-177.90	-28.22	-1.00	30.00	26.70	3.30	9.096	
800.00	799.84	802.11	801.95	1.87	1.88	-177.97	-22.87	-0.98	29.94	26.20	3.74	8.008	
852.64	852.31	855.31	854.97	2.01	2.02	-178.02	-18.63	-0.97	29.90	25.89	4.01	7.461	CC, ES
900.00	899.45	902.61	902.09	2.14	2.14	-178.09	-14.51	-0.96	30.34	26.08	4.26	7.125	
1,000.00	998.70	1,002.55	1,001.65	2.44	2.44	-178.38	-5.80	-0.93	33.82	28.99	4.83	6.997	SF
1,100.00	1,097.73	1,102.41	1,101.13	2.77	2.76	-178.68	2.90	-0.91	39.05	33.61	5.45	7.169	
1,200.00	1,196.76	1,202.27	1,200.61	3.13	3.08	-178.91	11.60	-0.88	44.28	38.20	6.08	7.280	
1,300.00	1,295.78	1,302.14	1,300.10	3.35	3.27	-179.09	20.31	-0.86	49.52	43.10	6.42	7.712	
1,400.00	1,394.81	1,402.00	1,399.58	3.45	3.34	-179.23	29.01	-0.84	54.75	48.24	6.51	8.416	

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

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Reference Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	No. 201H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	WellPlanner1
Reference Design:	Prelim Plan A	**Offset TVD Reference:**	Offset Datum

Offset Design Cueva De Oro Fed (111-121-131-201) - No. 111H - OH - Prelim Plan A — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD - OWSG 400-MWD - OWSG 1220-MWD - OWSG 3100-MWD - OWSG — **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
1,500.00	1,493.84	1,501.86	1,499.06	3.60	3.45	-179.35	37.71	-0.81	59.98	53.31	6.67	8.993	
1,600.00	1,592.86	1,601.72	1,598.55	3.79	3.60	-179.46	46.42	-0.79	65.21	58.30	6.91	9.439	
1,700.00	1,691.89	1,701.59	1,698.03	4.02	3.78	-179.54	55.12	-0.76	70.45	63.23	7.22	9.763	
1,800.00	1,790.92	1,801.45	1,797.51	4.27	3.99	-179.62	63.83	-0.74	75.68	68.10	7.58	9.983	
1,900.00	1,889.94	1,901.31	1,896.99	4.55	4.22	-179.68	72.53	-0.71	80.91	72.92	8.00	10.117	
2,000.00	1,988.97	2,001.18	1,996.48	4.85	4.48	-179.74	81.23	-0.69	86.15	77.69	8.46	10.185	
2,100.00	2,088.00	2,101.04	2,095.96	5.16	4.75	-179.79	89.94	-0.66	91.38	82.43	8.95	10.205	
2,200.00	2,187.02	2,200.90	2,195.44	5.49	5.03	-179.83	98.64	-0.64	96.61	87.13	9.48	10.189	
2,300.00	2,286.05	2,300.76	2,294.93	5.83	5.33	-179.87	107.34	-0.62	101.85	91.81	10.04	10.148	
2,400.00	2,385.08	2,400.63	2,394.41	6.18	5.64	-179.91	116.05	-0.59	107.08	96.47	10.61	10.091	
2,500.00	2,484.10	2,500.49	2,493.89	6.54	5.95	-179.94	124.75	-0.57	112.32	101.11	11.21	10.022	
2,600.00	2,583.13	2,600.35	2,593.38	6.90	6.27	-179.97	133.45	-0.54	117.55	105.73	11.82	9.948	
2,700.00	2,682.16	2,698.30	2,690.98	7.27	6.59	-180.00	141.64	-0.52	123.15	110.71	12.43	9.905	
2,800.00	2,781.18	2,793.70	2,786.23	7.64	6.89	179.99	146.89	-0.51	131.60	118.56	13.04	10.092	
2,900.00	2,880.21	2,888.47	2,880.97	8.02	7.18	179.98	148.96	-0.50	143.35	129.71	13.64	10.511	
3,000.00	2,979.24	2,986.74	2,979.24	8.40	7.47	179.99	149.00	-0.50	157.23	142.96	14.27	11.018	
3,100.00	3,078.26	3,085.76	3,078.26	8.79	7.76	179.99	149.00	-0.50	171.14	156.23	14.91	11.475	
3,200.00	3,177.29	3,184.79	3,177.29	9.04	7.94	179.99	149.00	-0.50	185.06	169.79	15.27	12.122	
3,300.00	3,276.32	3,283.82	3,276.32	9.16	7.97	179.99	149.00	-0.50	198.98	183.65	15.32	12.984	
3,400.00	3,375.35	3,382.84	3,375.35	9.30	8.00	179.99	149.00	-0.50	212.89	197.50	15.39	13.832	
3,500.00	3,474.37	3,481.87	3,474.37	9.46	8.05	179.99	149.00	-0.50	226.81	211.32	15.49	14.640	
3,600.00	3,573.40	3,580.90	3,573.40	9.64	8.11	179.99	149.00	-0.50	240.73	225.10	15.63	15.405	
3,700.00	3,672.43	3,679.92	3,672.43	9.82	8.18	179.99	149.00	-0.50	254.65	238.85	15.79	16.125	
3,800.00	3,771.45	3,778.95	3,771.45	10.03	8.27	179.99	149.00	-0.50	268.56	252.57	15.99	16.797	
3,900.00	3,870.48	3,877.98	3,870.48	10.24	8.38	179.99	149.00	-0.50	282.48	266.27	16.22	17.420	
4,000.00	3,969.51	3,977.00	3,969.51	10.47	8.49	179.99	149.00	-0.50	296.40	279.93	16.47	17.995	
4,100.00	4,068.53	4,076.03	4,068.53	10.71	8.62	179.99	149.00	-0.50	310.32	293.56	16.75	18.522	
4,200.00	4,167.56	4,175.06	4,167.56	10.96	8.77	179.99	149.00	-0.50	324.23	307.17	17.06	19.002	
4,300.00	4,266.59	4,274.08	4,266.59	11.21	8.92	179.99	149.00	-0.50	338.15	320.75	17.40	19.438	
4,400.00	4,365.61	4,373.11	4,365.61	11.48	9.09	179.99	149.00	-0.50	352.07	334.31	17.75	19.831	
4,500.00	4,464.64	4,472.14	4,464.64	11.76	9.26	179.99	149.00	-0.50	365.98	347.85	18.13	20.184	
4,600.00	4,563.68	4,571.17	4,563.68	12.04	9.45	179.99	149.00	-0.50	379.83	361.30	18.53	20.497	
4,700.00	4,663.01	4,670.51	4,663.01	12.31	9.65	179.99	149.00	-0.50	391.33	372.38	18.95	20.654	
4,800.00	4,762.68	4,770.18	4,762.68	12.55	9.85	179.99	149.00	-0.50	399.35	379.97	19.38	20.609	
4,900.00	4,862.57	4,870.07	4,862.57	12.77	10.07	179.99	149.00	-0.50	403.89	384.06	19.82	20.377	
5,000.00	4,962.56	4,970.06	4,962.56	12.96	10.29	179.79	149.00	-0.50	405.00	384.73	20.28	19.975	
5,100.00	5,062.56	5,070.06	5,062.56	13.14	10.52	179.79	149.00	-0.50	405.00	384.26	20.74	19.523	
5,200.00	5,162.56	5,170.06	5,162.56	13.33	10.76	179.79	149.00	-0.50	405.00	383.78	21.23	19.080	
5,300.00	5,262.56	5,270.06	5,262.56	13.53	11.00	179.79	149.00	-0.50	405.00	383.28	21.72	18.644	
5,400.00	5,362.56	5,370.06	5,362.56	13.73	11.26	179.79	149.00	-0.50	405.00	382.77	22.23	18.219	
5,500.00	5,462.56	5,470.06	5,462.56	13.94	11.51	179.79	149.00	-0.50	405.00	382.25	22.75	17.803	
5,600.00	5,562.56	5,570.06	5,562.56	14.16	11.77	179.79	149.00	-0.50	405.00	381.72	23.28	17.398	
5,700.00	5,662.56	5,670.06	5,662.56	14.38	12.04	179.79	149.00	-0.50	405.00	381.19	23.82	17.004	
5,800.00	5,762.56	5,770.06	5,762.56	14.61	12.31	179.79	149.00	-0.50	405.00	380.64	24.37	16.622	
5,900.00	5,862.56	5,870.06	5,862.56	14.84	12.59	179.79	149.00	-0.50	405.00	380.08	24.92	16.250	
6,000.00	5,962.56	5,970.06	5,962.56	15.08	12.87	179.79	149.00	-0.50	405.00	379.52	25.49	15.890	
6,100.00	6,062.56	6,070.06	6,062.56	15.32	13.15	179.79	149.00	-0.50	405.00	378.94	26.06	15.541	
6,200.00	6,162.56	6,170.06	6,162.56	15.57	13.44	179.79	149.00	-0.50	405.00	378.36	26.64	15.203	
6,300.00	6,262.56	6,270.06	6,262.56	15.82	13.73	179.79	149.00	-0.50	405.00	377.78	27.23	14.876	
6,400.00	6,362.56	6,370.06	6,362.56	16.07	14.02	179.79	149.00	-0.50	405.00	377.19	27.82	14.559	
6,500.00	6,462.56	6,470.06	6,462.56	16.33	14.32	179.79	149.00	-0.50	405.00	376.59	28.42	14.253	
6,600.00	6,562.56	6,570.06	6,562.56	16.59	14.62	179.79	149.00	-0.50	405.00	375.98	29.02	13.957	

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

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Reference Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	No. 201H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	WellPlanner1
Reference Design:	Prelim Plan A	**Offset TVD Reference:**	Offset Datum

Offset Design Cueva De Oro Fed (111-121-131-201) - No. 111H - OH - Prelim Plan A — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD - OWSG, 400-MWD - OWSG, 1220-MWD - OWSG, 3100-MWD - OWSG — **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
6,700.00	6,662.56	6,632.40	6,624.83	16.86	14.78	179.79	146.56	-0.49	409.19	379.83	29.35	13.940	
6,800.00	6,762.56	6,689.76	6,681.58	17.13	14.92	179.79	138.42	-0.48	423.40	393.88	29.52	14.345	
6,900.00	6,862.56	6,750.00	6,740.00	17.40	15.04	179.79	123.82	-0.44	447.31	417.69	29.61	15.106	
7,000.00	6,962.56	6,800.00	6,787.10	17.68	15.14	179.80	107.09	-0.41	480.12	450.62	29.50	16.274	
7,100.00	7,062.56	6,850.00	6,832.56	17.96	15.23	179.80	86.32	-0.36	521.17	491.81	29.37	17.747	
7,200.00	7,162.56	6,900.00	6,876.05	18.24	15.32	179.80	61.67	-0.31	569.63	540.38	29.25	19.474	
7,300.00	7,262.56	6,931.77	6,902.49	18.52	15.38	179.81	44.08	-0.27	624.24	595.36	28.88	21.618	
7,400.00	7,362.56	6,969.01	6,932.20	18.81	15.47	179.81	21.62	-0.22	684.58	655.92	28.66	23.885	
7,500.00	7,462.56	7,000.00	6,955.76	19.10	15.54	179.81	1.50	-0.17	749.74	721.32	28.42	26.378	
7,600.00	7,562.56	7,033.17	6,979.73	19.39	15.61	179.81	-21.42	-0.12	819.03	790.73	28.30	28.945	
7,700.00	7,662.56	7,050.00	6,991.38	19.68	15.64	179.81	-33.57	-0.10	892.04	864.02	28.02	31.841	
7,800.00	7,762.56	7,085.49	7,014.74	19.98	15.71	179.82	-60.28	-0.04	967.77	939.71	28.06	34.492	
7,900.00	7,862.56	7,100.00	7,023.81	20.28	15.74	179.82	-71.61	-0.01	1,046.37	1,018.48	27.90	37.509	
8,000.00	7,962.56	7,128.32	7,040.66	20.58	15.83	179.82	-94.36	0.04	1,127.06	1,099.10	27.96	40.311	
8,100.00	8,062.56	7,150.00	7,052.80	20.88	15.89	179.82	-112.32	0.08	1,209.80	1,181.81	27.99	43.227	
8,200.00	8,162.56	7,150.00	7,052.80	21.18	15.89	179.82	-112.32	0.08	1,294.44	1,266.59	27.85	46.480	
8,300.00	8,262.56	7,179.01	7,067.95	21.49	15.99	179.82	-137.06	0.13	1,380.09	1,352.06	28.03	49.238	
8,400.00	8,362.56	7,200.00	7,078.13	21.79	16.06	179.82	-155.41	0.17	1,467.33	1,439.16	28.17	52.090	
8,500.00	8,462.56	7,200.00	7,078.13	22.10	16.06	179.82	-155.41	0.17	1,555.61	1,527.45	28.16	55.243	
8,600.00	8,562.56	7,217.85	7,086.25	22.41	16.13	179.83	-171.31	0.21	1,644.87	1,616.54	28.32	58.074	
8,700.00	8,662.56	7,228.80	7,090.98	22.72	16.18	179.83	-181.18	0.23	1,735.04	1,706.58	28.46	60.967	
8,800.00	8,762.56	7,250.00	7,099.61	23.03	16.26	179.83	-200.55	0.27	1,826.14	1,797.45	28.69	63.654	
8,900.00	8,862.56	7,250.00	7,099.61	23.35	16.26	179.83	-200.55	0.27	1,917.64	1,888.66	28.79	66.610	
9,000.00	8,962.34	7,250.00	7,099.61	23.62	16.26	-0.03	-200.55	0.27	2,007.84	1,978.96	28.88	69.523	
9,100.00	9,059.78	7,270.30	7,107.19	23.79	16.36	-0.02	-219.38	0.31	2,090.39	2,061.35	29.04	71.990	
9,200.00	9,151.95	7,300.00	7,117.07	23.89	16.49	-0.02	-247.38	0.37	2,163.86	2,134.67	29.20	74.111	
9,300.00	9,236.03	7,300.00	7,117.07	23.93	16.49	-0.02	-247.38	0.37	2,226.02	2,196.87	29.15	76.362	
9,400.00	9,309.48	7,300.00	7,117.07	23.93	16.49	-0.02	-247.38	0.37	2,276.86	2,247.78	29.09	78.277	
9,500.00	9,370.07	7,350.00	7,130.39	23.93	16.75	-0.01	-295.56	0.48	2,314.35	2,285.10	29.25	79.124	
9,600.00	9,415.94	7,350.00	7,130.39	23.95	16.75	-0.01	-295.56	0.48	2,338.42	2,309.24	29.18	80.145	
9,700.00	9,445.71	7,375.49	7,135.54	24.01	16.89	-0.01	-320.52	0.54	2,348.77	2,319.53	29.24	80.337	
9,800.00	9,460.51	7,400.00	7,139.45	28.09	17.03	-0.01	-344.71	0.59	2,347.21	2,318.06	29.16	80.507	
9,900.00	9,464.76	7,400.00	7,139.45	28.14	17.03	-0.01	-344.71	0.59	2,338.66	2,309.86	28.80	81.191	
10,000.00	9,464.77	7,450.00	7,144.20	28.19	17.34	-0.01	-394.47	0.70	2,329.11	2,300.29	28.82	80.824	
10,100.00	9,464.77	7,450.00	7,144.20	28.24	17.34	-0.01	-394.47	0.70	2,322.70	2,294.06	28.64	81.092	
10,200.00	9,464.78	7,479.49	7,144.96	28.29	17.54	-0.01	-423.95	0.76	2,320.00	2,291.29	28.71	80.815	
10,230.89	9,464.78	7,481.64	7,144.96	28.31	17.55	-0.01	-426.10	0.77	2,319.82	2,291.10	28.72	80.775	
10,300.00	9,464.79	7,550.75	7,144.96	28.34	18.06	-0.01	-495.20	0.92	2,319.83	2,290.80	29.03	79.915	
10,400.00	9,464.79	7,650.75	7,144.96	28.39	18.89	-0.01	-595.20	1.14	2,319.83	2,290.29	29.54	78.534	
10,500.00	9,464.80	7,750.75	7,144.96	28.45	19.81	-0.01	-695.20	1.36	2,319.84	2,289.71	30.12	77.008	
10,600.00	9,464.80	7,850.75	7,144.96	28.50	20.84	-0.01	-795.20	1.58	2,319.84	2,289.06	30.78	75.368	
10,700.00	9,464.81	7,950.75	7,144.96	28.56	21.94	-0.01	-895.20	1.80	2,319.85	2,288.34	31.50	73.644	
10,800.00	9,464.81	8,050.75	7,144.96	29.40	23.11	-0.01	-995.20	2.02	2,319.85	2,287.57	32.28	71.862	
10,900.00	9,464.82	8,150.75	7,144.97	30.39	24.34	-0.01	-1,095.20	2.24	2,319.85	2,286.74	33.12	70.044	
11,000.00	9,464.83	8,250.75	7,144.97	31.44	25.62	-0.01	-1,195.20	2.46	2,319.86	2,285.85	34.01	68.213	
11,100.00	9,464.83	8,350.75	7,144.97	32.55	26.94	-0.01	-1,295.20	2.69	2,319.86	2,284.92	34.95	66.384	
11,200.00	9,464.84	8,450.75	7,144.97	33.70	28.30	-0.01	-1,395.20	2.91	2,319.87	2,283.94	35.93	64.572	
11,300.00	9,464.84	8,550.75	7,144.97	34.89	29.69	-0.01	-1,495.20	3.13	2,319.87	2,282.93	36.95	62.788	
11,400.00	9,464.85	8,650.75	7,144.97	36.12	31.11	-0.01	-1,595.20	3.35	2,319.88	2,281.87	38.01	61.040	
11,500.00	9,464.86	8,750.75	7,144.97	37.39	32.56	-0.01	-1,695.20	3.57	2,319.88	2,280.79	39.10	59.335	
11,600.00	9,464.86	8,850.75	7,144.97	38.69	34.02	-0.01	-1,795.20	3.79	2,319.89	2,279.67	40.22	57.679	
11,700.00	9,464.87	8,950.75	7,144.97	40.01	35.51	-0.01	-1,895.20	4.01	2,319.89	2,278.52	41.37	56.074	

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

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Reference Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	No. 201H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	WellPlanner1
Reference Design:	Prelim Plan A	**Offset TVD Reference:**	Offset Datum

Offset Design Cueva De Oro Fed (111-121-131-201) - No. 111H - OH - Prelim Plan A — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD - OWSG, 400-MWD - OWSG, 1220-MWD - OWSG, 3100-MWD - OWSG — **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
11,800.00	9,464.87	9,050.75	7,144.98	41.36	37.01	-0.01	-1,995.20	4.23	2,319.90	2,277.35	42.55	54.522	
11,900.00	9,464.88	9,150.75	7,144.98	42.73	38.52	-0.01	-2,095.20	4.45	2,319.90	2,276.15	43.75	53.024	
12,000.00	9,464.88	9,250.75	7,144.98	44.13	40.05	-0.01	-2,195.20	4.67	2,319.91	2,274.93	44.98	51.581	
12,100.00	9,464.89	9,350.75	7,144.98	45.54	41.59	-0.01	-2,295.20	4.89	2,319.91	2,273.69	46.22	50.192	
12,200.00	9,464.90	9,450.75	7,144.98	46.97	43.13	-0.01	-2,395.20	5.11	2,319.92	2,272.43	47.48	48.856	
12,300.00	9,464.90	9,550.75	7,144.98	48.42	44.69	-0.01	-2,495.20	5.33	2,319.92	2,271.16	48.77	47.573	
12,400.00	9,464.91	9,650.75	7,144.98	49.88	46.26	-0.01	-2,595.20	5.55	2,319.93	2,269.86	50.06	46.341	
12,500.00	9,464.91	9,750.75	7,144.98	51.35	47.83	0.00	-2,695.20	5.77	2,319.93	2,268.56	51.37	45.157	
12,600.00	9,464.92	9,850.75	7,144.98	52.83	49.41	0.00	-2,795.20	5.99	2,319.94	2,267.24	52.70	44.021	
12,700.00	9,464.93	9,950.75	7,144.99	54.33	50.99	0.00	-2,895.20	6.21	2,319.94	2,265.90	54.04	42.931	
12,800.00	9,464.93	10,050.75	7,144.99	55.83	52.58	0.00	-2,995.20	6.44	2,319.94	2,264.56	55.39	41.884	
12,900.00	9,464.94	10,150.75	7,144.99	57.35	54.18	0.00	-3,095.20	6.66	2,319.95	2,263.20	56.75	40.879	
13,000.00	9,464.94	10,250.75	7,144.99	58.87	55.78	0.00	-3,195.20	6.88	2,319.95	2,261.83	58.12	39.914	
13,100.00	9,464.95	10,350.75	7,144.99	60.40	57.38	0.00	-3,295.20	7.10	2,319.96	2,260.45	59.50	38.988	
13,200.00	9,464.96	10,450.75	7,144.99	61.94	58.99	0.00	-3,395.20	7.32	2,319.96	2,259.07	60.90	38.098	
13,300.00	9,464.96	10,550.75	7,144.99	63.49	60.60	0.00	-3,495.20	7.54	2,319.97	2,257.67	62.29	37.242	
13,400.00	9,464.97	10,650.75	7,144.99	65.04	62.22	0.00	-3,595.20	7.76	2,319.97	2,256.27	63.70	36.420	
13,500.00	9,464.97	10,750.75	7,144.99	66.60	63.84	0.00	-3,695.20	7.98	2,319.98	2,254.86	65.11	35.629	
13,600.00	9,464.98	10,850.75	7,145.00	68.16	65.46	0.00	-3,795.20	8.20	2,319.98	2,253.45	66.54	34.868	
13,700.00	9,464.98	10,950.75	7,145.00	69.73	67.08	0.00	-3,895.20	8.42	2,319.99	2,252.02	67.96	34.136	
13,800.00	9,464.99	11,050.75	7,145.00	71.30	68.71	0.00	-3,995.20	8.64	2,319.99	2,250.60	69.40	33.431	
13,900.00	9,465.00	11,150.75	7,145.00	72.88	70.34	0.00	-4,095.20	8.86	2,320.00	2,249.16	70.84	32.752	
13,962.83	9,465.00	11,213.58	7,145.00	73.87	71.36	0.00	-4,158.03	9.00	2,320.00	2,248.26	71.74	32.338	

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

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Reference Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	No. 201H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	WellPlanner1
Reference Design:	Prelim Plan A	**Offset TVD Reference:**	Offset Datum

Offset Design Cueva De Oro Fed (111-121-131-201) - No. 121H - OH - Prelim Plan A — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD - OWSG 400-MWD - OWSG 1220-MWD - OWSG 3100-MWD - OWSG — **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	-134.06	-30.00	-31.00	43.14				
100.00	100.00	100.00	100.00	0.13	0.13	-134.06	-30.00	-31.00	43.14	42.88	0.26	168.311	
200.00	200.00	200.00	200.00	0.49	0.49	-134.06	-30.00	-31.00	43.14	42.17	0.97	44.325	
300.00	300.00	300.00	300.00	0.85	0.85	-134.06	-30.00	-31.00	43.14	41.45	1.69	25.523	
400.00	400.00	400.00	400.00	1.20	1.20	-134.06	-30.00	-31.00	43.14	40.73	2.41	17.921	
500.00	500.00	500.00	500.00	1.39	1.39	-134.06	-30.00	-31.00	43.14	40.35	2.79	15.469	
600.00	600.00	600.00	600.00	1.48	1.48	-134.06	-30.00	-31.00	43.14	40.17	2.97	14.538	
700.00	699.98	701.16	701.14	1.65	1.65	-134.01	-28.22	-30.82	43.00	39.70	3.30	13.037	
800.00	799.84	802.32	802.15	1.87	1.88	-134.50	-22.89	-30.30	42.59	38.85	3.74	11.387	
900.00	899.45	903.47	902.90	2.14	2.15	-135.32	-14.02	-29.42	41.92	37.65	4.27	9.827	
928.14	927.42	931.57	930.85	2.22	2.23	-135.76	-11.10	-29.13	41.82	37.39	4.43	9.436	CC, ES
1,000.00	998.70	1,003.40	1,002.29	2.44	2.45	-138.04	-3.63	-28.40	42.50	37.65	4.85	8.757	
1,100.00	1,097.73	1,103.34	1,101.67	2.77	2.77	-142.11	6.77	-27.37	44.54	39.06	5.48	8.127	
1,200.00	1,196.76	1,203.27	1,201.06	3.13	3.10	-145.80	17.16	-26.35	46.78	40.65	6.13	7.636	
1,300.00	1,295.78	1,303.20	1,300.44	3.35	3.30	-149.15	27.56	-25.32	49.20	42.72	6.47	7.601	
1,400.00	1,394.81	1,403.13	1,399.83	3.45	3.38	-152.17	37.95	-24.29	51.76	45.20	6.57	7.883	
1,500.00	1,493.84	1,503.06	1,499.21	3.60	3.50	-154.90	48.35	-23.27	54.46	47.72	6.74	8.081	
1,600.00	1,592.86	1,602.99	1,598.59	3.79	3.67	-157.37	58.75	-22.24	57.28	50.29	6.98	8.202	
1,700.00	1,691.89	1,702.92	1,697.98	4.02	3.86	-159.60	69.14	-21.22	60.18	52.89	7.29	8.255	
1,800.00	1,790.92	1,802.86	1,797.36	4.27	4.08	-161.63	79.54	-20.19	63.18	55.52	7.66	8.253	
1,900.00	1,889.94	1,902.79	1,896.75	4.55	4.33	-163.47	89.93	-19.16	66.24	58.17	8.07	8.209	
2,000.00	1,988.97	2,002.72	1,996.13	4.85	4.60	-165.14	100.33	-18.14	69.36	60.84	8.53	8.136	
2,100.00	2,088.00	2,102.65	2,095.51	5.16	4.88	-166.67	110.72	-17.11	72.54	63.52	9.02	8.043	
2,200.00	2,187.02	2,202.58	2,194.90	5.49	5.18	-168.07	121.12	-16.09	75.77	66.22	9.54	7.940	
2,300.00	2,286.05	2,302.51	2,294.28	5.83	5.49	-169.36	131.51	-15.06	79.03	68.94	10.09	7.830	
2,400.00	2,385.08	2,402.44	2,393.67	6.18	5.81	-170.54	141.91	-14.04	82.34	71.67	10.67	7.719	
2,500.00	2,484.10	2,502.38	2,493.05	6.54	6.14	-171.63	152.30	-13.01	85.68	74.42	11.26	7.609	
2,600.00	2,583.13	2,602.31	2,592.43	6.90	6.47	-172.64	162.70	-11.98	89.04	77.17	11.87	7.502	
2,700.00	2,682.16	2,702.24	2,691.82	7.27	6.81	-173.58	173.09	-10.96	92.43	79.94	12.49	7.399	
2,800.00	2,781.18	2,802.17	2,791.20	7.64	7.16	-174.45	183.49	-9.93	95.85	82.72	13.13	7.301	
2,900.00	2,880.21	2,902.10	2,890.59	8.02	7.51	-175.26	193.88	-8.91	99.28	85.51	13.77	7.208	
3,000.00	2,979.24	3,002.03	2,989.97	8.40	7.86	-176.01	204.28	-7.88	102.73	88.31	14.43	7.120	
3,100.00	3,078.26	3,101.97	3,089.35	8.79	8.22	-176.72	214.67	-6.85	106.20	91.11	15.09	7.039	SF
3,200.00	3,177.29	3,201.90	3,188.74	9.04	8.43	-177.38	225.07	-5.83	109.69	94.26	15.42	7.112	
3,300.00	3,276.32	3,301.83	3,288.12	9.16	8.51	-178.00	235.46	-4.80	113.19	97.73	15.46	7.322	
3,400.00	3,375.35	3,401.76	3,387.51	9.30	8.61	-178.58	245.86	-3.78	116.70	101.17	15.53	7.514	
3,500.00	3,474.37	3,501.69	3,486.89	9.46	8.73	-179.13	256.25	-2.75	120.22	104.58	15.64	7.688	
3,600.00	3,573.40	3,598.33	3,583.10	9.64	8.85	-179.59	265.30	-1.86	124.80	109.03	15.77	7.913	
3,700.00	3,672.43	3,693.76	3,678.34	9.82	8.96	-179.87	271.14	-1.28	132.64	116.72	15.92	8.329	
3,800.00	3,771.45	3,788.59	3,773.13	10.03	9.06	-179.99	273.80	-1.02	143.77	127.67	16.09	8.933	
3,900.00	3,870.48	3,885.94	3,870.48	10.24	9.16	-180.00	274.00	-1.00	157.48	141.17	16.31	9.657	
4,000.00	3,969.51	3,984.97	3,969.51	10.47	9.26	-180.00	274.00	-1.00	171.40	154.83	16.56	10.349	
4,100.00	4,068.53	4,083.99	4,068.53	10.71	9.38	-180.00	274.00	-1.00	185.31	168.47	16.84	11.002	
4,200.00	4,167.56	4,183.02	4,167.56	10.96	9.52	-180.00	274.00	-1.00	199.23	182.08	17.15	11.616	
4,300.00	4,266.59	4,282.05	4,266.59	11.21	9.66	-180.00	274.00	-1.00	213.15	195.66	17.48	12.191	
4,400.00	4,365.61	4,381.07	4,365.61	11.48	9.81	-180.00	274.00	-1.00	227.07	209.23	17.84	12.728	
4,500.00	4,464.64	4,480.10	4,464.64	11.76	9.98	-180.00	274.00	-1.00	240.98	222.77	18.22	13.228	
4,600.00	4,563.68	4,579.14	4,563.68	12.04	10.15	-180.00	274.00	-1.00	254.83	236.22	18.62	13.689	
4,700.00	4,663.01	4,678.47	4,663.01	12.31	10.33	-180.00	274.00	-1.00	266.33	247.30	19.03	13.996	
4,800.00	4,762.68	4,778.14	4,762.68	12.55	10.53	-180.00	274.00	-1.00	274.35	254.89	19.46	14.099	
4,900.00	4,862.57	4,878.03	4,862.57	12.77	10.73	-180.00	274.00	-1.00	278.88	258.98	19.90	14.014	
5,000.00	4,962.56	4,978.02	4,962.56	12.96	10.94	179.80	274.00	-1.00	280.00	259.65	20.35	13.757	

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

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Reference Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	No. 201H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	WellPlanner1
Reference Design:	Prelim Plan A	**Offset TVD Reference:**	Offset Datum

Offset Design Cueva De Oro Fed (111-121-131-201) - No 121H - OH - Prelim Plan A — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD - OWSG, 400-MWD - OWSG, 1220-MWD - OWSG, 3100-MWD - OWSG — **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
5,100.00	5,062.56	5,078.02	5,062.56	13.14	11.15	179.80	274.00	-1.00	280.00	259.18	20.82	13.448	
5,200.00	5,162.56	5,178.02	5,162.56	13.33	11.38	179.80	274.00	-1.00	280.00	258.70	21.30	13.144	
5,300.00	5,262.56	5,278.02	5,262.56	13.53	11.61	179.80	274.00	-1.00	280.00	258.21	21.80	12.846	
5,400.00	5,362.56	5,378.02	5,362.56	13.73	11.85	179.80	274.00	-1.00	280.00	257.70	22.30	12.555	
5,500.00	5,462.56	5,478.02	5,462.56	13.94	12.09	179.80	274.00	-1.00	280.00	257.18	22.82	12.270	
5,600.00	5,562.56	5,578.02	5,562.56	14.16	12.34	179.80	274.00	-1.00	280.00	256.65	23.35	11.993	
5,700.00	5,662.56	5,678.02	5,662.56	14.38	12.60	179.80	274.00	-1.00	280.00	256.12	23.89	11.723	
5,800.00	5,762.56	5,778.02	5,762.56	14.61	12.86	179.80	274.00	-1.00	280.00	255.57	24.43	11.460	
5,900.00	5,862.56	5,878.02	5,862.56	14.84	13.12	179.80	274.00	-1.00	280.00	255.01	24.99	11.205	
6,000.00	5,962.56	5,978.02	5,962.56	15.08	13.39	179.80	274.00	-1.00	280.00	254.45	25.55	10.958	
6,100.00	6,062.56	6,078.02	6,062.56	15.32	13.66	179.80	274.00	-1.00	280.00	253.88	26.12	10.719	
6,200.00	6,162.56	6,178.02	6,162.56	15.57	13.94	179.80	274.00	-1.00	280.00	253.30	26.70	10.486	
6,300.00	6,262.56	6,278.02	6,262.56	15.82	14.22	179.80	274.00	-1.00	280.00	252.72	27.29	10.262	
6,400.00	6,362.56	6,378.02	6,362.56	16.07	14.50	179.80	274.00	-1.00	280.00	252.12	27.88	10.044	
6,500.00	6,462.56	6,478.02	6,462.56	16.33	14.79	179.80	274.00	-1.00	280.00	251.53	28.47	9.834	
6,600.00	6,562.56	6,578.02	6,562.56	16.59	15.08	179.80	274.00	-1.00	280.00	250.93	29.08	9.630	
6,700.00	6,662.56	6,678.02	6,662.56	16.86	15.37	179.80	274.00	-1.00	280.00	250.32	29.68	9.433	
6,800.00	6,762.56	6,778.02	6,762.56	17.13	15.67	179.80	274.00	-1.00	280.00	249.71	30.30	9.242	
6,900.00	6,862.56	6,878.02	6,862.56	17.40	15.97	179.80	274.00	-1.00	280.00	249.09	30.91	9.058	
7,000.00	6,962.56	6,978.02	6,962.56	17.68	16.27	179.80	274.00	-1.00	280.00	248.47	31.53	8.880	
7,100.00	7,062.56	7,078.02	7,062.56	17.96	16.57	179.80	274.00	-1.00	280.00	247.84	32.16	8.707	
7,200.00	7,162.56	7,178.02	7,162.56	18.24	16.87	179.80	274.00	-1.00	280.00	247.22	32.79	8.540	
7,300.00	7,262.56	7,278.02	7,262.56	18.52	17.18	179.80	274.00	-1.00	280.00	246.58	33.42	8.379	
7,305.42	7,267.99	7,283.45	7,267.99	18.54	17.20	179.80	274.00	-1.00	280.00	246.55	33.45	8.370	
7,400.00	7,362.56	7,358.07	7,342.58	18.81	17.41	179.80	272.56	-1.00	282.15	248.27	33.88	8.327	
7,500.00	7,462.56	7,424.07	7,407.99	19.10	17.56	179.80	264.11	-0.98	294.98	260.94	34.04	8.666	
7,600.00	7,562.56	7,487.33	7,469.39	19.39	17.68	179.80	249.00	-0.94	318.91	284.92	33.99	9.383	
7,700.00	7,662.56	7,550.00	7,528.21	19.68	17.78	179.81	227.46	-0.89	353.11	319.25	33.86	10.429	
7,800.00	7,762.56	7,600.00	7,573.23	19.98	17.85	179.81	205.74	-0.85	396.40	362.97	33.44	11.855	
7,900.00	7,862.56	7,650.00	7,616.18	20.28	17.91	179.81	180.18	-0.79	447.71	414.62	33.09	13.529	
8,000.00	7,962.56	7,700.00	7,656.75	20.58	17.96	179.82	150.97	-0.72	505.92	473.07	32.85	15.399	
8,100.00	8,062.56	7,734.69	7,683.32	20.88	18.00	179.82	128.68	-0.67	569.84	537.44	32.40	17.587	
8,200.00	8,162.56	7,770.00	7,708.94	21.18	18.04	179.82	104.38	-0.62	638.70	606.59	32.10	19.895	
8,300.00	8,262.56	7,800.00	7,729.49	21.49	18.08	179.83	82.54	-0.57	711.65	679.82	31.83	22.358	
8,400.00	8,362.56	7,829.38	7,748.48	21.79	18.12	179.83	60.12	-0.52	788.05	756.39	31.66	24.890	
8,500.00	8,462.56	7,850.00	7,761.11	22.10	18.15	179.83	43.83	-0.48	867.36	835.91	31.45	27.575	
8,600.00	8,562.56	7,876.62	7,776.53	22.41	18.20	179.83	22.13	-0.43	949.07	917.64	31.43	30.200	
8,700.00	8,662.56	7,900.00	7,789.24	22.72	18.24	179.83	2.51	-0.39	1,032.88	1,001.46	31.42	32.875	
8,800.00	8,762.56	7,900.00	7,789.24	23.03	18.24	179.83	2.51	-0.39	1,118.71	1,087.50	31.21	35.850	
8,900.00	8,862.56	7,930.86	7,804.76	23.35	18.30	179.83	-24.16	-0.33	1,205.50	1,174.10	31.40	38.394	
9,000.00	8,962.34	7,950.00	7,813.66	23.62	18.34	-0.03	-41.10	-0.29	1,291.34	1,259.89	31.45	41.061	
9,100.00	9,059.78	7,950.00	7,813.66	23.79	18.34	-0.02	-41.10	-0.29	1,369.52	1,338.27	31.25	43.820	
9,200.00	9,151.95	8,000.00	7,834.18	23.89	18.47	-0.02	-86.68	-0.19	1,437.84	1,406.40	31.43	45.741	
9,300.00	9,236.03	8,000.00	7,834.18	23.93	18.47	-0.02	-86.68	-0.19	1,495.65	1,464.48	31.17	47.985	
9,400.00	9,309.48	8,050.00	7,850.66	23.93	18.62	-0.01	-133.87	-0.08	1,542.41	1,511.15	31.25	49.357	
9,500.00	9,370.07	8,050.00	7,850.66	23.93	18.62	-0.01	-133.87	-0.08	1,576.77	1,545.78	30.99	50.876	
9,600.00	9,415.94	8,100.00	7,862.96	23.95	18.79	-0.01	-182.32	0.03	1,599.08	1,568.02	31.06	51.489	
9,700.00	9,445.71	8,100.00	7,862.96	24.01	18.79	-0.01	-182.32	0.03	1,608.36	1,577.46	30.89	52.062	
9,800.00	9,460.51	8,150.00	7,870.99	28.09	18.99	-0.01	-231.65	0.14	1,607.00	1,576.15	30.85	52.096	
9,900.00	9,464.76	8,150.00	7,870.99	28.14	18.99	-0.01	-231.65	0.14	1,599.60	1,569.26	30.34	52.715	
10,000.00	9,464.77	8,200.00	7,874.69	28.19	19.21	-0.01	-281.50	0.25	1,592.42	1,562.11	30.30	52.552	
10,095.50	9,464.77	8,225.71	7,874.96	28.24	19.34	-0.01	-290.70	0.27	1,589.82	1,559.62	30.20	52.651	

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

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Reference Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	No. 201H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	WellPlanner1
Reference Design:	Prelim Plan A	**Offset TVD Reference:**	Offset Datum

Offset Design Cueva De Oro Fed (111-121-131-201) - No. 121H - OH - Prelim Plan A — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD - OWSG, 400-MWD - OWSG, 1220-MWD - OWSG, 3100-MWD - OWSG — **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
10,100.00	9,464.77	8,221.21	7,874.96	28.24	19.31	-0.01	-295.20	0.28	1,589.82	1,559.63	30.19	52.660	
10,200.00	9,464.78	8,313.70	7,874.96	28.29	19.82	-0.01	-395.20	0.51	1,589.82	1,559.26	30.56	52.031	
10,300.00	9,464.79	8,413.70	7,874.96	28.34	20.48	-0.01	-495.20	0.74	1,589.83	1,558.82	31.01	51.268	
10,400.00	9,464.79	8,513.70	7,874.96	28.39	21.25	-0.01	-595.20	0.96	1,589.83	1,558.29	31.54	50.412	
10,500.00	9,464.80	8,613.70	7,874.96	28.45	22.12	-0.01	-695.20	1.19	1,589.83	1,557.70	32.13	49.480	
10,600.00	9,464.80	8,713.70	7,874.96	28.50	23.07	-0.01	-795.20	1.41	1,589.84	1,557.05	32.79	48.485	
10,700.00	9,464.81	8,813.70	7,874.96	28.56	24.11	-0.01	-895.20	1.64	1,589.84	1,556.33	33.51	47.444	
10,800.00	9,464.81	8,913.70	7,874.97	29.40	25.22	-0.01	-995.20	1.86	1,589.85	1,555.56	34.29	46.370	
10,900.00	9,464.82	9,013.70	7,874.97	30.39	26.38	-0.01	-1,095.19	2.09	1,589.85	1,554.74	35.11	45.276	
11,000.00	9,464.83	9,113.70	7,874.97	31.44	27.60	-0.01	-1,195.19	2.31	1,589.86	1,553.87	35.99	44.172	
11,100.00	9,464.83	9,213.70	7,874.97	32.55	28.86	-0.01	-1,295.19	2.54	1,589.86	1,552.95	36.92	43.067	
11,200.00	9,464.84	9,313.70	7,874.97	33.70	30.17	-0.01	-1,395.19	2.77	1,589.87	1,551.99	37.88	41.969	
11,300.00	9,464.84	9,413.70	7,874.97	34.89	31.50	-0.01	-1,495.19	2.99	1,589.87	1,550.99	38.89	40.885	
11,400.00	9,464.85	9,513.70	7,874.97	36.12	32.87	-0.01	-1,595.19	3.22	1,589.88	1,549.95	39.93	39.820	
11,500.00	9,464.86	9,613.70	7,874.97	37.39	34.27	-0.01	-1,695.19	3.44	1,589.88	1,548.88	41.00	38.777	
11,600.00	9,464.86	9,713.70	7,874.97	38.69	35.69	-0.01	-1,795.19	3.67	1,589.89	1,547.78	42.11	37.759	
11,700.00	9,464.87	9,813.70	7,874.98	40.01	37.13	-0.01	-1,895.19	3.89	1,589.89	1,546.65	43.24	36.769	
11,800.00	9,464.87	9,913.70	7,874.98	41.36	38.59	-0.01	-1,995.19	4.12	1,589.90	1,545.50	44.40	35.809	
11,900.00	9,464.88	10,013.70	7,874.98	42.73	40.06	-0.01	-2,095.19	4.35	1,589.90	1,544.32	45.58	34.879	
12,000.00	9,464.88	10,113.70	7,874.98	44.13	41.56	-0.01	-2,195.19	4.57	1,589.91	1,543.12	46.79	33.980	
12,100.00	9,464.89	10,213.70	7,874.98	45.54	43.06	-0.01	-2,295.19	4.80	1,589.91	1,541.89	48.02	33.112	
12,200.00	9,464.90	10,313.70	7,874.98	46.97	44.58	-0.01	-2,395.19	5.02	1,589.92	1,540.65	49.26	32.274	
12,300.00	9,464.90	10,413.70	7,874.98	48.42	46.11	-0.01	-2,495.19	5.25	1,589.92	1,539.39	50.53	31.466	
12,400.00	9,464.91	10,513.70	7,874.98	49.88	47.64	0.00	-2,595.19	5.47	1,589.93	1,538.12	51.81	30.688	
12,500.00	9,464.91	10,613.70	7,874.98	51.35	49.19	0.00	-2,695.19	5.70	1,589.93	1,536.83	53.10	29.939	
12,600.00	9,464.92	10,713.70	7,874.99	52.83	50.74	0.00	-2,795.19	5.93	1,589.93	1,535.52	54.42	29.218	
12,700.00	9,464.93	10,813.70	7,874.99	54.33	52.31	0.00	-2,895.19	6.15	1,589.94	1,534.20	55.74	28.525	
12,800.00	9,464.93	10,913.70	7,874.99	55.83	53.87	0.00	-2,995.19	6.38	1,589.94	1,532.87	57.08	27.857	
12,900.00	9,464.94	11,013.70	7,874.99	57.35	55.45	0.00	-3,095.19	6.60	1,589.95	1,531.53	58.42	27.214	
13,000.00	9,464.94	11,113.70	7,874.99	58.87	57.03	0.00	-3,195.19	6.83	1,589.95	1,530.17	59.78	26.596	
13,100.00	9,464.95	11,213.70	7,874.99	60.40	58.61	0.00	-3,295.19	7.05	1,589.96	1,528.81	61.15	26.001	
13,200.00	9,464.96	11,313.70	7,874.99	61.94	60.20	0.00	-3,395.19	7.28	1,589.96	1,527.44	62.53	25.428	
13,300.00	9,464.96	11,413.70	7,874.99	63.49	61.80	0.00	-3,495.19	7.50	1,589.97	1,526.05	63.91	24.876	
13,400.00	9,464.97	11,513.70	7,874.99	65.04	63.40	0.00	-3,595.19	7.73	1,589.97	1,524.66	65.31	24.345	
13,500.00	9,464.97	11,613.70	7,875.00	66.60	65.00	0.00	-3,695.19	7.96	1,589.98	1,523.27	66.71	23.833	
13,600.00	9,464.98	11,713.70	7,875.00	68.16	66.60	0.00	-3,795.19	8.18	1,589.98	1,521.86	68.12	23.340	
13,700.00	9,464.98	11,813.70	7,875.00	69.73	68.21	0.00	-3,895.19	8.41	1,589.99	1,520.45	69.54	22.865	
13,800.00	9,464.99	11,913.70	7,875.00	71.30	69.83	0.00	-3,995.19	8.63	1,589.99	1,519.03	70.96	22.406	
13,900.00	9,465.00	12,013.70	7,875.00	72.88	71.44	0.00	-4,095.19	8.86	1,590.00	1,517.61	72.39	21.964	
13,962.83	9,465.00	12,076.53	7,875.00	73.87	72.46	0.00	-4,158.02	9.00	1,590.00	1,516.71	73.29	21.694	

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Reference Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	No. 201H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	WellPlanner1
Reference Design:	Prelim Plan A	**Offset TVD Reference:**	Offset Datum

Offset Design Cueva De Oro Fed (111-121-131-201) - No. 131H - OH - Prelim Plan A — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD - OWSG, 400-MWD - OWSG, 1220-MWD - OWSG, 3100-MWD - OWSG — **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	-30.00	30.00				
100.00	100.00	100.00	100.00	0.13	0.13	-90.00	0.00	-30.00	30.00	29.74	0.26	117.047	
200.00	200.00	200.00	200.00	0.49	0.49	-90.00	0.00	-30.00	30.00	29.03	0.97	30.825	
300.00	300.00	300.00	300.00	0.85	0.85	-90.00	0.00	-30.00	30.00	28.31	1.69	17.749	
400.00	400.00	400.00	400.00	1.20	1.20	-90.00	0.00	-30.00	30.00	27.59	2.41	12.463	
500.00	500.00	500.00	500.00	1.39	1.39	-90.00	0.00	-30.00	30.00	27.21	2.79	10.758	
600.00	600.00	600.00	600.00	1.48	1.48	-90.00	0.00	-30.00	30.00	27.03	2.97	10.110	
700.00	699.98	700.07	700.05	1.65	1.65	-89.80	1.74	-29.88	29.88	26.58	3.30	9.066	
800.00	799.84	800.14	799.97	1.87	1.87	-89.82	6.97	-29.54	29.51	25.77	3.74	7.896	
900.00	899.45	900.20	899.65	2.14	2.14	-89.86	15.68	-28.96	28.90	24.63	4.27	6.770	
1,000.00	998.70	1,000.23	998.99	2.44	2.44	-90.82	27.41	-28.18	28.08	23.21	4.88	5.758	
1,100.00	1,097.73	1,100.21	1,098.22	2.77	2.77	-94.57	39.57	-27.37	27.32	21.77	5.54	4.929	
1,200.00	1,196.76	1,200.19	1,197.46	3.13	3.11	-98.51	51.73	-26.56	26.67	20.43	6.24	4.275	
1,300.00	1,295.78	1,300.17	1,296.69	3.35	3.32	-102.64	63.89	-25.76	26.16	19.51	6.65	3.932	
1,400.00	1,394.81	1,400.15	1,395.93	3.45	3.41	-106.90	76.05	-24.95	25.79	18.96	6.83	3.776	
1,500.00	1,493.84	1,500.13	1,495.16	3.60	3.55	-111.27	88.20	-24.14	25.56	18.48	7.08	3.610	
1,598.98	1,591.85	1,600.90	1,593.39	3.79	3.73	-115.64	100.24	-23.34	25.49	18.09	7.39	3.447	CC
1,600.00	1,592.86	1,600.12	1,594.40	3.79	3.73	-115.68	100.36	-23.33	25.49	18.09	7.39	3.447	
1,700.00	1,691.89	1,700.10	1,693.63	4.02	3.93	-120.10	112.52	-22.52	25.57	17.81	7.76	3.296	
1,800.00	1,790.92	1,800.08	1,792.87	4.27	4.17	-124.46	124.68	-21.72	25.79	17.64	8.16	3.162	
1,900.00	1,889.94	1,900.06	1,892.11	4.55	4.43	-128.72	136.83	-20.91	26.17	17.58	8.59	3.046	ES
2,000.00	1,988.97	2,000.04	1,991.34	4.85	4.72	-132.84	148.99	-20.10	26.68	17.64	9.05	2.949	
2,100.00	2,088.00	2,100.02	2,090.58	5.16	5.01	-136.79	161.15	-19.29	27.33	17.80	9.53	2.869	
2,200.00	2,187.02	2,200.00	2,189.81	5.49	5.33	-140.53	173.31	-18.49	28.10	18.07	10.03	2.803	
2,300.00	2,286.05	2,300.02	2,289.05	5.83	5.65	-144.06	185.47	-17.68	28.98	18.44	10.54	2.749	
2,400.00	2,385.08	2,400.04	2,388.28	6.18	5.98	-147.38	197.62	-16.87	29.97	18.89	11.08	2.706	
2,500.00	2,484.10	2,500.06	2,487.52	6.54	6.32	-150.47	209.78	-16.06	31.05	19.42	11.63	2.670	
2,600.00	2,583.13	2,600.08	2,586.75	6.90	6.67	-153.34	221.94	-15.26	32.22	20.02	12.20	2.641	
2,700.00	2,682.16	2,700.10	2,685.99	7.27	7.03	-156.01	234.10	-14.45	33.46	20.68	12.78	2.618	
2,800.00	2,781.18	2,800.12	2,785.22	7.64	7.39	-158.48	246.25	-13.64	34.77	21.38	13.38	2.598	
2,900.00	2,880.21	2,900.14	2,884.46	8.02	7.75	-160.77	258.41	-12.83	36.13	22.14	13.99	2.582	
3,000.00	2,979.24	3,000.16	2,983.69	8.40	8.12	-162.89	270.57	-12.03	37.55	22.94	14.62	2.569	
3,100.00	3,078.26	3,100.18	3,082.93	8.79	8.49	-164.85	282.73	-11.22	39.02	23.77	15.25	2.558	SF
3,200.00	3,177.29	3,200.19	3,182.17	9.04	8.72	-166.67	294.89	-10.41	40.53	24.96	15.57	2.603	
3,300.00	3,276.32	3,300.21	3,281.40	9.16	8.82	-168.35	307.04	-9.60	42.08	26.50	15.59	2.700	
3,400.00	3,375.35	3,400.23	3,380.64	9.30	8.94	-169.92	319.20	-8.79	43.66	28.03	15.64	2.792	
3,500.00	3,474.37	3,500.25	3,479.87	9.46	9.08	-171.37	331.36	-7.99	45.28	29.55	15.73	2.879	
3,600.00	3,573.40	3,600.27	3,579.11	9.64	9.23	-172.73	343.52	-7.18	46.92	31.07	15.85	2.960	
3,700.00	3,672.43	3,699.71	3,678.34	9.82	9.40	-173.99	355.67	-6.37	48.58	32.57	16.01	3.034	
3,800.00	3,771.45	3,800.31	3,777.58	10.03	9.58	-175.17	367.83	-5.56	50.27	34.06	16.21	3.101	
3,900.00	3,870.48	3,900.33	3,876.81	10.24	9.78	-176.27	379.99	-4.76	51.98	35.54	16.44	3.162	
4,000.00	3,969.51	4,000.35	3,976.05	10.47	9.99	-177.30	392.15	-3.95	53.70	37.00	16.70	3.215	
4,100.00	4,068.53	4,099.63	4,075.28	10.71	10.20	-178.26	404.31	-3.14	55.44	38.45	16.99	3.263	
4,200.00	4,167.56	4,198.19	4,173.21	10.96	10.42	-179.11	415.43	-2.40	58.08	40.78	17.31	3.356	
4,300.00	4,266.59	4,295.94	4,270.63	11.21	10.62	-179.68	423.26	-1.88	64.01	46.38	17.64	3.630	
4,400.00	4,365.61	4,393.18	4,367.77	11.48	10.80	-179.97	427.76	-1.58	73.33	55.36	17.97	4.081	
4,500.00	4,464.64	4,509.94	4,464.64	11.76	10.99	179.97	429.00	-1.50	85.98	67.63	18.35	4.685	
4,600.00	4,563.68	4,589.10	4,563.68	12.04	11.11	179.97	429.00	-1.50	99.83	81.12	18.71	5.336	
4,700.00	4,663.01	4,688.43	4,663.01	12.31	11.28	179.97	429.00	-1.50	111.33	92.20	19.12	5.822	
4,800.00	4,762.68	4,788.11	4,762.68	12.55	11.46	179.98	429.00	-1.50	119.35	99.80	19.55	6.105	
4,900.00	4,862.57	4,888.00	4,862.57	12.77	11.64	179.98	429.00	-1.50	123.88	103.90	19.99	6.198	
5,000.00	4,962.56	4,987.99	4,962.56	12.96	11.83	179.77	429.00	-1.50	125.00	104.56	20.44	6.116	

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

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Reference Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	No. 201H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	WellPlanner1
Reference Design:	Prelim Plan A	**Offset TVD Reference:**	Offset Datum

Offset Design Cueva De Oro Fed (111-121-131-201) - No. 131H - OH - Prelim Plan A — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD - OWSG 400-MWD - OWSG 1220-MWD - OWSG 3100-MWD - OWSG — **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
5,100.00	5,062.56	5,087.99	5,062.56	13.14	12.04	179.77	429.00	-1.50	125.00	104.10	20.90	5.979	
5,200.00	5,162.56	5,187.99	5,162.56	13.33	12.24	179.77	429.00	-1.50	125.00	103.62	21.38	5.846	
5,300.00	5,262.56	5,287.99	5,262.56	13.53	12.46	179.77	429.00	-1.50	125.00	103.12	21.88	5.714	
5,400.00	5,362.56	5,387.99	5,362.56	13.73	12.68	179.77	429.00	-1.50	125.00	102.62	22.38	5.585	
5,500.00	5,462.56	5,487.99	5,462.56	13.94	12.91	179.77	429.00	-1.50	125.00	102.11	22.90	5.460	
5,600.00	5,562.56	5,587.99	5,562.56	14.16	13.14	179.77	429.00	-1.50	125.00	101.58	23.42	5.337	
5,700.00	5,662.56	5,687.99	5,662.56	14.38	13.38	179.77	429.00	-1.50	125.00	101.04	23.96	5.218	
5,800.00	5,762.56	5,787.99	5,762.56	14.61	13.63	179.77	429.00	-1.50	125.00	100.50	24.50	5.101	
5,900.00	5,862.56	5,887.99	5,862.56	14.84	13.87	179.77	429.00	-1.50	125.00	99.94	25.06	4.989	
6,000.00	5,962.56	5,987.99	5,962.56	15.08	14.13	179.77	429.00	-1.50	125.00	99.38	25.62	4.879	
6,100.00	6,062.56	6,087.99	6,062.56	15.32	14.39	179.77	429.00	-1.50	125.00	98.81	26.19	4.773	
6,200.00	6,162.56	6,187.99	6,162.56	15.57	14.65	179.77	429.00	-1.50	125.00	98.24	26.77	4.670	
6,300.00	6,262.56	6,287.99	6,262.56	15.82	14.92	179.77	429.00	-1.50	125.00	97.65	27.35	4.571	
6,400.00	6,362.56	6,387.99	6,362.56	16.07	15.19	179.77	429.00	-1.50	125.00	97.06	27.94	4.474	
6,500.00	6,462.56	6,487.99	6,462.56	16.33	15.46	179.77	429.00	-1.50	125.00	96.47	28.53	4.381	
6,600.00	6,562.56	6,587.99	6,562.56	16.59	15.74	179.77	429.00	-1.50	125.00	95.87	29.13	4.290	
6,700.00	6,662.56	6,687.99	6,662.56	16.86	16.02	179.77	429.00	-1.50	125.00	95.26	29.74	4.203	
6,800.00	6,762.56	6,787.99	6,762.56	17.13	16.30	179.77	429.00	-1.50	125.00	94.65	30.35	4.118	
6,900.00	6,862.56	6,887.99	6,862.56	17.40	16.59	179.77	429.00	-1.50	125.00	94.03	30.97	4.037	
7,000.00	6,962.56	6,987.99	6,962.56	17.68	16.88	179.77	429.00	-1.50	125.00	93.41	31.59	3.957	
7,100.00	7,062.56	7,087.99	7,062.56	17.96	17.17	179.77	429.00	-1.50	125.00	92.79	32.21	3.881	
7,200.00	7,162.56	7,187.99	7,162.56	18.24	17.46	179.77	429.00	-1.50	125.00	92.16	32.84	3.807	
7,300.00	7,262.56	7,287.99	7,262.56	18.52	17.76	179.77	429.00	-1.50	125.00	91.53	33.47	3.735	
7,400.00	7,362.56	7,387.99	7,362.56	18.81	18.06	179.77	429.00	-1.50	125.00	90.90	34.10	3.665	
7,500.00	7,462.56	7,487.99	7,462.56	19.10	18.36	179.77	429.00	-1.50	125.00	90.26	34.74	3.598	
7,600.00	7,562.56	7,587.99	7,562.56	19.39	18.66	179.77	429.00	-1.50	125.00	89.62	35.38	3.533	
7,700.00	7,662.56	7,687.99	7,662.56	19.68	18.97	179.77	429.00	-1.50	125.00	88.98	36.03	3.470	
7,800.00	7,762.56	7,787.99	7,762.56	19.98	19.28	179.77	429.00	-1.50	125.00	88.33	36.67	3.409	
7,900.00	7,862.56	7,887.99	7,862.56	20.28	19.58	179.77	429.00	-1.50	125.00	87.68	37.32	3.349	
8,000.00	7,962.56	7,987.99	7,962.56	20.58	19.89	179.77	429.00	-1.50	125.00	87.03	37.97	3.292	
8,100.00	8,062.56	8,087.99	8,062.56	20.88	20.21	179.77	429.00	-1.50	125.00	86.38	38.63	3.236	
8,200.00	8,162.56	8,187.99	8,162.56	21.18	20.52	179.77	429.00	-1.50	125.00	85.72	39.28	3.182	
8,300.00	8,262.56	8,287.99	8,262.56	21.49	20.83	179.77	429.00	-1.50	125.00	85.06	39.94	3.130	
8,400.00	8,362.56	8,387.99	8,362.56	21.79	21.15	179.77	429.00	-1.50	125.00	84.40	40.60	3.079	
8,500.00	8,462.56	8,487.99	8,462.56	22.10	21.47	179.77	429.00	-1.50	125.00	83.74	41.26	3.029	
8,600.00	8,562.56	8,587.99	8,562.56	22.41	21.79	179.77	429.00	-1.50	125.00	83.08	41.93	2.982	
8,700.00	8,662.56	8,687.99	8,662.56	22.72	22.11	179.77	429.00	-1.50	125.00	82.41	42.59	2.935	
8,800.00	8,762.56	8,768.43	8,742.68	23.03	22.31	179.78	422.56	-1.49	132.94	90.14	42.80	3.106	
8,900.00	8,862.56	8,846.53	8,818.87	23.35	22.47	179.79	405.66	-1.45	154.64	112.02	42.62	3.628	
9,000.00	8,962.34	8,920.25	8,888.06	23.62	22.58	-0.07	380.35	-1.39	184.19	142.07	42.12	4.373	
9,100.00	9,059.78	8,992.19	8,951.89	23.79	22.65	-0.06	347.29	-1.31	209.62	168.29	41.33	5.072	
9,200.00	9,151.95	9,062.87	9,010.10	23.89	22.71	-0.06	307.27	-1.22	230.18	189.84	40.34	5.706	
9,300.00	9,236.03	9,132.64	9,062.29	23.93	22.76	-0.05	261.04	-1.12	245.62	206.41	39.21	6.264	
9,400.00	9,309.48	9,200.00	9,107.00	23.93	22.80	-0.05	210.70	-1.00	255.78	217.85	37.93	6.743	
9,500.00	9,370.07	9,270.61	9,147.18	23.93	22.86	-0.05	152.69	-0.87	260.52	223.65	36.86	7.067	
9,600.00	9,415.94	9,339.33	9,179.16	23.95	22.94	-0.05	91.91	-0.73	259.82	223.98	35.84	7.249	
9,700.00	9,445.71	9,408.21	9,203.68	24.01	23.04	-0.05	27.58	-0.58	253.67	218.62	35.05	7.237	
9,800.00	9,460.51	9,477.62	9,220.40	28.09	23.17	-0.05	-39.73	-0.43	244.19	209.52	34.66	7.044	
9,900.00	9,464.76	9,550.00	9,229.04	28.14	23.34	-0.05	-111.55	-0.26	236.29	202.47	33.82	6.986	
9,947.05	9,464.76	9,584.14	9,229.96	28.16	23.43	-0.05	-142.23	-0.19	234.81	201.24	33.57	6.994	
10,000.00	9,464.77	9,633.65	9,229.96	28.19	23.60	-0.05	-195.18	-0.07	234.81	201.10	33.71	6.967	
10,100.00	9,464.77	9,733.65	9,229.96	28.24	23.99	-0.05	-295.18	0.16	234.81	200.79	34.02	6.901	

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

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Reference Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	No. 201H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	WellPlanner1
Reference Design:	Prelim Plan A	**Offset TVD Reference:**	Offset Datum

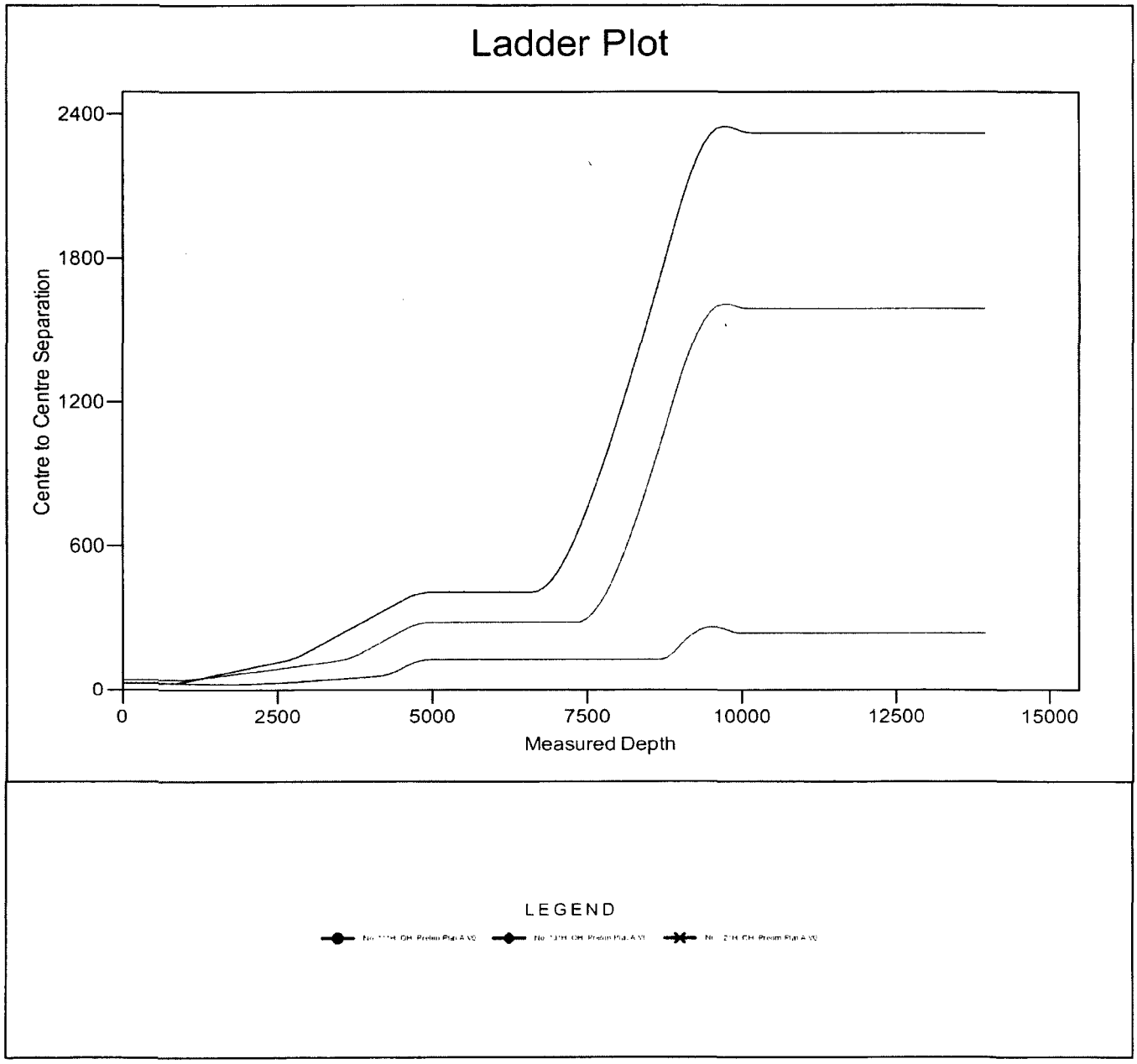
Offset Design Cueva De Oro Fed (111-121-131-201) - No. 131H - OH - Prelim Plan A — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD - OWSG 400-MWD - OWSG 1220-MWD - OWSG 3100-MWD - OWSG — **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
10,200.00	9,464.78	9,833.65	9,229.96	28.29	24.49	-0.05	-395.18	0.39	234.82	200.41	34.41	6.824	
10,300.00	9,464.79	9,933.65	9,229.96	28.34	25.10	-0.05	-495.18	0.62	234.82	199.96	34.86	6.735	
10,400.00	9,464.79	10,033.65	9,229.96	28.39	25.80	-0.05	-595.18	0.84	234.83	199.45	35.38	6.637	
10,500.00	9,464.80	10,133.65	9,229.96	28.45	26.58	-0.05	-695.18	1.07	234.83	198.87	35.96	6.530	
10,600.00	9,464.80	10,233.65	9,229.96	28.50	27.45	-0.04	-795.18	1.30	234.84	198.24	36.60	6.417	
10,700.00	9,464.81	10,333.65	9,229.97	28.56	28.38	-0.04	-895.18	1.53	234.84	197.55	37.29	6.298	
10,800.00	9,464.81	10,433.65	9,229.97	29.40	29.39	-0.04	-995.18	1.76	234.85	196.82	38.03	6.175	
10,900.00	9,464.82	10,533.65	9,229.97	30.39	30.45	-0.04	-1,095.18	1.99	234.85	196.03	38.83	6.049	
11,000.00	9,464.83	10,633.65	9,229.97	31.44	31.56	-0.04	-1,195.18	2.22	234.86	195.19	39.66	5.921	
11,100.00	9,464.83	10,733.65	9,229.97	32.55	32.73	-0.04	-1,295.18	2.45	234.86	194.31	40.55	5.792	
11,200.00	9,464.84	10,833.65	9,229.97	33.70	33.93	-0.04	-1,395.18	2.68	234.87	193.40	41.47	5.663	
11,300.00	9,464.84	10,933.65	9,229.97	34.89	35.18	-0.04	-1,495.18	2.90	234.87	192.44	42.43	5.535	
11,400.00	9,464.85	11,033.65	9,229.97	36.12	36.45	-0.03	-1,595.18	3.13	234.88	191.45	43.43	5.408	
11,500.00	9,464.86	11,133.65	9,229.97	37.39	37.76	-0.03	-1,695.18	3.36	234.88	190.42	44.46	5.283	
11,600.00	9,464.86	11,233.65	9,229.98	38.69	39.10	-0.03	-1,795.18	3.59	234.89	189.37	45.52	5.160	
11,700.00	9,464.87	11,333.65	9,229.98	40.01	40.46	-0.03	-1,895.18	3.82	234.89	188.28	46.61	5.039	
11,800.00	9,464.87	11,433.65	9,229.98	41.36	41.85	-0.03	-1,995.18	4.05	234.90	187.17	47.73	4.922	
11,900.00	9,464.88	11,533.65	9,229.98	42.73	43.25	-0.03	-2,095.18	4.28	234.90	186.03	48.87	4.807	
12,000.00	9,464.88	11,633.65	9,229.98	44.13	44.67	-0.03	-2,195.18	4.51	234.91	184.87	50.03	4.695	
12,100.00	9,464.89	11,733.65	9,229.98	45.54	46.12	-0.02	-2,295.18	4.74	234.91	183.69	51.22	4.586	
12,200.00	9,464.90	11,833.65	9,229.98	46.97	47.57	-0.02	-2,395.18	4.96	234.92	182.49	52.43	4.481	
12,300.00	9,464.90	11,933.65	9,229.98	48.42	49.04	-0.02	-2,495.18	5.19	234.92	181.27	53.65	4.379	
12,400.00	9,464.91	12,033.65	9,229.98	49.88	50.52	-0.02	-2,595.18	5.42	234.92	180.03	54.89	4.280	
12,500.00	9,464.91	12,133.65	9,229.98	51.35	52.02	-0.02	-2,695.18	5.65	234.93	178.78	56.15	4.184	
12,600.00	9,464.92	12,233.65	9,229.99	52.83	53.52	-0.02	-2,795.18	5.88	234.93	177.51	57.43	4.091	
12,700.00	9,464.93	12,333.65	9,229.99	54.33	55.03	-0.02	-2,895.18	6.11	234.94	176.22	58.72	4.001	
12,800.00	9,464.93	12,433.65	9,229.99	55.83	56.56	-0.02	-2,995.18	6.34	234.94	174.92	60.02	3.914	
12,900.00	9,464.94	12,533.65	9,229.99	57.35	58.09	-0.01	-3,095.17	6.57	234.95	173.61	61.33	3.831	
13,000.00	9,464.94	12,633.65	9,229.99	58.87	59.63	-0.01	-3,195.17	6.80	234.95	172.29	62.66	3.750	
13,100.00	9,464.95	12,733.65	9,229.99	60.40	61.17	-0.01	-3,295.17	7.02	234.96	170.96	64.00	3.671	
13,200.00	9,464.96	12,833.65	9,229.99	61.94	62.73	-0.01	-3,395.17	7.25	234.96	169.62	65.35	3.596	
13,300.00	9,464.96	12,933.65	9,229.99	63.49	64.29	-0.01	-3,495.17	7.48	234.97	168.26	66.70	3.523	
13,400.00	9,464.97	13,033.65	9,229.99	65.04	65.85	-0.01	-3,595.17	7.71	234.97	166.90	68.07	3.452	
13,500.00	9,464.97	13,133.65	9,230.00	66.60	67.42	-0.01	-3,695.17	7.94	234.98	165.53	69.45	3.384	
13,600.00	9,464.98	13,233.65	9,230.00	68.16	68.99	0.00	-3,795.17	8.17	234.98	164.15	70.83	3.318	
13,700.00	9,464.98	13,333.65	9,230.00	69.73	70.57	0.00	-3,895.17	8.40	234.99	162.77	72.22	3.254	
13,800.00	9,464.99	13,433.65	9,230.00	71.30	72.16	0.00	-3,995.17	8.63	234.99	161.37	73.62	3.192	
13,900.00	9,465.00	13,533.65	9,230.00	72.88	73.74	0.00	-4,095.17	8.86	235.00	159.97	75.03	3.132	
13,962.83	9,465.00	13,596.48	9,230.00	73.87	74.74	0.00	-4,158.00	9.00	235.00	159.09	75.91	3.096	

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Reference Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	No. 201H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	WellPlanner1
Reference Design:	Prelim Plan A	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to well @ 3297.50usft	Coordinates are relative to: No. 201H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Central Meridian is 104° 20' 0.000 W	Grid Convergence at Surface is: 0.13°



Company:	Matador Resources	**Local Co-ordinate Reference:**	Well No. 201H
Project:	Eddy County, NM	**TVD Reference:**	well @ 3297.50usft
Reference Site:	Cueva De Oro Fed (111-121-131-201)	**MD Reference:**	well @ 3297.50usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	No. 201H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	WellPlanner1
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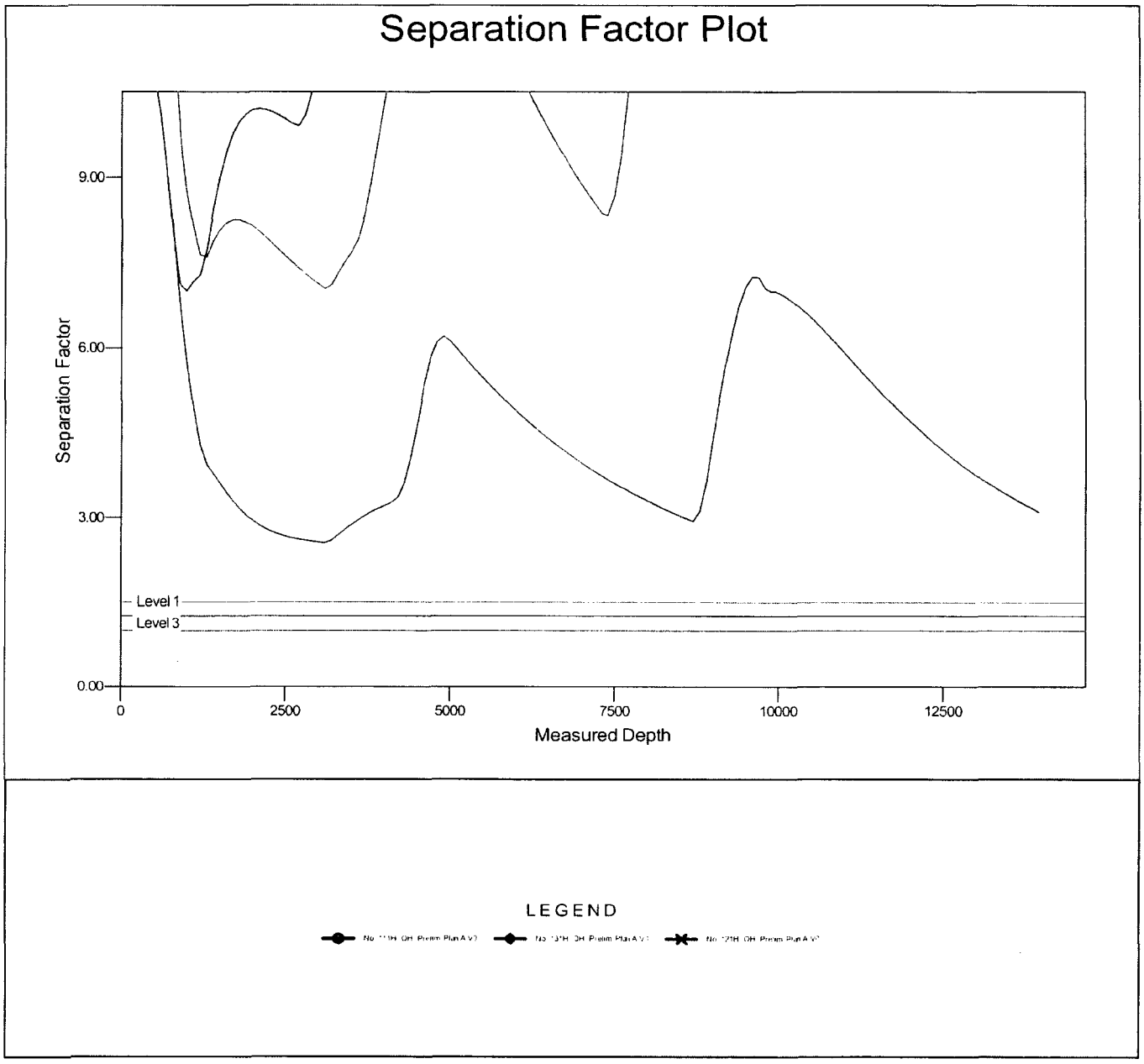
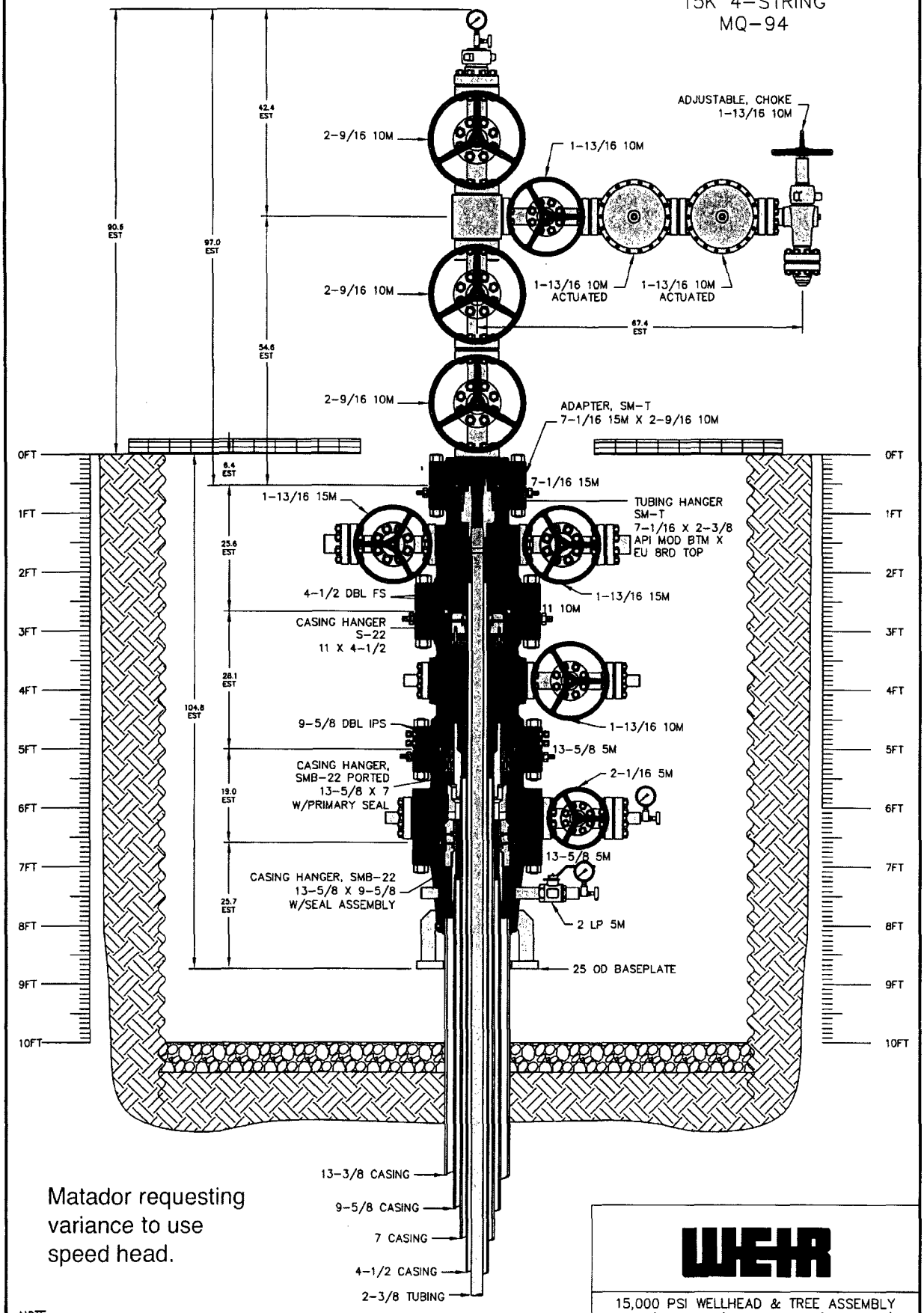


MATADOR
15K 4-STRING
MQ-94



Matador requesting variance to use speed head.

NOTE:
DIMENSIONS SHOWN ON THIS DRAWING ARE ESTIMATES ONLY AND CAN VARY SIGNIFICANTLY DEPENDING ON RAW MATERIAL LENGTHS. NO GUARANTEE OF STACKUP HEIGHT IS IMPLIED. DIMENSIONS SHOWN SHOULD BE CONSIDERED FOR REFERENCE PURPOSES ONLY.

WEIR

15,000 PSI WELLHEAD & TREE ASSEMBLY
13-3/8 X 9-5/8 X 7 X 4-1/2 X 2-3/8

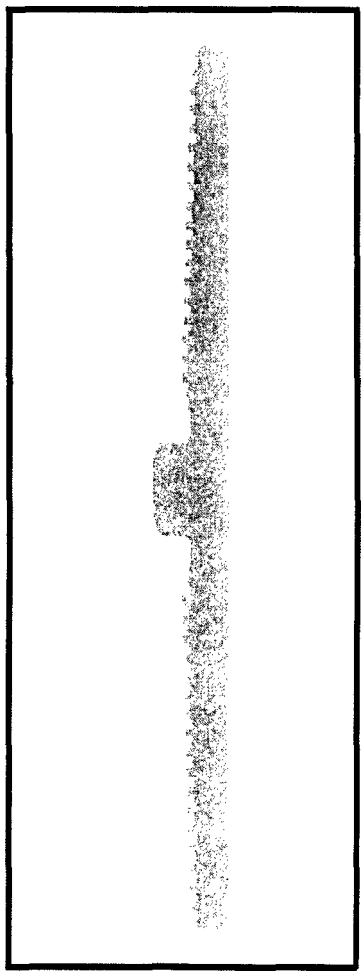
DRAWN BY:	SCALE	DATE	REV
RPL	1:10	18JAN16	
CHECKED BY:	DRAWING NO.		
APPROVED BY:	P-20986		

Technical Specifications

Connection Type:	Size(O.D.):	Weight (Wall):	Grade:
DWC/C-IS PLUS Casing	5-1/2 in	20.00 lb/ft (0.361 in)	VST P110 EC
standard			

	Material
VST P110 EC	Grade
125,000	Minimum Yield Strength (psi)
135,000	Minimum Ultimate Strength (psi)
	Pipe Dimensions
5.500	Nominal Pipe Body O.D. (in)
4.778	Nominal Pipe Body I.D.(in)
0.361	Nominal Wall Thickness (in)
20.00	Nominal Weight (lbs/ft)
19.83	Plain End Weight (lbs/ft)
5.828	Nominal Pipe Body Area (sq in)
	Pipe Body Performance Properties
729,000	Minimum Pipe Body Yield Strength (lbs)
12,090	Minimum Collapse Pressure (psi)
14,360	Minimum Internal Yield Pressure (psi)
13,100	Hydrostatic Test Pressure (psi)
	Connection Dimensions
6.300	Connection O.D. (in)
4.778	Connection I.D. (in)
4.653	Connection Drift Diameter (in)
4.13	Make-up Loss (in)
5.828	Critical Area (sq in)
100.0	Joint Efficiency (%)
	Connection Performance Properties
729,000	Joint Strength (lbs)
26,040	Reference String Length (ft) 1.4 Design Factor
728,000	API Joint Strength (lbs)
729,000	Compression Rating (lbs)
12,090	API Collapse Pressure Rating (psi)
14,360	API Internal Pressure Resistance (psi)
104.2	Maximum Uniaxial Bend Rating [degrees/100 ft]
	Appoximated Field End Torque Values
16,600	Minimum Final Torque (ft-lbs)
19,100	Maximum Final Torque (ft-lbs)
21,600	Connection Yield Torque (ft-lbs)

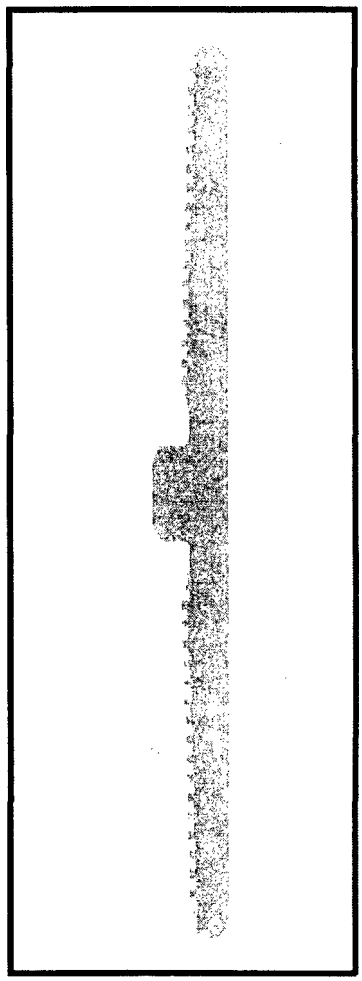
VAM USA
4424 W. Sam Houston Pkwy. Suite 150
Houston, TX 77041
Phone: 713-479-3200
Fax: 713-479-3234
E-mail: VAMUSAsales@vam-usa.com



For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).

DWC Connection Data Notes:

1. DWC connections are available with a seal ring (SR) option.
2. All standard DWC/C connections are interchangeable for a give pipe OD. DWC connections are interchangeable with DWC/C-SR connections of the same OD and wall.
3. Connection performance properties are based on nominal pipe body and connection dimensions.
4. DWC connection internal and external pressure resistance is calculated using the API rating for buttress connections. API Internal pressure resistance is calculated from formulas 31, 32, and 35 in the API Bulletin 5C3.
5. DWC joint strength is the minimum pipe body yield strength multiplied by the connection critical area.
6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.



4/14/2015

Matador Production Company
Cueva de Oro Fed 202H
SHL 248' FNL & 1859' FWL Sec. 21
BHL 240' FSL & 1870' FWL Sec. 21
T. 20 S., R. 29 E., Eddy County, NM

Drilling Program

1. ESTIMATED TOPS

Formation	TVD	MD	Resource
Quaternary	000	000	water
Salado/Salt	440	440	salt
(KOP	600	600	N/A)
Yates	1210	1212	gypsum
Seven Rivers	1525	1527	dolomite
Capitan Reef	1610	1612	water
Cherry Canyon	3080	3099	hydrocarbons
Brushy Canyon	4320	4324	hydrocarbons
Bone Spring Lime	5910	5913	hydrocarbons
1st Bone Spring Carbonate	6565	6573	hydrocarbons
1st Bone Spring Sand	7005	7006	hydrocarbons
2nd Bone Spring Carbonate	7285	7300	hydrocarbons
2nd Bone Spring Sand	7745	7752	Hydrocarbons
3rd Bone Spring Carbonate	8070	8099	hydrocarbons
3rd Bone Spring Sand	8880	8898	hydrocarbons
Wolfcamp Carbonate	9235	9260	hydrocarbons & goal
TD	9465	13963	hydrocarbons

2. NOTABLE ZONES

Wolfcamp is the goal for this well. Hole will extend south of the last perforation point to allow for pump installation. All perforations will be ≥330' from the dedication perimeter. A windmill is ≈600 yards northwest, but it is not in the State Engineer's database. Closest water well (CP 00752) in the database is 4457' northeast. No depth to water was recorded in the 2567' deep well.

3. PRESSURE CONTROL

Matador requests a variance for a 2000-psi annular to be installed after running 20" surface casing.

After 20" surface casing, a 5M BOP stack with 3 rams + 2 pipe rams + 1 blind ram + 1 annular preventer will be installed. The BOP will be used below intermediate casing 1 to TD. See attached BOP and choke manifold diagrams.

An accumulator complying with Onshore Order 2 requirements for the BOP stack pressure rating will be present. Rotating head will be installed as needed.

Pressure tests will be conducted before drilling out from under all casing strings. BOP will be inspected and operated as required by Onshore Order 2. Kelly cock and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position.

A third party company will test the BOPs.

Intermediate 1 casing pressure tests will be made to 250 psi low and 2000 psi high. Intermediate 2 casing pressure tests will be made to 250 psi low and 3000 psi high. Intermediate 3 casing pressure tests will be made t 250 psi low and 7500 psi high. Annular preventer will be tested to 250 psi low and 2500 psi high on the intermediate 1 casing and tested to 250 psi low and 2500 psi high on the intermediate 2 and 3 casing. In the case of running a speed head with landing mandrel for 9.625" and 7.625" x 7"casing, initial intermediate 1 casing test pressures will be 250 psi low and 3000 psi high, with wellhead seals tested to 5000 psi once the 9.625" casing has been landed and cemented.

BOP will then be lifted to install the D-section of the wellhead. Matador will nipple the BOP back up and pressure tests will be made to 250 psi low and 7500 psi high. Annular will be tested to 250 psi low and 2500 psi high.

Matador requests a variance to use a speed head. Speed head diameter range is from 13.375" to 2.375".

Matador requests a variance to use a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. If the specific hose is unavailable, then one of equal or higher rating will be used.

4. CASING & CEMENT

All casing will be API and new. Minimum safety factors are burst = 1.125, collapse = 1.125, and tension = 1.8.

Hole O. D.	Set MD	Set TVD	Name	Casing O. D.	TOC	Weight (lb/ft)	Grade	Joint
26"	0' - 400'	0' - 400'	Surface	20"	GL	94	K-55	BTC
17.5"	0' - 1200'	0' - 1197'	Intermediate 1	13.375"	GL	54.5	J-55	BTC
12.25"	0' - 3100'	0' - 3087'	Intermediate 2	9.625"	GL	40	J-55	BTC
8.75"	0' - 3000'	0' - 2987'	Intermediate 3	7.625"	2100'	29.7	P-110	BTC
	3000'- 8849'	2987'- 8836'		7.625"		29.7	P-110	Hydril 513
	8849'- 9699'	8836'- 9450'		7"		29	P-110	BTC
6.125"	0' - 8749'	0' - 8737'	Production	5.5"	8723'	20	P-110	Tenaris XP
	8749'- 14221'	8737'- 9465'		4.5"		13.5	P-110	Tenaris XP

Casing String	Type	Sacks	Yield	Cu. Ft.	Weight	Blend
Surface	Tail	873	1.38	1204	14.8	Class C + 5% NaCl + LCM
TOC = GL		100% Excess			Centralizers per Onshore Order 2.III.B.1f	
Intermediate 1	Lead	528	2.09	1103	12.6	Class C + Bentonite + 1% $CaCl_2$ + 8% NaCl + LCM
	Tail	322	1.38	444	14.8	Class C + 5% NaCl + LCM
TOC = GL		100% Excess			2 on btm jt, 1 on 2nd jt, 1 every 4th jt to GL	
Intermediate 2	Lead	499	2.48	1237	11.9	Class C + Bentonite + 2% $CaCl_2$ + 3% NaCl + LCM
	Tail	308	1.26	388	14.4	Class C + 5% NaCl + LCM
TOC = GL		100% Excess			2 on btm jt, 1 on 2nd jt, 1 every 4th jt to GL	
Intermediate 3	Lead	641	2.36	1512	11.5	TXI + Fluid Loss + Dispersant + Retarder + LCM
	Tail	248	1.38	342	13.2	TXI + Fluid Loss + Dispersant + Retarder + LCM
TOC = 2100'		35% Excess			2 on btm jt, 1 on 2nd jt, 1 every other jt to top of tail cement (500' above TOC), 1 every 4th jt to GL	
Production	Tail	415	1.38	572	15.8	Class H + Fluid loss + Dispersant + Retarder +LCM
TOC = 8699'		10% excess			2 on btm jt, 1 on 2nd jt, 1 every 3rd jt to top of tail cement (1000' tie back)	

5. MUD PROGRAM

An electronic Pason mud monitoring system complying with Onshore Order 1 will be used. All necessary mud products (barite, bentonite, LCM) for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions. A closed loop system will be used.

Mud Type	Interval	lb/gal	Viscosity	Fluid Loss
fresh water spud	0' - 400'	8.4	28	NC
brine water	400' - 1220'	10.0	30-32	NC
fresh water	1220' – 3100'	8.4 – 8.6	28-30	NC
fresh water/cut brine	3100' - 9699'	9.0	30-32	NC
oil based mud	9699' – 14221'	12.5	50-60	<10

6. CORES, TESTS, & LOGS

No core or drill stem test is planned.

A 2-person mud-logging program will be used from ≈1220' to TD.

No electric logs are planned at this time. GR will be collected through the MWD tools from intermediate 2 casing to TD. CBL with CCL will be run as far as gravity will let it fall to TOC.

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is ≈7099 psi. Expected bottom hole temperature is ≈135° F.

Matador does not anticipate that there will be enough H_2S from the surface to the Bone Spring to meet BLM's minimum requirements for the submission of an "H_2S Drilling Operation Plan" or "Public Protection Plan" for drilling and completing this well. Since Matador has an H_2S safety package on all wells, an "H_2S Drilling Operations Plan" is attached. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

8. OTHER INFORMATION

Anticipated spud date is upon approval. It is expected it will take ≈3 months to drill and complete the well.

APD ID: 10400012427 **Submission Date:** 03/31/2017

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

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:

Cueva_202H_Road_Map_07-20-2017.pdf

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

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Cueva_202H_Road_Map_07-20-2017.pdf

New road type: LOCAL

Length: 68.24 Feet **Width (ft.):** 20

Max slope (%): 1 **Max grade (%):** 1

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Crowned and ditched

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: GRAVEL

Access topsoil source: ONSITE

Access surfacing type description:

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: Grader

Access other construction information:

Access miscellaneous information:

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

Drainage Control

New road drainage crossing: CULVERT

Drainage Control comments: An 18" x 50' culvert will be installed in the country road borrow ditch.

Road Drainage Control Structures (DCS) description: An 18" x 50' culvert will be installed in the country road borrow ditch.
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:

Cueva_202H_Well_Map_03-24-2017.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: A tank battery will be built on the south side of the pad. Pipeline and power line plans have not been finalized.
Production Facilities map:

Cueva_202H_Production_Diagram_03-24-2017.pdf

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: CAMP USE, DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: GW WELL

Describe type:

Source longitude:

Source latitude:

Source datum:

Water source permit type: WATER RIGHT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: FEDERAL

Water source volume (barrels): 15000

Source volume (acre-feet): 1.9333965

Source volume (gal): 630000

Water source and transportation map:

Cueva_202H_Water_Source_Map_03-24-2017.pdf

Water source comments:

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:**

Water well additional information:

State appropriation permit:

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: NM One Call (811) will be notified before construction starts. Top 6" of soil and brush will be stockpiled east of the pad. Pipe racks will be to the north. A closed loop drilling system will be used. Caliche will be hauled from existing Constructors, Inc. pits on private land in NWNE 34-21s-27e and S2 13-22s-26e.
Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: All trash will be placed in a portable trash cage. It will be hauled to the Eddy County landfill. There will be no trash burning. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to CRI's state approved (NM-01-0006) disposal site. Human waste will be disposed of in chemical toilets and hauled to the Carlsbad wastewater treatment plant.
Amount of waste: 15000 barrels

Waste disposal frequency : Daily

Safe containment description: Steel tanks

Safe containmant attachment:

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

Disposal location description: Halfway NM

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

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:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Cueva_202H_Well_Site_Layout_03-24-2017.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** CUEVA DE ORO

Multiple Well Pad Number: SLOT 2

Recontouring attachment:

Cueva_202H_Recountouring_Plat_03-24-2017.pdf

Drainage/Erosion control construction: Pad moved away from Karst feature.

Drainage/Erosion control reclamation: Interim reclamation will shrink the pad 38% by removing caliche and reclaiming the north side (140' x 430'), leaving 2.27 acres for 4 wells, truck turn around, and production equipment. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas. Disturbed areas will be seeded in accordance with BLM's requirements. Enough stockpiled topsoil will be retained to cover the remainder of the pad when the wells are plugged. Once the last well is plugged, then the remainder of the pad and new road will be similarly reclaimed. Noxious weeds will be controlled.

Wellpad long term disturbance (acres): 2.27 **Wellpad short term disturbance (acres):** 3.65

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: 2.34 **Total short term disturbance:** 3.72

Reconstruction method: Interim reclamation will shrink the pad 38% by removing caliche and reclaiming the north side (140' x 430'), leaving 2.27 acres for 4 wells, truck turn around, and production equipment. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas. Disturbed areas will be seeded in accordance with BLM's requirements. Enough stockpiled topsoil will be retained to cover the remainder of the pad when the wells are plugged. Once the last well is plugged, then the remainder of the pad and new road will be similarly reclaimed. Noxious weeds will be controlled.
Topsoil redistribution: Evenly

Soil treatment: None planned

Existing Vegetation at the well pad:

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road:

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used?

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project?

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation?

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type: **Seed source:**

Seed name:

Source name: **Source address:**

Source phone:

Seed cultivar:

Seed use location:

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

Seed Summary **Total pounds/Acre:**

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: **Last Name:**

Phone: **Email:**

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: To BLM standards

Weed treatment plan attachment:

Monitoring plan description: To BLM standards

Monitoring plan attachment:

Success standards: To BLM satisfaction

Pit closure description: No pit

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:

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CUEVA DE ORO FEDERAL **Well Number:** 202H

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Section 12 - Other Information

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

ROW Type(s):

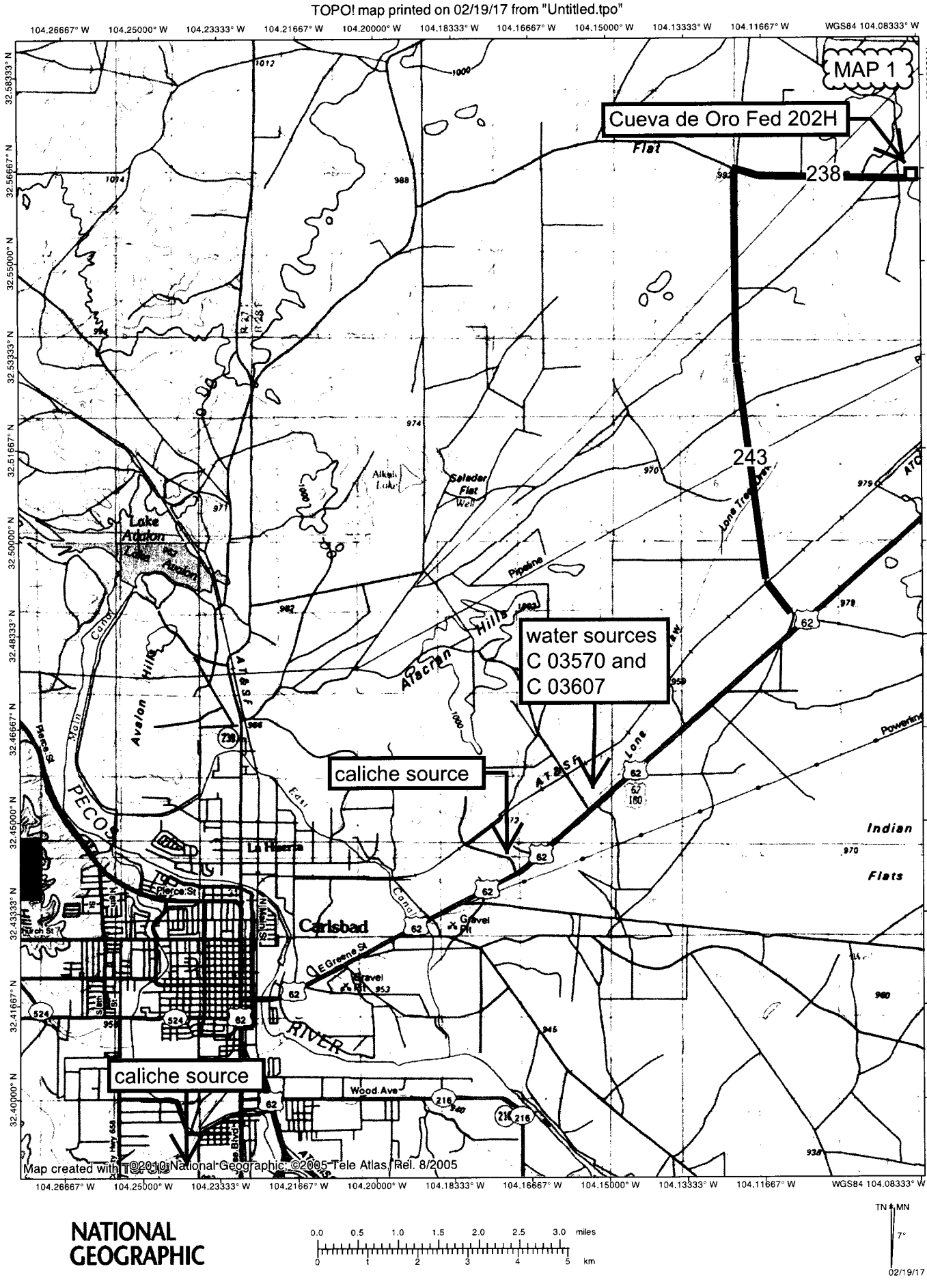
ROW Applications

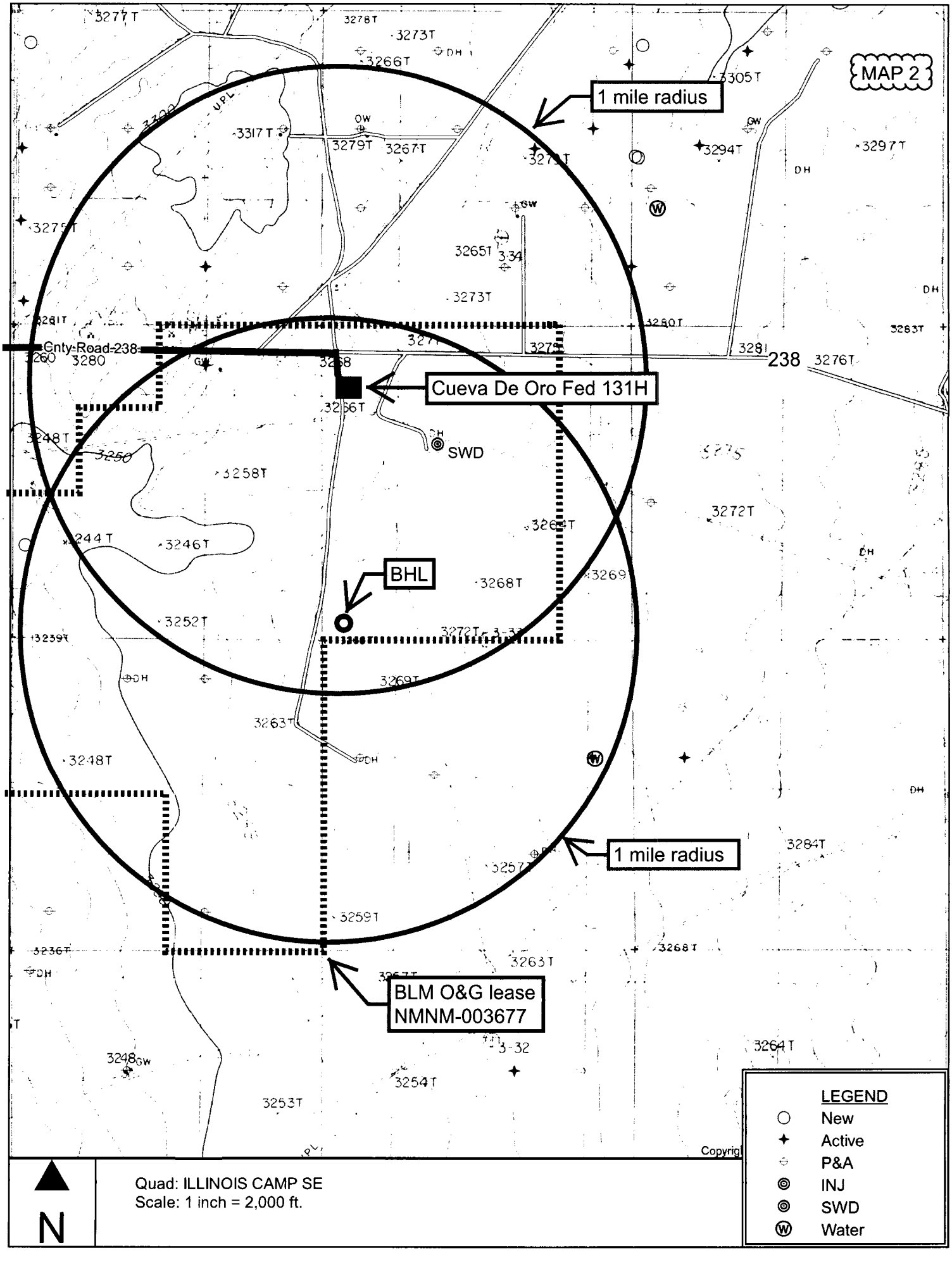
SUPO Additional Information: See revised Road Map and General SUPO attachment to address 10-day deficiency letter; revised road map indicates the road is 3.24' longer than originally submitted. Response to other deficiencies: 1) Road needs to access SE corner of pad because tank battery is in SW corner of pad. Tank battery must be on south side of pad because overhead power line is on north side of pad. Access on SW corner of pad would be too close (115') to offset road to EOG's Burton Flats SWD 1. 2) Pipeline and power lines plans have not been formulated as previously stated in item 4 of the Surface Plan. 3) Topsoil pile will not interfere with karst fence. Topsoil pile will be on west side of pad. Fence will be on east side of pad. Fence has been added to Map 4.
Use a previously conducted onsite? YES

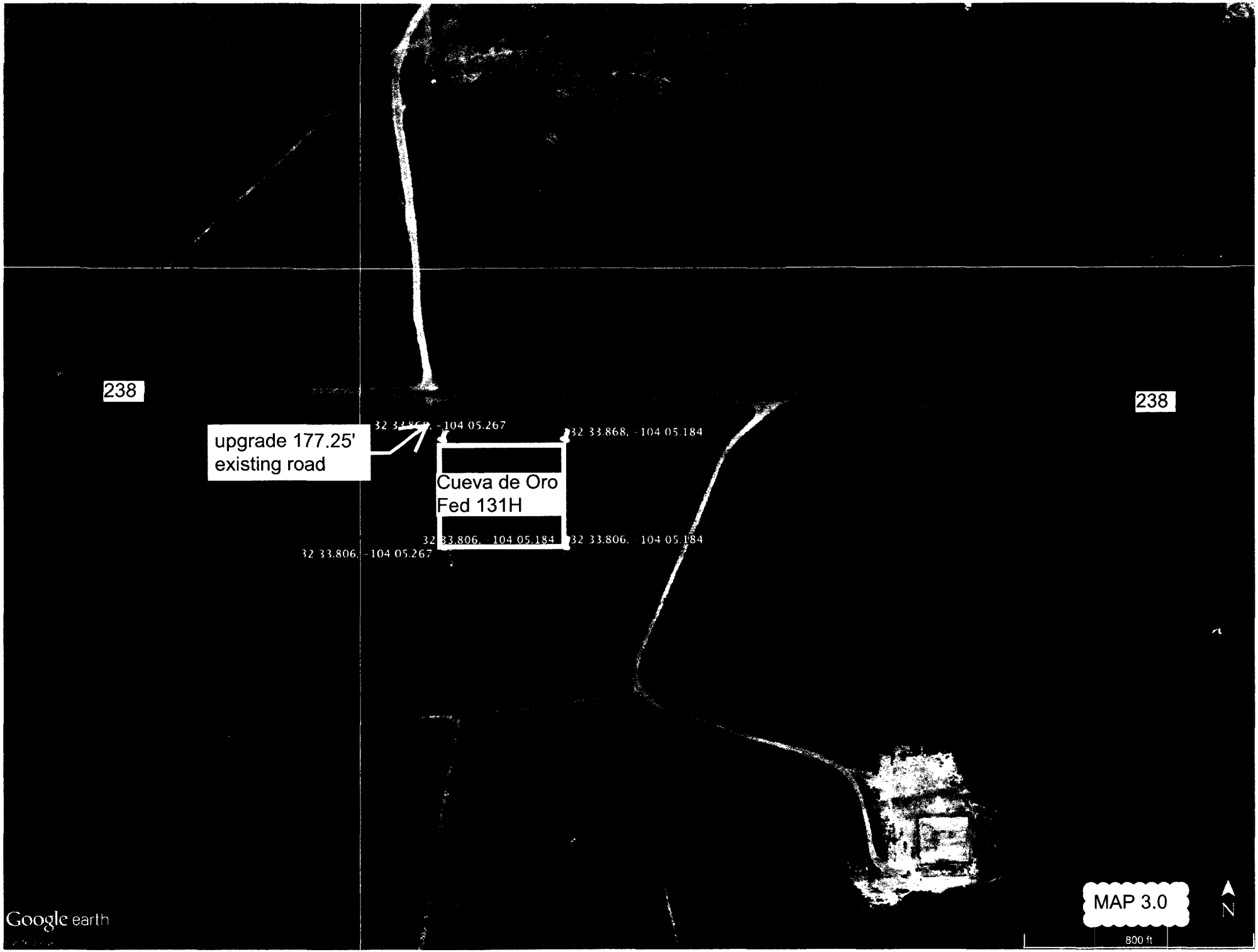
Previous Onsite information: On site inspection was held with Vance Wolf, Cassie Brooks, and Stan Allison (both BLM) on August 18, 2016.

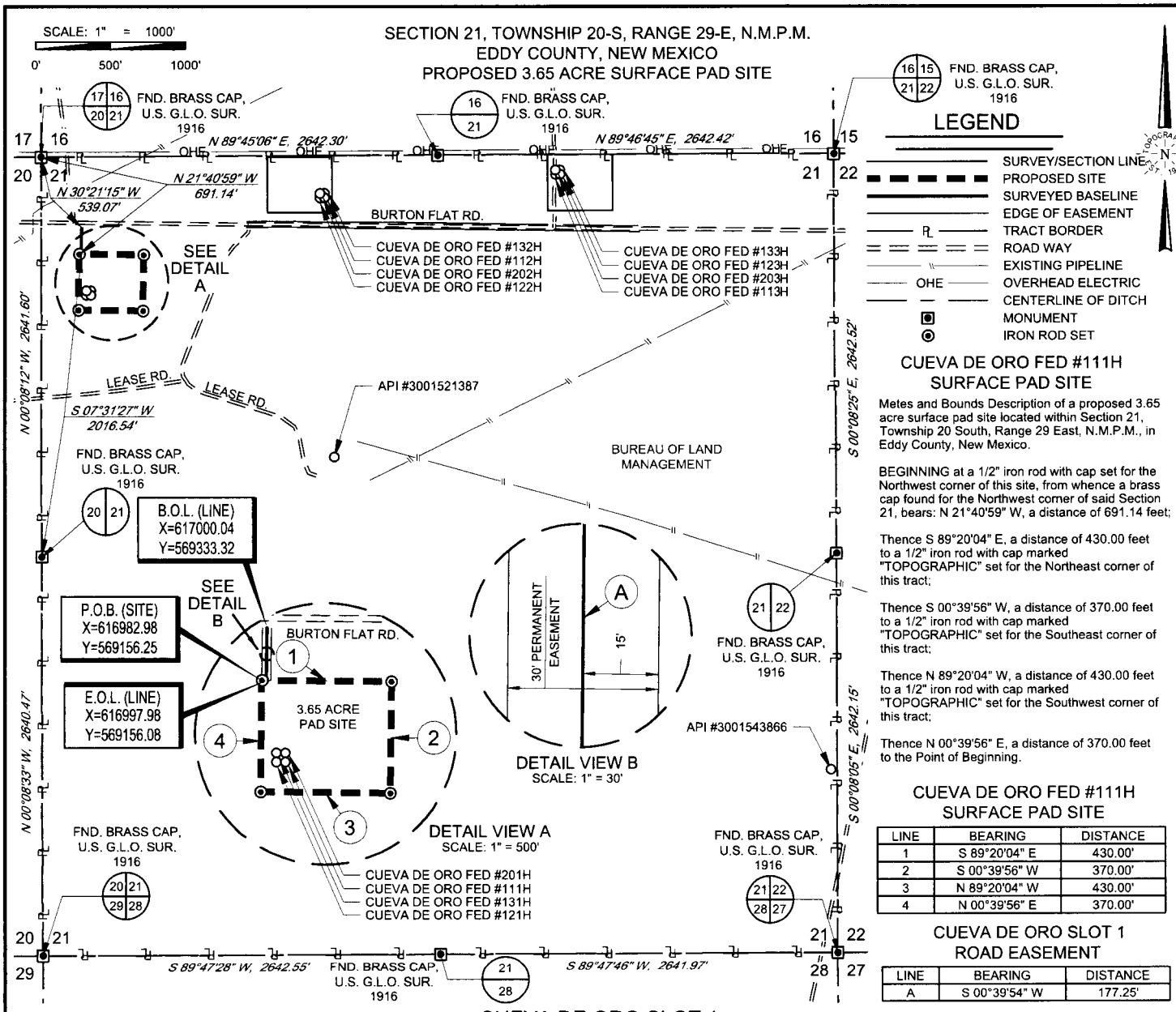
Other SUPO Attachment

Cueva_202H_General_SUPO_07-20-2017.pdf


TOPO! map printed on 02/19/17 from "Untitled.tpo"
MAP 1
Cueva de Oro Fed 202H
238
243
water sources
C 03570 and
C 03607
caliche source
caliche source
Carlsbad
PECOS
RIVER
Lake Avalon
Avalon Hills
Atacran Hills
Indian Flats
Map created with TOPO!©2010 National Geographic. ©2005 Tele Atlas, Rel. 8/2005
NATIONAL GEOGRAPHIC
0.0 0.5 1.0 1.5 2.0 2.5 3.0 miles
0 1 2 3 4 5 km
TN MN
7°
02/19/17


MAP 2
1 mile radius
Cueva De Oro Fed 131H
SWD
BHL
1 mile radius
BLM O&G lease
NMNM-003677
Cnty-Road-238
238
LEGEND
New
Active
P&A
INJ
SWD
Water
N
Quad: ILLINOIS CAMP SE
Scale: 1 inch = 2,000 ft.


238
238
upgrade 177.25'
existing road
32 33.868, -104 05.267
32 33.868, -104 05.184
Cueva de Oro
Fed 131H
32 33.806, -104 05.184
32 33.806, 104 05.184
32 33.806, -104 05.267
Google earth
MAP 3.0
N
800 ft



LEGEND

- SURVEY/SECTION LINE
- PROPOSED SITE
- SURVEYED BASELINE
- EDGE OF EASEMENT
- TRACT BORDER
- ROAD WAY
- EXISTING PIPELINE
- OVERHEAD ELECTRIC
- CENTERLINE OF DITCH
- MONUMENT
- IRON ROD SET

CUEVA DE ORO FED #111H SURFACE PAD SITE

Metes and Bounds Description of a proposed 3.65 acre surface pad site located within Section 21, Township 20 South, Range 29 East, N.M.P.M., in Eddy County, New Mexico.

BEGINNING at a 1/2" iron rod with cap set for the Northwest corner of this site, from whence a brass cap found for the Northwest corner of said Section 21, bears: N 21°40'59" W, a distance of 691.14 feet;

Thence S 89°20'04" E, a distance of 430.00 feet to a 1/2" iron rod with cap marked "TOPOGRAPHIC" set for the Northeast corner of this tract;

Thence S 00°39'56" W, a distance of 370.00 feet to a 1/2" iron rod with cap marked "TOPOGRAPHIC" set for the Southeast corner of this tract;

Thence N 89°20'04" W, a distance of 430.00 feet to a 1/2" iron rod with cap marked "TOPOGRAPHIC" set for the Southwest corner of this tract;

Thence N 00°39'56" E, a distance of 370.00 feet to the Point of Beginning.

CUEVA DE ORO FED #111H SURFACE PAD SITE

LINE	BEARING	DISTANCE
1	S 89°20'04" E	430.00'
2	S 00°39'56" W	370.00'
3	N 89°20'04" W	430.00'
4	N 00°39'56" E	370.00'

CUEVA DE ORO SLOT 1 ROAD EASEMENT

LINE	BEARING	DISTANCE
A	S 00°39'54" W	177.25'

CUEVA DE ORO SLOT 1 ROAD EASEMENT

Being a proposed road easement being 30 feet in width, 15 feet left, and 15 feet right of the above platted centerline total line footage containing 177.25 feet or 10.74 rods, containing 0.12 acres more or less.

MICHAEL B. BROWN NEW MEXICO 18329 PROFESSIONAL SURVEYOR

Michael Blake Brown, P.S. No. 18329
JUNE 26, 2017

Matador PRODUCTION COMPANY

TOPOGRAPHIC LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

CUEVA DE ORO FED #111H SURFACE PAD SITE	REVISION:	
	MML	08/24/2016
	MML	06/26/2017
DATE: 06/29/2016		
FILE: BO_CUEVA_DE_ORO_FED_111H_SURFACE_PAD_SITE_REV2		
DRAWN BY: A.V.F.		
SHEET :		

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1983.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY MATADOR PRODUCTION CO. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. B.O.L./P.O.B. = BEGINNING OF LINE/POINT OF BEGINNING
5. E.O.L. = END OF LINE

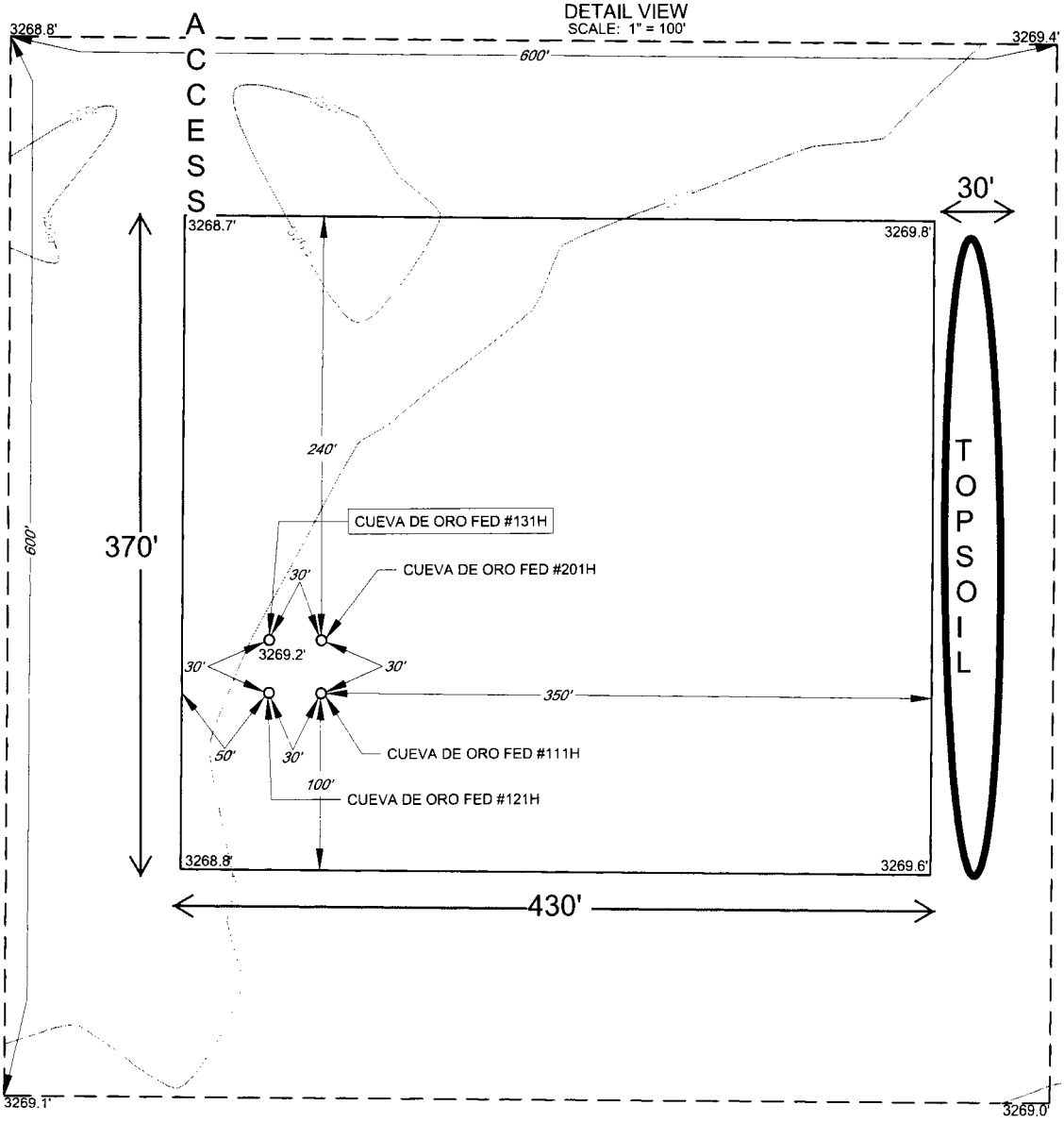
MAP 3.1

S:\SURVEY\MATADOR_RESOURCES\CUEVA_DE_ORO_FED_111H_SURFACE_PAD_SITE\FINAL_PRODUCTS\BO_CUEVA_DE_ORO_FED_111H_SURFACE_PAD_SITE_REV2.DWG 6/29/2017 11:30:10 AM ccaston

MAP 4

SECTION 21, TOWNSHIP 20-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'



LEASE NAME & WELL NO.: CUEVA DE ORO FED #131H

#131H LATITUDE N 32.5636462 #131H LONGITUDE W 104.0871348

LEGEND

EXISTING ROAD
SECTION LINE
ARCH SURVEY

-N-

SCALE: 1" = 100'
0' 50' 100'

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1927, U.S. SURVEY FEET

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ORIGINAL DOCUMENT SIZE: 8.5" X 11"

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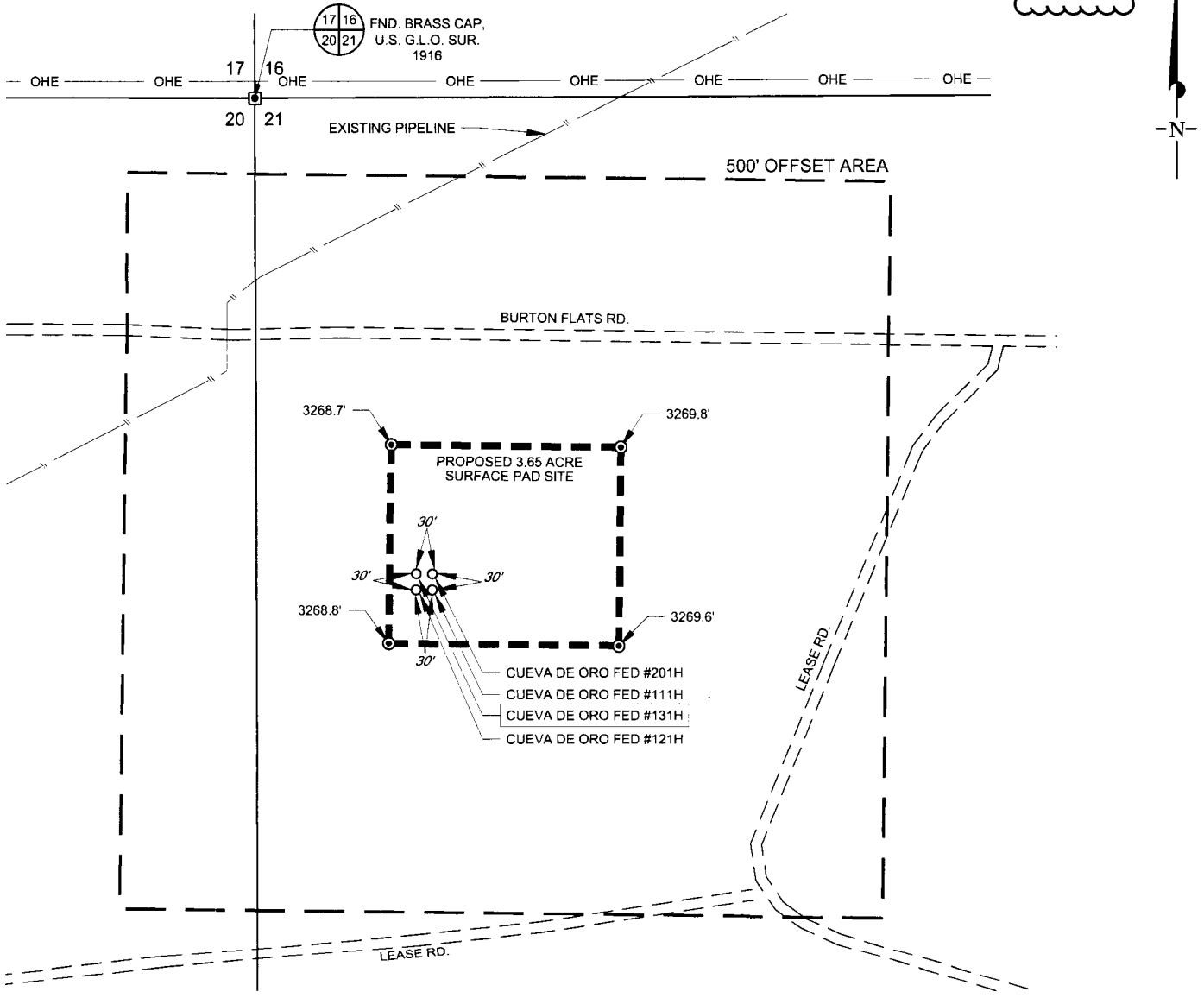
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

SCALE: 1" = 300'

0' 150' 300'

SECTION 21, TOWNSHIP 20-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

MAP 5



LEGEND

- PROPOSED SITE
- 500' PROXIMITY
- SURVEY/SECTION LINE
- ROAD WAY
- EXISTING PIPELINE
- OHE — OVERHEAD ELECTRIC
- IRON ROD SET
- MONUMENT

MICHAEL B. BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR

Matador PRODUCTION COMPANY

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

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Michael Blake Brown, P.S. No. 18329
AUGUST 23, 2016

CUEVA DE ORO FED #131H PROXIMITY	REVISION:	
	INT	DATE
DATE: 08/23/16		
FILE: LO_CUEVA_DE_ORO_FED_131H_REV1		
DRAWN BY: MML		
SHEET : 7 OF 7		

NOTES:
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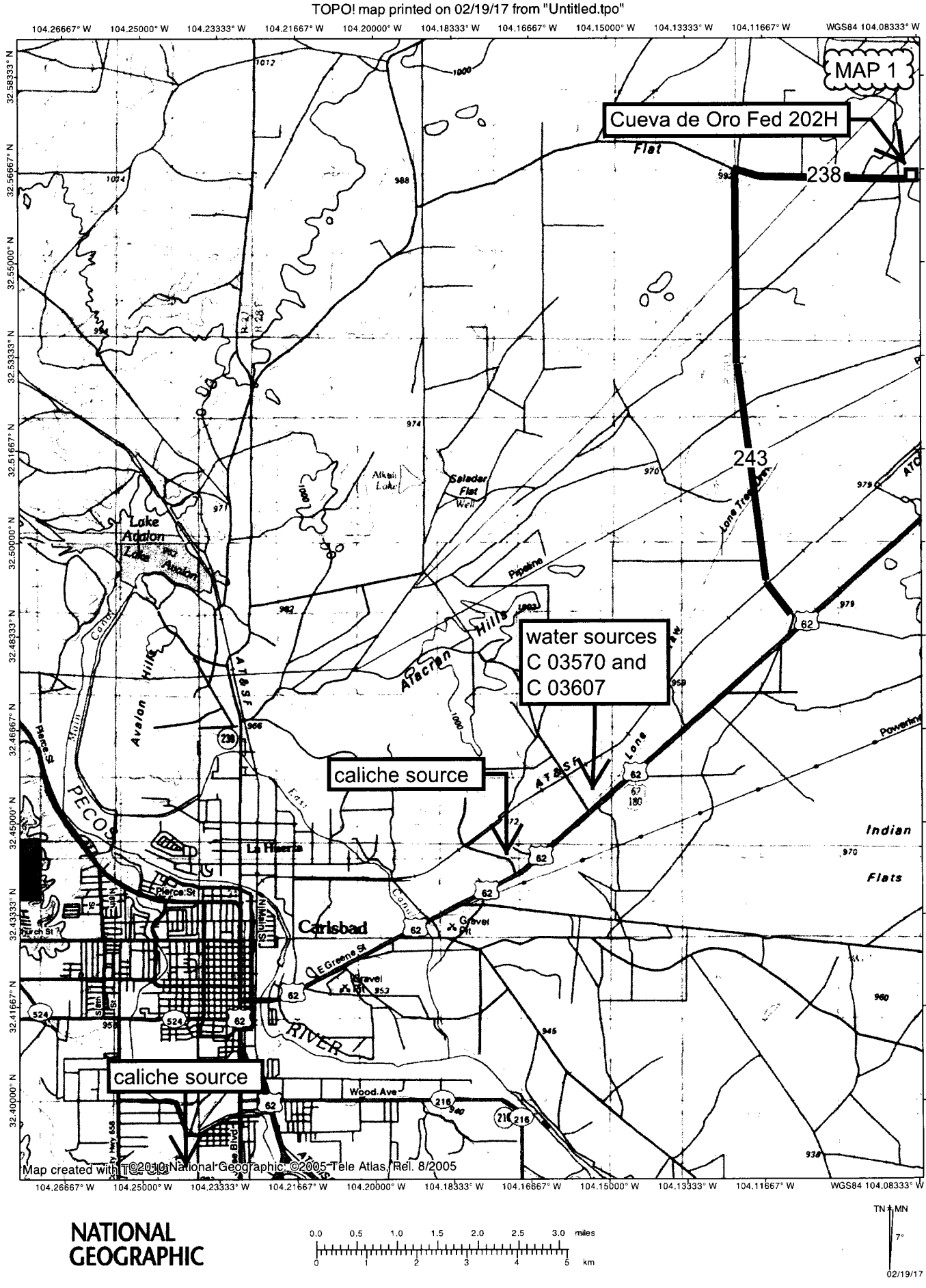
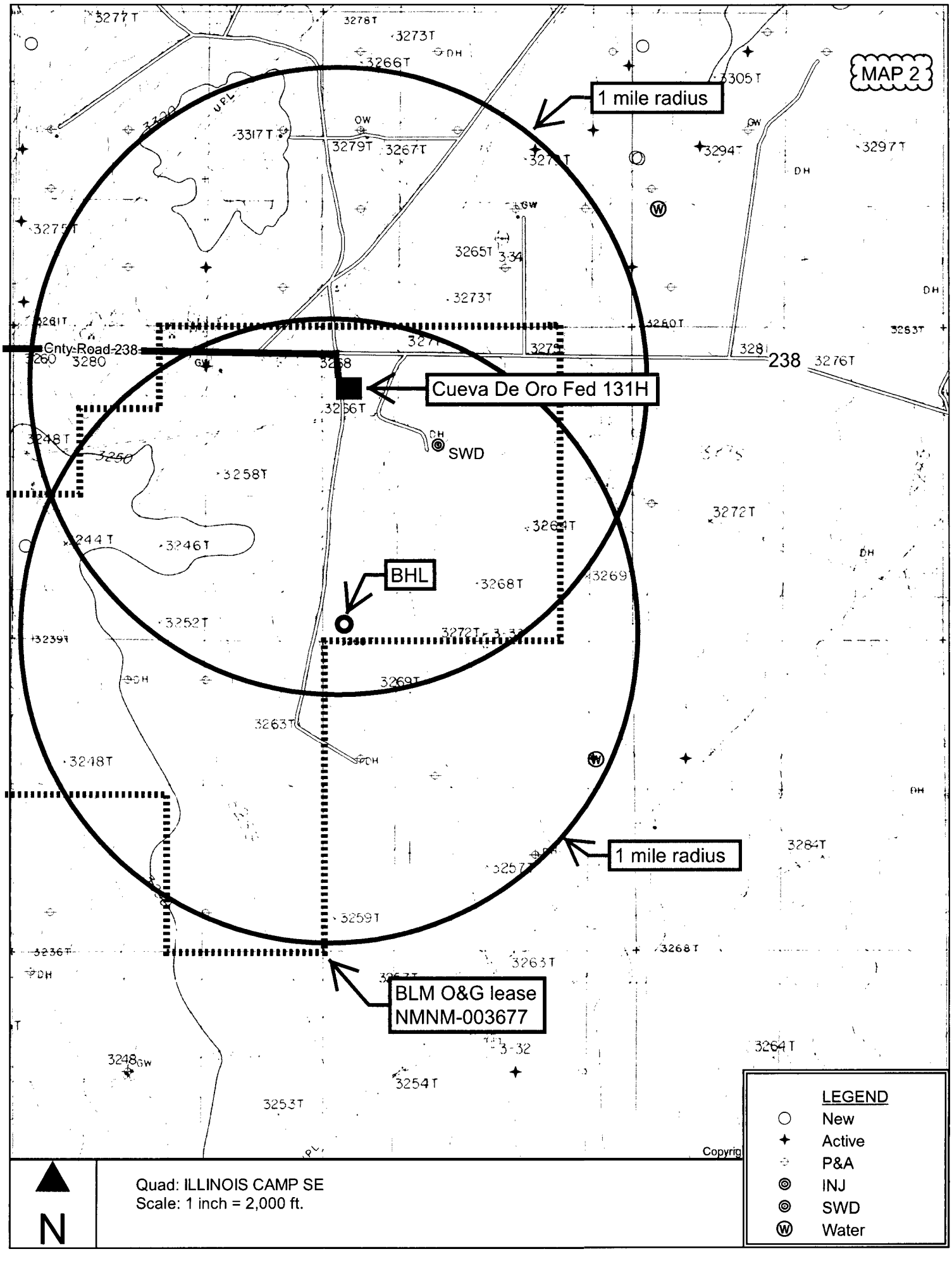
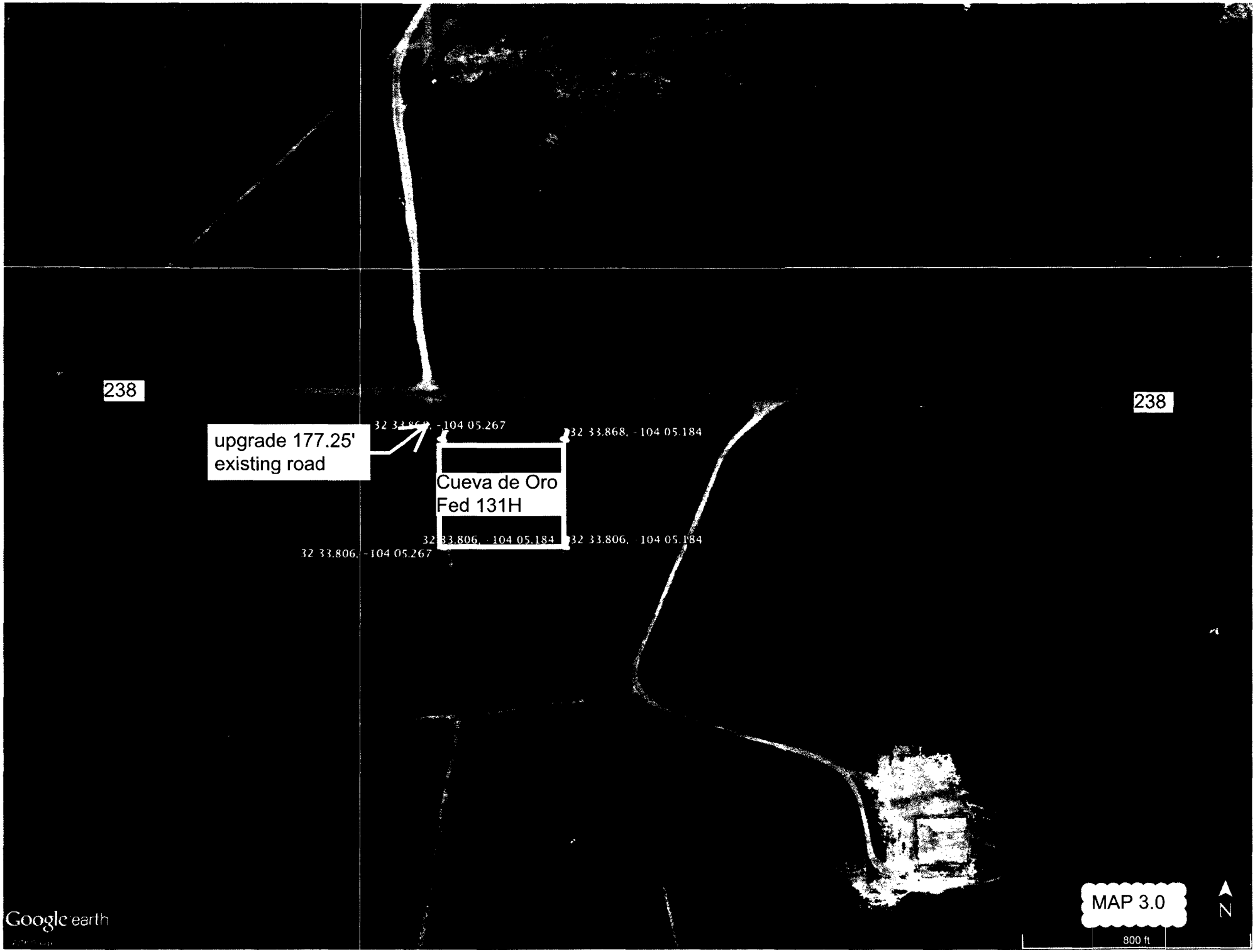
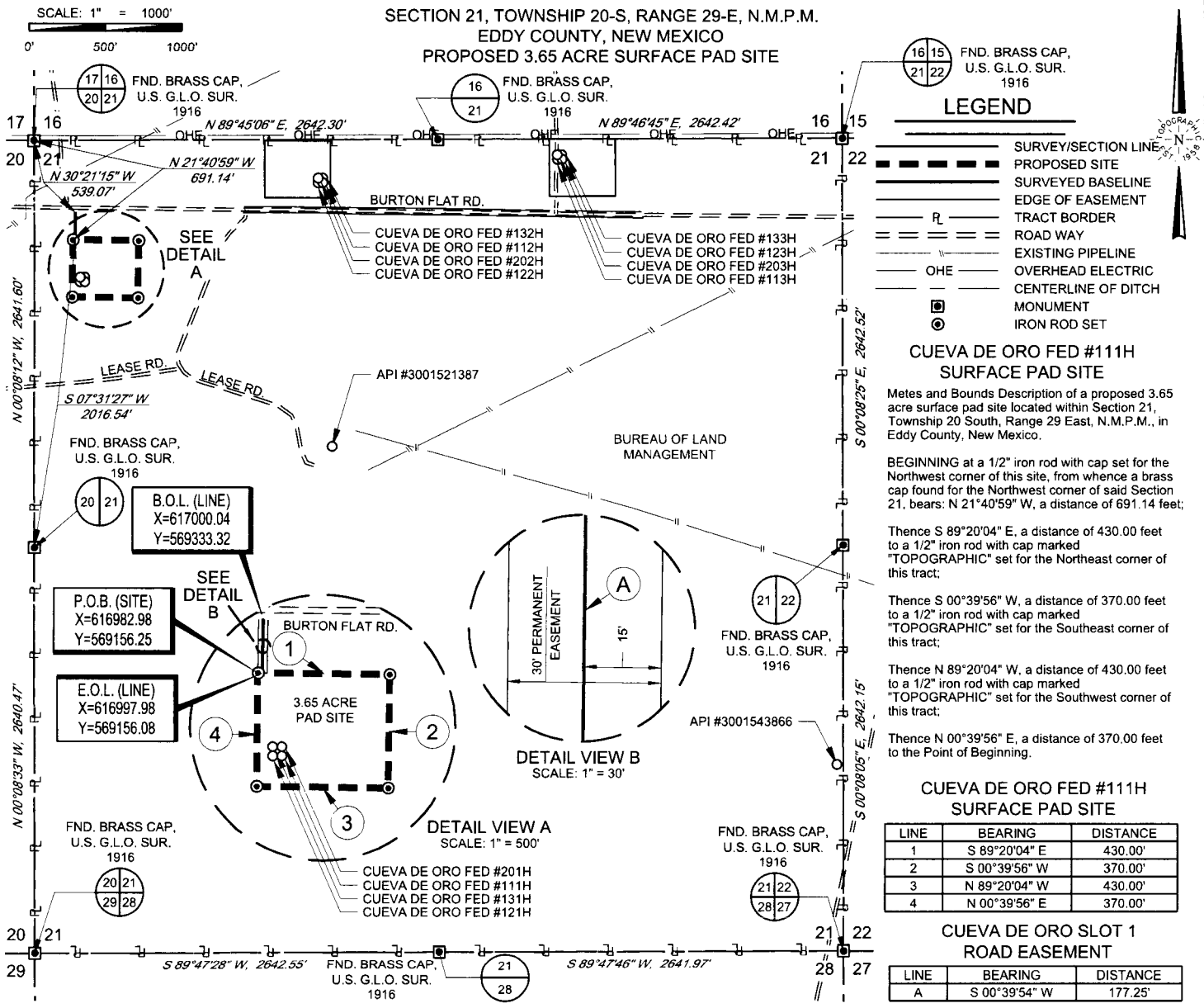

TOPO! map printed on 02/19/17 from "Untitled.tpo"
MAP 1
Cueva de Oro Fed 202H
238
243
water sources
C 03570 and
C 03607
caliche source
caliche source
Carlsbad
Lake Avalon
PECOS RIVER
Indian Flats
Map created with TOPO! ©2010 National Geographic. ©2005 Tele Atlas, Rel. 8/2005
NATIONAL GEOGRAPHIC
0.0 0.5 1.0 1.5 2.0 2.5 3.0 miles
0 1 2 3 4 5 km
TN + MN
7°
02/19/17


MAP 2
1 mile radius
Cueva De Oro Fed 131H
SWD
BHL
1 mile radius
BLM O&G lease
NMNM-003677
Cnty Road 238
238
LEGEND
New
Active
P&A
INJ
SWD
Water
N
Quad: ILLINOIS CAMP SE
Scale: 1 inch = 2,000 ft.


238
238
upgrade 177.25'
existing road
32 33.868, -104 05.267
32 33.868, -104 05.184
Cueva de Oro
Fed 131H
32 33.806, -104 05.184
32 33.806, 104 05.184
32 33.806, -104 05.267
Google earth
MAP 3.0
N
800 ft



CUEVA DE ORO FED #111H SURFACE PAD SITE

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CUEVA DE ORO FED #111H SURFACE PAD SITE

LINE	BEARING	DISTANCE
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2	S 00°39'56" W	370.00'
3	N 89°20'04" W	430.00'
4	N 00°39'56" E	370.00'

CUEVA DE ORO SLOT 1 ROAD EASEMENT

LINE	BEARING	DISTANCE
A	S 00°39'54" W	177.25'

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Matador PRODUCTION COMPANY

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2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

MICHAEL B. BROWN NEW MEXICO 18329 PROFESSIONAL SURVEYOR

Michael Blake Brown, P.S. No. 18329
JUNE 26, 2017

CUEVA DE ORO FED #111H SURFACE PAD SITE	REVISION:	
	MML	08/24/2016
	MML	06/26/2017
DATE: 06/29/2016		
FILE: BO_CUEVA_DE_ORO_FED_111H_SURFACE_PAD_SITE_REV2		
DRAWN BY: A.V.F.		
SHEET :		

NOTES:
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5. E.O.L. = END OF LINE

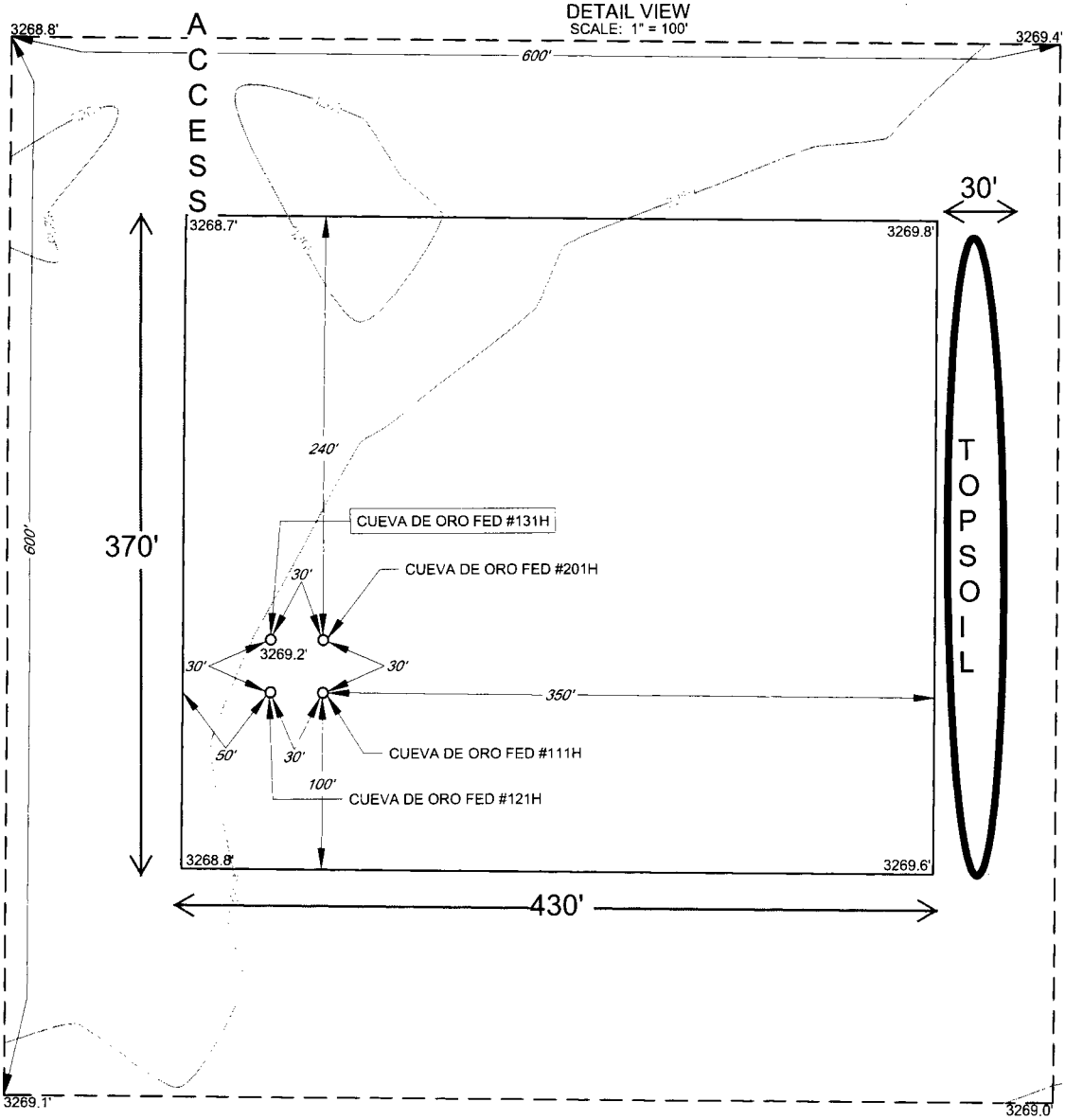
MAP 3.1

S:\SURVEY\MATADOR_RESOURCES\CUEVA_DE_ORO_FED_111H_SURFACE_PAD_SITE\FINAL_PRODUCTS\BO_CUEVA_DE_ORO_FED_111H_SURFACE_PAD_SITE_REV2.DWG 6/29/2017 11:30:10 AM ccaston

MAP 4

SECTION 21, TOWNSHIP 20-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'



LEASE NAME & WELL NO.: CUEVA DE ORO FED #131H

#131H LATITUDE N 32.5636462 #131H LONGITUDE W 104.0871348

LEGEND

EXISTING ROAD
SECTION LINE
ARCH SURVEY

-N-

SCALE: 1" = 100'

0' 50' 100'

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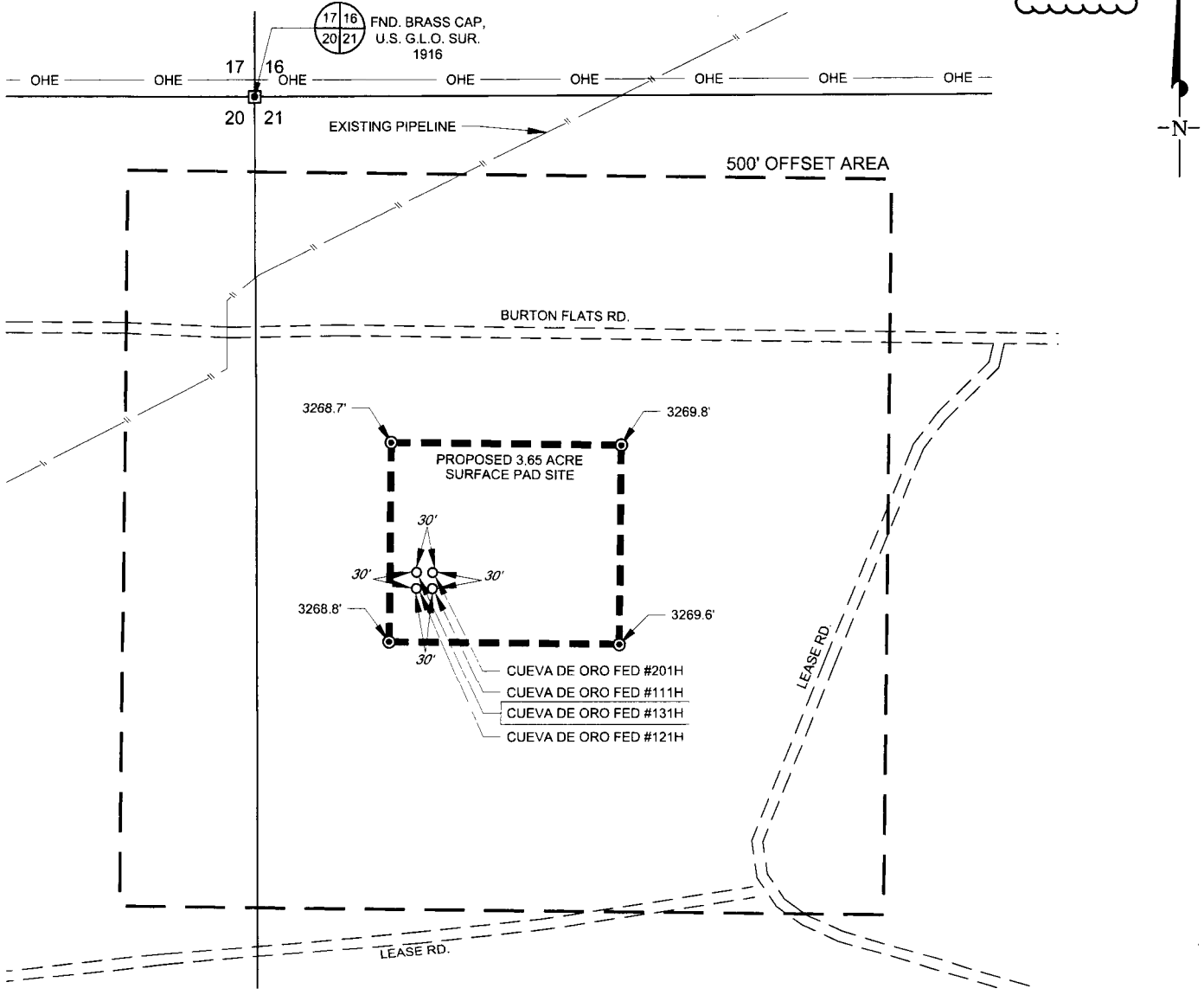
D:\USER DATA\JSTOVALL\DESKTOP\PUBLISH\CUEVA DE ORO\LO_CUEVA_DE_ORO_FED_131H_REV1.DWG 8/27/2016 1:14:30 PM jstovall

SCALE: 1" = 300'

0' 150' 300'

SECTION 21, TOWNSHIP 20-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

MAP 5



LEGEND

- PROPOSED SITE
- 500' PROXIMITY
- SURVEY/SECTION LINE
- ROAD WAY
- EXISTING PIPELINE
- OHE — OVERHEAD ELECTRIC
- IRON ROD SET
- MONUMENT

MICHAEL B. BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR

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Michael Blake Brown, P.S. No. 18329
AUGUST 23, 2016

CUEVA DE ORO FED #131H PROXIMITY	REVISION:	
	INT	DATE
DATE: 08/23/16		
FILE: LO_CUEVA_DE_ORO_FED_131H_REV1		
DRAWN BY: MML		
SHEET: 7 OF 7		

NOTES:
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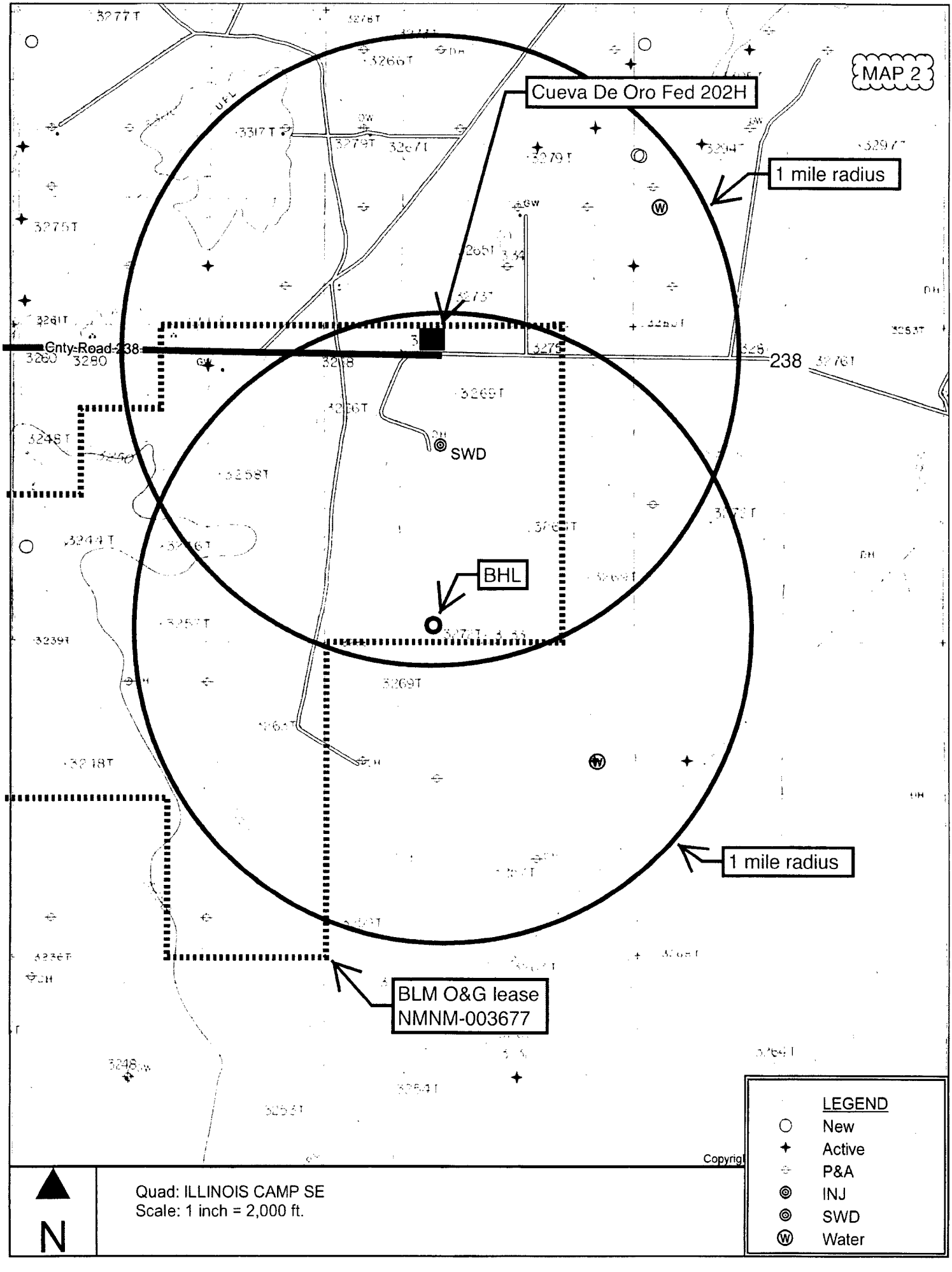
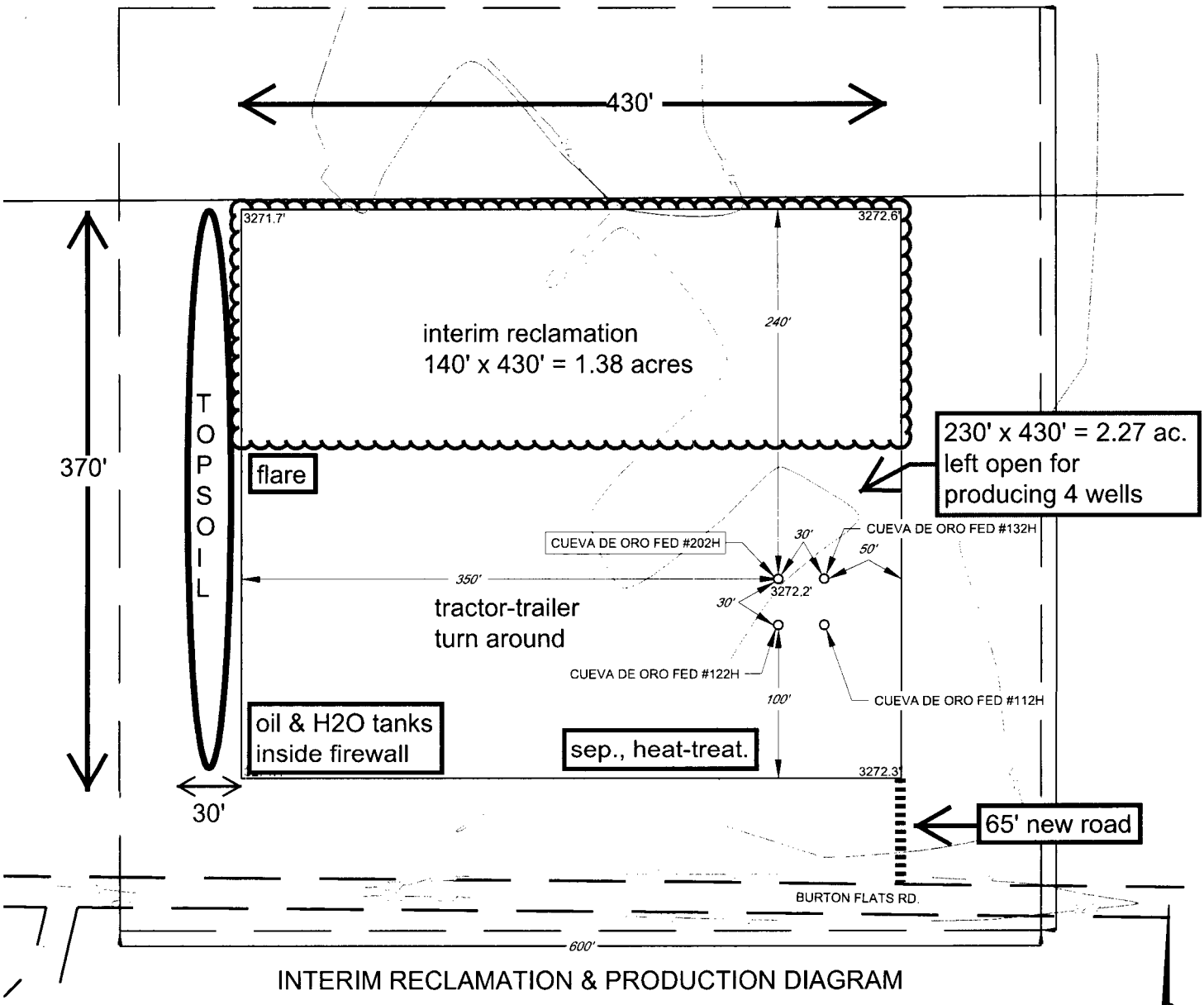

MAP 2
Cueva De Oro Fed 202H
1 mile radius
Cnty Road 238
238
SWD
BHL
1 mile radius
BLM O&G lease
NMNM-003677
LEGEND
New
Active
P&A
INJ
SWD
Water
N
Quad: ILLINOIS CAMP SE
Scale: 1 inch = 2,000 ft.

Matador PRODUCTION COMPANY

SECTION 21, TOWNSHIP 20-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'



INTERIM RECLAMATION & PRODUCTION DIAGRAM

LEASE NAME & WELL NO.: CUEVA DE ORO FED #202H

#202H LATITUDE N 32.5654039 #202H LONGITUDE W 104.0820774

SCALE: 1" = 100'
0' 50' 100'
N

LEGEND

EXISTING ROAD
SECTION LINE
ARCH SURVEY

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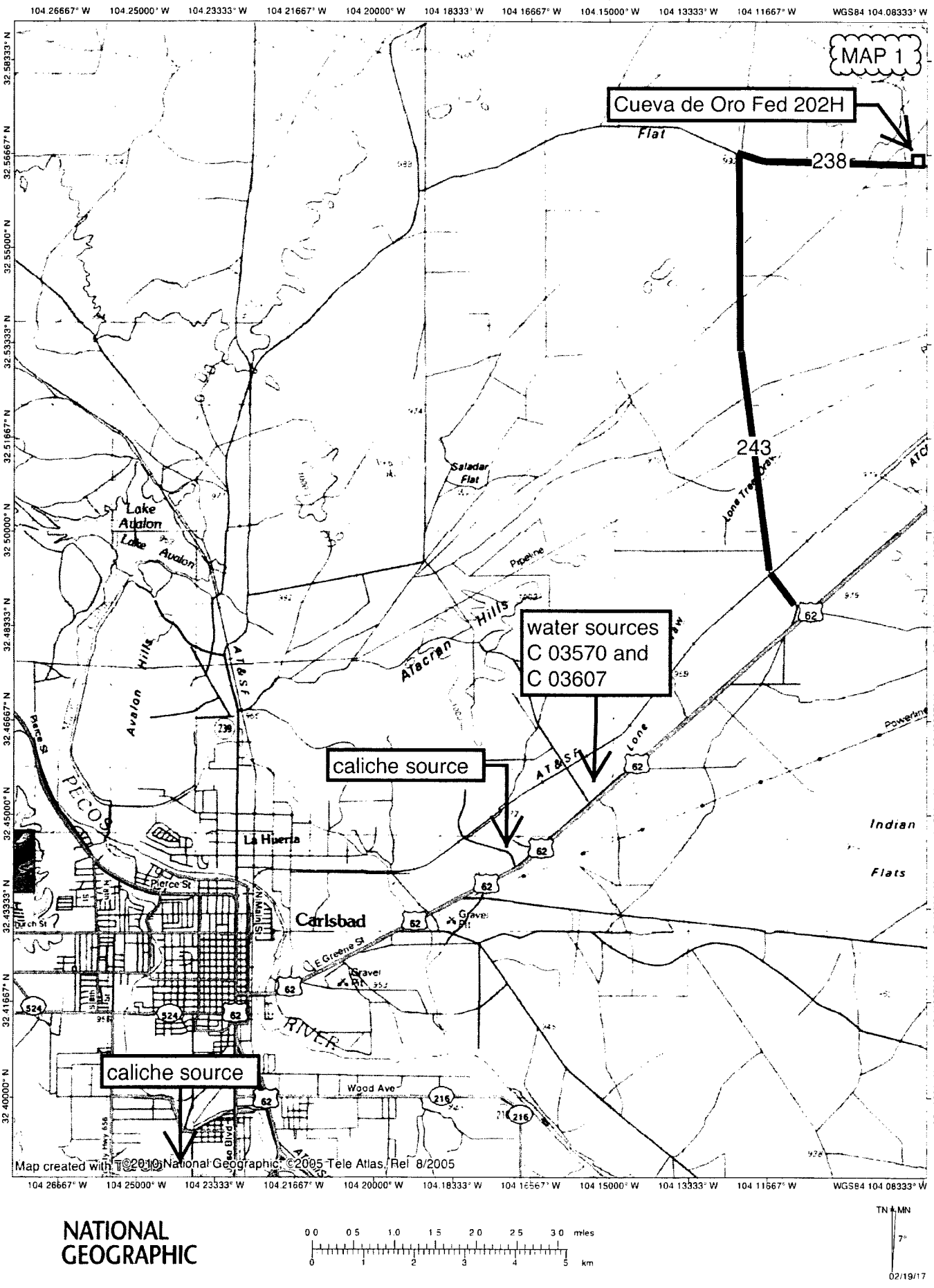
WWW.TOPOGRAPHIC.COM

ORIGINAL DOCUMENT SIZE: 8.5" X 11"

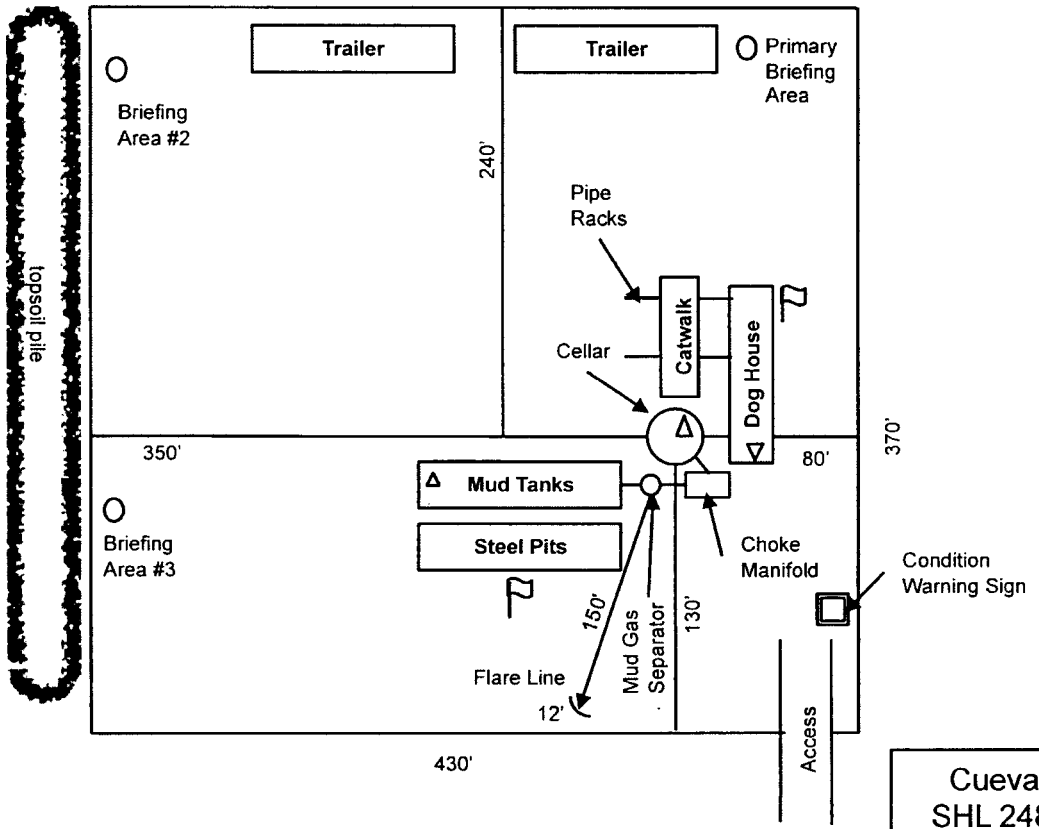

TOPO! map printed on 02/19/17 from "Untitled.tpo"
MAP 1
Cueva de Oro Fed 202H
238
243
water sources
C 03570 and
C 03607
caliche source
caliche source
Carlsbad
La Hiperia
Lake Avalon
Avalon Hills
Atacran Hills
Saladar Flat
Indian Flats
Wood Ave
Pierce St
E Greene St
PECOS RIVER
Map created with TOPO! ©2010 National Geographic, ©2005 Tele Atlas, Rel. 8/2005
NATIONAL GEOGRAPHIC
TN + MN
7°
02/19/17

Rig Diagram

Wind Direction Indicator

H2S Monitors

Briefing Areas



N

Prevailing wind out of South

Cueva De Oro Fed 202H
SHL 248' FNL & 1859' FWL
21-20S-29E Eddy County, NM

Matador Resources Company

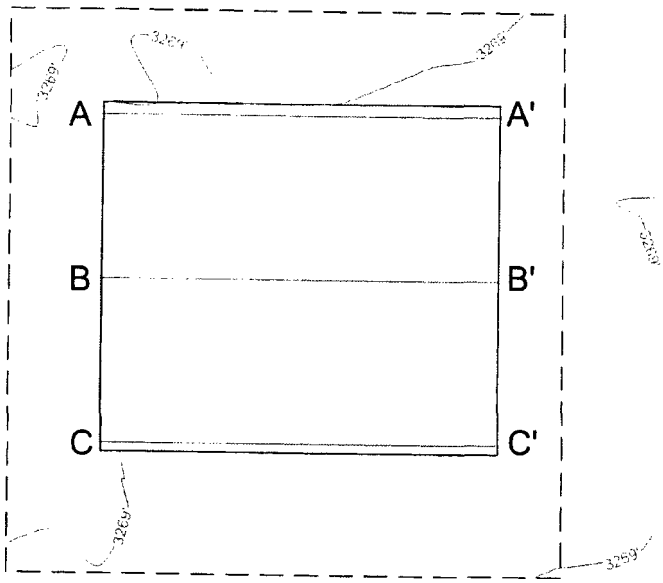
SCALE: 1" = 200'

0' 100' 200'

SECTION 20, TOWNSHIP 20-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

MAP 6

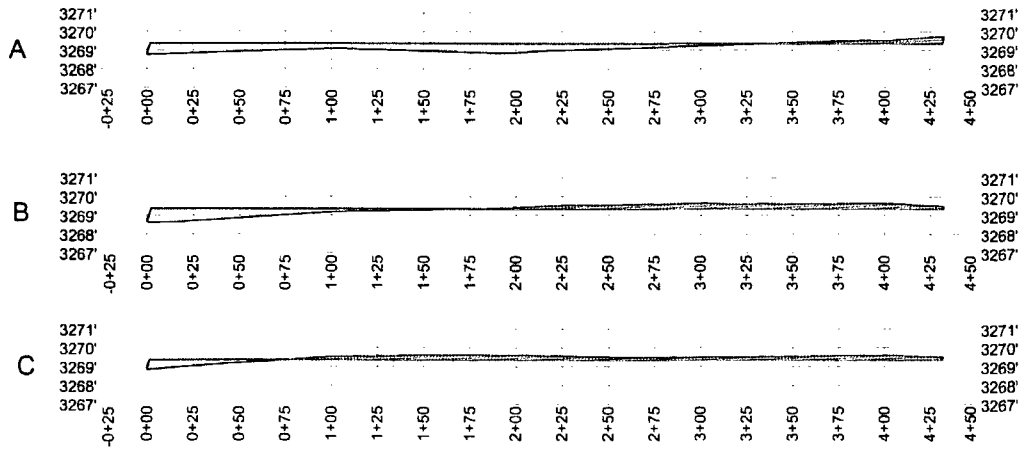
-N-



TOP OF PAD ELEVATION: 3269.4'

CUT SLOPE: 33.33% 3.000:1 18.43°
FILL SLOPE: 33.33% 3.000:1 18.43°
BALANCE TOLERANCE (C.Y.): 0.00
CUT SWELL FACTOR: 1.00
FILL SHRINK FACTOR: 1.00

PAD EARTHWORK VOLUMES
CUT : 21,634.9 C.F., 801.29 C.Y.
FILL: 21,634.8 C.F., 801.29 C.Y.
AREA: 160636.3 SQ.FT., 3.688 ACRES



Horizontal Scale = 1:100
Vertical Scale = 1:10

MICHAEL B. BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR

Matador PRODUCTION COMPANY

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM

Michael Blake Brown, P.S. No. 18329
AUGUST 25, 2016
Field note description of even date accompanies this plat.

CUEVA DE ORO FED #111H SURFACE PAD SITE PROFILE	REVISION:	
	MML	08/25/2016
DATE: 06/23/2016		
FILE: CD CUEVA DE ORO FED 111H SURFACE PAD SITE CUT FILL REV1		
DRAWN BY: A.V.F.		
SHEET :		

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY MATADOR RESOURCE COMPANY. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.

D:\USER DATA\JSTOVALL\DESKTOP\PUBLISH\CUEVA DE ORO\CD_CUEVA_DE_ORO_FED_111H_SURFACE_PAD_SITE_CUT_FILL_REV1.DWG 8/27/2016 12:32:19 PM jstovall

Matador Production Company **SURFACE PLAN PAGE 1**
Cueva de Oro Fed 202H
SHL 248' FNL & 1859' FWL Sec. 21
BHL 240' FSL & 1870' FWL Sec. 21
T. 20 S., R. 29 E., Eddy County, NM

Surface Use Plan

1. ROAD DIRECTIONS & DESCRIPTIONS (See MAPS 1 – 4)

From the junction of US 285 and Us 62/180 in Carlsbad...
Go East 9.1 miles on paved US 62/180 to the equivalent of Mile Post 44.15
Then turn left and go North 5.8 miles on paved County Road 243
Then turn sharply right and go East 2.3 miles on paved County Road 238
Then turn left and go North 68.24' cross-country to the proposed pad

Non-county roads will be maintained as needed to Gold Book standards. This includes pulling ditches, preserving the crown, and cleaning culverts. This will be done at least once a year, and more often as needed. Caliche will be hauled from Constructors, Inc. existing pits on private land in NWNE 34-21s-27e and S2 13-22s-26e.

2. ROAD TO BE BUILT OR UPGRADED (See MAPS 3 & 4)

68.24 feet of new road will be built. The new road will be crowned and ditched, have a 14' wide driving surface, and be surfaced with caliche. An 18" x 50' culvert will be installed in the country road borrow ditch. Maximum disturbed width = 50'. Maximum grade = 1%. Maximum cut or fill = 1'. No upgrade, cattle guard, or vehicle turn out is needed.

3. EXISTING WELLS (See MAP 2)

Existing oil, gas, water, disposal, and P & A wells are within a mile. No injection well is within a mile.

4. PROPOSED PRODUCTION FACILITIES

A tank battery will be built on the south side of the pad. Pipeline and power line plans have not been finalized.

5. WATER SUPPLY (See MAPS 1 – 4)

Water will be trucked from two water wells (C 03570 and C 03607) on private land in NENENE and SENENE 24-21s-27e.

6. CONSTRUCTION MATERIALS & METHODS (see MAP 4)

NM One Call (811) will be notified before construction starts. Top ≈6" of soil and brush will be stockpiled west of the pad. Pipe racks will be to the north. A closed loop drilling system will be used. Caliche will be hauled from existing Constructors, Inc. pits on private land in NWNE 34-21s-27e and S2 13-22s-26e.
A fence will be built on the east side of the pad to protect a karst feature.

7. WASTE DISPOSAL

All trash will be placed in a portable trash cage. It will be hauled to the Eddy County landfill. There will be no trash burning. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to R360's state approved (NM1-6-0) disposal site at Halfway. Human waste will be disposed of in chemical toilets and hauled to the Carlsbad wastewater treatment plant.

8. ANCILLARY FACILITIES

There will be no airstrip or camp. Camper trailers will be on location for the company man, tool pusher, or mud logger.
9. WELL SITE LAYOUT

See Rig Diagram for depictions of the well pad, trash cage, access onto the location, parking, living facilities, and rig orientation.

10. RECLAMATION

Interim reclamation will shrink the pad ≈38% by removing caliche and reclaiming the north side (140' x 430'), leaving 2.27 acres for 4 wells, truck turn around, and production equipment. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas. Disturbed areas will be seeded in accordance with BLM's requirements. Enough stockpiled topsoil will be retained to

cover the remainder of the pad when the wells are plugged. Once the last well is plugged, then the remainder of the pad and new road will be similarly reclaimed. Noxious weeds will be controlled.

11. SURFACE OWNER

All construction will be on BLM. Land use:

50' x 68.24' road = 0.07 acre
+ 370' x 430' pad = 3.65 acres
3.72 acres short term
– 1.38 acres interim reclamation
2.34 acres long term (0.07 road + 2.27 pad)

12. OTHER INFORMATION

On site inspection was held with Vance Wolf, Cassie Brooks, and Stan Allison (both BLM) on August 18, 2016.

Matador paid the Permian Basin programmatic agreement archaeology fund.

CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U. S. C. 1001 for the filing of false statements. Executed this 12th day of March, 2017.

Brian Wood, Consultant
Permits West, Inc.

37 Verano Loop, Santa Fe, NM 87508
(505) 466-8120 FAX: (505) 466-9682 Cellular: (505) 699-2276

Field representative will be:

Sam Pryor, Senior Staff Landman
Matador Production Company
5400 LBJ Freeway, Suite 1500
Dallas TX 75240
Phone: (972) 371-5241
FAX: (214) 866-4841

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

02/14/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001079

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: