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DISTRICT II-ARTESIA O.C.D.

Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM0544986

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.
TODD 36-25 STATE FED COM
232H 325417

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP 6137

9. API Well No.
30-015-45906

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool or Exploratory
333 West Sheridan Avenue Oklahoma City OK 73102	(800)583-3866	~~Wildcat~~ Bone Spring 53805 South

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

At surface SESW / 330 FSL / 1659 FWL / LAT 32.2545757 / LONG -103.734687

At proposed prod. zone NENW / 20 FNL / 2240 FWL / LAT 32.2826324 / LONG -103.7327953

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 36 / T23S / R31E / NMP

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

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
330 feet	600	320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
5190 feet	10550 feet / 20860 feet	FED: CO1104

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3504 feet	06/24/2019	30 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Jenny Harms / Ph: (405)552-6560	10/29/2018

Title
Regulatory Compliance Professional

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Christopher Walls / Ph: (575)234-2234	04/23/2019

Title	Office
Petroleum Engineer	CARLSBAD

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

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

APPROVED WITH CONDITIONS

Approval Date: 04/23/2019

(Continued on page 2)

*(Instructions on page 2)

RWP 4-24-19

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 I: 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 wen, 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 directionany 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.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

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 wen 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 win 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 conects this information to anow 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 Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

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Additional Operator Remarks

Location of Well

1. SHL: SESW / 330 FSL / 1659 FWL / TWSP: 23S / RANGE: 31E / SECTION: 36 / LAT: 32.2545757 / LONG: -103.734687 (TVD: 0 feet, MD: 0 feet)
   PPP: SESW / 100 FSL / 2240 FWL / TWSP: 23S / RANGE: 31E / SECTION: 36 / LAT: 32.2539433 / LONG: -103.7328079 (TVD: 10213 feet, MD: 10264 feet)
   BHL: NENW / 20 FNL / 2240 FWL / TWSP: 23S / RANGE: 31E / SECTION: 25 / LAT: 32.2826324 / LONG: -103.7327953 (TVD: 10550 feet, MD: 20860 feet)

BLM Point of Contact

Name: Linda (Cathleen) Queen
Title: Project Manager-Carlsbad Field Office
Phone: 5752345962
Email: cqueen@blm.gov

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 CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION COMPANY, L.P.
LEASE NO.:	NMNM0544986
WELL NAME & NO.:	232H- TODD 36-25 STATE FED COM
SURFACE HOLE FOOTAGE:	330'/S & 1659'/W
BOTTOM HOLE FOOTAGE	20'/N & 2240'/W
LOCATION:	SECTION 36, T23S, R31E, NMPM
COUNTY:	EDDY

COA

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

A. HYDROGEN SULFIDE

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

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **822 feet** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever

is greater. (This is to include the lead cement)

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

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

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing shall be set at approximately **4425 feet** is:

Option 1 (Single Stage):

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

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

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

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Operator has proposed to pump down 13-3/8" X 9-5/8" annulus. Operator must run a CBL from TD of the 9-5/8" casing to surface. Submit results to BLM.

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

- Cement should tie-back at least **500 feet** into previous casing string. Operator shall provide method of verification.
  Cement excess is less than 25%, more cement might be required.

C. PRESSURE CONTROL

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

2.

Option 1:

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

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
    e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases

subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

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

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

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

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

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

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

A. CASING

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

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

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

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

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

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

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

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

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

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

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

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

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

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

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the

plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

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

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

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

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

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION COMPANY, L.P.
LEASE NO.:	NMNM
WELL NAME & NO.:	232H- TODD 36-25 STATE FED COM
SURFACE HOLE FOOTAGE:	330'/S & 1659'/W
BOTTOM HOLE FOOTAGE	20'/N & 2240'/W
LOCATION:	SECTION 36, T23S, R31E, NMPM
COUNTY:	EDDY

TABLE OF CONTENTS

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

Approval Date: 04/23/2019

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)

In May 2008, the Pecos District Special Status Species Resource Management Plan Amendment (RMPA) was approved and is being implemented. In addition to the standard practices that minimize impacts, as listed above, the following COA will apply:

- Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken, to minimize noise associated impacts which could disrupt breeding and nesting activities.
- Upon abandonment, a low profile abandoned well marker will be installed to prevent raptor perching.
- Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. The holder without liability or expense shall make such modifications and/or additions to the United States.

Livestock Watering Requirement
Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

Fence Requirement
Where entry is granted across a fence line, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

The operator must contact the allotment holder prior to construction to identify the location of the pipeline. The operator must take measures to protect the pipeline from compression or other damages. If the pipeline is damaged or compromised in any way near the proposed project as a result of oil and gas activity, the operator is responsible for repairing the pipeline immediately. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

During construction, the proponent shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. The proponent is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the grazing permittee/allottee prior to disturbing any range improvement projects. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

Lessees must comply with the 2012Secretarial Potash Order. The Order is designed to manage the efficient development of oil, gas, and potash resources. Section 6 of the Order provides

general provisions which must be followed to minimize conflict between the industries and ensure the safety of operations.

To minimize impacts to potash resources, the proposed well is confined within the boundaries of the established Todd 36-25's Drill Island (See Potash Memo and Map in attached file for Drill Island description).

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

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

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

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

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

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

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

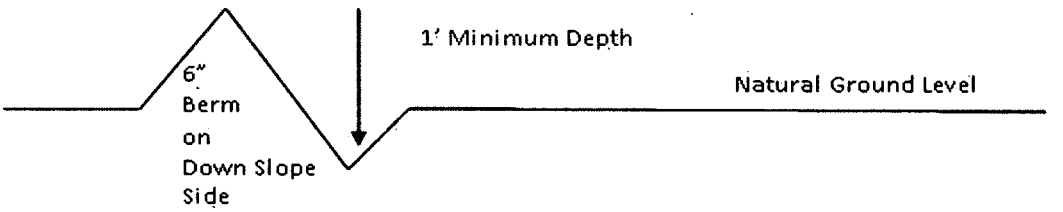
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattle guards

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

Fence Requirement

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

Public Access

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

Construction Steps

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

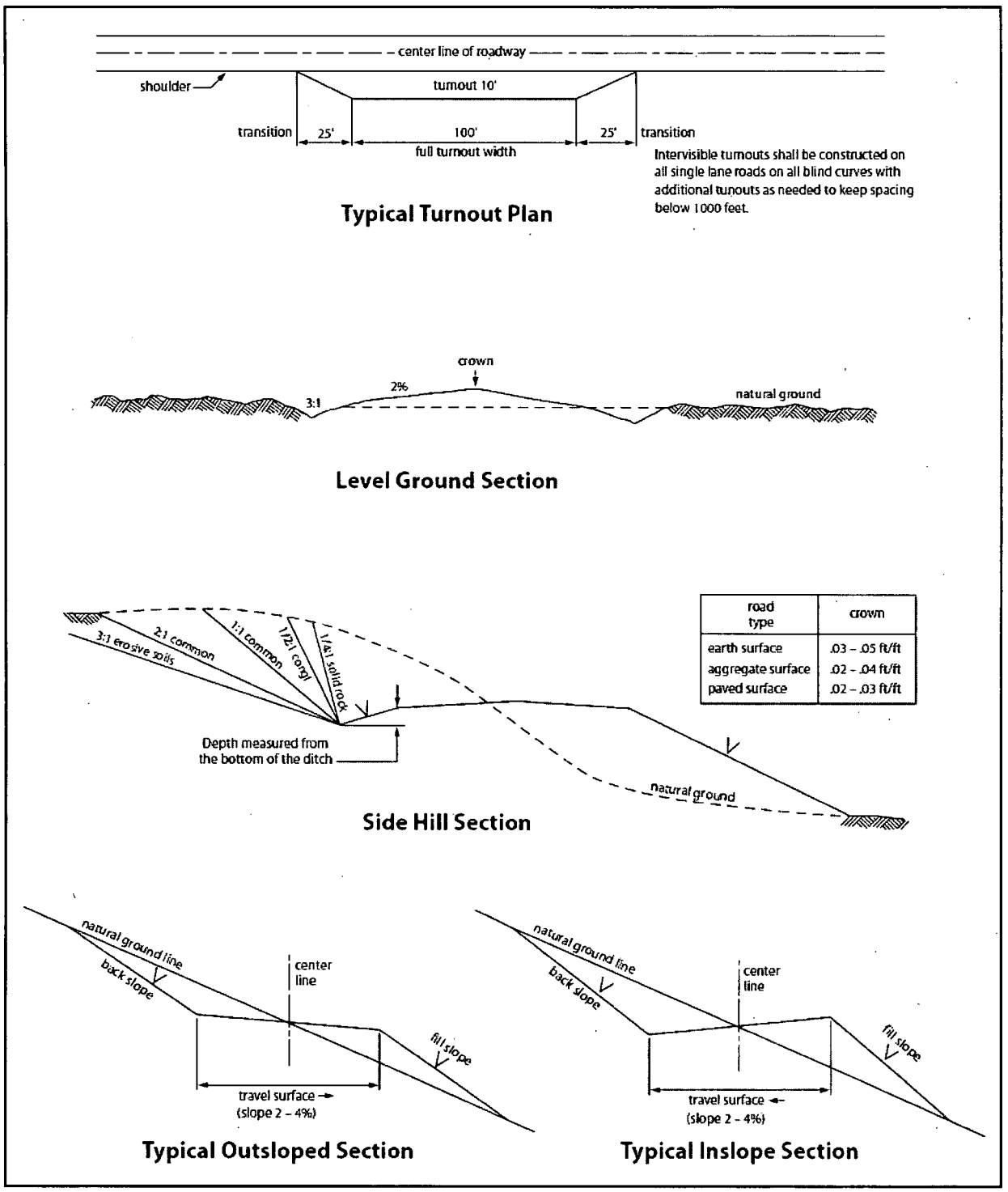


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

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

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus

freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

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

STANDARD STIPULATIONS FOR OIL AND GAS RELATED SITES

A copy of the application (Grant/Sundry Notice) and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant and for all response costs, penalties, damages, claims, and other costs arising from the provisions of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Chap. 82, Section 6901 et. seq., from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Chap. 109, Section 9601 et. seq., and from other applicable environmental statues.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et. seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the site or related pipeline(s), any oil or other pollutant should be discharged from site facilities, the pipeline(s) or from containers or vehicles impacting Federal lands, the control and total removal, disposal, and cleanup of such oil of other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. Sites shall be maintained in an orderly, sanitary condition at all times. Waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, brines, chemicals, oil drums, ashes, and equipment.

6. The operator will notify the Bureau of Land Management (BLM) authorized officer and nearest Fish and Wildlife Service (FWS) Law Enforcement office within 24 hours, if the operator discovers a dead or injured federally protected species (i.e., migratory bird species, bald or golden eagle, or species listed by the FWS as threatened or endangered) in or adjacent to a pit, trench, tank, exhaust stack, or fence. (If the operator is unable to contact the FWS Law Enforcement office, the operator must contact the nearest FWS Ecological Services office.)

7. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is **Shale Green**, Munsell Soil Color Chart Number 5Y 4/2.

8. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

9. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. There are several options available for purchasing mineral material: contact the BLM office (575-234-5972).

10. 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.

11. Once the site is no longer in service or use, the site must undergo final abandonment. At final abandonment, the site 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 the abandonment of the site. All pads and 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. 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).

12. The holder shall stockpile an adequate amount of topsoil where blading occurs. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles. The topsoil will be used for final reclamation.

13. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
( ) seed mixture 2	( ) seed mixture 4
(X) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

14. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

15. Open-topped Tanks - 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

16. 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.

17. 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.

18. 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.

19. Special Stipulations:

- 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 corrected within two weeks and proper measures will be taken to prevent future erosion.

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except

between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from permanent engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure

of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
( ) seed mixture 2	( ) seed mixture 4
(X) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. 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 associated roads, 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.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or

other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

19. Special Stipulations:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b.

A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply

with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

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).

Below Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall 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). 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. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

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

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*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

Operator Certification Data Report

04/23/2019

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: Jenny Harms **Signed on:** 10/29/2018

Title: Regulatory Compliance Professional

Street Address: 333 W Sheridan Ave

City: Oklahoma City **State:** OK **Zip:** 73102

Phone: (405)552-6560

Email address: jenny.harms@dvn.com

Field Representative

Representative Name: RAY VAZ

Street Address: 333 WEST SHERIDAN AVENUE

City: OKLAHOMA CITY **State:** OK **Zip:** 73102-5015

Phone: (575)748-1871

Email address: RAY.VAZ@DVN.COM

AFMSS

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

Application Data Report

04/23/2019

APD ID: 10400035677 **Submission Date:** 10/29/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400035677 **Tie to previous NOS?** **Submission Date:** 10/29/2018

BLM Office: CARLSBAD **User:** Jenny Harms **Title:** Regulatory Compliance Professional

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

Lease number: NMNM0544986 **Lease Acres:** 600

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

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

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO **APD Operator:** DEVON ENERGY PRODUCTION COMPANY LP

Operator letter of designation:

Operator Info

Operator Organization Name: DEVON ENERGY PRODUCTION COMPANY LP

Operator Address: 333 West Sheridan Avenue **Zip:** 73102

Operator PO Box:

Operator City: Oklahoma City **State:** OK

Operator Phone: (800)583-3866

Operator Internet Address:

Section 2 - Well Information

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

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

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

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H **Well API Number:**

Field/Pool or Exploratory? Exploratory **Field Name:** WILDCAT **Pool Name:**

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

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

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:** TODD 36 WELLPAD **Number:** 2

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

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: **Distance to nearest well:** 5190 FT **Distance to lease line:** 330 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: TODD_36_25_ST_FED_COM_232H_C102_signed_20181029063311.pdf

Well work start Date: 06/24/2019 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

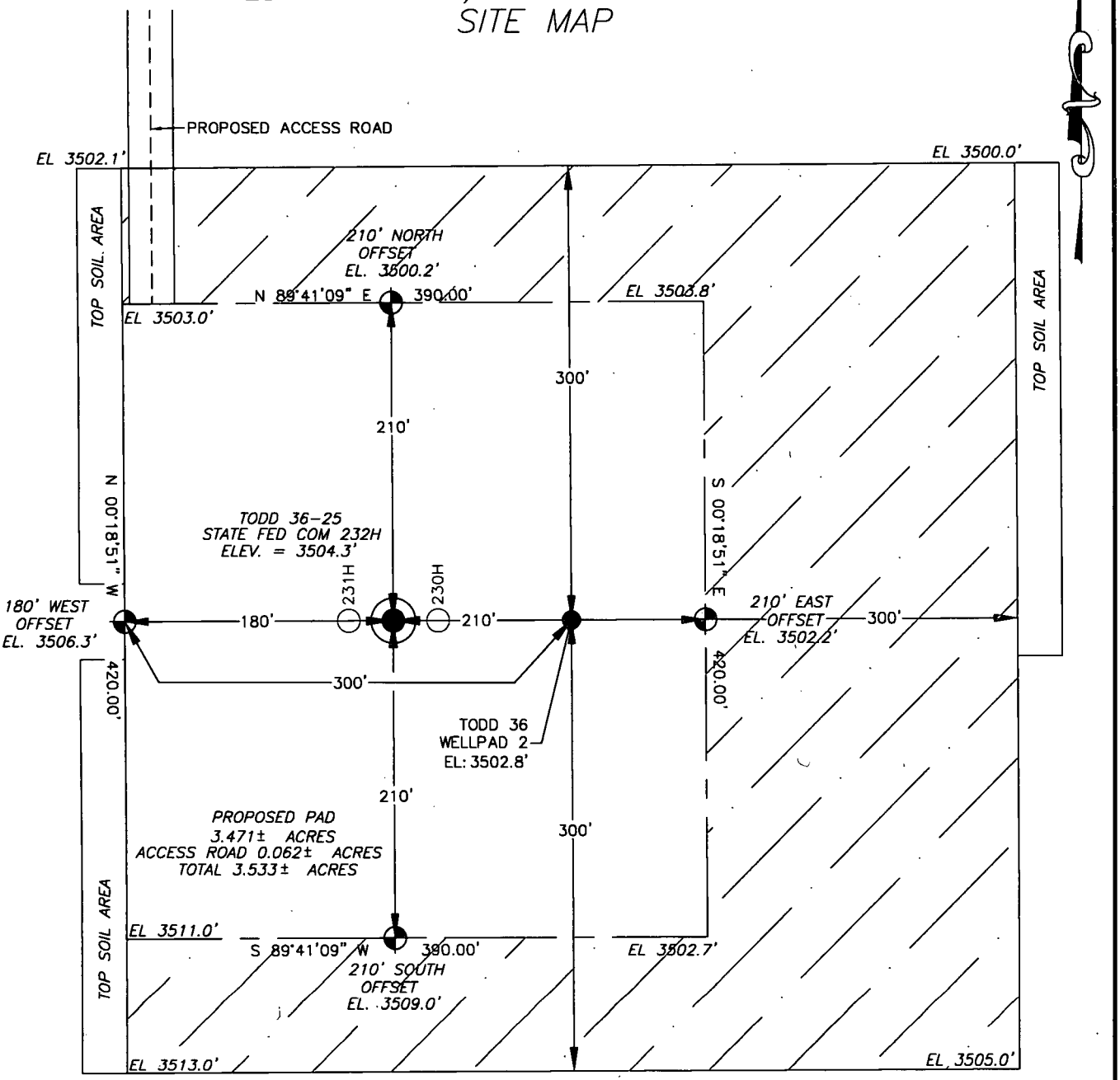
	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	330	FSL	1659	FWL	23S	31E	36	Aliquot SESW	32.2545757	-103.734687	EDDY	NEW MEXICO	NEW MEXICO	S	STATE	3504	0	0
KOP Leg #1	50	FSL	2240	FWL	23S	31E	36	Aliquot SESW	32.253796	-103.732671	EDDY	NEW MEXICO	NEW MEXICO	S	STATE	-6473	10019	9977
PPP Leg #1	100	FSL	2240	FWL	23S	31E	36	Aliquot SESW	32.2539433	-103.732879	EDDY	NEW MEXICO	NEW MEXICO	S	STATE	-6709	10264	10213

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	100	FNL	2243	FWL	23S	31E	25	Aliquot NENW	32.282411	-103.732782	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0544986	-7046	20780	10550
BHL Leg #1	20	FNL	2240	FWL	23S	31E	25	Aliquot NENW	32.282624	-103.732953	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0544986	-7046	20860	10550

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP



Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

DEVON ENERGY PRODUCTION COMPANY, L.P.
TODD 36-25 STATE FED COM 232H
LOCATED 330 FT. FROM THE SOUTH LINE
AND 1659 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

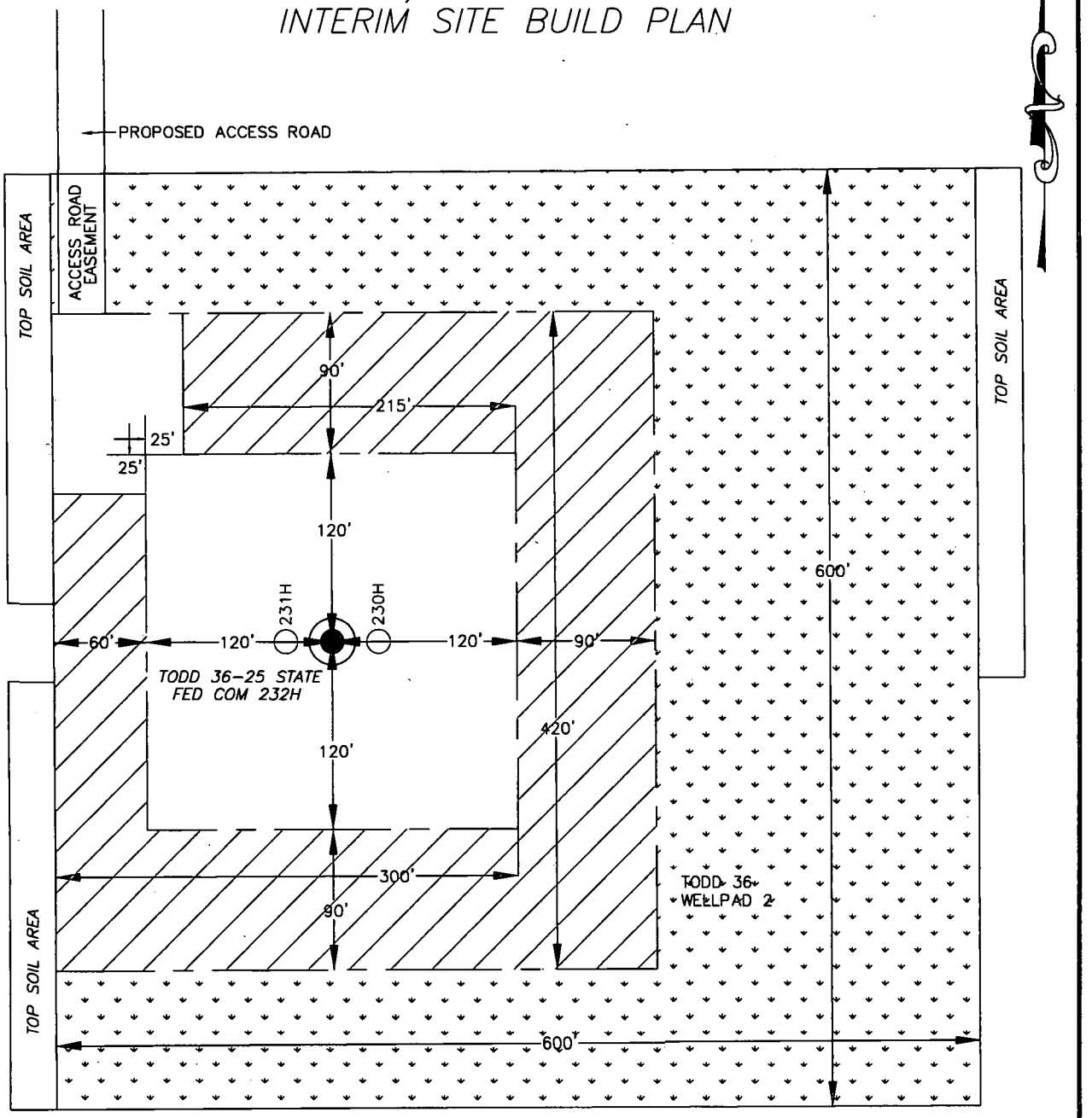
0 100 200

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF NM-128 AND RED ROAD HEAD NORTH ON RED ROAD FOR 0.09 MILES. TURN RIGHT ONTO AN ACCESS ROAD AND HEAD NORTHEAST FOR 0.07 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 WELLPAD 1 ACCESS ROAD. LEAVE THE EXISTING ACCESS ROAD AND HEAD NORTH AND EAST ON THE PROPOSED TODD 36 WELLPAD 1 ACCESS ROAD FOR 0.19 MILES TO THE SAME EXISTING ACCESS ROAD AND THEN HEAD EAST FOR 0.18 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 WELLPAD 2 ACCESS ROAD. HEAD SOUTH ALONG THE PROPOSED TODD 36 WELLPAD 2 ACCESS ROAD FOR 200 FEET TO THE TO THE NORTHWEST CORNER OF THE TODD 36 WELLPAD 2.

HORIZON ROW LLC		Drawn for:
DEVON ENERGY PRODUCTION CO., L.P.		devon
Drawn by: CHRIS MAAS	Date: 09/22/2018 Rev. Date: 10/08/2018	

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN



DENOTES INTERIM PAD RECLAMATION AREA

DENOTES GRADING SITE RECLAMATION AREA

2.228± ACRES INTERIM PAD RECLAMATION AREA
4.442± ACRES GRADING SITE RECLAMATION AREA
1.594± ACRES NON-RECLAIMED AREA
8.264± ACRES GRADING SITE RECLAMATION AREA

0 100 200

DEVON ENERGY PRODUCTION COMPANY, L.P.
TODD 36-25 STATE FED COM 232H
LOCATED 330 FT. FROM THE SOUTH LINE
AND 1659 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

HORIZON ROW LLC

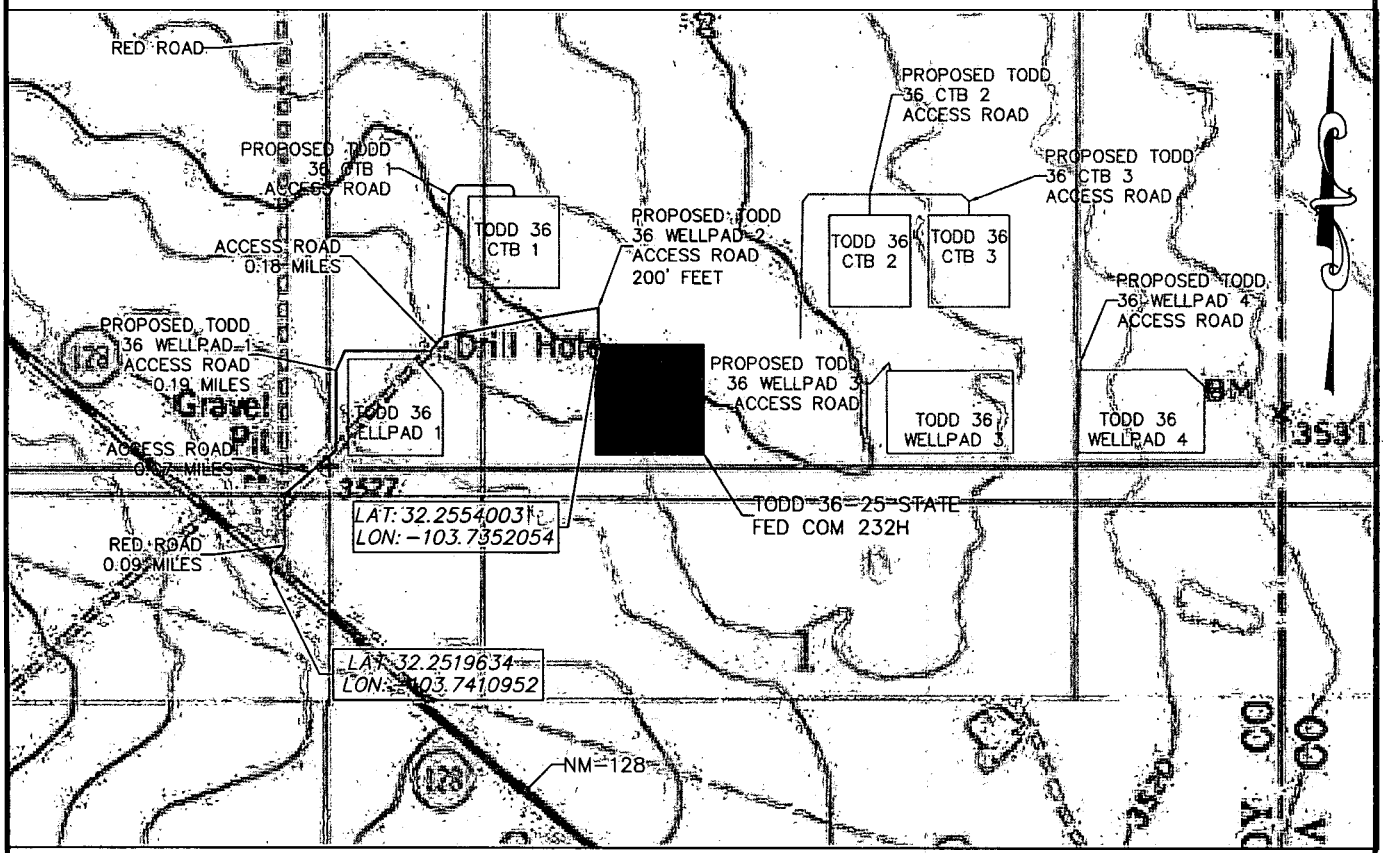
DEVON ENERGY PRODUCTION CO., L.P.

Drawn by: CHRIS MAAS

Date: 09/22/2018
Rev. Date: 10/08/2018

Drawn for: devon

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DEVON ENERGY PRODUCTION COMPANY, L.P.
TODD 36-25 STATE FED COM 232H
LOCATED 330 FT. FROM THE SOUTH LINE AND 1659 FT. FROM THE WEST LINE OF SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

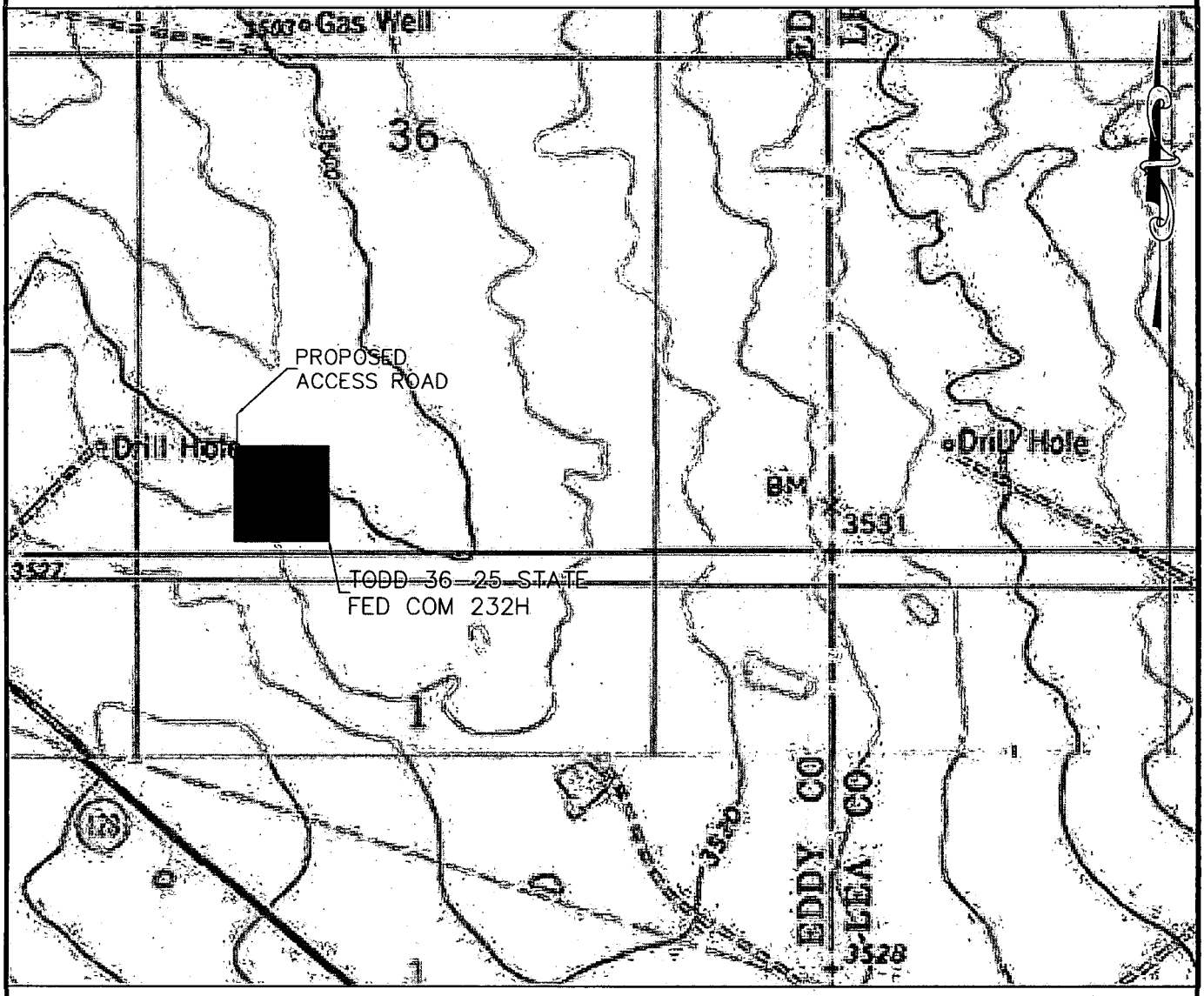
DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF NM-128 AND RED ROAD HEAD NORTH ON RED ROAD FOR 0.09 MILES. TURN RIGHT ONTO AN ACCESS ROAD AND HEAD NORTHEAST FOR 0.07 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 WELLPAD 1 ACCESS ROAD. LEAVE THE EXISTING ACCESS ROAD AND HEAD NORTH AND EAST ON THE PROPOSED TODD 36 WELLPAD 1 ACCESS ROAD FOR 0.19 MILES TO THE SAME EXISTING ACCESS ROAD AND THEN HEAD EAST FOR 0.18 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 WELLPAD 2 ACCESS ROAD. HEAD SOUTH ALONG THE PROPOSED TODD 36 WELLPAD 2 ACCESS ROAD FOR 200 FEET TO THE TO THE NORTHWEST CORNER OF THE TODD 36 WELLPAD 2.

0 1000 2000

HORIZON ROW LLC		Drawn for: devon
DEVON ENERGY PRODUCTION CO., L.P.		
Drawn by: CHRIS MAAS	Date: 09/22/2018 Rev: Date: 10/08/18	

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP

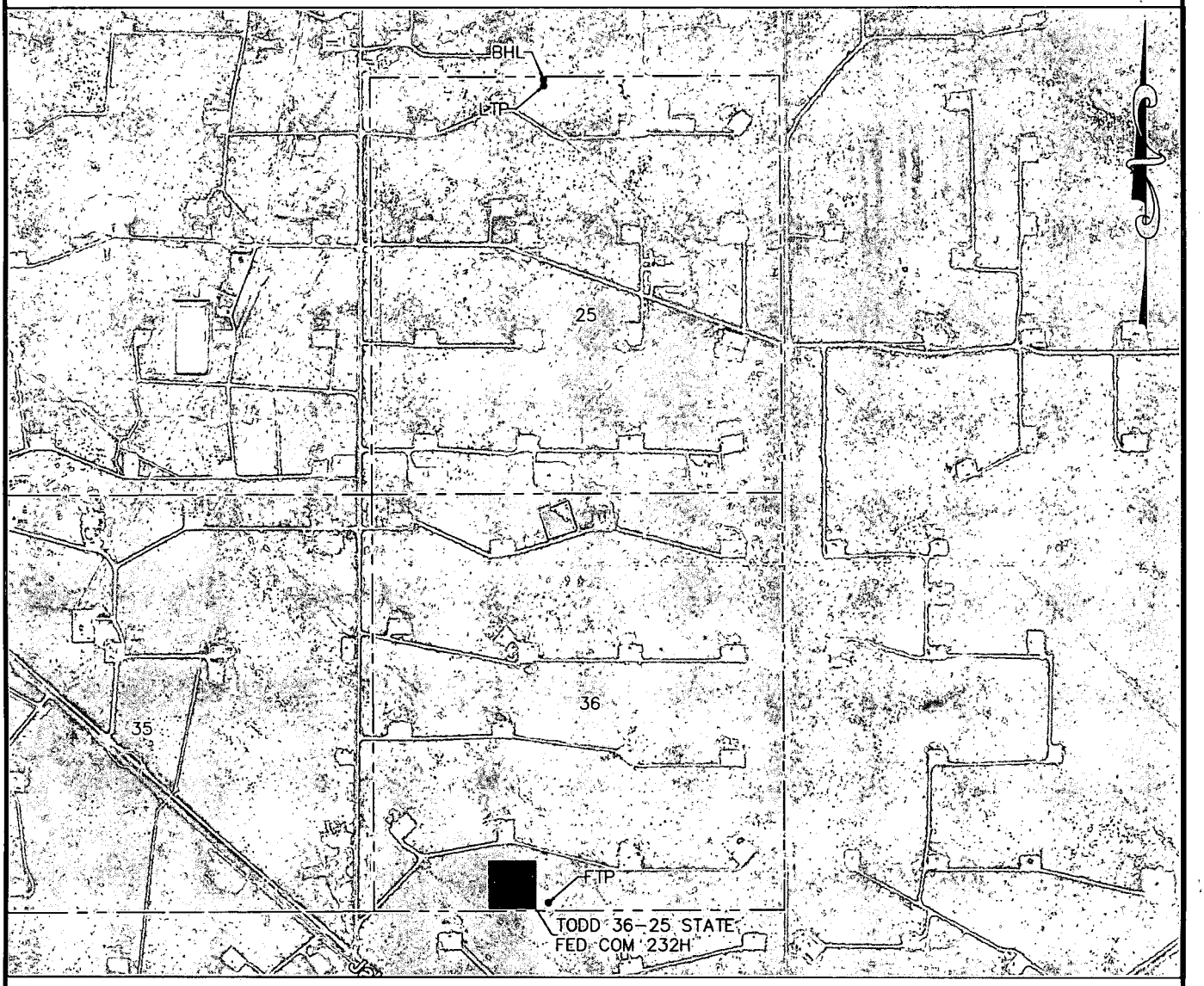


DEVON ENERGY PRODUCTION COMPANY, L.P.
TODD 36-25 STATE FED COM 232H
LOCATED 330 FT. FROM THE SOUTH LINE
AND 1659 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

0 1000 2000

HORIZON ROW LLC		Drawn for: devon
DEVON ENERGY PRODUCTION CO., L.P.		
Drawn by: CHRIS MAAS	Date: 09/22/2018 Rev:Date: 10/08/18	

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO

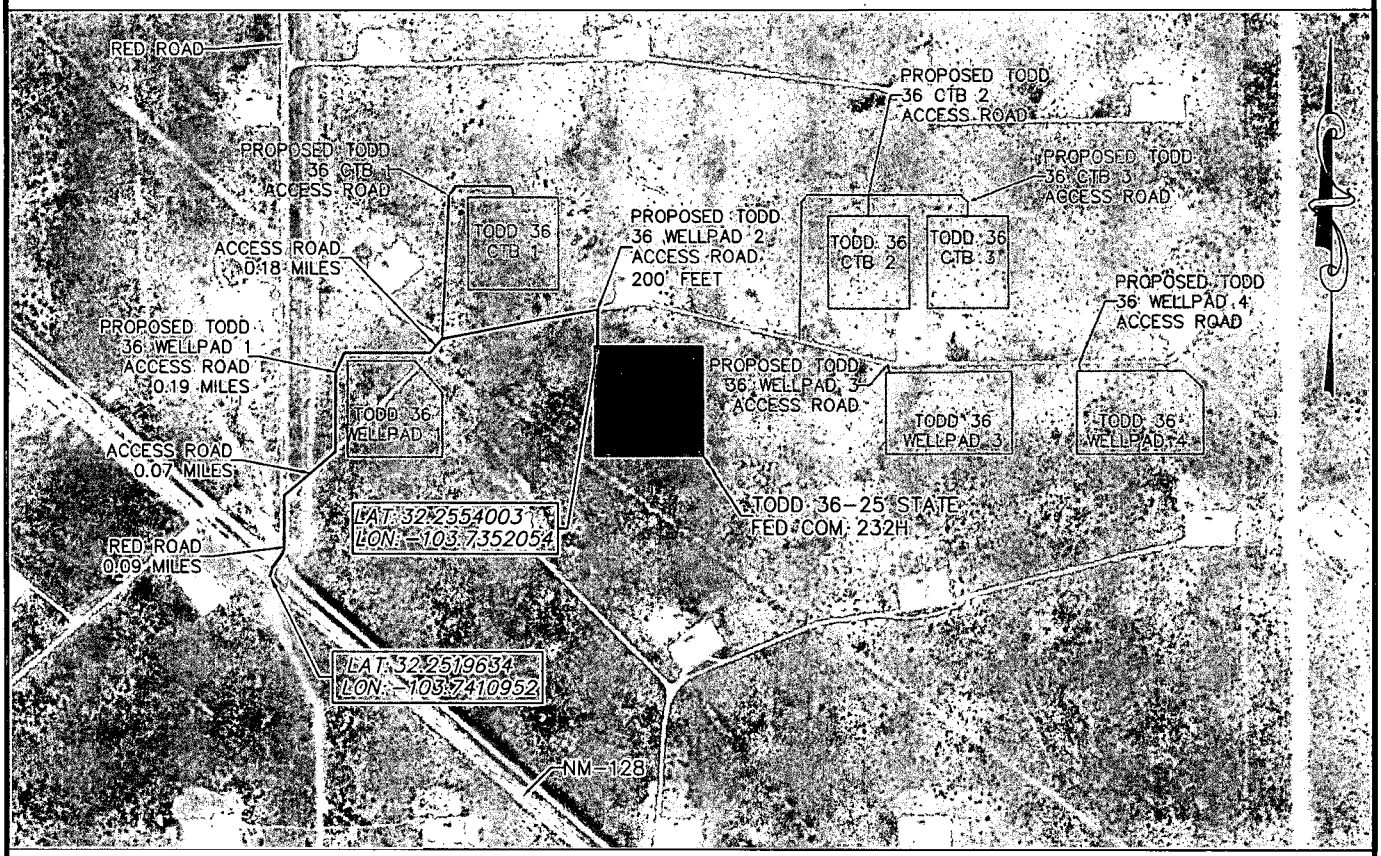


DEVON ENERGY PRODUCTION COMPANY, L.P.
TODD 36-25 STATE FED COM 232H
LOCATED 330 FT. FROM THE SOUTH LINE
AND 1659 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

0 2000 4000

HORIZON ROW LLC		Drawn for: devon
DEVON ENERGY PRODUCTION CO., L.P.		
Drawn by: CHRIS MAAS	Date: 09/22/2018 Rev:Date: 10/08/18	

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



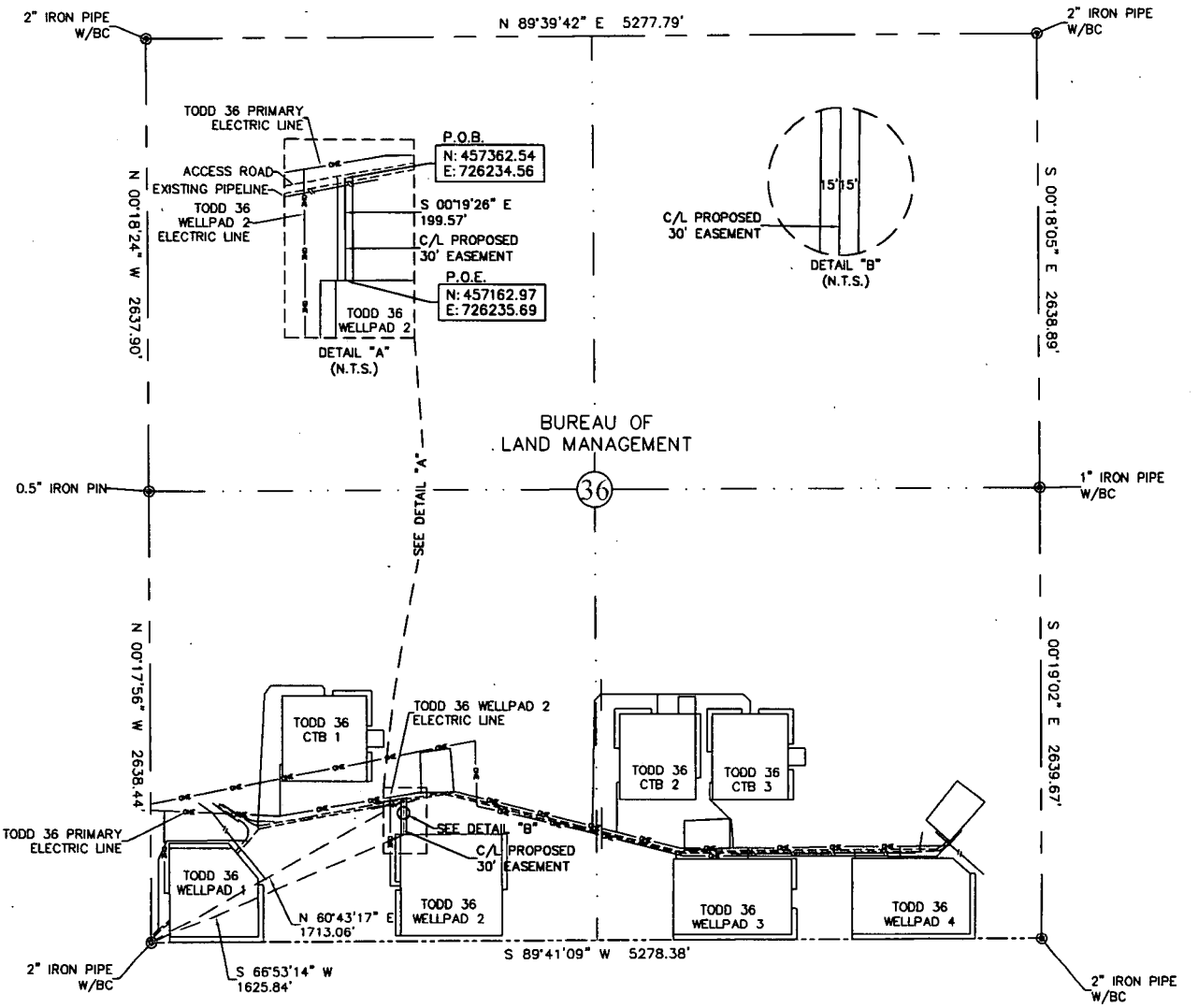
DEVON ENERGY PRODUCTION COMPANY, L.P.
TODD 36-25 STATE FED COM 232H
LOCATED 330 FT. FROM THE SOUTH LINE
AND 1659 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

0 1000 2000

HORIZON ROW LLC		Drawn for: devon
DEVON ENERGY PRODUCTION CO., L.P.		
Drawn by: CHRIS MAAS	Date: 09/22/2018 Rev. Date: 10/08/18	

EXHIBIT "A"

ACCESS ROAD PLAT
SECTION 36, T23S–R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.137 ACRE(S)
199.57 FEET OR 12.10 RODS

0+00.0 P.O.B./EXISTING ACCESS ROAD
0+08.0 EDGE OF ROAD
0+13.3 EXISTING FLOW LINE
1+99.6 P.O.E./TODD 36 WELLPAD 2

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

NEW MEXICO 22404 PROFESSIONAL SURVEYOR

B.L. Laman PLS #22404
Date Signed: 09-25-2018
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizonrow, LLC

0 1000 2000

HORIZON ROW LLC	DEVON ENERGY PRODUCTION COMPANY, L.P.		LINE NUMBER:
Drawn for: devon	TODD 36 WELLPAD 2 ACCESS ROAD		WBS NUMBER:
			SCALE: 1" = 1000'
	PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 36, T23S–R31E, N.M.P.M.		REVISIONS:
Drawn by: CHRIS MAAS	Date: 07/06/2018		SHEET:

SECTION 36, T23S-R31E, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

ACCESS ROAD PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

BEING an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) of Section 36, Township 23 South, Range 31 East, N.M.P.M., Eddy County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 36, T23S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 60°43'17" E a distance of 1713.06' to the **Point of Beginning** of this easement having coordinates of Northing=457362.54, Easting=726234.56 feet and continuing the following course;

Thence S 00°19'26" E a distance of 199.57' to the **Point of Ending** having coordinates of Northing=457162.97, Easting=726235.69 feet from said point a 2" iron pipe w/BC for the southwest corner of Section 36, T23S-R31E bears S 66°53'14" W a distance of 1625.84', covering **199.57' or 12.10 rods** and having an area of **0.137 acres**.

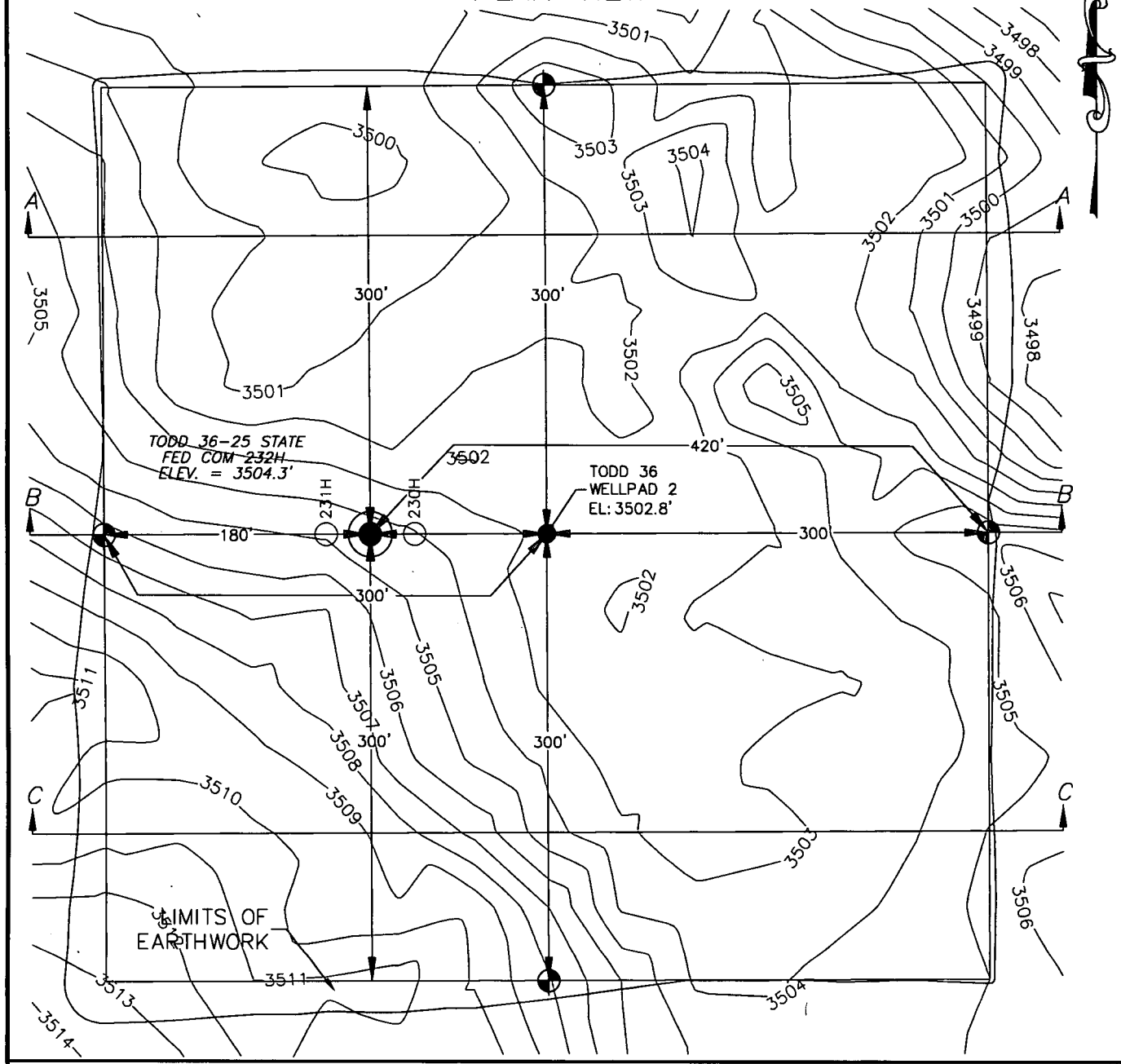
NOTES:

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS 22404
Date Signed: 09/25/2018
Horizon Row, LLC
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizon Row, LLC

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
PLAN VIEW



DEVON ENERGY PRODUCTION COMPANY, L.P.
TODD 36-25 STATE FED COM 232H
LOCATED 330 FT. FROM THE SOUTH LINE
AND 1659 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

0 100 200

EARTHWORK QUANTITIES FOR
TODD 36 WELLPAD 2

CUT	FILL	NET
15,793 CY	15,793 CY	0 CY

EARTHWORK QUANTITIES ARE ESTIMATED

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by: CHRIS MAAS

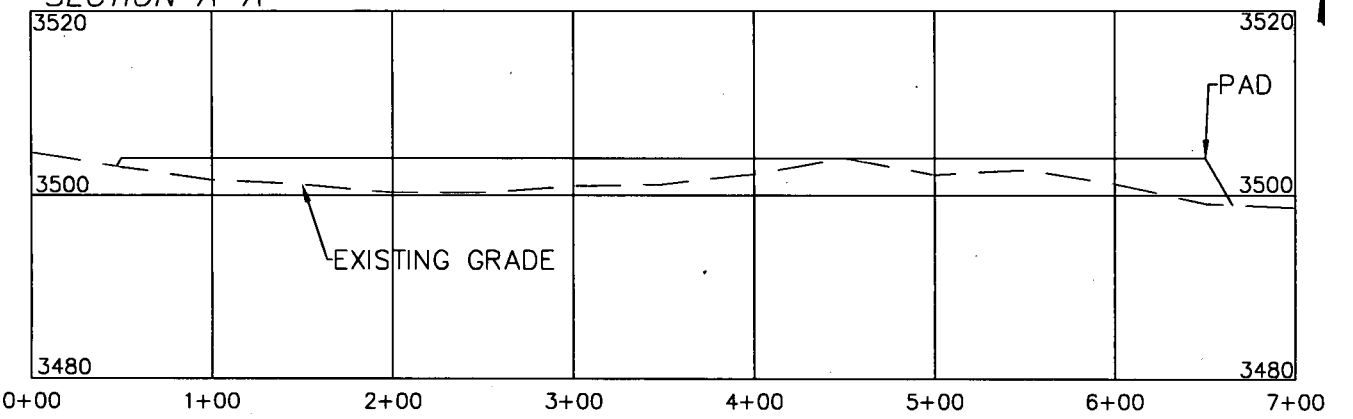
Date: 09/22/2018
Rev. Date: 10/08/2018

Drawn for:

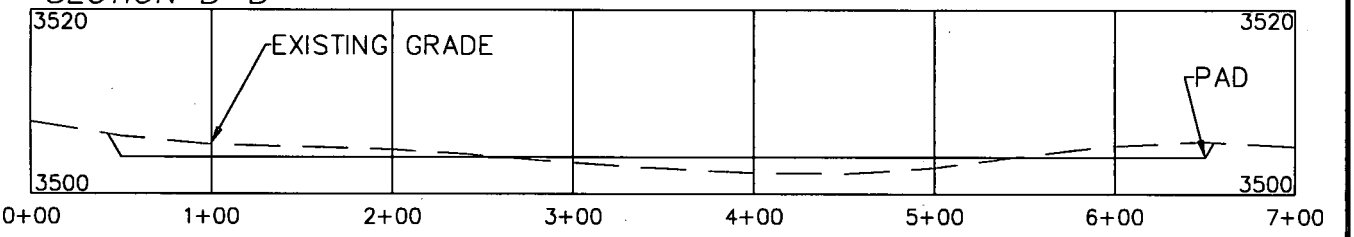
devon

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
CROSS SECTIONS

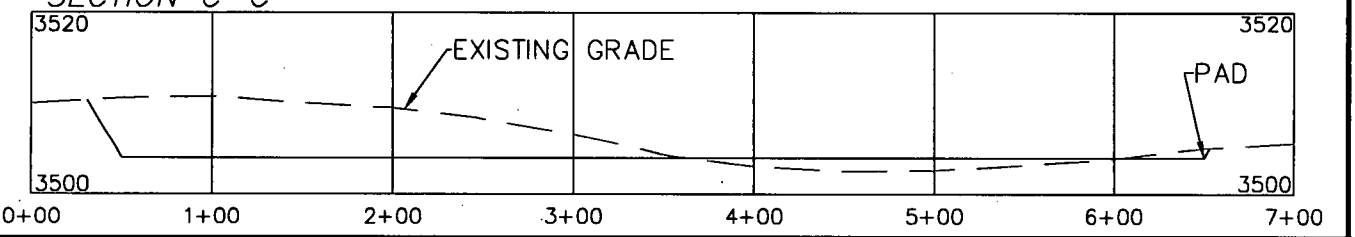
SECTION A–A



SECTION B–B



SECTION C–C



DEVON ENERGY PRODUCTION COMPANY, L.P.
TODD 36–25 STATE FED COM 232H
LOCATED 330 FT. FROM THE SOUTH LINE
AND 1659 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

SCALE 1" = 100' HORIZONTAL
SCALE 1" = 20' VERTICAL

EARTHWORK QUANTITIES FOR
TODD 36 WELLPAD 2

CUT	FILL	NET
15,793 CY	15,793 CY	0 CY

EARTHWORK QUANTITIES ARE ESTIMATED

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by: CHRIS MAAS

Date: 09/22/2018
Rev: Date: 10/08/2018

Drawn for:

devon

Drilling Plan Data Report
04/23/2019

APD ID: 10400035677 **Submission Date:** 10/29/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3504	0	0	ALLUVIUM	NONE	No
2	RUSTLER	2707	797	797	SALT	NONE	No
3	SALADO	2371	1133	1133	SALT	NONE	No
4	BASE OF SALT	-928	4432	4432	SALT	NONE	No
5	DELAWARE	-988	4492	4492	SANDSTONE	NONE	No
6	BONE SPRING LIME	-4853	8357	8357	LIMESTONE	NONE	No
7	BONE SPRING 1ST	-6145	9649	9649	SANDSTONE	NATURAL GAS,OIL	No
8	2ND BONE SPRING LIME	-6219	9723	9723	LIMESTONE	NONE	No
9	BONE SPRING 2ND	-7051	10555	20555	SANDSTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 10550

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below intermediate casing, a BOP/BOPE system with the above minimum rating will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.
Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.
Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Choke Diagram Attachment:

5M_BOPE__CK_20190319073010.pdf

5M_BOPE__CK_20190319073010.pdf

BOP Diagram Attachment:

5M_BOPE__CK_20190319073019.pdf

Pressure Rating (PSI): 5M **Rating Depth:** 6000

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below intermediate casing, a BOP/BOPE system with the above minimum rating will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.
Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.
Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Choke Diagram Attachment:

5M_BOPE__CK_20190319073045.pdf

BOP Diagram Attachment:

5M_BOPE__CK_20190319073052.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	822	0	822			822	H-40	48	STC	1.125	1	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	6000	0	6000			6000	J-55	40	OTHER - BTC	1.125	1	BUOY	1.6	BUOY	1.6
3	PRODUCTION	8.75	5.5	NEW	API	N	0	20860	0	10550			20860	P-110	17	OTHER - BTC	1.125	1	BUOY	1.6	BUOY	1.6

Casing Attachments

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Surf_Csg_Ass_20181009120933.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Int_Csg_Ass_20181009121011.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Prod_Csg_Ass_20181009121046.pdf

Section 4 - Cement

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	836	873	1.33	13.2	1142	100	c	Class C + adds
INTERMEDIATE	Lead		0	5500	1095	1.94	9	1470	50	C	Class C + Adds
INTERMEDIATE	Tail		5500	6000	196	1.33	13.2	261	50	C	Class C + Adds
PRODUCTION	Lead		4092	10019	462	3.57	9	1651	10	TUNED	Class C + adds
PRODUCTION	Tail		10019	20860	1887	1.46	13.2	2755	10	H	(50:50) Clas H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

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

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	836	OTHER : FRESH WATER	8.5	9							

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

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
6000	10550	WATER-BASED MUD	8.5	9							
836	6000	OTHER : BRINE	10	10.5							

Section 6 - Test, Logging, Coring

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

Will run GRMWD from TD to from KOP. Cement bond logs will be run in vertical to determine top of cement. Stated logs run will be in the Completion Report and submitted to the BLM.

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

CALIPER,CBL,DS,GR,MUDLOG

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4937 **Anticipated Surface Pressure:** 2616

Anticipated Bottom Hole Temperature(F): 169

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:

Todd_36_25_State_Fed_Com_232H_H2S_PLAN_20181029082712.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Devon_Todd_36_25_State_Fed_Com_232H_AC_Report_Permit_Plan_1_20181029074722.pdf

Devon_Todd_36_25_State_Fed_Com_232H_Permit_Plan_1_20181029074722.pdf

Devon_Todd_36_25_State_Fed_Com_232H_Plot_Permit_Plan_1_20181029074723.pdf

Other proposed operations facets description:

MB_VERB-revised to 5M
MB_WELLHEAD-revised to 5M
CLOSED LOOP
DRILLING PLAN-revised 3/19/2019
GAS CAPTURE

Other proposed operations facets attachment:

Clsd_Loop_20181009090953.pdf

TODD_36_Fed_Com_GasCapturePlan_WP2_10_4_2018_20181029074755.pdf

Todd_36_25_State_Fed_Com_232H_Drilling_Plan_Rev1_20190319090941.pdf

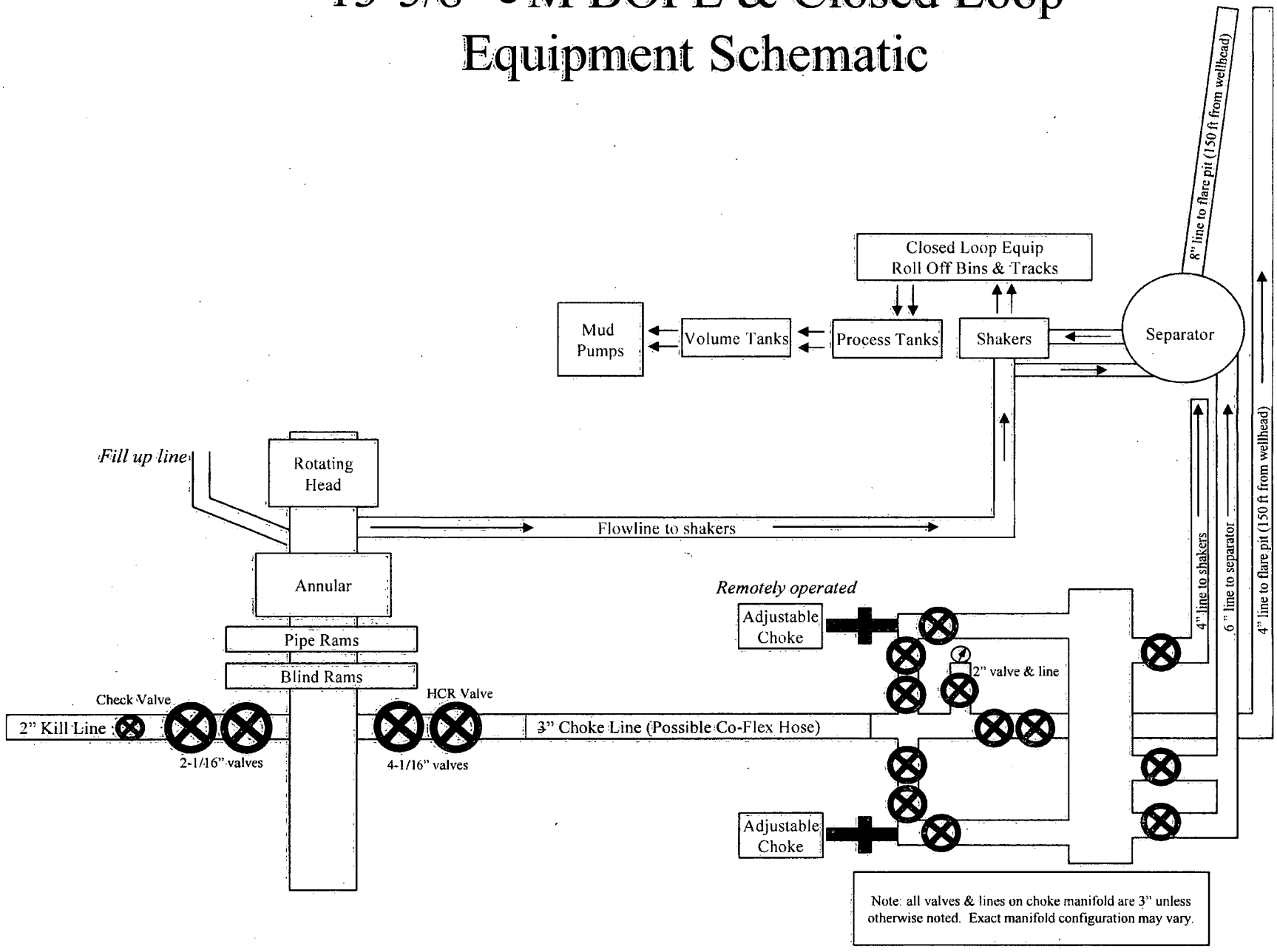
MB_Verb_5M_20190319091044.pdf

MB_Wellhd_5M_20190319091054.pdf

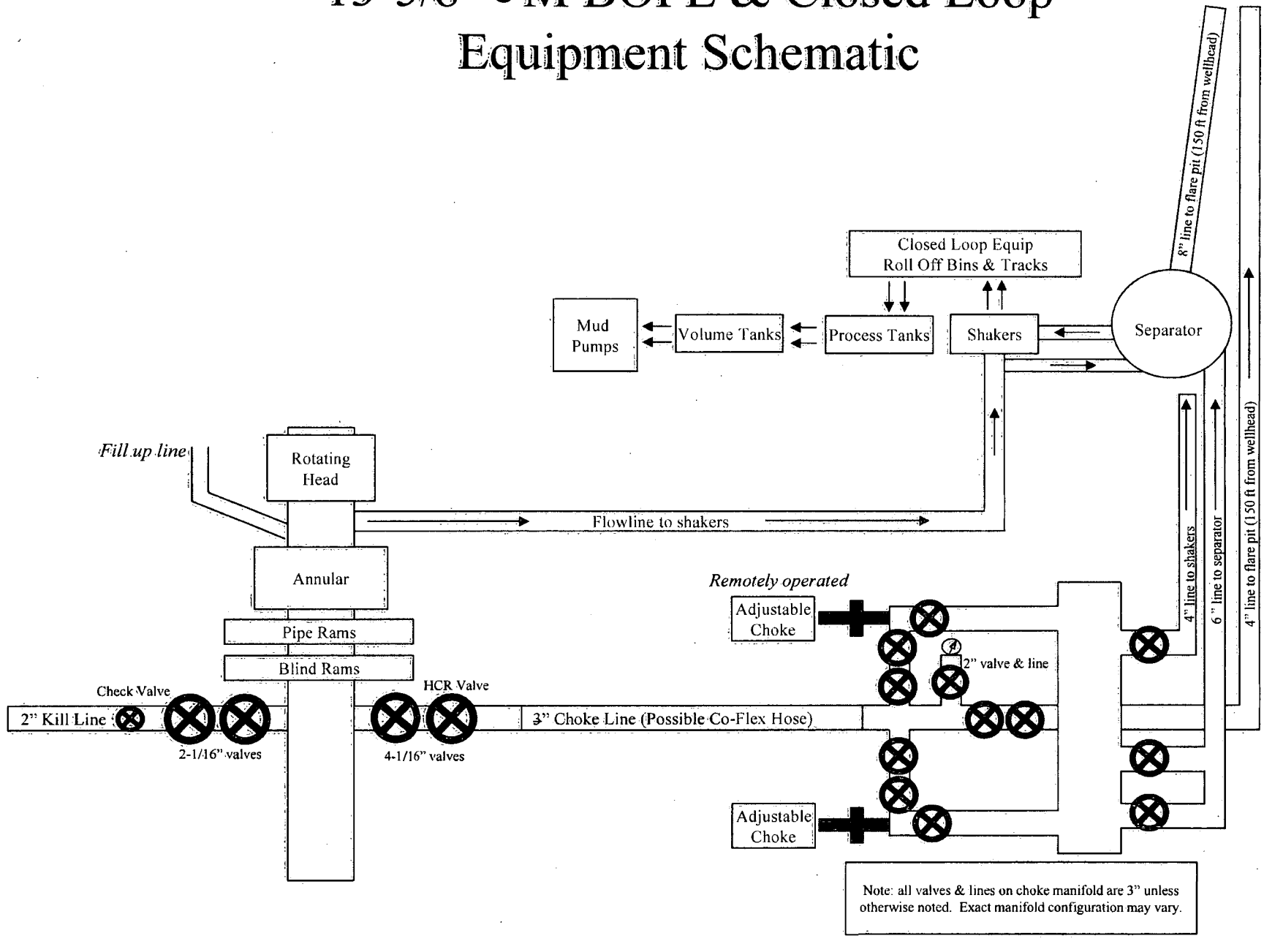
Other Variance attachment:

Co_flex_20181009090519.pdf

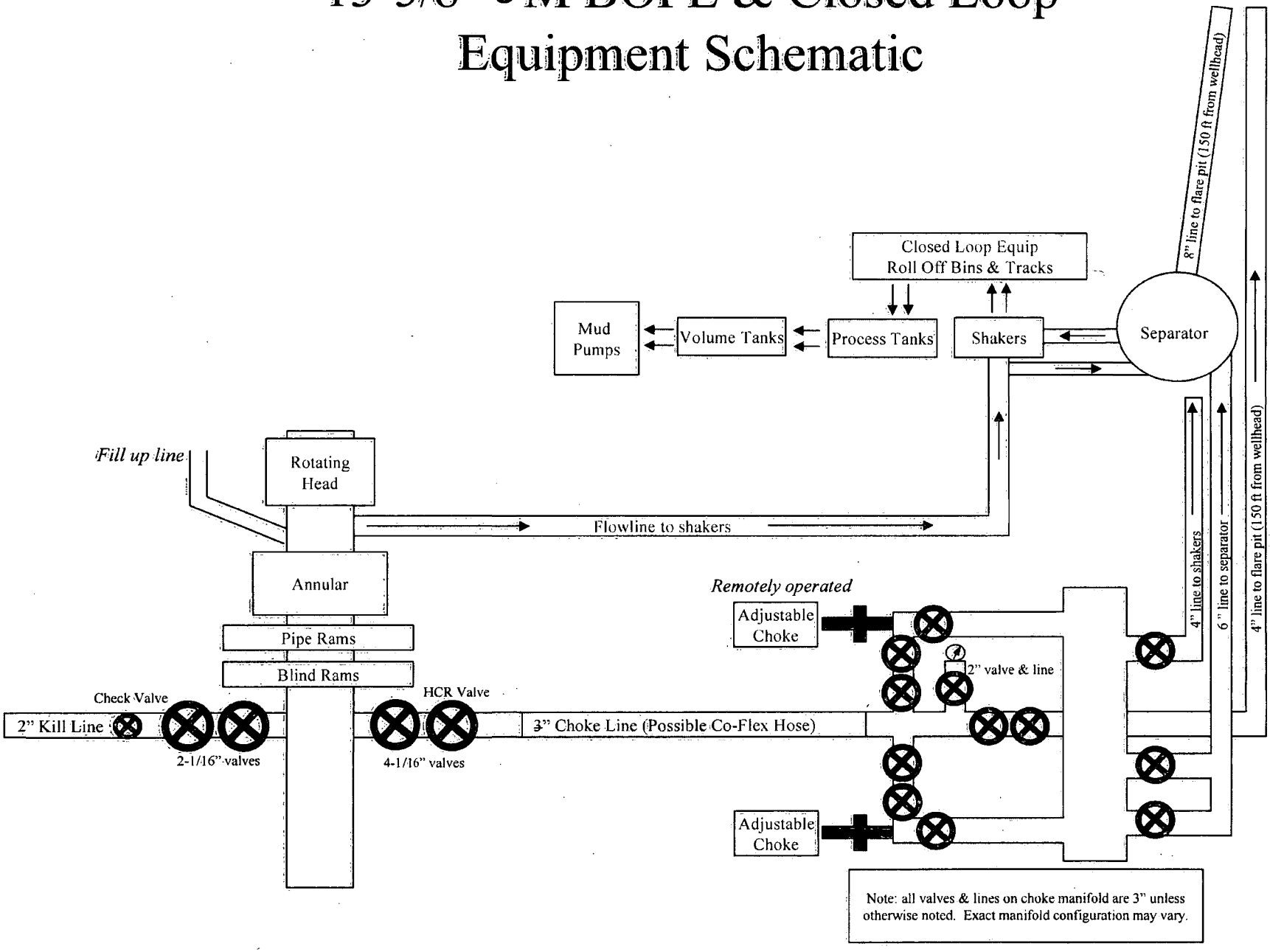
13-5/8" 5M BOPE & Closed Loop Equipment Schematic



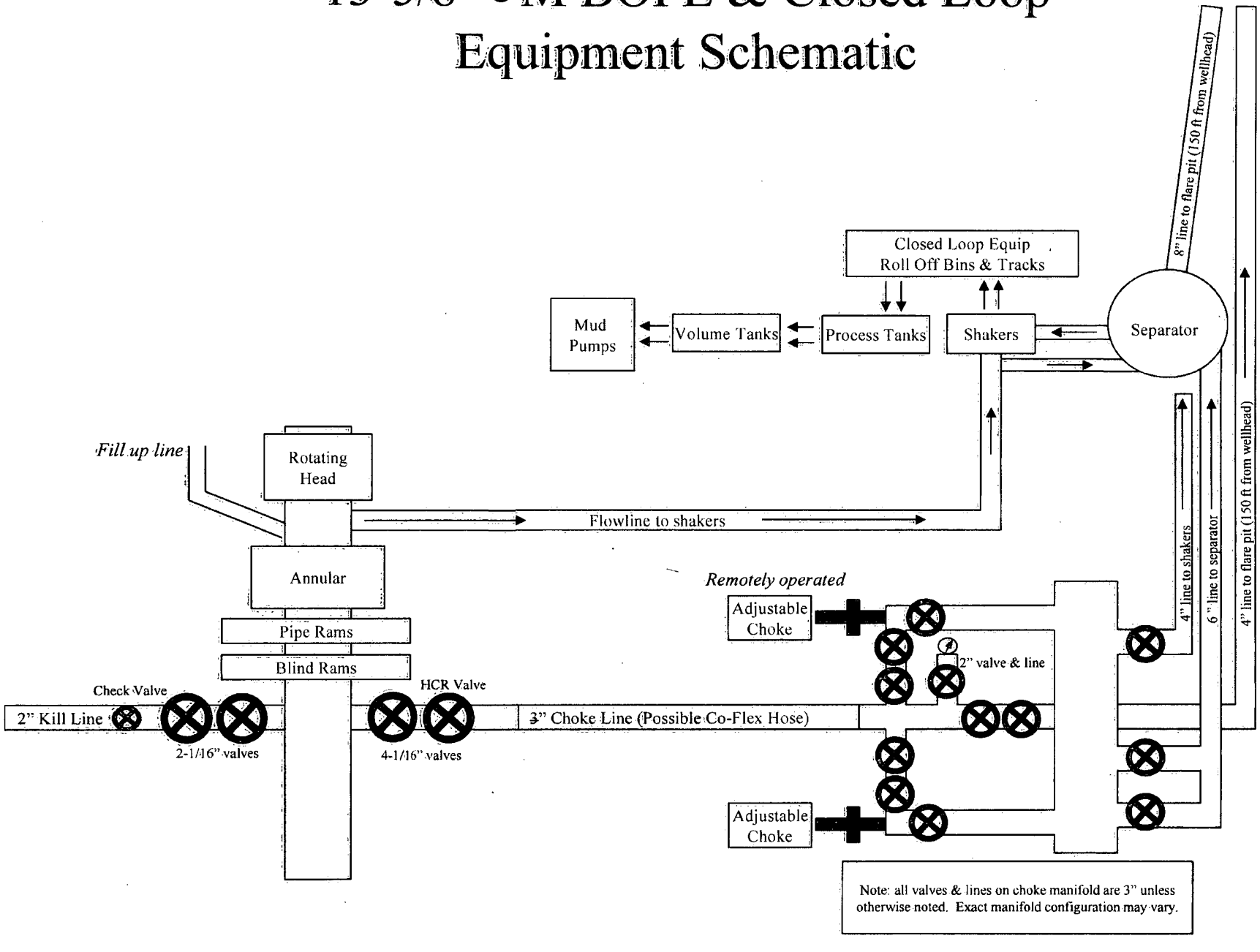
13-5/8" 5M BOPE & Closed Loop Equipment Schematic



13-5/8" 5M BOPE & Closed Loop Equipment Schematic



13-5/8" 5M BOPE & Closed Loop Equipment Schematic



Casing Assumptions and Load Cases

Production

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Production Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Fluid in hole (water or produced water) + test psi
Tubing Leak	Formation Pore Pressure	Packer @ KOP, leak below surface 8.6 ppg packer fluid
Stimulation	Formation Pore Pressure	Max frac pressure with heaviest frac fluid

Production Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC.	None
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Surface

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Surface Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Displace to Gas	Formation Pore Pressure	Dry gas from next casing point

Surface Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Surface Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	3 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Intermediate

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Intermediate Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Fracture @ Shoe	Formation Pore Pressure	Dry gas

Intermediate Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Intermediate Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

devon

Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015

Hydrogen Sulfide (H_2S) Contingency Plan

For

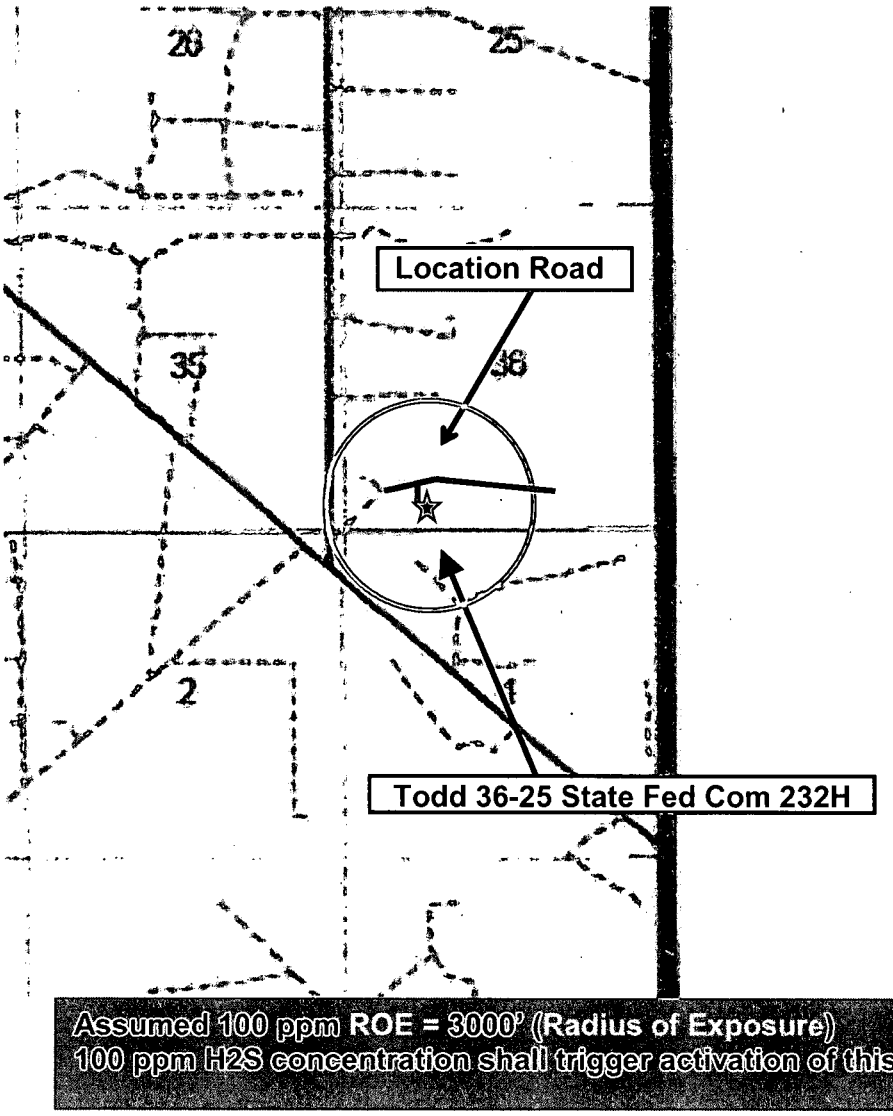
Todd 36-25 State Fed Com 232H

Sec-36 T-23S R-31E
330' FSL & 1659' FWL
LAT. = 32.2545757' N (NAD83)
LONG = 103.7346870' W

Eddy County NM

Todd 36-25 State Fed Com 232H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.



Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

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

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold – Remotely Operated

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

   E. Mud/Gas Separator

2. **Protective equipment for essential personnel:**

   30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **H_2S detection and monitoring equipment:**

   Portable H_2S monitors positioned on location for best coverage and response. These units have warning lights which activate when H_2S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

   - **Bell nipple**
   - **Rig floor**
   - **Cellar**
   - **Possum Belly/Shale shaker**
   - **Choke manifold**

   Visual warning systems:

   A. Wind direction indicators as shown on well site diagram

   B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. **Mud program:**

   The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

5. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H_2S trim.

   B. All elastomers used for packing and seals shall be H_2S trim.

6. **Communication:**

   A. Company personnel have/use cellular telephones in the field.

   B. Land line (telephone) communications at Office

7. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H_2S environment will use the closed chamber method of testing.

   B. There will be no drill stem testing.

Devon Energy Corp. Company Call List		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
EHS Professional – Laura Wright		405-439-8129
Agency Call List		
Lea County (575)	**Hobbs**	
	Lea County Communication Authority	393-3981
	State Police	392-5588
	City Police	397-9265
	Sheriff's Office	393-2515
	Ambulance	**911**
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
Eddy County (575)	**Carlsbad**	
	State Police	885-3137
	City Police	885-2111
	Sheriff's Office	887-7551
	Ambulance	**911**
	Fire Department	885-3125
	LEPC (Local Emergency Planning Committee)	887-3798
	US Bureau of Land Management	887-6544
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600
	24 HR	(505) 827-9126
	National Emergency Response Center	(800) 424-8802
	National Pollution Control Center: Direct	(703) 872-6000
	For Oil Spills	(800) 280-7118
	Emergency Services	
	Wild Well Control	(281) 784-4700
	Cudd Pressure Control (915) 699-0139	(915) 563-3356
	Halliburton	(575) 746-2757
	B. J. Services	(575) 746-3569
Give GPS position:	Native Air – Emergency Helicopter – Hobbs	(575) 392-6429
	Flight For Life - Lubbock, TX	(806) 743-9911
	Aerocare - Lubbock, TX	(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM	(800) 222-1222
	Poison Control (24/7)	(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service	(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov	

Prepared in conjunction with
Dave Small SHARP communications and consulting

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)
Sec. 36-T23S-R31E
Todd 36_25 State Fed Com 232H

Wellbore #1
Permit Plan 1

Anticollision Report

04 October, 2018

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Reference Permit Plan 1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 50.00ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,500.00 ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 10/4/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	20,860.67	Permit Plan 1 (Wellbore #1)	MWD+IFR1	OWSG MWD + IFR1

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Sec. 25-T23S-R31E						
Aldabra 25 Fed 3H - Wellbore #1 - Wellbore #1	15,684.35	10,558.01	141.14	41.57	1.417	Major Risk, CC, ES, SF
Aldabra 25 Fed 6H - Wellbore #1 - Wellbore #1						Out of range
Aldabra 25 Fed 7H - Wellbore #1 - Wellbore #1						Out of range
Aldabra 25 Fed Com 1H - Wellbore #1 - Wellbore #1						Out of range
Aldabra 25 Fed Com 2H - Wellbore #1 - Wellbore #1	20,618.28	15,047.00	1,340.54	1,138.96	6.650	CC, ES, SF
Todd 25 Fed 001Z SWD (Offset) - Wellbore #1 - Wellbor	18,893.84	10,533.30	374.42	127.50	1.516	Minor Risk, CC, ES, SF
Sec. 36-T23S-R31E						
Todd 36 State 01 SWD - Wellbore #1 - Wellbore #1	13,579.30	10,544.70	319.52	113.70	1.552	Minor Risk, CC, ES, SF
Todd 36 State 231H - Wellbore #1 - Permit Plan 1	2,650.00	2,650.40	29.99	11.41	1.614	Minor Risk, CC
Todd 36 State 231H - Wellbore #1 - Permit Plan 1	2,700.00	2,700.18	30.17	11.24	1.594	Minor Risk, ES
Todd 36 State 231H - Wellbore #1 - Permit Plan 1	2,750.00	2,749.96	30.71	11.44	1.594	Minor Risk, SF
Todd 36_25 State Fed Com 233H - Wellbore #1 - Permit	18,609.58	18,511.72	764.67	555.34	3.653	Alert, CC
Todd 36_25 State Fed Com 233H - Wellbore #1 - Permit	18,650.00	18,552.13	764.95	554.71	3.638	Alert, ES
Todd 36_25 State Fed Com 233H - Wellbore #1 - Permit	20,860.67	20,759.83	878.85	617.40	3.361	Alert, SF
Todd 36_25 State Fed Com 235H - Wellbore #1 - Permit						Out of range
Todd 36-25 State Fed Com 230H - Wellbore #1 - Permit	2,500.00	2,499.60	30.02	12.52	1.715	Minor Risk, CC
Todd 36-25 State Fed Com 230H - Wellbore #1 - Permit	2,550.00	2,549.35	30.23	12.38	1.693	Minor Risk, ES, SF
Todd 36-25 State Fed Com 234H - Wellbore #1 - Permit						Out of range
Todd 36B State 20H (Offset) - Wellbore #1 - Wellbore #1						Out of range

Offset Design Sec. 25-T23S-R31E - Aldabra 25 Fed 3H - Wellbore #1 - Wellbore #1

Offset Site Error: 0.00 ft

Survey Program: 122-GYRO-NS-CT, 10954-MWD+IGRF

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
14,200.00	10,550.00	10,558.64	10,554.81	51.84	36.83	93.02	5,063.71	598.09	1,491.06	1,416.47	74.59	19.991	
14,250.00	10,550.00	10,558.61	10,554.78	52.19	36.83	92.63	5,063.71	598.10	1,441.27	1,366.67	74.60	19.319	
14,300.00	10,550.00	10,558.59	10,554.76	52.54	36.83	92.62	5,063.71	598.10	1,391.52	1,316.90	74.62	18.648	
14,350.00	10,550.00	10,558.57	10,554.74	52.90	36.83	92.62	5,063.71	598.10	1,341.79	1,267.15	74.64	17.977	
14,400.00	10,550.00	10,558.55	10,554.72	53.26	36.83	92.61	5,063.71	598.10	1,292.08	1,217.42	74.66	17.307	
14,450.00	10,550.00	10,558.53	10,554.70	53.62	36.83	92.60	5,063.71	598.10	1,242.39	1,167.71	74.68	16.637	
14,500.00	10,550.00	10,558.51	10,554.68	53.99	36.83	92.59	5,063.71	598.10	1,192.73	1,118.03	74.70	15.967	
14,550.00	10,550.00	10,558.49	10,554.66	54.35	36.83	92.58	5,063.71	598.10	1,143.09	1,068.37	74.72	15.298	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 25-T23S-R31E - Aldabra 25 Fed 3H - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.00 ft

Survey Program: 122-GYRO-NS-CT, 10954-MWD+IGRF — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
14,600.00	10,550.00	10,558.47	10,554.64	54.72	36.83	92.58	5,063.71	598.10	1,093.49	1,018.74	74.75	14.629	
14,650.00	10,550.00	10,558.45	10,554.63	55.09	36.83	92.57	5,063.71	598.10	1,043.93	969.15	74.78	13.960	
14,700.00	10,550.00	10,558.43	10,554.61	55.47	36.83	92.56	5,063.71	598.10	994.41	919.60	74.81	13.292	
14,750.00	10,550.00	10,558.41	10,554.58	55.84	36.83	92.55	5,063.71	598.10	944.94	870.09	74.85	12.624	
14,800.00	10,550.00	10,558.39	10,554.56	56.22	36.83	92.54	5,063.71	598.10	895.54	820.64	74.90	11.956	
14,850.00	10,550.00	10,558.37	10,554.54	56.60	36.83	92.54	5,063.71	598.10	846.20	771.24	74.95	11.290	
14,900.00	10,550.00	10,558.35	10,554.52	56.98	36.83	92.53	5,063.71	598.11	796.94	721.92	75.02	10.623	
14,950.00	10,550.00	10,558.33	10,554.50	57.37	36.83	92.52	5,063.71	598.11	747.79	672.69	75.10	9.957	
15,000.00	10,550.00	10,558.31	10,554.48	57.76	36.83	92.51	5,063.71	598.11	698.75	623.55	75.20	9.292	
15,050.00	10,550.00	10,558.29	10,554.46	58.14	36.83	92.50	5,063.71	598.11	649.86	574.53	75.32	8.628	
15,100.00	10,550.00	10,558.27	10,554.44	58.53	36.83	92.49	5,063.71	598.11	601.15	525.66	75.48	7.964	
15,150.00	10,550.00	10,558.25	10,554.42	58.93	36.83	92.49	5,063.71	598.11	552.67	476.98	75.69	7.301	
15,200.00	10,550.00	10,558.23	10,554.40	59.32	36.82	92.48	5,063.71	598.11	504.49	428.51	75.98	6.640	
15,250.00	10,550.00	10,558.21	10,554.38	59.72	36.82	92.47	5,063.71	598.11	456.70	380.34	76.36	5.981	
15,300.00	10,550.00	10,558.18	10,554.35	60.12	36.82	92.46	5,063.71	598.11	409.44	332.54	76.90	5.325	
15,350.00	10,550.00	10,558.16	10,554.33	60.52	36.82	92.45	5,063.71	598.11	362.91	285.25	77.67	4.673	Alert
15,400.00	10,550.00	10,558.14	10,554.31	60.92	36.82	92.44	5,063.71	598.11	317.45	238.65	78.80	4.029	Alert
15,450.00	10,550.00	10,558.12	10,554.29	61.32	36.82	92.43	5,063.71	598.12	273.57	193.07	80.50	3.398	Alert
15,500.00	10,550.00	10,558.09	10,554.26	61.73	36.82	92.42	5,063.71	598.12	232.17	149.09	83.08	2.795	Alert
15,550.00	10,550.00	10,558.07	10,554.24	62.13	36.82	92.41	5,063.71	598.12	194.86	107.93	86.93	2.242	Minor Risk
15,600.00	10,550.00	10,558.05	10,554.22	62.54	36.82	92.40	5,063.71	598.12	164.42	72.27	92.15	1.784	Minor Risk
15,650.00	10,550.00	10,558.03	10,554.20	62.95	36.82	92.39	5,063.71	598.12	145.26	47.78	97.48	1.490	Major Risk
15,684.35	10,550.00	10,558.01	10,554.18	63.23	36.82	92.39	5,063.71	598.12	141.14	41.57	99.58	1.417	Major Risk, CC, ES, SF
15,700.00	10,550.00	10,558.00	10,554.17	63.36	36.82	92.39	5,063.71	598.12	142.01	42.20	99.80	1.423	Major Risk
15,750.00	10,550.00	10,557.98	10,554.15	63.77	36.82	92.37	5,063.71	598.12	155.63	57.90	97.73	1.592	Minor Risk
15,800.00	10,550.00	10,557.92	10,554.09	64.18	36.82	92.32	5,063.71	598.12	181.90	88.34	93.56	1.944	Minor Risk
15,850.00	10,550.00	10,557.83	10,554.00	64.59	36.82	92.25	5,063.71	598.13	216.11	126.59	89.52	2.414	Minor Risk
15,900.00	10,550.00	10,557.71	10,553.88	65.00	36.82	92.15	5,063.72	598.13	255.08	168.77	86.31	2.955	Alert
15,950.00	10,550.00	10,557.54	10,553.71	65.41	36.82	92.03	5,063.72	598.14	296.94	213.03	83.91	3.539	Alert
16,000.00	10,550.00	10,557.33	10,553.51	65.81	36.82	91.89	5,063.72	598.15	340.60	258.48	82.12	4.148	Alert
16,050.00	10,550.00	10,557.09	10,553.26	66.21	36.82	91.74	5,063.72	598.16	385.45	304.67	80.78	4.772	Alert
16,100.00	10,550.00	10,556.81	10,552.98	66.61	36.82	91.58	5,063.72	598.17	431.10	351.35	79.75	5.406	
16,150.00	10,550.00	10,556.49	10,552.66	67.00	36.82	91.41	5,063.72	598.18	477.32	398.36	78.96	6.045	
16,200.00	10,550.00	10,556.12	10,552.29	67.39	36.82	91.24	5,063.72	598.20	523.93	445.60	78.33	6.689	
16,250.00	10,550.00	10,555.72	10,551.89	67.78	36.82	91.06	5,063.73	598.21	570.84	493.01	77.83	7.334	
16,300.00	10,550.00	10,555.27	10,551.45	68.16	36.81	90.88	5,063.73	598.23	617.95	540.52	77.43	7.981	
16,350.00	10,550.00	10,554.80	10,550.97	68.54	36.81	90.74	5,063.73	598.25	665.27	588.17	77.10	8.628	
16,400.00	10,550.00	10,554.31	10,550.48	68.92	36.81	90.60	5,063.73	598.27	712.93	636.08	76.85	9.276	
16,450.00	10,550.00	10,553.82	10,550.00	69.30	36.81	90.47	5,063.74	598.29	760.90	684.24	76.66	9.925	
16,500.00	10,550.00	10,553.33	10,549.50	69.69	36.81	90.33	5,063.74	598.31	809.11	732.60	76.51	10.575	
16,550.00	10,550.00	10,552.83	10,549.00	70.07	36.81	90.19	5,063.74	598.33	857.53	781.13	76.40	11.224	
16,600.00	10,550.00	10,552.33	10,548.50	70.46	36.80	90.06	5,063.74	598.36	906.11	829.80	76.31	11.874	
16,650.00	10,550.00	10,551.82	10,548.00	70.84	36.80	89.92	5,063.75	598.38	954.85	878.60	76.24	12.524	
16,700.00	10,550.00	10,551.31	10,547.48	71.23	36.80	89.78	5,063.75	598.40	1,003.70	927.51	76.19	13.173	
16,750.00	10,550.00	10,550.79	10,546.97	71.62	36.80	89.63	5,063.75	598.42	1,052.67	976.51	76.16	13.822	
16,800.00	10,550.00	10,550.27	10,546.45	72.01	36.80	89.49	5,063.75	598.44	1,101.72	1,025.59	76.14	14.471	
16,850.00	10,550.00	10,549.75	10,545.93	72.40	36.79	89.35	5,063.76	598.46	1,150.86	1,074.74	76.12	15.119	
16,900.00	10,550.00	10,549.22	10,545.40	72.79	36.79	89.20	5,063.76	598.48	1,200.07	1,123.96	76.11	15.767	
16,950.00	10,550.00	10,548.68	10,544.86	73.18	36.79	89.05	5,063.76	598.51	1,249.34	1,173.23	76.11	16.414	
17,000.00	10,550.00	10,548.15	10,544.33	73.58	36.79	88.91	5,063.77	598.53	1,298.67	1,222.55	76.12	17.061	
17,050.00	10,550.00	10,547.60	10,543.78	73.97	36.79	88.76	5,063.77	598.55	1,348.05	1,271.92	76.13	17.708	
17,100.00	10,550.00	13,298.85	11,686.02	74.36	52.27	-146.63	6,502.53	-225.04	1,362.68	1,262.28	100.41	13.572	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 25-T23S-R31E - Aldabra 25 Fed 3H - Wellbore #1 - Wellbore #1

Offset Site Error: 0.00 ft

Survey Program: 122-GYRO-NS-CT, 10954-MWD+IGRF

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
17,150.00	10,550.00	13,340.79	11,685.21	74.76	52.67	-146.50	6,544.44	-224.10	1,363.89	1,262.71	101.18	13.480	
17,200.00	10,550.00	13,384.50	11,684.69	75.16	53.10	-146.38	6,588.14	-223.00	1,365.36	1,263.40	101.96	13.391	
17,250.00	10,550.00	13,430.90	11,684.50	75.56	53.56	-146.27	6,634.52	-221.67	1,367.05	1,264.31	102.75	13.305	
17,300.00	10,550.00	13,493.24	11,684.00	75.95	54.20	-146.11	6,696.83	-219.77	1,368.55	1,264.96	103.58	13.212	
17,350.00	10,550.00	13,544.33	11,683.18	76.35	54.74	-145.98	6,747.89	-218.24	1,369.72	1,265.31	104.41	13.119	
17,400.00	10,550.00	13,588.46	11,682.42	76.75	55.21	-145.85	6,792.00	-217.23	1,371.06	1,265.83	105.24	13.028	
17,450.00	10,550.00	13,630.51	11,681.74	77.16	55.68	-145.71	6,834.04	-216.55	1,372.64	1,266.57	106.07	12.941	
17,500.00	10,550.00	13,670.23	11,681.37	77.56	56.13	-145.59	6,873.75	-215.99	1,374.57	1,267.67	106.90	12.858	
17,550.00	10,550.00	13,709.96	11,681.33	77.96	56.59	-145.48	6,913.48	-215.47	1,376.88	1,269.15	107.73	12.781	
17,600.00	10,550.00	13,749.83	11,681.53	78.36	57.06	-145.37	6,953.35	-215.11	1,379.56	1,270.99	108.57	12.707	
17,650.00	10,550.00	13,789.65	11,681.92	78.77	57.54	-145.25	6,993.17	-214.98	1,382.60	1,273.19	109.41	12.636	
17,700.00	10,550.00	13,830.04	11,682.52	79.17	58.04	-145.13	7,033.54	-215.05	1,386.01	1,275.74	110.27	12.569	
17,750.00	10,550.00	13,870.67	11,683.43	79.58	58.54	-145.01	7,074.16	-215.16	1,389.75	1,278.63	111.13	12.506	
17,800.00	10,550.00	13,914.41	11,684.69	79.99	59.09	-144.90	7,117.89	-215.35	1,393.81	1,281.81	112.00	12.445	
17,850.00	10,550.00	13,963.30	11,686.02	80.39	59.72	-144.75	7,166.76	-215.81	1,397.96	1,285.04	112.92	12.380	
17,900.00	10,550.00	14,011.10	11,687.17	80.80	60.35	-144.60	7,214.54	-216.54	1,402.16	1,288.32	113.85	12.316	
17,950.00	10,550.00	14,057.72	11,688.36	81.21	60.97	-144.46	7,261.14	-217.30	1,406.47	1,291.69	114.77	12.254	
18,000.00	10,550.00	14,121.93	11,689.78	81.62	61.84	-144.25	7,325.33	-218.50	1,410.75	1,294.92	115.83	12.180	
18,050.00	10,550.00	14,194.90	11,689.21	82.03	62.85	-143.93	7,398.26	-220.64	1,414.07	1,297.08	116.99	12.087	
18,100.00	10,550.00	14,244.64	11,688.35	82.44	63.55	-143.71	7,447.96	-222.20	1,417.15	1,299.12	118.03	12.007	
18,150.00	10,550.00	14,292.67	11,687.60	82.85	64.23	-143.49	7,495.96	-223.61	1,420.25	1,301.19	119.06	11.929	
18,200.00	10,550.00	14,338.43	11,687.10	83.26	64.89	-143.30	7,541.71	-224.84	1,423.48	1,303.41	120.07	11.855	
18,250.00	10,550.00	14,396.25	11,686.62	83.68	65.73	-143.06	7,599.50	-226.27	1,426.79	1,305.62	121.16	11.776	
18,300.00	10,550.00	14,473.88	11,684.32	84.09	66.86	-142.70	7,677.07	-228.45	1,429.36	1,306.94	122.42	11.676	
18,350.00	10,550.00	14,512.68	11,683.00	84.51	67.44	-142.50	7,715.84	-229.55	1,431.66	1,308.23	123.44	11.598	
18,400.00	10,550.00	14,557.14	11,681.69	84.92	68.10	-142.29	7,760.26	-230.77	1,433.67	1,309.20	124.47	11.518	
18,450.00	10,550.00	14,602.47	11,680.62	85.35	68.78	-142.11	7,805.55	-231.90	1,435.33	1,309.84	125.48	11.439	
18,500.00	10,550.00	14,647.88	11,679.84	85.78	69.46	-141.98	7,850.95	-232.90	1,436.61	1,310.14	126.47	11.359	
18,550.00	10,550.00	14,691.86	11,679.34	86.21	70.12	-141.90	7,894.92	-233.80	1,437.54	1,310.12	127.43	11.281	
18,600.00	10,550.00	14,735.75	11,679.04	86.64	70.79	-141.84	7,938.80	-234.73	1,438.15	1,309.80	128.35	11.205	
18,650.00	10,550.00	14,807.62	11,678.46	87.08	71.89	-141.82	8,010.66	-235.89	1,438.02	1,308.59	129.44	11.110	
18,700.00	10,550.00	14,866.95	11,677.46	87.53	72.79	-141.86	8,069.98	-236.15	1,436.61	1,306.21	130.40	11.017	
18,750.00	10,550.00	14,914.59	11,676.68	87.97	73.53	-141.93	8,117.61	-236.30	1,434.66	1,303.38	131.28	10.928	
18,800.00	10,550.00	15,007.66	11,674.62	88.42	74.95	-142.08	8,210.65	-235.63	1,431.94	1,299.60	132.34	10.820	
18,850.00	10,550.00	15,065.21	11,672.67	88.87	75.83	-142.19	8,268.14	-233.82	1,427.84	1,294.64	133.20	10.719	
18,900.00	10,550.00	15,110.62	11,671.63	89.32	76.52	-142.31	8,313.49	-231.89	1,423.87	1,289.87	134.00	10.626	
18,950.00	10,550.00	15,148.88	11,671.14	89.77	77.10	-142.43	8,351.71	-230.07	1,420.15	1,285.39	134.76	10.538	
19,000.00	10,550.00	15,185.08	11,670.98	90.22	77.66	-142.54	8,387.87	-228.53	1,416.91	1,281.40	135.51	10.456	
19,050.00	10,550.00	15,221.60	11,671.10	90.67	78.22	-142.65	8,424.37	-227.18	1,414.15	1,277.90	136.25	10.379	
19,100.00	10,550.00	15,259.83	11,671.54	91.12	78.81	-142.78	8,462.58	-225.89	1,411.83	1,274.85	136.98	10.307	
19,150.00	10,550.00	15,298.07	11,672.30	91.57	79.41	-142.91	8,500.79	-224.70	1,409.94	1,272.23	137.71	10.239	
19,200.00	10,550.00	15,343.38	11,673.55	92.03	80.12	-143.07	8,546.06	-223.32	1,408.38	1,269.93	138.45	10.172	
19,250.00	10,550.00	15,392.24	11,675.15	92.48	80.89	-143.25	8,594.87	-221.59	1,406.89	1,267.70	139.19	10.108	
19,300.00	10,550.00	15,441.39	11,676.96	92.93	81.66	-143.45	8,643.94	-219.62	1,405.45	1,265.53	139.92	10.045	
19,350.00	10,550.00	15,490.66	11,678.84	93.39	82.44	-143.66	8,693.13	-217.58	1,404.04	1,263.40	140.64	9.983	
19,400.00	10,550.00	15,537.04	11,680.67	93.84	83.18	-143.86	8,739.43	-215.67	1,402.70	1,261.36	141.34	9.924	
19,450.00	10,550.00	15,582.67	11,682.56	94.30	83.90	-144.05	8,784.99	-213.89	1,401.53	1,259.48	142.04	9.867	
19,500.00	10,550.00	15,653.66	11,684.84	94.75	85.05	-144.32	8,855.91	-211.53	1,400.21	1,257.33	142.87	9.800	
19,550.00	10,550.00	15,736.48	11,684.60	95.21	86.39	-144.53	8,938.70	-209.79	1,397.79	1,253.97	143.82	9.719	
19,600.00	10,550.00	15,786.26	11,683.71	95.66	87.22	-144.63	8,988.46	-209.04	1,394.95	1,250.29	144.66	9.643	
19,650.00	10,550.00	15,833.55	11,682.53	96.12	88.00	-144.71	9,035.74	-208.50	1,391.93	1,246.43	145.51	9.566	
19,700.00	10,550.00	15,873.65	11,681.76	96.58	88.67	-144.78	9,075.82	-208.13	1,389.21	1,242.90	146.31	9.495	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 25-T23S-R31E - Aldabra 25 Fed 3H - Wellbore #1 - Wellbore #1 — Offset Site Error: 0.00 ft

Survey Program: 122-GYRO-NS-CT, 10954-MWD+IGRF — Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
19,750.00	10,550.00	15,914.91	11,681.27	97.03	89.36	-144.86	9,117.08	-207.82	1,386.85	1,239.74	147.11	9.427	
19,800.00	10,550.00	15,960.98	11,680.97	97.49	90.13	-144.96	9,163.16	-207.46	1,384.69	1,236.76	147.93	9.361	
19,850.00	10,550.00	16,007.32	11,680.89	97.95	90.91	-145.06	9,209.49	-207.00	1,382.67	1,233.94	148.73	9.296	
19,900.00	10,550.00	16,055.44	11,681.00	98.41	91.71	-145.18	9,257.61	-206.39	1,380.75	1,231.22	149.54	9.234	
19,950.00	10,550.00	16,104.68	11,681.30	98.87	92.54	-145.31	9,306.83	-205.62	1,378.90	1,228.57	150.33	9.172	
20,000.00	10,550.00	16,160.05	11,681.41	99.33	93.48	-145.45	9,362.20	-204.85	1,376.95	1,225.79	151.17	9.109	
20,050.00	10,550.00	16,210.21	11,681.19	99.79	94.33	-145.56	9,412.36	-204.35	1,374.85	1,222.86	151.99	9.046	
20,100.00	10,550.00	16,254.21	11,681.14	100.25	95.07	-145.66	9,456.35	-203.95	1,372.91	1,220.13	152.78	8.986	
20,150.00	10,550.00	16,296.48	11,681.31	100.71	95.79	-145.76	9,498.63	-203.58	1,371.20	1,217.65	153.55	8.930	
20,200.00	10,550.00	16,335.18	11,681.64	101.17	96.46	-145.85	9,537.32	-203.48	1,369.86	1,215.56	154.30	8.878	
20,250.00	10,550.00	16,373.90	11,682.14	101.63	97.12	-145.93	9,576.04	-203.69	1,368.93	1,213.88	155.05	8.829	
20,300.00	10,550.00	16,415.36	11,682.90	102.09	97.84	-146.02	9,617.49	-204.14	1,368.37	1,212.56	155.82	8.782	
20,350.00	10,550.00	16,457.22	11,683.93	102.55	98.57	-146.11	9,659.33	-204.64	1,368.12	1,211.54	156.58	8.738	
20,368.07	10,550.00	16,472.35	11,684.37	102.72	98.83	-146.14	9,674.45	-204.83	1,368.10	1,211.25	156.85	8.722	
20,400.00	10,550.00	16,501.07	11,685.29	103.01	99.33	-146.21	9,703.16	-205.18	1,368.14	1,210.79	157.34	8.695	
20,450.00	10,550.00	16,546.38	11,686.96	103.48	100.12	-146.32	9,748.44	-205.63	1,368.34	1,210.24	158.10	8.655	
20,500.00	10,550.00	16,590.90	11,688.87	103.94	100.89	-146.44	9,792.92	-205.95	1,368.73	1,209.89	158.84	8.617	
20,550.00	10,550.00	16,639.70	11,691.03	104.40	101.74	-146.57	9,836.26	-206.15	1,369.34	1,209.73	159.61	8.579	
20,600.00	10,550.00	16,684.15	11,693.71	104.87	102.52	-146.73	9,886.04	-206.31	1,370.09	1,209.79	160.30	8.547	
20,650.00	10,550.00	16,698.00	11,694.45	105.33	102.76	-146.77	9,899.87	-206.35	1,371.32	1,210.62	160.70	8.533	
20,700.00	10,550.00	16,698.00	11,694.45	105.80	102.76	-146.77	9,899.87	-206.35	1,374.30	1,213.46	160.84	8.545	
20,750.00	10,550.00	16,698.00	11,694.45	106.26	102.76	-146.77	9,899.87	-206.35	1,379.09	1,218.27	160.82	8.575	
20,800.00	10,550.00	16,698.00	11,694.45	106.72	102.76	-146.77	9,899.87	-206.35	1,385.66	1,225.01	160.65	8.625	
20,850.00	10,550.00	16,698.00	11,694.45	107.19	102.76	-146.77	9,899.87	-206.35	1,394.00	1,233.66	160.34	8.694	
20,860.67	10,550.00	16,698.00	11,694.45	107.29	102.76	-146.77	9,899.87	-206.35	1,396.01	1,235.75	160.26	8.711	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 25-T23S-R31E - Aldabra 25 Fed Com 2H - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.00 ft

Survey Program: 100-GYRO-NS-CT, 9945-MWD+IGRF — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
15,650.00	10,550.00	10,341.74	10,298.12	62.95	34.51	-80.66	5,236.93	-999.17	1,496.22	1,400.74	95.48	15.670	
15,700.00	10,550.00	10,357.00	10,308.42	63.36	34.53	-81.06	5,248.18	-999.20	1,484.12	1,387.98	96.14	15.437	
15,750.00	10,550.00	10,381.40	10,324.26	63.77	34.57	-81.68	5,266.74	-999.36	1,473.15	1,376.33	96.82	15.216	
15,800.00	10,550.00	10,417.97	10,346.78	64.18	34.62	-82.58	5,295.56	-999.66	1,463.74	1,366.22	97.52	15.009	
15,850.00	10,550.00	10,445.32	10,362.98	64.59	34.67	-83.23	5,317.59	-999.85	1,455.91	1,357.73	98.18	14.829	
15,900.00	10,550.00	10,474.71	10,379.56	65.00	34.74	-83.89	5,341.84	-1,000.18	1,449.85	1,351.02	98.83	14.670	
15,950.00	10,550.00	10,500.88	10,393.18	65.41	34.80	-84.44	5,364.19	-1,000.55	1,445.52	1,346.07	99.45	14.535	
16,000.00	10,550.00	10,523.44	10,404.10	65.81	34.86	-84.87	5,383.92	-1,001.06	1,443.05	1,343.02	100.04	14.425	
16,037.46	10,550.00	10,538.19	10,410.82	66.11	34.90	-85.14	5,397.04	-1,001.57	1,442.49	1,342.05	100.45	14.361	
16,050.00	10,550.00	10,546.00	10,414.23	66.21	34.92	-85.28	5,404.06	-1,001.90	1,442.56	1,341.97	100.59	14.341	
16,100.00	10,550.00	10,565.37	10,422.19	66.61	34.98	-85.59	5,421.68	-1,002.89	1,444.01	1,342.90	101.11	14.281	
16,150.00	10,550.00	10,637.70	10,445.31	67.00	35.24	-86.52	5,490.04	-1,006.50	1,447.01	1,345.12	101.89	14.202	
16,200.00	10,550.00	10,805.62	10,459.15	67.39	36.08	-87.08	5,656.84	-1,002.98	1,447.83	1,344.84	102.99	14.058	
16,250.00	10,550.00	16,250.00	10,455.55	67.78	70.21	-86.93	5,712.17	-997.54	1,446.10	1,310.05	136.05	10.629	
16,274.49	10,550.00	10,940.56	10,451.47	67.96	36.90	-86.77	5,790.90	-990.13	1,445.54	1,341.43	104.11	13.885	
16,300.00	10,550.00	10,967.07	10,450.02	68.16	37.08	-86.71	5,817.21	-987.22	1,444.98	1,340.51	104.47	13.831	
16,350.00	10,550.00	11,011.40	10,448.27	68.54	37.40	-86.64	5,861.25	-982.42	1,444.40	1,339.21	105.19	13.731	
16,398.07	10,550.00	11,049.07	10,447.11	68.91	37.68	-86.59	5,898.70	-978.61	1,444.22	1,338.35	105.88	13.640	
16,400.00	10,550.00	11,050.58	10,447.07	68.92	37.69	-86.59	5,900.21	-978.46	1,444.23	1,338.32	105.91	13.637	
16,450.00	10,550.00	11,083.00	10,446.30	69.30	37.94	-86.56	5,932.47	-975.42	1,444.45	1,337.84	106.60	13.550	
16,500.00	10,550.00	11,121.34	10,445.72	69.69	38.25	-86.54	5,970.68	-972.22	1,445.16	1,337.81	107.35	13.463	
16,550.00	10,550.00	11,154.02	10,445.60	70.07	38.53	-86.53	6,003.28	-969.95	1,446.48	1,338.42	108.06	13.386	
16,600.00	10,550.00	11,191.93	10,445.83	70.46	38.85	-86.55	6,041.12	-967.78	1,448.38	1,339.58	108.81	13.311	
16,650.00	10,550.00	11,244.34	10,446.13	70.84	39.33	-86.56	6,093.45	-964.87	1,450.38	1,340.72	109.67	13.225	
16,700.00	10,550.00	11,293.82	10,446.30	71.23	39.79	-86.57	6,142.85	-962.06	1,452.32	1,341.80	110.52	13.141	
16,750.00	10,550.00	11,339.76	10,446.82	71.62	40.23	-86.60	6,188.71	-959.56	1,454.36	1,342.99	111.37	13.059	
16,800.00	10,550.00	11,390.09	10,447.86	72.01	40.73	-86.65	6,238.97	-956.96	1,456.51	1,344.25	112.27	12.974	
16,850.00	10,550.00	11,447.53	10,449.00	72.40	41.33	-86.70	6,296.31	-953.79	1,458.49	1,345.25	113.24	12.880	
16,900.00	10,550.00	11,500.99	10,449.83	72.79	41.90	-86.73	6,349.67	-950.60	1,460.25	1,346.06	114.20	12.787	
16,950.00	10,550.00	11,553.11	10,450.24	73.18	42.47	-86.75	6,401.69	-947.38	1,461.94	1,346.79	115.15	12.695	
17,000.00	10,550.00	11,607.03	10,450.75	73.58	43.08	-86.78	6,455.50	-943.95	1,463.53	1,347.37	116.15	12.600	
17,050.00	10,550.00	11,661.08	10,452.03	73.97	43.69	-86.83	6,509.41	-940.40	1,464.97	1,347.81	117.16	12.504	
17,100.00	10,550.00	11,707.09	10,453.24	74.36	44.25	-86.88	6,555.32	-937.41	1,466.44	1,348.32	118.13	12.414	
17,150.00	10,550.00	11,756.10	10,454.46	74.76	44.83	-86.93	6,604.21	-934.31	1,468.00	1,348.88	119.12	12.324	
17,200.00	10,550.00	11,813.19	10,455.57	75.16	45.54	-86.98	6,661.16	-930.52	1,469.43	1,349.22	120.21	12.224	
17,250.00	10,550.00	11,879.98	10,456.35	75.56	46.38	-87.01	6,727.77	-925.60	1,470.53	1,349.14	121.39	12.114	
17,300.00	10,550.00	17,300.00	10,456.60	75.95	115.85	-87.02	6,780.48	-920.96	1,470.90	1,279.77	191.13	7.696	
17,350.00	10,550.00	11,975.32	10,456.91	76.35	47.61	-87.04	6,822.75	-917.33	1,471.44	1,348.00	123.44	11.920	
17,400.00	10,550.00	12,006.43	10,457.44	76.75	48.02	-87.06	6,853.77	-915.13	1,472.66	1,348.34	124.32	11.846	
17,450.00	10,550.00	12,043.09	10,458.38	77.16	48.50	-87.10	6,890.36	-913.02	1,474.49	1,349.24	125.25	11.772	
17,500.00	10,550.00	12,097.29	10,459.81	77.56	49.23	-87.16	6,944.45	-909.97	1,476.40	1,350.02	126.38	11.682	
17,550.00	10,550.00	12,147.49	10,461.04	77.96	49.92	-87.21	6,994.56	-907.03	1,478.21	1,350.73	127.48	11.596	
17,600.00	10,550.00	12,193.52	10,462.05	78.36	50.56	-87.25	7,040.49	-904.42	1,480.11	1,351.57	128.54	11.515	
17,650.00	10,550.00	12,234.69	10,462.85	78.77	51.13	-87.28	7,081.60	-902.20	1,482.18	1,352.64	129.54	11.442	
17,700.00	10,550.00	12,269.29	10,463.39	79.17	51.63	-87.31	7,116.16	-900.66	1,484.70	1,354.23	130.47	11.380	
17,750.00	10,550.00	12,303.85	10,463.80	79.58	52.12	-87.33	7,150.69	-899.47	1,487.74	1,356.36	131.39	11.323	
17,800.00	10,550.00	12,356.06	10,464.09	79.99	52.87	-87.35	7,202.89	-897.97	1,491.10	1,358.55	132.55	11.250	
17,850.00	10,550.00	12,416.76	10,463.74	80.39	53.75	-87.34	7,263.55	-895.83	1,494.14	1,360.32	133.82	11.165	
17,900.00	10,550.00	12,462.97	10,463.42	80.80	54.43	-87.33	7,309.72	-894.11	1,497.09	1,362.17	134.92	11.096	
19,050.00	10,550.00	13,578.10	10,440.59	90.67	72.18	-86.45	8,423.93	-862.08	1,497.37	1,334.99	162.38	9.221	
19,100.00	10,550.00	13,645.34	10,440.12	91.12	73.31	-86.42	8,491.15	-860.70	1,493.49	1,329.53	163.96	9.109	
19,150.00	10,550.00	13,705.92	10,440.06	91.57	74.33	-86.41	8,551.71	-858.87	1,489.10	1,323.68	165.42	9.002	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 25-T23S-R31E - Aldabra 25 Fed Com 2H - Wellbore #1 - Wellbore #1

Offset Site Error: 0.00 ft

Survey Program: 100-GYRO-NS-CT, 9945-MWD+IGRF

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
19,200.00	10,550.00	13,763.62	10,439.92	92.03	75.31	-86.39	8,609.37	-856.80	1,484.44	1,317.61	166.83	8.898	
19,250.00	10,550.00	13,833.18	10,440.71	92.48	76.49	-86.40	8,678.85	-853.71	1,479.31	1,310.89	168.42	8.783	
19,300.00	10,550.00	13,888.31	10,442.34	92.93	77.43	-86.45	8,733.88	-850.78	1,473.68	1,303.87	169.80	8.679	
19,350.00	10,550.00	13,936.47	10,443.08	93.39	78.25	-86.47	8,781.97	-848.17	1,468.06	1,296.98	171.08	8.581	
19,400.00	10,550.00	13,987.73	10,443.21	93.84	79.13	-86.46	8,833.15	-845.37	1,462.45	1,290.05	172.40	8.483	
19,450.00	10,550.00	14,040.31	10,443.37	94.30	80.03	-86.45	8,885.64	-842.41	1,456.76	1,283.01	173.74	8.385	
19,500.00	10,550.00	14,084.03	10,443.49	94.75	80.78	-86.44	8,929.29	-839.97	1,451.10	1,276.13	174.97	8.294	
19,550.00	10,550.00	14,126.71	10,443.55	95.21	81.52	-86.43	8,971.92	-837.80	1,445.67	1,269.50	176.17	8.206	
19,600.00	10,550.00	14,172.13	10,443.63	95.66	82.30	-86.42	9,017.30	-835.68	1,440.46	1,263.04	177.42	8.119	
19,650.00	10,550.00	14,218.79	10,444.01	96.12	83.11	-86.43	9,063.91	-833.62	1,435.36	1,256.67	178.69	8.033	
19,700.00	10,550.00	14,264.05	10,444.56	96.58	83.90	-86.44	9,109.12	-831.75	1,430.38	1,250.44	179.94	7.949	
19,750.00	10,550.00	14,308.58	10,444.84	97.03	84.67	-86.44	9,153.62	-830.05	1,425.59	1,244.40	181.18	7.868	
19,800.00	10,550.00	14,358.22	10,444.78	97.49	85.54	-86.42	9,203.22	-828.28	1,420.92	1,238.42	182.50	7.786	
19,850.00	10,550.00	14,412.53	10,444.06	97.95	86.49	-86.38	9,257.49	-826.16	1,416.14	1,232.26	183.89	7.701	
19,900.00	10,550.00	14,466.25	10,443.05	98.41	87.43	-86.33	9,311.15	-823.88	1,411.21	1,225.95	185.26	7.617	
19,950.00	10,550.00	14,519.88	10,442.65	98.87	88.37	-86.30	9,364.73	-821.50	1,406.14	1,219.50	186.64	7.534	
20,000.00	10,550.00	14,577.38	10,442.67	99.33	89.38	-86.28	9,422.16	-818.73	1,400.87	1,212.79	188.08	7.448	
20,050.00	10,550.00	14,631.30	10,442.92	99.79	90.33	-86.28	9,476.00	-815.88	1,395.34	1,205.87	189.47	7.365	
20,100.00	10,550.00	14,679.03	10,443.39	100.25	91.17	-86.28	9,523.66	-813.38	1,389.81	1,199.04	190.77	7.285	
20,150.00	10,550.00	14,727.26	10,444.07	100.71	92.02	-86.29	9,571.83	-810.92	1,384.35	1,192.26	192.09	7.207	
20,200.00	10,550.00	14,776.32	10,444.54	101.17	92.88	-86.30	9,620.83	-808.44	1,378.92	1,185.50	193.41	7.129	
20,250.00	10,550.00	14,827.48	10,444.60	101.63	93.79	-86.29	9,671.92	-805.83	1,373.50	1,178.73	194.77	7.052	
20,300.00	10,550.00	14,881.30	10,443.94	102.09	94.74	-86.24	9,725.65	-802.90	1,367.95	1,171.80	196.15	6.974	
20,350.00	10,550.00	14,932.23	10,442.74	102.55	95.65	-86.18	9,776.49	-799.98	1,362.30	1,164.80	197.50	6.898	
20,400.00	10,550.00	14,981.88	10,441.52	103.01	96.53	-86.11	9,826.04	-797.13	1,356.63	1,157.81	198.82	6.823	
20,450.00	10,550.00	15,031.54	10,440.31	103.48	97.41	-86.04	9,875.60	-794.27	1,350.97	1,150.82	200.15	6.750	
20,500.00	10,550.00	15,047.00	10,439.93	103.94	97.69	-86.02	9,891.03	-793.38	1,345.75	1,144.77	200.98	6.696	
20,550.00	10,550.00	15,047.00	10,439.93	104.40	97.69	-86.02	9,891.03	-793.38	1,342.28	1,140.88	201.40	6.665	
20,600.00	10,550.00	15,047.00	10,439.93	104.87	97.69	-86.02	9,891.03	-793.38	1,340.66	1,139.09	201.57	6.651	
20,618.28	10,550.00	15,047.00	10,439.93	105.04	97.69	-86.02	9,891.03	-793.38	1,340.54	1,138.96	201.58	6.650	CC, ES, SF
20,650.00	10,550.00	15,047.00	10,439.93	105.33	97.69	-86.02	9,891.03	-793.38	1,340.91	1,139.40	201.52	6.654	
20,700.00	10,550.00	15,047.00	10,439.93	105.80	97.69	-86.02	9,891.03	-793.38	1,343.03	1,141.81	201.22	6.674	
20,750.00	10,550.00	15,047.00	10,439.93	106.26	97.69	-86.02	9,891.03	-793.38	1,346.99	1,146.30	200.69	6.712	
20,800.00	10,550.00	15,047.00	10,439.93	106.72	97.69	-86.02	9,891.03	-793.38	1,352.80	1,152.86	199.94	6.766	
20,850.00	10,550.00	15,047.00	10,439.93	107.19	97.69	-86.02	9,891.03	-793.38	1,360.42	1,161.46	198.96	6.838	
20,860.67	10,550.00	15,047.00	10,439.93	107.29	97.69	-86.02	9,891.03	-793.38	1,362.28	1,163.55	198.73	6.855	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 25-T23S-R31E - Todd 25 Fed 001Z SWD (Offset) - Wellbore #1 - Wellbore #1 — Offset Site Error: 0.00 ft

Survey Program: 10-INC-ONLY — Offset Well Error: 10.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
17,400.00	10,550.00	10,533.30	10,533.30	76.75	157.84	-90.00	8,225.09	267.50	1,494.66	1,295.43	199.23	7.502	
17,450.00	10,550.00	10,533.30	10,533.30	77.16	157.84	-90.00	8,225.09	267.50	1,446.78	1,247.28	199.50	7.252	
17,500.00	10,550.00	10,533.30	10,533.30	77.56	157.84	-90.00	8,225.09	267.50	1,399.06	1,199.26	199.80	7.002	
17,550.00	10,550.00	10,533.30	10,533.30	77.96	157.84	-90.00	8,225.09	267.50	1,351.50	1,151.37	200.13	6.753	
17,600.00	10,550.00	10,533.30	10,533.30	78.36	157.84	-90.00	8,225.09	267.50	1,304.12	1,103.61	200.51	6.504	
17,650.00	10,550.00	10,533.30	10,533.30	78.77	157.84	-90.00	8,225.09	267.50	1,256.95	1,056.02	200.92	6.256	
17,700.00	10,550.00	10,533.30	10,533.30	79.17	157.84	-90.00	8,225.09	267.50	1,210.00	1,008.61	201.39	6.008	
17,750.00	10,550.00	10,533.30	10,533.30	79.58	157.84	-90.00	8,225.09	267.50	1,163.30	961.39	201.92	5.761	
17,800.00	10,550.00	10,533.30	10,533.30	79.99	157.84	-90.00	8,225.09	267.50	1,116.90	914.39	202.51	5.515	
17,850.00	10,550.00	10,533.30	10,533.30	80.39	157.84	-90.00	8,225.09	267.50	1,070.81	867.64	203.17	5.270	
17,900.00	10,550.00	10,533.30	10,533.30	80.80	157.84	-90.00	8,225.09	267.50	1,025.10	821.17	203.93	5.027	
17,950.00	10,550.00	10,533.30	10,533.30	81.21	157.84	-90.00	8,225.09	267.50	979.80	775.02	204.78	4.785	Alert
18,000.00	10,550.00	10,533.30	10,533.30	81.62	157.84	-90.00	8,225.09	267.50	934.98	729.23	205.75	4.544	Alert
18,050.00	10,550.00	10,533.30	10,533.30	82.03	157.84	-90.00	8,225.09	267.50	890.71	683.86	206.86	4.306	Alert
18,100.00	10,550.00	10,533.30	10,533.30	82.44	157.84	-90.00	8,225.09	267.50	847.09	638.97	208.11	4.070	Alert
18,150.00	10,550.00	10,533.30	10,533.30	82.85	157.84	-90.00	8,225.09	267.50	804.20	594.65	209.55	3.838	Alert
18,200.00	10,550.00	10,533.30	10,533.30	83.26	157.84	-90.00	8,225.09	267.50	762.18	551.00	211.18	3.609	Alert
18,250.00	10,550.00	10,533.30	10,533.30	83.68	157.84	-90.00	8,225.09	267.50	721.18	508.15	213.03	3.385	Alert
18,300.00	10,550.00	10,533.30	10,533.30	84.09	157.84	-90.00	8,225.09	267.50	681.38	466.25	215.14	3.167	Alert
18,350.00	10,550.00	10,533.30	10,533.30	84.51	157.84	-90.00	8,225.09	267.50	642.91	425.40	217.50	2.956	Alert
18,400.00	10,550.00	10,533.30	10,533.30	84.92	157.84	-90.00	8,225.09	267.50	605.56	385.44	220.12	2.751	Alert
18,450.00	10,550.00	10,533.30	10,533.30	85.35	157.84	-90.00	8,225.09	267.50	569.53	346.55	222.97	2.554	Alert
18,500.00	10,550.00	10,533.30	10,533.30	85.78	157.84	-90.00	8,225.09	267.50	535.08	309.01	226.07	2.367	Minor Risk
18,550.00	10,550.00	10,533.30	10,533.30	86.21	157.84	-90.00	8,225.09	267.50	502.57	273.18	229.38	2.191	Minor Risk
18,600.00	10,550.00	10,533.30	10,533.30	86.64	157.84	-90.00	8,225.09	267.50	472.39	239.54	232.84	2.029	Minor Risk
18,650.00	10,550.00	10,533.30	10,533.30	87.08	157.84	-90.00	8,225.09	267.50	445.03	208.68	236.35	1.883	Minor Risk
18,700.00	10,550.00	10,533.30	10,533.30	87.53	157.84	-90.00	8,225.09	267.50	421.06	181.32	239.74	1.756	Minor Risk
18,750.00	10,550.00	10,533.30	10,533.30	87.97	157.84	-90.00	8,225.09	267.50	401.09	158.32	242.77	1.652	Minor Risk
18,800.00	10,550.00	10,533.30	10,533.30	88.42	157.84	-90.00	8,225.09	267.50	386.00	140.84	245.16	1.574	Minor Risk
18,850.00	10,550.00	10,533.30	10,533.30	88.87	157.84	-90.00	8,225.09	267.50	376.98	130.36	246.62	1.529	Minor Risk
18,893.84	10,550.00	10,533.30	10,533.30	89.26	157.84	-90.00	8,225.09	267.50	374.42	127.50	246.93	1.516	Minor Risk, CC, ES, SF
18,900.00	10,550.00	10,533.30	10,533.30	89.32	157.84	-90.00	8,225.09	267.50	374.47	127.58	246.89	1.517	Minor Risk
18,950.00	10,550.00	10,533.30	10,533.30	89.77	157.84	-90.00	8,225.09	267.50	378.61	132.68	245.94	1.539	Minor Risk
19,000.00	10,550.00	10,533.30	10,533.30	90.22	157.84	-90.00	8,225.09	267.50	389.18	145.31	243.88	1.596	Minor Risk
19,050.00	10,550.00	10,533.30	10,533.30	90.67	157.84	-90.00	8,225.09	267.50	405.68	164.68	241.00	1.683	Minor Risk
19,100.00	10,550.00	10,533.30	10,533.30	91.12	157.84	-90.00	8,225.09	267.50	427.43	189.78	237.65	1.799	Minor Risk
19,150.00	10,550.00	10,533.30	10,533.30	91.57	157.84	-90.00	8,225.09	267.50	453.66	219.54	234.12	1.938	Minor Risk
19,200.00	10,550.00	10,533.30	10,533.30	92.03	157.84	-90.00	8,225.09	267.50	483.66	253.02	230.64	2.097	Minor Risk
19,250.00	10,550.00	10,533.30	10,533.30	92.48	157.84	-90.00	8,225.09	267.50	516.76	289.39	227.37	2.273	Minor Risk
19,300.00	10,550.00	10,533.30	10,533.30	92.93	157.84	-90.00	8,225.09	267.50	552.41	328.05	224.36	2.462	Minor Risk
19,350.00	10,550.00	10,533.30	10,533.30	93.39	157.84	-90.00	8,225.09	267.50	590.15	368.48	221.66	2.662	Alert
19,400.00	10,550.00	10,533.30	10,533.30	93.84	157.84	-90.00	8,225.09	267.50	629.59	410.33	219.26	2.871	Alert
19,450.00	10,550.00	10,533.30	10,533.30	94.30	157.84	-90.00	8,225.09	267.50	670.45	453.30	217.15	3.087	Alert
19,500.00	10,550.00	10,533.30	10,533.30	94.75	157.84	-90.00	8,225.09	267.50	712.47	497.18	215.30	3.309	Alert
19,550.00	10,550.00	10,533.30	10,533.30	95.21	157.84	-90.00	8,225.09	267.50	755.47	541.80	213.67	3.536	Alert
19,600.00	10,550.00	10,533.30	10,533.30	95.66	157.84	-90.00	8,225.09	267.50	799.28	587.03	212.25	3.766	Alert
19,650.00	10,550.00	10,533.30	10,533.30	96.12	157.84	-90.00	8,225.09	267.50	843.78	632.77	211.01	3.999	Alert
19,700.00	10,550.00	10,533.30	10,533.30	96.58	157.84	-90.00	8,225.09	267.50	888.87	678.94	209.93	4.234	Alert
19,750.00	10,550.00	10,533.30	10,533.30	97.03	157.84	-90.00	8,225.09	267.50	934.45	725.48	208.97	4.472	Alert
19,800.00	10,550.00	10,533.30	10,533.30	97.49	157.84	-90.00	8,225.09	267.50	980.47	772.33	208.13	4.711	Alert
19,850.00	10,550.00	10,533.30	10,533.30	97.95	157.84	-90.00	8,225.09	267.50	1,026.85	819.46	207.40	4.951	Alert
19,900.00	10,550.00	10,533.30	10,533.30	98.41	157.84	-90.00	8,225.09	267.50	1,073.57	866.82	206.75	5.193	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 25-T23S-R31E - Todd 25 Fed 001Z SWD (Offset) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.00 ft

Survey Program: 10-INC-ONLY

Offset Well Error: 10.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
19,950.00	10,550.00	10,533.30	10,533.30	98.87	157.84	-90.00	8,225.09	267.50	1,120.56	914.39	206.17	5.435	
20,000.00	10,550.00	10,533.30	10,533.30	99.33	157.84	-90.00	8,225.09	267.50	1,167.81	962.15	205.66	5.678	
20,050.00	10,550.00	10,533.30	10,533.30	99.79	157.84	-90.00	8,225.09	267.50	1,215.27	1,010.06	205.21	5.922	
20,100.00	10,550.00	10,533.30	10,533.30	100.25	157.84	-90.00	8,225.09	267.50	1,262.94	1,058.12	204.81	6.166	
20,150.00	10,550.00	10,533.30	10,533.30	100.71	157.84	-90.00	8,225.09	267.50	1,310.77	1,106.31	204.46	6.411	
20,200.00	10,550.00	10,533.30	10,533.30	101.17	157.84	-90.00	8,225.09	267.50	1,358.76	1,154.62	204.14	6.656	
20,250.00	10,550.00	10,533.30	10,533.30	101.63	157.84	-90.00	8,225.09	267.50	1,406.90	1,203.04	203.86	6.901	
20,300.00	10,550.00	10,533.30	10,533.30	102.09	157.84	-90.00	8,225.09	267.50	1,455.15	1,251.55	203.61	7.147	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36 State 01 SWD - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.00 ft

Survey Program: 10-INC-ONLY — **Offset Well Error:** 10.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,150.00	10,550.00	10,544.70	10,544.70	40.61	158.00	-90.00	2,953.08	311.12	1,464.58	1,269.21	195.37	7.496	
12,200.00	10,550.00	10,544.70	10,544.70	40.80	158.00	-90.00	2,953.08	311.12	1,415.82	1,220.42	195.40	7.246	
12,250.00	10,550.00	10,544.70	10,544.70	41.01	158.00	-90.00	2,953.08	311.12	1,367.16	1,171.72	195.44	6.995	
12,300.00	10,550.00	10,544.70	10,544.70	41.21	158.00	-90.00	2,953.08	311.12	1,318.60	1,123.12	195.48	6.745	
12,350.00	10,550.00	10,544.70	10,544.70	41.42	158.00	-90.00	2,953.08	311.12	1,270.14	1,074.62	195.52	6.496	
12,400.00	10,550.00	10,544.70	10,544.70	41.63	158.00	-90.00	2,953.08	311.12	1,221.82	1,026.24	195.57	6.247	
12,450.00	10,550.00	10,544.70	10,544.70	41.85	158.00	-90.00	2,953.08	311.12	1,173.63	978.00	195.63	5.999	
12,500.00	10,550.00	10,544.70	10,544.70	42.07	158.00	-90.00	2,953.08	311.12	1,125.60	929.91	195.69	5.752	
12,550.00	10,550.00	10,544.70	10,544.70	42.30	158.00	-90.00	2,953.08	311.12	1,077.75	881.98	195.77	5.505	
12,600.00	10,550.00	10,544.70	10,544.70	42.53	158.00	-90.00	2,953.08	311.12	1,030.11	834.26	195.85	5.260	
12,650.00	10,550.00	10,544.70	10,544.70	42.77	158.00	-90.00	2,953.08	311.12	982.69	786.75	195.94	5.015	
12,700.00	10,550.00	10,544.70	10,544.70	43.00	158.00	-90.00	2,953.08	311.12	935.55	739.50	196.05	4.772	Alert
12,750.00	10,550.00	10,544.70	10,544.70	43.25	158.00	-90.00	2,953.08	311.12	888.72	692.55	196.18	4.530	Alert
12,800.00	10,550.00	10,544.70	10,544.70	43.49	158.00	-90.00	2,953.08	311.12	842.26	645.94	196.32	4.290	Alert
12,850.00	10,550.00	10,544.70	10,544.70	43.75	158.00	-90.00	2,953.08	311.12	796.22	599.73	196.49	4.052	Alert
12,900.00	10,550.00	10,544.70	10,544.70	44.00	158.00	-90.00	2,953.08	311.12	750.69	554.00	196.70	3.816	Alert
12,950.00	10,550.00	10,544.70	10,544.70	44.26	158.00	-90.00	2,953.08	311.12	705.77	508.83	196.94	3.584	Alert
13,000.00	10,550.00	10,544.70	10,544.70	44.52	158.00	-90.00	2,953.08	311.12	661.57	464.35	197.23	3.354	Alert
13,050.00	10,550.00	10,544.70	10,544.70	44.79	158.00	-90.00	2,953.08	311.12	618.26	420.69	197.58	3.129	Alert
13,100.00	10,550.00	10,544.70	10,544.70	45.06	158.00	-90.00	2,953.08	311.12	576.04	378.04	198.00	2.909	Alert
13,150.00	10,550.00	10,544.70	10,544.70	45.34	158.00	-90.00	2,953.08	311.12	535.16	336.65	198.50	2.696	Alert
13,200.00	10,550.00	10,544.70	10,544.70	45.61	158.00	-90.00	2,953.08	311.12	495.94	296.83	199.11	2.491	Minor Risk
13,250.00	10,550.00	10,544.70	10,544.70	45.90	158.00	-90.00	2,953.08	311.12	458.84	258.99	199.85	2.296	Minor Risk
13,300.00	10,550.00	10,544.70	10,544.70	46.18	158.00	-90.00	2,953.08	311.12	424.38	223.67	200.71	2.114	Minor Risk
13,350.00	10,550.00	10,544.70	10,544.70	46.47	158.00	-90.00	2,953.08	311.12	393.28	191.58	201.71	1.950	Minor Risk
13,400.00	10,550.00	10,544.70	10,544.70	46.76	158.00	-90.00	2,953.08	311.12	366.39	163.60	202.79	1.807	Minor Risk
13,450.00	10,550.00	10,544.70	10,544.70	47.05	158.00	-90.00	2,953.08	311.12	344.69	140.80	203.89	1.691	Minor Risk
13,500.00	10,550.00	10,544.70	10,544.70	47.35	158.00	-90.00	2,953.08	311.12	329.21	124.34	204.88	1.607	Minor Risk
13,550.00	10,550.00	10,544.70	10,544.70	47.65	158.00	-90.00	2,953.08	311.12	320.86	115.27	205.59	1.561	Minor Risk
13,579.30	10,550.00	10,544.70	10,544.70	47.83	158.00	-90.00	2,953.08	311.12	319.52	113.70	205.82	1.552	Minor Risk, CC, ES, SF
13,600.00	10,550.00	10,544.70	10,544.70	47.95	158.00	-90.00	2,953.08	311.12	320.19	114.30	205.89	1.555	Minor Risk
13,650.00	10,550.00	10,544.70	10,544.70	48.26	158.00	-90.00	2,953.08	311.12	327.25	121.49	205.76	1.590	Minor Risk
13,700.00	10,550.00	10,544.70	10,544.70	48.57	158.00	-90.00	2,953.08	311.12	341.56	136.30	205.26	1.664	Minor Risk
13,750.00	10,550.00	10,544.70	10,544.70	48.88	158.00	-90.00	2,953.08	311.12	362.26	157.75	204.51	1.771	Minor Risk
13,800.00	10,550.00	10,544.70	10,544.70	49.19	158.00	-90.00	2,953.08	311.12	388.33	184.68	203.66	1.907	Minor Risk
13,850.00	10,550.00	10,544.70	10,544.70	49.51	158.00	-90.00	2,953.08	311.12	418.78	215.97	202.80	2.065	Minor Risk
13,900.00	10,550.00	10,544.70	10,544.70	49.83	158.00	-90.00	2,953.08	311.12	452.71	250.70	202.00	2.241	Minor Risk
13,950.00	10,550.00	10,544.70	10,544.70	50.15	158.00	-90.00	2,953.08	311.12	489.30	288.01	201.29	2.431	Minor Risk
14,000.00	10,550.00	10,544.70	10,544.70	50.48	158.00	-90.00	2,953.08	311.12	527.60	326.95	200.65	2.629	Alert
14,050.00	10,550.00	10,544.70	10,544.70	50.82	158.00	-90.00	2,953.08	311.12	567.21	367.12	200.09	2.835	Alert
14,100.00	10,550.00	10,544.70	10,544.70	51.15	158.00	-90.00	2,953.08	311.12	607.87	408.27	199.60	3.045	Alert
14,150.00	10,550.00	10,544.70	10,544.70	51.50	158.00	-90.00	2,953.08	311.12	649.37	450.19	199.18	3.260	Alert
14,200.00	10,550.00	10,544.70	10,544.70	51.84	158.00	-90.00	2,953.08	311.12	691.55	492.75	198.80	3.479	Alert
14,250.00	10,550.00	10,544.70	10,544.70	52.19	158.00	-90.00	2,953.08	311.12	734.30	535.82	198.48	3.700	Alert
14,300.00	10,550.00	10,544.70	10,544.70	52.54	158.00	-90.00	2,953.08	311.12	777.81	579.61	198.20	3.924	Alert
14,350.00	10,550.00	10,544.70	10,544.70	52.90	158.00	-90.00	2,953.08	311.12	822.06	624.10	197.97	4.153	Alert
14,400.00	10,550.00	10,544.70	10,544.70	53.26	158.00	-90.00	2,953.08	311.12	866.94	669.17	197.76	4.384	Alert
14,450.00	10,550.00	10,544.70	10,544.70	53.62	158.00	-90.00	2,953.08	311.12	912.35	714.75	197.59	4.617	Alert
14,500.00	10,550.00	10,544.70	10,544.70	53.99	158.00	-90.00	2,953.08	311.12	958.21	760.77	197.44	4.853	Alert
14,550.00	10,550.00	10,544.70	10,544.70	54.35	158.00	-90.00	2,953.08	311.12	1,004.47	807.15	197.32	5.090	
14,600.00	10,550.00	10,544.70	10,544.70	54.72	158.00	-90.00	2,953.08	311.12	1,051.07	853.86	197.21	5.330	
14,650.00	10,550.00	10,544.70	10,544.70	55.09	158.00	-90.00	2,953.08	311.12	1,097.98	900.86	197.11	5.570	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36 State 01 SWD - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.00 ft

Survey Program: 10-INC-ONLY — **Offset Well Error:** 10.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
14,700.00	10,550.00	10,544.70	10,544.70	55.47	158.00	-90.00	2,953.08	311.12	1,145.14	948.10	197.04	5.812	
14,750.00	10,550.00	10,544.70	10,544.70	55.84	158.00	-90.00	2,953.08	311.12	1,192.54	995.56	196.97	6.054	
14,800.00	10,550.00	10,544.70	10,544.70	56.22	158.00	-90.00	2,953.08	311.12	1,240.14	1,043.22	196.92	6.298	
14,850.00	10,550.00	10,544.70	10,544.70	56.60	158.00	-90.00	2,953.08	311.12	1,287.92	1,091.05	196.87	6.542	
14,900.00	10,550.00	10,544.70	10,544.70	56.98	158.00	-90.00	2,953.08	311.12	1,335.86	1,139.04	196.83	6.787	
14,950.00	10,550.00	10,544.70	10,544.70	57.37	158.00	-90.00	2,953.08	311.12	1,383.95	1,187.16	196.79	7.033	
15,000.00	10,550.00	10,544.70	10,544.70	57.76	158.00	-90.00	2,953.08	311.12	1,432.17	1,235.41	196.76	7.279	
15,050.00	10,550.00	10,544.70	10,544.70	58.14	158.00	-90.00	2,953.08	311.12	1,480.51	1,283.77	196.74	7.525	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36 State 231H - Wellbore #1 - Permit Plan 1 — Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM — Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.40	0.40	0.50	0.50	-90.32	-0.17	-29.99	29.99				
50.00	50.00	50.40	50.40	0.50	0.50	-90.32	-0.17	-29.99	29.99	28.98	1.01	29.795	
100.00	100.00	100.40	100.40	0.52	0.52	-90.32	-0.17	-29.99	29.99	28.95	1.04	28.952	
150.00	150.00	150.40	150.40	0.59	0.59	-90.32	-0.17	-29.99	29.99	28.81	1.18	25.389	
200.00	200.00	200.40	200.40	0.70	0.70	-90.32	-0.17	-29.99	29.99	28.59	1.41	21.342	
250.00	250.00	250.40	250.40	0.84	0.84	-90.32	-0.17	-29.99	29.99	28.31	1.68	17.888	
300.00	300.00	300.40	300.40	0.99	0.99	-90.32	-0.17	-29.99	29.99	28.01	1.98	15.178	
350.00	350.00	350.40	350.40	1.15	1.15	-90.32	-0.17	-29.99	29.99	27.70	2.29	13.083	
400.00	400.00	400.40	400.40	1.31	1.31	-90.32	-0.17	-29.99	29.99	27.37	2.62	11.449	
450.00	450.00	450.40	450.40	1.48	1.48	-90.32	-0.17	-29.99	29.99	27.04	2.95	10.153	
500.00	500.00	500.40	500.40	1.65	1.65	-90.32	-0.17	-29.99	29.99	26.70	3.29	9.106	
550.00	550.00	550.40	550.40	1.82	1.82	-90.32	-0.17	-29.99	29.99	26.35	3.64	8.247	
600.00	600.00	600.40	600.40	1.99	1.99	-90.32	-0.17	-29.99	29.99	26.01	3.98	7.530	
650.00	650.00	650.40	650.40	2.16	2.17	-90.32	-0.17	-29.99	29.99	25.66	4.33	6.925	
700.00	700.00	700.40	700.40	2.34	2.34	-90.32	-0.17	-29.99	29.99	25.31	4.68	6.408	
750.00	750.00	750.40	750.40	2.51	2.52	-90.32	-0.17	-29.99	29.99	24.96	5.03	5.961	
800.00	800.00	800.40	800.40	2.69	2.69	-90.32	-0.17	-29.99	29.99	24.61	5.38	5.572	
850.00	850.00	850.40	850.40	2.87	2.87	-90.32	-0.17	-29.99	29.99	24.26	5.74	5.229	
900.00	900.00	900.40	900.40	3.04	3.04	-90.32	-0.17	-29.99	29.99	23.90	6.09	4.926	Alert
950.00	950.00	950.40	950.40	3.22	3.22	-90.32	-0.17	-29.99	29.99	23.55	6.44	4.655	Alert
1,000.00	1,000.00	1,000.40	1,000.40	3.40	3.40	-90.32	-0.17	-29.99	29.99	23.19	6.80	4.412	Alert
1,050.00	1,050.00	1,050.40	1,050.40	3.58	3.58	-90.32	-0.17	-29.99	29.99	22.84	7.15	4.194	Alert
1,100.00	1,100.00	1,100.40	1,100.40	3.75	3.75	-90.32	-0.17	-29.99	29.99	22.48	7.51	3.995	Alert
1,150.00	1,150.00	1,150.40	1,150.40	3.93	3.93	-90.32	-0.17	-29.99	29.99	22.13	7.86	3.815	Alert
1,200.00	1,200.00	1,200.40	1,200.40	4.11	4.11	-90.32	-0.17	-29.99	29.99	21.77	8.22	3.649	Alert
1,250.00	1,250.00	1,250.40	1,250.40	4.29	4.29	-90.32	-0.17	-29.99	29.99	21.42	8.57	3.498	Alert
1,300.00	1,300.00	1,300.40	1,300.40	4.46	4.47	-90.32	-0.17	-29.99	29.99	21.06	8.93	3.358	Alert
1,350.00	1,350.00	1,350.40	1,350.40	4.64	4.64	-90.32	-0.17	-29.99	29.99	20.70	9.29	3.230	Alert
1,400.00	1,400.00	1,400.40	1,400.40	4.82	4.82	-90.32	-0.17	-29.99	29.99	20.35	9.64	3.110	Alert
1,450.00	1,450.00	1,450.40	1,450.40	5.00	5.00	-90.32	-0.17	-29.99	29.99	19.99	10.00	2.999	Alert
1,500.00	1,500.00	1,500.40	1,500.40	5.18	5.18	-90.32	-0.17	-29.99	29.99	19.63	10.36	2.896	Alert
1,550.00	1,550.00	1,550.40	1,550.40	5.36	5.36	-90.32	-0.17	-29.99	29.99	19.28	10.71	2.800	Alert
1,600.00	1,600.00	1,600.40	1,600.40	5.53	5.54	-90.32	-0.17	-29.99	29.99	18.92	11.07	2.709	Alert
1,650.00	1,650.00	1,650.40	1,650.40	5.71	5.71	-90.32	-0.17	-29.99	29.99	18.56	11.43	2.625	Alert
1,700.00	1,700.00	1,700.40	1,700.40	5.89	5.89	-90.32	-0.17	-29.99	29.99	18.21	11.78	2.545	Alert
1,750.00	1,750.00	1,750.40	1,750.40	6.07	6.07	-90.32	-0.17	-29.99	29.99	17.85	12.14	2.470	Minor Risk
1,800.00	1,800.00	1,800.40	1,800.40	6.25	6.25	-90.32	-0.17	-29.99	29.99	17.49	12.50	2.400	Minor Risk
1,850.00	1,850.00	1,850.40	1,850.40	6.43	6.43	-90.32	-0.17	-29.99	29.99	17.13	12.86	2.333	Minor Risk
1,900.00	1,900.00	1,900.40	1,900.40	6.61	6.61	-90.32	-0.17	-29.99	29.99	16.78	13.21	2.270	Minor Risk
1,950.00	1,950.00	1,950.40	1,950.40	6.78	6.79	-90.32	-0.17	-29.99	29.99	16.42	13.57	2.210	Minor Risk
2,000.00	2,000.00	2,000.40	2,000.40	6.96	6.96	-90.32	-0.17	-29.99	29.99	16.06	13.93	2.153	Minor Risk
2,050.00	2,050.00	2,050.40	2,050.40	7.14	7.14	-90.32	-0.17	-29.99	29.99	15.70	14.29	2.099	Minor Risk
2,100.00	2,100.00	2,100.40	2,100.40	7.32	7.32	-90.32	-0.17	-29.99	29.99	15.35	14.64	2.048	Minor Risk
2,150.00	2,150.00	2,150.40	2,150.40	7.50	7.50	-90.32	-0.17	-29.99	29.99	14.99	15.00	1.999	Minor Risk
2,200.00	2,200.00	2,200.40	2,200.40	7.68	7.68	-90.32	-0.17	-29.99	29.99	14.63	15.36	1.953	Minor Risk
2,250.00	2,250.00	2,250.40	2,250.40	7.86	7.86	-90.32	-0.17	-29.99	29.99	14.27	15.72	1.908	Minor Risk
2,300.00	2,300.00	2,300.40	2,300.40	8.04	8.04	-90.32	-0.17	-29.99	29.99	13.92	16.07	1.866	Minor Risk
2,350.00	2,350.00	2,350.40	2,350.40	8.22	8.22	-90.32	-0.17	-29.99	29.99	13.56	16.43	1.825	Minor Risk
2,400.00	2,400.00	2,400.40	2,400.40	8.39	8.40	-90.32	-0.17	-29.99	29.99	13.20	16.79	1.786	Minor Risk
2,450.00	2,450.00	2,450.40	2,450.40	8.57	8.57	-90.32	-0.17	-29.99	29.99	12.84	17.15	1.749	Minor Risk
2,500.00	2,500.00	2,500.40	2,500.40	8.75	8.75	-90.32	-0.17	-29.99	29.99	12.49	17.51	1.713	Minor Risk
2,550.00	2,550.00	2,550.40	2,550.40	8.93	8.93	-90.32	-0.17	-29.99	29.99	12.13	17.86	1.679	Minor Risk

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36 State 231H - Wellbore #1 - Permit Plan 1 — Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM — Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,600.00	2,600.00	2,600.40	2,600.40	9.11	9.11	-90.32	-0.17	-29.99	29.99	11.77	18.22	1.646	Minor Risk
2,650.00	2,650.00	2,650.40	2,650.40	9.29	9.29	-90.32	-0.17	-29.99	29.99	11.41	18.58	1.614	Minor Risk, CC
2,700.00	2,700.00	2,700.18	2,700.18	9.47	9.46	-90.56	-0.30	-30.17	30.17	11.24	18.93	1.594	Minor Risk, ES
2,750.00	2,750.00	2,749.96	2,749.96	9.65	9.63	-91.26	-0.67	-30.70	30.71	11.44	19.27	1.594	Minor Risk, SF
2,800.00	2,800.00	2,799.73	2,799.71	9.83	9.79	-92.37	-1.31	-31.58	31.62	12.00	19.61	1.612	Minor Risk
2,850.00	2,850.00	2,849.47	2,849.43	10.00	9.96	-93.82	-2.19	-32.81	32.90	12.95	19.95	1.649	Minor Risk
2,900.00	2,900.00	2,899.18	2,899.10	10.18	10.12	-95.52	-3.32	-34.39	34.58	14.29	20.29	1.704	Minor Risk
2,950.00	2,950.00	2,948.85	2,948.72	10.36	10.29	-97.38	-4.70	-36.33	36.67	16.04	20.63	1.777	Minor Risk
3,000.00	3,000.00	2,998.48	2,998.26	10.54	10.45	-99.32	-6.34	-38.60	39.18	18.21	20.97	1.869	Minor Risk
3,050.00	3,050.00	3,048.05	3,047.73	10.72	10.62	-101.27	-8.21	-41.23	42.12	20.82	21.30	1.977	Minor Risk
3,100.00	3,100.00	3,102.19	3,097.36	10.90	10.80	-103.13	-10.30	-44.13	45.42	23.76	21.66	2.097	Minor Risk
3,150.00	3,150.00	3,147.68	3,147.10	11.08	10.96	-104.75	-12.40	-47.07	48.78	26.79	21.99	2.218	Minor Risk
3,200.00	3,200.00	3,202.45	3,196.84	11.26	11.14	-106.17	-14.50	-50.00	52.18	29.83	22.35	2.334	Minor Risk
3,250.00	3,250.00	3,247.42	3,246.58	11.44	11.30	-107.41	-16.60	-52.93	55.60	32.92	22.68	2.451	Minor Risk
3,300.00	3,300.00	3,302.71	3,296.32	11.62	11.49	-108.50	-18.70	-55.86	59.05	36.00	23.05	2.562	Alert
3,350.00	3,350.00	3,347.16	3,346.06	11.80	11.64	-109.48	-20.80	-58.80	62.52	39.14	23.38	2.674	Alert
3,400.00	3,400.00	3,397.03	3,395.79	11.97	11.81	-110.35	-22.90	-61.73	66.00	42.28	23.72	2.782	Alert
3,450.00	3,450.00	3,446.89	3,445.53	12.15	11.98	-111.14	-25.00	-64.66	69.50	45.42	24.07	2.887	Alert
3,500.00	3,500.00	3,503.24	3,495.27	12.33	12.18	-111.84	-27.10	-67.60	73.01	48.56	24.44	2.987	Alert
3,550.00	3,550.00	3,546.63	3,545.01	12.51	12.33	-112.49	-29.20	-70.53	76.52	51.75	24.77	3.089	Alert
3,600.00	3,600.00	3,603.50	3,594.75	12.69	12.52	-113.08	-31.30	-73.46	80.05	54.91	25.14	3.184	Alert
3,650.00	3,650.00	3,646.37	3,644.49	12.87	12.67	-113.61	-33.40	-76.39	83.59	58.12	25.47	3.282	Alert
3,700.00	3,700.00	3,703.76	3,694.22	13.05	12.87	-114.11	-35.50	-79.33	87.13	61.28	25.84	3.371	Alert
3,750.00	3,750.00	3,746.11	3,743.96	13.23	13.02	-114.56	-37.60	-82.26	90.67	64.50	26.17	3.465	Alert
3,800.00	3,800.00	3,804.02	3,793.70	13.41	13.22	-114.98	-39.70	-85.19	94.23	67.68	26.55	3.549	Alert
3,850.00	3,850.00	3,845.84	3,843.43	13.58	13.37	130.58	-41.80	-88.12	97.96	71.10	26.86	3.647	Alert
3,900.00	3,899.99	3,904.33	3,893.13	13.75	13.58	130.52	-43.90	-91.06	102.05	74.81	27.24	3.747	Alert
3,950.00	3,949.97	3,945.47	3,942.80	13.92	13.72	130.69	-45.99	-93.98	106.49	78.94	27.55	3.866	Alert
4,000.00	3,999.94	3,995.23	3,992.43	14.09	13.90	131.05	-48.09	-96.91	111.29	83.41	27.89	3.991	Alert
4,050.00	4,049.88	4,044.95	4,042.02	14.25	14.07	131.58	-50.18	-99.83	116.46	88.23	28.23	4.126	Alert
4,100.00	4,099.79	4,105.38	4,091.56	14.42	14.29	132.24	-52.28	-102.76	122.00	93.39	28.60	4.265	Alert
4,150.00	4,149.66	4,144.24	4,141.05	14.59	14.42	133.02	-54.36	-105.67	127.92	99.02	28.91	4.426	Alert
4,200.00	4,199.49	4,206.21	4,190.47	14.76	14.64	133.89	-56.45	-108.59	134.25	104.96	29.29	4.584	Alert
4,250.00	4,249.28	4,243.27	4,239.82	14.93	14.77	134.84	-58.54	-111.50	140.99	111.40	29.59	4.765	Alert
4,300.00	4,299.01	4,292.69	4,289.11	15.10	14.95	135.83	-60.62	-114.40	148.15	118.23	29.93	4.951	Alert
4,350.00	4,348.68	4,342.02	4,338.31	15.27	15.12	136.87	-62.69	-117.30	155.76	125.49	30.27	5.146	
4,400.00	4,398.29	4,408.73	4,387.43	15.44	15.36	137.94	-64.77	-120.20	163.80	133.14	30.67	5.341	
4,450.00	4,447.87	4,440.49	4,436.53	15.61	15.48	139.00	-66.84	-123.10	172.04	141.09	30.95	5.559	
4,500.00	4,497.46	4,489.71	4,485.62	15.78	15.65	139.96	-68.91	-125.99	180.33	149.04	31.29	5.763	
4,550.00	4,547.05	4,538.93	4,534.71	15.95	15.83	140.84	-70.99	-128.89	188.67	157.04	31.63	5.965	
4,600.00	4,596.63	4,588.16	4,583.80	16.12	16.00	141.64	-73.06	-131.78	197.04	165.07	31.97	6.163	
4,650.00	4,646.22	4,637.38	4,632.90	16.30	16.18	142.38	-75.13	-134.67	205.45	173.14	32.32	6.358	
4,700.00	4,695.80	4,686.60	4,681.99	16.47	16.36	143.06	-77.21	-137.57	213.89	181.24	32.66	6.549	
4,750.00	4,745.39	4,735.82	4,731.08	16.64	16.53	143.69	-79.28	-140.46	222.36	189.36	33.00	6.738	
4,800.00	4,794.97	4,785.04	4,780.17	16.82	16.71	144.27	-81.35	-143.36	230.85	197.51	33.35	6.923	
4,850.00	4,844.56	4,834.26	4,829.27	16.99	16.89	144.81	-83.42	-146.25	239.37	205.68	33.69	7.105	
4,900.00	4,894.14	4,883.48	4,878.36	17.16	17.06	145.31	-85.50	-149.15	247.90	213.86	34.03	7.284	
4,950.00	4,943.73	4,932.70	4,927.45	17.34	17.24	145.78	-87.57	-152.04	256.45	222.07	34.38	7.459	
5,000.00	4,993.31	4,981.93	4,976.54	17.51	17.42	146.22	-89.64	-154.94	265.01	230.29	34.73	7.632	
5,050.00	5,042.90	5,031.15	5,025.63	17.69	17.59	146.64	-91.72	-157.83	273.59	238.52	35.07	7.801	
5,100.00	5,092.48	5,080.37	5,074.73	17.86	17.77	147.02	-93.79	-160.73	282.19	246.77	35.42	7.967	
5,150.00	5,142.07	5,129.59	5,123.82	18.04	17.95	147.39	-95.86	-163.62	290.79	255.03	35.76	8.131	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36 State 231H - Wellbore #1 - Permit Plan 1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.00	5,191.66	5,178.81	5,172.91	18.21	18.13	147.73	-97.94	-166.52	299.41	263.30	36.11	8.291	
5,250.00	5,241.24	5,228.03	5,222.00	18.39	18.31	148.06	-100.01	-169.41	308.03	271.57	36.46	8.449	
5,300.00	5,290.83	5,277.25	5,271.10	18.56	18.48	148.36	-102.08	-172.31	316.67	279.86	36.81	8.604	
5,350.00	5,340.41	5,326.47	5,320.19	18.74	18.66	148.65	-104.15	-175.20	325.31	288.15	37.15	8.756	
5,400.00	5,390.00	5,375.70	5,369.28	18.92	18.84	148.93	-106.23	-178.09	333.96	296.46	37.50	8.905	
5,450.00	5,439.58	5,424.92	5,418.37	19.09	19.02	149.19	-108.30	-180.99	342.62	304.77	37.85	9.052	
5,500.00	5,489.17	5,474.14	5,467.47	19.27	19.20	149.44	-110.37	-183.88	351.28	313.08	38.20	9.196	
5,550.00	5,538.75	5,523.36	5,516.56	19.45	19.37	149.68	-112.45	-186.78	359.95	321.40	38.55	9.338	
5,600.00	5,588.34	5,572.58	5,565.65	19.63	19.55	149.90	-114.52	-189.67	368.63	329.73	38.90	9.477	
5,650.00	5,637.92	5,621.80	5,614.74	19.80	19.73	150.12	-116.59	-192.57	377.31	338.06	39.25	9.613	
5,700.00	5,687.51	5,671.02	5,663.83	19.98	19.91	150.32	-118.66	-195.46	385.99	346.40	39.60	9.748	
5,750.00	5,737.09	5,720.25	5,712.93	20.16	20.09	150.52	-120.74	-198.36	394.68	354.74	39.95	9.880	
5,800.00	5,786.68	5,769.47	5,762.02	20.34	20.27	150.71	-122.81	-201.25	403.38	363.08	40.30	10.010	
5,850.00	5,836.27	5,818.69	5,811.11	20.52	20.45	150.89	-124.88	-204.15	412.08	371.43	40.65	10.137	
5,900.00	5,885.85	5,867.91	5,860.20	20.70	20.63	151.06	-126.96	-207.04	420.78	379.78	41.00	10.263	
5,950.00	5,935.44	5,917.13	5,909.30	20.87	20.81	151.22	-129.03	-209.94	429.49	388.14	41.35	10.386	
6,000.00	5,985.02	5,966.35	5,958.39	21.05	20.99	151.38	-131.10	-212.83	438.20	396.49	41.70	10.507	
6,050.00	6,034.61	6,015.57	6,007.48	21.23	21.17	151.54	-133.17	-215.73	446.91	404.86	42.06	10.627	
6,100.00	6,084.19	6,064.79	6,056.57	21.41	21.34	151.68	-135.25	-218.62	455.63	413.22	42.41	10.744	
6,150.00	6,133.78	6,114.02	6,105.67	21.59	21.52	151.83	-137.32	-221.51	464.35	421.59	42.76	10.859	
6,200.00	6,183.36	6,163.24	6,154.76	21.77	21.70	151.96	-139.39	-224.41	473.07	429.95	43.11	10.973	
6,250.00	6,232.95	6,212.46	6,203.85	21.95	21.88	152.09	-141.47	-227.30	481.79	438.33	43.46	11.085	
6,300.00	6,282.53	6,261.68	6,252.94	22.13	22.06	152.22	-143.54	-230.20	490.52	446.70	43.82	11.195	
6,350.00	6,332.12	6,310.90	6,302.03	22.31	22.24	152.34	-145.61	-233.09	499.25	455.07	44.17	11.303	
6,400.00	6,381.70	6,360.12	6,351.13	22.49	22.42	152.46	-147.69	-235.99	507.98	463.45	44.52	11.409	
6,450.00	6,431.29	6,409.34	6,400.22	22.67	22.60	152.57	-149.76	-238.88	516.71	471.83	44.88	11.514	
6,500.00	6,480.88	6,458.56	6,449.31	22.85	22.78	152.68	-151.83	-241.78	525.44	480.21	45.23	11.617	
6,550.00	6,530.46	6,507.79	6,498.40	23.03	22.96	152.79	-153.90	-244.67	534.18	488.59	45.58	11.718	
6,600.00	6,580.05	6,557.01	6,547.50	23.21	23.14	152.89	-155.98	-247.57	542.92	496.98	45.94	11.818	
6,650.00	6,629.63	6,606.23	6,596.59	23.39	23.32	152.99	-158.05	-250.46	551.66	505.36	46.29	11.917	
6,700.00	6,679.22	6,655.45	6,645.68	23.57	23.50	153.09	-160.12	-253.36	560.40	513.75	46.65	12.014	
6,750.00	6,728.80	6,704.67	6,694.77	23.76	23.68	153.19	-162.20	-256.25	569.14	522.14	47.00	12.109	
6,800.00	6,778.39	6,753.89	6,743.87	23.94	23.86	153.28	-164.27	-259.15	577.89	530.53	47.36	12.203	
6,850.00	6,827.97	6,803.11	6,792.96	24.12	24.04	153.36	-166.34	-262.04	586.63	538.92	47.71	12.295	
6,900.00	6,877.56	6,852.33	6,842.05	24.30	24.23	153.45	-168.41	-264.94	595.38	547.31	48.07	12.387	
6,950.00	6,927.14	6,901.56	6,891.14	24.48	24.41	153.53	-170.49	-267.83	604.13	555.70	48.42	12.476	
7,000.00	6,976.73	6,950.78	6,940.23	24.66	24.59	153.61	-172.56	-270.72	612.88	564.10	48.78	12.565	
7,050.00	7,026.31	7,000.00	6,989.33	24.84	24.77	153.69	-174.63	-273.62	621.63	572.49	49.13	12.652	
7,100.00	7,075.90	7,049.22	7,038.42	25.03	24.95	153.77	-176.71	-276.51	630.38	580.89	49.49	12.738	
7,150.00	7,125.48	7,101.56	7,087.51	25.21	25.14	153.84	-178.78	-279.41	639.13	589.28	49.86	12.820	
7,200.00	7,175.07	7,147.66	7,136.60	25.39	25.31	153.92	-180.85	-282.30	647.88	597.68	50.20	12.906	
7,250.00	7,224.66	7,203.12	7,185.70	25.57	25.51	153.99	-182.92	-285.20	656.64	606.06	50.58	12.983	
7,300.00	7,274.24	7,246.10	7,234.79	25.75	25.67	154.06	-185.00	-288.09	665.40	614.48	50.91	13.070	
7,350.00	7,323.83	7,304.68	7,283.88	25.94	25.89	154.12	-187.07	-290.99	674.15	622.85	51.30	13.141	
7,400.00	7,373.41	7,344.55	7,332.97	26.12	26.03	154.19	-189.14	-293.88	682.91	631.28	51.62	13.228	
7,450.00	7,423.00	7,406.23	7,382.07	26.30	26.26	154.25	-191.22	-296.78	691.67	639.64	52.03	13.295	
7,500.00	7,472.58	7,442.99	7,431.16	26.48	26.39	154.31	-193.29	-299.67	700.43	648.09	52.34	13.383	
7,550.00	7,522.17	7,507.79	7,480.25	26.67	26.63	154.37	-195.36	-302.57	709.19	656.43	52.75	13.444	
7,600.00	7,571.75	7,541.43	7,529.34	26.85	26.76	154.43	-197.43	-305.46	717.95	664.89	53.05	13.533	
7,650.00	7,621.34	7,590.65	7,578.44	27.03	26.94	154.49	-199.51	-308.36	726.71	673.30	53.41	13.606	
7,700.00	7,670.92	7,639.87	7,627.53	27.21	27.12	154.54	-201.58	-311.25	735.47	681.70	53.77	13.679	
7,750.00	7,720.51	7,689.10	7,676.62	27.40	27.30	154.60	-203.65	-314.14	744.23	690.11	54.12	13.751	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36 State 231H - Wellbore #1 - Permit Plan 1 — Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM — Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,800.00	7,770.09	7,738.32	7,725.71	27.58	27.48	154.65	-205.73	-317.04	753.00	698.52	54.48	13.821	
7,850.00	7,819.68	7,787.54	7,774.80	27.76	27.66	154.71	-207.80	-319.93	761.76	706.92	54.84	13.891	
7,900.00	7,869.27	7,836.76	7,823.90	27.95	27.84	154.76	-209.87	-322.83	770.52	715.33	55.20	13.960	
7,950.00	7,918.85	7,885.98	7,872.99	28.13	28.02	154.81	-211.95	-325.72	779.29	723.74	55.55	14.028	
8,000.00	7,968.44	7,935.20	7,922.08	28.31	28.21	154.85	-214.02	-328.62	788.06	732.14	55.91	14.095	
8,050.00	8,018.02	7,984.42	7,971.17	28.50	28.39	154.90	-216.09	-331.51	796.82	740.55	56.27	14.161	
8,100.00	8,067.61	8,033.64	8,020.27	28.68	28.57	154.95	-218.16	-334.41	805.59	748.96	56.63	14.226	
8,150.00	8,117.19	8,082.87	8,069.36	28.86	28.75	154.99	-220.24	-337.30	814.36	757.37	56.99	14.290	
8,200.00	8,166.78	8,132.09	8,118.45	29.05	28.93	155.04	-222.31	-340.20	823.12	765.78	57.34	14.354	
8,250.00	8,216.36	8,181.31	8,167.54	29.23	29.11	155.08	-224.38	-343.09	831.89	774.19	57.70	14.417	
8,300.00	8,265.95	8,230.53	8,216.64	29.42	29.29	155.13	-226.46	-345.99	840.66	782.60	58.06	14.479	
8,350.00	8,315.53	8,279.75	8,265.73	29.60	29.48	155.17	-228.53	-348.88	849.43	791.01	58.42	14.540	
8,400.00	8,365.12	8,328.97	8,314.82	29.78	29.66	155.21	-230.60	-351.78	858.20	799.42	58.78	14.601	
8,450.00	8,414.70	8,378.19	8,363.91	29.97	29.84	155.25	-232.67	-354.67	866.97	807.83	59.14	14.660	
8,500.00	8,464.29	8,427.41	8,413.00	30.15	30.02	155.29	-234.75	-357.56	875.74	816.24	59.50	14.719	
8,550.00	8,513.88	8,476.64	8,462.10	30.34	30.20	155.33	-236.82	-360.46	884.51	824.65	59.85	14.778	
8,600.00	8,563.46	8,525.86	8,511.19	30.52	30.38	155.37	-238.89	-363.35	893.28	833.07	60.21	14.835	
8,650.00	8,613.05	8,575.08	8,560.28	30.70	30.57	155.40	-240.97	-366.25	902.05	841.48	60.57	14.892	
8,700.00	8,662.63	8,624.30	8,609.37	30.89	30.75	155.44	-243.04	-369.14	910.82	849.89	60.93	14.948	
8,750.00	8,712.22	8,673.52	8,658.47	31.07	30.93	155.47	-245.11	-372.04	919.60	858.30	61.29	15.004	
8,800.00	8,761.80	8,722.74	8,707.56	31.26	31.11	155.51	-247.18	-374.93	928.37	866.72	61.65	15.059	
8,850.00	8,811.39	8,771.96	8,756.65	31.44	31.29	155.54	-249.26	-377.83	937.14	875.13	62.01	15.113	
8,900.00	8,860.97	8,821.18	8,805.74	31.62	31.48	155.58	-251.33	-380.72	945.91	883.54	62.37	15.166	
8,950.00	8,910.56	8,870.41	8,854.84	31.81	31.66	155.61	-253.40	-383.62	954.69	891.96	62.73	15.219	
9,000.00	8,960.14	8,919.63	8,903.93	31.99	31.84	155.64	-255.48	-386.51	963.46	900.37	63.09	15.271	
9,050.00	9,009.73	8,968.85	8,953.02	32.18	32.02	155.68	-257.55	-389.41	972.24	908.79	63.45	15.323	
9,100.00	9,059.31	9,018.07	9,002.11	32.36	32.20	155.71	-259.62	-392.30	981.01	917.20	63.81	15.374	
9,150.00	9,108.90	9,067.29	9,051.20	32.55	32.38	155.74	-261.70	-395.20	989.79	925.62	64.17	15.425	
9,200.00	9,158.49	9,116.52	9,100.31	32.73	32.57	155.79	-263.77	-398.09	998.50	933.97	64.53	15.474	
9,250.00	9,208.15	9,165.84	9,149.50	32.92	32.75	155.86	-265.85	-400.99	1,006.72	941.83	64.89	15.515	
9,300.00	9,257.89	9,215.26	9,198.78	33.10	32.93	155.90	-267.93	-403.90	1,014.34	949.09	65.25	15.546	
9,350.00	9,307.68	9,264.76	9,248.16	33.28	33.11	155.93	-270.01	-406.81	1,021.38	955.77	65.61	15.568	
9,400.00	9,357.54	9,314.34	9,297.61	33.46	33.30	155.94	-272.10	-409.72	1,027.82	961.85	65.97	15.581	
9,450.00	9,407.43	9,363.99	9,347.12	33.64	33.48	155.93	-274.19	-412.64	1,033.67	967.34	66.32	15.585	
9,500.00	9,457.37	9,426.78	9,409.78	33.82	33.71	155.90	-276.57	-415.96	1,038.64	971.87	66.77	15.556	
9,550.00	9,507.33	9,490.81	9,473.74	34.00	33.95	155.88	-278.38	-418.49	1,042.33	975.12	67.21	15.509	
9,600.00	9,557.31	9,555.01	9,537.90	34.17	34.17	155.87	-279.56	-420.15	1,044.75	977.11	67.64	15.445	
9,650.00	9,607.31	9,619.30	9,602.19	34.35	34.40	155.86	-280.12	-420.92	1,045.89	977.83	68.06	15.368	
9,700.00	9,657.31	9,674.82	9,657.71	34.52	34.59	-90.01	-280.17	-420.99	1,045.99	977.57	68.42	15.287	
9,750.00	9,707.31	9,724.82	9,707.71	34.69	34.76	-90.01	-280.17	-420.99	1,045.99	977.23	68.76	15.211	
9,800.00	9,757.31	9,774.82	9,757.71	34.86	34.93	-90.01	-280.17	-420.99	1,045.99	976.88	69.11	15.136	
9,850.00	9,807.31	9,824.82	9,807.71	35.03	35.09	-90.01	-280.17	-420.99	1,045.99	976.54	69.45	15.062	
9,900.00	9,857.31	9,874.82	9,857.71	35.20	35.26	-90.01	-280.17	-420.99	1,045.99	976.20	69.79	14.988	
9,950.00	9,907.31	9,924.82	9,907.71	35.38	35.43	-90.01	-280.17	-420.99	1,045.99	975.86	70.13	14.915	
10,000.00	9,957.31	9,974.82	9,957.71	35.55	35.60	-90.01	-280.17	-420.99	1,045.99	975.52	70.47	14.843	
10,000.01	9,957.32	9,974.83	9,957.72	35.55	35.60	-90.01	-280.17	-420.99	1,045.99	975.52	70.47	14.843	
10,050.00	10,007.30	10,024.58	10,007.45	35.72	35.77	-90.11	-279.36	-420.99	1,046.00	975.19	70.81	14.772	
10,100.00	10,057.05	10,074.17	10,056.80	35.89	35.93	-90.11	-274.59	-421.02	1,046.03	974.88	71.14	14.703	
10,150.00	10,106.19	10,123.77	10,105.55	36.06	36.08	-90.10	-265.57	-421.06	1,046.08	974.62	71.46	14.638	
10,200.00	10,154.35	10,173.37	10,153.35	36.22	36.23	-90.10	-252.37	-421.12	1,046.17	974.39	71.78	14.575	
10,250.00	10,201.16	10,222.98	10,199.83	36.38	36.37	-90.09	-235.08	-421.20	1,046.28	974.20	72.08	14.516	
10,300.00	10,246.27	10,272.60	10,244.65	36.53	36.50	-90.09	-213.83	-421.30	1,046.42	974.05	72.37	14.460	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36 State 231H - Wellbore #1 - Permit Plan 1 — Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM — Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,350.00	10,289.32	10,322.23	10,287.48	36.67	36.61	-90.08	-188.78	-421.41	1,046.58	973.93	72.64	14.407	
10,400.00	10,330.00	10,371.88	10,327.99	36.80	36.72	-90.07	-160.10	-421.54	1,046.76	973.85	72.91	14.357	
10,450.00	10,367.99	10,421.55	10,365.89	36.92	36.81	-90.06	-128.02	-421.69	1,046.97	973.81	73.16	14.311	
10,500.00	10,403.01	10,471.24	10,400.88	37.03	36.89	-90.06	-92.76	-421.86	1,047.19	973.79	73.40	14.267	
10,550.00	10,434.79	10,520.95	10,432.69	37.13	36.96	-90.05	-54.58	-422.03	1,047.44	973.81	73.63	14.226	
10,600.00	10,463.08	10,570.69	10,461.09	37.22	37.03	-90.04	-13.76	-422.22	1,047.70	973.85	73.85	14.187	
10,650.00	10,487.67	10,620.46	10,485.86	37.30	37.08	-90.03	29.38	-422.42	1,047.98	973.92	74.06	14.151	
10,700.00	10,508.38	10,670.26	10,506.81	37.38	37.15	-90.02	74.54	-422.63	1,048.26	974.01	74.26	14.116	
10,750.00	10,525.04	10,720.08	10,523.76	37.45	37.21	-90.01	121.38	-422.85	1,048.56	974.11	74.45	14.084	
10,800.00	10,537.53	10,769.94	10,536.59	37.51	37.30	-90.00	169.55	-423.07	1,048.87	974.24	74.64	14.053	
10,850.00	10,545.76	10,819.84	10,545.19	37.56	37.39	-89.99	218.68	-423.30	1,049.19	974.37	74.81	14.024	
10,900.00	10,549.66	10,869.77	10,549.48	37.60	37.49	-89.98	268.41	-423.53	1,049.50	974.52	74.98	13.997	
10,950.00	10,550.00	10,919.75	10,550.00	37.65	37.61	-89.98	318.38	-423.76	1,049.82	974.67	75.15	13.970	
11,000.00	10,550.00	10,969.75	10,550.00	37.69	37.73	-89.98	368.37	-423.99	1,050.14	974.81	75.33	13.940	
11,050.00	10,550.00	11,019.74	10,550.00	37.75	37.87	-89.98	418.37	-424.22	1,050.46	974.92	75.53	13.907	
11,100.00	10,550.00	11,069.74	10,550.00	37.81	38.02	-89.98	468.37	-424.45	1,050.78	975.02	75.75	13.871	
11,150.00	10,550.00	11,119.74	10,550.00	37.88	38.19	-89.98	518.37	-424.68	1,051.09	975.10	76.00	13.831	
11,200.00	10,550.00	11,169.74	10,550.00	37.96	38.37	-89.98	568.37	-424.91	1,051.41	975.16	76.25	13.788	
11,250.00	10,550.00	11,219.74	10,550.00	38.04	38.56	-89.98	618.37	-425.14	1,051.73	975.20	76.53	13.742	
11,300.00	10,550.00	11,269.74	10,550.00	38.13	38.76	-89.98	668.36	-425.37	1,052.05	975.22	76.83	13.693	
11,350.00	10,550.00	11,319.74	10,550.00	38.23	38.98	-89.98	718.36	-425.60	1,052.37	975.22	77.15	13.641	
11,400.00	10,550.00	11,369.74	10,550.00	38.33	39.21	-89.98	768.36	-425.84	1,052.69	975.21	77.48	13.587	
11,450.00	10,550.00	11,419.74	10,550.00	38.45	39.45	-89.98	818.36	-426.07	1,053.00	975.17	77.83	13.529	
11,500.00	10,550.00	11,469.73	10,550.00	38.56	39.70	-89.98	868.36	-426.30	1,053.32	975.12	78.20	13.469	
11,550.00	10,550.00	11,519.73	10,550.00	38.69	39.96	-89.98	918.36	-426.53	1,053.64	975.05	78.59	13.407	
11,600.00	10,550.00	11,569.73	10,550.00	38.81	40.24	-89.98	968.36	-426.76	1,053.96	974.97	78.99	13.342	
11,650.00	10,550.00	11,619.73	10,550.00	38.95	40.52	-89.98	1,018.35	-426.99	1,054.28	974.86	79.42	13.275	
11,700.00	10,550.00	11,669.73	10,550.00	39.09	40.82	-89.98	1,068.35	-427.22	1,054.60	974.74	79.85	13.207	
11,750.00	10,550.00	11,719.73	10,550.00	39.24	41.13	-89.98	1,118.35	-427.45	1,054.91	974.61	80.31	13.136	
11,800.00	10,550.00	11,769.73	10,550.00	39.39	41.45	-89.98	1,168.35	-427.68	1,055.23	974.46	80.77	13.064	
11,850.00	10,550.00	11,819.73	10,550.00	39.55	41.77	-89.98	1,218.35	-427.92	1,055.55	974.29	81.26	12.989	
11,900.00	10,550.00	11,869.73	10,550.00	39.71	42.11	-89.98	1,268.35	-428.15	1,055.87	974.11	81.76	12.914	
11,950.00	10,550.00	11,919.73	10,550.00	39.88	42.46	-89.98	1,318.34	-428.38	1,056.19	973.91	82.28	12.837	
12,000.00	10,550.00	11,969.72	10,550.00	40.06	42.82	-89.98	1,368.34	-428.61	1,056.51	973.70	82.81	12.759	
12,050.00	10,550.00	12,019.72	10,550.00	40.24	43.18	-89.98	1,418.34	-428.84	1,056.82	973.47	83.35	12.679	
12,100.00	10,550.00	12,069.72	10,550.00	40.42	43.56	-89.98	1,468.34	-429.07	1,057.14	973.23	83.91	12.598	
12,150.00	10,550.00	12,119.72	10,550.00	40.61	43.94	-89.98	1,518.34	-429.30	1,057.46	972.97	84.49	12.516	
12,200.00	10,550.00	12,169.72	10,550.00	40.80	44.33	-89.98	1,568.34	-429.53	1,057.78	972.71	85.07	12.434	
12,250.00	10,550.00	12,219.72	10,550.00	41.01	44.73	-89.98	1,618.34	-429.76	1,058.10	972.42	85.67	12.351	
12,300.00	10,550.00	12,269.72	10,550.00	41.21	45.14	-89.98	1,668.33	-429.99	1,058.42	972.13	86.28	12.267	
12,350.00	10,550.00	12,319.72	10,550.00	41.42	45.56	-89.98	1,718.33	-430.23	1,058.73	971.82	86.91	12.182	
12,400.00	10,550.00	12,369.72	10,550.00	41.63	45.98	-89.98	1,768.33	-430.46	1,059.05	971.51	87.55	12.097	
12,450.00	10,550.00	12,419.72	10,550.00	41.85	46.42	-89.98	1,818.33	-430.69	1,059.37	971.17	88.20	12.011	
12,500.00	10,550.00	12,469.71	10,550.00	42.07	46.86	-89.98	1,868.33	-430.92	1,059.69	970.83	88.86	11.926	
12,550.00	10,550.00	12,519.71	10,550.00	42.30	47.30	-89.98	1,918.33	-431.15	1,060.01	970.48	89.53	11.839	
12,600.00	10,550.00	12,569.71	10,550.00	42.53	47.76	-89.98	1,968.32	-431.38	1,060.33	970.11	90.21	11.753	
12,650.00	10,550.00	12,619.71	10,550.00	42.77	48.21	-89.98	2,018.32	-431.61	1,060.64	969.73	90.91	11.667	
12,700.00	10,550.00	12,669.71	10,550.00	43.00	48.68	-89.98	2,068.32	-431.84	1,060.96	969.35	91.62	11.581	
12,750.00	10,550.00	12,719.71	10,550.00	43.25	49.15	-89.98	2,118.32	-432.07	1,061.28	968.95	92.33	11.494	
12,800.00	10,550.00	12,769.71	10,550.00	43.49	49.63	-89.98	2,168.32	-432.31	1,061.60	968.54	93.06	11.408	
12,850.00	10,550.00	12,819.71	10,550.00	43.75	50.12	-89.98	2,218.32	-432.54	1,061.92	968.12	93.80	11.322	
12,900.00	10,550.00	12,869.71	10,550.00	44.00	50.61	-89.98	2,268.32	-432.77	1,062.24	967.69	94.54	11.236	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36 State 231H - Wellbore #1 - Permit Plan 1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,950.00	10,550.00	12,919.71	10,550.00	44.26	51.11	-89.98	2,318.31	-433.00	1,062.55	967.26	95.30	11.150	
13,000.00	10,550.00	12,969.70	10,550.00	44.52	51.61	-89.98	2,368.31	-433.23	1,062.87	966.81	96.06	11.064	
13,050.00	10,550.00	13,019.70	10,550.00	44.79	52.11	-89.98	2,418.31	-433.46	1,063.19	966.35	96.84	10.979	
13,100.00	10,550.00	13,069.70	10,550.00	45.06	52.63	-89.98	2,468.31	-433.69	1,063.51	965.89	97.62	10.895	
13,150.00	10,550.00	13,119.70	10,550.00	45.34	53.14	-89.98	2,518.31	-433.92	1,063.83	965.42	98.41	10.810	
13,200.00	10,550.00	13,169.70	10,550.00	45.61	53.67	-89.98	2,568.31	-434.15	1,064.15	964.94	99.21	10.726	
13,250.00	10,550.00	13,219.70	10,550.00	45.90	54.19	-89.98	2,618.30	-434.39	1,064.46	964.44	100.02	10.643	
13,300.00	10,550.00	13,269.70	10,550.00	46.18	54.73	-89.98	2,668.30	-434.62	1,064.78	963.95	100.83	10.560	
13,350.00	10,550.00	13,319.70	10,550.00	46.47	55.26	-89.98	2,718.30	-434.85	1,065.10	963.44	101.66	10.477	
13,400.00	10,550.00	13,369.70	10,550.00	46.76	55.80	-89.98	2,768.30	-435.08	1,065.42	962.93	102.49	10.395	
13,450.00	10,550.00	13,419.70	10,550.00	47.05	56.35	-89.98	2,818.30	-435.31	1,065.74	962.41	103.33	10.314	
13,500.00	10,550.00	13,469.69	10,550.00	47.35	56.90	-89.98	2,868.30	-435.54	1,066.06	961.88	104.17	10.233	
13,550.00	10,550.00	13,519.69	10,550.00	47.65	57.45	-89.98	2,918.30	-435.77	1,066.37	961.35	105.03	10.153	
13,600.00	10,550.00	13,569.69	10,550.00	47.95	58.01	-89.98	2,968.29	-436.00	1,066.69	960.80	105.89	10.074	
13,650.00	10,550.00	13,619.69	10,550.00	48.26	58.57	-89.98	3,018.29	-436.23	1,067.01	960.26	106.75	9.995	
13,700.00	10,550.00	13,669.69	10,550.00	48.57	59.13	-89.98	3,068.29	-436.46	1,067.33	959.70	107.63	9.917	
13,750.00	10,550.00	13,719.69	10,550.00	48.88	59.70	-89.98	3,118.29	-436.70	1,067.65	959.14	108.51	9.839	
13,800.00	10,550.00	13,769.69	10,550.00	49.19	60.27	-89.98	3,168.29	-436.93	1,067.97	958.57	109.39	9.763	
13,850.00	10,550.00	13,819.69	10,550.00	49.51	60.84	-89.98	3,218.29	-437.16	1,068.28	958.00	110.29	9.687	
13,900.00	10,550.00	13,869.69	10,550.00	49.83	61.42	-89.98	3,268.28	-437.39	1,068.60	957.42	111.18	9.611	
13,950.00	10,550.00	13,919.69	10,550.00	50.15	62.00	-89.98	3,318.28	-437.62	1,068.76	956.67	112.09	9.535	
14,000.00	10,550.00	13,969.68	10,550.00	50.48	62.59	-89.98	3,368.28	-437.85	1,068.11	955.12	113.00	9.453	
14,050.00	10,550.00	14,019.66	10,550.00	50.82	63.17	-89.98	3,418.25	-438.08	1,066.60	952.68	113.92	9.363	
14,100.00	10,550.00	14,069.60	10,550.00	51.15	63.76	-89.98	3,468.20	-438.31	1,064.20	949.36	114.84	9.266	
14,150.00	10,550.00	14,119.49	10,550.00	51.50	64.35	-89.98	3,518.09	-438.54	1,060.94	945.16	115.78	9.163	
14,200.00	10,550.00	14,169.32	10,550.00	51.84	64.95	-89.98	3,567.92	-438.77	1,056.81	940.09	116.72	9.054	
14,250.00	10,550.00	14,219.07	10,550.00	52.19	65.54	-89.98	3,617.67	-439.00	1,051.85	934.18	117.67	8.939	
14,300.00	10,550.00	14,268.81	10,550.00	52.54	66.14	-89.98	3,667.40	-439.23	1,046.68	928.06	118.62	8.824	
14,350.00	10,550.00	14,318.54	10,550.00	52.90	66.74	-89.98	3,717.13	-439.46	1,041.51	921.93	119.58	8.710	
14,400.00	10,550.00	14,368.27	10,550.00	53.26	67.34	-89.98	3,766.86	-439.69	1,036.34	915.80	120.54	8.598	
14,450.00	10,550.00	14,418.00	10,550.00	53.62	67.94	-89.98	3,816.59	-439.92	1,031.17	909.66	121.51	8.487	
14,500.00	10,550.00	14,467.73	10,550.00	53.99	68.55	-89.98	3,866.32	-440.15	1,026.00	903.52	122.48	8.377	
14,550.00	10,550.00	14,517.47	10,550.00	54.35	69.16	-89.98	3,916.06	-440.38	1,020.83	897.38	123.45	8.269	
14,600.00	10,550.00	14,567.20	10,550.00	54.72	69.77	-89.98	3,965.79	-440.61	1,015.66	891.22	124.43	8.162	
14,650.00	10,550.00	14,616.93	10,550.00	55.09	70.39	-89.98	4,015.52	-440.84	1,010.49	885.07	125.42	8.057	
14,700.00	10,550.00	14,666.66	10,550.00	55.47	71.00	-89.98	4,065.25	-441.07	1,005.32	878.91	126.41	7.953	
14,750.00	10,550.00	14,716.39	10,550.00	55.84	71.62	-89.98	4,114.98	-441.30	1,000.15	872.74	127.40	7.850	
14,800.00	10,550.00	14,766.13	10,550.00	56.22	72.24	-89.98	4,164.71	-441.53	994.98	866.58	128.40	7.749	
14,850.00	10,550.00	14,815.86	10,550.00	56.60	72.86	-89.98	4,214.45	-441.76	989.81	860.40	129.40	7.649	
14,900.00	10,550.00	14,865.59	10,550.00	56.98	73.48	-89.98	4,264.18	-441.99	984.64	854.23	130.41	7.550	
14,950.00	10,550.00	14,915.32	10,550.00	57.37	74.11	-89.98	4,313.91	-442.22	979.47	848.05	131.42	7.453	
15,000.00	10,550.00	14,965.05	10,550.00	57.76	74.74	-89.98	4,363.64	-442.45	974.30	841.86	132.43	7.357	
15,050.00	10,550.00	15,014.79	10,550.00	58.14	75.36	-89.98	4,413.37	-442.68	969.13	835.67	133.45	7.262	
15,100.00	10,550.00	15,064.52	10,550.00	58.53	76.00	-89.98	4,463.10	-442.91	963.96	829.48	134.47	7.168	
15,150.00	10,550.00	15,114.25	10,550.00	58.93	76.63	-89.98	4,512.83	-443.14	958.79	823.29	135.50	7.076	
15,200.00	10,550.00	15,163.98	10,550.00	59.32	77.26	-89.98	4,562.57	-443.37	953.62	817.09	136.53	6.985	
15,250.00	10,550.00	15,213.71	10,550.00	59.72	77.90	-89.98	4,612.30	-443.60	948.45	810.89	137.56	6.895	
15,300.00	10,550.00	15,263.44	10,550.00	60.12	78.53	-89.98	4,662.03	-443.83	943.28	804.68	138.59	6.806	
15,350.00	10,550.00	15,313.18	10,550.00	60.52	79.17	-89.98	4,711.76	-444.06	938.11	798.47	139.63	6.718	
15,400.00	10,550.00	15,362.91	10,550.00	60.92	79.81	-89.98	4,761.49	-444.29	932.94	792.26	140.67	6.632	
15,450.00	10,550.00	15,412.64	10,550.00	61.32	80.45	-89.98	4,811.22	-444.52	927.77	786.05	141.72	6.547	
15,500.00	10,550.00	15,462.37	10,550.00	61.73	81.10	-89.98	4,860.95	-444.75	922.60	779.83	142.76	6.462	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36 State 231H - Wellbore #1 - Permit Plan 1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
15,550.00	10,550.00	15,512.10	10,550.00	62.13	81.74	-89.97	4,910.69	-444.98	917.42	773.61	143.81	6.379	
15,600.00	10,550.00	15,526.07	10,550.00	62.54	81.92	-89.97	4,924.65	-445.04	912.96	768.51	144.45	6.320	
15,650.00	10,550.00	15,526.07	10,550.00	62.95	81.92	-89.97	4,924.65	-445.04	911.11	766.44	144.66	6.298	
15,658.75	10,550.00	15,526.07	10,550.00	63.02	81.92	-89.97	4,924.65	-445.04	911.06	766.40	144.67	6.298	
15,700.00	10,550.00	15,526.07	10,550.00	63.36	81.92	-89.97	4,924.65	-445.04	912.00	767.43	144.56	6.309	
15,750.00	10,550.00	15,526.07	10,550.00	63.77	81.92	-89.97	4,924.65	-445.04	915.66	771.51	144.16	6.352	
15,800.00	10,550.00	15,526.07	10,550.00	64.18	81.92	-89.97	4,924.65	-445.04	922.68	779.23	143.46	6.432	
15,850.00	10,550.00	15,526.07	10,550.00	64.59	81.92	-89.97	4,924.65	-445.04	933.18	790.70	142.48	6.550	
15,900.00	10,550.00	15,526.07	10,550.00	65.00	81.92	-89.97	4,924.65	-445.04	947.05	805.77	141.27	6.704	
15,950.00	10,550.00	15,526.07	10,550.00	65.41	81.92	-89.97	4,924.65	-445.04	964.13	824.26	139.87	6.893	
16,000.00	10,550.00	15,526.07	10,550.00	65.81	81.92	-89.97	4,924.65	-445.04	984.25	845.94	138.31	7.116	
16,050.00	10,550.00	15,526.07	10,550.00	66.21	81.92	-89.97	4,924.65	-445.04	1,007.22	870.58	136.64	7.371	
16,100.00	10,550.00	15,526.07	10,550.00	66.61	81.92	-89.97	4,924.65	-445.04	1,032.85	897.95	134.90	7.656	
16,150.00	10,550.00	15,526.07	10,550.00	67.00	81.92	-89.97	4,924.65	-445.04	1,060.94	927.81	133.13	7.969	
16,200.00	10,550.00	15,526.07	10,550.00	67.39	81.92	-89.97	4,924.65	-445.04	1,091.28	959.91	131.37	8.307	
16,250.00	10,550.00	15,526.07	10,550.00	67.78	81.92	-89.97	4,924.65	-445.04	1,123.69	994.07	129.62	8.669	
16,300.00	10,550.00	15,526.07	10,550.00	68.16	81.92	-89.97	4,924.65	-445.04	1,157.99	1,030.06	127.93	9.052	
16,350.00	10,550.00	15,526.07	10,550.00	68.54	81.92	-89.97	4,924.65	-445.04	1,193.88	1,067.59	126.30	9.453	
16,400.00	10,550.00	15,526.07	10,550.00	68.92	81.92	-89.97	4,924.65	-445.04	1,230.81	1,106.10	124.71	9.869	
16,450.00	10,550.00	15,526.07	10,550.00	69.30	81.92	-89.97	4,924.65	-445.04	1,268.63	1,145.46	123.17	10.299	
16,500.00	10,550.00	15,526.07	10,550.00	69.69	81.92	-89.97	4,924.65	-445.04	1,307.27	1,185.58	121.70	10.742	
16,550.00	10,550.00	15,526.07	10,550.00	70.07	81.92	-89.97	4,924.65	-445.04	1,346.66	1,226.39	120.28	11.197	
16,600.00	10,550.00	15,526.07	10,550.00	70.46	81.92	-89.97	4,924.65	-445.04	1,386.74	1,267.82	118.91	11.662	
16,650.00	10,550.00	15,526.07	10,550.00	70.84	81.92	-89.97	4,924.65	-445.04	1,427.44	1,309.83	117.61	12.137	
16,700.00	10,550.00	15,526.07	10,550.00	71.23	81.92	-89.97	4,924.65	-445.04	1,468.71	1,352.34	116.37	12.621	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36_25 State Fed Com 233H - Wellbore #1 - Permit Plan 1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,850.00	5,836.27	5,952.17	5,941.91	20.52	21.04	-23.30	-123.65	1,700.62	1,498.61	1,457.44	41.17	36.399	
5,900.00	5,885.85	6,001.30	5,990.88	20.70	21.22	-23.32	-125.70	1,697.23	1,489.32	1,447.80	41.52	35.868	
5,950.00	5,935.44	6,050.43	6,039.84	20.87	21.40	-23.33	-127.75	1,693.83	1,480.03	1,438.16	41.87	35.345	
6,000.00	5,985.02	6,099.55	6,088.81	21.05	21.58	-23.35	-129.80	1,690.44	1,470.74	1,428.52	42.23	34.831	
6,050.00	6,034.61	6,148.68	6,137.78	21.23	21.77	-23.36	-131.85	1,687.04	1,461.45	1,418.87	42.58	34.324	
6,100.00	6,084.19	6,202.19	6,186.75	21.41	21.96	-23.38	-133.90	1,683.65	1,452.16	1,409.22	42.95	33.814	
6,150.00	6,133.78	6,246.94	6,235.71	21.59	22.13	-23.39	-135.94	1,680.25	1,442.87	1,399.59	43.28	33.337	
6,200.00	6,183.36	6,303.94	6,284.68	21.77	22.34	-23.41	-137.99	1,676.85	1,433.58	1,389.92	43.66	32.833	
6,250.00	6,232.95	6,345.19	6,333.65	21.95	22.49	-23.43	-140.04	1,673.46	1,424.29	1,380.31	43.99	32.380	
6,300.00	6,282.53	6,405.68	6,382.62	22.13	22.71	-23.44	-142.09	1,670.06	1,415.00	1,370.62	44.38	31.883	
6,350.00	6,332.12	6,443.45	6,431.58	22.31	22.85	-23.46	-144.14	1,666.67	1,405.71	1,361.02	44.69	31.453	
6,400.00	6,381.70	6,507.42	6,480.55	22.49	23.09	-23.48	-146.19	1,663.27	1,396.42	1,351.32	45.10	30.963	
6,450.00	6,431.29	6,541.70	6,529.52	22.67	23.22	-23.49	-148.24	1,659.88	1,387.13	1,341.73	45.40	30.554	
6,500.00	6,480.88	6,609.17	6,578.49	22.85	23.47	-23.51	-150.29	1,656.48	1,377.85	1,332.03	45.82	30.071	
6,550.00	6,530.46	6,639.96	6,627.45	23.03	23.58	-23.53	-152.34	1,653.08	1,368.56	1,322.45	46.11	29.682	
6,600.00	6,580.05	6,689.09	6,676.42	23.21	23.76	-23.55	-154.39	1,649.69	1,359.27	1,312.81	46.46	29.256	
6,650.00	6,629.63	6,738.21	6,725.39	23.39	23.94	-23.57	-156.44	1,646.29	1,349.98	1,303.16	46.82	28.836	
6,700.00	6,679.22	6,787.34	6,774.36	23.57	24.13	-23.58	-158.49	1,642.90	1,340.69	1,293.52	47.17	28.423	
6,750.00	6,728.80	6,836.47	6,823.32	23.76	24.31	-23.60	-160.53	1,639.50	1,331.40	1,283.88	47.52	28.015	
6,800.00	6,778.39	6,885.60	6,872.29	23.94	24.49	-23.62	-162.58	1,636.10	1,322.11	1,274.23	47.88	27.614	
6,850.00	6,827.97	6,934.73	6,921.26	24.12	24.67	-23.64	-164.63	1,632.71	1,312.82	1,264.59	48.23	27.218	
6,900.00	6,877.56	6,983.85	6,970.23	24.30	24.85	-23.66	-166.68	1,629.31	1,303.54	1,254.95	48.59	26.828	
6,950.00	6,927.14	7,032.98	7,019.19	24.48	25.04	-23.68	-168.73	1,625.92	1,294.25	1,245.30	48.94	26.443	
7,000.00	6,976.73	7,082.11	7,068.16	24.66	25.22	-23.70	-170.78	1,622.52	1,284.96	1,235.66	49.30	26.065	
7,050.00	7,026.31	7,131.24	7,117.13	24.84	25.40	-23.72	-172.83	1,619.13	1,275.67	1,226.02	49.65	25.691	
7,100.00	7,075.90	7,180.36	7,166.10	25.03	25.58	-23.74	-174.88	1,615.73	1,266.38	1,216.37	50.01	25.323	
7,150.00	7,125.48	7,229.49	7,215.06	25.21	25.76	-23.76	-176.93	1,612.33	1,257.10	1,206.73	50.37	24.959	
7,200.00	7,175.07	7,278.62	7,264.03	25.39	25.95	-23.78	-178.98	1,608.94	1,247.81	1,197.09	50.72	24.601	
7,250.00	7,224.66	7,327.75	7,313.00	25.57	26.13	-23.81	-181.03	1,605.54	1,238.52	1,187.45	51.08	24.248	
7,300.00	7,274.24	7,376.88	7,361.96	25.75	26.31	-23.83	-183.08	1,602.15	1,229.24	1,177.80	51.43	23.899	
7,350.00	7,323.83	7,426.00	7,410.93	25.94	26.49	-23.85	-185.12	1,598.75	1,219.95	1,168.16	51.79	23.556	
7,400.00	7,373.41	7,475.13	7,459.90	26.12	26.68	-23.87	-187.17	1,595.36	1,210.66	1,158.52	52.15	23.217	
7,450.00	7,423.00	7,524.26	7,508.87	26.30	26.86	-23.90	-189.22	1,591.96	1,201.38	1,148.87	52.50	22.882	
7,500.00	7,472.58	7,573.39	7,557.83	26.48	27.04	-23.92	-191.27	1,588.56	1,192.09	1,139.23	52.86	22.552	
7,550.00	7,522.17	7,622.51	7,606.80	26.67	27.22	-23.94	-193.32	1,585.17	1,182.80	1,129.59	53.22	22.226	
7,600.00	7,571.75	7,671.64	7,655.77	26.85	27.41	-23.97	-195.37	1,581.77	1,173.52	1,119.95	53.57	21.905	
7,650.00	7,621.34	7,720.77	7,704.74	27.03	27.59	-23.99	-197.42	1,578.38	1,164.23	1,110.30	53.93	21.588	
7,700.00	7,670.92	7,769.90	7,753.70	27.21	27.77	-24.02	-199.47	1,574.98	1,154.95	1,100.66	54.29	21.275	
7,750.00	7,720.51	7,819.03	7,802.67	27.40	27.96	-24.04	-201.52	1,571.58	1,145.66	1,091.02	54.64	20.966	
7,800.00	7,770.09	7,868.15	7,851.64	27.58	28.14	-24.07	-203.57	1,568.19	1,136.38	1,081.38	55.00	20.661	
7,850.00	7,819.68	7,917.28	7,900.61	27.76	28.32	-24.09	-205.62	1,564.79	1,127.09	1,071.73	55.36	20.360	
7,900.00	7,869.27	7,966.41	7,949.57	27.95	28.50	-24.12	-207.67	1,561.40	1,117.81	1,062.09	55.72	20.063	
7,950.00	7,918.85	8,015.54	7,998.54	28.13	28.69	-24.15	-209.71	1,558.00	1,108.52	1,052.45	56.07	19.769	
8,000.00	7,968.44	8,064.66	8,047.51	28.31	28.87	-24.17	-211.76	1,554.61	1,099.24	1,042.81	56.43	19.479	
8,050.00	8,018.02	8,113.79	8,096.48	28.50	29.05	-24.20	-213.81	1,551.21	1,089.96	1,033.17	56.79	19.193	
8,100.00	8,067.61	8,162.92	8,145.44	28.68	29.23	-24.23	-215.86	1,547.81	1,080.67	1,023.53	57.15	18.910	
8,150.00	8,117.19	8,212.05	8,194.41	28.86	29.42	-24.26	-217.91	1,544.42	1,071.39	1,013.89	57.51	18.631	
8,200.00	8,166.78	8,261.18	8,243.38	29.05	29.60	-24.29	-219.96	1,541.02	1,062.11	1,004.24	57.86	18.355	
8,250.00	8,216.36	8,310.30	8,292.35	29.23	29.78	-24.32	-222.01	1,537.63	1,052.82	994.60	58.22	18.083	
8,300.00	8,265.95	8,359.43	8,341.31	29.42	29.97	-24.35	-224.06	1,534.23	1,043.54	984.96	58.58	17.814	
8,350.00	8,315.53	8,408.56	8,390.28	29.60	30.15	-24.38	-226.11	1,530.84	1,034.26	975.32	58.94	17.548	
8,400.00	8,365.12	8,457.69	8,439.25	29.78	30.33	-24.41	-228.16	1,527.44	1,024.98	965.68	59.30	17.286	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36_25 State Fed Com 233H - Wellbore #1 - Permit Plan 1 — Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM — Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,450.00	8,414.70	8,506.81	8,488.21	29.97	30.52	-24.45	-230.21	1,524.04	1,015.70	956.04	59.66	17.026	
8,500.00	8,464.29	8,555.94	8,537.18	30.15	30.70	-24.48	-232.26	1,520.65	1,006.42	946.40	60.01	16.770	
8,550.00	8,513.88	8,605.07	8,586.15	30.34	30.88	-24.51	-234.30	1,517.25	997.14	936.76	60.37	16.516	
8,600.00	8,563.46	8,654.20	8,635.12	30.52	31.07	-24.55	-236.35	1,513.86	987.85	927.12	60.73	16.266	
8,650.00	8,613.05	8,703.33	8,684.08	30.70	31.25	-24.58	-238.40	1,510.46	978.57	917.48	61.09	16.019	
8,700.00	8,662.63	8,752.45	8,733.05	30.89	31.43	-24.62	-240.45	1,507.06	969.29	907.85	61.45	15.774	
8,750.00	8,712.22	8,801.58	8,782.02	31.07	31.61	-24.65	-242.50	1,503.67	960.02	898.21	61.81	15.532	
8,800.00	8,761.80	8,850.71	8,830.99	31.26	31.80	-24.69	-244.55	1,500.27	950.74	888.57	62.17	15.293	
8,850.00	8,811.39	8,900.16	8,879.95	31.44	31.98	-24.73	-246.60	1,496.88	941.46	878.93	62.53	15.057	
8,900.00	8,860.97	8,948.96	8,928.92	31.62	32.16	-24.76	-248.65	1,493.48	932.18	869.29	62.89	14.823	
8,950.00	8,910.56	9,001.91	8,977.89	31.81	32.36	-24.80	-250.70	1,490.09	922.90	859.64	63.26	14.589	
9,000.00	8,960.14	9,047.22	9,026.86	31.99	32.53	-24.84	-252.75	1,486.69	913.62	850.02	63.60	14.364	
9,050.00	9,009.73	9,103.65	9,075.82	32.18	32.74	-24.88	-254.80	1,483.29	904.35	840.36	63.99	14.133	
9,100.00	9,059.31	9,145.48	9,124.79	32.36	32.90	-24.92	-256.85	1,479.90	895.07	830.75	64.32	13.915	
9,150.00	9,108.90	9,194.60	9,173.76	32.55	33.08	-24.97	-258.90	1,476.50	885.79	821.11	64.68	13.694	
9,200.00	9,158.49	9,243.74	9,222.74	32.73	33.26	-24.98	-260.94	1,473.11	876.58	811.54	65.04	13.477	
9,250.00	9,208.15	9,292.97	9,271.81	32.92	33.45	-24.95	-263.00	1,469.70	867.86	802.46	65.40	13.270	
9,300.00	9,257.89	9,333.77	9,312.50	33.10	33.60	-24.92	-264.57	1,467.10	859.98	794.22	65.76	13.077	
9,350.00	9,307.68	9,375.29	9,353.92	33.28	33.75	-24.89	-265.94	1,464.83	853.16	787.04	66.12	12.903	
9,400.00	9,357.54	9,416.96	9,395.53	33.46	33.90	-24.87	-267.08	1,462.94	847.39	780.91	66.48	12.747	
9,450.00	9,407.43	9,458.76	9,437.30	33.64	34.05	-24.85	-267.99	1,461.44	842.67	775.85	66.82	12.611	
9,500.00	9,457.37	9,500.67	9,479.19	33.82	34.21	-24.85	-268.66	1,460.32	839.02	771.86	67.17	12.492	
9,550.00	9,507.33	9,542.66	9,521.17	34.00	34.35	-24.85	-269.10	1,459.60	836.44	768.94	67.50	12.392	
9,600.00	9,557.31	9,584.71	9,563.21	34.17	34.50	-24.85	-269.29	1,459.27	834.92	767.09	67.83	12.309	
9,650.00	9,607.31	9,632.10	9,610.61	34.35	34.66	-24.87	-269.31	1,459.25	834.36	766.20	68.17	12.240	
9,700.00	9,657.31	9,682.10	9,660.61	34.52	34.82	89.26	-269.31	1,459.25	834.25	765.74	68.51	12.177	
9,700.00	9,657.31	9,682.10	9,660.61	34.52	34.82	89.27	-269.31	1,459.25	834.32	765.81	68.51	12.178	
9,750.00	9,707.31	9,732.10	9,710.61	34.69	34.99	89.27	-269.31	1,459.25	834.32	765.47	68.85	12.118	
9,800.00	9,757.31	9,782.10	9,760.61	34.86	35.16	89.27	-269.31	1,459.25	834.32	765.13	69.19	12.058	
9,850.00	9,807.31	9,832.10	9,810.61	35.03	35.33	89.27	-269.31	1,459.25	834.32	764.79	69.53	11.999	
9,900.00	9,857.31	9,882.10	9,860.61	35.20	35.49	89.27	-269.31	1,459.25	834.32	764.45	69.87	11.941	
9,950.00	9,907.31	9,932.10	9,910.61	35.38	35.66	89.27	-269.31	1,459.25	834.32	764.10	70.21	11.883	
9,950.26	9,907.57	9,932.36	9,910.87	35.38	35.66	89.27	-269.31	1,459.25	834.32	764.10	70.21	11.882	
10,000.00	9,957.31	9,981.70	9,960.19	35.55	35.83	89.20	-268.35	1,459.24	834.33	763.77	70.55	11.826	
10,050.00	10,007.30	10,030.72	10,008.94	35.72	35.98	88.81	-263.42	1,459.22	834.37	763.49	70.88	11.771	
10,100.00	10,057.05	10,079.34	10,056.72	35.89	36.14	88.51	-254.44	1,459.17	834.41	763.20	71.20	11.719	
10,150.00	10,106.19	10,127.62	10,103.23	36.06	36.28	88.22	-241.55	1,459.10	834.44	762.92	71.52	11.668	
10,200.00	10,154.35	10,175.57	10,148.18	36.22	36.41	87.94	-224.91	1,459.02	834.46	762.64	71.82	11.620	
10,250.00	10,201.16	10,223.20	10,191.31	36.38	36.53	87.68	-204.72	1,458.91	834.46	762.36	72.10	11.573	
10,300.00	10,246.27	10,270.55	10,232.37	36.53	36.64	87.44	-181.18	1,458.79	834.45	762.07	72.38	11.529	
10,350.00	10,289.32	10,317.62	10,271.13	36.67	36.74	87.21	-154.48	1,458.65	834.42	761.78	72.64	11.487	
10,400.00	10,330.00	10,364.46	10,307.39	36.80	36.82	87.01	-124.86	1,458.50	834.36	761.48	72.89	11.448	
10,450.00	10,367.99	10,411.07	10,340.95	36.92	36.90	86.83	-92.53	1,458.33	834.28	761.16	73.12	11.410	
10,500.00	10,403.01	10,457.49	10,371.65	37.03	36.96	86.67	-57.74	1,458.15	834.17	760.83	73.34	11.374	
10,550.00	10,434.79	10,503.73	10,399.34	37.13	37.02	86.53	-20.72	1,457.96	834.04	760.48	73.55	11.339	
10,600.00	10,463.08	10,549.82	10,423.88	37.22	37.06	86.42	18.29	1,457.76	833.87	760.11	73.76	11.306	
10,650.00	10,487.67	10,595.79	10,445.15	37.30	37.09	86.34	59.03	1,457.55	833.66	759.72	73.95	11.274	
10,700.00	10,508.38	10,641.67	10,463.06	37.38	37.13	86.28	101.24	1,457.33	833.43	759.30	74.13	11.243	
10,750.00	10,525.04	10,687.46	10,477.51	37.45	37.16	86.24	144.69	1,457.10	833.16	758.86	74.31	11.213	
10,800.00	10,537.53	10,733.21	10,488.43	37.51	37.22	86.24	189.10	1,456.87	832.87	758.39	74.48	11.183	
10,850.00	10,545.76	10,778.93	10,495.78	37.56	37.29	86.25	234.21	1,456.64	832.54	757.90	74.64	11.154	
10,900.00	10,549.66	10,824.65	10,499.50	37.60	37.38	86.30	279.77	1,456.40	832.18	757.39	74.79	11.126	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36_25 State Fed Com 233H - Wellbore #1 - Permit Plan 1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,950.00	10,550.00	10,872.42	10,500.00	37.65	37.49	86.33	327.53	1,456.16	831.82	756.87	74.96	11.098	
11,000.00	10,550.00	10,922.42	10,500.00	37.69	37.62	86.32	377.53	1,455.90	831.48	756.34	75.14	11.066	
11,050.00	10,550.00	10,972.42	10,500.00	37.75	37.76	86.32	427.53	1,455.64	831.13	755.79	75.34	11.032	
11,100.00	10,550.00	11,022.42	10,500.00	37.81	37.91	86.32	477.52	1,455.38	830.79	755.23	75.56	10.995	
11,150.00	10,550.00	11,072.41	10,500.00	37.88	38.08	86.32	527.52	1,455.12	830.44	754.64	75.80	10.956	
11,200.00	10,550.00	11,122.41	10,500.00	37.96	38.26	86.32	577.52	1,454.86	830.09	754.04	76.06	10.914	
11,250.00	10,550.00	11,172.41	10,500.00	38.04	38.45	86.32	627.52	1,454.60	829.75	753.41	76.34	10.869	
11,300.00	10,550.00	11,222.41	10,500.00	38.13	38.66	86.32	677.52	1,454.34	829.40	752.77	76.63	10.823	
11,350.00	10,550.00	11,272.41	10,500.00	38.23	38.88	86.31	727.51	1,454.08	829.06	752.11	76.95	10.774	
11,400.00	10,550.00	11,322.41	10,500.00	38.33	39.10	86.31	777.51	1,453.82	828.71	751.43	77.28	10.724	
11,450.00	10,550.00	11,372.41	10,500.00	38.45	39.35	86.31	827.51	1,453.56	828.37	750.73	77.63	10.670	
11,500.00	10,550.00	11,422.41	10,500.00	38.56	39.60	86.31	877.51	1,453.30	828.02	750.02	78.00	10.616	
11,550.00	10,550.00	11,472.40	10,500.00	38.69	39.86	86.31	927.51	1,453.05	827.67	749.28	78.39	10.558	
11,600.00	10,550.00	11,522.40	10,500.00	38.81	40.14	86.31	977.51	1,452.79	827.33	748.54	78.79	10.500	
11,650.00	10,550.00	11,572.40	10,500.00	38.95	40.42	86.30	1,027.50	1,452.53	826.98	747.77	79.21	10.440	
11,700.00	10,550.00	11,622.40	10,500.00	39.09	40.72	86.30	1,077.50	1,452.27	826.64	746.99	79.65	10.379	
11,750.00	10,550.00	11,672.40	10,500.00	39.24	41.03	86.30	1,127.50	1,452.01	826.29	746.19	80.11	10.315	
11,800.00	10,550.00	11,722.40	10,500.00	39.39	41.34	86.30	1,177.50	1,451.75	825.95	745.37	80.57	10.251	
11,850.00	10,550.00	11,772.40	10,500.00	39.55	41.67	86.30	1,227.50	1,451.49	825.60	744.54	81.06	10.185	
11,900.00	10,550.00	11,822.40	10,500.00	39.71	42.01	86.30	1,277.49	1,451.23	825.25	743.70	81.56	10.119	
11,950.00	10,550.00	11,872.40	10,500.00	39.88	42.36	86.30	1,327.49	1,450.97	824.91	742.83	82.08	10.051	
12,000.00	10,550.00	11,922.39	10,500.00	40.06	42.71	86.29	1,377.49	1,450.71	824.56	741.96	82.60	9.982	
12,050.00	10,550.00	11,972.39	10,500.00	40.24	43.08	86.29	1,427.49	1,450.45	824.22	741.07	83.15	9.912	
12,100.00	10,550.00	12,022.39	10,500.00	40.42	43.45	86.29	1,477.49	1,450.19	823.87	740.16	83.71	9.842	
12,150.00	10,550.00	12,072.39	10,500.00	40.61	43.84	86.29	1,527.48	1,449.94	823.53	739.24	84.28	9.771	
12,200.00	10,550.00	12,122.39	10,500.00	40.80	44.23	86.29	1,577.48	1,449.68	823.18	738.31	84.87	9.700	
12,250.00	10,550.00	12,172.39	10,500.00	41.01	44.63	86.29	1,627.48	1,449.42	822.83	737.36	85.47	9.627	
12,300.00	10,550.00	12,222.39	10,500.00	41.21	45.04	86.28	1,677.48	1,449.16	822.49	736.41	86.08	9.555	
12,350.00	10,550.00	12,272.39	10,500.00	41.42	45.46	86.28	1,727.48	1,448.90	822.14	735.43	86.71	9.482	
12,400.00	10,550.00	12,322.38	10,500.00	41.63	45.88	86.28	1,777.48	1,448.64	821.80	734.45	87.34	9.409	
12,450.00	10,550.00	12,372.38	10,500.00	41.85	46.31	86.28	1,827.47	1,448.38	821.45	733.46	88.00	9.335	
12,500.00	10,550.00	12,422.38	10,500.00	42.07	46.75	86.28	1,877.47	1,448.12	821.11	732.45	88.66	9.262	
12,550.00	10,550.00	12,472.38	10,500.00	42.30	47.20	86.28	1,927.47	1,447.86	820.76	731.43	89.33	9.188	
12,600.00	10,550.00	12,522.38	10,500.00	42.53	47.65	86.27	1,977.47	1,447.60	820.41	730.40	90.01	9.114	
12,650.00	10,550.00	12,572.38	10,500.00	42.77	48.11	86.27	2,027.47	1,447.34	820.07	729.36	90.71	9.040	
12,700.00	10,550.00	12,622.38	10,500.00	43.00	48.58	86.27	2,077.46	1,447.08	819.72	728.31	91.41	8.967	
12,750.00	10,550.00	12,672.38	10,500.00	43.25	49.05	86.27	2,127.46	1,446.83	819.38	727.24	92.13	8.893	
12,800.00	10,550.00	12,722.37	10,500.00	43.49	49.53	86.27	2,177.46	1,446.57	819.03	726.17	92.86	8.820	
12,850.00	10,550.00	12,772.37	10,500.00	43.75	50.01	86.27	2,227.46	1,446.31	818.69	725.09	93.60	8.747	
12,900.00	10,550.00	12,822.37	10,500.00	44.00	50.50	86.27	2,277.46	1,446.05	818.34	724.00	94.34	8.674	
12,950.00	10,550.00	12,872.37	10,500.00	44.26	51.00	86.26	2,327.45	1,445.79	817.99	722.90	95.10	8.601	
13,000.00	10,550.00	12,922.37	10,500.00	44.52	51.50	86.26	2,377.45	1,445.53	817.65	721.79	95.86	8.529	
13,050.00	10,550.00	12,972.37	10,500.00	44.79	52.01	86.26	2,427.45	1,445.27	817.30	720.66	96.64	8.457	
13,100.00	10,550.00	13,022.37	10,500.00	45.06	52.52	86.26	2,477.45	1,445.01	816.96	719.54	97.42	8.386	
13,150.00	10,550.00	13,072.37	10,500.00	45.34	53.04	86.26	2,527.45	1,444.75	816.61	718.40	98.21	8.315	
13,200.00	10,550.00	13,122.37	10,500.00	45.61	53.56	86.26	2,577.45	1,444.49	816.27	717.25	99.01	8.244	
13,250.00	10,550.00	13,172.36	10,500.00	45.90	54.09	86.25	2,627.44	1,444.23	815.92	716.10	99.82	8.174	
13,300.00	10,550.00	13,222.36	10,500.00	46.18	54.62	86.25	2,677.44	1,443.98	815.58	714.94	100.64	8.104	
13,350.00	10,550.00	13,272.36	10,500.00	46.47	55.15	86.25	2,727.44	1,443.72	815.23	713.77	101.46	8.035	
13,400.00	10,550.00	13,322.36	10,500.00	46.76	55.69	86.25	2,777.44	1,443.46	814.88	712.59	102.29	7.966	
13,450.00	10,550.00	13,372.36	10,500.00	47.05	56.24	86.25	2,827.44	1,443.20	814.54	711.41	103.13	7.898	
13,500.00	10,550.00	13,422.36	10,500.00	47.35	56.79	86.25	2,877.43	1,442.94	814.19	710.22	103.98	7.830	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36_25 State Fed Com 233H - Wellbore #1 - Permit Plan 1

Survey Program: 0-MWD+HDGM

Offset Site Error: 0.00 ft

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,550.00	10,550.00	13,472.36	10,500.00	47.65	57.34	86.24	2,927.43	1,442.68	813.85	709.01	104.83	7.763	
13,600.00	10,550.00	13,522.36	10,500.00	47.95	57.90	86.24	2,977.43	1,442.42	813.50	707.81	105.69	7.697	
13,650.00	10,550.00	13,572.35	10,500.00	48.26	58.46	86.24	3,027.43	1,442.16	813.16	706.60	106.56	7.631	
13,700.00	10,550.00	13,622.35	10,500.00	48.57	59.02	86.24	3,077.43	1,441.90	812.81	705.38	107.43	7.566	
13,750.00	10,550.00	13,672.35	10,500.00	48.88	59.59	86.24	3,127.42	1,441.64	812.46	704.15	108.31	7.501	
13,800.00	10,550.00	13,722.35	10,500.00	49.19	60.16	86.24	3,177.42	1,441.38	812.12	702.92	109.20	7.437	
13,850.00	10,550.00	13,772.35	10,500.00	49.51	60.73	86.24	3,227.42	1,441.12	811.77	701.68	110.09	7.374	
13,900.00	10,550.00	13,822.35	10,500.00	49.83	61.31	86.23	3,277.42	1,440.87	811.43	700.44	110.99	7.311	
13,941.30	10,550.00	13,863.64	10,500.00	50.10	61.79	86.23	3,318.72	1,440.65	811.32	699.59	111.73	7.261	
13,950.00	10,550.00	13,872.35	10,500.00	50.15	61.89	86.23	3,327.42	1,440.61	811.24	699.35	111.89	7.250	
14,000.00	10,550.00	13,922.34	10,500.00	50.48	62.48	86.23	3,377.41	1,440.35	811.86	699.06	112.80	7.197	
14,050.00	10,550.00	13,972.32	10,500.00	50.82	63.06	86.24	3,427.39	1,440.09	813.35	699.62	113.73	7.152	
14,100.00	10,550.00	14,022.26	10,500.00	51.15	63.65	86.25	3,477.33	1,439.83	815.70	701.05	114.65	7.115	
14,150.00	10,550.00	14,072.16	10,500.00	51.50	64.24	86.26	3,527.23	1,439.57	818.93	703.34	115.59	7.085	
14,200.00	10,550.00	14,121.99	10,500.00	51.84	64.84	86.27	3,577.06	1,439.31	823.03	706.50	116.53	7.063	
14,250.00	10,550.00	14,171.74	10,500.00	52.19	65.43	86.29	3,626.81	1,439.05	827.95	710.47	117.48	7.048	
14,300.00	10,550.00	14,221.48	10,500.00	52.54	66.03	86.31	3,676.55	1,438.80	833.08	714.65	118.43	7.034	
14,350.00	10,550.00	14,271.21	10,500.00	52.90	66.63	86.33	3,726.28	1,438.54	838.21	718.82	119.39	7.021	
14,400.00	10,550.00	14,320.95	10,500.00	53.26	67.23	86.36	3,776.01	1,438.28	843.34	722.99	120.35	7.007	
14,450.00	10,550.00	14,370.68	10,500.00	53.62	67.84	86.38	3,825.75	1,438.02	848.48	727.15	121.32	6.994	
14,500.00	10,550.00	14,420.42	10,500.00	53.99	68.44	86.40	3,875.48	1,437.77	853.61	731.31	122.29	6.980	
14,550.00	10,550.00	14,470.15	10,500.00	54.35	69.05	86.42	3,925.22	1,437.51	858.74	735.47	123.27	6.966	
14,600.00	10,550.00	14,519.89	10,500.00	54.72	69.66	86.44	3,974.95	1,437.25	863.87	739.62	124.25	6.953	
14,650.00	10,550.00	14,569.62	10,500.00	55.09	70.28	86.46	4,024.68	1,436.99	869.00	743.76	125.24	6.939	
14,700.00	10,550.00	14,619.36	10,500.00	55.47	70.89	86.49	4,074.42	1,436.73	874.14	747.91	126.23	6.925	
14,750.00	10,550.00	14,669.09	10,500.00	55.84	71.51	86.51	4,124.15	1,436.48	879.27	752.04	127.23	6.911	
14,800.00	10,550.00	14,718.83	10,500.00	56.22	72.13	86.53	4,173.89	1,436.22	884.40	756.18	128.23	6.897	
14,850.00	10,550.00	14,768.56	10,500.00	56.60	72.75	86.55	4,223.62	1,435.96	889.54	760.30	129.23	6.883	
14,900.00	10,550.00	14,818.30	10,500.00	56.98	73.38	86.57	4,273.36	1,435.70	894.67	764.43	130.24	6.870	
14,950.00	10,550.00	14,868.03	10,500.00	57.37	74.00	86.59	4,323.09	1,435.45	899.80	768.55	131.25	6.856	
15,000.00	10,550.00	14,917.77	10,500.00	57.76	74.63	86.61	4,372.82	1,435.19	904.94	772.67	132.26	6.842	
15,050.00	10,550.00	14,967.50	10,500.00	58.14	75.26	86.62	4,422.56	1,434.93	910.07	776.79	133.28	6.828	
15,100.00	10,550.00	15,017.24	10,500.00	58.53	75.89	86.64	4,472.29	1,434.67	915.20	780.90	134.30	6.814	
15,150.00	10,550.00	15,066.97	10,500.00	58.93	76.52	86.66	4,522.03	1,434.41	920.34	785.00	135.33	6.801	
15,200.00	10,550.00	15,116.71	10,500.00	59.32	77.15	86.68	4,571.76	1,434.16	925.47	789.11	136.36	6.787	
15,250.00	10,550.00	15,166.44	10,500.00	59.72	77.79	86.70	4,621.50	1,433.90	930.60	793.21	137.39	6.773	
15,300.00	10,550.00	15,216.18	10,500.00	60.12	78.43	86.72	4,671.23	1,433.64	935.74	797.31	138.43	6.760	
15,350.00	10,550.00	15,265.91	10,500.00	60.52	79.07	86.74	4,720.96	1,433.38	940.87	801.40	139.47	6.746	
15,400.00	10,550.00	15,315.65	10,500.00	60.92	79.71	86.75	4,770.70	1,433.13	946.00	805.50	140.51	6.733	
15,450.00	10,550.00	15,365.38	10,500.00	61.32	80.35	86.77	4,820.43	1,432.87	951.14	809.58	141.56	6.719	
15,500.00	10,550.00	15,415.12	10,500.00	61.73	80.99	86.79	4,870.17	1,432.61	956.27	813.67	142.60	6.706	
15,550.00	10,550.00	15,464.85	10,500.00	62.13	81.63	86.81	4,919.90	1,432.35	961.41	817.75	143.65	6.692	
15,600.00	10,550.00	15,514.59	10,500.00	62.54	82.28	86.82	4,969.63	1,432.09	966.54	821.83	144.71	6.679	
15,650.00	10,550.00	15,564.32	10,500.00	62.95	82.93	86.84	5,019.37	1,431.84	971.68	825.91	145.77	6.666	
15,700.00	10,550.00	15,614.06	10,500.00	63.36	83.57	86.86	5,069.10	1,431.58	976.81	829.99	146.82	6.653	
15,750.00	10,550.00	15,663.80	10,500.00	63.77	84.22	86.87	5,118.84	1,431.32	981.91	834.02	147.89	6.640	
15,800.00	10,550.00	15,713.60	10,500.00	64.18	84.87	86.89	5,168.64	1,431.06	986.34	837.39	148.95	6.622	
15,850.00	10,550.00	15,763.47	10,500.00	64.59	85.53	86.91	5,218.51	1,430.80	989.91	839.90	150.01	6.599	
15,900.00	10,550.00	15,813.39	10,500.00	65.00	86.18	86.92	5,268.44	1,430.55	992.61	841.53	151.08	6.570	
15,950.00	10,550.00	15,863.36	10,500.00	65.41	86.84	86.93	5,318.40	1,430.29	994.43	842.30	152.14	6.536	
16,000.00	10,550.00	15,913.35	10,500.00	65.81	87.50	86.93	5,368.39	1,430.03	995.39	842.19	153.20	6.497	
16,050.00	10,550.00	15,963.35	10,500.00	66.21	88.16	86.93	5,418.39	1,429.77	995.48	841.22	154.26	6.453	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36_25 State Fed Com 233H - Wellbore #1 - Permit Plan 1 — Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM — Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
16,100.00	10,550.00	16,013.34	10,500.00	66.61	88.82	86.93	5,468.38	1,429.51	994.69	839.37	155.32	6.404	
16,150.00	10,550.00	16,063.31	10,500.00	67.00	89.48	86.92	5,518.36	1,429.25	993.03	836.66	156.37	6.350	
16,200.00	10,550.00	16,113.25	10,500.00	67.39	90.14	86.91	5,568.29	1,428.99	990.50	833.08	157.43	6.292	
16,250.00	10,550.00	16,163.13	10,500.00	67.78	90.81	86.90	5,618.17	1,428.73	987.11	828.63	158.47	6.229	
16,300.00	10,550.00	16,212.95	10,500.00	68.16	91.47	86.88	5,667.99	1,428.47	982.84	823.32	159.52	6.161	
16,350.00	10,550.00	16,262.70	10,500.00	68.54	92.13	86.86	5,717.74	1,428.22	977.86	817.30	160.56	6.090	
16,400.00	10,550.00	16,312.45	10,500.00	68.92	92.79	86.84	5,767.48	1,427.96	972.82	811.22	161.61	6.020	
16,450.00	10,550.00	16,362.19	10,500.00	69.30	93.46	86.83	5,817.23	1,427.70	967.78	805.13	162.65	5.950	
16,500.00	10,550.00	16,411.93	10,500.00	69.69	94.12	86.81	5,866.97	1,427.44	962.74	799.04	163.70	5.881	
16,550.00	10,550.00	16,461.68	10,500.00	70.07	94.79	86.79	5,916.71	1,427.19	957.69	792.95	164.75	5.813	
16,600.00	10,550.00	16,511.42	10,500.00	70.46	95.46	86.78	5,966.46	1,426.93	952.65	786.85	165.80	5.746	
16,650.00	10,550.00	16,561.17	10,500.00	70.84	96.12	86.76	6,016.20	1,426.67	947.61	780.76	166.85	5.679	
16,700.00	10,550.00	16,610.91	10,500.00	71.23	96.79	86.74	6,065.94	1,426.41	942.57	774.66	167.91	5.614	
16,750.00	10,550.00	16,660.66	10,500.00	71.62	97.46	86.72	6,115.69	1,426.15	937.53	768.56	168.97	5.549	
16,800.00	10,550.00	16,710.40	10,500.00	72.01	98.13	86.71	6,165.43	1,425.90	932.48	762.46	170.02	5.484	
16,850.00	10,550.00	16,760.14	10,500.00	72.40	98.80	86.69	6,215.18	1,425.64	927.44	756.36	171.08	5.421	
16,900.00	10,550.00	16,809.89	10,500.00	72.79	99.47	86.67	6,264.92	1,425.38	922.40	750.26	172.14	5.358	
16,950.00	10,550.00	16,859.63	10,500.00	73.18	100.15	86.65	6,314.66	1,425.12	917.36	744.15	173.21	5.296	
17,000.00	10,550.00	16,909.38	10,500.00	73.58	100.82	86.63	6,364.41	1,424.86	912.32	738.04	174.27	5.235	
17,050.00	10,550.00	16,959.12	10,500.00	73.97	101.49	86.61	6,414.15	1,424.61	907.28	731.94	175.34	5.174	
17,100.00	10,550.00	17,008.87	10,500.00	74.36	102.17	86.60	6,463.89	1,424.35	902.23	725.83	176.41	5.114	
17,150.00	10,550.00	17,058.61	10,500.00	74.76	102.84	86.58	6,513.64	1,424.09	897.19	719.72	177.48	5.055	
17,200.00	10,550.00	17,108.35	10,500.00	75.16	103.52	86.56	6,563.38	1,423.83	892.15	713.60	178.55	4.997	Alert
17,250.00	10,550.00	17,158.10	10,500.00	75.56	104.20	86.54	6,613.12	1,423.58	887.11	707.49	179.62	4.939	Alert
17,300.00	10,550.00	17,207.84	10,500.00	75.95	104.87	86.52	6,662.87	1,423.32	882.07	701.38	180.69	4.882	Alert
17,350.00	10,550.00	17,257.59	10,500.00	76.35	105.55	86.50	6,712.61	1,423.06	877.03	695.26	181.77	4.825	Alert
17,400.00	10,550.00	17,307.33	10,500.00	76.75	106.23	86.48	6,762.36	1,422.80	871.99	689.14	182.85	4.769	Alert
17,450.00	10,550.00	17,357.08	10,500.00	77.16	106.91	86.46	6,812.10	1,422.54	866.95	683.02	183.92	4.714	Alert
17,500.00	10,550.00	17,406.82	10,500.00	77.56	107.59	86.44	6,861.84	1,422.29	861.91	676.90	185.00	4.659	Alert
17,550.00	10,550.00	17,456.56	10,500.00	77.96	108.27	86.42	6,911.59	1,422.03	856.87	670.78	186.08	4.605	Alert
17,600.00	10,550.00	17,506.31	10,500.00	78.36	108.95	86.39	6,961.33	1,421.77	851.83	664.66	187.17	4.551	Alert
17,650.00	10,550.00	17,556.05	10,500.00	78.77	109.63	86.37	7,011.07	1,421.51	846.79	658.54	188.25	4.498	Alert
17,700.00	10,550.00	17,605.80	10,500.00	79.17	110.31	86.35	7,060.82	1,421.26	841.75	652.41	189.33	4.446	Alert
17,750.00	10,550.00	17,655.54	10,500.00	79.58	110.99	86.33	7,110.56	1,421.00	836.71	646.29	190.42	4.394	Alert
17,800.00	10,550.00	17,705.29	10,500.00	79.99	111.68	86.31	7,160.30	1,420.74	831.67	640.16	191.50	4.343	Alert
17,850.00	10,550.00	17,755.03	10,500.00	80.39	112.36	86.28	7,210.05	1,420.48	826.63	634.03	192.59	4.292	Alert
17,900.00	10,550.00	17,804.77	10,500.00	80.80	113.04	86.26	7,259.79	1,420.22	821.59	627.90	193.68	4.242	Alert
17,950.00	10,550.00	17,854.52	10,500.00	81.21	113.73	86.24	7,309.54	1,419.97	816.55	621.77	194.77	4.192	Alert
18,000.00	10,550.00	17,904.26	10,500.00	81.62	114.41	86.21	7,359.28	1,419.71	811.51	615.65	195.86	4.143	Alert
18,050.00	10,550.00	17,954.01	10,500.00	82.03	115.10	86.19	7,409.02	1,419.45	806.47	609.51	196.95	4.095	Alert
18,100.00	10,550.00	18,003.75	10,500.00	82.44	115.78	86.17	7,458.77	1,419.19	801.43	603.38	198.05	4.047	Alert
18,150.00	10,550.00	18,053.50	10,500.00	82.85	116.47	86.14	7,508.51	1,418.93	796.39	597.25	199.14	3.999	Alert
18,200.00	10,550.00	18,103.24	10,500.00	83.26	117.16	86.12	7,558.25	1,418.68	791.35	591.11	200.24	3.952	Alert
18,250.00	10,550.00	18,152.98	10,500.00	83.68	117.84	86.09	7,608.00	1,418.42	786.31	584.98	201.33	3.906	Alert
18,300.00	10,550.00	18,202.73	10,500.00	84.09	118.53	86.07	7,657.74	1,418.16	781.27	578.84	202.43	3.859	Alert
18,350.00	10,550.00	18,252.49	10,500.00	84.51	119.22	86.05	7,707.50	1,417.90	776.39	572.86	203.53	3.815	Alert
18,400.00	10,550.00	18,302.32	10,500.00	84.92	119.91	86.03	7,757.33	1,417.65	772.31	567.68	204.63	3.774	Alert
18,450.00	10,550.00	18,352.22	10,500.00	85.35	120.60	86.02	7,807.23	1,417.39	769.10	563.36	205.75	3.738	Alert
18,500.00	10,550.00	18,402.16	10,500.00	85.78	121.29	86.01	7,857.17	1,417.13	766.76	559.90	206.86	3.707	Alert
18,550.00	10,550.00	18,452.14	10,500.00	86.21	121.99	86.01	7,907.15	1,416.87	765.29	557.30	207.99	3.679	Alert
18,600.00	10,550.00	18,502.13	10,500.00	86.64	122.68	86.00	7,957.14	1,416.61	764.69	555.57	209.11	3.657	Alert
18,609.58	10,550.00	18,511.72	10,500.00	86.73	122.81	86.00	7,966.72	1,416.56	764.67	555.34	209.33	3.653	Alert, CC

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36_25 State Fed Com 233H - Wellbore #1 - Permit Plan 1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
18,650.00	10,550.00	18,552.13	10,500.00	87.08	123.37	86.00	8,007.14	1,416.35	764.95	554.71	210.25	3.638	Alert, ES
18,700.00	10,550.00	18,602.12	10,500.00	87.53	124.07	86.01	8,057.13	1,416.09	766.09	554.71	211.38	3.624	Alert
18,750.00	10,550.00	18,652.08	10,500.00	87.97	124.76	86.02	8,107.08	1,415.83	768.10	555.58	212.52	3.614	Alert
18,800.00	10,550.00	18,702.01	10,500.00	88.42	125.46	86.03	8,157.01	1,415.57	770.71	557.04	213.67	3.607	Alert
18,850.00	10,550.00	18,751.94	10,500.00	88.87	126.15	86.04	8,206.94	1,415.31	773.33	558.52	214.81	3.600	Alert
18,900.00	10,550.00	18,801.87	10,500.00	89.32	126.85	86.06	8,256.87	1,415.06	775.95	560.00	215.96	3.593	Alert
18,950.00	10,550.00	18,851.80	10,500.00	89.77	127.54	86.07	8,306.81	1,414.80	778.58	561.47	217.10	3.586	Alert
19,000.00	10,550.00	18,901.73	10,500.00	90.22	128.24	86.08	8,356.74	1,414.54	781.20	562.95	218.25	3.579	Alert
19,050.00	10,550.00	18,951.66	10,500.00	90.67	128.94	86.10	8,406.67	1,414.28	783.82	564.42	219.40	3.573	Alert
19,100.00	10,550.00	19,001.59	10,500.00	91.12	129.63	86.11	8,456.60	1,414.02	786.45	565.90	220.55	3.566	Alert
19,150.00	10,550.00	19,051.52	10,500.00	91.57	130.33	86.12	8,506.53	1,413.76	789.07	567.37	221.70	3.559	Alert
19,200.00	10,550.00	19,101.46	10,500.00	92.03	131.03	86.13	8,556.46	1,413.50	791.69	568.84	222.85	3.553	Alert
19,250.00	10,550.00	19,151.39	10,500.00	92.48	131.72	86.15	8,606.39	1,413.24	794.32	570.32	224.00	3.546	Alert
19,300.00	10,550.00	19,201.32	10,500.00	92.93	132.42	86.16	8,656.32	1,412.99	796.94	571.79	225.15	3.540	Alert
19,350.00	10,550.00	19,251.25	10,500.00	93.39	133.12	86.17	8,706.25	1,412.73	799.56	573.26	226.30	3.533	Alert
19,400.00	10,550.00	19,301.18	10,500.00	93.84	133.82	86.19	8,756.18	1,412.47	802.19	574.73	227.46	3.527	Alert
19,450.00	10,550.00	19,351.11	10,500.00	94.30	134.52	86.20	8,806.11	1,412.21	804.81	576.20	228.61	3.520	Alert
19,500.00	10,550.00	19,401.04	10,500.00	94.75	135.22	86.21	8,856.04	1,411.95	807.43	577.67	229.77	3.514	Alert
19,550.00	10,550.00	19,450.97	10,500.00	95.21	135.91	86.22	8,905.97	1,411.69	810.06	579.13	230.92	3.508	Alert
19,600.00	10,550.00	19,500.90	10,500.00	95.66	136.61	86.23	8,955.90	1,411.43	812.68	580.60	232.08	3.502	Alert
19,650.00	10,550.00	19,550.83	10,500.00	96.12	137.31	86.25	9,005.83	1,411.17	815.31	582.07	233.24	3.496	Alert
19,700.00	10,550.00	19,600.76	10,500.00	96.58	138.01	86.26	9,055.76	1,410.92	817.93	583.53	234.39	3.490	Alert
19,750.00	10,550.00	19,650.69	10,500.00	97.03	138.71	86.27	9,105.69	1,410.66	820.55	585.00	235.55	3.484	Alert
19,800.00	10,550.00	19,700.63	10,500.00	97.49	139.42	86.28	9,155.62	1,410.40	823.18	586.46	236.71	3.478	Alert
19,850.00	10,550.00	19,750.56	10,500.00	97.95	140.12	86.29	9,205.55	1,410.14	825.80	587.93	237.87	3.472	Alert
19,900.00	10,550.00	19,800.49	10,500.00	98.41	140.82	86.31	9,255.48	1,409.88	828.42	589.39	239.03	3.466	Alert
19,950.00	10,550.00	19,850.42	10,500.00	98.87	141.52	86.32	9,305.41	1,409.62	831.05	590.85	240.19	3.460	Alert
20,000.00	10,550.00	19,900.35	10,500.00	99.33	142.22	86.33	9,355.34	1,409.36	833.67	592.32	241.36	3.454	Alert
20,050.00	10,550.00	19,950.28	10,500.00	99.79	142.92	86.34	9,405.27	1,409.10	836.30	593.78	242.52	3.448	Alert
20,100.00	10,550.00	20,000.21	10,500.00	100.25	143.63	86.35	9,455.20	1,408.84	838.92	595.24	243.68	3.443	Alert
20,150.00	10,550.00	20,050.14	10,500.00	100.71	144.33	86.36	9,505.13	1,408.59	841.54	596.70	244.85	3.437	Alert
20,200.00	10,550.00	20,100.07	10,500.00	101.17	145.03	86.37	9,555.06	1,408.33	844.17	598.16	246.01	3.431	Alert
20,250.00	10,550.00	20,150.00	10,500.00	101.63	145.73	86.39	9,604.99	1,408.07	846.79	599.62	247.17	3.426	Alert
20,300.00	10,550.00	20,200.07	10,500.00	102.09	146.44	86.40	9,654.92	1,407.81	849.42	601.08	248.34	3.420	Alert
20,350.00	10,550.00	20,249.86	10,500.00	102.55	147.14	86.41	9,704.85	1,407.55	852.04	602.54	249.51	3.415	Alert
20,400.00	10,550.00	20,300.21	10,500.00	103.01	147.85	86.42	9,754.78	1,407.29	854.67	603.99	250.68	3.409	Alert
20,450.00	10,550.00	20,349.73	10,500.00	103.48	148.55	86.43	9,804.71	1,407.03	857.29	605.45	251.84	3.404	Alert
20,500.00	10,550.00	20,400.34	10,500.00	103.94	149.26	86.44	9,854.64	1,406.77	859.91	606.90	253.02	3.399	Alert
20,550.00	10,550.00	20,449.59	10,500.00	104.40	149.96	86.45	9,904.57	1,406.52	862.54	608.36	254.18	3.393	Alert
20,600.00	10,550.00	20,500.48	10,500.00	104.87	150.68	86.46	9,954.50	1,406.26	865.16	609.81	255.36	3.388	Alert
20,650.00	10,550.00	20,549.45	10,500.00	105.33	151.37	86.47	10,004.43	1,406.00	867.79	611.27	256.51	3.383	Alert
20,700.00	10,550.00	20,600.62	10,500.00	105.80	152.09	86.48	10,054.36	1,405.74	870.41	612.71	257.70	3.378	Alert
20,750.00	10,550.00	20,649.31	10,500.00	106.26	152.78	86.50	10,104.29	1,405.48	873.04	614.18	258.85	3.373	Alert
20,800.00	10,550.00	20,700.76	10,500.00	106.72	153.50	86.51	10,154.22	1,405.22	875.66	615.62	260.05	3.367	Alert
20,850.00	10,550.00	20,749.17	10,500.00	107.19	154.19	86.52	10,204.15	1,404.96	878.29	617.09	261.19	3.363	Alert
20,860.67	10,550.00	20,759.83	10,500.00	107.29	154.34	86.52	10,214.81	1,404.91	878.85	617.40	261.44	3.361	Alert, SF

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36-25 State Fed Com 230H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.40	-0.40	0.50	0.50	89.68	0.17	30.02	30.02				
50.00	50.00	49.60	49.60	0.50	0.50	89.68	0.17	30.02	30.02	29.01	1.01	29.829	
100.00	100.00	100.40	99.60	0.52	0.52	89.68	0.17	30.02	30.02	28.98	1.04	28.981	
150.00	150.00	149.60	149.60	0.59	0.59	89.68	0.17	30.02	30.02	28.84	1.18	25.447	
200.00	200.00	200.40	199.60	0.70	0.70	89.68	0.17	30.02	30.02	28.62	1.41	21.364	
250.00	250.00	249.60	249.60	0.84	0.84	89.68	0.17	30.02	30.02	28.35	1.67	17.930	
300.00	300.00	300.40	299.60	0.99	0.99	89.68	0.17	30.02	30.02	28.04	1.98	15.193	
350.00	350.00	349.60	349.60	1.15	1.14	89.68	0.17	30.02	30.02	27.73	2.29	13.111	
400.00	400.00	400.40	399.60	1.31	1.31	89.68	0.17	30.02	30.02	27.40	2.62	11.460	
450.00	450.00	449.60	449.60	1.48	1.47	89.68	0.17	30.02	30.02	27.07	2.95	10.172	
500.00	500.00	500.40	499.60	1.65	1.65	89.68	0.17	30.02	30.02	26.73	3.29	9.115	
550.00	550.00	549.60	549.60	1.82	1.82	89.68	0.17	30.02	30.02	26.39	3.63	8.261	
600.00	600.00	600.40	599.60	1.99	1.99	89.68	0.17	30.02	30.02	26.04	3.98	7.538	
650.00	650.00	649.60	649.60	2.16	2.16	89.68	0.17	30.02	30.02	25.69	4.33	6.937	
700.00	700.00	700.40	699.60	2.34	2.34	89.68	0.17	30.02	30.02	25.34	4.68	6.415	
750.00	750.00	749.60	749.60	2.51	2.51	89.68	0.17	30.02	30.02	24.99	5.03	5.971	
800.00	800.00	800.40	799.60	2.69	2.69	89.68	0.17	30.02	30.02	24.64	5.38	5.577	
850.00	850.00	849.60	849.60	2.87	2.87	89.68	0.17	30.02	30.02	24.29	5.73	5.237	
900.00	900.00	900.40	899.60	3.04	3.04	89.68	0.17	30.02	30.02	23.93	6.09	4.931	Alert
950.00	950.00	949.60	949.60	3.22	3.22	89.68	0.17	30.02	30.02	23.58	6.44	4.662	Alert
1,000.00	1,000.00	1,000.40	999.60	3.40	3.40	89.68	0.17	30.02	30.02	23.22	6.80	4.417	Alert
1,050.00	1,050.00	1,049.60	1,049.60	3.58	3.57	89.68	0.17	30.02	30.02	22.87	7.15	4.199	Alert
1,100.00	1,100.00	1,100.40	1,099.60	3.75	3.75	89.68	0.17	30.02	30.02	22.51	7.51	3.999	Alert
1,150.00	1,150.00	1,149.60	1,149.60	3.93	3.93	89.68	0.17	30.02	30.02	22.16	7.86	3.820	Alert
1,200.00	1,200.00	1,200.40	1,199.60	4.11	4.11	89.68	0.17	30.02	30.02	21.80	8.22	3.653	Alert
1,250.00	1,250.00	1,249.60	1,249.60	4.29	4.28	89.68	0.17	30.02	30.02	21.45	8.57	3.503	Alert
1,300.00	1,300.00	1,300.40	1,299.60	4.46	4.47	89.68	0.17	30.02	30.02	21.09	8.93	3.362	Alert
1,350.00	1,350.00	1,349.60	1,349.60	4.64	4.64	89.68	0.17	30.02	30.02	20.74	9.28	3.234	Alert
1,400.00	1,400.00	1,400.40	1,399.60	4.82	4.82	89.68	0.17	30.02	30.02	20.38	9.64	3.113	Alert
1,450.00	1,450.00	1,449.60	1,449.60	5.00	5.00	89.68	0.17	30.02	30.02	20.02	10.00	3.003	Alert
1,500.00	1,500.00	1,500.40	1,499.60	5.18	5.18	89.68	0.17	30.02	30.02	19.66	10.36	2.899	Alert
1,550.00	1,550.00	1,549.60	1,549.60	5.36	5.35	89.68	0.17	30.02	30.02	19.31	10.71	2.803	Alert
1,600.00	1,600.00	1,600.40	1,599.60	5.53	5.54	89.68	0.17	30.02	30.02	18.95	11.07	2.712	Alert
1,650.00	1,650.00	1,649.60	1,649.60	5.71	5.71	89.68	0.17	30.02	30.02	18.60	11.42	2.628	Alert
1,700.00	1,700.00	1,700.40	1,699.60	5.89	5.89	89.68	0.17	30.02	30.02	18.24	11.78	2.548	Alert
1,750.00	1,750.00	1,749.60	1,749.60	6.07	6.07	89.68	0.17	30.02	30.02	17.88	12.14	2.473	Minor Risk
1,800.00	1,800.00	1,800.40	1,799.60	6.25	6.25	89.68	0.17	30.02	30.02	17.52	12.50	2.402	Minor Risk
1,850.00	1,850.00	1,849.60	1,849.60	6.43	6.43	89.68	0.17	30.02	30.02	17.17	12.85	2.336	Minor Risk
1,900.00	1,900.00	1,900.40	1,899.60	6.61	6.61	89.68	0.17	30.02	30.02	16.81	13.21	2.272	Minor Risk
1,950.00	1,950.00	1,949.60	1,949.60	6.78	6.78	89.68	0.17	30.02	30.02	16.45	13.57	2.213	Minor Risk
2,000.00	2,000.00	2,000.40	1,999.60	6.96	6.96	89.68	0.17	30.02	30.02	16.09	13.93	2.155	Minor Risk
2,050.00	2,050.00	2,049.60	2,049.60	7.14	7.14	89.68	0.17	30.02	30.02	15.74	14.28	2.102	Minor Risk
2,100.00	2,100.00	2,100.40	2,099.60	7.32	7.32	89.68	0.17	30.02	30.02	15.38	14.64	2.050	Minor Risk
2,150.00	2,150.00	2,149.60	2,149.60	7.50	7.50	89.68	0.17	30.02	30.02	15.02	15.00	2.002	Minor Risk
2,200.00	2,200.00	2,200.40	2,199.60	7.68	7.68	89.68	0.17	30.02	30.02	14.66	15.36	1.955	Minor Risk
2,250.00	2,250.00	2,249.60	2,249.60	7.86	7.86	89.68	0.17	30.02	30.02	14.31	15.71	1.910	Minor Risk
2,300.00	2,300.00	2,300.40	2,299.60	8.04	8.04	89.68	0.17	30.02	30.02	13.95	16.07	1.868	Minor Risk
2,350.00	2,350.00	2,349.60	2,349.60	8.22	8.21	89.68	0.17	30.02	30.02	13.59	16.43	1.827	Minor Risk
2,400.00	2,400.00	2,400.40	2,399.60	8.39	8.40	89.68	0.17	30.02	30.02	13.23	16.79	1.788	Minor Risk
2,450.00	2,450.00	2,449.60	2,449.60	8.57	8.57	89.68	0.17	30.02	30.02	12.88	17.14	1.751	Minor Risk
2,500.00	2,500.00	2,499.60	2,499.60	8.75	8.75	89.68	0.17	30.02	30.02	12.52	17.50	1.715	Minor Risk, CC
2,550.00	2,550.00	2,549.35	2,549.35	8.93	8.92	89.77	0.12	30.23	30.23	12.38	17.85	1.693	Minor Risk, ES, SF

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36-25 State Fed Com 230H - Wellbore #1 - Permit Plan 1 — Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM — Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,600.00	2,600.00	2,599.08	2,599.08	9.11	9.10	90.02	-0.01	30.86	30.86	12.66	18.20	1.695	Minor Risk
2,650.00	2,650.00	2,648.80	2,648.79	9.29	9.26	90.42	-0.24	31.91	31.92	13.37	18.55	1.721	Minor Risk
2,700.00	2,700.00	2,698.50	2,698.46	9.47	9.43	90.94	-0.55	33.38	33.41	14.52	18.89	1.768	Minor Risk
2,750.00	2,750.00	2,748.17	2,748.10	9.65	9.60	91.55	-0.95	35.28	35.32	16.09	19.23	1.837	Minor Risk
2,800.00	2,800.00	2,797.81	2,797.67	9.83	9.77	92.21	-1.45	37.59	37.66	18.09	19.57	1.924	Minor Risk
2,850.00	2,850.00	2,847.39	2,847.18	10.00	9.94	92.88	-2.03	40.32	40.44	20.53	19.91	2.031	Minor Risk
2,900.00	2,900.00	2,896.93	2,896.61	10.18	10.11	93.56	-2.70	43.46	43.65	23.40	20.25	2.156	Minor Risk
2,950.00	2,950.00	2,946.41	2,945.95	10.36	10.28	94.21	-3.46	47.02	47.29	26.70	20.59	2.297	Minor Risk
3,000.00	3,000.00	2,995.81	2,995.20	10.54	10.45	94.83	-4.31	50.99	51.36	30.44	20.92	2.455	Minor Risk
3,050.00	3,050.00	3,045.15	3,044.33	10.72	10.62	95.41	-5.24	55.36	55.86	34.61	21.25	2.628	Alert
3,100.00	3,100.00	3,094.41	3,093.34	10.90	10.79	95.94	-6.26	60.15	60.80	39.21	21.59	2.816	Alert
3,150.00	3,150.00	3,143.57	3,142.22	11.08	10.97	96.43	-7.37	65.33	66.16	44.24	21.92	3.019	Alert
3,200.00	3,200.00	3,192.64	3,190.96	11.26	11.14	96.88	-8.56	70.91	71.95	49.71	22.25	3.234	Alert
3,250.00	3,250.00	3,241.61	3,239.54	11.44	11.31	97.29	-9.83	76.89	78.17	55.60	22.57	3.463	Alert
3,300.00	3,300.00	3,290.47	3,287.97	11.62	11.48	97.66	-11.19	83.26	84.81	61.92	22.90	3.704	Alert
3,350.00	3,350.00	3,339.22	3,336.22	11.80	11.66	97.99	-12.64	90.02	91.88	68.66	23.22	3.957	Alert
3,400.00	3,400.00	3,387.84	3,384.30	11.97	11.83	98.29	-14.16	97.16	99.37	75.83	23.54	4.221	Alert
3,450.00	3,450.00	3,436.34	3,432.18	12.15	12.01	98.56	-15.76	104.68	107.28	83.42	23.86	4.496	Alert
3,500.00	3,500.00	3,484.70	3,479.86	12.33	12.19	98.81	-17.45	112.57	115.61	91.43	24.18	4.781	Alert
3,550.00	3,550.00	3,532.92	3,527.33	12.51	12.37	99.03	-19.21	120.83	124.36	99.86	24.49	5.077	
3,600.00	3,600.00	3,580.99	3,574.59	12.69	12.55	99.24	-21.05	129.45	133.52	108.71	24.81	5.382	
3,650.00	3,650.00	3,631.41	3,621.59	12.87	12.73	99.42	-22.97	138.43	143.09	117.96	25.13	5.694	
3,700.00	3,700.00	3,677.91	3,669.67	13.05	12.91	99.59	-24.97	147.83	152.88	127.41	25.47	6.003	
3,750.00	3,750.00	3,726.94	3,717.75	13.23	13.10	99.74	-26.98	157.22	162.67	136.85	25.82	6.301	
3,800.00	3,800.00	3,775.97	3,765.83	13.41	13.29	99.87	-28.98	166.62	172.46	146.30	26.16	6.591	
3,850.00	3,850.00	3,825.05	3,813.96	13.58	13.48	-14.14	-30.99	176.03	181.99	155.49	26.51	6.866	
3,900.00	3,899.99	3,874.23	3,862.18	13.75	13.67	-14.07	-33.00	185.45	191.01	164.15	26.85	7.113	
3,950.00	3,949.97	3,923.50	3,910.50	13.92	13.86	-14.04	-35.01	194.90	199.50	172.31	27.19	7.337	
4,000.00	3,999.94	3,972.86	3,958.90	14.09	14.05	-14.05	-37.03	204.36	207.47	179.94	27.53	7.536	
4,050.00	4,049.88	4,022.31	4,007.39	14.25	14.25	-14.09	-39.05	213.83	214.92	187.05	27.87	7.711	
4,100.00	4,099.79	4,071.82	4,055.94	14.42	14.45	-14.17	-41.08	223.32	221.84	193.63	28.21	7.863	
4,150.00	4,149.66	4,121.41	4,104.57	14.59	14.64	-14.27	-43.11	232.83	228.24	199.69	28.56	7.992	
4,200.00	4,199.49	4,171.06	4,153.25	14.76	14.84	-14.41	-45.14	242.34	234.12	205.22	28.90	8.101	
4,250.00	4,249.28	4,220.76	4,202.00	14.93	15.04	-14.57	-47.17	251.87	239.48	210.23	29.25	8.188	
4,300.00	4,299.01	4,270.52	4,250.79	15.10	15.24	-14.76	-49.21	261.40	244.31	214.72	29.59	8.255	
4,350.00	4,348.68	4,320.33	4,299.63	15.27	15.44	-14.97	-51.24	270.95	248.62	218.68	29.94	8.303	
4,400.00	4,398.29	4,370.17	4,348.51	15.44	15.65	-15.21	-53.28	280.50	252.42	222.13	30.29	8.333	
4,450.00	4,447.87	4,420.02	4,397.39	15.61	15.85	-15.47	-55.32	290.06	256.05	225.41	30.64	8.357	
4,500.00	4,497.46	4,469.88	4,446.28	15.78	16.05	-15.71	-57.36	299.61	259.69	228.70	30.99	8.380	
4,550.00	4,547.05	4,519.73	4,495.17	15.95	16.26	-15.96	-59.40	309.17	263.33	231.99	31.34	8.402	
4,600.00	4,596.63	4,569.59	4,544.06	16.12	16.46	-16.19	-61.44	318.72	266.97	235.28	31.69	8.424	
4,650.00	4,646.22	4,619.45	4,592.95	16.30	16.67	-16.42	-63.48	328.28	270.62	238.57	32.04	8.445	
4,700.00	4,695.80	4,669.30	4,641.84	16.47	16.88	-16.64	-65.51	337.83	274.27	241.87	32.40	8.466	
4,750.00	4,745.39	4,719.16	4,690.73	16.64	17.08	-16.86	-67.55	347.39	277.93	245.18	32.75	8.486	
4,800.00	4,794.97	4,769.01	4,739.61	16.82	17.29	-17.07	-69.59	356.94	281.59	248.48	33.11	8.506	
4,850.00	4,844.56	4,818.87	4,788.50	16.99	17.50	-17.27	-71.63	366.50	285.25	251.79	33.46	8.525	
4,900.00	4,894.14	4,868.72	4,837.39	17.16	17.71	-17.47	-73.67	376.05	288.92	255.11	33.82	8.544	
4,950.00	4,943.73	4,918.58	4,886.28	17.34	17.92	-17.67	-75.71	385.61	292.59	258.42	34.17	8.563	
5,000.00	4,993.31	4,968.43	4,935.17	17.51	18.12	-17.86	-77.75	395.16	296.27	261.74	34.53	8.581	
5,050.00	5,042.90	5,018.29	4,984.06	17.69	18.33	-18.04	-79.79	404.72	299.95	265.06	34.88	8.598	
5,100.00	5,092.48	5,068.14	5,032.95	17.86	18.55	-18.22	-81.83	414.27	303.63	268.39	35.24	8.615	
5,150.00	5,142.07	5,118.00	5,081.83	18.04	18.76	-18.40	-83.86	423.83	307.31	271.71	35.60	8.632	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36-25 State Fed Com 230H - Wellbore #1 - Permit Plan 1

Survey Program: 0-MWD+HDGM

Offset Site Error: 0.00 ft

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.00	5,191.66	5,167.85	5,130.72	18.21	18.97	-18.57	-85.90	433.38	311.00	275.04	35.96	8.649	
5,250.00	5,241.24	5,217.71	5,179.61	18.39	19.18	-18.74	-87.94	442.94	314.69	278.37	36.32	8.665	
5,300.00	5,290.83	5,267.56	5,228.50	18.56	19.39	-18.91	-89.98	452.49	318.38	281.70	36.68	8.681	
5,350.00	5,340.41	5,317.42	5,277.39	18.74	19.60	-19.07	-92.02	462.05	322.07	285.04	37.04	8.696	
5,400.00	5,390.00	5,367.27	5,326.28	18.92	19.82	-19.22	-94.06	471.60	325.77	288.37	37.40	8.711	
5,450.00	5,439.58	5,417.13	5,375.17	19.09	20.03	-19.38	-96.10	481.16	329.47	291.71	37.76	8.726	
5,500.00	5,489.17	5,466.98	5,424.05	19.27	20.24	-19.53	-98.14	490.71	333.17	295.05	38.12	8.740	
5,550.00	5,538.75	5,516.84	5,472.94	19.45	20.46	-19.68	-100.17	500.27	336.88	298.40	38.48	8.754	
5,600.00	5,588.34	5,566.69	5,521.83	19.63	20.67	-19.82	-102.21	509.82	340.58	301.74	38.84	8.768	
5,650.00	5,637.92	5,616.55	5,570.72	19.80	20.88	-19.96	-104.25	519.38	344.29	305.09	39.20	8.782	
5,700.00	5,687.51	5,666.41	5,619.61	19.98	21.10	-20.10	-106.29	528.93	348.00	308.43	39.57	8.795	
5,750.00	5,737.09	5,716.26	5,668.50	20.16	21.31	-20.23	-108.33	538.49	351.71	311.78	39.93	8.808	
5,800.00	5,786.68	5,766.12	5,717.39	20.34	21.53	-20.36	-110.37	548.04	355.43	315.13	40.29	8.821	
5,850.00	5,836.27	5,815.97	5,766.27	20.52	21.74	-20.49	-112.41	557.60	359.14	318.49	40.66	8.833	
5,900.00	5,885.85	5,865.83	5,815.16	20.70	21.96	-20.62	-114.45	567.15	362.86	321.84	41.02	8.846	
5,950.00	5,935.44	5,915.68	5,864.05	20.87	22.18	-20.74	-116.49	576.71	366.58	325.19	41.39	8.857	
6,000.00	5,985.02	5,965.54	5,912.94	21.05	22.39	-20.87	-118.52	586.26	370.30	328.55	41.75	8.869	
6,050.00	6,034.61	6,015.39	5,961.83	21.23	22.61	-20.98	-120.56	595.82	374.03	331.91	42.12	8.881	
6,100.00	6,084.19	6,065.25	6,010.72	21.41	22.83	-21.10	-122.60	605.37	377.75	335.27	42.48	8.892	
6,150.00	6,133.78	6,115.10	6,059.60	21.59	23.04	-21.22	-124.64	614.93	381.48	338.63	42.85	8.903	
6,200.00	6,183.36	6,164.96	6,108.49	21.77	23.26	-21.33	-126.68	624.48	385.20	341.99	43.21	8.914	
6,250.00	6,232.95	6,214.81	6,157.38	21.95	23.48	-21.44	-128.72	634.04	388.93	345.35	43.58	8.924	
6,300.00	6,282.53	6,264.67	6,206.27	22.13	23.69	-21.55	-130.76	643.59	392.66	348.72	43.95	8.935	
6,350.00	6,332.12	6,314.52	6,255.16	22.31	23.91	-21.65	-132.80	653.15	396.39	352.08	44.31	8.945	
6,400.00	6,381.70	6,364.38	6,304.05	22.49	24.13	-21.76	-134.84	662.70	400.13	355.45	44.68	8.955	
6,450.00	6,431.29	6,414.23	6,352.94	22.67	24.35	-21.86	-136.87	672.26	403.86	358.81	45.05	8.965	
6,500.00	6,480.88	6,464.09	6,401.82	22.85	24.57	-21.96	-138.91	681.81	407.60	362.18	45.42	8.975	
6,550.00	6,530.46	6,513.94	6,450.71	23.03	24.79	-22.06	-140.95	691.37	411.33	365.55	45.78	8.984	
6,600.00	6,580.05	6,563.80	6,499.60	23.21	25.00	-22.15	-142.99	700.92	415.07	368.92	46.15	8.993	
6,650.00	6,629.63	6,613.66	6,548.49	23.39	25.22	-22.25	-145.03	710.48	418.81	372.29	46.52	9.003	
6,700.00	6,679.22	6,663.51	6,597.38	23.57	25.44	-22.34	-147.07	720.03	422.55	375.66	46.89	9.012	
6,750.00	6,728.80	6,713.37	6,646.27	23.76	25.66	-22.43	-149.11	729.59	426.29	379.03	47.26	9.020	
6,800.00	6,778.39	6,763.22	6,695.16	23.94	25.88	-22.52	-151.15	739.14	430.03	382.41	47.63	9.029	
6,850.00	6,827.97	6,813.08	6,744.04	24.12	26.10	-22.61	-153.19	748.70	433.78	385.78	48.00	9.038	
6,900.00	6,877.56	6,862.93	6,792.93	24.30	26.32	-22.70	-155.22	758.25	437.52	389.15	48.37	9.046	
6,950.00	6,927.14	6,912.79	6,841.82	24.48	26.54	-22.78	-157.26	767.81	441.27	392.53	48.74	9.054	
7,000.00	6,976.73	6,962.64	6,890.71	24.66	26.76	-22.87	-159.30	777.36	445.01	395.91	49.11	9.062	
7,050.00	7,026.31	7,012.50	6,939.60	24.84	26.98	-22.95	-161.34	786.92	448.76	399.28	49.48	9.070	
7,100.00	7,075.90	7,062.35	6,988.49	25.03	27.20	-23.03	-163.38	796.47	452.51	402.66	49.85	9.078	
7,150.00	7,125.48	7,112.21	7,037.38	25.21	27.42	-23.11	-165.42	806.03	456.26	406.04	50.22	9.086	
7,200.00	7,175.07	7,162.06	7,086.26	25.39	27.64	-23.19	-167.46	815.58	460.01	409.42	50.59	9.093	
7,250.00	7,224.66	7,211.92	7,135.15	25.57	27.86	-23.27	-169.50	825.14	463.76	412.80	50.96	9.100	
7,300.00	7,274.24	7,261.77	7,184.04	25.75	28.08	-23.34	-171.54	834.69	467.51	416.18	51.33	9.108	
7,350.00	7,323.83	7,311.63	7,232.93	25.94	28.30	-23.42	-173.57	844.25	471.26	419.56	51.70	9.115	
7,400.00	7,373.41	7,361.48	7,281.82	26.12	28.52	-23.49	-175.61	853.80	475.01	422.94	52.07	9.122	
7,450.00	7,423.00	7,411.34	7,330.71	26.30	28.75	-23.56	-177.65	863.36	478.77	426.32	52.45	9.129	
7,500.00	7,472.58	7,461.19	7,379.60	26.48	28.97	-23.63	-179.69	872.91	482.52	429.71	52.82	9.136	
7,550.00	7,522.17	7,511.05	7,428.48	26.67	29.19	-23.71	-181.73	882.47	486.28	433.09	53.19	9.142	
7,600.00	7,571.75	7,560.91	7,477.37	26.85	29.41	-23.77	-183.77	892.02	490.03	436.47	53.56	9.149	
7,650.00	7,621.34	7,610.76	7,526.26	27.03	29.63	-23.84	-185.81	901.58	493.79	439.86	53.93	9.155	
7,700.00	7,670.92	7,660.62	7,575.15	27.21	29.85	-23.91	-187.85	911.13	497.55	443.24	54.31	9.162	
7,750.00	7,720.51	7,710.47	7,624.04	27.40	30.07	-23.98	-189.89	920.69	501.31	446.63	54.68	9.168	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36-25 State Fed Com 230H - Wellbore #1 - Permit Plan 1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,800.00	7,770.09	7,760.33	7,672.93	27.58	30.30	-24.04	-191.92	930.24	505.07	450.01	55.05	9.174	
7,850.00	7,819.68	7,810.18	7,721.82	27.76	30.52	-24.11	-193.96	939.80	508.83	453.40	55.43	9.180	
7,900.00	7,869.27	7,860.04	7,770.70	27.95	30.74	-24.17	-196.00	949.35	512.59	456.79	55.80	9.186	
7,950.00	7,918.85	7,909.89	7,819.59	28.13	30.96	-24.23	-198.04	958.91	516.35	460.17	56.17	9.192	
8,000.00	7,968.44	7,959.75	7,868.48	28.31	31.18	-24.29	-200.08	968.46	520.11	463.56	56.55	9.198	
8,050.00	8,018.02	8,009.60	7,917.37	28.50	31.41	-24.35	-202.12	978.02	523.87	466.95	56.92	9.204	
8,100.00	8,067.61	8,059.46	7,966.26	28.68	31.63	-24.41	-204.16	987.57	527.63	470.34	57.29	9.209	
8,150.00	8,117.19	8,109.31	8,015.15	28.86	31.85	-24.47	-206.20	997.13	531.39	473.73	57.67	9.215	
8,200.00	8,166.78	8,159.17	8,064.04	29.05	32.07	-24.53	-208.24	1,006.68	535.16	477.12	58.04	9.220	
8,250.00	8,216.36	8,209.02	8,112.92	29.23	32.30	-24.59	-210.27	1,016.24	538.92	480.51	58.41	9.226	
8,300.00	8,265.95	8,258.88	8,161.81	29.42	32.52	-24.64	-212.31	1,025.79	542.69	483.90	58.79	9.231	
8,350.00	8,315.53	8,308.73	8,210.70	29.60	32.74	-24.70	-214.35	1,035.35	546.45	487.29	59.16	9.236	
8,400.00	8,365.12	8,358.59	8,259.59	29.78	32.97	-24.75	-216.39	1,044.90	550.22	490.68	59.54	9.241	
8,450.00	8,414.70	8,408.44	8,308.48	29.97	33.19	-24.81	-218.43	1,054.46	553.98	494.07	59.91	9.247	
8,500.00	8,464.29	8,458.30	8,357.37	30.15	33.41	-24.86	-220.47	1,064.01	557.75	497.46	60.29	9.252	
8,550.00	8,513.88	8,508.15	8,406.26	30.34	33.63	-24.91	-222.51	1,073.57	561.52	500.86	60.66	9.256	
8,600.00	8,563.46	8,558.01	8,455.14	30.52	33.86	-24.97	-224.55	1,083.12	565.28	504.25	61.04	9.261	
8,650.00	8,613.05	8,607.87	8,504.03	30.70	34.08	-25.02	-226.58	1,092.68	569.05	507.64	61.41	9.266	
8,700.00	8,662.63	8,657.72	8,552.92	30.89	34.30	-25.07	-228.62	1,102.23	572.82	511.03	61.79	9.271	
8,750.00	8,712.22	8,707.58	8,601.81	31.07	34.53	-25.12	-230.66	1,111.79	576.59	514.43	62.16	9.275	
8,800.00	8,761.80	8,757.43	8,650.70	31.26	34.75	-25.17	-232.70	1,121.34	580.36	517.82	62.54	9.280	
8,850.00	8,811.39	8,807.29	8,699.59	31.44	34.97	-25.21	-234.74	1,130.90	584.13	521.22	62.91	9.285	
8,900.00	8,860.97	8,857.14	8,748.48	31.62	35.20	-25.26	-236.78	1,140.45	587.90	524.61	63.29	9.289	
8,950.00	8,910.56	8,907.00	8,797.36	31.81	35.42	-25.31	-238.82	1,150.01	591.67	528.00	63.67	9.293	
9,000.00	8,960.14	8,956.85	8,846.25	31.99	35.65	-25.36	-240.86	1,159.56	595.44	531.40	64.04	9.298	
9,050.00	9,009.73	9,006.71	8,895.14	32.18	35.87	-25.40	-242.90	1,169.12	599.21	534.80	64.42	9.302	
9,100.00	9,059.31	9,056.56	8,944.03	32.36	36.09	-25.45	-244.93	1,178.68	602.98	538.19	64.79	9.306	
9,150.00	9,108.90	9,106.42	8,992.92	32.55	36.32	-25.49	-246.97	1,188.23	606.76	541.59	65.17	9.310	
9,200.00	9,158.49	9,156.27	9,041.80	32.73	36.54	-25.55	-249.01	1,197.78	610.59	545.04	65.55	9.316	
9,250.00	9,208.15	9,206.08	9,090.65	32.92	36.76	-25.59	-251.05	1,207.33	614.92	549.00	65.92	9.328	
9,300.00	9,257.89	9,255.84	9,139.44	33.10	36.99	-25.62	-253.08	1,216.87	619.84	553.55	66.29	9.350	
9,350.00	9,307.68	9,305.53	9,188.17	33.28	37.21	-25.62	-255.12	1,226.39	625.35	558.69	66.66	9.381	
9,400.00	9,357.54	9,355.15	9,236.83	33.46	37.44	-25.60	-257.15	1,235.90	631.44	564.41	67.03	9.420	
9,450.00	9,407.43	9,404.70	9,285.41	33.64	37.66	-25.56	-259.17	1,245.40	638.12	570.73	67.40	9.468	
9,500.00	9,457.37	9,454.15	9,333.91	33.82	37.88	-25.50	-261.19	1,254.88	645.39	577.63	67.76	9.525	
9,550.00	9,507.33	9,503.51	9,382.31	34.00	38.10	-25.43	-263.21	1,264.33	653.24	585.12	68.12	9.589	
9,600.00	9,557.31	9,552.76	9,430.61	34.17	38.32	-25.33	-265.23	1,273.77	661.68	593.20	68.48	9.662	
9,650.00	9,607.31	9,601.90	9,478.79	34.35	38.55	-25.22	-267.24	1,283.19	670.71	601.88	68.84	9.744	
9,700.00	9,657.31	9,650.94	9,526.88	34.52	38.77	89.08	-269.24	1,292.59	680.22	611.03	69.19	9.831	
9,750.00	9,707.31	9,699.97	9,574.96	34.69	38.99	89.26	-271.25	1,301.99	689.78	620.24	69.54	9.919	
9,800.00	9,757.31	9,748.95	9,622.99	34.86	39.21	89.43	-273.18	1,311.38	699.35	629.46	69.89	10.006	
9,850.00	9,807.31	9,797.72	9,670.84	35.03	39.42	89.37	-272.33	1,320.71	708.93	638.69	70.24	10.093	
9,900.00	9,857.31	9,846.01	9,717.98	35.20	39.62	88.98	-267.40	1,329.89	718.56	647.97	70.59	10.179	
9,950.00	9,907.31	9,893.15	9,763.45	35.38	39.81	88.29	-258.71	1,338.72	728.31	657.38	70.93	10.268	
10,000.00	9,957.31	9,938.59	9,806.47	35.55	39.97	87.36	-246.76	1,347.06	738.31	667.07	71.24	10.363	
10,050.00	10,007.30	9,982.13	9,846.71	35.72	40.12	85.55	-232.08	1,354.83	748.69	677.17	71.52	10.468	
10,100.00	10,057.05	10,024.68	9,884.87	35.89	40.25	83.48	-214.77	1,362.19	759.28	687.51	71.77	10.579	
10,150.00	10,106.19	10,066.47	9,921.02	36.06	40.37	81.49	-195.01	1,369.15	769.93	697.95	71.98	10.697	
10,200.00	10,154.35	10,107.58	9,955.11	36.22	40.48	79.60	-173.01	1,375.69	780.52	708.38	72.15	10.818	
10,250.00	10,201.18	10,148.11	9,987.12	36.38	40.57	77.81	-148.94	1,381.81	790.94	718.65	72.28	10.942	
10,300.00	10,246.27	10,188.12	10,017.01	36.53	40.65	76.14	-122.97	1,387.51	801.06	728.67	72.39	11.066	
10,350.00	10,289.32	10,227.68	10,044.75	36.67	40.72	74.59	-95.26	1,392.78	810.77	738.31	72.47	11.188	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36-25 State Fed Com 230H - Wellbore #1 - Permit Plan 1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,400.00	10,330.00	10,266.86	10,070.30	36.80	40.79	73.17	-65.98	1,397.62	819.99	747.47	72.52	11.307	
10,450.00	10,367.99	10,305.70	10,093.64	36.92	40.84	71.88	-35.25	1,402.01	828.61	756.05	72.56	11.419	
10,500.00	10,403.01	10,344.26	10,114.74	37.03	40.89	70.71	-3.23	1,405.96	836.56	763.96	72.59	11.524	
10,550.00	10,434.79	10,382.58	10,133.57	37.13	40.92	69.68	29.95	1,409.47	843.75	771.13	72.62	11.619	
10,600.00	10,463.08	10,420.69	10,150.10	37.22	40.96	68.79	64.15	1,412.51	850.12	777.47	72.65	11.702	
10,650.00	10,487.67	10,458.63	10,164.30	37.30	40.98	68.03	99.23	1,415.10	855.62	782.93	72.69	11.771	
10,700.00	10,508.38	10,496.43	10,176.15	37.38	41.00	67.41	135.06	1,417.23	860.19	787.45	72.75	11.824	
10,750.00	10,525.04	10,534.13	10,185.64	37.45	41.02	66.92	171.49	1,418.89	863.80	790.98	72.82	11.862	
10,800.00	10,537.53	10,571.74	10,192.74	37.51	41.04	66.56	208.40	1,420.08	866.42	793.50	72.92	11.881	
10,850.00	10,545.76	10,609.29	10,197.45	37.56	41.05	66.34	245.64	1,420.81	868.01	794.97	73.05	11.883	
10,900.00	10,549.66	10,646.81	10,199.75	37.60	41.07	66.26	283.08	1,421.06	868.58	795.38	73.20	11.866	
10,950.00	10,550.00	10,691.12	10,200.00	37.65	41.09	66.26	327.39	1,420.88	868.32	794.93	73.39	11.831	
11,000.00	10,550.00	10,741.11	10,200.00	37.69	41.12	66.25	377.39	1,420.62	868.00	794.38	73.62	11.791	
11,050.00	10,550.00	10,808.89	10,200.00	37.75	41.18	66.24	427.39	1,420.35	867.68	793.77	73.92	11.739	
11,100.00	10,550.00	10,841.11	10,200.00	37.81	41.21	66.23	477.38	1,420.09	867.36	793.25	74.12	11.703	
11,150.00	10,550.00	10,908.89	10,200.00	37.88	41.30	66.22	527.38	1,419.83	867.04	792.58	74.46	11.645	
11,200.00	10,550.00	10,941.11	10,200.00	37.96	41.35	66.21	577.38	1,419.57	866.72	792.04	74.69	11.605	
11,250.00	10,550.00	11,008.89	10,200.00	38.04	41.48	66.20	627.38	1,419.31	866.41	791.33	75.07	11.541	
11,300.00	10,550.00	11,041.11	10,200.00	38.13	41.54	66.19	677.38	1,419.05	866.09	790.76	75.32	11.498	
11,350.00	10,550.00	11,091.11	10,200.00	38.23	41.66	66.18	727.37	1,418.78	865.77	790.10	75.67	11.442	
11,400.00	10,550.00	11,141.10	10,200.00	38.33	41.79	66.17	777.37	1,418.52	865.45	789.42	76.03	11.383	
11,450.00	10,550.00	11,208.90	10,200.00	38.45	42.00	66.16	827.37	1,418.26	865.13	788.63	76.49	11.310	
11,500.00	10,550.00	11,241.10	10,200.00	38.56	42.11	66.16	877.37	1,418.00	864.81	788.01	76.80	11.261	
11,550.00	10,550.00	11,308.90	10,200.00	38.69	42.36	66.15	927.37	1,417.74	864.49	787.19	77.30	11.184	
11,600.00	10,550.00	11,341.10	10,200.00	38.81	42.48	66.14	977.36	1,417.47	864.17	786.54	77.63	11.132	
11,650.00	10,550.00	11,408.90	10,200.00	38.95	42.78	66.13	1,027.36	1,417.21	863.85	785.68	78.17	11.051	
11,700.00	10,550.00	11,441.10	10,200.00	39.09	42.93	66.12	1,077.36	1,416.95	863.53	785.01	78.52	10.998	
11,750.00	10,550.00	11,508.90	10,200.00	39.24	43.26	66.11	1,127.36	1,416.69	863.21	784.12	79.09	10.914	
11,800.00	10,550.00	11,541.09	10,200.00	39.39	43.43	66.10	1,177.36	1,416.43	862.89	783.43	79.47	10.859	
11,850.00	10,550.00	11,608.91	10,200.00	39.55	43.80	66.09	1,227.35	1,416.17	862.57	782.50	80.08	10.772	
11,900.00	10,550.00	11,641.09	10,200.00	39.71	43.98	66.08	1,277.35	1,415.90	862.26	781.79	80.47	10.715	
11,950.00	10,550.00	11,708.91	10,200.00	39.88	44.39	66.07	1,327.35	1,415.64	861.94	780.82	81.12	10.626	
12,000.00	10,550.00	11,741.09	10,200.00	40.06	44.59	66.06	1,377.35	1,415.38	861.62	780.09	81.53	10.568	
12,050.00	10,550.00	11,808.91	10,200.00	40.24	45.03	66.05	1,427.35	1,415.12	861.30	779.09	82.20	10.477	
12,100.00	10,550.00	11,841.09	10,200.00	40.42	45.25	66.04	1,477.35	1,414.86	860.98	778.34	82.64	10.419	
12,150.00	10,550.00	11,908.91	10,200.00	40.61	45.72	66.03	1,527.34	1,414.59	860.66	777.32	83.34	10.327	
12,200.00	10,550.00	11,941.09	10,200.00	40.80	45.95	66.02	1,577.34	1,414.33	860.34	776.55	83.79	10.267	
12,250.00	10,550.00	12,008.92	10,200.00	41.01	46.45	66.01	1,627.34	1,414.07	860.02	775.49	84.53	10.174	
12,300.00	10,550.00	12,041.08	10,200.00	41.21	46.69	66.00	1,677.34	1,413.81	859.70	774.70	85.00	10.114	
12,350.00	10,550.00	12,108.92	10,200.00	41.42	47.21	66.00	1,727.34	1,413.55	859.38	773.62	85.76	10.020	
12,400.00	10,550.00	12,141.08	10,200.00	41.63	47.47	65.99	1,777.33	1,413.29	859.07	772.82	86.25	9.960	
12,450.00	10,550.00	12,208.92	10,200.00	41.85	48.02	65.98	1,827.33	1,413.02	858.75	771.71	87.04	9.866	
12,500.00	10,550.00	12,241.08	10,200.00	42.07	48.28	65.97	1,877.33	1,412.76	858.43	770.89	87.54	9.806	
12,550.00	10,550.00	12,308.92	10,200.00	42.30	48.85	65.96	1,927.33	1,412.50	858.11	769.75	88.36	9.712	
12,600.00	10,550.00	12,341.08	10,200.00	42.53	49.13	65.95	1,977.33	1,412.24	857.79	768.91	88.88	9.652	
12,650.00	10,550.00	12,408.93	10,200.00	42.77	49.72	65.94	2,027.32	1,411.98	857.47	767.76	89.72	9.558	
12,700.00	10,550.00	12,441.07	10,200.00	43.00	50.01	65.93	2,077.32	1,411.71	857.15	766.90	90.25	9.498	
12,750.00	10,550.00	12,508.93	10,200.00	43.25	50.62	65.92	2,127.32	1,411.45	856.83	765.72	91.11	9.404	
12,800.00	10,550.00	12,541.07	10,200.00	43.49	50.91	65.91	2,177.32	1,411.19	856.52	764.86	91.66	9.345	
12,850.00	10,550.00	12,608.93	10,200.00	43.75	51.54	65.90	2,227.32	1,410.93	856.20	763.65	92.54	9.252	
12,900.00	10,550.00	12,641.07	10,200.00	44.00	51.84	65.89	2,277.31	1,410.67	855.88	762.77	93.10	9.193	
12,950.00	10,550.00	12,708.93	10,200.00	44.26	52.49	65.88	2,327.31	1,410.41	855.56	761.55	94.01	9.101	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36-25 State Fed Com 230H - Wellbore #1 - Permit Plan 1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,000.00	10,550.00	12,741.07	10,200.00	44.52	52.80	65.87	2,377.31	1,410.14	855.24	760.66	94.58	9.042	
13,050.00	10,550.00	12,808.94	10,200.00	44.79	53.46	65.86	2,427.31	1,409.88	854.92	759.41	95.51	8.951	
13,100.00	10,550.00	12,841.06	10,200.00	45.06	53.78	65.85	2,477.31	1,409.62	854.60	758.51	96.09	8.893	
13,150.00	10,550.00	12,908.94	10,200.00	45.34	54.45	65.84	2,527.31	1,409.36	854.29	757.25	97.04	8.804	
13,200.00	10,550.00	12,941.06	10,200.00	45.61	54.78	65.83	2,577.30	1,409.10	853.97	756.33	97.64	8.746	
13,250.00	10,550.00	12,991.06	10,200.00	45.90	55.29	65.82	2,627.30	1,408.84	853.65	755.23	98.42	8.674	
13,300.00	10,550.00	13,041.06	10,200.00	46.18	55.80	65.81	2,677.30	1,408.57	853.33	754.12	99.21	8.602	
13,350.00	10,550.00	13,108.94	10,200.00	46.47	56.50	65.80	2,727.30	1,408.31	853.01	752.83	100.19	8.514	
13,400.00	10,550.00	13,141.06	10,200.00	46.76	56.84	65.80	2,777.30	1,408.05	852.69	751.89	100.81	8.459	
13,450.00	10,550.00	13,208.95	10,200.00	47.05	57.56	65.79	2,827.29	1,407.79	852.37	750.58	101.80	8.373	
13,500.00	10,550.00	13,241.05	10,200.00	47.35	57.90	65.78	2,877.29	1,407.53	852.06	749.63	102.43	8.318	
13,550.00	10,550.00	13,308.95	10,200.00	47.65	58.63	65.77	2,927.29	1,407.26	851.74	748.30	103.44	8.234	
13,600.00	10,550.00	13,341.05	10,200.00	47.95	58.98	65.76	2,977.29	1,407.00	851.42	747.34	104.08	8.180	
13,650.00	10,550.00	13,408.95	10,200.00	48.26	59.72	65.75	3,027.29	1,406.74	851.10	746.00	105.10	8.098	
13,700.00	10,550.00	13,441.05	10,200.00	48.57	60.07	65.74	3,077.28	1,406.48	850.78	745.03	105.75	8.045	
13,750.00	10,550.00	13,508.95	10,200.00	48.88	60.82	65.73	3,127.28	1,406.22	850.47	743.67	106.79	7.964	
13,800.00	10,550.00	13,541.05	10,200.00	49.19	61.18	65.72	3,177.28	1,405.96	850.15	742.70	107.45	7.912	
13,850.00	10,550.00	13,608.96	10,200.00	49.51	61.94	65.71	3,227.28	1,405.69	849.83	741.33	108.50	7.832	
13,900.00	10,550.00	13,641.04	10,200.00	49.83	62.30	65.70	3,277.28	1,405.43	849.51	740.34	109.17	7.782	
13,941.44	10,550.00	13,682.48	10,200.00	50.10	62.77	65.70	3,318.71	1,405.21	849.41	739.52	109.89	7.730	
13,950.00	10,550.00	13,708.96	10,200.00	50.15	63.07	65.69	3,327.28	1,405.17	849.34	739.10	110.23	7.705	
14,000.00	10,550.00	13,741.04	10,200.00	50.48	63.44	65.71	3,377.27	1,404.91	849.90	738.98	110.92	7.662	
14,050.00	10,550.00	13,808.98	10,200.00	50.82	64.22	65.74	3,427.25	1,404.65	851.26	739.24	112.02	7.599	
14,100.00	10,550.00	13,840.96	10,200.00	51.15	64.59	65.78	3,477.19	1,404.39	853.41	740.68	112.73	7.570	
14,150.00	10,550.00	13,909.15	10,200.00	51.50	65.38	65.85	3,527.08	1,404.12	856.36	742.49	113.87	7.521	
14,200.00	10,550.00	13,940.69	10,200.00	51.84	65.74	65.93	3,576.91	1,403.86	860.10	745.50	114.60	7.505	
14,250.00	10,550.00	14,009.56	10,200.00	52.19	66.55	66.04	3,626.67	1,403.60	864.61	748.84	115.77	7.468	
14,300.00	10,550.00	14,040.18	10,200.00	52.54	66.91	66.17	3,676.40	1,403.34	869.31	752.80	116.52	7.461	
14,350.00	10,550.00	14,089.91	10,200.00	52.90	67.50	66.31	3,726.14	1,403.08	874.02	756.54	117.48	7.440	
14,400.00	10,550.00	14,139.65	10,200.00	53.26	68.09	66.45	3,775.87	1,402.82	878.73	760.28	118.45	7.418	
14,450.00	10,550.00	14,189.38	10,200.00	53.62	68.68	66.58	3,825.61	1,402.56	883.45	764.02	119.43	7.397	
14,500.00	10,550.00	14,239.12	10,200.00	53.99	69.28	66.71	3,875.34	1,402.30	888.17	767.77	120.41	7.376	
14,550.00	10,550.00	14,288.85	10,200.00	54.35	69.88	66.84	3,925.08	1,402.04	892.90	771.51	121.39	7.356	
14,600.00	10,550.00	14,338.59	10,200.00	54.72	70.48	66.97	3,974.81	1,401.78	897.63	775.26	122.38	7.335	
14,650.00	10,550.00	14,388.32	10,200.00	55.09	71.08	67.10	4,024.54	1,401.52	902.37	779.00	123.37	7.314	
14,700.00	10,550.00	14,438.06	10,200.00	55.47	71.68	67.22	4,074.28	1,401.26	907.11	782.74	124.36	7.294	
14,750.00	10,550.00	14,487.79	10,200.00	55.84	72.29	67.35	4,124.01	1,401.00	911.85	786.49	125.36	7.274	
14,800.00	10,550.00	14,537.53	10,200.00	56.22	72.90	67.47	4,173.75	1,400.74	916.60	790.24	126.37	7.254	
14,850.00	10,550.00	14,587.26	10,200.00	56.60	73.51	67.59	4,223.48	1,400.48	921.36	793.98	127.37	7.234	
14,900.00	10,550.00	14,637.00	10,200.00	56.98	74.12	67.72	4,273.22	1,400.22	926.11	797.73	128.38	7.214	
14,950.00	10,550.00	14,686.73	10,200.00	57.37	74.74	67.83	4,322.95	1,399.96	930.87	801.48	129.40	7.194	
15,000.00	10,550.00	14,736.47	10,200.00	57.76	75.36	67.95	4,372.69	1,399.70	935.64	805.23	130.41	7.174	
15,050.00	10,550.00	14,786.20	10,200.00	58.14	75.98	68.07	4,422.42	1,399.44	940.41	808.97	131.44	7.155	
15,100.00	10,550.00	14,835.94	10,200.00	58.53	76.60	68.19	4,472.15	1,399.18	945.18	812.72	132.46	7.136	
15,150.00	10,550.00	14,885.67	10,200.00	58.93	77.22	68.30	4,521.89	1,398.92	949.96	816.47	133.49	7.116	
15,200.00	10,550.00	14,935.41	10,200.00	59.32	77.84	68.42	4,571.62	1,398.65	954.74	820.22	134.52	7.098	
15,250.00	10,550.00	14,985.14	10,200.00	59.72	78.47	68.53	4,621.36	1,398.39	959.52	823.97	135.55	7.079	
15,300.00	10,550.00	15,034.88	10,200.00	60.12	79.10	68.64	4,671.09	1,398.13	964.31	827.73	136.59	7.060	
15,350.00	10,550.00	15,084.61	10,200.00	60.52	79.73	68.75	4,720.83	1,397.87	969.10	831.48	137.63	7.041	
15,400.00	10,550.00	15,134.35	10,200.00	60.92	80.36	68.86	4,770.56	1,397.61	973.90	835.23	138.67	7.023	
15,450.00	10,550.00	15,184.08	10,200.00	61.32	80.99	68.97	4,820.30	1,397.35	978.70	838.98	139.72	7.005	
15,500.00	10,550.00	15,233.82	10,200.00	61.73	81.63	69.08	4,870.03	1,397.09	983.50	842.74	140.77	6.987	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36-25 State Fed Com 230H - Wellbore #1 - Permit Plan 1 — Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM — Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
15,550.00	10,550.00	15,283.55	10,200.00	62.13	82.26	69.18	4,919.77	1,396.83	988.31	846.49	141.82	6.969	
15,600.00	10,550.00	15,333.29	10,200.00	62.54	82.90	69.29	4,969.50	1,396.57	993.12	850.24	142.87	6.951	
15,650.00	10,550.00	15,383.03	10,200.00	62.95	83.54	69.39	5,019.23	1,396.31	997.93	854.00	143.93	6.934	
15,700.00	10,550.00	15,432.76	10,200.00	63.36	84.18	69.50	5,068.97	1,396.05	1,002.74	857.76	144.99	6.916	
15,750.00	10,550.00	15,482.50	10,200.00	63.77	84.82	69.61	5,118.71	1,395.79	1,007.52	861.48	146.05	6.899	
15,800.00	10,550.00	15,532.30	10,200.00	64.18	85.46	69.72	5,168.51	1,395.53	1,011.69	864.58	147.11	6.877	
15,850.00	10,550.00	15,582.17	10,200.00	64.59	86.11	69.82	5,218.38	1,395.27	1,015.04	866.88	148.16	6.851	
15,900.00	10,550.00	15,632.10	10,200.00	65.00	86.76	69.89	5,268.31	1,395.01	1,017.58	868.37	149.21	6.820	
15,950.00	10,550.00	15,682.07	10,200.00	65.41	87.40	69.93	5,318.27	1,394.75	1,019.29	869.04	150.25	6.784	
16,000.00	10,550.00	15,732.06	10,200.00	65.81	88.06	69.96	5,368.26	1,394.48	1,020.19	868.91	151.28	6.744	
16,050.00	10,550.00	15,782.05	10,200.00	66.21	88.71	69.96	5,418.26	1,394.22	1,020.27	867.96	152.31	6.699	
16,100.00	10,550.00	15,832.05	10,200.00	66.61	89.36	69.94	5,468.25	1,393.96	1,019.52	866.20	153.33	6.649	
16,150.00	10,550.00	15,882.02	10,200.00	67.00	90.02	69.90	5,518.22	1,393.70	1,017.96	863.62	154.34	6.596	
16,200.00	10,550.00	15,931.95	10,200.00	67.39	90.67	69.83	5,568.16	1,393.44	1,015.58	860.24	155.34	6.538	
16,250.00	10,550.00	15,981.84	10,200.00	67.78	91.33	69.74	5,618.04	1,393.18	1,012.39	856.06	156.33	6.476	
16,300.00	10,550.00	16,031.65	10,200.00	68.16	91.98	69.63	5,667.85	1,392.91	1,008.38	851.06	157.31	6.410	
16,350.00	10,550.00	16,081.41	10,200.00	68.54	92.64	69.52	5,717.60	1,392.65	1,003.70	845.41	158.29	6.341	
16,400.00	10,550.00	16,131.15	10,200.00	68.92	93.29	69.42	5,767.35	1,392.39	998.97	839.71	159.26	6.273	
16,450.00	10,550.00	16,180.89	10,200.00	69.30	93.95	69.32	5,817.09	1,392.13	994.23	834.00	160.23	6.205	
16,500.00	10,550.00	16,230.64	10,200.00	69.69	94.61	69.21	5,866.83	1,391.87	989.51	828.30	161.20	6.138	
16,550.00	10,550.00	16,280.38	10,200.00	70.07	95.27	69.11	5,916.58	1,391.61	984.78	822.60	162.18	6.072	
16,600.00	10,550.00	16,330.13	10,200.00	70.46	95.93	69.00	5,966.32	1,391.35	980.06	816.91	163.15	6.007	
16,650.00	10,550.00	16,379.87	10,200.00	70.84	96.59	68.90	6,016.06	1,391.09	975.34	811.21	164.13	5.943	
16,700.00	10,550.00	16,429.61	10,200.00	71.23	97.25	68.79	6,065.81	1,390.83	970.62	805.52	165.10	5.879	
16,750.00	10,550.00	16,479.36	10,200.00	71.62	97.92	68.68	6,115.55	1,390.57	965.91	799.84	166.08	5.816	
16,800.00	10,550.00	16,529.10	10,200.00	72.01	98.58	68.57	6,165.29	1,390.31	961.20	794.15	167.05	5.754	
16,850.00	10,550.00	16,578.85	10,200.00	72.40	99.25	68.46	6,215.04	1,390.05	956.50	788.47	168.03	5.693	
16,900.00	10,550.00	16,628.59	10,200.00	72.79	99.91	68.35	6,264.78	1,389.79	951.80	782.80	169.00	5.632	
16,950.00	10,550.00	16,678.33	10,200.00	73.18	100.58	68.24	6,314.52	1,389.53	947.10	777.12	169.98	5.572	
17,000.00	10,550.00	16,728.08	10,200.00	73.58	101.25	68.12	6,364.27	1,389.27	942.41	771.46	170.95	5.513	
17,050.00	10,550.00	16,777.82	10,200.00	73.97	101.91	68.01	6,414.01	1,389.01	937.71	765.79	171.92	5.454	
17,100.00	10,550.00	16,827.57	10,200.00	74.36	102.58	67.89	6,463.75	1,388.75	933.03	760.13	172.90	5.396	
17,150.00	10,550.00	16,877.31	10,200.00	74.76	103.25	67.78	6,513.50	1,388.49	928.35	754.47	173.87	5.339	
17,200.00	10,550.00	16,927.05	10,200.00	75.16	103.92	67.66	6,563.24	1,388.23	923.67	748.82	174.85	5.283	
17,250.00	10,550.00	16,976.80	10,200.00	75.56	104.59	67.54	6,612.98	1,387.97	918.99	743.17	175.82	5.227	
17,300.00	10,550.00	17,026.54	10,200.00	75.95	105.27	67.42	6,662.73	1,387.71	914.32	737.53	176.79	5.172	
17,350.00	10,550.00	17,076.29	10,200.00	76.35	105.94	67.29	6,712.47	1,387.45	909.65	731.89	177.77	5.117	
17,400.00	10,550.00	17,126.03	10,200.00	76.75	106.61	67.17	6,762.22	1,387.18	904.99	726.25	178.74	5.063	
17,450.00	10,550.00	17,175.77	10,200.00	77.16	107.29	67.05	6,811.96	1,386.92	900.33	720.62	179.71	5.010	
17,500.00	10,550.00	17,225.52	10,200.00	77.56	107.96	66.92	6,861.70	1,386.66	895.68	715.00	180.68	4.957	Alert
17,550.00	10,550.00	17,275.26	10,200.00	77.96	108.63	66.79	6,911.45	1,386.40	891.03	709.38	181.65	4.905	Alert
17,600.00	10,550.00	17,325.01	10,200.00	78.36	109.31	66.66	6,961.19	1,386.14	886.38	703.77	182.62	4.854	Alert
17,650.00	10,550.00	17,374.75	10,200.00	78.77	109.99	66.53	7,010.93	1,385.88	881.74	698.16	183.58	4.803	Alert
17,700.00	10,550.00	17,424.49	10,200.00	79.17	110.66	66.40	7,060.68	1,385.62	877.11	692.56	184.55	4.753	Alert
17,750.00	10,550.00	17,474.24	10,200.00	79.58	111.34	66.27	7,110.42	1,385.36	872.47	686.96	185.51	4.703	Alert
17,800.00	10,550.00	17,523.98	10,200.00	79.99	112.02	66.14	7,160.16	1,385.10	867.85	681.37	186.48	4.654	Alert
17,850.00	10,550.00	17,573.73	10,200.00	80.39	112.70	66.00	7,209.91	1,384.84	863.22	675.78	187.44	4.605	Alert
17,900.00	10,550.00	17,623.47	10,200.00	80.80	113.38	65.86	7,259.65	1,384.58	858.61	670.20	188.40	4.557	Alert
17,950.00	10,550.00	17,673.21	10,200.00	81.21	114.06	65.72	7,309.39	1,384.32	853.99	664.63	189.36	4.510	Alert
18,000.00	10,550.00	17,722.96	10,200.00	81.62	114.74	65.58	7,359.14	1,384.06	849.39	659.07	190.32	4.463	Alert
18,050.00	10,550.00	17,772.70	10,200.00	82.03	115.42	65.44	7,408.88	1,383.80	844.78	653.51	191.28	4.417	Alert
18,100.00	10,550.00	17,822.45	10,200.00	82.44	116.10	65.30	7,458.62	1,383.54	840.19	647.95	192.23	4.371	Alert

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36-25 State Fed Com 230H - Wellbore #1 - Permit Plan 1 — Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM — Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
18,150.00	10,550.00	17,872.19	10,200.00	82.85	116.78	65.16	7,508.37	1,383.28	835.60	642.41	193.19	4.325	Alert
18,200.00	10,550.00	17,921.93	10,200.00	83.26	117.47	65.01	7,558.11	1,383.02	831.01	636.87	194.14	4.280	Alert
18,250.00	10,550.00	17,971.68	10,200.00	83.68	118.15	64.86	7,607.85	1,382.76	826.43	631.34	195.09	4.236	Alert
18,300.00	10,550.00	18,021.42	10,200.00	84.09	118.83	64.71	7,657.60	1,382.50	821.85	625.82	196.04	4.192	Alert
18,350.00	10,550.00	18,071.18	10,200.00	84.51	119.52	64.59	7,707.35	1,382.24	817.43	620.44	196.99	4.150	Alert
18,400.00	10,550.00	18,121.01	10,200.00	84.92	120.20	64.50	7,757.19	1,381.97	813.73	615.77	197.95	4.111	Alert
18,450.00	10,550.00	18,170.91	10,200.00	85.35	120.89	64.42	7,807.08	1,381.71	810.82	611.87	198.95	4.076	Alert
18,500.00	10,550.00	18,220.85	10,200.00	85.78	121.58	64.37	7,857.02	1,381.45	808.70	608.74	199.96	4.044	Alert
18,550.00	10,550.00	18,270.83	10,200.00	86.21	122.27	64.34	7,907.00	1,381.19	807.37	606.38	200.99	4.017	Alert
18,600.00	10,550.00	18,320.83	10,200.00	86.64	122.96	64.32	7,957.00	1,380.93	806.82	604.77	202.05	3.993	Alert
18,609.73	10,550.00	18,330.56	10,200.00	86.73	123.09	64.32	7,966.73	1,380.88	806.81	604.55	202.26	3.989	Alert
18,650.00	10,550.00	18,370.83	10,200.00	87.08	123.65	64.33	8,006.99	1,380.67	807.06	603.93	203.13	3.973	Alert
18,700.00	10,550.00	18,420.81	10,200.00	87.53	124.34	64.35	8,056.98	1,380.41	808.09	603.86	204.23	3.957	Alert
18,750.00	10,550.00	18,470.77	10,200.00	87.97	125.03	64.40	8,106.94	1,380.14	809.90	604.55	205.35	3.944	Alert
18,800.00	10,550.00	18,520.70	10,200.00	88.42	125.72	64.48	8,156.87	1,379.88	812.25	605.76	206.49	3.934	Alert
18,850.00	10,550.00	18,570.63	10,200.00	88.87	126.41	64.56	8,206.80	1,379.62	814.63	606.99	207.63	3.923	Alert
18,900.00	10,550.00	18,620.56	10,200.00	89.32	127.10	64.63	8,256.73	1,379.36	817.00	608.23	208.77	3.913	Alert
18,950.00	10,550.00	18,670.50	10,200.00	89.77	127.79	64.71	8,306.66	1,379.10	819.37	609.46	209.92	3.903	Alert
19,000.00	10,550.00	18,720.43	10,200.00	90.22	128.48	64.79	8,356.59	1,378.84	821.75	610.69	211.06	3.893	Alert
19,050.00	10,550.00	18,770.36	10,200.00	90.67	129.18	64.87	8,406.52	1,378.57	824.13	611.92	212.21	3.884	Alert
19,100.00	10,550.00	18,820.29	10,200.00	91.12	129.87	64.95	8,456.45	1,378.31	826.51	613.16	213.35	3.874	Alert
19,150.00	10,550.00	18,870.22	10,200.00	91.57	130.56	65.02	8,506.38	1,378.05	828.89	614.39	214.50	3.864	Alert
19,200.00	10,550.00	18,920.15	10,200.00	92.03	131.26	65.10	8,556.31	1,377.79	831.27	615.62	215.65	3.855	Alert
19,250.00	10,550.00	18,970.08	10,200.00	92.48	131.95	65.18	8,606.24	1,377.53	833.66	616.86	216.80	3.845	Alert
19,300.00	10,550.00	19,020.01	10,200.00	92.93	132.65	65.25	8,656.17	1,377.27	836.04	618.10	217.95	3.836	Alert
19,350.00	10,550.00	19,069.94	10,200.00	93.39	133.34	65.33	8,706.10	1,377.01	838.43	619.33	219.10	3.827	Alert
19,400.00	10,550.00	19,119.87	10,200.00	93.84	134.03	65.40	8,756.03	1,376.74	840.82	620.57	220.25	3.818	Alert
19,450.00	10,550.00	19,169.80	10,200.00	94.30	134.73	65.48	8,805.96	1,376.48	843.21	621.81	221.40	3.809	Alert
19,500.00	10,550.00	19,219.74	10,200.00	94.75	135.43	65.55	8,855.89	1,376.22	845.60	623.04	222.55	3.800	Alert
19,550.00	10,550.00	19,269.67	10,200.00	95.21	136.12	65.62	8,905.82	1,375.96	847.99	624.28	223.71	3.791	Alert
19,600.00	10,550.00	19,319.60	10,200.00	95.66	136.82	65.70	8,955.75	1,375.70	850.38	625.52	224.86	3.782	Alert
19,650.00	10,550.00	19,369.53	10,200.00	96.12	137.52	65.77	9,005.68	1,375.44	852.78	626.76	226.02	3.773	Alert
19,700.00	10,550.00	19,419.46	10,200.00	96.58	138.21	65.84	9,055.61	1,375.18	855.18	628.00	227.17	3.764	Alert
19,750.00	10,550.00	19,469.39	10,200.00	97.03	138.91	65.91	9,105.54	1,374.91	857.57	629.24	228.33	3.756	Alert
19,800.00	10,550.00	19,519.32	10,200.00	97.49	139.61	65.98	9,155.47	1,374.65	859.97	630.49	229.49	3.747	Alert
19,850.00	10,550.00	19,569.25	10,200.00	97.95	140.31	66.05	9,205.40	1,374.39	862.37	631.73	230.65	3.739	Alert
19,900.00	10,550.00	19,619.18	10,200.00	98.41	141.00	66.13	9,255.33	1,374.13	864.77	632.97	231.80	3.731	Alert
19,950.00	10,550.00	19,669.11	10,200.00	98.87	141.70	66.20	9,305.26	1,373.87	867.18	634.21	232.96	3.722	Alert
20,000.00	10,550.00	19,719.05	10,200.00	99.33	142.40	66.27	9,355.19	1,373.61	869.58	635.46	234.12	3.714	Alert
20,050.00	10,550.00	19,768.98	10,200.00	99.79	143.10	66.34	9,405.13	1,373.35	871.99	636.70	235.29	3.706	Alert
20,100.00	10,550.00	19,818.91	10,200.00	100.25	143.80	66.40	9,455.06	1,373.08	874.40	637.95	236.45	3.698	Alert
20,150.00	10,550.00	19,868.84	10,200.00	100.71	144.50	66.47	9,504.99	1,372.82	876.80	639.19	237.61	3.690	Alert
20,200.00	10,550.00	19,918.77	10,200.00	101.17	145.20	66.54	9,554.92	1,372.56	879.21	640.44	238.77	3.682	Alert
20,250.00	10,550.00	19,968.70	10,200.00	101.63	145.90	66.61	9,604.85	1,372.30	881.62	641.68	239.94	3.674	Alert
20,300.00	10,550.00	20,018.63	10,200.00	102.09	146.60	66.68	9,654.78	1,372.04	884.04	642.93	241.10	3.667	Alert
20,350.00	10,550.00	20,068.56	10,200.00	102.55	147.30	66.74	9,704.71	1,371.78	886.45	644.18	242.27	3.659	Alert
20,400.00	10,550.00	20,118.49	10,200.00	103.01	148.00	66.81	9,754.64	1,371.52	888.86	645.43	243.44	3.651	Alert
20,450.00	10,550.00	20,168.42	10,200.00	103.48	148.70	66.88	9,804.57	1,371.25	891.28	646.68	244.60	3.644	Alert
20,500.00	10,550.00	20,218.35	10,200.00	103.94	149.40	66.94	9,854.50	1,370.99	893.70	647.93	245.77	3.636	Alert
20,550.00	10,550.00	20,268.29	10,200.00	104.40	150.11	67.01	9,904.43	1,370.73	896.11	649.18	246.94	3.629	Alert
20,600.00	10,550.00	20,318.22	10,200.00	104.87	150.81	67.07	9,954.36	1,370.47	898.53	650.43	248.11	3.622	Alert
20,650.00	10,550.00	20,368.15	10,200.00	105.33	151.51	67.14	10,004.29	1,370.21	900.95	651.68	249.28	3.614	Alert

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 36-T23S-R31E - Todd 36-25 State Fed Com 230H - Wellbore #1 - Permit Plan 1

Offset Site Error: 0.00 ft

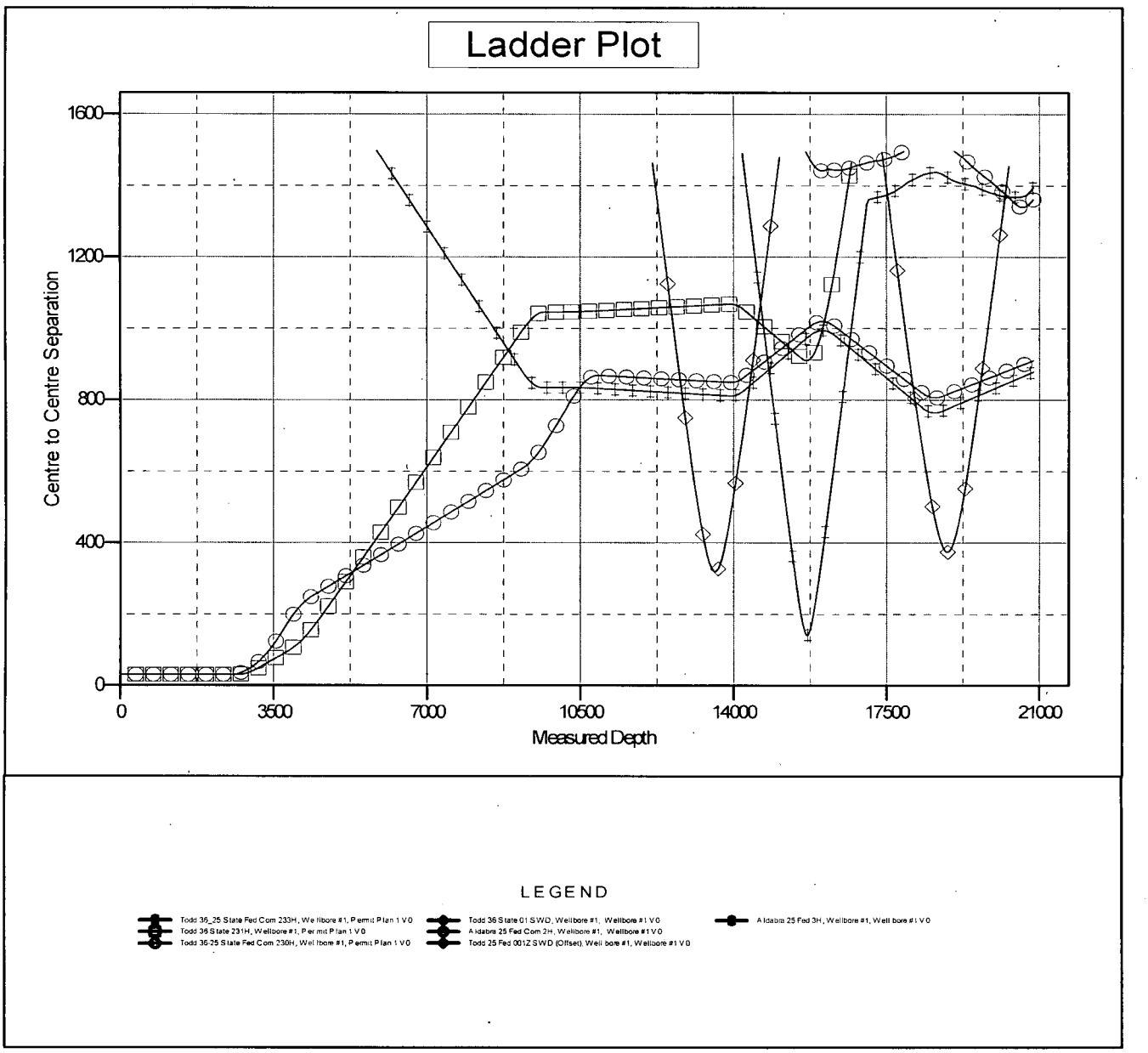
Survey Program: 0-MWD+HDGM

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
20,700.00	10,550.00	20,418.08	10,200.00	105.80	152.21	67.20	10,054.22	1,369.95	903.37	652.93	250.44	3.607	Alert
20,750.00	10,550.00	20,468.01	10,200.00	106.26	152.92	67.27	10,104.15	1,369.69	905.80	654.18	251.62	3.600	Alert
20,800.00	10,550.00	20,517.94	10,200.00	106.72	153.62	67.33	10,154.08	1,369.42	908.22	655.43	252.79	3.593	Alert
20,850.00	10,550.00	20,567.87	10,200.00	107.19	154.32	67.40	10,204.01	1,369.16	910.65	656.69	253.96	3.586	Alert
20,860.67	10,550.00	20,578.53	10,200.00	107.29	154.47	67.41	10,214.67	1,369.11	911.16	656.96	254.21	3.584	Alert

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 3529.70ft	Coordinates are relative to: Todd 36_25 State Fed Com 232H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is -104.333334	Grid Convergence at Surface is: 0.32°

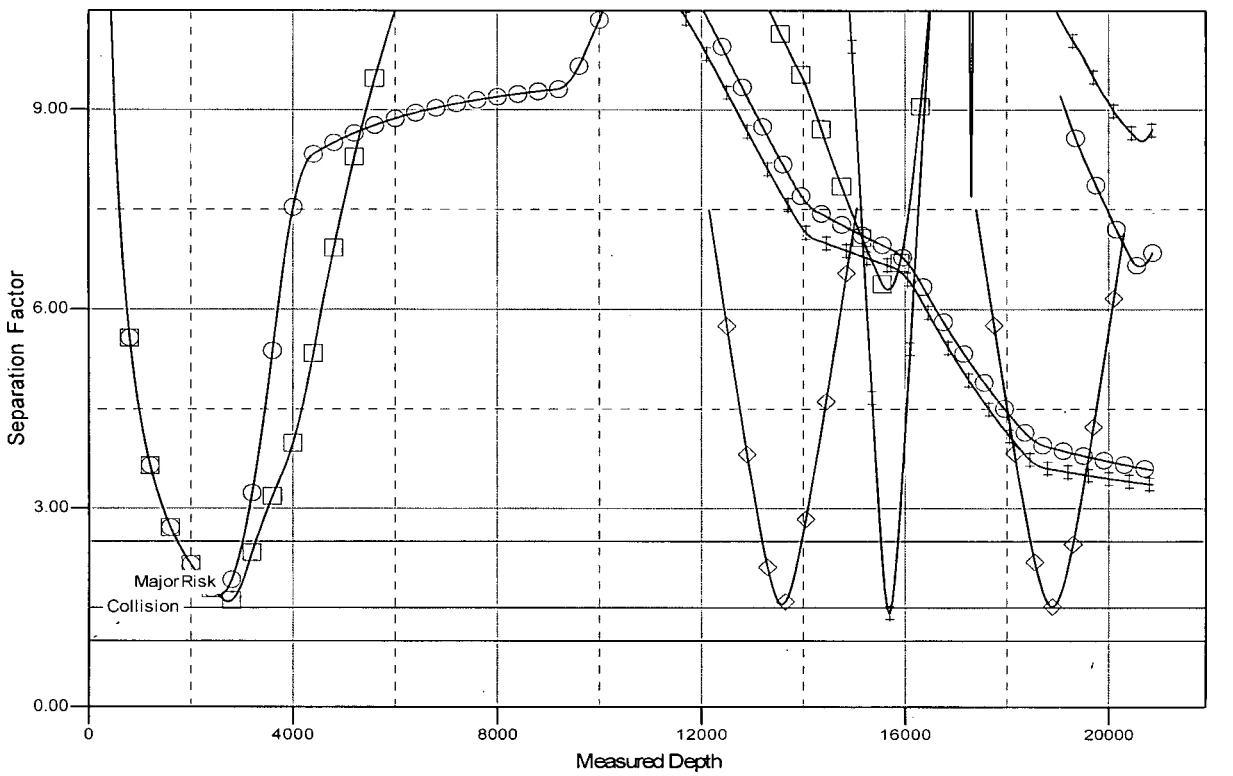


Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3529.70ft
Reference Site:	Sec. 36-T23S-R31E	**MD Reference:**	RKB @ 3529.70ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 3529.70ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Todd 36_25 State Fed Com 232H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.32°

Separation Factor Plot



LEGEND

Todd 36_25 State Fed Com 233H, Wellbore #1, Permit Plan 1 V0
Todd 36 State 231H, Wellbore #1, Permit Plan 1 V0
Todd 36-25 State Fed Com 230H, Wellbore #1, Permit Plan 1 V0
Todd 36 State 01 SWD, Wellbore #1, Wellbore #1 V0
Aldabra 25 Fed Com 2H, Wellbore #1, Wellbore #1 V0
Todd 25 Fed 001Z SWD (Offset), Well bore #1, Wellbore #1 V0
Aldabra 25 Fed 3H, Wellbore #1, Well bore #1 V0

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)
Sec. 36-T23S-R31E
Todd 36_25 State Fed Com 232H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

04 October, 2018

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3529.70ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3529.70ft
Site:	Sec. 36-T23S-R31E	**North Reference:**	Grid
Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Project Eddy County (NAD 83 NM Eastern)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Sec. 36-T23S-R31E

Site Position:		**Northing:**	461,801.03 usft	**Latitude:**	32.268172
From:	Map	**Easting:**	724,712.45 usft	**Longitude:**	-103.740050
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.32 °

Well Todd 36_25 State Fed Com 232H

Well Position	**+N/-S**	0.00 ft	**Northing:**	456,863.71 usft	**Latitude:**	32.254575
	+E/-W	0.00 ft	**Easting:**	726,397.59 usft	**Longitude:**	-103.734687
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:**	3,504.70 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/1/2018	6.89	60.05	47,805.81610630

Design Permit Plan 1

Audit Notes:

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

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	2.96

Plan Survey Tool Program **Date** 10/4/2018

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,860.67	Permit Plan 1 (Wellbore #1)	MWD+IFR1 OWSG MWD + IFR1	

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3529.70ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3529.70ft
Site:	Sec. 36-T23S-R31E	**North Reference:**	Grid
Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,390.71	7.38	114.13	4,389.07	-15.54	34.69	1.25	1.25	0.00	114.13	
9,177.43	7.38	114.13	9,136.11	-267.05	596.09	0.00	0.00	0.00	0.00	
9,669.69	0.00	0.01	9,627.00	-280.00	625.00	1.50	-1.50	0.00	180.00	
10,019.73	0.00	0.01	9,977.04	-280.00	625.00	0.00	0.00	0.00	0.01	
10,919.73	90.00	0.10	10,550.00	292.96	626.00	10.00	10.00	0.00	0.10	
13,919.73	90.00	0.10	10,550.00	3,292.95	631.24	0.00	0.00	0.00	0.00	
14,234.73	90.00	353.80	10,550.00	3,607.35	614.48	2.00	0.00	-2.00	-90.00	
15,734.73	90.00	353.80	10,550.00	5,098.58	452.49	0.00	0.00	0.00	0.00	
16,319.73	90.00	5.50	10,550.00	5,682.55	448.92	2.00	0.00	2.00	90.00	
18,319.73	90.00	5.50	10,550.00	7,673.34	640.61	0.00	0.00	0.00	0.00	
18,760.31	90.00	356.69	10,550.00	8,113.40	649.01	2.00	0.00	-2.00	-90.00	PBHL - Todd 36_25 S
20,860.67	90.00	356.69	10,550.00	10,210.26	527.69	0.00	0.00	0.00	0.00	PBHL - Todd 36_25 S

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3529.70ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3529.70ft
Site:	Sec. 36-T23S-R31E	**North Reference:**	Grid
Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
100.00	0.00	0.00	100.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
200.00	0.00	0.00	200.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
300.00	0.00	0.00	300.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
400.00	0.00	0.00	400.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
500.00	0.00	0.00	500.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
600.00	0.00	0.00	600.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
700.00	0.00	0.00	700.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
800.00	0.00	0.00	800.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
900.00	0.00	0.00	900.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
1,000.00	0.00	0.00	1,000.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
1,100.00	0.00	0.00	1,100.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
1,200.00	0.00	0.00	1,200.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
1,300.00	0.00	0.00	1,300.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
1,400.00	0.00	0.00	1,400.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
1,500.00	0.00	0.00	1,500.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
1,600.00	0.00	0.00	1,600.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
1,700.00	0.00	0.00	1,700.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
1,800.00	0.00	0.00	1,800.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
1,900.00	0.00	0.00	1,900.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
2,000.00	0.00	0.00	2,000.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
2,100.00	0.00	0.00	2,100.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
2,200.00	0.00	0.00	2,200.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
2,300.00	0.00	0.00	2,300.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
2,400.00	0.00	0.00	2,400.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
2,500.00	0.00	0.00	2,500.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
2,600.00	0.00	0.00	2,600.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
2,700.00	0.00	0.00	2,700.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
2,800.00	0.00	0.00	2,800.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
2,900.00	0.00	0.00	2,900.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
3,000.00	0.00	0.00	3,000.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
3,100.00	0.00	0.00	3,100.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
3,200.00	0.00	0.00	3,200.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
3,300.00	0.00	0.00	3,300.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
3,400.00	0.00	0.00	3,400.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
3,500.00	0.00	0.00	3,500.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
3,600.00	0.00	0.00	3,600.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
3,700.00	0.00	0.00	3,700.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
3,800.00	0.00	0.00	3,800.00	0.00	0.00	456,863.71	726,397.59	32.254575	-103.734687
3,900.00	1.25	114.13	3,899.99	-0.45	1.00	456,863.26	726,398.58	32.254574	-103.734684
4,000.00	2.50	114.13	3,999.94	-1.78	3.98	456,861.92	726,401.57	32.254570	-103.734674
4,100.00	3.75	114.13	4,099.79	-4.01	8.96	456,859.69	726,406.54	32.254564	-103.734658
4,200.00	5.00	114.13	4,199.49	-7.13	15.92	456,856.57	726,413.50	32.254555	-103.734636
4,300.00	6.25	114.13	4,299.01	-11.14	24.86	456,852.57	726,422.45	32.254544	-103.734607
4,390.71	7.38	114.13	4,389.07	-15.54	34.69	456,848.17	726,432.27	32.254532	-103.734575
4,400.00	7.38	114.13	4,398.29	-16.03	35.78	456,847.68	726,433.36	32.254531	-103.734572
4,500.00	7.38	114.13	4,497.46	-21.28	47.51	456,842.42	726,445.09	32.254516	-103.734534
4,600.00	7.38	114.13	4,596.63	-26.54	59.23	456,837.17	726,456.82	32.254501	-103.734496
4,700.00	7.38	114.13	4,695.80	-31.79	70.96	456,831.91	726,468.55	32.254487	-103.734458
4,800.00	7.38	114.13	4,794.97	-37.05	82.69	456,826.66	726,480.28	32.254472	-103.734421
4,900.00	7.38	114.13	4,894.14	-42.30	94.42	456,821.41	726,492.01	32.254458	-103.734383
5,000.00	7.38	114.13	4,993.31	-47.55	106.15	456,816.15	726,503.73	32.254443	-103.734345
5,100.00	7.38	114.13	5,092.48	-52.81	117.88	456,810.90	726,515.46	32.254428	-103.734307
5,200.00	7.38	114.13	5,191.66	-58.06	129.61	456,805.64	726,527.19	32.254414	-103.734269
5,300.00	7.38	114.13	5,290.83	-63.32	141.33	456,800.39	726,538.92	32.254399	-103.734231

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3529.70ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3529.70ft
Site:	Sec. 36-T23S-R31E	**North Reference:**	Grid
Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.00	7.38	114.13	5,390.00	-68.57	153.06	456,795.13	726,550.65	32.254384	-103.734193
5,500.00	7.38	114.13	5,489.17	-73.83	164.79	456,789.88	726,562.38	32.254370	-103.734156
5,600.00	7.38	114.13	5,588.34	-79.08	176.52	456,784.63	726,574.10	32.254355	-103.734118
5,700.00	7.38	114.13	5,687.51	-84.33	188.25	456,779.37	726,585.83	32.254341	-103.734080
5,800.00	7.38	114.13	5,786.68	-89.59	199.98	456,774.12	726,597.56	32.254326	-103.734042
5,900.00	7.38	114.13	5,885.85	-94.84	211.70	456,768.86	726,609.29	32.254311	-103.734004
6,000.00	7.38	114.13	5,985.02	-100.10	223.43	456,763.61	726,621.02	32.254297	-103.733966
6,100.00	7.38	114.13	6,084.19	-105.35	235.16	456,758.35	726,632.75	32.254282	-103.733929
6,200.00	7.38	114.13	6,183.36	-110.61	246.89	456,753.10	726,644.47	32.254268	-103.733891
6,300.00	7.38	114.13	6,282.53	-115.86	258.62	456,747.85	726,656.20	32.254253	-103.733853
6,400.00	7.38	114.13	6,381.70	-121.11	270.35	456,742.59	726,667.93	32.254238	-103.733815
6,500.00	7.38	114.13	6,480.88	-126.37	282.07	456,737.34	726,679.66	32.254224	-103.733777
6,600.00	7.38	114.13	6,580.05	-131.62	293.80	456,732.08	726,691.39	32.254209	-103.733739
6,700.00	7.38	114.13	6,679.22	-136.88	305.53	456,726.83	726,703.12	32.254194	-103.733701
6,800.00	7.38	114.13	6,778.39	-142.13	317.26	456,721.57	726,714.84	32.254180	-103.733664
6,900.00	7.38	114.13	6,877.56	-147.39	328.99	456,716.32	726,726.57	32.254165	-103.733626
7,000.00	7.38	114.13	6,976.73	-152.64	340.72	456,711.07	726,738.30	32.254151	-103.733588
7,100.00	7.38	114.13	7,075.90	-157.89	352.44	456,705.81	726,750.03	32.254136	-103.733550
7,200.00	7.38	114.13	7,175.07	-163.15	364.17	456,700.56	726,761.76	32.254121	-103.733512
7,300.00	7.38	114.13	7,274.24	-168.40	375.90	456,695.30	726,773.49	32.254107	-103.733474
7,400.00	7.38	114.13	7,373.41	-173.66	387.63	456,690.05	726,785.21	32.254092	-103.733437
7,500.00	7.38	114.13	7,472.58	-178.91	399.36	456,684.79	726,796.94	32.254077	-103.733399
7,600.00	7.38	114.13	7,571.75	-184.17	411.09	456,679.54	726,808.67	32.254063	-103.733361
7,700.00	7.38	114.13	7,670.92	-189.42	422.81	456,674.29	726,820.40	32.254048	-103.733323
7,800.00	7.38	114.13	7,770.09	-194.68	434.54	456,669.03	726,832.13	32.254034	-103.733285
7,900.00	7.38	114.13	7,869.27	-199.93	446.27	456,663.78	726,843.86	32.254019	-103.733247
8,000.00	7.38	114.13	7,968.44	-205.18	458.00	456,658.52	726,855.58	32.254004	-103.733210
8,100.00	7.38	114.13	8,067.61	-210.44	469.73	456,653.27	726,867.31	32.253990	-103.733172
8,200.00	7.38	114.13	8,166.78	-215.69	481.46	456,648.01	726,879.04	32.253975	-103.733134
8,300.00	7.38	114.13	8,265.95	-220.95	493.18	456,642.76	726,890.77	32.253960	-103.733096
8,400.00	7.38	114.13	8,365.12	-226.20	504.91	456,637.51	726,902.50	32.253946	-103.733058
8,500.00	7.38	114.13	8,464.29	-231.46	516.64	456,632.25	726,914.23	32.253931	-103.733020
8,600.00	7.38	114.13	8,563.46	-236.71	528.37	456,627.00	726,925.95	32.253917	-103.732982
8,700.00	7.38	114.13	8,662.63	-241.96	540.10	456,621.74	726,937.68	32.253902	-103.732945
8,800.00	7.38	114.13	8,761.80	-247.22	551.83	456,616.49	726,949.41	32.253887	-103.732907
8,900.00	7.38	114.13	8,860.97	-252.47	563.55	456,611.23	726,961.14	32.253873	-103.732869
9,000.00	7.38	114.13	8,960.14	-257.73	575.28	456,605.98	726,972.87	32.253858	-103.732831
9,100.00	7.38	114.13	9,059.31	-262.98	587.01	456,600.73	726,984.60	32.253843	-103.732793
9,177.43	7.38	114.13	9,136.11	-267.05	596.09	456,596.66	726,993.68	32.253832	-103.732764
9,200.00	7.05	114.13	9,158.49	-268.21	598.68	456,595.50	726,996.26	32.253829	-103.732756
9,300.00	5.55	114.13	9,257.89	-272.69	608.69	456,591.01	727,006.27	32.253816	-103.732723
9,400.00	4.05	114.13	9,357.54	-276.11	616.32	456,587.60	727,013.90	32.253807	-103.732699
9,500.00	2.55	114.13	9,457.37	-278.46	621.56	456,585.25	727,019.15	32.253800	-103.732682
9,600.00	1.05	114.13	9,557.31	-279.74	624.42	456,583.97	727,022.00	32.253797	-103.732673
9,669.69	0.00	0.01	9,627.00	-280.00	625.00	456,583.71	727,022.59	32.253796	-103.732671
9,700.00	0.00	0.00	9,657.31	-280.00	625.00	456,583.71	727,022.59	32.253796	-103.732671
9,800.00	0.00	0.00	9,757.31	-280.00	625.00	456,583.71	727,022.59	32.253796	-103.732671
9,900.00	0.00	0.00	9,857.31	-280.00	625.00	456,583.71	727,022.59	32.253796	-103.732671
10,000.00	0.00	0.00	9,957.31	-280.00	625.00	456,583.71	727,022.59	32.253796	-103.732671
10,019.73	0.00	0.00	9,977.04	-280.00	625.00	456,583.71	727,022.59	32.253796	-103.732671
KOP @ 10020' MD, 50' FSL, 2240' FWL									
10,100.00	8.03	0.10	10,057.05	-274.39	625.01	456,589.32	727,022.59	32.253812	-103.732671
10,200.00	18.03	0.10	10,154.35	-251.87	625.05	456,611.83	727,022.63	32.253873	-103.732670

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3529.70ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3529.70ft
Site:	Sec. 36-T23S-R31E	**North Reference:**	Grid
Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,264.00	24.43	0.10	10,213.98	-228.71	625.09	456,634.99	727,022.67	32.253937	-103.732669
FTP @ 10264' MD, 100' FSL, 2240' FWL									
10,300.00	28.03	0.10	10,246.27	-212.81	625.12	456,650.90	727,022.70	32.253981	-103.732669
10,400.00	38.03	0.10	10,330.00	-158.37	625.21	456,705.33	727,022.80	32.254130	-103.732668
10,500.00	48.03	0.10	10,403.01	-90.23	625.33	456,773.48	727,022.92	32.254318	-103.732666
10,600.00	58.03	0.10	10,463.08	-10.43	625.47	456,853.27	727,023.06	32.254537	-103.732664
10,700.00	68.03	0.10	10,508.38	78.57	625.63	456,942.28	727,023.21	32.254782	-103.732662
10,800.00	78.03	0.10	10,537.53	174.10	625.79	457,037.80	727,023.38	32.255044	-103.732660
10,900.00	88.03	0.10	10,549.66	273.23	625.97	457,136.94	727,023.55	32.255317	-103.732658
10,919.73	90.00	0.10	10,550.00	292.96	626.00	457,156.66	727,023.58	32.255371	-103.732657
11,000.00	90.00	0.10	10,550.00	373.23	626.14	457,236.93	727,023.73	32.255592	-103.732655
11,100.00	90.00	0.10	10,550.00	473.23	626.31	457,336.93	727,023.90	32.255866	-103.732653
11,200.00	90.00	0.10	10,550.00	573.23	626.49	457,436.93	727,024.07	32.256141	-103.732650
11,300.00	90.00	0.10	10,550.00	673.23	626.66	457,536.93	727,024.25	32.256416	-103.732648
11,400.00	90.00	0.10	10,550.00	773.23	626.84	457,636.93	727,024.42	32.256691	-103.732646
11,500.00	90.00	0.10	10,550.00	873.23	627.01	457,736.93	727,024.60	32.256966	-103.732643
11,600.00	90.00	0.10	10,550.00	973.23	627.19	457,836.93	727,024.77	32.257241	-103.732641
11,700.00	90.00	0.10	10,550.00	1,073.23	627.36	457,936.93	727,024.95	32.257516	-103.732639
11,800.00	90.00	0.10	10,550.00	1,173.23	627.54	458,036.93	727,025.12	32.257791	-103.732636
11,900.00	90.00	0.10	10,550.00	1,273.23	627.71	458,136.93	727,025.30	32.258065	-103.732634
12,000.00	90.00	0.10	10,550.00	1,373.23	627.89	458,236.93	727,025.47	32.258340	-103.732631
12,100.00	90.00	0.10	10,550.00	1,473.23	628.06	458,336.93	727,025.64	32.258615	-103.732629
12,200.00	90.00	0.10	10,550.00	1,573.23	628.23	458,436.93	727,025.82	32.258890	-103.732627
12,300.00	90.00	0.10	10,550.00	1,673.23	628.41	458,536.93	727,025.99	32.259165	-103.732624
12,400.00	90.00	0.10	10,550.00	1,773.22	628.58	458,636.93	727,026.17	32.259440	-103.732622
12,500.00	90.00	0.10	10,550.00	1,873.22	628.76	458,736.93	727,026.34	32.259715	-103.732620
12,600.00	90.00	0.10	10,550.00	1,973.22	628.93	458,836.93	727,026.52	32.259990	-103.732617
12,700.00	90.00	0.10	10,550.00	2,073.22	629.11	458,936.93	727,026.69	32.260264	-103.732615
12,800.00	90.00	0.10	10,550.00	2,173.22	629.28	459,036.93	727,026.87	32.260539	-103.732612
12,900.00	90.00	0.10	10,550.00	2,273.22	629.46	459,136.93	727,027.04	32.260814	-103.732610
13,000.00	90.00	0.10	10,550.00	2,373.22	629.63	459,236.93	727,027.22	32.261089	-103.732608
13,100.00	90.00	0.10	10,550.00	2,473.22	629.81	459,336.92	727,027.39	32.261364	-103.732605
13,200.00	90.00	0.10	10,550.00	2,573.22	629.98	459,436.92	727,027.56	32.261639	-103.732603
13,300.00	90.00	0.10	10,550.00	2,673.22	630.15	459,536.92	727,027.74	32.261914	-103.732601
13,400.00	90.00	0.10	10,550.00	2,773.22	630.33	459,636.92	727,027.91	32.262188	-103.732598
13,500.00	90.00	0.10	10,550.00	2,873.22	630.50	459,736.92	727,028.09	32.262463	-103.732596
13,600.00	90.00	0.10	10,550.00	2,973.22	630.68	459,836.92	727,028.26	32.262738	-103.732593
13,700.00	90.00	0.10	10,550.00	3,073.22	630.85	459,936.92	727,028.44	32.263013	-103.732591
13,800.00	90.00	0.10	10,550.00	3,173.22	631.03	460,036.92	727,028.61	32.263288	-103.732589
13,900.00	90.00	0.10	10,550.00	3,273.22	631.20	460,136.92	727,028.79	32.263563	-103.732586
13,919.73	90.00	0.10	10,550.00	3,292.95	631.24	460,156.65	727,028.82	32.263617	-103.732586
14,000.00	90.00	358.49	10,550.00	3,373.21	630.25	460,236.91	727,027.84	32.263838	-103.732588
14,100.00	90.00	356.49	10,550.00	3,473.11	625.88	460,336.81	727,023.47	32.264112	-103.732600
14,200.00	90.00	354.49	10,550.00	3,572.80	618.03	460,436.50	727,015.61	32.264387	-103.732624
14,234.73	90.00	353.80	10,550.00	3,607.35	614.48	460,471.05	727,012.07	32.264482	-103.732634
14,300.00	90.00	353.80	10,550.00	3,672.24	607.44	460,535.93	727,005.02	32.264660	-103.732656
14,400.00	90.00	353.80	10,550.00	3,771.65	596.64	460,635.35	726,994.22	32.264933	-103.732689
14,500.00	90.00	353.80	10,550.00	3,871.07	585.84	460,734.76	726,983.42	32.265207	-103.732722
14,600.00	90.00	353.80	10,550.00	3,970.48	575.04	460,834.18	726,972.62	32.265480	-103.732755
14,700.00	90.00	353.80	10,550.00	4,069.90	564.24	460,933.59	726,961.82	32.265754	-103.732789
14,800.00	90.00	353.80	10,550.00	4,169.31	553.44	461,033.01	726,951.02	32.266027	-103.732822
14,900.00	90.00	353.80	10,550.00	4,268.73	542.64	461,132.42	726,940.22	32.266301	-103.732855
15,000.00	90.00	353.80	10,550.00	4,368.14	531.84	461,231.84	726,929.42	32.266574	-103.732888
15,100.00	90.00	353.80	10,550.00	4,467.56	521.04	461,331.25	726,918.62	32.266847	-103.732921

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3529.70ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3529.70ft
Site:	Sec. 36-T23S-R31E	**North Reference:**	Grid
Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,200.00	90.00	353.80	10,550.00	4,566.97	510.24	461,430.67	726,907.82	32.267121	-103.732954
15,300.00	90.00	353.80	10,550.00	4,666.39	499.44	461,530.08	726,897.02	32.267394	-103.732987
15,400.00	90.00	353.80	10,550.00	4,765.80	488.64	461,629.50	726,886.22	32.267668	-103.733020
15,500.00	90.00	353.80	10,550.00	4,865.22	477.84	461,728.91	726,875.42	32.267941	-103.733054
15,588.00	90.00	353.80	10,550.00	4,952.70	468.33	461,816.40	726,865.92	32.268182	-103.733083
Cross Section @ 15588' MD, 0' FSL, 2084' FWL									
15,600.00	90.00	353.80	10,550.00	4,964.63	467.04	461,828.33	726,864.62	32.268215	-103.733087
15,700.00	90.00	353.80	10,550.00	5,064.05	456.24	461,927.74	726,853.82	32.268488	-103.733120
15,734.73	90.00	353.80	10,550.00	5,098.58	452.49	461,962.27	726,850.07	32.268583	-103.733131
15,800.00	90.00	355.11	10,550.00	5,163.54	446.18	462,027.23	726,843.76	32.268762	-103.733151
15,900.00	90.00	357.11	10,550.00	5,263.30	439.38	462,127.00	726,836.97	32.269036	-103.733171
16,000.00	90.00	359.11	10,550.00	5,363.24	436.08	462,226.94	726,833.66	32.269311	-103.733180
16,100.00	90.00	1.11	10,550.00	5,463.24	436.26	462,326.93	726,833.85	32.269586	-103.733177
16,200.00	90.00	3.11	10,550.00	5,563.16	439.94	462,426.86	726,837.52	32.269860	-103.733164
16,300.00	90.00	5.11	10,550.00	5,662.90	447.09	462,526.60	726,844.68	32.270134	-103.733139
16,319.73	90.00	5.50	10,550.00	5,682.55	448.92	462,546.24	726,846.50	32.270188	-103.733132
16,400.00	90.00	5.50	10,550.00	5,762.45	456.61	462,626.14	726,854.20	32.270408	-103.733106
16,500.00	90.00	5.50	10,550.00	5,861.99	466.20	462,725.68	726,863.78	32.270681	-103.733073
16,600.00	90.00	5.50	10,550.00	5,961.53	475.78	462,825.22	726,873.37	32.270955	-103.733040
16,700.00	90.00	5.50	10,550.00	6,061.07	485.36	462,924.76	726,882.95	32.271228	-103.733008
16,800.00	90.00	5.50	10,550.00	6,160.61	494.95	463,024.30	726,892.53	32.271502	-103.732975
16,900.00	90.00	5.50	10,550.00	6,260.15	504.53	463,123.84	726,902.12	32.271775	-103.732942
17,000.00	90.00	5.50	10,550.00	6,359.69	514.12	463,223.38	726,911.70	32.272049	-103.732909
17,100.00	90.00	5.50	10,550.00	6,459.23	523.70	463,322.92	726,921.29	32.272322	-103.732876
17,200.00	90.00	5.50	10,550.00	6,558.77	533.29	463,422.46	726,930.87	32.272595	-103.732844
17,300.00	90.00	5.50	10,550.00	6,658.30	542.87	463,522.00	726,940.46	32.272869	-103.732811
17,400.00	90.00	5.50	10,550.00	6,757.84	552.46	463,621.54	726,950.04	32.273142	-103.732778
17,500.00	90.00	5.50	10,550.00	6,857.38	562.04	463,721.08	726,959.63	32.273416	-103.732745
17,600.00	90.00	5.50	10,550.00	6,956.92	571.63	463,820.62	726,969.21	32.273689	-103.732712
17,700.00	90.00	5.50	10,550.00	7,056.46	581.21	463,920.15	726,978.80	32.273963	-103.732680
17,800.00	90.00	5.50	10,550.00	7,156.00	590.80	464,019.69	726,988.38	32.274236	-103.732647
17,900.00	90.00	5.50	10,550.00	7,255.54	600.38	464,119.23	726,997.96	32.274510	-103.732614
18,000.00	90.00	5.50	10,550.00	7,355.08	609.96	464,218.77	727,007.55	32.274783	-103.732581
18,100.00	90.00	5.50	10,550.00	7,454.62	619.55	464,318.31	727,017.13	32.275057	-103.732548
18,200.00	90.00	5.50	10,550.00	7,554.16	629.13	464,417.85	727,026.72	32.275330	-103.732515
18,300.00	90.00	5.50	10,550.00	7,653.70	638.72	464,517.39	727,036.30	32.275603	-103.732483
18,319.73	90.00	5.50	10,550.00	7,673.34	640.61	464,537.03	727,038.19	32.275657	-103.732476
18,400.00	90.00	3.89	10,550.00	7,753.34	647.18	464,617.03	727,044.77	32.275877	-103.732453
18,500.00	90.00	1.89	10,550.00	7,853.21	652.23	464,716.90	727,049.82	32.276152	-103.732435
18,600.00	90.00	359.89	10,550.00	7,953.19	653.79	464,816.88	727,051.38	32.276426	-103.732428
18,700.00	90.00	357.89	10,550.00	8,053.16	651.86	464,916.85	727,049.45	32.276701	-103.732433
18,760.31	90.00	356.69	10,550.00	8,113.40	649.01	464,977.09	727,046.60	32.276867	-103.732441
18,800.00	90.00	356.69	10,550.00	8,153.03	646.72	465,016.72	727,044.31	32.276976	-103.732448
18,900.00	90.00	356.69	10,550.00	8,252.86	640.95	465,116.55	727,038.53	32.277250	-103.732465
19,000.00	90.00	356.69	10,550.00	8,352.70	635.17	465,216.38	727,032.75	32.277525	-103.732481
19,100.00	90.00	356.69	10,550.00	8,452.53	629.39	465,316.22	727,026.98	32.277799	-103.732498
19,200.00	90.00	356.69	10,550.00	8,552.36	623.62	465,416.05	727,021.20	32.278074	-103.732515
19,300.00	90.00	356.69	10,550.00	8,652.19	617.84	465,515.88	727,015.43	32.278348	-103.732532
19,400.00	90.00	356.69	10,550.00	8,752.03	612.06	465,615.72	727,009.65	32.278623	-103.732549
19,500.00	90.00	356.69	10,550.00	8,851.86	606.29	465,715.55	727,003.87	32.278897	-103.732566
19,600.00	90.00	356.69	10,550.00	8,951.69	600.51	465,815.38	726,998.10	32.279172	-103.732583
19,700.00	90.00	356.69	10,550.00	9,051.53	594.74	465,915.21	726,992.32	32.279446	-103.732600
19,800.00	90.00	356.69	10,550.00	9,151.36	588.96	466,015.05	726,986.54	32.279721	-103.732617
19,900.00	90.00	356.69	10,550.00	9,251.19	583.18	466,114.88	726,980.77	32.279995	-103.732633

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Todd 36_25 State Fed Com 232H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3529.70ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3529.70ft
Site:	Sec. 36-T23S-R31E	**North Reference:**	Grid
Well:	Todd 36_25 State Fed Com 232H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,000.00	90.00	356.69	10,550.00	9,351.03	577.41	466,214.71	726,974.99	32.280270	-103.732650
20,100.00	90.00	356.69	10,550.00	9,450.86	571.63	466,314.55	726,969.22	32.280544	-103.732667
20,200.00	90.00	356.69	10,550.00	9,550.69	565.85	466,414.38	726,963.44	32.280819	-103.732684
20,300.00	90.00	356.69	10,550.00	9,650.53	560.08	466,514.21	726,957.66	32.281093	-103.732701
20,400.00	90.00	356.69	10,550.00	9,750.36	554.30	466,614.04	726,951.89	32.281368	-103.732718
20,500.00	90.00	356.69	10,550.00	9,850.19	548.52	466,713.88	726,946.11	32.281642	-103.732735
20,600.00	90.00	356.69	10,550.00	9,950.02	542.75	466,813.71	726,940.33	32.281917	-103.732752
20,700.00	90.00	356.69	10,550.00	10,049.86	536.97	466,913.54	726,934.56	32.282191	-103.732768
20,780.00	90.00	356.69	10,550.00	10,129.72	532.35	466,993.41	726,929.94	32.282411	-103.732782
LTP @ 20780' MD, 100' FNL, 2243' FWL									
20,800.00	90.00	356.69	10,550.00	10,149.69	531.20	467,013.38	726,928.78	32.282466	-103.732785
20,860.66	90.00	356.69	10,550.00	10,210.25	527.69	467,073.93	726,925.28	32.282632	-103.732796
PBHL; 20' FNL, 2240' FWL									
20,860.67	90.00	356.69	10,550.00	10,210.26	527.69	467,073.95	726,925.28	32.282632	-103.732796

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL - Todd 36_25 Stat	0.00	0.00	0.00	10,210.26	527.69	467,073.95	726,925.28	32.282632	-103.732796
- plan misses target center by 10223.89ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
10,019.73	9,977.04	-280.00	625.00	KOP @ 10020' MD, 50' FSL, 2240' FWL
10,264.00	10,213.98	-228.71	625.09	FTP @ 10264' MD, 100' FSL, 2240' FWL
15,588.00	10,550.00	4,952.70	468.33	Cross Section @ 15588' MD, 0' FSL, 2084' FWL
20,780.00	10,550.00	10,129.72	532.35	LTP @ 20780' MD, 100' FNL, 2243' FWL
20,860.66	10,550.00	10,210.25	527.69	PBHL; 20' FNL, 2240' FWL

Devon Energy

WELL DETAILS: Todd 36_25 State Fed Com 232H

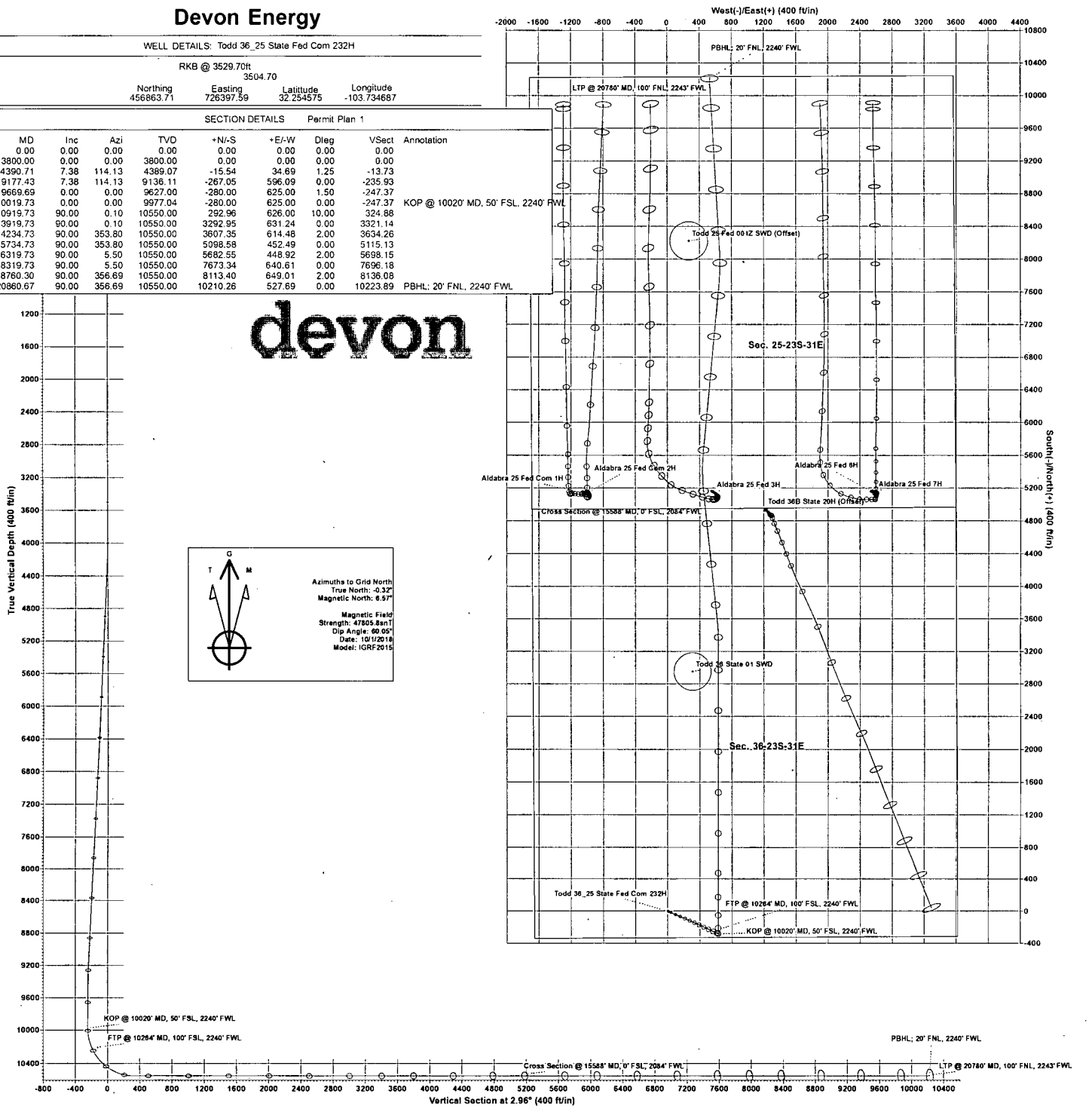
RKB @ 3529.70ft
3504.70

Northing	Easting	Latitude	Longitude
456863.71	726397.59	32.254575	-103.734687

SECTION DETAILS Permit Plan 1

	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Annotation
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	0.00	
	4390.71	7.38	114.13	4389.07	-15.54	34.69	1.25	-13.73	
	9177.43	7.38	114.13	9136.11	-267.05	596.09	0.00	-235.93	
5	9669.69	0.00	0.00	9627.00	-280.00	625.00	1.50	-247.37	
6	10019.73	0.00	0.00	9977.04	-280.00	625.00	0.00	-247.37	KOP @ 10020' MD, 50' FSL, 2240' FWL
7	10919.73	90.00	0.10	10550.00	292.96	626.00	10.00	324.88	
8	13919.73	90.00	0.10	10550.00	3292.95	631.24	0.00	3321.14	
9	14234.73	90.00	353.80	10550.00	3607.35	614.48	2.00	3634.26	
10	15734.73	90.00	353.80	10550.00	5098.58	452.49	0.00	5115.13	
11	16319.73	90.00	5.50	10550.00	5682.55	448.92	2.00	5698.15	
12	18319.73	90.00	5.50	10550.00	7673.34	640.61	0.00	7696.18	
13	18760.30	90.00	356.69	10550.00	8113.40	649.01	2.00	8136.08	
14	20860.67	90.00	356.69	10550.00	10210.26	527.69	0.00	10223.89	PBHL; 20' FNL, 2240' FWL

devon



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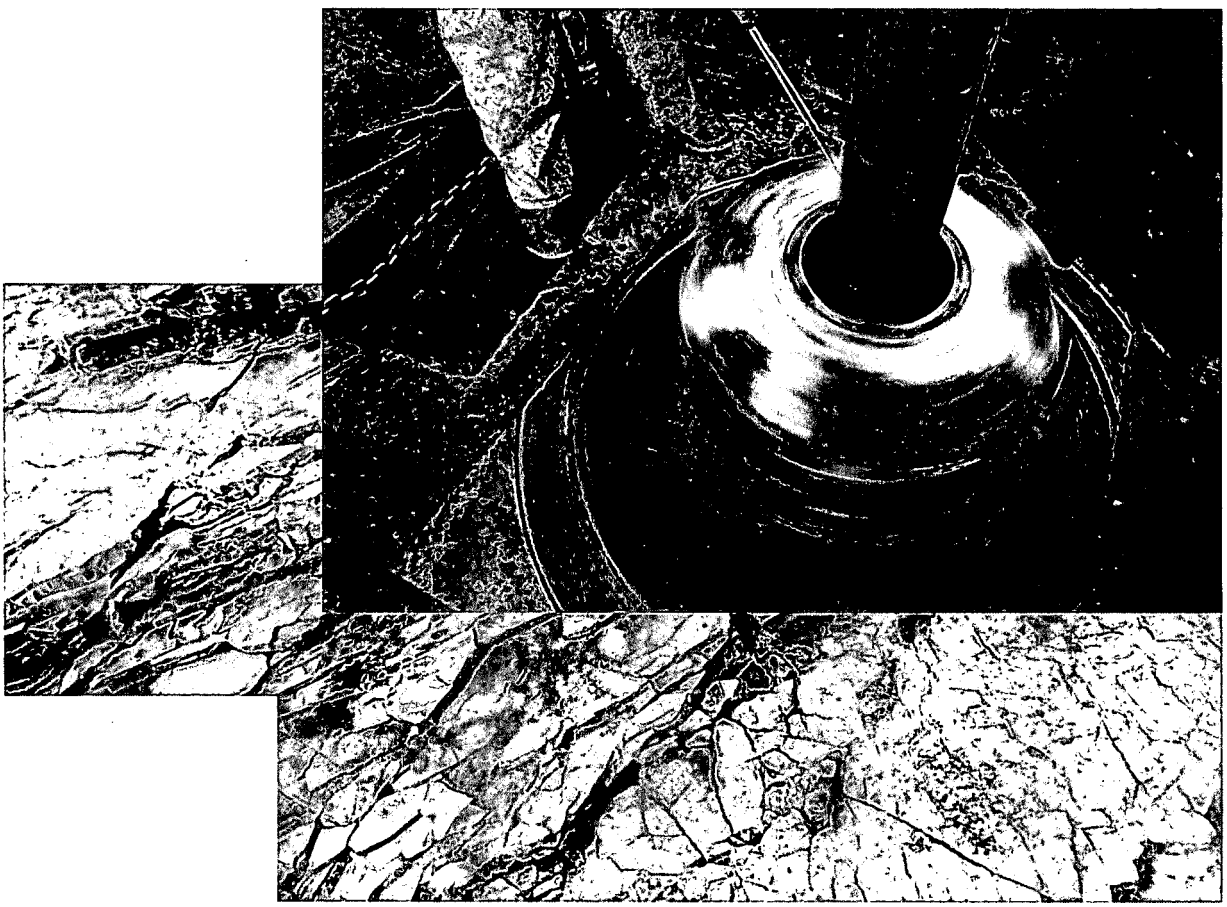
Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

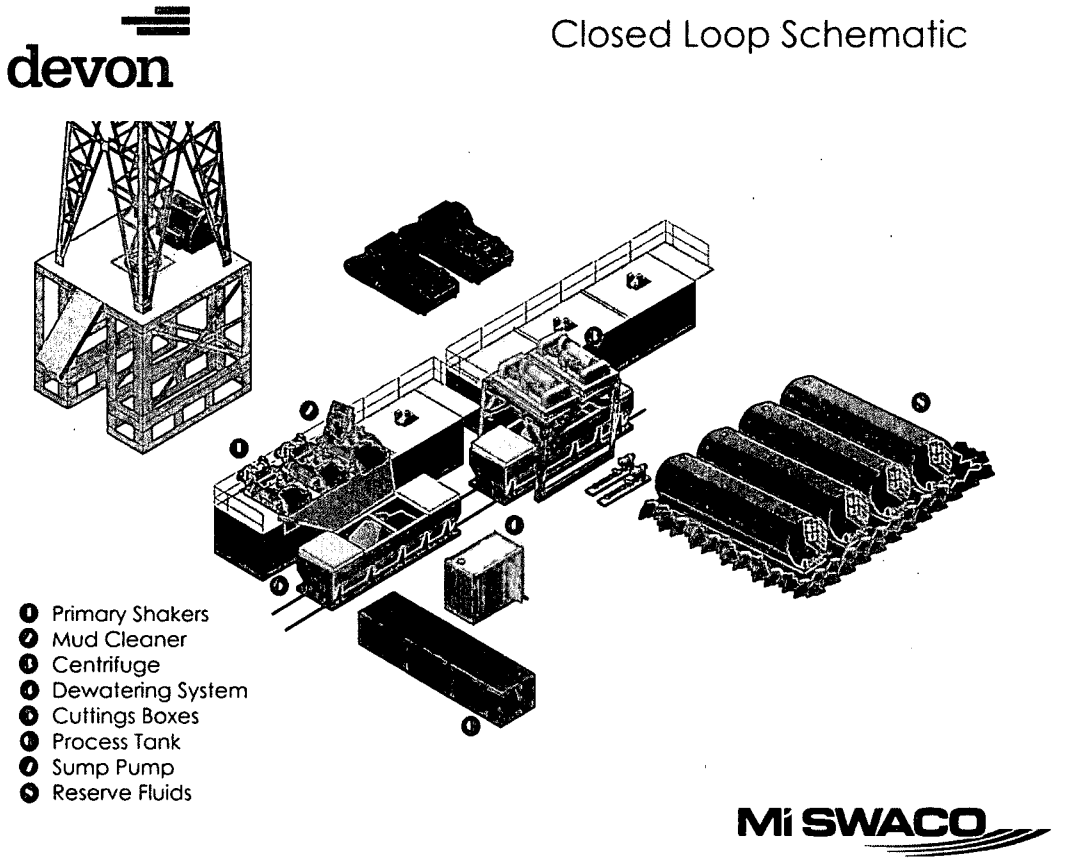
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

Devon Energy, Todd 36-25 State Fed Com 232H

1. Geologic Formations

TVD of target	10550	Pilot hole depth	N/A
MD at TD:	20860	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	811		
Salado	1146		
Base of Salt	4445		
Delaware	4506		
L Brushy Canyon	8056		
Bone Spring	8386		
Leonard 'A'	8486		
Leonard 'B'	8971		
Leonard 'C'	9136		
2nd BSPG Lime	9871		
2nd BSPG Sand	10036		
L 2nd BSPG Sand	10536		
Landing Point	10550		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (PPF)	Grade	Conn.
	From	To				
17.5"	0	836	13.375"	48	H-40	STC
12.25"	0	6000	9.625"	40	J-55	BTC
8.75"	0	TD	5.5"	17	P-110	BTC
BLM Minimum Safety Factor				Collapse: 1.125	Burst: 1.00	Tension: 1.6 Dry 1.8 Wet

- All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h Must have table for contingency casing
- Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
- Variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing. No losses are expected in subsequent hole section.
- Int casing shoe will be selected based on drilling data, gamma, and flows experienced while drilling. Setting depth with be revised accordingly if needed.
- A variance is requested to wave the centralizer requirement for the intermediate and production casing strings if drilling conditions dictate

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

3. Cementing Program (3-String Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	873	Surf	13.2	1.33	Lead: Class C Cement + additives
Int	1095	Surf	9	1.94	Lead: Class C Cement + additives
	196	500' above shoe	13.2	1.33	Tail: Class H / C + additives
Int 1 Two Stage (optional) w/ DV @ ~4500	560	Surf	9	1.94	Stage 1 Lead: Class C Cement + additives
	196	500' above shoe	13.2	1.33	Stage 1 Tail: Class H / C + additives
	570	Surf	9	1.94	Stage 2 Lead: Class C Cement + additives
	196	500' above DV	13.2	1.33	Stage 2 Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.33	Squeeze Lead: Class C Cement + additives
	1095	Surf	9	1.94	Lead: Class C Cement + additives
	196	500' above shoe	13.2	1.33	Tail: Class H / C + additives
Production	353	500' tieback	9	3.569	Lead: Class H / C + additives
	1887	KOP	13.2	1.46	Tail: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	% Excess
Surface	100%
Intermediate	50%
Production	10%

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram		5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram		5M
			Pipe Ram		
			Double Ram	X	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

5. Mud Program

Interval	Type	Weight (ppg)	Vis	Water Loss
Surface	FW	8.5 – 9.0	28-34	N/C
Intermediate	Brine	10 – 10.5	28-34	N/C
Production	WBM	8.5 – 9.0	28-34	N/C

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

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

6. Logging and Testing Procedures

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

Additional logs planned		Interval
	Resistivity	
	Density	
X	CBL	Production casing
X	Mud log	KOP to TD

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4937 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

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

8. Other facets of operation

Is this a walking operation? Potentially

1. If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2. The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3. The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

1. Spudder rig will move in and drill surface hole.
    a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
4. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5. Spudder rig operations is expected to take 4-5 days per well on a multi well pad.
6. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nippled up and tested on the wellhead before drilling operations commences on each well.
    a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

_x_ Directional Plan

___ Other, describe

A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.

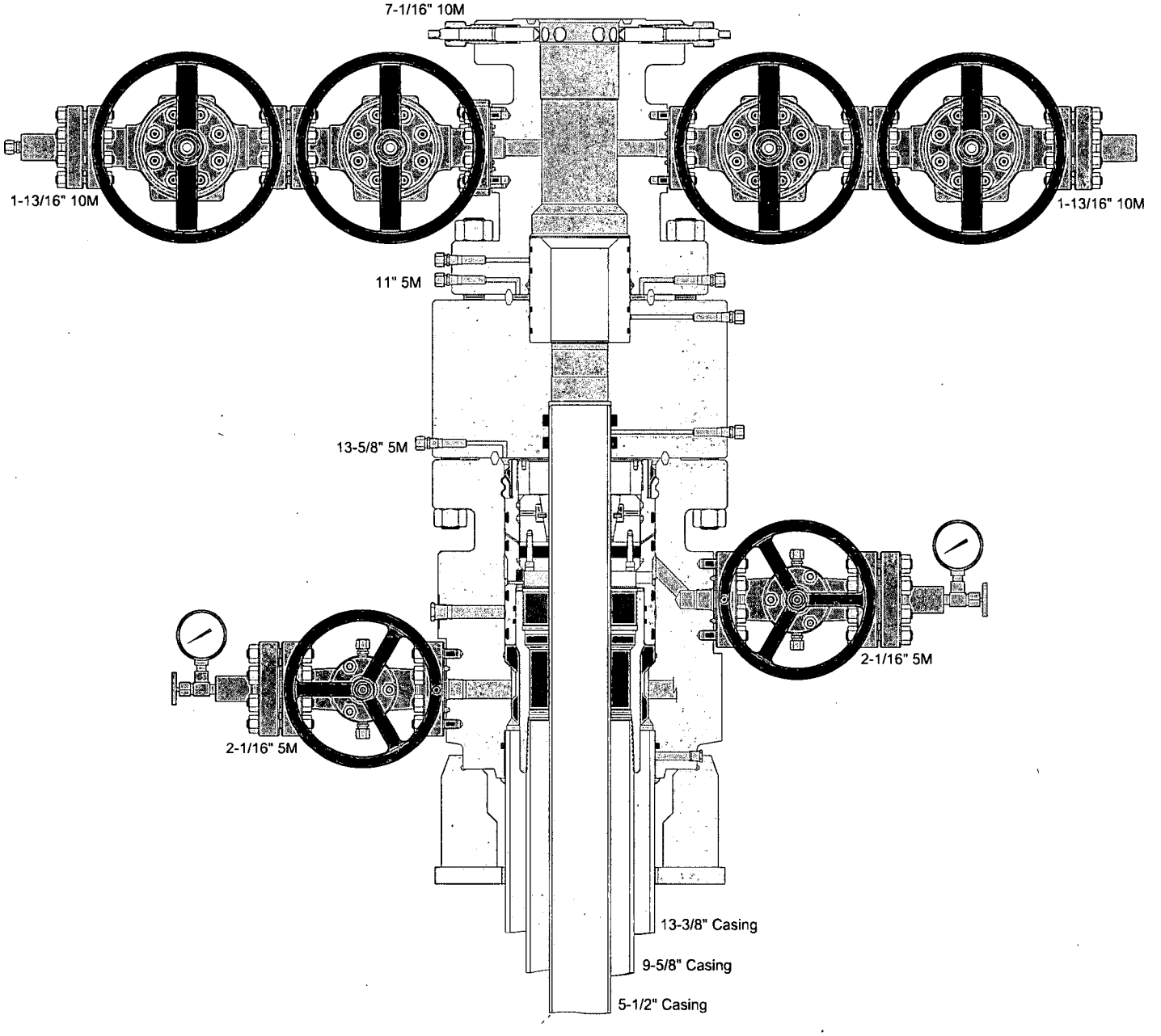
- Wellhead will be installed by wellhead representatives.
- If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- Wellhead representative will install the test plug for the initial BOP test.
- Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 5M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time.
- If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted.
- Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.
- Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.

After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 5M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 5,000 psi high pressure test. The 5,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.

After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 5M will already be installed on the wellhead.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 5,000 psi WP.

Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron.


7-1/16" 10M
1-13/16" 10M
1-13/16" 10M
11" 5M
13-5/8" 5M
2-1/16" 5M
2-1/16" 5M
13-3/8" Casing
9-5/8" Casing
5-1/2" Casing

Continental CONTITECH

Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly It is good practice to use lifting & safety equipment but not mandatory

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
11535 Brittmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com

RIG 212

PHOENIX

QUALITY DOCUMENT

PHOENIX RUBBER INDUSTRIAL LTD.

6728 Szeged, Budapesti út 10. Hungary • H–6701 Szeged, P. O. Box 152
Phone: (3662) 556-737 • Fax: (3662) 568-738

SALES & MARKETING: H–1092 Budapest, Ráday u. 42-44. Hungary • H–1440 Budapest, P. O. Box 26
Phone: (361) 456-4200 • Fax: (361) 217-2972, 456-4273 • www.taurusemerge.hu

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 552	
PURCHASER: Phoenix Beattie Co.				P.O. N°: 1519FA-871	
PHOENIX RUBBER order N°: 170466		HOSE TYPE: 3" ID		Choke and Kill Hose	
HOSE SERIAL N°: 34128		NOMINAL / ACTUAL LENGTH:		11,43 m	
W.P. 68,96 MPa	10000 psi	T.P. 103,4 MPa	15000 psi	Duration: 60	min.

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.

→ 10 mm = 25 MPa

COUPLINGS

Type	Serial N°	Quality	Heat N°
3" coupling with	720 719	AISI 4130	C7626
4 1/16" Flange end		AISI 4130	47357

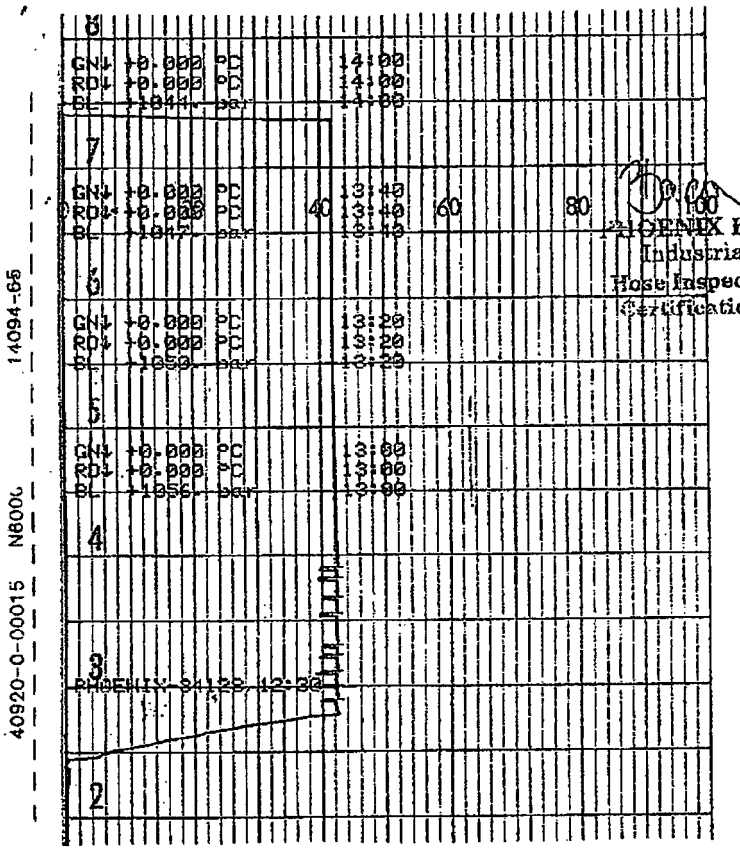
API Spec 16 C
Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

Date:	Inspector	Quality Control
29. April. 2002.		PHOENIX RUBBER Industrial Ltd. Hose Inspection and Certification Dept.

CERTIFIED TRUE COPY
PHOENIX RUBBER c.c.



PHOENIX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE CO.
PHOENIX RUBBER LTD.

APD ID: 10400035677 **Submission Date:** 10/29/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

TODD_36_25_STATE_FED_COM_232H_EXISTING_RD_20181029075132.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:

TODD_36_25_STATE_FED_COM_232H_ACCESS_RD_20181029080639.pdf

New road type: COLLECTOR,RESOURCE

Length: 200 Feet **Width (ft.):** 30

Max slope (%): 6 **Max grade (%):** 4

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 20

New road access erosion control: n/a

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: BOTH

Access surfacing type description:

Access onsite topsoil source depth: 6

Offsite topsoil source description: n/a

Onsite topsoil removal process: See attached Interim reclamation diagram.

Access other construction information:

Access miscellaneous information:

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

Drainage Control

New road drainage crossing: CULVERT

Drainage Control comments: n/a

Road Drainage Control Structures (DCS) description: n/a

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:

TODD_36_25_STATE_FED_COM_232H_OneMileBuffer_WA017432160_20181029080737.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:

Production Facilities map:

AA000145925_TODD_36_CTB_2_P_20181029080831.PDF

Section 5 - Location and Types of Water Supply

Water Source Table

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

Water source use type: OTHER **Water source type:** OTHER

Describe type: STIMULATION

Source latitude: **Source longitude:**

Source datum:

Water source permit type: OTHER

Source land ownership: FEDERAL

Water source transport method: PIPELINE

Source transportation land ownership: STATE

Water source volume (barrels): 230000 **Source volume (acre-feet):** 29.645412

Source volume (gal): 9660000

Water source and transportation map:

TODD_36_25_STATE_FED_COM_230H_232H__231H_waterxmap_20181029080908.pdf

Water source comments: The attached Water Transfer Map is a proposal only and the final route and documentation will be provided by a Devon contractor prior to installation. When available Devon will always follow existing disturbance.
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:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Dirt fill and caliche will be used to construct well pad. See attached map revised with STR. 4/1/2019
Construction Materials source location attachment:

Todd_36_Wellpad_2_Caliche_Map_REVISED_3_18_2019_20190319074649.pdf

Section 7 - Methods for Handling Waste

Waste type: COMPLETIONS/STIMULATION

Waste content description: Flow back water during completion operations.

Amount of waste: 3000 barrels

Waste disposal frequency : One Time Only

Safe containment description: n/a

Safe containmant attachment:

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

Disposal location description: Various disposal locations in Lea and Eddy counties.

Waste type: PRODUCED WATER

Waste content description: n/a

Amount of waste: 1000 barrels

Waste disposal frequency : Daily

Safe containment description: n/a

Safe containmant attachment:

Waste disposal type: ON-LEASE INJECTION **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Multiple methods for handling waste will be utilized. Via trucking, Dvn owned disposal system and or third party pipeline take away.

Waste type: FLOWBACK

Waste content description: n/a

Amount of waste: 1500 barrels

Waste disposal frequency : Daily

Safe containment description: n/a

Safe containmant attachment:

Waste disposal type: ON-LEASE INJECTION **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Various disposal locations in Lea and Eddy counties.

Waste type: DRILLING

Waste content description: Water Based Cuttings

Amount of waste: 2005 barrels

Waste disposal frequency : Daily

Safe containment description: n/a

Safe containmant attachment:

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

Disposal type description:

Disposal location description: All cuttings will disposed of at R360, Sundance, or equivalent.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

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

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

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

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:

rig_lay_out_20181029081452.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: TODD 36 WELLPAD

Multiple Well Pad Number: 2

Recontouring attachment:

Drainage/Erosion control construction: All areas disturbed shall be reclaimed as early and as nearly as practicable to their original condition or their final land use and shall be maintained to control dust and minimize erosion to the extent practicable.
Drainage/Erosion control reclamation: Topsoils and subsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns. The disturbed area then shall be reseeded in the first favorable growing season.

Well pad proposed disturbance (acres): 3.76
Road proposed disturbance (acres): 0.199
Powerline proposed disturbance (acres): 0.398
Pipeline proposed disturbance (acres): 1.044
Other proposed disturbance (acres): 5.165
Total proposed disturbance: 10.566

Well pad interim reclamation (acres): 2.228
Road interim reclamation (acres): 0
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 0
Other interim reclamation (acres): 0
Total interim reclamation: 2.228

Well pad long term disturbance (acres): 1.594
Road long term disturbance (acres): 0.199
Powerline long term disturbance (acres): 0.398
Pipeline long term disturbance (acres): 1.044
Other long term disturbance (acres): 5.165
Total long term disturbance: 8.4

Disturbance Comments:

Reconstruction method: Operator will use Best Management Practices"BMP" to mechanically recontour to obtain the desired outcome.
Topsoil redistribution: Topsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.
Soil treatment: Topsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.
Existing Vegetation at the well pad: Shinnery, yucca, grasses and mesquite.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: Shinnery, yucca, grasses and mesquite.

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

Seed Type	Pounds/Acre

Total pounds/Acre:

Seed reclamation attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

Operator Contact/Responsible Official Contact Info

First Name: JACOB **Last Name:** OCHOA

Phone: (575)748-9934 **Email:** JACOB.OCHOA@DVN.COM

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Maintain weeds on an as need basis.

Weed treatment plan attachment:

Monitoring plan description: Monitor as needed.

Monitoring plan attachment:

Success standards: n/a

Pit closure description: n/a

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Section 12 - Other Information

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

ROW Type(s):

ROW Applications

SUPO Additional Information: ELECTRIC FLOWLINES-buried added to plat CTB- revised to show center point of the CTB calls from the section lines 3/26/2019 PAYMENT 1st perf/KOP- revised to match directional survey 4/1/2019
Use a previously conducted onsite? NO

Previous Onsite information:

Other SUPO Attachment

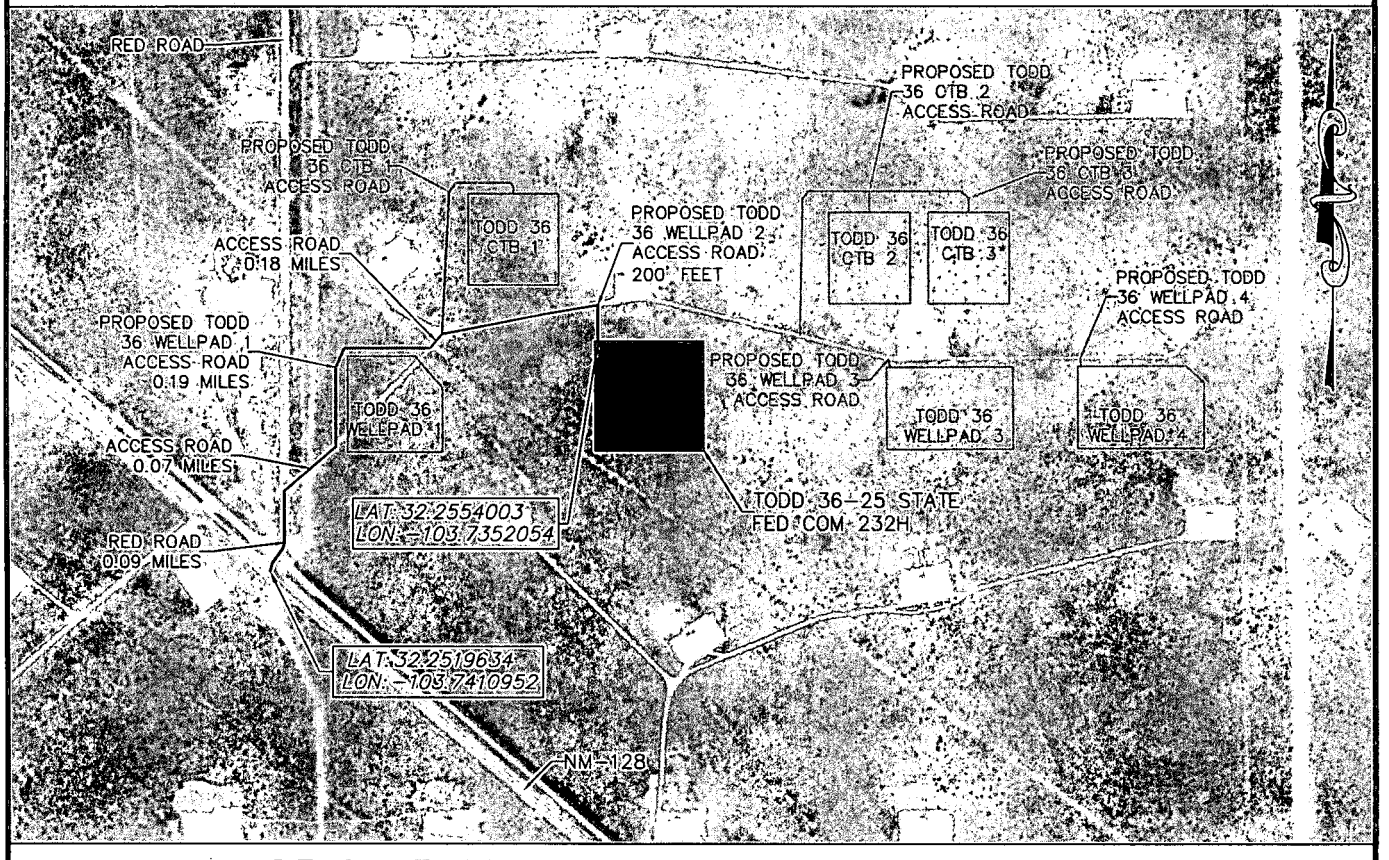
EL8245_TODD_36_CTB_2_EL_P_20181029114314.PDF
EL8248_TODD_36_WP_2_EL_P_20181029114319.PDF
_EXTERNAL__Pay.gov_Payment_Confirmation__BLM_Oil_and_Gas_Online_Payment_20181029114534.pdf
7660143F_TODD_36_WP_2_TO_CTB_2_FL_20190319091212.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TODD 36-25 STATE FED COM **Well Number:** 232H

AA000145925_TODD_36_CTB_2_P_R2_20190326074322.pdf

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



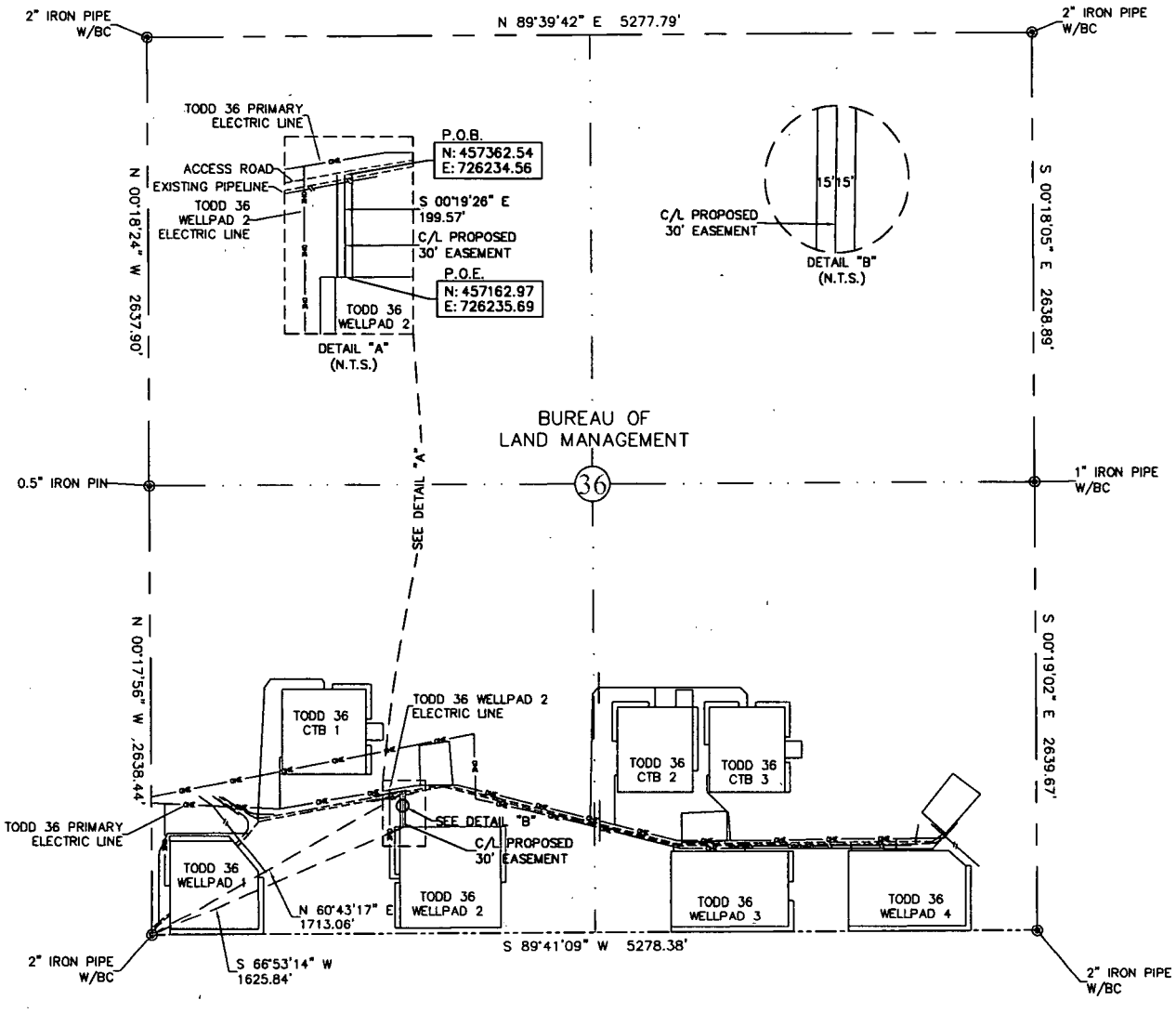
DEVON ENERGY PRODUCTION COMPANY, L.P.
TODD 36-25 STATE FED COM 232H
LOCATED 330 FT. FROM THE SOUTH LINE
AND 1659 FT. FROM THE WEST LINE OF
SECTION 36, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

0 1000 2000

HORIZON ROW LLC	Drawn for: devon
DEVON ENERGY PRODUCTION CO., L.P.	
Drawn by: CHRIS MAAS	Date: 09/22/2018 Rev: Date: 10/08/18

EXHIBIT "A"

ACCESS ROAD PLAT
SECTION 36, T23S–R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



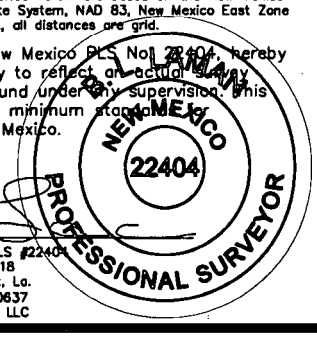
30' EASEMENT AREA = 0.137 ACRE(S)
199.57 FEET OR 12.10 RODS

0+00.0 P.O.B./EXISTING ACCESS ROAD
0+08.0 EDGE OF ROAD
0+13.3 EXISTING FLOW LINE
1+99.6 P.O.E./TODD 36 WELLPAD 2

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision; this survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS #22404
Date Signed: 09-25-2018
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizonrow, LLC

0 1000 2000

HORIZON ROW LLC	DEVON ENERGY PRODUCTION COMPANY, L.P.		LINE NUMBER:
Drawn for: devon	TODD 36 WELLPAD 2 ACCESS ROAD		WBS NUMBER:
			SCALE: 1" = 1000'
	PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 36, T23S–R31E, N.M.P.M.		REVISIONS:
Drawn by: CHRIS MAAS	Date: 07/06/2018		SHEET:

SECTION 36, T23S-R31E, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

ACCESS ROAD PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

BEING an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) of Section 36, Township 23 South, Range 31 East, N.M.P.M., Eddy County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 36, T23S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 60°43'17" E a distance of 1713.06' to the **Point of Beginning** of this easement having coordinates of Northing=457362.54, Easting=726234.56 feet and continuing the following course;

Thence S 00°19'26" E a distance of 199.57' to the **Point of Ending** having coordinates of Northing=457162.97, Easting=726235.69 feet from said point a 2" iron pipe w/BC for the southwest corner of Section 36, T23S-R31E bears S 66°53'14" W a distance of 1625.84', covering **199.57' or 12.10 rods** and having an area of **0.137 acres**.

NOTES:

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS 22404
Date Signed: 09/25/2018
Horizon Row, LLC
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizon Row, LLC

PLAT

One Mile Radius Map

TODD 36-25 STATE FED COM 232H
WA017432160

devon

This map is for illustrative purposes only and is neither a legally recorded map nor a survey and is not intended to be used as one. Devon makes no warranty,representation, or guarantee of any kind regarding this map.

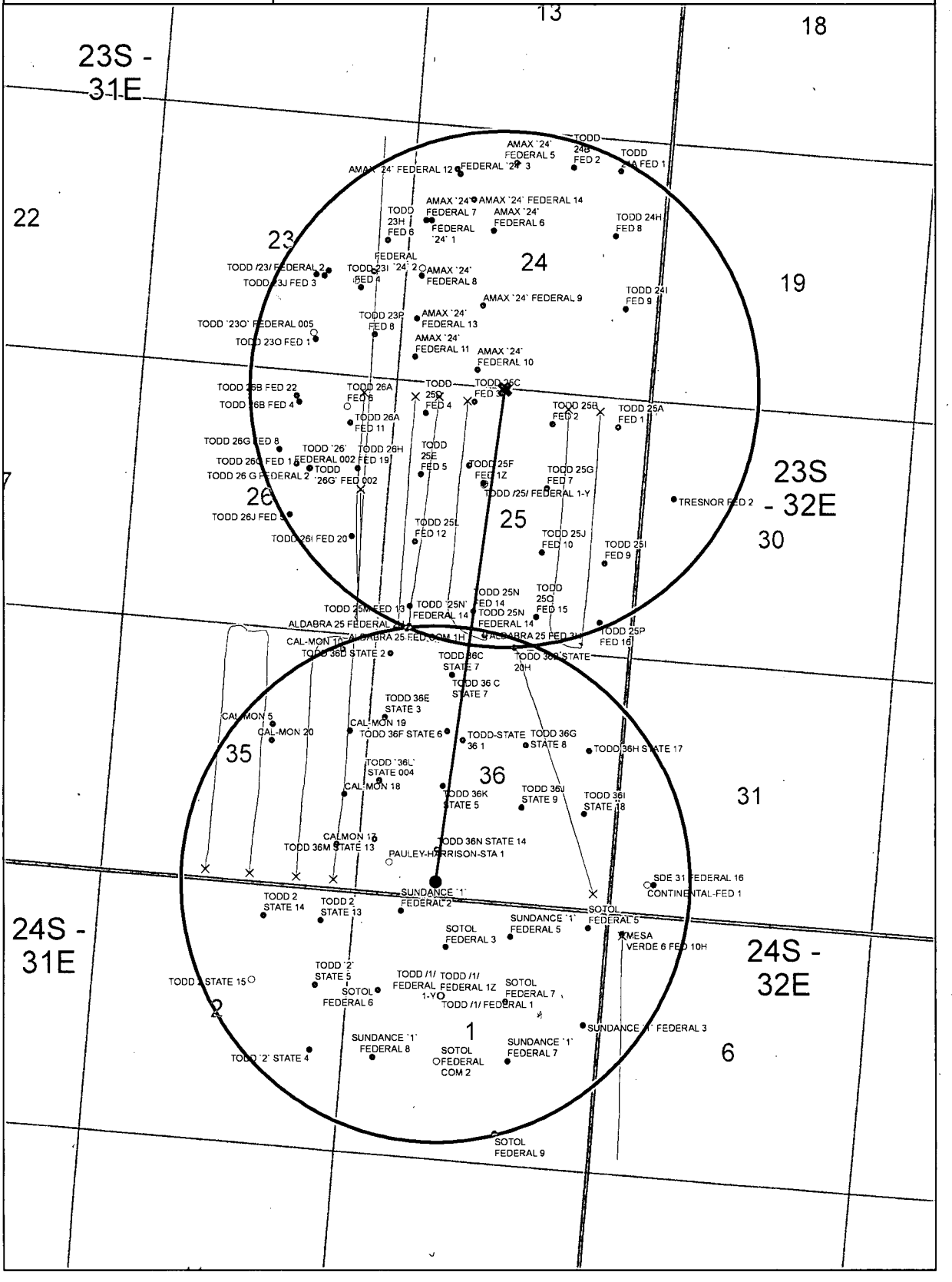
USA Contiguous Equidistant Conic
Datum: North American 1983
Created by: FME Server
Map is current as of 10/24/2018

Miles
0 0.3
1 inch = 0.44 miles

CAL-MON MDP1 `35` FEDERAL 006H
Nearest wellbore to SHL: 2119 ft.

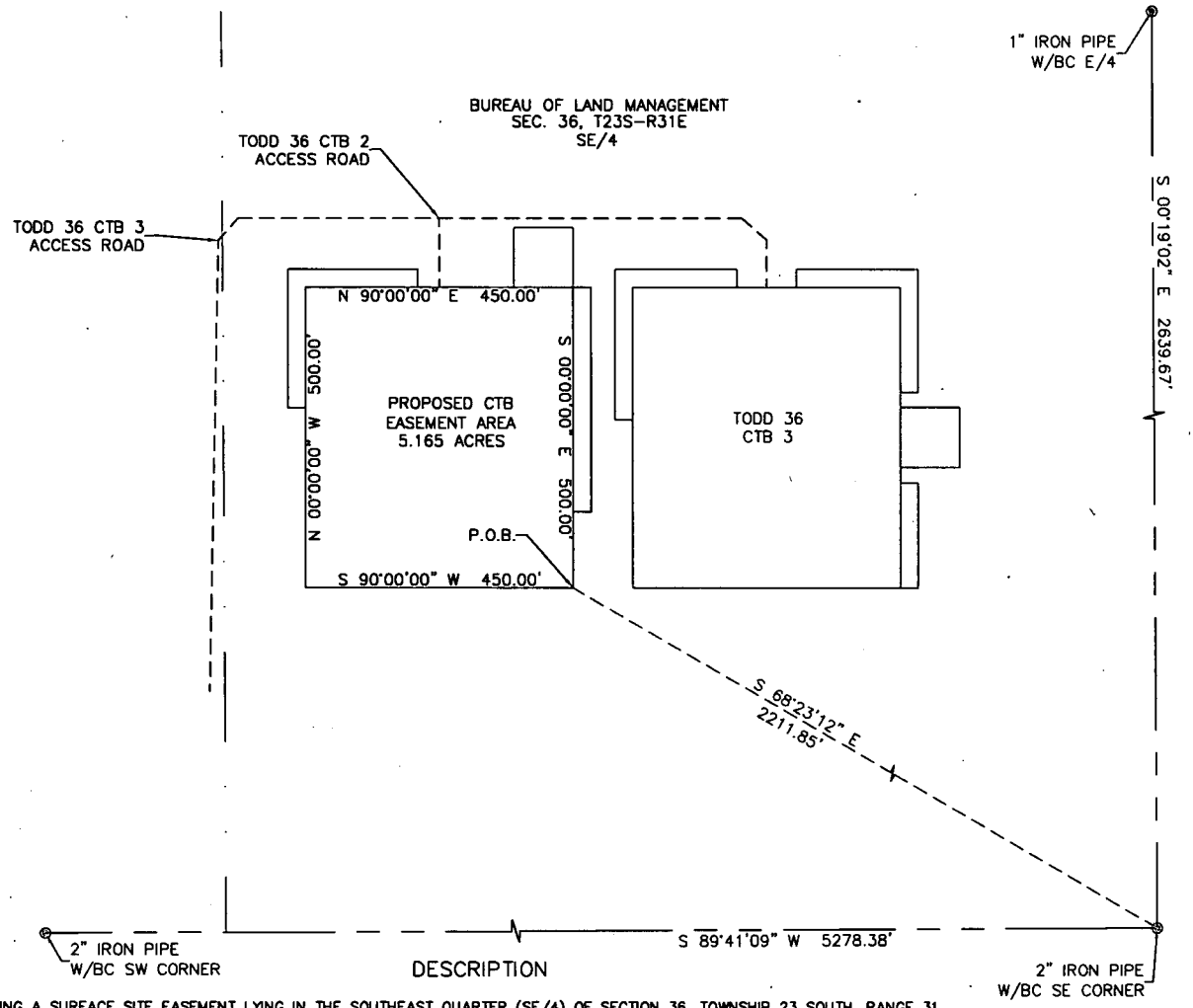
ALDABRA 25 FED 3H
Nearest wellbore to BHL: 803 ft.

- ○ Unknown SHL
- • Active SHL
- ○ Inactive SHL
- × BHL



TODD 36 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN THE SOUTHEAST QUARTER (SE/4)
SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, NEW MEXICO
SHEET 1 OF 6



DESCRIPTION

BEING A SURFACE SITE EASEMENT LYING IN THE SOUTHEAST QUARTER (SE/4) OF SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST N.M.P.M., EDDY COUNTY, NEW MEXICO.

BEGINNING AT THE SOUTHEAST CORNER OF SAID SITE EASEMENT, WHERE A 2" IRON PIPE W/BC FOR THE SOUTHEAST CORNER OF SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST N.M.P.M. BEARS S 68°23'12" E, A DISTANCE 2211.85';

THENCE S 90°00'00" W, A DISTANCE 450.00 FEET TO THE SOUTHWEST CORNER OF THIS EASEMENT;
THENCE N 00°00'00" W, A DISTANCE 500.00 FEET TO THE NORTHWEST CORNER OF THIS EASEMENT;
THENCE N 90°00'00" E, A DISTANCE 450.00 FEET TO THE NORTHEAST CORNER OF THIS EASEMENT;
THENCE S 00°00'00" E, A DISTANCE 500.00 FEET TO THE SOUTHEAST CORNER OF THIS EASEMENT,
TO THE POINT OF BEGINNING; CONTAINING 5.165 ACRES.

GENERAL NOTES:

1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A CENTRAL BATTERY.

2.) All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS/No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman
PLS #22404
Horizonrow, LLC
Date Signed: 09-09-2018
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizonrow, LLC

B. L. LAMAN
NEW MEXICO
22404
PROFESSIONAL SURVEYOR

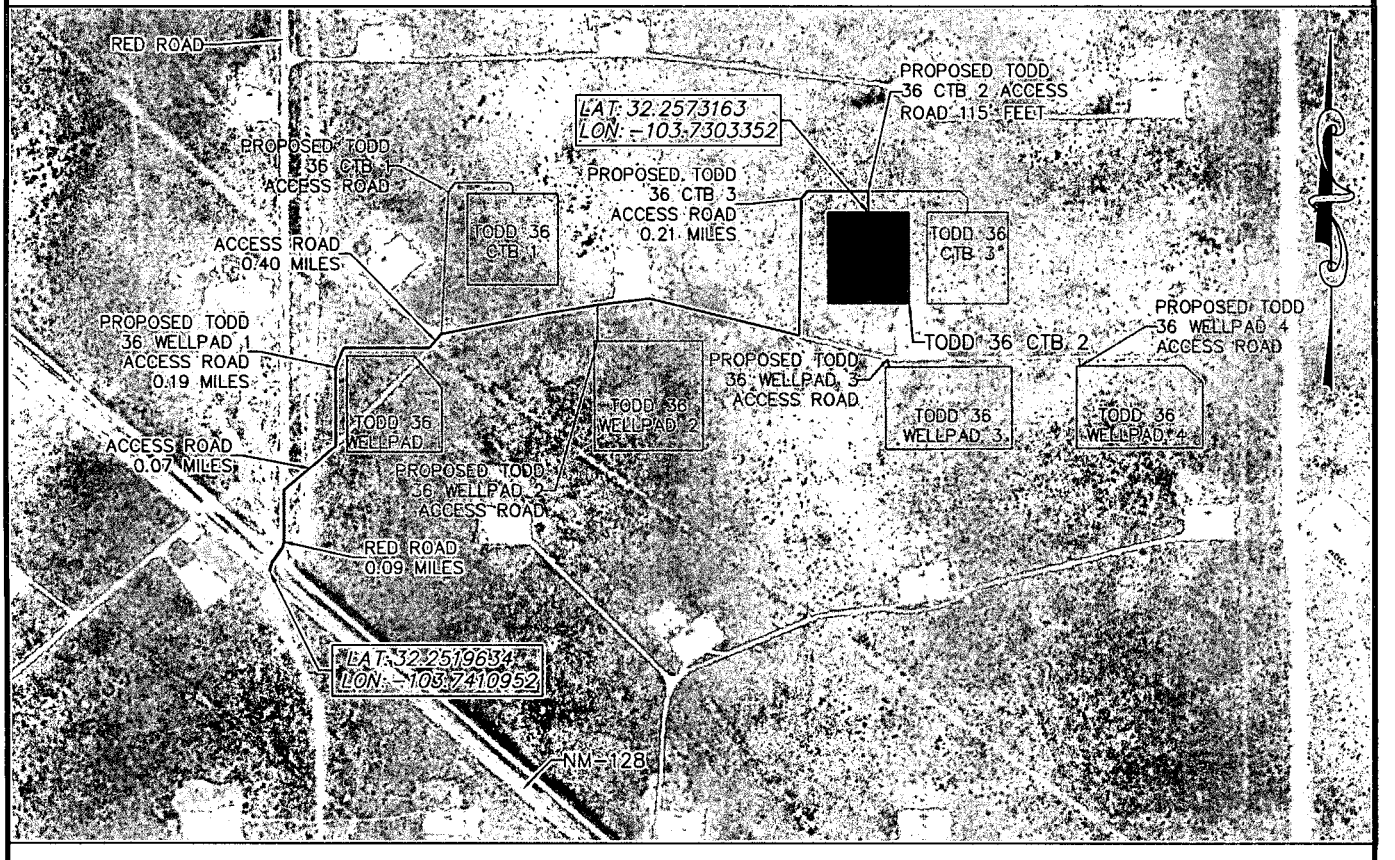
DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF NM-128 AND RED ROAD HEAD NORTH ON RED ROAD FOR 0.09 MILES. TURN RIGHT ONTO AN ACCESS ROAD AND HEAD NORTHEAST FOR 0.07 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 WELLPAD 1 ACCESS ROAD. LEAVE THE EXISTING ACCESS ROAD AND HEAD NORTH AND EAST ON THE PROPOSED TODD 36 WELLPAD 1 ACCESS ROAD FOR 0.19 MILES TO THE SAME EXISTING ACCESS ROAD AND THEN HEAD EAST FOR 0.40 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 CTB 3 ACCESS ROAD. HEAD NORTH AND EAST ALONG THE PROPOSED TODD 36 CTB 3 ACCESS ROAD FOR 0.21 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 CTB 2 ACCESS ROAD. TURN RIGHT AND HEAD SOUTH 115' TO THE NORTH CENTER POINT OF THE TODD 36 CTB 2.

0 300 600

HORIZON ROW LLC Drawn for: devon	DEVON ENERGY PRODUCTION COMPANY, L.P. TODD 36 CTB 2		SITE NUMBER: AA0001459.25
			WBS NUMBER:
	SURVEY PLAT SHOWING A CTB ON THE PROPERTY OF THE BUREAU OF LAND MANAGEMENT		SCALE: 1" = 300'
			REVISIONS:
Drawn by: CHRIS MAAS	Date: 07/06/2018		DATE OF SURVEY: 6/22/18

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



DIRECTIONS TO LOCATION

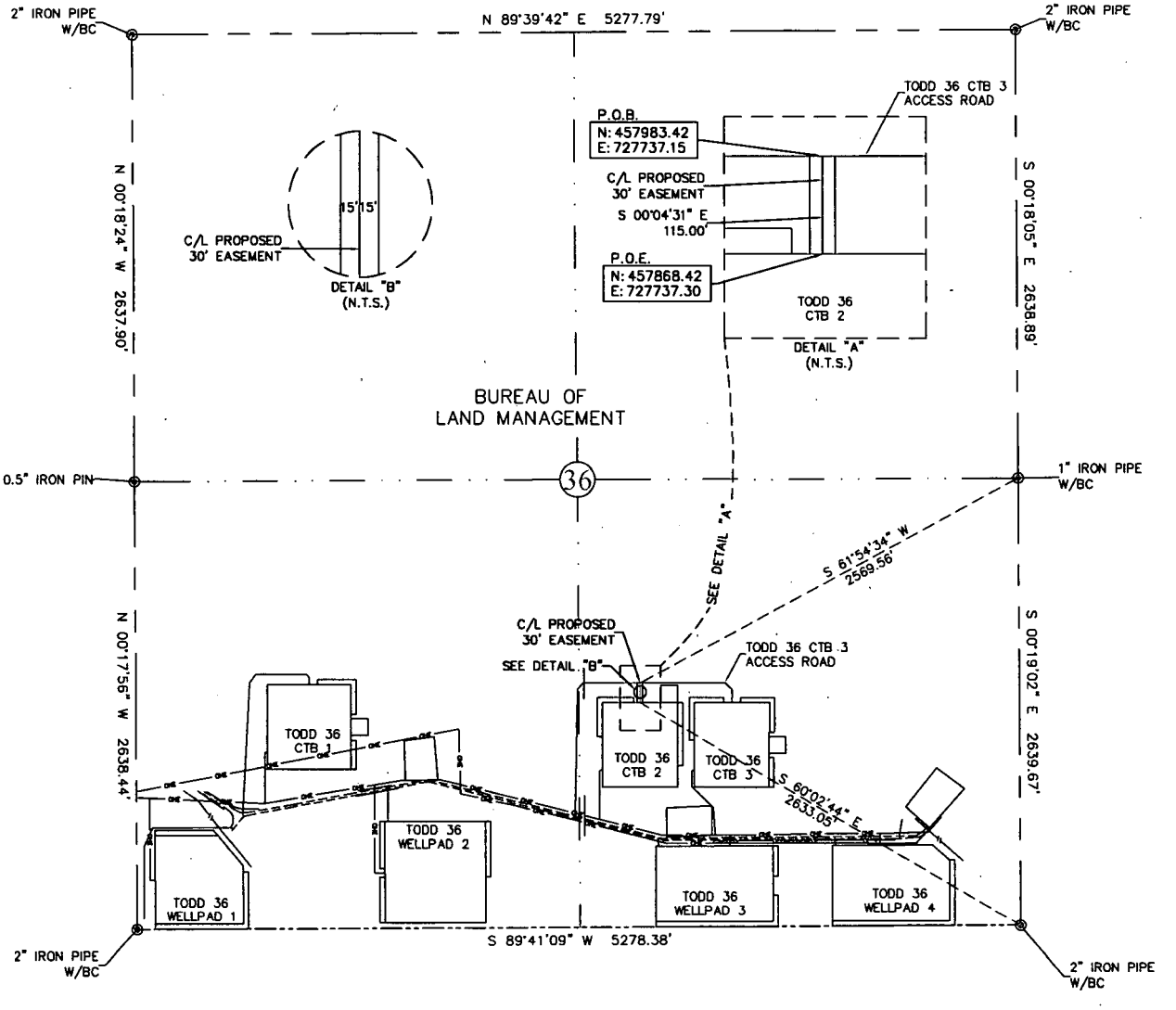
FROM THE INTERSECTION OF NM-128 AND RED ROAD HEAD NORTH ON RED ROAD FOR 0.09 MILES. TURN RIGHT ONTO AN ACCESS ROAD AND HEAD NORTHEAST FOR 0.07 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 WELLPAD 1 ACCESS ROAD. LEAVE THE EXISTING ACCESS ROAD AND HEAD NORTH AND EAST ON THE PROPOSED TODD 36 WELLPAD 1 ACCESS ROAD FOR 0.19 MILES TO THE SAME EXISTING ACCESS ROAD AND THEN HEAD EAST FOR 0.40 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 CTB 3 ACCESS ROAD. HEAD NORTH AND EAST ALONG THE PROPOSED TODD 36 CTB 3 ACCESS ROAD FOR 0.21 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 CTB 2 ACCESS ROAD. TURN RIGHT AND HEAD SOUTH 115' TO THE NORTH CENTER POINT OF THE TODD 36 CTB 2.

0 1000 2000

HORIZON ROW LLC	Drawn for:
DEVON ENERGY PRODUCTION CO., L.P.	devon
Drawn by: CHRIS MAAS	Date: 07/06/2018

EXHIBIT "A"
PAGE 3 of 6

ACCESS ROAD PLAT
SECTION 36, T23S–R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



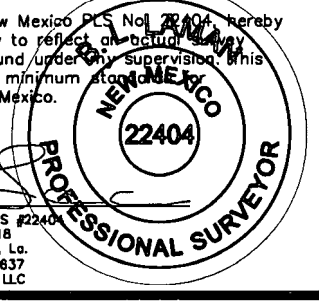
30' EASEMENT AREA = 0.079 ACRE(S)
115.00 FEET OR 6.97 RODS

0+00.0 P.O.B./EXISTING ACCESS ROAD
1+15.0 P.O.E./TODD 36 CTB 2

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision; this survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS #22404
Date Signed: 09-09-2018
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizonrow, LLC

0 1000 2000

HORIZON ROW LLC	DEVON ENERGY PRODUCTION COMPANY, L.P.		LINE NUMBER:
Drawn for: devon	TODD 36 CTB 2 ACCESS ROAD		WBS NUMBER:
			SCALE: 1" = 1000'
	PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 36, T23S–R31E, N.M.P.M.		REVISIONS:
Drawn by: CHRIS MAAS	Date: 07/06/2018		SHEET: 3 OF 6

SECTION 36, T23S-R31E, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

ACCESS ROAD PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

BEING an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southeast quarter (SE ¼) of Section 36, Township 23 South, Range 31 East, N.M.P.M., Eddy County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the east quarter corner of Section 36, T23S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence S 61°54'34" W a distance of 2569.56' to the **Point of Beginning** of this easement having coordinates of Northing=457983.42, Easting=727737.15 feet and continuing the following course;

Thence S 00°04'31" E a distance of 115.00' to the **Point of Ending** having coordinates of Northing=457868.42, Easting=727737.30 feet from said point a 2" iron pipe w/BC for the southeast corner of Section 36, T23S-R31E bears S 60°02'44" E a distance of 2633.05', covering **115.00' or 6.97 rods** and having an area of **0.079 acres**.

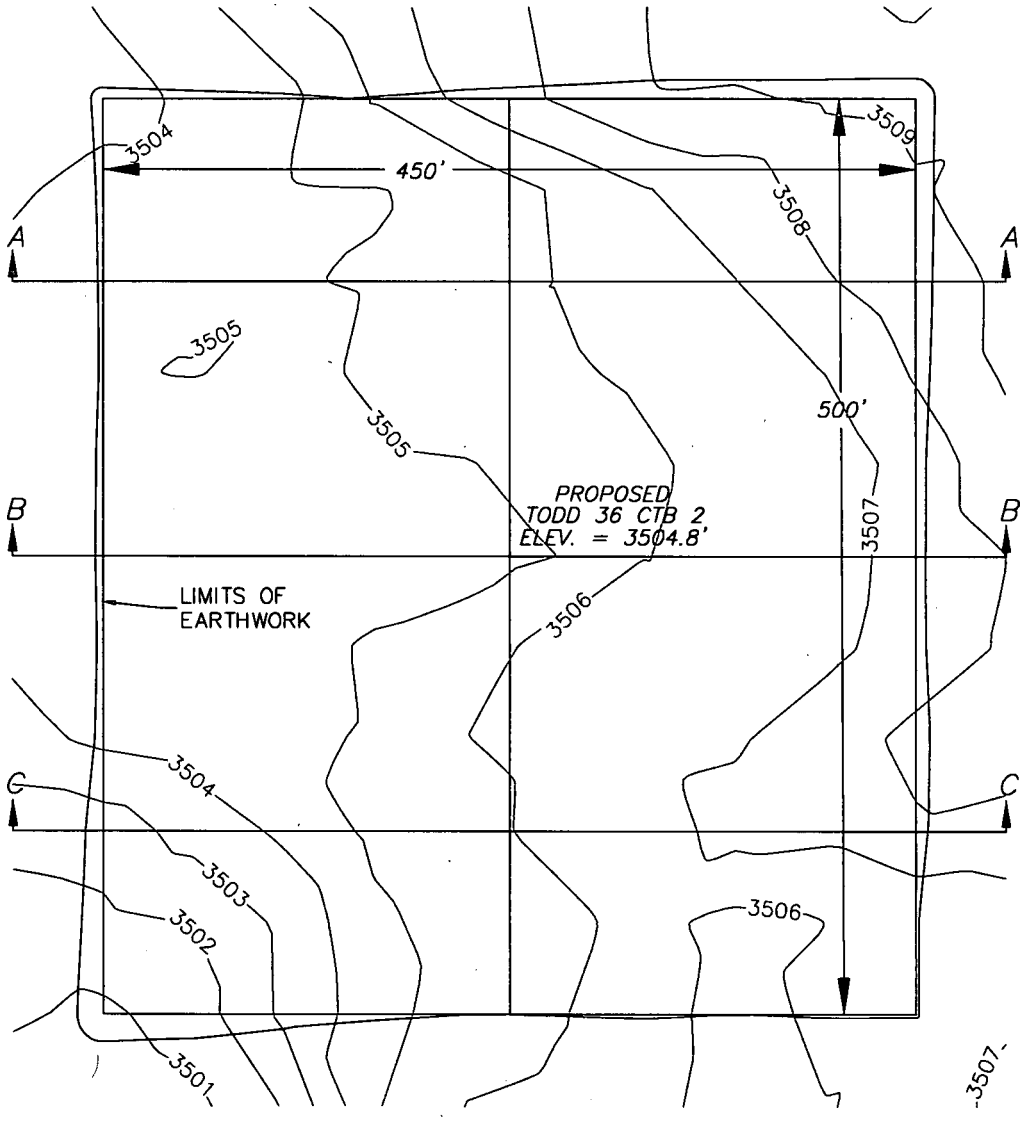
NOTES:

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS 22404
Date Signed: 09/09/2018
Horizon Row, LLC
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizon Row, LLC

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
PLAN VIEW



0 100 200

SHEET 5 OF 6

EARTHWORK QUANTITIES FOR
TODD 36 CTB 2

CUT	FILL	NET
4,836 CY	4,836 CY	0 CY

EARTHWORK QUANTITIES ARE ESTIMATED

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

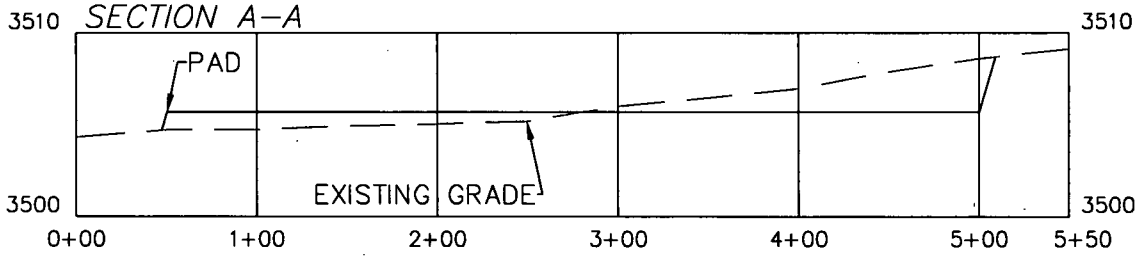
Drawn by: CHRIS MAAS

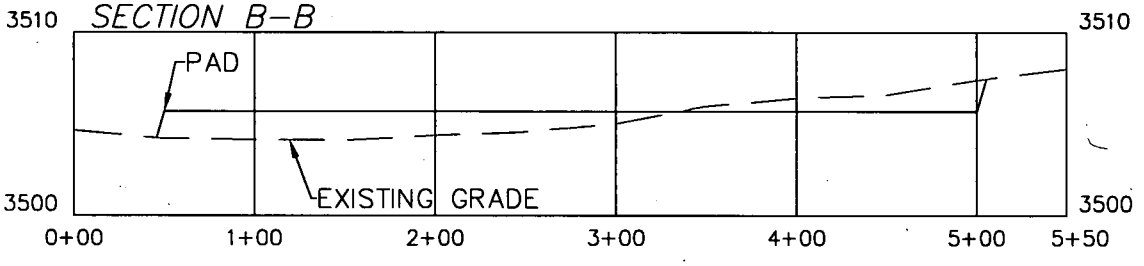
Date: 07/06/2018

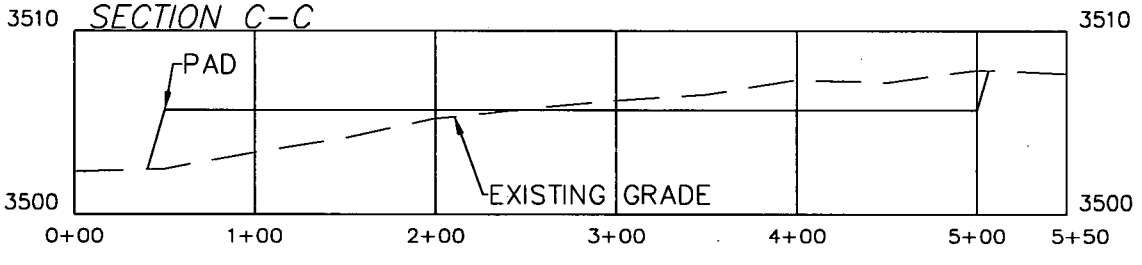
Drawn for:

devon

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
CROSS SECTIONS







SCALE 1" = 100' HORIZONTAL
SCALE 1" = 10' VERTICAL

SHEET 6 OF 6

EARTHWORK QUANTITIES FOR
TODD 36 CTB 2

CUT	FILL	NET
4,836 CY	4,836 CY	0 CY

EARTHWORK QUANTITIES ARE ESTIMATED

HORIZON ROW LLC

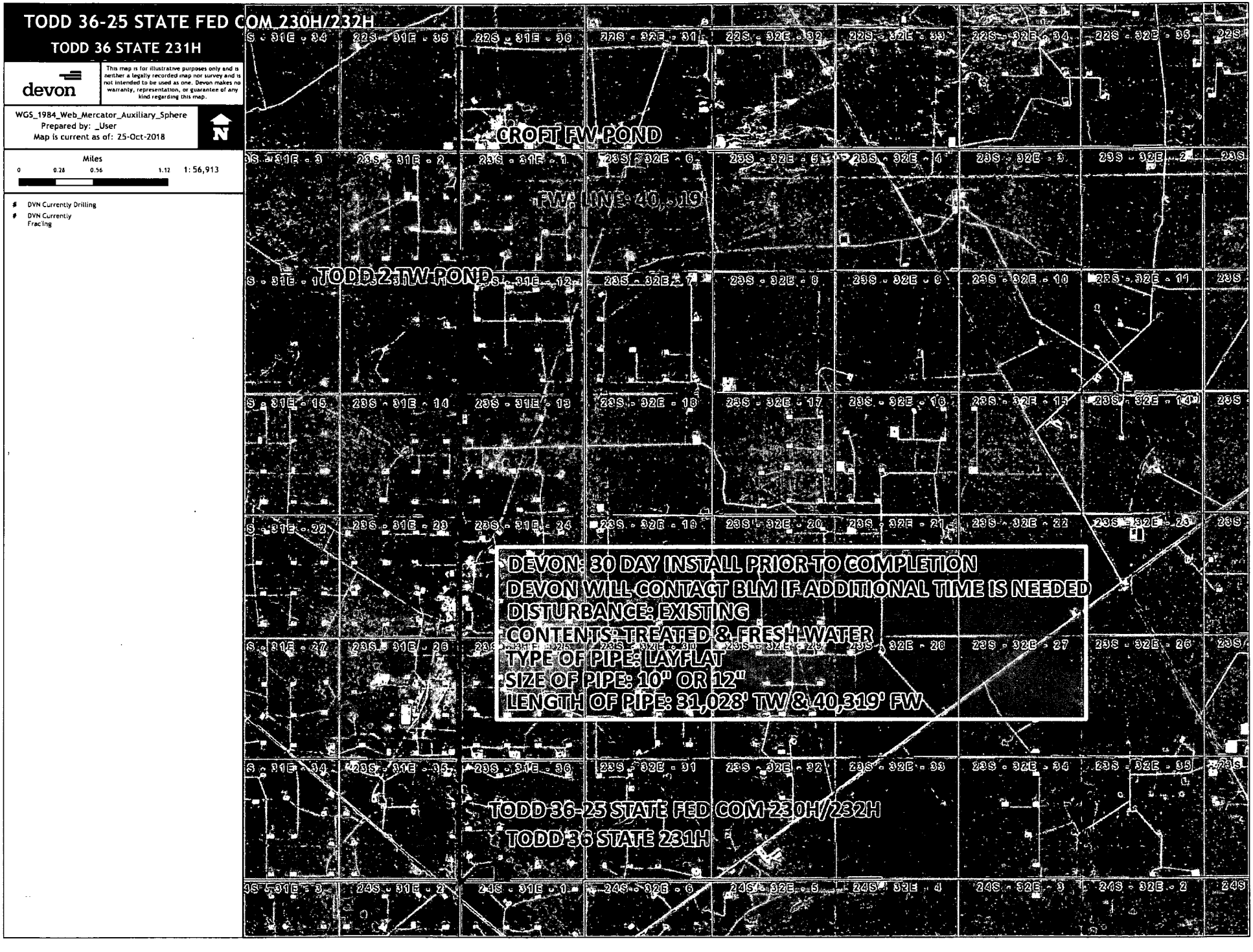
DEVON ENERGY PRODUCTION CO., L.P.

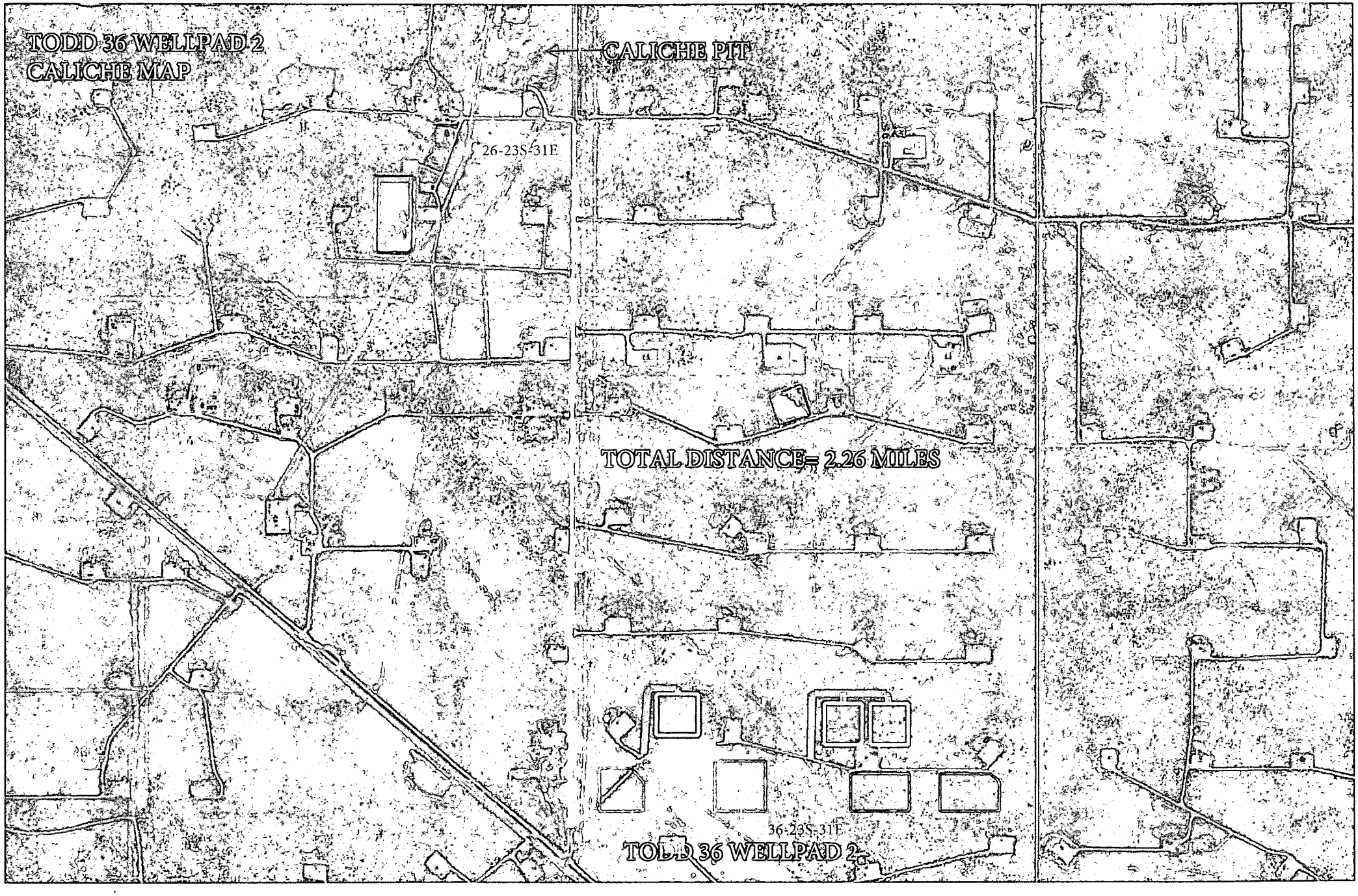
Drawn by: CHRIS MAAS

Date: 07/06/2018

Drawn for:

devon


TODD 36-25 STATE FED COM 230H/232H
TODD 36 STATE 231H
devon
This map is for illustrative purposes only and is neither a legally recorded map nor survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.
WGS_1984_Web_Mercator_Auxiliary_Sphere
Prepared by: _User
Map is current as of: 25-Oct-2018
N
Miles
0 0.28 0.56 1.12
1: 56,913
DVN Currently Drilling
DVN Currently Fracing
CROFT FW POND
FW: LINE: 40,319'
TODD 2 TW POND
DEVON: 30 DAY INSTALL PRIOR TO COMPLETION
DEVON WILL CONTACT BLM IF ADDITIONAL TIME IS NEEDED
DISTURBANCE: EXISTING
CONTENTS: TREATED & FRESH WATER
TYPE OF PIPE: LAYFLAT
SIZE OF PIPE: 10" OR 12"
LENGTH OF PIPE: 31,028' TW & 40,319' FW
TODD 36-25 STATE FED COM 230H/232H
TODD 36 STATE 231H


TODD 36 WELLPAD 2
CALICHE MAP
CALICHE PIT
26-23S-31E
TOTAL DISTANCE= 2.26 MILES
36-23S-31E
TODD 36 WELLPAD 2

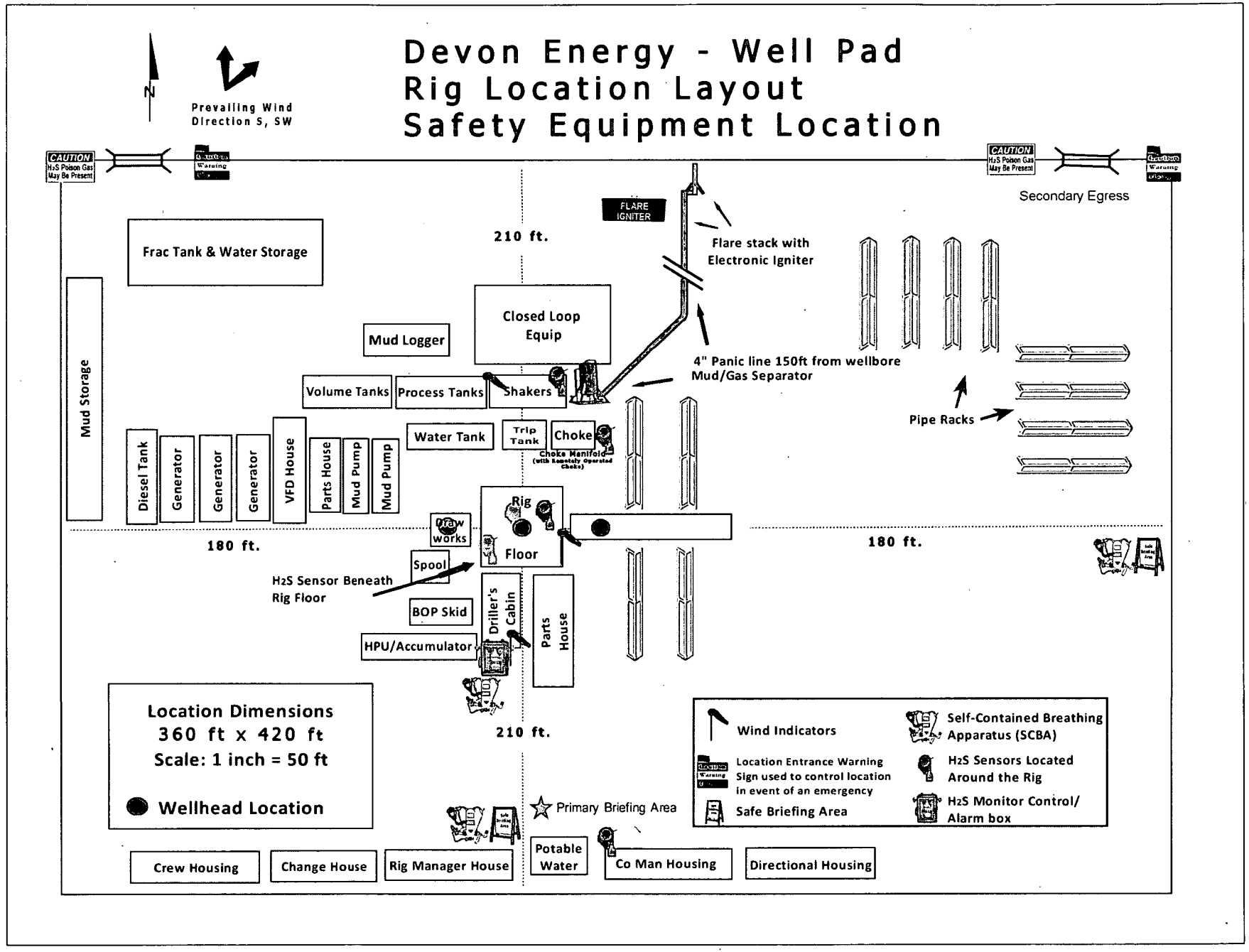
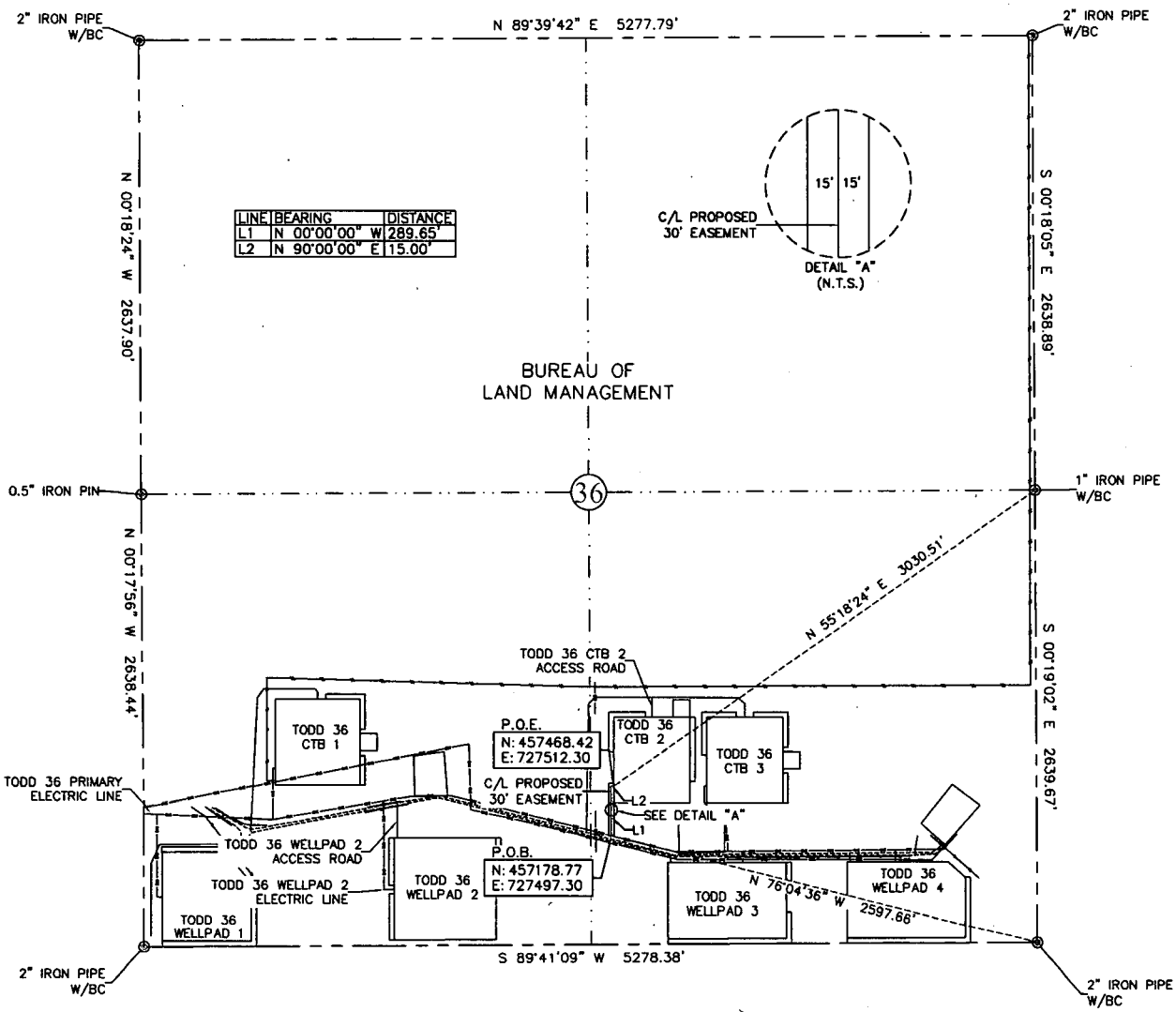

Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location
N
Prevailing Wind
Direction S, SW
CAUTION
H2S Poison Gas
May Be Present
Secondary Egress
FLARE IGNITER
Flare stack with
Electronic Igniter
210 ft.
Frac Tank & Water Storage
Closed Loop
Equip
Mud Logger
4" Panic line 150ft from wellbore
Mud/Gas Separator
Mud Storage
Volume Tanks
Process Tanks
Shakers
Pipe Racks
Water Tank
Trip
Tank
Choke
Choke Manifold
(with Remotely Operated
Chokes)
Diesel Tank
Generator
Generator
Generator
VFD House
Parts House
Mud Pump
Mud Pump
Rig
Floor
Draw
works
180 ft.
180 ft.
Spool
H2S Sensor Beneath
Rig Floor
BOP Skid
Driller's
Cabin
Parts
House
HPU/Accumulator
Location Dimensions
360 ft x 420 ft
Scale: 1 inch = 50 ft
Wellhead Location
210 ft.
Wind Indicators
Location Entrance Warning
Sign used to control location
in event of an emergency
Safe Briefing Area
Self-Contained Breathing
Apparatus (SCBA)
H2S Sensors Located
Around the Rig
H2S Monitor Control/
Alarm box
Primary Briefing Area
Crew Housing
Change House
Rig Manager House
Potable
Water
Co Man Housing
Directional Housing

EXHIBIT "A"
PAGE 1 of 4

ELECTRIC LINE PLAT
SECTION 36, T23S–R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.210 ACRE(S)
304.65 FEET OR 18.46 RODS

STATION TABLE

0+00.0 P.O.B./TODD 36 PRIMARY ELECTRIC LINE
2+14.7 EXISTING FLOW LINE
3+04.7 P.O.E./TODD 36 CTB 2

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision, this survey meets the minimum standards for surveying in New Mexico.

NEW MEXICO 22404 PROFESSIONAL SURVEYOR

B.L. Laman PLS #22404
Date Signed: 09-07-2018
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizonrow, LLC

0 1000 2000

HORIZON ROW LLC

Drawn for: devon

Drawn by: Jesus Rivero

Date: 07/03/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.
TODD 36 CTB 2
ELECTRIC LINE

PROPOSED 30' EASEMENT
ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT
SECTION 36, T23S–R31E, N.M.P.M.

LINE NUMBER: EL8245
WBS NUMBER: XX-129865.01.SLC
SCALE: 1" = 1000'
REVISIONS:
SHEET: 1 OF 4

SECTION 36, T23S-R31E, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

ELECTRIC LINE PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

BEING an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southeast quarter (SE ¼) of Section 36, Township 23 South, Range 31 East, N.M.P.M., Eddy County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southeast corner of Section 36, T23S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 76°04'36" W a distance of 2597.66' to the **Point of Beginning** of this easement having coordinates of Northing=457178.77, Easting=727497.30 feet and continuing the following courses;

Thence N 00°00'00" W a distance of 289.65' to an angle point;

Thence N 90°00'00" E a distance of 15.00' to the **Point of Ending** having coordinates of Northing=457468.42, Easting=727512.30 feet from said point a 1" iron pipe w/BC for the east quarter corner of Section 36, T23S-R31E bears N 55°18'24" E a distance of 3030.51', covering **304.65' or 18.46 rods** and having an area of **0.210 acres**.

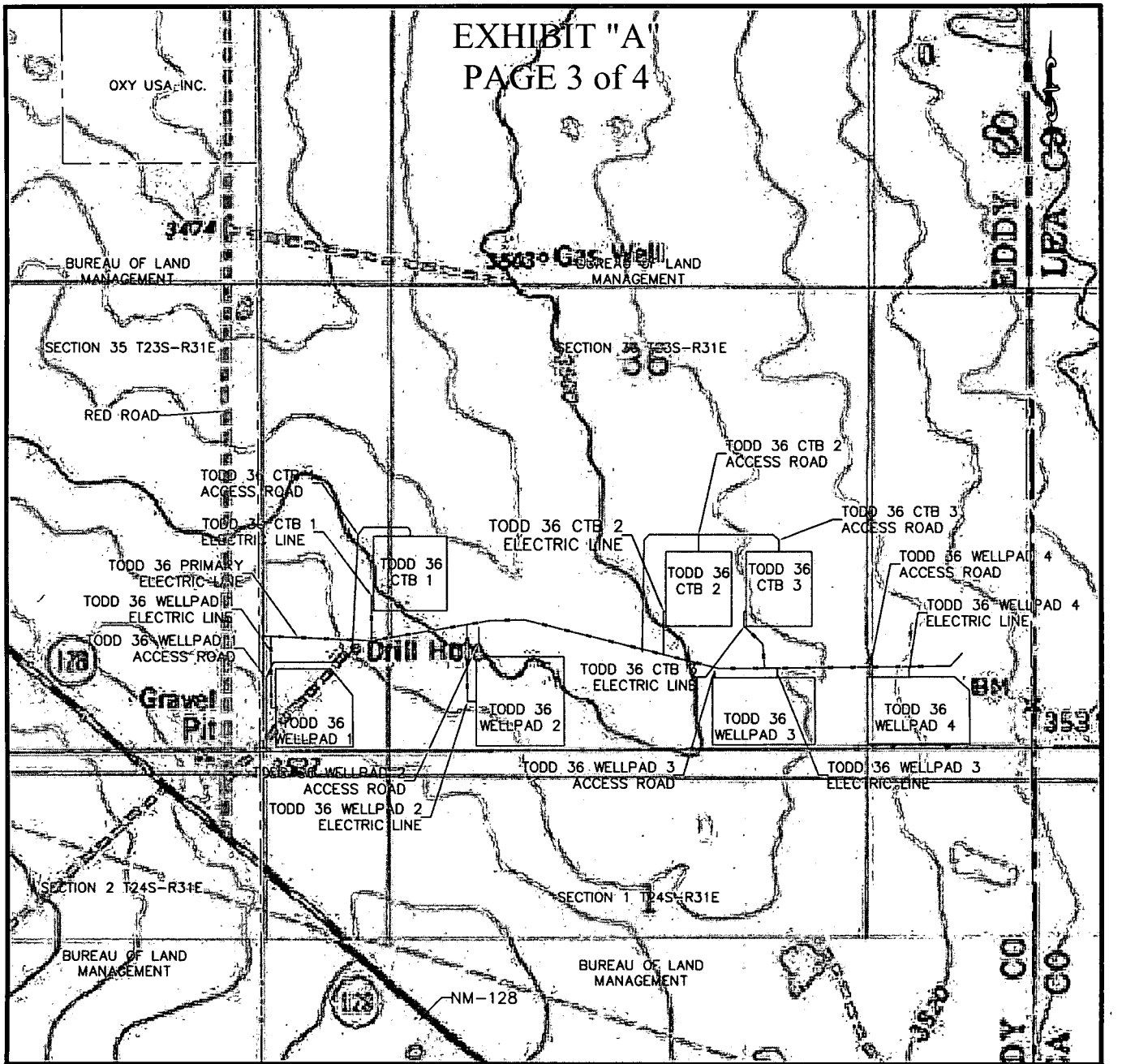
NOTES:

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS 22404
Date Signed: 09/07/2018
Horizon Row, LLC
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizon Row, LLC

EXHIBIT "A"
PAGE 3 of 4

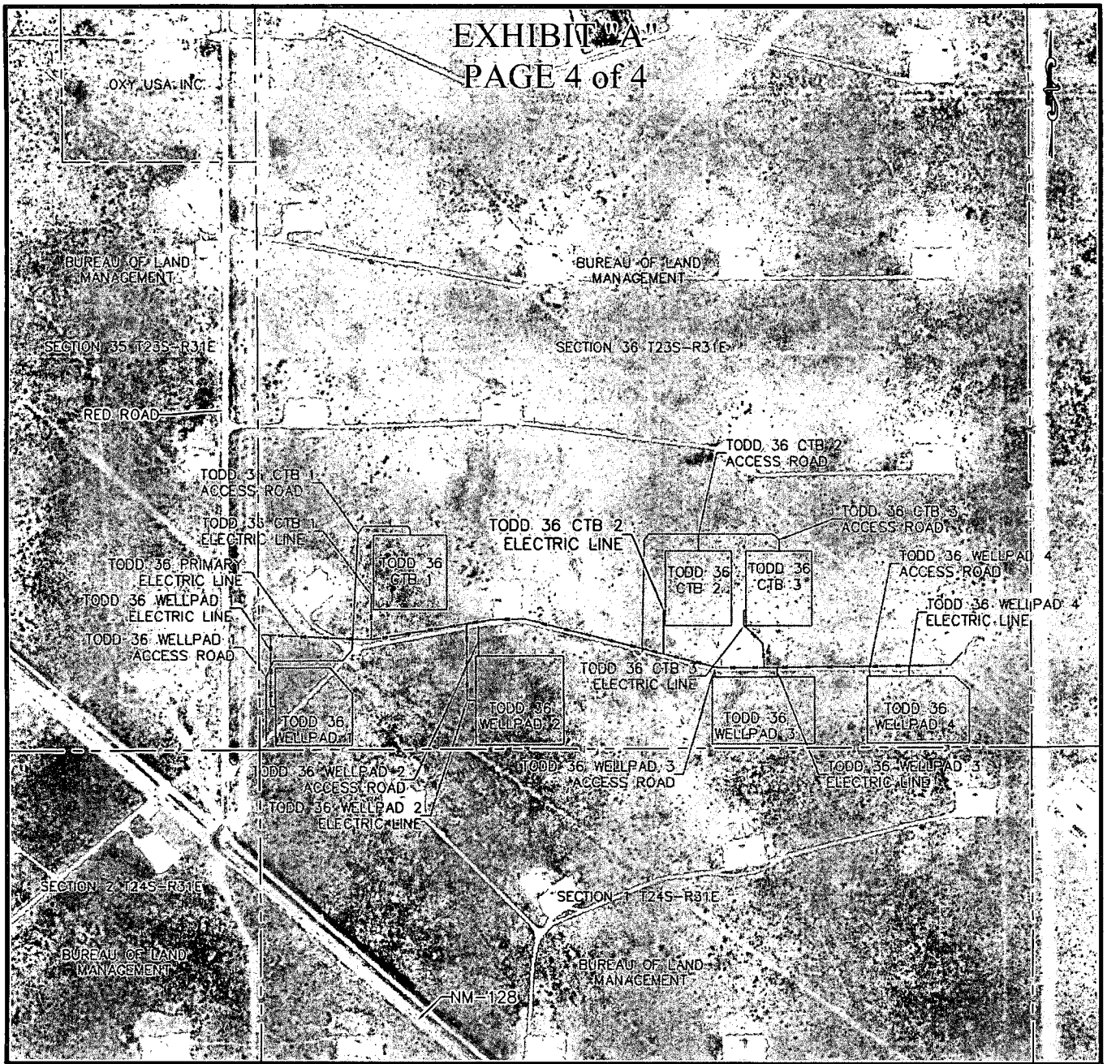


QUAD MAP

SECTION 36, T23S-R31E, N.M.P.M.;
EDDY COUNTY, NEW MEXICO

HORIZON ROW LLC	Drawn for: devon		LINE NUMBER: EL8245
DEVON ENERGY PRODUCTION CO., L.P.			WBS NUMBER: XX-129865.01.SLC
PROPOSED 30' EASEMENT			SCALE: 1" = 1000'
Drawn by: Jesus Rivero	Date: 07/03/2018		REVISIONS:
			SHEET: 3 OF 4

EXHIBIT "A"
PAGE 4 of 4



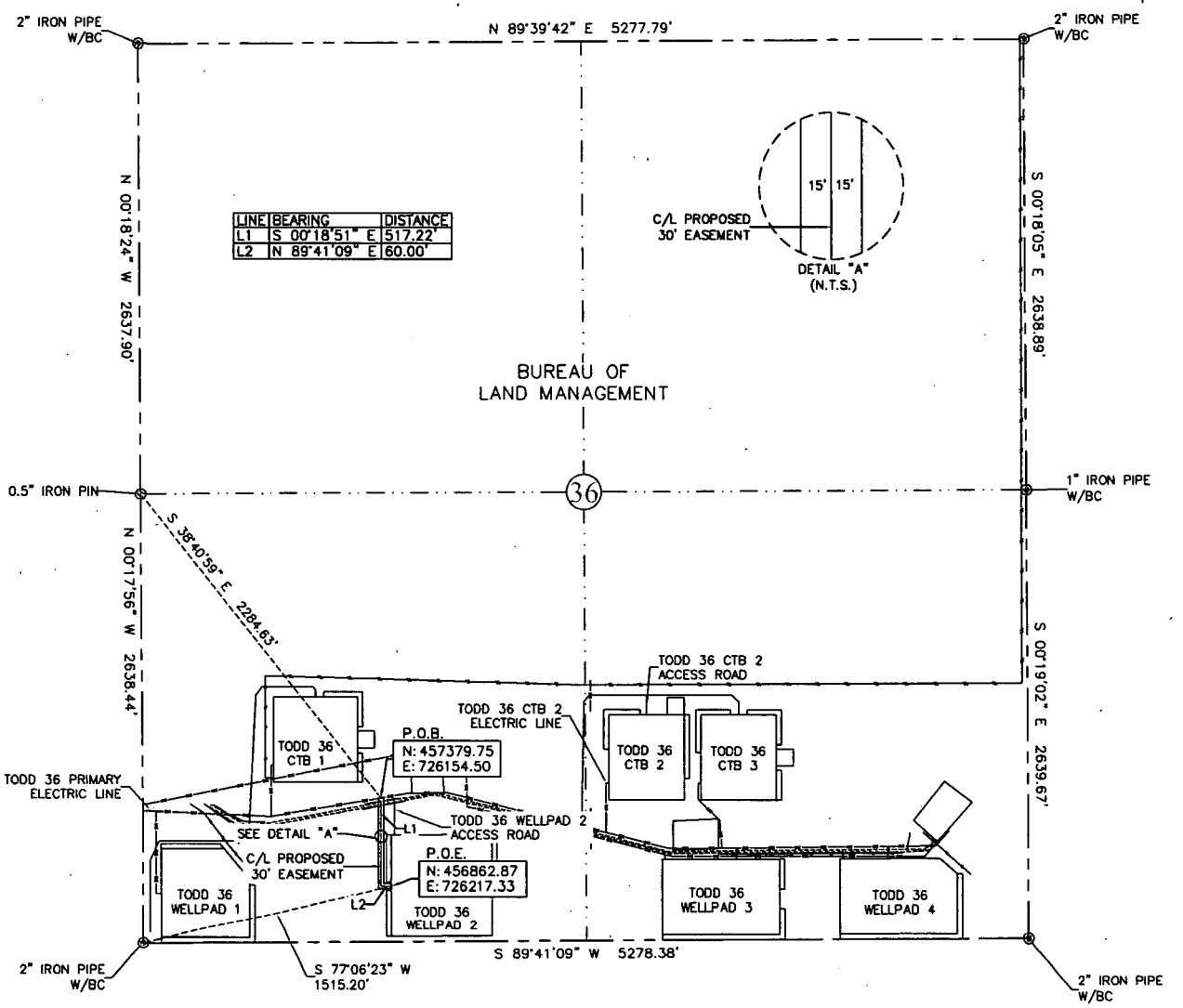
AERIAL MAP

SECTION 36, T23S-R31E, N.M.P.M.;
EDDY COUNTY, NEW MEXICO

HORIZON ROW LLC	Drawn for:		LINE NUMBER: EL8245
DEVON ENERGY PRODUCTION CO., L.P.			WBS NUMBER: XX-129865.01.SLC
PROPOSED 30' EASEMENT			SCALE: 1" = 1000'
Drawn by: Jesus Rivero	Date: 07/03/2018		REVISIONS:
			SHEET: 4 OF 4

EXHIBIT "A"
PAGE 1 of 4

ELECTRIC LINE PLAT
SECTION 36, T23S–R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.398 ACRE(S)
577.22 FEET OR 34.98 RODS

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision; this survey meets the minimum standards for surveying in New Mexico.

NEW MEXICO 22404 PROFESSIONAL SURVEYOR

B.L. Laman PLS #22404
Date Signed: 09-07-2018
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizonrow, LLC

STATION TABLE

0+00.0	P.O.B./TODD 36 PRIMARY ELECTRIC LINE
0+19.4	EXISTING FLOWLINE
0+24.8	EDGE OF LEASE ROAD
0+32.6	CENTERLINE LEASE ROAD
0+40.5	EDGE OF LEASE ROAD
0+44.8	EXISTING FLOWLINE
5+77.2	P.O.E./TODD 36 WELLPAD 2

0 1000 2000

HORIZON ROW LLC
Drawn for: devon
Drawn by: Jesus Rivero
Date: 07/03/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.
TODD 36 WELLPAD 2
ELECTRIC LINE
PROPOSED 30' EASEMENT
ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT
SECTION 36, T23S–R31E, N.M.P.M.

LINE NUMBER: EL8248
WBS NUMBER: XX-129865.01.SLC
SCALE: 1" = 1000'
REVISIONS:
SHEET: 1 OF 4

SECTION 36, T23S-R31E, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

ELECTRIC LINE PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

BEING an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) of Section 36, Township 23 South, Range 31 East, N.M.P.M., Eddy County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 0.5" iron pipe w/BC for the west quarter corner of Section 36, T23S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence S 38°40'59" E a distance of 2284.63' to the **Point of Beginning** of this easement having coordinates of Northing=457379.75, Easting=726154.50 feet and continuing the following courses;

Thence S 00°18'51" E a distance of 517.22' to an angle point;

Thence N 89°41'09" E a distance of 60.00' to the **Point of Ending** having coordinates of Northing=456862.87, Easting=726217.33 feet from said point a 2" iron pipe w/BC for the southwest corner of Section 36, T23S-R31E bears S 77°06'23" W a distance of 1515.20', covering **577.22' or 34.98 rods** and having an area of **0.398 acres**.

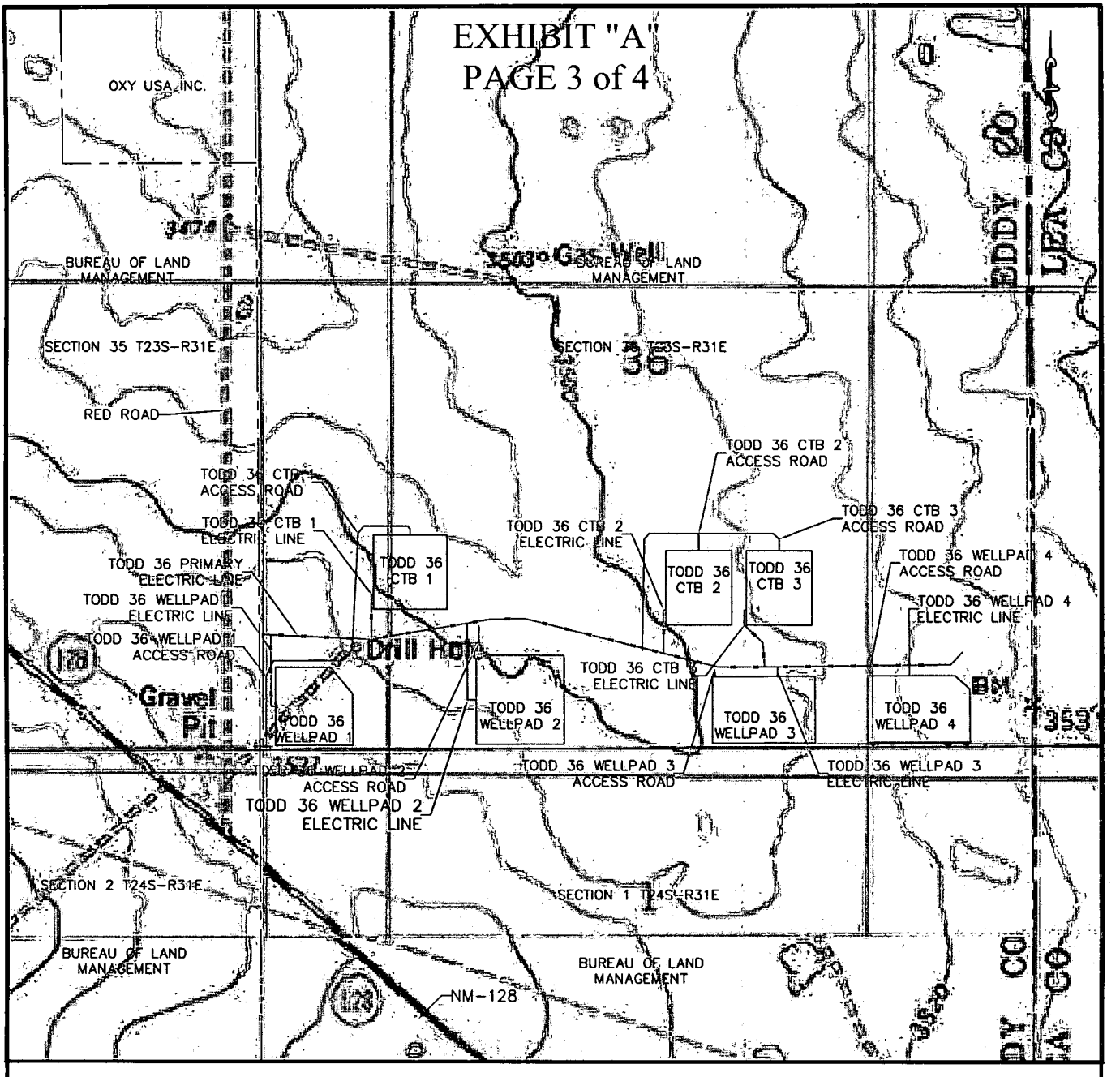
NOTES:

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS 22404
Date Signed: 09/07/2018
Horizon Row, LLC
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizon Row, LLC

EXHIBIT "A"
PAGE 3 of 4

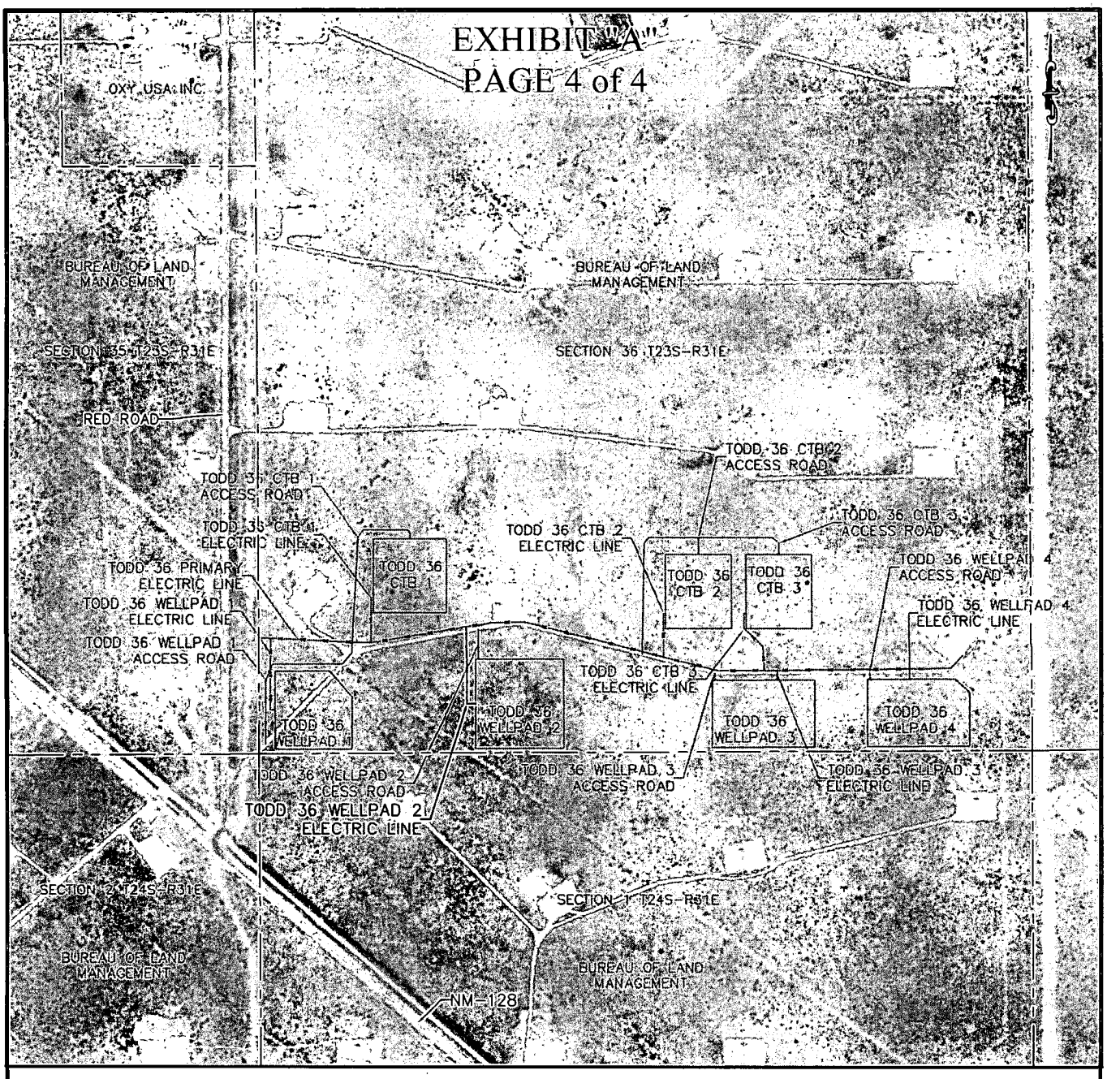


QUAD MAP

SECTION 36, T23S-R31E, N.M.P.M.;
EDDY COUNTY, NEW MEXICO

HORIZON ROW LLC	Drawn for: devon		LINE NUMBER: EL8248
DEVON ENERGY PRODUCTION CO., L.P.			WBS NUMBER: XX-129865.01.SLC
PROPOSED 30' EASEMENT			SCALE: 1" = 1000'
			REVISIONS:
Drawn by: Jesus Rivero	Date: 07/03/2018		SHEET: 3 OF 4

EXHIBIT "A"
PAGE 4 of 4



AERIAL MAP

SECTION 36, T23S-R31E, N.M.P.M.;
EDDY COUNTY, NEW MEXICO

HORIZON ROW LLC	Drawn for:		LINE NUMBER: EL8248
DEVON ENERGY PRODUCTION CO., L.P.			WBS NUMBER: XX-129865.01.SLC
PROPOSED 30' EASEMENT			SCALE: 1" = 1000'
Drawn by: Jesus Rivero / Date: 07/03/2018			REVISIONS:
			SHEET: 4 OF 4

From: notification@pay.gov
To: Harms, Jenny
Subject: [EXTERNAL] Pay.gov Payment Confirmation: BLM Oil and Gas Online Payment
Date: Monday, October 29, 2018 9:34:58 AM

An official email of the United States government

Paygov logo

Your payment has been submitted to Pay.gov and the details are below. To confirm that the payment processed as expected, you may refer to your bank statement on the scheduled payment date. If you have any questions or wish to cancel this payment, you will need to contact the agency you paid at your earliest convenience.

Application Name: BLM Oil and Gas Online Payment
Pay.gov Tracking ID: 26D5HTI4
Agency Tracking ID: 75603995480

Account Holder Name: Devon Energy Production Company, L.P.
Transaction Type: ACH Debit
Transaction Amount: $20,100.00
Payment Date: 10/30/2018

Account Type: Business Checking
Routing Number: 061000052
Account Number: **********9892

Transaction Date: 10/29/2018 10:34:40 AM EDT
Total Payments Scheduled: 1
Frequency: OneTime

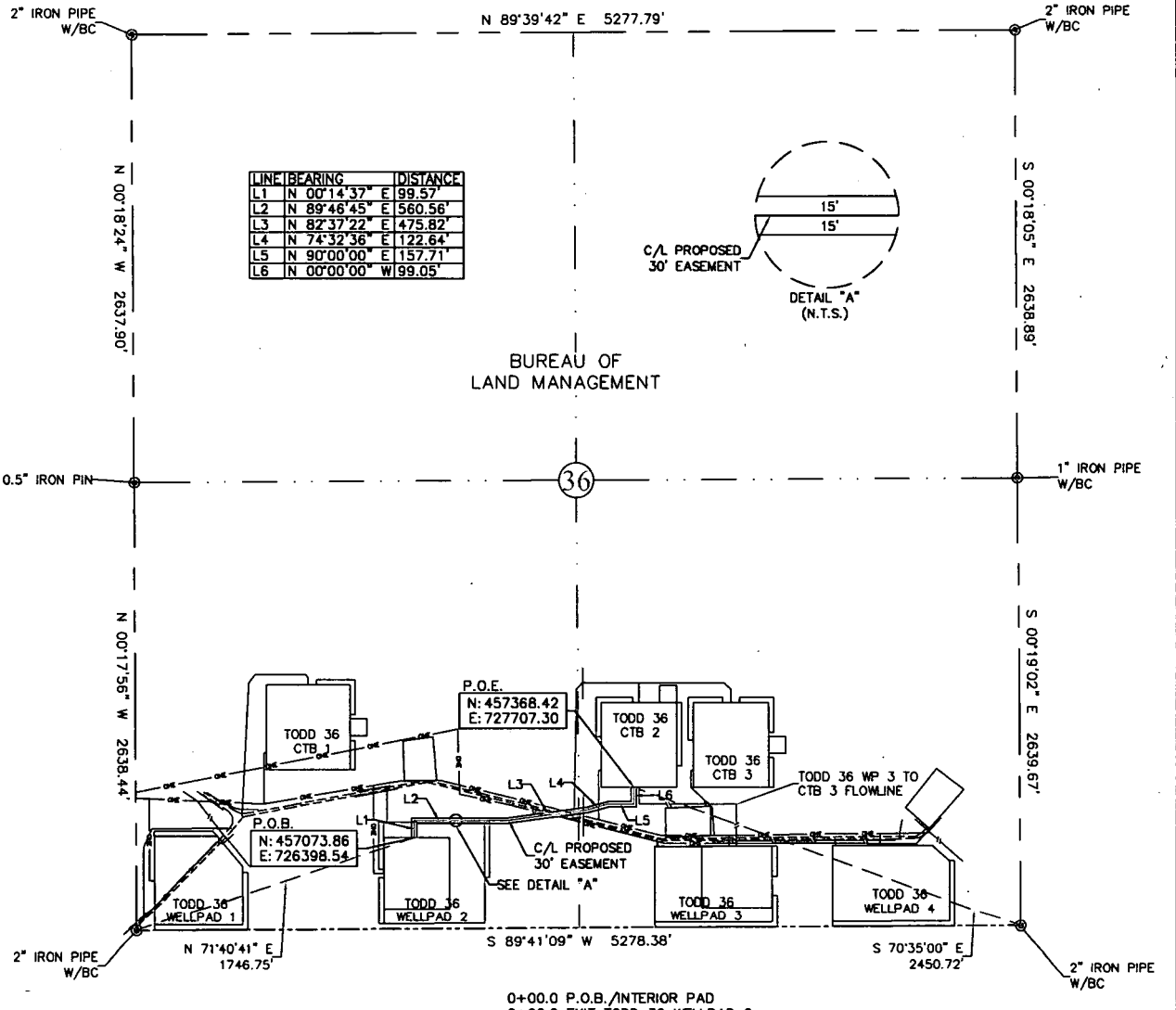
Company: Devon Energy Production Company, L.P.
APD IDs: 10400035681, 10400035677
Lease Numbers: NMNM0544986, NMNM0544986
Well Numbers: 232H, 230H
Note: You will need your Pay.gov Tracking ID to complete your APD transaction in AFMSS II. Please ensure you write this number down upon completion of payment.

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

Pay.gov is a program of the U.S. Department of the Treasury, Bureau of the Fiscal Service

EXHIBIT "A"
PAGE 1 of 4

8" COMPOSITE PIPE
SECTION 36, T23S–R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO
Flowlines are buried



0+00.0 P.O.B./INTERIOR PAD
0+90.0 EXIT TODD 36 WELLPAD 2
9+07.9 POWER LINE
9+25.8 FLOWLINE
9+43.8 EDGE OF ROAD
9+57.0 C/L ROAD
9+72.3 EDGE OF ROAD
10+23.7 TODD 36 PRIMARY ELECTRIC LINE
10+54.9 TODD 36 CTB 3 ACCESS ROAD
11+10.2 POWER LINE
12+04.3 TODD 36 CTB 2 ELECTRIC LINE
15+15.3 P.O.E./TODD 36 CTB 2

30' EASEMENT AREA = 1.044 ACRE(S)
1515.35 FEET OR 91.84 RODS

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision; this survey meets the minimum standards for surveying in New Mexico.

LAMAN NEW MEXICO 22404 PROFESSIONAL SURVEYOR

B.L. Laman PLS #22404
Date Signed: 09-27-2018
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizonrow, LLC

0 1000 2000

HORIZON ROW LLC	DEVON ENERGY PRODUCTION COMPANY, L.P.		LINE NUMBER: 7660143F
Drawn for: devon	TODD 36 WELLPAD 2 TO CTB 2 FLOWLINE		WBS NUMBER: XX-129865.01.SLC
			SCALE: 1" = 1000'
	PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 36, T23S–R31E, N.M.P.M.		REVISIONS:
Drawn by: CHRIS MAAS	Date: 09/27/2018		DATE OF SURVEY: 9/26/18

SECTION 36, T23S-R31E, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

BEING an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the southeast quarter (SE ¼) of Section 36, Township 23 South, Range 31 East, N.M.P.M., Eddy County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 36, T23S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 71°40'41" E a distance of 1746.75' to the **Point of Beginning** of this easement having coordinates of Northing=457073.86, Easting=726398.54 feet and continuing the following courses;

Thence N 00°14'37" E a distance of 99.57' to an angle point;

Thence N 89°46'45" E a distance of 560.56' to an angle point;

Thence N 82°37'22" E a distance of 475.82' to an angle point;

Thence N 74°32'36" E a distance of 122.64' to an angle point;

Thence N 90°00'00" E a distance of 157.71' to an angle point;

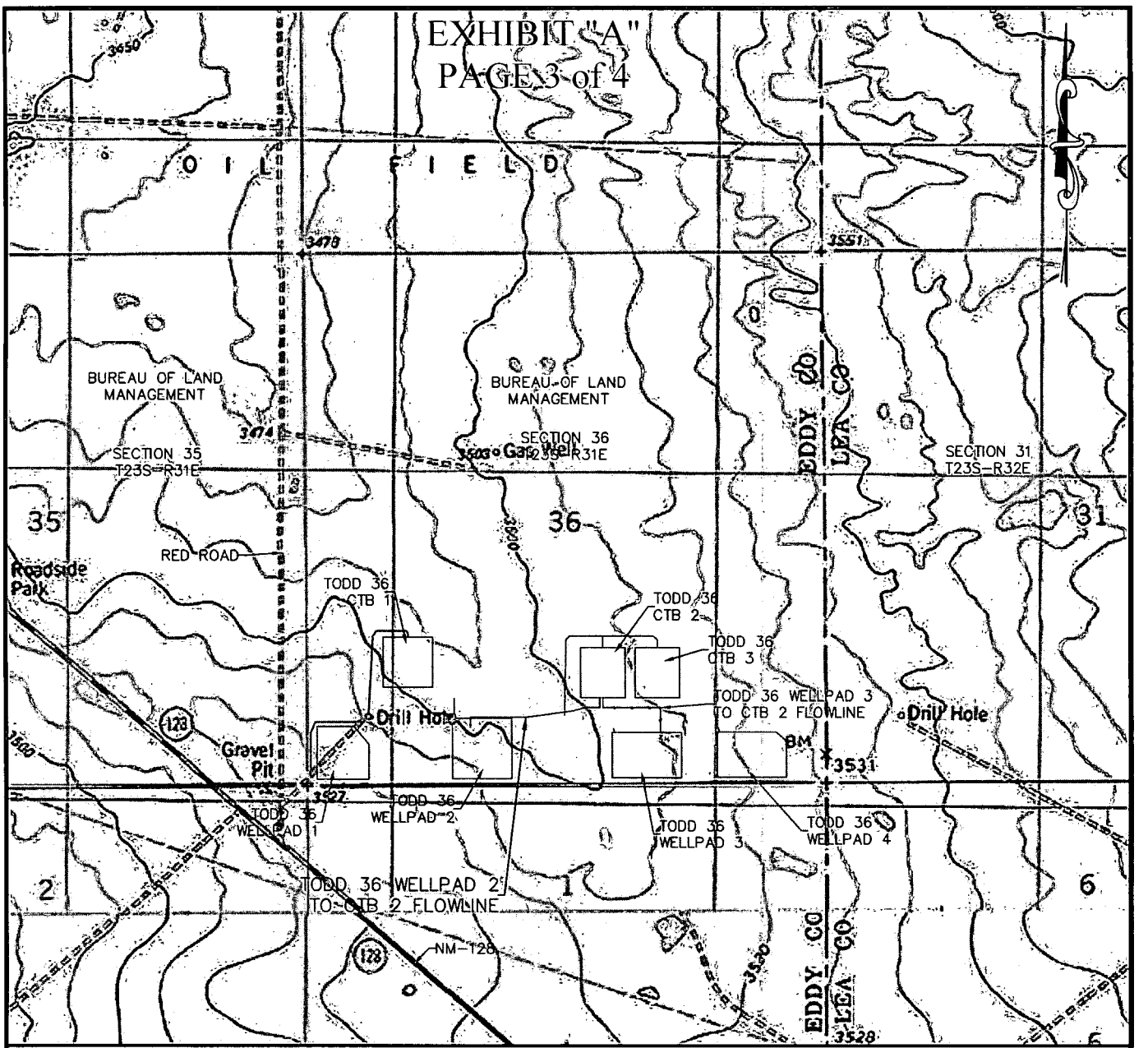
Thence N 00°00'00" W a distance of 99.05' to the **Point of Ending** having coordinates of Northing=457368.42, Easting=727707.30 feet from said point a 2" iron pipe w/BC for the southeast corner of Section 36, T23S-R31E bears S 70°35'00" E a distance of 2450.72', covering **1515.35' or 91.84 rods** and having an area of **1.044 acres**.

NOTES:

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS 22404
Date Signed: 09/27/2018
Horizon Row, LLC
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizon Row, LLC



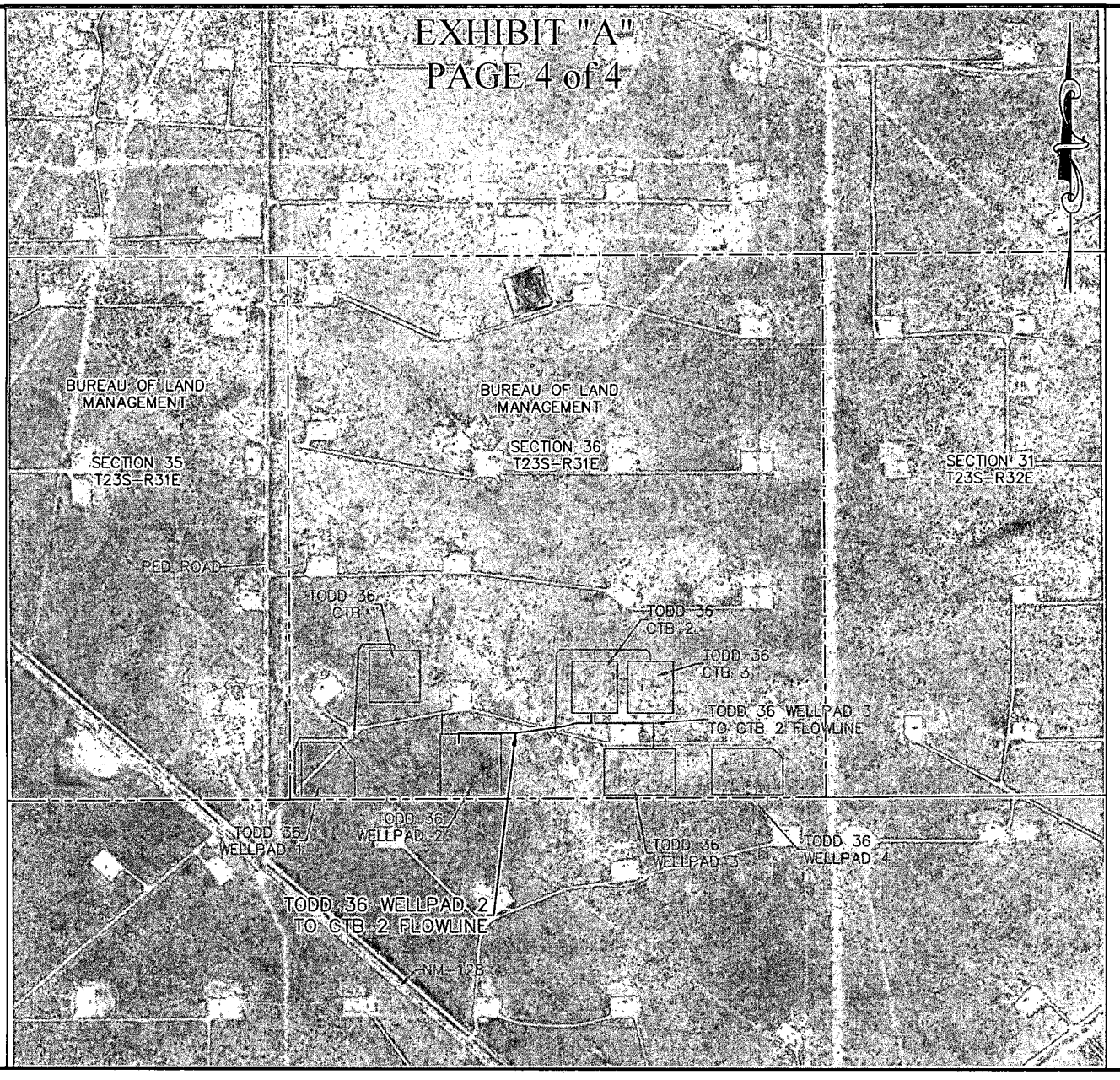
QUAD MAP

SECTION 36, T23S-R31E, N.M.P.M.; EDDY COUNTY, NEW MEXICO

Flowlines are buried

HORIZON ROW LLC	Drawn for: devon		LINE NUMBER: 7660143F
DEVON ENERGY PRODUCTION CO., L.P. PROPOSED 30' EASEMENT			WBS NUMBER: XX-129865.01.SLC
			SCALE: 1" = 1500'
			REVISIONS:
Drawn by: CHRIS MAAS	Date: 09/27/2018		DATE OF SURVEY: 9/27/18

EXHIBIT "A"
PAGE 4 of 4



AERIAL MAP

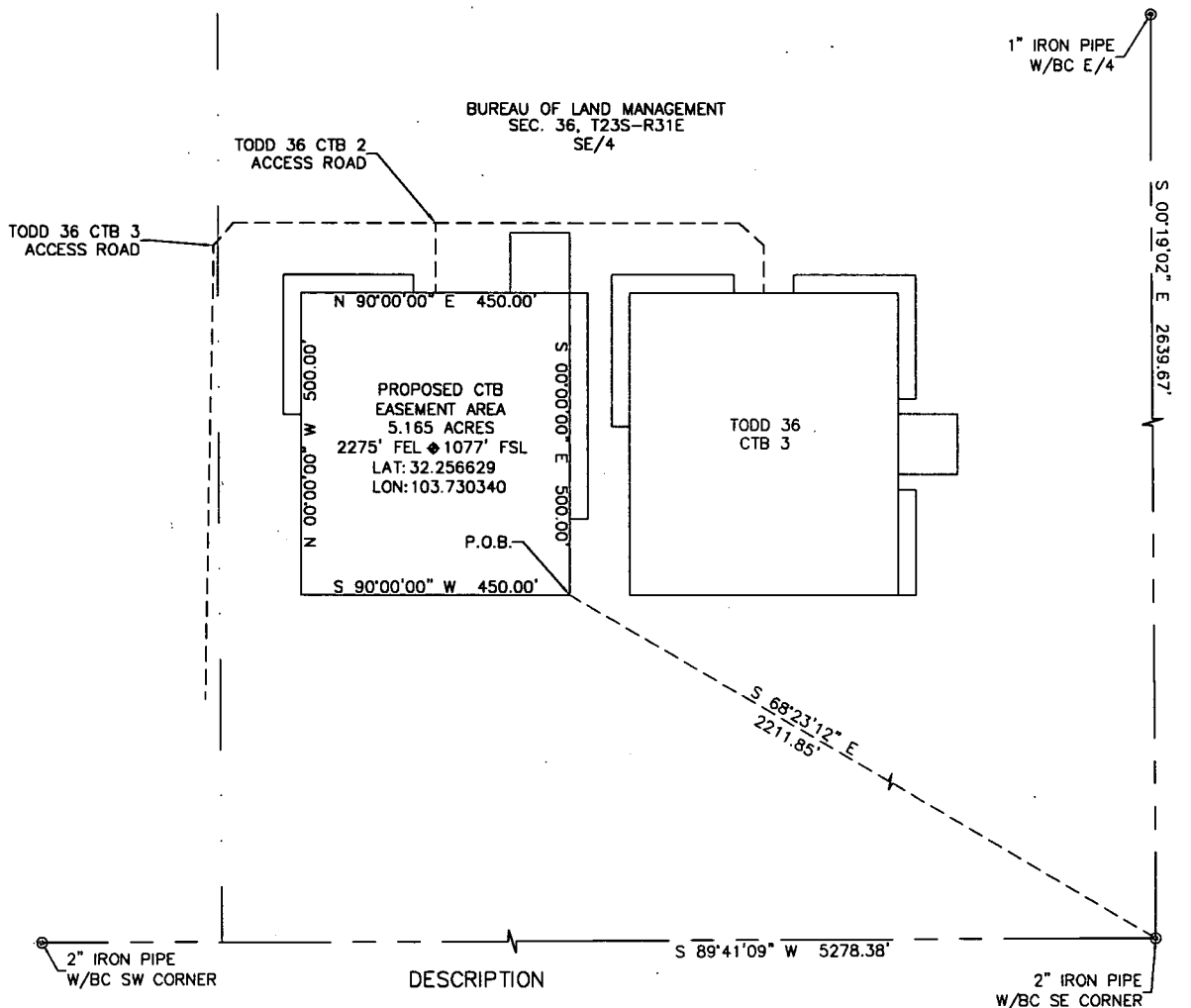
SECTION 36, T23S-R31E, N.M.P.M.;
EDDY COUNTY, NEW MEXICO

Flowlines are buried

HORIZON ROW LLC		Drawn for: devon	LINE NUMBER: 7660143F
DEVON ENERGY PRODUCTION CO., L.P. PROPOSED 30' EASEMENT			WBS NUMBER: XX-129865.01.SLC
			SCALE: 1" = 1500'
			REVISIONS:
Drawn by: CHRIS MAAS	Date: 09/27/2018		DATE OF SURVEY: 9/27/18

TODD 36 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN THE SOUTHEAST QUARTER (SE/4)
SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, NEW MEXICO
SHEET 1 OF 6



DESCRIPTION

BEING A SURFACE SITE EASEMENT LYING IN THE SOUTHEAST QUARTER (SE/4) OF SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST N.M.P.M., EDDY COUNTY, NEW MEXICO.

BEGINNING AT THE SOUTHEAST CORNER OF SAID SITE EASEMENT, WHERE A 2" IRON PIPE W/BC FOR THE SOUTHEAST CORNER OF SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST N.M.P.M. BEARS S 68°23'12" E, A DISTANCE 2211.85';

THENCE S 90°00'00" W, A DISTANCE 450.00 FEET TO THE SOUTHWEST CORNER OF THIS EASEMENT;
THENCE N 00°00'00" W, A DISTANCE 500.00 FEET TO THE NORTHWEST CORNER OF THIS EASEMENT;
THENCE N 90°00'00" E, A DISTANCE 450.00 FEET TO THE NORTHEAST CORNER OF THIS EASEMENT;
THENCE S 00°00'00" E, A DISTANCE 500.00 FEET TO THE SOUTHEAST CORNER OF THIS EASEMENT,
TO THE POINT OF BEGINNING; CONTAINING 5.165 ACRES.

GENERAL NOTES:

1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A CENTRAL BATTERY.

2.) All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. LAMAN
NEW MEXICO
22404
PROFESSIONAL SURVEYOR

B.L. Laman PLS #22404
Horizonrow, LLC
Date Signed: 03-21-2019
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizonrow, LLC

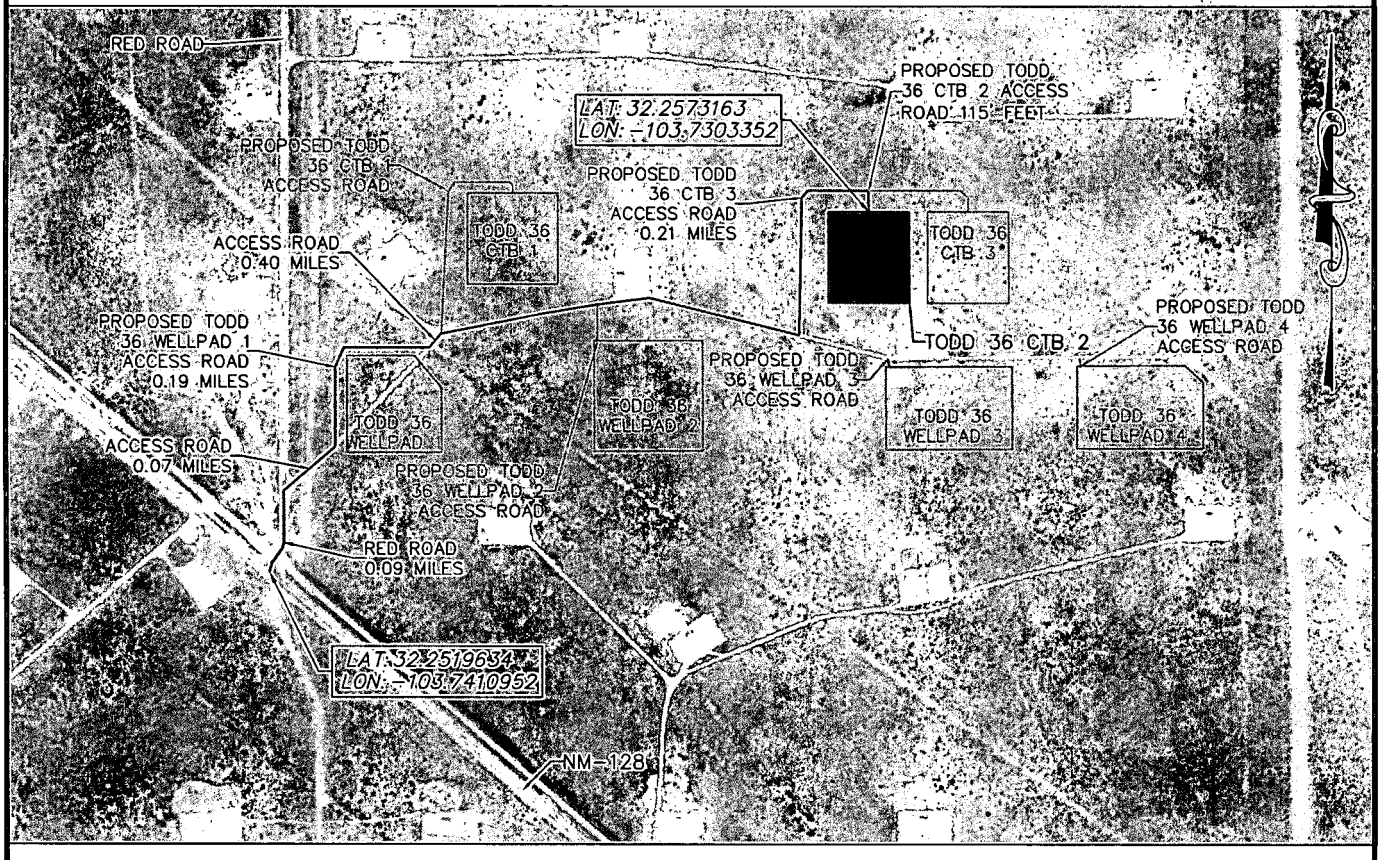
DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF NM-128 AND RED ROAD HEAD NORTH ON RED ROAD FOR 0.09 MILES. TURN RIGHT ONTO AN ACCESS ROAD AND HEAD NORTHEAST FOR 0.07 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 WELLPAD 1 ACCESS ROAD. LEAVE THE EXISTING ACCESS ROAD AND HEAD NORTH AND EAST ON THE PROPOSED TODD 36 WELLPAD 1 ACCESS ROAD FOR 0.19 MILES TO THE SAME EXISTING ACCESS ROAD AND THEN HEAD EAST FOR 0.40 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 CTB 3 ACCESS ROAD. HEAD NORTH AND EAST ALONG THE PROPOSED TODD 36 CTB 3 ACCESS ROAD FOR 0.21 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 CTB 2 ACCESS ROAD. TURN RIGHT AND HEAD SOUTH 115' TO THE NORTH CENTER POINT OF THE TODD 36 CTB 2.

0 300 600

HORIZON ROW LLC	DEVON ENERGY PRODUCTION COMPANY, L.P.	SITE NUMBER: AA000145925
Drawn for: devon	TODD 36 CTB 2	WBS NUMBER:
	SURVEY PLAT SHOWING A CTB ON THE PROPERTY OF THE BUREAU OF LAND MANAGEMENT	SCALE: 1" = 300'
		REVISIONS:
Drawn by: CHRIS MAAS	Date: 07/06/2018	DATE OF SURVEY: 6/22/18

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF NM-128 AND RED ROAD HEAD NORTH ON RED ROAD FOR 0.09 MILES. TURN RIGHT ONTO AN ACCESS ROAD AND HEAD NORTHEAST FOR 0.07 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 WELLPAD 1 ACCESS ROAD. LEAVE THE EXISTING ACCESS ROAD AND HEAD NORTH AND EAST ON THE PROPOSED TODD 36 WELLPAD 1 ACCESS ROAD FOR 0.19 MILES TO THE SAME EXISTING ACCESS ROAD AND THEN HEAD EAST FOR 0.40 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 CTB 3 ACCESS ROAD. HEAD NORTH AND EAST ALONG THE PROPOSED TODD 36 CTB 3 ACCESS ROAD FOR 0.21 MILES TO THE POINT OF BEGINNING OF THE PROPOSED TODD 36 CTB 2 ACCESS ROAD. TURN RIGHT AND HEAD SOUTH 115' TO THE NORTH CENTER POINT OF THE TODD 36 CTB 2.

0 1000 2000

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

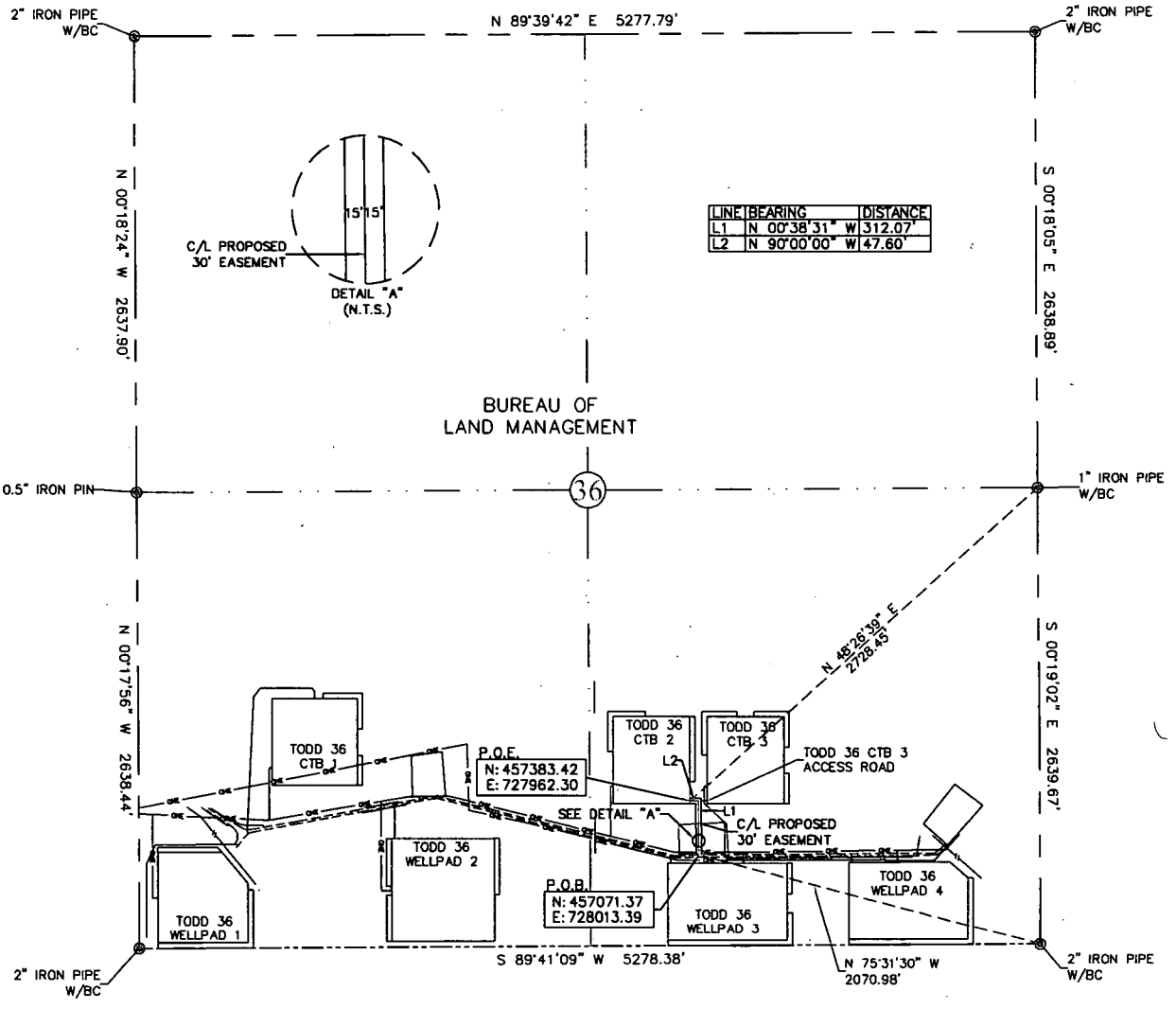
Drawn by: CHRIS MAAS

Date: 07/06/2018

Drawn for: devon

EXHIBIT "A"

ACCESS ROAD PLAT
SECTION 36, T23S–R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.248 ACRE(S)
359.67 FEET OR 21.80 RODS

0+00.0 P.O.B./EXISTING ACCESS ROAD
0+09.7 EDGE OF ROAD
0+15.0 TODD 36 PRIMARY ELECTRIC LINE
3+12.1 TODD 36 CTB 3 ACCESS ROAD
3+59.7 P.O.E./TODD 36 CTB 2

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

NEW MEXICO 22404 PROFESSIONAL SURVEYOR

B.L. Laman PLS #22404
Date Signed: 12-27-2018
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizonrow, LLC

0 1000 2000

HORIZON ROW LLC	DEVON ENERGY PRODUCTION COMPANY, L.P.		LINE NUMBER: 7660159R
Drawn for: devon	TODD 36 CTB 2 ACCESS ROAD		WBS NUMBER:
	PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 36, T23S–R31E, N.M.P.M.		SCALE: 1" = 1000'
Drawn by: CHRIS MAAS	Date: 07/06/2018		REVISIONS: CMAAS 12/10/18
			DATE OF SURVEY: 12/6/18

SECTION 36, T23S-R31E, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

ACCESS ROAD PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

BEING an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southeast quarter (SE ¼) of Section 36, Township 23 South, Range 31 East, N.M.P.M., Eddy County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southeast corner of Section 36, T23S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 75°31'30" W a distance of 2070.98' to the **Point of Beginning** of this easement having coordinates of Northing=457071.37, Easting=728013.39 feet and continuing the following courses;

Thence N 00°38'31" W a distance of 312.07' to an angle point;

Thence N 90°00'00" W a distance of 47.60' to the **Point of Ending** having coordinates of Northing=457383.42, Easting=727962.30 feet from said point a 1" iron pipe w/BC for the east quarter corner of Section 36, T23S-R31E bears N 48°26'39" E a distance of 2728.45', covering **359.67' or 21.80 rods** and having an area of **0.248 acres**.

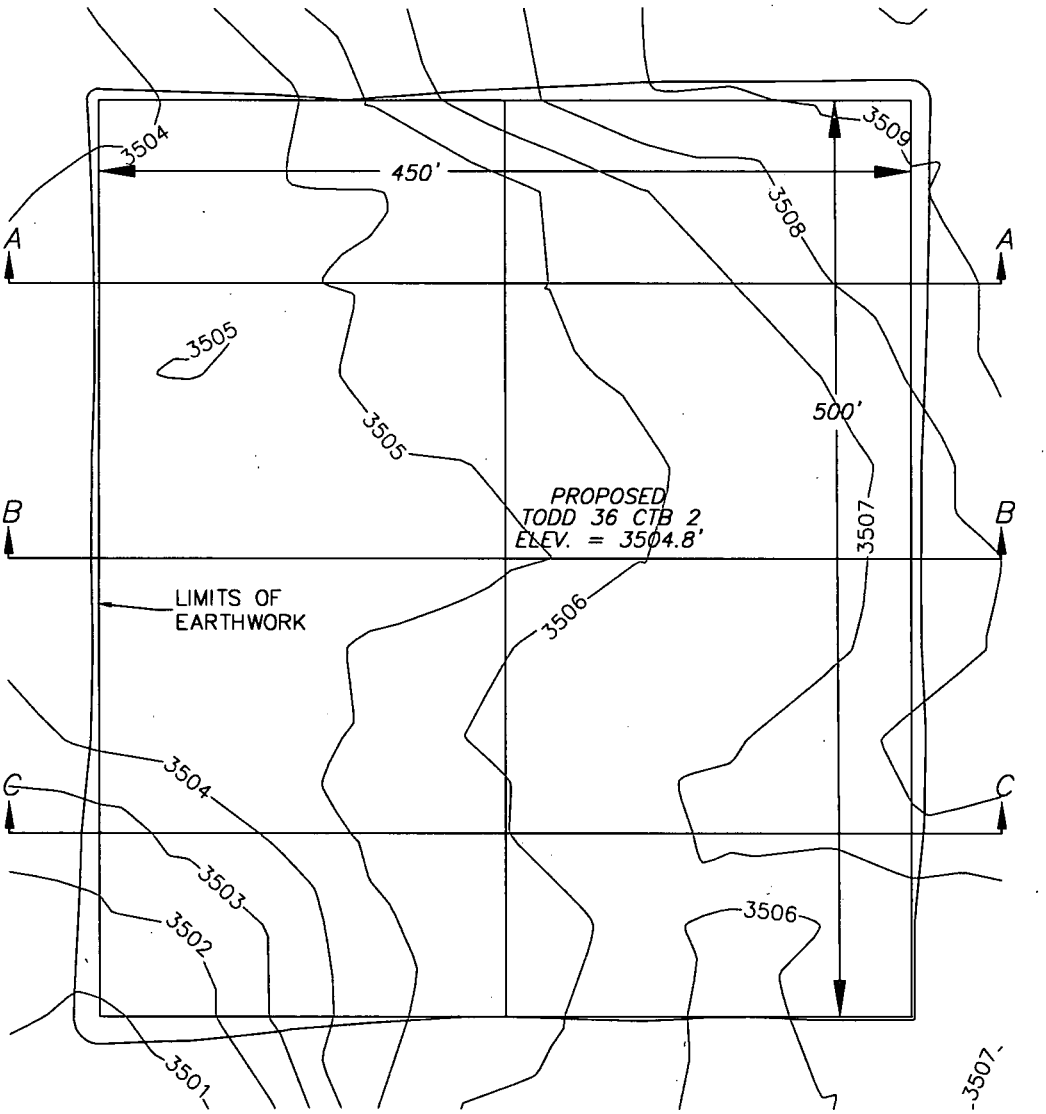
NOTES:

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS 22404
Date Signed: 12/27/2018
Horizon Row, LLC
P.O. Box 548, Dry Creek, La.
(903) 388-3045 70637
Employee of Horizon Row, LLC

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
PLAN VIEW



EARTHWORK QUANTITIES FOR
TODD 36 CTB 2

CUT	FILL	NET
4,836 CY	4,836 CY	0 CY

EARTHWORK QUANTITIES ARE ESTIMATED

0 100 200

SHEET 5 OF 6

HORIZON ROW LLC

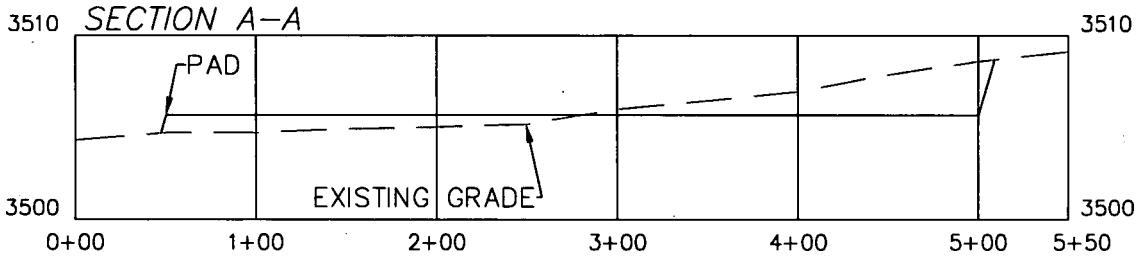
DEVON ENERGY PRODUCTION CO., L.P.

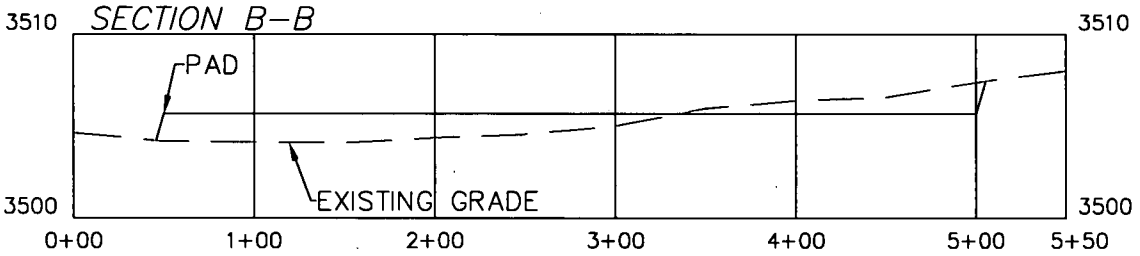
Drawn by: CHRIS MAAS

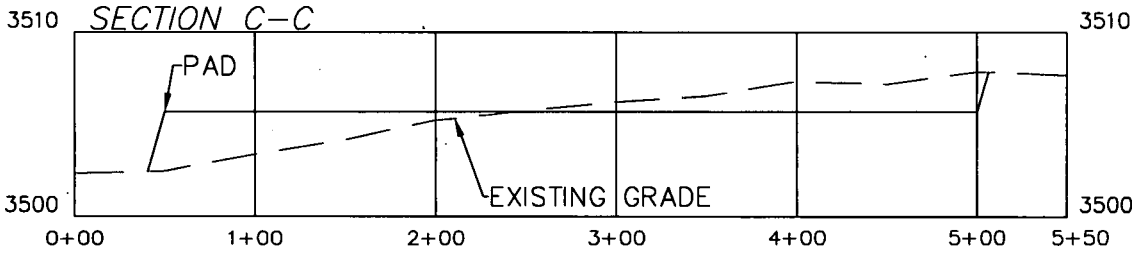
Date: 07/06/2018

Drawn for: devon

SECTION 36, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
CROSS SECTIONS







SCALE 1" = 100' HORIZONTAL
SCALE 1" = 10' VERTICAL

SHEET 6 OF 6

EARTHWORK QUANTITIES FOR
TODD 36 CTB 2

CUT	FILL	NET
4,836 CY	4,836 CY	0 CY

EARTHWORK QUANTITIES ARE ESTIMATED

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by: CHRIS MAAS

Date: 07/06/2018

Drawn for:

devon

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

04/23/2019

Bond Information

Federal/Indian APD: FED

BLM Bond number: CO1104

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:

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