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JUN 28 2019

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.
NMNM022080

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.
TOMB RAIDER 1-12 FED
332H 316894

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP

9. API Well No.
30-015-46150

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	LIVINGSTON RIDGE / BONESPRING

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

At surface LOT 3 / 210 FNL / 2199 FWL / LAT 32.3401419 / LONG -103.7329353

At proposed prod. zone SESW / 20 FSL / 2370 FWL / LAT 32.311754 / LONG -103.7323584

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 1 / 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
210 feet	1280	640

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
525 feet	11620 feet / 21864 feet	FED: CO1104

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3467 feet	06/19/2019	45 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	12/14/2018

Title
Regulatory Compliance Professional

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	06/26/2019

Title	Office
Assistant Field Manager Lands & Minerals	CARLSBAD

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

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

APPROVED WITH CONDITIONS

Approval Date: 06/26/2019

RWP 6-28-19

(Continued on page 2)

*(Instructions on page 2)

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: LOT 3 / 210 FNL / 2199 FWL / TWSP: 23S / RANGE: 31E / SECTION: 1 / LAT: 32.3401419 / LONG: -103.7329353 (TVD: 0 feet, MD: 0 feet)
   PPP: LOT 3 / 100 FNL / 2370 FWL / TWSP: 23S / RANGE: 31E / SECTION: 1 / LAT: 32.340442 / LONG: -103.732379 (TVD: 11281 feet, MD: 11291 feet)
   BHL: SESW / 20 FSL / 2370 FWL / TWSP: 23S / RANGE: 31E / SECTION: 12 / LAT: 32.311754 / LONG: -103.7323584 (TVD: 11620 feet, MD: 21864 feet)

BLM Point of Contact

Name: Tanja Baca
Title: Admin Support Assistant
Phone: 5752345940
Email: tabaca@blm.gov

CONFIDENTIAL

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.

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PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company LP**
LEASE NO.:	**NMNM022080**
WELL NAME & NO.:	Tomb Raider 1-12 Fed 332H
SURFACE HOLE FOOTAGE:	210'/N & 2199'/W
BOTTOM HOLE FOOTAGE	20'/S & 2370'/W
LOCATION:	Section 1, T.23 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

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

Primary Casing Design:

1. The **10-3/4** inch surface casing shall be set at approximately **791 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 **7-5/8** inch intermediate casing 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 10-3/4" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" 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.

Alternate Casing Design:

4. The **13-3/8** inch surface casing shall be set at approximately **791 feet** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.

    e. 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.
    f. 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)

    g. 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.
    h. 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.

5. The minimum required fill of cement behind the **8-5/8** inch intermediate casing 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.

    c. 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.

    d. 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 8-5/8" annulus. Operator must run a CBL from TD of the 8-5/8" casing to surface. Submit results to BLM.

6. 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 **5000 (5M)** 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.

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 LP
WELL NAME & NO.:	Tomb Raider 1-12 Fed 332H
SURFACE HOLE FOOTAGE:	210'/N & 2199'/W
BOTTOM HOLE FOOTAGE	20'/S & 2370'/W
LOCATION:	Section 1, T.23 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

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

☐ **General Provisions**
☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☒ **Special Requirements**
- Lesser Prairie-Chicken Timing Stipulations
- Ground-level Abandoned Well Marker
- Potash
- Range
- Watershed
- Cultural

☐ **Construction**
- Notification
- Topsoil
- Closed Loop System
- Federal Mineral Material Pits
- Well Pads
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☐ **Road Section Diagram**
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- Well Structures & Facilities
- Pipelines
- Electric Lines

☐ **Interim Reclamation**
☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

This pad is a build as you go not a full grade.

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.

The proposed action occurs within one-half mile of the WIPP and Mills lesser prairie-chicken Habitat Evaluation Areas (HEA) as described in the 2008 Special Status Species Resource Management Plan Amendment. Therefore, according to the prescriptions set forth in the RMPA for management of HEAs, non-emergency exceptions to the Timing Limitation Condition-of-Approval will not be granted to afford the species protection during its breeding season.

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.

Raptor Nest Mitigation

- A BLM Wildlife Biologist must be contacted by the operator prior to construction activities to determine if the raptor nests/burrows are active.
- Raptor nests on special, natural habitat features, such as trees, large brush, cliff faces and escarpments, will be protected by not allowing surface disturbance within up to 200 meters of nests or by delaying activity for up to 90 days, or a combination of both. Exceptions to this requirement for raptor nests will be considered if the nests expected to be disturbed are inactive, the proposed activity is of short duration (e.g. habitat enhancement projects, fences, pipelines), and will not result in continuing activity in proximity to the nest.
- 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.

Temporary Fencing Requirement

For the following proposed locations, the BLM would require temporary fencing be installed before construction begins. This fencing would remain in place and be maintained throughout the life of the well pads and CTB pads to protect nearby dune land habitat from harm.

- Todd Apache 6-6 Pad 2
- Todd Apache 6-6 CTB 2
- Todd Apache 8-5 CTB 2

Temporary Fencing Requirement

For the following proposed locations, the BLM would require temporary fencing be installed before construction begins. This fencing would remain in place and be maintained throughout the life of the well pads and CTB pads to protect nearby dune land habitat from harm.

- Todd Apache 6-6 Pad 2
- Todd Apache 6-6 CTB 2
- Todd Apache 8-5 CTB 2

Temporary Fence Crossing 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 fences.

Cattle Guard Requirement
Where entry is granted across a fence line for an access road, 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 with an appropriately sized cattle guard sufficient to carry out the project. Any new or existing cattle guards on the access 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. Once the road is abandoned, the fence would 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 fences.

Livestock Watering Requirement
The operator must contact the allotment holder prior to construction to identify the location of the pipelines. The operator must take measures to protect the pipelines from compression or other damages. If the pipelines are 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 pipelines 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.

Interim reclamation will be conducted on all disturbed areas not needed for active support of production operations, and if caliche is used as a surfacing material it will be removed at time of reclamation to enhance re-establishment of vegetation.

Temporary Fencing Requirement
For the following proposed locations, the BLM would require temporary fencing be installed before construction begins. This fencing would remain in place and be maintained throughout the life of the well pads and CTB pads to protect nearby dune land habitat from harm..

- Todd Apache 6-6 Pad 2
- Todd Apache 6-6 CTB 2
- Todd Apache 8-5 CTB 2

Devon would need to avoid the two identified archaeology sites by ensuring that infrastructure and vehicles maintain a minimum distance of 100 feet from these sites.

- Any water erosion that may occur due to the construction of the well pad and CTB pad during the life of the well and CTB will be corrected within two weeks and proper measures will be taken to prevent future erosion.

Permitted Exceptions for Drilling in the Designated Potash Area

1. It is the intent of the Department of the Interior to administer oil and gas operations throughout the Designated Potash Area in a manner which promotes safe, orderly co-development of oil, gas, and potash resources. It is the policy of the Department of the Interior to deny approval of most applications for permits to drill oil and gas wells from surface locations within the Designated Potash Area. Three exceptions to this policy will be permitted if the drilling will occur under the following conditions from:

    a. A Drilling Island associated with a Development Area established under this Order or a Drilling Island established under a prior Order;

    b. A Barren Area and the Authorized Officer determines that such operations will not adversely affect active or planned potash mining operations in the immediate vicinity of the proposed drill-site; or

    c. A Drilling Island, not covered by (a) above or single well site established under this Order by the approval and in the sole discretion of the Authorized Officer, provided that such site was jointly recommended to the Authorized Officer by the oil and gas lessee(s) and the nearest potash lessee(s).

Development Areas

2. When processing an application for permit to drill (APD) an oil or gas well in the Designated Potash Area that complies with regulatory requirements, the Authorized Officer will determine whether to establish a Development Area in connection with the application, and if so, will determine the boundaries of the Development Area and the location within the Development Area of one or more Drilling Islands from which drilling will be permitted. The BLM may also designate a Development Area outside of the APD process based on information in its possession, and may modify the boundaries of a Development Area. Existing wells may be included within the boundaries of a Development Area. A Development Area may include Federal oil and gas leases and other Federal and non-Federal lands.

    a. After designating or modifying a Development Area, the BLM will issue a Notice to Lessees, consistent with its authorities under 43 CFR Subpart 3105 and part 3180, information lessees that future drilling on lands under an oil and gas lease within that Development Area will:

        i. occur, under most circumstances, from a Barren Area or A Drilling Island within the Development Area; and
        ii. be managed under a unit or communitization agreement, generally by a single operator, consistent with BLM regulations and this Order. Unit and communitization agreements will be negotiated among lessees. The BLM will consider whether a specific plan of development is necessary or advisable for a particular Drilling Island.

    b. The Authorized Officer reserves the right to approve an operator or successor operator of a Development Area and/or a Drilling Island, if applicable, to ensure that the operator has the resources to operate and extract the oil and gas resources consistent with the requirements of this Order and all applicable laws

and regulations, and has provided financial assurance in the amount required by the Authorized Officer.

c. The Authorized Officer will determine the appropriate designation of a Development Area in terms of location, shape and size. In most cases, a single Drilling Island will be established for each Development Area. In establishing the location, shape and size of a Development Area and an associated Drilling Island, the Authorized Officer will consider:

   i. the appropriate location, shape, and size of a Development Area and associated Drillings Island to allow effective extraction of oil and gas resources while managing the impact on potash resources;
   ii. the application of available oil and gas drilling and production technology in the Permian Basin;
   iii. the applicable geology of the Designated Potash Area and optimal locations to minimize loss of potash ore while considering co-development of both resources;
   iv. any long term exploration and/or mining plans provided by the potash industry;
   v. whether a Barren Area may be the most appropriate area for a Drilling Island;
   vi. the requirements of this Order; and
   vii. any other relevant factors

d. As the Authorized Officer establishes a Development Area, the Authorized Officer will more strictly apply the factors listed in Section 6.e.(2)(d), especially the appropriate application of the available oil and gas drilling and production technology in the Permian Basin, when closer to current traditional (non-solution) potash mining operations. Greater flexibility in the application of the factors listed in Section 6.e(2)(d) will be applied further from current and near-term traditional (non-solution) potash mining operations. No Drilling Islands will be established within one mile of any area where approved potash mining operations will be conducted within 3 years consistent with the 3-year mine plan referenced above (Section 6.d.(8)) without the consent of the affected potash lessee(s).

e. The Authorized Officer may establish a Development Area associated with a well or wells drilled from a Barren Area as appropriate and necessary.

f. As part of the consideration for establishing Development Areas and Drilling Islands, the BLM will consider input from the potash lessees and the oil and gas lessees or mineral right owner who would be potentially subject to a unitization agreement supporting the Development Are, provided that the input is given timely.

Buffer Zones

3. Buffer Zones of ¼ mile for oil wells and ½ mile for gas wells are hereby established. These Buffer Zones will stay in effect until such time as revised distances are adopted by the BLM Director or other BLM official, as delegated. However, the Authorized Officer may adjust the Buffer Zones in an individual case, when the facts and circumstances demonstrate that such adjustment would enhance conservation and would not compromise safety. The Director will base revised Buffer Zones on science, engineering, and new technology and will consider comments and reports from the Joint Industry Technical Committee and other interested parties in adopting any revisions.

Unitization and Communitization

4. To more properly conserve the potash, oil, and gas resources in the Designated Potash Area, and to adequately protect the rights of all parties in interest, including the United States, it is the policy of the Department of the Interior that all Federal oil and gas leases within a Development Area should be unitized or subject to an approved communitization agreement unless there is a compelling reason for another operating system. The Authorized Officer will make full use of his/her authorities wherever necessary or advisable to require unitization and/or communitization pursuant to the regulations in 43 CFR Subparts 3105 and 3180. The Authorized Officer will use his/her discretion to the fullest extent possible to assure that any communitization agreement and any unit plan of operations hereafter approved or prescribed within the Designated Potash Area will adhere to the provisions of this Order. The Authorized Officer will work with Federal lessees, and with the State Of New Mexico as provided below, to include non-Federal mineral rights owners in unit or communitization agreements to the extent possible.

5. Coordination with the State of New Mexico.

    a. If the effective operation of any Development Area requires that the New Mexico Oil Conservation Division (NMOCD) revise the State's mandatory well spacing requirements, the BLM will participate as needed in such a process. The BLM may adopt the NMOCD spacing requirements and require lessees to enter into communitization agreements based on those requirements.

    b. The BLM will cooperate with the NMOCD in the implementation of that agency's rules and regulations.

    c. In taking any action under Section 6.e. of this Order, the Authorized Officer will take into consideration the applicable rules and regulations of the NMOCD.

To minimize impacts to potash resources, the proposed well is confined within the boundaries of the established Tomb Raider 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.

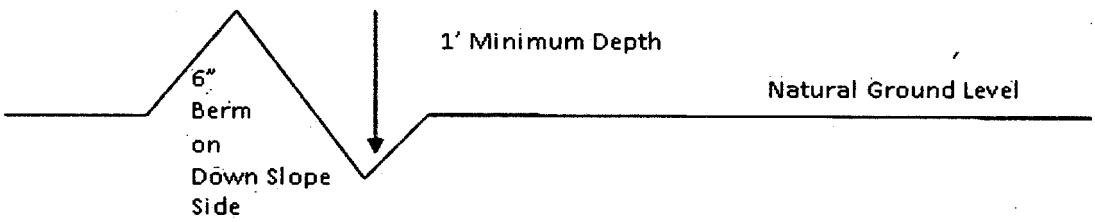
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

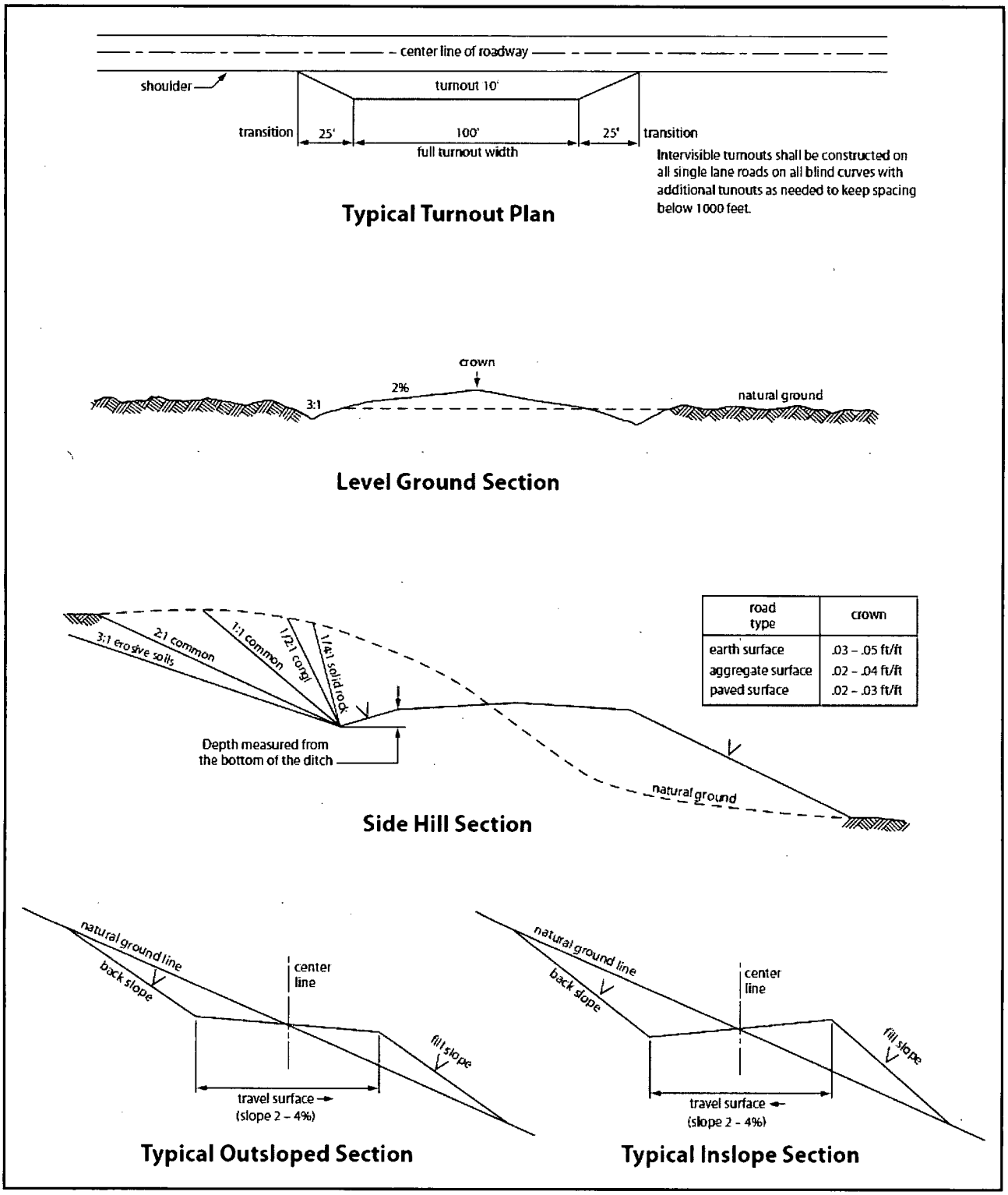


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

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.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the application (Grant, Sundry Notice, APD) 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 activity of 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. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
b. Activities of other parties including, but not limited to:
    (1) Land clearing.
    (2) Earth-disturbing and earth-moving work.
    (3) Blasting.
    (4) Vandalism and sabotage.
c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, 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, salt water, or 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 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 the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. 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.

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. Excluding the pipe, all above-ground structures not subject to safety requirement 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" – **Shale Green**,

Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. 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. Signs will be maintained in a legible condition for the life of the pipeline.

14. 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. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. 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 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.

16. 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, powerline 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.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

18. Special Stipulations:

a. **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 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.

b. This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your

Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

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.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

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).

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

06/27/2019

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: 12/14/2018

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: (405)552-4902

Email address: ray.vaz@dvn.com

AFMSS

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

Application Data Report
06/27/2019

APD ID: 10400037335 **Submission Date:** 12/14/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400037335 **Tie to previous NOS?** **Submission Date:** 12/14/2018

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: NMNM022080 **Lease Acres:** 1280

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: TOMB RAIDER 1-12 FED **Well Number:** 332H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** LIVINGSTON RIDGE **Pool Name:** BONESPRING

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

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

Describe other minerals:

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

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** TODD APACHE 1-1 PAD **Number:** 1

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:** 525 FT **Distance to lease line:** 210 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: TOMB_RAIDER_1_12_FED_332H_C102_20181214124901.pdf

Well work start Date: 06/19/2019 **Duration:** 45 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 6665

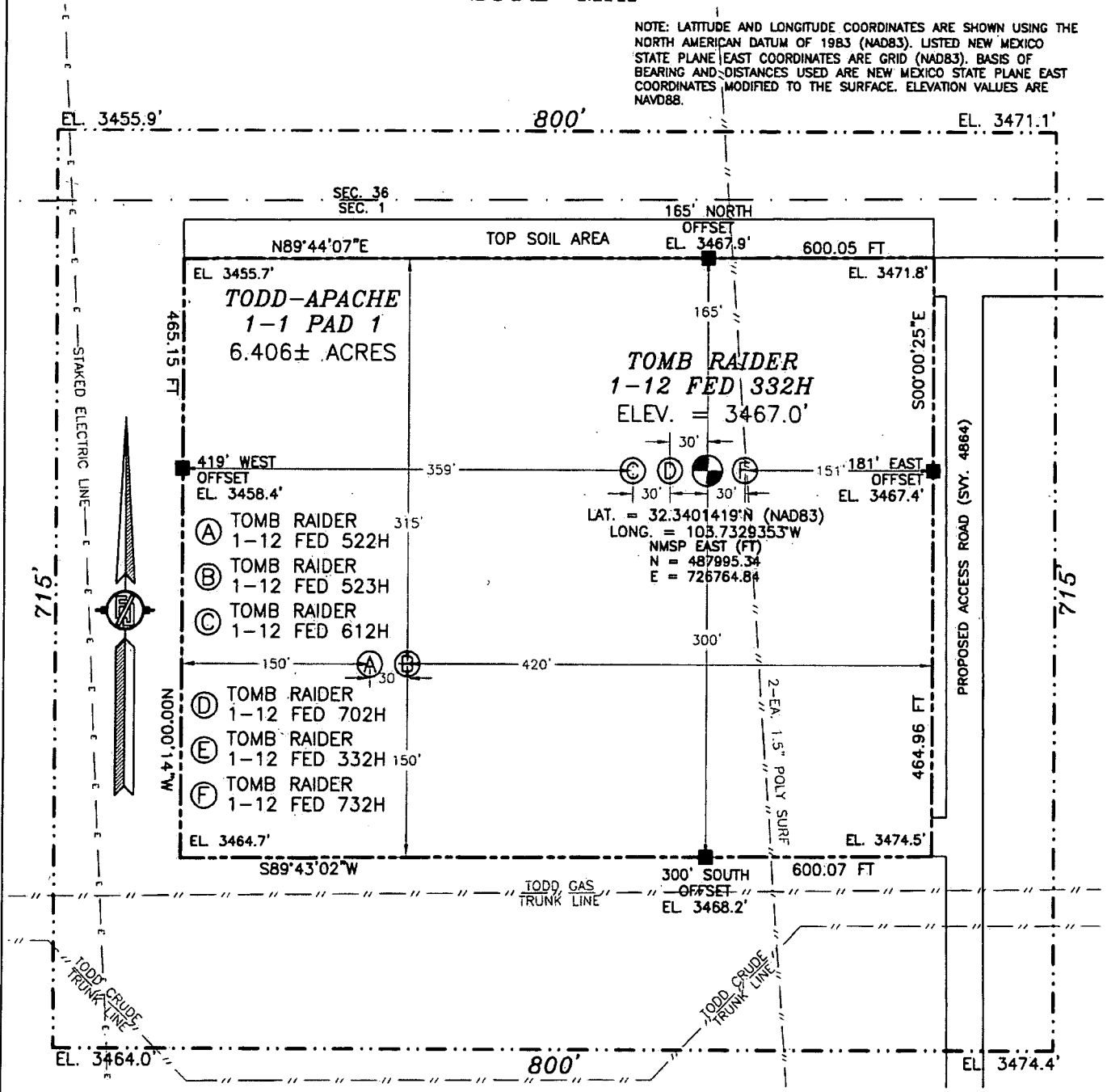
	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	210	FNL	2199	FWL	23S	31E	1	Lot 3	32.3401419	-103.7329353	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 022080	3467	0	0
KOP Leg #1	50	FNL	2370	FWL	23S	31E	1	Lot 3	32.340579	-103.732379	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 022080	-7580	11050	11047
PPP Leg #1	100	FNL	2370	FWL	23S	31E	1	Lot 3	32.340442	-103.732379	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 022080	-7814	11291	11281

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

	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	FSL	2370	FWL	23S	31E	12	Aliquot SESW	32.311974	-103.732359	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 022080	-8153	21784	11620
BHL Leg #1	20	FSL	2370	FWL	23S	31E	12	Aliquot SESW	32.311754	-103.732584	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 022080	-8153	21864	11620

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP



DIRECTIONS TO LOCATION

FROM STATE HIGHWAY 128 AND CR 798 (RED ROAD) GO NORTH ON CR 798 6.4 MILES, TURN RIGHT ON CALICHE ROAD AND GO EAST 0.4 OF A MILE, BEND RIGHT AND GO SOUTH 0.15 OF A MILE, BEND LEFT AND GO SOUTHEAST 0.19 OF A MILE, TURN RIGHT AND GO SOUTH 0.11 OF A MILE TO A PROPOSED ROAD SURVEY WHERE ROAD BENDS LEFT. FOLLOW FLAGS SOUTH 90', THEN WEST 378' TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 332H

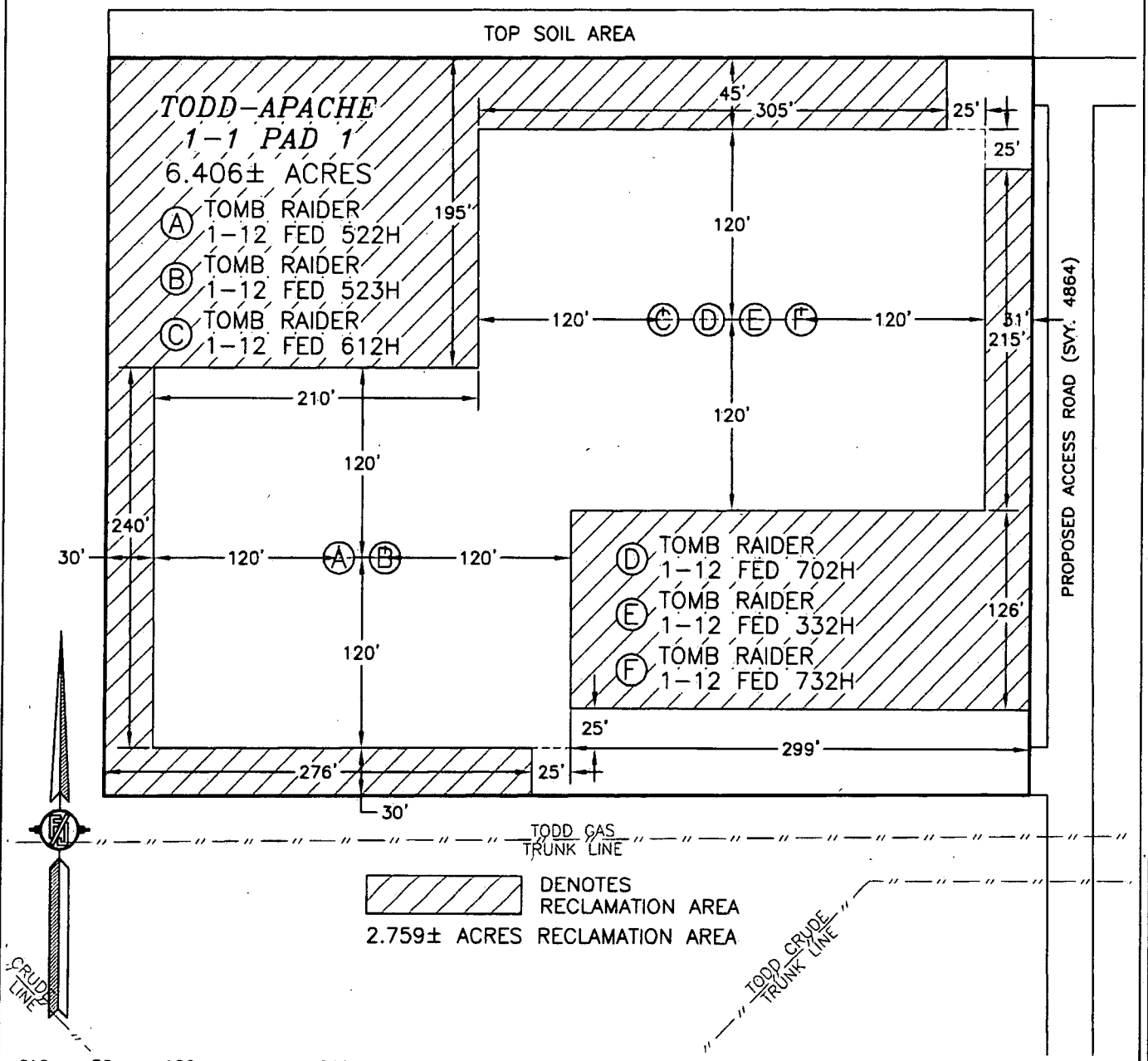
LOCATED 210 FT. FROM THE NORTH LINE AND 2199 FT. FROM THE WEST LINE OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6665

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
INTERIM SITE RECLAMATION



DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 332H

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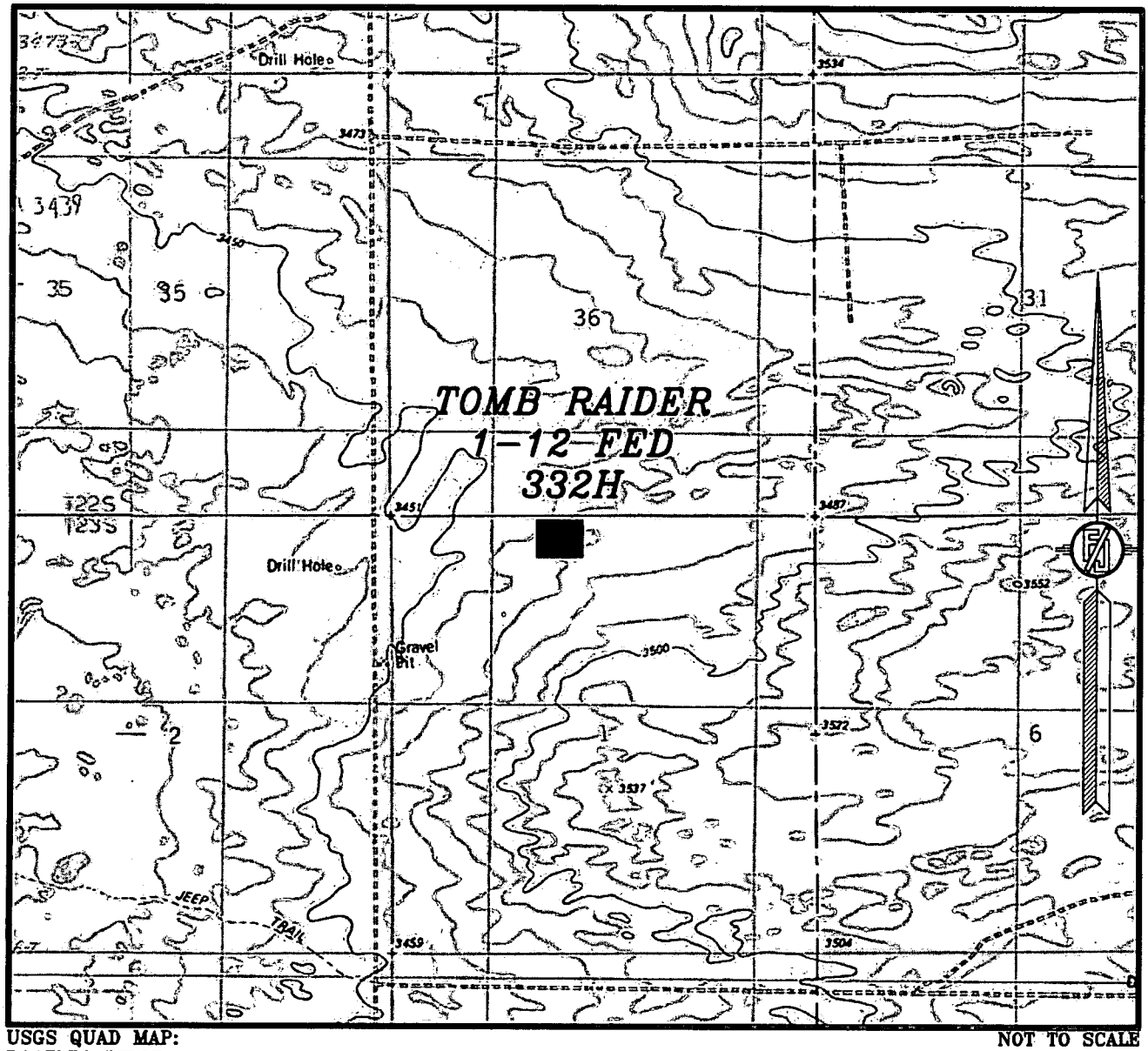
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



USGS QUAD MAP:
BOOTLEG RIDGE

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 332H

LOCATED 210 FT. FROM THE NORTH LINE
AND 2199 FT. FROM THE WEST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

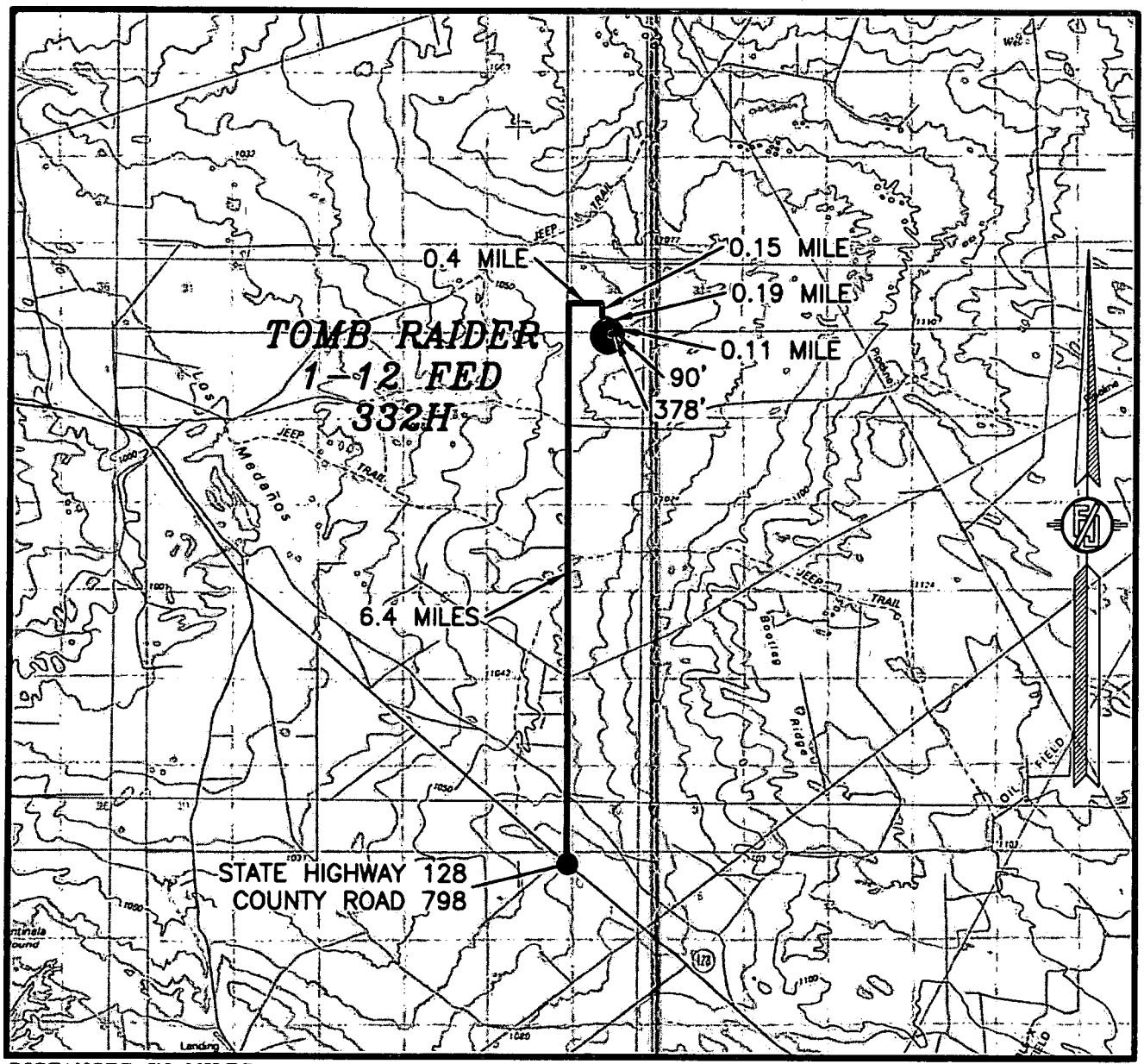
NOVEMBER 6, 2018

SURVEY NO. 6665

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION
FROM STATE HIGHWAY 128 AND CR 798 (RED ROAD) GO NORTH ON CR 798 6.4 MILES, TURN RIGHT ON CALICHE ROAD AND GO EAST 0.4 OF A MILE, BEND RIGHT AND GO SOUTH 0.15 OF A MILE, BEND LEFT AND GO SOUTHEAST 0.19 OF A MILE, TURN RIGHT AND GO SOUTH 0.11 OF A MILE TO A PROPOSED ROAD SURVEY WHERE ROAD BENDS LEFT. FOLLOW FLAGS SOUTH 90', THEN WEST 378' TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 1-12 FED 332H
LOCATED 210 FT. FROM THE NORTH LINE AND 2199 FT. FROM THE WEST LINE OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

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SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO

NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 332H

LOCATED 210 FT. FROM THE NORTH LINE
AND 2199 FT. FROM THE WEST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6665

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL ACCESS ROUTE MAP

NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 332H

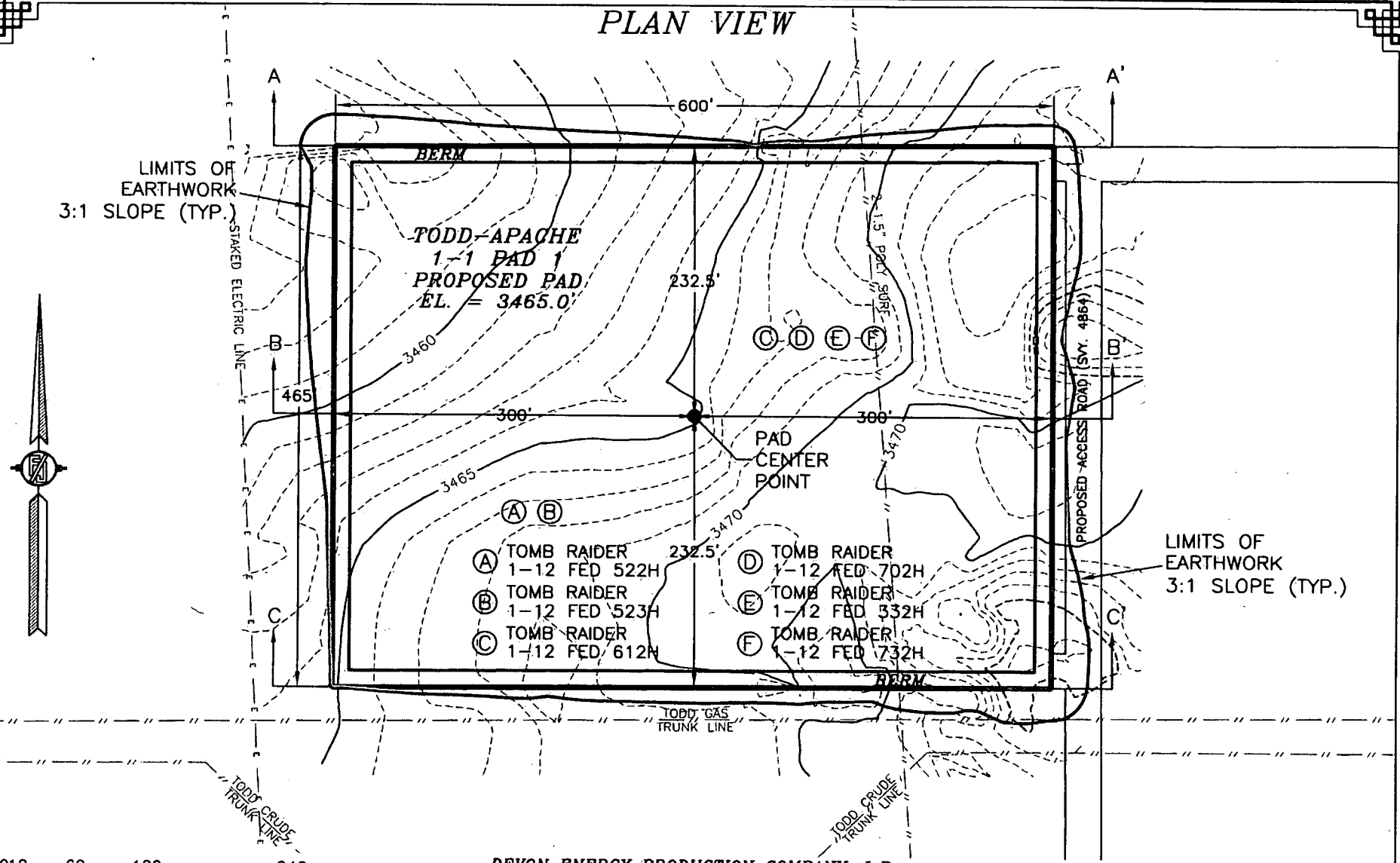
LOCATED 210 FT. FROM THE NORTH LINE
AND 2199 FT. FROM THE WEST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6665

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

PLAN VIEW



CUT	FILL	NET
32056 CU. YD	13418 CU. YD	18638 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

DEVON ENERGY PRODUCTION COMPANY, L.P.
PAD GRADING AND CROSS SECTIONS
FOR TOMB RAIDER 1-12 FED 332H
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

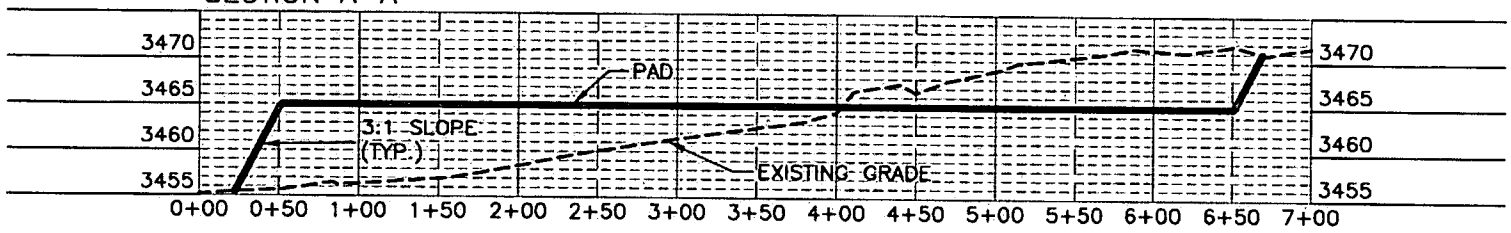
NOVEMBER 6, 2018

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

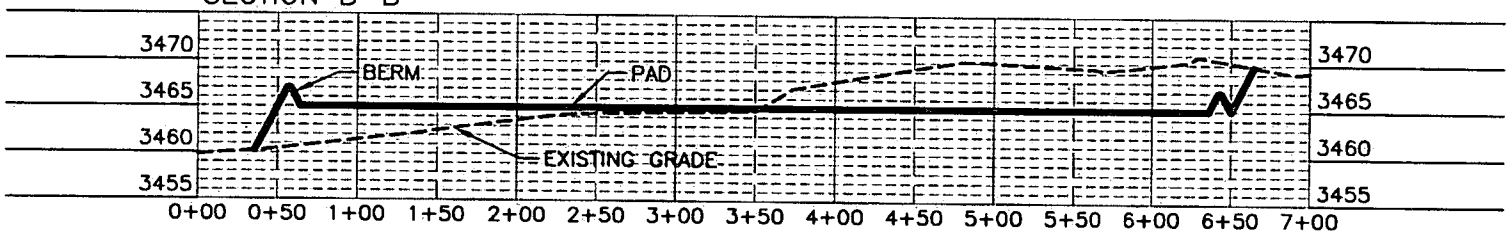
SHEET 1-2
SURVEY NO. 6665

CROSS-SECTIONS

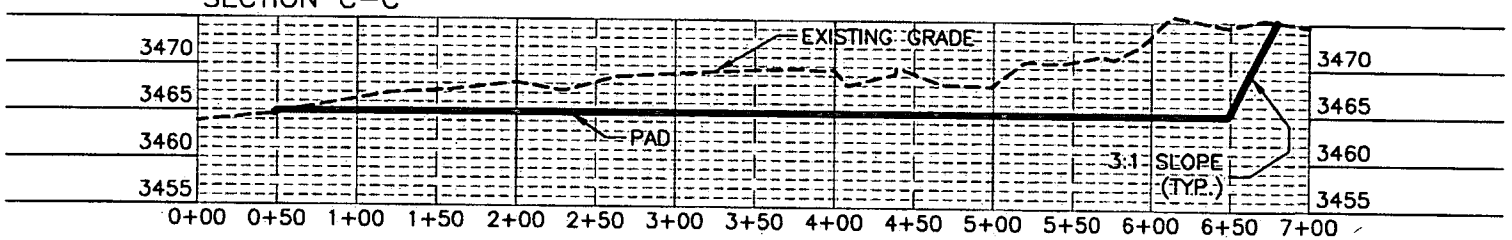
SECTION A-A'



SECTION B-B'



SECTION C-C'



0 12 60 120 240

SCALE 1" = 120' - 1" = 20' VER

DEVON ENERGY PRODUCTION COMPANY, L.P.
PAD GRADING AND CROSS SECTIONS
FOR TOMB RAIDER 1-12 FED 332H
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

CUT	FILL	NET
32056 CU. YD	13418 CU. YD	18638 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

NOVEMBER 6, 2018

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SHEET 2-2
SURVEY NO. 6665

APD ID: 10400037335 **Submission Date:** 12/14/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

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	3467	0	0	OTHER	NONE	No
2	RUSTLER	2797	670	670	SALT	NONE	No
3	SALADO	2326	1141	1141	SALT	NONE	No
4	BASE OF SALT	-978	4445	4445	SALT	NONE	No
5	DELAWARE	-1008	4475	4475	SANDSTONE	NATURAL GAS,OIL	No
6	BONE SPRING LIME	-4883	8350	8350	LIMESTONE	NATURAL GAS,OIL	No
7	BONE SPRING 3RD	-8153	11620	21620	SANDSTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 11620

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below intermeidate 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_20180716121144_20181214075309.pdf

BOP Diagram Attachment:

5M_BOPE_20180716121144_20181214075317.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

Pressure Rating (PSI): 5M **Rating Depth:** 10006

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below surface 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_20180716121144_20181214075203.pdf

BOP Diagram Attachment:

5M_BOPE_20180716121144_20181214075210.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	14.75	10.75	NEW	API	N	0	791	0	791	-6768	-7557	791	J-55	40.5	STC	1.125	1.25	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	10006	0	10006	-6768	-11036	10006	P-110	29.7	OTHER - BTC	1.125	1.25	BUOY	1.6	BUOY	1.6
3	PRODUCTION	6.75	5.5	NEW	API	N	0	21864	0	11620	-6768	-16768	21864	P-110	20	OTHER - VAM SG	1.125	1.25	BUOY	1.6	BUOY	1.6

Casing Attachments

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Surf_Csg_Ass_20181214075552.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Int_Csg_Ass_20181214075711.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Prod_Csg_Ass_20181214075915.pdf

Section 4 - Cement

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	791	513	1.33	13.2	683	50	C	Class C + adds
INTERMEDIATE	Lead		0	6006	882	1.85	9	1632	30	TUNED	TUNED LIGHT
INTERMEDIATE	Tail		6006	10006	848	1.33	13.2	1128	30	H	Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
PRODUCTION	Lead		9506	21864	862	1.33	13.2	1147	10	CLASS H	Class H / C + additives
PRODUCTION	Tail										none

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	791	OTHER : FW GEL	8.5	9				2			

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

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	10006	OTHER : DBE / Cut Brine	9	10				2			
10006	11620	OIL-BASED MUD	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: 6345 **Anticipated Surface Pressure:** 3788.6

Anticipated Bottom Hole Temperature(F): 168

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:

Tomb_Raider_1_12_Fed_332H_H2S_20181214130131.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Devon_Tomb_Raider_1_12_Fed_332H_AC_Report_Permit_Plan_1_20181214130222.pdf

Devon_Tomb_Raider_1_12_Fed_332H_Permit_Plan_1_20181214130222.pdf

Devon_Tomb_Raider_1_12_Fed_332H_Plot_Permit_Plan_1_20181214130223.pdf

Other proposed operations facets description:

DRILLING PLAN -revsied 5/7/2019
CLOSED LOOP DESIGN,
MB VERB MB WELLHEAD, GAS CAPTURE PLAN, SPEC SHEETS, SPUDDER RIG

Other proposed operations facets attachment:

Spudder_Rig_Info_20181214084913.pdf

8.625_32__P110EC___7.875_SD__BTC__20181214084913.pdf

Clsd_Loop_20181214085036.pdf

5.5_x_20_P110_EC_VAMSG_20181214084912.pdf

TODD_1_12_GasCapturePlan_12_13_2018_20181214130240.pdf

MB_Verb_5M_20190507073353.pdf

MB_Wellhd_5M___WC_10.75_7.625_20190507073450.pdf

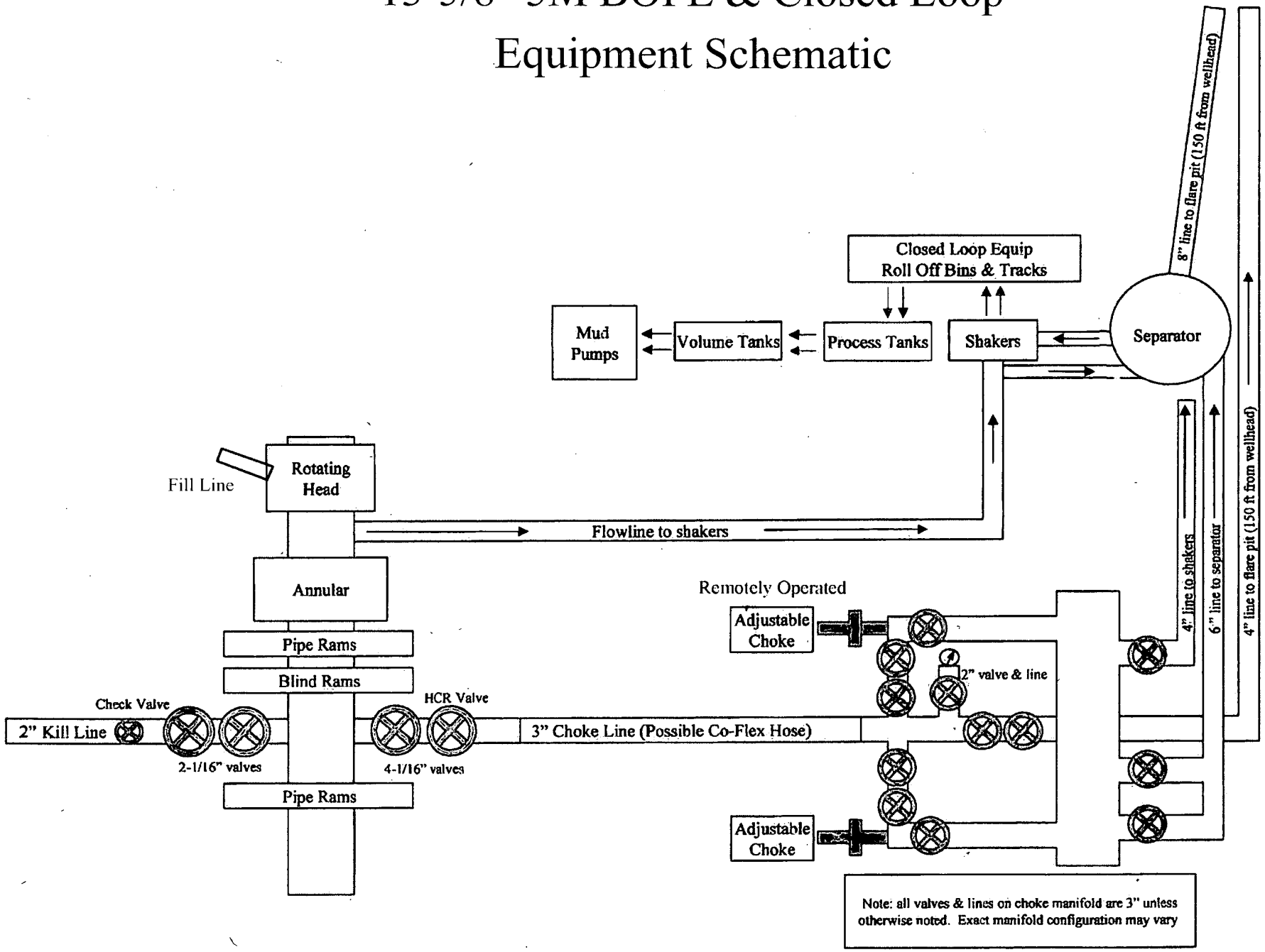
Tomb_Raider_12_1_Fed_332H_Drilling_Plan_5_6_20190507074034.pdf

MB_Wellhd_10M_13.375_8.625_5.5_20190516131003.PDF

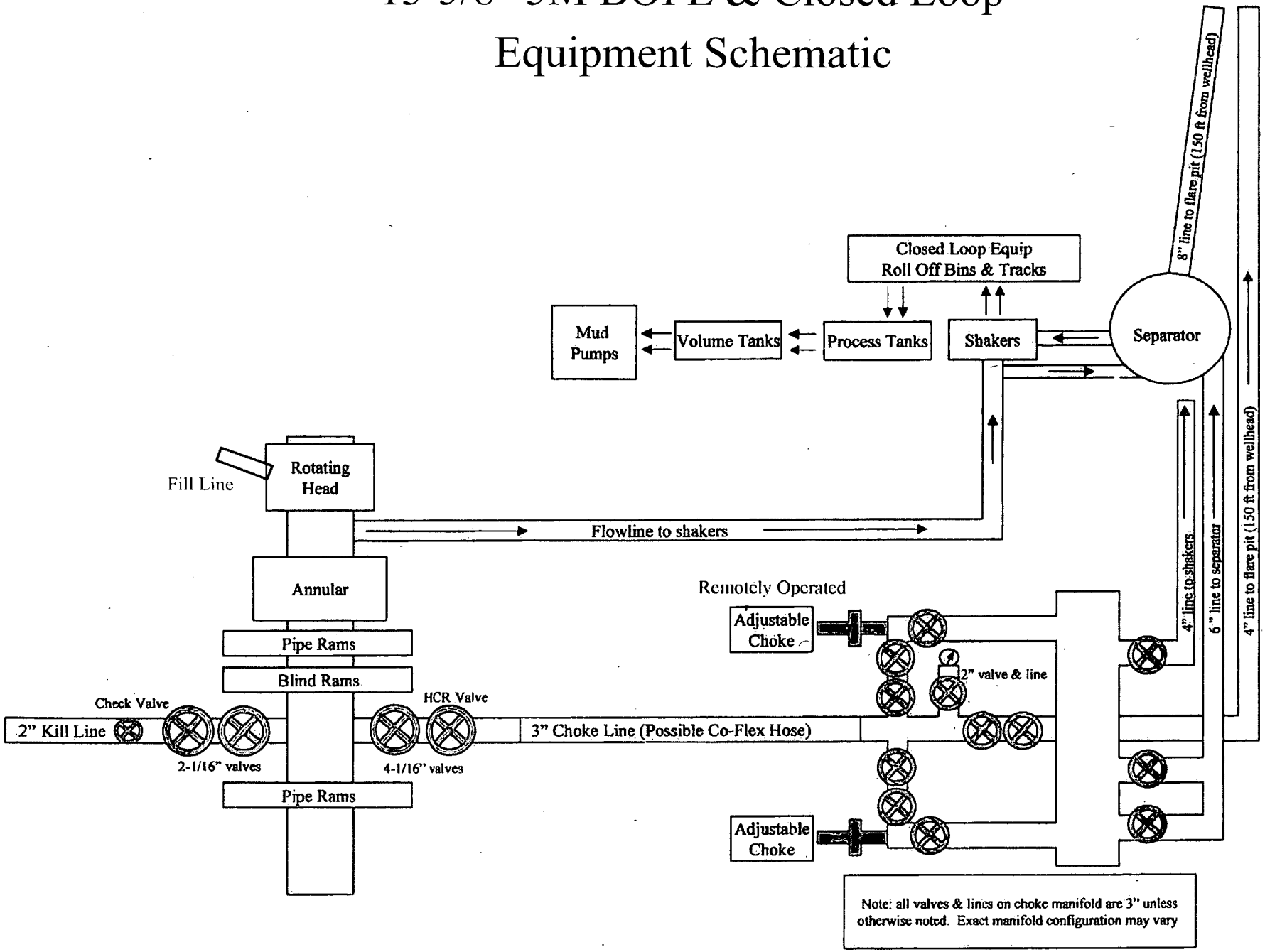
Other Variance attachment:

Co_flex_20181214085236.pdf

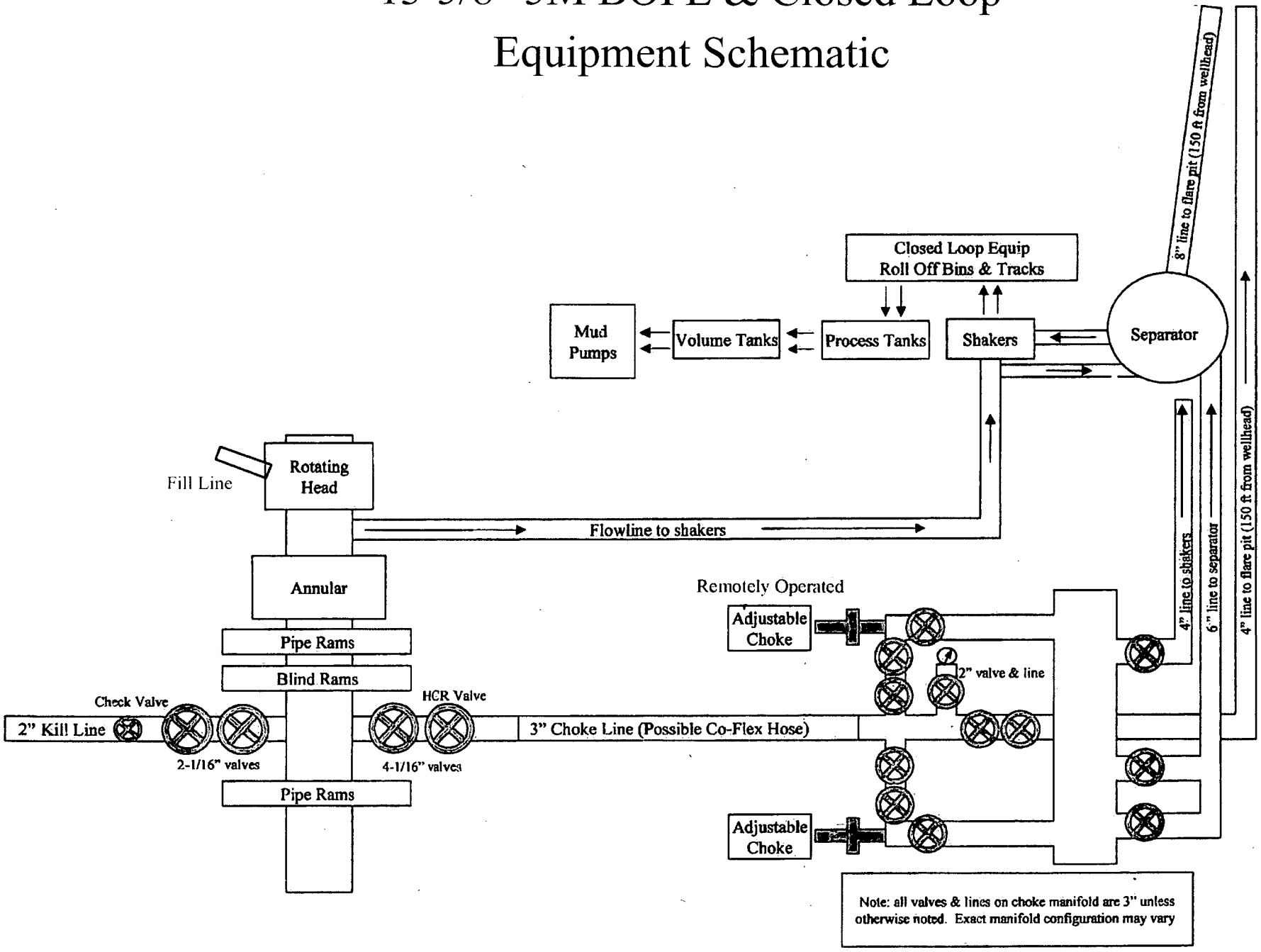
13-5/8" 5M BOPE & Closed Loop Equipment Schematic



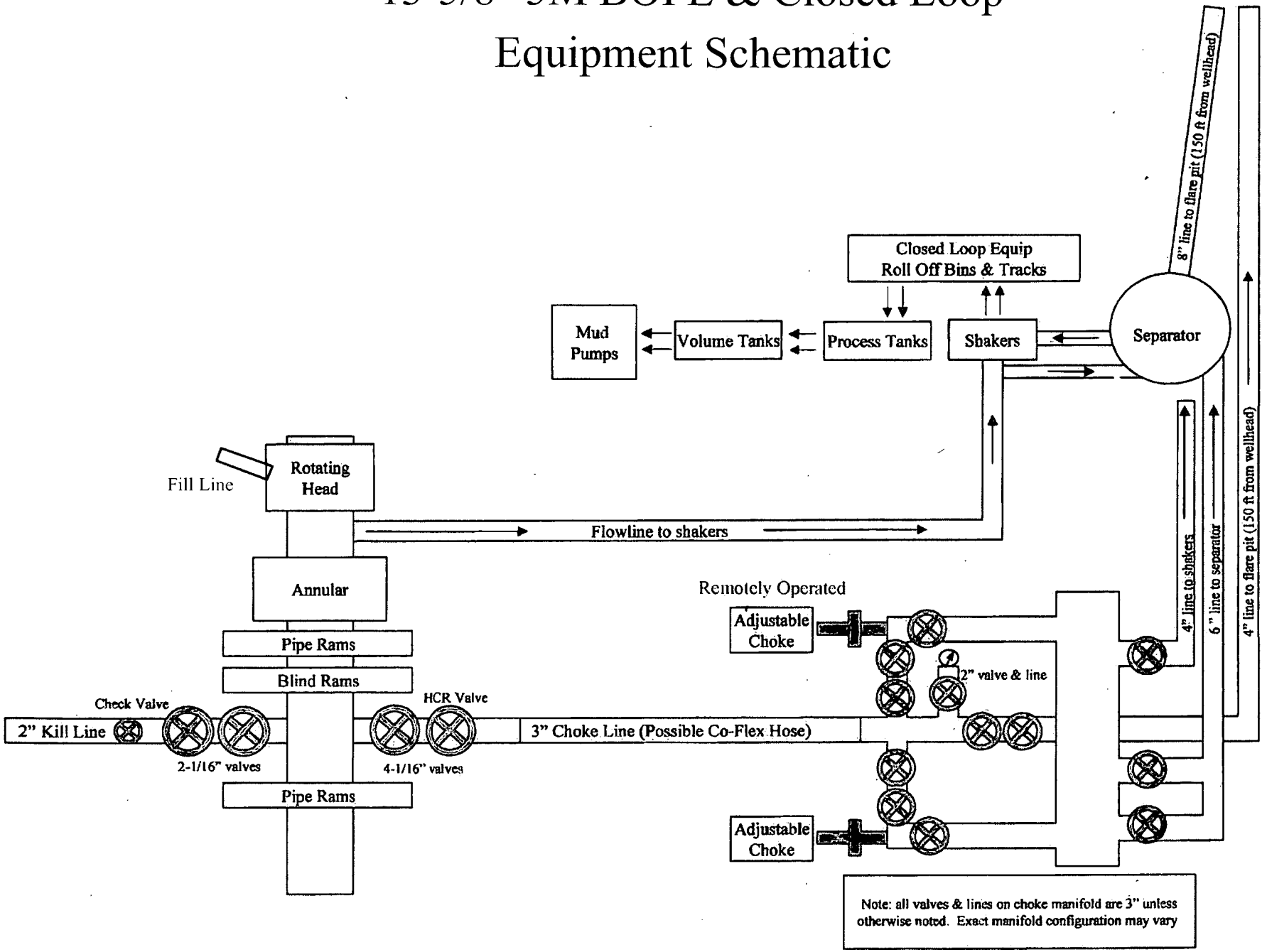
13-5/8" 5M BOPE & Closed Loop Equipment Schematic



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



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



Casing Assumptions and Load Cases

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

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

devon

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

Hydrogen Sulfide (H_2S) Contingency Plan

For

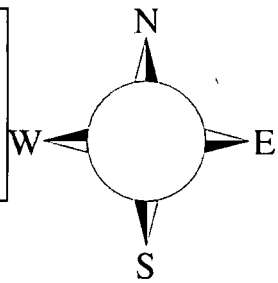
Tomb Raider 1-12 Fed 332H

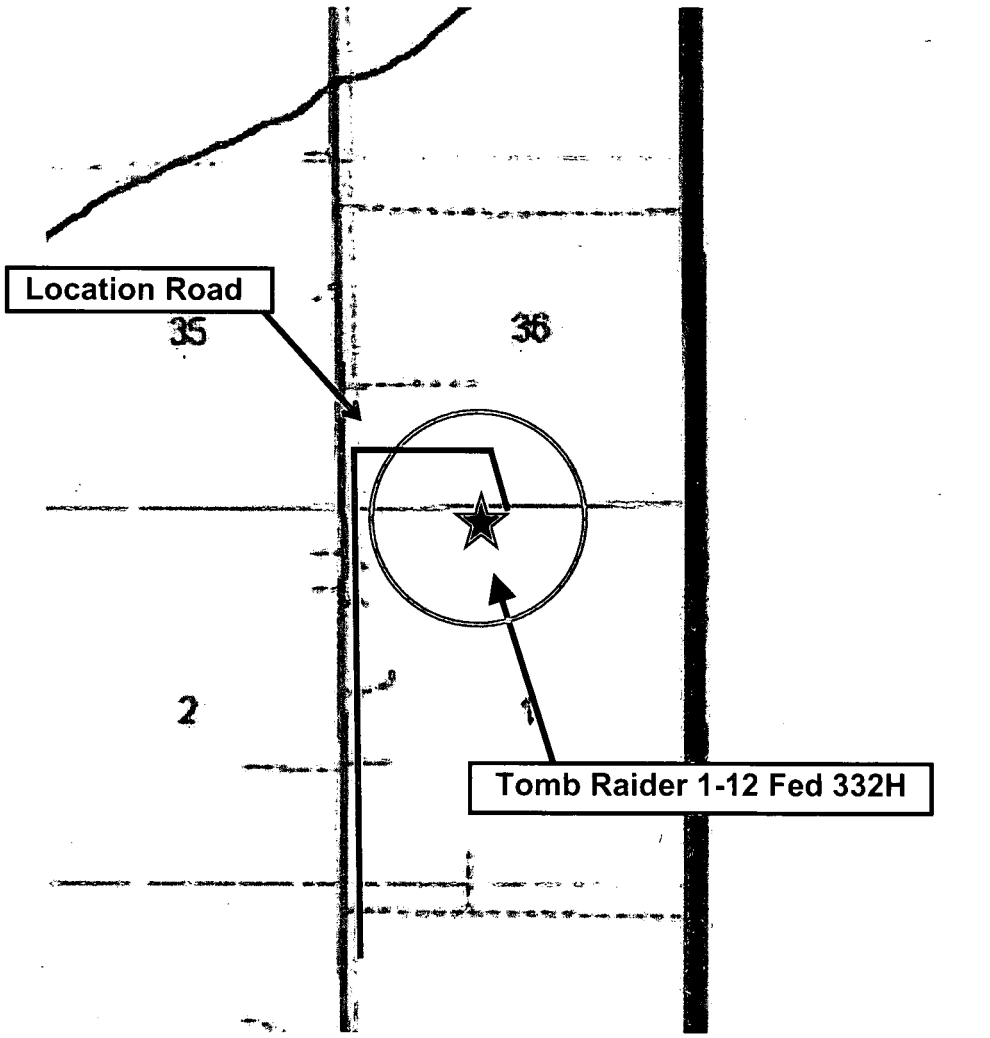
Sec-1 T-23S R-31E
210' FNL & 2199' FWL
LAT. = 32.3401419' N (NAD83)
LONG = 103.7329353' W

Eddy County NM

Tomb Raider 1-12 Fed 332H

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.





Assumed 100 ppm ROE = 3000' (Radius of Exposure)
100 ppm H2S concentration shall trigger activation of this plan.

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 & CONSULTING, LLC

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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** 11/30/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	21,864.06	Permit Plan 1 (Wellbore #1)	MWD+HDGM	OWSG MWD + HDGM

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 01-T23S-R31E						
Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1	15,946.76	10,704.00	1,008.60	868.76	7.212	CC
Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1	15,950.00	10,704.00	1,008.61	868.73	7.211	ES
Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1	16,600.00	10,704.00	1,201.67	1,006.09	6.144	SF
Belloq 2 State 5H - Wellbore #1 - Actual						Out of range
Belloq 2 State 5H - Wellbore #1 - Plan #1						Out of range
Belloq 2 State 5H - Wellbore #1 - Plan #2						Out of range
Belloq 2 State 5H - Wellbore #1 - Plan #3						Out of range
Belloq 2 State 5H - Wellbore #1 - PTL						Out of range
Belloq 2 State 5H - Wellbore #1 - PTL - WellCon						Out of range
Belloq 2 State 5H - Wellbore #1 - T&D						Out of range
Tomb Raider 1 Fed 1H - Original - Actual	9,773.67	9,768.43	987.36	919.30	14.507	CC
Tomb Raider 1 Fed 1H - Original - Actual	9,800.00	9,789.46	987.44	919.29	14.488	ES
Tomb Raider 1 Fed 1H - Original - Actual	9,950.00	9,919.31	991.09	922.39	14.428	SF
Tomb Raider 1 Fed 1H - Original - Plan 2	9,811.94	9,808.33	985.02	916.11	14.294	CC, ES
Tomb Raider 1 Fed 1H - Original - Plan 2	9,950.00	9,900.00	988.58	918.92	14.192	SF
Tomb Raider 1 Fed 1H - Original - Plan1v2	9,737.71	9,729.73	935.22	900.61	27.023	CC
Tomb Raider 1 Fed 1H - Original - Plan1v2	9,750.00	9,739.44	935.24	900.59	26.990	ES
Tomb Raider 1 Fed 1H - Original - Plan1v2	9,950.00	9,887.28	941.48	906.17	26.663	SF
Tomb Raider 1 Fed 1H - Original - PTL	9,773.67	9,768.43	987.36	919.30	14.507	CC
Tomb Raider 1 Fed 1H - Original - PTL	9,800.00	9,789.46	987.44	919.29	14.488	ES
Tomb Raider 1 Fed 1H - Original - PTL	9,950.00	9,915.86	991.13	922.44	14.430	SF
Tomb Raider 1 Fed 1H - Original - T&D	10,248.41	12,316.00	925.32	888.88	25.392	CC
Tomb Raider 1 Fed 1H - Original - T&D	10,250.00	12,316.00	925.32	888.87	25.389	ES
Tomb Raider 1 Fed 1H - Original - T&D	10,300.00	12,316.00	926.76	890.18	25.336	SF
Tomb Raider 1-12 Fed 334H - Wellbore #1 - Wellbore #1						Out of range
Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1	190.05	178.05	738.81	737.51	567.153	CC
Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1	2,450.00	2,433.66	742.12	725.28	44.060	ES
Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1	8,750.00	8,714.23	1,038.34	976.87	16.892	SF
Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan	8,649.03	8,654.84	447.02	385.63	7.282	CC
Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan	8,650.00	8,655.65	447.02	385.63	7.281	ES
Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan	8,750.00	8,737.44	449.11	387.19	7.252	SF
Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan	7,885.92	7,896.21	148.07	92.10	2.645	Alert, CC
Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan	7,900.00	7,909.78	148.10	92.02	2.641	Alert, ES
Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan	7,950.00	7,957.92	148.59	92.17	2.634	Alert, SF
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan	6,807.11	6,862.68	110.63	61.73	2.262	Minor Risk, CC
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan	6,850.00	6,904.93	110.88	61.66	2.253	Minor Risk, ES, SF
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan	6,807.11	6,862.68	110.63	61.73	2.262	Minor Risk, 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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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

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 01-T23S-R31E						
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan	6,850.00	6,904.93	110.88	61.66	2.253	Minor Risk, ES, SF
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan	2,500.00	2,508.80	762.65	745.12	43.492	CC
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan	2,650.00	2,642.38	763.21	744.68	41.189	ES
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan	9,000.00	8,933.67	1,107.92	1,044.50	17.470	SF
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan	2,500.00	2,508.80	762.65	745.12	43.492	CC
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan	2,600.00	2,596.45	763.02	744.83	41.938	ES
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan	8,900.00	8,833.47	1,124.77	1,062.08	17.941	SF
Tomb Raider 1-12 Fed 612H - Wellbore #1 - Permit Plan	2,000.00	1,999.90	60.00	46.07	4.308	Alert, CC
Tomb Raider 1-12 Fed 612H - Wellbore #1 - Permit Plan	2,050.00	2,049.44	60.19	45.91	4.215	Alert, ES
Tomb Raider 1-12 Fed 612H - Wellbore #1 - Permit Plan	21,864.06	21,964.10	664.02	353.29	2.137	Minor Risk, SF
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1	10,742.05	10,763.60	660.94	584.46	8.642	CC
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1	21,550.00	21,652.58	664.14	364.09	2.213	Minor Risk, ES, SF
Tomb Raider 1-12 Fed 614H - Wellbore #1 - T&D	11,530.95	11,549.77	515.69	474.55	12.534	CC, ES
Tomb Raider 1-12 Fed 614H - Wellbore #1 - T&D	11,550.00	11,560.72	515.89	474.70	12.525	SF
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1	20,908.79	20,957.06	643.49	359.72	2.268	Minor Risk, CC
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1	21,350.00	21,386.41	644.99	348.82	2.178	Minor Risk, ES
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1	21,864.06	21,890.31	662.39	351.13	2.128	Minor Risk, SF
Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole	1,360.24	1,345.71	877.52	868.36	95.810	CC
Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole	2,550.00	2,532.73	879.71	862.18	50.191	ES
Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole	9,900.00	9,802.00	1,424.37	1,355.25	20.606	SF
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	8,096.18	8,112.14	629.34	572.24	11.021	CC
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	8,250.00	8,261.09	629.79	571.61	10.826	ES
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	21,700.00	20,480.00	1,299.93	1,117.05	7.108	SF
Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan	2,500.00	2,500.10	30.01	12.51	1.714	Minor Risk, CC
Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan	2,550.00	2,550.10	30.17	12.31	1.689	Minor Risk, ES
Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan	21,864.06	22,065.74	385.77	104.00	1.369	Major Risk, SF
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals	0.00	15.21	718.34			
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals	2,400.00	2,407.78	726.68	710.20	44.094	ES
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals	21,864.06	22,205.39	1,262.96	956.92	4.127	Alert, SF
Tomb Raider 1-12 Fed 714H - Original Hole - NTL	0.00	15.21	718.34			
Tomb Raider 1-12 Fed 714H - Original Hole - NTL	2,400.00	2,407.78	726.68	710.20	44.094	ES
Tomb Raider 1-12 Fed 714H - Original Hole - NTL	11,600.00	11,653.74	1,207.57	1,126.22	14.845	SF
Tomb Raider 1-12 Fed 714H - Original Hole - T&D	11,530.97	11,529.68	545.67	505.03	13.426	CC, ES
Tomb Raider 1-12 Fed 714H - Original Hole - T&D	11,550.00	11,542.17	545.86	505.17	13.415	SF
Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan	2,000.00	2,000.20	29.99	16.06	2.153	Minor Risk, CC
Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan	2,050.00	2,049.96	30.19	15.91	2.114	Minor Risk, ES
Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan	21,864.06	22,068.73	304.62	45.06	1.174	Major Risk, SF
Tomb Raider 1-12 Fed Com 234H - Wellbore #1 - Wellbo						Out of range
Tomb Raider 1-12 Fed Com 528H - Wellbore #1 - Wellbo						Out of range
Tomb Raider 1-12 Fed Com 718H - Wellbore #1 - Wellbo						Out of range
Sec 12-T23S-R31E						
Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan	11,600.00	21,485.55	1,323.67	1,131.21	6.878	SF
Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan	11,700.00	21,400.90	1,321.48	1,129.92	6.898	ES
Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan	21,120.07	11,987.13	1,319.75	1,132.00	7.029	CC
Tomb Raider 12-1 Fed 516H - Wellbore #1 - Permit Plan						Out of range
Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan						Out of range
Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan						Out of range
Tomb Raider 12-1 Fed 701H - Wellbore #1 - Permit Plan						Out of range
Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan	21,681.28	11,744.22	1,070.43	874.87	5.474	CC
Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan	21,700.00	11,731.64	1,070.52	874.79	5.469	ES
Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan	21,750.00	11,700.79	1,071.67	875.61	5.466	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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 5.00 ft

Survey Program: 226-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
14,850.00	11,620.00	10,704.00	10,701.98	63.62	224.09	22.28	-4,411.58	-182.99	1,490.02	1,273.82	216.21	6.892	
14,900.00	11,620.00	10,704.00	10,701.98	64.18	224.09	22.28	-4,411.58	-182.99	1,453.61	1,240.06	213.55	6.807	
14,950.00	11,620.00	10,704.00	10,701.98	64.74	224.09	22.28	-4,411.58	-182.99	1,418.03	1,207.31	210.73	6.729	
15,000.00	11,620.00	10,704.00	10,701.98	65.30	224.09	22.28	-4,411.58	-182.99	1,383.34	1,175.63	207.71	6.660	
15,050.00	11,620.00	10,704.00	10,701.98	65.87	224.09	22.28	-4,411.58	-182.99	1,349.62	1,145.11	204.51	6.599	
15,100.00	11,620.00	10,704.00	10,701.98	66.44	224.09	22.28	-4,411.58	-182.99	1,316.92	1,115.82	201.10	6.549	
15,150.00	11,620.00	10,704.00	10,701.98	67.02	224.09	22.28	-4,411.58	-182.99	1,285.34	1,087.85	197.49	6.508	
15,200.00	11,620.00	10,704.00	10,701.98	67.59	224.09	22.28	-4,411.58	-182.99	1,254.96	1,061.29	193.67	6.480	
15,250.00	11,620.00	10,704.00	10,701.98	68.17	224.09	22.28	-4,411.58	-182.99	1,225.87	1,036.22	189.65	6.464	
15,300.00	11,620.00	10,704.00	10,701.98	68.75	224.09	22.28	-4,411.58	-182.99	1,198.16	1,012.72	185.44	6.461	
15,350.00	11,620.00	10,704.00	10,701.98	69.34	224.09	22.28	-4,411.58	-182.99	1,171.92	990.88	181.04	6.473	
15,400.00	11,620.00	10,704.00	10,701.98	69.93	224.09	22.28	-4,411.58	-182.99	1,147.27	970.77	176.50	6.500	
15,450.00	11,620.00	10,704.00	10,701.98	70.52	224.09	22.28	-4,411.58	-182.99	1,124.30	952.46	171.84	6.543	
15,500.00	11,620.00	10,704.00	10,701.98	71.11	224.09	22.28	-4,411.58	-182.99	1,103.12	936.01	167.11	6.601	
15,550.00	11,620.00	10,704.00	10,701.98	71.71	224.09	22.28	-4,411.58	-182.99	1,083.84	921.44	162.40	6.674	
15,600.00	11,620.00	10,704.00	10,701.98	72.31	224.09	22.28	-4,411.58	-182.99	1,066.55	908.76	157.79	6.759	
15,650.00	11,620.00	10,704.00	10,701.98	72.91	224.09	22.28	-4,411.58	-182.99	1,051.36	897.97	153.39	6.854	
15,700.00	11,620.00	10,704.00	10,701.98	73.51	224.09	22.28	-4,411.58	-182.99	1,038.35	889.01	149.34	6.953	
15,750.00	11,620.00	10,704.00	10,701.98	74.12	224.09	22.28	-4,411.58	-182.99	1,027.62	881.81	145.81	7.048	
15,800.00	11,620.00	10,704.00	10,701.98	74.72	224.09	22.28	-4,411.58	-182.99	1,019.22	876.28	142.94	7.130	
15,850.00	11,620.00	10,704.00	10,701.98	75.33	224.09	22.28	-4,411.58	-182.99	1,013.23	872.32	140.92	7.190	
15,900.00	11,620.00	10,704.00	10,701.98	75.94	224.09	22.28	-4,411.58	-182.99	1,009.69	869.82	139.86	7.219	
15,946.76	11,620.00	10,704.00	10,701.98	76.52	224.09	22.28	-4,411.58	-182.99	1,008.60	868.76	139.84	7.212 CC	
15,950.00	11,620.00	10,704.00	10,701.98	76.56	224.09	22.28	-4,411.58	-182.99	1,008.61	868.73	139.88	7.211 ES	
16,000.00	11,620.00	10,704.00	10,701.98	77.17	224.09	22.28	-4,411.58	-182.99	1,010.01	869.03	140.98	7.164	
16,050.00	11,620.00	10,704.00	10,701.98	77.79	224.09	22.28	-4,411.58	-182.99	1,013.87	870.74	143.13	7.083	
16,100.00	11,620.00	10,704.00	10,701.98	78.41	224.09	22.28	-4,411.58	-182.99	1,020.18	873.96	146.22	6.977	
16,150.00	11,620.00	10,704.00	10,701.98	79.03	224.09	22.28	-4,411.58	-182.99	1,028.88	878.79	150.09	6.855	
16,200.00	11,620.00	10,704.00	10,701.98	79.65	224.09	22.28	-4,411.58	-182.99	1,039.91	885.34	154.57	6.728	
16,250.00	11,620.00	10,704.00	10,701.98	80.28	224.09	22.28	-4,411.58	-182.99	1,053.20	893.72	159.49	6.604	
16,300.00	11,620.00	10,704.00	10,701.98	80.91	224.09	22.28	-4,411.58	-182.99	1,068.67	903.99	164.68	6.489	
16,350.00	11,620.00	10,704.00	10,701.98	81.53	224.09	22.28	-4,411.58	-182.99	1,086.22	916.21	170.01	6.389	
16,400.00	11,620.00	10,704.00	10,701.98	82.16	224.09	22.28	-4,411.58	-182.99	1,105.76	930.39	175.37	6.305	
16,450.00	11,620.00	10,704.00	10,701.98	82.80	224.09	22.28	-4,411.58	-182.99	1,127.18	946.51	180.67	6.239	
16,500.00	11,620.00	10,704.00	10,701.98	83.43	224.09	22.28	-4,411.58	-182.99	1,150.37	964.54	185.83	6.191	
16,550.00	11,620.00	10,704.00	10,701.98	84.06	224.09	22.28	-4,411.58	-182.99	1,175.23	984.43	190.81	6.159	
16,600.00	11,620.00	10,704.00	10,701.98	84.70	224.09	22.28	-4,411.58	-182.99	1,201.67	1,006.09	195.57	6.144 SF	
16,650.00	11,620.00	10,704.00	10,701.98	85.34	224.09	22.28	-4,411.58	-182.99	1,229.56	1,029.46	200.10	6.145	
16,700.00	11,620.00	10,704.00	10,701.98	85.98	224.09	22.28	-4,411.58	-182.99	1,258.83	1,054.45	204.38	6.159	
16,750.00	11,620.00	10,704.00	10,701.98	86.62	224.09	22.28	-4,411.58	-182.99	1,289.37	1,080.96	208.41	6.187	
16,800.00	11,620.00	10,704.00	10,701.98	87.26	224.09	22.28	-4,411.58	-182.99	1,321.10	1,108.91	212.19	6.226	
16,850.00	11,620.00	10,704.00	10,701.98	87.90	224.09	22.28	-4,411.58	-182.99	1,353.93	1,138.20	215.73	6.276	
16,900.00	11,620.00	10,704.00	10,701.98	88.55	224.09	22.28	-4,411.58	-182.99	1,387.78	1,168.75	219.03	6.336	
16,950.00	11,620.00	10,704.00	10,701.98	89.20	224.09	22.28	-4,411.58	-182.99	1,422.59	1,200.48	222.11	6.405	
17,000.00	11,620.00	10,704.00	10,701.98	89.84	224.09	22.28	-4,411.58	-182.99	1,458.28	1,233.30	224.98	6.482	
17,050.00	11,620.00	10,704.00	10,701.98	90.49	224.09	22.28	-4,411.58	-182.99	1,494.80	1,267.15	227.65	6.566	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Actual — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9646-MWD+IGRF — **Offset Well Error:** 0.00 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
0.00	0.00	12.03	12.03	0.50	0.02	89.20	15.04	1,077.54	1,077.65				
50.00	50.00	62.57	62.57	0.50	0.08	89.19	15.20	1,077.52	1,077.63	1,077.04	0.59	1,839.830	
100.00	100.00	113.22	113.22	0.52	0.18	89.17	15.59	1,077.47	1,077.58	1,076.89	0.69	1,554.514	
150.00	150.00	164.29	164.28	0.59	0.35	89.15	15.98	1,077.38	1,077.50	1,076.55	0.94	1,140.829	
200.00	200.00	214.79	214.79	0.70	0.53	89.13	16.28	1,077.24	1,077.37	1,076.13	1.23	873.836	
250.00	250.00	264.38	264.38	0.84	0.70	89.12	16.55	1,077.11	1,077.24	1,075.70	1.54	698.824	
300.00	300.00	312.80	312.79	0.99	0.87	89.11	16.80	1,077.02	1,077.15	1,075.29	1.86	579.145	
316.01	316.01	327.91	327.91	1.04	0.93	89.10	16.86	1,077.01	1,077.14	1,075.18	1.96	548.881	
350.00	350.00	360.02	360.01	1.15	1.04	89.10	16.97	1,077.04	1,077.17	1,074.99	2.18	493.541	
400.00	400.00	410.07	410.07	1.31	1.21	89.09	17.12	1,077.16	1,077.29	1,074.77	2.52	427.380	
450.00	450.00	462.82	462.81	1.48	1.40	89.07	17.49	1,077.17	1,077.31	1,074.44	2.87	375.103	
500.00	500.00	513.58	513.57	1.65	1.58	89.04	18.02	1,077.09	1,077.24	1,074.02	3.22	334.620	
550.00	550.00	563.63	563.62	1.82	1.75	89.01	18.52	1,077.00	1,077.16	1,073.60	3.57	302.063	
588.18	588.18	600.09	600.08	1.95	1.88	89.00	18.88	1,076.96	1,077.13	1,073.30	3.83	281.563	
600.00	600.00	611.27	611.25	1.99	1.92	88.99	19.01	1,076.96	1,077.13	1,073.23	3.91	275.790	
650.00	650.00	658.54	658.52	2.16	2.08	88.96	19.57	1,077.04	1,077.22	1,072.98	4.24	253.766	
700.00	700.00	709.21	709.19	2.34	2.26	88.93	20.15	1,077.18	1,077.38	1,072.78	4.60	234.377	
750.00	750.00	760.37	760.34	2.51	2.44	88.91	20.59	1,077.28	1,077.48	1,072.52	4.95	217.634	
800.00	800.00	812.39	812.37	2.69	2.62	88.88	21.03	1,077.30	1,077.50	1,072.19	5.31	202.977	
850.00	850.00	863.94	863.91	2.87	2.80	88.85	21.61	1,077.22	1,077.44	1,071.77	5.66	190.196	
900.00	900.00	914.13	914.09	3.04	2.98	88.82	22.19	1,077.11	1,077.34	1,071.32	6.02	179.052	
950.00	950.00	963.18	963.14	3.22	3.15	88.79	22.71	1,077.00	1,077.24	1,070.88	6.37	169.240	
972.82	972.82	984.76	984.72	3.30	3.23	88.78	22.91	1,076.99	1,077.23	1,070.71	6.52	165.185	
1,000.00	1,000.00	1,010.46	1,010.42	3.40	3.32	88.77	23.12	1,077.00	1,077.25	1,070.54	6.71	160.606	
1,050.00	1,050.00	1,060.16	1,060.12	3.58	3.49	88.75	23.44	1,077.10	1,077.36	1,070.30	7.06	152.639	
1,100.00	1,100.00	1,113.31	1,113.27	3.75	3.68	88.73	23.85	1,077.10	1,077.37	1,069.94	7.42	145.173	
1,150.00	1,150.00	1,162.16	1,162.12	3.93	3.85	88.71	24.27	1,077.02	1,077.29	1,069.52	7.77	138.658	
1,153.12	1,153.12	1,165.06	1,165.02	3.94	3.86	88.71	24.29	1,077.02	1,077.29	1,069.50	7.79	138.281	
1,200.00	1,200.00	1,208.69	1,208.64	4.11	4.01	88.69	24.54	1,077.08	1,077.36	1,069.26	8.11	132.851	
1,250.00	1,250.00	1,257.66	1,257.62	4.29	4.18	88.69	24.68	1,077.27	1,077.56	1,069.10	8.46	127.395	
1,300.00	1,300.00	1,308.04	1,307.99	4.46	4.36	88.68	24.77	1,077.46	1,077.75	1,068.94	8.81	122.302	
1,350.00	1,350.00	1,360.53	1,360.49	4.64	4.54	88.68	24.85	1,077.60	1,077.88	1,068.71	9.17	117.499	
1,400.00	1,400.00	1,413.63	1,413.59	4.82	4.73	88.67	25.05	1,077.59	1,077.88	1,068.34	9.54	113.020	
1,450.00	1,450.00	1,464.35	1,464.30	5.00	4.91	88.65	25.36	1,077.48	1,077.78	1,067.89	9.89	108.952	
1,500.00	1,500.00	1,515.09	1,515.04	5.18	5.08	88.63	25.84	1,077.34	1,077.66	1,067.41	10.25	105.160	
1,550.00	1,550.00	1,564.11	1,564.06	5.36	5.26	88.61	26.23	1,077.22	1,077.54	1,066.94	10.60	101.681	
1,600.00	1,600.00	1,613.57	1,613.52	5.53	5.43	88.59	26.47	1,077.13	1,077.45	1,066.51	10.95	98.413	
1,650.00	1,650.00	1,663.51	1,663.46	5.71	5.60	88.58	26.66	1,077.05	1,077.38	1,066.08	11.30	95.335	
1,700.00	1,700.00	1,712.44	1,712.39	5.89	5.78	88.57	26.81	1,076.99	1,077.32	1,065.67	11.65	92.471	
1,709.35	1,709.35	1,721.30	1,721.25	5.92	5.81	88.57	26.83	1,076.98	1,077.32	1,065.60	11.71	91.963	
1,750.00	1,750.00	1,759.82	1,759.77	6.07	5.94	88.57	26.85	1,077.02	1,077.36	1,065.36	11.99	89.823	
1,800.00	1,800.00	1,808.25	1,808.20	6.25	6.11	88.58	26.79	1,077.17	1,077.51	1,065.16	12.34	87.305	
1,850.00	1,850.00	1,858.12	1,858.06	6.43	6.28	88.58	26.69	1,077.34	1,077.68	1,064.99	12.69	84.893	
1,900.00	1,900.00	1,908.24	1,908.19	6.61	6.46	88.59	26.60	1,077.52	1,077.86	1,064.81	13.05	82.606	
1,950.00	1,950.00	1,958.58	1,958.53	6.78	6.63	88.59	26.50	1,077.69	1,078.02	1,064.62	13.40	80.433	
2,000.00	2,000.00	2,012.66	2,012.61	6.96	6.82	88.60	26.43	1,077.79	1,078.11	1,064.34	13.77	78.293	
2,050.00	2,050.00	2,068.48	2,068.42	7.14	7.01	88.59	26.44	1,077.60	1,077.94	1,063.80	14.14	76.214	
2,100.00	2,100.00	2,117.18	2,117.13	7.32	7.18	88.59	26.49	1,077.34	1,077.67	1,063.18	14.49	74.362	
2,150.00	2,150.00	2,166.14	2,166.08	7.50	7.35	88.59	26.54	1,077.12	1,077.46	1,062.62	14.84	72.596	
2,200.00	2,200.00	2,217.29	2,217.23	7.68	7.53	88.59	26.58	1,076.90	1,077.24	1,062.04	15.20	70.876	
2,250.00	2,250.00	2,267.14	2,267.09	7.86	7.71	88.59	26.56	1,076.63	1,076.97	1,061.42	15.55	69.251	
2,300.00	2,300.00	2,313.21	2,313.15	8.04	7.87	88.59	26.53	1,076.49	1,076.82	1,060.93	15.89	67.761	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Actual

Offset Site Error: 5.00 ft

Survey Program: 102-GYRO-NS, 9646-MWD+IGRF

Offset Well Error: 0.00 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
2,315.94	2,315.94	2,327.90	2,327.84	8.09	7.92	88.59	26.52	1,076.49	1,076.81	1,060.81	16.00	67.302	
2,350.00	2,350.00	2,361.04	2,360.98	8.22	8.03	88.59	26.49	1,076.52	1,076.85	1,060.61	16.24	66.319	
2,400.00	2,400.00	2,415.00	2,414.94	8.39	8.22	88.59	26.46	1,076.47	1,076.80	1,060.19	16.60	64.850	
2,450.00	2,450.00	2,467.07	2,467.01	8.57	8.40	88.59	26.44	1,076.25	1,076.59	1,059.62	16.97	63.459	
2,500.00	2,500.00	2,517.16	2,517.10	8.75	8.58	88.59	26.42	1,076.01	1,076.35	1,059.03	17.32	62.149	
2,550.00	2,550.00	2,564.72	2,564.66	8.93	8.74	41.70	26.38	1,075.81	1,075.98	1,058.31	17.66	60.920	
2,600.00	2,599.99	2,610.71	2,610.66	9.11	8.90	41.73	26.33	1,075.78	1,075.45	1,057.45	18.00	59.747	
2,650.00	2,649.98	2,658.75	2,658.69	9.28	9.07	41.77	26.26	1,075.90	1,074.76	1,056.42	18.34	58.590	
2,700.00	2,699.96	2,708.24	2,708.18	9.46	9.24	41.83	26.18	1,076.06	1,073.86	1,055.16	18.69	57.448	
2,750.00	2,749.94	2,760.32	2,760.26	9.64	9.42	41.89	26.10	1,076.21	1,072.91	1,053.86	19.05	56.319	
2,800.00	2,799.92	2,813.55	2,813.49	9.81	9.61	41.95	26.10	1,076.21	1,071.83	1,052.42	19.41	55.213	
2,850.00	2,849.90	2,863.63	2,863.57	9.99	9.78	41.99	26.14	1,076.12	1,070.67	1,050.90	19.76	54.173	
2,900.00	2,899.88	2,913.52	2,913.46	10.17	9.96	42.04	26.19	1,076.04	1,069.51	1,049.39	20.11	53.171	
2,950.00	2,949.86	2,964.06	2,964.00	10.34	10.13	42.09	26.26	1,075.95	1,068.34	1,047.87	20.47	52.197	
3,000.00	2,999.84	3,013.81	3,013.75	10.52	10.31	42.14	26.36	1,075.83	1,067.15	1,046.33	20.82	51.262	
3,050.00	3,049.81	3,060.47	3,060.41	10.70	10.47	42.18	26.45	1,075.81	1,066.05	1,044.89	21.16	50.387	
3,100.00	3,099.79	3,107.83	3,107.77	10.88	10.64	42.23	26.53	1,075.94	1,065.11	1,043.61	21.50	49.541	
3,150.00	3,149.77	3,158.03	3,157.97	11.05	10.81	42.28	26.60	1,076.12	1,064.22	1,042.36	21.85	48.702	
3,200.00	3,199.75	3,210.16	3,210.10	11.23	10.99	42.33	26.66	1,076.28	1,063.30	1,041.08	22.21	47.873	
3,250.00	3,249.73	3,266.19	3,266.13	11.41	11.19	42.38	26.80	1,076.20	1,062.15	1,039.57	22.58	47.033	
3,300.00	3,299.71	3,318.36	3,318.30	11.59	11.37	42.43	27.01	1,075.89	1,060.79	1,037.84	22.94	46.238	
3,350.00	3,349.69	3,368.56	3,368.50	11.76	11.55	42.46	27.28	1,075.57	1,059.39	1,036.10	23.29	45.478	
3,400.00	3,399.67	3,415.76	3,415.70	11.94	11.71	42.50	27.58	1,075.30	1,058.05	1,034.41	23.64	44.763	
3,450.00	3,449.65	3,462.19	3,462.13	12.12	11.88	42.53	27.83	1,075.20	1,056.86	1,032.89	23.98	44.079	
3,500.00	3,499.62	3,511.97	3,511.90	12.30	12.05	42.57	28.08	1,075.19	1,055.79	1,031.46	24.33	43.398	
3,550.00	3,549.60	3,562.70	3,562.63	12.48	12.23	42.62	28.28	1,075.15	1,054.68	1,030.00	24.68	42.730	
3,600.00	3,599.58	3,616.54	3,616.47	12.65	12.42	42.66	28.52	1,075.00	1,053.47	1,028.43	25.05	42.059	
3,650.00	3,649.56	3,670.59	3,670.52	12.83	12.61	42.70	28.84	1,074.63	1,052.07	1,026.66	25.41	41.399	
3,700.00	3,699.54	3,718.95	3,718.88	13.01	12.77	42.73	29.19	1,074.28	1,050.64	1,024.88	25.76	40.786	
3,750.00	3,749.52	3,768.16	3,768.08	13.19	12.95	42.76	29.61	1,073.94	1,049.24	1,023.13	26.11	40.186	
3,800.00	3,799.50	3,817.12	3,817.04	13.37	13.12	42.79	30.11	1,073.65	1,047.88	1,021.42	26.46	39.604	
3,850.00	3,849.48	3,864.79	3,864.71	13.54	13.29	42.81	30.70	1,073.43	1,046.58	1,019.77	26.80	39.046	
3,900.00	3,899.46	3,910.47	3,910.38	13.72	13.45	42.82	31.30	1,073.37	1,045.46	1,018.32	27.14	38.519	
3,950.00	3,949.44	3,956.25	3,956.16	13.90	13.61	42.84	31.89	1,073.51	1,044.54	1,017.06	27.48	38.012	
4,000.00	3,999.41	4,002.22	4,002.13	14.08	13.77	42.87	32.33	1,073.82	1,043.82	1,016.00	27.82	37.524	
4,050.00	4,049.39	4,048.19	4,048.09	14.26	13.93	42.90	32.57	1,074.31	1,043.29	1,015.14	28.15	37.056	
4,100.00	4,099.37	4,094.14	4,094.03	14.44	14.09	42.95	32.69	1,074.98	1,042.96	1,014.46	28.49	36.605	
4,150.00	4,149.35	4,139.89	4,139.78	14.61	14.25	43.00	32.72	1,075.83	1,042.82	1,013.99	28.83	36.174	
4,157.10	4,156.45	4,146.31	4,146.20	14.64	14.27	43.00	32.71	1,075.96	1,042.82	1,013.94	28.88	36.114	
4,200.00	4,199.33	4,185.10	4,184.97	14.79	14.40	43.05	32.60	1,076.86	1,042.90	1,013.74	29.16	35.763	
4,250.00	4,249.31	4,230.86	4,230.72	14.97	14.56	43.12	32.31	1,078.12	1,043.21	1,013.71	29.50	35.366	
4,300.00	4,299.29	4,278.89	4,278.73	15.15	14.73	43.20	31.85	1,079.57	1,043.66	1,013.82	29.84	34.973	
4,350.00	4,349.27	4,326.76	4,326.57	15.33	14.90	43.28	31.27	1,081.10	1,044.21	1,014.02	30.19	34.593	
4,400.00	4,399.25	4,374.14	4,373.91	15.51	15.06	43.37	30.51	1,082.73	1,044.87	1,014.34	30.53	34.227	
4,450.00	4,449.22	4,422.25	4,421.98	15.69	15.23	43.48	29.53	1,084.49	1,045.65	1,014.78	30.87	33.870	
4,500.00	4,499.20	4,472.38	4,472.07	15.86	15.41	43.59	28.50	1,086.36	1,046.47	1,015.24	31.23	33.513	
4,550.00	4,549.18	4,521.02	4,520.66	16.04	15.58	43.69	27.57	1,088.17	1,047.29	1,015.72	31.57	33.171	
4,600.00	4,599.16	4,567.44	4,567.04	16.22	15.74	43.78	26.87	1,090.03	1,048.26	1,016.35	31.91	32.850	
4,650.00	4,649.14	4,617.17	4,616.72	16.40	15.92	43.86	26.34	1,092.17	1,049.37	1,017.11	32.26	32.526	
4,700.00	4,699.12	4,672.16	4,671.66	16.58	16.11	43.95	25.75	1,094.35	1,050.31	1,017.68	32.64	32.182	
4,750.00	4,749.10	4,726.02	4,725.49	16.76	16.30	44.05	25.07	1,096.25	1,051.04	1,018.04	33.01	31.844	
4,800.00	4,799.08	4,779.37	4,778.80	16.94	16.48	44.15	24.26	1,097.95	1,051.61	1,018.24	33.37	31.510	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Actual — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9646-MWD+IGRF — **Offset Well Error:** 0.00 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
4,850.00	4,849.06	4,828.96	4,828.36	17.12	16.66	44.25	23.42	1,099.46	1,052.10	1,018.38	33.73	31.196	
4,900.00	4,899.03	4,878.36	4,877.73	17.30	16.83	44.34	22.62	1,100.99	1,052.63	1,018.55	34.08	30.891	
4,950.00	4,949.01	4,930.44	4,929.78	17.47	17.01	44.44	21.88	1,102.56	1,053.12	1,018.68	34.44	30.580	
5,000.00	4,998.99	4,982.34	4,981.66	17.65	17.19	44.53	21.29	1,104.03	1,053.51	1,018.71	34.80	30.274	
5,050.00	5,048.97	5,033.62	5,032.91	17.83	17.37	44.61	20.80	1,105.41	1,053.83	1,018.68	35.16	29.975	
5,100.00	5,098.95	5,084.05	5,083.33	18.01	17.55	44.69	20.37	1,106.71	1,054.10	1,018.59	35.51	29.682	
5,150.00	5,148.93	5,133.24	5,132.50	18.19	17.72	44.77	19.81	1,108.00	1,054.40	1,018.53	35.86	29.401	
5,200.00	5,198.91	5,184.57	5,183.80	18.37	17.90	44.86	19.07	1,109.35	1,054.70	1,018.48	36.22	29.118	
5,250.00	5,248.89	5,237.99	5,237.20	18.55	18.09	44.97	18.20	1,110.60	1,054.87	1,018.29	36.59	28.831	
5,300.00	5,298.87	5,288.50	5,287.70	18.73	18.26	45.07	17.43	1,111.68	1,054.94	1,017.99	36.94	28.555	
5,350.00	5,348.84	5,338.07	5,337.26	18.91	18.44	45.14	17.07	1,112.76	1,055.01	1,017.72	37.30	28.288	
5,400.00	5,398.82	5,389.36	5,388.53	19.09	18.62	45.20	17.04	1,113.88	1,055.08	1,017.42	37.65	28.020	
5,450.00	5,448.80	5,440.92	5,440.08	19.27	18.80	45.24	17.21	1,114.93	1,055.07	1,017.06	38.01	27.755	
5,500.00	5,498.78	5,490.95	5,490.11	19.44	18.97	45.29	17.23	1,115.91	1,055.03	1,016.66	38.37	27.498	
5,550.00	5,548.76	5,541.32	5,540.45	19.62	19.15	45.37	16.85	1,116.87	1,054.98	1,016.25	38.72	27.244	
5,600.00	5,598.74	5,592.93	5,592.06	19.80	19.33	45.45	16.35	1,117.80	1,054.88	1,015.79	39.08	26.991	
5,650.00	5,648.72	5,645.00	5,644.12	19.98	19.51	45.53	15.89	1,118.66	1,054.69	1,015.25	39.44	26.739	
5,700.00	5,698.70	5,697.84	5,696.95	20.16	19.69	45.61	15.56	1,119.40	1,054.39	1,014.58	39.81	26.487	
5,750.00	5,748.68	5,749.25	5,748.36	20.34	19.87	45.68	15.38	1,120.01	1,053.98	1,013.81	40.17	26.240	
5,800.00	5,798.65	5,799.70	5,798.80	20.52	20.05	45.74	15.24	1,120.58	1,053.53	1,013.01	40.52	25.999	
5,850.00	5,848.63	5,849.98	5,849.09	20.70	20.22	45.80	15.08	1,121.12	1,053.07	1,012.19	40.88	25.762	
5,900.00	5,898.61	5,900.21	5,899.31	20.88	20.40	45.88	14.77	1,121.65	1,052.59	1,011.36	41.23	25.529	
5,950.00	5,948.59	5,951.10	5,950.19	21.06	20.58	45.95	14.37	1,122.15	1,052.10	1,010.51	41.59	25.298	
6,000.00	5,998.57	6,002.08	6,001.17	21.24	20.75	46.03	13.99	1,122.61	1,051.55	1,009.61	41.95	25.070	
6,050.00	6,048.55	6,051.90	6,050.99	21.42	20.93	46.11	13.62	1,123.03	1,050.99	1,008.69	42.30	24.847	
6,100.00	6,098.53	6,102.07	6,101.15	21.60	21.10	46.18	13.25	1,123.47	1,050.44	1,007.78	42.65	24.628	
6,150.00	6,148.51	6,153.79	6,152.88	21.77	21.28	46.26	13.01	1,123.87	1,049.83	1,006.82	43.01	24.408	
6,200.00	6,198.49	6,205.03	6,204.11	21.95	21.46	46.32	12.97	1,124.20	1,049.15	1,005.78	43.37	24.190	
6,250.00	6,248.46	6,255.33	6,254.41	22.13	21.64	46.37	12.98	1,124.49	1,048.44	1,004.71	43.73	23.978	
6,300.00	6,298.44	6,305.17	6,304.25	22.31	21.81	46.43	12.98	1,124.77	1,047.72	1,003.64	44.08	23.769	
6,350.00	6,348.42	6,354.52	6,353.60	22.49	21.98	46.49	12.82	1,125.07	1,047.02	1,002.59	44.43	23.566	
6,400.00	6,398.40	6,404.39	6,403.47	22.67	22.16	46.57	12.51	1,125.38	1,046.35	1,001.57	44.78	23.365	
6,450.00	6,448.38	6,454.62	6,453.69	22.85	22.33	46.64	12.20	1,125.68	1,045.67	1,000.54	45.14	23.166	
6,500.00	6,498.36	6,505.82	6,504.89	23.03	22.51	46.71	11.96	1,125.96	1,044.97	999.47	45.50	22.968	
6,550.00	6,548.34	6,557.38	6,556.45	23.21	22.69	46.78	11.86	1,126.18	1,044.19	998.34	45.86	22.772	
6,600.00	6,598.32	6,608.52	6,607.59	23.39	22.87	46.84	11.84	1,126.34	1,043.35	997.14	46.21	22.577	
6,650.00	6,648.30	6,659.61	6,658.68	23.57	23.05	46.90	11.80	1,126.44	1,042.46	995.89	46.57	22.385	
6,700.00	6,698.27	6,708.00	6,707.07	23.75	23.22	46.96	11.67	1,126.54	1,041.58	994.66	46.92	22.200	
6,750.00	6,748.25	6,756.74	6,755.81	23.93	23.39	47.03	11.41	1,126.70	1,040.77	993.50	47.27	22.018	
6,800.00	6,798.23	6,806.37	6,805.44	24.11	23.56	47.11	11.10	1,126.90	1,040.00	992.38	47.62	21.839	
6,850.00	6,848.21	6,856.10	6,855.17	24.29	23.73	47.18	10.82	1,127.11	1,039.25	991.27	47.97	21.663	
6,900.00	6,898.19	6,906.12	6,905.19	24.47	23.91	47.24	10.68	1,127.34	1,038.50	990.17	48.33	21.489	
6,950.00	6,948.17	6,955.97	6,955.04	24.65	24.08	47.30	10.72	1,127.58	1,037.75	989.07	48.68	21.317	
7,000.00	6,998.15	7,005.57	7,004.63	24.83	24.26	47.36	10.74	1,127.83	1,037.01	987.98	49.03	21.149	
7,050.00	7,048.13	7,054.54	7,053.61	25.00	24.43	47.42	10.69	1,128.10	1,036.31	986.92	49.38	20.984	
7,100.00	7,098.11	7,102.90	7,101.97	25.18	24.60	47.48	10.45	1,128.42	1,035.67	985.94	49.73	20.825	
7,150.00	7,148.08	7,153.36	7,152.42	25.36	24.77	47.57	10.05	1,128.79	1,035.09	985.00	50.09	20.665	
7,200.00	7,198.06	7,205.39	7,204.45	25.54	24.95	47.64	9.77	1,129.10	1,034.43	983.98	50.45	20.504	
7,250.00	7,248.04	7,254.97	7,254.03	25.72	25.13	47.71	9.62	1,129.35	1,033.71	982.91	50.80	20.348	
7,300.00	7,298.02	7,303.82	7,302.87	25.90	25.30	47.77	9.44	1,129.64	1,033.05	981.90	51.15	20.196	
7,350.00	7,348.00	7,351.40	7,350.46	26.08	25.46	47.85	9.13	1,129.99	1,032.47	980.97	51.50	20.049	
7,400.00	7,397.98	7,398.76	7,397.81	26.26	25.63	47.94	8.51	1,130.43	1,032.02	980.17	51.84	19.907	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Actual — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9646-MWD+IGRF — **Offset Well Error:** 0.00 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
7,450.00	7,447.96	7,448.01	7,447.04	26.44	25.80	48.04	7.61	1,130.96	1,031.65	979.46	52.19	19.766	
7,500.00	7,497.94	7,497.50	7,496.53	26.62	25.97	48.16	6.55	1,131.49	1,031.31	978.77	52.55	19.627	
7,550.00	7,547.92	7,550.17	7,549.18	26.80	26.16	48.28	5.43	1,132.01	1,030.93	978.02	52.91	19.485	
7,600.00	7,597.89	7,602.88	7,601.88	26.98	26.34	48.39	4.48	1,132.40	1,030.41	977.14	53.27	19.342	
7,650.00	7,647.87	7,651.62	7,650.61	27.16	26.51	48.50	3.56	1,132.74	1,029.88	976.26	53.62	19.206	
7,700.00	7,697.85	7,700.37	7,699.35	27.34	26.68	48.62	2.54	1,133.09	1,029.39	975.41	53.97	19.072	
7,750.00	7,747.83	7,747.64	7,746.61	27.52	26.85	48.73	1.41	1,133.53	1,029.00	974.68	54.32	18.944	
7,800.00	7,797.81	7,795.14	7,794.08	27.70	27.01	48.86	0.15	1,134.07	1,028.74	974.08	54.66	18.820	
7,850.00	7,847.79	7,843.10	7,842.02	27.88	27.18	48.98	-1.09	1,134.73	1,028.60	973.59	55.01	18.699	
7,900.00	7,897.77	7,893.67	7,892.57	28.06	27.36	49.11	-2.31	1,135.50	1,028.53	973.17	55.36	18.577	
7,950.00	7,947.75	7,948.42	7,947.30	28.24	27.55	49.23	-3.48	1,136.16	1,028.30	972.56	55.74	18.449	
8,000.00	7,997.73	7,999.33	7,998.21	28.42	27.72	49.35	-4.45	1,136.61	1,027.90	971.80	56.09	18.325	
8,050.00	8,047.70	8,048.39	8,047.25	28.60	27.90	49.46	-5.48	1,137.07	1,027.53	971.08	56.44	18.204	
8,100.00	8,097.68	8,097.20	8,096.05	28.78	28.07	49.58	-6.61	1,137.56	1,027.22	970.42	56.79	18.086	
8,150.00	8,147.66	8,145.94	8,144.76	28.96	28.24	49.71	-7.90	1,138.09	1,026.96	969.82	57.14	17.971	
8,200.00	8,197.64	8,196.67	8,195.47	29.13	28.41	49.85	-9.33	1,138.65	1,026.74	969.24	57.50	17.856	
8,250.00	8,247.62	8,247.81	8,246.59	29.31	28.59	49.99	-10.76	1,139.15	1,026.46	968.60	57.86	17.741	
8,300.00	8,297.60	8,301.88	8,300.64	29.49	28.78	50.13	-12.20	1,139.56	1,026.06	967.83	58.23	17.621	
8,350.00	8,347.58	8,355.68	8,354.42	29.67	28.97	50.27	-13.49	1,139.76	1,025.46	966.87	58.59	17.501	
8,400.00	8,397.56	8,408.78	8,407.51	29.85	29.15	50.40	-14.66	1,139.79	1,024.71	965.75	58.96	17.380	
8,450.00	8,447.54	8,458.32	8,457.04	30.03	29.33	50.52	-15.70	1,139.72	1,023.85	964.53	59.31	17.262	
8,500.00	8,497.51	8,504.56	8,503.27	30.21	29.49	50.64	-16.77	1,139.78	1,023.13	963.48	59.65	17.151	
8,550.00	8,547.49	8,554.63	8,553.32	30.39	29.66	50.77	-18.05	1,139.96	1,022.56	962.55	60.01	17.041	
8,600.00	8,597.47	8,608.63	8,607.30	30.57	29.85	50.91	-19.34	1,140.00	1,021.84	961.47	60.37	16.925	
8,650.00	8,647.45	8,662.32	8,660.98	30.75	30.04	51.04	-20.48	1,139.85	1,020.93	960.19	60.74	16.808	
8,700.00	8,697.43	8,715.92	8,714.57	30.93	30.22	51.16	-21.40	1,139.54	1,019.85	958.75	61.10	16.691	
8,750.00	8,747.41	8,764.19	8,762.84	31.11	30.39	51.27	-22.18	1,139.22	1,018.73	957.28	61.45	16.577	
8,800.00	8,797.39	8,812.58	8,811.21	31.29	30.56	51.38	-23.06	1,138.96	1,017.69	955.89	61.80	16.467	
8,850.00	8,847.37	8,861.52	8,860.15	31.47	30.73	51.49	-23.88	1,138.77	1,016.71	954.56	62.15	16.358	
8,900.00	8,897.35	8,910.48	8,909.11	31.65	30.90	51.59	-24.52	1,138.66	1,015.79	953.29	62.50	16.252	
8,950.00	8,947.33	8,955.83	8,954.45	31.83	31.06	51.68	-25.04	1,138.71	1,015.03	952.18	62.84	16.152	
9,000.00	8,997.30	9,002.74	9,001.36	32.01	31.22	51.77	-25.54	1,138.95	1,014.46	951.27	63.19	16.055	
9,050.00	9,047.28	9,057.04	9,055.65	32.19	31.41	51.87	-26.11	1,139.17	1,013.84	950.29	63.55	15.952	
9,100.00	9,097.26	9,112.59	9,111.20	32.37	31.61	51.97	-26.65	1,139.15	1,013.00	949.08	63.93	15.847	
9,150.00	9,147.24	9,170.04	9,168.65	32.55	31.81	52.06	-26.95	1,138.77	1,011.82	947.52	64.30	15.736	
9,200.00	9,197.22	9,221.99	9,220.59	32.73	31.99	52.15	-27.14	1,138.16	1,010.38	945.72	64.66	15.627	
9,250.00	9,247.20	9,272.26	9,270.86	32.91	32.16	52.25	-27.67	1,137.49	1,008.91	943.90	65.01	15.519	
9,300.00	9,297.18	9,329.96	9,328.55	33.09	32.36	52.38	-28.49	1,136.47	1,007.27	941.89	65.38	15.406	
9,350.00	9,347.16	9,388.39	9,386.95	33.27	32.57	52.51	-29.18	1,134.96	1,005.21	939.45	65.75	15.288	
9,400.00	9,397.14	9,441.77	9,440.30	33.45	32.75	52.63	-29.81	1,133.30	1,002.89	936.78	66.11	15.170	
9,450.00	9,447.11	9,497.13	9,495.62	33.63	32.94	52.76	-30.52	1,131.29	1,000.32	933.85	66.47	15.049	
9,500.00	9,497.09	9,551.63	9,550.07	33.81	33.13	52.91	-31.41	1,128.97	997.48	930.65	66.83	14.926	
9,550.00	9,547.07	9,598.04	9,596.42	33.99	33.23	53.03	-32.18	1,126.96	994.62	927.51	67.11	14.821	
9,600.00	9,597.05	9,643.70	9,642.04	34.17	33.31	53.16	-33.09	1,125.16	991.97	924.59	67.38	14.723	
9,650.00	9,647.03	9,682.48	9,680.75	34.35	33.32	53.33	-34.80	1,123.72	989.68	922.09	67.58	14.644	
9,700.00	9,697.01	9,714.73	9,712.83	34.53	33.32	53.56	-37.95	1,122.75	988.18	920.39	67.79	14.578	
9,750.00	9,746.99	9,751.74	9,749.40	34.71	33.32	53.94	-43.52	1,121.79	987.45	919.47	67.97	14.527	
9,773.67	9,770.64	9,768.43	9,765.75	34.79	33.32	54.15	-46.82	1,121.37	987.36	919.30	68.06	14.507 CC	
9,800.00	9,796.97	9,789.46	9,786.20	34.88	33.32	54.47	-51.69	1,120.83	987.44	919.29	68.16	14.488 ES	
9,850.00	9,846.95	9,824.90	9,820.24	35.06	33.33	55.08	-61.52	1,119.82	988.11	919.79	68.33	14.462	
9,900.00	9,896.92	9,868.49	9,861.40	35.24	33.34	55.96	-75.79	1,118.59	989.55	921.05	68.50	14.446	
9,950.00	9,946.90	9,919.31	9,908.57	35.42	33.35	57.11	-94.56	1,116.34	991.09	922.39	68.69	14.428 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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Actual — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9646-MWD+IGRF — **Offset Well Error:** 0.00 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
10,000.00	9,996.88	9,952.48	9,938.79	35.60	33.37	57.94	-108.12	1,114.69	993.30	924.46	68.84	14.429	
10,050.00	10,046.86	9,981.53	9,964.64	35.78	33.38	58.73	-121.28	1,113.28	996.65	927.69	68.95	14.454	
10,100.00	10,096.84	10,008.71	9,988.12	35.96	33.40	59.54	-134.90	1,111.96	1,001.27	932.25	69.03	14.506	
10,150.00	10,146.82	10,032.33	10,007.97	36.14	33.42	60.29	-147.67	1,110.86	1,007.28	938.23	69.05	14.589	
10,200.00	10,196.80	10,055.00	10,026.35	36.32	33.44	61.05	-160.88	1,109.90	1,014.87	945.86	69.02	14.705	
10,250.00	10,246.78	10,071.38	10,039.20	36.50	33.46	61.63	-171.02	1,109.27	1,024.09	955.20	68.89	14.865	
10,300.00	10,296.76	10,086.00	10,050.36	36.68	33.47	62.17	-180.46	1,108.75	1,034.97	966.28	68.69	15.066	
10,350.00	10,346.73	10,108.08	10,066.61	36.86	33.50	63.01	-195.38	1,107.99	1,047.46	978.93	68.53	15.286	
10,400.00	10,396.71	10,125.04	10,078.59	37.04	33.53	63.67	-207.37	1,107.41	1,061.58	993.32	68.26	15.552	
10,450.00	10,446.69	10,140.94	10,089.43	37.22	33.55	64.31	-218.99	1,106.88	1,077.32	1,009.38	67.94	15.856	
10,500.00	10,496.67	10,149.00	10,094.78	37.40	33.56	64.64	-225.01	1,106.62	1,094.71	1,027.22	67.49	16.219	
10,550.00	10,546.65	10,166.46	10,106.02	37.58	33.60	65.36	-238.36	1,106.12	1,113.64	1,046.51	67.13	16.589	
10,600.00	10,596.63	10,181.00	10,114.99	37.76	33.62	66.04	-249.80	1,105.80	1,134.21	1,067.51	66.70	17.004	
10,650.00	10,646.62	10,181.00	10,114.99	37.94	33.62	66.38	-249.80	1,105.80	1,156.50	1,090.44	66.06	17.507	
10,700.00	10,696.62	10,197.61	10,124.79	38.12	33.66	67.46	-263.21	1,105.55	1,180.36	1,114.73	65.63	17.985	
10,750.00	10,746.62	10,212.00	10,132.88	38.30	33.69	114.97	-275.11	1,105.44	1,205.79	1,140.63	65.16	18.504	
10,800.00	10,796.62	10,212.00	10,132.88	38.47	33.69	114.97	-275.11	1,105.44	1,232.47	1,167.99	64.49	19.112	
10,850.00	10,846.62	10,222.79	10,138.68	38.65	33.72	115.43	-284.20	1,105.43	1,260.41	1,196.44	63.97	19.703	
10,900.00	10,896.62	10,229.84	10,142.34	38.83	33.73	115.73	-290.22	1,105.45	1,289.55	1,226.14	63.40	20.338	
10,950.00	10,946.62	10,244.00	10,149.38	39.00	33.77	116.33	-302.52	1,105.59	1,319.88	1,256.93	62.95	20.967	
11,000.00	10,996.62	10,244.00	10,149.38	39.18	33.77	116.33	-302.52	1,105.59	1,351.11	1,288.81	62.31	21.685	
11,050.00	11,046.62	10,244.00	10,149.38	39.36	33.77	116.33	-302.52	1,105.59	1,383.45	1,321.76	61.68	22.429	
11,100.00	11,096.56	10,256.71	10,155.33	39.53	33.81	-59.09	-313.74	1,105.78	1,415.85	1,354.62	61.24	23.121	
11,150.00	11,146.12	10,264.47	10,158.80	39.69	33.83	-55.38	-320.68	1,105.90	1,447.48	1,386.77	60.71	23.841	
11,200.00	11,194.92	10,275.00	10,163.31	39.84	33.86	-51.94	-330.20	1,106.07	1,478.07	1,417.84	60.23	24.541	

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Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2 — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9558- — **Offset Well Error:** 0.00 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
0.00	0.00	12.03	12.03	0.50	0.02	89.20	15.04	1,077.54	1,077.65				
50.00	50.00	62.57	62.57	0.50	0.08	89.19	15.20	1,077.52	1,077.63	1,077.04	0.59	1,839.830	
100.00	100.00	113.22	113.22	0.52	0.18	89.17	15.59	1,077.47	1,077.58	1,076.89	0.69	1,554.514	
150.00	150.00	164.29	164.28	0.59	0.35	89.15	15.98	1,077.38	1,077.50	1,076.55	0.94	1,140.829	
200.00	200.00	214.79	214.79	0.70	0.53	89.13	16.28	1,077.24	1,077.37	1,076.13	1.23	873.836	
250.00	250.00	264.38	264.38	0.84	0.70	89.12	16.55	1,077.11	1,077.24	1,075.70	1.54	698.824	
300.00	300.00	312.80	312.79	0.99	0.87	89.11	16.80	1,077.02	1,077.15	1,075.29	1.86	579.145	
316.01	316.01	327.91	327.91	1.04	0.93	89.10	16.86	1,077.01	1,077.14	1,075.18	1.96	548.881	
350.00	350.00	360.02	360.01	1.15	1.04	89.10	16.97	1,077.04	1,077.17	1,074.99	2.18	493.541	
400.00	400.00	410.07	410.07	1.31	1.21	89.09	17.12	1,077.16	1,077.29	1,074.77	2.52	427.379	
450.00	450.00	462.82	462.81	1.48	1.40	89.07	17.49	1,077.17	1,077.31	1,074.44	2.87	375.103	
500.00	500.00	513.58	513.57	1.65	1.58	89.04	18.02	1,077.09	1,077.24	1,074.02	3.22	334.620	
550.00	550.00	563.63	563.62	1.82	1.75	89.01	18.52	1,077.00	1,077.16	1,073.60	3.57	302.063	
588.18	588.18	600.09	600.08	1.95	1.88	89.00	18.88	1,076.96	1,077.13	1,073.30	3.83	281.563	
600.00	600.00	611.27	611.25	1.99	1.92	88.99	19.01	1,076.96	1,077.13	1,073.23	3.91	275.790	
650.00	650.00	658.54	658.52	2.16	2.08	88.96	19.57	1,077.04	1,077.22	1,072.98	4.24	253.766	
700.00	700.00	709.21	709.19	2.34	2.26	88.93	20.15	1,077.18	1,077.38	1,072.78	4.60	234.377	
750.00	750.00	760.37	760.34	2.51	2.44	88.91	20.59	1,077.28	1,077.48	1,072.52	4.95	217.634	
800.00	800.00	812.39	812.37	2.69	2.62	88.88	21.03	1,077.30	1,077.50	1,072.19	5.31	202.977	
850.00	850.00	863.94	863.91	2.87	2.80	88.85	21.61	1,077.22	1,077.44	1,071.77	5.66	190.196	
900.00	900.00	914.13	914.09	3.04	2.98	88.82	22.19	1,077.11	1,077.34	1,071.32	6.02	179.052	
950.00	950.00	963.18	963.14	3.22	3.15	88.79	22.71	1,077.00	1,077.24	1,070.88	6.37	169.240	
972.82	972.82	984.76	984.72	3.30	3.23	88.78	22.91	1,076.99	1,077.23	1,070.71	6.52	165.185	
1,000.00	1,000.00	1,010.46	1,010.42	3.40	3.32	88.77	23.12	1,077.00	1,077.25	1,070.54	6.71	160.606	
1,050.00	1,050.00	1,060.16	1,060.12	3.58	3.49	88.75	23.44	1,077.10	1,077.36	1,070.30	7.06	152.639	
1,100.00	1,100.00	1,113.31	1,113.27	3.75	3.68	88.73	23.85	1,077.10	1,077.37	1,069.94	7.42	145.173	
1,150.00	1,150.00	1,162.16	1,162.12	3.93	3.85	88.71	24.27	1,077.02	1,077.29	1,069.52	7.77	138.658	
1,153.12	1,153.12	1,165.06	1,165.02	3.94	3.86	88.71	24.29	1,077.02	1,077.29	1,069.50	7.79	138.281	
1,200.00	1,200.00	1,208.69	1,208.64	4.11	4.01	88.69	24.54	1,077.08	1,077.36	1,069.26	8.11	132.851	
1,250.00	1,250.00	1,257.66	1,257.62	4.29	4.18	88.69	24.68	1,077.27	1,077.56	1,069.10	8.46	127.395	
1,300.00	1,300.00	1,308.04	1,307.99	4.46	4.36	88.68	24.77	1,077.46	1,077.75	1,068.94	8.81	122.302	
1,350.00	1,350.00	1,360.53	1,360.49	4.64	4.54	88.68	24.85	1,077.60	1,077.88	1,068.71	9.17	117.499	
1,400.00	1,400.00	1,413.63	1,413.59	4.82	4.73	88.67	25.05	1,077.59	1,077.88	1,068.34	9.54	113.020	
1,450.00	1,450.00	1,464.35	1,464.30	5.00	4.91	88.65	25.36	1,077.48	1,077.78	1,067.89	9.89	108.952	
1,500.00	1,500.00	1,515.09	1,515.04	5.18	5.08	88.63	25.84	1,077.34	1,077.66	1,067.41	10.25	105.160	
1,550.00	1,550.00	1,564.11	1,564.06	5.36	5.26	88.61	26.23	1,077.22	1,077.54	1,066.94	10.60	101.681	
1,600.00	1,600.00	1,613.57	1,613.52	5.53	5.43	88.59	26.47	1,077.13	1,077.45	1,066.51	10.95	98.413	
1,650.00	1,650.00	1,663.51	1,663.46	5.71	5.60	88.58	26.66	1,077.05	1,077.38	1,066.08	11.30	95.335	
1,700.00	1,700.00	1,712.44	1,712.39	5.89	5.78	88.57	26.81	1,076.99	1,077.32	1,065.67	11.65	92.471	
1,709.35	1,709.35	1,721.30	1,721.25	5.92	5.81	88.57	26.83	1,076.98	1,077.32	1,065.60	11.71	91.963	
1,750.00	1,750.00	1,759.82	1,759.77	6.07	5.94	88.57	26.85	1,077.02	1,077.36	1,065.36	11.99	89.823	
1,800.00	1,800.00	1,808.25	1,808.20	6.25	6.11	88.58	26.79	1,077.17	1,077.51	1,065.16	12.34	87.306	
1,850.00	1,850.00	1,858.12	1,858.06	6.43	6.28	88.58	26.69	1,077.34	1,077.68	1,064.99	12.69	84.893	
1,900.00	1,900.00	1,908.24	1,908.19	6.61	6.46	88.59	26.60	1,077.52	1,077.86	1,064.81	13.05	82.606	
1,950.00	1,950.00	1,958.58	1,958.53	6.78	6.63	88.59	26.50	1,077.69	1,078.02	1,064.62	13.40	80.433	
2,000.00	2,000.00	2,012.66	2,012.61	6.96	6.82	88.60	26.43	1,077.79	1,078.11	1,064.34	13.77	78.293	
2,050.00	2,050.00	2,068.48	2,068.42	7.14	7.01	88.59	26.44	1,077.60	1,077.94	1,063.80	14.14	76.214	
2,100.00	2,100.00	2,117.18	2,117.13	7.32	7.18	88.59	26.49	1,077.34	1,077.67	1,063.18	14.49	74.362	
2,150.00	2,150.00	2,166.14	2,166.08	7.50	7.35	88.59	26.54	1,077.12	1,077.46	1,062.62	14.84	72.596	
2,200.00	2,200.00	2,217.29	2,217.23	7.68	7.53	88.59	26.58	1,076.90	1,077.24	1,062.04	15.20	70.876	
2,250.00	2,250.00	2,267.14	2,267.09	7.86	7.71	88.59	26.56	1,076.63	1,076.97	1,061.42	15.55	69.251	
2,300.00	2,300.00	2,313.21	2,313.15	8.04	7.87	88.59	26.53	1,076.49	1,076.82	1,060.93	15.89	67.761	

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

Anticollision Report

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Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2 — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9558- — **Offset Well Error:** 0.00 ft

Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance				Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
2,315.94	2,315.94	2,327.90	2,327.84	8.09	7.92	88.59	26.52	1,076.49	1,076.81	1,060.81	16.00	67.302	
2,350.00	2,350.00	2,361.04	2,360.98	8.22	8.03	88.59	26.49	1,076.52	1,076.85	1,060.61	16.24	66.319	
2,400.00	2,400.00	2,415.00	2,414.94	8.39	8.22	88.59	26.46	1,076.47	1,076.80	1,060.19	16.60	64.850	
2,450.00	2,450.00	2,467.07	2,467.01	8.57	8.40	88.59	26.44	1,076.25	1,076.59	1,059.62	16.97	63.459	
2,500.00	2,500.00	2,517.16	2,517.10	8.75	8.58	88.59	26.42	1,076.01	1,076.35	1,059.03	17.32	62.149	
2,550.00	2,550.00	2,564.72	2,564.66	8.93	8.74	41.70	26.38	1,075.81	1,075.98	1,058.31	17.66	60.920	
2,600.00	2,599.99	2,610.71	2,610.66	9.11	8.90	41.73	26.33	1,075.78	1,075.45	1,057.45	18.00	59.747	
2,650.00	2,649.98	2,658.75	2,658.69	9.28	9.07	41.77	26.26	1,075.90	1,074.76	1,056.42	18.34	58.590	
2,700.00	2,699.96	2,708.24	2,708.18	9.46	9.24	41.83	26.18	1,076.06	1,073.86	1,055.16	18.69	57.448	
2,750.00	2,749.94	2,760.32	2,760.26	9.64	9.42	41.89	26.10	1,076.21	1,072.91	1,053.86	19.05	56.319	
2,800.00	2,799.92	2,813.55	2,813.49	9.81	9.61	41.95	26.10	1,076.21	1,071.83	1,052.42	19.41	55.213	
2,850.00	2,849.90	2,863.63	2,863.57	9.99	9.78	41.99	26.14	1,076.12	1,070.67	1,050.90	19.76	54.173	
2,900.00	2,899.88	2,913.52	2,913.46	10.17	9.96	42.04	26.19	1,076.04	1,069.51	1,049.39	20.11	53.171	
2,950.00	2,949.86	2,964.06	2,964.00	10.34	10.13	42.09	26.26	1,075.95	1,068.34	1,047.87	20.47	52.197	
3,000.00	2,999.84	3,013.81	3,013.75	10.52	10.31	42.14	26.36	1,075.83	1,067.15	1,046.33	20.82	51.262	
3,050.00	3,049.81	3,060.47	3,060.41	10.70	10.47	42.18	26.45	1,075.81	1,066.05	1,044.89	21.16	50.387	
3,100.00	3,099.79	3,107.83	3,107.77	10.88	10.64	42.23	26.53	1,075.94	1,065.11	1,043.61	21.50	49.541	
3,150.00	3,149.77	3,158.03	3,157.97	11.05	10.81	42.28	26.60	1,076.12	1,064.22	1,042.36	21.85	48.702	
3,200.00	3,199.75	3,210.16	3,210.10	11.23	10.99	42.33	26.66	1,076.28	1,063.30	1,041.08	22.21	47.873	
3,250.00	3,249.73	3,266.19	3,266.13	11.41	11.19	42.38	26.80	1,076.20	1,062.15	1,039.57	22.58	47.033	
3,300.00	3,299.71	3,318.36	3,318.30	11.59	11.37	42.43	27.01	1,075.89	1,060.79	1,037.84	22.94	46.238	
3,350.00	3,349.69	3,368.56	3,368.50	11.76	11.55	42.46	27.28	1,075.57	1,059.39	1,036.10	23.29	45.478	
3,400.00	3,399.67	3,415.76	3,415.70	11.94	11.71	42.50	27.58	1,075.30	1,058.05	1,034.41	23.64	44.763	
3,450.00	3,449.65	3,462.19	3,462.13	12.12	11.88	42.53	27.83	1,075.20	1,056.86	1,032.89	23.98	44.079	
3,500.00	3,499.62	3,511.97	3,511.90	12.30	12.05	42.57	28.08	1,075.19	1,055.79	1,031.46	24.33	43.398	
3,550.00	3,549.60	3,562.70	3,562.63	12.48	12.23	42.62	28.28	1,075.15	1,054.68	1,030.00	24.68	42.730	
3,600.00	3,599.58	3,616.54	3,616.47	12.65	12.42	42.66	28.52	1,075.00	1,053.47	1,028.43	25.05	42.059	
3,650.00	3,649.56	3,670.59	3,670.52	12.83	12.61	42.70	28.84	1,074.63	1,052.07	1,026.66	25.41	41.399	
3,700.00	3,699.54	3,718.95	3,718.88	13.01	12.77	42.73	29.19	1,074.28	1,050.64	1,024.88	25.76	40.786	
3,750.00	3,749.52	3,768.16	3,768.08	13.19	12.95	42.76	29.61	1,073.94	1,049.24	1,023.13	26.11	40.186	
3,800.00	3,799.50	3,817.12	3,817.04	13.37	13.12	42.79	30.11	1,073.65	1,047.88	1,021.42	26.46	39.604	
3,850.00	3,849.48	3,864.79	3,864.71	13.54	13.29	42.81	30.70	1,073.43	1,046.58	1,019.77	26.80	39.046	
3,900.00	3,899.46	3,910.47	3,910.38	13.72	13.45	42.82	31.30	1,073.37	1,045.46	1,018.32	27.14	38.519	
3,950.00	3,949.44	3,956.25	3,956.16	13.90	13.61	42.84	31.89	1,073.51	1,044.54	1,017.06	27.48	38.012	
4,000.00	3,999.41	4,002.22	4,002.13	14.08	13.77	42.87	32.33	1,073.82	1,043.82	1,016.00	27.82	37.524	
4,050.00	4,049.39	4,048.19	4,048.09	14.26	13.93	42.90	32.57	1,074.31	1,043.29	1,015.14	28.15	37.056	
4,100.00	4,099.37	4,094.14	4,094.03	14.44	14.09	42.95	32.69	1,074.98	1,042.96	1,014.46	28.49	36.605	
4,150.00	4,149.35	4,139.89	4,139.78	14.61	14.25	43.00	32.72	1,075.83	1,042.82	1,013.99	28.83	36.174	
4,157.10	4,156.45	4,146.31	4,146.20	14.64	14.27	43.00	32.71	1,075.96	1,042.82	1,013.94	28.88	36.114	
4,200.00	4,199.33	4,185.10	4,184.97	14.79	14.40	43.05	32.60	1,076.86	1,042.90	1,013.74	29.16	35.763	
4,250.00	4,249.31	4,230.86	4,230.72	14.97	14.56	43.12	32.31	1,078.12	1,043.21	1,013.71	29.50	35.366	
4,300.00	4,299.29	4,278.89	4,278.73	15.15	14.73	43.20	31.85	1,079.57	1,043.66	1,013.82	29.84	34.973	
4,350.00	4,349.27	4,326.76	4,326.57	15.33	14.90	43.28	31.27	1,081.10	1,044.21	1,014.02	30.19	34.593	
4,400.00	4,399.25	4,374.14	4,373.91	15.51	15.06	43.37	30.51	1,082.73	1,044.87	1,014.34	30.53	34.227	
4,450.00	4,449.22	4,422.25	4,421.98	15.69	15.23	43.48	29.53	1,084.49	1,045.65	1,014.78	30.87	33.870	
4,500.00	4,499.20	4,472.38	4,472.07	15.86	15.41	43.59	28.50	1,086.36	1,046.47	1,015.24	31.23	33.513	
4,550.00	4,549.18	4,521.02	4,520.66	16.04	15.58	43.69	27.57	1,088.17	1,047.29	1,015.72	31.57	33.171	
4,600.00	4,599.16	4,567.44	4,567.04	16.22	15.74	43.78	26.87	1,090.03	1,048.26	1,016.35	31.91	32.850	
4,650.00	4,649.14	4,617.17	4,616.72	16.40	15.92	43.86	26.34	1,092.17	1,049.37	1,017.11	32.26	32.526	
4,700.00	4,699.12	4,672.16	4,671.66	16.58	16.11	43.95	25.75	1,094.35	1,050.31	1,017.68	32.64	32.182	
4,750.00	4,749.10	4,726.02	4,725.49	16.76	16.30	44.05	25.07	1,096.25	1,051.04	1,018.04	33.01	31.844	
4,800.00	4,799.08	4,779.37	4,778.80	16.94	16.48	44.15	24.26	1,097.95	1,051.61	1,018.24	33.37	31.510	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2 — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9558- — **Offset Well Error:** 0.00 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
4,850.00	4,849.06	4,828.96	4,828.36	17.12	16.66	44.25	23.42	1,099.46	1,052.10	1,018.38	33.73	31.196	
4,900.00	4,899.03	4,878.36	4,877.73	17.30	16.83	44.34	22.62	1,100.99	1,052.63	1,018.55	34.08	30.891	
4,950.00	4,949.01	4,930.44	4,929.78	17.47	17.01	44.44	21.88	1,102.56	1,053.12	1,018.68	34.44	30.580	
5,000.00	4,998.99	4,982.34	4,981.66	17.65	17.19	44.53	21.29	1,104.03	1,053.51	1,018.71	34.80	30.274	
5,050.00	5,048.97	5,033.62	5,032.91	17.83	17.37	44.61	20.80	1,105.41	1,053.83	1,018.68	35.16	29.975	
5,100.00	5,098.95	5,084.05	5,083.33	18.01	17.55	44.69	20.37	1,106.71	1,054.10	1,018.59	35.51	29.682	
5,150.00	5,148.93	5,133.24	5,132.50	18.19	17.72	44.77	19.81	1,108.00	1,054.40	1,018.53	35.86	29.401	
5,200.00	5,198.91	5,184.57	5,183.80	18.37	17.90	44.86	19.07	1,109.35	1,054.70	1,018.48	36.22	29.118	
5,250.00	5,248.89	5,237.99	5,237.20	18.55	18.09	44.97	18.20	1,110.60	1,054.87	1,018.29	36.59	28.831	
5,300.00	5,298.87	5,288.50	5,287.70	18.73	18.26	45.07	17.43	1,111.68	1,054.94	1,017.99	36.94	28.555	
5,350.00	5,348.84	5,338.07	5,337.26	18.91	18.44	45.14	17.07	1,112.76	1,055.01	1,017.72	37.30	28.288	
5,400.00	5,398.82	5,389.36	5,388.53	19.09	18.62	45.20	17.04	1,113.88	1,055.08	1,017.42	37.65	28.020	
5,450.00	5,448.80	5,440.92	5,440.08	19.27	18.80	45.24	17.21	1,114.93	1,055.07	1,017.06	38.01	27.755	
5,500.00	5,498.78	5,490.95	5,490.11	19.44	18.97	45.29	17.23	1,115.91	1,055.03	1,016.66	38.37	27.498	
5,550.00	5,548.76	5,541.32	5,540.45	19.62	19.15	45.37	16.85	1,116.87	1,054.98	1,016.25	38.72	27.244	
5,600.00	5,598.74	5,592.93	5,592.06	19.80	19.33	45.45	16.35	1,117.80	1,054.88	1,015.79	39.08	26.991	
5,650.00	5,648.72	5,645.00	5,644.12	19.98	19.51	45.53	15.89	1,118.66	1,054.69	1,015.25	39.44	26.739	
5,700.00	5,698.70	5,697.84	5,696.95	20.16	19.69	45.61	15.56	1,119.40	1,054.39	1,014.58	39.81	26.487	
5,750.00	5,748.68	5,749.25	5,748.36	20.34	19.87	45.68	15.38	1,120.01	1,053.98	1,013.81	40.17	26.240	
5,800.00	5,798.65	5,799.70	5,798.80	20.52	20.05	45.74	15.24	1,120.58	1,053.53	1,013.01	40.52	25.999	
5,850.00	5,848.63	5,849.98	5,849.09	20.70	20.22	45.80	15.08	1,121.12	1,053.07	1,012.19	40.88	25.762	
5,900.00	5,898.61	5,900.21	5,899.31	20.88	20.40	45.88	14.77	1,121.65	1,052.59	1,011.36	41.23	25.529	
5,950.00	5,948.59	5,951.10	5,950.19	21.06	20.58	45.95	14.37	1,122.15	1,052.10	1,010.51	41.59	25.298	
6,000.00	5,998.57	6,002.08	6,001.17	21.24	20.75	46.03	13.99	1,122.61	1,051.55	1,009.61	41.95	25.070	
6,050.00	6,048.55	6,051.90	6,050.99	21.42	20.93	46.11	13.62	1,123.03	1,050.99	1,008.69	42.30	24.847	
6,100.00	6,098.53	6,102.07	6,101.15	21.60	21.10	46.18	13.25	1,123.47	1,050.44	1,007.78	42.65	24.628	
6,150.00	6,148.51	6,153.79	6,152.88	21.77	21.28	46.26	13.01	1,123.87	1,049.83	1,006.82	43.01	24.408	
6,200.00	6,198.49	6,205.03	6,204.11	21.95	21.46	46.32	12.97	1,124.20	1,049.15	1,005.78	43.37	24.190	
6,250.00	6,248.46	6,255.33	6,254.41	22.13	21.64	46.37	12.98	1,124.49	1,048.44	1,004.71	43.73	23.978	
6,300.00	6,298.44	6,305.17	6,304.25	22.31	21.81	46.43	12.98	1,124.77	1,047.72	1,003.64	44.08	23.769	
6,350.00	6,348.42	6,354.52	6,353.60	22.49	21.98	46.49	12.82	1,125.07	1,047.02	1,002.59	44.43	23.566	
6,400.00	6,398.40	6,404.39	6,403.47	22.67	22.16	46.57	12.51	1,125.38	1,046.35	1,001.57	44.78	23.365	
6,450.00	6,448.38	6,454.62	6,453.69	22.85	22.33	46.64	12.20	1,125.68	1,045.67	1,000.54	45.14	23.166	
6,500.00	6,498.36	6,505.82	6,504.89	23.03	22.51	46.71	11.96	1,125.96	1,044.97	999.47	45.50	22.968	
6,550.00	6,548.34	6,557.38	6,556.45	23.21	22.69	46.78	11.86	1,126.18	1,044.19	998.34	45.86	22.772	
6,600.00	6,598.32	6,608.52	6,607.59	23.39	22.87	46.84	11.84	1,126.34	1,043.35	997.14	46.21	22.577	
6,650.00	6,648.30	6,659.61	6,658.68	23.57	23.05	46.90	11.80	1,126.44	1,042.46	995.89	46.57	22.385	
6,700.00	6,698.27	6,708.00	6,707.07	23.75	23.22	46.96	11.67	1,126.54	1,041.58	994.66	46.92	22.200	
6,750.00	6,748.25	6,756.74	6,755.81	23.93	23.39	47.03	11.41	1,126.70	1,040.77	993.50	47.27	22.018	
6,800.00	6,798.23	6,806.37	6,805.44	24.11	23.56	47.11	11.10	1,126.90	1,040.00	992.38	47.62	21.839	
6,850.00	6,848.21	6,856.10	6,855.17	24.29	23.73	47.18	10.82	1,127.11	1,039.25	991.27	47.97	21.663	
6,900.00	6,898.19	6,906.12	6,905.19	24.47	23.91	47.24	10.68	1,127.34	1,038.50	990.17	48.33	21.489	
6,950.00	6,948.17	6,955.97	6,955.04	24.65	24.08	47.30	10.72	1,127.58	1,037.75	989.07	48.68	21.317	
7,000.00	6,998.15	7,005.57	7,004.63	24.83	24.26	47.36	10.74	1,127.83	1,037.01	987.98	49.03	21.149	
7,050.00	7,048.13	7,054.54	7,053.61	25.00	24.43	47.42	10.69	1,128.10	1,036.31	986.92	49.38	20.984	
7,100.00	7,098.11	7,102.90	7,101.97	25.18	24.60	47.48	10.45	1,128.42	1,035.67	985.94	49.73	20.825	
7,150.00	7,148.08	7,153.36	7,152.42	25.36	24.77	47.57	10.05	1,128.79	1,035.09	985.00	50.09	20.665	
7,200.00	7,198.06	7,205.39	7,204.45	25.54	24.95	47.64	9.77	1,129.10	1,034.43	983.98	50.45	20.504	
7,250.00	7,248.04	7,254.97	7,254.03	25.72	25.13	47.71	9.62	1,129.35	1,033.71	982.91	50.80	20.348	
7,300.00	7,298.02	7,303.82	7,302.87	25.90	25.30	47.77	9.44	1,129.64	1,033.05	981.90	51.15	20.196	
7,350.00	7,348.00	7,351.40	7,350.46	26.08	25.46	47.85	9.13	1,129.99	1,032.47	980.97	51.50	20.049	
7,400.00	7,397.98	7,398.76	7,397.81	26.26	25.63	47.94	8.51	1,130.43	1,032.02	980.17	51.84	19.907	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2 — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9558- — **Offset Well Error:** 0.00 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
7,450.00	7,447.96	7,448.01	7,447.04	26.44	25.80	48.04	7.61	1,130.96	1,031.65	979.46	52.19	19.766	
7,500.00	7,497.94	7,497.50	7,496.53	26.62	25.97	48.16	6.55	1,131.49	1,031.31	978.77	52.55	19.627	
7,550.00	7,547.92	7,550.17	7,549.18	26.80	26.16	48.28	5.43	1,132.01	1,030.93	978.02	52.91	19.485	
7,600.00	7,597.89	7,602.88	7,601.88	26.98	26.34	48.39	4.48	1,132.40	1,030.41	977.14	53.27	19.342	
7,650.00	7,647.87	7,651.62	7,650.61	27.16	26.51	48.50	3.56	1,132.74	1,029.88	976.26	53.62	19.206	
7,700.00	7,697.85	7,700.37	7,699.35	27.34	26.68	48.62	2.54	1,133.09	1,029.39	975.41	53.97	19.072	
7,750.00	7,747.83	7,747.64	7,746.61	27.52	26.85	48.73	1.41	1,133.53	1,029.00	974.68	54.32	18.944	
7,800.00	7,797.81	7,795.14	7,794.08	27.70	27.01	48.86	0.15	1,134.07	1,028.74	974.08	54.66	18.820	
7,850.00	7,847.79	7,843.10	7,842.02	27.88	27.18	48.98	-1.09	1,134.73	1,028.60	973.59	55.01	18.699	
7,900.00	7,897.77	7,893.67	7,892.57	28.06	27.36	49.11	-2.31	1,135.50	1,028.53	973.17	55.36	18.577	
7,950.00	7,947.75	7,948.42	7,947.30	28.24	27.55	49.23	-3.48	1,136.16	1,028.30	972.56	55.74	18.449	
8,000.00	7,997.73	7,999.33	7,998.21	28.42	27.72	49.35	-4.45	1,136.61	1,027.90	971.80	56.09	18.325	
8,050.00	8,047.70	8,048.39	8,047.25	28.60	27.90	49.46	-5.48	1,137.07	1,027.53	971.08	56.44	18.204	
8,100.00	8,097.68	8,097.20	8,096.05	28.78	28.07	49.58	-6.61	1,137.56	1,027.22	970.42	56.79	18.086	
8,150.00	8,147.66	8,145.94	8,144.76	28.96	28.24	49.71	-7.90	1,138.09	1,026.96	969.82	57.14	17.971	
8,200.00	8,197.64	8,196.67	8,195.47	29.13	28.41	49.85	-9.33	1,138.65	1,026.74	969.24	57.50	17.856	
8,250.00	8,247.62	8,247.81	8,246.59	29.31	28.59	49.99	-10.76	1,139.15	1,026.46	968.60	57.86	17.741	
8,300.00	8,297.60	8,301.88	8,300.64	29.49	28.78	50.13	-12.20	1,139.56	1,026.06	967.83	58.23	17.621	
8,350.00	8,347.58	8,355.68	8,354.42	29.67	28.97	50.27	-13.49	1,139.76	1,025.46	966.87	58.59	17.501	
8,400.00	8,397.56	8,408.78	8,407.51	29.85	29.15	50.40	-14.66	1,139.79	1,024.71	965.75	58.96	17.380	
8,450.00	8,447.54	8,458.32	8,457.04	30.03	29.33	50.52	-15.70	1,139.72	1,023.85	964.53	59.31	17.262	
8,500.00	8,497.51	8,504.56	8,503.27	30.21	29.49	50.64	-16.77	1,139.78	1,023.13	963.48	59.65	17.151	
8,550.00	8,547.49	8,554.63	8,553.32	30.39	29.66	50.77	-18.05	1,139.96	1,022.56	962.55	60.01	17.041	
8,600.00	8,597.47	8,608.63	8,607.30	30.57	29.85	50.91	-19.34	1,140.00	1,021.84	961.47	60.37	16.925	
8,650.00	8,647.45	8,662.32	8,660.98	30.75	30.04	51.04	-20.48	1,139.85	1,020.93	960.19	60.74	16.808	
8,700.00	8,697.43	8,715.92	8,714.57	30.93	30.22	51.16	-21.40	1,139.54	1,019.85	958.75	61.10	16.691	
8,750.00	8,747.41	8,764.19	8,762.84	31.11	30.39	51.27	-22.18	1,139.22	1,018.73	957.28	61.45	16.577	
8,800.00	8,797.39	8,812.58	8,811.21	31.29	30.56	51.38	-23.06	1,138.96	1,017.69	955.89	61.80	16.467	
8,850.00	8,847.37	8,861.52	8,860.15	31.47	30.73	51.49	-23.88	1,138.77	1,016.71	954.56	62.15	16.358	
8,900.00	8,897.35	8,910.48	8,909.11	31.65	30.90	51.59	-24.52	1,138.66	1,015.79	953.29	62.50	16.252	
8,950.00	8,947.33	8,955.83	8,954.45	31.83	31.06	51.68	-25.04	1,138.71	1,015.03	952.18	62.84	16.152	
9,000.00	8,997.30	9,002.74	9,001.36	32.01	31.22	51.77	-25.54	1,138.95	1,014.46	951.27	63.19	16.055	
9,050.00	9,047.28	9,057.04	9,055.65	32.19	31.41	51.87	-26.11	1,139.17	1,013.84	950.29	63.55	15.952	
9,100.00	9,097.26	9,112.59	9,111.20	32.37	31.61	51.97	-26.65	1,139.15	1,013.00	949.08	63.93	15.847	
9,150.00	9,147.24	9,170.04	9,168.65	32.55	31.81	52.06	-26.95	1,138.77	1,011.82	947.52	64.30	15.736	
9,200.00	9,197.22	9,221.99	9,220.59	32.73	31.99	52.15	-27.14	1,138.16	1,010.38	945.72	64.66	15.627	
9,250.00	9,247.20	9,272.26	9,270.86	32.91	32.16	52.25	-27.67	1,137.49	1,008.91	943.90	65.01	15.519	
9,300.00	9,297.18	9,329.96	9,328.55	33.09	32.36	52.38	-28.49	1,136.47	1,007.27	941.89	65.38	15.406	
9,350.00	9,347.16	9,388.39	9,386.95	33.27	32.57	52.51	-29.18	1,134.96	1,005.21	939.45	65.75	15.288	
9,400.00	9,397.14	9,441.77	9,440.30	33.45	32.75	52.63	-29.81	1,133.30	1,002.89	936.78	66.11	15.170	
9,450.00	9,447.11	9,497.13	9,495.62	33.63	32.94	52.76	-30.52	1,131.29	1,000.32	933.85	66.47	15.049	
9,500.00	9,497.09	9,551.63	9,550.07	33.81	33.13	52.91	-31.41	1,128.97	997.48	930.65	66.83	14.926	
9,550.00	9,547.07	9,601.75	9,600.13	33.99	33.31	53.04	-32.18	1,126.73	994.53	927.35	67.18	14.804	
9,600.00	9,597.05	9,651.61	9,649.93	34.17	33.48	53.17	-32.95	1,124.50	991.60	924.06	67.53	14.683	
9,650.00	9,647.03	9,689.42	9,687.65	34.35	33.61	53.35	-34.84	1,122.82	988.97	921.10	67.87	14.571	
9,700.00	9,697.01	9,727.11	9,725.06	34.53	33.74	53.66	-39.10	1,121.18	986.97	918.77	68.20	14.471	
9,750.00	9,746.99	9,764.04	9,761.37	34.71	33.88	54.10	-45.56	1,119.59	985.64	917.11	68.53	14.383	
9,800.00	9,796.97	9,800.00	9,796.29	34.88	34.00	54.64	-54.01	1,118.09	985.04	916.20	68.84	14.309	
9,811.94	9,808.90	9,808.33	9,804.30	34.93	34.03	54.79	-56.27	1,117.74	985.02	916.11	68.91	14.294	CC, ES
9,850.00	9,846.95	9,834.60	9,829.35	35.06	34.13	55.28	-64.12	1,116.68	985.27	916.13	69.13	14.251	
9,900.00	9,896.92	9,867.88	9,860.54	35.24	34.25	55.99	-75.64	1,115.36	986.41	917.00	69.41	14.212	
9,950.00	9,946.90	9,900.00	9,889.99	35.42	34.38	56.77	-88.39	1,114.13	988.58	918.92	69.66	14.192	SF

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2 — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9558- — **Offset Well Error:** 0.00 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
10,000.00	9,996.88	9,929.85	9,916.70	35.60	34.49	57.57	-101.65	1,113.02	991.85	921.98	69.87	14.195	
10,050.00	10,046.86	9,958.45	9,941.65	35.78	34.61	58.40	-115.60	1,112.00	996.34	926.29	70.04	14.224	
10,100.00	10,096.84	9,985.45	9,964.55	35.96	34.72	59.24	-129.86	1,111.07	1,002.12	931.95	70.17	14.281	
10,150.00	10,146.82	10,010.87	9,985.51	36.14	34.83	60.08	-144.22	1,110.23	1,009.28	939.03	70.25	14.367	
10,200.00	10,196.80	10,034.78	10,004.65	36.32	34.94	60.90	-158.53	1,109.47	1,017.88	947.61	70.27	14.485	
10,250.00	10,246.78	10,050.00	10,016.53	36.50	35.01	61.44	-168.03	1,109.00	1,028.01	957.87	70.14	14.657	
10,300.00	10,296.76	10,078.28	10,037.93	36.68	35.15	62.49	-186.49	1,108.17	1,039.57	969.43	70.14	14.822	
10,350.00	10,346.73	10,100.00	10,053.77	36.86	35.26	63.32	-201.35	1,107.56	1,052.72	982.72	70.01	15.037	
10,400.00	10,396.71	10,116.52	10,065.44	37.04	35.35	63.96	-213.03	1,107.12	1,067.42	997.66	69.77	15.300	
10,450.00	10,446.69	10,133.87	10,077.34	37.22	35.45	64.65	-225.63	1,106.67	1,083.67	1,014.17	69.50	15.593	
10,500.00	10,496.67	10,150.00	10,088.08	37.40	35.54	65.30	-237.67	1,106.28	1,101.44	1,032.27	69.17	15.924	
10,550.00	10,546.65	10,165.41	10,098.03	37.58	35.63	65.93	-249.42	1,105.91	1,120.71	1,051.90	68.81	16.287	
10,600.00	10,596.63	10,179.75	10,107.02	37.76	35.73	66.59	-260.60	1,105.59	1,141.45	1,073.05	68.40	16.687	
10,650.00	10,646.62	10,200.00	10,119.24	37.94	35.85	67.77	-276.74	1,105.15	1,163.81	1,095.73	68.08	17.095	
10,700.00	10,696.62	10,200.00	10,119.24	38.12	35.85	68.15	-276.74	1,105.15	1,187.70	1,120.32	67.38	17.627	
10,750.00	10,746.62	10,218.62	10,129.99	38.30	35.99	115.83	-291.94	1,104.78	1,212.95	1,145.93	67.02	18.099	
10,800.00	10,796.62	10,230.23	10,136.44	38.47	36.07	116.31	-301.58	1,104.55	1,239.46	1,172.94	66.52	18.633	
10,850.00	10,846.62	10,250.00	10,147.00	38.65	36.21	117.14	-318.29	1,104.20	1,267.23	1,201.06	66.17	19.151	
10,900.00	10,896.62	10,250.00	10,147.00	38.83	36.21	117.14	-318.29	1,104.20	1,295.96	1,230.51	65.46	19.798	
10,950.00	10,946.62	10,250.00	10,147.00	39.00	36.21	117.14	-318.29	1,104.20	1,325.96	1,261.21	64.75	20.477	
11,000.00	10,996.62	10,270.59	10,157.41	39.18	36.38	118.00	-336.05	1,103.86	1,356.71	1,292.26	64.45	21.049	
11,050.00	11,046.62	10,279.37	10,161.66	39.36	36.46	118.37	-343.73	1,103.72	1,388.55	1,324.61	63.94	21.716	
11,100.00	11,096.56	10,300.00	10,171.19	39.53	36.63	-56.94	-362.03	1,103.42	1,420.60	1,356.96	63.64	22.322	
11,150.00	11,146.12	10,300.00	10,171.19	39.69	36.63	-53.72	-362.03	1,103.42	1,451.45	1,388.50	62.95	23.057	
11,200.00	11,194.92	10,300.00	10,171.19	39.84	36.63	-50.78	-362.03	1,103.42	1,481.33	1,419.07	62.26	23.792	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan1v2 — **Offset Site Error:** 5.00 ft

Survey Program: 0-GYRO — **Offset Well Error:** 0.00 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
0.00	0.00	11.90	11.90	0.50	0.00	89.20	15.03	1,077.54	1,077.65				
50.00	50.00	61.90	61.90	0.50	0.00	89.20	15.03	1,077.54	1,077.65	1,077.14	0.50	2,146.161	
100.00	100.00	111.90	111.90	0.52	0.00	89.20	15.03	1,077.54	1,077.65	1,077.13	0.52	2,080.579	
150.00	150.00	161.90	161.90	0.59	0.00	89.20	15.03	1,077.54	1,077.65	1,077.06	0.59	1,825.156	
200.00	200.00	211.90	211.90	0.70	0.00	89.20	15.03	1,077.54	1,077.65	1,076.94	0.70	1,534.447	
250.00	250.00	261.90	261.90	0.84	0.00	89.20	15.03	1,077.54	1,077.65	1,076.81	0.84	1,286.107	
300.00	300.00	311.90	311.90	0.99	0.00	89.20	15.03	1,077.54	1,077.65	1,076.66	0.99	1,091.249	
350.00	350.00	361.90	361.90	1.15	0.00	89.20	15.03	1,077.54	1,077.65	1,076.50	1.15	940.609	
400.00	400.00	411.90	411.90	1.31	0.00	89.20	15.03	1,077.54	1,077.65	1,076.34	1.31	823.077	
450.00	450.00	461.90	461.90	1.48	0.00	89.20	15.03	1,077.54	1,077.65	1,076.17	1.48	729.853	
500.00	500.00	511.90	511.90	1.65	0.00	89.20	15.03	1,077.54	1,077.65	1,076.00	1.65	654.592	
550.00	550.00	561.90	561.90	1.82	0.00	89.20	15.03	1,077.54	1,077.65	1,075.83	1.82	592.807	
600.00	600.00	611.90	611.90	1.99	0.00	89.20	15.03	1,077.54	1,077.65	1,075.66	1.99	541.313	
650.00	650.00	661.90	661.90	2.16	0.00	89.20	15.03	1,077.54	1,077.65	1,075.48	2.16	497.813	
700.00	700.00	711.90	711.90	2.34	0.00	89.20	15.03	1,077.54	1,077.65	1,075.31	2.34	460.628	
750.00	750.00	761.90	761.90	2.51	0.00	89.20	15.03	1,077.54	1,077.65	1,075.13	2.51	428.505	
800.00	800.00	811.90	811.90	2.69	0.00	89.20	15.03	1,077.54	1,077.65	1,074.96	2.69	400.494	
850.00	850.00	861.90	861.90	2.87	0.00	89.20	15.03	1,077.54	1,077.65	1,074.78	2.87	375.866	
900.00	900.00	911.90	911.90	3.04	0.00	89.20	15.03	1,077.54	1,077.65	1,074.60	3.04	354.052	
950.00	950.00	961.90	961.90	3.22	0.00	89.20	15.03	1,077.54	1,077.65	1,074.43	3.22	334.602	
1,000.00	1,000.00	1,011.90	1,011.90	3.40	0.00	89.20	15.03	1,077.54	1,077.65	1,074.25	3.40	317.154	
1,050.00	1,050.00	1,061.90	1,061.90	3.58	0.00	89.20	15.03	1,077.54	1,077.65	1,074.07	3.58	301.419	
1,100.00	1,100.00	1,111.90	1,111.90	3.75	0.00	89.20	15.03	1,077.54	1,077.65	1,073.89	3.75	287.158	
1,150.00	1,150.00	1,161.90	1,161.90	3.93	0.00	89.20	15.03	1,077.54	1,077.65	1,073.72	3.93	274.175	
1,200.00	1,200.00	1,211.90	1,211.90	4.11	0.00	89.20	15.03	1,077.54	1,077.65	1,073.54	4.11	262.306	
1,250.00	1,250.00	1,261.90	1,261.90	4.29	0.00	89.20	15.03	1,077.54	1,077.65	1,073.36	4.29	251.416	
1,300.00	1,300.00	1,311.90	1,311.90	4.46	0.00	89.20	15.03	1,077.54	1,077.65	1,073.18	4.46	241.388	
1,350.00	1,350.00	1,361.90	1,361.90	4.64	0.00	89.20	15.03	1,077.54	1,077.65	1,073.00	4.64	232.125	
1,400.00	1,400.00	1,411.90	1,411.90	4.82	0.00	89.20	15.03	1,077.54	1,077.65	1,072.83	4.82	223.543	
1,450.00	1,450.00	1,461.90	1,461.90	5.00	0.00	89.20	15.03	1,077.54	1,077.65	1,072.65	5.00	215.570	
1,500.00	1,500.00	1,511.90	1,511.90	5.18	0.00	89.20	15.03	1,077.54	1,077.65	1,072.47	5.18	208.143	
1,550.00	1,550.00	1,561.90	1,561.90	5.36	0.00	89.20	15.03	1,077.54	1,077.65	1,072.29	5.36	201.209	
1,600.00	1,600.00	1,611.90	1,611.90	5.53	0.00	89.20	15.03	1,077.54	1,077.65	1,072.11	5.53	194.720	
1,650.00	1,650.00	1,661.90	1,661.90	5.71	0.00	89.20	15.03	1,077.54	1,077.65	1,071.93	5.71	188.635	
1,700.00	1,700.00	1,711.90	1,711.90	5.89	0.00	89.20	15.03	1,077.54	1,077.65	1,071.76	5.89	182.918	
1,750.00	1,750.00	1,761.90	1,761.90	6.07	0.00	89.20	15.03	1,077.54	1,077.65	1,071.58	6.07	177.536	
1,800.00	1,800.00	1,811.90	1,811.90	6.25	0.00	89.20	15.03	1,077.54	1,077.65	1,071.40	6.25	172.460	
1,850.00	1,850.00	1,861.90	1,861.90	6.43	0.00	89.20	15.03	1,077.54	1,077.65	1,071.22	6.43	167.666	
1,900.00	1,900.00	1,911.90	1,911.90	6.61	0.00	89.20	15.03	1,077.54	1,077.65	1,071.04	6.61	163.130	
1,950.00	1,950.00	1,961.90	1,961.90	6.78	0.00	89.20	15.03	1,077.54	1,077.65	1,070.86	6.78	158.833	
2,000.00	2,000.00	2,011.90	2,011.90	6.96	0.00	89.20	15.03	1,077.54	1,077.65	1,070.68	6.96	154.755	
2,050.00	2,050.00	2,061.90	2,061.90	7.14	0.00	89.20	15.03	1,077.54	1,077.65	1,070.50	7.14	150.881	
2,100.00	2,100.00	2,111.90	2,111.90	7.32	0.00	89.20	15.03	1,077.54	1,077.65	1,070.33	7.32	147.196	
2,150.00	2,150.00	2,161.90	2,161.90	7.50	0.00	89.20	15.03	1,077.54	1,077.65	1,070.15	7.50	143.687	
2,200.00	2,200.00	2,211.90	2,211.90	7.68	0.00	89.20	15.03	1,077.54	1,077.65	1,069.97	7.68	140.340	
2,250.00	2,250.00	2,261.90	2,261.90	7.86	0.00	89.20	15.03	1,077.54	1,077.65	1,069.79	7.86	137.146	
2,300.00	2,300.00	2,311.90	2,311.90	8.04	0.00	89.20	15.03	1,077.54	1,077.65	1,069.61	8.04	134.093	
2,350.00	2,350.00	2,361.90	2,361.90	8.22	0.00	89.20	15.03	1,077.54	1,077.65	1,069.43	8.22	131.173	
2,400.00	2,400.00	2,411.90	2,411.90	8.39	0.00	89.20	15.03	1,077.54	1,077.65	1,069.25	8.39	128.377	
2,450.00	2,450.00	2,461.90	2,461.90	8.57	0.00	89.20	15.03	1,077.54	1,077.65	1,069.07	8.57	125.698	
2,500.00	2,500.00	2,511.90	2,511.90	8.75	0.00	89.20	15.03	1,077.54	1,077.65	1,068.89	8.75	123.128	
2,550.00	2,550.00	2,561.90	2,561.90	8.93	0.00	42.31	15.03	1,077.54	1,077.49	1,068.56	8.93	120.664	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan1v2 — **Offset Site Error:** 5.00 ft

Survey Program: 0-GYRO — **Offset Well Error:** 0.00 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
2,600.00	2,599.99	2,611.89	2,611.89	9.11	0.00	42.33	15.03	1,077.54	1,077.00	1,067.89	9.11	118.259	
2,650.00	2,649.98	2,661.88	2,661.88	9.28	0.00	42.38	15.03	1,077.54	1,076.20	1,066.91	9.28	115.930	
2,700.00	2,699.96	2,711.86	2,711.86	9.46	0.00	42.43	15.03	1,077.54	1,075.14	1,065.68	9.46	113.660	
2,750.00	2,749.94	2,761.84	2,761.84	9.64	0.00	42.48	15.03	1,077.54	1,074.07	1,064.43	9.64	111.471	
2,800.00	2,799.92	2,811.82	2,811.82	9.81	0.00	42.54	15.03	1,077.54	1,073.00	1,063.19	9.81	109.360	
2,850.00	2,849.90	2,861.80	2,861.80	9.99	0.00	42.59	15.03	1,077.54	1,071.93	1,061.94	9.99	107.321	
2,900.00	2,899.88	2,911.78	2,911.78	10.17	0.00	42.64	15.03	1,077.54	1,070.86	1,060.69	10.16	105.353	
2,950.00	2,949.86	2,961.76	2,961.76	10.34	0.00	42.69	15.03	1,077.54	1,069.79	1,059.45	10.34	103.450	
3,000.00	2,999.84	3,011.74	3,011.74	10.52	0.00	42.75	15.03	1,077.54	1,068.72	1,058.21	10.52	101.611	
3,050.00	3,049.81	3,061.71	3,061.71	10.70	0.00	42.80	15.03	1,077.54	1,067.66	1,056.96	10.69	99.831	
3,100.00	3,099.79	3,111.69	3,111.69	10.88	0.00	42.85	15.03	1,077.54	1,066.59	1,055.72	10.87	98.110	
3,150.00	3,149.77	3,161.67	3,161.67	11.05	0.00	42.91	15.03	1,077.54	1,065.53	1,054.48	11.05	96.442	
3,200.00	3,199.75	3,211.65	3,211.65	11.23	0.00	42.96	15.03	1,077.54	1,064.46	1,053.24	11.23	94.826	
3,250.00	3,249.73	3,261.63	3,261.63	11.41	0.00	43.01	15.03	1,077.54	1,063.40	1,052.00	11.40	93.260	
3,300.00	3,299.71	3,311.61	3,311.61	11.59	0.00	43.07	15.03	1,077.54	1,062.34	1,050.76	11.58	91.741	
3,350.00	3,349.69	3,361.59	3,361.59	11.76	0.00	43.12	15.03	1,077.54	1,061.28	1,049.52	11.76	90.267	
3,400.00	3,399.67	3,411.57	3,411.57	11.94	0.00	43.17	15.03	1,077.54	1,060.22	1,048.28	11.93	88.837	
3,450.00	3,449.65	3,461.55	3,461.55	12.12	0.00	43.23	15.03	1,077.54	1,059.16	1,047.05	12.11	87.449	
3,500.00	3,499.62	3,511.52	3,511.52	12.30	0.00	43.28	15.03	1,077.54	1,058.10	1,045.81	12.29	86.100	
3,550.00	3,549.60	3,561.50	3,561.50	12.48	0.00	43.33	15.03	1,077.54	1,057.04	1,044.58	12.47	84.789	
3,600.00	3,599.58	3,611.48	3,611.48	12.65	0.00	43.39	15.03	1,077.54	1,055.99	1,043.34	12.64	83.515	
3,650.00	3,649.56	3,661.46	3,661.46	12.83	0.00	43.44	15.03	1,077.54	1,054.93	1,042.11	12.82	82.275	
3,700.00	3,699.54	3,711.44	3,711.44	13.01	0.00	43.50	15.03	1,077.54	1,053.88	1,040.88	13.00	81.070	
3,750.00	3,749.52	3,761.42	3,761.42	13.19	0.00	43.55	15.03	1,077.54	1,052.82	1,039.65	13.18	79.896	
3,800.00	3,799.50	3,811.40	3,811.40	13.37	0.00	43.61	15.03	1,077.54	1,051.77	1,038.42	13.36	78.754	
3,850.00	3,849.48	3,861.38	3,861.38	13.54	0.00	43.66	15.03	1,077.54	1,050.72	1,037.19	13.53	77.641	
3,900.00	3,899.46	3,911.36	3,911.36	13.72	0.00	43.71	15.03	1,077.54	1,049.67	1,035.96	13.71	76.557	
3,950.00	3,949.44	3,961.34	3,961.34	13.90	0.00	43.77	15.03	1,077.54	1,048.62	1,034.73	13.89	75.501	
4,000.00	3,999.41	4,011.31	4,011.31	14.08	0.00	43.82	15.03	1,077.54	1,047.57	1,033.51	14.07	74.471	
4,050.00	4,049.39	4,061.29	4,061.29	14.26	0.00	43.88	15.03	1,077.54	1,046.52	1,032.28	14.24	73.467	
4,100.00	4,099.37	4,111.27	4,111.27	14.44	0.00	43.93	15.03	1,077.54	1,045.48	1,031.05	14.42	72.487	
4,150.00	4,149.35	4,161.25	4,161.25	14.61	0.00	43.99	15.03	1,077.54	1,044.43	1,029.83	14.60	71.531	
4,200.00	4,199.33	4,211.23	4,211.23	14.79	0.00	44.05	15.03	1,077.54	1,043.39	1,028.61	14.78	70.599	
4,250.00	4,249.31	4,261.21	4,261.21	14.97	0.00	44.10	15.03	1,077.54	1,042.34	1,027.39	14.96	69.688	
4,300.00	4,299.29	4,311.19	4,311.19	15.15	0.00	44.16	15.03	1,077.54	1,041.30	1,026.17	15.14	68.799	
4,350.00	4,349.27	4,361.17	4,361.17	15.33	0.00	44.21	15.03	1,077.54	1,040.26	1,024.95	15.31	67.930	
4,400.00	4,399.25	4,411.15	4,411.15	15.51	0.00	44.27	15.03	1,077.54	1,039.22	1,023.73	15.49	67.081	
4,450.00	4,449.22	4,461.12	4,461.12	15.69	0.00	44.32	15.03	1,077.54	1,038.18	1,022.51	15.67	66.251	
4,500.00	4,499.20	4,511.10	4,511.10	15.86	0.00	44.38	15.03	1,077.54	1,037.14	1,021.29	15.85	65.441	
4,550.00	4,549.18	4,561.08	4,561.08	16.04	0.00	44.44	15.03	1,077.54	1,036.10	1,020.08	16.03	64.648	
4,600.00	4,599.16	4,611.06	4,611.06	16.22	0.00	44.49	15.03	1,077.54	1,035.07	1,018.86	16.21	63.872	
4,650.00	4,649.14	4,661.04	4,661.04	16.40	0.00	44.55	15.03	1,077.54	1,034.03	1,017.65	16.38	63.113	
4,700.00	4,699.12	4,711.02	4,711.02	16.58	0.00	44.61	15.03	1,077.54	1,032.99	1,016.43	16.56	62.371	
4,750.00	4,749.10	4,761.00	4,761.00	16.76	0.00	44.66	15.03	1,077.54	1,031.96	1,015.22	16.74	61.644	
4,800.00	4,799.08	4,810.98	4,810.98	16.94	0.00	44.72	15.03	1,077.54	1,030.93	1,014.01	16.92	60.933	
4,850.00	4,849.06	4,860.96	4,860.96	17.12	0.00	44.78	15.03	1,077.54	1,029.90	1,012.80	17.10	60.236	
4,900.00	4,899.03	4,910.93	4,910.93	17.30	0.00	44.83	15.03	1,077.54	1,028.87	1,011.59	17.28	59.554	
4,950.00	4,949.01	4,960.91	4,960.91	17.47	0.00	44.89	15.03	1,077.54	1,027.84	1,010.38	17.45	58.886	
5,000.00	4,998.99	5,010.89	5,010.89	17.65	0.00	44.95	15.03	1,077.54	1,026.81	1,009.17	17.63	58.231	
5,050.00	5,048.97	5,060.87	5,060.87	17.83	0.00	45.00	15.03	1,077.54	1,025.78	1,007.97	17.81	57.590	
5,100.00	5,098.95	5,110.85	5,110.85	18.01	0.00	45.06	15.03	1,077.54	1,024.75	1,006.76	17.99	56.961	
5,150.00	5,148.93	5,160.83	5,160.83	18.19	0.00	45.12	15.03	1,077.54	1,023.73	1,005.56	18.17	56.345	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan1v2 — **Offset Site Error:** 5.00 ft

Survey Program: 0-GYRO — **Offset Well Error:** 0.00 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
5,200.00	5,198.91	5,210.81	5,210.81	18.37	0.00	45.18	15.03	1,077.54	1,022.70	1,004.35	18.35	55.740	
5,250.00	5,248.89	5,260.79	5,260.79	18.55	0.00	45.23	15.03	1,077.54	1,021.68	1,003.15	18.53	55.147	
5,300.00	5,298.87	5,310.77	5,310.77	18.73	0.00	45.29	15.03	1,077.54	1,020.66	1,001.95	18.71	54.566	
5,350.00	5,348.84	5,360.74	5,360.74	18.91	0.00	45.35	15.03	1,077.54	1,019.64	1,000.75	18.88	53.995	
5,400.00	5,398.82	5,410.72	5,410.72	19.09	0.00	45.41	15.03	1,077.54	1,018.61	999.55	19.06	53.436	
5,450.00	5,448.80	5,460.70	5,460.70	19.27	0.00	45.47	15.03	1,077.54	1,017.60	998.35	19.24	52.886	
5,500.00	5,498.78	5,510.68	5,510.68	19.44	0.00	45.53	15.03	1,077.54	1,016.58	997.16	19.42	52.347	
5,550.00	5,548.76	5,560.66	5,560.66	19.62	0.00	45.58	15.03	1,077.54	1,015.56	995.96	19.60	51.818	
5,600.00	5,598.74	5,610.64	5,610.64	19.80	0.00	45.64	15.03	1,077.54	1,014.54	994.77	19.78	51.298	
5,650.00	5,648.72	5,660.62	5,660.62	19.98	0.00	45.70	15.03	1,077.54	1,013.53	993.57	19.96	50.787	
5,700.00	5,698.70	5,710.60	5,710.60	20.16	0.00	45.76	15.03	1,077.54	1,012.51	992.38	20.14	50.286	
5,750.00	5,748.68	5,760.58	5,760.58	20.34	0.00	45.82	15.03	1,077.54	1,011.50	991.19	20.31	49.793	
5,800.00	5,798.65	5,810.55	5,810.55	20.52	0.00	45.88	15.03	1,077.54	1,010.49	990.00	20.49	49.309	
5,850.00	5,848.63	5,860.53	5,860.53	20.70	0.00	45.94	15.03	1,077.54	1,009.48	988.81	20.67	48.834	
5,900.00	5,898.61	5,910.51	5,910.51	20.88	0.00	46.00	15.03	1,077.54	1,008.47	987.62	20.85	48.366	
5,950.00	5,948.59	5,960.49	5,960.49	21.06	0.00	46.06	15.03	1,077.54	1,007.46	986.43	21.03	47.907	
6,000.00	5,998.57	6,010.47	6,010.47	21.24	0.00	46.11	15.03	1,077.54	1,006.45	985.24	21.21	47.455	
6,050.00	6,048.55	6,060.45	6,060.45	21.42	0.00	46.17	15.03	1,077.54	1,005.45	984.06	21.39	47.011	
6,100.00	6,098.53	6,110.43	6,110.43	21.60	0.00	46.23	15.03	1,077.54	1,004.44	982.87	21.57	46.575	
6,150.00	6,148.51	6,160.41	6,160.41	21.77	0.00	46.29	15.03	1,077.54	1,003.44	981.69	21.75	46.145	
6,200.00	6,198.49	6,210.39	6,210.39	21.95	0.00	46.35	15.03	1,077.54	1,002.43	980.51	21.92	45.723	
6,250.00	6,248.46	6,260.36	6,260.36	22.13	0.00	46.41	15.03	1,077.54	1,001.43	979.33	22.10	45.307	
6,300.00	6,298.44	6,310.34	6,310.34	22.31	0.00	46.47	15.03	1,077.54	1,000.43	978.15	22.28	44.898	
6,350.00	6,348.42	6,360.32	6,360.32	22.49	0.00	46.53	15.03	1,077.54	999.43	976.97	22.46	44.496	
6,400.00	6,398.40	6,410.30	6,410.30	22.67	0.00	46.60	15.03	1,077.54	998.43	975.79	22.64	44.100	
6,450.00	6,448.38	6,460.28	6,460.28	22.85	0.00	46.66	15.03	1,077.54	997.43	974.61	22.82	43.710	
6,500.00	6,498.36	6,510.26	6,510.26	23.03	0.00	46.72	15.03	1,077.54	996.44	973.44	23.00	43.327	
6,550.00	6,548.34	6,560.24	6,560.24	23.21	0.00	46.78	15.03	1,077.54	995.44	972.26	23.18	42.949	
6,600.00	6,598.32	6,610.22	6,610.22	23.39	0.00	46.84	15.03	1,077.54	994.45	971.09	23.36	42.577	
6,650.00	6,648.30	6,660.20	6,660.20	23.57	0.00	46.90	15.03	1,077.54	993.45	969.92	23.54	42.211	
6,700.00	6,698.27	6,710.17	6,710.17	23.75	0.00	46.96	15.03	1,077.54	992.46	968.75	23.71	41.851	
6,750.00	6,748.25	6,760.15	6,760.15	23.93	0.00	47.02	15.03	1,077.54	991.47	967.58	23.89	41.496	
6,800.00	6,798.23	6,810.13	6,810.13	24.11	0.00	47.08	15.03	1,077.54	990.48	966.41	24.07	41.146	
6,850.00	6,848.21	6,860.11	6,860.11	24.29	0.00	47.15	15.03	1,077.54	989.49	965.24	24.25	40.801	
6,900.00	6,898.19	6,910.09	6,910.09	24.47	0.00	47.21	15.03	1,077.54	988.50	964.07	24.43	40.462	
6,950.00	6,948.17	6,960.07	6,960.07	24.65	0.00	47.27	15.03	1,077.54	987.52	962.91	24.61	40.127	
7,000.00	6,998.15	7,010.05	7,010.05	24.83	0.00	47.33	15.03	1,077.54	986.53	961.74	24.79	39.797	
7,050.00	7,048.13	7,060.03	7,060.03	25.00	0.00	47.39	15.03	1,077.54	985.55	960.58	24.97	39.473	
7,100.00	7,098.11	7,110.01	7,110.01	25.18	0.00	47.45	15.03	1,077.54	984.57	959.42	25.15	39.152	
7,150.00	7,148.08	7,159.98	7,159.98	25.36	0.00	47.52	15.03	1,077.54	983.58	958.26	25.33	38.837	
7,200.00	7,198.06	7,209.96	7,209.96	25.54	0.00	47.58	15.03	1,077.54	982.60	957.10	25.51	38.525	
7,250.00	7,248.04	7,259.94	7,259.94	25.72	0.00	47.64	15.03	1,077.54	981.62	955.94	25.68	38.218	
7,300.00	7,298.02	7,309.92	7,309.92	25.90	0.00	47.70	15.03	1,077.54	980.65	954.78	25.86	37.916	
7,350.00	7,348.00	7,359.90	7,359.90	26.08	0.00	47.77	15.03	1,077.54	979.67	953.63	26.04	37.618	
7,400.00	7,397.98	7,409.88	7,409.88	26.26	0.00	47.83	15.03	1,077.54	978.69	952.47	26.22	37.323	
7,450.00	7,447.96	7,459.86	7,459.86	26.44	0.00	47.89	15.03	1,077.54	977.72	951.32	26.40	37.033	
7,500.00	7,497.94	7,509.84	7,509.84	26.62	0.00	47.96	15.03	1,077.54	976.75	950.16	26.58	36.747	
7,550.00	7,547.92	7,559.82	7,559.82	26.80	0.00	48.02	15.03	1,077.54	975.77	949.01	26.76	36.464	
7,600.00	7,597.89	7,609.79	7,609.79	26.98	0.00	48.08	15.03	1,077.54	974.80	947.86	26.94	36.186	
7,650.00	7,647.87	7,659.77	7,659.77	27.16	0.00	48.15	15.03	1,077.54	973.83	946.71	27.12	35.911	
7,700.00	7,697.85	7,709.75	7,709.75	27.34	0.00	48.21	15.03	1,077.54	972.86	945.57	27.30	35.640	
7,750.00	7,747.83	7,759.73	7,759.73	27.52	0.00	48.27	15.03	1,077.54	971.90	944.42	27.48	35.372	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan1v2 — **Offset Site Error:** 5.00 ft

Survey Program: 0-GYRO — **Offset Well Error:** 0.00 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
7,800.00	7,797.81	7,809.71	7,809.71	27.70	0.00	48.34	15.03	1,077.54	970.93	943.27	27.66	35.108	
7,850.00	7,847.79	7,859.69	7,859.69	27.88	0.00	48.40	15.03	1,077.54	969.96	942.13	27.83	34.847	
7,900.00	7,897.77	7,909.67	7,909.67	28.06	0.00	48.47	15.03	1,077.54	969.00	940.99	28.01	34.590	
7,950.00	7,947.75	7,959.65	7,959.65	28.24	0.00	48.53	15.03	1,077.54	968.04	939.84	28.19	34.335	
8,000.00	7,997.73	8,009.63	8,009.63	28.42	0.00	48.60	15.03	1,077.54	967.08	938.70	28.37	34.085	
8,050.00	8,047.70	8,059.60	8,059.60	28.60	0.00	48.66	15.03	1,077.54	966.12	937.56	28.55	33.837	
8,100.00	8,097.68	8,109.58	8,109.58	28.78	0.00	48.73	15.03	1,077.54	965.16	936.43	28.73	33.593	
8,150.00	8,147.66	8,159.56	8,159.56	28.96	0.00	48.79	15.03	1,077.54	964.20	935.29	28.91	33.351	
8,200.00	8,197.64	8,209.54	8,209.54	29.13	0.00	48.86	15.03	1,077.54	963.24	934.15	29.09	33.113	
8,250.00	8,247.62	8,259.52	8,259.52	29.31	0.00	48.92	15.03	1,077.54	962.29	933.02	29.27	32.877	
8,300.00	8,297.60	8,309.50	8,309.50	29.49	0.00	48.99	15.03	1,077.54	961.33	931.88	29.45	32.645	
8,350.00	8,347.58	8,359.48	8,359.48	29.67	0.00	49.05	15.03	1,077.54	960.38	930.75	29.63	32.415	
8,400.00	8,397.56	8,409.46	8,409.46	29.85	0.00	49.12	15.03	1,077.54	959.43	929.62	29.81	32.188	
8,450.00	8,447.54	8,459.44	8,459.44	30.03	0.00	49.18	15.03	1,077.54	958.48	928.49	29.99	31.964	
8,500.00	8,497.51	8,509.41	8,509.41	30.21	0.00	49.25	15.03	1,077.54	957.53	927.36	30.17	31.742	
8,550.00	8,547.49	8,559.39	8,559.39	30.39	0.00	49.31	15.03	1,077.54	956.58	926.24	30.35	31.524	
8,600.00	8,597.47	8,609.37	8,609.37	30.57	0.00	49.38	15.03	1,077.54	955.64	925.11	30.52	31.307	
8,650.00	8,647.45	8,659.35	8,659.35	30.75	0.00	49.45	15.03	1,077.54	954.69	923.99	30.70	31.094	
8,700.00	8,697.43	8,709.33	8,709.33	30.93	0.00	49.51	15.03	1,077.54	953.75	922.86	30.88	30.883	
8,750.00	8,747.41	8,759.31	8,759.31	31.11	0.00	49.58	15.03	1,077.54	952.80	921.74	31.06	30.674	
8,800.00	8,797.39	8,809.29	8,809.29	31.29	0.00	49.64	15.03	1,077.54	951.86	920.62	31.24	30.468	
8,850.00	8,847.37	8,859.27	8,859.27	31.47	0.00	49.71	15.03	1,077.54	950.92	919.50	31.42	30.264	
8,900.00	8,897.35	8,909.25	8,909.25	31.65	0.00	49.78	15.03	1,077.54	949.98	918.38	31.60	30.062	
8,950.00	8,947.33	8,959.23	8,959.23	31.83	0.00	49.85	15.03	1,077.54	949.05	917.27	31.78	29.863	
9,000.00	8,997.30	9,009.20	9,009.20	32.01	0.00	49.91	15.03	1,077.54	948.11	916.15	31.96	29.666	
9,050.00	9,047.28	9,059.18	9,059.18	32.19	0.00	49.98	15.03	1,077.54	947.18	915.04	32.14	29.472	
9,100.00	9,097.26	9,109.16	9,109.16	32.37	0.00	50.05	15.03	1,077.54	946.24	913.92	32.32	29.279	
9,150.00	9,147.24	9,159.14	9,159.14	32.55	0.00	50.11	15.03	1,077.54	945.31	912.81	32.50	29.089	
9,200.00	9,197.22	9,209.12	9,209.12	32.73	0.00	50.18	15.03	1,077.54	944.38	911.70	32.68	28.901	
9,250.00	9,247.20	9,259.10	9,259.10	32.91	0.00	50.25	15.03	1,077.54	943.45	910.59	32.86	28.715	
9,300.00	9,297.18	9,309.08	9,309.08	33.09	0.00	50.32	15.03	1,077.54	942.52	909.48	33.04	28.530	
9,350.00	9,347.16	9,359.06	9,359.06	33.27	0.00	50.39	15.03	1,077.54	941.59	908.38	33.21	28.348	
9,400.00	9,397.14	9,409.04	9,409.04	33.45	0.00	50.45	15.03	1,077.54	940.67	907.27	33.39	28.168	
9,450.00	9,447.11	9,459.01	9,459.01	33.63	0.00	50.52	15.03	1,077.54	939.74	906.17	33.57	27.990	
9,500.00	9,497.09	9,508.99	9,508.99	33.81	0.00	50.59	15.03	1,077.54	938.82	905.07	33.75	27.814	
9,550.00	9,547.07	9,558.97	9,558.97	33.99	0.00	50.66	15.03	1,077.54	937.90	903.97	33.93	27.640	
9,600.00	9,597.05	9,608.95	9,608.95	34.17	0.00	50.73	15.03	1,077.54	936.98	902.87	34.11	27.468	
9,650.00	9,647.03	9,658.93	9,658.93	34.35	0.00	50.80	15.03	1,077.54	936.06	901.77	34.29	27.297	
9,700.00	9,697.01	9,700.00	9,699.97	34.53	0.00	50.93	13.71	1,077.56	935.38	900.91	34.47	27.134	
9,737.71	9,734.71	9,729.73	9,729.56	34.66	0.00	51.14	10.92	1,077.59	935.22	900.61	34.61	27.023 CC	
9,750.00	9,746.99	9,739.44	9,739.20	34.71	0.00	51.23	9.67	1,077.60	935.24	900.59	34.65	26.990 ES	
9,800.00	9,796.97	9,778.40	9,777.58	34.88	0.00	51.69	3.05	1,077.68	935.69	900.86	34.83	26.867	
9,850.00	9,846.95	9,816.19	9,814.30	35.06	0.00	52.27	-5.85	1,077.78	936.81	901.81	35.00	26.768	
9,900.00	9,896.92	9,852.55	9,849.00	35.24	0.00	52.97	-16.68	1,077.90	938.70	903.54	35.16	26.699	
9,950.00	9,946.90	9,887.28	9,881.44	35.42	0.00	53.76	-29.06	1,078.04	941.48	906.17	35.31	26.663 SF	
10,000.00	9,996.88	9,920.25	9,911.50	35.60	0.00	54.61	-42.61	1,078.19	945.25	909.80	35.45	26.666	
10,050.00	10,046.86	9,950.00	9,937.91	35.78	0.00	55.46	-56.30	1,078.34	950.13	914.57	35.56	26.717	
10,100.00	10,096.84	9,980.69	9,964.37	35.96	0.00	56.42	-71.84	1,078.52	956.24	920.58	35.66	26.813	
10,150.00	10,146.82	10,008.16	9,987.31	36.14	0.00	57.33	-86.94	1,078.69	963.68	927.94	35.74	26.967	
10,200.00	10,196.80	10,033.85	10,008.09	36.32	0.00	58.24	-102.03	1,078.86	972.52	936.74	35.78	27.180	
10,250.00	10,246.78	10,057.84	10,026.87	36.50	0.00	59.13	-116.96	1,079.03	982.83	947.04	35.79	27.457	
10,300.00	10,296.76	10,080.21	10,043.80	36.68	0.00	59.98	-131.57	1,079.19	994.67	958.89	35.78	27.801	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan1v2 — **Offset Site Error:** 5.00 ft

Survey Program: 0-GYRO — **Offset Well Error:** 0.00 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
10,350.00	10,346.73	10,100.00	10,058.30	36.86	0.00	60.77	-145.04	1,079.34	1,008.07	972.34	35.73	28.217	
10,400.00	10,396.71	10,120.49	10,072.81	37.04	0.00	61.60	-159.51	1,079.51	1,023.04	987.39	35.66	28.693	
10,450.00	10,446.69	10,138.60	10,085.19	37.22	0.00	62.35	-172.72	1,079.66	1,039.59	1,004.04	35.55	29.243	
10,500.00	10,496.67	10,150.00	10,092.77	37.40	0.00	62.83	-181.24	1,079.75	1,057.73	1,022.35	35.38	29.893	
10,550.00	10,546.65	10,171.24	10,106.44	37.58	0.00	63.74	-197.50	1,079.93	1,077.35	1,042.09	35.26	30.550	
10,600.00	10,596.63	10,185.97	10,115.55	37.76	0.00	64.45	-209.06	1,080.06	1,098.51	1,063.42	35.09	31.305	
10,650.00	10,646.62	10,200.00	10,123.96	37.94	0.00	65.41	-220.30	1,080.19	1,121.28	1,086.38	34.90	32.127	
10,700.00	10,696.62	10,213.00	10,131.50	38.12	0.00	66.35	-230.89	1,080.31	1,145.68	1,110.98	34.70	33.017	
10,750.00	10,746.62	10,225.42	10,138.48	38.30	0.00	113.80	-241.16	1,080.43	1,171.51	1,137.02	34.49	33.967	
10,800.00	10,796.62	10,237.07	10,144.82	38.47	0.00	114.31	-250.93	1,080.54	1,198.59	1,164.31	34.27	34.972	
10,850.00	10,846.62	10,250.00	10,151.62	38.65	0.00	114.88	-261.92	1,080.66	1,226.87	1,192.80	34.07	36.013	
10,900.00	10,896.62	10,250.00	10,151.62	38.83	0.00	114.88	-261.92	1,080.66	1,256.34	1,222.56	33.77	37.198	
10,950.00	10,946.62	10,268.04	10,160.70	39.00	0.00	115.68	-277.51	1,080.83	1,286.75	1,253.14	33.61	38.279	
11,000.00	10,996.62	10,277.19	10,165.11	39.18	0.00	116.09	-285.53	1,080.92	1,318.25	1,284.85	33.40	39.468	
11,050.00	11,046.62	10,285.83	10,169.16	39.36	0.00	116.47	-293.16	1,081.01	1,350.71	1,317.52	33.19	40.695	
11,100.00	11,096.56	10,300.00	10,175.55	39.53	0.00	-58.86	-305.80	1,081.15	1,383.34	1,350.33	33.02	41.899	
11,150.00	11,146.12	10,300.00	10,175.55	39.69	0.00	-55.41	-305.80	1,081.15	1,415.10	1,382.37	32.74	43.225	
11,200.00	11,194.92	10,300.00	10,175.55	39.84	0.00	-52.23	-305.80	1,081.15	1,446.01	1,413.55	32.46	44.546	
11,250.00	11,242.61	10,325.78	10,186.37	39.98	0.00	-48.69	-329.20	1,081.42	1,475.20	1,442.85	32.35	45.601	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - PTL — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9646-MWD+IGRF, 9898- — **Offset Well Error:** 0.00 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
0.00	0.00	12.03	12.03	0.50	0.02	89.20	15.04	1,077.54	1,077.65				
50.00	50.00	62.57	62.57	0.50	0.08	89.19	15.20	1,077.52	1,077.63	1,077.04	0.59	1,839.830	
100.00	100.00	113.22	113.22	0.52	0.18	89.17	15.59	1,077.47	1,077.58	1,076.89	0.69	1,554.514	
150.00	150.00	164.29	164.28	0.59	0.35	89.15	15.98	1,077.38	1,077.50	1,076.55	0.94	1,140.829	
200.00	200.00	214.79	214.79	0.70	0.53	89.13	16.28	1,077.24	1,077.37	1,076.13	1.23	873.836	
250.00	250.00	264.38	264.38	0.84	0.70	89.12	16.55	1,077.11	1,077.24	1,075.70	1.54	698.824	
300.00	300.00	312.80	312.79	0.99	0.87	89.11	16.80	1,077.02	1,077.15	1,075.29	1.86	579.145	
316.01	316.01	327.91	327.91	1.04	0.93	89.10	16.86	1,077.01	1,077.14	1,075.18	1.96	548.881	
350.00	350.00	360.02	360.01	1.15	1.04	89.10	16.97	1,077.04	1,077.17	1,074.99	2.18	493.541	
400.00	400.00	410.07	410.07	1.31	1.21	89.09	17.12	1,077.16	1,077.29	1,074.77	2.52	427.379	
450.00	450.00	462.82	462.81	1.48	1.40	89.07	17.49	1,077.17	1,077.31	1,074.44	2.87	375.103	
500.00	500.00	513.58	513.57	1.65	1.58	89.04	18.02	1,077.09	1,077.24	1,074.02	3.22	334.620	
550.00	550.00	563.63	563.62	1.82	1.75	89.01	18.52	1,077.00	1,077.16	1,073.60	3.57	302.063	
588.18	588.18	600.09	600.08	1.95	1.88	89.00	18.88	1,076.96	1,077.13	1,073.30	3.83	281.563	
600.00	600.00	611.27	611.25	1.99	1.92	88.99	19.01	1,076.96	1,077.13	1,073.23	3.91	275.790	
650.00	650.00	658.54	658.52	2.16	2.08	88.96	19.57	1,077.04	1,077.22	1,072.98	4.24	253.766	
700.00	700.00	709.21	709.19	2.34	2.26	88.93	20.15	1,077.18	1,077.38	1,072.78	4.60	234.377	
750.00	750.00	760.37	760.34	2.51	2.44	88.91	20.59	1,077.28	1,077.48	1,072.52	4.95	217.634	
800.00	800.00	812.39	812.37	2.69	2.62	88.88	21.03	1,077.30	1,077.50	1,072.19	5.31	202.977	
850.00	850.00	863.94	863.91	2.87	2.80	88.85	21.61	1,077.22	1,077.44	1,071.77	5.66	190.196	
900.00	900.00	914.13	914.09	3.04	2.98	88.82	22.19	1,077.11	1,077.34	1,071.32	6.02	179.052	
950.00	950.00	963.18	963.14	3.22	3.15	88.79	22.71	1,077.00	1,077.24	1,070.88	6.37	169.240	
972.82	972.82	984.76	984.72	3.30	3.23	88.78	22.91	1,076.99	1,077.23	1,070.71	6.52	165.185	
1,000.00	1,000.00	1,010.46	1,010.42	3.40	3.32	88.77	23.12	1,077.00	1,077.25	1,070.54	6.71	160.606	
1,050.00	1,050.00	1,060.16	1,060.12	3.58	3.49	88.75	23.44	1,077.10	1,077.36	1,070.30	7.06	152.639	
1,100.00	1,100.00	1,113.31	1,113.27	3.75	3.68	88.73	23.85	1,077.10	1,077.37	1,069.94	7.42	145.173	
1,150.00	1,150.00	1,162.16	1,162.12	3.93	3.85	88.71	24.27	1,077.02	1,077.29	1,069.52	7.77	138.658	
1,153.12	1,153.12	1,165.06	1,165.02	3.94	3.86	88.71	24.29	1,077.02	1,077.29	1,069.50	7.79	138.281	
1,200.00	1,200.00	1,208.69	1,208.64	4.11	4.01	88.69	24.54	1,077.08	1,077.36	1,069.26	8.11	132.851	
1,250.00	1,250.00	1,257.66	1,257.62	4.29	4.18	88.69	24.68	1,077.27	1,077.56	1,069.10	8.46	127.395	
1,300.00	1,300.00	1,308.04	1,307.99	4.46	4.36	88.68	24.77	1,077.46	1,077.75	1,068.94	8.81	122.302	
1,350.00	1,350.00	1,360.53	1,360.49	4.64	4.54	88.68	24.85	1,077.60	1,077.88	1,068.71	9.17	117.499	
1,400.00	1,400.00	1,413.63	1,413.59	4.82	4.73	88.67	25.05	1,077.59	1,077.88	1,068.34	9.54	113.020	
1,450.00	1,450.00	1,464.35	1,464.30	5.00	4.91	88.65	25.36	1,077.48	1,077.78	1,067.89	9.89	108.952	
1,500.00	1,500.00	1,515.09	1,515.04	5.18	5.08	88.63	25.84	1,077.34	1,077.66	1,067.41	10.25	105.160	
1,550.00	1,550.00	1,564.11	1,564.06	5.36	5.26	88.61	26.23	1,077.22	1,077.54	1,066.94	10.60	101.681	
1,600.00	1,600.00	1,613.57	1,613.52	5.53	5.43	88.59	26.47	1,077.13	1,077.45	1,066.51	10.95	98.413	
1,650.00	1,650.00	1,663.51	1,663.46	5.71	5.60	88.58	26.66	1,077.05	1,077.38	1,066.08	11.30	95.335	
1,700.00	1,700.00	1,712.44	1,712.39	5.89	5.78	88.57	26.81	1,076.99	1,077.32	1,065.67	11.65	92.471	
1,709.35	1,709.35	1,721.30	1,721.25	5.92	5.81	88.57	26.83	1,076.98	1,077.32	1,065.60	11.71	91.963	
1,750.00	1,750.00	1,759.82	1,759.77	6.07	5.94	88.57	26.85	1,077.02	1,077.36	1,065.36	11.99	89.823	
1,800.00	1,800.00	1,808.25	1,808.20	6.25	6.11	88.58	26.79	1,077.17	1,077.51	1,065.16	12.34	87.306	
1,850.00	1,850.00	1,858.12	1,858.06	6.43	6.28	88.58	26.69	1,077.34	1,077.68	1,064.99	12.69	84.893	
1,900.00	1,900.00	1,908.24	1,908.19	6.61	6.46	88.59	26.60	1,077.52	1,077.86	1,064.81	13.05	82.606	
1,950.00	1,950.00	1,958.58	1,958.53	6.78	6.63	88.59	26.50	1,077.69	1,078.02	1,064.62	13.40	80.433	
2,000.00	2,000.00	2,012.66	2,012.61	6.96	6.82	88.60	26.43	1,077.79	1,078.11	1,064.34	13.77	78.293	
2,050.00	2,050.00	2,068.48	2,068.42	7.14	7.01	88.59	26.44	1,077.60	1,077.94	1,063.80	14.14	76.214	
2,100.00	2,100.00	2,117.18	2,117.13	7.32	7.18	88.59	26.49	1,077.34	1,077.67	1,063.18	14.49	74.362	
2,150.00	2,150.00	2,166.14	2,166.08	7.50	7.35	88.59	26.54	1,077.12	1,077.46	1,062.62	14.84	72.596	
2,200.00	2,200.00	2,217.29	2,217.23	7.68	7.53	88.59	26.58	1,076.90	1,077.24	1,062.04	15.20	70.876	
2,250.00	2,250.00	2,267.14	2,267.09	7.86	7.71	88.59	26.56	1,076.63	1,076.97	1,061.42	15.55	69.251	
2,300.00	2,300.00	2,313.21	2,313.15	8.04	7.87	88.59	26.53	1,076.49	1,076.82	1,060.93	15.89	67.761	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - PTL — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9646-MWD+IGRF, 9898- — **Offset Well Error:** 0.00 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
2,315.94	2,315.94	2,327.90	2,327.84	8.09	7.92	88.59	26.52	1,076.49	1,076.81	1,060.81	16.00	67.302	
2,350.00	2,350.00	2,361.04	2,360.98	8.22	8.03	88.59	26.49	1,076.52	1,076.85	1,060.61	16.24	66.319	
2,400.00	2,400.00	2,415.00	2,414.94	8.39	8.22	88.59	26.46	1,076.47	1,076.80	1,060.19	16.60	64.850	
2,450.00	2,450.00	2,467.07	2,467.01	8.57	8.40	88.59	26.44	1,076.25	1,076.59	1,059.62	16.97	63.459	
2,500.00	2,500.00	2,517.16	2,517.10	8.75	8.58	88.59	26.42	1,076.01	1,076.35	1,059.03	17.32	62.149	
2,550.00	2,550.00	2,564.72	2,564.66	8.93	8.74	41.70	26.38	1,075.81	1,075.98	1,058.31	17.66	60.920	
2,600.00	2,599.99	2,610.71	2,610.66	9.11	8.90	41.73	26.33	1,075.78	1,075.45	1,057.45	18.00	59.747	
2,650.00	2,649.98	2,658.75	2,658.69	9.28	9.07	41.77	26.26	1,075.90	1,074.76	1,056.42	18.34	58.590	
2,700.00	2,699.96	2,708.24	2,708.18	9.46	9.24	41.83	26.18	1,076.06	1,073.86	1,055.16	18.69	57.448	
2,750.00	2,749.94	2,760.32	2,760.26	9.64	9.42	41.89	26.10	1,076.21	1,072.91	1,053.86	19.05	56.319	
2,800.00	2,799.92	2,813.55	2,813.49	9.81	9.61	41.95	26.10	1,076.21	1,071.83	1,052.42	19.41	55.213	
2,850.00	2,849.90	2,863.63	2,863.57	9.99	9.78	41.99	26.14	1,076.12	1,070.67	1,050.90	19.76	54.173	
2,900.00	2,899.88	2,913.52	2,913.46	10.17	9.96	42.04	26.19	1,076.04	1,069.51	1,049.39	20.11	53.171	
2,950.00	2,949.86	2,964.06	2,964.00	10.34	10.13	42.09	26.26	1,075.95	1,068.34	1,047.87	20.47	52.197	
3,000.00	2,999.84	3,013.81	3,013.75	10.52	10.31	42.14	26.36	1,075.83	1,067.15	1,046.33	20.82	51.262	
3,050.00	3,049.81	3,060.47	3,060.41	10.70	10.47	42.18	26.45	1,075.81	1,066.05	1,044.89	21.16	50.387	
3,100.00	3,099.79	3,107.83	3,107.77	10.88	10.64	42.23	26.53	1,075.94	1,065.11	1,043.61	21.50	49.541	
3,150.00	3,149.77	3,158.03	3,157.97	11.05	10.81	42.28	26.60	1,076.12	1,064.22	1,042.36	21.85	48.702	
3,200.00	3,199.75	3,210.16	3,210.10	11.23	10.99	42.33	26.66	1,076.28	1,063.30	1,041.08	22.21	47.873	
3,250.00	3,249.73	3,266.19	3,266.13	11.41	11.19	42.38	26.80	1,076.20	1,062.15	1,039.57	22.58	47.033	
3,300.00	3,299.71	3,318.36	3,318.30	11.59	11.37	42.43	27.01	1,075.89	1,060.79	1,037.84	22.94	46.238	
3,350.00	3,349.69	3,368.56	3,368.50	11.76	11.55	42.46	27.28	1,075.57	1,059.39	1,036.10	23.29	45.478	
3,400.00	3,399.67	3,415.76	3,415.70	11.94	11.71	42.50	27.58	1,075.30	1,058.05	1,034.41	23.64	44.763	
3,450.00	3,449.65	3,462.19	3,462.13	12.12	11.88	42.53	27.83	1,075.20	1,056.86	1,032.89	23.98	44.079	
3,500.00	3,499.62	3,511.97	3,511.90	12.30	12.05	42.57	28.08	1,075.19	1,055.79	1,031.46	24.33	43.398	
3,550.00	3,549.60	3,562.70	3,562.63	12.48	12.23	42.62	28.28	1,075.15	1,054.68	1,030.00	24.68	42.730	
3,600.00	3,599.58	3,616.54	3,616.47	12.65	12.42	42.66	28.52	1,075.00	1,053.47	1,028.43	25.05	42.059	
3,650.00	3,649.56	3,670.59	3,670.52	12.83	12.61	42.70	28.84	1,074.63	1,052.07	1,026.66	25.41	41.399	
3,700.00	3,699.54	3,718.95	3,718.88	13.01	12.77	42.73	29.19	1,074.28	1,050.64	1,024.88	25.76	40.786	
3,750.00	3,749.52	3,768.16	3,768.08	13.19	12.95	42.76	29.61	1,073.94	1,049.24	1,023.13	26.11	40.186	
3,800.00	3,799.50	3,817.12	3,817.04	13.37	13.12	42.79	30.11	1,073.65	1,047.88	1,021.42	26.46	39.604	
3,850.00	3,849.48	3,864.79	3,864.71	13.54	13.29	42.81	30.70	1,073.43	1,046.58	1,019.77	26.80	39.046	
3,900.00	3,899.46	3,910.47	3,910.38	13.72	13.45	42.82	31.30	1,073.37	1,045.46	1,018.32	27.14	38.519	
3,950.00	3,949.44	3,956.25	3,956.16	13.90	13.61	42.84	31.89	1,073.51	1,044.54	1,017.06	27.48	38.012	
4,000.00	3,999.41	4,002.22	4,002.13	14.08	13.77	42.87	32.33	1,073.82	1,043.82	1,016.00	27.82	37.524	
4,050.00	4,049.39	4,048.19	4,048.09	14.26	13.93	42.90	32.57	1,074.31	1,043.29	1,015.14	28.15	37.056	
4,100.00	4,099.37	4,094.14	4,094.03	14.44	14.09	42.95	32.69	1,074.98	1,042.96	1,014.46	28.49	36.605	
4,150.00	4,149.35	4,139.89	4,139.78	14.61	14.25	43.00	32.72	1,075.83	1,042.82	1,013.99	28.83	36.174	
4,157.10	4,156.45	4,146.31	4,146.20	14.64	14.27	43.00	32.71	1,075.96	1,042.82	1,013.94	28.88	36.114	
4,200.00	4,199.33	4,185.10	4,184.97	14.79	14.40	43.05	32.60	1,076.86	1,042.90	1,013.74	29.16	35.763	
4,250.00	4,249.31	4,230.86	4,230.72	14.97	14.56	43.12	32.31	1,078.12	1,043.21	1,013.71	29.50	35.366	
4,300.00	4,299.29	4,278.89	4,278.73	15.15	14.73	43.20	31.85	1,079.57	1,043.66	1,013.82	29.84	34.973	
4,350.00	4,349.27	4,326.76	4,326.57	15.33	14.90	43.28	31.27	1,081.10	1,044.21	1,014.02	30.19	34.593	
4,400.00	4,399.25	4,374.14	4,373.91	15.51	15.06	43.37	30.51	1,082.73	1,044.87	1,014.34	30.53	34.227	
4,450.00	4,449.22	4,422.25	4,421.98	15.69	15.23	43.48	29.53	1,084.49	1,045.65	1,014.78	30.87	33.870	
4,500.00	4,499.20	4,472.38	4,472.07	15.86	15.41	43.59	28.50	1,086.36	1,046.47	1,015.24	31.23	33.513	
4,550.00	4,549.18	4,521.02	4,520.66	16.04	15.58	43.69	27.57	1,088.17	1,047.29	1,015.72	31.57	33.171	
4,600.00	4,599.16	4,567.44	4,567.04	16.22	15.74	43.78	26.87	1,090.03	1,048.26	1,016.35	31.91	32.850	
4,650.00	4,649.14	4,617.17	4,616.72	16.40	15.92	43.86	26.34	1,092.17	1,049.37	1,017.11	32.26	32.526	
4,700.00	4,699.12	4,672.16	4,671.66	16.58	16.11	43.95	25.75	1,094.35	1,050.31	1,017.68	32.64	32.182	
4,750.00	4,749.10	4,726.02	4,725.49	16.76	16.30	44.05	25.07	1,096.25	1,051.04	1,018.04	33.01	31.844	
4,800.00	4,799.08	4,779.37	4,778.80	16.94	16.48	44.15	24.26	1,097.95	1,051.61	1,018.24	33.37	31.510	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - PTL — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9646-MWD+IGRF, 9898- — **Offset Well Error:** 0.00 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
4,850.00	4,849.06	4,828.96	4,828.36	17.12	16.66	44.25	23.42	1,099.46	1,052.10	1,018.38	33.73	31.196	
4,900.00	4,899.03	4,878.36	4,877.73	17.30	16.83	44.34	22.62	1,100.99	1,052.63	1,018.55	34.08	30.891	
4,950.00	4,949.01	4,930.44	4,929.78	17.47	17.01	44.44	21.88	1,102.56	1,053.12	1,018.68	34.44	30.580	
5,000.00	4,998.99	4,982.34	4,981.66	17.65	17.19	44.53	21.29	1,104.03	1,053.51	1,018.71	34.80	30.274	
5,050.00	5,048.97	5,033.62	5,032.91	17.83	17.37	44.61	20.80	1,105.41	1,053.83	1,018.68	35.16	29.975	
5,100.00	5,098.95	5,084.05	5,083.33	18.01	17.55	44.69	20.37	1,106.71	1,054.10	1,018.59	35.51	29.682	
5,150.00	5,148.93	5,133.24	5,132.50	18.19	17.72	44.77	19.81	1,108.00	1,054.40	1,018.53	35.86	29.401	
5,200.00	5,198.91	5,184.57	5,183.80	18.37	17.90	44.86	19.07	1,109.35	1,054.70	1,018.48	36.22	29.118	
5,250.00	5,248.89	5,237.99	5,237.20	18.55	18.09	44.97	18.20	1,110.60	1,054.87	1,018.29	36.59	28.831	
5,300.00	5,298.87	5,288.50	5,287.70	18.73	18.26	45.07	17.43	1,111.68	1,054.94	1,017.99	36.94	28.555	
5,350.00	5,348.84	5,338.07	5,337.26	18.91	18.44	45.14	17.07	1,112.76	1,055.01	1,017.72	37.30	28.288	
5,400.00	5,398.82	5,389.36	5,388.53	19.09	18.62	45.20	17.04	1,113.88	1,055.08	1,017.42	37.65	28.020	
5,450.00	5,448.80	5,440.92	5,440.08	19.27	18.80	45.24	17.21	1,114.93	1,055.07	1,017.06	38.01	27.755	
5,500.00	5,498.78	5,490.95	5,490.11	19.44	18.97	45.29	17.23	1,115.91	1,055.03	1,016.66	38.37	27.498	
5,550.00	5,548.76	5,541.32	5,540.45	19.62	19.15	45.37	16.85	1,116.87	1,054.98	1,016.25	38.72	27.244	
5,600.00	5,598.74	5,592.93	5,592.06	19.80	19.33	45.45	16.35	1,117.80	1,054.88	1,015.79	39.08	26.991	
5,650.00	5,648.72	5,645.00	5,644.12	19.98	19.51	45.53	15.89	1,118.66	1,054.69	1,015.25	39.44	26.739	
5,700.00	5,698.70	5,697.84	5,696.95	20.16	19.69	45.61	15.56	1,119.40	1,054.39	1,014.58	39.81	26.487	
5,750.00	5,748.68	5,749.25	5,748.36	20.34	19.87	45.68	15.38	1,120.01	1,053.98	1,013.81	40.17	26.240	
5,800.00	5,798.65	5,799.70	5,798.80	20.52	20.05	45.74	15.24	1,120.58	1,053.53	1,013.01	40.52	25.999	
5,850.00	5,848.63	5,849.98	5,849.09	20.70	20.22	45.80	15.08	1,121.12	1,053.07	1,012.19	40.88	25.762	
5,900.00	5,898.61	5,900.21	5,899.31	20.88	20.40	45.88	14.77	1,121.65	1,052.59	1,011.36	41.23	25.529	
5,950.00	5,948.59	5,951.10	5,950.19	21.06	20.58	45.95	14.37	1,122.15	1,052.10	1,010.51	41.59	25.298	
6,000.00	5,998.57	6,002.08	6,001.17	21.24	20.75	46.03	13.99	1,122.61	1,051.55	1,009.61	41.95	25.070	
6,050.00	6,048.55	6,051.90	6,050.99	21.42	20.93	46.11	13.62	1,123.03	1,050.99	1,008.69	42.30	24.847	
6,100.00	6,098.53	6,102.07	6,101.15	21.60	21.10	46.18	13.25	1,123.47	1,050.44	1,007.78	42.65	24.628	
6,150.00	6,148.51	6,153.79	6,152.88	21.77	21.28	46.26	13.01	1,123.87	1,049.83	1,006.82	43.01	24.408	
6,200.00	6,198.49	6,205.03	6,204.11	21.95	21.46	46.32	12.97	1,124.20	1,049.15	1,005.78	43.37	24.190	
6,250.00	6,248.46	6,255.33	6,254.41	22.13	21.64	46.37	12.98	1,124.49	1,048.44	1,004.71	43.73	23.978	
6,300.00	6,298.44	6,305.17	6,304.25	22.31	21.81	46.43	12.98	1,124.77	1,047.72	1,003.64	44.08	23.769	
6,350.00	6,348.42	6,354.52	6,353.60	22.49	21.98	46.49	12.82	1,125.07	1,047.02	1,002.59	44.43	23.566	
6,400.00	6,398.40	6,404.39	6,403.47	22.67	22.16	46.57	12.51	1,125.38	1,046.35	1,001.57	44.78	23.365	
6,450.00	6,448.38	6,454.62	6,453.69	22.85	22.33	46.64	12.20	1,125.68	1,045.67	1,000.54	45.14	23.166	
6,500.00	6,498.36	6,505.82	6,504.89	23.03	22.51	46.71	11.96	1,125.96	1,044.97	999.47	45.50	22.968	
6,550.00	6,548.34	6,557.38	6,556.45	23.21	22.69	46.78	11.86	1,126.18	1,044.19	998.34	45.86	22.772	
6,600.00	6,598.32	6,608.52	6,607.59	23.39	22.87	46.84	11.84	1,126.34	1,043.35	997.14	46.21	22.577	
6,650.00	6,648.30	6,659.61	6,658.68	23.57	23.05	46.90	11.80	1,126.44	1,042.46	995.89	46.57	22.385	
6,700.00	6,698.27	6,708.00	6,707.07	23.75	23.22	46.96	11.67	1,126.54	1,041.58	994.66	46.92	22.200	
6,750.00	6,748.25	6,756.74	6,755.81	23.93	23.39	47.03	11.41	1,126.70	1,040.77	993.50	47.27	22.018	
6,800.00	6,798.23	6,806.37	6,805.44	24.11	23.56	47.11	11.10	1,126.90	1,040.00	992.38	47.62	21.839	
6,850.00	6,848.21	6,856.10	6,855.17	24.29	23.73	47.18	10.82	1,127.11	1,039.25	991.27	47.97	21.663	
6,900.00	6,898.19	6,906.12	6,905.19	24.47	23.91	47.24	10.68	1,127.34	1,038.50	990.17	48.33	21.489	
6,950.00	6,948.17	6,955.97	6,955.04	24.65	24.08	47.30	10.72	1,127.58	1,037.75	989.07	48.68	21.317	
7,000.00	6,998.15	7,005.57	7,004.63	24.83	24.26	47.36	10.74	1,127.83	1,037.01	987.98	49.03	21.149	
7,050.00	7,048.13	7,054.54	7,053.61	25.00	24.43	47.42	10.69	1,128.10	1,036.31	986.92	49.38	20.984	
7,100.00	7,098.11	7,102.90	7,101.97	25.18	24.60	47.48	10.45	1,128.42	1,035.67	985.94	49.73	20.825	
7,150.00	7,148.08	7,153.36	7,152.42	25.36	24.77	47.57	10.05	1,128.79	1,035.09	985.00	50.09	20.665	
7,200.00	7,198.06	7,205.39	7,204.45	25.54	24.95	47.64	9.77	1,129.10	1,034.43	983.98	50.45	20.504	
7,250.00	7,248.04	7,254.97	7,254.03	25.72	25.13	47.71	9.62	1,129.35	1,033.71	982.91	50.80	20.348	
7,300.00	7,298.02	7,303.82	7,302.87	25.90	25.30	47.77	9.44	1,129.64	1,033.05	981.90	51.15	20.196	
7,350.00	7,348.00	7,351.40	7,350.46	26.08	25.46	47.85	9.13	1,129.99	1,032.47	980.97	51.50	20.049	
7,400.00	7,397.98	7,398.76	7,397.81	26.26	25.63	47.94	8.51	1,130.43	1,032.02	980.17	51.84	19.907	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - PTL — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9646-MWD+IGRF, 9898- — **Offset Well Error:** 0.00 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
7,450.00	7,447.96	7,448.01	7,447.04	26.44	25.80	48.04	7.61	1,130.96	1,031.65	979.46	52.19	19.766	
7,500.00	7,497.94	7,497.50	7,496.53	26.62	25.97	48.16	6.55	1,131.49	1,031.31	978.77	52.55	19.627	
7,550.00	7,547.92	7,550.17	7,549.18	26.80	26.16	48.28	5.43	1,132.01	1,030.93	978.02	52.91	19.485	
7,600.00	7,597.89	7,602.88	7,601.88	26.98	26.34	48.39	4.48	1,132.40	1,030.41	977.14	53.27	19.342	
7,650.00	7,647.87	7,651.62	7,650.61	27.16	26.51	48.50	3.56	1,132.74	1,029.88	976.26	53.62	19.206	
7,700.00	7,697.85	7,700.37	7,699.35	27.34	26.68	48.62	2.54	1,133.09	1,029.39	975.41	53.97	19.072	
7,750.00	7,747.83	7,747.64	7,746.61	27.52	26.85	48.73	1.41	1,133.53	1,029.00	974.68	54.32	18.944	
7,800.00	7,797.81	7,795.14	7,794.08	27.70	27.01	48.86	0.15	1,134.07	1,028.74	974.08	54.66	18.820	
7,850.00	7,847.79	7,843.10	7,842.02	27.88	27.18	48.98	-1.09	1,134.73	1,028.60	973.59	55.01	18.699	
7,900.00	7,897.77	7,893.67	7,892.57	28.06	27.36	49.11	-2.31	1,135.50	1,028.53	973.17	55.36	18.577	
7,950.00	7,947.75	7,948.42	7,947.30	28.24	27.55	49.23	-3.48	1,136.16	1,028.30	972.56	55.74	18.449	
8,000.00	7,997.73	7,999.33	7,998.21	28.42	27.72	49.35	-4.45	1,136.61	1,027.90	971.80	56.09	18.325	
8,050.00	8,047.70	8,048.39	8,047.25	28.60	27.90	49.46	-5.48	1,137.07	1,027.53	971.08	56.44	18.204	
8,100.00	8,097.68	8,097.20	8,096.05	28.78	28.07	49.58	-6.61	1,137.56	1,027.22	970.42	56.79	18.086	
8,150.00	8,147.66	8,145.94	8,144.76	28.96	28.24	49.71	-7.90	1,138.09	1,026.96	969.82	57.14	17.971	
8,200.00	8,197.64	8,196.67	8,195.47	29.13	28.41	49.85	-9.33	1,138.65	1,026.74	969.24	57.50	17.856	
8,250.00	8,247.62	8,247.81	8,246.59	29.31	28.59	49.99	-10.76	1,139.15	1,026.46	968.60	57.86	17.741	
8,300.00	8,297.60	8,301.88	8,300.64	29.49	28.78	50.13	-12.20	1,139.56	1,026.06	967.83	58.23	17.621	
8,350.00	8,347.58	8,355.68	8,354.42	29.67	28.97	50.27	-13.49	1,139.76	1,025.46	966.87	58.59	17.501	
8,400.00	8,397.56	8,408.78	8,407.51	29.85	29.15	50.40	-14.66	1,139.79	1,024.71	965.75	58.96	17.380	
8,450.00	8,447.54	8,458.32	8,457.04	30.03	29.33	50.52	-15.70	1,139.72	1,023.85	964.53	59.31	17.262	
8,500.00	8,497.51	8,504.56	8,503.27	30.21	29.49	50.64	-16.77	1,139.78	1,023.13	963.48	59.65	17.151	
8,550.00	8,547.49	8,554.63	8,553.32	30.39	29.66	50.77	-18.05	1,139.96	1,022.56	962.55	60.01	17.041	
8,600.00	8,597.47	8,608.63	8,607.30	30.57	29.85	50.91	-19.34	1,140.00	1,021.84	961.47	60.37	16.925	
8,650.00	8,647.45	8,662.32	8,660.98	30.75	30.04	51.04	-20.48	1,139.85	1,020.93	960.19	60.74	16.808	
8,700.00	8,697.43	8,715.92	8,714.57	30.93	30.22	51.16	-21.40	1,139.54	1,019.85	958.75	61.10	16.691	
8,750.00	8,747.41	8,764.19	8,762.84	31.11	30.39	51.27	-22.18	1,139.22	1,018.73	957.28	61.45	16.577	
8,800.00	8,797.39	8,812.58	8,811.21	31.29	30.56	51.38	-23.06	1,138.96	1,017.69	955.89	61.80	16.467	
8,850.00	8,847.37	8,861.52	8,860.15	31.47	30.73	51.49	-23.88	1,138.77	1,016.71	954.56	62.15	16.358	
8,900.00	8,897.35	8,910.48	8,909.11	31.65	30.90	51.59	-24.52	1,138.66	1,015.79	953.29	62.50	16.252	
8,950.00	8,947.33	8,955.83	8,954.45	31.83	31.06	51.68	-25.04	1,138.71	1,015.03	952.18	62.84	16.152	
9,000.00	8,997.30	9,002.74	9,001.36	32.01	31.22	51.77	-25.54	1,138.95	1,014.46	951.27	63.19	16.055	
9,050.00	9,047.28	9,057.04	9,055.65	32.19	31.41	51.87	-26.11	1,139.17	1,013.84	950.29	63.55	15.952	
9,100.00	9,097.26	9,112.59	9,111.20	32.37	31.61	51.97	-26.65	1,139.15	1,013.00	949.08	63.93	15.847	
9,150.00	9,147.24	9,170.04	9,168.65	32.55	31.81	52.06	-26.95	1,138.77	1,011.82	947.52	64.30	15.736	
9,200.00	9,197.22	9,221.99	9,220.59	32.73	31.99	52.15	-27.14	1,138.16	1,010.38	945.72	64.66	15.627	
9,250.00	9,247.20	9,272.26	9,270.86	32.91	32.16	52.25	-27.67	1,137.49	1,008.91	943.90	65.01	15.519	
9,300.00	9,297.18	9,329.96	9,328.55	33.09	32.36	52.38	-28.49	1,136.47	1,007.27	941.89	65.38	15.406	
9,350.00	9,347.16	9,388.39	9,386.95	33.27	32.57	52.51	-29.18	1,134.96	1,005.21	939.45	65.75	15.288	
9,400.00	9,397.14	9,441.77	9,440.30	33.45	32.75	52.63	-29.81	1,133.30	1,002.89	936.78	66.11	15.170	
9,450.00	9,447.11	9,497.13	9,495.62	33.63	32.94	52.76	-30.52	1,131.29	1,000.32	933.85	66.47	15.049	
9,500.00	9,497.09	9,551.63	9,550.07	33.81	33.13	52.91	-31.41	1,128.97	997.48	930.65	66.83	14.926	
9,550.00	9,547.07	9,598.04	9,596.42	33.99	33.23	53.03	-32.18	1,126.96	994.62	927.51	67.11	14.821	
9,600.00	9,597.05	9,643.70	9,642.04	34.17	33.31	53.16	-33.09	1,125.16	991.97	924.59	67.38	14.723	
9,650.00	9,647.03	9,682.48	9,680.75	34.35	33.32	53.33	-34.80	1,123.72	989.68	922.09	67.58	14.644	
9,700.00	9,697.01	9,714.73	9,712.83	34.53	33.32	53.56	-37.95	1,122.75	988.18	920.39	67.79	14.578	
9,750.00	9,746.99	9,751.74	9,749.40	34.71	33.32	53.94	-43.52	1,121.79	987.45	919.47	67.97	14.527	
9,773.67	9,770.64	9,768.43	9,765.75	34.79	33.32	54.15	-46.82	1,121.37	987.36	919.30	68.06	14.507 CC	
9,800.00	9,796.97	9,789.46	9,786.20	34.88	33.32	54.47	-51.69	1,120.83	987.44	919.29	68.16	14.488 ES	
9,850.00	9,846.95	9,824.90	9,820.24	35.06	33.33	55.08	-61.52	1,119.82	988.11	919.79	68.33	14.462	
9,900.00	9,896.92	9,868.49	9,861.40	35.24	33.34	55.96	-75.79	1,118.59	989.55	921.05	68.50	14.446	
9,950.00	9,946.90	9,915.86	9,905.39	35.42	33.35	57.03	-93.22	1,116.55	991.13	922.44	68.69	14.430 SF	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - PTL — **Offset Site Error:** 5.00 ft

Survey Program: 102-GYRO-NS, 9646-MWD+IGRF, 9898- — **Offset Well Error:** 0.00 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
10,000.00	9,996.88	9,949.02	9,935.72	35.60	33.37	57.84	-106.55	1,115.12	993.53	924.70	68.83	14.435	
10,050.00	10,046.86	9,977.87	9,961.65	35.78	33.38	58.60	-119.14	1,113.97	997.02	928.08	68.94	14.463	
10,100.00	10,096.84	10,000.00	9,981.04	35.96	33.39	59.23	-129.77	1,113.12	1,001.81	932.83	68.98	14.523	
10,150.00	10,146.82	10,029.09	10,005.78	36.14	33.42	60.12	-145.02	1,112.05	1,007.96	938.93	69.03	14.602	
10,200.00	10,196.80	10,050.00	10,023.00	36.32	33.43	60.81	-156.85	1,111.31	1,015.57	946.59	68.98	14.722	
10,250.00	10,246.78	10,074.09	10,042.22	36.50	33.46	61.63	-171.35	1,110.50	1,024.69	955.76	68.92	14.867	
10,300.00	10,296.76	10,100.00	10,062.10	36.68	33.49	62.57	-187.94	1,109.67	1,035.39	966.55	68.84	15.041	
10,350.00	10,346.73	10,113.35	10,072.01	36.86	33.51	63.07	-196.89	1,109.26	1,047.61	979.01	68.60	15.272	
10,400.00	10,396.71	10,131.03	10,084.75	37.04	33.53	63.75	-209.12	1,108.74	1,061.46	993.11	68.35	15.529	
10,450.00	10,446.69	10,150.00	10,097.94	37.22	33.56	64.50	-222.75	1,108.21	1,076.91	1,008.83	68.08	15.818	
10,500.00	10,496.67	10,162.89	10,106.62	37.40	33.58	65.01	-232.28	1,107.86	1,093.93	1,026.22	67.71	16.157	
10,550.00	10,546.65	10,177.25	10,115.98	37.58	33.61	65.60	-243.16	1,107.49	1,112.51	1,045.19	67.32	16.527	
10,600.00	10,596.63	10,200.00	10,130.18	37.76	33.65	66.61	-260.92	1,106.94	1,132.70	1,065.69	67.01	16.904	
10,650.00	10,646.62	10,200.00	10,130.18	37.94	33.65	66.94	-260.92	1,106.94	1,154.36	1,087.99	66.38	17.391	
10,700.00	10,696.62	10,215.31	10,139.28	38.12	33.69	67.94	-273.23	1,106.59	1,177.73	1,111.79	65.94	17.860	
10,750.00	10,746.62	10,226.63	10,145.77	38.30	33.72	115.32	-282.50	1,106.35	1,202.55	1,137.11	65.44	18.377	
10,800.00	10,796.62	10,250.00	10,158.50	38.47	33.77	116.30	-302.09	1,105.88	1,228.84	1,163.74	65.10	18.876	
10,850.00	10,846.62	10,250.00	10,158.50	38.65	33.77	116.30	-302.09	1,105.88	1,256.00	1,191.57	64.43	19.493	
10,900.00	10,896.62	10,250.00	10,158.50	38.83	33.77	116.30	-302.09	1,105.88	1,284.54	1,220.77	63.77	20.144	
10,950.00	10,946.62	10,265.48	10,166.43	39.00	33.81	116.96	-315.37	1,105.59	1,314.10	1,250.76	63.33	20.749	
11,000.00	10,996.62	10,273.81	10,170.53	39.18	33.84	117.32	-322.63	1,105.45	1,344.75	1,281.94	62.81	21.410	
11,050.00	11,046.62	10,281.68	10,174.29	39.36	33.86	117.65	-329.55	1,105.31	1,376.39	1,314.10	62.29	22.096	
11,100.00	11,096.56	10,300.00	10,182.62	39.53	33.91	-57.74	-345.85	1,105.03	1,408.29	1,346.37	61.91	22.746	
11,150.00	11,146.12	10,300.00	10,182.62	39.69	33.91	-54.50	-345.85	1,105.03	1,439.07	1,377.80	61.27	23.486	
11,200.00	11,194.92	10,300.00	10,182.62	39.84	33.91	-51.52	-345.85	1,105.03	1,468.94	1,408.31	60.64	24.226	
11,250.00	11,242.61	10,317.82	10,190.16	39.98	33.97	-48.37	-362.00	1,104.78	1,497.37	1,437.13	60.24	24.855	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - T&D — **Offset Site Error:** 5.00 ft

Survey Program: — **Offset Well Error:** 0.00 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
0.00	0.00	11.90	11.90	0.50		89.20	15.03	1,077.54	1,077.65				
50.00	50.00	61.90	61.90	0.50		89.20	15.03	1,077.54	1,077.65	1,077.14	0.50	2,146.691	
100.00	100.00	111.90	111.90	0.52		89.20	15.03	1,077.54	1,077.65	1,077.13	0.52	2,081.382	
138.22	138.22	150.11	150.11	0.57		89.20	15.14	1,077.53	1,077.63	1,077.07	0.57	1,894.139	
150.00	150.00	161.75	161.74	0.59		89.20	15.13	1,077.53	1,077.64	1,077.05	0.59	1,825.755	
200.00	200.00	211.90	211.90	0.70		89.20	15.03	1,077.54	1,077.65	1,076.94	0.70	1,534.884	
231.58	231.58	243.46	243.46	0.79		89.20	15.09	1,077.51	1,077.61	1,076.83	0.79	1,371.470	
250.00	250.00	261.29	261.28	0.84		89.20	15.08	1,077.51	1,077.62	1,076.78	0.84	1,286.379	
300.00	300.00	311.91	311.90	0.99		89.20	15.03	1,077.54	1,077.65	1,076.66	0.99	1,091.470	
324.76	324.76	336.65	336.65	1.06		89.20	15.09	1,077.52	1,077.62	1,076.56	1.06	1,012.026	
350.00	350.00	361.29	361.28	1.15		89.20	15.07	1,077.52	1,077.63	1,076.48	1.15	940.757	
400.00	400.00	411.91	411.90	1.31		89.20	15.03	1,077.54	1,077.65	1,076.34	1.31	823.203	
450.00	450.00	463.05	463.05	1.48		89.20	15.04	1,077.56	1,077.66	1,076.19	1.48	729.964	
500.00	500.00	511.91	511.90	1.65		89.20	15.03	1,077.54	1,077.65	1,076.00	1.65	654.672	
511.75	511.75	523.65	523.64	1.69		89.19	15.15	1,077.52	1,077.63	1,075.94	1.69	639.067	
550.00	550.00	561.22	561.21	1.82		89.20	15.07	1,077.54	1,077.64	1,075.82	1.82	592.869	
600.00	600.00	611.91	611.90	1.99		89.20	15.03	1,077.54	1,077.65	1,075.66	1.99	541.367	
607.06	607.06	618.93	618.92	2.02		89.19	15.14	1,077.52	1,077.63	1,075.61	2.02	534.778	
650.00	650.00	661.06	661.05	2.16		89.20	15.04	1,077.54	1,077.65	1,075.48	2.16	497.859	
700.00	700.00	711.97	711.95	2.34		89.19	15.18	1,077.58	1,077.69	1,075.35	2.34	460.684	
750.00	750.00	763.95	763.93	2.51		89.20	14.99	1,077.53	1,077.64	1,075.12	2.51	428.535	
752.96	752.96	767.03	767.01	2.53		89.20	14.96	1,077.53	1,077.63	1,075.11	2.53	426.766	
800.00	800.00	812.06	812.03	2.69		89.20	15.11	1,077.56	1,077.66	1,074.97	2.69	400.530	
850.00	850.00	861.93	861.90	2.87		89.20	15.03	1,077.54	1,077.65	1,074.78	2.87	375.893	
887.97	887.97	899.85	899.82	3.00		89.19	15.17	1,077.52	1,077.62	1,074.62	3.00	359.087	
900.00	900.00	911.62	911.59	3.04		89.19	15.16	1,077.52	1,077.63	1,074.58	3.04	354.069	
950.00	950.00	961.94	961.90	3.22		89.20	15.03	1,077.54	1,077.65	1,074.43	3.22	334.622	
981.27	981.27	993.16	993.12	3.33		89.19	15.16	1,077.51	1,077.62	1,074.29	3.33	323.488	
1,000.00	1,000.00	1,011.42	1,011.38	3.40		89.20	15.13	1,077.52	1,077.63	1,074.23	3.40	317.167	
1,050.00	1,050.00	1,061.94	1,061.90	3.58		89.20	15.03	1,077.54	1,077.65	1,074.07	3.58	301.436	
1,100.00	1,100.00	1,112.82	1,112.79	3.75		89.20	15.07	1,077.56	1,077.67	1,073.92	3.75	287.179	
1,150.00	1,150.00	1,161.94	1,161.90	3.93		89.20	15.03	1,077.54	1,077.65	1,073.72	3.93	274.189	
1,167.39	1,167.39	1,179.32	1,179.28	3.99		89.19	15.14	1,077.51	1,077.62	1,073.63	3.99	269.933	
1,200.00	1,200.00	1,211.04	1,211.00	4.11		89.20	15.09	1,077.53	1,077.63	1,073.52	4.11	262.316	
1,250.00	1,250.00	1,261.94	1,261.90	4.29		89.20	15.03	1,077.54	1,077.65	1,073.36	4.29	251.428	
1,300.00	1,300.00	1,326.47	1,311.90	4.46		89.20	15.03	1,077.54	1,077.65	1,073.18	4.46	241.399	
1,350.00	1,350.00	1,361.95	1,361.90	4.64		89.20	15.03	1,077.54	1,077.65	1,073.00	4.64	232.135	
1,400.00	1,400.00	1,413.89	1,413.85	4.82		89.20	15.03	1,077.54	1,077.65	1,072.83	4.82	223.553	
1,447.69	1,447.69	1,459.64	1,459.59	4.99		89.20	15.08	1,077.52	1,077.63	1,072.64	4.99	215.930	
1,450.00	1,450.00	1,461.90	1,461.86	5.00		89.20	15.08	1,077.52	1,077.63	1,072.63	5.00	215.575	
1,500.00	1,500.00	1,511.95	1,511.90	5.18		89.20	15.03	1,077.54	1,077.65	1,072.47	5.18	208.151	
1,541.46	1,541.46	1,553.40	1,553.36	5.33		89.19	15.15	1,077.51	1,077.61	1,072.29	5.33	202.362	
1,550.00	1,550.00	1,561.66	1,561.61	5.36		89.19	15.15	1,077.51	1,077.61	1,072.26	5.36	201.210	
1,600.00	1,600.00	1,611.95	1,611.90	5.53		89.20	15.03	1,077.54	1,077.65	1,072.11	5.53	194.727	
1,634.93	1,634.93	1,646.88	1,646.83	5.66		89.20	15.08	1,077.52	1,077.63	1,071.97	5.66	190.433	
1,650.00	1,650.00	1,661.68	1,661.63	5.71		89.20	15.07	1,077.52	1,077.63	1,071.92	5.71	188.639	
1,700.00	1,700.00	1,711.95	1,711.90	5.89		89.20	15.03	1,077.54	1,077.65	1,071.76	5.89	182.924	
1,728.55	1,728.55	1,740.50	1,740.45	5.99		89.20	15.07	1,077.52	1,077.63	1,071.64	5.99	179.809	
1,750.00	1,750.00	1,761.60	1,761.54	6.07		89.20	15.06	1,077.53	1,077.63	1,071.56	6.07	177.539	
1,800.00	1,800.00	1,811.95	1,811.90	6.25		89.20	15.03	1,077.54	1,077.65	1,071.40	6.25	172.465	
1,850.00	1,850.00	1,863.09	1,863.04	6.43		89.20	15.02	1,077.57	1,077.67	1,071.25	6.43	167.675	
1,900.00	1,900.00	1,911.95	1,911.90	6.61		89.20	15.03	1,077.54	1,077.65	1,071.04	6.61	163.135	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - T&D — **Offset Site Error:** 5.00 ft

Survey Program: — **Offset Well Error:** 0.00 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
1,950.00	1,950.00	1,963.46	1,963.40	6.78		89.20	15.02	1,077.56	1,077.67	1,070.88	6.78	158.840	
1,971.96	1,971.96	1,986.38	1,986.32	6.86		89.20	15.04	1,077.52	1,077.63	1,070.76	6.86	157.018	
2,000.00	2,000.00	2,011.95	2,011.90	6.96		89.20	15.03	1,077.54	1,077.65	1,070.68	6.96	154.760	
2,050.00	2,050.00	2,074.39	2,061.90	7.14		89.20	15.03	1,077.54	1,077.65	1,070.50	7.14	150.886	
2,100.00	2,100.00	2,111.95	2,111.90	7.32		89.20	15.03	1,077.54	1,077.65	1,070.33	7.32	147.200	
2,106.47	2,106.47	2,118.20	2,118.15	7.34		89.20	15.04	1,077.47	1,077.58	1,070.23	7.34	146.727	
2,150.00	2,150.00	2,158.90	2,158.85	7.50		89.20	15.03	1,077.53	1,077.64	1,070.14	7.50	143.690	
2,196.64	2,196.64	2,208.60	2,208.54	7.67		89.20	15.04	1,077.50	1,077.60	1,069.94	7.67	140.558	
2,200.00	2,200.00	2,211.81	2,211.76	7.68		89.20	15.04	1,077.50	1,077.60	1,069.92	7.68	140.338	
2,250.00	2,250.00	2,261.96	2,261.90	7.86		89.20	15.03	1,077.54	1,077.65	1,069.79	7.86	137.149	
2,290.26	2,290.26	2,302.22	2,302.16	8.00		89.20	15.02	1,077.48	1,077.58	1,069.58	8.00	134.672	
2,300.00	2,300.00	2,311.35	2,311.30	8.04		89.20	15.02	1,077.48	1,077.58	1,069.55	8.04	134.088	
2,350.00	2,350.00	2,361.96	2,361.90	8.22		89.20	15.03	1,077.54	1,077.65	1,069.43	8.22	131.176	
2,400.00	2,400.00	2,412.28	2,412.22	8.39		89.20	15.02	1,077.56	1,077.66	1,069.27	8.39	128.382	
2,450.00	2,450.00	2,461.96	2,461.90	8.57		89.20	15.03	1,077.54	1,077.65	1,069.07	8.57	125.701	
2,477.52	2,477.52	2,489.48	2,489.42	8.67		89.20	15.03	1,077.49	1,077.59	1,068.92	8.67	124.267	
2,500.00	2,500.00	2,510.80	2,510.74	8.75		89.20	15.03	1,077.50	1,077.60	1,068.85	8.75	123.126	
2,550.00	2,550.00	2,561.96	2,561.90	8.93		42.31	15.03	1,077.54	1,077.49	1,068.56	8.93	120.666	
2,600.00	2,599.99	2,610.43	2,610.37	9.11		42.33	15.03	1,077.50	1,076.97	1,067.86	9.11	118.258	
2,650.00	2,649.98	2,661.94	2,661.88	9.28		42.38	15.03	1,077.54	1,076.20	1,066.91	9.28	115.932	
2,700.00	2,699.96	2,713.06	2,713.00	9.46		42.43	15.02	1,077.55	1,075.15	1,065.69	9.46	113.664	
2,750.00	2,749.94	2,761.90	2,761.84	9.64		42.48	15.03	1,077.54	1,074.07	1,064.43	9.64	111.473	
2,800.00	2,799.92	2,822.38	2,811.82	9.81		42.54	15.03	1,077.54	1,073.00	1,063.19	9.81	109.362	
2,850.00	2,849.90	2,861.86	2,861.80	9.99		42.59	15.03	1,077.54	1,071.93	1,061.94	9.99	107.323	
2,900.00	2,899.88	2,911.84	2,911.78	10.17		42.64	15.03	1,077.54	1,070.86	1,060.69	10.16	105.355	
2,950.00	2,949.86	2,961.74	2,961.68	10.34		42.69	15.04	1,077.52	1,069.77	1,059.43	10.34	103.450	
3,000.00	2,999.84	3,011.80	3,011.74	10.52		42.75	15.03	1,077.54	1,068.72	1,058.21	10.52	101.613	
3,050.00	3,049.81	3,061.48	3,061.42	10.70		42.80	15.05	1,077.51	1,067.63	1,056.93	10.69	99.831	
3,100.00	3,099.79	3,111.75	3,111.69	10.88		42.85	15.03	1,077.54	1,066.59	1,055.72	10.87	98.111	
3,150.00	3,149.77	3,162.48	3,162.42	11.05		42.91	15.05	1,077.58	1,065.56	1,054.52	11.05	96.447	
3,200.00	3,199.75	3,211.71	3,211.65	11.23		42.96	15.03	1,077.54	1,064.46	1,053.24	11.23	94.828	
3,250.00	3,249.73	3,262.61	3,262.54	11.41		43.01	15.04	1,077.57	1,063.43	1,052.03	11.40	93.264	
3,300.00	3,299.71	3,311.67	3,311.61	11.59		43.07	15.03	1,077.54	1,062.34	1,050.76	11.58	91.743	
3,350.00	3,349.69	3,359.69	3,359.63	11.76		43.12	15.06	1,077.49	1,061.23	1,049.48	11.76	90.265	
3,400.00	3,399.67	3,411.63	3,411.57	11.94		43.17	15.03	1,077.54	1,060.22	1,048.28	11.93	88.839	
3,450.00	3,449.65	3,459.08	3,459.02	12.12		43.22	15.07	1,077.50	1,059.12	1,047.01	12.11	87.447	
3,500.00	3,499.62	3,511.59	3,511.52	12.30		43.28	15.03	1,077.54	1,058.10	1,045.81	12.29	86.101	
3,550.00	3,549.60	3,570.61	3,561.50	12.48		43.33	15.03	1,077.54	1,057.04	1,044.58	12.47	84.790	
3,600.00	3,599.58	3,611.55	3,611.48	12.65		43.39	15.03	1,077.54	1,055.99	1,043.34	12.64	83.516	
3,650.00	3,649.56	3,661.53	3,661.46	12.83		43.44	15.03	1,077.54	1,054.93	1,042.11	12.82	82.276	
3,700.00	3,699.54	3,711.10	3,711.03	13.01		43.49	15.10	1,077.45	1,053.79	1,040.79	13.00	81.064	
3,750.00	3,749.52	3,761.50	3,761.42	13.19		43.55	15.03	1,077.54	1,052.82	1,039.65	13.18	79.897	
3,800.00	3,799.50	3,810.67	3,810.59	13.37		43.60	15.13	1,077.47	1,051.70	1,038.34	13.36	78.749	
3,850.00	3,849.48	3,861.46	3,861.38	13.54		43.66	15.03	1,077.54	1,050.72	1,037.19	13.53	77.642	
3,900.00	3,899.46	3,910.49	3,910.41	13.72		43.71	15.16	1,077.49	1,049.62	1,035.91	13.71	76.554	
3,950.00	3,949.44	3,961.43	3,961.34	13.90		43.77	15.03	1,077.54	1,048.62	1,034.73	13.89	75.502	
4,000.00	3,999.41	4,012.34	4,012.25	14.08		43.82	15.14	1,077.57	1,047.60	1,033.53	14.07	74.474	
4,050.00	4,049.39	4,061.39	4,061.29	14.26		43.88	15.03	1,077.54	1,046.52	1,032.28	14.24	73.468	
4,100.00	4,099.37	4,115.79	4,115.69	14.44		43.94	15.05	1,077.60	1,045.55	1,031.12	14.42	72.495	
4,150.00	4,149.35	4,161.36	4,161.25	14.61		43.99	15.03	1,077.54	1,044.43	1,029.83	14.60	71.532	
4,200.00	4,199.33	4,221.47	4,221.35	14.79		44.06	15.03	1,077.54	1,043.44	1,028.66	14.78	70.610	
4,250.00	4,249.31	4,261.35	4,261.21	14.97		44.10	15.03	1,077.54	1,042.34	1,027.39	14.96	69.689	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - T&D

Offset Site Error: 5.00 ft

Survey Program: **Offset Well Error:** 0.00 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
4,300.00	4,299.29	4,331.96	4,331.80	15.15		44.18	15.10	1,077.25	1,041.21	1,026.08	15.13	68.814	
4,350.00	4,349.27	4,361.35	4,361.17	15.33		44.21	15.03	1,077.54	1,040.26	1,024.95	15.31	67.931	
4,400.00	4,399.25	4,411.40	4,411.15	15.51		44.27	15.03	1,077.54	1,039.22	1,023.73	15.49	67.082	
4,450.00	4,449.22	4,465.71	4,465.44	15.69		44.34	14.79	1,077.96	1,038.61	1,022.94	15.67	66.282	
4,500.00	4,499.20	4,511.45	4,511.10	15.86		44.38	15.03	1,077.54	1,037.14	1,021.29	15.85	65.441	
4,550.00	4,549.18	4,570.27	4,569.91	16.04		44.46	14.85	1,077.89	1,036.49	1,020.46	16.03	64.678	
4,600.00	4,599.16	4,611.49	4,611.06	16.22		44.49	15.03	1,077.54	1,035.07	1,018.86	16.21	63.873	
4,650.00	4,649.14	4,679.53	4,679.07	16.40		44.57	14.99	1,077.74	1,034.38	1,018.00	16.38	63.152	
4,700.00	4,699.12	4,711.53	4,711.02	16.58		44.61	15.03	1,077.54	1,032.99	1,016.43	16.56	62.372	
4,750.00	4,749.10	4,778.28	4,777.75	16.76		44.68	15.00	1,077.62	1,032.18	1,015.44	16.74	61.672	
4,800.00	4,799.08	4,811.55	4,810.98	16.94		44.72	15.03	1,077.54	1,030.93	1,014.01	16.92	60.934	
4,850.00	4,849.06	4,877.65	4,877.06	17.12		44.79	15.04	1,077.53	1,030.01	1,012.91	17.09	60.257	
4,900.00	4,899.03	4,911.56	4,910.93	17.30		44.83	15.03	1,077.54	1,028.87	1,011.59	17.28	59.555	
4,950.00	4,949.01	4,982.03	4,981.38	17.47		44.91	15.13	1,077.34	1,027.83	1,010.38	17.45	58.905	
5,000.00	4,998.99	5,011.57	5,010.89	17.65		44.95	15.03	1,077.54	1,026.81	1,009.17	17.63	58.232	
5,050.00	5,048.97	5,081.42	5,080.72	17.83		45.02	15.14	1,077.25	1,025.68	1,007.87	17.81	57.603	
5,100.00	5,098.95	5,111.87	5,111.15	18.01		45.07	14.94	1,077.84	1,025.06	1,007.07	17.99	56.979	
5,150.00	5,148.93	5,161.58	5,160.83	18.19		45.12	15.03	1,077.54	1,023.73	1,005.56	18.17	56.345	
5,200.00	5,198.91	5,214.62	5,213.86	18.37		45.19	14.87	1,077.84	1,023.01	1,004.67	18.35	55.759	
5,250.00	5,248.89	5,261.58	5,260.79	18.55		45.23	15.03	1,077.54	1,021.68	1,003.15	18.53	55.148	
5,300.00	5,298.87	5,315.76	5,314.96	18.73		45.31	14.85	1,077.75	1,020.88	1,002.18	18.70	54.581	
5,350.00	5,348.84	5,361.56	5,360.74	18.91		45.35	15.03	1,077.54	1,019.64	1,000.75	18.88	53.996	
5,400.00	5,398.82	5,417.93	5,417.11	19.09		45.42	15.02	1,077.72	1,018.81	999.75	19.06	53.450	
5,450.00	5,448.80	5,461.54	5,460.70	19.27		45.47	15.03	1,077.54	1,017.60	998.35	19.24	52.887	
5,500.00	5,498.78	5,518.61	5,517.76	19.44		45.53	15.06	1,077.66	1,016.71	997.30	19.42	52.359	
5,550.00	5,548.76	5,561.52	5,560.66	19.62		45.58	15.03	1,077.54	1,015.56	995.96	19.60	51.818	
5,600.00	5,598.74	5,620.26	5,619.40	19.80		45.65	15.00	1,077.59	1,014.63	994.86	19.78	51.308	
5,650.00	5,648.72	5,661.50	5,660.62	19.98		45.70	15.03	1,077.54	1,013.53	993.57	19.96	50.788	
5,700.00	5,698.70	5,727.21	5,710.60	20.16		45.76	15.03	1,077.54	1,012.51	992.38	20.13	50.286	
5,750.00	5,748.68	5,761.46	5,760.58	20.34		45.82	15.03	1,077.54	1,011.50	991.19	20.31	49.794	
5,800.00	5,798.65	5,818.10	5,817.21	20.52		45.88	15.04	1,077.51	1,010.48	989.99	20.49	49.313	
5,850.00	5,848.63	5,861.65	5,860.76	20.70		45.94	15.01	1,077.67	1,009.61	988.94	20.67	48.841	
5,900.00	5,898.61	5,918.40	5,917.50	20.88		46.00	15.04	1,077.47	1,008.42	987.57	20.85	48.368	
5,950.00	5,948.59	5,962.43	5,961.53	21.06		46.06	14.94	1,077.66	1,007.58	986.55	21.03	47.914	
6,000.00	5,998.57	6,011.38	6,010.47	21.24		46.11	15.03	1,077.54	1,006.45	985.24	21.21	47.456	
6,050.00	6,048.55	6,062.88	6,061.97	21.42		46.18	14.96	1,077.63	1,005.54	984.15	21.39	47.017	
6,100.00	6,098.53	6,111.34	6,110.43	21.60		46.23	15.03	1,077.54	1,004.44	982.87	21.57	46.575	
6,150.00	6,148.51	6,163.57	6,162.66	21.77		46.30	14.96	1,077.62	1,003.52	981.78	21.74	46.150	
6,200.00	6,198.49	6,211.30	6,210.39	21.95		46.35	15.03	1,077.54	1,002.43	980.51	21.92	45.723	
6,250.00	6,248.46	6,263.17	6,262.25	22.13		46.42	15.03	1,077.59	1,001.48	979.37	22.10	45.311	
6,300.00	6,298.44	6,311.26	6,310.34	22.31		46.47	15.03	1,077.54	1,000.43	978.15	22.28	44.899	
6,350.00	6,348.42	6,363.33	6,362.41	22.49		46.54	15.03	1,077.57	999.46	977.00	22.46	44.499	
6,400.00	6,398.40	6,411.22	6,410.30	22.67		46.60	15.03	1,077.54	998.43	975.79	22.64	44.101	
6,450.00	6,448.38	6,475.41	6,460.28	22.85		46.66	15.03	1,077.54	997.43	974.61	22.82	43.711	
6,500.00	6,498.36	6,511.18	6,510.26	23.03		46.72	15.03	1,077.54	996.44	973.44	23.00	43.327	
6,550.00	6,548.34	6,564.46	6,563.53	23.21		46.78	15.04	1,077.53	995.44	972.26	23.18	42.951	
6,600.00	6,598.32	6,611.24	6,610.31	23.39		46.84	15.03	1,077.58	994.49	971.13	23.36	42.580	
6,650.00	6,648.30	6,663.14	6,662.21	23.57		46.90	15.03	1,077.53	993.44	969.91	23.53	42.212	
6,700.00	6,698.27	6,711.25	6,710.32	23.75		46.96	15.02	1,077.56	992.48	968.76	23.71	41.852	
6,750.00	6,748.25	6,761.08	6,760.15	23.93		47.02	15.03	1,077.54	991.47	967.58	23.89	41.496	
6,800.00	6,798.23	6,811.76	6,810.83	24.11		47.09	14.96	1,077.58	990.52	966.45	24.07	41.148	
6,850.00	6,848.21	6,861.04	6,860.11	24.29		47.15	15.03	1,077.54	989.49	965.24	24.25	40.802	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - T&D — **Offset Site Error:** 5.00 ft

Survey Program: — **Offset Well Error:** 0.00 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
6,900.00	6,898.19	6,912.16	6,911.23	24.47		47.21	14.98	1,077.58	988.55	964.12	24.43	40.464	
6,950.00	6,948.17	6,961.00	6,960.07	24.65		47.27	15.03	1,077.54	987.52	962.91	24.61	40.127	
7,000.00	6,998.15	7,012.42	7,011.49	24.83		47.33	15.04	1,077.58	986.57	961.78	24.79	39.800	
7,050.00	7,048.13	7,060.96	7,060.03	25.00		47.39	15.03	1,077.54	985.55	960.58	24.97	39.473	
7,100.00	7,098.11	7,113.00	7,112.06	25.18		47.46	15.03	1,077.57	984.59	959.45	25.15	39.155	
7,150.00	7,148.08	7,160.92	7,159.98	25.36		47.52	15.03	1,077.54	983.58	958.26	25.33	38.837	
7,200.00	7,198.06	7,223.64	7,209.96	25.54		47.58	15.03	1,077.54	982.60	957.10	25.51	38.526	
7,250.00	7,248.04	7,260.88	7,259.94	25.72		47.64	15.03	1,077.54	981.62	955.94	25.68	38.219	
7,300.00	7,298.02	7,313.39	7,312.45	25.90		47.71	15.03	1,077.54	980.64	954.78	25.86	37.917	
7,350.00	7,348.00	7,361.09	7,360.15	26.08		47.77	14.98	1,077.62	979.75	953.71	26.04	37.621	
7,400.00	7,397.98	7,415.02	7,414.08	26.26		47.83	15.05	1,077.50	978.66	952.44	26.22	37.324	
7,450.00	7,447.96	7,462.19	7,461.23	26.44		47.91	14.84	1,077.66	977.85	951.45	26.40	37.039	
7,500.00	7,497.94	7,510.81	7,509.84	26.62		47.96	15.03	1,077.54	976.75	950.16	26.58	36.747	
7,550.00	7,547.92	7,563.28	7,562.30	26.80		48.04	14.80	1,077.65	975.90	949.15	26.76	36.471	
7,600.00	7,597.89	7,610.79	7,609.79	26.98		48.08	15.03	1,077.54	974.80	947.86	26.94	36.186	
7,650.00	7,647.87	7,662.87	7,661.87	27.16		48.16	14.88	1,077.60	973.90	946.79	27.12	35.915	
7,700.00	7,697.85	7,710.77	7,709.75	27.34		48.21	15.03	1,077.54	972.86	945.57	27.30	35.640	
7,750.00	7,747.83	7,763.81	7,762.78	27.52		48.29	14.89	1,077.59	971.96	944.48	27.48	35.376	
7,800.00	7,797.81	7,810.76	7,809.71	27.70		48.34	15.03	1,077.54	970.93	943.27	27.66	35.108	
7,850.00	7,847.79	7,866.94	7,865.87	27.88		48.41	14.96	1,077.57	970.02	942.19	27.83	34.852	
7,900.00	7,897.77	7,910.76	7,909.67	28.06		48.47	15.03	1,077.54	969.00	940.99	28.01	34.590	
7,950.00	7,947.75	7,971.69	7,959.65	28.24		48.53	15.03	1,077.54	968.04	939.84	28.19	34.336	
8,000.00	7,997.73	8,010.75	8,009.63	28.42		48.60	15.03	1,077.54	967.08	938.70	28.37	34.085	
8,050.00	8,047.70	8,066.48	8,065.36	28.60		48.66	15.10	1,077.51	966.10	937.55	28.55	33.839	
8,100.00	8,097.68	8,111.31	8,110.16	28.78		48.74	14.77	1,077.66	965.30	936.57	28.73	33.598	
8,150.00	8,147.66	8,168.44	8,167.28	28.96		48.79	15.22	1,077.46	964.12	935.22	28.91	33.352	
8,200.00	8,197.64	8,212.54	8,211.35	29.13		48.87	14.72	1,077.67	963.40	934.31	29.09	33.119	
8,250.00	8,247.62	8,260.74	8,259.52	29.31		48.92	15.03	1,077.54	962.29	933.02	29.27	32.877	
8,300.00	8,297.60	8,313.17	8,311.94	29.49		49.00	14.76	1,077.63	961.46	932.01	29.45	32.650	
8,350.00	8,347.58	8,360.73	8,359.48	29.67		49.05	15.03	1,077.54	960.38	930.75	29.63	32.415	
8,400.00	8,397.56	8,412.10	8,410.84	29.85		49.13	14.83	1,077.57	959.48	929.67	29.81	32.190	
8,450.00	8,447.54	8,460.71	8,459.44	30.03		49.18	15.03	1,077.54	958.48	928.49	29.99	31.964	
8,500.00	8,497.51	8,510.74	8,509.46	30.21		49.26	14.89	1,077.53	957.53	927.37	30.17	31.743	
8,550.00	8,547.49	8,560.70	8,559.39	30.39		49.31	15.03	1,077.54	956.58	926.24	30.34	31.524	
8,600.00	8,597.47	8,613.64	8,612.33	30.57		49.39	14.94	1,077.56	955.67	925.14	30.52	31.310	
8,650.00	8,647.45	8,660.68	8,659.35	30.75		49.45	15.03	1,077.54	954.69	923.99	30.70	31.094	
8,700.00	8,697.43	8,719.70	8,709.33	30.93		49.51	15.03	1,077.54	953.75	922.86	30.88	30.883	
8,750.00	8,747.41	8,760.66	8,759.31	31.11		49.58	15.03	1,077.54	952.80	921.74	31.06	30.674	
8,800.00	8,797.39	8,810.65	8,809.29	31.29		49.64	15.03	1,077.54	951.86	920.62	31.24	30.468	
8,850.00	8,847.37	8,860.51	8,859.15	31.47		49.72	14.81	1,077.49	950.89	919.47	31.42	30.263	
8,900.00	8,897.35	8,910.62	8,909.25	31.65		49.78	15.03	1,077.54	949.98	918.38	31.60	30.063	
8,950.00	8,947.33	8,960.56	8,959.19	31.83		49.85	14.90	1,077.52	949.04	917.26	31.78	29.863	
9,000.00	8,997.30	9,010.59	9,009.20	32.01		49.91	15.03	1,077.54	948.11	916.15	31.96	29.666	
9,050.00	9,047.28	9,062.13	9,060.75	32.19		49.99	14.93	1,077.61	947.25	915.12	32.14	29.475	
9,100.00	9,097.26	9,110.55	9,109.16	32.37		50.05	15.03	1,077.54	946.24	913.92	32.32	29.279	
9,150.00	9,147.24	9,160.69	9,159.30	32.55		50.12	14.94	1,077.54	945.31	912.82	32.50	29.089	
9,200.00	9,197.22	9,210.51	9,209.12	32.73		50.18	15.03	1,077.54	944.38	911.70	32.68	28.901	
9,250.00	9,247.20	9,257.41	9,256.02	32.91		50.25	15.02	1,077.45	943.37	910.51	32.86	28.711	
9,300.00	9,297.18	9,310.48	9,309.08	33.09		50.32	15.03	1,077.54	942.52	909.48	33.04	28.531	
9,350.00	9,347.16	9,356.47	9,355.06	33.27		50.39	14.94	1,077.46	941.53	908.31	33.22	28.346	
9,400.00	9,397.14	9,410.47	9,409.04	33.45		50.45	15.03	1,077.54	940.67	907.27	33.39	28.169	
9,450.00	9,447.11	9,451.65	9,450.20	33.63		50.51	14.97	1,077.39	939.65	906.07	33.58	27.986	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - T&D — **Offset Site Error:** 5.00 ft

Survey Program: — **Offset Well Error:** 0.00 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
9,500.00	9,497.09	9,506.69	9,505.20	33.81		50.59	14.93	1,077.26	938.56	904.80	33.75	27.806	
9,550.00	9,547.07	9,560.55	9,558.97	33.99		50.66	15.03	1,077.54	937.90	903.97	33.93	27.640	
9,600.00	9,597.05	9,607.85	9,606.26	34.17		50.74	14.86	1,077.06	936.53	902.41	34.11	27.454	
9,650.00	9,647.03	9,660.60	9,658.93	34.35		50.80	15.03	1,077.54	936.06	901.77	34.29	27.297	
9,700.00	9,697.01	9,702.72	9,700.98	34.53		50.86	14.88	1,077.45	935.11	900.63	34.47	27.126	
9,750.00	9,746.99	9,760.75	9,758.51	34.71		50.97	14.47	1,077.46	934.22	899.57	34.65	26.961	
9,800.00	9,796.97	9,812.60	9,808.87	34.88		51.00	15.03	1,077.54	933.31	898.48	34.83	26.796	
9,850.00	9,846.95	9,866.22	9,858.85	35.06		51.07	15.03	1,077.54	932.40	897.39	35.01	26.633	
9,900.00	9,896.92	9,920.49	9,910.92	35.24		51.20	14.10	1,077.43	931.50	896.32	35.19	26.472	
9,950.00	9,946.90	9,973.36	9,958.80	35.42		51.21	15.03	1,077.54	930.57	895.21	35.37	26.311	
10,000.00	9,996.88	10,031.58	10,008.78	35.60		51.28	15.03	1,077.54	929.66	894.12	35.55	26.153	
10,050.00	10,046.86	10,094.40	10,058.76	35.78		51.35	15.03	1,077.54	928.76	893.03	35.73	25.996	
10,100.00	10,096.84	10,100.00	10,108.74	35.96		51.42	15.03	1,077.54	927.85	891.94	35.91	25.841	
10,150.00	10,146.82	10,150.00	10,158.72	36.14		51.49	15.03	1,077.54	926.94	890.86	36.09	25.687	
10,200.00	10,196.80	10,200.00	10,208.70	36.32		51.56	15.03	1,077.54	926.04	889.78	36.27	25.535	
10,248.41	10,245.18	12,316.00	10,240.39	36.50		51.61	15.03	1,077.54	925.32	888.88	36.44	25.392	CC
10,250.00	10,246.78	12,316.00	10,240.39	36.50		51.61	15.03	1,077.54	925.32	888.87	36.45	25.389	ES
10,300.00	10,296.76	12,316.00	10,240.39	36.68		51.61	15.03	1,077.54	926.76	890.18	36.58	25.336	SF
10,350.00	10,346.73	12,316.00	10,240.39	36.86		51.61	15.03	1,077.54	930.88	894.24	36.64	25.409	
10,400.00	10,396.71	12,316.00	10,240.39	37.04		51.61	15.03	1,077.54	937.65	901.03	36.62	25.603	
10,450.00	10,446.69	12,316.00	10,240.39	37.22		51.61	15.03	1,077.54	947.02	910.48	36.54	25.915	
10,500.00	10,496.67	12,316.00	10,240.39	37.40		51.61	15.03	1,077.54	958.91	922.51	36.40	26.342	
10,550.00	10,546.65	12,316.00	10,240.39	37.58		51.61	15.03	1,077.54	973.23	937.02	36.21	26.877	
10,600.00	10,596.63	12,316.00	10,240.39	37.76		51.65	15.03	1,077.54	989.87	953.90	35.97	27.518	
10,650.00	10,646.62	12,316.00	10,240.39	37.94		51.90	15.03	1,077.54	1,008.98	973.28	35.70	28.264	
10,700.00	10,696.62	12,316.00	10,240.39	38.12		52.18	15.03	1,077.54	1,030.52	995.12	35.40	29.112	
10,750.00	10,746.62	12,316.00	10,240.39	38.30		99.09	15.03	1,077.54	1,054.18	1,019.10	35.08	30.051	
10,800.00	10,796.62	12,316.00	10,240.39	38.47		99.09	15.03	1,077.54	1,079.63	1,044.88	34.75	31.069	
10,850.00	10,846.62	12,316.00	10,240.39	38.65		99.09	15.03	1,077.54	1,106.76	1,072.34	34.41	32.160	
10,900.00	10,896.62	12,316.00	10,240.39	38.83		99.09	15.03	1,077.54	1,135.44	1,101.36	34.08	33.318	
10,950.00	10,946.62	12,316.00	10,240.39	39.00		99.09	15.03	1,077.54	1,165.56	1,131.82	33.75	34.537	
11,000.00	10,996.62	12,316.00	10,240.39	39.18		99.09	15.03	1,077.54	1,197.02	1,163.59	33.43	35.810	
11,050.00	11,046.62	12,316.00	10,240.39	39.36		99.09	15.03	1,077.54	1,229.70	1,196.59	33.12	37.133	
11,100.00	11,096.56	12,316.00	10,240.39	39.53		-76.17	15.03	1,077.54	1,263.22	1,230.41	32.81	38.498	
11,150.00	11,146.12	12,316.00	10,240.39	39.69		-71.76	15.03	1,077.54	1,297.05	1,264.54	32.52	39.890	
11,200.00	11,194.92	12,316.00	10,240.39	39.84		-67.44	15.03	1,077.54	1,330.92	1,298.69	32.23	41.290	
11,250.00	11,242.61	12,316.00	10,240.39	39.98		-63.31	15.03	1,077.54	1,364.58	1,332.61	31.97	42.681	
11,300.00	11,288.80	12,316.00	10,240.39	40.12		-59.41	15.03	1,077.54	1,397.80	1,366.07	31.73	44.051	
11,350.00	11,333.15	12,316.00	10,240.39	40.25		-55.79	15.03	1,077.54	1,430.36	1,398.84	31.52	45.384	
11,400.00	11,375.33	12,316.00	10,240.39	40.37		-52.46	15.03	1,077.54	1,462.06	1,430.73	31.33	46.666	
11,450.00	11,415.01	12,316.00	10,240.39	40.48		-49.45	15.03	1,077.54	1,492.74	1,461.56	31.17	47.883	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1

Offset Site Error: 5.00 ft

Survey Program: 117-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	0.00	0.00	0.50	0.50	-89.49	6.54	-738.92	739.05				
50.00	50.00	38.38	38.38	0.50	0.50	-89.49	6.54	-738.91	738.94	737.94	1.00	735.367	
100.00	100.00	88.89	88.89	0.52	0.52	-89.49	6.52	-738.87	738.90	737.86	1.03	715.368	
150.00	150.00	138.75	138.75	0.59	0.55	-89.50	6.49	-738.80	738.83	737.69	1.14	645.659	
190.05	190.05	178.05	178.05	0.68	0.63	-89.50	6.49	-738.78	738.81	737.51	1.30	567.153 CC	
200.00	200.00	187.81	187.81	0.70	0.65	-89.50	6.50	-738.78	738.81	737.46	1.35	548.019	
250.00	250.00	236.87	236.87	0.84	0.77	-89.49	6.56	-738.82	738.85	737.25	1.60	460.886	
300.00	300.00	285.94	285.94	0.99	0.90	-89.48	6.67	-738.93	738.96	737.07	1.89	391.226	
350.00	350.00	335.02	335.02	1.15	1.05	-89.47	6.79	-739.10	739.13	736.94	2.19	336.941	
400.00	400.00	385.09	385.09	1.31	1.21	-89.47	6.90	-739.31	739.35	736.84	2.51	294.082	
450.00	450.00	436.35	436.35	1.48	1.37	-89.46	6.94	-739.47	739.51	736.66	2.85	259.723	
500.00	500.00	485.47	485.47	1.65	1.53	-89.46	6.93	-739.58	739.62	736.44	3.18	232.604	
550.00	550.00	533.47	533.46	1.82	1.70	-89.46	6.96	-739.81	739.86	736.35	3.51	210.624	
600.00	600.00	582.70	582.70	1.99	1.86	-89.45	7.05	-740.15	740.20	736.35	3.85	192.090	
650.00	650.00	632.37	632.37	2.16	2.03	-89.44	7.22	-740.52	740.57	736.37	4.20	176.407	
700.00	700.00	681.34	681.33	2.34	2.20	-89.43	7.39	-740.92	740.99	736.44	4.54	163.130	
750.00	750.00	730.28	730.27	2.51	2.37	-89.42	7.47	-741.40	741.47	736.59	4.89	151.699	
800.00	800.00	781.23	781.22	2.69	2.55	-89.42	7.55	-741.89	741.96	736.72	5.24	141.555	
850.00	850.00	832.18	832.17	2.87	2.73	-89.40	7.72	-742.32	742.39	736.79	5.60	132.661	
900.00	900.00	883.14	883.12	3.04	2.91	-89.38	7.97	-742.69	742.75	736.80	5.95	124.800	
950.00	950.00	934.08	934.07	3.22	3.09	-89.37	8.21	-742.99	743.04	736.74	6.31	117.799	
1,000.00	1,000.00	985.40	985.38	3.40	3.27	-89.35	8.38	-743.22	743.27	736.61	6.67	111.518	
1,050.00	1,050.00	1,037.53	1,037.51	3.58	3.45	-89.34	8.54	-743.33	743.38	736.35	7.02	105.833	
1,100.00	1,100.00	1,088.83	1,088.81	3.75	3.63	-89.33	8.71	-743.30	743.35	735.97	7.38	100.740	
1,150.00	1,150.00	1,139.41	1,139.39	3.93	3.80	-89.32	8.86	-743.23	743.28	735.55	7.73	96.152	
1,200.00	1,200.00	1,189.47	1,189.45	4.11	3.97	-89.31	8.98	-743.12	743.18	735.10	8.08	91.996	
1,250.00	1,250.00	1,239.33	1,239.31	4.29	4.14	-89.30	9.03	-743.03	743.09	734.66	8.43	88.197	
1,300.00	1,300.00	1,289.39	1,289.37	4.46	4.31	-89.30	9.08	-742.94	743.00	734.22	8.77	84.676	
1,350.00	1,350.00	1,339.52	1,339.50	4.64	4.48	-89.29	9.26	-742.84	742.90	733.78	9.12	81.418	
1,400.00	1,400.00	1,390.65	1,390.62	4.82	4.66	-89.27	9.40	-742.70	742.76	733.28	9.48	78.366	
1,450.00	1,450.00	1,441.07	1,441.04	5.00	4.83	-89.28	9.35	-742.49	742.55	732.72	9.83	75.547	
1,500.00	1,500.00	1,488.84	1,488.82	5.18	4.99	-89.29	9.22	-742.37	742.42	732.25	10.17	73.001	
1,518.35	1,518.35	1,506.37	1,506.35	5.24	5.05	-89.29	9.17	-742.36	742.41	732.12	10.30	72.112	
1,550.00	1,550.00	1,537.55	1,537.53	5.36	5.16	-89.30	9.07	-742.38	742.43	731.92	10.51	70.610	
1,600.00	1,600.00	1,588.62	1,588.59	5.53	5.33	-89.31	8.95	-742.38	742.43	731.56	10.87	68.316	
1,650.00	1,650.00	1,639.35	1,639.33	5.71	5.51	-89.31	8.91	-742.30	742.36	731.14	11.22	66.162	
1,700.00	1,700.00	1,689.72	1,689.69	5.89	5.68	-89.31	8.96	-742.20	742.26	730.69	11.57	64.139	
1,750.00	1,750.00	1,740.51	1,740.49	6.07	5.86	-89.30	9.06	-742.06	742.12	730.20	11.93	62.223	
1,800.00	1,800.00	1,791.61	1,791.58	6.25	6.03	-89.30	9.08	-741.85	741.92	729.64	12.28	60.404	
1,850.00	1,850.00	1,839.95	1,839.92	6.43	6.20	-89.30	9.06	-741.65	741.71	729.08	12.63	58.729	
1,887.90	1,887.90	1,875.92	1,875.90	6.56	6.33	-89.30	9.06	-741.61	741.66	728.77	12.89	57.537	
1,900.00	1,900.00	1,887.41	1,887.39	6.61	6.37	-89.30	9.07	-741.61	741.67	728.69	12.97	57.169	
1,950.00	1,950.00	1,938.23	1,938.21	6.78	6.55	-89.30	9.11	-741.65	741.70	728.38	13.33	55.644	
2,000.00	2,000.00	1,990.01	1,989.99	6.96	6.73	-89.29	9.20	-741.57	741.63	727.94	13.69	54.176	
2,050.00	2,050.00	2,038.39	2,038.37	7.14	6.90	-89.28	9.33	-741.49	741.55	727.51	14.04	52.825	
2,060.45	2,060.45	2,048.48	2,048.45	7.18	6.93	-89.28	9.37	-741.49	741.54	727.43	14.11	52.552	
2,100.00	2,100.00	2,086.64	2,086.62	7.32	7.07	-89.26	9.54	-741.52	741.58	727.20	14.39	51.549	
2,150.00	2,150.00	2,135.39	2,135.37	7.50	7.24	-89.25	9.70	-741.65	741.72	726.98	14.74	50.336	
2,200.00	2,200.00	2,184.47	2,184.44	7.68	7.41	-89.25	9.70	-741.86	741.94	726.85	15.09	49.181	
2,250.00	2,250.00	2,236.97	2,236.95	7.86	7.59	-89.26	9.64	-742.03	742.09	726.64	15.45	48.043	
2,300.00	2,300.00	2,288.83	2,288.81	8.04	7.77	-89.26	9.57	-742.02	742.08	726.28	15.80	46.955	
2,350.00	2,350.00	2,339.14	2,339.12	8.22	7.94	-89.26	9.52	-741.96	742.02	725.86	16.16	45.926	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1

Offset Site Error: 5.00 ft

Survey Program: 117-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
2,395.00	2,395.00	2,383.03	2,383.00	8.38	8.09	-89.26	9.52	-741.90	741.96	725.49	16.47	45.049	
2,400.00	2,400.00	2,387.63	2,387.60	8.39	8.11	-89.26	9.53	-741.90	741.96	725.46	16.50	44.957	
2,450.00	2,450.00	2,433.66	2,433.64	8.57	8.27	-89.25	9.70	-742.04	742.12	725.28	16.84	44.060 ES	
2,500.00	2,500.00	2,480.22	2,480.19	8.75	8.43	-89.22	10.06	-742.43	742.54	725.36	17.18	43.209	
2,550.00	2,550.00	2,527.61	2,527.58	8.93	8.60	-136.09	10.56	-743.01	743.31	725.78	17.53	42.407	
2,600.00	2,599.99	2,573.98	2,573.93	9.11	8.76	-136.07	11.18	-743.74	744.58	726.72	17.87	41.672	
2,650.00	2,649.98	2,618.79	2,618.73	9.28	8.92	-136.05	11.92	-744.73	746.49	728.29	18.20	41.018	
2,700.00	2,699.96	2,664.83	2,664.73	9.46	9.08	-136.05	12.84	-746.05	748.96	730.43	18.53	40.408	
2,750.00	2,749.94	2,713.73	2,713.61	9.64	9.26	-136.05	13.82	-747.59	751.59	732.71	18.88	39.804	
2,800.00	2,799.92	2,763.96	2,763.80	9.81	9.43	-136.06	14.82	-749.22	754.28	735.04	19.24	39.212	
2,850.00	2,849.90	2,816.35	2,816.15	9.99	9.62	-136.06	15.83	-750.79	756.84	737.24	19.60	38.618	
2,900.00	2,899.88	2,867.53	2,867.31	10.17	9.80	-136.07	16.82	-752.19	759.26	739.31	19.96	38.047	
2,950.00	2,949.86	2,917.87	2,917.62	10.34	9.98	-136.07	17.82	-753.53	761.65	741.34	20.31	37.500	
3,000.00	2,999.84	2,964.49	2,964.21	10.52	10.14	-136.06	18.83	-754.82	764.10	743.45	20.65	37.003	
3,050.00	3,049.81	3,009.47	3,009.15	10.70	10.30	-136.04	20.04	-756.34	766.85	745.87	20.98	36.548	
3,100.00	3,099.79	3,056.74	3,056.36	10.88	10.47	-136.00	21.52	-758.19	769.88	748.56	21.32	36.105	
3,150.00	3,149.77	3,105.47	3,105.02	11.05	10.64	-135.96	23.12	-760.20	773.00	751.33	21.67	35.669	
3,200.00	3,199.75	3,153.51	3,152.99	11.23	10.82	-135.92	24.71	-762.26	776.22	754.20	22.02	35.255	
3,250.00	3,249.73	3,201.23	3,200.64	11.41	10.99	-135.88	26.17	-764.44	779.57	757.21	22.36	34.863	
3,300.00	3,299.71	3,249.77	3,249.10	11.59	11.16	-135.86	27.54	-766.77	783.04	760.33	22.71	34.483	
3,350.00	3,349.69	3,298.65	3,297.91	11.76	11.33	-135.84	28.80	-769.19	786.58	763.52	23.06	34.114	
3,400.00	3,399.67	3,349.07	3,348.24	11.94	11.51	-135.83	30.04	-771.71	790.14	766.73	23.41	33.747	
3,450.00	3,449.65	3,399.90	3,399.00	12.12	11.69	-135.81	31.42	-774.19	793.65	769.88	23.77	33.385	
3,500.00	3,499.62	3,446.03	3,445.05	12.30	11.86	-135.78	32.75	-776.51	797.23	773.12	24.11	33.068	
3,550.00	3,549.60	3,491.82	3,490.75	12.48	12.02	-135.75	34.14	-779.05	801.07	776.62	24.44	32.773	
3,600.00	3,599.58	3,543.44	3,542.26	12.65	12.21	-135.72	35.70	-782.00	805.00	780.19	24.81	32.452	
3,650.00	3,649.56	3,596.03	3,594.76	12.83	12.40	-135.70	37.16	-784.85	808.77	783.60	25.17	32.127	
3,700.00	3,699.54	3,650.72	3,649.36	13.01	12.59	-135.68	38.56	-787.56	812.31	786.76	25.55	31.790	
3,750.00	3,749.52	3,703.03	3,701.60	13.19	12.78	-135.67	39.83	-789.86	815.58	789.66	25.92	31.467	
3,800.00	3,799.50	3,751.27	3,749.78	13.37	12.95	-135.64	41.20	-792.01	818.87	792.60	26.27	31.176	
3,850.00	3,849.48	3,798.19	3,796.62	13.54	13.12	-135.60	42.77	-794.20	822.27	795.67	26.61	30.904	
3,900.00	3,899.46	3,843.44	3,841.78	13.72	13.28	-135.55	44.47	-796.54	825.94	799.00	26.94	30.658	
3,950.00	3,949.44	3,890.66	3,888.88	13.90	13.46	-135.49	46.39	-799.22	829.85	802.57	27.28	30.417	
4,000.00	3,999.41	3,941.66	3,939.76	14.08	13.64	-135.43	48.31	-802.12	833.78	806.14	27.64	30.162	
4,050.00	4,049.39	3,991.91	3,989.91	14.26	13.82	-135.40	49.96	-804.93	837.65	809.65	28.00	29.915	
4,100.00	4,099.37	4,041.42	4,039.31	14.44	14.00	-135.37	51.44	-807.71	841.53	813.17	28.36	29.678	
4,150.00	4,149.35	4,088.76	4,086.55	14.61	14.17	-135.35	52.77	-810.42	845.46	816.76	28.70	29.461	
4,200.00	4,199.33	4,134.65	4,132.34	14.79	14.34	-135.32	54.24	-813.25	849.61	820.58	29.03	29.263	
4,250.00	4,249.31	4,183.00	4,180.55	14.97	14.51	-135.27	55.96	-816.41	853.96	824.57	29.38	29.065	
4,300.00	4,299.29	4,233.34	4,230.75	15.15	14.69	-135.22	57.83	-819.68	858.29	828.55	29.74	28.860	
4,350.00	4,349.27	4,287.63	4,284.90	15.33	14.89	-135.17	59.84	-823.10	862.52	832.40	30.12	28.637	
4,400.00	4,399.25	4,343.77	4,340.92	15.51	15.09	-135.13	61.69	-826.25	866.41	835.90	30.51	28.399	
4,450.00	4,449.22	4,391.12	4,388.18	15.69	15.27	-135.10	63.21	-828.81	870.18	839.33	30.85	28.205	
4,500.00	4,499.20	4,438.69	4,435.64	15.86	15.44	-135.06	64.85	-831.50	874.10	842.90	31.20	28.019	
4,550.00	4,549.18	4,489.55	4,486.38	16.04	15.62	-135.02	66.67	-834.42	878.04	846.49	31.56	27.823	
4,600.00	4,599.16	4,540.42	4,537.14	16.22	15.81	-134.97	68.49	-837.28	881.93	850.01	31.92	27.629	
4,650.00	4,649.14	4,586.32	4,582.93	16.40	15.97	-134.93	70.16	-839.95	885.93	853.68	32.26	27.465	
4,700.00	4,699.12	4,633.28	4,629.77	16.58	16.14	-134.89	71.91	-842.85	890.10	857.51	32.60	27.306	
4,750.00	4,749.10	4,681.74	4,678.09	16.76	16.32	-134.84	73.76	-845.95	894.39	861.44	32.95	27.146	
4,800.00	4,799.08	4,731.50	4,727.71	16.94	16.50	-134.79	75.71	-849.19	898.74	865.43	33.30	26.986	
4,850.00	4,849.06	4,785.64	4,781.71	17.12	16.70	-134.73	77.77	-852.57	902.94	869.26	33.68	26.806	
4,900.00	4,899.03	4,840.32	4,836.26	17.30	16.90	-134.69	79.75	-855.71	906.90	872.83	34.07	26.622	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 5.00 ft

Survey Program: 117-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
4,950.00	4,949.01	4,895.55	4,891.39	17.47	17.10	-134.65	81.62	-858.57	910.57	876.12	34.45	26.431	
5,000.00	4,998.99	4,949.66	4,945.41	17.65	17.29	-134.62	83.33	-861.08	913.98	879.15	34.83	26.243	
5,050.00	5,048.97	5,003.49	4,999.17	17.83	17.49	-134.60	84.87	-863.35	917.16	881.96	35.20	26.053	
5,100.00	5,098.95	5,054.33	5,049.95	18.01	17.67	-134.58	86.22	-865.38	920.22	884.66	35.57	25.874	
5,150.00	5,148.93	5,105.31	5,100.88	18.19	17.86	-134.57	87.49	-867.35	923.22	887.29	35.93	25.697	
5,200.00	5,198.91	5,156.29	5,151.81	18.37	18.04	-134.58	88.57	-869.27	926.16	889.87	36.29	25.521	
5,250.00	5,248.89	5,207.99	5,203.47	18.55	18.23	-134.59	89.47	-871.15	929.04	892.39	36.65	25.346	
5,300.00	5,298.87	5,260.98	5,256.43	18.73	18.42	-134.62	90.23	-872.94	931.78	894.75	37.03	25.166	
5,350.00	5,348.84	5,312.48	5,307.89	18.91	18.60	-134.65	90.86	-874.54	934.37	896.98	37.39	24.991	
5,400.00	5,398.82	5,362.90	5,358.29	19.09	18.78	-134.68	91.39	-876.07	936.93	899.18	37.75	24.821	
5,450.00	5,448.80	5,412.72	5,408.08	19.27	18.96	-134.72	91.84	-877.57	939.47	901.37	38.10	24.656	
5,500.00	5,498.78	5,462.31	5,457.64	19.44	19.14	-134.77	92.20	-879.09	942.03	903.57	38.46	24.494	
5,550.00	5,548.76	5,514.75	5,510.06	19.62	19.33	-134.81	92.55	-880.64	944.55	905.72	38.83	24.328	
5,600.00	5,598.74	5,567.82	5,563.11	19.80	19.52	-134.86	92.96	-882.04	946.90	907.71	39.20	24.158	
5,650.00	5,648.72	5,617.35	5,612.62	19.98	19.69	-134.90	93.34	-883.28	949.19	909.64	39.55	23.999	
5,700.00	5,698.70	5,667.56	5,662.81	20.16	19.87	-134.94	93.68	-884.54	951.49	911.58	39.91	23.841	
5,750.00	5,748.68	5,720.36	5,715.61	20.34	20.06	-134.99	94.01	-885.78	953.69	913.42	40.28	23.678	
5,800.00	5,798.65	5,772.90	5,768.13	20.52	20.25	-135.04	94.34	-886.85	955.75	915.11	40.64	23.515	
5,850.00	5,848.63	5,824.96	5,820.18	20.70	20.44	-135.08	94.69	-887.80	957.70	916.69	41.01	23.353	
5,900.00	5,898.61	5,877.51	5,872.72	20.88	20.62	-135.13	95.05	-888.62	959.52	918.15	41.38	23.190	
5,950.00	5,948.59	5,930.46	5,925.67	21.06	20.81	-135.17	95.45	-889.30	961.20	919.45	41.75	23.025	
6,000.00	5,998.57	5,983.04	5,978.25	21.24	21.00	-135.21	95.87	-889.80	962.72	920.61	42.11	22.861	
6,050.00	6,048.55	6,035.03	6,030.23	21.42	21.19	-135.25	96.30	-890.19	964.13	921.66	42.48	22.698	
6,100.00	6,098.53	6,084.46	6,079.66	21.60	21.36	-135.28	96.73	-890.50	965.50	922.67	42.83	22.542	
6,150.00	6,148.51	6,133.35	6,128.54	21.77	21.54	-135.32	97.17	-890.86	966.91	923.73	43.18	22.391	
6,200.00	6,198.49	6,184.35	6,179.54	21.95	21.72	-135.35	97.66	-891.25	968.34	924.79	43.54	22.238	
6,250.00	6,248.46	6,235.59	6,230.77	22.13	21.90	-135.38	98.19	-891.57	969.70	925.79	43.91	22.086	
6,300.00	6,298.44	6,283.94	6,279.13	22.31	22.07	-135.41	98.69	-891.88	971.07	926.81	44.26	21.942	
6,350.00	6,348.42	6,332.75	6,327.93	22.49	22.25	-135.45	99.13	-892.28	972.52	927.91	44.61	21.800	
6,400.00	6,398.40	6,383.30	6,378.47	22.67	22.43	-135.48	99.58	-892.69	973.98	929.01	44.97	21.659	
6,450.00	6,448.38	6,433.84	6,429.01	22.85	22.61	-135.51	100.07	-893.08	975.40	930.08	45.33	21.519	
6,500.00	6,498.36	6,484.37	6,479.54	23.03	22.79	-135.54	100.57	-893.43	976.80	931.12	45.69	21.380	
6,550.00	6,548.34	6,535.21	6,530.37	23.21	22.97	-135.57	101.09	-893.76	978.17	932.12	46.05	21.243	
6,600.00	6,598.32	6,586.47	6,581.63	23.39	23.15	-135.61	101.61	-894.02	979.48	933.07	46.41	21.105	
6,650.00	6,648.30	6,638.16	6,633.32	23.57	23.33	-135.64	102.09	-894.22	980.72	933.95	46.77	20.968	
6,700.00	6,698.27	6,690.18	6,685.34	23.75	23.52	-135.68	102.46	-894.32	981.86	934.72	47.13	20.831	
6,750.00	6,748.25	6,739.19	6,734.35	23.93	23.69	-135.72	102.72	-894.36	982.95	935.47	47.49	20.699	
6,800.00	6,798.23	6,787.22	6,782.37	24.11	23.86	-135.76	102.98	-894.50	984.14	936.30	47.84	20.573	
6,850.00	6,848.21	6,836.30	6,831.45	24.29	24.03	-135.81	103.27	-894.71	985.40	937.21	48.19	20.448	
6,900.00	6,898.19	6,885.66	6,880.81	24.47	24.21	-135.84	103.58	-894.96	986.70	938.16	48.55	20.325	
6,950.00	6,948.17	6,935.78	6,930.93	24.65	24.39	-135.88	103.97	-895.23	988.02	939.11	48.90	20.204	
7,000.00	6,998.15	6,986.00	6,981.15	24.83	24.57	-135.91	104.48	-895.48	989.32	940.06	49.26	20.083	
7,050.00	7,048.13	7,034.85	7,030.00	25.00	24.74	-135.94	105.01	-895.74	990.64	941.03	49.61	19.967	
7,100.00	7,098.11	7,083.82	7,078.96	25.18	24.92	-135.97	105.51	-896.07	992.03	942.06	49.97	19.853	
7,150.00	7,148.08	7,133.65	7,128.79	25.36	25.09	-136.00	105.97	-896.42	993.43	943.11	50.32	19.741	
7,200.00	7,198.06	7,183.31	7,178.44	25.54	25.27	-136.03	106.36	-896.78	994.85	944.17	50.68	19.630	
7,250.00	7,248.04	7,232.33	7,227.46	25.72	25.45	-136.07	106.74	-897.18	996.30	945.27	51.03	19.522	
7,300.00	7,298.02	7,281.97	7,277.10	25.90	25.62	-136.10	107.14	-897.62	997.80	946.41	51.39	19.416	
7,350.00	7,348.00	7,333.12	7,328.24	26.08	25.81	-136.14	107.54	-898.04	999.26	947.51	51.75	19.308	
7,400.00	7,397.98	7,383.37	7,378.49	26.26	25.99	-136.18	107.94	-898.41	1,000.68	948.57	52.11	19.203	
7,450.00	7,447.96	7,432.54	7,427.66	26.44	26.16	-136.21	108.34	-898.79	1,002.12	949.66	52.47	19.100	
7,500.00	7,497.94	7,482.33	7,477.45	26.62	26.34	-136.24	108.75	-899.21	1,003.60	950.78	52.82	18.999	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 5.00 ft

Survey Program: 117-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
7,550.00	7,547.92	7,532.69	7,527.80	26.80	26.52	-136.28	109.05	-899.62	1,005.06	951.88	53.18	18.898	
7,600.00	7,597.89	7,583.05	7,578.16	26.98	26.70	-136.33	109.25	-900.02	1,006.51	952.97	53.54	18.799	
7,650.00	7,647.87	7,633.42	7,628.52	27.16	26.88	-136.38	109.48	-900.39	1,007.93	954.03	53.90	18.700	
7,700.00	7,697.85	7,683.81	7,678.92	27.34	27.06	-136.42	109.71	-900.75	1,009.34	955.08	54.26	18.602	
7,750.00	7,747.83	7,734.22	7,729.32	27.52	27.24	-136.47	109.88	-901.08	1,010.72	956.11	54.62	18.505	
7,800.00	7,797.81	7,783.07	7,778.17	27.70	27.41	-136.52	109.99	-901.42	1,012.12	957.15	54.97	18.412	
7,850.00	7,847.79	7,831.82	7,826.92	27.88	27.58	-136.57	110.02	-901.82	1,013.59	958.26	55.32	18.321	
7,900.00	7,897.77	7,879.18	7,874.28	28.06	27.75	-136.63	109.99	-902.29	1,015.14	959.48	55.67	18.236	
7,950.00	7,947.75	7,926.63	7,921.72	28.24	27.92	-136.68	109.91	-902.89	1,016.83	960.82	56.01	18.153	
8,000.00	7,997.73	7,976.54	7,971.63	28.42	28.09	-136.75	109.81	-903.58	1,018.58	962.21	56.37	18.070	
8,050.00	8,047.70	8,026.45	8,021.53	28.60	28.27	-136.81	109.73	-904.27	1,020.33	963.61	56.73	17.987	
8,100.00	8,097.68	8,073.42	8,068.49	28.78	28.44	-136.86	109.64	-905.00	1,022.17	965.10	57.07	17.911	
8,150.00	8,147.66	8,121.35	8,116.42	28.96	28.61	-136.92	109.50	-905.87	1,024.13	966.72	57.42	17.837	
8,200.00	8,197.64	8,172.32	8,167.39	29.13	28.79	-136.99	109.34	-906.80	1,026.11	968.33	57.78	17.760	
8,250.00	8,247.62	8,222.50	8,217.56	29.31	28.96	-137.06	109.16	-907.68	1,028.04	969.91	58.13	17.685	
8,300.00	8,297.60	8,270.98	8,266.02	29.49	29.13	-137.12	108.93	-908.56	1,030.02	971.54	58.48	17.613	
8,350.00	8,347.58	8,320.41	8,315.44	29.67	29.31	-137.19	108.63	-909.53	1,032.06	973.23	58.83	17.542	
8,400.00	8,397.56	8,371.84	8,366.86	29.85	29.49	-137.26	108.34	-910.50	1,034.07	974.88	59.19	17.469	
8,450.00	8,447.54	8,442.75	8,437.71	30.03	29.73	-137.46	106.15	-911.24	1,035.74	976.12	59.62	17.372	
8,500.00	8,497.51	8,522.99	8,516.92	30.21	29.99	-138.23	93.90	-909.68	1,035.93	975.90	60.04	17.255	
8,550.00	8,547.49	8,593.16	8,583.69	30.39	30.20	-139.47	72.81	-906.37	1,035.06	974.66	60.40	17.137	
8,600.00	8,597.47	8,627.23	8,614.85	30.57	30.29	-140.26	59.15	-904.58	1,034.38	973.67	60.71	17.038	
8,617.39	8,614.86	8,639.77	8,626.07	30.63	30.33	-140.58	53.59	-903.95	1,034.33	973.51	60.81	17.008	
8,650.00	8,647.45	8,662.40	8,645.95	30.75	30.39	-141.20	42.84	-902.87	1,034.53	973.52	61.01	16.957	
8,700.00	8,697.43	8,678.00	8,659.36	30.93	30.43	-141.66	34.90	-902.17	1,035.87	974.64	61.22	16.920	
8,750.00	8,747.41	8,714.23	8,689.50	31.11	30.51	-142.80	14.85	-900.93	1,038.34	976.87	61.47	16.892 SF	
8,800.00	8,797.39	8,735.95	8,706.84	31.29	30.56	-143.54	1.78	-900.52	1,042.48	980.86	61.62	16.917	
8,850.00	8,847.37	8,772.00	8,734.29	31.47	30.65	-144.84	-21.58	-900.38	1,048.45	986.64	61.82	16.961	
8,900.00	8,897.35	8,772.00	8,734.29	31.65	30.65	-144.84	-21.58	-900.38	1,055.62	993.89	61.74	17.099	
8,950.00	8,947.33	8,798.59	8,753.45	31.83	30.70	-145.86	-40.01	-900.59	1,064.57	1,002.79	61.78	17.232	
9,000.00	8,997.30	8,819.42	8,767.81	32.01	30.75	-146.68	-55.09	-900.81	1,075.08	1,013.34	61.73	17.415	
9,050.00	9,047.28	8,838.57	8,780.50	32.19	30.80	-147.46	-69.43	-901.06	1,087.18	1,025.55	61.62	17.642	
9,100.00	9,097.26	8,866.00	8,797.78	32.37	30.88	-148.61	-90.73	-901.51	1,100.97	1,039.42	61.55	17.888	
9,150.00	9,147.24	8,866.00	8,797.78	32.55	30.88	-148.61	-90.73	-901.51	1,116.25	1,055.09	61.16	18.250	
9,200.00	9,197.22	8,866.00	8,797.78	32.73	30.88	-148.61	-90.73	-901.51	1,133.53	1,072.82	60.71	18.670	
9,250.00	9,247.20	8,896.27	8,815.44	32.91	30.96	-149.91	-115.29	-902.19	1,151.78	1,091.22	60.56	19.018	
9,300.00	9,297.18	8,907.25	8,821.45	33.09	30.99	-150.40	-124.48	-902.50	1,171.95	1,111.79	60.17	19.478	
9,350.00	9,347.16	8,917.44	8,826.82	33.27	31.02	-150.85	-133.13	-902.83	1,193.65	1,133.91	59.73	19.983	
9,400.00	9,397.14	8,926.90	8,831.64	33.45	31.04	-151.27	-141.26	-903.15	1,216.81	1,157.54	59.27	20.531	
9,450.00	9,447.11	8,960.00	8,847.16	33.63	31.13	-152.77	-170.46	-904.50	1,242.02	1,182.96	59.06	21.029	
9,500.00	9,497.09	8,960.00	8,847.16	33.81	31.13	-152.77	-170.46	-904.50	1,267.57	1,209.10	58.46	21.681	
9,550.00	9,547.07	8,960.00	8,847.16	33.99	31.13	-152.77	-170.46	-904.50	1,294.54	1,236.68	57.86	22.375	
9,600.00	9,597.05	8,960.00	8,847.16	34.17	31.13	-152.77	-170.46	-904.50	1,322.85	1,265.61	57.24	23.109	
9,650.00	9,647.03	8,960.00	8,847.16	34.35	31.13	-152.77	-170.46	-904.50	1,352.42	1,295.79	56.63	23.881	
9,700.00	9,697.01	8,960.00	8,847.16	34.53	31.13	-152.77	-170.46	-904.50	1,383.17	1,327.14	56.03	24.687	
9,750.00	9,746.99	8,960.00	8,847.16	34.71	31.13	-152.77	-170.46	-904.50	1,415.01	1,359.58	55.44	25.525	
9,800.00	9,796.97	8,960.00	8,847.16	34.88	31.13	-152.77	-170.46	-904.50	1,447.88	1,393.03	54.86	26.395	
9,850.00	9,846.95	8,990.66	8,859.66	35.06	31.22	-154.17	-198.41	-905.96	1,480.67	1,426.01	54.66	27.089	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	8.70	8.70	0.50	0.50	101.53	-146.61	718.50	733.31				
50.00	50.00	58.70	58.70	0.50	0.51	101.53	-146.61	718.50	733.31	732.30	1.01	727.348	
100.00	100.00	108.70	108.70	0.52	0.53	101.53	-146.61	718.50	733.31	732.26	1.04	702.085	
150.00	150.00	158.70	158.70	0.59	0.61	101.53	-146.61	718.50	733.31	732.11	1.20	612.298	
200.00	200.00	208.70	208.70	0.70	0.72	101.53	-146.61	718.50	733.31	731.88	1.43	514.081	
250.00	250.00	258.70	258.70	0.84	0.86	101.53	-146.61	718.50	733.31	731.61	1.70	431.192	
300.00	300.00	308.70	308.70	0.99	1.01	101.53	-146.61	718.50	733.31	731.31	2.00	366.345	
350.00	350.00	358.70	358.70	1.15	1.17	101.53	-146.61	718.50	733.31	730.99	2.32	316.201	
400.00	400.00	408.70	408.70	1.31	1.34	101.53	-146.61	718.50	733.31	730.66	2.65	277.027	
450.00	450.00	458.70	458.70	1.48	1.51	101.53	-146.61	718.50	733.31	730.32	2.98	245.908	
500.00	500.00	508.70	508.70	1.65	1.68	101.53	-146.61	718.50	733.31	729.98	3.32	220.748	
550.00	550.00	558.70	558.70	1.82	1.85	101.53	-146.61	718.50	733.31	729.64	3.67	200.065	
600.00	600.00	608.70	608.70	1.99	2.02	101.53	-146.61	718.50	733.31	729.30	4.01	182.805	
650.00	650.00	658.70	658.70	2.16	2.19	101.53	-146.61	718.50	733.31	728.95	4.36	168.210	
700.00	700.00	708.70	708.70	2.34	2.37	101.53	-146.61	718.50	733.31	728.60	4.71	155.721	
750.00	750.00	758.70	758.70	2.51	2.55	101.53	-146.61	718.50	733.31	728.25	5.06	144.923	
800.00	800.00	808.70	808.70	2.69	2.72	101.53	-146.61	718.50	733.31	727.89	5.41	135.501	
850.00	850.00	858.70	858.70	2.87	2.90	101.53	-146.61	718.50	733.31	727.54	5.76	127.210	
900.00	900.00	908.70	908.70	3.04	3.07	101.53	-146.61	718.50	733.31	727.19	6.12	119.863	
950.00	950.00	958.70	958.70	3.22	3.25	101.53	-146.61	718.50	733.31	726.84	6.47	113.308	
1,000.00	1,000.00	1,008.70	1,008.70	3.40	3.43	101.53	-146.61	718.50	733.31	726.48	6.83	107.426	
1,050.00	1,050.00	1,058.70	1,058.70	3.58	3.61	101.53	-146.61	718.50	733.31	726.13	7.18	102.118	
1,100.00	1,100.00	1,108.70	1,108.70	3.75	3.78	101.53	-146.61	718.50	733.31	725.77	7.54	97.306	
1,150.00	1,150.00	1,158.70	1,158.70	3.93	3.96	101.53	-146.61	718.50	733.31	725.42	7.89	92.923	
1,200.00	1,200.00	1,208.70	1,208.70	4.11	4.14	101.53	-146.61	718.50	733.31	725.06	8.25	88.915	
1,250.00	1,250.00	1,258.70	1,258.70	4.29	4.32	101.53	-146.61	718.50	733.31	724.70	8.60	85.236	
1,300.00	1,300.00	1,308.70	1,308.70	4.46	4.50	101.53	-146.61	718.50	733.31	724.35	8.96	81.848	
1,350.00	1,350.00	1,358.70	1,358.70	4.64	4.67	101.53	-146.61	718.50	733.31	723.99	9.32	78.718	
1,400.00	1,400.00	1,408.70	1,408.70	4.82	4.85	101.53	-146.61	718.50	733.31	723.63	9.67	75.816	
1,450.00	1,450.00	1,458.70	1,458.70	5.00	5.03	101.53	-146.61	718.50	733.31	723.28	10.03	73.120	
1,500.00	1,500.00	1,508.70	1,508.70	5.18	5.21	101.53	-146.61	718.50	733.31	722.92	10.39	70.609	
1,550.00	1,550.00	1,558.70	1,558.70	5.36	5.39	101.53	-146.61	718.50	733.31	722.56	10.74	68.263	
1,600.00	1,600.00	1,608.70	1,608.70	5.53	5.57	101.53	-146.61	718.50	733.31	722.21	11.10	66.068	
1,650.00	1,650.00	1,658.70	1,658.70	5.71	5.74	101.53	-146.61	718.50	733.31	721.85	11.46	64.009	
1,700.00	1,700.00	1,708.70	1,708.70	5.89	5.92	101.53	-146.61	718.50	733.31	721.49	11.81	62.073	
1,750.00	1,750.00	1,758.70	1,758.70	6.07	6.10	101.53	-146.61	718.50	733.31	721.14	12.17	60.252	
1,800.00	1,800.00	1,808.70	1,808.70	6.25	6.28	101.53	-146.61	718.50	733.31	720.78	12.53	58.533	
1,850.00	1,850.00	1,858.70	1,858.70	6.43	6.46	101.53	-146.61	718.50	733.31	720.42	12.89	56.910	
1,900.00	1,900.00	1,908.70	1,908.70	6.61	6.64	101.53	-146.61	718.50	733.31	720.06	13.24	55.374	
1,950.00	1,950.00	1,958.70	1,958.70	6.78	6.82	101.53	-146.61	718.50	733.31	719.71	13.60	53.918	
2,000.00	2,000.00	2,008.70	2,008.70	6.96	6.99	101.53	-146.61	718.50	733.31	719.35	13.96	52.537	
2,050.00	2,050.00	2,058.70	2,058.70	7.14	7.17	101.53	-146.61	718.50	733.31	718.99	14.32	51.225	
2,100.00	2,100.00	2,108.70	2,108.70	7.32	7.35	101.53	-146.61	718.50	733.31	718.63	14.67	49.977	
2,150.00	2,150.00	2,158.70	2,158.70	7.50	7.53	101.53	-146.61	718.50	733.31	718.28	15.03	48.787	
2,200.00	2,200.00	2,208.70	2,208.70	7.68	7.71	101.53	-146.61	718.50	733.31	717.92	15.39	47.653	
2,250.00	2,250.00	2,258.70	2,258.70	7.86	7.89	101.53	-146.61	718.50	733.31	717.56	15.75	46.571	
2,300.00	2,300.00	2,308.70	2,308.70	8.04	8.07	101.53	-146.61	718.50	733.31	717.20	16.10	45.536	
2,350.00	2,350.00	2,358.70	2,358.70	8.22	8.25	101.53	-146.61	718.50	733.31	716.85	16.46	44.546	
2,400.00	2,400.00	2,408.70	2,408.70	8.39	8.43	101.53	-146.61	718.50	733.31	716.49	16.82	43.599	
2,450.00	2,450.00	2,458.70	2,458.70	8.57	8.60	101.53	-146.61	718.50	733.31	716.13	17.18	42.690	
2,500.00	2,500.00	2,508.70	2,508.70	8.75	8.78	101.53	-146.61	718.50	733.31	715.77	17.54	41.819	
2,550.00	2,550.00	2,558.70	2,558.70	8.93	8.96	54.64	-146.61	718.50	733.18	715.29	17.89	40.979	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	2,599.99	2,608.69	2,608.69	9.11	9.14	54.69	-146.61	718.50	732.80	714.55	18.25	40.158	
2,650.00	2,649.98	2,658.68	2,658.68	9.28	9.32	54.76	-146.61	718.50	732.17	713.57	18.60	39.358	
2,700.00	2,699.96	2,708.66	2,708.66	9.46	9.50	54.86	-146.61	718.50	731.35	712.39	18.96	38.577	
2,750.00	2,749.94	2,758.64	2,758.64	9.64	9.68	54.95	-146.61	718.50	730.51	711.20	19.31	37.825	
2,800.00	2,799.92	2,808.62	2,808.62	9.81	9.86	55.04	-146.61	718.50	729.68	710.01	19.67	37.099	
2,850.00	2,849.90	2,858.60	2,858.60	9.99	10.04	55.14	-146.61	718.50	728.85	708.82	20.02	36.399	
2,900.00	2,899.88	2,908.58	2,908.58	10.17	10.21	55.23	-146.61	718.50	728.02	707.64	20.38	35.724	
2,950.00	2,949.86	2,958.56	2,958.56	10.34	10.39	55.33	-146.61	718.50	727.19	706.46	20.73	35.071	
3,000.00	2,999.84	3,008.54	3,008.54	10.52	10.57	55.42	-146.61	718.50	726.37	705.28	21.09	34.441	
3,050.00	3,049.81	3,058.51	3,058.51	10.70	10.75	55.51	-146.61	718.50	725.54	704.10	21.45	33.831	
3,100.00	3,099.79	3,108.49	3,108.49	10.88	10.93	55.61	-146.61	718.50	724.72	702.92	21.80	33.241	
3,150.00	3,149.77	3,158.47	3,158.47	11.05	11.11	55.70	-146.61	718.50	723.90	701.74	22.16	32.670	
3,200.00	3,199.75	3,208.45	3,208.45	11.23	11.29	55.80	-146.61	718.50	723.08	700.57	22.51	32.117	
3,250.00	3,249.73	3,258.43	3,258.43	11.41	11.47	55.89	-146.61	718.50	722.27	699.40	22.87	31.581	
3,300.00	3,299.71	3,308.41	3,308.41	11.59	11.65	55.99	-146.61	718.50	721.45	698.23	23.23	31.062	
3,350.00	3,349.69	3,358.39	3,358.39	11.76	11.83	56.08	-146.61	718.50	720.64	697.06	23.58	30.558	
3,400.00	3,399.67	3,408.37	3,408.37	11.94	12.00	56.18	-146.61	718.50	719.83	695.89	23.94	30.069	
3,450.00	3,449.65	3,458.35	3,458.35	12.12	12.18	56.28	-146.61	718.50	719.03	694.73	24.30	29.595	
3,500.00	3,499.62	3,508.32	3,508.32	12.30	12.36	56.37	-146.61	718.50	718.22	693.57	24.65	29.134	
3,550.00	3,549.60	3,558.30	3,558.30	12.48	12.54	56.47	-146.61	718.50	717.42	692.41	25.01	28.686	
3,600.00	3,599.58	3,608.28	3,608.28	12.65	12.72	56.57	-146.61	718.50	716.61	691.25	25.37	28.251	
3,650.00	3,649.56	3,658.26	3,658.26	12.83	12.90	56.66	-146.61	718.50	715.81	690.09	25.72	27.828	
3,700.00	3,699.54	3,708.24	3,708.24	13.01	13.08	56.76	-146.61	718.50	715.02	688.94	26.08	27.417	
3,750.00	3,749.52	3,758.22	3,758.22	13.19	13.26	56.86	-146.61	718.50	714.22	687.79	26.44	27.017	
3,800.00	3,799.50	3,808.20	3,808.20	13.37	13.44	56.96	-146.61	718.50	713.43	686.64	26.79	26.627	
3,850.00	3,849.48	3,858.18	3,858.18	13.54	13.62	57.05	-146.61	718.50	712.64	685.49	27.15	26.248	
3,900.00	3,899.46	3,908.16	3,908.16	13.72	13.79	57.15	-146.61	718.50	711.85	684.34	27.51	25.879	
3,950.00	3,949.44	3,958.14	3,958.14	13.90	13.97	57.25	-146.61	718.50	711.06	683.20	27.86	25.519	
4,000.00	3,999.41	4,009.35	4,009.35	14.08	14.16	57.35	-146.60	718.49	710.27	682.04	28.23	25.164	
4,050.00	4,049.39	4,066.96	4,066.95	14.26	14.36	57.44	-146.26	718.16	709.13	680.53	28.61	24.790	
4,100.00	4,099.37	4,124.54	4,124.52	14.44	14.57	57.51	-145.40	717.32	707.46	678.47	28.98	24.410	
4,150.00	4,149.35	4,182.08	4,182.03	14.61	14.77	57.54	-144.03	715.97	705.24	675.89	29.35	24.025	
4,200.00	4,199.33	4,239.56	4,239.45	14.79	14.97	57.55	-142.15	714.12	702.50	672.77	29.72	23.634	
4,250.00	4,249.31	4,305.20	4,294.60	14.97	15.21	57.52	-139.87	711.88	699.24	669.11	30.12	23.212	
4,300.00	4,299.29	4,344.69	4,344.39	15.15	15.35	57.49	-137.69	709.74	695.84	665.40	30.44	22.859	
4,350.00	4,349.27	4,405.43	4,394.18	15.33	15.56	57.46	-135.51	707.60	692.44	661.61	30.83	22.458	
4,400.00	4,399.25	4,444.45	4,443.97	15.51	15.70	57.43	-133.34	705.46	689.05	657.90	31.15	22.121	
4,450.00	4,449.22	4,505.66	4,493.76	15.69	15.92	57.40	-131.16	703.33	685.65	654.11	31.54	21.737	
4,500.00	4,499.20	4,544.22	4,543.55	15.86	16.05	57.37	-128.99	701.19	682.26	650.40	31.86	21.416	
4,550.00	4,549.18	4,594.10	4,593.34	16.04	16.23	57.34	-126.81	699.05	678.86	646.65	32.21	21.075	
4,600.00	4,599.16	4,643.99	4,643.13	16.22	16.41	57.31	-124.64	696.92	675.47	642.90	32.57	20.741	
4,650.00	4,649.14	4,706.13	4,692.92	16.40	16.63	57.28	-122.46	694.78	672.07	639.11	32.96	20.388	
4,700.00	4,699.12	4,743.75	4,742.71	16.58	16.76	57.25	-120.29	692.64	668.68	635.40	33.28	20.095	
4,750.00	4,749.10	4,793.64	4,792.50	16.76	16.94	57.22	-118.11	690.50	665.28	631.65	33.63	19.782	
4,800.00	4,799.08	4,843.52	4,842.29	16.94	17.12	57.18	-115.94	688.37	661.89	627.90	33.99	19.475	
4,850.00	4,849.06	4,906.60	4,892.08	17.12	17.35	57.15	-113.76	686.23	658.49	624.11	34.39	19.149	
4,900.00	4,899.03	4,943.29	4,941.87	17.30	17.48	57.12	-111.59	684.09	655.10	620.40	34.70	18.881	
4,950.00	4,949.01	5,006.83	4,991.66	17.47	17.70	57.08	-109.41	681.96	651.71	616.61	35.10	18.567	
5,000.00	4,998.99	5,043.05	5,041.45	17.65	17.83	57.05	-107.23	679.82	648.31	612.91	35.41	18.310	
5,050.00	5,048.97	5,107.06	5,091.24	17.83	18.06	57.02	-105.06	677.68	644.92	609.11	35.81	18.008	
5,100.00	5,098.95	5,142.82	5,141.03	18.01	18.19	56.98	-102.88	675.55	641.53	605.41	36.12	17.762	
5,150.00	5,148.93	5,207.30	5,190.82	18.19	18.42	56.95	-100.71	673.41	638.13	601.61	36.53	17.471	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1

Survey Program: 0-MWD+HDGM

Offset Site Error: 5.00 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	5,198.91	5,242.59	5,240.61	18.37	18.55	56.91	-98.53	671.27	634.74	597.91	36.83	17.234	
5,250.00	5,248.89	5,307.53	5,290.40	18.55	18.78	56.88	-96.36	669.13	631.35	594.11	37.24	16.954	
5,300.00	5,298.87	5,342.35	5,340.19	18.73	18.90	56.84	-94.18	667.00	627.96	590.42	37.54	16.727	
5,350.00	5,348.84	5,407.76	5,389.98	18.91	19.14	56.80	-92.01	664.86	624.57	586.61	37.95	16.456	
5,400.00	5,398.82	5,442.12	5,439.77	19.09	19.26	56.77	-89.83	662.72	621.17	582.92	38.25	16.238	
5,450.00	5,448.80	5,492.00	5,489.56	19.27	19.44	56.73	-87.66	660.59	617.78	579.17	38.61	16.001	
5,500.00	5,498.78	5,541.89	5,539.35	19.44	19.62	56.69	-85.48	658.45	614.39	575.43	38.97	15.767	
5,550.00	5,548.76	5,608.23	5,589.14	19.62	19.86	56.66	-83.30	656.31	611.00	571.62	39.38	15.515	
5,600.00	5,598.74	5,641.65	5,638.93	19.80	19.98	56.62	-81.13	654.17	607.61	567.93	39.68	15.313	
5,650.00	5,648.72	5,708.46	5,688.72	19.98	20.22	56.58	-78.95	652.04	604.22	564.13	40.10	15.070	
5,700.00	5,698.70	5,741.42	5,738.51	20.16	20.34	56.54	-76.78	649.90	600.83	560.44	40.39	14.875	
5,750.00	5,748.68	5,808.70	5,788.30	20.34	20.58	56.50	-74.60	647.76	597.44	556.63	40.81	14.639	
5,800.00	5,798.65	5,841.19	5,838.09	20.52	20.70	56.46	-72.43	645.63	594.05	552.95	41.10	14.452	
5,850.00	5,848.63	5,908.93	5,887.88	20.70	20.94	56.42	-70.25	643.49	590.66	549.14	41.53	14.224	
5,900.00	5,898.61	5,940.95	5,937.67	20.88	21.06	56.38	-68.08	641.35	587.27	545.46	41.82	14.043	
5,950.00	5,948.59	6,009.17	5,987.46	21.06	21.30	56.34	-65.90	639.21	583.89	541.65	42.24	13.823	
6,000.00	5,998.57	6,040.72	6,037.25	21.24	21.42	56.29	-63.73	637.08	580.50	537.97	42.53	13.648	
6,050.00	6,048.55	6,109.40	6,087.04	21.42	21.66	56.25	-61.55	634.94	577.11	534.15	42.96	13.435	
6,100.00	6,098.53	6,140.49	6,136.83	21.60	21.78	56.21	-59.38	632.80	573.72	530.48	43.25	13.267	
6,150.00	6,148.51	6,209.63	6,186.62	21.77	22.02	56.17	-57.20	630.67	570.34	526.66	43.67	13.060	
6,200.00	6,198.49	6,240.25	6,236.41	21.95	22.14	56.12	-55.02	628.53	566.95	522.99	43.96	12.897	
6,250.00	6,248.46	6,290.13	6,286.20	22.13	22.32	56.08	-52.85	626.39	563.56	519.24	44.32	12.717	
6,300.00	6,298.44	6,340.02	6,335.99	22.31	22.50	56.03	-50.67	624.25	560.18	515.50	44.67	12.539	
6,350.00	6,348.42	6,389.90	6,385.78	22.49	22.68	55.99	-48.50	622.12	556.79	511.76	45.03	12.364	
6,400.00	6,398.40	6,439.78	6,435.57	22.67	22.86	55.94	-46.32	619.98	553.40	508.02	45.39	12.193	
6,450.00	6,448.38	6,489.67	6,485.36	22.85	23.04	55.89	-44.15	617.84	550.02	504.27	45.75	12.023	
6,500.00	6,498.36	6,539.55	6,535.15	23.03	23.22	55.85	-41.97	615.71	546.63	500.53	46.10	11.857	
6,550.00	6,548.34	6,589.43	6,584.94	23.21	23.40	55.80	-39.80	613.57	543.25	496.79	46.46	11.693	
6,600.00	6,598.32	6,639.32	6,634.73	23.39	23.58	55.75	-37.62	611.43	539.87	493.05	46.82	11.531	
6,650.00	6,648.30	6,689.20	6,684.52	23.57	23.76	55.70	-35.45	609.30	536.48	489.31	47.18	11.372	
6,700.00	6,698.27	6,739.08	6,734.31	23.75	23.94	55.65	-33.27	607.16	533.10	485.57	47.53	11.215	
6,750.00	6,748.25	6,788.97	6,784.10	23.93	24.12	55.60	-31.09	605.02	529.72	481.83	47.89	11.061	
6,800.00	6,798.23	6,838.85	6,833.89	24.11	24.30	55.55	-28.92	602.88	526.33	478.09	48.25	10.909	
6,850.00	6,848.21	6,888.73	6,883.68	24.29	24.48	55.50	-26.74	600.75	522.95	474.35	48.61	10.759	
6,900.00	6,898.19	6,938.62	6,933.47	24.47	24.66	55.44	-24.57	598.61	519.57	470.61	48.96	10.611	
6,950.00	6,948.17	6,988.50	6,983.26	24.65	24.84	55.39	-22.39	596.47	516.19	466.87	49.32	10.466	
7,000.00	6,998.15	7,038.38	7,033.05	24.83	25.02	55.34	-20.22	594.34	512.81	463.13	49.68	10.322	
7,050.00	7,048.13	7,088.27	7,082.84	25.00	25.20	55.28	-18.04	592.20	509.43	459.39	50.04	10.181	
7,100.00	7,098.11	7,138.15	7,132.63	25.18	25.38	55.23	-15.87	590.06	506.05	455.65	50.40	10.042	
7,150.00	7,148.08	7,188.03	7,182.42	25.36	25.56	55.17	-13.69	587.92	502.67	451.92	50.75	9.904	
7,200.00	7,198.06	7,237.92	7,232.21	25.54	25.74	55.12	-11.52	585.79	499.29	448.18	51.11	9.769	
7,250.00	7,248.04	7,287.80	7,282.00	25.72	25.92	55.06	-9.34	583.65	495.91	444.44	51.47	9.635	
7,300.00	7,298.02	7,337.68	7,331.79	25.90	26.11	55.00	-7.17	581.51	492.54	440.71	51.83	9.503	
7,350.00	7,348.00	7,387.57	7,381.58	26.08	26.29	54.94	-4.99	579.38	489.16	436.97	52.19	9.374	
7,400.00	7,397.98	7,437.45	7,431.37	26.26	26.47	54.88	-2.81	577.24	485.78	433.24	52.54	9.245	
7,450.00	7,447.96	7,487.33	7,481.16	26.44	26.65	54.82	-0.64	575.10	482.41	429.50	52.90	9.119	
7,500.00	7,497.94	7,537.22	7,530.95	26.62	26.83	54.76	1.54	572.96	479.03	425.77	53.26	8.994	
7,550.00	7,547.92	7,587.10	7,580.74	26.80	27.01	54.70	3.71	570.83	475.66	422.04	53.62	8.871	
7,600.00	7,597.89	7,636.98	7,630.53	26.98	27.19	54.63	5.89	568.69	472.28	418.30	53.98	8.750	
7,650.00	7,647.87	7,685.59	7,679.04	27.16	27.37	54.57	7.99	566.62	468.93	414.59	54.33	8.630	
7,700.00	7,697.85	7,730.90	7,724.30	27.34	27.53	54.54	9.67	564.97	465.93	411.24	54.69	8.519	
7,750.00	7,747.83	7,776.27	7,769.63	27.52	27.69	54.55	10.97	563.70	463.43	408.39	55.05	8.419	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	7,797.81	7,821.68	7,815.02	27.70	27.86	54.59	11.88	562.80	461.42	406.03	55.39	8.330	
7,850.00	7,847.79	7,867.11	7,860.44	27.88	28.02	54.67	12.41	562.28	459.91	404.17	55.74	8.251	
7,900.00	7,897.77	7,913.13	7,906.47	28.06	28.18	54.80	12.56	562.14	458.88	402.80	56.08	8.182	
7,950.00	7,947.75	7,963.11	7,956.45	28.24	28.36	54.95	12.56	562.14	458.04	401.60	56.44	8.116	
8,000.00	7,997.73	8,013.09	8,006.43	28.42	28.54	55.09	12.56	562.14	457.21	400.41	56.80	8.050	
8,050.00	8,047.70	8,063.07	8,056.40	28.60	28.72	55.24	12.56	562.14	456.38	399.23	57.15	7.985	
8,100.00	8,097.68	8,113.05	8,106.38	28.78	28.89	55.39	12.56	562.14	455.55	398.04	57.51	7.921	
8,150.00	8,147.66	8,163.03	8,156.36	28.96	29.07	55.54	12.56	562.14	454.73	396.86	57.87	7.858	
8,200.00	8,197.64	8,213.01	8,206.34	29.13	29.25	55.70	12.56	562.14	453.91	395.69	58.22	7.796	
8,250.00	8,247.62	8,262.99	8,256.32	29.31	29.43	55.85	12.56	562.14	453.09	394.51	58.58	7.734	
8,300.00	8,297.60	8,312.97	8,306.30	29.49	29.61	56.00	12.56	562.14	452.28	393.34	58.94	7.674	
8,350.00	8,347.58	8,362.94	8,356.28	29.67	29.78	56.15	12.56	562.14	451.47	392.17	59.30	7.614	
8,400.00	8,397.56	8,412.92	8,406.26	29.85	29.96	56.31	12.56	562.14	450.66	391.01	59.65	7.555	
8,450.00	8,447.54	8,462.90	8,456.24	30.03	30.14	56.46	12.56	562.14	449.86	389.84	60.01	7.496	
8,500.00	8,497.51	8,512.88	8,506.21	30.21	30.32	56.61	12.56	562.14	449.06	388.69	60.37	7.439	
8,550.00	8,547.49	8,562.86	8,556.19	30.39	30.49	56.77	12.56	562.14	448.26	387.53	60.73	7.382	
8,600.00	8,597.47	8,612.84	8,606.17	30.57	30.67	56.92	12.56	562.14	447.46	386.38	61.08	7.325	
8,649.03	8,646.48	8,654.84	8,648.15	30.75	30.81	57.20	11.42	562.15	447.02	385.63	61.39	7.282	CC
8,650.00	8,647.45	8,655.65	8,648.95	30.75	30.82	57.21	11.36	562.15	447.02	385.63	61.40	7.281	ES
8,700.00	8,697.43	8,697.00	8,690.09	30.93	30.95	57.85	7.21	562.17	447.53	385.86	61.68	7.256	
8,750.00	8,747.41	8,737.44	8,729.93	31.11	31.07	58.83	0.30	562.21	449.11	387.19	61.93	7.252	SF
8,800.00	8,797.39	8,776.61	8,767.95	31.29	31.19	60.09	-9.06	562.26	451.93	389.80	62.13	7.274	
8,850.00	8,847.37	8,814.21	8,803.77	31.47	31.29	61.58	-20.48	562.33	456.18	393.92	62.26	7.327	
8,900.00	8,897.35	8,850.00	8,837.10	31.65	31.39	63.23	-33.50	562.40	462.09	399.77	62.32	7.415	
8,950.00	8,947.33	8,883.96	8,867.92	31.83	31.48	64.98	-47.75	562.48	469.87	407.60	62.27	7.546	
9,000.00	8,997.30	8,915.90	8,896.08	32.01	31.56	66.78	-62.81	562.57	479.70	417.60	62.10	7.725	
9,050.00	9,047.28	8,945.85	8,921.69	32.19	31.63	68.57	-78.33	562.65	491.71	429.91	61.80	7.956	
9,100.00	9,097.26	8,973.83	8,944.86	32.37	31.70	70.33	-94.02	562.74	506.02	444.64	61.37	8.245	
9,150.00	9,147.24	9,000.00	8,965.81	32.55	31.75	72.03	-109.70	562.83	522.64	461.82	60.82	8.593	
9,200.00	9,197.22	9,024.21	8,984.53	32.73	31.80	73.63	-125.05	562.92	541.57	481.42	60.15	9.003	
9,250.00	9,247.20	9,050.00	9,003.74	32.91	31.85	75.37	-142.25	563.01	562.77	503.27	59.50	9.458	
9,300.00	9,297.18	9,067.78	9,016.53	33.09	31.88	76.57	-154.61	563.08	586.11	527.54	58.57	10.007	
9,350.00	9,347.16	9,087.29	9,030.11	33.27	31.92	77.90	-168.61	563.16	611.52	553.82	57.69	10.600	
9,400.00	9,397.14	9,100.00	9,038.70	33.45	31.94	78.76	-177.98	563.21	638.88	582.29	56.60	11.288	
9,450.00	9,447.11	9,122.30	9,053.25	33.63	31.99	80.27	-194.87	563.31	667.95	612.07	55.88	11.954	
9,500.00	9,497.09	9,138.01	9,063.11	33.81	32.03	81.33	-207.11	563.38	698.70	643.73	54.97	12.710	
9,550.00	9,547.07	9,150.00	9,070.40	33.99	32.06	82.13	-216.62	563.43	730.96	676.96	53.99	13.538	
9,600.00	9,597.05	9,166.32	9,080.01	34.17	32.09	83.20	-229.81	563.51	764.57	711.34	53.23	14.364	
9,650.00	9,647.03	9,179.08	9,087.26	34.35	32.13	84.04	-240.32	563.57	799.45	747.04	52.41	15.254	
9,700.00	9,697.01	9,200.00	9,098.62	34.53	32.18	85.38	-257.87	563.66	835.57	783.66	51.92	16.095	
9,750.00	9,746.99	9,200.00	9,098.62	34.71	32.18	85.38	-257.87	563.66	872.51	821.68	50.83	17.165	
9,800.00	9,796.97	9,212.70	9,105.20	34.88	32.21	86.19	-268.73	563.73	910.49	860.28	50.21	18.133	
9,850.00	9,846.95	9,222.55	9,110.15	35.06	32.23	86.80	-277.25	563.77	949.32	899.75	49.57	19.151	
9,900.00	9,896.92	9,231.81	9,114.66	35.24	32.26	87.38	-285.34	563.82	988.93	939.95	48.97	20.193	
9,950.00	9,946.90	9,250.00	9,123.14	35.42	32.30	88.49	-301.43	563.91	1,029.35	980.67	48.68	21.146	
10,000.00	9,996.88	9,250.00	9,123.14	35.60	32.30	88.49	-301.43	563.91	1,070.19	1,022.24	47.95	22.320	
10,050.00	10,046.86	9,250.00	9,123.14	35.78	32.30	88.49	-301.43	563.91	1,111.77	1,064.49	47.28	23.513	
10,100.00	10,096.84	9,250.00	9,123.14	35.96	32.30	88.49	-301.43	563.91	1,154.02	1,107.34	46.69	24.719	
10,150.00	10,146.82	9,270.81	9,132.20	36.14	32.36	89.72	-320.17	564.02	1,196.34	1,149.71	46.62	25.659	
10,200.00	10,196.80	9,277.40	9,134.93	36.32	32.37	90.10	-326.16	564.05	1,239.34	1,193.07	46.27	26.787	
10,250.00	10,246.78	9,283.64	9,137.45	36.50	32.39	90.46	-331.87	564.08	1,282.75	1,236.80	45.94	27.921	
10,300.00	10,296.76	9,300.00	9,143.76	36.68	32.43	91.39	-346.96	564.17	1,326.66	1,280.80	45.86	28.926	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	10,346.73	9,300.00	9,143.76	36.86	32.43	91.39	-346.96	564.17	1,370.69	1,325.22	45.48	30.140	
10,400.00	10,396.71	9,300.00	9,143.76	37.04	32.43	91.39	-346.96	564.17	1,415.12	1,369.99	45.13	31.356	
10,450.00	10,446.69	9,300.00	9,143.76	37.22	32.43	91.39	-346.96	564.17	1,459.91	1,415.08	44.82	32.571	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	-122.31	-151.03	-238.83	282.58				
50.00	50.00	50.40	50.40	0.50	0.50	-122.31	-151.03	-238.83	282.58	281.57	1.01	280.732	
100.00	100.00	100.40	100.40	0.52	0.52	-122.31	-151.03	-238.83	282.58	281.54	1.04	272.789	
150.00	150.00	150.40	150.40	0.59	0.59	-122.31	-151.03	-238.83	282.58	281.40	1.18	239.220	
200.00	200.00	200.40	200.40	0.70	0.70	-122.31	-151.03	-238.83	282.58	281.17	1.41	201.092	
250.00	250.00	250.40	250.40	0.84	0.84	-122.31	-151.03	-238.83	282.58	280.90	1.68	168.544	
300.00	300.00	300.40	300.40	0.99	0.99	-122.31	-151.03	-238.83	282.58	280.60	1.98	143.012	
350.00	350.00	350.40	350.40	1.15	1.15	-122.31	-151.03	-238.83	282.58	280.29	2.29	123.274	
400.00	400.00	400.40	400.40	1.31	1.31	-122.31	-151.03	-238.83	282.58	279.96	2.62	107.874	
450.00	450.00	450.40	450.40	1.48	1.48	-122.31	-151.03	-238.83	282.58	279.62	2.95	95.659	
500.00	500.00	500.40	500.40	1.65	1.65	-122.31	-151.03	-238.83	282.58	279.28	3.29	85.797	
550.00	550.00	550.40	550.40	1.82	1.82	-122.31	-151.03	-238.83	282.58	278.94	3.64	77.701	
600.00	600.00	600.40	600.40	1.99	1.99	-122.31	-151.03	-238.83	282.58	278.60	3.98	70.953	
650.00	650.00	650.40	650.40	2.16	2.17	-122.31	-151.03	-238.83	282.58	278.25	4.33	65.253	
700.00	700.00	700.40	700.40	2.34	2.34	-122.31	-151.03	-238.83	282.58	277.90	4.68	60.379	
750.00	750.00	750.40	750.40	2.51	2.52	-122.31	-151.03	-238.83	282.58	277.55	5.03	56.169	
800.00	800.00	800.40	800.40	2.69	2.69	-122.31	-151.03	-238.83	282.58	277.20	5.38	52.498	
850.00	850.00	850.40	850.40	2.87	2.87	-122.31	-151.03	-238.83	282.58	276.84	5.74	49.271	
900.00	900.00	900.40	900.40	3.04	3.04	-122.31	-151.03	-238.83	282.58	276.49	6.09	46.412	
950.00	950.00	950.40	950.40	3.22	3.22	-122.31	-151.03	-238.83	282.58	276.14	6.44	43.862	
1,000.00	1,000.00	1,000.40	1,000.40	3.40	3.40	-122.31	-151.03	-238.83	282.58	275.78	6.80	41.575	
1,050.00	1,050.00	1,050.40	1,050.40	3.58	3.58	-122.31	-151.03	-238.83	282.58	275.43	7.15	39.513	
1,100.00	1,100.00	1,100.40	1,100.40	3.75	3.75	-122.31	-151.03	-238.83	282.58	275.07	7.51	37.644	
1,150.00	1,150.00	1,150.40	1,150.40	3.93	3.93	-122.31	-151.03	-238.83	282.58	274.72	7.86	35.942	
1,200.00	1,200.00	1,200.40	1,200.40	4.11	4.11	-122.31	-151.03	-238.83	282.58	274.36	8.22	34.386	
1,250.00	1,250.00	1,250.40	1,250.40	4.29	4.29	-122.31	-151.03	-238.83	282.58	274.00	8.57	32.959	
1,300.00	1,300.00	1,300.40	1,300.40	4.46	4.47	-122.31	-151.03	-238.83	282.58	273.65	8.93	31.644	
1,350.00	1,350.00	1,350.40	1,350.40	4.64	4.64	-122.31	-151.03	-238.83	282.58	273.29	9.29	30.430	
1,400.00	1,400.00	1,400.40	1,400.40	4.82	4.82	-122.31	-151.03	-238.83	282.58	272.94	9.64	29.305	
1,450.00	1,450.00	1,450.40	1,450.40	5.00	5.00	-122.31	-151.03	-238.83	282.58	272.58	10.00	28.260	
1,500.00	1,500.00	1,500.40	1,500.40	5.18	5.18	-122.31	-151.03	-238.83	282.58	272.22	10.36	27.287	
1,550.00	1,550.00	1,550.40	1,550.40	5.36	5.36	-122.31	-151.03	-238.83	282.58	271.86	10.71	26.378	
1,600.00	1,600.00	1,600.40	1,600.40	5.53	5.54	-122.31	-151.03	-238.83	282.58	271.51	11.07	25.527	
1,650.00	1,650.00	1,650.40	1,650.40	5.71	5.71	-122.31	-151.03	-238.83	282.58	271.15	11.43	24.729	
1,700.00	1,700.00	1,700.40	1,700.40	5.89	5.89	-122.31	-151.03	-238.83	282.58	270.79	11.78	23.980	
1,750.00	1,750.00	1,750.40	1,750.40	6.07	6.07	-122.31	-151.03	-238.83	282.58	270.44	12.14	23.274	
1,800.00	1,800.00	1,800.40	1,800.40	6.25	6.25	-122.31	-151.03	-238.83	282.58	270.08	12.50	22.609	
1,850.00	1,850.00	1,850.40	1,850.40	6.43	6.43	-122.31	-151.03	-238.83	282.58	269.72	12.86	21.981	
1,900.00	1,900.00	1,900.40	1,900.40	6.61	6.61	-122.31	-151.03	-238.83	282.58	269.36	13.21	21.386	
1,950.00	1,950.00	1,950.40	1,950.40	6.78	6.79	-122.31	-151.03	-238.83	282.58	269.01	13.57	20.823	
2,000.00	2,000.00	2,000.40	2,000.40	6.96	6.96	-122.31	-151.03	-238.83	282.58	268.65	13.93	20.288	
2,050.00	2,050.00	2,050.40	2,050.40	7.14	7.14	-122.31	-151.03	-238.83	282.58	268.29	14.29	19.780	
2,100.00	2,100.00	2,100.40	2,100.40	7.32	7.32	-122.31	-151.03	-238.83	282.58	267.93	14.64	19.297	
2,150.00	2,150.00	2,150.40	2,150.40	7.50	7.50	-122.31	-151.03	-238.83	282.58	267.58	15.00	18.837	
2,200.00	2,200.00	2,200.40	2,200.40	7.68	7.68	-122.31	-151.03	-238.83	282.58	267.22	15.36	18.399	
2,250.00	2,250.00	2,250.40	2,250.40	7.86	7.86	-122.31	-151.03	-238.83	282.58	266.86	15.72	17.980	
2,300.00	2,300.00	2,300.40	2,300.40	8.04	8.04	-122.31	-151.03	-238.83	282.58	266.50	16.07	17.580	
2,350.00	2,350.00	2,350.40	2,350.40	8.22	8.22	-122.31	-151.03	-238.83	282.58	266.15	16.43	17.197	
2,400.00	2,400.00	2,400.40	2,400.40	8.39	8.40	-122.31	-151.03	-238.83	282.58	265.79	16.79	16.830	
2,450.00	2,450.00	2,450.40	2,450.40	8.57	8.57	-122.31	-151.03	-238.83	282.58	265.43	17.15	16.479	
2,500.00	2,500.00	2,500.42	2,500.42	8.75	8.75	-122.31	-151.03	-238.83	282.58	265.07	17.51	16.142	
2,550.00	2,550.00	2,553.01	2,553.01	8.93	8.94	-169.22	-150.89	-238.63	282.56	264.69	17.87	15.813	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	2,599.99	2,605.61	2,605.60	9.11	9.13	-169.24	-150.49	-238.02	282.51	264.28	18.23	15.497	
2,650.00	2,649.98	2,658.20	2,658.18	9.28	9.31	-169.28	-149.81	-237.02	282.43	263.84	18.59	15.195	
2,700.00	2,699.96	2,710.79	2,710.74	9.46	9.49	-169.33	-148.87	-235.61	282.23	263.28	18.94	14.899	
2,750.00	2,749.94	2,763.37	2,763.28	9.64	9.68	-169.37	-147.66	-233.80	281.59	262.29	19.30	14.592	
2,800.00	2,799.92	2,815.93	2,815.77	9.81	9.86	-169.42	-146.18	-231.60	280.49	260.84	19.65	14.274	
2,850.00	2,849.90	2,865.92	2,865.69	9.99	10.04	-169.46	-144.65	-229.31	279.16	259.15	20.00	13.956	
2,900.00	2,899.88	2,915.90	2,915.59	10.17	10.22	-169.50	-143.11	-227.02	277.83	257.47	20.35	13.649	
2,950.00	2,949.86	2,965.89	2,965.50	10.34	10.39	-169.54	-141.58	-224.73	276.50	255.79	20.71	13.353	
3,000.00	2,999.84	3,015.87	3,015.40	10.52	10.57	-169.59	-140.05	-222.44	275.17	254.11	21.06	13.066	
3,050.00	3,049.81	3,065.85	3,065.31	10.70	10.75	-169.63	-138.51	-220.15	273.84	252.43	21.41	12.789	
3,100.00	3,099.79	3,115.83	3,115.22	10.88	10.93	-169.67	-136.98	-217.86	272.51	250.75	21.77	12.520	
3,150.00	3,149.77	3,165.81	3,165.12	11.05	11.10	-169.72	-135.44	-215.57	271.19	249.07	22.12	12.260	
3,200.00	3,199.75	3,215.80	3,215.03	11.23	11.28	-169.76	-133.91	-213.28	269.86	247.38	22.47	12.008	
3,250.00	3,249.73	3,265.78	3,264.93	11.41	11.46	-169.81	-132.37	-211.00	268.53	245.70	22.83	11.764	
3,300.00	3,299.71	3,315.76	3,314.84	11.59	11.64	-169.85	-130.84	-208.71	267.20	244.02	23.18	11.527	
3,350.00	3,349.69	3,365.74	3,364.74	11.76	11.81	-169.90	-129.31	-206.42	265.87	242.34	23.54	11.297	
3,400.00	3,399.67	3,415.72	3,414.65	11.94	11.99	-169.95	-127.77	-204.13	264.55	240.66	23.89	11.074	
3,450.00	3,449.65	3,465.70	3,464.56	12.12	12.17	-169.99	-126.24	-201.84	263.22	238.98	24.24	10.857	
3,500.00	3,499.62	3,515.69	3,514.46	12.30	12.35	-170.04	-124.70	-199.55	261.89	237.29	24.60	10.647	
3,550.00	3,549.60	3,565.67	3,564.37	12.48	12.53	-170.09	-123.17	-197.26	260.57	235.61	24.95	10.442	
3,600.00	3,599.58	3,615.65	3,614.27	12.65	12.70	-170.14	-121.64	-194.97	259.24	233.93	25.31	10.243	
3,650.00	3,649.56	3,665.63	3,664.18	12.83	12.88	-170.19	-120.10	-192.68	257.91	232.25	25.66	10.050	
3,700.00	3,699.54	3,715.61	3,714.09	13.01	13.06	-170.23	-118.57	-190.39	256.59	230.57	26.02	9.862	
3,750.00	3,749.52	3,765.60	3,763.99	13.19	13.24	-170.28	-117.03	-188.11	255.26	228.89	26.37	9.679	
3,800.00	3,799.50	3,815.58	3,813.90	13.37	13.42	-170.34	-115.50	-185.82	253.94	227.21	26.73	9.500	
3,850.00	3,849.48	3,865.56	3,863.80	13.54	13.60	-170.39	-113.97	-183.53	252.61	225.53	27.08	9.327	
3,900.00	3,899.46	3,915.54	3,913.71	13.72	13.78	-170.44	-112.43	-181.24	251.28	223.84	27.44	9.157	
3,950.00	3,949.44	3,965.52	3,963.62	13.90	13.96	-170.49	-110.90	-178.95	249.96	222.16	27.80	8.993	
4,000.00	3,999.41	4,015.51	4,013.52	14.08	14.14	-170.54	-109.36	-176.66	248.63	220.48	28.15	8.832	
4,050.00	4,049.39	4,065.49	4,063.43	14.26	14.32	-170.60	-107.83	-174.37	247.31	218.80	28.51	8.675	
4,100.00	4,099.37	4,115.47	4,113.33	14.44	14.50	-170.65	-106.29	-172.08	245.99	217.12	28.86	8.522	
4,150.00	4,149.35	4,165.45	4,163.24	14.61	14.68	-170.70	-104.76	-169.79	244.66	215.44	29.22	8.373	
4,200.00	4,199.33	4,215.43	4,213.14	14.79	14.86	-170.76	-103.23	-167.50	243.34	213.76	29.58	8.227	
4,250.00	4,249.31	4,265.42	4,263.05	14.97	15.03	-170.81	-101.69	-165.22	242.01	212.08	29.93	8.085	
4,300.00	4,299.29	4,315.40	4,312.96	15.15	15.21	-170.87	-100.16	-162.93	240.69	210.40	30.29	7.946	
4,350.00	4,349.27	4,365.38	4,362.86	15.33	15.39	-170.93	-98.62	-160.64	239.37	208.72	30.65	7.811	
4,400.00	4,399.25	4,415.36	4,412.77	15.51	15.57	-170.98	-97.09	-158.35	238.04	207.04	31.00	7.678	
4,450.00	4,449.22	4,465.34	4,462.67	15.69	15.75	-171.04	-95.56	-156.06	236.72	205.36	31.36	7.549	
4,500.00	4,499.20	4,515.32	4,512.58	15.86	15.93	-171.10	-94.02	-153.77	235.40	203.68	31.72	7.422	
4,550.00	4,549.18	4,565.31	4,562.49	16.04	16.11	-171.16	-92.49	-151.48	234.07	202.00	32.07	7.298	
4,600.00	4,599.16	4,615.29	4,612.39	16.22	16.29	-171.22	-90.95	-149.19	232.75	200.32	32.43	7.177	
4,650.00	4,649.14	4,665.27	4,662.30	16.40	16.47	-171.28	-89.42	-146.90	231.43	198.64	32.79	7.059	
4,700.00	4,699.12	4,715.25	4,712.20	16.58	16.66	-171.34	-87.89	-144.61	230.11	196.96	33.14	6.943	
4,750.00	4,749.10	4,765.23	4,762.11	16.76	16.84	-171.40	-86.35	-142.33	228.79	195.29	33.50	6.829	
4,800.00	4,799.08	4,815.22	4,812.02	16.94	17.02	-171.47	-84.82	-140.04	227.47	193.61	33.86	6.718	
4,850.00	4,849.06	4,865.20	4,861.92	17.12	17.20	-171.53	-83.28	-137.75	226.14	191.93	34.21	6.610	
4,900.00	4,899.03	4,915.18	4,911.83	17.30	17.38	-171.59	-81.75	-135.46	224.82	190.25	34.57	6.503	
4,950.00	4,949.01	4,965.16	4,961.73	17.47	17.56	-171.66	-80.21	-133.17	223.50	188.57	34.93	6.399	
5,000.00	4,998.99	5,015.14	5,011.64	17.65	17.74	-171.72	-78.68	-130.88	222.18	186.90	35.29	6.297	
5,050.00	5,048.97	5,065.13	5,061.55	17.83	17.92	-171.79	-77.15	-128.59	220.86	185.22	35.64	6.196	
5,100.00	5,098.95	5,115.11	5,111.45	18.01	18.10	-171.86	-75.61	-126.30	219.54	183.54	36.00	6.098	
5,150.00	5,148.93	5,165.09	5,161.36	18.19	18.28	-171.93	-74.08	-124.01	218.23	181.87	36.36	6.002	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	5,198.91	5,215.07	5,211.26	18.37	18.46	-172.00	-72.54	-121.72	216.91	180.19	36.72	5.908	
5,250.00	5,248.89	5,265.05	5,261.17	18.55	18.64	-172.07	-71.01	-119.44	215.59	178.51	37.07	5.815	
5,300.00	5,298.87	5,315.04	5,311.07	18.73	18.82	-172.14	-69.48	-117.15	214.27	176.84	37.43	5.724	
5,350.00	5,348.84	5,365.02	5,360.98	18.91	19.00	-172.21	-67.94	-114.86	212.95	175.16	37.79	5.635	
5,400.00	5,398.82	5,415.00	5,410.89	19.09	19.18	-172.28	-66.41	-112.57	211.63	173.49	38.15	5.548	
5,450.00	5,448.80	5,464.98	5,460.79	19.27	19.36	-172.35	-64.87	-110.28	210.32	171.81	38.50	5.462	
5,500.00	5,498.78	5,514.96	5,510.70	19.44	19.54	-172.43	-63.34	-107.99	209.00	170.14	38.86	5.378	
5,550.00	5,548.76	5,564.95	5,560.60	19.62	19.73	-172.50	-61.81	-105.70	207.68	168.46	39.22	5.295	
5,600.00	5,598.74	5,614.93	5,610.51	19.80	19.91	-172.58	-60.27	-103.41	206.37	166.79	39.58	5.214	
5,650.00	5,648.72	5,664.91	5,660.42	19.98	20.09	-172.66	-58.74	-101.12	205.05	165.12	39.94	5.135	
5,700.00	5,698.70	5,714.89	5,710.32	20.16	20.27	-172.73	-57.20	-98.83	203.74	163.44	40.29	5.056	
5,750.00	5,748.68	5,764.87	5,760.23	20.34	20.45	-172.81	-55.67	-96.55	202.42	161.77	40.65	4.979	Alert
5,800.00	5,798.65	5,814.85	5,810.13	20.52	20.63	-172.89	-54.13	-94.26	201.11	160.10	41.01	4.904	Alert
5,850.00	5,848.63	5,864.84	5,860.04	20.70	20.81	-172.98	-52.60	-91.97	199.79	158.42	41.37	4.830	Alert
5,900.00	5,898.61	5,914.82	5,909.95	20.88	20.99	-173.06	-51.07	-89.68	198.48	156.75	41.73	4.757	Alert
5,950.00	5,948.59	5,964.80	5,959.85	21.06	21.17	-173.14	-49.53	-87.39	197.17	155.08	42.08	4.685	Alert
6,000.00	5,998.57	6,014.78	6,009.76	21.24	21.36	-173.23	-48.00	-85.10	195.85	153.41	42.44	4.615	Alert
6,050.00	6,048.55	6,064.76	6,059.66	21.42	21.54	-173.31	-46.46	-82.81	194.54	151.74	42.80	4.545	Alert
6,100.00	6,098.53	6,114.75	6,109.57	21.60	21.72	-173.40	-44.93	-80.52	193.23	150.07	43.16	4.477	Alert
6,150.00	6,148.51	6,164.73	6,159.48	21.77	21.90	-173.49	-43.40	-78.23	191.92	148.40	43.52	4.410	Alert
6,200.00	6,198.49	6,214.71	6,209.38	21.95	22.08	-173.58	-41.86	-75.94	190.61	146.73	43.88	4.344	Alert
6,250.00	6,248.46	6,264.69	6,259.29	22.13	22.26	-173.67	-40.33	-73.65	189.29	145.06	44.23	4.279	Alert
6,300.00	6,298.44	6,314.67	6,309.19	22.31	22.44	-173.76	-38.79	-71.37	187.98	143.39	44.59	4.216	Alert
6,350.00	6,348.42	6,364.66	6,359.10	22.49	22.62	-173.85	-37.26	-69.08	186.68	141.72	44.95	4.153	Alert
6,400.00	6,398.40	6,414.64	6,409.00	22.67	22.80	-173.95	-35.73	-66.79	185.37	140.06	45.31	4.091	Alert
6,450.00	6,448.38	6,464.62	6,458.91	22.85	22.99	-174.04	-34.19	-64.50	184.06	138.39	45.67	4.030	Alert
6,500.00	6,498.36	6,514.60	6,508.82	23.03	23.17	-174.14	-32.66	-62.21	182.75	136.72	46.03	3.971	Alert
6,550.00	6,548.34	6,564.58	6,558.72	23.21	23.35	-174.24	-31.12	-59.92	181.44	135.06	46.38	3.912	Alert
6,600.00	6,598.32	6,614.57	6,608.63	23.39	23.53	-174.34	-29.59	-57.63	180.13	133.39	46.74	3.854	Alert
6,650.00	6,648.30	6,664.55	6,658.53	23.57	23.71	-174.44	-28.05	-55.34	178.83	131.73	47.10	3.797	Alert
6,700.00	6,698.27	6,714.53	6,708.44	23.75	23.89	-174.54	-26.52	-53.05	177.52	130.06	47.46	3.740	Alert
6,750.00	6,748.25	6,764.51	6,758.35	23.93	24.07	-174.65	-24.99	-50.76	176.22	128.40	47.82	3.685	Alert
6,800.00	6,798.23	6,814.49	6,808.25	24.11	24.26	-174.75	-23.45	-48.48	174.91	126.73	48.18	3.631	Alert
6,850.00	6,848.21	6,864.48	6,858.16	24.29	24.44	-174.86	-21.92	-46.19	173.61	125.07	48.54	3.577	Alert
6,900.00	6,898.19	6,914.46	6,908.06	24.47	24.62	-174.97	-20.38	-43.90	172.30	123.41	48.90	3.524	Alert
6,950.00	6,948.17	6,964.44	6,957.97	24.65	24.80	-175.08	-18.85	-41.61	171.00	121.75	49.25	3.472	Alert
7,000.00	6,998.15	7,014.42	7,007.88	24.83	24.98	-175.19	-17.32	-39.32	169.70	120.09	49.61	3.420	Alert
7,050.00	7,048.13	7,064.40	7,057.78	25.00	25.16	-175.31	-15.78	-37.03	168.40	118.43	49.97	3.370	Alert
7,100.00	7,098.11	7,114.38	7,107.69	25.18	25.35	-175.42	-14.25	-34.74	167.10	116.77	50.33	3.320	Alert
7,150.00	7,148.08	7,164.37	7,157.59	25.36	25.53	-175.54	-12.71	-32.45	165.80	115.11	50.69	3.271	Alert
7,200.00	7,198.06	7,214.35	7,207.50	25.54	25.71	-175.66	-11.18	-30.16	164.50	113.45	51.05	3.222	Alert
7,250.00	7,248.04	7,264.33	7,257.40	25.72	25.89	-175.78	-9.65	-27.87	163.20	111.79	51.41	3.175	Alert
7,300.00	7,298.02	7,314.31	7,307.31	25.90	26.07	-175.90	-8.11	-25.59	161.90	110.13	51.77	3.128	Alert
7,350.00	7,348.00	7,364.29	7,357.22	26.08	26.25	-176.03	-6.58	-23.30	160.60	108.48	52.13	3.081	Alert
7,400.00	7,397.98	7,414.28	7,407.12	26.26	26.43	-176.16	-5.04	-21.01	159.31	106.82	52.48	3.035	Alert
7,450.00	7,447.96	7,464.26	7,457.03	26.44	26.62	-176.29	-3.51	-18.72	158.01	105.17	52.84	2.990	Alert
7,500.00	7,497.94	7,514.24	7,506.93	26.62	26.80	-176.42	-1.97	-16.43	156.71	103.51	53.20	2.946	Alert
7,550.00	7,547.92	7,564.22	7,556.84	26.80	26.98	-176.55	-0.44	-14.14	155.42	101.86	53.56	2.902	Alert
7,600.00	7,597.89	7,614.20	7,606.75	26.98	27.16	-176.69	1.09	-11.85	154.13	100.21	53.92	2.858	Alert
7,650.00	7,647.87	7,664.19	7,656.65	27.16	27.34	-176.83	2.63	-9.56	152.84	98.56	54.28	2.816	Alert
7,700.00	7,697.85	7,714.17	7,706.56	27.34	27.52	-176.97	4.16	-7.27	151.54	96.90	54.64	2.774	Alert
7,750.00	7,747.83	7,764.15	7,756.46	27.52	27.71	-177.11	5.70	-4.98	150.25	95.26	55.00	2.732	Alert

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	7,797.81	7,813.50	7,805.74	27.70	27.89	-177.26	7.19	-2.75	149.00	93.64	55.36	2.691	Alert
7,850.00	7,847.79	7,861.63	7,853.82	27.88	28.06	-177.38	8.39	-0.97	148.24	92.52	55.72	2.660	Alert
7,885.92	7,883.69	7,896.21	7,888.39	28.01	28.18	-177.45	9.03	0.00	148.07	92.10	55.98	2.645	Alert, CC
7,900.00	7,897.77	7,909.78	7,901.94	28.06	28.23	-177.47	9.24	0.31	148.10	92.02	56.08	2.641	Alert, ES
7,950.00	7,947.75	7,957.92	7,950.08	28.24	28.40	-177.54	9.76	1.08	148.59	92.17	56.42	2.634	Alert, SF
8,000.00	7,997.73	8,009.72	7,998.13	28.42	28.59	-177.57	9.94	1.35	149.70	92.93	56.77	2.637	Alert
8,050.00	8,047.70	8,055.95	8,048.10	28.60	28.75	-177.60	9.94	1.35	151.16	94.04	57.12	2.646	Alert
8,100.00	8,097.68	8,105.93	8,098.08	28.78	28.93	-177.62	9.94	1.35	152.61	95.13	57.47	2.655	Alert
8,150.00	8,147.66	8,155.91	8,148.06	28.96	29.10	-177.64	9.94	1.35	154.06	96.23	57.83	2.664	Alert
8,200.00	8,197.64	8,205.88	8,198.04	29.13	29.28	-177.66	9.94	1.35	155.51	97.32	58.18	2.673	Alert
8,250.00	8,247.62	8,255.86	8,248.02	29.31	29.45	-177.69	9.94	1.35	156.96	98.42	58.54	2.681	Alert
8,300.00	8,297.60	8,305.84	8,298.00	29.49	29.63	-177.71	9.94	1.35	158.41	99.52	58.90	2.690	Alert
8,350.00	8,347.58	8,355.82	8,347.98	29.67	29.81	-177.73	9.94	1.35	159.86	100.61	59.25	2.698	Alert
8,400.00	8,397.56	8,405.80	8,397.96	29.85	29.98	-177.75	9.94	1.35	161.31	101.71	59.61	2.706	Alert
8,450.00	8,447.54	8,455.78	8,447.94	30.03	30.16	-177.77	9.94	1.35	162.77	102.80	59.96	2.714	Alert
8,500.00	8,497.51	8,505.76	8,497.91	30.21	30.33	-177.79	9.94	1.35	164.22	103.90	60.32	2.722	Alert
8,550.00	8,547.49	8,555.74	8,547.89	30.39	30.51	-177.81	9.94	1.35	165.67	104.99	60.68	2.730	Alert
8,600.00	8,597.47	8,605.72	8,597.87	30.57	30.69	-177.83	9.94	1.35	167.12	106.09	61.03	2.738	Alert
8,650.00	8,647.45	8,649.91	8,642.06	30.75	30.84	-178.05	9.16	1.36	169.18	107.89	61.30	2.760	Alert
8,700.00	8,697.43	8,691.41	8,683.39	30.93	30.97	-178.98	5.48	1.38	173.56	112.14	61.42	2.826	Alert
8,750.00	8,747.41	8,732.06	8,723.50	31.11	31.10	179.45	-1.00	1.42	180.44	119.03	61.40	2.938	Alert
8,800.00	8,797.39	8,771.48	8,761.87	31.29	31.22	177.43	-10.00	1.48	189.95	128.72	61.23	3.102	Alert
8,850.00	8,847.37	8,809.38	8,798.10	31.47	31.33	175.14	-21.11	1.55	202.22	141.34	60.88	3.322	Alert
8,900.00	8,897.35	8,845.53	8,831.90	31.65	31.43	172.75	-33.92	1.63	217.32	156.97	60.35	3.601	Alert
8,950.00	8,947.33	8,879.79	8,863.13	31.83	31.52	170.39	-48.00	1.72	235.24	175.60	59.64	3.944	Alert
9,000.00	8,997.30	8,912.08	8,891.73	32.01	31.60	168.15	-62.96	1.81	255.90	197.10	58.80	4.352	Alert
9,050.00	9,047.28	8,942.36	8,917.76	32.19	31.67	166.07	-78.44	1.91	279.17	221.31	57.86	4.825	Alert
9,100.00	9,097.26	8,970.68	8,941.33	32.37	31.73	164.18	-94.13	2.01	304.85	248.00	56.85	5.363	
9,150.00	9,147.24	9,000.00	8,964.88	32.55	31.80	162.31	-111.59	2.12	332.78	276.75	56.03	5.939	
9,200.00	9,197.22	9,021.67	8,981.70	32.73	31.84	160.99	-125.25	2.21	362.68	307.91	54.77	6.622	
9,250.00	9,247.20	9,050.00	9,002.88	32.91	31.90	159.34	-144.06	2.32	394.48	340.34	54.14	7.286	
9,300.00	9,297.18	9,065.78	9,014.27	33.09	31.92	158.46	-154.98	2.39	427.78	375.02	52.76	8.108	
9,350.00	9,347.16	9,085.52	9,028.09	33.27	31.96	157.41	-169.08	2.48	462.59	410.77	51.82	8.927	
9,400.00	9,397.14	9,100.00	9,037.91	33.45	31.99	156.67	-179.71	2.55	498.73	448.04	50.70	9.838	
9,450.00	9,447.11	9,120.96	9,051.64	33.63	32.02	155.65	-195.54	2.65	535.98	485.88	50.11	10.697	
9,500.00	9,497.09	9,136.85	9,061.66	33.81	32.05	154.91	-207.88	2.73	574.29	524.96	49.33	11.641	
9,550.00	9,547.07	9,150.00	9,069.70	33.99	32.08	154.32	-218.29	2.79	613.53	565.00	48.53	12.642	
9,600.00	9,597.05	9,165.48	9,078.84	34.17	32.12	153.65	-230.78	2.87	653.60	605.64	47.96	13.629	
9,650.00	9,647.03	9,178.38	9,086.20	34.35	32.15	153.11	-241.37	2.94	694.41	647.06	47.35	14.666	
9,700.00	9,697.01	9,200.00	9,098.00	34.53	32.20	152.26	-259.49	3.05	736.04	688.83	47.21	15.589	
9,750.00	9,746.99	9,200.00	9,098.00	34.71	32.20	152.26	-259.49	3.05	778.00	731.78	46.21	16.835	
9,800.00	9,796.97	9,200.00	9,098.00	34.88	32.20	152.26	-259.49	3.05	820.86	775.52	45.34	18.105	
9,850.00	9,846.95	9,222.30	9,109.44	35.06	32.26	151.43	-278.63	3.17	863.77	818.36	45.40	19.024	
9,900.00	9,896.92	9,231.66	9,114.02	35.24	32.28	151.09	-286.78	3.23	907.35	862.33	45.02	20.153	
9,950.00	9,946.90	9,250.00	9,122.60	35.42	32.33	150.46	-303.00	3.33	951.47	906.48	45.00	21.145	
10,000.00	9,996.88	9,250.00	9,122.60	35.60	32.33	150.46	-303.00	3.33	995.72	951.31	44.41	22.422	
10,050.00	10,046.86	9,250.00	9,122.60	35.78	32.33	150.46	-303.00	3.33	1,040.48	996.59	43.89	23.706	
10,100.00	10,096.84	9,250.00	9,122.60	35.96	32.33	150.46	-303.00	3.33	1,085.71	1,042.26	43.44	24.992	
10,150.00	10,146.82	9,271.01	9,131.79	36.14	32.38	149.78	-321.89	3.45	1,130.75	1,087.13	43.62	25.923	
10,200.00	10,196.80	9,277.65	9,134.55	36.32	32.40	149.57	-327.93	3.48	1,176.32	1,132.90	43.42	27.090	
10,250.00	10,246.78	9,283.95	9,137.10	36.50	32.42	149.38	-333.68	3.52	1,222.14	1,178.89	43.25	28.258	
10,300.00	10,296.76	9,300.00	9,143.32	36.68	32.46	148.90	-348.48	3.61	1,268.30	1,224.97	43.34	29.266	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1

Offset Site Error: 5.00 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	10,346.73	9,300.00	9,143.32	36.86	32.46	148.90	-348.48	3.61	1,314.44	1,271.38	43.07	30.522	
10,400.00	10,396.71	9,300.00	9,143.32	37.04	32.46	148.90	-348.48	3.61	1,360.86	1,318.03	42.83	31.773	
10,450.00	10,446.69	9,300.00	9,143.32	37.22	32.46	148.90	-348.48	3.61	1,407.52	1,364.89	42.63	33.016	
10,500.00	10,496.67	9,300.00	9,143.32	37.40	32.46	148.90	-348.48	3.61	1,454.40	1,411.94	42.46	34.253	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1

Offset Site Error: 5.00 ft

Survey Program: 0-MWD+IFR1

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	8.60	8.60	0.50	0.50	102.04	-146.81	688.48	703.96				
50.00	50.00	58.60	58.60	0.50	0.51	102.04	-146.81	688.48	703.96	702.95	1.01	698.255	
100.00	100.00	108.60	108.60	0.52	0.53	102.04	-146.81	688.48	703.96	702.92	1.04	674.061	
150.00	150.00	158.60	158.60	0.59	0.61	102.04	-146.81	688.48	703.96	702.76	1.20	587.894	
200.00	200.00	208.60	208.60	0.70	0.72	102.04	-146.81	688.48	703.96	702.53	1.43	493.598	
250.00	250.00	258.60	258.60	0.84	0.86	102.04	-146.81	688.48	703.96	702.26	1.70	414.007	
300.00	300.00	308.60	308.60	0.99	1.01	102.04	-146.81	688.48	703.96	701.96	2.00	351.738	
350.00	350.00	358.60	358.60	1.15	1.17	102.04	-146.81	688.48	703.96	701.64	2.32	303.589	
400.00	400.00	408.60	408.60	1.31	1.34	102.04	-146.81	688.48	703.96	701.31	2.65	265.974	
450.00	450.00	458.60	458.60	1.48	1.51	102.04	-146.81	688.48	703.96	700.98	2.98	236.094	
500.00	500.00	508.60	508.60	1.65	1.68	102.04	-146.81	688.48	703.96	700.64	3.32	211.936	
550.00	550.00	558.60	558.60	1.82	1.85	102.04	-146.81	688.48	703.96	700.30	3.67	192.076	
600.00	600.00	608.60	608.60	1.99	2.02	102.04	-146.81	688.48	703.96	699.95	4.01	175.505	
650.00	650.00	658.60	658.60	2.16	2.19	102.04	-146.81	688.48	703.96	699.60	4.36	161.491	
700.00	700.00	708.60	708.60	2.34	2.37	102.04	-146.81	688.48	703.96	699.25	4.71	149.500	
750.00	750.00	758.60	758.60	2.51	2.54	102.04	-146.81	688.48	703.96	698.90	5.06	139.133	
800.00	800.00	808.60	808.60	2.69	2.72	102.04	-146.81	688.48	703.96	698.55	5.41	130.086	
850.00	850.00	858.60	858.60	2.87	2.90	102.04	-146.81	688.48	703.96	698.20	5.76	122.127	
900.00	900.00	908.60	908.60	3.04	3.07	102.04	-146.81	688.48	703.96	697.84	6.12	115.073	
950.00	950.00	958.60	958.60	3.22	3.25	102.04	-146.81	688.48	703.96	697.49	6.47	108.780	
1,000.00	1,000.00	1,008.60	1,008.60	3.40	3.43	102.04	-146.81	688.48	703.96	697.13	6.83	103.132	
1,050.00	1,050.00	1,058.60	1,058.60	3.58	3.61	102.04	-146.81	688.48	703.96	696.78	7.18	98.036	
1,100.00	1,100.00	1,108.60	1,108.60	3.75	3.78	102.04	-146.81	688.48	703.96	696.42	7.54	93.416	
1,150.00	1,150.00	1,158.60	1,158.60	3.93	3.96	102.04	-146.81	688.48	703.96	696.07	7.89	89.208	
1,200.00	1,200.00	1,208.60	1,208.60	4.11	4.14	102.04	-146.81	688.48	703.96	695.71	8.25	85.360	
1,250.00	1,250.00	1,258.60	1,258.60	4.29	4.32	102.04	-146.81	688.48	703.96	695.36	8.60	81.829	
1,300.00	1,300.00	1,308.60	1,308.60	4.46	4.49	102.04	-146.81	688.48	703.96	695.00	8.96	78.576	
1,350.00	1,350.00	1,358.60	1,358.60	4.64	4.67	102.04	-146.81	688.48	703.96	694.64	9.32	75.570	
1,400.00	1,400.00	1,408.60	1,408.60	4.82	4.85	102.04	-146.81	688.48	703.96	694.29	9.67	72.785	
1,450.00	1,450.00	1,458.60	1,458.60	5.00	5.03	102.04	-146.81	688.48	703.96	693.93	10.03	70.197	
1,500.00	1,500.00	1,508.60	1,508.60	5.18	5.21	102.04	-146.81	688.48	703.96	693.58	10.39	67.785	
1,550.00	1,550.00	1,558.60	1,558.60	5.36	5.39	102.04	-146.81	688.48	703.96	693.22	10.74	65.533	
1,600.00	1,600.00	1,608.60	1,608.60	5.53	5.56	102.04	-146.81	688.48	703.96	692.86	11.10	63.426	
1,650.00	1,650.00	1,658.60	1,658.60	5.71	5.74	102.04	-146.81	688.48	703.96	692.50	11.46	61.449	
1,700.00	1,700.00	1,708.60	1,708.60	5.89	5.92	102.04	-146.81	688.48	703.96	692.15	11.81	59.591	
1,750.00	1,750.00	1,758.60	1,758.60	6.07	6.10	102.04	-146.81	688.48	703.96	691.79	12.17	57.842	
1,800.00	1,800.00	1,808.60	1,808.60	6.25	6.28	102.04	-146.81	688.48	703.96	691.43	12.53	56.192	
1,850.00	1,850.00	1,858.60	1,858.60	6.43	6.46	102.04	-146.81	688.48	703.96	691.08	12.89	54.634	
1,900.00	1,900.00	1,908.60	1,908.60	6.61	6.64	102.04	-146.81	688.48	703.96	690.72	13.24	53.159	
1,950.00	1,950.00	1,958.60	1,958.60	6.78	6.82	102.04	-146.81	688.48	703.96	690.36	13.60	51.762	
2,000.00	2,000.00	2,008.60	2,008.60	6.96	6.99	102.04	-146.81	688.48	703.96	690.00	13.96	50.436	
2,050.00	2,050.00	2,058.60	2,058.60	7.14	7.17	102.04	-146.81	688.48	703.96	689.65	14.32	49.176	
2,100.00	2,100.00	2,108.60	2,108.60	7.32	7.35	102.04	-146.81	688.48	703.96	689.29	14.67	47.978	
2,150.00	2,150.00	2,158.60	2,158.60	7.50	7.53	102.04	-146.81	688.48	703.96	688.93	15.03	46.836	
2,200.00	2,200.00	2,208.60	2,208.60	7.68	7.71	102.04	-146.81	688.48	703.96	688.57	15.39	45.747	
2,250.00	2,250.00	2,258.60	2,258.60	7.86	7.89	102.04	-146.81	688.48	703.96	688.21	15.75	44.708	
2,300.00	2,300.00	2,308.60	2,308.60	8.04	8.07	102.04	-146.81	688.48	703.96	687.86	16.10	43.715	
2,350.00	2,350.00	2,358.60	2,358.60	8.22	8.25	102.04	-146.81	688.48	703.96	687.50	16.46	42.765	
2,400.00	2,400.00	2,408.60	2,408.60	8.39	8.42	102.04	-146.81	688.48	703.96	687.14	16.82	41.855	
2,450.00	2,450.00	2,458.60	2,458.60	8.57	8.60	102.04	-146.81	688.48	703.96	686.78	17.18	40.983	
2,500.00	2,500.00	2,510.16	2,510.16	8.75	8.79	102.04	-146.81	688.47	703.95	686.41	17.54	40.135	
2,550.00	2,550.00	2,569.22	2,569.22	8.93	8.99	55.16	-146.71	687.97	703.39	685.47	17.92	39.246	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 ft

Survey Program: 0-MWD+IFR1 — **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	2,599.99	2,628.25	2,628.23	9.11	9.20	55.22	-146.46	686.72	701.94	683.64	18.30	38.356	
2,650.00	2,649.98	2,687.19	2,687.14	9.28	9.40	55.33	-146.07	684.73	699.60	680.93	18.67	37.466	
2,700.00	2,699.96	2,746.04	2,745.92	9.46	9.61	55.46	-145.52	682.01	696.43	677.39	19.04	36.573	
2,750.00	2,749.94	2,804.78	2,804.55	9.64	9.81	55.58	-144.84	678.55	692.61	673.20	19.41	35.686	
2,800.00	2,799.92	2,863.39	2,863.01	9.81	10.02	55.70	-144.01	674.36	688.15	668.38	19.77	34.806	
2,850.00	2,849.90	2,921.85	2,921.26	9.99	10.22	55.83	-143.03	669.45	683.05	662.92	20.13	33.930	
2,900.00	2,899.88	2,980.16	2,979.28	10.17	10.42	55.96	-141.92	663.84	677.33	656.85	20.49	33.061	
2,950.00	2,949.86	3,038.28	3,037.04	10.34	10.63	56.10	-140.66	657.52	670.98	650.14	20.84	32.196	
3,000.00	2,999.84	3,096.20	3,094.52	10.52	10.83	56.24	-139.27	650.50	664.01	642.82	21.19	31.336	
3,050.00	3,049.81	3,153.91	3,151.70	10.70	11.03	56.38	-137.74	642.81	656.42	634.88	21.54	30.480	
3,100.00	3,099.79	3,211.39	3,208.53	10.88	11.24	56.53	-136.08	634.44	648.21	626.33	21.88	29.628	
3,150.00	3,149.77	3,268.25	3,256.82	11.05	11.41	56.67	-134.62	627.06	639.72	617.50	22.23	28.783	
3,200.00	3,199.75	3,309.51	3,305.48	11.23	11.59	56.80	-133.14	619.62	631.24	608.67	22.57	27.965	
3,250.00	3,249.73	3,358.76	3,354.15	11.41	11.76	56.94	-131.66	612.18	622.76	599.84	22.92	27.170	
3,300.00	3,299.71	3,408.01	3,402.81	11.59	11.94	57.09	-130.18	604.75	614.28	591.01	23.27	26.399	
3,350.00	3,349.69	3,457.26	3,451.48	11.76	12.11	57.24	-128.71	597.31	605.81	582.19	23.62	25.651	
3,400.00	3,399.67	3,506.52	3,500.14	11.94	12.29	57.39	-127.23	589.87	597.34	573.38	23.97	24.924	
3,450.00	3,449.65	3,555.77	3,548.81	12.12	12.47	57.55	-125.75	582.43	588.88	564.56	24.32	24.217	
3,500.00	3,499.62	3,605.02	3,597.47	12.30	12.65	57.71	-124.28	574.99	580.42	555.76	24.67	23.531	
3,550.00	3,549.60	3,654.27	3,646.14	12.48	12.82	57.88	-122.80	567.55	571.97	546.95	25.02	22.863	
3,600.00	3,599.58	3,703.53	3,694.80	12.65	13.00	58.05	-121.32	560.11	563.52	538.15	25.37	22.214	
3,650.00	3,649.56	3,752.78	3,743.47	12.83	13.18	58.23	-119.84	552.67	555.07	529.36	25.72	21.583	
3,700.00	3,699.54	3,802.03	3,792.13	13.01	13.36	58.41	-118.37	545.23	546.64	520.57	26.07	20.968	
3,750.00	3,749.52	3,851.28	3,840.80	13.19	13.54	58.60	-116.89	537.79	538.20	511.78	26.42	20.370	
3,800.00	3,799.50	3,900.54	3,889.46	13.37	13.72	58.79	-115.41	530.35	529.77	503.00	26.77	19.787	
3,850.00	3,849.48	3,949.79	3,938.13	13.54	13.90	58.99	-113.94	522.91	521.35	494.23	27.13	19.219	
3,900.00	3,899.46	4,000.96	3,986.79	13.72	14.09	59.20	-112.46	515.47	512.94	485.45	27.49	18.662	
3,950.00	3,949.44	4,048.29	4,035.46	13.90	14.26	59.41	-110.98	508.03	504.53	476.70	27.83	18.127	
4,000.00	3,999.41	4,102.46	4,084.12	14.08	14.46	59.63	-109.50	500.60	496.13	467.93	28.20	17.591	
4,050.00	4,049.39	4,146.80	4,132.79	14.26	14.62	59.86	-108.03	493.16	487.73	459.20	28.54	17.090	
4,100.00	4,099.37	4,196.05	4,181.45	14.44	14.80	60.10	-106.55	485.72	479.35	450.46	28.89	16.590	
4,150.00	4,149.35	4,245.30	4,230.12	14.61	14.98	60.34	-105.07	478.28	470.97	441.72	29.25	16.103	
4,200.00	4,199.33	4,294.55	4,278.78	14.79	15.16	60.60	-103.60	470.84	462.60	433.00	29.60	15.627	
4,250.00	4,249.31	4,343.81	4,327.45	14.97	15.34	60.86	-102.12	463.40	454.24	424.29	29.96	15.163	
4,300.00	4,299.29	4,406.94	4,376.11	15.15	15.58	61.13	-100.64	455.96	445.89	415.53	30.36	14.686	
4,350.00	4,349.27	4,442.31	4,424.78	15.33	15.71	61.42	-99.17	448.52	437.55	406.88	30.67	14.268	
4,400.00	4,399.25	4,508.44	4,473.44	15.51	15.95	61.71	-97.69	441.08	429.22	398.14	31.08	13.808	
4,450.00	4,449.22	4,540.82	4,522.11	15.69	16.07	62.02	-96.21	433.64	420.91	389.53	31.38	13.413	
4,500.00	4,499.20	4,590.07	4,570.77	15.86	16.25	62.34	-94.73	426.20	412.60	380.86	31.74	13.001	
4,550.00	4,549.18	4,639.32	4,619.44	16.04	16.44	62.67	-93.26	418.76	404.31	372.22	32.09	12.598	
4,600.00	4,599.16	4,688.57	4,668.10	16.22	16.62	63.01	-91.78	411.32	396.03	363.58	32.45	12.205	
4,650.00	4,649.14	4,737.82	4,716.76	16.40	16.80	63.37	-90.30	403.88	387.77	354.96	32.81	11.820	
4,700.00	4,699.12	4,787.08	4,765.43	16.58	16.99	63.75	-88.83	396.45	379.52	346.35	33.16	11.444	
4,750.00	4,749.10	4,836.33	4,814.09	16.76	17.17	64.14	-87.35	389.01	371.28	337.76	33.52	11.076	
4,800.00	4,799.08	4,885.58	4,862.76	16.94	17.35	64.55	-85.87	381.57	363.07	329.19	33.88	10.717	
4,850.00	4,849.06	4,934.83	4,911.42	17.12	17.53	64.98	-84.39	374.13	354.88	320.64	34.24	10.365	
4,900.00	4,899.03	4,984.09	4,960.09	17.30	17.72	65.43	-82.92	366.69	346.70	312.10	34.60	10.021	
4,950.00	4,949.01	5,033.34	5,008.75	17.47	17.90	65.90	-81.44	359.25	338.55	303.59	34.96	9.685	
5,000.00	4,998.99	5,082.59	5,057.42	17.65	18.09	66.40	-79.96	351.81	330.42	295.10	35.32	9.356	
5,050.00	5,048.97	5,131.84	5,106.08	17.83	18.27	66.91	-78.49	344.37	322.31	286.64	35.68	9.035	
5,100.00	5,098.95	5,181.10	5,154.75	18.01	18.45	67.46	-77.01	336.93	314.24	278.20	36.04	8.720	
5,150.00	5,148.93	5,230.35	5,203.41	18.19	18.64	68.03	-75.53	329.49	306.19	269.79	36.40	8.413	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 ft

Survey Program: 0-MWD+IFR1 — **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	5,198.91	5,279.60	5,252.08	18.37	18.82	68.64	-74.05	322.05	298.17	261.42	36.76	8.112	
5,250.00	5,248.89	5,328.85	5,300.74	18.55	19.01	69.28	-72.58	314.61	290.19	253.07	37.12	7.818	
5,300.00	5,298.87	5,378.10	5,349.41	18.73	19.19	69.95	-71.10	307.17	282.25	244.76	37.48	7.530	
5,350.00	5,348.84	5,427.36	5,398.07	18.91	19.37	70.66	-69.62	299.73	274.34	236.50	37.84	7.249	
5,400.00	5,398.82	5,476.61	5,446.74	19.09	19.56	71.42	-68.15	292.30	266.48	228.27	38.21	6.974	
5,450.00	5,448.80	5,525.86	5,495.40	19.27	19.74	72.22	-66.67	284.86	258.67	220.10	38.57	6.706	
5,500.00	5,498.78	5,575.11	5,544.07	19.44	19.93	73.07	-65.19	277.42	250.91	211.97	38.94	6.444	
5,550.00	5,548.76	5,624.37	5,592.73	19.62	20.11	73.97	-63.71	269.98	243.21	203.90	39.30	6.188	
5,600.00	5,598.74	5,673.62	5,641.40	19.80	20.30	74.93	-62.24	262.54	235.57	195.90	39.67	5.938	
5,650.00	5,648.72	5,722.87	5,690.06	19.98	20.48	75.96	-60.76	255.10	228.00	187.96	40.04	5.694	
5,700.00	5,698.70	5,772.12	5,738.73	20.16	20.67	77.05	-59.28	247.66	220.51	180.10	40.41	5.457	
5,750.00	5,748.68	5,821.38	5,787.39	20.34	20.85	78.22	-57.81	240.22	213.10	172.32	40.78	5.226	
5,800.00	5,798.65	5,870.63	5,836.06	20.52	21.04	79.47	-56.33	232.78	205.78	164.64	41.15	5.001	
5,850.00	5,848.63	5,919.88	5,884.72	20.70	21.22	80.82	-54.85	225.34	198.57	157.05	41.52	4.782	Alert
5,900.00	5,898.61	5,969.13	5,933.39	20.88	21.41	82.26	-53.38	217.90	191.48	149.58	41.90	4.570	Alert
5,950.00	5,948.59	6,018.38	5,982.05	21.06	21.59	83.81	-51.90	210.46	184.52	142.24	42.27	4.365	Alert
6,000.00	5,998.57	6,067.64	6,030.72	21.24	21.78	85.49	-50.42	203.02	177.70	135.05	42.65	4.166	Alert
6,050.00	6,048.55	6,116.89	6,079.38	21.42	21.96	87.29	-48.94	195.58	171.04	128.01	43.03	3.975	Alert
6,100.00	6,098.53	6,166.14	6,128.05	21.60	22.15	89.23	-47.47	188.15	164.57	121.15	43.41	3.791	Alert
6,150.00	6,148.51	6,215.39	6,176.71	21.77	22.33	91.33	-45.99	180.71	158.29	114.50	43.80	3.614	Alert
6,200.00	6,198.49	6,264.65	6,225.37	21.95	22.52	93.60	-44.51	173.27	152.25	108.07	44.19	3.446	Alert
6,250.00	6,248.46	6,313.90	6,274.04	22.13	22.71	96.04	-43.04	165.83	146.47	101.89	44.58	3.286	Alert
6,300.00	6,298.44	6,363.15	6,322.70	22.31	22.89	98.68	-41.56	158.39	140.97	96.00	44.97	3.135	Alert
6,350.00	6,348.42	6,412.40	6,371.37	22.49	23.08	101.52	-40.08	150.95	135.80	90.44	45.36	2.994	Alert
6,400.00	6,398.40	6,461.66	6,420.03	22.67	23.26	104.57	-38.60	143.51	130.99	85.24	45.76	2.863	Alert
6,450.00	6,448.38	6,510.91	6,468.70	22.85	23.45	107.84	-37.13	136.07	126.59	80.44	46.15	2.743	Alert
6,500.00	6,498.36	6,560.16	6,517.36	23.03	23.64	111.33	-35.65	128.63	122.64	76.08	46.55	2.634	Alert
6,550.00	6,548.34	6,609.41	6,566.03	23.21	23.82	115.03	-34.17	121.19	119.17	72.23	46.95	2.538	Alert
6,600.00	6,598.32	6,658.66	6,614.69	23.39	24.01	118.93	-32.70	113.75	116.25	68.91	47.34	2.456	Minor Risk
6,650.00	6,648.30	6,707.92	6,663.36	23.57	24.19	123.01	-31.22	106.31	113.90	66.17	47.73	2.386	Minor Risk
6,700.00	6,698.27	6,757.17	6,712.02	23.75	24.38	127.23	-29.74	98.87	112.16	64.05	48.11	2.331	Minor Risk
6,750.00	6,748.25	6,806.42	6,760.69	23.93	24.57	131.55	-28.26	91.43	111.07	62.58	48.49	2.291	Minor Risk
6,800.00	6,798.23	6,855.67	6,809.35	24.11	24.75	135.93	-26.79	84.00	110.64	61.78	48.86	2.265	Minor Risk
6,807.11	6,805.34	6,862.68	6,816.27	24.13	24.78	136.56	-26.58	82.94	110.63	61.73	48.91	2.262	Minor Risk, CC
6,850.00	6,848.21	6,904.93	6,858.02	24.29	24.94	140.32	-25.31	76.56	110.88	61.66	49.22	2.253	Minor Risk, ES, SF
6,900.00	6,898.19	6,954.18	6,906.68	24.47	25.13	144.67	-23.83	69.12	111.79	62.22	49.57	2.255	Minor Risk
6,950.00	6,948.17	7,003.43	6,955.35	24.65	25.31	148.92	-22.36	61.68	113.34	63.43	49.91	2.271	Minor Risk
7,000.00	6,998.15	7,052.68	7,004.01	24.83	25.50	153.04	-20.88	54.24	115.52	65.27	50.25	2.299	Minor Risk
7,050.00	7,048.13	7,101.94	7,052.68	25.00	25.68	156.99	-19.40	46.80	118.28	67.71	50.58	2.339	Minor Risk
7,100.00	7,098.11	7,151.19	7,101.34	25.18	25.87	160.75	-17.92	39.36	121.60	70.69	50.90	2.389	Minor Risk
7,150.00	7,148.08	7,200.44	7,150.01	25.36	26.06	164.30	-16.45	31.92	125.42	74.19	51.23	2.448	Minor Risk
7,200.00	7,198.06	7,249.69	7,198.67	25.54	26.24	167.64	-14.97	24.48	129.70	78.15	51.55	2.516	Alert
7,250.00	7,248.04	7,301.06	7,247.34	25.72	26.44	170.75	-13.49	17.04	134.40	82.51	51.88	2.590	Alert
7,300.00	7,298.02	7,348.20	7,296.00	25.90	26.62	173.65	-12.02	9.60	139.47	87.27	52.20	2.672	Alert
7,350.00	7,348.00	7,402.55	7,344.67	26.08	26.82	176.35	-10.54	2.16	144.87	92.33	52.55	2.757	Alert
7,400.00	7,397.98	7,446.70	7,393.33	26.26	26.99	178.85	-9.06	-5.28	150.58	97.72	52.86	2.849	Alert
7,450.00	7,447.96	7,504.05	7,442.00	26.44	27.21	-178.84	-7.58	-12.72	156.55	103.33	53.22	2.942	Alert
7,500.00	7,497.94	7,545.21	7,490.66	26.62	27.36	-176.69	-6.11	-20.15	162.76	109.24	53.52	3.041	Alert
7,550.00	7,547.92	7,605.54	7,539.33	26.80	27.59	-174.71	-4.63	-27.59	169.18	115.29	53.89	3.139	Alert
7,600.00	7,597.89	7,643.71	7,587.99	26.98	27.74	-172.87	-3.15	-35.03	175.79	121.60	54.19	3.244	Alert
7,650.00	7,647.87	7,692.96	7,636.65	27.16	27.93	-171.16	-1.68	-42.47	182.56	128.03	54.53	3.348	Alert
7,700.00	7,697.85	7,742.22	7,685.32	27.34	28.11	-169.57	-0.20	-49.91	189.49	134.62	54.87	3.453	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 ft

Survey Program: 0-MWD+IFR1 — **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
7,750.00	7,747.83	7,792.36	7,734.88	27.52	28.30	-168.09	1.29	-57.42	196.49	141.26	55.23	3.558	Alert
7,800.00	7,797.81	7,843.73	7,785.73	27.70	28.50	-166.78	2.70	-64.54	203.19	147.57	55.62	3.653	Alert
7,850.00	7,847.79	7,895.31	7,836.89	27.88	28.69	-165.68	3.99	-71.01	209.47	153.46	56.01	3.740	Alert
7,900.00	7,897.77	7,947.09	7,888.33	28.06	28.88	-164.76	5.14	-76.82	215.29	158.90	56.39	3.818	Alert
7,950.00	7,947.75	7,999.05	7,940.02	28.24	29.07	-164.00	6.17	-81.97	220.63	163.85	56.78	3.886	Alert
8,000.00	7,997.73	8,051.16	7,991.93	28.42	29.26	-163.38	7.05	-86.44	225.47	168.31	57.16	3.945	Alert
8,050.00	8,047.70	8,103.41	8,044.04	28.60	29.45	-162.90	7.81	-90.23	229.79	172.25	57.53	3.994	Alert
8,100.00	8,097.68	8,155.79	8,096.32	28.78	29.64	-162.54	8.42	-93.32	233.57	175.67	57.91	4.034	Alert
8,150.00	8,147.66	8,208.26	8,148.74	28.96	29.82	-162.30	8.89	-95.71	236.82	178.54	58.27	4.064	Alert
8,200.00	8,197.64	8,260.82	8,201.26	29.13	30.01	-162.16	9.23	-97.40	239.51	180.88	58.63	4.085	Alert
8,250.00	8,247.62	8,313.44	8,253.87	29.31	30.19	-162.13	9.42	-98.37	241.66	182.67	58.99	4.097	Alert
8,300.00	8,297.60	8,366.10	8,306.53	29.49	30.37	-162.20	9.48	-98.64	243.25	183.91	59.34	4.099	Alert
8,350.00	8,347.58	8,418.74	8,356.18	29.67	30.54	-162.31	9.48	-98.65	244.64	184.95	59.69	4.098	Alert
8,400.00	8,397.56	8,465.72	8,406.16	29.85	30.71	-162.41	9.48	-98.65	246.02	185.98	60.04	4.097	Alert
8,450.00	8,447.54	8,515.70	8,456.14	30.03	30.88	-162.51	9.48	-98.65	247.41	187.01	60.39	4.097	Alert
8,500.00	8,497.51	8,565.68	8,506.11	30.21	31.06	-162.61	9.48	-98.65	248.79	188.05	60.75	4.096	Alert
8,550.00	8,547.49	8,615.66	8,556.09	30.39	31.23	-162.71	9.48	-98.65	250.18	189.08	61.10	4.095	Alert
8,600.00	8,597.47	8,665.64	8,606.07	30.57	31.40	-162.81	9.48	-98.65	251.57	190.12	61.45	4.094	Alert
8,650.00	8,647.45	8,708.50	8,648.91	30.75	31.54	-163.14	8.29	-98.64	253.57	191.78	61.79	4.104	Alert
8,700.00	8,697.43	8,749.91	8,690.10	30.93	31.67	-164.05	4.13	-98.61	257.20	195.12	62.08	4.143	Alert
8,750.00	8,747.41	8,790.40	8,729.98	31.11	31.80	-165.48	-2.79	-98.57	262.61	200.30	62.30	4.215	Alert
8,800.00	8,797.39	8,829.60	8,768.04	31.29	31.91	-167.32	-12.17	-98.51	269.98	207.55	62.43	4.325	Alert
8,850.00	8,847.37	8,867.24	8,803.90	31.47	32.02	-169.44	-23.60	-98.44	279.53	217.10	62.43	4.478	Alert
8,900.00	8,897.35	8,903.11	8,837.29	31.65	32.12	-171.73	-36.66	-98.36	291.46	229.19	62.27	4.680	Alert
8,950.00	8,947.33	8,937.06	8,868.10	31.83	32.22	-174.08	-50.92	-98.27	305.91	243.96	61.95	4.938	Alert
9,000.00	8,997.30	8,969.02	8,896.28	32.01	32.30	-176.40	-66.00	-98.17	322.94	261.49	61.45	5.255	
9,050.00	9,047.28	9,000.00	8,922.75	32.19	32.37	-178.70	-82.08	-98.07	342.55	281.71	60.85	5.630	
9,100.00	9,097.26	9,026.99	8,945.07	32.37	32.43	179.28	-97.25	-97.98	364.68	304.66	60.01	6.076	
9,150.00	9,147.24	9,050.00	8,963.52	32.55	32.48	177.56	-110.99	-97.89	389.20	330.23	58.97	6.600	
9,200.00	9,197.22	9,077.39	8,984.74	32.73	32.54	175.54	-128.31	-97.78	415.92	357.73	58.19	7.148	
9,250.00	9,247.20	9,100.00	9,001.62	32.91	32.59	173.91	-143.35	-97.69	444.71	387.50	57.21	7.773	
9,300.00	9,297.18	9,120.97	9,016.74	33.09	32.62	172.43	-157.89	-97.59	475.37	419.15	56.22	8.455	
9,350.00	9,347.16	9,140.48	9,030.31	33.27	32.66	171.09	-171.90	-97.51	507.71	452.47	55.25	9.190	
9,400.00	9,397.14	9,150.00	9,036.75	33.45	32.67	170.45	-178.90	-97.46	541.71	487.85	53.87	10.056	
9,450.00	9,447.11	9,175.49	9,053.44	33.63	32.71	168.78	-198.17	-97.34	576.83	523.43	53.40	10.803	
9,500.00	9,497.09	9,200.00	9,068.66	33.81	32.75	167.24	-217.38	-97.22	613.42	560.48	52.95	11.586	
9,550.00	9,547.07	9,200.00	9,068.66	33.99	32.75	167.24	-217.38	-97.22	650.92	599.45	51.47	12.646	
9,600.00	9,597.05	9,219.50	9,080.17	34.17	32.77	166.06	-233.12	-97.12	689.41	638.44	50.98	13.524	
9,650.00	9,647.03	9,232.26	9,087.41	34.35	32.79	165.32	-243.63	-97.05	728.85	678.57	50.28	14.497	
9,700.00	9,697.01	9,250.00	9,097.08	34.53	32.81	164.32	-258.49	-96.96	769.13	719.28	49.85	15.428	
9,750.00	9,746.99	9,250.00	9,097.08	34.71	32.81	164.32	-258.49	-96.96	810.06	761.24	48.83	16.590	
9,800.00	9,796.97	9,265.86	9,105.34	34.88	32.83	163.45	-272.04	-96.88	851.61	803.13	48.48	17.567	
9,850.00	9,846.95	9,275.71	9,110.28	35.06	32.84	162.93	-280.56	-96.82	893.78	845.81	47.97	18.631	
9,900.00	9,896.92	9,284.97	9,114.78	35.24	32.85	162.44	-288.65	-96.77	936.48	888.97	47.51	19.711	
9,950.00	9,946.90	9,300.00	9,121.82	35.42	32.86	161.68	-301.93	-96.69	979.71	932.43	47.29	20.719	
10,000.00	9,996.88	9,300.00	9,121.82	35.60	32.86	161.68	-301.93	-96.69	1,023.28	976.63	46.65	21.934	
10,050.00	10,046.86	9,300.00	9,121.82	35.78	32.86	161.68	-301.93	-96.69	1,067.41	1,021.32	46.09	23.159	
10,100.00	10,096.84	9,317.01	9,129.36	35.96	32.88	160.85	-317.17	-96.59	1,111.66	1,065.61	46.05	24.142	
10,150.00	10,146.82	9,323.95	9,132.30	36.14	32.88	160.53	-323.46	-96.55	1,156.36	1,110.60	45.76	25.269	
10,200.00	10,196.80	9,330.53	9,135.02	36.32	32.89	160.22	-329.45	-96.51	1,201.37	1,155.87	45.51	26.400	
10,250.00	10,246.78	9,350.00	9,142.67	36.50	32.90	159.34	-347.35	-96.40	1,246.88	1,201.29	45.59	27.349	
10,300.00	10,296.76	9,350.00	9,142.67	36.68	32.90	159.34	-347.35	-96.40	1,292.28	1,247.04	45.24	28.565	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1

Offset Site Error: 5.00 ft

Survey Program: 0-MWD+IFR1

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	10,346.73	9,350.00	9,142.67	36.86	32.90	159.34	-347.35	-96.40	1,338.00	1,293.07	44.93	29.780	
10,400.00	10,396.71	9,350.00	9,142.67	37.04	32.90	159.34	-347.35	-96.40	1,384.02	1,339.36	44.66	30.992	
10,450.00	10,446.69	9,350.00	9,142.67	37.22	32.90	159.34	-347.35	-96.40	1,430.30	1,385.89	44.42	32.201	
10,500.00	10,496.67	9,350.00	9,142.67	37.40	32.90	159.34	-347.35	-96.40	1,476.83	1,432.62	44.21	33.404	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2 — Offset Site Error: 5.00 ft

Survey Program: 0-MWD+IFR1 — 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	8.60	8.60	0.50	0.50	102.04	-146.81	688.48	703.96				
50.00	50.00	58.60	58.60	0.50	0.51	102.04	-146.81	688.48	703.96	702.95	1.01	698.255	
100.00	100.00	108.60	108.60	0.52	0.53	102.04	-146.81	688.48	703.96	702.92	1.04	674.061	
150.00	150.00	158.60	158.60	0.59	0.61	102.04	-146.81	688.48	703.96	702.76	1.20	587.894	
200.00	200.00	208.60	208.60	0.70	0.72	102.04	-146.81	688.48	703.96	702.53	1.43	493.598	
250.00	250.00	258.60	258.60	0.84	0.86	102.04	-146.81	688.48	703.96	702.26	1.70	414.007	
300.00	300.00	308.60	308.60	0.99	1.01	102.04	-146.81	688.48	703.96	701.96	2.00	351.738	
350.00	350.00	358.60	358.60	1.15	1.17	102.04	-146.81	688.48	703.96	701.64	2.32	303.589	
400.00	400.00	408.60	408.60	1.31	1.34	102.04	-146.81	688.48	703.96	701.31	2.65	265.974	
450.00	450.00	458.60	458.60	1.48	1.51	102.04	-146.81	688.48	703.96	700.98	2.98	236.094	
500.00	500.00	508.60	508.60	1.65	1.68	102.04	-146.81	688.48	703.96	700.64	3.32	211.936	
550.00	550.00	558.60	558.60	1.82	1.85	102.04	-146.81	688.48	703.96	700.30	3.67	192.076	
600.00	600.00	608.60	608.60	1.99	2.02	102.04	-146.81	688.48	703.96	699.95	4.01	175.505	
650.00	650.00	658.60	658.60	2.16	2.19	102.04	-146.81	688.48	703.96	699.60	4.36	161.491	
700.00	700.00	708.60	708.60	2.34	2.37	102.04	-146.81	688.48	703.96	699.25	4.71	149.500	
750.00	750.00	758.60	758.60	2.51	2.54	102.04	-146.81	688.48	703.96	698.90	5.06	139.133	
800.00	800.00	808.60	808.60	2.69	2.72	102.04	-146.81	688.48	703.96	698.55	5.41	130.086	
850.00	850.00	858.60	858.60	2.87	2.90	102.04	-146.81	688.48	703.96	698.20	5.76	122.127	
900.00	900.00	908.60	908.60	3.04	3.07	102.04	-146.81	688.48	703.96	697.84	6.12	115.073	
950.00	950.00	958.60	958.60	3.22	3.25	102.04	-146.81	688.48	703.96	697.49	6.47	108.780	
1,000.00	1,000.00	1,008.60	1,008.60	3.40	3.43	102.04	-146.81	688.48	703.96	697.13	6.83	103.132	
1,050.00	1,050.00	1,058.60	1,058.60	3.58	3.61	102.04	-146.81	688.48	703.96	696.78	7.18	98.036	
1,100.00	1,100.00	1,108.60	1,108.60	3.75	3.78	102.04	-146.81	688.48	703.96	696.42	7.54	93.416	
1,150.00	1,150.00	1,158.60	1,158.60	3.93	3.96	102.04	-146.81	688.48	703.96	696.07	7.89	89.208	
1,200.00	1,200.00	1,208.60	1,208.60	4.11	4.14	102.04	-146.81	688.48	703.96	695.71	8.25	85.360	
1,250.00	1,250.00	1,258.60	1,258.60	4.29	4.32	102.04	-146.81	688.48	703.96	695.36	8.60	81.829	
1,300.00	1,300.00	1,308.60	1,308.60	4.46	4.49	102.04	-146.81	688.48	703.96	695.00	8.96	78.576	
1,350.00	1,350.00	1,358.60	1,358.60	4.64	4.67	102.04	-146.81	688.48	703.96	694.64	9.32	75.570	
1,400.00	1,400.00	1,408.60	1,408.60	4.82	4.85	102.04	-146.81	688.48	703.96	694.29	9.67	72.785	
1,450.00	1,450.00	1,458.60	1,458.60	5.00	5.03	102.04	-146.81	688.48	703.96	693.93	10.03	70.197	
1,500.00	1,500.00	1,508.60	1,508.60	5.18	5.21	102.04	-146.81	688.48	703.96	693.58	10.39	67.785	
1,550.00	1,550.00	1,558.60	1,558.60	5.36	5.39	102.04	-146.81	688.48	703.96	693.22	10.74	65.533	
1,600.00	1,600.00	1,608.60	1,608.60	5.53	5.56	102.04	-146.81	688.48	703.96	692.86	11.10	63.426	
1,650.00	1,650.00	1,658.60	1,658.60	5.71	5.74	102.04	-146.81	688.48	703.96	692.50	11.46	61.449	
1,700.00	1,700.00	1,708.60	1,708.60	5.89	5.92	102.04	-146.81	688.48	703.96	692.15	11.81	59.591	
1,750.00	1,750.00	1,758.60	1,758.60	6.07	6.10	102.04	-146.81	688.48	703.96	691.79	12.17	57.842	
1,800.00	1,800.00	1,808.60	1,808.60	6.25	6.28	102.04	-146.81	688.48	703.96	691.43	12.53	56.192	
1,850.00	1,850.00	1,858.60	1,858.60	6.43	6.46	102.04	-146.81	688.48	703.96	691.08	12.89	54.634	
1,900.00	1,900.00	1,908.60	1,908.60	6.61	6.64	102.04	-146.81	688.48	703.96	690.72	13.24	53.159	
1,950.00	1,950.00	1,958.60	1,958.60	6.78	6.82	102.04	-146.81	688.48	703.96	690.36	13.60	51.762	
2,000.00	2,000.00	2,008.60	2,008.60	6.96	6.99	102.04	-146.81	688.48	703.96	690.00	13.96	50.436	
2,050.00	2,050.00	2,058.60	2,058.60	7.14	7.17	102.04	-146.81	688.48	703.96	689.65	14.32	49.176	
2,100.00	2,100.00	2,108.60	2,108.60	7.32	7.35	102.04	-146.81	688.48	703.96	689.29	14.67	47.978	
2,150.00	2,150.00	2,158.60	2,158.60	7.50	7.53	102.04	-146.81	688.48	703.96	688.93	15.03	46.836	
2,200.00	2,200.00	2,208.60	2,208.60	7.68	7.71	102.04	-146.81	688.48	703.96	688.57	15.39	45.747	
2,250.00	2,250.00	2,258.60	2,258.60	7.86	7.89	102.04	-146.81	688.48	703.96	688.21	15.75	44.708	
2,300.00	2,300.00	2,308.60	2,308.60	8.04	8.07	102.04	-146.81	688.48	703.96	687.86	16.10	43.715	
2,350.00	2,350.00	2,358.60	2,358.60	8.22	8.25	102.04	-146.81	688.48	703.96	687.50	16.46	42.765	
2,400.00	2,400.00	2,408.60	2,408.60	8.39	8.42	102.04	-146.81	688.48	703.96	687.14	16.82	41.855	
2,450.00	2,450.00	2,458.60	2,458.60	8.57	8.60	102.04	-146.81	688.48	703.96	686.78	17.18	40.983	
2,500.00	2,500.00	2,510.16	2,510.16	8.75	8.79	102.04	-146.81	688.47	703.95	686.41	17.54	40.135	
2,550.00	2,550.00	2,569.22	2,569.22	8.93	8.99	55.16	-146.71	687.97	703.39	685.47	17.92	39.246	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2 — **Offset Site Error:** 5.00 ft

Survey Program: 0-MWD+IFR1 — **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	2,599.99	2,628.25	2,628.23	9.11	9.20	55.22	-146.46	686.72	701.94	683.64	18.30	38.356	
2,650.00	2,649.98	2,687.19	2,687.14	9.28	9.40	55.33	-146.07	684.73	699.60	680.93	18.67	37.466	
2,700.00	2,699.96	2,746.04	2,745.92	9.46	9.61	55.46	-145.52	682.01	696.43	677.39	19.04	36.573	
2,750.00	2,749.94	2,804.78	2,804.55	9.64	9.81	55.58	-144.84	678.55	692.61	673.20	19.41	35.686	
2,800.00	2,799.92	2,863.39	2,863.01	9.81	10.02	55.70	-144.01	674.36	688.15	668.38	19.77	34.806	
2,850.00	2,849.90	2,921.85	2,921.26	9.99	10.22	55.83	-143.03	669.45	683.05	662.92	20.13	33.930	
2,900.00	2,899.88	2,980.16	2,979.28	10.17	10.42	55.96	-141.92	663.84	677.33	656.85	20.49	33.061	
2,950.00	2,949.86	3,038.28	3,037.04	10.34	10.63	56.10	-140.66	657.52	670.98	650.14	20.84	32.196	
3,000.00	2,999.84	3,096.20	3,094.52	10.52	10.83	56.24	-139.27	650.50	664.01	642.82	21.19	31.336	
3,050.00	3,049.81	3,153.91	3,151.70	10.70	11.03	56.38	-137.74	642.81	656.42	634.88	21.54	30.480	
3,100.00	3,099.79	3,211.39	3,208.53	10.88	11.24	56.53	-136.08	634.44	648.21	626.33	21.88	29.628	
3,150.00	3,149.77	3,260.25	3,256.82	11.05	11.41	56.67	-134.62	627.06	639.72	617.50	22.23	28.783	
3,200.00	3,199.75	3,309.51	3,305.48	11.23	11.59	56.80	-133.14	619.62	631.24	608.67	22.57	27.965	
3,250.00	3,249.73	3,358.76	3,354.15	11.41	11.76	56.94	-131.66	612.18	622.76	599.84	22.92	27.170	
3,300.00	3,299.71	3,408.01	3,402.81	11.59	11.94	57.09	-130.18	604.75	614.28	591.01	23.27	26.399	
3,350.00	3,349.69	3,457.26	3,451.48	11.76	12.11	57.24	-128.71	597.31	605.81	582.19	23.62	25.651	
3,400.00	3,399.67	3,506.52	3,500.14	11.94	12.29	57.39	-127.23	589.87	597.34	573.38	23.97	24.924	
3,450.00	3,449.65	3,555.77	3,548.81	12.12	12.47	57.55	-125.75	582.43	588.88	564.56	24.32	24.217	
3,500.00	3,499.62	3,605.02	3,597.47	12.30	12.65	57.71	-124.28	574.99	580.42	555.76	24.67	23.531	
3,550.00	3,549.60	3,654.27	3,646.14	12.48	12.82	57.88	-122.80	567.55	571.97	546.95	25.02	22.863	
3,600.00	3,599.58	3,703.53	3,694.80	12.65	13.00	58.05	-121.32	560.11	563.52	538.15	25.37	22.214	
3,650.00	3,649.56	3,752.78	3,743.47	12.83	13.18	58.23	-119.84	552.67	555.07	529.36	25.72	21.583	
3,700.00	3,699.54	3,802.03	3,792.13	13.01	13.36	58.41	-118.37	545.23	546.64	520.57	26.07	20.968	
3,750.00	3,749.52	3,851.28	3,840.80	13.19	13.54	58.60	-116.89	537.79	538.20	511.78	26.42	20.370	
3,800.00	3,799.50	3,900.54	3,889.46	13.37	13.72	58.79	-115.41	530.35	529.77	503.00	26.77	19.787	
3,850.00	3,849.48	3,949.79	3,938.13	13.54	13.90	58.99	-113.94	522.91	521.35	494.23	27.13	19.219	
3,900.00	3,899.46	4,000.96	3,986.79	13.72	14.09	59.20	-112.46	515.47	512.94	485.45	27.49	18.662	
3,950.00	3,949.44	4,048.29	4,035.46	13.90	14.26	59.41	-110.98	508.03	504.53	476.70	27.83	18.127	
4,000.00	3,999.41	4,102.46	4,084.12	14.08	14.46	59.63	-109.50	500.60	496.13	467.93	28.20	17.591	
4,050.00	4,049.39	4,146.80	4,132.79	14.26	14.62	59.86	-108.03	493.16	487.73	459.20	28.54	17.090	
4,100.00	4,099.37	4,196.05	4,181.45	14.44	14.80	60.10	-106.55	485.72	479.35	450.46	28.89	16.590	
4,150.00	4,149.35	4,245.30	4,230.12	14.61	14.98	60.34	-105.07	478.28	470.97	441.72	29.25	16.103	
4,200.00	4,199.33	4,294.55	4,278.78	14.79	15.16	60.60	-103.60	470.84	462.60	433.00	29.60	15.627	
4,250.00	4,249.31	4,343.81	4,327.45	14.97	15.34	60.86	-102.12	463.40	454.24	424.29	29.96	15.163	
4,300.00	4,299.29	4,406.94	4,376.11	15.15	15.58	61.13	-100.64	455.96	445.89	415.53	30.36	14.686	
4,350.00	4,349.27	4,442.31	4,424.78	15.33	15.71	61.42	-99.17	448.52	437.55	406.88	30.67	14.268	
4,400.00	4,399.25	4,508.44	4,473.44	15.51	15.95	61.71	-97.69	441.08	429.22	398.14	31.08	13.808	
4,450.00	4,449.22	4,540.82	4,522.11	15.69	16.07	62.02	-96.21	433.64	420.91	389.53	31.38	13.413	
4,500.00	4,499.20	4,590.07	4,570.77	15.86	16.25	62.34	-94.73	426.20	412.60	380.86	31.74	13.001	
4,550.00	4,549.18	4,639.32	4,619.44	16.04	16.44	62.67	-93.26	418.76	404.31	372.22	32.09	12.598	
4,600.00	4,599.16	4,688.57	4,668.10	16.22	16.62	63.01	-91.78	411.32	396.03	363.58	32.45	12.205	
4,650.00	4,649.14	4,737.82	4,716.76	16.40	16.80	63.37	-90.30	403.88	387.77	354.96	32.81	11.820	
4,700.00	4,699.12	4,787.08	4,765.43	16.58	16.99	63.75	-88.83	396.45	379.52	346.35	33.16	11.444	
4,750.00	4,749.10	4,836.33	4,814.09	16.76	17.17	64.14	-87.35	389.01	371.28	337.76	33.52	11.076	
4,800.00	4,799.08	4,885.58	4,862.76	16.94	17.35	64.55	-85.87	381.57	363.07	329.19	33.88	10.717	
4,850.00	4,849.06	4,934.83	4,911.42	17.12	17.53	64.98	-84.39	374.13	354.88	320.64	34.24	10.365	
4,900.00	4,899.03	4,984.09	4,960.09	17.30	17.72	65.43	-82.92	366.69	346.70	312.10	34.60	10.021	
4,950.00	4,949.01	5,033.34	5,008.75	17.47	17.90	65.90	-81.44	359.25	338.55	303.59	34.96	9.685	
5,000.00	4,998.99	5,082.59	5,057.42	17.65	18.09	66.40	-79.96	351.81	330.42	295.10	35.32	9.356	
5,050.00	5,048.97	5,131.84	5,106.08	17.83	18.27	66.91	-78.49	344.37	322.31	286.64	35.68	9.035	
5,100.00	5,098.95	5,181.10	5,154.75	18.01	18.45	67.46	-77.01	336.93	314.24	278.20	36.04	8.720	
5,150.00	5,148.93	5,230.35	5,203.41	18.19	18.64	68.03	-75.53	329.49	306.19	269.79	36.40	8.413	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2 — **Offset Site Error:** 5.00 ft

Survey Program: 0-MWD+IFR1 — **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	5,198.91	5,279.60	5,252.08	18.37	18.82	68.64	-74.05	322.05	298.17	261.42	36.76	8.112	
5,250.00	5,248.89	5,328.85	5,300.74	18.55	19.01	69.28	-72.58	314.61	290.19	253.07	37.12	7.818	
5,300.00	5,298.87	5,378.10	5,349.41	18.73	19.19	69.95	-71.10	307.17	282.25	244.76	37.48	7.530	
5,350.00	5,348.84	5,427.36	5,398.07	18.91	19.37	70.66	-69.62	299.73	274.34	236.50	37.84	7.249	
5,400.00	5,398.82	5,476.61	5,446.74	19.09	19.56	71.42	-68.15	292.30	266.48	228.27	38.21	6.974	
5,450.00	5,448.80	5,525.86	5,495.40	19.27	19.74	72.22	-66.67	284.86	258.67	220.10	38.57	6.706	
5,500.00	5,498.78	5,575.11	5,544.07	19.44	19.93	73.07	-65.19	277.42	250.91	211.97	38.94	6.444	
5,550.00	5,548.76	5,624.37	5,592.73	19.62	20.11	73.97	-63.71	269.98	243.21	203.90	39.30	6.188	
5,600.00	5,598.74	5,673.62	5,641.40	19.80	20.30	74.93	-62.24	262.54	235.57	195.90	39.67	5.938	
5,650.00	5,648.72	5,722.87	5,690.06	19.98	20.48	75.96	-60.76	255.10	228.00	187.96	40.04	5.694	
5,700.00	5,698.70	5,772.12	5,738.73	20.16	20.67	77.05	-59.28	247.66	220.51	180.10	40.41	5.457	
5,750.00	5,748.68	5,821.38	5,787.39	20.34	20.85	78.22	-57.81	240.22	213.10	172.32	40.78	5.226	
5,800.00	5,798.65	5,870.63	5,836.06	20.52	21.04	79.47	-56.33	232.78	205.78	164.64	41.15	5.001	
5,850.00	5,848.63	5,919.88	5,884.72	20.70	21.22	80.82	-54.85	225.34	198.57	157.05	41.52	4.782	Alert
5,900.00	5,898.61	5,969.13	5,933.39	20.88	21.41	82.26	-53.38	217.90	191.48	149.58	41.90	4.570	Alert
5,950.00	5,948.59	6,018.38	5,982.05	21.06	21.59	83.81	-51.90	210.46	184.52	142.24	42.27	4.365	Alert
6,000.00	5,998.57	6,067.64	6,030.72	21.24	21.78	85.49	-50.42	203.02	177.70	135.05	42.65	4.166	Alert
6,050.00	6,048.55	6,116.89	6,079.38	21.42	21.96	87.29	-48.94	195.58	171.04	128.01	43.03	3.975	Alert
6,100.00	6,098.53	6,166.14	6,128.05	21.60	22.15	89.23	-47.47	188.15	164.57	121.15	43.41	3.791	Alert
6,150.00	6,148.51	6,215.39	6,176.71	21.77	22.33	91.33	-45.99	180.71	158.29	114.50	43.80	3.614	Alert
6,200.00	6,198.49	6,264.65	6,225.37	21.95	22.52	93.60	-44.51	173.27	152.25	108.07	44.19	3.446	Alert
6,250.00	6,248.46	6,313.90	6,274.04	22.13	22.71	96.04	-43.04	165.83	146.47	101.89	44.58	3.286	Alert
6,300.00	6,298.44	6,363.15	6,322.70	22.31	22.89	98.68	-41.56	158.39	140.97	96.00	44.97	3.135	Alert
6,350.00	6,348.42	6,412.40	6,371.37	22.49	23.08	101.52	-40.08	150.95	135.80	90.44	45.36	2.994	Alert
6,400.00	6,398.40	6,461.66	6,420.03	22.67	23.26	104.57	-38.60	143.51	130.99	85.24	45.76	2.863	Alert
6,450.00	6,448.38	6,510.91	6,468.70	22.85	23.45	107.84	-37.13	136.07	126.59	80.44	46.15	2.743	Alert
6,500.00	6,498.36	6,560.16	6,517.36	23.03	23.64	111.33	-35.65	128.63	122.64	76.08	46.55	2.634	Alert
6,550.00	6,548.34	6,609.41	6,566.03	23.21	23.82	115.03	-34.17	121.19	119.17	72.23	46.95	2.538	Alert
6,600.00	6,598.32	6,658.66	6,614.69	23.39	24.01	118.93	-32.70	113.75	116.25	68.91	47.34	2.456	Minor Risk
6,650.00	6,648.30	6,707.92	6,663.36	23.57	24.19	123.01	-31.22	106.31	113.90	66.17	47.73	2.386	Minor Risk
6,700.00	6,698.27	6,757.17	6,712.02	23.75	24.38	127.23	-29.74	98.87	112.16	64.05	48.11	2.331	Minor Risk
6,750.00	6,748.25	6,806.42	6,760.69	23.93	24.57	131.55	-28.26	91.43	111.07	62.58	48.49	2.291	Minor Risk
6,800.00	6,798.23	6,855.67	6,809.35	24.11	24.75	135.93	-26.79	84.00	110.64	61.78	48.86	2.265	Minor Risk
6,807.11	6,805.34	6,862.68	6,816.27	24.13	24.78	136.56	-26.58	82.94	110.63	61.73	48.91	2.262	Minor Risk, CC
6,850.00	6,848.21	6,904.93	6,858.02	24.29	24.94	140.32	-25.31	76.56	110.88	61.66	49.22	2.253	Minor Risk, ES, SF
6,900.00	6,898.19	6,954.18	6,906.68	24.47	25.13	144.67	-23.83	69.12	111.79	62.22	49.57	2.255	Minor Risk
6,950.00	6,948.17	7,003.43	6,955.35	24.65	25.31	148.92	-22.36	61.68	113.34	63.43	49.91	2.271	Minor Risk
7,000.00	6,998.15	7,052.68	7,004.01	24.83	25.50	153.04	-20.88	54.24	115.52	65.27	50.25	2.299	Minor Risk
7,050.00	7,048.13	7,101.94	7,052.68	25.00	25.68	156.99	-19.40	46.80	118.28	67.71	50.58	2.339	Minor Risk
7,100.00	7,098.11	7,151.19	7,101.34	25.18	25.87	160.75	-17.92	39.36	121.60	70.69	50.90	2.389	Minor Risk
7,150.00	7,148.08	7,200.44	7,150.01	25.36	26.06	164.30	-16.45	31.92	125.42	74.19	51.23	2.448	Minor Risk
7,200.00	7,198.06	7,249.69	7,198.67	25.54	26.24	167.64	-14.97	24.48	129.70	78.15	51.55	2.516	Alert
7,250.00	7,248.04	7,301.06	7,247.34	25.72	26.44	170.75	-13.49	17.04	134.40	82.51	51.88	2.590	Alert
7,300.00	7,298.02	7,348.20	7,296.00	25.90	26.62	173.65	-12.02	9.60	139.47	87.27	52.20	2.672	Alert
7,350.00	7,348.00	7,402.55	7,344.67	26.08	26.82	176.35	-10.54	2.16	144.87	92.33	52.55	2.757	Alert
7,400.00	7,397.98	7,446.70	7,393.33	26.26	26.99	178.85	-9.06	-5.28	150.58	97.72	52.86	2.849	Alert
7,450.00	7,447.96	7,504.05	7,442.00	26.44	27.21	-178.84	-7.58	-12.72	156.55	103.33	53.22	2.942	Alert
7,500.00	7,497.94	7,545.21	7,490.66	26.62	27.36	-176.69	-6.11	-20.15	162.76	109.24	53.52	3.041	Alert
7,550.00	7,547.92	7,605.54	7,539.33	26.80	27.59	-174.71	-4.63	-27.59	169.18	115.29	53.89	3.139	Alert
7,600.00	7,597.89	7,643.71	7,587.99	26.98	27.74	-172.87	-3.15	-35.03	175.79	121.60	54.19	3.244	Alert
7,650.00	7,647.87	7,692.96	7,636.65	27.16	27.93	-171.16	-1.68	-42.47	182.56	128.03	54.53	3.348	Alert
7,700.00	7,697.85	7,742.22	7,685.32	27.34	28.11	-169.57	-0.20	-49.91	189.49	134.62	54.87	3.453	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2 — **Offset Site Error:** 5.00 ft

Survey Program: 0-MWD+IFR1 — **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
7,750.00	7,747.83	7,792.36	7,734.88	27.52	28.30	-168.09	1.29	-57.42	196.49	141.26	55.23	3.558	Alert
7,800.00	7,797.81	7,843.73	7,785.73	27.70	28.50	-166.78	2.70	-64.54	203.19	147.57	55.62	3.653	Alert
7,850.00	7,847.79	7,895.31	7,836.89	27.88	28.69	-165.68	3.99	-71.01	209.47	153.46	56.01	3.740	Alert
7,900.00	7,897.77	7,947.09	7,888.33	28.06	28.88	-164.76	5.14	-76.82	215.29	158.90	56.39	3.818	Alert
7,950.00	7,947.75	7,999.05	7,940.02	28.24	29.07	-164.00	6.17	-81.97	220.63	163.85	56.78	3.886	Alert
8,000.00	7,997.73	8,051.16	7,991.93	28.42	29.26	-163.38	7.05	-86.44	225.47	168.31	57.16	3.945	Alert
8,050.00	8,047.70	8,103.41	8,044.04	28.60	29.45	-162.90	7.81	-90.23	229.79	172.25	57.53	3.994	Alert
8,100.00	8,097.68	8,155.79	8,096.32	28.78	29.64	-162.54	8.42	-93.32	233.57	175.67	57.91	4.034	Alert
8,150.00	8,147.66	8,208.26	8,148.74	28.96	29.82	-162.30	8.89	-95.71	236.82	178.54	58.27	4.064	Alert
8,200.00	8,197.64	8,260.82	8,201.26	29.13	30.01	-162.16	9.23	-97.40	239.51	180.88	58.63	4.085	Alert
8,250.00	8,247.62	8,313.44	8,253.87	29.31	30.19	-162.13	9.42	-98.37	241.66	182.67	58.99	4.097	Alert
8,300.00	8,297.60	8,366.10	8,306.53	29.49	30.37	-162.20	9.48	-98.64	243.25	183.91	59.34	4.099	Alert
8,350.00	8,347.58	8,415.74	8,356.18	29.67	30.54	-162.31	9.48	-98.65	244.64	184.95	59.69	4.098	Alert
8,400.00	8,397.56	8,465.72	8,406.16	29.85	30.71	-162.41	9.48	-98.65	246.02	185.98	60.04	4.097	Alert
8,450.00	8,447.54	8,515.70	8,456.14	30.03	30.88	-162.51	9.48	-98.65	247.41	187.01	60.39	4.097	Alert
8,500.00	8,497.51	8,565.68	8,506.11	30.21	31.06	-162.61	9.48	-98.65	248.79	188.05	60.75	4.096	Alert
8,550.00	8,547.49	8,615.66	8,556.09	30.39	31.23	-162.71	9.48	-98.65	250.18	189.08	61.10	4.095	Alert
8,600.00	8,597.47	8,665.64	8,606.07	30.57	31.40	-162.81	9.48	-98.65	251.57	190.12	61.45	4.094	Alert
8,650.00	8,647.45	8,708.50	8,648.91	30.75	31.54	-163.14	8.29	-98.64	253.57	191.78	61.79	4.104	Alert
8,700.00	8,697.43	8,749.91	8,690.10	30.93	31.67	-164.05	4.13	-98.61	257.20	195.12	62.08	4.143	Alert
8,750.00	8,747.41	8,790.40	8,729.98	31.11	31.80	-165.48	-2.79	-98.57	262.61	200.30	62.30	4.215	Alert
8,800.00	8,797.39	8,829.60	8,768.04	31.29	31.91	-167.32	-12.17	-98.51	269.98	207.55	62.43	4.325	Alert
8,850.00	8,847.37	8,867.24	8,803.90	31.47	32.02	-169.44	-23.60	-98.44	279.53	217.10	62.43	4.478	Alert
8,900.00	8,897.35	8,903.11	8,837.29	31.65	32.12	-171.73	-36.66	-98.36	291.46	229.19	62.27	4.680	Alert
8,950.00	8,947.33	8,937.06	8,868.10	31.83	32.22	-174.08	-50.92	-98.27	305.91	243.96	61.95	4.938	Alert
9,000.00	8,997.30	8,969.02	8,896.28	32.01	32.30	-176.40	-66.00	-98.17	322.94	261.49	61.45	5.255	
9,050.00	9,047.28	9,000.00	8,922.75	32.19	32.37	-178.70	-82.08	-98.07	342.55	281.71	60.85	5.630	
9,100.00	9,097.26	9,026.99	8,945.07	32.37	32.43	179.28	-97.25	-97.98	364.68	304.66	60.01	6.076	
9,150.00	9,147.24	9,050.00	8,963.52	32.55	32.48	177.56	-110.99	-97.89	389.20	330.23	58.97	6.600	
9,200.00	9,197.22	9,077.39	8,984.74	32.73	32.54	175.54	-128.31	-97.78	415.92	357.73	58.19	7.148	
9,250.00	9,247.20	9,100.00	9,001.62	32.91	32.59	173.91	-143.35	-97.69	444.71	387.50	57.21	7.773	
9,300.00	9,297.18	9,120.97	9,016.74	33.09	32.62	172.43	-157.89	-97.59	475.37	419.15	56.22	8.455	
9,350.00	9,347.16	9,140.48	9,030.31	33.27	32.66	171.09	-171.90	-97.51	507.71	452.47	55.25	9.190	
9,400.00	9,397.14	9,150.00	9,036.75	33.45	32.67	170.45	-178.90	-97.46	541.71	487.85	53.87	10.056	
9,450.00	9,447.11	9,175.49	9,053.44	33.63	32.71	168.78	-198.17	-97.34	576.83	523.43	53.40	10.803	
9,500.00	9,497.09	9,200.00	9,068.66	33.81	32.75	167.24	-217.38	-97.22	613.42	560.48	52.95	11.586	
9,550.00	9,547.07	9,200.00	9,068.66	33.99	32.75	167.24	-217.38	-97.22	650.92	599.45	51.47	12.646	
9,600.00	9,597.05	9,219.50	9,080.17	34.17	32.77	166.06	-233.12	-97.12	689.41	638.44	50.98	13.524	
9,650.00	9,647.03	9,232.26	9,087.41	34.35	32.79	165.32	-243.63	-97.05	728.85	678.57	50.28	14.497	
9,700.00	9,697.01	9,250.00	9,097.08	34.53	32.81	164.32	-258.49	-96.96	769.13	719.28	49.85	15.428	
9,750.00	9,746.99	9,250.00	9,097.08	34.71	32.81	164.32	-258.49	-96.96	810.06	761.24	48.83	16.590	
9,800.00	9,796.97	9,265.86	9,105.34	34.88	32.83	163.45	-272.04	-96.88	851.61	803.13	48.48	17.567	
9,850.00	9,846.95	9,275.71	9,110.28	35.06	32.84	162.93	-280.56	-96.82	893.78	845.81	47.97	18.631	
9,900.00	9,896.92	9,284.97	9,114.78	35.24	32.85	162.44	-288.65	-96.77	936.48	888.97	47.51	19.711	
9,950.00	9,946.90	9,300.00	9,121.82	35.42	32.86	161.68	-301.93	-96.69	979.71	932.43	47.29	20.719	
10,000.00	9,996.88	9,300.00	9,121.82	35.60	32.86	161.68	-301.93	-96.69	1,023.28	976.63	46.65	21.934	
10,050.00	10,046.86	9,300.00	9,121.82	35.78	32.86	161.68	-301.93	-96.69	1,067.41	1,021.32	46.09	23.159	
10,100.00	10,096.84	9,317.01	9,129.36	35.96	32.88	160.85	-317.17	-96.59	1,111.66	1,065.61	46.05	24.142	
10,150.00	10,146.82	9,323.95	9,132.30	36.14	32.88	160.53	-323.46	-96.55	1,156.36	1,110.60	45.76	25.269	
10,200.00	10,196.80	9,330.53	9,135.02	36.32	32.89	160.22	-329.45	-96.51	1,201.37	1,155.87	45.51	26.400	
10,250.00	10,246.78	9,350.00	9,142.67	36.50	32.90	159.34	-347.35	-96.40	1,246.88	1,201.29	45.59	27.349	
10,300.00	10,296.76	9,350.00	9,142.67	36.68	32.90	159.34	-347.35	-96.40	1,292.28	1,247.04	45.24	28.565	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2

Offset Site Error: 5.00 ft

Survey Program: 0-MWD+IFR1

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	10,346.73	9,350.00	9,142.67	36.86	32.90	159.34	-347.35	-96.40	1,338.00	1,293.07	44.93	29.780	
10,400.00	10,396.71	9,350.00	9,142.67	37.04	32.90	159.34	-347.35	-96.40	1,384.02	1,339.36	44.66	30.992	
10,450.00	10,446.69	9,350.00	9,142.67	37.22	32.90	159.34	-347.35	-96.40	1,430.30	1,385.89	44.42	32.201	
10,500.00	10,496.67	9,350.00	9,142.67	37.40	32.90	159.34	-347.35	-96.40	1,476.83	1,432.62	44.21	33.404	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	8.80	8.80	0.50	0.50	101.07	-146.50	748.45	762.65				
50.00	50.00	58.80	58.80	0.50	0.51	101.07	-146.50	748.45	762.65	761.65	1.01	756.442	
100.00	100.00	108.80	108.80	0.52	0.53	101.07	-146.50	748.45	762.65	761.61	1.04	730.105	
150.00	150.00	158.80	158.80	0.59	0.61	101.07	-146.50	748.45	762.65	761.46	1.20	636.695	
200.00	200.00	208.80	208.80	0.70	0.72	101.07	-146.50	748.45	762.65	761.23	1.43	534.558	
250.00	250.00	258.80	258.80	0.84	0.86	101.07	-146.50	748.45	762.65	760.95	1.70	448.372	
300.00	300.00	308.80	308.80	0.99	1.01	101.07	-146.50	748.45	762.65	760.65	2.00	380.947	
350.00	350.00	358.80	358.80	1.15	1.17	101.07	-146.50	748.45	762.65	760.34	2.32	328.809	
400.00	400.00	408.80	408.80	1.31	1.34	101.07	-146.50	748.45	762.65	760.01	2.65	288.078	
450.00	450.00	458.80	458.80	1.48	1.51	101.07	-146.50	748.45	762.65	759.67	2.98	255.721	
500.00	500.00	508.80	508.80	1.65	1.68	101.07	-146.50	748.45	762.65	759.33	3.32	229.559	
550.00	550.00	558.80	558.80	1.82	1.85	101.07	-146.50	748.45	762.65	758.99	3.67	208.052	
600.00	600.00	608.80	608.80	1.99	2.02	101.07	-146.50	748.45	762.65	758.64	4.01	190.105	
650.00	650.00	658.80	658.80	2.16	2.20	101.07	-146.50	748.45	762.65	758.29	4.36	174.928	
700.00	700.00	708.80	708.80	2.34	2.37	101.07	-146.50	748.45	762.65	757.95	4.71	161.941	
750.00	750.00	758.80	758.80	2.51	2.55	101.07	-146.50	748.45	762.65	757.59	5.06	150.713	
800.00	800.00	808.80	808.80	2.69	2.72	101.07	-146.50	748.45	762.65	757.24	5.41	140.914	
850.00	850.00	858.80	858.80	2.87	2.90	101.07	-146.50	748.45	762.65	756.89	5.76	132.293	
900.00	900.00	908.80	908.80	3.04	3.07	101.07	-146.50	748.45	762.65	756.54	6.12	124.653	
950.00	950.00	958.80	958.80	3.22	3.25	101.07	-146.50	748.45	762.65	756.18	6.47	117.837	
1,000.00	1,000.00	1,008.80	1,008.80	3.40	3.43	101.07	-146.50	748.45	762.65	755.83	6.83	111.719	
1,050.00	1,050.00	1,058.80	1,058.80	3.58	3.61	101.07	-146.50	748.45	762.65	755.47	7.18	106.200	
1,100.00	1,100.00	1,108.80	1,108.80	3.75	3.78	101.07	-146.50	748.45	762.65	755.12	7.54	101.195	
1,150.00	1,150.00	1,158.80	1,158.80	3.93	3.96	101.07	-146.50	748.45	762.65	754.76	7.89	96.637	
1,200.00	1,200.00	1,208.80	1,208.80	4.11	4.14	101.07	-146.50	748.45	762.65	754.41	8.25	92.470	
1,250.00	1,250.00	1,258.80	1,258.80	4.29	4.32	101.07	-146.50	748.45	762.65	754.05	8.60	88.644	
1,300.00	1,300.00	1,308.80	1,308.80	4.46	4.50	101.07	-146.50	748.45	762.65	753.69	8.96	85.121	
1,350.00	1,350.00	1,358.80	1,358.80	4.64	4.67	101.07	-146.50	748.45	762.65	753.34	9.32	81.865	
1,400.00	1,400.00	1,408.80	1,408.80	4.82	4.85	101.07	-146.50	748.45	762.65	752.98	9.67	78.848	
1,450.00	1,450.00	1,458.80	1,458.80	5.00	5.03	101.07	-146.50	748.45	762.65	752.63	10.03	76.044	
1,500.00	1,500.00	1,508.80	1,508.80	5.18	5.21	101.07	-146.50	748.45	762.65	752.27	10.39	73.432	
1,550.00	1,550.00	1,558.80	1,558.80	5.36	5.39	101.07	-146.50	748.45	762.65	751.91	10.74	70.993	
1,600.00	1,600.00	1,608.80	1,608.80	5.53	5.57	101.07	-146.50	748.45	762.65	751.55	11.10	68.710	
1,650.00	1,650.00	1,658.80	1,658.80	5.71	5.74	101.07	-146.50	748.45	762.65	751.20	11.46	66.568	
1,700.00	1,700.00	1,708.80	1,708.80	5.89	5.92	101.07	-146.50	748.45	762.65	750.84	11.81	64.556	
1,750.00	1,750.00	1,758.80	1,758.80	6.07	6.10	101.07	-146.50	748.45	762.65	750.48	12.17	62.661	
1,800.00	1,800.00	1,808.80	1,808.80	6.25	6.28	101.07	-146.50	748.45	762.65	750.13	12.53	60.874	
1,850.00	1,850.00	1,858.80	1,858.80	6.43	6.46	101.07	-146.50	748.45	762.65	749.77	12.89	59.186	
1,900.00	1,900.00	1,908.80	1,908.80	6.61	6.64	101.07	-146.50	748.45	762.65	749.41	13.24	57.588	
1,950.00	1,950.00	1,958.80	1,958.80	6.78	6.82	101.07	-146.50	748.45	762.65	749.05	13.60	56.075	
2,000.00	2,000.00	2,008.80	2,008.80	6.96	6.99	101.07	-146.50	748.45	762.65	748.70	13.96	54.639	
2,050.00	2,050.00	2,058.80	2,058.80	7.14	7.17	101.07	-146.50	748.45	762.65	748.34	14.32	53.274	
2,100.00	2,100.00	2,108.80	2,108.80	7.32	7.35	101.07	-146.50	748.45	762.65	747.98	14.67	51.975	
2,150.00	2,150.00	2,158.80	2,158.80	7.50	7.53	101.07	-146.50	748.45	762.65	747.62	15.03	50.739	
2,200.00	2,200.00	2,208.80	2,208.80	7.68	7.71	101.07	-146.50	748.45	762.65	747.27	15.39	49.559	
2,250.00	2,250.00	2,258.80	2,258.80	7.86	7.89	101.07	-146.50	748.45	762.65	746.91	15.75	48.433	
2,300.00	2,300.00	2,308.80	2,308.80	8.04	8.07	101.07	-146.50	748.45	762.65	746.55	16.10	47.357	
2,350.00	2,350.00	2,358.80	2,358.80	8.22	8.25	101.07	-146.50	748.45	762.65	746.19	16.46	46.328	
2,400.00	2,400.00	2,408.80	2,408.80	8.39	8.43	101.07	-146.50	748.45	762.65	745.83	16.82	45.343	
2,450.00	2,450.00	2,458.80	2,458.80	8.57	8.60	101.07	-146.50	748.45	762.65	745.48	17.18	44.398	
2,500.00	2,500.00	2,508.80	2,508.80	8.75	8.78	101.07	-146.50	748.45	762.65	745.12	17.54	43.492	CC
2,550.00	2,550.00	2,552.72	2,552.72	8.93	8.94	54.17	-146.42	748.68	762.76	744.89	17.87	42.692	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	2,599.99	2,597.55	2,597.54	9.11	9.10	54.19	-146.23	749.24	762.95	744.75	18.20	41.919	
2,650.00	2,649.98	2,642.38	2,642.36	9.28	9.25	54.21	-145.93	750.13	763.21	744.68	18.53	41.189 ES	
2,700.00	2,699.96	2,687.20	2,687.17	9.46	9.41	54.24	-145.51	751.34	763.62	744.77	18.86	40.493	
2,750.00	2,749.94	2,732.02	2,731.96	9.64	9.56	54.25	-144.98	752.90	764.36	745.17	19.19	39.838	
2,800.00	2,799.92	2,776.84	2,776.73	9.81	9.72	54.26	-144.33	754.78	765.43	745.92	19.51	39.225	
2,850.00	2,849.90	2,821.63	2,821.46	9.99	9.88	54.25	-143.58	756.99	766.84	747.00	19.84	38.650	
2,900.00	2,899.88	2,866.41	2,866.16	10.17	10.03	54.23	-142.71	759.53	768.59	748.43	20.17	38.111	
2,950.00	2,949.86	2,911.16	2,910.80	10.34	10.19	54.19	-141.73	762.40	770.68	750.19	20.49	37.608	
3,000.00	2,999.84	2,955.87	2,955.39	10.52	10.35	54.15	-140.63	765.60	773.11	752.29	20.82	37.138	
3,050.00	3,049.81	3,000.55	2,999.92	10.70	10.50	54.09	-139.42	769.13	775.87	754.73	21.14	36.699	
3,100.00	3,099.79	3,045.19	3,044.37	10.88	10.66	54.01	-138.11	772.97	778.97	757.51	21.46	36.292	
3,150.00	3,149.77	3,090.75	3,089.70	11.05	10.82	53.93	-136.65	777.23	782.41	760.62	21.79	35.904	
3,200.00	3,199.75	3,140.60	3,139.30	11.23	11.00	53.83	-135.01	782.01	785.96	763.82	22.14	35.495	
3,250.00	3,249.73	3,209.54	3,188.90	11.41	11.24	53.73	-133.38	786.79	789.51	766.95	22.56	34.995	
3,300.00	3,299.71	3,240.32	3,238.50	11.59	11.35	53.64	-131.74	791.57	793.07	770.22	22.85	34.714	
3,350.00	3,349.69	3,309.83	3,288.10	11.76	11.60	53.54	-130.10	796.35	796.63	773.36	23.27	34.238	
3,400.00	3,399.67	3,340.03	3,337.70	11.94	11.71	53.45	-128.47	801.13	800.19	776.63	23.55	33.978	
3,450.00	3,449.65	3,389.88	3,387.30	12.12	11.89	53.35	-126.83	805.91	803.75	779.84	23.90	33.625	
3,500.00	3,499.62	3,439.74	3,436.90	12.30	12.07	53.26	-125.20	810.69	807.31	783.05	24.26	33.283	
3,550.00	3,549.60	3,489.59	3,486.50	12.48	12.25	53.17	-123.56	815.47	810.88	786.27	24.61	32.950	
3,600.00	3,599.58	3,539.45	3,536.09	12.65	12.43	53.08	-121.92	820.25	814.45	789.48	24.96	32.626	
3,650.00	3,649.56	3,589.31	3,585.69	12.83	12.61	52.99	-120.29	825.03	818.02	792.70	25.32	32.311	
3,700.00	3,699.54	3,639.16	3,635.29	13.01	12.79	52.90	-118.65	829.82	821.59	795.92	25.67	32.005	
3,750.00	3,749.52	3,689.02	3,684.89	13.19	12.97	52.81	-117.02	834.60	825.16	799.14	26.03	31.706	
3,800.00	3,799.50	3,738.87	3,734.49	13.37	13.16	52.72	-115.38	839.38	828.74	802.36	26.38	31.416	
3,850.00	3,849.48	3,788.73	3,784.09	13.54	13.34	52.63	-113.74	844.16	832.32	805.58	26.73	31.133	
3,900.00	3,899.46	3,838.59	3,833.69	13.72	13.52	52.55	-112.11	848.94	835.90	808.81	27.09	30.857	
3,950.00	3,949.44	3,888.44	3,883.29	13.90	13.70	52.46	-110.47	853.72	839.48	812.03	27.44	30.588	
4,000.00	3,999.41	3,938.30	3,932.89	14.08	13.88	52.38	-108.83	858.50	843.06	815.26	27.80	30.326	
4,050.00	4,049.39	3,988.15	3,982.49	14.26	14.07	52.29	-107.20	863.28	846.65	818.49	28.16	30.071	
4,100.00	4,099.37	4,038.01	4,032.09	14.44	14.25	52.21	-105.56	868.06	850.23	821.72	28.51	29.821	
4,150.00	4,149.35	4,087.86	4,081.69	14.61	14.43	52.13	-103.93	872.84	853.82	824.96	28.87	29.578	
4,200.00	4,199.33	4,137.72	4,131.28	14.79	14.62	52.04	-102.29	877.62	857.41	828.19	29.22	29.340	
4,250.00	4,249.31	4,187.58	4,180.88	14.97	14.80	51.96	-100.65	882.40	861.01	831.43	29.58	29.109	
4,300.00	4,299.29	4,237.43	4,230.48	15.15	14.98	51.88	-99.02	887.18	864.60	834.66	29.94	28.882	
4,350.00	4,349.27	4,287.29	4,280.08	15.33	15.17	51.80	-97.38	891.96	868.20	837.90	30.29	28.661	
4,400.00	4,399.25	4,337.14	4,329.68	15.51	15.35	51.72	-95.75	896.74	871.79	841.14	30.65	28.445	
4,450.00	4,449.22	4,387.00	4,379.28	15.69	15.54	51.64	-94.11	901.52	875.39	844.39	31.01	28.234	
4,500.00	4,499.20	4,436.86	4,428.88	15.86	15.72	51.56	-92.47	906.30	878.99	847.63	31.36	28.027	
4,550.00	4,549.18	4,486.71	4,478.48	16.04	15.90	51.49	-90.84	911.08	882.60	850.88	31.72	27.825	
4,600.00	4,599.16	4,536.57	4,528.08	16.22	16.09	51.41	-89.20	915.86	886.20	854.12	32.08	27.628	
4,650.00	4,649.14	4,586.42	4,577.68	16.40	16.27	51.33	-87.56	920.64	889.81	857.37	32.43	27.435	
4,700.00	4,699.12	4,636.28	4,627.28	16.58	16.46	51.26	-85.93	925.42	893.41	860.62	32.79	27.246	
4,750.00	4,749.10	4,686.13	4,676.88	16.76	16.64	51.18	-84.29	930.20	897.02	863.87	33.15	27.061	
4,800.00	4,799.08	4,735.99	4,726.48	16.94	16.83	51.11	-82.66	934.98	900.63	867.13	33.51	26.880	
4,850.00	4,849.06	4,785.85	4,776.07	17.12	17.02	51.03	-81.02	939.76	904.24	870.38	33.86	26.703	
4,900.00	4,899.03	4,835.70	4,825.67	17.30	17.20	50.96	-79.38	944.54	907.86	873.64	34.22	26.529	
4,950.00	4,949.01	4,885.56	4,875.27	17.47	17.39	50.89	-77.75	949.32	911.47	876.89	34.58	26.359	
5,000.00	4,998.99	4,935.41	4,924.87	17.65	17.57	50.82	-76.11	954.10	915.09	880.15	34.94	26.193	
5,050.00	5,048.97	4,985.27	4,974.47	17.83	17.76	50.74	-74.48	958.88	918.71	883.41	35.29	26.029	
5,100.00	5,098.95	5,035.13	5,024.07	18.01	17.94	50.67	-72.84	963.66	922.33	886.67	35.65	25.870	
5,150.00	5,148.93	5,084.98	5,073.67	18.19	18.13	50.60	-71.20	968.44	925.95	889.94	36.01	25.713	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	5,198.91	5,134.84	5,123.27	18.37	18.32	50.53	-69.57	973.22	929.57	893.20	36.37	25.559	
5,250.00	5,248.89	5,184.69	5,172.87	18.55	18.50	50.46	-67.93	978.00	933.19	896.46	36.73	25.408	
5,300.00	5,298.87	5,234.55	5,222.47	18.73	18.69	50.39	-66.29	982.78	936.82	899.73	37.09	25.261	
5,350.00	5,348.84	5,284.41	5,272.07	18.91	18.88	50.33	-64.66	987.56	940.44	903.00	37.44	25.116	
5,400.00	5,398.82	5,334.26	5,321.67	19.09	19.06	50.26	-63.02	992.34	944.07	906.27	37.80	24.973	
5,450.00	5,448.80	5,384.12	5,371.26	19.27	19.25	50.19	-61.39	997.12	947.70	909.54	38.16	24.834	
5,500.00	5,498.78	5,433.97	5,420.86	19.44	19.44	50.12	-59.75	1,001.90	951.33	912.81	38.52	24.697	
5,550.00	5,548.76	5,483.83	5,470.46	19.62	19.62	50.06	-58.11	1,006.68	954.96	916.08	38.88	24.562	
5,600.00	5,598.74	5,533.68	5,520.06	19.80	19.81	49.99	-56.48	1,011.46	958.59	919.35	39.24	24.430	
5,650.00	5,648.72	5,583.54	5,569.66	19.98	20.00	49.93	-54.84	1,016.24	962.22	922.63	39.60	24.301	
5,700.00	5,698.70	5,633.40	5,619.26	20.16	20.18	49.86	-53.21	1,021.02	965.86	925.90	39.96	24.173	
5,750.00	5,748.68	5,683.25	5,668.86	20.34	20.37	49.80	-51.57	1,025.81	969.50	929.18	40.31	24.048	
5,800.00	5,798.65	5,733.11	5,718.46	20.52	20.56	49.73	-49.93	1,030.59	973.13	932.46	40.67	23.925	
5,850.00	5,848.63	5,782.96	5,768.06	20.70	20.75	49.67	-48.30	1,035.37	976.77	935.74	41.03	23.805	
5,900.00	5,898.61	5,832.82	5,817.66	20.88	20.93	49.61	-46.66	1,040.15	980.41	939.02	41.39	23.686	
5,950.00	5,948.59	5,882.68	5,867.26	21.06	21.12	49.55	-45.02	1,044.93	984.05	942.30	41.75	23.570	
6,000.00	5,998.57	5,932.53	5,916.86	21.24	21.31	49.48	-43.39	1,049.71	987.69	945.58	42.11	23.455	
6,050.00	6,048.55	5,982.39	5,966.45	21.42	21.50	49.42	-41.75	1,054.49	991.34	948.87	42.47	23.342	
6,100.00	6,098.53	6,032.24	6,016.05	21.60	21.68	49.36	-40.12	1,059.27	994.98	952.15	42.83	23.232	
6,150.00	6,148.51	6,082.10	6,065.65	21.77	21.87	49.30	-38.48	1,064.05	998.63	955.44	43.19	23.123	
6,200.00	6,198.49	6,131.95	6,115.25	21.95	22.06	49.24	-36.84	1,068.83	1,002.27	958.73	43.55	23.016	
6,250.00	6,248.46	6,181.81	6,164.85	22.13	22.25	49.18	-35.21	1,073.61	1,005.92	962.01	43.91	22.910	
6,300.00	6,298.44	6,231.67	6,214.45	22.31	22.44	49.12	-33.57	1,078.39	1,009.57	965.30	44.27	22.807	
6,350.00	6,348.42	6,281.52	6,264.05	22.49	22.62	49.06	-31.94	1,083.17	1,013.22	968.59	44.63	22.705	
6,400.00	6,398.40	6,331.38	6,313.65	22.67	22.81	49.00	-30.30	1,087.95	1,016.87	971.88	44.99	22.604	
6,450.00	6,448.38	6,381.23	6,363.25	22.85	23.00	48.95	-28.66	1,092.73	1,020.52	975.18	45.35	22.506	
6,500.00	6,498.36	6,431.09	6,412.85	23.03	23.19	48.89	-27.03	1,097.51	1,024.18	978.47	45.70	22.408	
6,550.00	6,548.34	6,480.95	6,462.45	23.21	23.38	48.83	-25.39	1,102.29	1,027.83	981.76	46.06	22.313	
6,600.00	6,598.32	6,530.80	6,512.05	23.39	23.56	48.77	-23.75	1,107.07	1,031.48	985.06	46.42	22.219	
6,650.00	6,648.30	6,580.66	6,561.64	23.57	23.75	48.72	-22.12	1,111.85	1,035.14	988.36	46.78	22.126	
6,700.00	6,698.27	6,630.51	6,611.24	23.75	23.94	48.66	-20.48	1,116.63	1,038.80	991.65	47.14	22.035	
6,750.00	6,748.25	6,680.37	6,660.84	23.93	24.13	48.61	-18.85	1,121.41	1,042.45	994.95	47.50	21.945	
6,800.00	6,798.23	6,730.22	6,710.44	24.11	24.32	48.55	-17.21	1,126.19	1,046.11	998.25	47.86	21.856	
6,850.00	6,848.21	6,780.08	6,760.04	24.29	24.51	48.50	-15.57	1,130.97	1,049.77	1,001.55	48.22	21.769	
6,900.00	6,898.19	6,829.94	6,809.64	24.47	24.70	48.44	-13.94	1,135.75	1,053.43	1,004.85	48.58	21.683	
6,950.00	6,948.17	6,879.79	6,859.24	24.65	24.88	48.39	-12.30	1,140.53	1,057.10	1,008.15	48.94	21.598	
7,000.00	6,998.15	6,929.65	6,908.84	24.83	25.07	48.33	-10.67	1,145.31	1,060.76	1,011.46	49.30	21.515	
7,050.00	7,048.13	6,979.50	6,958.44	25.00	25.26	48.28	-9.03	1,150.09	1,064.42	1,014.76	49.66	21.433	
7,100.00	7,098.11	7,029.36	7,008.04	25.18	25.45	48.23	-7.39	1,154.87	1,068.09	1,018.06	50.02	21.352	
7,150.00	7,148.08	7,079.22	7,057.64	25.36	25.64	48.18	-5.76	1,159.65	1,071.75	1,021.37	50.38	21.272	
7,200.00	7,198.06	7,129.07	7,107.24	25.54	25.83	48.12	-4.12	1,164.43	1,075.42	1,024.67	50.74	21.193	
7,250.00	7,248.04	7,178.93	7,156.83	25.72	26.02	48.07	-2.48	1,169.21	1,079.08	1,027.98	51.10	21.116	
7,300.00	7,298.02	7,228.78	7,206.43	25.90	26.20	48.02	-0.85	1,173.99	1,082.75	1,031.29	51.46	21.039	
7,350.00	7,348.00	7,278.64	7,256.03	26.08	26.39	47.97	0.79	1,178.77	1,086.42	1,034.60	51.82	20.964	
7,400.00	7,397.98	7,328.49	7,305.63	26.26	26.58	47.92	2.42	1,183.55	1,090.09	1,037.91	52.18	20.890	
7,450.00	7,447.96	7,378.35	7,355.23	26.44	26.77	47.87	4.06	1,188.33	1,093.76	1,041.22	52.54	20.816	
7,500.00	7,497.94	7,428.21	7,404.83	26.62	26.96	47.82	5.70	1,193.11	1,097.43	1,044.53	52.90	20.744	
7,550.00	7,547.92	7,478.06	7,454.43	26.80	27.15	47.77	7.33	1,197.89	1,101.11	1,047.84	53.26	20.673	
7,600.00	7,597.89	7,527.92	7,504.03	26.98	27.34	47.72	8.97	1,202.67	1,104.78	1,051.15	53.62	20.602	
7,650.00	7,647.87	7,592.62	7,568.44	27.16	27.58	47.66	10.96	1,208.49	1,108.18	1,054.11	54.07	20.496	
7,700.00	7,697.85	7,660.69	7,636.30	27.34	27.83	47.63	12.68	1,213.51	1,110.78	1,056.26	54.52	20.374	
7,750.00	7,747.83	7,728.86	7,704.35	27.52	28.08	47.62	14.01	1,217.39	1,112.56	1,057.60	54.96	20.244	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	7,797.81	7,797.09	7,772.52	27.70	28.33	47.64	14.94	1,220.12	1,113.52	1,058.14	55.38	20.106	
7,850.00	7,847.79	7,865.34	7,840.74	27.88	28.57	47.68	15.48	1,221.70	1,113.66	1,057.87	55.80	19.959	
7,900.00	7,897.77	7,931.17	7,906.57	28.06	28.80	47.74	15.63	1,222.13	1,112.99	1,056.80	56.19	19.807	
7,950.00	7,947.75	7,981.15	7,956.55	28.24	28.97	47.80	15.63	1,222.13	1,112.02	1,055.47	56.54	19.666	
8,000.00	7,997.73	8,031.13	8,006.53	28.42	29.14	47.85	15.63	1,222.13	1,111.04	1,054.14	56.90	19.527	
8,050.00	8,047.70	8,081.11	8,056.50	28.60	29.31	47.91	15.63	1,222.13	1,110.07	1,052.82	57.25	19.389	
8,100.00	8,097.68	8,131.08	8,106.48	28.78	29.49	47.96	15.63	1,222.13	1,109.09	1,051.49	57.61	19.253	
8,150.00	8,147.66	8,181.06	8,156.46	28.96	29.66	48.02	15.63	1,222.13	1,108.12	1,050.16	57.96	19.119	
8,200.00	8,197.64	8,231.04	8,206.44	29.13	29.83	48.07	15.63	1,222.13	1,107.15	1,048.84	58.31	18.986	
8,250.00	8,247.62	8,281.02	8,256.42	29.31	30.00	48.13	15.63	1,222.13	1,106.18	1,047.51	58.67	18.855	
8,300.00	8,297.60	8,331.00	8,306.40	29.49	30.17	48.19	15.63	1,222.13	1,105.21	1,046.19	59.02	18.725	
8,350.00	8,347.58	8,380.98	8,356.38	29.67	30.35	48.24	15.63	1,222.13	1,104.24	1,044.87	59.38	18.597	
8,400.00	8,397.56	8,430.96	8,406.36	29.85	30.52	48.30	15.63	1,222.13	1,103.28	1,043.55	59.73	18.471	
8,450.00	8,447.54	8,480.94	8,456.34	30.03	30.69	48.36	15.63	1,222.13	1,102.31	1,042.23	60.08	18.346	
8,500.00	8,497.51	8,530.92	8,506.31	30.21	30.86	48.41	15.63	1,222.13	1,101.35	1,040.91	60.44	18.223	
8,550.00	8,547.49	8,580.90	8,556.29	30.39	31.04	48.47	15.63	1,222.13	1,100.38	1,039.59	60.79	18.100	
8,600.00	8,597.47	8,630.87	8,606.27	30.57	31.21	48.53	15.63	1,222.13	1,099.42	1,038.27	61.15	17.980	
8,650.00	8,647.45	8,673.63	8,649.00	30.75	31.35	48.64	14.44	1,222.14	1,098.60	1,037.13	61.48	17.870	
8,700.00	8,697.43	8,714.95	8,690.10	30.93	31.48	48.90	10.29	1,222.16	1,098.17	1,036.38	61.80	17.770	
8,724.39	8,721.81	8,734.79	8,709.71	31.02	31.54	49.08	7.24	1,222.18	1,098.12	1,036.17	61.95	17.726	
8,750.00	8,747.41	8,755.35	8,729.90	31.11	31.60	49.30	3.38	1,222.20	1,098.18	1,036.07	62.11	17.681	
8,800.00	8,797.39	8,794.48	8,767.89	31.29	31.72	49.83	-5.97	1,222.26	1,098.70	1,036.29	62.41	17.604	
8,850.00	8,847.37	8,832.05	8,803.68	31.47	31.82	50.46	-17.37	1,222.32	1,099.83	1,037.13	62.70	17.542	
8,900.00	8,897.35	8,867.85	8,837.03	31.65	31.92	51.17	-30.39	1,222.39	1,101.66	1,038.70	62.96	17.497	
8,950.00	8,947.33	8,900.00	8,866.22	31.83	32.01	51.90	-43.84	1,222.47	1,104.32	1,041.13	63.20	17.474	
9,000.00	8,997.30	8,933.67	8,895.94	32.01	32.09	52.74	-59.65	1,222.56	1,107.92	1,044.50	63.42	17.470 SF	
9,050.00	9,047.28	8,963.60	8,921.54	32.19	32.16	53.56	-75.16	1,222.65	1,112.55	1,048.96	63.60	17.494	
9,100.00	9,097.26	8,991.58	8,944.71	32.37	32.22	54.39	-90.83	1,222.73	1,118.33	1,054.60	63.73	17.547	
9,150.00	9,147.24	9,017.66	8,965.59	32.55	32.27	55.20	-106.46	1,222.82	1,125.33	1,061.51	63.83	17.631	
9,200.00	9,197.22	9,041.94	8,984.37	32.73	32.32	56.00	-121.84	1,222.91	1,133.64	1,069.77	63.87	17.749	
9,250.00	9,247.20	9,064.52	9,001.24	32.91	32.36	56.76	-136.84	1,222.99	1,143.31	1,079.45	63.86	17.903	
9,300.00	9,297.18	9,085.50	9,016.38	33.09	32.40	57.50	-151.38	1,223.07	1,154.39	1,090.59	63.80	18.093	
9,350.00	9,347.16	9,100.00	9,026.52	33.27	32.43	58.03	-161.74	1,223.13	1,166.92	1,103.27	63.65	18.335	
9,400.00	9,397.14	9,123.14	9,042.15	33.45	32.46	58.88	-178.80	1,223.23	1,180.86	1,117.33	63.54	18.586	
9,450.00	9,447.11	9,140.02	9,053.11	33.63	32.49	59.52	-191.63	1,223.30	1,196.28	1,132.96	63.32	18.892	
9,500.00	9,497.09	9,150.00	9,059.42	33.81	32.51	59.90	-199.37	1,223.34	1,213.18	1,150.18	63.00	19.257	
9,550.00	9,547.07	9,170.37	9,071.86	33.99	32.54	60.69	-215.50	1,223.43	1,231.45	1,168.68	62.76	19.621	
9,600.00	9,597.05	9,184.04	9,079.88	34.17	32.56	61.23	-226.56	1,223.50	1,251.15	1,188.72	62.42	20.043	
9,650.00	9,647.03	9,200.00	9,088.91	34.35	32.58	61.86	-239.72	1,223.57	1,272.22	1,210.13	62.09	20.491	
9,700.00	9,697.01	9,200.00	9,088.91	34.53	32.58	61.86	-239.72	1,223.57	1,294.68	1,233.14	61.54	21.037	
9,750.00	9,746.99	9,219.94	9,099.67	34.71	32.61	62.67	-256.50	1,223.67	1,318.30	1,257.07	61.23	21.532	
9,800.00	9,796.97	9,230.43	9,105.10	34.88	32.63	63.09	-265.48	1,223.72	1,343.22	1,282.44	60.78	22.099	
9,850.00	9,846.95	9,250.00	9,114.78	35.06	32.66	63.89	-282.49	1,223.81	1,369.42	1,308.98	60.44	22.656	
9,900.00	9,896.92	9,250.00	9,114.78	35.24	32.66	63.89	-282.49	1,223.81	1,396.59	1,336.73	59.86	23.330	
9,950.00	9,946.90	9,250.00	9,114.78	35.42	32.66	63.89	-282.49	1,223.81	1,424.99	1,365.71	59.28	24.038	
10,000.00	9,996.88	9,266.51	9,122.49	35.60	32.68	64.57	-297.08	1,223.89	1,454.30	1,395.40	58.91	24.688	
10,050.00	10,046.86	9,274.27	9,125.97	35.78	32.69	64.89	-304.03	1,223.93	1,484.66	1,426.23	58.43	25.409	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 2 — **Offset Site Error:** 5.00 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	8.80	8.80	0.50	0.50	101.07	-146.50	748.45	762.65				
50.00	50.00	58.80	58.80	0.50	0.51	101.07	-146.50	748.45	762.65	761.65	1.01	756.442	
100.00	100.00	108.80	108.80	0.52	0.53	101.07	-146.50	748.45	762.65	761.61	1.04	730.105	
150.00	150.00	158.80	158.80	0.59	0.61	101.07	-146.50	748.45	762.65	761.46	1.20	636.695	
200.00	200.00	208.80	208.80	0.70	0.72	101.07	-146.50	748.45	762.65	761.23	1.43	534.558	
250.00	250.00	258.80	258.80	0.84	0.86	101.07	-146.50	748.45	762.65	760.95	1.70	448.372	
300.00	300.00	308.80	308.80	0.99	1.01	101.07	-146.50	748.45	762.65	760.65	2.00	380.947	
350.00	350.00	358.80	358.80	1.15	1.17	101.07	-146.50	748.45	762.65	760.34	2.32	328.809	
400.00	400.00	408.80	408.80	1.31	1.34	101.07	-146.50	748.45	762.65	760.01	2.65	288.078	
450.00	450.00	458.80	458.80	1.48	1.51	101.07	-146.50	748.45	762.65	759.67	2.98	255.721	
500.00	500.00	508.80	508.80	1.65	1.68	101.07	-146.50	748.45	762.65	759.33	3.32	229.559	
550.00	550.00	558.80	558.80	1.82	1.85	101.07	-146.50	748.45	762.65	758.99	3.67	208.052	
600.00	600.00	608.80	608.80	1.99	2.02	101.07	-146.50	748.45	762.65	758.64	4.01	190.105	
650.00	650.00	658.80	658.80	2.16	2.20	101.07	-146.50	748.45	762.65	758.29	4.36	174.928	
700.00	700.00	708.80	708.80	2.34	2.37	101.07	-146.50	748.45	762.65	757.95	4.71	161.941	
750.00	750.00	758.80	758.80	2.51	2.55	101.07	-146.50	748.45	762.65	757.59	5.06	150.713	
800.00	800.00	808.80	808.80	2.69	2.72	101.07	-146.50	748.45	762.65	757.24	5.41	140.914	
850.00	850.00	858.80	858.80	2.87	2.90	101.07	-146.50	748.45	762.65	756.89	5.76	132.293	
900.00	900.00	908.80	908.80	3.04	3.07	101.07	-146.50	748.45	762.65	756.54	6.12	124.653	
950.00	950.00	958.80	958.80	3.22	3.25	101.07	-146.50	748.45	762.65	756.18	6.47	117.837	
1,000.00	1,000.00	1,008.80	1,008.80	3.40	3.43	101.07	-146.50	748.45	762.65	755.83	6.83	111.719	
1,050.00	1,050.00	1,058.80	1,058.80	3.58	3.61	101.07	-146.50	748.45	762.65	755.47	7.18	106.200	
1,100.00	1,100.00	1,108.80	1,108.80	3.75	3.78	101.07	-146.50	748.45	762.65	755.12	7.54	101.195	
1,150.00	1,150.00	1,158.80	1,158.80	3.93	3.96	101.07	-146.50	748.45	762.65	754.76	7.89	96.637	
1,200.00	1,200.00	1,208.80	1,208.80	4.11	4.14	101.07	-146.50	748.45	762.65	754.41	8.25	92.470	
1,250.00	1,250.00	1,258.80	1,258.80	4.29	4.32	101.07	-146.50	748.45	762.65	754.05	8.60	88.644	
1,300.00	1,300.00	1,308.80	1,308.80	4.46	4.50	101.07	-146.50	748.45	762.65	753.69	8.96	85.121	
1,350.00	1,350.00	1,358.80	1,358.80	4.64	4.67	101.07	-146.50	748.45	762.65	753.34	9.32	81.865	
1,400.00	1,400.00	1,408.80	1,408.80	4.82	4.85	101.07	-146.50	748.45	762.65	752.98	9.67	78.848	
1,450.00	1,450.00	1,458.80	1,458.80	5.00	5.03	101.07	-146.50	748.45	762.65	752.63	10.03	76.044	
1,500.00	1,500.00	1,508.80	1,508.80	5.18	5.21	101.07	-146.50	748.45	762.65	752.27	10.39	73.432	
1,550.00	1,550.00	1,558.80	1,558.80	5.36	5.39	101.07	-146.50	748.45	762.65	751.91	10.74	70.993	
1,600.00	1,600.00	1,608.80	1,608.80	5.53	5.57	101.07	-146.50	748.45	762.65	751.55	11.10	68.710	
1,650.00	1,650.00	1,658.80	1,658.80	5.71	5.74	101.07	-146.50	748.45	762.65	751.20	11.46	66.568	
1,700.00	1,700.00	1,708.80	1,708.80	5.89	5.92	101.07	-146.50	748.45	762.65	750.84	11.81	64.556	
1,750.00	1,750.00	1,758.80	1,758.80	6.07	6.10	101.07	-146.50	748.45	762.65	750.48	12.17	62.661	
1,800.00	1,800.00	1,808.80	1,808.80	6.25	6.28	101.07	-146.50	748.45	762.65	750.13	12.53	60.874	
1,850.00	1,850.00	1,858.80	1,858.80	6.43	6.46	101.07	-146.50	748.45	762.65	749.77	12.89	59.186	
1,900.00	1,900.00	1,908.80	1,908.80	6.61	6.64	101.07	-146.50	748.45	762.65	749.41	13.24	57.588	
1,950.00	1,950.00	1,958.80	1,958.80	6.78	6.82	101.07	-146.50	748.45	762.65	749.05	13.60	56.075	
2,000.00	2,000.00	2,008.80	2,008.80	6.96	6.99	101.07	-146.50	748.45	762.65	748.70	13.96	54.639	
2,050.00	2,050.00	2,058.80	2,058.80	7.14	7.17	101.07	-146.50	748.45	762.65	748.34	14.32	53.274	
2,100.00	2,100.00	2,108.80	2,108.80	7.32	7.35	101.07	-146.50	748.45	762.65	747.98	14.67	51.975	
2,150.00	2,150.00	2,158.80	2,158.80	7.50	7.53	101.07	-146.50	748.45	762.65	747.62	15.03	50.739	
2,200.00	2,200.00	2,208.80	2,208.80	7.68	7.71	101.07	-146.50	748.45	762.65	747.27	15.39	49.559	
2,250.00	2,250.00	2,258.80	2,258.80	7.86	7.89	101.07	-146.50	748.45	762.65	746.91	15.75	48.433	
2,300.00	2,300.00	2,308.80	2,308.80	8.04	8.07	101.07	-146.50	748.45	762.65	746.55	16.10	47.357	
2,350.00	2,350.00	2,358.80	2,358.80	8.22	8.25	101.07	-146.50	748.45	762.65	746.19	16.46	46.328	
2,400.00	2,400.00	2,408.80	2,408.80	8.39	8.43	101.07	-146.50	748.45	762.65	745.83	16.82	45.343	
2,450.00	2,450.00	2,458.80	2,458.80	8.57	8.60	101.07	-146.50	748.45	762.65	745.48	17.18	44.398	
2,500.00	2,500.00	2,508.80	2,508.80	8.75	8.78	101.07	-146.50	748.45	762.65	745.12	17.54	43.492 CC	
2,550.00	2,550.00	2,552.13	2,552.13	8.93	8.93	54.18	-146.48	748.69	762.78	744.92	17.86	42.702	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 2 — **Offset Site Error:** 5.00 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	2,599.99	2,596.45	2,596.44	9.11	9.09	54.20	-146.43	749.26	763.02	744.83	18.19	41.938 ES	
2,650.00	2,649.98	2,640.77	2,640.75	9.28	9.24	54.24	-146.35	750.17	763.38	744.86	18.52	41.220	
2,700.00	2,699.96	2,685.08	2,685.05	9.46	9.39	54.29	-146.25	751.43	763.91	745.07	18.84	40.539	
2,750.00	2,749.94	2,729.39	2,729.33	9.64	9.55	54.33	-146.11	753.03	764.80	745.64	19.17	39.900	
2,800.00	2,799.92	2,773.69	2,773.58	9.81	9.70	54.37	-145.95	754.96	766.07	746.58	19.49	39.303	
2,850.00	2,849.90	2,817.96	2,817.80	9.99	9.85	54.40	-145.76	757.24	767.70	747.89	19.81	38.746	
2,900.00	2,899.88	2,862.22	2,861.98	10.17	10.01	54.42	-145.54	759.86	769.71	749.57	20.14	38.227	
2,950.00	2,949.86	2,906.45	2,906.11	10.34	10.16	54.44	-145.29	762.81	772.08	751.63	20.46	37.743	
3,000.00	2,999.84	2,950.65	2,950.18	10.52	10.31	54.45	-145.01	766.10	774.83	754.05	20.78	37.294	
3,050.00	3,049.81	2,994.80	2,994.19	10.70	10.47	54.45	-144.70	769.73	777.94	756.85	21.10	36.878	
3,100.00	3,099.79	3,038.92	3,038.12	10.88	10.62	54.45	-144.37	773.69	781.43	760.01	21.41	36.493	
3,150.00	3,149.77	3,087.39	3,086.38	11.05	10.79	54.43	-143.98	778.30	785.17	763.42	21.75	36.092	
3,200.00	3,199.75	3,137.25	3,136.01	11.23	10.97	54.42	-143.58	783.06	788.93	766.82	22.10	35.691	
3,250.00	3,249.73	3,187.11	3,185.64	11.41	11.14	54.41	-143.18	787.82	792.69	770.23	22.45	35.302	
3,300.00	3,299.71	3,236.97	3,235.27	11.59	11.32	54.40	-142.77	792.58	796.44	773.64	22.80	34.925	
3,350.00	3,349.69	3,286.83	3,284.90	11.76	11.50	54.39	-142.37	797.33	800.20	777.04	23.16	34.558	
3,400.00	3,399.67	3,336.69	3,334.53	11.94	11.68	54.38	-141.97	802.09	803.96	780.45	23.51	34.202	
3,450.00	3,449.65	3,386.55	3,384.15	12.12	11.85	54.37	-141.57	806.85	807.71	783.85	23.86	33.856	
3,500.00	3,499.62	3,436.40	3,433.78	12.30	12.03	54.36	-141.17	811.60	811.47	787.26	24.21	33.519	
3,550.00	3,549.60	3,486.26	3,483.41	12.48	12.21	54.35	-140.77	816.36	815.23	790.66	24.56	33.192	
3,600.00	3,599.58	3,536.12	3,533.04	12.65	12.39	54.34	-140.36	821.12	818.98	794.07	24.91	32.874	
3,650.00	3,649.56	3,585.98	3,582.67	12.83	12.57	54.33	-139.96	825.87	822.74	797.47	25.27	32.564	
3,700.00	3,699.54	3,635.84	3,632.30	13.01	12.75	54.32	-139.56	830.63	826.50	800.88	25.62	32.262	
3,750.00	3,749.52	3,685.70	3,681.93	13.19	12.93	54.31	-139.16	835.39	830.25	804.28	25.97	31.969	
3,800.00	3,799.50	3,735.55	3,731.56	13.37	13.11	54.30	-138.76	840.15	834.01	807.69	26.32	31.683	
3,850.00	3,849.48	3,785.41	3,781.19	13.54	13.29	54.29	-138.36	844.90	837.77	811.09	26.68	31.404	
3,900.00	3,899.46	3,835.27	3,830.82	13.72	13.47	54.28	-137.95	849.66	841.52	814.49	27.03	31.132	
3,950.00	3,949.44	3,885.13	3,880.45	13.90	13.65	54.27	-137.55	854.42	845.28	817.90	27.38	30.867	
4,000.00	3,999.41	3,934.99	3,930.08	14.08	13.83	54.26	-137.15	859.17	849.04	821.30	27.74	30.609	
4,050.00	4,049.39	3,984.85	3,979.71	14.26	14.01	54.25	-136.75	863.93	852.79	824.70	28.09	30.356	
4,100.00	4,099.37	4,034.71	4,029.34	14.44	14.20	54.24	-136.35	868.69	856.55	828.10	28.45	30.110	
4,150.00	4,149.35	4,084.56	4,078.97	14.61	14.38	54.23	-135.95	873.45	860.31	831.51	28.80	29.870	
4,200.00	4,199.33	4,134.42	4,128.60	14.79	14.56	54.22	-135.54	878.20	864.07	834.91	29.16	29.636	
4,250.00	4,249.31	4,184.28	4,178.22	14.97	14.74	54.21	-135.14	882.96	867.82	838.31	29.51	29.407	
4,300.00	4,299.29	4,234.14	4,227.85	15.15	14.93	54.20	-134.74	887.72	871.58	841.71	29.87	29.183	
4,350.00	4,349.27	4,284.00	4,277.48	15.33	15.11	54.19	-134.34	892.47	875.34	845.12	30.22	28.964	
4,400.00	4,399.25	4,333.86	4,327.11	15.51	15.29	54.18	-133.94	897.23	879.09	848.52	30.58	28.751	
4,450.00	4,449.22	4,383.71	4,376.74	15.69	15.47	54.17	-133.53	901.99	882.85	851.92	30.93	28.542	
4,500.00	4,499.20	4,433.57	4,426.37	15.86	15.66	54.16	-133.13	906.75	886.61	855.32	31.29	28.337	
4,550.00	4,549.18	4,483.43	4,476.00	16.04	15.84	54.15	-132.73	911.50	890.37	858.72	31.64	28.137	
4,600.00	4,599.16	4,533.29	4,525.63	16.22	16.03	54.15	-132.33	916.26	894.12	862.12	32.00	27.942	
4,650.00	4,649.14	4,583.15	4,575.26	16.40	16.21	54.14	-131.93	921.02	897.88	865.52	32.36	27.751	
4,700.00	4,699.12	4,633.01	4,624.89	16.58	16.39	54.13	-131.53	925.77	901.64	868.93	32.71	27.563	
4,750.00	4,749.10	4,682.86	4,674.52	16.76	16.58	54.12	-131.12	930.53	905.39	872.33	33.07	27.380	
4,800.00	4,799.08	4,732.72	4,724.15	16.94	16.76	54.11	-130.72	935.29	909.15	875.73	33.42	27.201	
4,850.00	4,849.06	4,782.58	4,773.78	17.12	16.95	54.10	-130.32	940.05	912.91	879.13	33.78	27.025	
4,900.00	4,899.03	4,832.44	4,823.41	17.30	17.13	54.09	-129.92	944.80	916.67	882.53	34.14	26.853	
4,950.00	4,949.01	4,882.30	4,873.04	17.47	17.31	54.09	-129.52	949.56	920.42	885.93	34.49	26.684	
5,000.00	4,998.99	4,932.16	4,922.66	17.65	17.50	54.08	-129.12	954.32	924.18	889.33	34.85	26.519	
5,050.00	5,048.97	4,982.02	4,972.29	17.83	17.68	54.07	-128.71	959.07	927.94	892.73	35.21	26.357	
5,100.00	5,098.95	5,031.87	5,021.92	18.01	17.87	54.06	-128.31	963.83	931.70	896.13	35.56	26.198	
5,150.00	5,148.93	5,081.73	5,071.55	18.19	18.05	54.05	-127.91	968.59	935.45	899.53	35.92	26.042	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 2

Survey Program: 0-MWD+HDGM

Offset Site Error: 5.00 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	5,198.91	5,131.59	5,121.18	18.37	18.24	54.05	-127.51	973.35	939.21	902.93	36.28	25.889	
5,250.00	5,248.89	5,181.45	5,170.81	18.55	18.42	54.04	-127.11	978.10	942.97	906.33	36.64	25.739	
5,300.00	5,298.87	5,231.31	5,220.44	18.73	18.61	54.03	-126.71	982.86	946.73	909.73	36.99	25.592	
5,350.00	5,348.84	5,281.17	5,270.07	18.91	18.80	54.02	-126.30	987.62	950.48	913.13	37.35	25.448	
5,400.00	5,398.82	5,331.02	5,319.70	19.09	18.98	54.01	-125.90	992.37	954.24	916.53	37.71	25.306	
5,450.00	5,448.80	5,380.88	5,369.33	19.27	19.17	54.01	-125.50	997.13	958.00	919.93	38.07	25.167	
5,500.00	5,498.78	5,430.74	5,418.96	19.44	19.35	54.00	-125.10	1,001.89	961.76	923.33	38.42	25.031	
5,550.00	5,548.76	5,480.60	5,468.59	19.62	19.54	53.99	-124.70	1,006.65	965.51	926.73	38.78	24.897	
5,600.00	5,598.74	5,530.46	5,518.22	19.80	19.72	53.98	-124.30	1,011.40	969.27	930.13	39.14	24.765	
5,650.00	5,648.72	5,580.32	5,567.85	19.98	19.91	53.98	-123.89	1,016.16	973.03	933.53	39.50	24.636	
5,700.00	5,698.70	5,630.18	5,617.48	20.16	20.10	53.97	-123.49	1,020.92	976.79	936.93	39.85	24.509	
5,750.00	5,748.68	5,680.03	5,667.11	20.34	20.28	53.96	-123.09	1,025.67	980.54	940.33	40.21	24.385	
5,800.00	5,798.65	5,729.89	5,716.73	20.52	20.47	53.95	-122.69	1,030.43	984.30	943.73	40.57	24.262	
5,850.00	5,848.63	5,779.75	5,766.36	20.70	20.66	53.95	-122.29	1,035.19	988.06	947.13	40.93	24.142	
5,900.00	5,898.61	5,829.61	5,815.99	20.88	20.84	53.94	-121.89	1,039.95	991.82	950.53	41.29	24.023	
5,950.00	5,948.59	5,879.47	5,865.62	21.06	21.03	53.93	-121.48	1,044.70	995.58	953.93	41.64	23.907	
6,000.00	5,998.57	5,929.33	5,915.25	21.24	21.21	53.93	-121.08	1,049.46	999.33	957.33	42.00	23.792	
6,050.00	6,048.55	5,979.18	5,964.88	21.42	21.40	53.92	-120.68	1,054.22	1,003.09	960.73	42.36	23.680	
6,100.00	6,098.53	6,029.04	6,014.51	21.60	21.59	53.91	-120.28	1,058.97	1,006.85	964.13	42.72	23.569	
6,150.00	6,148.51	6,078.90	6,064.14	21.77	21.77	53.91	-119.88	1,063.73	1,010.61	967.53	43.08	23.460	
6,200.00	6,198.49	6,128.76	6,113.77	21.95	21.96	53.90	-119.47	1,068.49	1,014.36	970.93	43.44	23.353	
6,250.00	6,248.46	6,178.62	6,163.40	22.13	22.15	53.89	-119.07	1,073.25	1,018.12	974.33	43.79	23.248	
6,300.00	6,298.44	6,228.48	6,213.03	22.31	22.34	53.89	-118.67	1,078.00	1,021.88	977.73	44.15	23.144	
6,350.00	6,348.42	6,278.34	6,262.66	22.49	22.52	53.88	-118.27	1,082.76	1,025.64	981.13	44.51	23.042	
6,400.00	6,398.40	6,328.19	6,312.29	22.67	22.71	53.87	-117.87	1,087.52	1,029.40	984.53	44.87	22.942	
6,450.00	6,448.38	6,378.05	6,361.92	22.85	22.90	53.87	-117.47	1,092.27	1,033.15	987.92	45.23	22.843	
6,500.00	6,498.36	6,427.91	6,411.55	23.03	23.08	53.86	-117.06	1,097.03	1,036.91	991.32	45.59	22.745	
6,550.00	6,548.34	6,477.77	6,461.17	23.21	23.27	53.85	-116.66	1,101.79	1,040.67	994.72	45.95	22.650	
6,600.00	6,598.32	6,527.63	6,510.80	23.39	23.46	53.85	-116.26	1,106.55	1,044.43	998.12	46.31	22.555	
6,650.00	6,648.30	6,577.49	6,560.43	23.57	23.65	53.84	-115.86	1,111.30	1,048.19	1,001.52	46.66	22.462	
6,700.00	6,698.27	6,627.34	6,610.06	23.75	23.83	53.83	-115.46	1,116.06	1,051.94	1,004.92	47.02	22.371	
6,750.00	6,748.25	6,677.20	6,659.69	23.93	24.02	53.83	-115.06	1,120.82	1,055.70	1,008.32	47.38	22.281	
6,800.00	6,798.23	6,727.06	6,709.32	24.11	24.21	53.82	-114.65	1,125.57	1,059.46	1,011.72	47.74	22.192	
6,850.00	6,848.21	6,776.92	6,758.95	24.29	24.39	53.81	-114.25	1,130.33	1,063.22	1,015.12	48.10	22.104	
6,900.00	6,898.19	6,826.78	6,808.58	24.47	24.58	53.81	-113.85	1,135.09	1,066.97	1,018.52	48.46	22.018	
6,950.00	6,948.17	6,876.64	6,858.21	24.65	24.77	53.80	-113.45	1,139.85	1,070.73	1,021.91	48.82	21.933	
7,000.00	6,998.15	6,926.50	6,907.84	24.83	24.96	53.80	-113.05	1,144.60	1,074.49	1,025.31	49.18	21.849	
7,050.00	7,048.13	6,976.35	6,957.47	25.00	25.15	53.79	-112.65	1,149.36	1,078.25	1,028.71	49.54	21.767	
7,100.00	7,098.11	7,026.21	7,007.10	25.18	25.33	53.78	-112.24	1,154.12	1,082.01	1,032.11	49.90	21.685	
7,150.00	7,148.08	7,076.07	7,056.73	25.36	25.52	53.78	-111.84	1,158.87	1,085.76	1,035.51	50.26	21.605	
7,200.00	7,198.06	7,125.93	7,106.36	25.54	25.71	53.77	-111.44	1,163.63	1,089.52	1,038.91	50.61	21.526	
7,250.00	7,248.04	7,175.79	7,155.99	25.72	25.90	53.77	-111.04	1,168.39	1,093.28	1,042.31	50.97	21.448	
7,300.00	7,298.02	7,225.65	7,205.62	25.90	26.08	53.76	-110.64	1,173.15	1,097.04	1,045.71	51.33	21.371	
7,350.00	7,348.00	7,275.50	7,255.24	26.08	26.27	53.75	-110.24	1,177.90	1,100.80	1,049.10	51.69	21.295	
7,400.00	7,397.98	7,325.36	7,304.87	26.26	26.46	53.75	-109.83	1,182.66	1,104.56	1,052.50	52.05	21.220	
7,450.00	7,447.96	7,375.22	7,354.50	26.44	26.65	53.74	-109.43	1,187.42	1,108.31	1,055.90	52.41	21.146	
7,500.00	7,497.94	7,425.08	7,404.13	26.62	26.84	53.74	-109.03	1,192.17	1,112.07	1,059.30	52.77	21.074	
7,550.00	7,547.92	7,474.94	7,453.76	26.80	27.02	53.73	-108.63	1,196.93	1,115.83	1,062.70	53.13	21.002	
7,600.00	7,597.89	7,524.80	7,503.39	26.98	27.21	53.73	-108.23	1,201.69	1,119.59	1,066.10	53.49	20.931	
7,650.00	7,647.87	7,582.11	7,560.45	27.16	27.43	53.72	-107.77	1,207.07	1,123.28	1,069.39	53.89	20.843	
7,700.00	7,697.85	7,651.80	7,629.91	27.34	27.69	53.73	-107.30	1,212.61	1,126.27	1,071.92	54.35	20.721	
7,750.00	7,747.83	7,721.60	7,699.59	27.52	27.94	53.75	-106.94	1,216.89	1,128.38	1,073.58	54.80	20.590	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 2 — **Offset Site Error:** 5.00 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	7,797.81	7,791.49	7,769.40	27.70	28.19	53.80	-106.69	1,219.91	1,129.61	1,074.37	55.24	20.450	
7,850.00	7,847.79	7,861.40	7,839.29	27.88	28.44	53.85	-106.54	1,221.65	1,129.96	1,074.30	55.66	20.301	
7,900.00	7,897.77	7,928.68	7,906.57	28.06	28.67	53.93	-106.50	1,222.13	1,129.44	1,073.38	56.06	20.148	
7,950.00	7,947.75	7,978.66	7,956.55	28.24	28.85	53.99	-106.50	1,222.13	1,128.58	1,072.17	56.41	20.006	
8,000.00	7,997.73	8,028.63	8,006.53	28.42	29.02	54.05	-106.50	1,222.13	1,127.73	1,070.96	56.76	19.867	
8,050.00	8,047.70	8,078.61	8,056.50	28.60	29.19	54.11	-106.50	1,222.13	1,126.88	1,069.76	57.12	19.729	
8,100.00	8,097.68	8,128.59	8,106.48	28.78	29.36	54.17	-106.50	1,222.13	1,126.03	1,068.55	57.47	19.593	
8,150.00	8,147.66	8,178.57	8,156.46	28.96	29.53	54.23	-106.50	1,222.13	1,125.18	1,067.35	57.82	19.459	
8,200.00	8,197.64	8,228.55	8,206.44	29.13	29.70	54.29	-106.50	1,222.13	1,124.33	1,066.15	58.18	19.326	
8,250.00	8,247.62	8,278.53	8,256.42	29.31	29.87	54.35	-106.50	1,222.13	1,123.48	1,064.95	58.53	19.195	
8,300.00	8,297.60	8,328.51	8,306.40	29.49	30.05	54.41	-106.50	1,222.13	1,122.63	1,063.75	58.88	19.065	
8,350.00	8,347.58	8,378.49	8,356.38	29.67	30.22	54.47	-106.50	1,222.13	1,121.79	1,062.55	59.24	18.937	
8,400.00	8,397.56	8,428.47	8,406.36	29.85	30.39	54.53	-106.50	1,222.13	1,120.94	1,061.35	59.59	18.810	
8,450.00	8,447.54	8,478.44	8,456.34	30.03	30.56	54.59	-106.50	1,222.13	1,120.10	1,060.16	59.95	18.685	
8,500.00	8,497.51	8,528.42	8,506.31	30.21	30.73	54.65	-106.50	1,222.13	1,119.26	1,058.96	60.30	18.562	
8,550.00	8,547.49	8,578.40	8,556.29	30.39	30.90	54.71	-106.50	1,222.13	1,118.42	1,057.77	60.65	18.440	
8,600.00	8,597.47	8,628.38	8,606.27	30.57	31.08	54.77	-106.50	1,222.13	1,117.58	1,056.58	61.01	18.319	
8,650.00	8,647.45	8,665.54	8,643.42	30.75	31.20	54.86	-107.36	1,222.14	1,117.00	1,055.67	61.33	18.214	
8,669.70	8,667.15	8,679.46	8,657.30	30.82	31.25	54.92	-108.29	1,222.14	1,116.95	1,055.50	61.45	18.178	
8,700.00	8,697.43	8,700.00	8,677.75	30.93	31.31	55.05	-110.28	1,222.16	1,117.07	1,055.44	61.63	18.126	
8,750.00	8,747.41	8,735.31	8,712.67	31.11	31.43	55.35	-115.41	1,222.19	1,117.83	1,055.91	61.92	18.053	
8,800.00	8,797.39	8,769.09	8,745.74	31.29	31.53	55.73	-122.32	1,222.22	1,119.33	1,057.13	62.20	17.997	
8,850.00	8,847.37	8,800.00	8,775.58	31.47	31.63	56.17	-130.34	1,222.27	1,121.62	1,059.18	62.45	17.961	
8,900.00	8,897.35	8,833.47	8,807.37	31.65	31.73	56.73	-140.82	1,222.33	1,124.77	1,062.08	62.69	17.941 SF	
8,950.00	8,947.33	8,863.80	8,835.59	31.83	31.82	57.31	-151.91	1,222.39	1,128.84	1,065.94	62.90	17.945	
9,000.00	8,997.30	8,892.75	8,861.95	32.01	31.90	57.93	-163.87	1,222.46	1,133.91	1,070.83	63.09	17.974	
9,050.00	9,047.28	8,920.28	8,886.43	32.19	31.98	58.58	-176.47	1,222.53	1,140.05	1,076.81	63.23	18.029	
9,100.00	9,097.26	8,950.00	8,912.14	32.37	32.06	59.34	-191.38	1,222.62	1,147.33	1,083.95	63.37	18.104	
9,150.00	9,147.24	8,971.07	8,929.87	32.55	32.12	59.91	-202.74	1,222.68	1,155.78	1,092.36	63.41	18.226	
9,200.00	9,197.22	9,000.00	8,953.53	32.73	32.19	60.74	-219.39	1,222.78	1,165.50	1,102.01	63.49	18.356	
9,250.00	9,247.20	9,016.29	8,966.47	32.91	32.23	61.22	-229.28	1,222.83	1,176.46	1,113.03	63.42	18.549	
9,300.00	9,297.18	9,036.93	8,982.45	33.09	32.28	61.86	-242.33	1,222.91	1,188.75	1,125.39	63.36	18.762	
9,350.00	9,347.16	9,050.00	8,992.33	33.27	32.31	62.28	-250.90	1,222.96	1,202.40	1,139.21	63.18	19.030	
9,400.00	9,397.14	9,074.58	9,010.36	33.45	32.37	63.08	-267.60	1,223.05	1,217.32	1,154.22	63.10	19.292	
9,450.00	9,447.11	9,100.00	9,028.23	33.63	32.43	63.94	-285.67	1,223.15	1,233.68	1,170.68	63.00	19.581	
9,500.00	9,497.09	9,100.00	9,028.23	33.81	32.43	63.94	-285.67	1,223.15	1,251.31	1,188.73	62.58	19.996	
9,550.00	9,547.07	9,122.98	9,043.69	33.99	32.48	64.74	-302.68	1,223.25	1,270.20	1,207.80	62.40	20.355	
9,600.00	9,597.05	9,137.24	9,052.93	34.17	32.51	65.24	-313.53	1,223.31	1,290.44	1,228.34	62.10	20.780	
9,650.00	9,647.03	9,150.00	9,060.97	34.35	32.54	65.70	-323.45	1,223.37	1,311.95	1,250.19	61.76	21.243	
9,700.00	9,697.01	9,163.29	9,069.11	34.53	32.57	66.18	-333.95	1,223.43	1,334.69	1,273.28	61.41	21.734	
9,750.00	9,746.99	9,175.20	9,076.19	34.71	32.60	66.61	-343.53	1,223.48	1,358.63	1,297.60	61.03	22.262	
9,800.00	9,796.97	9,186.44	9,082.69	34.88	32.62	67.02	-352.70	1,223.54	1,383.71	1,323.08	60.63	22.821	
9,850.00	9,846.95	9,200.00	9,090.29	35.06	32.65	67.53	-363.93	1,223.60	1,409.92	1,349.66	60.26	23.396	
9,900.00	9,896.92	9,200.00	9,090.29	35.24	32.65	67.53	-363.93	1,223.60	1,437.23	1,377.53	59.71	24.072	
9,950.00	9,946.90	9,216.57	9,099.22	35.42	32.69	68.14	-377.89	1,223.68	1,465.48	1,406.10	59.38	24.681	
10,000.00	9,996.88	9,225.56	9,103.89	35.60	32.71	68.48	-385.57	1,223.72	1,494.76	1,435.81	58.95	25.358	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 612H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	0.10	-0.10	0.50	0.50	-90.26	-0.27	-60.00	60.00				
50.00	50.00	49.90	49.90	0.50	0.50	-90.26	-0.27	-60.00	60.00	58.99	1.01	59.614	
100.00	100.00	100.10	99.90	0.52	0.52	-90.26	-0.27	-60.00	60.00	58.97	1.04	57.938	
150.00	150.00	149.90	149.90	0.59	0.59	-90.26	-0.27	-60.00	60.00	58.82	1.18	50.836	
200.00	200.00	200.10	199.90	0.70	0.70	-90.26	-0.27	-60.00	60.00	58.60	1.40	42.722	
250.00	250.00	249.90	249.90	0.84	0.84	-90.26	-0.27	-60.00	60.00	58.33	1.68	35.818	
300.00	300.00	300.10	299.90	0.99	0.99	-90.26	-0.27	-60.00	60.00	58.03	1.97	30.380	
350.00	350.00	349.90	349.90	1.15	1.15	-90.26	-0.27	-60.00	60.00	57.71	2.29	26.194	
400.00	400.00	400.10	399.90	1.31	1.31	-90.26	-0.27	-60.00	60.00	57.38	2.62	22.914	
450.00	450.00	449.90	449.90	1.48	1.48	-90.26	-0.27	-60.00	60.00	57.05	2.95	20.323	
500.00	500.00	500.10	499.90	1.65	1.65	-90.26	-0.27	-60.00	60.00	56.71	3.29	18.223	
550.00	550.00	549.90	549.90	1.82	1.82	-90.26	-0.27	-60.00	60.00	56.37	3.63	16.506	
600.00	600.00	600.10	599.90	1.99	1.99	-90.26	-0.27	-60.00	60.00	56.02	3.98	15.070	
650.00	650.00	649.90	649.90	2.16	2.16	-90.26	-0.27	-60.00	60.00	55.67	4.33	13.861	
700.00	700.00	700.10	699.90	2.34	2.34	-90.26	-0.27	-60.00	60.00	55.32	4.68	12.823	
750.00	750.00	749.90	749.90	2.51	2.51	-90.26	-0.27	-60.00	60.00	54.97	5.03	11.931	
800.00	800.00	800.10	799.90	2.69	2.69	-90.26	-0.27	-60.00	60.00	54.62	5.38	11.149	
850.00	850.00	849.90	849.90	2.87	2.87	-90.26	-0.27	-60.00	60.00	54.27	5.73	10.465	
900.00	900.00	900.10	899.90	3.04	3.04	-90.26	-0.27	-60.00	60.00	53.91	6.09	9.856	
950.00	950.00	949.90	949.90	3.22	3.22	-90.26	-0.27	-60.00	60.00	53.56	6.44	9.316	
1,000.00	1,000.00	1,000.10	999.90	3.40	3.40	-90.26	-0.27	-60.00	60.00	53.21	6.80	8.829	
1,050.00	1,050.00	1,049.90	1,049.90	3.58	3.57	-90.26	-0.27	-60.00	60.00	52.85	7.15	8.392	
1,100.00	1,100.00	1,100.10	1,099.90	3.75	3.75	-90.26	-0.27	-60.00	60.00	52.50	7.51	7.994	
1,150.00	1,150.00	1,149.90	1,149.90	3.93	3.93	-90.26	-0.27	-60.00	60.00	52.14	7.86	7.633	
1,200.00	1,200.00	1,200.10	1,199.90	4.11	4.11	-90.26	-0.27	-60.00	60.00	51.78	8.22	7.302	
1,250.00	1,250.00	1,249.90	1,249.90	4.29	4.29	-90.26	-0.27	-60.00	60.00	51.43	8.57	7.000	
1,300.00	1,300.00	1,300.10	1,299.90	4.46	4.46	-90.26	-0.27	-60.00	60.00	51.07	8.93	6.720	
1,350.00	1,350.00	1,349.90	1,349.90	4.64	4.64	-90.26	-0.27	-60.00	60.00	50.72	9.28	6.463	
1,400.00	1,400.00	1,400.10	1,399.90	4.82	4.82	-90.26	-0.27	-60.00	60.00	50.36	9.64	6.223	
1,450.00	1,450.00	1,449.90	1,449.90	5.00	5.00	-90.26	-0.27	-60.00	60.00	50.00	10.00	6.002	
1,500.00	1,500.00	1,500.10	1,499.90	5.18	5.18	-90.26	-0.27	-60.00	60.00	49.65	10.35	5.794	
1,550.00	1,550.00	1,549.90	1,549.90	5.36	5.36	-90.26	-0.27	-60.00	60.00	49.29	10.71	5.602	
1,600.00	1,600.00	1,600.10	1,599.90	5.53	5.53	-90.26	-0.27	-60.00	60.00	48.93	11.07	5.421	
1,650.00	1,650.00	1,649.90	1,649.90	5.71	5.71	-90.26	-0.27	-60.00	60.00	48.58	11.42	5.252	
1,700.00	1,700.00	1,700.10	1,699.90	5.89	5.89	-90.26	-0.27	-60.00	60.00	48.22	11.78	5.092	
1,750.00	1,750.00	1,749.90	1,749.90	6.07	6.07	-90.26	-0.27	-60.00	60.00	47.86	12.14	4.943	Alert
1,800.00	1,800.00	1,800.10	1,799.90	6.25	6.25	-90.26	-0.27	-60.00	60.00	47.50	12.50	4.801	Alert
1,850.00	1,850.00	1,849.90	1,849.90	6.43	6.43	-90.26	-0.27	-60.00	60.00	47.15	12.85	4.668	Alert
1,900.00	1,900.00	1,900.10	1,899.90	6.61	6.61	-90.26	-0.27	-60.00	60.00	46.79	13.21	4.541	Alert
1,950.00	1,950.00	1,949.90	1,949.90	6.78	6.78	-90.26	-0.27	-60.00	60.00	46.43	13.57	4.422	Alert
2,000.00	2,000.00	1,999.90	1,999.90	6.96	6.96	-90.26	-0.27	-60.00	60.00	46.07	13.93	4.308	Alert, CC
2,050.00	2,050.00	2,049.44	2,049.44	7.14	7.14	-90.16	-0.17	-60.19	60.19	45.91	14.28	4.215	Alert, ES
2,100.00	2,100.00	2,098.98	2,098.97	7.32	7.31	-89.88	0.13	-60.75	60.76	46.13	14.63	4.153	Alert
2,150.00	2,150.00	2,148.50	2,148.48	7.50	7.49	-89.41	0.64	-61.70	61.72	46.74	14.98	4.120	Alert
2,200.00	2,200.00	2,198.00	2,197.96	7.68	7.66	-88.78	1.34	-63.02	63.06	47.73	15.33	4.114	Alert
2,250.00	2,250.00	2,247.64	2,247.57	7.86	7.83	-88.02	2.24	-64.70	64.78	49.10	15.68	4.131	Alert
2,300.00	2,300.00	2,302.40	2,297.49	8.04	8.02	-87.26	3.18	-66.46	66.58	50.53	16.05	4.148	Alert
2,350.00	2,350.00	2,347.56	2,347.41	8.22	8.18	-86.54	4.12	-68.23	68.40	52.01	16.39	4.174	Alert
2,400.00	2,400.00	2,402.48	2,397.33	8.39	8.38	-85.86	5.06	-70.00	70.23	53.47	16.76	4.191	Alert
2,450.00	2,450.00	2,447.48	2,447.25	8.57	8.54	-85.22	6.01	-71.77	72.07	54.97	17.09	4.216	Alert
2,500.00	2,500.00	2,502.56	2,497.17	8.75	8.73	-84.60	6.95	-73.53	73.91	56.45	17.47	4.232	Alert
2,550.00	2,550.00	2,547.40	2,547.08	8.93	8.89	-131.03	7.89	-75.30	75.91	58.11	17.80	4.264	Alert

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 612H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	2,599.99	2,602.65	2,596.99	9.11	9.08	-130.82	8.83	-77.07	78.19	60.02	18.17	4.303	Alert
2,650.00	2,649.98	2,647.28	2,646.88	9.28	9.24	-130.85	9.78	-78.83	80.77	62.26	18.51	4.364	Alert
2,700.00	2,699.96	2,702.80	2,696.76	9.46	9.44	-131.07	10.72	-80.60	83.56	64.68	18.88	4.426	Alert
2,750.00	2,749.94	2,747.12	2,746.64	9.64	9.60	-131.29	11.66	-82.37	86.37	67.16	19.21	4.496	Alert
2,800.00	2,799.92	2,802.96	2,796.52	9.81	9.79	-131.50	12.60	-84.13	89.18	69.60	19.58	4.554	Alert
2,850.00	2,849.90	2,846.96	2,846.40	9.99	9.95	-131.70	13.54	-85.90	91.99	72.08	19.92	4.619	Alert
2,900.00	2,899.88	2,903.12	2,896.28	10.17	10.15	-131.88	14.48	-87.66	94.80	74.51	20.29	4.672	Alert
2,950.00	2,949.86	2,946.80	2,946.16	10.34	10.30	-132.06	15.43	-89.43	97.62	77.00	20.62	4.734	Alert
3,000.00	2,999.84	3,003.28	2,996.04	10.52	10.50	-132.22	16.37	-91.20	100.43	79.44	21.00	4.783	Alert
3,050.00	3,049.81	3,046.64	3,045.92	10.70	10.66	-132.37	17.31	-92.96	103.25	81.92	21.33	4.841	Alert
3,100.00	3,099.79	3,103.44	3,095.80	10.88	10.86	-132.52	18.25	-94.73	106.06	84.36	21.70	4.887	Alert
3,150.00	3,149.77	3,146.48	3,145.68	11.05	11.02	-132.66	19.19	-96.49	108.88	86.85	22.03	4.941	Alert
3,200.00	3,199.75	3,203.60	3,195.56	11.23	11.22	-132.79	20.14	-98.26	111.70	89.28	22.41	4.984	Alert
3,250.00	3,249.73	3,246.32	3,245.44	11.41	11.37	-132.92	21.08	-100.03	114.52	91.77	22.74	5.035	
3,300.00	3,299.71	3,303.76	3,295.32	11.59	11.58	-133.04	22.02	-101.79	117.33	94.21	23.12	5.074	
3,350.00	3,349.69	3,346.16	3,345.20	11.76	11.73	-133.15	22.96	-103.56	120.15	96.70	23.45	5.124	
3,400.00	3,399.67	3,403.92	3,395.08	11.94	11.93	-133.26	23.90	-105.32	122.97	99.14	23.83	5.160	
3,450.00	3,449.65	3,446.00	3,444.96	12.12	12.08	-133.36	24.84	-107.09	125.79	101.63	24.16	5.207	
3,500.00	3,499.62	3,504.08	3,494.84	12.30	12.29	-133.46	25.79	-108.86	128.61	104.07	24.54	5.240	
3,550.00	3,549.60	3,545.84	3,544.72	12.48	12.44	-133.56	26.73	-110.62	131.43	106.56	24.87	5.285	
3,600.00	3,599.58	3,604.24	3,594.60	12.65	12.65	-133.65	27.67	-112.39	134.25	109.00	25.25	5.316	
3,650.00	3,649.56	3,645.68	3,644.48	12.83	12.80	-133.73	28.61	-114.15	137.07	111.50	25.58	5.359	
3,700.00	3,699.54	3,704.40	3,694.36	13.01	13.01	-133.82	29.55	-115.92	139.90	113.93	25.96	5.388	
3,750.00	3,749.52	3,745.52	3,744.24	13.19	13.16	-133.90	30.50	-117.69	142.72	116.43	26.29	5.429	
3,800.00	3,799.50	3,804.56	3,794.12	13.37	13.37	-133.98	31.44	-119.45	145.54	118.86	26.68	5.456	
3,850.00	3,849.48	3,845.36	3,844.00	13.54	13.51	-134.05	32.38	-121.22	148.36	121.36	27.00	5.495	
3,900.00	3,899.46	3,904.72	3,893.88	13.72	13.73	-134.12	33.32	-122.98	151.18	123.80	27.39	5.520	
3,950.00	3,949.44	3,945.20	3,943.76	13.90	13.87	-134.19	34.26	-124.75	154.01	126.30	27.71	5.558	
4,000.00	3,999.41	4,004.88	3,993.64	14.08	14.09	-134.26	35.21	-126.52	156.83	128.73	28.10	5.581	
4,050.00	4,049.39	4,045.04	4,043.52	14.26	14.23	-134.32	36.15	-128.28	159.65	131.23	28.42	5.617	
4,100.00	4,099.37	4,105.04	4,093.40	14.44	14.44	-134.38	37.09	-130.05	162.48	133.66	28.81	5.639	
4,150.00	4,149.35	4,144.88	4,143.28	14.61	14.59	-134.44	38.03	-131.81	165.30	136.17	29.13	5.674	
4,200.00	4,199.33	4,205.20	4,193.16	14.79	14.80	-134.50	38.97	-133.58	168.12	138.60	29.53	5.694	
4,250.00	4,249.31	4,244.72	4,243.04	14.97	14.95	-134.56	39.91	-135.35	170.95	141.10	29.85	5.728	
4,300.00	4,299.29	4,305.36	4,292.92	15.15	15.16	-134.61	40.86	-137.11	173.77	143.53	30.24	5.746	
4,350.00	4,349.27	4,344.56	4,342.80	15.33	15.30	-134.66	41.80	-138.88	176.60	146.04	30.56	5.779	
4,400.00	4,399.25	4,405.52	4,392.68	15.51	15.52	-134.71	42.74	-140.64	179.42	148.47	30.95	5.796	
4,450.00	4,449.22	4,444.40	4,442.55	15.69	15.66	-134.76	43.68	-142.41	182.25	150.97	31.27	5.828	
4,500.00	4,499.20	4,505.68	4,492.43	15.86	15.88	-134.81	44.62	-144.18	185.07	153.40	31.67	5.844	
4,550.00	4,549.18	4,544.24	4,542.31	16.04	16.02	-134.86	45.57	-145.94	187.90	155.91	31.98	5.875	
4,600.00	4,599.16	4,605.84	4,592.19	16.22	16.24	-134.90	46.51	-147.71	190.72	158.34	32.38	5.890	
4,650.00	4,649.14	4,644.08	4,642.07	16.40	16.38	-134.94	47.45	-149.47	193.55	160.85	32.70	5.919	
4,700.00	4,699.12	4,706.00	4,691.95	16.58	16.60	-134.99	48.39	-151.24	196.37	163.27	33.10	5.933	
4,750.00	4,749.10	4,743.92	4,741.83	16.76	16.74	-135.03	49.33	-153.01	199.20	165.79	33.41	5.962	
4,800.00	4,799.08	4,806.16	4,791.71	16.94	16.96	-135.07	50.27	-154.77	202.02	168.21	33.81	5.975	
4,850.00	4,849.06	4,843.76	4,841.59	17.12	17.10	-135.11	51.22	-156.54	204.85	170.72	34.12	6.003	
4,900.00	4,899.03	4,893.68	4,891.47	17.30	17.28	-135.14	52.16	-158.30	207.67	173.19	34.48	6.023	
4,950.00	4,949.01	4,943.60	4,941.35	17.47	17.46	-135.18	53.10	-160.07	210.50	175.66	34.84	6.042	
5,000.00	4,998.99	5,006.48	4,991.23	17.65	17.69	-135.22	54.04	-161.84	213.32	178.08	35.24	6.053	
5,050.00	5,048.97	5,043.44	5,041.11	17.83	17.82	-135.25	54.98	-163.60	216.15	180.60	35.55	6.080	
5,100.00	5,098.95	5,093.36	5,090.99	18.01	18.00	-135.28	55.93	-165.37	218.97	183.07	35.91	6.098	
5,150.00	5,148.93	5,143.28	5,140.87	18.19	18.18	-135.32	56.87	-167.13	221.80	185.54	36.26	6.116	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 612H - Wellbore #1 - Permit Plan 1

Offset Site Error: 5.00 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	5,198.91	5,206.80	5,190.75	18.37	18.41	-135.35	57.81	-168.90	224.63	187.96	36.67	6.126	
5,250.00	5,248.89	5,243.12	5,240.63	18.55	18.54	-135.38	58.75	-170.67	227.45	190.47	36.98	6.151	
5,300.00	5,298.87	5,293.04	5,290.51	18.73	18.72	-135.41	59.69	-172.43	230.28	192.94	37.34	6.168	
5,350.00	5,348.84	5,342.96	5,340.39	18.91	18.90	-135.44	60.63	-174.20	233.10	195.41	37.69	6.184	
5,400.00	5,398.82	5,407.12	5,390.27	19.09	19.13	-135.47	61.58	-175.96	235.93	197.83	38.10	6.192	
5,450.00	5,448.80	5,442.80	5,440.15	19.27	19.26	-135.50	62.52	-177.73	238.76	200.35	38.41	6.216	
5,500.00	5,498.78	5,507.28	5,490.03	19.44	19.49	-135.53	63.46	-179.49	241.58	202.77	38.82	6.224	
5,550.00	5,548.76	5,542.64	5,539.91	19.62	19.62	-135.55	64.40	-181.26	244.41	205.29	39.12	6.247	
5,600.00	5,598.74	5,607.44	5,589.79	19.80	19.85	-135.58	65.34	-183.03	247.24	207.70	39.53	6.254	
5,650.00	5,648.72	5,642.48	5,639.67	19.98	19.98	-135.61	66.29	-184.79	250.06	210.23	39.84	6.277	
5,700.00	5,698.70	5,707.61	5,689.55	20.16	20.21	-135.63	67.23	-186.56	252.89	212.64	40.25	6.283	
5,750.00	5,748.68	5,742.32	5,739.43	20.34	20.34	-135.66	68.17	-188.32	255.72	215.16	40.55	6.306	
5,800.00	5,798.65	5,807.77	5,789.31	20.52	20.57	-135.68	69.11	-190.09	258.54	217.58	40.96	6.311	
5,850.00	5,848.63	5,842.15	5,839.19	20.70	20.70	-135.71	70.05	-191.86	261.37	220.10	41.27	6.334	
5,900.00	5,898.61	5,907.93	5,889.07	20.88	20.93	-135.73	71.00	-193.62	264.20	222.52	41.68	6.339	
5,950.00	5,948.59	5,941.99	5,938.95	21.06	21.06	-135.75	71.94	-195.39	267.02	225.04	41.98	6.361	
6,000.00	5,998.57	6,008.09	5,988.83	21.24	21.30	-135.77	72.88	-197.15	269.85	227.45	42.40	6.365	
6,050.00	6,048.55	6,041.83	6,038.71	21.42	21.42	-135.80	73.82	-198.92	272.68	229.98	42.70	6.386	
6,100.00	6,098.53	6,108.25	6,088.59	21.60	21.66	-135.82	74.76	-200.69	275.50	232.39	43.11	6.390	
6,150.00	6,148.51	6,141.67	6,138.47	21.77	21.78	-135.84	75.70	-202.45	278.33	234.92	43.41	6.411	
6,200.00	6,198.49	6,208.41	6,188.35	21.95	22.02	-135.86	76.65	-204.22	281.16	237.33	43.83	6.415	
6,250.00	6,248.46	6,241.51	6,238.23	22.13	22.14	-135.88	77.59	-205.98	283.98	239.86	44.13	6.436	
6,300.00	6,298.44	6,308.57	6,288.11	22.31	22.38	-135.90	78.53	-207.75	286.81	242.27	44.55	6.439	
6,350.00	6,348.42	6,341.35	6,337.99	22.49	22.50	-135.92	79.47	-209.52	289.64	244.80	44.84	6.459	
6,400.00	6,398.40	6,408.73	6,387.87	22.67	22.74	-135.94	80.41	-211.28	292.47	247.20	45.26	6.462	
6,450.00	6,448.38	6,441.19	6,437.75	22.85	22.86	-135.95	81.36	-213.05	295.29	249.73	45.56	6.482	
6,500.00	6,498.36	6,508.89	6,487.63	23.03	23.10	-135.97	82.30	-214.81	298.12	252.14	45.98	6.484	
6,550.00	6,548.34	6,541.03	6,537.51	23.21	23.22	-135.99	83.24	-216.58	300.95	254.67	46.27	6.504	
6,600.00	6,598.32	6,609.05	6,587.39	23.39	23.46	-136.01	84.18	-218.35	303.77	257.08	46.70	6.505	
6,650.00	6,648.30	6,640.87	6,637.27	23.57	23.58	-136.03	85.12	-220.11	306.60	259.61	46.99	6.525	
6,700.00	6,698.27	6,709.21	6,687.15	23.75	23.83	-136.04	86.06	-221.88	309.43	262.02	47.41	6.526	
6,750.00	6,748.25	6,740.71	6,737.02	23.93	23.94	-136.06	87.01	-223.64	312.26	264.55	47.70	6.546	
6,800.00	6,798.23	6,809.37	6,786.90	24.11	24.19	-136.08	87.95	-225.41	315.08	266.95	48.13	6.547	
6,850.00	6,848.21	6,840.55	6,836.78	24.29	24.30	-136.09	88.89	-227.18	317.91	269.49	48.42	6.566	
6,900.00	6,898.19	6,909.53	6,886.66	24.47	24.55	-136.11	89.83	-228.94	320.74	271.89	48.85	6.566	
6,950.00	6,948.17	6,940.39	6,936.54	24.65	24.66	-136.12	90.77	-230.71	323.57	274.43	49.14	6.585	
7,000.00	6,998.15	7,009.69	6,986.42	24.83	24.91	-136.14	91.72	-232.47	326.39	276.83	49.56	6.585	
7,050.00	7,048.13	7,040.23	7,036.30	25.00	25.02	-136.15	92.66	-234.24	329.22	279.37	49.85	6.604	
7,100.00	7,098.11	7,109.85	7,086.18	25.18	25.27	-136.17	93.60	-236.01	332.05	281.77	50.28	6.604	
7,150.00	7,148.08	7,140.07	7,136.06	25.36	25.38	-136.18	94.54	-237.77	334.87	284.31	50.57	6.622	
7,200.00	7,198.06	7,189.99	7,185.94	25.54	25.56	-136.20	95.48	-239.54	337.70	286.78	50.93	6.631	
7,250.00	7,248.04	7,239.91	7,235.82	25.72	25.74	-136.21	96.43	-241.30	340.53	289.25	51.28	6.640	
7,300.00	7,298.02	7,289.83	7,285.70	25.90	25.92	-136.22	97.37	-243.07	343.36	291.72	51.64	6.649	
7,350.00	7,348.00	7,339.75	7,335.58	26.08	26.10	-136.24	98.31	-244.84	346.19	294.19	52.00	6.657	
7,400.00	7,397.98	7,389.67	7,385.46	26.26	26.28	-136.25	99.25	-246.60	349.01	296.66	52.36	6.666	
7,450.00	7,447.96	7,439.59	7,435.34	26.44	26.46	-136.26	100.19	-248.37	351.84	299.12	52.72	6.674	
7,500.00	7,497.94	7,489.51	7,485.22	26.62	26.64	-136.28	101.13	-250.13	354.67	301.59	53.07	6.683	
7,550.00	7,547.92	7,539.43	7,535.10	26.80	26.82	-136.29	102.08	-251.90	357.50	304.06	53.43	6.691	
7,600.00	7,597.89	7,589.35	7,584.98	26.98	27.00	-136.30	103.02	-253.67	360.32	306.53	53.79	6.699	
7,650.00	7,647.87	7,639.27	7,634.86	27.16	27.18	-136.31	103.96	-255.43	363.15	309.00	54.15	6.707	
7,700.00	7,697.85	7,689.19	7,684.74	27.34	27.37	-136.33	104.90	-257.20	365.98	311.47	54.51	6.714	
7,750.00	7,747.83	7,739.11	7,734.62	27.52	27.55	-136.34	105.84	-258.96	368.81	313.94	54.86	6.722	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 612H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	7,797.81	7,789.03	7,784.50	27.70	27.73	-136.35	106.79	-260.73	371.63	316.41	55.22	6.730	
7,850.00	7,847.79	7,838.95	7,834.38	27.88	27.91	-136.36	107.73	-262.50	374.46	318.88	55.58	6.737	
7,900.00	7,897.77	7,888.87	7,884.26	28.06	28.09	-136.37	108.67	-264.26	377.29	321.35	55.94	6.745	
7,950.00	7,947.75	7,938.79	7,934.14	28.24	28.27	-136.38	109.61	-266.03	380.12	323.82	56.30	6.752	
8,000.00	7,997.73	7,988.71	7,984.02	28.42	28.45	-136.39	110.55	-267.79	382.95	326.29	56.66	6.759	
8,050.00	8,047.70	8,038.63	8,033.90	28.60	28.63	-136.41	111.49	-269.56	385.77	328.76	57.01	6.766	
8,100.00	8,097.68	8,088.55	8,083.78	28.78	28.81	-136.42	112.44	-271.33	388.60	331.23	57.37	6.773	
8,150.00	8,147.66	8,138.47	8,133.66	28.96	28.99	-136.43	113.38	-273.09	391.43	333.70	57.73	6.780	
8,200.00	8,197.64	8,188.39	8,183.54	29.13	29.17	-136.44	114.32	-274.86	394.26	336.17	58.09	6.787	
8,250.00	8,247.62	8,238.31	8,233.42	29.31	29.35	-136.45	115.26	-276.62	397.08	338.64	58.45	6.794	
8,300.00	8,297.60	8,288.23	8,283.30	29.49	29.53	-136.46	116.20	-278.39	399.91	341.11	58.80	6.801	
8,350.00	8,347.58	8,338.15	8,333.18	29.67	29.71	-136.47	117.15	-280.16	402.74	343.58	59.16	6.807	
8,400.00	8,397.56	8,388.07	8,383.06	29.85	29.89	-136.48	118.09	-281.92	405.57	346.05	59.52	6.814	
8,450.00	8,447.54	8,437.99	8,432.94	30.03	30.07	-136.49	119.03	-283.69	408.40	348.52	59.88	6.820	
8,500.00	8,497.51	8,487.91	8,482.82	30.21	30.25	-136.50	119.97	-285.45	411.22	350.99	60.24	6.827	
8,550.00	8,547.49	8,537.83	8,532.70	30.39	30.43	-136.51	120.91	-287.22	414.05	353.46	60.60	6.833	
8,600.00	8,597.47	8,587.75	8,582.58	30.57	30.61	-136.52	121.86	-288.99	416.88	355.93	60.95	6.839	
8,650.00	8,647.45	8,637.67	8,632.46	30.75	30.79	-136.52	122.80	-290.75	419.71	358.39	61.31	6.845	
8,700.00	8,697.43	8,687.59	8,682.34	30.93	30.97	-136.53	123.74	-292.52	422.54	360.86	61.67	6.851	
8,750.00	8,747.41	8,737.51	8,732.22	31.11	31.15	-136.54	124.68	-294.28	425.36	363.33	62.03	6.857	
8,800.00	8,797.39	8,787.43	8,782.10	31.29	31.33	-136.55	125.62	-296.05	428.19	365.80	62.39	6.863	
8,850.00	8,847.37	8,837.35	8,831.98	31.47	31.52	-136.56	126.56	-297.81	431.02	368.27	62.75	6.869	
8,900.00	8,897.35	8,887.27	8,881.86	31.65	31.70	-136.57	127.51	-299.58	433.85	370.74	63.10	6.875	
8,950.00	8,947.33	8,937.19	8,931.74	31.83	31.88	-136.58	128.45	-301.35	436.68	373.21	63.46	6.881	
9,000.00	8,997.30	8,987.11	8,981.62	32.01	32.06	-136.59	129.39	-303.11	439.50	375.68	63.82	6.886	
9,050.00	9,047.28	9,037.03	9,031.49	32.19	32.24	-136.59	130.33	-304.88	442.33	378.15	64.18	6.892	
9,100.00	9,097.26	9,086.95	9,081.37	32.37	32.42	-136.60	131.27	-306.64	445.16	380.62	64.54	6.898	
9,150.00	9,147.24	9,136.87	9,131.25	32.55	32.60	-136.61	132.22	-308.41	447.99	383.09	64.90	6.903	
9,200.00	9,197.22	9,186.79	9,181.13	32.73	32.78	-136.62	133.16	-310.18	450.82	385.56	65.25	6.909	
9,250.00	9,247.20	9,236.71	9,231.01	32.91	32.96	-136.63	134.10	-311.94	453.64	388.03	65.61	6.914	
9,300.00	9,297.18	9,286.63	9,280.89	33.09	33.14	-136.63	135.04	-313.71	456.47	390.50	65.97	6.919	
9,350.00	9,347.16	9,336.55	9,330.77	33.27	33.32	-136.64	135.98	-315.47	459.30	392.97	66.33	6.924	
9,400.00	9,397.14	9,386.47	9,380.65	33.45	33.50	-136.65	136.92	-317.24	462.13	395.44	66.69	6.930	
9,450.00	9,447.11	9,436.39	9,430.53	33.63	33.68	-136.66	137.87	-319.01	464.96	397.91	67.05	6.935	
9,500.00	9,497.09	9,486.31	9,480.41	33.81	33.86	-136.66	138.81	-320.77	467.78	400.38	67.41	6.940	
9,550.00	9,547.07	9,536.23	9,530.29	33.99	34.04	-136.67	139.75	-322.54	470.61	402.85	67.76	6.945	
9,600.00	9,597.05	9,586.15	9,580.17	34.17	34.22	-136.68	140.69	-324.30	473.44	405.32	68.12	6.950	
9,650.00	9,647.03	9,636.07	9,630.05	34.35	34.40	-136.68	141.63	-326.07	476.27	407.79	68.48	6.955	
9,700.00	9,697.01	9,685.99	9,679.93	34.53	34.58	-136.69	142.58	-327.84	479.10	410.26	68.84	6.960	
9,750.00	9,746.99	9,735.91	9,729.81	34.71	34.76	-136.70	143.52	-329.60	481.92	412.73	69.20	6.964	
9,800.00	9,796.97	9,785.83	9,779.69	34.88	34.95	-136.71	144.46	-331.37	484.75	415.20	69.56	6.969	
9,850.00	9,846.95	9,835.75	9,829.57	35.06	35.13	-136.71	145.40	-333.13	487.58	417.67	69.91	6.974	
9,900.00	9,896.92	9,885.67	9,879.45	35.24	35.31	-136.72	146.34	-334.90	490.41	420.14	70.27	6.979	
9,950.00	9,946.90	9,935.59	9,929.33	35.42	35.49	-136.73	147.29	-336.67	493.24	422.61	70.63	6.983	
10,000.00	9,996.88	9,985.51	9,979.21	35.60	35.67	-136.73	148.23	-338.43	496.07	425.07	70.99	6.988	
10,050.00	10,046.86	10,035.43	10,029.09	35.78	35.85	-136.74	149.17	-340.20	498.89	427.54	71.35	6.992	
10,100.00	10,096.84	10,085.35	10,078.97	35.96	36.03	-136.75	150.11	-341.96	501.72	430.01	71.71	6.997	
10,150.00	10,146.82	10,135.27	10,128.85	36.14	36.21	-136.75	151.05	-343.73	504.55	432.48	72.07	7.001	
10,200.00	10,196.80	10,185.19	10,178.73	36.32	36.39	-136.76	151.99	-345.50	507.38	434.95	72.42	7.006	
10,250.00	10,246.78	10,235.11	10,228.61	36.50	36.57	-136.76	152.94	-347.26	510.21	437.42	72.78	7.010	
10,300.00	10,296.76	10,285.03	10,278.49	36.68	36.75	-136.77	153.88	-349.03	513.03	439.89	73.14	7.014	
10,350.00	10,346.73	10,334.95	10,328.37	36.86	36.93	-136.78	154.82	-350.79	515.86	442.36	73.50	7.019	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 612H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	10,396.71	10,384.87	10,378.25	37.04	37.11	-136.78	155.76	-352.56	518.69	444.83	73.86	7.023	
10,450.00	10,446.69	10,434.79	10,428.13	37.22	37.29	-136.79	156.70	-354.33	521.52	447.30	74.22	7.027	
10,500.00	10,496.67	10,484.71	10,478.01	37.40	37.47	-136.79	157.65	-356.09	524.35	449.77	74.58	7.031	
10,550.00	10,546.65	10,536.85	10,530.11	37.58	37.66	-136.80	158.61	-357.90	527.14	452.19	74.95	7.033	
10,600.00	10,596.63	10,593.75	10,586.99	37.76	37.87	-136.85	159.36	-359.30	529.42	454.08	75.34	7.027	
10,650.00	10,646.62	10,650.70	10,643.94	37.94	38.07	-136.91	159.70	-359.95	530.71	454.98	75.73	7.008	
10,700.00	10,696.62	10,703.28	10,696.52	38.12	38.25	-136.93	159.73	-360.00	531.00	454.91	76.09	6.978	
10,750.00	10,746.62	10,753.28	10,746.52	38.30	38.43	-90.03	159.73	-360.00	531.00	454.56	76.44	6.946	
10,800.00	10,796.62	10,803.28	10,796.52	38.47	38.60	-90.03	159.73	-360.00	531.00	454.20	76.80	6.914	
10,850.00	10,846.62	10,853.28	10,846.52	38.65	38.78	-90.03	159.73	-360.00	531.00	453.85	77.15	6.883	
10,900.00	10,896.62	10,903.28	10,896.52	38.83	38.95	-90.03	159.73	-360.00	531.00	453.50	77.50	6.851	
10,950.00	10,946.62	10,953.28	10,946.52	39.00	39.13	-90.03	159.73	-360.00	531.00	453.15	77.85	6.820	
11,000.00	10,996.62	11,003.28	10,996.52	39.18	39.30	-90.03	159.73	-360.00	531.00	452.79	78.21	6.790	
11,000.00	10,996.62	11,003.29	10,996.52	39.18	39.30	-90.03	159.73	-360.00	531.00	452.79	78.21	6.790	
11,050.00	11,046.62	11,038.16	11,031.39	39.36	39.43	-90.03	159.74	-360.23	531.45	452.95	78.49	6.770	
11,100.00	11,096.56	11,064.02	11,057.22	39.53	39.52	90.20	159.83	-361.55	534.01	455.36	78.65	6.790	
11,150.00	11,146.12	11,089.50	11,082.58	39.69	39.61	90.08	159.98	-363.99	538.86	460.17	78.68	6.848	
11,200.00	11,194.92	11,114.29	11,107.12	39.84	39.71	89.95	160.20	-367.43	546.00	467.38	78.62	6.945	
11,250.00	11,242.61	11,138.44	11,130.86	39.98	39.80	89.77	160.48	-371.80	555.47	476.99	78.48	7.078	
11,300.00	11,288.80	11,187.63	11,179.02	40.12	39.98	90.46	158.99	-381.71	566.25	487.38	78.87	7.180	
11,350.00	11,333.15	11,239.35	11,229.31	40.25	40.17	91.16	152.90	-392.03	577.16	497.85	79.31	7.277	
11,400.00	11,375.33	11,293.11	11,280.80	40.37	40.35	91.85	141.68	-402.56	588.09	508.31	79.79	7.371	
11,450.00	11,415.01	11,349.13	11,333.12	40.48	40.54	92.53	124.81	-413.22	598.91	518.64	80.27	7.461	
11,500.00	11,451.88	11,407.63	11,385.76	40.59	40.71	93.20	101.72	-423.92	609.47	528.74	80.74	7.549	
11,550.00	11,485.68	11,468.79	11,438.05	40.70	40.88	93.85	71.86	-434.49	619.61	538.45	81.17	7.634	
11,600.00	11,516.14	11,532.78	11,489.09	40.82	41.05	94.48	34.72	-444.77	629.17	547.62	81.55	7.715	
11,650.00	11,543.03	11,599.68	11,537.79	40.94	41.21	95.07	-10.06	-454.51	637.96	556.09	81.87	7.793	
11,700.00	11,566.14	11,669.50	11,582.80	41.05	41.36	95.61	-62.62	-463.45	645.79	563.67	82.12	7.864	
11,750.00	11,585.30	11,742.11	11,622.61	41.17	41.52	96.09	-122.77	-471.27	652.47	570.16	82.31	7.927	
11,800.00	11,600.37	11,817.21	11,655.63	41.28	41.68	96.47	-189.86	-477.65	657.85	575.37	82.48	7.976	
11,850.00	11,611.22	11,894.33	11,680.30	41.40	41.86	96.75	-262.73	-482.27	661.76	579.12	82.64	8.008	
11,900.00	11,617.78	11,972.87	11,695.36	41.51	42.03	96.90	-339.70	-484.89	664.09	581.26	82.82	8.018	
11,950.00	11,620.00	12,052.06	11,699.97	41.62	42.21	96.92	-418.69	-485.34	664.76	581.71	83.05	8.004	
11,952.43	11,620.00	12,055.91	11,699.93	41.63	42.22	96.91	-422.54	-485.31	664.75	581.69	83.07	8.003	
12,000.00	11,620.00	12,100.04	11,700.00	41.74	42.32	96.92	-466.67	-485.04	664.76	581.49	83.27	7.983	
12,050.00	11,620.00	12,150.04	11,700.00	41.88	42.45	96.92	-516.67	-484.73	664.76	581.23	83.53	7.958	
12,100.00	11,620.00	12,200.04	11,700.00	42.01	42.59	96.92	-566.67	-484.42	664.76	580.97	83.79	7.934	
12,150.00	11,620.00	12,250.04	11,700.00	42.17	42.74	96.92	-616.67	-484.10	664.75	580.66	84.10	7.905	
12,200.00	11,620.00	12,300.04	11,700.00	42.33	42.90	96.92	-666.67	-483.79	664.75	580.35	84.40	7.876	
12,250.00	11,620.00	12,350.04	11,700.00	42.51	43.08	96.92	-716.66	-483.47	664.75	579.99	84.76	7.843	
12,300.00	11,620.00	12,400.04	11,700.00	42.69	43.25	96.92	-766.66	-483.16	664.74	579.63	85.11	7.810	
12,350.00	11,620.00	12,450.04	11,700.00	42.90	43.45	96.92	-816.66	-482.85	664.74	579.22	85.51	7.773	
12,400.00	11,620.00	12,500.04	11,700.00	43.10	43.65	96.92	-866.66	-482.53	664.73	578.82	85.91	7.737	
12,450.00	11,620.00	12,550.04	11,700.00	43.33	43.87	96.92	-916.66	-482.22	664.73	578.37	86.36	7.697	
12,500.00	11,620.00	12,600.04	11,700.00	43.56	44.09	96.92	-966.66	-481.90	664.73	577.92	86.80	7.658	
12,550.00	11,620.00	12,650.04	11,700.00	43.81	44.34	96.92	-1,016.66	-481.59	664.72	577.43	87.29	7.615	
12,600.00	11,620.00	12,700.04	11,700.00	44.06	44.58	96.92	-1,066.66	-481.27	664.72	576.94	87.78	7.572	
12,650.00	11,620.00	12,750.04	11,700.00	44.33	44.84	96.92	-1,116.66	-480.96	664.72	576.40	88.31	7.527	
12,700.00	11,620.00	12,800.04	11,700.00	44.60	45.10	96.92	-1,166.66	-480.65	664.71	575.87	88.84	7.482	
12,750.00	11,620.00	12,850.04	11,700.00	44.89	45.39	96.92	-1,216.65	-480.33	664.71	575.29	89.42	7.434	
12,800.00	11,620.00	12,900.04	11,700.00	45.18	45.67	96.92	-1,266.65	-480.02	664.70	574.72	89.99	7.387	
12,850.00	11,620.00	12,950.04	11,700.00	45.49	45.97	96.92	-1,316.65	-479.70	664.70	574.10	90.60	7.337	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 612H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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
12,900.00	11,620.00	13,000.04	11,700.00	45.80	46.28	96.92	-1,366.65	-479.39	664.70	573.49	91.21	7.288	
12,950.00	11,620.00	13,050.04	11,700.00	46.13	46.60	96.92	-1,416.65	-479.08	664.69	572.84	91.86	7.236	
13,000.00	11,620.00	13,100.04	11,700.00	46.46	46.92	96.92	-1,466.65	-478.76	664.69	572.19	92.50	7.186	
13,050.00	11,620.00	13,150.04	11,700.00	46.81	47.26	96.92	-1,516.65	-478.45	664.69	571.50	93.19	7.133	
13,100.00	11,620.00	13,200.04	11,700.00	47.15	47.60	96.92	-1,566.65	-478.13	664.68	570.81	93.87	7.081	
13,150.00	11,620.00	13,250.04	11,700.00	47.52	47.95	96.92	-1,616.65	-477.82	664.68	570.09	94.59	7.027	
13,200.00	11,620.00	13,300.04	11,700.00	47.88	48.31	96.92	-1,666.65	-477.50	664.67	569.37	95.31	6.974	
13,250.00	11,620.00	13,350.04	11,700.00	48.26	48.68	96.92	-1,716.64	-477.19	664.67	568.61	96.06	6.919	
13,300.00	11,620.00	13,400.04	11,700.00	48.64	49.06	96.92	-1,766.64	-476.88	664.67	567.86	96.81	6.866	
13,350.00	11,620.00	13,450.04	11,700.00	49.04	49.44	96.92	-1,816.64	-476.56	664.66	567.07	97.59	6.811	
13,400.00	11,620.00	13,500.04	11,700.00	49.43	49.83	96.92	-1,866.64	-476.25	664.66	566.29	98.37	6.756	
13,450.00	11,620.00	13,550.04	11,700.00	49.84	50.24	96.92	-1,916.64	-475.93	664.66	565.47	99.19	6.701	
13,500.00	11,620.00	13,600.04	11,700.00	50.25	50.64	96.92	-1,966.64	-475.62	664.65	564.65	100.00	6.647	
13,550.00	11,620.00	13,650.04	11,700.00	50.68	51.06	96.92	-2,016.64	-475.31	664.65	563.81	100.84	6.591	
13,600.00	11,620.00	13,700.04	11,700.00	51.10	51.48	96.92	-2,066.64	-474.99	664.64	562.96	101.68	6.537	
13,650.00	11,620.00	13,750.04	11,700.00	51.54	51.91	96.92	-2,116.64	-474.68	664.64	562.09	102.55	6.481	
13,700.00	11,620.00	13,800.04	11,700.00	51.98	52.34	96.92	-2,166.64	-474.36	664.64	561.22	103.41	6.427	
13,750.00	11,620.00	13,850.04	11,700.00	52.43	52.79	96.92	-2,216.63	-474.05	664.63	560.32	104.31	6.372	
13,800.00	11,620.00	13,900.04	11,700.00	52.88	53.23	96.92	-2,266.63	-473.73	664.63	559.43	105.20	6.318	
13,850.00	11,620.00	13,950.04	11,700.00	53.35	53.69	96.92	-2,316.63	-473.42	664.63	558.51	106.12	6.263	
13,900.00	11,620.00	14,000.04	11,700.00	53.81	54.14	96.92	-2,366.63	-473.11	664.62	557.58	107.04	6.209	
13,950.00	11,620.00	14,050.04	11,700.00	54.29	54.61	96.92	-2,416.63	-472.79	664.62	556.64	107.98	6.155	
14,000.00	11,620.00	14,100.04	11,700.00	54.76	55.08	96.92	-2,466.63	-472.48	664.61	555.69	108.92	6.102	
14,050.00	11,620.00	14,150.04	11,700.00	55.25	55.56	96.92	-2,516.63	-472.16	664.61	554.73	109.88	6.048	
14,100.00	11,620.00	14,200.04	11,700.00	55.73	56.04	96.92	-2,566.63	-471.85	664.61	553.76	110.84	5.996	
14,150.00	11,620.00	14,250.04	11,700.00	56.23	56.53	96.92	-2,616.63	-471.54	664.60	552.77	111.83	5.943	
14,200.00	11,620.00	14,300.04	11,700.00	56.73	57.02	96.92	-2,666.63	-471.22	664.60	551.79	112.81	5.891	
14,250.00	11,620.00	14,350.04	11,700.00	57.23	57.52	96.92	-2,716.62	-470.91	664.59	550.78	113.82	5.839	
14,300.00	11,620.00	14,400.04	11,700.00	57.74	58.02	96.92	-2,766.62	-470.59	664.59	549.77	114.82	5.788	
14,350.00	11,620.00	14,450.04	11,700.00	58.26	58.53	96.92	-2,816.62	-470.28	664.59	548.74	115.84	5.737	
14,400.00	11,620.00	14,500.04	11,700.00	58.77	59.04	96.92	-2,866.62	-469.96	664.58	547.72	116.86	5.687	
14,450.00	11,620.00	14,550.04	11,700.00	59.30	59.56	96.92	-2,916.62	-469.65	664.58	546.67	117.91	5.637	
14,500.00	11,620.00	14,600.04	11,700.00	59.82	60.08	96.92	-2,966.62	-469.34	664.58	545.63	118.95	5.587	
14,550.00	11,620.00	14,650.04	11,700.00	60.35	60.61	96.92	-3,016.62	-469.02	664.57	544.57	120.00	5.538	
14,600.00	11,620.00	14,700.04	11,700.00	60.89	61.14	96.92	-3,066.62	-468.71	664.57	543.51	121.06	5.490	
14,650.00	11,620.00	14,750.04	11,700.00	61.43	61.67	96.92	-3,116.62	-468.39	664.56	542.43	122.13	5.441	
14,700.00	11,620.00	14,800.04	11,700.00	61.97	62.21	96.92	-3,166.62	-468.08	664.56	541.35	123.21	5.394	
14,750.00	11,620.00	14,850.04	11,700.00	62.52	62.75	96.92	-3,216.61	-467.77	664.56	540.26	124.29	5.347	
14,800.00	11,620.00	14,900.04	11,700.00	63.07	63.30	96.92	-3,266.61	-467.45	664.55	539.17	125.38	5.300	
14,850.00	11,620.00	14,950.04	11,700.00	63.62	63.85	96.92	-3,316.61	-467.14	664.55	538.06	126.49	5.254	
14,900.00	11,620.00	15,000.04	11,700.00	64.18	64.40	96.92	-3,366.61	-466.82	664.55	536.96	127.59	5.209	
14,950.00	11,620.00	15,050.04	11,700.00	64.74	64.96	96.92	-3,416.61	-466.51	664.54	535.84	128.71	5.163	
15,000.00	11,620.00	15,100.04	11,700.00	65.30	65.51	96.92	-3,466.61	-466.19	664.54	534.72	129.82	5.119	
15,050.00	11,620.00	15,150.04	11,700.00	65.87	66.08	96.92	-3,516.61	-465.88	664.53	533.58	130.95	5.075	
15,100.00	11,620.00	15,200.04	11,700.00	66.44	66.64	96.92	-3,566.61	-465.57	664.53	532.45	132.08	5.031	
15,150.00	11,620.00	15,250.04	11,700.00	67.02	67.21	96.92	-3,616.61	-465.25	664.53	531.30	133.22	4.988	Alert
15,200.00	11,620.00	15,300.04	11,700.00	67.59	67.78	96.92	-3,666.61	-464.94	664.52	530.16	134.36	4.946	Alert
15,250.00	11,620.00	15,350.04	11,700.00	68.17	68.36	96.92	-3,716.60	-464.62	664.52	529.00	135.52	4.904	Alert
15,300.00	11,620.00	15,400.04	11,700.00	68.75	68.94	96.92	-3,766.60	-464.31	664.52	527.84	136.67	4.862	Alert
15,350.00	11,620.00	15,450.04	11,700.00	69.34	69.52	96.92	-3,816.60	-464.00	664.51	526.68	137.84	4.821	Alert
15,400.00	11,620.00	15,500.04	11,700.00	69.93	70.10	96.92	-3,866.60	-463.68	664.51	525.51	139.00	4.781	Alert
15,450.00	11,620.00	15,550.04	11,700.00	70.52	70.69	96.92	-3,916.60	-463.37	664.50	524.33	140.18	4.740	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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 612H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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
15,500.00	11,620.00	15,600.04	11,700.00	71.11	71.28	96.92	-3,966.60	-463.05	664.50	523.15	141.35	4.701	Alert
15,550.00	11,620.00	15,650.04	11,700.00	71.71	71.87	96.92	-4,016.60	-462.74	664.50	521.96	142.54	4.662	Alert
15,600.00	11,620.00	15,700.04	11,700.00	72.31	72.46	96.92	-4,066.60	-462.42	664.49	520.77	143.72	4.623	Alert
15,650.00	11,620.00	15,750.04	11,700.00	72.91	73.06	96.92	-4,116.60	-462.11	664.49	519.57	144.92	4.585	Alert
15,700.00	11,620.00	15,800.04	11,700.00	73.51	73.66	96.92	-4,166.60	-461.80	664.49	518.37	146.11	4.548	Alert
15,750.00	11,620.00	15,850.04	11,700.00	74.12	74.26	96.92	-4,216.60	-461.48	664.48	517.17	147.32	4.511	Alert
15,800.00	11,620.00	15,900.04	11,700.00	74.72	74.87	96.92	-4,266.59	-461.17	664.48	515.96	148.52	4.474	Alert
15,850.00	11,620.00	15,950.04	11,700.00	75.33	75.47	96.92	-4,316.59	-460.85	664.47	514.74	149.73	4.438	Alert
15,900.00	11,620.00	16,000.04	11,700.00	75.94	76.08	96.92	-4,366.59	-460.54	664.47	513.52	150.95	4.402	Alert
15,950.00	11,620.00	16,050.04	11,700.00	76.56	76.69	96.92	-4,416.59	-460.23	664.47	512.30	152.17	4.367	Alert
16,000.00	11,620.00	16,100.04	11,700.00	77.17	77.30	96.92	-4,466.59	-459.91	664.46	511.08	153.39	4.332	Alert
16,050.00	11,620.00	16,150.04	11,700.00	77.79	77.92	96.92	-4,516.59	-459.60	664.46	509.84	154.62	4.297	Alert
16,100.00	11,620.00	16,200.04	11,700.00	78.41	78.53	96.92	-4,566.59	-459.28	664.46	508.61	155.85	4.264	Alert
16,150.00	11,620.00	16,250.04	11,700.00	79.03	79.15	96.92	-4,616.59	-458.97	664.45	507.37	157.08	4.230	Alert
16,200.00	11,620.00	16,300.04	11,700.00	79.65	79.77	96.92	-4,666.59	-458.66	664.45	506.13	158.32	4.197	Alert
16,250.00	11,620.00	16,350.04	11,700.00	80.28	80.39	96.92	-4,716.59	-458.34	664.44	504.88	159.56	4.164	Alert
16,300.00	11,620.00	16,400.04	11,700.00	80.91	81.02	96.92	-4,766.58	-458.03	664.44	503.63	160.81	4.132	Alert
16,350.00	11,620.00	16,450.04	11,700.00	81.53	81.64	96.92	-4,816.58	-457.71	664.44	502.38	162.06	4.100	Alert
16,400.00	11,620.00	16,500.04	11,700.00	82.16	82.27	96.92	-4,866.58	-457.40	664.43	501.13	163.31	4.069	Alert
16,450.00	11,620.00	16,550.04	11,700.00	82.80	82.90	96.92	-4,916.58	-457.08	664.43	499.87	164.56	4.038	Alert
16,500.00	11,620.00	16,600.04	11,700.00	83.43	83.53	96.92	-4,966.58	-456.77	664.42	498.60	165.82	4.007	Alert
16,550.00	11,620.00	16,650.04	11,700.00	84.06	84.16	96.92	-5,016.58	-456.46	664.42	497.34	167.08	3.977	Alert
16,600.00	11,620.00	16,700.04	11,700.00	84.70	84.79	96.92	-5,066.58	-456.14	664.42	496.07	168.35	3.947	Alert
16,650.00	11,620.00	16,750.04	11,700.00	85.34	85.43	96.92	-5,116.58	-455.83	664.41	494.80	169.62	3.917	Alert
16,700.00	11,620.00	16,800.04	11,700.00	85.98	86.06	96.92	-5,166.58	-455.51	664.41	493.53	170.88	3.888	Alert
16,750.00	11,620.00	16,850.04	11,700.00	86.62	86.70	96.92	-5,216.58	-455.20	664.41	492.25	172.16	3.859	Alert
16,800.00	11,620.00	16,900.04	11,700.00	87.26	87.34	96.92	-5,266.57	-454.89	664.40	490.97	173.43	3.831	Alert
16,850.00	11,620.00	16,950.04	11,700.00	87.90	87.98	96.92	-5,316.57	-454.57	664.40	489.68	174.71	3.803	Alert
16,900.00	11,620.00	17,000.04	11,700.00	88.55	88.62	96.92	-5,366.57	-454.26	664.39	488.40	175.99	3.775	Alert
16,950.00	11,620.00	17,050.04	11,700.00	89.20	89.27	96.92	-5,416.57	-453.94	664.39	487.11	177.28	3.748	Alert
17,000.00	11,620.00	17,100.04	11,700.00	89.84	89.91	96.92	-5,466.57	-453.63	664.39	485.82	178.57	3.721	Alert
17,050.00	11,620.00	17,150.04	11,700.00	90.49	90.56	96.92	-5,516.57	-453.31	664.38	484.53	179.86	3.694	Alert
17,100.00	11,620.00	17,200.04	11,700.00	91.14	91.21	96.92	-5,566.57	-453.00	664.38	483.23	181.15	3.668	Alert
17,150.00	11,620.00	17,250.04	11,700.00	91.79	91.86	96.92	-5,616.57	-452.69	664.38	481.93	182.44	3.642	Alert
17,200.00	11,620.00	17,300.04	11,700.00	92.44	92.51	96.92	-5,666.57	-452.37	664.37	480.63	183.74	3.616	Alert
17,250.00	11,620.00	17,350.04	11,700.00	93.10	93.16	96.92	-5,716.57	-452.06	664.37	479.33	185.04	3.590	Alert
17,300.00	11,620.00	17,400.04	11,700.00	93.75	93.81	96.92	-5,766.56	-451.74	664.36	478.03	186.34	3.565	Alert
17,350.00	11,620.00	17,450.04	11,700.00	94.41	94.46	96.92	-5,816.56	-451.43	664.36	476.72	187.64	3.541	Alert
17,400.00	11,620.00	17,500.04	11,700.00	95.06	95.12	96.92	-5,866.56	-451.12	664.36	475.41	188.95	3.516	Alert
17,450.00	11,620.00	17,550.04	11,700.00	95.72	95.77	96.93	-5,916.56	-450.80	664.35	474.10	190.25	3.492	Alert
17,500.00	11,620.00	17,600.04	11,700.00	96.38	96.43	96.93	-5,966.56	-450.49	664.35	472.79	191.56	3.468	Alert
17,550.00	11,620.00	17,650.04	11,700.00	97.04	97.09	96.93	-6,016.56	-450.17	664.35	471.47	192.87	3.444	Alert
17,600.00	11,620.00	17,700.04	11,700.00	97.70	97.74	96.93	-6,066.56	-449.86	664.34	470.15	194.19	3.421	Alert
17,650.00	11,620.00	17,750.04	11,700.00	98.36	98.40	96.93	-6,116.56	-449.54	664.34	468.83	195.50	3.398	Alert
17,700.00	11,620.00	17,800.04	11,700.00	99.03	99.06	96.93	-6,166.56	-449.23	664.33	467.51	196.82	3.375	Alert
17,750.00	11,620.00	17,850.04	11,700.00	99.69	99.73	96.93	-6,216.56	-448.92	664.33	466.19	198.14	3.353	Alert
17,800.00	11,620.00	17,900.04	11,700.00	100.35	100.39	96.93	-6,266.55	-448.60	664.33	464.87	199.46	3.331	Alert
17,850.00	11,620.00	17,950.04	11,700.00	101.02	101.05	96.93	-6,316.55	-448.29	664.32	463.54	200.78	3.309	Alert
17,900.00	11,620.00	18,000.04	11,700.00	101.69	101.72	96.93	-6,366.55	-447.97	664.32	462.21	202.11	3.287	Alert
17,950.00	11,620.00	18,050.04	11,700.00	102.35	102.38	96.93	-6,416.55	-447.66	664.32	460.88	203.43	3.265	Alert
18,000.00	11,620.00	18,100.04	11,700.00	103.02	103.05	96.93	-6,466.55	-447.35	664.31	459.55	204.76	3.244	Alert
18,050.00	11,620.00	18,150.04	11,700.00	103.69	103.71	96.93	-6,516.55	-447.03	664.31	458.22	206.09	3.223	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 612H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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
18,100.00	11,620.00	18,200.04	11,700.00	104.36	104.38	96.93	-6,566.55	-446.72	664.30	456.88	207.42	3.203	Alert
18,150.00	11,620.00	18,250.04	11,700.00	105.03	105.05	96.93	-6,616.55	-446.40	664.30	455.54	208.76	3.182	Alert
18,200.00	11,620.00	18,300.04	11,700.00	105.70	105.72	96.93	-6,666.55	-446.09	664.30	454.21	210.09	3.162	Alert
18,250.00	11,620.00	18,350.04	11,700.00	106.37	106.39	96.93	-6,716.55	-445.77	664.29	452.87	211.43	3.142	Alert
18,300.00	11,620.00	18,400.04	11,700.00	107.04	107.06	96.93	-6,766.54	-445.46	664.29	451.53	212.76	3.122	Alert
18,350.00	11,620.00	18,450.04	11,700.00	107.72	107.73	96.93	-6,816.54	-445.15	664.29	450.18	214.10	3.103	Alert
18,400.00	11,620.00	18,500.04	11,700.00	108.39	108.40	96.93	-6,866.54	-444.83	664.28	448.84	215.44	3.083	Alert
18,450.00	11,620.00	18,550.04	11,700.00	109.07	109.08	96.93	-6,916.54	-444.52	664.28	447.49	216.79	3.064	Alert
18,500.00	11,620.00	18,600.04	11,700.00	109.74	109.75	96.93	-6,966.54	-444.20	664.27	446.15	218.13	3.045	Alert
18,550.00	11,620.00	18,650.04	11,700.00	110.42	110.43	96.93	-7,016.54	-443.89	664.27	444.80	219.47	3.027	Alert
18,600.00	11,620.00	18,700.04	11,700.00	111.10	111.10	96.93	-7,066.54	-443.58	664.27	443.45	220.82	3.008	Alert
18,650.00	11,620.00	18,750.04	11,700.00	111.77	111.78	96.93	-7,116.54	-443.26	664.26	442.10	222.17	2.990	Alert
18,700.00	11,620.00	18,800.04	11,700.00	112.45	112.45	96.93	-7,166.54	-442.95	664.26	440.74	223.51	2.972	Alert
18,750.00	11,620.00	18,850.04	11,700.00	113.13	113.13	96.93	-7,216.54	-442.63	664.25	439.39	224.86	2.954	Alert
18,800.00	11,620.00	18,900.04	11,700.00	113.81	113.81	96.93	-7,266.53	-442.32	664.25	438.04	226.21	2.936	Alert
18,850.00	11,620.00	18,950.04	11,700.00	114.49	114.49	96.93	-7,316.53	-442.00	664.25	436.68	227.57	2.919	Alert
18,900.00	11,620.00	19,000.04	11,700.00	115.17	115.17	96.93	-7,366.53	-441.69	664.24	435.32	228.92	2.902	Alert
18,950.00	11,620.00	19,050.04	11,700.00	115.85	115.85	96.93	-7,416.53	-441.38	664.24	433.96	230.28	2.885	Alert
19,000.00	11,620.00	19,100.04	11,700.00	116.53	116.53	96.93	-7,466.53	-441.06	664.24	432.60	231.63	2.868	Alert
19,050.00	11,620.00	19,150.04	11,700.00	117.22	117.21	96.93	-7,516.53	-440.75	664.23	431.24	232.99	2.851	Alert
19,100.00	11,620.00	19,200.04	11,700.00	117.90	117.89	96.93	-7,566.53	-440.43	664.23	429.88	234.35	2.834	Alert
19,150.00	11,620.00	19,250.04	11,700.00	118.58	118.57	96.93	-7,616.53	-440.12	664.22	428.52	235.71	2.818	Alert
19,200.00	11,620.00	19,300.04	11,700.00	119.27	119.25	96.93	-7,666.53	-439.81	664.22	427.16	237.07	2.802	Alert
19,250.00	11,620.00	19,350.04	11,700.00	119.95	119.94	96.93	-7,716.53	-439.49	664.22	425.79	238.43	2.786	Alert
19,300.00	11,620.00	19,400.04	11,700.00	120.63	120.62	96.93	-7,766.53	-439.18	664.21	424.42	239.79	2.770	Alert
19,350.00	11,620.00	19,450.04	11,700.00	121.32	121.30	96.93	-7,816.52	-438.86	664.21	423.06	241.15	2.754	Alert
19,400.00	11,620.00	19,500.04	11,700.00	122.01	121.99	96.93	-7,866.52	-438.55	664.21	421.69	242.52	2.739	Alert
19,450.00	11,620.00	19,550.04	11,700.00	122.69	122.67	96.93	-7,916.52	-438.23	664.20	420.32	243.88	2.723	Alert
19,500.00	11,620.00	19,600.04	11,700.00	123.38	123.36	96.93	-7,966.52	-437.92	664.20	418.95	245.25	2.708	Alert
19,550.00	11,620.00	19,650.04	11,700.00	124.07	124.04	96.93	-8,016.52	-437.61	664.19	417.58	246.62	2.693	Alert
19,600.00	11,620.00	19,700.04	11,700.00	124.76	124.73	96.93	-8,066.52	-437.29	664.19	416.21	247.98	2.678	Alert
19,650.00	11,620.00	19,750.04	11,700.00	125.44	125.42	96.93	-8,116.52	-436.98	664.19	414.83	249.35	2.664	Alert
19,700.00	11,620.00	19,800.04	11,700.00	126.13	126.11	96.93	-8,166.52	-436.66	664.18	413.46	250.72	2.649	Alert
19,750.00	11,620.00	19,850.04	11,700.00	126.82	126.79	96.93	-8,216.52	-436.35	664.18	412.08	252.10	2.635	Alert
19,800.00	11,620.00	19,900.04	11,700.00	127.51	127.48	96.93	-8,266.52	-436.04	664.18	410.71	253.47	2.620	Alert
19,850.00	11,620.00	19,950.04	11,700.00	128.20	128.17	96.93	-8,316.51	-435.72	664.17	409.33	254.84	2.606	Alert
19,900.00	11,620.00	20,000.04	11,700.00	128.89	128.86	96.93	-8,366.51	-435.41	664.17	407.95	256.21	2.592	Alert
19,950.00	11,620.00	20,050.04	11,700.00	129.58	129.55	96.93	-8,416.51	-435.09	664.16	406.58	257.59	2.578	Alert
20,000.00	11,620.00	20,100.04	11,700.00	130.28	130.24	96.93	-8,466.51	-434.78	664.16	405.20	258.96	2.565	Alert
20,050.00	11,620.00	20,150.04	11,700.00	130.97	130.93	96.93	-8,516.51	-434.46	664.16	403.82	260.34	2.551	Alert
20,100.00	11,620.00	20,200.04	11,700.00	131.66	131.62	96.93	-8,566.51	-434.15	664.15	402.44	261.72	2.538	Alert
20,150.00	11,620.00	20,250.04	11,700.00	132.35	132.32	96.93	-8,616.51	-433.84	664.15	401.05	263.10	2.524	Alert
20,200.00	11,620.00	20,300.04	11,700.00	133.05	133.01	96.93	-8,666.51	-433.52	664.15	399.67	264.47	2.511	Alert
20,250.00	11,620.00	20,350.04	11,700.00	133.74	133.70	96.93	-8,716.51	-433.21	664.14	398.29	265.85	2.498	Minor Risk
20,300.00	11,620.00	20,400.04	11,700.00	134.43	134.39	96.93	-8,766.51	-432.89	664.14	396.90	267.23	2.485	Minor Risk
20,350.00	11,620.00	20,450.04	11,700.00	135.13	135.09	96.93	-8,816.50	-432.58	664.13	395.52	268.61	2.472	Minor Risk
20,400.00	11,620.00	20,500.04	11,700.00	135.82	135.78	96.93	-8,866.50	-432.27	664.13	394.13	270.00	2.460	Minor Risk
20,450.00	11,620.00	20,550.04	11,700.00	136.52	136.47	96.93	-8,916.50	-431.95	664.13	392.75	271.38	2.447	Minor Risk
20,500.00	11,620.00	20,600.04	11,700.00	137.21	137.17	96.93	-8,966.50	-431.64	664.12	391.36	272.76	2.435	Minor Risk
20,550.00	11,620.00	20,650.04	11,700.00	137.91	137.86	96.93	-9,016.50	-431.32	664.12	389.97	274.14	2.423	Minor Risk
20,600.00	11,620.00	20,700.04	11,700.00	138.60	138.56	96.93	-9,066.50	-431.01	664.12	388.59	275.53	2.410	Minor Risk
20,650.00	11,620.00	20,750.04	11,700.00	139.30	139.25	96.93	-9,116.50	-430.70	664.11	387.20	276.91	2.398	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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 612H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	11,620.00	20,800.04	11,700.00	140.00	139.95	96.93	-9,166.50	-430.38	664.11	385.81	278.30	2.386	Minor Risk
20,750.00	11,620.00	20,850.04	11,700.00	140.69	140.64	96.93	-9,216.50	-430.07	664.10	384.42	279.69	2.374	Minor Risk
20,800.00	11,620.00	20,900.04	11,700.00	141.39	141.34	96.93	-9,266.50	-429.75	664.10	383.03	281.07	2.363	Minor Risk
20,850.00	11,620.00	20,950.04	11,700.00	142.09	142.04	96.93	-9,316.49	-429.44	664.10	381.64	282.46	2.351	Minor Risk
20,900.00	11,620.00	21,000.04	11,700.00	142.79	142.73	96.93	-9,366.49	-429.12	664.09	380.24	283.85	2.340	Minor Risk
20,950.00	11,620.00	21,050.04	11,700.00	143.49	143.43	96.93	-9,416.49	-428.81	664.09	378.85	285.24	2.328	Minor Risk
21,000.00	11,620.00	21,100.04	11,700.00	144.18	144.13	96.93	-9,466.49	-428.50	664.08	377.46	286.63	2.317	Minor Risk
21,050.00	11,620.00	21,150.04	11,700.00	144.88	144.83	96.93	-9,516.49	-428.18	664.08	376.06	288.02	2.306	Minor Risk
21,100.00	11,620.00	21,200.04	11,700.00	145.58	145.52	96.93	-9,566.49	-427.87	664.08	374.67	289.41	2.295	Minor Risk
21,150.00	11,620.00	21,250.04	11,700.00	146.28	146.22	96.93	-9,616.49	-427.55	664.07	373.27	290.80	2.284	Minor Risk
21,200.00	11,620.00	21,300.04	11,700.00	146.98	146.92	96.93	-9,666.49	-427.24	664.07	371.88	292.19	2.273	Minor Risk
21,250.00	11,620.00	21,350.04	11,700.00	147.68	147.62	96.93	-9,716.49	-426.93	664.07	370.48	293.58	2.262	Minor Risk
21,300.00	11,620.00	21,400.04	11,700.00	148.38	148.32	96.93	-9,766.49	-426.61	664.06	369.08	294.98	2.251	Minor Risk
21,350.00	11,620.00	21,450.04	11,700.00	149.08	149.02	96.93	-9,816.48	-426.30	664.06	367.69	296.37	2.241	Minor Risk
21,400.00	11,620.00	21,500.04	11,700.00	149.78	149.72	96.93	-9,866.48	-425.98	664.05	366.29	297.77	2.230	Minor Risk
21,450.00	11,620.00	21,550.04	11,700.00	150.48	150.42	96.93	-9,916.48	-425.67	664.05	364.89	299.16	2.220	Minor Risk
21,500.00	11,620.00	21,600.04	11,700.00	151.19	151.12	96.93	-9,966.48	-425.35	664.05	363.49	300.55	2.209	Minor Risk
21,550.00	11,620.00	21,650.04	11,700.00	151.89	151.82	96.93	-10,016.48	-425.04	664.04	362.09	301.95	2.199	Minor Risk
21,600.00	11,620.00	21,700.04	11,700.00	152.59	152.52	96.93	-10,066.48	-424.73	664.04	360.69	303.35	2.189	Minor Risk
21,650.00	11,620.00	21,750.04	11,700.00	153.29	153.22	96.93	-10,116.48	-424.41	664.04	359.29	304.74	2.179	Minor Risk
21,700.00	11,620.00	21,800.04	11,700.00	153.99	153.93	96.93	-10,166.48	-424.10	664.03	357.89	306.14	2.169	Minor Risk
21,750.00	11,620.00	21,850.04	11,700.00	154.70	154.63	96.93	-10,216.48	-423.78	664.03	356.49	307.54	2.159	Minor Risk
21,800.00	11,620.00	21,900.04	11,700.00	155.40	155.33	96.93	-10,266.48	-423.47	664.02	355.09	308.94	2.149	Minor Risk
21,850.00	11,620.00	21,950.04	11,700.00	156.10	156.03	96.93	-10,316.47	-423.16	664.02	353.68	310.34	2.140	Minor Risk
21,864.06	11,620.00	21,964.10	11,700.00	156.30	156.23	96.93	-10,330.53	-423.07	664.02	353.29	310.73	2.137	Minor Risk, SF

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1 — **Offset Site Error:** 5.00 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	10.00	10.00	0.50	0.50	92.23	-26.76	687.86	688.38				
50.00	50.00	60.00	60.00	0.50	0.51	92.23	-26.76	687.86	688.38	687.37	1.01	682.831	
100.00	100.00	110.00	110.00	0.52	0.53	92.23	-26.76	687.86	688.38	687.34	1.04	658.859	
150.00	150.00	160.00	160.00	0.59	0.61	92.23	-26.76	687.86	688.38	687.18	1.20	574.493	
200.00	200.00	210.00	210.00	0.70	0.73	92.23	-26.76	687.86	688.38	686.95	1.43	482.324	
250.00	250.00	260.00	260.00	0.84	0.86	92.23	-26.76	687.86	688.38	686.68	1.70	404.567	
300.00	300.00	310.00	310.00	0.99	1.02	92.23	-26.76	687.86	688.38	686.38	2.00	343.740	
350.00	350.00	360.00	360.00	1.15	1.17	92.23	-26.76	687.86	688.38	686.06	2.32	296.704	
400.00	400.00	410.00	410.00	1.31	1.34	92.23	-26.76	687.86	688.38	685.73	2.65	259.958	
450.00	450.00	460.00	460.00	1.48	1.51	92.23	-26.76	687.86	688.38	685.40	2.98	230.765	
500.00	500.00	510.00	510.00	1.65	1.68	92.23	-26.76	687.86	688.38	685.06	3.32	207.160	
550.00	550.00	560.00	560.00	1.82	1.85	92.23	-26.76	687.86	688.38	684.72	3.67	187.755	
600.00	600.00	610.00	610.00	1.99	2.02	92.23	-26.76	687.86	688.38	684.37	4.01	171.561	
650.00	650.00	660.00	660.00	2.16	2.20	92.23	-26.76	687.86	688.38	684.02	4.36	157.867	
700.00	700.00	710.00	710.00	2.34	2.37	92.23	-26.76	687.86	688.38	683.67	4.71	146.148	
750.00	750.00	760.00	760.00	2.51	2.55	92.23	-26.76	687.86	688.38	683.32	5.06	136.016	
800.00	800.00	810.00	810.00	2.69	2.72	92.23	-26.76	687.86	688.38	682.97	5.41	127.174	
850.00	850.00	860.00	860.00	2.87	2.90	92.23	-26.76	687.86	688.38	682.62	5.77	119.395	
900.00	900.00	910.00	910.00	3.04	3.08	92.23	-26.76	687.86	688.38	682.26	6.12	112.500	
950.00	950.00	960.00	960.00	3.22	3.25	92.23	-26.76	687.86	688.38	681.91	6.47	106.349	
1,000.00	1,000.00	1,010.00	1,010.00	3.40	3.43	92.23	-26.76	687.86	688.38	681.55	6.83	100.829	
1,050.00	1,050.00	1,060.00	1,060.00	3.58	3.61	92.23	-26.76	687.86	688.38	681.20	7.18	95.848	
1,100.00	1,100.00	1,110.00	1,110.00	3.75	3.78	92.23	-26.76	687.86	688.38	680.84	7.54	91.331	
1,150.00	1,150.00	1,160.00	1,160.00	3.93	3.96	92.23	-26.76	687.86	688.38	680.49	7.89	87.218	
1,200.00	1,200.00	1,210.00	1,210.00	4.11	4.14	92.23	-26.76	687.86	688.38	680.13	8.25	83.457	
1,250.00	1,250.00	1,260.00	1,260.00	4.29	4.32	92.23	-26.76	687.86	688.38	679.78	8.60	80.005	
1,300.00	1,300.00	1,310.00	1,310.00	4.46	4.50	92.23	-26.76	687.86	688.38	679.42	8.96	76.825	
1,350.00	1,350.00	1,360.00	1,360.00	4.64	4.67	92.23	-26.76	687.86	688.38	679.06	9.32	73.887	
1,400.00	1,400.00	1,410.00	1,410.00	4.82	4.85	92.23	-26.76	687.86	688.38	678.71	9.67	71.164	
1,450.00	1,450.00	1,460.00	1,460.00	5.00	5.03	92.23	-26.76	687.86	688.38	678.35	10.03	68.633	
1,500.00	1,500.00	1,510.00	1,510.00	5.18	5.21	92.23	-26.76	687.86	688.38	678.00	10.39	66.276	
1,550.00	1,550.00	1,560.00	1,560.00	5.36	5.39	92.23	-26.76	687.86	688.38	677.64	10.74	64.075	
1,600.00	1,600.00	1,610.00	1,610.00	5.53	5.57	92.23	-26.76	687.86	688.38	677.28	11.10	62.014	
1,650.00	1,650.00	1,660.00	1,660.00	5.71	5.74	92.23	-26.76	687.86	688.38	676.92	11.46	60.082	
1,700.00	1,700.00	1,710.00	1,710.00	5.89	5.92	92.23	-26.76	687.86	688.38	676.57	11.81	58.265	
1,750.00	1,750.00	1,760.00	1,760.00	6.07	6.10	92.23	-26.76	687.86	688.38	676.21	12.17	56.555	
1,800.00	1,800.00	1,810.00	1,810.00	6.25	6.28	92.23	-26.76	687.86	688.38	675.85	12.53	54.943	
1,850.00	1,850.00	1,860.00	1,860.00	6.43	6.46	92.23	-26.76	687.86	688.38	675.50	12.89	53.419	
1,900.00	1,900.00	1,910.00	1,910.00	6.61	6.64	92.23	-26.76	687.86	688.38	675.14	13.24	51.977	
1,950.00	1,950.00	1,960.00	1,960.00	6.78	6.82	92.23	-26.76	687.86	688.38	674.78	13.60	50.611	
2,000.00	2,000.00	2,010.00	2,010.00	6.96	7.00	92.23	-26.76	687.86	688.38	674.42	13.96	49.315	
2,050.00	2,050.00	2,060.00	2,060.00	7.14	7.17	92.23	-26.76	687.86	688.38	674.07	14.32	48.083	
2,100.00	2,100.00	2,110.00	2,110.00	7.32	7.35	92.23	-26.76	687.86	688.38	673.71	14.67	46.911	
2,150.00	2,150.00	2,160.00	2,160.00	7.50	7.53	92.23	-26.76	687.86	688.38	673.35	15.03	45.795	
2,200.00	2,200.00	2,210.00	2,210.00	7.68	7.71	92.23	-26.76	687.86	688.38	672.99	15.39	44.731	
2,250.00	2,250.00	2,260.00	2,260.00	7.86	7.89	92.23	-26.76	687.86	688.38	672.63	15.75	43.715	
2,300.00	2,300.00	2,310.00	2,310.00	8.04	8.07	92.23	-26.76	687.86	688.38	672.28	16.10	42.744	
2,350.00	2,350.00	2,360.00	2,360.00	8.22	8.25	92.23	-26.76	687.86	688.38	671.92	16.46	41.815	
2,400.00	2,400.00	2,410.00	2,410.00	8.39	8.43	92.23	-26.76	687.86	688.38	671.56	16.82	40.925	
2,450.00	2,450.00	2,460.00	2,460.00	8.57	8.61	92.23	-26.76	687.86	688.38	671.20	17.18	40.072	
2,500.00	2,500.00	2,510.00	2,510.00	8.75	8.78	92.23	-26.76	687.86	688.38	670.85	17.54	39.255	
2,550.00	2,550.00	2,554.39	2,554.38	8.93	8.94	45.31	-26.45	688.10	688.47	670.60	17.87	38.525	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1

Offset Site Error: 5.00 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	2,599.99	2,599.70	2,599.69	9.11	9.10	45.28	-25.72	688.65	688.59	670.38	18.21	37.817	
2,650.00	2,649.98	2,645.01	2,644.98	9.28	9.26	45.24	-24.57	689.52	688.74	670.20	18.54	37.144	
2,700.00	2,699.96	2,690.32	2,690.24	9.46	9.43	45.18	-22.98	690.72	688.99	670.12	18.88	36.501	
2,750.00	2,749.94	2,735.59	2,735.45	9.64	9.59	45.09	-20.97	692.25	689.57	670.37	19.21	35.899	
2,800.00	2,799.92	2,780.84	2,780.58	9.81	9.75	44.96	-18.54	694.09	690.50	670.96	19.54	35.337	
2,850.00	2,849.90	2,826.03	2,825.64	9.99	9.91	44.79	-15.68	696.26	691.77	671.90	19.87	34.813	
2,900.00	2,899.88	2,871.17	2,870.58	10.17	10.07	44.59	-12.40	698.75	693.39	673.19	20.20	34.325	
2,950.00	2,949.86	2,916.23	2,915.40	10.34	10.23	44.35	-8.70	701.55	695.37	674.84	20.53	33.872	
3,000.00	2,999.84	2,961.20	2,960.08	10.52	10.39	44.09	-4.60	704.66	697.71	676.86	20.86	33.452	
3,050.00	3,049.81	3,006.08	3,004.60	10.70	10.55	43.78	-0.08	708.08	700.42	679.24	21.18	33.065	
3,100.00	3,099.79	3,052.79	3,050.87	10.88	10.72	43.44	5.02	711.95	703.48	681.96	21.52	32.692	
3,150.00	3,149.77	3,102.48	3,100.08	11.05	10.90	43.07	10.53	716.13	706.63	684.76	21.87	32.308	
3,200.00	3,199.75	3,152.17	3,149.29	11.23	11.08	42.70	16.05	720.31	709.81	687.59	22.23	31.937	
3,250.00	3,249.73	3,201.87	3,198.50	11.41	11.26	42.34	21.56	724.48	713.02	690.44	22.58	31.579	
3,300.00	3,299.71	3,251.56	3,247.70	11.59	11.44	41.98	27.07	728.66	716.26	693.33	22.93	31.232	
3,350.00	3,349.69	3,301.25	3,296.91	11.76	11.62	41.62	32.58	732.84	719.53	696.24	23.29	30.896	
3,400.00	3,399.67	3,350.94	3,346.12	11.94	11.80	41.27	38.09	737.02	722.82	699.18	23.64	30.571	
3,450.00	3,449.65	3,400.63	3,395.33	12.12	11.98	40.92	43.60	741.19	726.14	702.14	24.00	30.256	
3,500.00	3,499.62	3,450.33	3,444.54	12.30	12.17	40.57	49.12	745.37	729.49	705.14	24.36	29.951	
3,550.00	3,549.60	3,500.02	3,493.74	12.48	12.35	40.23	54.63	749.55	732.87	708.15	24.71	29.655	
3,600.00	3,599.58	3,549.71	3,542.95	12.65	12.54	39.89	60.14	753.73	736.27	711.20	25.07	29.369	
3,650.00	3,649.56	3,600.60	3,592.16	12.83	12.72	39.55	65.65	757.90	739.70	714.26	25.43	29.086	
3,700.00	3,699.54	3,649.09	3,641.37	13.01	12.91	39.22	71.16	762.08	743.15	717.36	25.79	28.821	
3,750.00	3,749.52	3,701.22	3,690.58	13.19	13.10	38.88	76.67	766.26	746.63	720.48	26.15	28.550	
3,800.00	3,799.50	3,748.48	3,739.78	13.37	13.28	38.55	82.18	770.44	750.13	723.63	26.50	28.305	
3,850.00	3,849.48	3,801.83	3,788.99	13.54	13.48	38.23	87.70	774.61	753.66	726.78	26.87	28.045	
3,900.00	3,899.46	3,847.86	3,838.20	13.72	13.65	37.91	93.21	778.79	757.21	729.99	27.22	27.819	
3,950.00	3,949.44	3,902.45	3,887.41	13.90	13.86	37.59	98.72	782.97	760.78	733.19	27.60	27.569	
4,000.00	3,999.41	3,947.24	3,936.62	14.08	14.03	37.27	104.23	787.14	764.38	736.45	27.94	27.361	
4,050.00	4,049.39	4,003.07	3,985.83	14.26	14.24	36.96	109.74	791.32	768.01	739.69	28.32	27.120	
4,100.00	4,099.37	4,046.63	4,035.03	14.44	14.40	36.65	115.25	795.50	771.65	742.99	28.66	26.928	
4,150.00	4,149.35	4,096.32	4,084.24	14.61	14.59	36.34	120.77	799.68	775.32	746.30	29.02	26.721	
4,200.00	4,199.33	4,146.01	4,133.45	14.79	14.78	36.03	126.28	803.85	779.01	749.63	29.38	26.519	
4,250.00	4,249.31	4,195.70	4,182.66	14.97	14.97	35.73	131.79	808.03	782.72	752.98	29.74	26.322	
4,300.00	4,299.29	4,250.94	4,237.38	15.15	15.18	35.41	137.76	812.56	786.34	756.21	30.13	26.098	
4,350.00	4,349.27	4,309.24	4,295.25	15.33	15.40	35.12	143.42	816.85	789.47	758.93	30.54	25.851	
4,400.00	4,399.25	4,367.70	4,353.38	15.51	15.62	34.87	148.38	820.61	792.07	761.13	30.95	25.595	
4,450.00	4,449.22	4,426.29	4,411.72	15.69	15.84	34.67	152.65	823.84	794.14	762.79	31.35	25.331	
4,500.00	4,499.20	4,484.98	4,470.24	15.86	16.05	34.51	156.20	826.54	795.67	763.92	31.75	25.060	
4,550.00	4,549.18	4,543.73	4,528.89	16.04	16.27	34.40	159.04	828.69	796.64	764.50	32.15	24.781	
4,600.00	4,599.16	4,602.54	4,587.63	16.22	16.48	34.34	161.16	830.30	797.07	764.53	32.54	24.495	
4,650.00	4,649.14	4,661.35	4,646.42	16.40	16.69	34.32	162.57	831.36	796.95	764.02	32.93	24.203	
4,700.00	4,699.12	4,720.16	4,705.22	16.58	16.90	34.35	163.25	831.88	796.27	762.96	33.31	23.904	
4,750.00	4,749.10	4,774.04	4,759.10	16.76	17.09	34.40	163.32	831.93	795.12	761.45	33.68	23.610	
4,800.00	4,799.08	4,824.02	4,809.08	16.94	17.26	34.46	163.32	831.93	793.93	759.89	34.03	23.329	
4,850.00	4,849.06	4,874.00	4,859.06	17.12	17.44	34.52	163.32	831.93	792.73	758.34	34.39	23.053	
4,900.00	4,899.03	4,923.98	4,909.03	17.30	17.61	34.58	163.32	831.93	791.53	756.79	34.74	22.783	
4,950.00	4,949.01	4,973.95	4,959.01	17.47	17.79	34.64	163.32	831.93	790.34	755.24	35.10	22.518	
5,000.00	4,998.99	5,023.93	5,008.99	17.65	17.97	34.70	163.32	831.93	789.14	753.69	35.45	22.259	
5,050.00	5,048.97	5,073.91	5,058.97	17.83	18.14	34.76	163.32	831.93	787.95	752.14	35.81	22.005	
5,100.00	5,098.95	5,123.89	5,108.95	18.01	18.32	34.82	163.32	831.93	786.76	750.59	36.16	21.755	
5,150.00	5,148.93	5,173.87	5,158.93	18.19	18.49	34.88	163.32	831.93	785.56	749.04	36.52	21.511	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1 — Offset Site Error: 5.00 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	5,198.91	5,223.85	5,208.91	18.37	18.67	34.94	163.32	831.93	784.37	747.50	36.87	21.271	
5,250.00	5,248.89	5,273.83	5,258.89	18.55	18.85	35.01	163.32	831.93	783.18	745.95	37.23	21.036	
5,300.00	5,298.87	5,323.81	5,308.87	18.73	19.02	35.07	163.32	831.93	781.99	744.41	37.59	20.805	
5,350.00	5,348.84	5,373.79	5,358.84	18.91	19.20	35.13	163.32	831.93	780.80	742.86	37.94	20.579	
5,400.00	5,398.82	5,423.76	5,408.82	19.09	19.37	35.19	163.32	831.93	779.62	741.32	38.30	20.357	
5,450.00	5,448.80	5,473.74	5,458.80	19.27	19.55	35.25	163.32	831.93	778.43	739.78	38.65	20.138	
5,500.00	5,498.78	5,523.72	5,508.78	19.44	19.73	35.31	163.32	831.93	777.24	738.23	39.01	19.924	
5,550.00	5,548.76	5,573.70	5,558.76	19.62	19.90	35.37	163.32	831.93	776.06	736.69	39.37	19.714	
5,600.00	5,598.74	5,623.68	5,608.74	19.80	20.08	35.44	163.32	831.93	774.87	735.15	39.72	19.508	
5,650.00	5,648.72	5,673.66	5,658.72	19.98	20.26	35.50	163.32	831.93	773.69	733.61	40.08	19.305	
5,700.00	5,698.70	5,723.64	5,708.70	20.16	20.43	35.56	163.32	831.93	772.51	732.08	40.43	19.105	
5,750.00	5,748.68	5,773.62	5,758.68	20.34	20.61	35.62	163.32	831.93	771.33	730.54	40.79	18.910	
5,800.00	5,798.65	5,823.60	5,808.65	20.52	20.79	35.69	163.32	831.93	770.15	729.00	41.15	18.717	
5,850.00	5,848.63	5,873.57	5,858.63	20.70	20.96	35.75	163.32	831.93	768.97	727.47	41.50	18.528	
5,900.00	5,898.61	5,923.55	5,908.61	20.88	21.14	35.81	163.32	831.93	767.79	725.93	41.86	18.342	
5,950.00	5,948.59	5,973.53	5,958.59	21.06	21.32	35.88	163.32	831.93	766.61	724.40	42.22	18.160	
6,000.00	5,998.57	6,023.51	6,008.57	21.24	21.49	35.94	163.32	831.93	765.44	722.86	42.57	17.980	
6,050.00	6,048.55	6,073.49	6,058.55	21.42	21.67	36.00	163.32	831.93	764.26	721.33	42.93	17.803	
6,100.00	6,098.53	6,123.47	6,108.53	21.60	21.85	36.07	163.32	831.93	763.09	719.80	43.28	17.629	
6,150.00	6,148.51	6,173.45	6,158.51	21.77	22.02	36.13	163.32	831.93	761.91	718.27	43.64	17.458	
6,200.00	6,198.49	6,223.43	6,208.49	21.95	22.20	36.20	163.32	831.93	760.74	716.74	44.00	17.290	
6,250.00	6,248.46	6,273.41	6,258.46	22.13	22.38	36.26	163.32	831.93	759.57	715.21	44.35	17.125	
6,300.00	6,298.44	6,323.39	6,308.44	22.31	22.55	36.33	163.32	831.93	758.40	713.69	44.71	16.962	
6,350.00	6,348.42	6,373.36	6,358.42	22.49	22.73	36.39	163.32	831.93	757.23	712.16	45.07	16.802	
6,400.00	6,398.40	6,423.34	6,408.40	22.67	22.91	36.46	163.32	831.93	756.06	710.63	45.42	16.644	
6,450.00	6,448.38	6,473.32	6,458.38	22.85	23.08	36.52	163.32	831.93	754.89	709.11	45.78	16.489	
6,500.00	6,498.36	6,523.30	6,508.36	23.03	23.26	36.59	163.32	831.93	753.72	707.59	46.14	16.336	
6,550.00	6,548.34	6,573.28	6,558.34	23.21	23.44	36.65	163.32	831.93	752.56	706.06	46.49	16.186	
6,600.00	6,598.32	6,623.26	6,608.32	23.39	23.62	36.72	163.32	831.93	751.39	704.54	46.85	16.038	
6,650.00	6,648.30	6,673.24	6,658.30	23.57	23.79	36.79	163.32	831.93	750.23	703.02	47.21	15.892	
6,700.00	6,698.27	6,723.22	6,708.27	23.75	23.97	36.85	163.32	831.93	749.07	701.50	47.57	15.748	
6,750.00	6,748.25	6,773.20	6,758.25	23.93	24.15	36.92	163.32	831.93	747.90	699.98	47.92	15.607	
6,800.00	6,798.23	6,823.17	6,808.23	24.11	24.33	36.99	163.32	831.93	746.74	698.46	48.28	15.467	
6,850.00	6,848.21	6,873.15	6,858.21	24.29	24.50	37.05	163.32	831.93	745.58	696.95	48.64	15.330	
6,900.00	6,898.19	6,923.13	6,908.19	24.47	24.68	37.12	163.32	831.93	744.42	695.43	48.99	15.194	
6,950.00	6,948.17	6,973.11	6,958.17	24.65	24.86	37.19	163.32	831.93	743.27	693.92	49.35	15.061	
7,000.00	6,998.15	7,023.09	7,008.15	24.83	25.04	37.26	163.32	831.93	742.11	692.40	49.71	14.930	
7,050.00	7,048.13	7,073.07	7,058.13	25.00	25.21	37.32	163.32	831.93	740.95	690.89	50.06	14.800	
7,100.00	7,098.11	7,123.05	7,108.11	25.18	25.39	37.39	163.32	831.93	739.80	689.38	50.42	14.672	
7,150.00	7,148.08	7,173.03	7,158.08	25.36	25.57	37.46	163.32	831.93	738.65	687.87	50.78	14.546	
7,200.00	7,198.06	7,223.01	7,208.06	25.54	25.75	37.53	163.32	831.93	737.49	686.36	51.14	14.422	
7,250.00	7,248.04	7,272.98	7,258.04	25.72	25.92	37.60	163.32	831.93	736.34	684.85	51.49	14.300	
7,300.00	7,298.02	7,322.96	7,308.02	25.90	26.10	37.67	163.32	831.93	735.19	683.34	51.85	14.179	
7,350.00	7,348.00	7,372.94	7,358.00	26.08	26.28	37.74	163.32	831.93	734.04	681.83	52.21	14.060	
7,400.00	7,397.98	7,422.92	7,407.98	26.26	26.46	37.81	163.32	831.93	732.89	680.33	52.56	13.943	
7,450.00	7,447.96	7,472.90	7,457.96	26.44	26.63	37.88	163.32	831.93	731.75	678.82	52.92	13.827	
7,500.00	7,497.94	7,522.88	7,507.94	26.62	26.81	37.95	163.32	831.93	730.60	677.32	53.28	13.713	
7,550.00	7,547.92	7,572.86	7,557.92	26.80	26.99	38.02	163.32	831.93	729.46	675.82	53.64	13.600	
7,600.00	7,597.89	7,622.84	7,607.89	26.98	27.17	38.09	163.32	831.93	728.31	674.32	53.99	13.489	
7,650.00	7,647.87	7,672.82	7,657.87	27.16	27.34	38.16	163.32	831.93	727.17	672.82	54.35	13.379	
7,700.00	7,697.85	7,722.79	7,707.85	27.34	27.52	38.23	163.32	831.93	726.03	671.32	54.71	13.271	
7,750.00	7,747.83	7,772.77	7,757.83	27.52	27.70	38.30	163.32	831.93	724.89	669.82	55.07	13.164	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1

Offset Site Error: 5.00 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	7,797.81	7,822.75	7,807.81	27.70	27.88	38.37	163.32	831.93	723.75	668.32	55.42	13.059	
7,850.00	7,847.79	7,872.73	7,857.79	27.88	28.05	38.44	163.32	831.93	722.61	666.83	55.78	12.954	
7,900.00	7,897.77	7,922.71	7,907.77	28.06	28.23	38.51	163.32	831.93	721.47	665.33	56.14	12.852	
7,950.00	7,947.75	7,972.69	7,957.75	28.24	28.41	38.59	163.32	831.93	720.34	663.84	56.50	12.750	
8,000.00	7,997.73	8,022.67	8,007.73	28.42	28.59	38.66	163.32	831.93	719.20	662.35	56.85	12.650	
8,050.00	8,047.70	8,072.65	8,057.70	28.60	28.77	38.73	163.32	831.93	718.07	660.86	57.21	12.551	
8,100.00	8,097.68	8,122.63	8,107.68	28.78	28.94	38.80	163.32	831.93	716.93	659.37	57.57	12.454	
8,150.00	8,147.66	8,172.60	8,157.66	28.96	29.12	38.88	163.32	831.93	715.80	657.88	57.93	12.357	
8,200.00	8,197.64	8,222.58	8,207.64	29.13	29.30	38.95	163.32	831.93	714.67	656.39	58.28	12.262	
8,250.00	8,247.62	8,272.56	8,257.62	29.31	29.48	39.02	163.32	831.93	713.54	654.90	58.64	12.168	
8,300.00	8,297.60	8,322.54	8,307.60	29.49	29.66	39.10	163.32	831.93	712.41	653.42	59.00	12.075	
8,350.00	8,347.58	8,372.52	8,357.58	29.67	29.83	39.17	163.32	831.93	711.29	651.93	59.36	11.983	
8,400.00	8,397.56	8,422.50	8,407.56	29.85	30.01	39.24	163.32	831.93	710.16	650.45	59.71	11.893	
8,450.00	8,447.54	8,472.48	8,457.54	30.03	30.19	39.32	163.32	831.93	709.04	648.97	60.07	11.803	
8,500.00	8,497.51	8,522.46	8,507.51	30.21	30.37	39.39	163.32	831.93	707.91	647.49	60.43	11.715	
8,550.00	8,547.49	8,572.44	8,557.49	30.39	30.55	39.47	163.32	831.93	706.79	646.01	60.79	11.627	
8,600.00	8,597.47	8,622.41	8,607.47	30.57	30.72	39.54	163.32	831.93	705.67	644.53	61.14	11.541	
8,650.00	8,647.45	8,672.39	8,657.45	30.75	30.90	39.62	163.32	831.93	704.55	643.05	61.50	11.456	
8,700.00	8,697.43	8,722.37	8,707.43	30.93	31.08	39.69	163.32	831.93	703.43	641.57	61.86	11.371	
8,750.00	8,747.41	8,772.35	8,757.41	31.11	31.26	39.77	163.32	831.93	702.32	640.10	62.22	11.288	
8,800.00	8,797.39	8,822.33	8,807.39	31.29	31.44	39.84	163.32	831.93	701.20	638.63	62.58	11.206	
8,850.00	8,847.37	8,872.31	8,857.37	31.47	31.61	39.92	163.32	831.93	700.09	637.15	62.93	11.124	
8,900.00	8,897.35	8,922.29	8,907.35	31.65	31.79	40.00	163.32	831.93	698.97	635.68	63.29	11.044	
8,950.00	8,947.33	8,972.27	8,957.33	31.83	31.97	40.07	163.32	831.93	697.86	634.21	63.65	10.964	
9,000.00	8,997.30	9,022.25	9,007.30	32.01	32.15	40.15	163.32	831.93	696.75	632.74	64.01	10.886	
9,050.00	9,047.28	9,072.22	9,057.28	32.19	32.33	40.23	163.32	831.93	695.64	631.27	64.36	10.808	
9,100.00	9,097.26	9,122.20	9,107.26	32.37	32.50	40.30	163.32	831.93	694.53	629.81	64.72	10.731	
9,150.00	9,147.24	9,172.18	9,157.24	32.55	32.68	40.38	163.32	831.93	693.42	628.34	65.08	10.655	
9,200.00	9,197.22	9,222.16	9,207.22	32.73	32.86	40.46	163.32	831.93	692.32	626.88	65.44	10.580	
9,250.00	9,247.20	9,272.14	9,257.20	32.91	33.04	40.54	163.32	831.93	691.21	625.42	65.80	10.505	
9,300.00	9,297.18	9,322.12	9,307.18	33.09	33.22	40.62	163.32	831.93	690.11	623.96	66.15	10.432	
9,350.00	9,347.16	9,372.10	9,357.16	33.27	33.40	40.69	163.32	831.93	689.01	622.50	66.51	10.359	
9,400.00	9,397.14	9,422.08	9,407.14	33.45	33.57	40.77	163.32	831.93	687.91	621.04	66.87	10.287	
9,450.00	9,447.11	9,472.06	9,457.11	33.63	33.75	40.85	163.32	831.93	686.81	619.58	67.23	10.216	
9,500.00	9,497.09	9,522.03	9,507.09	33.81	33.93	40.93	163.32	831.93	685.71	618.12	67.59	10.146	
9,550.00	9,547.07	9,572.01	9,557.07	33.99	34.11	41.01	163.32	831.93	684.61	616.67	67.94	10.076	
9,600.00	9,597.05	9,621.99	9,607.05	34.17	34.29	41.09	163.32	831.93	683.52	615.22	68.30	10.007	
9,650.00	9,647.03	9,671.97	9,657.03	34.35	34.46	41.17	163.32	831.93	682.42	613.76	68.66	9.939	
9,700.00	9,697.01	9,721.95	9,707.01	34.53	34.64	41.25	163.32	831.93	681.33	612.31	69.02	9.872	
9,750.00	9,746.99	9,771.93	9,756.99	34.71	34.82	41.33	163.32	831.93	680.24	610.86	69.38	9.805	
9,800.00	9,796.97	9,821.91	9,806.97	34.88	35.00	41.41	163.32	831.93	679.15	609.42	69.73	9.739	
9,850.00	9,846.95	9,871.89	9,856.95	35.06	35.18	41.49	163.32	831.93	678.06	607.97	70.09	9.674	
9,900.00	9,896.92	9,921.87	9,906.92	35.24	35.36	41.58	163.32	831.93	676.97	606.52	70.45	9.609	
9,950.00	9,946.90	9,971.84	9,956.90	35.42	35.53	41.66	163.32	831.93	675.89	605.08	70.81	9.545	
10,000.00	9,996.88	10,021.82	10,006.88	35.60	35.71	41.74	163.32	831.93	674.80	603.64	71.17	9.482	
10,050.00	10,046.86	10,071.80	10,056.86	35.78	35.89	41.82	163.32	831.93	673.72	602.19	71.52	9.420	
10,100.00	10,096.84	10,121.78	10,106.84	35.96	36.07	41.90	163.32	831.93	672.64	600.75	71.88	9.358	
10,150.00	10,146.82	10,171.76	10,156.82	36.14	36.25	41.99	163.32	831.93	671.56	599.32	72.24	9.296	
10,200.00	10,196.80	10,221.74	10,206.80	36.32	36.43	42.07	163.32	831.93	670.48	597.88	72.60	9.236	
10,250.00	10,246.78	10,271.72	10,256.78	36.50	36.60	42.15	163.32	831.93	669.40	596.44	72.96	9.175	
10,300.00	10,296.76	10,321.70	10,306.76	36.68	36.78	42.24	163.32	831.93	668.32	595.01	73.31	9.116	
10,350.00	10,346.73	10,371.68	10,356.73	36.86	36.96	42.32	163.32	831.93	667.25	593.58	73.67	9.057	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1

Survey Program: 0-MWD+HDGM

Offset Site Error: 5.00 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
10,400.00	10,396.71	10,421.65	10,406.71	37.04	37.14	42.41	163.32	831.93	666.17	592.14	74.03	8.999	
10,450.00	10,446.69	10,471.63	10,456.69	37.22	37.32	42.49	163.32	831.93	665.10	590.71	74.39	8.941	
10,500.00	10,496.67	10,521.61	10,506.67	37.40	37.50	42.57	163.32	831.93	664.03	589.29	74.75	8.884	
10,550.00	10,546.65	10,571.59	10,556.65	37.58	37.68	42.66	163.32	831.93	662.96	587.86	75.10	8.827	
10,600.00	10,596.63	10,621.57	10,606.63	37.76	37.85	42.74	163.32	831.93	661.91	586.44	75.46	8.771	
10,650.00	10,646.62	10,671.56	10,656.62	37.94	38.03	42.79	163.32	831.93	661.18	585.36	75.82	8.720	
10,700.00	10,696.62	10,721.56	10,706.62	38.12	38.21	42.81	163.32	831.93	660.94	584.76	76.18	8.676	
10,742.05	10,738.66	10,763.60	10,748.66	38.27	38.36	42.81	163.32	831.93	660.94	584.46	76.48	8.642 CC	
10,750.00	10,746.62	10,771.56	10,756.62	38.30	38.39	89.71	163.32	831.93	660.94	584.41	76.53	8.636	
10,800.00	10,796.62	10,821.56	10,806.62	38.47	38.57	89.71	163.32	831.93	660.94	584.05	76.89	8.596	
10,850.00	10,846.62	10,871.56	10,856.62	38.65	38.75	89.71	163.32	831.93	660.94	583.69	77.24	8.557	
10,900.00	10,896.62	10,921.56	10,906.62	38.83	38.92	89.71	163.32	831.93	660.94	583.34	77.60	8.517	
10,950.00	10,946.62	10,971.56	10,956.62	39.00	39.10	89.71	163.32	831.93	660.94	582.98	77.96	8.478	
11,000.00	10,996.62	11,021.56	11,006.62	39.18	39.28	89.71	163.32	831.93	660.94	582.63	78.31	8.440	
11,050.00	11,046.62	11,071.56	11,056.62	39.36	39.46	89.71	163.32	831.93	660.94	582.27	78.67	8.402	
11,080.11	11,076.72	11,101.66	11,086.72	39.46	39.57	-90.00	163.32	831.93	660.94	582.06	78.88	8.379	
11,100.00	11,096.56	11,121.50	11,106.56	39.53	39.64	-90.12	163.32	831.93	660.94	581.93	79.01	8.365	
11,150.00	11,146.12	11,171.30	11,156.36	39.69	39.81	-90.65	163.06	831.93	660.98	581.64	79.34	8.331	
11,200.00	11,194.92	11,221.81	11,206.71	39.84	39.98	-91.26	159.31	831.95	661.10	581.44	79.66	8.299	
11,250.00	11,242.61	11,272.98	11,257.18	39.98	40.13	-91.87	151.00	832.00	661.29	581.34	79.95	8.271	
11,300.00	11,288.80	11,324.82	11,307.36	40.12	40.29	-92.47	138.03	832.07	661.55	581.31	80.24	8.245	
11,350.00	11,333.15	11,377.35	11,356.79	40.25	40.43	-93.05	120.32	832.17	661.86	581.36	80.51	8.221	
11,400.00	11,375.33	11,430.56	11,405.00	40.37	40.57	-93.61	97.85	832.30	662.23	581.47	80.76	8.200	
11,450.00	11,415.01	11,484.45	11,451.49	40.48	40.70	-94.14	70.62	832.45	662.64	581.64	81.00	8.181	
11,500.00	11,451.88	11,539.02	11,495.74	40.59	40.82	-94.65	38.73	832.63	663.07	581.85	81.22	8.164	
11,550.00	11,485.68	11,594.23	11,537.23	40.70	40.92	-95.12	2.33	832.83	663.51	582.09	81.42	8.149	
11,600.00	11,516.14	11,650.06	11,575.41	40.82	41.03	-95.55	-38.36	833.06	663.95	582.34	81.61	8.136	
11,650.00	11,543.03	11,706.45	11,609.79	40.94	41.14	-95.93	-83.04	833.31	664.36	582.57	81.79	8.123	
11,700.00	11,566.14	11,763.36	11,639.85	41.05	41.26	-96.27	-131.33	833.58	664.74	582.78	81.97	8.110	
11,750.00	11,585.30	11,820.72	11,665.16	41.17	41.38	-96.55	-182.78	833.86	665.07	582.93	82.14	8.097	
11,800.00	11,600.37	11,878.46	11,685.31	41.28	41.50	-96.77	-236.85	834.16	665.33	583.02	82.32	8.082	
11,850.00	11,611.22	11,936.49	11,699.98	41.40	41.62	-96.93	-292.97	834.48	665.52	583.02	82.51	8.066	
11,900.00	11,617.78	11,994.71	11,708.93	41.51	41.74	-97.04	-350.48	834.80	665.63	582.93	82.70	8.048	
11,950.00	11,620.00	12,053.04	11,711.99	41.62	41.86	-97.08	-408.70	835.12	665.65	582.73	82.92	8.028	
12,000.00	11,620.00	12,103.17	11,711.99	41.74	41.97	-97.08	-458.83	835.40	665.62	582.49	83.13	8.007	
12,050.00	11,620.00	12,153.17	11,711.99	41.88	42.10	-97.08	-508.83	835.68	665.59	582.20	83.39	7.982	
12,100.00	11,620.00	12,203.17	11,711.99	42.01	42.22	-97.08	-558.83	835.96	665.56	581.91	83.64	7.957	
12,150.00	11,620.00	12,253.17	11,711.99	42.17	42.37	-97.08	-608.83	836.24	665.53	581.58	83.94	7.928	
12,200.00	11,620.00	12,303.17	11,711.99	42.33	42.52	-97.08	-658.83	836.52	665.50	581.25	84.25	7.899	
12,250.00	11,620.00	12,353.17	11,711.99	42.51	42.69	-97.08	-708.83	836.80	665.46	580.87	84.60	7.866	
12,300.00	11,620.00	12,403.17	11,711.99	42.69	42.87	-97.08	-758.83	837.08	665.43	580.49	84.95	7.833	
12,350.00	11,620.00	12,453.17	11,711.99	42.90	43.06	-97.08	-808.83	837.36	665.40	580.06	85.34	7.797	
12,400.00	11,620.00	12,503.17	11,711.99	43.10	43.26	-97.08	-858.83	837.64	665.37	579.63	85.74	7.760	
12,450.00	11,620.00	12,553.17	11,711.99	43.33	43.48	-97.08	-908.83	837.92	665.34	579.16	86.18	7.720	
12,500.00	11,620.00	12,603.17	11,711.99	43.56	43.70	-97.08	-958.83	838.20	665.31	578.69	86.62	7.680	
12,550.00	11,620.00	12,653.17	11,711.99	43.81	43.94	-97.08	-1,008.82	838.48	665.28	578.17	87.11	7.637	
12,600.00	11,620.00	12,703.17	11,711.99	44.06	44.18	-97.08	-1,058.82	838.76	665.25	577.65	87.59	7.595	
12,650.00	11,620.00	12,753.17	11,711.99	44.33	44.44	-97.08	-1,108.82	839.03	665.22	577.10	88.12	7.549	
12,700.00	11,620.00	12,803.17	11,711.99	44.60	44.71	-97.08	-1,158.82	839.31	665.19	576.54	88.65	7.504	
12,750.00	11,620.00	12,853.17	11,711.99	44.89	44.99	-97.08	-1,208.82	839.59	665.16	575.94	89.22	7.456	
12,800.00	11,620.00	12,903.17	11,711.99	45.18	45.27	-97.08	-1,258.82	839.87	665.13	575.34	89.78	7.408	
12,850.00	11,620.00	12,953.17	11,711.99	45.49	45.57	-97.08	-1,308.82	840.15	665.09	574.70	90.39	7.358	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1

Survey Program: 0-MWD+HDGM

Offset Site Error: 5.00 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
12,900.00	11,620.00	13,003.17	11,711.99	45.80	45.87	-97.08	-1,358.82	840.43	665.06	574.07	91.00	7.309	
12,950.00	11,620.00	13,053.17	11,711.99	46.13	46.19	-97.08	-1,408.82	840.71	665.03	573.39	91.64	7.257	
13,000.00	11,620.00	13,103.17	11,711.99	46.46	46.52	-97.08	-1,458.82	840.99	665.00	572.72	92.29	7.206	
13,050.00	11,620.00	13,153.17	11,711.99	46.81	46.85	-97.08	-1,508.82	841.27	664.97	572.01	92.97	7.153	
13,100.00	11,620.00	13,203.17	11,711.99	47.15	47.19	-97.08	-1,558.82	841.55	664.94	571.29	93.65	7.100	
13,150.00	11,620.00	13,253.17	11,711.99	47.52	47.55	-97.08	-1,608.82	841.83	664.91	570.55	94.36	7.046	
13,200.00	11,620.00	13,303.17	11,711.99	47.88	47.91	-97.08	-1,658.81	842.11	664.88	569.80	95.08	6.993	
13,250.00	11,620.00	13,353.17	11,711.99	48.26	48.28	-97.08	-1,708.81	842.39	664.85	569.02	95.82	6.938	
13,300.00	11,620.00	13,403.17	11,711.99	48.64	48.65	-97.08	-1,758.81	842.66	664.82	568.24	96.57	6.884	
13,350.00	11,620.00	13,453.17	11,711.99	49.04	49.04	-97.08	-1,808.81	842.94	664.79	567.43	97.35	6.829	
13,400.00	11,620.00	13,503.17	11,711.99	49.43	49.43	-97.08	-1,858.81	843.22	664.76	566.62	98.13	6.774	
13,450.00	11,620.00	13,553.17	11,711.99	49.84	49.83	-97.09	-1,908.81	843.50	664.72	565.78	98.94	6.718	
13,500.00	11,620.00	13,603.17	11,711.99	50.25	50.24	-97.09	-1,958.81	843.78	664.69	564.94	99.75	6.664	
13,550.00	11,620.00	13,653.17	11,711.99	50.68	50.66	-97.09	-2,008.81	844.06	664.66	564.07	100.59	6.608	
13,600.00	11,620.00	13,703.17	11,711.99	51.10	51.08	-97.09	-2,058.81	844.34	664.63	563.20	101.43	6.553	
13,650.00	11,620.00	13,753.17	11,711.99	51.54	51.51	-97.09	-2,108.81	844.62	664.60	562.31	102.29	6.497	
13,700.00	11,620.00	13,803.17	11,711.99	51.98	51.94	-97.09	-2,158.81	844.90	664.57	561.41	103.16	6.442	
13,750.00	11,620.00	13,853.17	11,711.99	52.43	52.38	-97.09	-2,208.81	845.18	664.54	560.49	104.05	6.387	
13,800.00	11,620.00	13,903.17	11,711.99	52.88	52.83	-97.09	-2,258.81	845.46	664.51	559.57	104.94	6.332	
13,850.00	11,620.00	13,953.17	11,711.99	53.35	53.29	-97.09	-2,308.80	845.74	664.48	558.62	105.85	6.277	
13,900.00	11,620.00	14,003.17	11,711.99	53.81	53.74	-97.09	-2,358.80	846.02	664.45	557.68	106.77	6.223	
13,950.00	11,620.00	14,053.17	11,711.99	54.29	54.21	-97.09	-2,408.80	846.29	664.42	556.71	107.71	6.169	
14,000.00	11,620.00	14,103.17	11,711.99	54.76	54.68	-97.09	-2,458.80	846.57	664.38	555.74	108.65	6.115	
14,050.00	11,620.00	14,153.17	11,711.99	55.25	55.16	-97.09	-2,508.80	846.85	664.35	554.75	109.61	6.061	
14,100.00	11,620.00	14,203.17	11,711.99	55.73	55.64	-97.09	-2,558.80	847.13	664.32	553.75	110.57	6.008	
14,150.00	11,620.00	14,253.17	11,711.99	56.23	56.14	-97.09	-2,608.80	847.41	664.29	552.74	111.55	5.955	
14,200.00	11,620.00	14,303.17	11,711.99	56.73	56.63	-97.09	-2,658.80	847.69	664.26	551.73	112.53	5.903	
14,250.00	11,620.00	14,353.17	11,711.99	57.23	57.13	-97.09	-2,708.80	847.97	664.23	550.70	113.53	5.851	
14,300.00	11,620.00	14,403.17	11,711.99	57.74	57.63	-97.09	-2,758.80	848.25	664.20	549.66	114.54	5.799	
14,350.00	11,620.00	14,453.17	11,711.99	58.26	58.14	-97.09	-2,808.80	848.53	664.17	548.61	115.56	5.748	
14,400.00	11,620.00	14,503.17	11,711.99	58.77	58.65	-97.09	-2,858.80	848.81	664.14	547.56	116.58	5.697	
14,450.00	11,620.00	14,553.17	11,711.99	59.30	59.17	-97.09	-2,908.79	849.09	664.11	546.49	117.61	5.646	
14,500.00	11,620.00	14,603.17	11,711.99	59.82	59.69	-97.09	-2,958.79	849.37	664.08	545.42	118.65	5.597	
14,550.00	11,620.00	14,653.17	11,711.99	60.35	60.22	-97.09	-3,008.79	849.65	664.05	544.34	119.71	5.547	
14,600.00	11,620.00	14,703.17	11,711.99	60.89	60.75	-97.09	-3,058.79	849.93	664.01	543.25	120.76	5.498	
14,650.00	11,620.00	14,753.17	11,711.99	61.43	61.28	-97.09	-3,108.79	850.20	663.98	542.15	121.84	5.450	
14,700.00	11,620.00	14,803.17	11,711.99	61.97	61.82	-97.09	-3,158.79	850.48	663.95	541.05	122.91	5.402	
14,750.00	11,620.00	14,853.17	11,711.99	62.52	62.36	-97.09	-3,208.79	850.76	663.92	539.93	123.99	5.354	
14,800.00	11,620.00	14,903.17	11,711.99	63.07	62.91	-97.09	-3,258.79	851.04	663.89	538.81	125.08	5.308	
14,850.00	11,620.00	14,953.17	11,711.99	63.62	63.46	-97.09	-3,308.79	851.32	663.86	537.68	126.18	5.261	
14,900.00	11,620.00	15,003.17	11,711.99	64.18	64.01	-97.09	-3,358.79	851.60	663.83	536.55	127.28	5.215	
14,950.00	11,620.00	15,053.17	11,711.99	64.74	64.57	-97.09	-3,408.79	851.88	663.80	535.40	128.40	5.170	
15,000.00	11,620.00	15,103.17	11,711.99	65.30	65.13	-97.10	-3,458.79	852.16	663.77	534.26	129.51	5.125	
15,050.00	11,620.00	15,153.17	11,711.99	65.87	65.69	-97.10	-3,508.79	852.44	663.74	533.10	130.64	5.081	
15,100.00	11,620.00	15,203.17	11,711.99	66.44	66.26	-97.10	-3,558.78	852.72	663.71	531.94	131.77	5.037	
15,150.00	11,620.00	15,253.17	11,711.99	67.02	66.83	-97.10	-3,608.78	853.00	663.67	530.77	132.91	4.993	Alert
15,200.00	11,620.00	15,303.17	11,711.99	67.59	67.40	-97.10	-3,658.78	853.28	663.64	529.59	134.05	4.951	Alert
15,250.00	11,620.00	15,353.17	11,711.99	68.17	67.98	-97.10	-3,708.78	853.56	663.61	528.41	135.20	4.908	Alert
15,300.00	11,620.00	15,403.17	11,711.99	68.75	68.56	-97.10	-3,758.78	853.83	663.58	527.23	136.35	4.867	Alert
15,350.00	11,620.00	15,453.17	11,711.99	69.34	69.14	-97.10	-3,808.78	854.11	663.55	526.04	137.52	4.825	Alert
15,400.00	11,620.00	15,503.17	11,711.99	69.93	69.72	-97.10	-3,858.78	854.39	663.52	524.84	138.68	4.785	Alert
15,450.00	11,620.00	15,553.17	11,711.99	70.52	70.31	-97.10	-3,908.78	854.67	663.49	523.64	139.85	4.744	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1 — Offset Site Error: 5.00 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
15,500.00	11,620.00	15,603.17	11,711.99	71.11	70.90	-97.10	-3,958.78	854.95	663.46	522.43	141.03	4.704	Alert
15,550.00	11,620.00	15,653.17	11,711.99	71.71	71.49	-97.10	-4,008.78	855.23	663.43	521.22	142.21	4.665	Alert
15,600.00	11,620.00	15,703.17	11,711.99	72.31	72.09	-97.10	-4,058.78	855.51	663.40	520.00	143.40	4.626	Alert
15,650.00	11,620.00	15,753.17	11,711.99	72.91	72.69	-97.10	-4,108.78	855.79	663.37	518.78	144.59	4.588	Alert
15,700.00	11,620.00	15,803.17	11,711.99	73.51	73.29	-97.10	-4,158.78	856.07	663.34	517.55	145.78	4.550	Alert
15,750.00	11,620.00	15,853.17	11,711.99	74.12	73.89	-97.10	-4,208.77	856.35	663.30	516.32	146.99	4.513	Alert
15,800.00	11,620.00	15,903.17	11,711.99	74.72	74.49	-97.10	-4,258.77	856.63	663.27	515.09	148.19	4.476	Alert
15,850.00	11,620.00	15,953.17	11,711.99	75.33	75.10	-97.10	-4,308.77	856.91	663.24	513.84	149.40	4.439	Alert
15,900.00	11,620.00	16,003.17	11,711.99	75.94	75.71	-97.10	-4,358.77	857.19	663.21	512.60	150.61	4.403	Alert
15,950.00	11,620.00	16,053.17	11,711.99	76.56	76.32	-97.10	-4,408.77	857.47	663.18	511.35	151.83	4.368	Alert
16,000.00	11,620.00	16,103.17	11,711.99	77.17	76.93	-97.10	-4,458.77	857.74	663.15	510.10	153.05	4.333	Alert
16,050.00	11,620.00	16,153.17	11,711.99	77.79	77.55	-97.10	-4,508.77	858.02	663.12	508.84	154.28	4.298	Alert
16,100.00	11,620.00	16,203.17	11,711.99	78.41	78.16	-97.10	-4,558.77	858.30	663.09	507.58	155.51	4.264	Alert
16,150.00	11,620.00	16,253.17	11,711.99	79.03	78.78	-97.10	-4,608.77	858.58	663.06	506.32	156.74	4.230	Alert
16,200.00	11,620.00	16,303.17	11,711.99	79.65	79.40	-97.10	-4,658.77	858.86	663.03	505.05	157.98	4.197	Alert
16,250.00	11,620.00	16,353.17	11,711.99	80.28	80.03	-97.10	-4,708.77	859.14	663.00	503.78	159.22	4.164	Alert
16,300.00	11,620.00	16,403.17	11,711.99	80.91	80.65	-97.10	-4,758.77	859.42	662.97	502.50	160.46	4.132	Alert
16,350.00	11,620.00	16,453.17	11,711.99	81.53	81.28	-97.10	-4,808.76	859.70	662.93	501.22	161.71	4.100	Alert
16,400.00	11,620.00	16,503.17	11,711.99	82.16	81.90	-97.10	-4,858.76	859.98	662.90	499.94	162.96	4.068	Alert
16,450.00	11,620.00	16,553.17	11,711.99	82.80	82.53	-97.10	-4,908.76	860.26	662.87	498.66	164.22	4.037	Alert
16,500.00	11,620.00	16,603.17	11,711.99	83.43	83.16	-97.11	-4,958.76	860.54	662.84	497.37	165.47	4.006	Alert
16,550.00	11,620.00	16,653.17	11,711.99	84.06	83.80	-97.11	-5,008.76	860.82	662.81	496.08	166.73	3.975	Alert
16,600.00	11,620.00	16,703.17	11,711.99	84.70	84.43	-97.11	-5,058.76	861.10	662.78	494.78	168.00	3.945	Alert
16,619.98	11,620.00	16,733.09	11,712.01	84.96	84.81	-97.11	-5,078.24	861.20	662.77	494.14	168.63	3.930	Alert
16,650.00	11,620.00	16,752.67	11,712.19	85.34	85.06	-97.12	-5,108.26	861.37	662.77	493.52	169.25	3.916	Alert
16,700.00	11,620.00	16,802.67	11,712.50	85.98	85.70	-97.15	-5,158.26	861.65	662.78	492.27	170.52	3.887	Alert
16,750.00	11,620.00	16,852.67	11,712.80	86.62	86.34	-97.18	-5,208.25	861.93	662.79	491.01	171.78	3.858	Alert
16,800.00	11,620.00	16,902.67	11,713.11	87.26	86.98	-97.20	-5,258.25	862.21	662.80	489.75	173.05	3.830	Alert
16,850.00	11,620.00	16,952.67	11,713.41	87.90	87.62	-97.23	-5,308.25	862.49	662.80	488.48	174.32	3.802	Alert
16,900.00	11,620.00	17,002.67	11,713.72	88.55	88.26	-97.26	-5,358.24	862.77	662.81	487.22	175.59	3.775	Alert
16,950.00	11,620.00	17,052.67	11,714.03	89.20	88.91	-97.28	-5,408.24	863.05	662.82	485.95	176.87	3.748	Alert
17,000.00	11,620.00	17,102.67	11,714.33	89.84	89.55	-97.31	-5,458.24	863.33	662.83	484.68	178.14	3.721	Alert
17,050.00	11,620.00	17,152.66	11,714.64	90.49	90.20	-97.34	-5,508.24	863.61	662.84	483.41	179.43	3.694	Alert
17,100.00	11,620.00	17,202.66	11,714.94	91.14	90.85	-97.36	-5,558.23	863.88	662.84	482.14	180.71	3.668	Alert
17,150.00	11,620.00	17,252.66	11,715.25	91.79	91.50	-97.39	-5,608.23	864.16	662.85	480.86	181.99	3.642	Alert
17,200.00	11,620.00	17,302.66	11,715.55	92.44	92.15	-97.42	-5,658.23	864.44	662.86	479.58	183.28	3.617	Alert
17,250.00	11,620.00	17,352.66	11,715.86	93.10	92.80	-97.44	-5,708.23	864.72	662.87	478.30	184.57	3.591	Alert
17,300.00	11,620.00	17,402.66	11,716.16	93.75	93.45	-97.47	-5,758.22	865.00	662.88	477.02	185.86	3.567	Alert
17,350.00	11,620.00	17,452.66	11,716.47	94.41	94.11	-97.50	-5,808.22	865.28	662.89	475.73	187.15	3.542	Alert
17,400.00	11,620.00	17,502.66	11,716.77	95.06	94.76	-97.52	-5,858.22	865.56	662.90	474.45	188.45	3.518	Alert
17,450.00	11,620.00	17,552.66	11,717.08	95.72	95.42	-97.55	-5,908.22	865.84	662.91	473.16	189.75	3.494	Alert
17,500.00	11,620.00	17,602.66	11,717.38	96.38	96.08	-97.57	-5,958.21	866.12	662.91	471.87	191.05	3.470	Alert
17,550.00	11,620.00	17,652.65	11,717.69	97.04	96.74	-97.60	-6,008.21	866.40	662.92	470.58	192.35	3.446	Alert
17,600.00	11,620.00	17,702.65	11,718.00	97.70	97.40	-97.63	-6,058.21	866.68	662.93	469.28	193.65	3.423	Alert
17,650.00	11,620.00	17,752.65	11,718.30	98.36	98.06	-97.65	-6,108.20	866.96	662.94	467.99	194.95	3.400	Alert
17,700.00	11,620.00	17,802.65	11,718.61	99.03	98.72	-97.68	-6,158.20	867.24	662.95	466.69	196.26	3.378	Alert
17,750.00	11,620.00	17,852.65	11,718.91	99.69	99.38	-97.71	-6,208.20	867.52	662.96	465.39	197.57	3.356	Alert
17,800.00	11,620.00	17,902.65	11,719.22	100.35	100.04	-97.73	-6,258.20	867.79	662.97	464.10	198.88	3.334	Alert
17,850.00	11,620.00	17,952.65	11,719.52	101.02	100.71	-97.76	-6,308.19	868.07	662.98	462.79	200.19	3.312	Alert
17,900.00	11,620.00	18,002.65	11,719.83	101.69	101.37	-97.79	-6,358.19	868.35	662.99	461.49	201.50	3.290	Alert
17,950.00	11,620.00	18,052.65	11,720.13	102.35	102.04	-97.81	-6,408.19	868.63	663.01	460.19	202.82	3.269	Alert
18,000.00	11,620.00	18,102.65	11,720.44	103.02	102.70	-97.84	-6,458.19	868.91	663.02	458.88	204.13	3.248	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1 — **Offset Site Error:** 5.00 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
18,050.00	11,620.00	18,152.65	11,720.74	103.69	103.37	-97.87	-6,508.18	869.19	663.03	457.57	205.45	3.227	Alert
18,100.00	11,620.00	18,202.64	11,721.05	104.36	104.04	-97.89	-6,558.18	869.47	663.04	456.27	206.77	3.207	Alert
18,150.00	11,620.00	18,252.64	11,721.36	105.03	104.71	-97.92	-6,608.18	869.75	663.05	454.96	208.09	3.186	Alert
18,200.00	11,620.00	18,302.64	11,721.66	105.70	105.38	-97.95	-6,658.18	870.03	663.06	453.65	209.41	3.166	Alert
18,250.00	11,620.00	18,352.64	11,721.97	106.37	106.05	-97.97	-6,708.17	870.31	663.07	452.33	210.74	3.146	Alert
18,300.00	11,620.00	18,402.64	11,722.27	107.04	106.72	-98.00	-6,758.17	870.59	663.08	451.02	212.06	3.127	Alert
18,350.00	11,620.00	18,452.64	11,722.58	107.72	107.40	-98.03	-6,808.17	870.87	663.10	449.71	213.39	3.107	Alert
18,400.00	11,620.00	18,502.64	11,722.88	108.39	108.07	-98.05	-6,858.17	871.15	663.11	448.39	214.72	3.088	Alert
18,450.00	11,620.00	18,552.64	11,723.19	109.07	108.74	-98.08	-6,908.16	871.42	663.12	447.07	216.04	3.069	Alert
18,500.00	11,620.00	18,602.64	11,723.49	109.74	109.42	-98.11	-6,958.16	871.70	663.13	445.76	217.37	3.051	Alert
18,550.00	11,620.00	18,652.64	11,723.80	110.42	110.09	-98.13	-7,008.16	871.98	663.14	444.44	218.71	3.032	Alert
18,600.00	11,620.00	18,702.64	11,724.10	111.10	110.77	-98.16	-7,058.15	872.26	663.16	443.12	220.04	3.014	Alert
18,650.00	11,620.00	18,752.63	11,724.41	111.77	111.44	-98.18	-7,108.15	872.54	663.17	441.80	221.37	2.996	Alert
18,700.00	11,620.00	18,802.63	11,724.71	112.45	112.12	-98.21	-7,158.15	872.82	663.18	440.48	222.70	2.978	Alert
18,750.00	11,620.00	18,852.63	11,725.02	113.13	112.80	-98.24	-7,208.15	873.10	663.19	439.15	224.04	2.960	Alert
18,800.00	11,620.00	18,902.63	11,725.33	113.81	113.48	-98.26	-7,258.14	873.38	663.21	437.83	225.38	2.943	Alert
18,850.00	11,620.00	18,952.63	11,725.63	114.49	114.16	-98.29	-7,308.14	873.66	663.22	436.51	226.72	2.925	Alert
18,900.00	11,620.00	19,002.63	11,725.94	115.17	114.84	-98.32	-7,358.14	873.94	663.23	435.18	228.05	2.908	Alert
18,950.00	11,620.00	19,052.63	11,726.24	115.85	115.52	-98.34	-7,408.14	874.22	663.25	433.85	229.39	2.891	Alert
19,000.00	11,620.00	19,102.63	11,726.55	116.53	116.20	-98.37	-7,458.13	874.50	663.26	432.53	230.73	2.875	Alert
19,050.00	11,620.00	19,152.63	11,726.85	117.22	116.88	-98.40	-7,508.13	874.78	663.28	431.20	232.08	2.858	Alert
19,100.00	11,620.00	19,202.63	11,727.16	117.90	117.56	-98.42	-7,558.13	875.05	663.29	429.87	233.42	2.842	Alert
19,150.00	11,620.00	19,252.62	11,727.46	118.58	118.24	-98.45	-7,608.13	875.33	663.30	428.54	234.76	2.825	Alert
19,200.00	11,620.00	19,302.62	11,727.77	119.27	118.93	-98.48	-7,658.12	875.61	663.32	427.21	236.11	2.809	Alert
19,250.00	11,620.00	19,352.62	11,728.07	119.95	119.61	-98.50	-7,708.12	875.89	663.33	425.88	237.45	2.794	Alert
19,300.00	11,620.00	19,402.62	11,728.38	120.63	120.30	-98.53	-7,758.12	876.17	663.35	424.55	238.80	2.778	Alert
19,350.00	11,620.00	19,452.62	11,728.69	121.32	120.98	-98.56	-7,808.11	876.45	663.36	423.21	240.15	2.762	Alert
19,400.00	11,620.00	19,502.62	11,728.99	122.01	121.67	-98.58	-7,858.11	876.73	663.38	421.88	241.49	2.747	Alert
19,450.00	11,620.00	19,552.62	11,729.30	122.69	122.35	-98.61	-7,908.11	877.01	663.39	420.55	242.84	2.732	Alert
19,500.00	11,620.00	19,602.62	11,729.60	123.38	123.04	-98.63	-7,958.11	877.29	663.41	419.21	244.19	2.717	Alert
19,550.00	11,620.00	19,652.62	11,729.91	124.07	123.72	-98.66	-8,008.10	877.57	663.42	417.88	245.54	2.702	Alert
19,600.00	11,620.00	19,702.62	11,730.21	124.76	124.41	-98.69	-8,058.10	877.85	663.44	416.54	246.90	2.687	Alert
19,650.00	11,620.00	19,752.62	11,730.52	125.44	125.10	-98.71	-8,108.10	878.13	663.45	415.20	248.25	2.673	Alert
19,700.00	11,620.00	19,802.61	11,730.82	126.13	125.79	-98.74	-8,158.10	878.41	663.47	413.87	249.60	2.658	Alert
19,750.00	11,620.00	19,852.61	11,731.13	126.82	126.48	-98.77	-8,208.09	878.68	663.48	412.53	250.95	2.644	Alert
19,800.00	11,620.00	19,902.61	11,731.43	127.51	127.17	-98.79	-8,258.09	878.96	663.50	411.19	252.31	2.630	Alert
19,850.00	11,620.00	19,952.61	11,731.74	128.20	127.86	-98.82	-8,308.09	879.24	663.51	409.85	253.66	2.616	Alert
19,900.00	11,620.00	20,002.61	11,732.05	128.89	128.55	-98.85	-8,358.09	879.52	663.53	408.51	255.02	2.602	Alert
19,950.00	11,620.00	20,052.61	11,732.35	129.58	129.24	-98.87	-8,408.08	879.80	663.55	407.17	256.37	2.588	Alert
20,000.00	11,620.00	20,102.61	11,732.66	130.28	129.93	-98.90	-8,458.08	880.08	663.56	405.83	257.73	2.575	Alert
20,050.00	11,620.00	20,152.61	11,732.96	130.97	130.62	-98.93	-8,508.08	880.36	663.58	404.49	259.09	2.561	Alert
20,100.00	11,620.00	20,202.61	11,733.27	131.66	131.31	-98.95	-8,558.07	880.64	663.60	403.15	260.45	2.548	Alert
20,150.00	11,620.00	20,252.61	11,733.57	132.35	132.00	-98.98	-8,608.07	880.92	663.61	401.81	261.81	2.535	Alert
20,200.00	11,620.00	20,302.61	11,733.88	133.05	132.69	-99.01	-8,658.07	881.20	663.63	400.47	263.17	2.522	Alert
20,250.00	11,620.00	20,352.60	11,734.18	133.74	133.39	-99.03	-8,708.07	881.48	663.65	399.12	264.53	2.509	Alert
20,300.00	11,620.00	20,402.60	11,734.49	134.43	134.08	-99.06	-8,758.06	881.76	663.67	397.78	265.89	2.496	Minor Risk
20,350.00	11,620.00	20,452.60	11,734.79	135.13	134.77	-99.08	-8,808.06	882.04	663.68	396.44	267.25	2.483	Minor Risk
20,400.00	11,620.00	20,502.60	11,735.10	135.82	135.47	-99.11	-8,858.06	882.31	663.70	395.09	268.61	2.471	Minor Risk
20,450.00	11,620.00	20,552.60	11,735.40	136.52	136.16	-99.14	-8,908.06	882.59	663.72	393.75	269.97	2.458	Minor Risk
20,500.00	11,620.00	20,602.60	11,735.71	137.21	136.86	-99.16	-8,958.05	882.87	663.74	392.40	271.33	2.446	Minor Risk
20,550.00	11,620.00	20,652.60	11,736.02	137.91	137.55	-99.19	-9,008.05	883.15	663.75	391.06	272.70	2.434	Minor Risk
20,600.00	11,620.00	20,702.60	11,736.32	138.60	138.25	-99.22	-9,058.05	883.43	663.77	389.71	274.06	2.422	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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1

Offset Site Error: 5.00 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
20,650.00	11,620.00	20,752.60	11,736.63	139.30	138.94	-99.24	-9,108.05	883.71	663.79	388.37	275.42	2.410	Minor Risk
20,700.00	11,620.00	20,802.60	11,736.93	140.00	139.64	-99.27	-9,158.04	883.99	663.81	387.02	276.79	2.398	Minor Risk
20,750.00	11,620.00	20,852.59	11,737.24	140.69	140.34	-99.30	-9,208.04	884.27	663.83	385.67	278.15	2.387	Minor Risk
20,800.00	11,620.00	20,902.59	11,737.54	141.39	141.03	-99.32	-9,258.04	884.55	663.85	384.33	279.52	2.375	Minor Risk
20,850.00	11,620.00	20,952.59	11,737.85	142.09	141.73	-99.35	-9,308.04	884.83	663.86	382.98	280.89	2.363	Minor Risk
20,900.00	11,620.00	21,002.59	11,738.15	142.79	142.43	-99.38	-9,358.03	885.11	663.88	381.63	282.25	2.352	Minor Risk
20,950.00	11,620.00	21,052.59	11,738.46	143.49	143.13	-99.40	-9,408.03	885.39	663.90	380.28	283.62	2.341	Minor Risk
21,000.00	11,620.00	21,102.59	11,738.76	144.18	143.82	-99.43	-9,458.03	885.67	663.92	378.94	284.99	2.330	Minor Risk
21,050.00	11,620.00	21,152.59	11,739.07	144.88	144.52	-99.46	-9,508.02	885.94	663.94	377.59	286.35	2.319	Minor Risk
21,100.00	11,620.00	21,202.59	11,739.38	145.58	145.22	-99.48	-9,558.02	886.22	663.96	376.24	287.72	2.308	Minor Risk
21,150.00	11,620.00	21,252.59	11,739.68	146.28	145.92	-99.51	-9,608.02	886.50	663.98	374.89	289.09	2.297	Minor Risk
21,200.00	11,620.00	21,302.59	11,739.99	146.98	146.62	-99.53	-9,658.02	886.78	664.00	373.54	290.46	2.286	Minor Risk
21,250.00	11,620.00	21,352.59	11,740.29	147.68	147.32	-99.56	-9,708.01	887.06	664.02	372.19	291.83	2.275	Minor Risk
21,300.00	11,620.00	21,402.58	11,740.60	148.38	148.02	-99.59	-9,758.01	887.34	664.04	370.84	293.20	2.265	Minor Risk
21,350.00	11,620.00	21,452.58	11,740.90	149.08	148.72	-99.61	-9,808.01	887.62	664.06	369.49	294.57	2.254	Minor Risk
21,400.00	11,620.00	21,502.58	11,741.21	149.78	149.42	-99.64	-9,858.01	887.90	664.08	368.14	295.94	2.244	Minor Risk
21,450.00	11,620.00	21,552.58	11,741.51	150.48	150.12	-99.67	-9,908.00	888.18	664.10	366.79	297.31	2.234	Minor Risk
21,500.00	11,620.00	21,602.58	11,741.82	151.19	150.82	-99.69	-9,958.00	888.46	664.12	365.44	298.68	2.224	Minor Risk
21,550.00	11,620.00	21,652.58	11,742.12	151.89	151.52	-99.72	-10,008.00	888.74	664.14	364.09	300.05	2.213	Minor Risk, ES, SF
21,600.00	11,620.00	21,657.56	11,742.15	152.59	151.59	-99.72	-10,012.98	888.77	665.69	365.36	300.33	2.217	Minor Risk
21,650.00	11,620.00	21,657.56	11,742.15	153.29	151.59	-99.72	-10,012.98	888.77	670.95	371.90	299.05	2.244	Minor Risk
21,700.00	11,620.00	21,657.56	11,742.15	153.99	151.59	-99.72	-10,012.98	888.77	679.85	383.51	296.35	2.294	Minor Risk
21,750.00	11,620.00	21,657.56	11,742.15	154.70	151.59	-99.72	-10,012.98	888.77	692.26	399.88	292.38	2.368	Minor Risk
21,800.00	11,620.00	21,657.56	11,742.15	155.40	151.59	-99.72	-10,012.98	888.77	708.00	420.65	287.35	2.464	Minor Risk
21,850.00	11,620.00	21,657.56	11,742.15	156.10	151.59	-99.72	-10,012.98	888.77	726.84	445.36	281.47	2.582	Alert
21,864.06	11,620.00	21,657.56	11,742.15	156.30	151.59	-99.72	-10,012.98	888.77	732.66	452.96	279.70	2.619	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - T&D

Offset Site Error: 5.00 ft

Survey Program: **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	10.00	10.00	0.50		92.23	-26.76	687.86	688.38				
50.00	50.00	60.00	60.00	0.50		92.23	-26.76	687.86	688.38	687.38	1.00	687.005	
100.00	100.00	110.00	110.00	0.52		92.23	-26.76	687.86	688.38	687.36	1.02	676.372	
131.36	131.36	141.36	141.35	0.56		92.26	-27.19	687.82	688.36	687.30	1.06	650.862	
150.00	150.00	159.97	159.97	0.59		92.26	-27.18	687.82	688.36	687.27	1.09	631.383	
200.00	200.00	209.90	209.89	0.70		92.25	-27.08	687.83	688.37	687.16	1.20	572.634	
250.00	250.00	259.83	259.82	0.84		92.24	-26.87	687.85	688.38	687.04	1.34	514.591	
300.00	300.00	310.03	310.00	0.99		92.23	-26.76	687.86	688.38	686.89	1.49	462.829	
317.31	317.31	327.30	327.27	1.04		92.24	-26.95	687.78	688.31	686.77	1.54	446.575	
350.00	350.00	358.52	358.49	1.15		92.24	-26.86	687.82	688.34	686.70	1.65	418.320	
400.00	400.00	410.05	410.00	1.31		92.23	-26.76	687.86	688.38	686.57	1.81	380.513	
409.62	409.62	419.66	419.61	1.34		92.24	-26.96	687.75	688.28	686.44	1.84	373.857	
450.00	450.00	457.66	457.61	1.48		92.23	-26.82	687.83	688.35	686.38	1.98	348.298	
500.00	500.00	510.06	510.00	1.65		92.23	-26.76	687.86	688.38	686.24	2.15	320.761	
505.86	505.86	515.70	515.64	1.67		92.24	-26.90	687.75	688.28	686.11	2.17	317.749	
550.00	550.00	557.09	557.03	1.82		92.23	-26.77	687.85	688.38	686.06	2.32	297.013	
596.59	596.59	606.63	606.56	1.98		92.24	-26.93	687.80	688.33	685.85	2.48	277.691	
600.00	600.00	609.94	609.86	1.99		92.24	-26.93	687.80	688.33	685.84	2.49	276.370	
650.00	650.00	660.08	660.00	2.16		92.23	-26.76	687.86	688.38	685.72	2.66	258.347	
700.00	700.00	710.08	710.00	2.34		92.23	-26.76	687.86	688.38	685.54	2.84	242.446	
717.06	717.06	727.08	727.00	2.40		92.24	-26.96	687.77	688.30	685.40	2.90	237.421	
750.00	750.00	759.34	759.25	2.51		92.24	-26.91	687.79	688.32	685.31	3.01	228.322	
800.00	800.00	810.09	810.00	2.69		92.23	-26.76	687.86	688.38	685.19	3.19	215.753	
831.91	831.91	842.00	841.91	2.80		92.24	-26.85	687.81	688.33	685.03	3.30	208.391	
850.00	850.00	859.53	859.44	2.87		92.23	-26.83	687.82	688.34	684.97	3.37	204.443	
900.00	900.00	910.10	910.00	3.04		92.23	-26.76	687.86	688.38	684.84	3.54	194.263	
924.38	924.38	934.42	934.32	3.13		92.24	-26.88	687.76	688.28	684.65	3.63	189.620	
950.00	950.00	958.48	958.38	3.22		92.24	-26.84	687.79	688.32	684.60	3.72	185.007	
1,000.00	1,000.00	1,010.11	1,010.00	3.40		92.23	-26.76	687.86	688.38	684.48	3.90	176.614	
1,016.78	1,016.78	1,026.75	1,026.65	3.46		92.24	-26.92	687.74	688.26	684.31	3.96	173.927	
1,050.00	1,050.00	1,057.59	1,057.48	3.58		92.23	-26.84	687.80	688.33	684.25	4.08	168.913	
1,100.00	1,100.00	1,110.12	1,110.00	3.75		92.23	-26.76	687.86	688.38	684.13	4.25	161.873	
1,107.45	1,107.45	1,117.52	1,117.40	3.78		92.24	-26.92	687.77	688.30	684.02	4.28	160.852	
1,150.00	1,150.00	1,157.87	1,157.74	3.93		92.23	-26.79	687.85	688.37	683.94	4.43	155.378	
1,197.56	1,197.56	1,207.68	1,207.54	4.10		92.24	-26.93	687.76	688.29	683.69	4.60	149.645	
1,200.00	1,200.00	1,209.97	1,209.84	4.11		92.24	-26.93	687.76	688.29	683.68	4.61	149.363	
1,250.00	1,250.00	1,260.15	1,260.00	4.29		92.23	-26.76	687.86	688.38	683.60	4.79	143.829	
1,288.85	1,288.85	1,298.99	1,298.85	4.42		92.24	-26.93	687.76	688.29	683.37	4.92	139.770	
1,300.00	1,300.00	1,309.52	1,309.37	4.46		92.24	-26.93	687.77	688.30	683.33	4.96	138.653	
1,350.00	1,350.00	1,360.16	1,360.00	4.64		92.23	-26.76	687.86	688.38	683.24	5.14	133.866	
1,383.00	1,383.00	1,393.15	1,392.99	4.76		92.24	-26.93	687.74	688.26	683.00	5.26	130.850	
1,400.00	1,400.00	1,409.04	1,408.88	4.82		92.24	-26.91	687.75	688.28	682.96	5.32	129.362	
1,450.00	1,450.00	1,460.17	1,460.00	5.00		92.23	-26.76	687.86	688.38	682.88	5.50	125.186	
1,477.95	1,477.95	1,488.11	1,487.94	5.10		92.24	-26.92	687.77	688.30	682.70	5.60	122.942	
1,500.00	1,500.00	1,509.04	1,508.87	5.18		92.24	-26.89	687.79	688.31	682.64	5.68	121.241	
1,550.00	1,550.00	1,560.18	1,560.00	5.36		92.23	-26.76	687.86	688.38	682.53	5.86	117.558	
1,571.83	1,571.83	1,582.01	1,581.83	5.43		92.24	-26.91	687.79	688.31	682.38	5.93	116.003	
1,600.00	1,600.00	1,609.02	1,608.83	5.53		92.24	-26.86	687.81	688.34	682.30	6.03	114.074	
1,650.00	1,650.00	1,660.19	1,660.00	5.71		92.23	-26.76	687.86	688.38	682.17	6.21	110.803	
1,666.88	1,666.88	1,677.00	1,676.81	5.77		92.24	-26.88	687.78	688.31	682.04	6.27	109.727	
1,700.00	1,700.00	1,708.64	1,708.45	5.89		92.23	-26.82	687.82	688.35	681.96	6.39	107.702	
1,750.00	1,750.00	1,760.20	1,760.00	6.07		92.23	-26.76	687.86	688.38	681.81	6.57	104.779	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - T&D

Offset Site Error: 5.00 ft

Survey Program:

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
1,759.37	1,759.37	1,769.55	1,769.35	6.10		92.24	-26.88	687.78	688.31	681.71	6.60	104.237	
1,800.00	1,800.00	1,808.41	1,808.21	6.25		92.23	-26.80	687.84	688.36	681.61	6.75	102.003	
1,850.00	1,850.00	1,860.21	1,860.00	6.43		92.23	-26.76	687.86	688.38	681.45	6.93	99.374	
1,855.77	1,855.77	1,865.91	1,865.70	6.45		92.24	-26.90	687.82	688.35	681.40	6.95	99.074	
1,900.00	1,900.00	1,909.16	1,908.96	6.61		92.23	-26.76	687.86	688.38	681.28	7.11	96.875	
1,946.79	1,946.79	1,957.00	1,956.79	6.77		92.24	-26.87	687.82	688.34	681.07	7.27	94.642	
1,950.00	1,950.00	1,960.13	1,959.92	6.78		92.24	-26.87	687.82	688.34	681.06	7.28	94.493	
2,000.00	2,000.00	2,010.22	2,010.00	6.96		92.23	-26.76	687.86	688.38	680.92	7.46	92.235	
2,040.78	2,040.78	2,051.00	2,050.78	7.11		92.24	-26.86	687.85	688.38	680.77	7.61	90.467	
2,050.00	2,050.00	2,060.20	2,059.98	7.14		92.24	-26.86	687.85	688.38	680.74	7.64	90.077	
2,100.00	2,100.00	2,110.22	2,110.00	7.32		92.23	-26.76	687.86	688.38	680.56	7.82	88.018	
2,150.00	2,150.00	2,160.27	2,160.05	7.50		92.24	-26.87	687.86	688.39	680.39	8.00	86.051	
2,200.00	2,200.00	2,210.23	2,210.00	7.68		92.23	-26.76	687.86	688.38	680.20	8.18	84.168	
2,250.00	2,250.00	2,263.73	2,263.50	7.86		92.22	-26.64	688.03	688.55	680.20	8.36	82.389	
2,300.00	2,300.00	2,310.27	2,310.00	8.04		92.23	-26.76	687.86	688.38	679.85	8.54	80.641	
2,350.00	2,350.00	2,366.68	2,366.40	8.22		92.22	-26.65	688.01	688.56	679.84	8.71	79.009	
2,400.00	2,400.00	2,410.37	2,410.00	8.39		92.23	-26.76	687.86	688.38	679.49	8.89	77.397	
2,450.00	2,450.00	2,472.37	2,471.94	8.57		92.22	-26.72	687.89	688.51	679.44	9.07	75.894	
2,465.40	2,465.40	2,493.32	2,492.85	8.63		92.28	-27.32	687.42	688.19	679.06	9.13	75.411	
2,500.00	2,500.00	2,510.57	2,510.00	8.75		92.23	-26.76	687.86	688.38	679.13	9.25	74.403	
2,550.00	2,550.00	2,575.14	2,560.00	8.93		45.34	-26.76	687.86	688.23	678.80	9.43	72.987	
2,600.00	2,599.99	2,610.85	2,609.99	9.11		45.38	-26.76	687.86	687.77	678.16	9.61	71.591	
2,650.00	2,649.98	2,664.61	2,659.98	9.28		45.45	-26.76	687.86	687.00	677.22	9.78	70.224	
2,700.00	2,699.96	2,713.04	2,711.54	9.46		45.44	-25.58	688.67	686.76	676.80	9.96	68.959	
2,750.00	2,749.94	2,762.12	2,759.94	9.64		45.62	-26.76	687.86	684.98	674.85	10.14	67.585	
2,800.00	2,799.92	2,820.47	2,818.14	9.81		45.63	-25.62	688.63	684.74	674.42	10.31	66.410	
2,850.00	2,849.90	2,862.91	2,859.90	9.99		45.80	-26.76	687.86	682.96	672.47	10.49	65.119	
2,900.00	2,899.88	2,927.05	2,923.85	10.17		45.84	-25.92	688.43	682.61	671.95	10.66	64.021	
2,950.00	2,949.86	2,963.72	2,959.86	10.34		45.97	-26.76	687.86	680.93	670.09	10.84	62.811	
3,000.00	2,999.84	3,036.75	3,032.62	10.52		46.09	-26.62	687.96	680.40	669.38	11.01	61.787	
3,050.00	3,049.81	3,064.53	3,059.81	10.70		46.15	-26.76	687.86	678.92	667.72	11.19	60.648	
3,100.00	3,099.79	3,143.22	3,138.16	10.88		46.34	-27.30	687.50	678.17	666.81	11.36	59.688	
3,150.00	3,149.77	3,165.34	3,159.77	11.05		46.33	-26.76	687.86	676.91	665.36	11.55	58.615	
3,200.00	3,199.75	3,246.54	3,240.57	11.23		46.58	-27.95	687.10	675.92	664.21	11.71	57.703	
3,250.00	3,249.73	3,266.09	3,259.73	11.41		46.51	-26.76	687.86	674.90	663.00	11.90	56.703	
3,300.00	3,299.71	3,329.17	3,309.71	11.59		46.60	-26.76	687.86	673.91	661.83	12.08	55.788	
3,350.00	3,349.69	3,366.81	3,359.69	11.76		46.69	-26.76	687.86	672.91	660.65	12.26	54.900	
3,400.00	3,399.67	3,417.51	3,409.67	11.94		46.78	-26.76	687.86	671.91	659.48	12.43	54.037	
3,450.00	3,449.65	3,469.80	3,461.86	12.12		46.76	-25.57	688.60	671.58	658.97	12.61	53.251	
3,500.00	3,499.62	3,518.21	3,509.62	12.30		46.96	-26.76	687.86	669.93	657.14	12.79	52.382	
3,550.00	3,549.60	3,576.96	3,568.24	12.48		46.97	-25.71	688.58	669.64	656.67	12.97	51.649	
3,600.00	3,599.58	3,618.93	3,609.58	12.65		47.14	-26.76	687.86	667.95	654.80	13.14	50.816	
3,650.00	3,649.56	3,684.18	3,674.65	12.83		47.20	-26.11	688.34	667.56	654.24	13.32	50.124	
3,700.00	3,699.54	3,719.56	3,709.54	13.01		47.32	-26.76	687.86	665.97	652.47	13.50	49.332	
3,750.00	3,749.52	3,792.04	3,781.83	13.19		47.45	-26.69	687.92	665.42	651.75	13.67	48.681	
3,800.00	3,799.50	3,820.04	3,809.50	13.37		47.51	-26.76	687.86	664.01	650.15	13.86	47.924	
3,850.00	3,849.48	3,896.07	3,885.35	13.54		47.67	-27.06	687.54	663.23	649.21	14.02	47.301	
3,900.00	3,899.46	3,920.39	3,909.46	13.72		47.69	-26.76	687.86	662.05	647.84	14.21	46.587	
3,950.00	3,949.44	3,995.71	3,984.62	13.90		47.87	-27.22	687.36	661.09	646.71	14.38	45.980	
4,000.00	3,999.41	4,020.68	4,009.41	14.08		47.88	-26.76	687.86	660.09	645.53	14.57	45.314	
4,050.00	4,049.39	4,081.05	4,059.39	14.26		47.97	-26.76	687.86	659.12	644.38	14.75	44.701	
4,100.00	4,099.37	4,120.93	4,109.37	14.44		48.07	-26.76	687.86	658.15	643.23	14.92	44.102	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - T&D

Survey Program:

Offset Site Error: 5.00 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
4,150.00	4,149.35	4,171.18	4,159.35	14.61		48.16	-26.76	687.86	657.18	642.08	15.10	43.518	
4,200.00	4,199.33	4,225.32	4,213.45	14.79		48.23	-26.42	688.62	656.95	641.67	15.28	42.998	
4,250.00	4,249.31	4,271.40	4,259.31	14.97		48.35	-26.76	687.86	655.24	639.79	15.46	42.390	
4,300.00	4,299.29	4,332.56	4,320.41	15.15		48.44	-26.54	688.52	655.01	639.37	15.63	41.900	
4,350.00	4,349.27	4,371.60	4,359.27	15.33		48.54	-26.76	687.86	653.32	637.50	15.81	41.312	
4,400.00	4,399.25	4,431.57	4,419.19	15.51		48.63	-26.48	688.28	652.83	636.84	15.99	40.829	
4,450.00	4,449.22	4,471.76	4,459.22	15.69		48.73	-26.76	687.86	651.40	635.23	16.17	40.282	
4,500.00	4,499.20	4,530.05	4,517.47	15.86		48.81	-26.45	688.12	650.72	634.38	16.35	39.807	
4,550.00	4,549.18	4,571.91	4,559.18	16.04		48.92	-26.76	687.86	649.48	632.96	16.53	39.297	
4,600.00	4,599.16	4,631.11	4,618.33	16.22		49.02	-26.58	688.00	648.72	632.01	16.70	38.838	
4,650.00	4,649.14	4,672.05	4,659.14	16.40		49.12	-26.76	687.86	647.58	630.69	16.88	38.354	
4,700.00	4,699.12	4,731.94	4,718.98	16.58		49.23	-26.74	687.88	646.72	629.66	17.06	37.910	
4,750.00	4,749.10	4,772.17	4,759.10	16.76		49.31	-26.76	687.86	645.68	628.44	17.24	37.450	
4,800.00	4,799.08	4,834.33	4,821.20	16.94		49.45	-26.96	687.69	644.70	627.29	17.42	37.020	
4,850.00	4,849.06	4,872.27	4,859.06	17.12		49.51	-26.76	687.86	643.79	626.19	17.60	36.582	
4,900.00	4,899.03	4,930.05	4,916.78	17.30		49.65	-27.06	687.71	642.77	625.00	17.77	36.163	
4,950.00	4,949.01	4,972.83	4,959.44	17.47		49.65	-26.10	688.04	642.01	624.06	17.96	35.756	
5,000.00	4,998.99	5,022.52	5,008.99	17.65		49.80	-26.76	687.86	640.97	622.83	18.13	35.346	
5,050.00	5,048.97	5,073.18	5,059.63	17.83		49.85	-26.17	688.01	640.11	621.79	18.31	34.954	
5,100.00	5,098.95	5,122.62	5,108.95	18.01		50.00	-26.76	687.86	639.10	620.61	18.49	34.562	
5,150.00	5,148.93	5,173.43	5,159.73	18.19		50.06	-26.26	687.97	638.22	619.55	18.67	34.184	
5,200.00	5,198.91	5,222.73	5,208.91	18.37		50.20	-26.76	687.86	637.23	618.38	18.85	33.807	
5,250.00	5,248.89	5,272.79	5,258.94	18.55		50.26	-26.31	687.92	636.31	617.28	19.03	33.441	
5,300.00	5,298.87	5,322.83	5,308.87	18.73		50.40	-26.76	687.86	635.38	616.17	19.21	33.082	
5,350.00	5,348.84	5,371.44	5,357.45	18.91		50.47	-26.44	687.86	634.41	615.03	19.39	32.726	
5,400.00	5,398.82	5,422.88	5,408.82	19.09		50.61	-26.76	687.86	633.53	613.97	19.56	32.383	
5,450.00	5,448.80	5,468.61	5,454.53	19.27		50.68	-26.58	687.80	632.53	612.79	19.74	32.038	
5,500.00	5,498.78	5,522.90	5,508.78	19.44		50.81	-26.76	687.86	631.69	611.77	19.92	31.709	
5,550.00	5,548.76	5,564.37	5,550.23	19.62		50.89	-26.66	687.73	630.68	610.58	20.10	31.376	
5,600.00	5,598.74	5,622.57	5,608.38	19.80		51.01	-26.71	687.48	629.47	609.19	20.28	31.040	
5,650.00	5,648.72	5,663.51	5,649.31	19.98		51.10	-26.75	687.79	628.94	608.49	20.46	30.742	
5,700.00	5,698.70	5,722.06	5,707.84	20.16		51.23	-26.85	687.64	627.83	607.19	20.64	30.422	
5,750.00	5,748.68	5,772.91	5,758.68	20.34		51.32	-26.76	687.86	627.12	606.31	20.82	30.127	
5,800.00	5,798.65	5,821.57	5,807.33	20.52		51.44	-26.86	687.68	626.06	605.06	21.00	29.819	
5,850.00	5,848.63	5,872.88	5,858.63	20.70		51.53	-26.76	687.86	625.31	604.14	21.17	29.533	
5,900.00	5,898.61	5,921.23	5,906.98	20.88		51.64	-26.86	687.73	624.30	602.94	21.35	29.237	
5,950.00	5,948.59	5,972.86	5,958.59	21.06		51.74	-26.76	687.86	623.51	601.98	21.53	28.958	
6,000.00	5,998.57	6,020.95	6,006.69	21.24		51.85	-26.86	687.75	622.52	600.81	21.71	28.673	
6,050.00	6,048.55	6,072.83	6,058.55	21.42		51.95	-26.76	687.86	621.71	599.83	21.89	28.402	
6,100.00	6,098.53	6,120.24	6,105.96	21.60		52.06	-26.83	687.76	620.74	598.67	22.07	28.127	
6,150.00	6,148.51	6,172.80	6,158.51	21.77		52.16	-26.76	687.86	619.93	597.68	22.25	27.865	
6,200.00	6,198.49	6,220.35	6,206.06	21.95		52.27	-26.80	687.81	618.99	596.57	22.43	27.600	
6,250.00	6,248.46	6,272.76	6,258.46	22.13		52.37	-26.76	687.86	618.15	595.54	22.61	27.345	
6,300.00	6,298.44	6,319.75	6,305.45	22.31		52.48	-26.78	687.83	617.24	594.46	22.79	27.090	
6,350.00	6,348.42	6,372.67	6,358.36	22.49		52.60	-26.82	687.69	616.22	593.25	22.96	26.834	
6,400.00	6,398.40	6,422.72	6,408.40	22.67		52.70	-26.76	687.86	615.50	592.36	23.14	26.596	
6,450.00	6,448.38	6,472.22	6,457.90	22.85		52.81	-26.82	687.71	614.48	591.16	23.32	26.348	
6,500.00	6,498.36	6,522.69	6,508.36	23.03		52.91	-26.76	687.86	613.74	590.24	23.50	26.116	
6,550.00	6,548.34	6,571.85	6,557.52	23.21		53.03	-26.83	687.72	612.74	589.06	23.68	25.876	
6,600.00	6,598.32	6,622.66	6,608.32	23.39		53.13	-26.76	687.86	611.99	588.13	23.86	25.650	
6,650.00	6,648.30	6,671.38	6,657.04	23.57		53.24	-26.82	687.73	611.00	586.96	24.04	25.417	
6,700.00	6,698.27	6,722.62	6,708.27	23.75		53.35	-26.76	687.86	610.26	586.04	24.22	25.199	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - T&D — **Offset Site Error:** 5.00 ft

Survey Program: — **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
6,750.00	6,748.25	6,771.22	6,756.88	23.93		53.46	-26.78	687.76	609.30	584.90	24.40	24.974	
6,800.00	6,798.23	6,822.58	6,808.23	24.11		53.57	-26.76	687.86	608.52	583.95	24.58	24.761	
6,850.00	6,848.21	6,874.00	6,859.64	24.29		53.67	-26.67	687.93	607.72	582.97	24.75	24.550	
6,900.00	6,898.19	6,922.55	6,908.19	24.47		53.79	-26.76	687.86	606.80	581.87	24.93	24.336	
6,950.00	6,948.17	6,974.39	6,960.02	24.65		53.89	-26.70	687.91	605.99	580.87	25.11	24.131	
7,000.00	6,998.15	7,022.52	7,008.15	24.83		54.01	-26.76	687.86	605.09	579.80	25.29	23.924	
7,050.00	7,048.13	7,087.49	7,058.13	25.00		54.12	-26.76	687.86	604.24	578.77	25.47	23.722	
7,100.00	7,098.11	7,122.49	7,108.11	25.18		54.23	-26.76	687.86	603.39	577.74	25.65	23.523	
7,150.00	7,148.08	7,177.53	7,158.08	25.36		54.34	-26.76	687.86	602.54	576.71	25.83	23.327	
7,200.00	7,198.06	7,222.47	7,208.08	25.54		54.44	-26.62	687.95	601.76	575.75	26.01	23.136	
7,250.00	7,248.04	7,274.26	7,259.87	25.72		54.58	-26.79	687.84	600.84	574.65	26.19	22.943	
7,300.00	7,298.02	7,322.48	7,308.08	25.90		54.67	-26.61	687.91	600.03	573.66	26.37	22.756	
7,350.00	7,348.00	7,372.98	7,358.58	26.08		54.80	-26.83	687.84	599.16	572.62	26.55	22.570	
7,400.00	7,397.98	7,422.47	7,408.06	26.26		54.89	-26.61	687.91	598.35	571.62	26.73	22.388	
7,450.00	7,447.96	7,472.37	7,457.96	26.44		55.02	-26.76	687.86	597.50	570.60	26.91	22.207	
7,500.00	7,497.94	7,522.72	7,508.30	26.62		55.13	-26.67	687.92	596.71	569.62	27.09	22.031	
7,550.00	7,547.92	7,572.33	7,557.92	26.80		55.25	-26.76	687.86	595.84	568.58	27.26	21.854	
7,600.00	7,597.89	7,622.65	7,608.23	26.98		55.36	-26.71	687.90	595.04	567.59	27.44	21.682	
7,650.00	7,647.87	7,672.29	7,657.87	27.16		55.48	-26.76	687.86	594.19	566.57	27.62	21.510	
7,700.00	7,697.85	7,722.58	7,708.17	27.34		55.59	-26.73	687.88	593.38	565.58	27.80	21.343	
7,750.00	7,747.83	7,772.25	7,757.83	27.52		55.71	-26.76	687.86	592.55	564.57	27.98	21.176	
7,800.00	7,797.81	7,822.75	7,808.33	27.70		55.83	-26.73	687.88	591.74	563.58	28.16	21.013	
7,850.00	7,847.79	7,872.21	7,857.79	27.88		55.94	-26.76	687.86	590.91	562.57	28.34	20.850	
7,900.00	7,897.77	7,937.81	7,907.77	28.06		56.06	-26.76	687.86	590.10	561.58	28.52	20.691	
7,950.00	7,947.75	7,972.17	7,957.75	28.24		56.18	-26.76	687.86	589.29	560.59	28.70	20.533	
8,000.00	7,997.73	8,027.85	8,007.73	28.42		56.30	-26.76	687.86	588.49	559.61	28.88	20.378	
8,050.00	8,047.70	8,072.13	8,057.71	28.60		56.41	-26.74	687.88	587.69	558.63	29.06	20.225	
8,100.00	8,097.68	8,122.37	8,107.95	28.78		56.53	-26.76	687.86	586.88	557.64	29.24	20.073	
8,150.00	8,147.66	8,172.05	8,157.62	28.96		56.65	-26.72	687.86	586.06	556.65	29.42	19.923	
8,200.00	8,197.64	8,222.06	8,207.64	29.13		56.77	-26.76	687.86	585.28	555.68	29.60	19.775	
8,250.00	8,247.62	8,272.04	8,257.62	29.31		56.89	-26.76	687.86	584.49	554.71	29.78	19.630	
8,300.00	8,297.60	8,322.02	8,307.60	29.49		57.01	-26.76	687.86	583.69	553.74	29.96	19.486	
8,350.00	8,347.58	8,371.96	8,357.54	29.67		57.12	-26.73	687.87	582.90	552.77	30.13	19.343	
8,400.00	8,397.56	8,421.98	8,407.56	29.85		57.25	-26.76	687.86	582.12	551.80	30.31	19.203	
8,450.00	8,447.54	8,471.60	8,457.18	30.03		57.36	-26.73	687.84	581.31	550.81	30.49	19.063	
8,500.00	8,497.51	8,521.94	8,507.51	30.21		57.49	-26.76	687.86	580.55	549.88	30.67	18.927	
8,550.00	8,547.49	8,571.04	8,556.62	30.39		57.61	-26.74	687.83	579.73	548.88	30.85	18.790	
8,600.00	8,597.47	8,621.90	8,607.47	30.57		57.73	-26.76	687.86	578.99	547.96	31.03	18.658	
8,650.00	8,647.45	8,671.53	8,657.11	30.75		57.85	-26.73	687.86	578.21	547.00	31.21	18.526	
8,700.00	8,697.43	8,721.86	8,707.43	30.93		57.97	-26.76	687.86	577.45	546.06	31.39	18.395	
8,750.00	8,747.41	8,771.37	8,756.93	31.11		58.09	-26.72	687.87	576.67	545.10	31.57	18.266	
8,800.00	8,797.39	8,821.82	8,807.39	31.29		58.22	-26.76	687.86	575.91	544.16	31.75	18.139	
8,850.00	8,847.37	8,874.19	8,857.37	31.47		58.34	-26.76	687.86	575.15	543.22	31.93	18.013	
8,900.00	8,897.35	8,921.85	8,907.41	31.65		58.46	-26.69	687.93	574.44	542.33	32.11	17.890	
8,950.00	8,947.33	8,973.21	8,958.77	31.83		58.60	-26.78	687.84	573.61	541.32	32.29	17.766	
9,000.00	8,997.30	9,022.03	9,007.58	32.01		58.71	-26.70	687.94	572.93	540.46	32.47	17.646	
9,050.00	9,047.28	9,071.73	9,057.28	32.19		58.84	-26.76	687.86	572.12	539.47	32.65	17.524	
9,100.00	9,097.26	9,122.83	9,108.38	32.37		58.96	-26.78	687.99	571.50	538.67	32.83	17.410	
9,150.00	9,147.24	9,171.70	9,157.24	32.55		59.09	-26.76	687.86	570.62	537.61	33.01	17.288	
9,200.00	9,197.22	9,223.95	9,209.49	32.73		59.22	-26.84	688.00	570.04	536.85	33.18	17.178	
9,250.00	9,247.20	9,271.67	9,257.20	32.91		59.34	-26.76	687.86	569.13	535.77	33.37	17.057	
9,300.00	9,297.18	9,324.09	9,309.62	33.09		59.48	-26.86	687.95	568.51	534.97	33.54	16.948	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - T&D

Offset Site Error: 5.00 ft

Survey Program:

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
9,350.00	9,347.16	9,371.64	9,357.16	33.27		59.59	-26.76	687.86	567.66	533.93	33.72	16.832	
9,400.00	9,397.14	9,424.47	9,409.98	33.45		59.73	-26.84	687.92	567.00	533.10	33.90	16.724	
9,450.00	9,447.11	9,471.61	9,457.11	33.63		59.84	-26.76	687.86	566.19	532.11	34.08	16.612	
9,500.00	9,497.09	9,524.01	9,509.51	33.81		59.98	-26.81	687.88	565.50	531.24	34.26	16.505	
9,550.00	9,547.07	9,571.59	9,557.07	33.99		60.10	-26.76	687.86	564.74	530.29	34.44	16.396	
9,600.00	9,597.05	9,632.41	9,607.05	34.17		60.23	-26.76	687.86	564.01	529.39	34.62	16.290	
9,650.00	9,647.03	9,671.57	9,657.03	34.35		60.35	-26.76	687.86	563.29	528.49	34.80	16.186	
9,700.00	9,697.01	9,725.95	9,711.41	34.53		60.49	-26.71	687.83	562.55	527.57	34.98	16.082	
9,750.00	9,746.99	9,771.74	9,757.19	34.71		60.63	-26.94	687.91	561.96	526.80	35.16	15.982	
9,800.00	9,796.97	9,824.27	9,809.71	34.88		60.74	-26.68	687.84	561.12	525.78	35.34	15.878	
9,850.00	9,846.95	9,871.59	9,857.02	35.06		60.89	-26.95	687.82	560.46	524.94	35.52	15.778	
9,900.00	9,896.92	9,921.50	9,906.92	35.24		61.00	-26.76	687.86	559.74	524.04	35.70	15.679	
9,950.00	9,946.90	9,971.52	9,956.94	35.42		61.15	-26.92	687.81	559.04	523.16	35.88	15.581	
10,000.00	9,996.88	10,021.47	10,006.88	35.60		61.26	-26.76	687.86	558.33	522.27	36.06	15.484	
10,050.00	10,046.86	10,070.78	10,056.19	35.78		61.41	-26.89	687.75	557.58	521.34	36.24	15.386	
10,100.00	10,096.84	10,121.45	10,106.84	35.96		61.52	-26.76	687.86	556.94	520.52	36.42	15.293	
10,150.00	10,146.82	10,169.82	10,155.21	36.14		61.67	-26.89	687.71	556.15	519.55	36.60	15.196	
10,200.00	10,196.80	10,221.42	10,206.80	36.32		61.79	-26.76	687.86	555.56	518.78	36.78	15.106	
10,250.00	10,246.78	10,270.16	10,255.53	36.50		61.92	-26.82	687.78	554.83	517.87	36.96	15.012	
10,300.00	10,296.76	10,321.39	10,306.76	36.68		62.05	-26.76	687.86	554.19	517.06	37.14	14.923	
10,350.00	10,346.73	10,370.48	10,355.85	36.86		62.19	-26.79	687.83	553.50	516.18	37.32	14.832	
10,400.00	10,396.71	10,421.35	10,406.71	37.04		62.32	-26.76	687.86	552.84	515.34	37.50	14.744	
10,450.00	10,446.69	10,470.67	10,456.03	37.22		62.45	-26.77	687.85	552.16	514.48	37.68	14.655	
10,500.00	10,496.67	10,521.31	10,506.67	37.40		62.59	-26.82	687.86	551.51	513.65	37.86	14.569	
10,550.00	10,546.65	10,571.73	10,557.09	37.58		62.72	-26.75	687.86	550.82	512.79	38.04	14.482	
10,600.00	10,596.63	10,621.34	10,606.70	37.76		62.85	-26.82	687.86	550.19	511.98	38.22	14.397	
10,650.00	10,646.62	10,671.93	10,657.29	37.94		62.93	-26.73	687.86	549.71	511.32	38.39	14.318	
10,698.81	10,695.43	10,719.97	10,705.33	38.11		62.97	-26.81	687.82	549.55	510.98	38.57	14.249	
10,700.00	10,696.62	10,721.14	10,706.50	38.12		62.97	-26.80	687.82	549.55	510.98	38.57	14.247	
10,750.00	10,746.62	10,771.26	10,756.62	38.30		109.87	-26.76	687.86	549.57	510.82	38.75	14.183	
10,783.39	10,780.01	10,804.65	10,790.00	38.41		109.87	-26.81	687.77	549.50	510.63	38.87	14.138	
10,800.00	10,796.62	10,820.71	10,806.06	38.47		109.87	-26.80	687.78	549.51	510.58	38.93	14.116	
10,850.00	10,846.62	10,871.27	10,856.62	38.65		109.87	-26.76	687.86	549.57	510.46	39.10	14.054	
10,877.76	10,874.38	10,899.02	10,884.37	38.75		109.88	-26.88	687.78	549.53	510.33	39.20	14.018	
10,900.00	10,896.62	10,920.85	10,906.20	38.83		109.88	-26.85	687.80	549.54	510.26	39.28	13.990	
10,950.00	10,946.62	10,971.27	10,956.62	39.00		109.87	-26.76	687.86	549.57	510.11	39.46	13.928	
10,974.42	10,971.04	10,995.61	10,980.95	39.09		109.88	-26.87	687.73	549.48	509.94	39.54	13.895	
11,000.00	10,996.62	11,020.18	11,005.52	39.18		109.88	-26.83	687.77	549.51	509.88	39.64	13.864	
11,050.00	11,046.62	11,071.28	11,056.62	39.36		109.87	-26.76	687.86	549.57	509.76	39.81	13.804	
11,100.00	11,096.56	11,119.77	11,105.10	39.53		-70.04	-26.78	687.84	548.82	508.84	39.98	13.727	
11,150.00	11,146.12	11,170.90	11,156.12	39.69		-70.90	-26.76	687.86	546.64	506.51	40.14	13.620	
11,200.00	11,194.92	11,224.20	11,209.30	39.84		-72.42	-26.51	687.90	543.14	502.86	40.28	13.483	
11,250.00	11,242.61	11,271.29	11,252.61	39.98		-74.17	-26.76	687.86	538.64	498.21	40.43	13.323	
11,300.00	11,288.80	11,321.01	11,298.80	40.12		-76.51	-26.76	687.86	533.44	492.88	40.56	13.150	
11,350.00	11,333.15	11,370.46	11,343.15	40.25		-79.21	-26.76	687.86	528.02	487.32	40.70	12.975	
11,400.00	11,375.33	11,419.61	11,385.33	40.37		-82.16	-26.76	687.86	522.91	482.09	40.82	12.809	
11,450.00	11,415.01	11,467.67	11,425.01	40.48		-85.23	-26.76	687.86	518.74	477.80	40.95	12.669	
11,500.00	11,451.88	11,514.57	11,461.88	40.59		-88.24	-26.76	687.86	516.18	475.11	41.07	12.569	
11,530.95	11,473.18	11,549.77	11,483.18	40.66		-90.00	-26.76	687.86	515.69	474.55	41.14	12.534	CC, ES
11,550.00	11,485.68	11,560.72	11,495.68	40.70		-91.03	-26.76	687.86	515.89	474.70	41.19	12.525	SF
11,600.00	11,516.14	11,606.09	11,526.14	40.82		-93.44	-26.76	687.86	518.51	477.20	41.31	12.551	
11,650.00	11,543.03	11,649.89	11,553.03	40.94		-95.33	-26.76	687.86	524.58	483.14	41.43	12.660	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - T&D — **Offset Site Error:** 5.00 ft

Survey Program: — **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
11,700.00	11,566.14	11,661.84	11,563.14	41.05		-95.16	-29.43	687.94	534.00	492.44	41.56	12.850	
11,750.00	11,585.30	11,704.72	11,586.68	41.17		-96.08	-29.49	687.82	547.52	505.85	41.67	13.140	
11,800.00	11,600.37	11,748.98	11,610.37	41.28		-96.72	-26.76	687.86	566.42	524.65	41.77	13.562	
11,850.00	11,611.22	11,750.16	11,609.97	41.40		-94.20	-29.34	687.73	587.02	545.16	41.86	14.023	
11,900.00	11,617.78	11,790.97	11,627.78	41.51		-93.24	-26.76	687.86	613.66	571.74	41.93	14.636	
11,950.00	11,620.00	11,793.19	11,630.00	41.62		-90.03	-26.76	687.86	642.10	600.12	41.99	15.292	
12,000.00	11,620.00	11,793.19	11,630.00	41.74		-90.00	-26.76	687.86	673.09	631.05	42.04	16.011	
12,050.00	11,620.00	11,793.19	11,630.00	41.88		-90.00	-26.76	687.86	706.27	664.18	42.09	16.780	
12,100.00	11,620.00	11,793.19	11,630.00	42.01		-90.00	-26.76	687.86	741.33	699.20	42.13	17.597	
12,150.00	11,620.00	11,793.19	11,630.00	42.17		-90.00	-26.76	687.86	778.03	735.86	42.17	18.450	
12,200.00	11,620.00	11,793.19	11,630.00	42.33		-90.00	-26.76	687.86	816.14	773.94	42.20	19.339	
12,250.00	11,620.00	11,793.19	11,630.00	42.51		-90.00	-26.76	687.86	855.48	813.24	42.24	20.255	
12,300.00	11,620.00	11,793.19	11,630.00	42.69		-90.00	-26.76	687.86	895.88	853.62	42.26	21.198	
12,350.00	11,620.00	11,793.19	11,630.00	42.90		-90.00	-26.76	687.86	937.21	894.92	42.29	22.161	
12,400.00	11,620.00	11,793.19	11,630.00	43.10		-90.00	-26.76	687.86	979.34	937.03	42.31	23.146	
12,450.00	11,620.00	11,793.19	11,630.00	43.33		-90.00	-26.76	687.86	1,022.19	979.85	42.34	24.145	
12,500.00	11,620.00	11,793.19	11,630.00	43.56		-90.00	-26.76	687.86	1,065.66	1,023.30	42.35	25.160	
12,550.00	11,620.00	11,793.19	11,630.00	43.81		-90.00	-26.76	687.86	1,109.68	1,067.30	42.37	26.187	
12,600.00	11,620.00	11,793.19	11,630.00	44.06		-90.00	-26.76	687.86	1,154.18	1,111.79	42.39	27.227	
12,650.00	11,620.00	11,793.19	11,630.00	44.33		-90.00	-26.76	687.86	1,199.12	1,156.71	42.41	28.275	
12,700.00	11,620.00	11,793.19	11,630.00	44.60		-90.00	-26.76	687.86	1,244.45	1,202.03	42.42	29.334	
12,750.00	11,620.00	11,793.19	11,630.00	44.89		-90.00	-26.76	687.86	1,290.12	1,247.68	42.44	30.399	
12,800.00	11,620.00	11,793.19	11,630.00	45.18		-90.00	-26.76	687.86	1,336.10	1,293.65	42.45	31.472	
12,850.00	11,620.00	11,793.19	11,630.00	45.49		-90.00	-26.76	687.86	1,382.36	1,339.89	42.47	32.551	
12,900.00	11,620.00	11,793.19	11,630.00	45.80		-90.00	-26.76	687.86	1,428.87	1,386.39	42.48	33.636	
12,950.00	11,620.00	11,793.19	11,630.00	46.13		-90.00	-26.76	687.86	1,475.61	1,433.12	42.49	34.724	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1

Survey Program: 187-MWD+HDGM

Offset Site Error: 5.00 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
0.00	0.00	10.02	10.02	0.50	0.50	92.23	-26.76	687.86	688.38				
50.00	50.00	60.14	60.14	0.50	0.51	92.24	-26.88	687.85	688.38	687.37	1.01	681.239	
100.00	100.00	110.26	110.25	0.52	0.53	92.26	-27.16	687.83	688.36	687.32	1.05	658.285	
150.00	150.00	160.37	160.37	0.59	0.56	92.30	-27.60	687.79	688.34	687.19	1.15	599.761	
200.00	200.00	211.47	211.46	0.70	0.63	92.35	-28.21	687.71	688.29	686.96	1.33	518.573	
250.00	250.00	263.68	263.67	0.84	0.75	92.41	-28.95	687.49	688.11	686.51	1.59	432.605	
300.00	300.00	314.91	314.89	0.99	0.90	92.48	-29.77	687.12	687.78	685.90	1.89	364.645	
350.00	350.00	365.69	365.66	1.15	1.05	92.55	-30.61	686.69	687.40	685.20	2.20	312.339	
400.00	400.00	415.97	415.93	1.31	1.22	92.62	-31.42	686.23	686.98	684.45	2.53	271.927	
450.00	450.00	466.17	466.13	1.48	1.38	92.68	-32.10	685.76	686.54	683.68	2.86	240.066	
500.00	500.00	514.59	514.54	1.65	1.55	92.73	-32.74	685.35	686.15	682.95	3.19	214.898	
550.00	550.00	563.15	563.09	1.82	1.71	92.79	-33.43	685.05	685.87	682.34	3.53	194.278	
600.00	600.00	613.08	613.02	1.99	1.89	92.85	-34.11	684.79	685.65	681.78	3.88	176.913	
650.00	650.00	663.02	662.95	2.16	2.06	92.90	-34.70	684.55	685.43	681.21	4.22	162.305	
700.00	700.00	712.99	712.92	2.34	2.23	92.95	-35.22	684.31	685.22	680.65	4.57	149.865	
750.00	750.00	762.95	762.88	2.51	2.41	92.98	-35.66	684.07	685.01	680.08	4.92	139.153	
800.00	800.00	813.49	813.41	2.69	2.59	93.02	-36.06	683.83	684.79	679.52	5.28	129.789	
850.00	850.00	865.11	865.04	2.87	2.77	93.06	-36.52	683.49	684.48	678.85	5.63	121.485	
900.00	900.00	916.20	916.11	3.04	2.95	93.11	-37.07	683.03	684.07	678.08	5.99	114.176	
950.00	950.00	966.85	966.76	3.22	3.13	93.16	-37.70	682.52	683.60	677.25	6.35	107.696	
1,000.00	1,000.00	1,016.14	1,016.04	3.40	3.30	93.22	-38.37	682.01	683.12	676.42	6.70	101.965	
1,050.00	1,050.00	1,065.00	1,064.89	3.58	3.48	93.28	-39.04	681.58	682.72	675.66	7.05	96.832	
1,100.00	1,100.00	1,115.22	1,115.12	3.75	3.66	93.34	-39.74	681.18	682.35	674.95	7.41	92.125	
1,150.00	1,150.00	1,165.64	1,165.53	3.93	3.83	93.40	-40.48	680.74	681.96	674.20	7.76	87.835	
1,200.00	1,200.00	1,215.44	1,215.32	4.11	4.01	93.47	-41.23	680.30	681.57	673.45	8.12	83.941	
1,250.00	1,250.00	1,265.49	1,265.36	4.29	4.19	93.53	-41.98	679.87	681.18	672.71	8.48	80.364	
1,300.00	1,300.00	1,316.17	1,316.03	4.46	4.37	93.60	-42.73	679.40	680.76	671.93	8.84	77.052	
1,350.00	1,350.00	1,366.19	1,366.04	4.64	4.55	93.66	-43.44	678.89	680.31	671.12	9.19	74.011	
1,400.00	1,400.00	1,415.34	1,415.19	4.82	4.73	93.72	-44.12	678.44	679.90	670.35	9.55	71.224	
1,450.00	1,450.00	1,464.65	1,464.50	5.00	4.90	93.78	-44.79	678.05	679.54	669.64	9.90	68.637	
1,500.00	1,500.00	1,514.15	1,513.99	5.18	5.08	93.84	-45.43	677.70	679.23	668.97	10.26	66.229	
1,550.00	1,550.00	1,564.04	1,563.87	5.36	5.26	93.89	-46.04	677.37	678.95	668.33	10.61	63.975	
1,600.00	1,600.00	1,614.20	1,614.03	5.53	5.44	93.94	-46.60	677.04	678.66	667.69	10.97	61.862	
1,650.00	1,650.00	1,664.21	1,664.04	5.71	5.62	93.98	-47.11	676.71	678.36	667.03	11.33	59.884	
1,700.00	1,700.00	1,714.16	1,713.98	5.89	5.80	94.03	-47.62	676.38	678.06	666.38	11.69	58.028	
1,750.00	1,750.00	1,763.22	1,763.03	6.07	5.97	94.07	-48.14	676.08	677.80	665.76	12.04	56.299	
1,800.00	1,800.00	1,812.11	1,811.92	6.25	6.15	94.12	-48.69	675.86	677.62	665.22	12.39	54.678	
1,850.00	1,850.00	1,862.13	1,861.94	6.43	6.32	94.17	-49.26	675.68	677.48	664.73	12.75	53.134	
1,900.00	1,900.00	1,912.25	1,912.05	6.61	6.50	94.21	-49.77	675.50	677.33	664.22	13.11	51.671	
1,950.00	1,950.00	1,961.13	1,960.93	6.78	6.68	94.25	-50.23	675.35	677.22	663.76	13.46	50.307	
1,993.39	1,993.39	2,003.59	2,003.39	6.94	6.83	94.29	-50.61	675.30	677.19	663.42	13.77	49.184	
2,000.00	2,000.00	2,010.15	2,009.95	6.96	6.85	94.29	-50.67	675.29	677.19	663.38	13.82	49.017	
2,050.00	2,050.00	2,059.85	2,059.65	7.14	7.03	94.33	-51.13	675.27	677.21	663.04	14.17	47.787	
2,100.00	2,100.00	2,108.29	2,108.09	7.32	7.20	94.37	-51.61	675.28	677.25	662.73	14.52	46.640	
2,150.00	2,150.00	2,152.60	2,152.39	7.50	7.35	94.38	-51.70	675.59	677.61	662.76	14.85	45.633	
2,200.00	2,200.00	2,197.28	2,197.07	7.68	7.50	94.33	-51.26	676.31	678.38	663.20	15.18	44.698	
2,250.00	2,250.00	2,245.07	2,244.84	7.86	7.66	94.26	-50.50	677.36	679.41	663.90	15.51	43.805	
2,300.00	2,300.00	2,292.85	2,292.59	8.04	7.81	94.18	-49.60	678.57	680.61	664.76	15.84	42.960	
2,350.00	2,350.00	2,339.68	2,339.38	8.22	7.97	94.06	-48.24	679.99	682.01	665.83	16.17	42.170	
2,400.00	2,400.00	2,386.86	2,386.49	8.39	8.12	93.88	-46.21	681.66	683.63	667.13	16.50	41.423	
2,450.00	2,450.00	2,435.85	2,435.38	8.57	8.28	93.66	-43.78	683.55	685.39	668.55	16.84	40.694	
2,500.00	2,500.00	2,484.15	2,483.58	8.75	8.44	93.45	-41.27	685.48	687.23	670.05	17.18	40.005	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 5.00 ft

Survey Program: 187-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
2,550.00	2,550.00	2,530.03	2,529.32	8.93	8.59	46.30	-38.52	687.54	689.15	671.65	17.50	39.372	
2,600.00	2,599.99	2,575.71	2,574.84	9.11	8.74	46.05	-35.32	689.89	691.08	673.25	17.83	38.765	
2,650.00	2,649.98	2,620.65	2,619.55	9.28	8.89	45.77	-31.62	692.52	693.05	674.90	18.15	38.191	
2,700.00	2,699.96	2,665.69	2,664.28	9.46	9.04	45.48	-27.29	695.50	695.16	676.69	18.47	37.646	
2,750.00	2,749.94	2,713.93	2,712.13	9.64	9.21	45.13	-22.27	698.92	697.50	678.70	18.80	37.098	
2,800.00	2,799.92	2,762.29	2,760.08	9.81	9.37	44.78	-17.04	702.47	699.97	680.83	19.14	36.576	
2,850.00	2,849.90	2,812.09	2,809.44	9.99	9.54	44.41	-11.59	706.16	702.51	683.03	19.48	36.060	
2,900.00	2,899.88	2,861.74	2,858.65	10.17	9.71	44.04	-6.14	709.83	705.08	685.26	19.83	35.562	
2,950.00	2,949.86	2,910.75	2,907.24	10.34	9.88	43.68	-0.75	713.49	707.71	687.54	20.17	35.088	
3,000.00	2,999.84	2,959.97	2,956.01	10.52	10.05	43.31	4.68	717.21	710.42	689.91	20.51	34.632	
3,050.00	3,049.81	3,009.75	3,005.34	10.70	10.23	42.94	10.22	720.98	713.17	692.31	20.86	34.185	
3,100.00	3,099.79	3,060.18	3,055.30	10.88	10.40	42.57	15.89	724.79	715.93	694.72	21.21	33.748	
3,150.00	3,149.77	3,111.64	3,106.29	11.05	10.58	42.19	21.65	728.58	718.62	697.05	21.57	33.312	
3,200.00	3,199.75	3,162.90	3,157.11	11.23	10.77	41.82	27.35	732.23	721.23	699.30	21.93	32.887	
3,250.00	3,249.73	3,214.01	3,207.79	11.41	10.95	41.47	32.93	735.77	723.76	701.48	22.29	32.473	
3,300.00	3,299.71	3,264.47	3,257.84	11.59	11.13	41.12	38.36	739.20	726.25	703.61	22.64	32.073	
3,350.00	3,349.69	3,314.65	3,307.61	11.76	11.31	40.78	43.77	742.57	728.73	705.73	23.00	31.687	
3,400.00	3,399.67	3,365.79	3,358.35	11.94	11.49	40.44	49.24	745.95	731.17	707.82	23.36	31.304	
3,450.00	3,449.65	3,417.16	3,409.33	12.12	11.68	40.11	54.57	749.24	733.54	709.82	23.72	30.928	
3,500.00	3,499.62	3,463.32	3,455.15	12.30	11.84	39.82	59.34	752.26	735.99	711.94	24.05	30.599	
3,550.00	3,549.60	3,509.46	3,500.92	12.48	12.01	39.52	64.18	755.51	738.71	714.33	24.39	30.292	
3,600.00	3,599.58	3,558.75	3,549.80	12.65	12.19	39.21	69.36	759.12	741.60	716.86	24.74	29.978	
3,650.00	3,649.56	3,608.26	3,598.91	12.83	12.37	38.91	74.42	762.77	744.53	719.44	25.09	29.673	
3,700.00	3,699.54	3,658.07	3,648.35	13.01	12.55	38.63	79.22	766.47	747.48	722.04	25.45	29.376	
3,750.00	3,749.52	3,708.30	3,698.25	13.19	12.73	38.39	83.62	770.24	750.45	724.64	25.80	29.084	
3,800.00	3,799.50	3,760.55	3,750.19	13.37	12.92	38.17	87.69	774.10	753.32	727.15	26.17	28.786	
3,850.00	3,849.48	3,813.35	3,802.73	13.54	13.11	38.00	91.31	777.86	756.03	729.49	26.54	28.487	
3,900.00	3,899.46	3,867.06	3,856.23	13.72	13.31	37.84	94.65	781.47	758.52	731.61	26.91	28.183	
3,950.00	3,949.44	3,918.34	3,907.31	13.90	13.49	37.71	97.59	784.74	760.81	733.54	27.28	27.894	
4,000.00	3,999.41	3,968.04	3,956.84	14.08	13.67	37.60	100.25	787.91	763.10	735.47	27.63	27.620	
4,050.00	4,049.39	4,017.70	4,006.34	14.26	13.85	37.51	102.69	791.12	765.40	737.42	27.98	27.355	
4,100.00	4,099.37	4,067.36	4,055.84	14.44	14.03	37.44	104.82	794.38	767.73	739.40	28.33	27.096	
4,150.00	4,149.35	4,116.83	4,105.17	14.61	14.21	37.39	106.66	797.68	770.08	741.39	28.69	26.846	
4,200.00	4,199.33	4,166.27	4,154.47	14.79	14.38	37.36	108.30	801.03	772.46	743.43	29.04	26.603	
4,250.00	4,249.31	4,214.77	4,202.83	14.97	14.56	37.34	109.73	804.39	774.91	745.52	29.38	26.373	
4,300.00	4,299.29	4,263.23	4,251.15	15.15	14.73	37.34	110.99	807.86	777.45	747.72	29.73	26.151	
4,350.00	4,349.27	4,320.88	4,308.65	15.33	14.93	37.32	112.61	811.74	779.79	749.66	30.12	25.887	
4,400.00	4,399.25	4,377.75	4,365.39	15.51	15.14	37.27	114.63	814.98	781.64	751.13	30.51	25.619	
4,450.00	4,449.22	4,433.26	4,420.78	15.69	15.34	37.19	117.01	817.67	783.12	752.22	30.89	25.351	
4,500.00	4,499.20	4,485.76	4,473.17	15.86	15.53	37.09	119.58	819.88	784.30	753.05	31.26	25.092	
4,550.00	4,549.18	4,536.85	4,524.15	16.04	15.71	36.98	122.16	821.93	785.41	753.79	31.62	24.841	
4,600.00	4,599.16	4,588.24	4,575.45	16.22	15.89	36.87	124.76	823.91	786.44	754.46	31.98	24.592	
4,650.00	4,649.14	4,639.71	4,626.81	16.40	16.08	36.78	127.24	825.81	787.37	755.03	32.34	24.346	
4,700.00	4,699.12	4,689.54	4,676.56	16.58	16.26	36.69	129.54	827.62	788.27	755.57	32.70	24.110	
4,750.00	4,749.10	4,740.11	4,727.04	16.76	16.44	36.60	131.81	829.46	789.17	756.12	33.05	23.876	
4,800.00	4,799.08	4,795.44	4,782.29	16.94	16.63	36.50	134.35	831.25	789.87	756.44	33.43	23.627	
4,850.00	4,849.06	4,849.95	4,836.72	17.12	16.83	36.39	136.97	832.63	790.24	756.44	33.80	23.377	
4,900.00	4,899.03	4,903.43	4,890.11	17.30	17.02	36.26	139.81	833.70	790.38	756.20	34.17	23.129	
4,950.00	4,949.01	4,955.16	4,941.75	17.47	17.20	36.13	142.74	834.52	790.33	755.80	34.53	22.886	
5,000.00	4,998.99	5,006.17	4,992.67	17.65	17.38	35.99	145.62	835.26	790.22	755.33	34.89	22.647	
5,050.00	5,048.97	5,056.88	5,043.31	17.83	17.57	35.85	148.44	835.93	790.05	754.80	35.25	22.412	
5,100.00	5,098.95	5,107.59	5,093.93	18.01	17.75	35.72	151.22	836.57	789.85	754.24	35.61	22.181	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1

Survey Program: 187-MWD+HDGM

Offset Site Error: 5.00 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
5,150.00	5,148.93	5,159.53	5,145.79	18.19	17.93	35.58	154.09	837.13	789.56	753.59	35.97	21.949	
5,200.00	5,198.91	5,211.82	5,198.00	18.37	18.12	35.44	157.05	837.54	789.15	752.81	36.34	21.719	
5,250.00	5,248.89	5,265.24	5,251.33	18.55	18.31	35.30	159.99	837.78	788.55	751.85	36.70	21.485	
5,300.00	5,298.87	5,320.65	5,306.66	18.73	18.50	35.16	162.84	837.76	787.70	750.63	37.07	21.248	
5,350.00	5,348.84	5,378.20	5,364.16	18.91	18.70	35.05	165.29	837.30	786.42	748.97	37.45	21.002	
5,400.00	5,398.82	5,437.80	5,423.72	19.09	18.91	34.97	167.24	836.26	784.59	746.77	37.82	20.747	
5,450.00	5,448.80	5,497.66	5,483.54	19.27	19.11	34.92	168.67	834.52	782.14	743.95	38.19	20.483	
5,500.00	5,498.78	5,546.97	5,532.82	19.44	19.28	34.91	169.35	832.97	779.48	740.95	38.53	20.229	
5,550.00	5,548.76	5,595.71	5,581.54	19.62	19.45	34.94	169.59	831.40	776.74	737.86	38.88	19.977	
5,600.00	5,598.74	5,641.25	5,627.06	19.80	19.60	34.99	169.51	830.19	774.22	735.00	39.22	19.738	
5,650.00	5,648.72	5,688.19	5,673.98	19.98	19.76	35.06	169.18	829.24	771.98	732.41	39.57	19.510	
5,700.00	5,698.70	5,737.12	5,722.90	20.16	19.93	35.14	168.76	828.35	769.83	729.92	39.92	19.286	
5,750.00	5,748.68	5,786.05	5,771.83	20.34	20.09	35.23	168.29	827.54	767.76	727.49	40.26	19.068	
5,800.00	5,798.65	5,835.00	5,820.77	20.52	20.26	35.32	167.80	826.79	765.75	725.13	40.61	18.855	
5,850.00	5,848.63	5,884.38	5,870.14	20.70	20.43	35.41	167.28	826.10	763.79	722.83	40.96	18.647	
5,900.00	5,898.61	5,934.05	5,919.80	20.88	20.60	35.51	166.73	825.43	761.87	720.56	41.31	18.442	
5,950.00	5,948.59	5,984.24	5,969.99	21.06	20.77	35.61	166.17	824.75	759.95	718.29	41.66	18.241	
6,000.00	5,998.57	6,034.63	6,020.37	21.24	20.94	35.71	165.66	824.05	758.00	715.99	42.01	18.042	
6,050.00	6,048.55	6,083.60	6,069.33	21.42	21.11	35.80	165.20	823.36	756.07	713.71	42.36	17.848	
6,100.00	6,098.53	6,132.30	6,118.03	21.60	21.27	35.88	164.79	822.75	754.22	711.51	42.71	17.659	
6,150.00	6,148.51	6,182.32	6,168.05	21.77	21.44	35.97	164.41	822.17	752.42	709.36	43.06	17.474	
6,200.00	6,198.49	6,232.51	6,218.23	21.95	21.62	36.06	164.05	821.57	750.60	707.19	43.41	17.290	
6,250.00	6,248.46	6,283.47	6,269.18	22.13	21.79	36.14	163.73	820.90	748.75	704.98	43.77	17.108	
6,300.00	6,298.44	6,334.43	6,320.14	22.31	21.97	36.22	163.47	820.17	746.83	702.71	44.12	16.928	
6,350.00	6,348.42	6,383.28	6,368.99	22.49	22.13	36.30	163.22	819.48	744.92	700.46	44.47	16.752	
6,400.00	6,398.40	6,432.65	6,418.34	22.67	22.30	36.38	162.96	818.83	743.07	698.25	44.82	16.580	
6,450.00	6,448.38	6,482.48	6,468.17	22.85	22.47	36.46	162.67	818.19	741.24	696.07	45.17	16.410	
6,500.00	6,498.36	6,532.41	6,518.09	23.03	22.65	36.55	162.36	817.57	739.41	693.89	45.52	16.243	
6,550.00	6,548.34	6,582.49	6,568.17	23.21	22.82	36.63	162.07	816.93	737.58	691.71	45.87	16.079	
6,600.00	6,598.32	6,631.95	6,617.63	23.39	22.99	36.71	161.81	816.31	735.76	689.53	46.22	15.917	
6,650.00	6,648.30	6,680.79	6,666.46	23.57	23.16	36.79	161.64	815.74	734.00	687.42	46.57	15.759	
6,700.00	6,698.27	6,726.21	6,711.89	23.75	23.32	36.85	161.60	815.33	732.38	685.47	46.92	15.610	
6,750.00	6,748.25	6,769.04	6,754.71	23.93	23.46	36.89	161.81	815.30	731.22	683.97	47.25	15.475	
6,800.00	6,798.23	6,814.25	6,799.92	24.11	23.62	36.92	162.31	815.67	730.52	682.92	47.59	15.350	
6,850.00	6,848.21	6,863.91	6,849.57	24.29	23.79	36.94	162.95	816.18	729.94	681.99	47.94	15.225	
6,900.00	6,898.19	6,914.21	6,899.86	24.47	23.97	36.96	163.63	816.71	729.37	681.07	48.30	15.102	
6,950.00	6,948.17	6,965.33	6,950.98	24.65	24.15	36.98	164.27	817.19	728.74	680.09	48.65	14.978	
7,000.00	6,998.15	7,016.96	7,002.60	24.83	24.33	37.01	164.85	817.59	728.02	679.01	49.01	14.854	
7,050.00	7,048.13	7,068.89	7,054.52	25.00	24.51	37.05	165.33	817.86	727.18	677.81	49.37	14.729	
7,100.00	7,098.11	7,117.93	7,103.57	25.18	24.68	37.09	165.75	818.07	726.28	676.56	49.72	14.607	
7,150.00	7,148.08	7,166.19	7,151.82	25.36	24.85	37.12	166.24	818.38	725.49	675.42	50.07	14.490	
7,200.00	7,198.06	7,216.94	7,202.57	25.54	25.02	37.14	166.84	818.75	724.75	674.33	50.43	14.373	
7,250.00	7,248.04	7,268.25	7,253.87	25.72	25.20	37.17	167.50	819.02	723.93	673.15	50.78	14.255	
7,300.00	7,298.02	7,318.39	7,304.01	25.90	25.38	37.18	168.16	819.24	723.05	671.92	51.14	14.139	
7,350.00	7,348.00	7,368.51	7,354.12	26.08	25.55	37.20	168.83	819.45	722.17	670.68	51.49	14.025	
7,400.00	7,397.98	7,418.10	7,403.71	26.26	25.72	37.23	169.43	819.67	721.30	669.45	51.84	13.913	
7,450.00	7,447.96	7,467.93	7,453.54	26.44	25.90	37.26	169.91	819.93	720.45	668.25	52.20	13.802	
7,500.00	7,497.94	7,518.70	7,504.30	26.62	26.07	37.30	170.31	820.17	719.57	667.02	52.55	13.692	
7,550.00	7,547.92	7,569.34	7,554.94	26.80	26.25	37.35	170.62	820.37	718.64	665.73	52.91	13.582	
7,600.00	7,597.89	7,619.74	7,605.34	26.98	26.43	37.40	170.89	820.54	717.68	664.42	53.26	13.474	
7,650.00	7,647.87	7,669.77	7,655.37	27.16	26.60	37.45	171.12	820.69	716.70	663.08	53.62	13.367	
7,700.00	7,697.85	7,719.34	7,704.94	27.34	26.77	37.51	171.37	820.85	715.73	661.76	53.97	13.261	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 5.00 ft

Survey Program: 187-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
7,750.00	7,747.83	7,769.17	7,754.77	27.52	26.95	37.56	171.66	821.03	714.79	660.47	54.32	13.158	
7,800.00	7,797.81	7,819.20	7,804.80	27.70	27.12	37.60	171.96	821.22	713.86	659.18	54.68	13.055	
7,850.00	7,847.79	7,870.04	7,855.63	27.88	27.30	37.66	172.23	821.39	712.90	657.86	55.04	12.953	
7,900.00	7,897.77	7,921.24	7,906.83	28.06	27.48	37.72	172.39	821.48	711.85	656.46	55.39	12.851	
7,950.00	7,947.75	7,971.34	7,956.94	28.24	27.65	37.78	172.47	821.53	710.76	655.01	55.75	12.750	
8,000.00	7,997.73	8,021.23	8,006.82	28.42	27.83	37.85	172.53	821.58	709.67	653.57	56.10	12.650	
8,050.00	8,047.70	8,071.66	8,057.25	28.60	28.00	37.92	172.62	821.63	708.58	652.12	56.46	12.551	
8,100.00	8,097.68	8,122.14	8,107.73	28.78	28.18	37.98	172.77	821.63	707.44	650.63	56.81	12.453	
8,150.00	8,147.66	8,172.08	8,157.67	28.96	28.35	38.04	172.90	821.62	706.30	649.13	57.16	12.356	
8,200.00	8,197.64	8,222.05	8,207.64	29.13	28.53	38.11	172.93	821.61	705.16	647.64	57.52	12.260	
8,250.00	8,247.62	8,271.67	8,257.27	29.31	28.70	38.18	172.99	821.62	704.03	646.15	57.87	12.165	
8,300.00	8,297.60	8,321.70	8,307.30	29.49	28.87	38.24	173.14	821.64	702.92	644.69	58.23	12.072	
8,350.00	8,347.58	8,372.60	8,358.19	29.67	29.05	38.30	173.30	821.62	701.77	643.18	58.58	11.979	
8,400.00	8,397.56	8,423.49	8,409.09	29.85	29.23	38.36	173.46	821.53	700.55	641.61	58.94	11.886	
8,450.00	8,447.54	8,474.40	8,459.99	30.03	29.41	38.42	173.61	821.37	699.27	639.97	59.30	11.793	
8,500.00	8,497.51	8,523.88	8,509.47	30.21	29.58	38.48	173.76	821.18	697.95	638.30	59.65	11.701	
8,550.00	8,547.49	8,572.32	8,557.92	30.39	29.75	38.54	173.97	821.08	696.73	636.73	60.00	11.612	
8,600.00	8,597.47	8,621.29	8,606.88	30.57	29.92	38.59	174.26	821.07	695.61	635.26	60.35	11.526	
8,650.00	8,647.45	8,670.52	8,656.11	30.75	30.09	38.62	174.72	821.10	694.54	633.84	60.70	11.441	
8,700.00	8,697.43	8,719.80	8,705.39	30.93	30.27	38.65	175.29	821.18	693.53	632.47	61.06	11.359	
8,750.00	8,747.41	8,769.09	8,754.68	31.11	30.44	38.69	175.75	821.31	692.57	631.16	61.41	11.278	
8,800.00	8,797.39	8,818.21	8,803.79	31.29	30.61	38.73	176.13	821.50	691.66	629.90	61.76	11.199	
8,850.00	8,847.37	8,867.29	8,852.87	31.47	30.78	38.78	176.46	821.77	690.82	628.71	62.12	11.122	
8,900.00	8,897.35	8,917.00	8,902.57	31.65	30.96	38.83	176.76	822.08	690.03	627.56	62.47	11.046	
8,950.00	8,947.33	8,966.78	8,952.36	31.83	31.13	38.88	177.04	822.41	689.25	626.43	62.82	10.971	
9,000.00	8,997.30	9,015.08	9,000.66	32.01	31.30	38.95	177.21	822.81	688.54	625.37	63.17	10.899	
9,050.00	9,047.28	9,063.45	9,049.02	32.19	31.47	39.02	177.19	823.34	687.95	624.43	63.52	10.830	
9,100.00	9,097.26	9,112.46	9,098.03	32.37	31.64	39.12	177.01	823.98	687.46	623.59	63.87	10.763	
9,150.00	9,147.24	9,161.80	9,147.36	32.55	31.81	39.23	176.65	824.70	687.04	622.82	64.22	10.698	
9,200.00	9,197.22	9,213.29	9,198.85	32.73	31.99	39.35	176.14	825.42	686.58	622.00	64.58	10.632	
9,250.00	9,247.20	9,264.49	9,250.03	32.91	32.16	39.49	175.50	826.03	686.02	621.08	64.93	10.565	
9,300.00	9,297.18	9,315.01	9,300.55	33.09	32.34	39.63	174.81	826.58	685.40	620.11	65.29	10.498	
9,350.00	9,347.16	9,365.90	9,351.43	33.27	32.51	39.77	174.09	827.09	684.74	619.10	65.64	10.431	
9,400.00	9,397.14	9,417.27	9,402.80	33.45	32.69	39.91	173.35	827.52	683.99	618.00	66.00	10.364	
9,450.00	9,447.11	9,466.64	9,452.16	33.63	32.86	40.05	172.62	827.86	683.19	616.85	66.35	10.297	
9,500.00	9,497.09	9,514.76	9,500.27	33.81	33.02	40.20	171.80	828.32	682.51	615.82	66.69	10.233	
9,550.00	9,547.07	9,564.68	9,550.17	33.99	33.19	40.36	170.86	828.89	681.93	614.89	67.05	10.171	
9,600.00	9,597.05	9,615.59	9,601.08	34.17	33.37	40.52	169.95	829.42	681.30	613.90	67.40	10.108	
9,650.00	9,647.03	9,667.38	9,652.85	34.35	33.54	40.67	169.09	829.85	680.58	612.82	67.76	10.044	
9,700.00	9,697.01	9,719.40	9,704.87	34.53	33.72	40.83	168.27	830.12	679.71	611.59	68.11	9.979	
9,750.00	9,746.99	9,772.29	9,757.75	34.71	33.90	40.98	167.44	830.21	678.66	610.19	68.47	9.911	
9,800.00	9,796.97	9,825.17	9,810.62	34.88	34.09	41.14	166.56	830.07	677.40	608.57	68.83	9.841	
9,850.00	9,846.95	9,874.72	9,860.17	35.06	34.26	41.29	165.75	829.87	676.08	606.90	69.18	9.772	
9,900.00	9,896.92	9,925.48	9,910.92	35.24	34.43	41.44	164.98	829.64	674.74	605.20	69.53	9.704	
9,950.00	9,946.90	9,977.81	9,963.24	35.42	34.61	41.59	164.22	829.26	673.27	603.38	69.89	9.633	
10,000.00	9,996.88	10,030.16	10,015.58	35.60	34.79	41.73	163.50	828.69	671.62	601.38	70.25	9.561	
10,050.00	10,046.86	10,082.52	10,067.93	35.78	34.97	41.88	162.76	827.93	669.80	599.20	70.60	9.487	
10,100.00	10,096.84	10,131.66	10,117.06	35.96	35.14	42.02	162.07	827.13	667.89	596.94	70.95	9.413	
10,150.00	10,146.82	10,179.34	10,164.74	36.14	35.30	42.14	161.54	826.49	666.13	594.83	71.30	9.343	
10,200.00	10,196.80	10,227.71	10,213.10	36.32	35.47	42.26	161.10	825.99	664.53	592.88	71.65	9.275	
10,250.00	10,246.78	10,276.39	10,261.78	36.50	35.64	42.38	160.70	825.58	663.03	591.03	72.00	9.209	
10,300.00	10,296.76	10,325.56	10,310.94	36.68	35.81	42.49	160.32	825.25	661.61	589.26	72.35	9.145	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1

Offset Site Error: 5.00 ft

Survey Program: 187-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	10,346.73	10,374.89	10,360.27	36.86	35.98	42.61	159.96	824.96	660.25	587.55	72.70	9.082	
10,400.00	10,396.71	10,423.30	10,408.68	37.04	36.14	42.72	159.64	824.76	658.97	585.92	73.05	9.021	
10,450.00	10,446.69	10,471.61	10,456.99	37.22	36.31	42.83	159.37	824.68	657.82	584.42	73.40	8.962	
10,500.00	10,496.67	10,521.30	10,506.68	37.40	36.48	42.94	159.11	824.67	656.75	582.99	73.75	8.905	
10,550.00	10,546.65	10,571.16	10,556.54	37.58	36.65	43.04	158.84	824.68	655.69	581.59	74.10	8.848	
10,600.00	10,596.63	10,622.42	10,607.79	37.76	36.83	43.15	158.60	824.64	654.60	580.14	74.46	8.791	
10,650.00	10,646.62	10,673.74	10,659.12	37.94	37.01	43.22	158.38	824.49	653.74	578.93	74.81	8.738	
10,700.00	10,696.62	10,725.32	10,710.70	38.12	37.19	43.26	158.17	824.23	653.25	578.08	75.17	8.690	
10,750.00	10,746.62	10,776.20	10,761.57	38.30	37.36	90.18	157.95	823.86	652.89	577.37	75.52	8.645	
10,800.00	10,796.62	10,825.95	10,811.33	38.47	37.53	90.21	157.62	823.50	652.52	576.65	75.87	8.600	
10,850.00	10,846.62	10,876.45	10,861.82	38.65	37.71	90.25	157.14	823.12	652.15	575.93	76.22	8.556	
10,900.00	10,896.62	10,927.77	10,913.13	38.83	37.89	90.29	156.65	822.66	651.70	575.13	76.58	8.511	
10,950.00	10,946.62	10,978.05	10,963.41	39.00	38.06	90.33	156.20	822.13	651.18	574.25	76.93	8.465	
11,000.00	10,996.62	11,027.76	11,013.11	39.18	38.23	90.38	155.73	821.62	650.67	573.39	77.28	8.420	
11,050.00	11,046.62	11,078.22	11,063.56	39.36	38.41	90.47	154.63	821.10	650.16	572.53	77.63	8.375	
11,100.00	11,096.56	11,128.91	11,114.13	39.53	38.58	-89.13	151.38	820.50	649.57	571.60	77.97	8.331	
11,150.00	11,146.12	11,174.75	11,159.53	39.69	38.73	-89.16	145.17	820.07	649.06	570.77	78.29	8.291	
11,200.00	11,194.92	11,220.91	11,204.50	39.84	38.88	-89.15	134.79	819.87	648.78	570.18	78.60	8.255	
11,209.34	11,203.92	11,227.97	11,211.28	39.87	38.91	-89.15	132.85	819.87	648.76	570.12	78.65	8.249	
11,250.00	11,242.61	11,259.36	11,241.15	39.98	39.01	-89.12	123.21	820.14	649.03	570.16	78.87	8.229	
11,300.00	11,288.80	11,311.60	11,289.62	40.12	39.16	-89.12	103.77	820.94	649.68	570.50	79.17	8.206	
11,350.00	11,333.15	11,346.04	11,320.59	40.25	39.26	-89.10	88.73	821.69	650.63	571.23	79.40	8.194	
11,400.00	11,375.33	11,381.95	11,351.78	40.37	39.36	-89.06	71.02	823.35	652.73	573.11	79.61	8.199	
11,450.00	11,415.01	11,423.54	11,386.61	40.48	39.48	-89.06	48.47	826.00	655.67	575.83	79.85	8.212	
11,500.00	11,451.88	11,482.56	11,434.32	40.59	39.63	-89.38	13.96	829.78	658.66	578.49	80.17	8.216	
11,550.00	11,485.68	11,547.69	11,483.04	40.70	39.81	-89.78	-29.14	832.37	660.40	579.91	80.49	8.204	
11,600.00	11,516.14	11,598.57	11,518.12	40.82	39.95	-90.12	-65.95	833.85	661.63	580.87	80.75	8.193	
11,650.00	11,543.03	11,661.55	11,557.72	40.94	40.12	-90.66	-114.88	835.27	662.61	581.58	81.03	8.177	
11,700.00	11,566.14	11,747.60	11,604.19	41.05	40.36	-91.44	-187.21	833.48	661.24	579.93	81.30	8.133	
11,750.00	11,585.30	11,791.17	11,624.61	41.17	40.48	-92.00	-225.66	831.83	659.21	577.67	81.53	8.085	
11,800.00	11,600.37	11,832.00	11,642.55	41.28	40.60	-92.66	-262.32	830.78	657.94	576.19	81.75	8.048	
11,826.70	11,606.69	11,850.15	11,650.23	41.34	40.65	-92.99	-278.76	830.56	657.72	575.87	81.86	8.035	
11,850.00	11,611.22	11,865.75	11,656.62	41.40	40.70	-93.28	-292.99	830.57	657.89	575.94	81.95	8.028	
11,900.00	11,617.78	11,905.80	11,671.84	41.51	40.82	-94.04	-330.03	831.24	659.28	577.14	82.13	8.027	
11,950.00	11,620.00	11,956.39	11,687.56	41.62	40.98	-95.00	-378.07	832.58	661.44	579.14	82.30	8.037	
12,000.00	11,620.00	12,010.79	11,700.07	41.74	41.15	-96.07	-430.98	834.02	663.62	581.15	82.47	8.047	
12,050.00	11,620.00	12,061.89	11,706.98	41.88	41.31	-96.65	-481.56	835.62	665.64	582.95	82.69	8.050	
12,100.00	11,620.00	12,119.62	11,711.92	42.01	41.50	-97.05	-539.05	837.40	667.38	584.43	82.95	8.045	
12,150.00	11,620.00	12,177.62	11,715.04	42.17	41.69	-97.31	-596.95	838.72	668.53	585.27	83.26	8.030	
12,200.00	11,620.00	12,229.28	11,716.51	42.33	41.88	-97.43	-648.58	839.64	669.29	585.71	83.58	8.008	
12,250.00	11,620.00	12,279.87	11,717.22	42.51	42.07	-97.48	-699.15	840.59	670.01	586.07	83.94	7.982	
12,300.00	11,620.00	12,318.21	11,717.67	42.69	42.23	-97.51	-737.47	841.63	671.13	586.85	84.28	7.963	
12,350.00	11,620.00	12,356.46	11,718.46	42.90	42.39	-97.56	-775.69	843.30	673.12	588.49	84.64	7.953	
12,400.00	11,620.00	12,403.24	11,719.63	43.10	42.60	-97.63	-822.37	845.99	675.81	590.78	85.04	7.947	
12,450.00	11,620.00	12,457.31	11,719.89	43.33	42.85	-97.62	-876.36	849.03	678.32	592.81	85.51	7.933	
12,500.00	11,620.00	12,499.54	11,719.84	43.56	43.06	-97.60	-918.51	851.45	680.87	594.92	85.95	7.921	
12,550.00	11,620.00	12,538.39	11,721.18	43.81	43.26	-97.68	-957.25	854.12	684.20	597.81	86.39	7.920	
12,600.00	11,620.00	12,585.68	11,724.29	44.06	43.52	-97.90	-1,004.28	857.84	688.23	601.38	86.85	7.924	
12,650.00	11,620.00	12,650.09	11,726.05	44.33	43.88	-98.00	-1,068.49	862.42	691.64	604.17	87.46	7.908	
12,700.00	11,620.00	12,693.77	11,725.74	44.60	44.13	-97.94	-1,112.07	865.36	694.63	606.64	87.99	7.894	
12,750.00	11,620.00	12,734.04	11,725.73	44.89	44.37	-97.91	-1,152.22	868.59	698.30	609.78	88.52	7.888	
12,800.00	11,620.00	12,806.86	11,725.83	45.18	44.82	-97.85	-1,224.81	874.25	702.01	612.75	89.26	7.865	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1

Offset Site Error: 5.00 ft

Survey Program: 187-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
12,850.00	11,620.00	12,883.43	11,724.78	45.49	45.31	-97.75	-1,301.33	876.75	703.12	613.07	90.04	7.809	
12,900.00	11,620.00	12,944.53	11,724.25	45.80	45.71	-97.70	-1,362.42	877.31	703.21	612.47	90.73	7.750	
12,950.00	11,620.00	12,997.37	11,723.36	46.13	46.08	-97.63	-1,415.25	877.35	702.82	611.40	91.42	7.687	
13,000.00	11,620.00	13,048.55	11,721.55	46.46	46.43	-97.49	-1,466.40	877.29	702.22	610.10	92.12	7.623	
13,050.00	11,620.00	13,094.33	11,720.58	46.81	46.76	-97.42	-1,512.17	877.30	701.79	608.98	92.81	7.561	
13,095.17	11,620.00	13,135.70	11,720.77	47.12	47.06	-97.43	-1,553.54	877.41	701.66	608.23	93.43	7.510	
13,100.00	11,620.00	13,138.66	11,720.82	47.15	47.09	-97.44	-1,556.50	877.43	701.67	608.18	93.49	7.506	
13,150.00	11,620.00	13,177.06	11,721.70	47.52	47.38	-97.50	-1,594.88	877.97	702.20	608.05	94.15	7.459	
13,200.00	11,620.00	13,215.41	11,723.07	47.88	47.67	-97.61	-1,633.19	879.07	703.56	608.77	94.79	7.422	
13,250.00	11,620.00	13,267.95	11,725.20	48.26	48.08	-97.76	-1,685.65	881.03	705.37	609.82	95.55	7.382	
13,300.00	11,620.00	13,325.31	11,726.73	48.64	48.54	-97.87	-1,742.96	882.72	706.71	610.35	96.36	7.334	
13,350.00	11,620.00	13,380.40	11,727.27	49.04	48.99	-97.90	-1,798.04	883.99	707.61	610.43	97.18	7.281	
13,400.00	11,620.00	13,435.97	11,726.87	49.43	49.45	-97.86	-1,853.60	884.98	708.14	610.11	98.03	7.224	
13,450.00	11,620.00	13,491.89	11,726.23	49.84	49.92	-97.81	-1,909.51	885.54	708.25	609.35	98.90	7.162	
13,500.00	11,620.00	13,553.12	11,725.02	50.25	50.45	-97.72	-1,970.73	885.53	707.81	608.00	99.81	7.092	
13,550.00	11,620.00	13,616.36	11,722.02	50.68	50.99	-97.49	-2,033.89	884.59	706.45	605.69	100.76	7.011	
13,600.00	11,620.00	13,654.83	11,720.46	51.10	51.34	-97.37	-2,072.32	884.12	705.22	603.63	101.59	6.942	
13,650.00	11,620.00	13,697.68	11,719.35	51.54	51.72	-97.29	-2,115.16	883.88	704.47	602.03	102.44	6.877	
13,693.07	11,620.00	13,733.75	11,718.91	51.92	52.05	-97.25	-2,151.22	883.98	704.26	601.09	103.17	6.826	
13,700.00	11,620.00	13,739.56	11,718.87	51.98	52.10	-97.25	-2,157.03	884.03	704.26	600.98	103.29	6.818	
13,750.00	11,620.00	13,781.45	11,718.88	52.43	52.48	-97.25	-2,198.92	884.60	704.63	600.50	104.13	6.767	
13,800.00	11,620.00	13,822.73	11,719.35	52.88	52.87	-97.28	-2,240.18	885.59	705.59	600.61	104.98	6.721	
13,850.00	11,620.00	13,863.80	11,720.23	53.35	53.26	-97.34	-2,281.21	887.05	707.18	601.36	105.82	6.683	
13,900.00	11,620.00	13,904.26	11,721.40	53.81	53.65	-97.41	-2,321.61	888.96	709.41	602.75	106.65	6.651	
13,950.00	11,620.00	13,944.08	11,722.34	54.29	54.04	-97.46	-2,361.34	891.44	712.34	604.84	107.50	6.627	
14,000.00	11,620.00	13,987.07	11,722.99	54.76	54.47	-97.48	-2,404.20	894.78	715.96	607.59	108.37	6.606	
14,050.00	11,620.00	14,060.47	11,722.76	55.25	55.20	-97.42	-2,477.43	899.62	718.91	609.29	109.62	6.558	
14,100.00	11,620.00	14,103.74	11,722.05	55.73	55.64	-97.34	-2,520.64	901.84	721.06	610.51	110.56	6.522	
14,150.00	11,620.00	14,139.51	11,721.96	56.23	56.01	-97.31	-2,556.33	904.29	724.15	612.74	111.40	6.500	
14,200.00	11,620.00	14,182.55	11,722.45	56.73	56.46	-97.32	-2,599.20	908.01	728.16	615.84	112.32	6.483	
14,250.00	11,620.00	14,260.87	11,722.92	57.23	57.27	-97.31	-2,677.34	913.28	731.23	617.55	113.67	6.433	
14,300.00	11,620.00	14,335.85	11,722.46	57.74	58.06	-97.25	-2,752.27	915.67	732.46	617.53	114.93	6.373	
14,350.00	11,620.00	14,396.65	11,721.42	58.26	58.69	-97.17	-2,813.07	916.06	732.34	616.28	116.06	6.310	
14,400.00	11,620.00	14,451.12	11,719.54	58.77	59.27	-97.03	-2,867.50	916.08	731.84	614.69	117.15	6.247	
14,450.00	11,620.00	14,514.04	11,716.87	59.30	59.93	-96.83	-2,930.36	915.42	730.75	612.45	118.31	6.177	
14,500.00	11,620.00	14,570.86	11,714.72	59.82	60.54	-96.68	-2,987.12	913.89	728.87	609.46	119.41	6.104	
14,550.00	11,620.00	14,620.34	11,714.13	60.35	61.07	-96.65	-3,036.56	912.29	726.89	606.41	120.48	6.033	
14,600.00	11,620.00	14,666.28	11,714.75	60.89	61.56	-96.72	-3,082.48	910.76	725.01	603.50	121.51	5.967	
14,650.00	11,620.00	14,709.49	11,715.69	61.43	62.03	-96.80	-3,125.66	909.66	723.56	601.02	122.54	5.905	
14,700.00	11,620.00	14,762.57	11,716.92	61.97	62.61	-96.91	-3,178.72	908.64	722.45	598.83	123.61	5.844	
14,750.00	11,620.00	14,832.87	11,716.30	62.52	63.38	-96.89	-3,248.97	906.12	720.31	595.54	124.77	5.773	
14,800.00	11,620.00	14,881.05	11,714.73	63.07	63.91	-96.79	-3,297.06	903.92	717.54	591.66	125.88	5.700	
14,850.00	11,620.00	14,929.49	11,712.90	63.62	64.44	-96.67	-3,345.42	901.84	714.87	587.87	127.00	5.629	
14,900.00	11,620.00	14,972.52	11,711.60	64.18	64.92	-96.58	-3,388.40	900.22	712.52	584.41	128.11	5.562	
14,950.00	11,620.00	15,015.97	11,711.01	64.74	65.40	-96.55	-3,431.83	898.90	710.62	581.41	129.21	5.500	
15,000.00	11,620.00	15,070.80	11,710.13	65.30	66.02	-96.50	-3,486.63	897.34	708.81	578.46	130.36	5.437	
15,050.00	11,620.00	15,126.67	11,707.59	65.87	66.65	-96.31	-3,542.41	895.48	706.59	575.05	131.54	5.372	
15,100.00	11,620.00	15,161.44	11,707.03	66.44	67.06	-96.28	-3,577.17	894.59	704.86	572.23	132.63	5.314	
15,150.00	11,620.00	15,199.89	11,707.95	67.02	67.50	-96.36	-3,615.59	894.00	703.92	570.22	133.70	5.265	
15,187.38	11,620.00	15,229.84	11,709.62	67.45	67.85	-96.50	-3,645.50	893.84	703.73	569.25	134.48	5.233	
15,200.00	11,620.00	15,240.15	11,710.22	67.59	67.97	-96.55	-3,655.79	893.86	703.75	569.01	134.74	5.223	
15,250.00	11,620.00	15,281.01	11,712.61	68.17	68.45	-96.74	-3,696.57	894.24	704.24	568.47	135.78	5.187	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 5.00 ft

Survey Program: 187-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
15,300.00	11,620.00	15,325.56	11,715.08	68.75	68.98	-96.93	-3,741.05	895.20	705.33	568.49	136.84	5.154	
15,350.00	11,620.00	15,374.53	11,716.47	69.34	69.57	-97.03	-3,789.98	896.56	706.58	568.59	137.98	5.121	
15,400.00	11,620.00	15,430.72	11,716.23	69.93	70.24	-97.00	-3,846.14	898.27	707.76	568.52	139.24	5.083	
15,450.00	11,620.00	15,493.61	11,714.30	70.52	70.99	-96.84	-3,908.98	899.39	708.15	567.57	140.58	5.037	
15,500.00	11,620.00	15,569.98	11,711.19	71.11	71.90	-96.60	-3,985.29	898.70	707.16	565.20	141.96	4.981	Alert
15,550.00	11,620.00	15,616.51	11,709.70	71.71	72.46	-96.49	-4,031.77	897.24	705.13	561.96	143.16	4.925	Alert
15,600.00	11,620.00	15,654.54	11,709.26	72.31	72.91	-96.47	-4,069.79	896.57	703.87	559.57	144.30	4.878	Alert
15,650.00	11,620.00	15,696.76	11,709.57	72.91	73.42	-96.50	-4,112.01	896.43	703.42	557.99	145.44	4.837	Alert
15,700.00	11,620.00	15,748.48	11,709.65	73.51	74.05	-96.50	-4,163.73	896.39	703.09	556.43	146.65	4.794	Alert
15,750.00	11,620.00	15,802.72	11,708.92	74.12	74.71	-96.45	-4,217.96	896.26	702.58	554.68	147.90	4.750	Alert
15,800.00	11,620.00	15,859.76	11,706.84	74.72	75.40	-96.29	-4,274.96	895.75	701.63	552.45	149.19	4.703	Alert
15,850.00	11,620.00	15,903.24	11,704.85	75.33	75.93	-96.13	-4,318.39	895.30	700.57	550.17	150.40	4.658	Alert
15,900.00	11,620.00	15,943.49	11,704.04	75.94	76.43	-96.07	-4,358.63	895.32	700.19	548.62	151.57	4.620	Alert
15,902.58	11,620.00	15,945.56	11,704.03	75.97	76.45	-96.07	-4,360.70	895.34	700.19	548.56	151.62	4.618	Alert
15,950.00	11,620.00	15,988.13	11,704.13	76.56	76.98	-96.08	-4,403.27	895.81	700.43	547.68	152.74	4.586	Alert
16,000.00	11,620.00	16,037.80	11,703.87	77.17	77.60	-96.05	-4,452.94	896.51	700.78	546.81	153.98	4.551	Alert
16,050.00	11,620.00	16,097.19	11,702.77	77.79	78.34	-95.96	-4,512.31	897.19	700.98	545.66	155.31	4.513	Alert
16,100.00	11,620.00	16,164.39	11,700.72	78.41	79.17	-95.80	-4,579.47	896.59	700.06	543.38	156.68	4.468	Alert
16,150.00	11,620.00	16,212.61	11,699.69	79.03	79.77	-95.73	-4,627.67	895.67	698.70	540.77	157.93	4.424	Alert
16,200.00	11,620.00	16,261.73	11,699.53	79.65	80.38	-95.73	-4,676.78	894.60	697.29	538.13	159.16	4.381	Alert
16,250.00	11,620.00	16,307.16	11,699.85	80.28	80.94	-95.76	-4,722.20	893.78	696.12	535.74	160.38	4.340	Alert
16,300.00	11,620.00	16,354.15	11,700.50	80.91	81.53	-95.82	-4,769.18	893.20	695.26	533.67	161.59	4.303	Alert
16,350.00	11,620.00	16,407.00	11,701.59	81.53	82.19	-95.92	-4,822.02	892.46	694.36	531.52	162.84	4.264	Alert
16,400.00	11,620.00	16,458.50	11,702.95	82.16	82.84	-96.04	-4,873.48	891.52	693.28	529.21	164.07	4.225	Alert
16,450.00	11,620.00	16,508.10	11,704.17	82.80	83.47	-96.15	-4,923.07	890.61	692.19	526.89	165.30	4.187	Alert
16,500.00	11,620.00	16,566.50	11,705.14	83.43	84.20	-96.25	-4,981.44	889.40	690.97	524.40	166.57	4.148	Alert
16,550.00	11,620.00	16,632.97	11,704.46	84.06	85.04	-96.22	-5,047.85	886.84	688.68	520.84	167.84	4.103	Alert
16,600.00	11,620.00	16,677.26	11,703.79	84.70	85.59	-96.18	-5,092.10	884.87	686.08	516.97	169.11	4.057	Alert
16,650.00	11,620.00	16,723.40	11,703.63	85.34	86.17	-96.19	-5,138.20	883.01	683.75	513.38	170.37	4.013	Alert
16,700.00	11,620.00	16,768.56	11,703.58	85.98	86.74	-96.20	-5,183.33	881.47	681.74	510.11	171.63	3.972	Alert
16,750.00	11,620.00	16,813.78	11,703.30	86.62	87.32	-96.19	-5,228.54	880.26	680.07	507.18	172.89	3.934	Alert
16,800.00	11,620.00	16,859.88	11,702.85	87.26	87.91	-96.16	-5,274.62	879.35	678.72	504.56	174.16	3.897	Alert
16,850.00	11,620.00	16,906.01	11,702.27	87.90	88.50	-96.12	-5,320.74	878.71	677.66	502.23	175.43	3.863	Alert
16,900.00	11,620.00	16,952.23	11,701.55	88.55	89.09	-96.07	-5,366.96	878.34	676.87	500.17	176.70	3.831	Alert
16,950.00	11,620.00	16,998.46	11,700.68	89.20	89.69	-96.00	-5,413.18	878.25	676.37	498.39	177.98	3.800	Alert
16,980.92	11,620.00	17,024.45	11,700.23	89.60	90.03	-95.96	-5,439.17	878.36	676.24	497.50	178.75	3.783	Alert
17,000.00	11,620.00	17,040.11	11,700.10	89.84	90.23	-95.95	-5,454.83	878.51	676.29	497.08	179.21	3.774	Alert
17,050.00	11,620.00	17,081.14	11,700.28	90.49	90.77	-95.96	-5,495.85	879.22	676.88	496.48	180.40	3.752	Alert
17,100.00	11,620.00	17,128.08	11,701.14	91.14	91.39	-96.02	-5,542.76	880.49	678.00	496.35	181.64	3.733	Alert
17,150.00	11,620.00	17,179.18	11,701.84	91.79	92.06	-96.07	-5,593.84	881.86	679.10	496.15	182.95	3.712	Alert
17,200.00	11,620.00	17,242.84	11,702.36	92.44	92.89	-96.11	-5,657.49	883.03	679.77	495.37	184.40	3.686	Alert
17,250.00	11,620.00	17,302.20	11,702.76	93.10	93.67	-96.15	-5,716.84	882.80	679.28	493.51	185.77	3.657	Alert
17,300.00	11,620.00	17,345.69	11,703.80	93.75	94.24	-96.24	-5,760.31	882.62	678.88	491.88	187.00	3.630	Alert
17,315.82	11,620.00	17,359.44	11,704.32	93.96	94.42	-96.29	-5,774.05	882.62	678.86	491.48	187.38	3.623	Alert
17,350.00	11,620.00	17,389.89	11,705.77	94.41	94.82	-96.41	-5,804.47	882.75	678.97	490.76	188.21	3.608	Alert
17,400.00	11,620.00	17,437.53	11,707.22	95.06	95.45	-96.53	-5,852.09	883.23	679.33	489.88	189.46	3.586	Alert
17,450.00	11,620.00	17,484.78	11,707.23	95.72	96.08	-96.52	-5,899.33	884.04	679.87	489.13	190.74	3.564	Alert
17,500.00	11,620.00	17,530.43	11,707.62	96.38	96.69	-96.55	-5,944.97	885.02	680.69	488.69	191.99	3.545	Alert
17,550.00	11,620.00	17,577.81	11,709.31	97.04	97.32	-96.68	-5,992.30	886.20	681.81	488.58	193.23	3.528	Alert
17,600.00	11,620.00	17,636.92	11,711.58	97.70	98.11	-96.86	-6,051.36	887.29	682.65	488.03	194.62	3.508	Alert
17,650.00	11,620.00	17,689.01	11,713.09	98.36	98.80	-96.99	-6,103.42	887.76	682.96	487.03	195.93	3.486	Alert
17,700.00	11,620.00	17,735.51	11,714.39	99.03	99.42	-97.09	-6,149.90	888.34	683.44	486.26	197.17	3.466	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 5.00 ft

Survey Program: 187-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
17,750.00	11,620.00	17,782.65	11,715.56	99.69	100.05	-97.19	-6,197.02	889.17	684.16	485.73	198.43	3.448	Alert
17,800.00	11,620.00	17,830.41	11,715.78	100.35	100.70	-97.19	-6,244.76	890.31	685.06	485.33	199.73	3.430	Alert
17,850.00	11,620.00	17,882.05	11,714.91	101.02	101.39	-97.11	-6,296.37	891.76	686.05	484.94	201.11	3.411	Alert
17,900.00	11,620.00	17,936.90	11,713.43	101.69	102.13	-96.98	-6,351.19	893.04	686.73	484.19	202.55	3.391	Alert
17,950.00	11,620.00	18,025.26	11,709.60	102.35	103.30	-96.67	-6,439.45	892.69	686.07	481.90	204.17	3.360	Alert
18,000.00	11,620.00	18,088.99	11,706.60	103.02	104.14	-96.45	-6,503.03	889.68	683.10	477.61	205.49	3.324	Alert
18,050.00	11,620.00	18,146.42	11,706.37	103.69	104.89	-96.47	-6,560.34	885.95	679.54	472.81	206.73	3.287	Alert
18,100.00	11,620.00	18,185.20	11,706.31	104.36	105.40	-96.49	-6,599.05	883.66	676.25	468.12	208.13	3.249	Alert
18,150.00	11,620.00	18,227.14	11,705.84	105.03	105.95	-96.47	-6,640.94	881.67	673.53	464.03	209.50	3.215	Alert
18,200.00	11,620.00	18,268.52	11,705.49	105.70	106.50	-96.46	-6,682.29	880.21	671.42	460.58	210.84	3.184	Alert
18,250.00	11,620.00	18,309.91	11,705.96	106.37	107.05	-96.51	-6,723.66	879.19	669.95	457.81	212.14	3.158	Alert
18,300.00	11,620.00	18,356.19	11,707.03	107.04	107.67	-96.61	-6,769.93	878.48	669.00	455.58	213.43	3.135	Alert
18,350.00	11,620.00	18,405.03	11,707.47	107.72	108.32	-96.66	-6,818.77	877.92	668.18	453.43	214.74	3.112	Alert
18,400.00	11,620.00	18,451.80	11,707.35	108.39	108.95	-96.65	-6,865.53	877.58	667.49	451.43	216.06	3.089	Alert
18,450.00	11,620.00	18,497.81	11,707.23	109.07	109.57	-96.65	-6,911.54	877.51	667.10	449.72	217.38	3.069	Alert
18,476.01	11,620.00	18,520.56	11,707.21	109.42	109.88	-96.65	-6,934.29	877.59	667.02	448.97	218.05	3.059	Alert
18,500.00	11,620.00	18,539.66	11,707.38	109.74	110.14	-96.66	-6,953.39	877.75	667.11	448.47	218.64	3.051	Alert
18,550.00	11,620.00	18,579.42	11,708.44	110.42	110.68	-96.75	-6,993.13	878.48	667.86	448.05	219.81	3.038	Alert
18,600.00	11,620.00	18,621.22	11,710.55	111.10	111.25	-96.92	-7,034.85	879.75	669.36	448.40	220.96	3.029	Alert
18,650.00	11,620.00	18,667.77	11,713.38	111.77	111.89	-97.14	-7,081.29	881.45	671.24	449.07	222.17	3.021	Alert
18,700.00	11,620.00	18,715.30	11,716.42	112.45	112.55	-97.38	-7,128.68	883.40	673.37	449.99	223.38	3.014	Alert
18,750.00	11,620.00	18,765.79	11,717.40	113.13	113.25	-97.44	-7,179.09	885.80	675.54	450.81	224.73	3.006	Alert
18,800.00	11,620.00	18,812.20	11,715.76	113.81	113.89	-97.28	-7,225.40	888.35	677.74	451.67	226.07	2.998	Alert
18,850.00	11,620.00	18,852.62	11,715.20	114.49	114.45	-97.21	-7,265.73	890.93	680.52	453.29	227.22	2.995	Alert
18,900.00	11,620.00	18,893.62	11,716.32	115.17	115.02	-97.27	-7,306.61	893.91	683.98	455.69	228.30	2.996	Alert
18,950.00	11,620.00	18,947.15	11,718.19	115.85	115.77	-97.39	-7,359.95	897.93	687.62	457.89	229.73	2.993	Alert
19,000.00	11,620.00	19,003.01	11,719.11	116.53	116.55	-97.42	-7,415.65	901.92	690.97	459.71	231.26	2.988	Alert
19,050.00	11,620.00	19,064.38	11,719.53	117.22	117.40	-97.42	-7,476.91	905.54	693.63	460.71	232.92	2.978	Alert
19,100.00	11,620.00	19,114.56	11,719.55	117.90	118.10	-97.40	-7,527.03	908.01	695.77	461.47	234.30	2.970	Alert
19,150.00	11,620.00	19,160.87	11,719.29	118.58	118.75	-97.36	-7,573.28	910.54	698.14	462.53	235.60	2.963	Alert
19,200.00	11,620.00	19,223.54	11,718.00	119.27	119.62	-97.22	-7,635.85	913.84	700.34	463.04	237.30	2.951	Alert
19,250.00	11,620.00	19,310.20	11,713.54	119.95	120.81	-96.85	-7,722.36	915.82	701.03	461.80	239.23	2.930	Alert
19,300.00	11,620.00	19,386.73	11,710.11	120.63	121.85	-96.60	-7,798.75	913.02	698.41	457.80	240.61	2.903	Alert
19,350.00	11,620.00	19,430.78	11,708.42	121.32	122.44	-96.48	-7,842.72	911.10	695.71	453.66	242.05	2.874	Alert
19,400.00	11,620.00	19,472.02	11,706.95	122.01	123.00	-96.38	-7,883.91	909.65	693.47	450.00	243.48	2.848	Alert
19,450.00	11,620.00	19,509.11	11,705.67	122.69	123.50	-96.28	-7,920.98	908.98	692.08	447.22	244.86	2.826	Alert
19,500.00	11,620.00	19,549.00	11,704.30	123.38	124.05	-96.17	-7,960.84	909.03	691.62	445.42	246.21	2.809	Alert
19,502.73	11,620.00	19,549.00	11,704.30	123.42	124.05	-96.17	-7,960.84	909.03	691.62	445.36	246.26	2.809	Alert
19,550.00	11,620.00	19,595.05	11,702.54	124.07	124.69	-96.02	-8,006.85	909.58	691.69	444.10	247.59	2.794	Alert
19,600.00	11,620.00	19,645.04	11,700.17	124.76	125.38	-95.82	-8,056.78	910.24	691.80	442.76	249.04	2.778	Alert
19,650.00	11,620.00	19,702.39	11,697.42	125.44	126.17	-95.59	-8,114.07	910.68	691.63	441.08	250.55	2.760	Alert
19,700.00	11,620.00	19,759.78	11,695.04	126.13	126.95	-95.40	-8,171.40	910.46	690.93	438.92	252.02	2.742	Alert
19,750.00	11,620.00	19,812.11	11,693.42	126.82	127.67	-95.28	-8,223.70	909.75	689.79	436.36	253.44	2.722	Alert
19,800.00	11,620.00	19,865.32	11,693.51	127.51	128.40	-95.29	-8,276.90	908.83	688.64	433.83	254.80	2.703	Alert
19,850.00	11,620.00	19,922.58	11,694.40	128.20	129.18	-95.38	-8,334.13	907.23	687.01	430.87	256.13	2.682	Alert
19,900.00	11,620.00	19,975.62	11,695.55	128.89	129.90	-95.50	-8,387.12	905.30	684.99	427.54	257.45	2.661	Alert
19,950.00	11,620.00	20,028.38	11,696.63	129.58	130.62	-95.61	-8,439.83	903.17	682.78	424.01	258.77	2.639	Alert
20,000.00	11,620.00	20,079.01	11,697.42	130.28	131.31	-95.69	-8,490.41	901.04	680.44	420.35	260.10	2.616	Alert
20,050.00	11,620.00	20,130.63	11,697.95	130.97	132.01	-95.76	-8,541.98	898.80	678.03	416.60	261.43	2.594	Alert
20,100.00	11,620.00	20,183.86	11,698.81	131.66	132.73	-95.86	-8,595.14	896.25	675.42	412.69	262.73	2.571	Alert
20,150.00	11,620.00	20,232.25	11,700.03	132.35	133.39	-95.98	-8,643.45	893.73	672.66	408.59	264.07	2.547	Alert
20,200.00	11,620.00	20,276.35	11,701.46	133.05	133.99	-96.13	-8,687.48	891.73	670.26	404.83	265.43	2.525	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1

Offset Site Error: 5.00 ft

Survey Program: 187-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
20,250.00	11,620.00	20,324.86	11,703.33	133.74	134.65	-96.31	-8,735.91	889.85	668.23	401.50	266.74	2.505	Alert
20,300.00	11,620.00	20,380.67	11,705.70	134.43	135.41	-96.54	-8,791.62	887.36	665.95	397.97	267.98	2.485	Minor Risk
20,350.00	11,620.00	20,430.07	11,707.96	135.13	136.09	-96.76	-8,840.90	884.87	663.39	394.13	269.26	2.464	Minor Risk
20,400.00	11,620.00	20,476.60	11,710.23	135.82	136.72	-96.98	-8,887.33	882.70	661.06	390.50	270.56	2.443	Minor Risk
20,450.00	11,620.00	20,530.98	11,712.90	136.52	137.46	-97.24	-8,941.59	880.23	658.81	387.02	271.79	2.424	Minor Risk
20,500.00	11,620.00	20,589.61	11,715.21	137.21	138.26	-97.48	-9,000.08	876.92	655.95	383.00	272.95	2.403	Minor Risk
20,550.00	11,620.00	20,630.69	11,716.39	137.91	138.82	-97.61	-9,041.08	874.70	653.14	378.78	274.36	2.381	Minor Risk
20,600.00	11,620.00	20,672.59	11,717.15	138.60	139.40	-97.70	-9,082.94	873.00	650.94	375.20	275.74	2.361	Minor Risk
20,650.00	11,620.00	20,720.69	11,717.73	139.30	140.06	-97.77	-9,131.02	871.51	649.18	372.09	277.08	2.343	Minor Risk
20,700.00	11,620.00	20,770.57	11,718.53	140.00	140.74	-97.86	-9,180.86	869.95	647.44	369.02	278.41	2.325	Minor Risk
20,750.00	11,620.00	20,816.29	11,719.69	140.69	141.37	-97.99	-9,226.54	868.61	645.85	366.11	279.74	2.309	Minor Risk
20,800.00	11,620.00	20,861.47	11,721.58	141.39	142.00	-98.17	-9,271.67	867.51	644.63	363.61	281.02	2.294	Minor Risk
20,850.00	11,620.00	20,905.52	11,723.65	142.09	142.61	-98.36	-9,315.66	866.76	643.82	361.55	282.27	2.281	Minor Risk
20,900.00	11,620.00	20,949.35	11,724.79	142.79	143.22	-98.47	-9,359.48	866.58	643.50	359.96	283.55	2.269	Minor Risk
20,908.79	11,620.00	20,957.06	11,724.90	142.91	143.33	-98.48	-9,367.19	866.61	643.49	359.72	283.77	2.268	Minor Risk, CC
20,950.00	11,620.00	20,994.50	11,725.32	143.49	143.85	-98.52	-9,404.63	866.89	643.62	358.77	284.85	2.260	Minor Risk
21,000.00	11,620.00	21,040.35	11,726.36	144.18	144.49	-98.60	-9,450.46	867.45	644.08	357.95	286.13	2.251	Minor Risk
21,050.00	11,620.00	21,090.71	11,727.76	144.88	145.20	-98.72	-9,500.80	868.23	644.76	357.30	287.46	2.243	Minor Risk
21,100.00	11,620.00	21,144.52	11,727.79	145.58	145.96	-98.72	-9,554.60	869.04	645.20	356.29	288.91	2.233	Minor Risk
21,150.00	11,620.00	21,200.34	11,726.46	146.28	146.74	-98.60	-9,610.39	869.69	645.28	354.85	290.43	2.222	Minor Risk
21,200.00	11,620.00	21,256.62	11,724.65	146.98	147.53	-98.44	-9,666.65	869.85	644.88	352.93	291.95	2.209	Minor Risk
21,250.00	11,620.00	21,301.22	11,722.80	147.68	148.15	-98.28	-9,711.21	870.08	644.51	351.12	293.39	2.197	Minor Risk
21,284.36	11,620.00	21,332.80	11,721.26	148.16	148.59	-98.14	-9,742.75	870.42	644.44	350.04	294.40	2.189	Minor Risk
21,300.00	11,620.00	21,347.16	11,720.49	148.38	148.80	-98.07	-9,757.09	870.64	644.45	349.60	294.86	2.186	Minor Risk
21,350.00	11,620.00	21,386.41	11,718.92	149.08	149.35	-97.93	-9,796.30	871.53	644.99	348.82	296.17	2.178	Minor Risk, ES
21,400.00	11,620.00	21,426.13	11,718.33	149.78	149.91	-97.86	-9,835.98	872.93	646.33	348.95	297.38	2.173	Minor Risk
21,450.00	11,620.00	21,474.33	11,718.36	150.48	150.60	-97.84	-9,884.13	875.08	648.23	349.49	298.75	2.170	Minor Risk
21,500.00	11,620.00	21,526.60	11,717.63	151.19	151.34	-97.75	-9,936.34	877.39	650.01	349.76	300.25	2.165	Minor Risk
21,550.00	11,620.00	21,576.85	11,716.15	151.89	152.05	-97.60	-9,986.53	879.59	651.69	349.94	301.74	2.160	Minor Risk
21,600.00	11,620.00	21,627.22	11,714.05	152.59	152.77	-97.39	-10,036.36	881.86	653.36	350.10	303.26	2.154	Minor Risk
21,650.00	11,620.00	21,676.68	11,711.62	153.29	153.48	-97.16	-10,086.15	884.18	655.05	350.27	304.78	2.149	Minor Risk
21,700.00	11,620.00	21,726.58	11,709.19	153.99	154.19	-96.93	-10,135.93	886.49	656.74	350.45	306.29	2.144	Minor Risk
21,750.00	11,620.00	21,776.48	11,706.76	154.70	154.90	-96.70	-10,185.72	888.80	658.45	350.64	307.81	2.139	Minor Risk
21,800.00	11,620.00	21,826.38	11,704.33	155.40	155.61	-96.47	-10,235.51	891.12	660.17	350.85	309.32	2.134	Minor Risk
21,850.00	11,620.00	21,876.28	11,701.90	156.10	156.32	-96.24	-10,285.30	893.43	661.90	351.06	310.83	2.129	Minor Risk
21,864.06	11,620.00	21,890.31	11,701.22	156.30	156.52	-96.18	-10,299.30	894.08	662.39	351.13	311.26	2.128	Minor Risk, 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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole — **Offset Site Error:** 5.00 ft

Survey Program: 150-MWD+HDGM — **Offset Well Error:** 0.00 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
0.00	0.00	0.00	0.00	0.50	0.00	-89.62	5.88	-888.97	889.11				
50.00	50.00	37.36	37.36	0.50	0.06	-89.62	5.88	-888.93	888.95	888.39	0.56	1,591.332	
100.00	100.00	90.13	90.13	0.52	0.14	-89.62	5.85	-888.73	888.76	888.10	0.65	1,358.450	
150.00	150.00	142.89	142.89	0.59	0.22	-89.63	5.81	-888.36	888.42	887.61	0.81	1,101.453	
200.00	200.00	194.62	194.61	0.70	0.39	-89.62	5.85	-887.87	887.94	886.85	1.09	815.570	
250.00	250.00	246.18	246.17	0.84	0.57	-89.61	6.11	-887.29	887.38	885.97	1.41	630.037	
300.00	300.00	294.68	294.67	0.99	0.74	-89.59	6.33	-886.75	886.82	885.09	1.73	512.233	
350.00	350.00	343.45	343.43	1.15	0.92	-89.59	6.34	-886.27	886.33	884.27	2.06	429.493	
400.00	400.00	392.82	392.80	1.31	1.10	-89.59	6.28	-885.84	885.90	883.49	2.40	368.505	
450.00	450.00	442.41	442.39	1.48	1.27	-89.60	6.22	-885.45	885.50	882.75	2.75	322.138	
500.00	500.00	492.85	492.83	1.65	1.45	-89.60	6.15	-885.04	885.09	881.99	3.10	285.581	
550.00	550.00	543.38	543.36	1.82	1.64	-89.61	6.06	-884.60	884.66	881.20	3.45	256.292	
600.00	600.00	594.05	594.03	1.99	1.82	-89.62	5.89	-884.13	884.19	880.38	3.81	232.318	
650.00	650.00	644.55	644.53	2.16	2.00	-89.63	5.65	-883.62	883.68	879.52	4.16	212.401	
700.00	700.00	694.90	694.87	2.34	2.18	-89.65	5.37	-883.09	883.16	878.64	4.52	195.598	
750.00	750.00	745.08	745.04	2.51	2.36	-89.67	5.14	-882.55	882.62	877.75	4.87	181.232	
800.00	800.00	796.20	796.17	2.69	2.54	-89.68	4.94	-881.96	882.04	876.81	5.23	168.675	
850.00	850.00	847.33	847.29	2.87	2.72	-89.69	4.72	-881.31	881.40	875.81	5.59	157.710	
900.00	900.00	897.01	896.96	3.04	2.90	-89.71	4.50	-880.64	880.72	874.78	5.94	148.183	
950.00	950.00	946.60	946.55	3.22	3.08	-89.72	4.31	-880.00	880.08	873.78	6.30	139.734	
1,000.00	1,000.00	996.27	996.21	3.40	3.26	-89.73	4.10	-879.38	879.46	872.80	6.65	132.180	
1,050.00	1,050.00	1,046.19	1,046.13	3.58	3.44	-89.74	3.94	-878.77	878.84	871.83	7.01	125.373	
1,100.00	1,100.00	1,096.50	1,096.44	3.75	3.61	-89.75	3.86	-878.20	878.25	870.89	7.36	119.332	
1,150.00	1,150.00	1,146.23	1,146.17	3.93	3.77	-89.75	3.90	-877.84	877.86	870.16	7.70	114.022	
1,200.00	1,200.00	1,197.40	1,197.34	4.11	3.94	-89.74	4.05	-877.68	877.69	869.65	8.04	109.140	
1,250.00	1,250.00	1,246.80	1,246.73	4.29	4.11	-89.72	4.22	-877.59	877.60	869.21	8.39	104.596	
1,300.00	1,300.00	1,296.19	1,296.13	4.46	4.28	-89.71	4.38	-877.53	877.54	868.80	8.74	100.418	
1,350.00	1,350.00	1,345.59	1,345.52	4.64	4.45	-89.70	4.52	-877.51	877.52	868.43	9.09	96.563	
1,360.24	1,360.24	1,345.71	1,345.64	4.68	4.48	-89.70	4.55	-877.51	877.52	868.36	9.16	95.810 CC	
1,400.00	1,400.00	1,384.60	1,384.53	4.82	4.61	-89.70	4.65	-877.52	877.54	868.10	9.43	93.038	
1,450.00	1,450.00	1,433.45	1,433.39	5.00	4.78	-89.69	4.74	-877.60	877.62	867.84	9.77	89.784	
1,500.00	1,500.00	1,483.94	1,483.87	5.18	4.95	-89.69	4.82	-877.71	877.73	867.60	10.12	86.703	
1,550.00	1,550.00	1,534.72	1,534.65	5.36	5.12	-89.68	4.93	-877.78	877.79	867.32	10.47	83.814	
1,600.00	1,600.00	1,584.97	1,584.90	5.53	5.29	-89.67	5.07	-877.81	877.83	867.00	10.83	81.087	
1,650.00	1,650.00	1,635.21	1,635.14	5.71	5.47	-89.66	5.20	-877.83	877.85	866.67	11.18	78.531	
1,700.00	1,700.00	1,685.46	1,685.39	5.89	5.64	-89.65	5.34	-877.84	877.86	866.33	11.53	76.129	
1,750.00	1,750.00	1,735.71	1,735.64	6.07	5.82	-89.64	5.48	-877.83	877.85	865.97	11.88	73.869	
1,800.00	1,800.00	1,785.76	1,785.69	6.25	5.99	-89.63	5.63	-877.82	877.84	865.60	12.24	71.723	
1,850.00	1,850.00	1,835.86	1,835.80	6.43	6.17	-89.62	5.80	-877.80	877.82	865.22	12.59	69.702	
1,900.00	1,900.00	1,885.97	1,885.90	6.61	6.35	-89.61	5.97	-877.77	877.79	864.84	12.95	67.790	
1,950.00	1,950.00	1,935.61	1,935.54	6.78	6.52	-89.60	6.16	-877.75	877.77	864.47	13.30	65.990	
1,959.57	1,959.57	1,945.04	1,944.97	6.82	6.55	-89.60	6.20	-877.74	877.77	864.40	13.37	65.659	
2,000.00	2,000.00	1,984.87	1,984.80	6.96	6.69	-89.58	6.37	-877.76	877.78	864.13	13.65	64.294	
2,050.00	2,050.00	2,034.12	2,034.05	7.14	6.86	-89.57	6.60	-877.81	877.84	863.83	14.00	62.686	
2,100.00	2,100.00	2,083.37	2,083.30	7.32	7.04	-89.55	6.86	-877.90	877.93	863.58	14.35	61.159	
2,150.00	2,150.00	2,132.87	2,132.80	7.50	7.21	-89.53	7.13	-878.04	878.07	863.36	14.71	59.708	
2,200.00	2,200.00	2,182.47	2,182.39	7.68	7.38	-89.52	7.40	-878.19	878.23	863.17	15.06	58.326	
2,250.00	2,250.00	2,232.06	2,231.99	7.86	7.55	-89.50	7.65	-878.37	878.41	863.00	15.41	57.009	
2,300.00	2,300.00	2,281.66	2,281.59	8.04	7.73	-89.48	7.91	-878.57	878.62	862.86	15.76	55.752	
2,350.00	2,350.00	2,331.83	2,331.76	8.22	7.90	-89.47	8.15	-878.79	878.83	862.72	16.11	54.542	
2,400.00	2,400.00	2,382.08	2,382.00	8.39	8.08	-89.45	8.39	-878.99	879.03	862.57	16.47	53.382	
2,450.00	2,450.00	2,432.32	2,432.24	8.57	8.25	-89.44	8.61	-879.17	879.22	862.40	16.82	52.270	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole — **Offset Site Error:** 5.00 ft

Survey Program: 150-MWD+HDGM — **Offset Well Error:** 0.00 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
2,500.00	2,500.00	2,482.56	2,482.48	8.75	8.43	-89.43	8.82	-879.34	879.39	862.22	17.17	51.204	
2,550.00	2,550.00	2,532.73	2,532.65	8.93	8.60	-136.32	9.01	-879.50	879.71	862.18	17.53	50.191 ES	
2,600.00	2,599.99	2,582.91	2,582.83	9.11	8.78	-136.34	9.19	-879.65	880.33	862.45	17.88	49.235	
2,650.00	2,649.98	2,633.08	2,633.00	9.28	8.95	-136.37	9.35	-879.79	881.26	863.03	18.23	48.337	
2,700.00	2,699.96	2,683.43	2,683.35	9.46	9.13	-136.42	9.50	-879.92	882.43	863.84	18.58	47.482	
2,750.00	2,749.94	2,734.17	2,734.09	9.64	9.31	-136.48	9.66	-880.01	883.57	864.63	18.94	46.652	
2,800.00	2,799.92	2,784.90	2,784.82	9.81	9.49	-136.53	9.82	-880.06	884.68	865.38	19.30	45.850	
2,850.00	2,849.90	2,835.64	2,835.56	9.99	9.67	-136.59	10.01	-880.07	885.74	866.09	19.65	45.074	
2,900.00	2,899.88	2,886.06	2,885.97	10.17	9.85	-136.64	10.20	-880.04	886.76	866.76	20.01	44.325	
2,950.00	2,949.86	2,936.27	2,936.19	10.34	10.02	-136.69	10.39	-879.99	887.77	867.41	20.36	43.601	
3,000.00	2,999.84	2,986.49	2,986.41	10.52	10.20	-136.74	10.59	-879.93	888.77	868.06	20.72	42.900	
3,050.00	3,049.81	3,036.71	3,036.63	10.70	10.38	-136.79	10.79	-879.86	889.76	868.69	21.07	42.223	
3,100.00	3,099.79	3,086.25	3,086.16	10.88	10.56	-136.85	10.99	-879.79	890.75	869.32	21.43	41.573	
3,150.00	3,149.77	3,135.69	3,135.60	11.05	10.73	-136.90	11.18	-879.75	891.77	869.99	21.78	40.947	
3,200.00	3,199.75	3,185.12	3,185.04	11.23	10.91	-136.95	11.38	-879.74	892.82	870.69	22.13	40.341	
3,250.00	3,249.73	3,234.56	3,234.48	11.41	11.09	-137.00	11.56	-879.76	893.91	871.42	22.48	39.756	
3,300.00	3,299.71	3,284.09	3,284.00	11.59	11.26	-137.05	11.79	-879.81	895.02	872.18	22.84	39.191	
3,350.00	3,349.69	3,333.61	3,333.52	11.76	11.44	-137.09	12.08	-879.88	896.16	872.96	23.19	38.643	
3,400.00	3,399.67	3,383.13	3,383.04	11.94	11.61	-137.13	12.43	-879.98	897.32	873.78	23.54	38.113	
3,450.00	3,449.65	3,433.08	3,432.99	12.12	11.79	-137.17	12.85	-880.11	898.51	874.61	23.90	37.597	
3,500.00	3,499.62	3,484.26	3,484.17	12.30	11.97	-137.21	13.24	-880.19	899.65	875.40	24.26	37.087	
3,550.00	3,549.60	3,535.45	3,535.36	12.48	12.16	-137.25	13.54	-880.21	900.73	876.12	24.62	36.589	
3,600.00	3,599.58	3,586.63	3,586.54	12.65	12.34	-137.30	13.76	-880.16	901.75	876.77	24.98	36.103	
3,650.00	3,649.56	3,638.01	3,637.92	12.83	12.52	-137.36	13.89	-880.03	902.69	877.36	25.34	35.628	
3,700.00	3,699.54	3,689.54	3,689.45	13.01	12.70	-137.42	13.97	-879.82	903.56	877.86	25.70	35.164	
3,750.00	3,749.52	3,741.07	3,740.98	13.19	12.88	-137.48	13.98	-879.52	904.33	878.28	26.05	34.710	
3,800.00	3,799.50	3,792.60	3,792.50	13.37	13.06	-137.55	13.94	-879.13	905.03	878.61	26.41	34.264	
3,850.00	3,849.48	3,843.94	3,843.84	13.54	13.24	-137.62	13.85	-878.66	905.64	878.87	26.77	33.831	
3,900.00	3,899.46	3,895.25	3,895.15	13.72	13.42	-137.69	13.71	-878.11	906.18	879.06	27.13	33.407	
3,950.00	3,949.44	3,946.57	3,946.46	13.90	13.60	-137.77	13.53	-877.49	906.65	879.17	27.48	32.991	
4,000.00	3,999.41	3,997.88	3,997.77	14.08	13.78	-137.84	13.30	-876.79	907.05	879.22	27.84	32.583	
4,050.00	4,049.39	4,049.02	4,048.90	14.26	13.95	-137.93	12.98	-876.02	907.39	879.19	28.19	32.185	
4,100.00	4,099.37	4,100.18	4,100.05	14.44	14.13	-138.02	12.53	-875.18	907.66	879.11	28.55	31.794	
4,150.00	4,149.35	4,151.33	4,151.20	14.61	14.31	-138.12	11.97	-874.28	907.86	878.96	28.90	31.411	
4,200.00	4,199.33	4,199.95	4,199.80	14.79	14.48	-138.22	11.34	-873.39	908.04	878.80	29.25	31.046	
4,250.00	4,249.31	4,246.38	4,246.22	14.97	14.64	-138.31	10.77	-872.69	908.40	878.81	29.59	30.703	
4,300.00	4,299.29	4,292.81	4,292.65	15.15	14.80	-138.40	10.25	-872.18	908.95	879.02	29.92	30.374	
4,350.00	4,349.27	4,339.24	4,339.08	15.33	14.95	-138.49	9.77	-871.85	909.69	879.43	30.26	30.060	
4,400.00	4,399.25	4,387.18	4,387.01	15.51	15.12	-138.58	9.32	-871.69	910.62	880.01	30.60	29.754	
4,450.00	4,449.22	4,437.17	4,437.00	15.69	15.29	-138.67	8.88	-871.54	911.58	880.63	30.95	29.450	
4,500.00	4,499.20	4,487.16	4,486.99	15.86	15.46	-138.75	8.44	-871.40	912.54	881.24	31.30	29.152	
4,550.00	4,549.18	4,537.16	4,536.98	16.04	15.63	-138.84	8.02	-871.25	913.50	881.85	31.65	28.861	
4,600.00	4,599.16	4,585.02	4,584.85	16.22	15.79	-138.92	7.64	-871.15	914.50	882.51	31.99	28.584	
4,650.00	4,649.14	4,631.71	4,631.53	16.40	15.95	-139.00	7.32	-871.21	915.67	883.34	32.33	28.322	
4,700.00	4,699.12	4,678.39	4,678.21	16.58	16.11	-139.07	7.07	-871.44	917.02	884.36	32.67	28.072	
4,750.00	4,749.10	4,725.06	4,724.88	16.76	16.27	-139.13	6.87	-871.83	918.56	885.55	33.00	27.832	
4,800.00	4,799.08	4,774.71	4,774.52	16.94	16.44	-139.20	6.71	-872.39	920.22	886.87	33.35	27.592	
4,850.00	4,849.06	4,826.39	4,826.21	17.12	16.62	-139.27	6.54	-872.89	921.81	888.11	33.71	27.348	
4,900.00	4,899.03	4,878.09	4,877.90	17.30	16.79	-139.34	6.36	-873.30	923.32	889.25	34.06	27.107	
4,950.00	4,949.01	4,929.79	4,929.59	17.47	16.97	-139.41	6.18	-873.61	924.73	890.31	34.42	26.868	
5,000.00	4,998.99	4,980.42	4,980.23	17.65	17.14	-139.48	6.02	-873.85	926.07	891.30	34.77	26.634	
5,050.00	5,048.97	5,030.99	5,030.80	17.83	17.32	-139.55	5.89	-874.05	927.38	892.26	35.12	26.405	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole — **Offset Site Error:** 5.00 ft

Survey Program: 150-MWD+HDGM — **Offset Well Error:** 0.00 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
5,100.00	5,098.95	5,081.57	5,081.37	18.01	17.49	-139.61	5.79	-874.23	928.67	893.19	35.47	26.179	
5,150.00	5,148.93	5,132.14	5,131.95	18.19	17.66	-139.67	5.74	-874.37	929.92	894.09	35.83	25.957	
5,200.00	5,198.91	5,180.97	5,180.77	18.37	17.83	-139.73	5.70	-874.53	931.19	895.02	36.17	25.744	
5,250.00	5,248.89	5,230.08	5,229.89	18.55	18.00	-139.79	5.65	-874.74	932.52	896.00	36.52	25.535	
5,300.00	5,298.87	5,279.19	5,279.00	18.73	18.17	-139.85	5.61	-874.99	933.88	897.02	36.87	25.331	
5,350.00	5,348.84	5,328.68	5,328.49	18.91	18.34	-139.91	5.57	-875.29	935.30	898.08	37.22	25.132	
5,400.00	5,398.82	5,378.95	5,378.75	19.09	18.51	-139.97	5.54	-875.59	936.71	899.14	37.57	24.933	
5,450.00	5,448.80	5,429.22	5,429.02	19.27	18.69	-140.02	5.55	-875.88	938.11	900.18	37.92	24.738	
5,500.00	5,498.78	5,479.49	5,479.29	19.44	18.86	-140.08	5.57	-876.15	939.49	901.21	38.27	24.546	
5,550.00	5,548.76	5,529.59	5,529.39	19.62	19.04	-140.13	5.62	-876.41	940.86	902.23	38.63	24.358	
5,600.00	5,598.74	5,579.54	5,579.34	19.80	19.21	-140.19	5.64	-876.66	942.23	903.25	38.98	24.173	
5,650.00	5,648.72	5,629.48	5,629.28	19.98	19.38	-140.24	5.63	-876.92	943.60	904.27	39.33	23.991	
5,700.00	5,698.70	5,679.43	5,679.23	20.16	19.56	-140.30	5.59	-877.17	944.97	905.29	39.68	23.813	
5,750.00	5,748.68	5,729.56	5,729.35	20.34	19.73	-140.36	5.54	-877.42	946.34	906.31	40.04	23.638	
5,800.00	5,798.65	5,779.73	5,779.53	20.52	19.90	-140.42	5.50	-877.67	947.71	907.32	40.39	23.465	
5,850.00	5,848.63	5,829.91	5,829.71	20.70	20.08	-140.47	5.48	-877.90	949.06	908.32	40.74	23.295	
5,900.00	5,898.61	5,880.09	5,879.89	20.88	20.25	-140.53	5.49	-878.12	950.40	909.31	41.09	23.127	
5,950.00	5,948.59	5,929.87	5,929.66	21.06	20.42	-140.58	5.44	-878.34	951.75	910.30	41.45	22.963	
6,000.00	5,998.57	5,979.59	5,979.38	21.24	20.60	-140.65	5.31	-878.57	953.10	911.31	41.80	22.803	
6,050.00	6,048.55	6,029.26	6,029.05	21.42	20.77	-140.70	5.24	-878.81	954.48	912.33	42.15	22.645	
6,100.00	6,098.53	6,076.93	6,076.73	21.60	20.94	-140.76	5.25	-879.07	955.88	913.39	42.49	22.495	
6,150.00	6,148.51	6,119.47	6,119.26	21.77	21.08	-140.79	5.43	-879.57	957.58	914.76	42.82	22.365	
6,200.00	6,198.49	6,162.01	6,161.79	21.95	21.23	-140.81	5.82	-880.42	959.66	916.52	43.14	22.247	
6,250.00	6,248.46	6,205.18	6,204.94	22.13	21.39	-140.81	6.46	-881.61	962.11	918.66	43.46	22.139	
6,300.00	6,298.44	6,248.32	6,248.04	22.31	21.54	-140.80	7.38	-883.13	964.92	921.14	43.78	22.042	
6,350.00	6,348.42	6,290.20	6,289.87	22.49	21.68	-140.78	8.45	-884.93	968.10	924.01	44.09	21.958	
6,400.00	6,398.40	6,331.85	6,331.44	22.67	21.83	-140.75	9.57	-887.08	971.71	927.31	44.40	21.887	
6,450.00	6,448.38	6,375.25	6,374.75	22.85	21.98	-140.71	10.82	-889.67	975.71	931.00	44.71	21.823	
6,500.00	6,498.36	6,419.87	6,419.26	23.03	22.14	-140.66	12.25	-892.59	979.99	934.95	45.03	21.762	
6,550.00	6,548.34	6,463.16	6,462.40	23.21	22.29	-140.61	13.77	-895.67	984.55	939.20	45.34	21.713	
6,600.00	6,598.32	6,504.99	6,504.08	23.39	22.44	-140.55	15.28	-898.97	989.49	943.84	45.64	21.678	
6,650.00	6,648.30	6,546.56	6,545.46	23.57	22.58	-140.50	16.80	-902.59	994.83	948.89	45.94	21.655	
6,700.00	6,698.27	6,587.31	6,586.01	23.75	22.73	-140.44	18.23	-906.48	1,000.60	954.38	46.23	21.645	
6,750.00	6,748.25	6,627.99	6,626.44	23.93	22.87	-140.39	19.58	-910.72	1,006.82	960.31	46.51	21.646	
6,800.00	6,798.23	6,667.96	6,666.13	24.11	23.01	-140.35	20.84	-915.25	1,013.49	966.70	46.79	21.661	
6,850.00	6,848.21	6,707.73	6,705.58	24.29	23.15	-140.30	22.04	-920.13	1,020.63	973.58	47.06	21.688	
6,900.00	6,898.19	6,750.01	6,747.47	24.47	23.30	-140.26	23.28	-925.69	1,028.22	980.87	47.35	21.716	
6,950.00	6,948.17	6,794.67	6,791.70	24.65	23.46	-140.21	24.58	-931.79	1,036.06	988.40	47.66	21.740	
7,000.00	6,998.15	6,842.85	6,839.37	24.83	23.63	-140.16	25.98	-938.56	1,044.09	996.09	48.00	21.753	
7,050.00	7,048.13	6,896.71	6,892.70	25.00	23.82	-140.10	27.65	-945.99	1,051.99	1,003.61	48.39	21.741	
7,100.00	7,098.11	6,944.43	6,939.95	25.18	23.99	-140.04	29.24	-952.46	1,059.77	1,011.05	48.72	21.751	
7,150.00	7,148.08	6,988.34	6,983.40	25.36	24.15	-139.98	30.84	-958.62	1,067.78	1,018.75	49.03	21.780	
7,200.00	7,198.06	7,037.41	7,031.92	25.54	24.33	-139.91	32.76	-965.69	1,075.97	1,026.60	49.37	21.792	
7,250.00	7,248.04	7,092.15	7,086.07	25.72	24.52	-139.83	34.85	-973.39	1,083.99	1,034.22	49.77	21.779	
7,300.00	7,298.02	7,148.02	7,141.39	25.90	24.73	-139.75	36.91	-980.94	1,091.75	1,041.57	50.18	21.758	
7,350.00	7,348.00	7,204.35	7,197.22	26.08	24.93	-139.69	38.87	-988.19	1,099.20	1,048.61	50.59	21.729	
7,400.00	7,397.98	7,246.90	7,239.38	26.26	25.08	-139.64	40.34	-993.70	1,106.67	1,055.79	50.88	21.750	
7,450.00	7,447.96	7,290.36	7,282.42	26.44	25.24	-139.58	41.89	-999.55	1,114.41	1,063.22	51.18	21.773	
7,500.00	7,497.94	7,346.46	7,337.97	26.62	25.44	-139.52	43.84	-1,007.11	1,122.16	1,070.56	51.59	21.750	
7,550.00	7,547.92	7,404.20	7,395.21	26.80	25.65	-139.46	45.71	-1,014.47	1,129.55	1,077.53	52.01	21.717	
7,600.00	7,597.89	7,449.50	7,440.12	26.98	25.82	-139.41	47.29	-1,020.24	1,136.92	1,084.59	52.33	21.725	
7,650.00	7,647.87	7,495.85	7,486.05	27.16	25.99	-139.35	49.06	-1,026.20	1,144.35	1,091.69	52.66	21.731	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole — **Offset Site Error:** 5.00 ft

Survey Program: 150-MWD+HDGM — **Offset Well Error:** 0.00 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
7,700.00	7,697.85	7,538.18	7,527.96	27.34	26.14	-139.29	50.87	-1,031.85	1,152.03	1,099.08	52.95	21.755	
7,750.00	7,747.83	7,580.98	7,570.29	27.52	26.30	-139.21	52.91	-1,037.84	1,160.01	1,106.76	53.25	21.784	
7,800.00	7,797.81	7,633.15	7,621.88	27.70	26.49	-139.12	55.43	-1,045.21	1,168.06	1,114.44	53.63	21.781	
7,850.00	7,847.79	7,686.30	7,674.46	27.88	26.69	-139.04	57.87	-1,052.58	1,175.99	1,121.98	54.01	21.773	
7,900.00	7,897.77	7,742.24	7,729.84	28.06	26.89	-138.96	60.30	-1,060.07	1,183.69	1,129.27	54.42	21.751	
7,950.00	7,947.75	7,793.32	7,780.44	28.24	27.08	-138.89	62.39	-1,066.69	1,191.18	1,136.39	54.79	21.742	
8,000.00	7,997.73	7,840.73	7,827.41	28.42	27.26	-138.83	64.34	-1,072.88	1,198.72	1,143.59	55.12	21.746	
8,050.00	8,047.70	7,890.41	7,876.61	28.60	27.44	-138.77	66.36	-1,079.41	1,206.31	1,150.83	55.48	21.743	
8,100.00	8,097.68	7,941.80	7,927.52	28.78	27.63	-138.71	68.39	-1,086.11	1,213.84	1,157.99	55.85	21.734	
8,150.00	8,147.66	7,987.40	7,972.71	28.96	27.80	-138.65	70.15	-1,092.05	1,221.38	1,165.20	56.17	21.743	
8,200.00	8,197.64	8,030.94	8,015.81	29.13	27.96	-138.60	71.94	-1,097.93	1,229.14	1,172.66	56.48	21.763	
8,250.00	8,247.62	8,082.10	8,066.43	29.31	28.15	-138.54	74.10	-1,104.99	1,237.06	1,180.21	56.85	21.761	
8,300.00	8,297.60	8,139.92	8,123.70	29.49	28.37	-138.47	76.31	-1,112.65	1,244.70	1,187.43	57.27	21.734	
8,350.00	8,347.58	8,183.74	8,167.11	29.67	28.53	-138.43	77.88	-1,118.37	1,252.26	1,194.68	57.58	21.748	
8,400.00	8,397.56	8,225.82	8,208.78	29.85	28.69	-138.39	79.40	-1,124.11	1,260.10	1,202.23	57.88	21.773	
8,450.00	8,447.54	8,273.93	8,256.38	30.03	28.87	-138.35	81.13	-1,130.87	1,268.16	1,209.94	58.22	21.783	
8,500.00	8,497.51	8,325.50	8,307.41	30.21	29.06	-138.30	82.90	-1,138.05	1,276.15	1,217.56	58.59	21.780	
8,550.00	8,547.49	8,386.42	8,367.75	30.39	29.29	-138.26	84.76	-1,146.24	1,283.92	1,224.88	59.04	21.747	
8,600.00	8,597.47	8,449.92	8,430.74	30.57	29.52	-138.24	86.20	-1,154.10	1,291.15	1,231.65	59.50	21.699	
8,650.00	8,647.45	8,500.45	8,480.90	30.75	29.71	-138.22	87.50	-1,160.15	1,298.18	1,238.31	59.87	21.685	
8,700.00	8,697.43	8,557.69	8,537.73	30.93	29.93	-138.19	89.15	-1,166.75	1,304.99	1,244.71	60.28	21.650	
8,750.00	8,747.41	8,618.37	8,598.03	31.11	30.15	-138.16	90.88	-1,173.28	1,311.42	1,250.70	60.71	21.601	
8,800.00	8,797.39	8,676.70	8,656.05	31.29	30.37	-138.13	92.63	-1,179.13	1,317.46	1,256.34	61.13	21.553	
8,850.00	8,847.37	8,735.01	8,714.06	31.47	30.58	-138.08	94.65	-1,184.59	1,323.19	1,261.65	61.54	21.501	
8,900.00	8,897.35	8,773.87	8,752.71	31.65	30.73	-138.05	95.99	-1,188.38	1,329.07	1,267.25	61.83	21.497	
8,950.00	8,947.33	8,816.74	8,795.34	31.83	30.89	-138.02	97.47	-1,192.70	1,335.15	1,273.02	62.14	21.487	
9,000.00	8,997.30	8,855.38	8,833.73	32.01	31.03	-137.99	98.83	-1,196.86	1,341.58	1,279.16	62.42	21.494	
9,050.00	9,047.28	8,893.93	8,871.99	32.19	31.17	-137.96	100.23	-1,201.33	1,348.40	1,285.71	62.69	21.508	
9,100.00	9,097.26	8,957.35	8,934.94	32.37	31.41	-137.91	102.44	-1,208.74	1,355.31	1,292.16	63.15	21.462	
9,150.00	9,147.24	9,016.53	8,993.78	32.55	31.63	-137.89	104.13	-1,214.87	1,361.51	1,297.94	63.57	21.416	
9,200.00	9,197.22	9,057.80	9,034.81	32.73	31.79	-137.88	104.99	-1,219.22	1,367.83	1,303.96	63.87	21.415	
9,250.00	9,247.20	9,103.79	9,080.51	32.91	31.96	-137.89	105.62	-1,224.33	1,374.45	1,310.24	64.20	21.408	
9,300.00	9,297.18	9,178.04	9,154.37	33.09	32.23	-137.95	105.51	-1,231.89	1,380.61	1,315.88	64.73	21.330	
9,350.00	9,347.16	9,259.61	9,235.65	33.27	32.53	-138.07	104.07	-1,238.51	1,385.77	1,320.50	65.27	21.230	
9,400.00	9,397.14	9,320.26	9,296.17	33.45	32.75	-138.17	102.61	-1,242.38	1,390.04	1,324.35	65.69	21.161	
9,450.00	9,447.11	9,372.71	9,348.50	33.63	32.93	-138.26	101.41	-1,245.56	1,394.18	1,328.13	66.06	21.106	
9,500.00	9,497.09	9,429.69	9,405.38	33.81	33.14	-138.35	100.17	-1,248.82	1,398.16	1,331.71	66.45	21.041	
9,550.00	9,547.07	9,487.13	9,462.73	33.99	33.34	-138.44	98.97	-1,251.80	1,401.86	1,335.02	66.84	20.973	
9,600.00	9,597.05	9,537.97	9,513.50	34.17	33.52	-138.52	97.92	-1,254.32	1,405.45	1,338.25	67.20	20.914	
9,650.00	9,647.03	9,597.53	9,572.98	34.35	33.73	-138.62	96.76	-1,257.07	1,408.89	1,341.29	67.60	20.841	
9,700.00	9,697.01	9,671.61	9,647.01	34.53	33.99	-138.71	95.73	-1,259.62	1,411.75	1,343.69	68.06	20.742	
9,750.00	9,746.99	9,724.37	9,699.72	34.71	34.18	-138.82	93.93	-1,260.55	1,413.77	1,345.34	68.43	20.661	
9,800.00	9,796.97	9,755.00	9,730.23	34.88	34.28	-138.95	91.37	-1,261.43	1,416.42	1,347.73	68.70	20.619	
9,850.00	9,846.95	9,775.72	9,750.73	35.06	34.35	-139.08	88.55	-1,262.34	1,419.92	1,351.01	68.91	20.607	
9,900.00	9,896.92	9,802.00	9,776.43	35.24	34.44	-139.31	83.28	-1,263.88	1,424.37	1,355.25	69.12	20.606 SF	
9,950.00	9,946.90	9,828.87	9,802.27	35.42	34.53	-139.61	76.18	-1,265.76	1,429.67	1,360.34	69.33	20.621	
10,000.00	9,996.88	9,865.73	9,836.96	35.60	34.64	-140.12	64.06	-1,268.53	1,435.64	1,366.06	69.58	20.633	
10,050.00	10,046.86	9,905.52	9,873.08	35.78	34.76	-140.80	47.62	-1,271.24	1,441.97	1,372.13	69.84	20.647	
10,100.00	10,096.84	9,930.32	9,894.82	35.96	34.83	-141.28	35.81	-1,272.98	1,449.08	1,379.09	69.99	20.705	
10,150.00	10,146.82	9,944.00	9,906.54	36.14	34.87	-141.56	28.84	-1,274.01	1,457.22	1,387.19	70.03	20.807	
10,200.00	10,196.80	9,971.61	9,929.64	36.32	34.94	-142.17	13.91	-1,276.34	1,466.35	1,396.20	70.16	20.901	
10,250.00	10,246.78	9,991.00	9,945.42	36.50	34.99	-142.61	2.79	-1,278.20	1,476.66	1,406.46	70.20	21.036	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole

Survey Program: 150-MWD+HDGM

Offset Site Error: 5.00 ft

Offset Well Error: 0.00 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
10,300.00	10,296.76	10,012.68	9,962.65	36.68	35.04	-143.13	-10.18	-1,280.43	1,488.03	1,417.80	70.23	21.188	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1

Offset Site Error: 5.00 ft

Survey Program: 147-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	0.00	0.00	0.50	0.50	-89.58	6.17	-839.01	839.16				
50.00	50.00	37.14	37.14	0.50	0.50	-89.58	6.18	-838.98	839.00	838.00	1.01	834.722	
100.00	100.00	89.15	89.15	0.52	0.52	-89.58	6.21	-838.83	838.86	837.82	1.04	810.059	
150.00	150.00	141.16	141.16	0.59	0.54	-89.57	6.28	-838.55	838.59	837.46	1.13	739.688	
200.00	200.00	191.88	191.88	0.70	0.63	-89.56	6.38	-838.19	838.24	836.91	1.33	629.471	
250.00	250.00	242.45	242.44	0.84	0.75	-89.55	6.54	-837.80	837.86	836.26	1.59	526.575	
300.00	300.00	291.95	291.95	0.99	0.89	-89.54	6.67	-837.42	837.47	835.59	1.88	445.188	
350.00	350.00	341.32	341.31	1.15	1.05	-89.54	6.73	-837.07	837.11	834.92	2.19	382.142	
400.00	400.00	390.03	390.02	1.31	1.20	-89.54	6.77	-836.78	836.82	834.30	2.51	333.350	
450.00	450.00	439.96	439.95	1.48	1.37	-89.53	6.82	-836.54	836.58	833.74	2.84	294.343	
500.00	500.00	491.85	491.84	1.65	1.54	-89.53	6.83	-836.22	836.27	833.08	3.19	262.453	
550.00	550.00	542.25	542.24	1.82	1.71	-89.53	6.81	-835.82	835.88	832.35	3.53	236.817	
600.00	600.00	591.78	591.76	1.99	1.88	-89.53	6.81	-835.45	835.50	831.63	3.87	215.732	
650.00	650.00	641.35	641.34	2.16	2.05	-89.53	6.84	-835.10	835.15	830.93	4.22	197.967	
700.00	700.00	690.94	690.93	2.34	2.23	-89.53	6.87	-834.78	834.82	830.26	4.57	182.827	
750.00	750.00	740.54	740.53	2.51	2.40	-89.52	6.93	-834.48	834.52	829.61	4.92	169.787	
800.00	800.00	789.63	789.61	2.69	2.57	-89.52	6.98	-834.22	834.26	829.00	5.26	158.511	
850.00	850.00	838.71	838.69	2.87	2.75	-89.52	6.99	-834.02	834.05	828.44	5.61	148.621	
900.00	900.00	887.93	887.91	3.04	2.92	-89.52	6.98	-833.87	833.90	827.94	5.96	139.871	
950.00	950.00	937.57	937.55	3.22	3.09	-89.52	6.96	-833.75	833.78	827.46	6.31	132.055	
1,000.00	1,000.00	987.21	987.20	3.40	3.27	-89.52	6.94	-833.65	833.68	827.01	6.67	125.058	
1,050.00	1,050.00	1,036.86	1,036.84	3.58	3.45	-89.52	6.92	-833.57	833.60	826.58	7.02	118.760	
1,100.00	1,100.00	1,086.76	1,086.74	3.75	3.62	-89.53	6.90	-833.51	833.54	826.16	7.37	113.066	
1,150.00	1,150.00	1,136.85	1,136.83	3.93	3.80	-89.53	6.84	-833.44	833.47	825.75	7.73	107.892	
1,200.00	1,200.00	1,186.94	1,186.92	4.11	3.97	-89.54	6.74	-833.37	833.40	825.32	8.08	103.166	
1,250.00	1,250.00	1,237.03	1,237.01	4.29	4.15	-89.55	6.61	-833.30	833.32	824.89	8.43	98.832	
1,300.00	1,300.00	1,287.56	1,287.54	4.46	4.32	-89.56	6.43	-833.20	833.23	824.44	8.79	94.839	
1,350.00	1,350.00	1,338.11	1,338.09	4.64	4.50	-89.57	6.21	-833.08	833.10	823.96	9.14	91.150	
1,399.09	1,399.09	1,384.81	1,384.79	4.82	4.66	-89.59	6.02	-833.02	833.04	823.57	9.47	87.930	
1,400.00	1,400.00	1,385.68	1,385.66	4.82	4.66	-89.59	6.02	-833.02	833.04	823.56	9.48	87.873	
1,450.00	1,450.00	1,434.17	1,434.15	5.00	4.83	-89.60	5.85	-833.08	833.10	823.28	9.82	84.806	
1,500.00	1,500.00	1,484.37	1,484.35	5.18	5.00	-89.61	5.70	-833.17	833.19	823.02	10.17	81.911	
1,550.00	1,550.00	1,534.58	1,534.56	5.36	5.17	-89.62	5.56	-833.25	833.27	822.75	10.52	79.206	
1,600.00	1,600.00	1,584.78	1,584.76	5.53	5.34	-89.63	5.42	-833.31	833.33	822.46	10.87	76.673	
1,650.00	1,650.00	1,634.62	1,634.60	5.71	5.50	-89.64	5.30	-833.37	833.39	822.17	11.22	74.304	
1,700.00	1,700.00	1,684.23	1,684.21	5.89	5.67	-89.64	5.21	-833.45	833.46	821.90	11.56	72.085	
1,750.00	1,750.00	1,733.85	1,733.83	6.07	5.84	-89.65	5.14	-833.55	833.56	821.66	11.91	69.996	
1,800.00	1,800.00	1,783.46	1,783.44	6.25	6.01	-89.65	5.10	-833.67	833.69	821.43	12.26	68.027	
1,850.00	1,850.00	1,834.95	1,834.93	6.43	6.18	-89.65	5.08	-833.77	833.79	821.18	12.61	66.114	
1,900.00	1,900.00	1,886.72	1,886.70	6.61	6.36	-89.66	5.02	-833.76	833.78	820.81	12.97	64.291	
1,941.81	1,941.81	1,927.53	1,927.51	6.76	6.51	-89.66	4.95	-833.74	833.76	820.50	13.26	62.872	
1,950.00	1,950.00	1,935.54	1,935.52	6.78	6.53	-89.66	4.94	-833.74	833.76	820.44	13.32	62.601	
2,000.00	2,000.00	1,984.57	1,984.55	6.96	6.71	-89.67	4.83	-833.79	833.80	820.13	13.67	61.000	
2,050.00	2,050.00	2,034.67	2,034.65	7.14	6.88	-89.68	4.71	-833.85	833.87	819.85	14.02	59.472	
2,100.00	2,100.00	2,085.07	2,085.05	7.32	7.05	-89.69	4.58	-833.91	833.93	819.55	14.38	58.011	
2,150.00	2,150.00	2,136.58	2,136.55	7.50	7.24	-89.69	4.47	-833.91	833.92	819.18	14.74	56.593	
2,200.00	2,200.00	2,187.48	2,187.46	7.68	7.42	-89.70	4.37	-833.82	833.83	818.74	15.09	55.243	
2,250.00	2,250.00	2,237.44	2,237.41	7.86	7.59	-89.71	4.23	-833.71	833.73	818.28	15.45	53.962	
2,300.00	2,300.00	2,287.39	2,287.37	8.04	7.77	-89.72	4.03	-833.61	833.62	817.82	15.81	52.739	
2,350.00	2,350.00	2,337.35	2,337.33	8.22	7.95	-89.74	3.78	-833.52	833.53	817.36	16.16	51.570	
2,400.00	2,400.00	2,386.27	2,386.25	8.39	8.12	-89.76	3.50	-833.44	833.45	816.93	16.51	50.468	
2,415.02	2,415.02	2,400.74	2,400.72	8.45	8.17	-89.77	3.41	-833.44	833.44	816.82	16.62	50.151	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1 — Offset Site Error: 5.00 ft

Survey Program: 147-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
2,450.00	2,450.00	2,434.46	2,434.43	8.57	8.29	-89.78	3.21	-833.46	833.47	816.61	16.86	49.430	
2,500.00	2,500.00	2,482.64	2,482.62	8.75	8.46	-89.80	2.93	-833.59	833.60	816.39	17.21	48.439	
2,550.00	2,550.00	2,530.82	2,530.80	8.93	8.63	-136.73	2.65	-833.82	834.00	816.44	17.55	47.508	
2,600.00	2,599.99	2,581.71	2,581.68	9.11	8.80	-136.77	2.38	-834.12	834.77	816.86	17.91	46.610	
2,650.00	2,649.98	2,633.95	2,633.92	9.28	8.99	-136.84	2.13	-834.30	835.74	817.47	18.27	45.749	
2,700.00	2,699.96	2,684.99	2,684.96	9.46	9.17	-136.92	1.92	-834.37	836.85	818.22	18.62	44.934	
2,750.00	2,749.94	2,735.82	2,735.79	9.64	9.34	-137.00	1.68	-834.39	837.93	818.95	18.98	44.148	
2,800.00	2,799.92	2,786.64	2,786.61	9.81	9.52	-137.09	1.41	-834.35	838.96	819.62	19.34	43.389	
2,850.00	2,849.90	2,837.47	2,837.44	9.99	9.70	-137.18	1.12	-834.27	839.94	820.24	19.69	42.654	
2,900.00	2,899.88	2,887.40	2,887.37	10.17	9.88	-137.26	0.85	-834.16	840.90	820.85	20.05	41.948	
2,950.00	2,949.86	2,937.19	2,937.15	10.34	10.06	-137.35	0.60	-834.05	841.86	821.46	20.40	41.267	
3,000.00	2,999.84	2,986.29	2,986.25	10.52	10.23	-137.43	0.39	-833.98	842.86	822.11	20.75	40.616	
3,050.00	3,049.81	3,035.79	3,035.75	10.70	10.41	-137.51	0.20	-833.96	843.91	822.81	21.10	39.987	
3,100.00	3,099.79	3,086.02	3,085.98	10.88	10.59	-137.58	0.06	-833.94	844.96	823.50	21.46	39.373	
3,150.00	3,149.77	3,135.73	3,135.70	11.05	10.77	-137.66	-0.04	-833.91	846.01	824.19	21.81	38.782	
3,200.00	3,199.75	3,184.88	3,184.84	11.23	10.94	-137.73	-0.21	-833.92	847.09	824.93	22.17	38.216	
3,250.00	3,249.73	3,234.80	3,234.76	11.41	11.12	-137.82	-0.46	-833.96	848.22	825.70	22.52	37.665	
3,300.00	3,299.71	3,285.36	3,285.32	11.59	11.30	-137.89	-0.65	-833.98	849.31	826.44	22.88	37.126	
3,350.00	3,349.69	3,334.68	3,334.64	11.76	11.47	-137.97	-0.81	-833.99	850.41	827.18	23.23	36.610	
3,400.00	3,399.67	3,383.45	3,383.41	11.94	11.64	-138.05	-1.03	-834.06	851.57	827.99	23.58	36.116	
3,450.00	3,449.65	3,433.72	3,433.68	12.12	11.82	-138.13	-1.33	-834.18	852.76	828.83	23.93	35.630	
3,500.00	3,499.62	3,484.52	3,484.48	12.30	12.00	-138.22	-1.67	-834.24	853.92	829.63	24.29	35.153	
3,550.00	3,549.60	3,536.10	3,536.06	12.48	12.19	-138.32	-2.06	-834.24	855.01	830.36	24.65	34.682	
3,600.00	3,599.58	3,587.77	3,587.72	12.65	12.37	-138.41	-2.52	-834.13	856.00	830.99	25.01	34.220	
3,650.00	3,649.56	3,639.44	3,639.39	12.83	12.55	-138.52	-3.04	-833.92	856.90	831.52	25.38	33.768	
3,700.00	3,699.54	3,691.51	3,691.46	13.01	12.74	-138.62	-3.63	-833.60	857.69	831.95	25.74	33.322	
3,750.00	3,749.52	3,745.05	3,744.99	13.19	12.93	-138.74	-4.37	-833.07	858.32	832.21	26.11	32.876	
3,800.00	3,799.50	3,797.11	3,797.03	13.37	13.12	-138.87	-5.22	-832.37	858.76	832.29	26.47	32.441	
3,850.00	3,849.48	3,847.42	3,847.34	13.54	13.30	-138.99	-6.06	-831.63	859.16	832.33	26.83	32.024	
3,900.00	3,899.46	3,898.39	3,898.29	13.72	13.48	-139.11	-6.92	-830.86	859.53	832.34	27.19	31.614	
3,950.00	3,949.44	3,949.85	3,949.74	13.90	13.66	-139.24	-7.89	-829.99	859.82	832.27	27.55	31.209	
4,000.00	3,999.41	4,001.31	4,001.18	14.08	13.85	-139.38	-8.96	-829.03	860.03	832.12	27.91	30.813	
4,050.00	4,049.39	4,052.75	4,052.60	14.26	14.03	-139.53	-10.15	-827.97	860.16	831.88	28.27	30.423	
4,100.00	4,099.37	4,103.78	4,103.60	14.44	14.21	-139.68	-11.38	-826.84	860.21	831.58	28.63	30.043	
4,150.00	4,149.35	4,154.76	4,154.55	14.61	14.40	-139.83	-12.64	-825.65	860.22	831.22	28.99	29.670	
4,200.00	4,199.33	4,205.74	4,205.49	14.79	14.58	-139.98	-13.90	-824.40	860.17	830.81	29.35	29.304	
4,250.00	4,249.31	4,256.72	4,256.44	14.97	14.76	-140.14	-15.18	-823.09	860.06	830.35	29.71	28.946	
4,300.00	4,299.29	4,305.88	4,305.56	15.15	14.94	-140.30	-16.60	-821.81	859.97	829.90	30.07	28.601	
4,350.00	4,349.27	4,355.68	4,355.32	15.33	15.12	-140.48	-18.29	-820.53	859.90	829.48	30.42	28.263	
4,400.00	4,399.25	4,406.73	4,406.33	15.51	15.30	-140.65	-19.84	-819.19	859.81	829.03	30.79	27.929	
4,450.00	4,449.22	4,461.76	4,461.32	15.69	15.50	-140.80	-21.10	-817.63	859.60	828.45	31.16	27.589	
4,500.00	4,499.20	4,520.66	4,520.17	15.86	15.71	-140.95	-22.08	-815.45	858.94	827.40	31.54	27.236	
4,550.00	4,549.18	4,587.55	4,586.97	16.04	15.94	-141.08	-22.56	-812.02	857.54	825.61	31.93	26.859	
4,600.00	4,599.16	4,651.00	4,650.26	16.22	16.16	-141.15	-22.07	-807.63	855.18	822.88	32.30	26.475	
4,650.00	4,649.14	4,710.29	4,709.35	16.40	16.37	-141.15	-20.64	-802.86	852.21	819.55	32.66	26.090	
4,700.00	4,699.12	4,766.09	4,764.89	16.58	16.56	-141.10	-18.53	-797.93	848.78	815.77	33.02	25.706	
4,750.00	4,749.10	4,821.53	4,820.01	16.76	16.75	-141.01	-15.85	-792.70	845.03	811.66	33.37	25.322	
4,800.00	4,799.08	4,871.16	4,869.34	16.94	16.93	-140.92	-13.24	-787.91	841.15	807.43	33.72	24.944	
4,850.00	4,849.06	4,921.18	4,919.06	17.12	17.10	-140.82	-10.52	-783.04	837.23	803.16	34.07	24.573	
4,900.00	4,899.03	4,970.05	4,967.62	17.30	17.27	-140.72	-7.88	-778.32	833.35	798.93	34.42	24.210	
4,950.00	4,949.01	5,018.88	5,016.16	17.47	17.43	-140.62	-5.27	-773.66	829.53	794.75	34.77	23.857	
5,000.00	4,998.99	5,067.65	5,064.62	17.65	17.60	-140.50	-2.27	-769.09	825.77	790.65	35.12	23.512	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1

Offset Site Error: 5.00 ft

Survey Program: 147-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
5,050.00	5,048.97	5,117.65	5,114.28	17.83	17.77	-140.34	1.28	-764.48	822.06	786.59	35.47	23.175	
5,100.00	5,098.95	5,169.12	5,165.38	18.01	17.95	-140.15	5.11	-759.67	818.29	782.46	35.82	22.842	
5,150.00	5,148.93	5,217.76	5,213.66	18.19	18.12	-139.98	8.81	-755.09	814.47	778.30	36.17	22.515	
5,200.00	5,198.91	5,264.79	5,260.37	18.37	18.29	-139.81	12.31	-750.79	810.82	774.29	36.52	22.199	
5,250.00	5,248.89	5,315.07	5,310.30	18.55	18.46	-139.62	16.05	-746.31	807.28	770.40	36.88	21.892	
5,300.00	5,298.87	5,367.32	5,362.17	18.73	18.64	-139.41	20.28	-741.53	803.62	766.39	37.23	21.586	
5,350.00	5,348.84	5,419.09	5,413.51	18.91	18.83	-139.17	24.77	-736.66	799.83	762.25	37.58	21.283	
5,400.00	5,398.82	5,470.71	5,464.68	19.09	19.01	-138.92	29.42	-731.70	795.94	758.00	37.93	20.982	
5,450.00	5,448.80	5,518.30	5,511.86	19.27	19.18	-138.68	33.74	-727.13	792.06	753.77	38.29	20.688	
5,500.00	5,498.78	5,565.82	5,558.97	19.44	19.34	-138.45	37.98	-722.69	788.34	749.70	38.64	20.403	
5,550.00	5,548.76	5,615.37	5,608.12	19.62	19.52	-138.20	42.40	-718.15	784.71	745.72	38.99	20.125	
5,600.00	5,598.74	5,664.97	5,657.30	19.80	19.70	-137.95	46.89	-713.61	781.11	741.77	39.35	19.852	
5,650.00	5,648.72	5,713.30	5,705.23	19.98	19.87	-137.70	51.31	-709.24	777.58	737.88	39.70	19.587	
5,700.00	5,698.70	5,761.75	5,753.28	20.16	20.04	-137.44	55.79	-704.94	774.15	734.09	40.05	19.328	
5,750.00	5,748.68	5,810.27	5,801.41	20.34	20.22	-137.18	60.29	-700.71	770.81	730.40	40.41	19.076	
5,800.00	5,798.65	5,859.51	5,850.26	20.52	20.39	-136.91	64.85	-696.50	767.57	726.80	40.76	18.830	
5,850.00	5,848.63	5,911.51	5,901.85	20.70	20.58	-136.64	69.54	-691.97	764.27	723.15	41.12	18.587	
5,900.00	5,898.61	5,965.91	5,955.82	20.88	20.77	-136.36	74.24	-687.04	760.81	719.33	41.48	18.343	
5,950.00	5,948.59	6,024.26	6,013.68	21.06	20.99	-136.09	78.95	-681.19	756.88	715.05	41.83	18.094	
6,000.00	5,998.57	6,074.17	6,063.16	21.24	21.17	-135.87	82.70	-675.84	752.61	710.42	42.19	17.840	
6,050.00	6,048.55	6,121.28	6,109.89	21.42	21.34	-135.68	86.06	-670.93	748.50	705.95	42.55	17.593	
6,100.00	6,098.53	6,167.85	6,156.12	21.60	21.51	-135.50	89.22	-666.25	744.58	701.68	42.90	17.355	
6,150.00	6,148.51	6,214.27	6,202.22	21.77	21.68	-135.33	92.27	-661.81	740.90	697.64	43.26	17.127	
6,200.00	6,198.49	6,262.74	6,250.39	21.95	21.85	-135.16	95.36	-657.34	737.41	693.79	43.62	16.907	
6,250.00	6,248.46	6,311.99	6,299.34	22.13	22.03	-134.98	98.46	-652.84	733.97	690.00	43.97	16.691	
6,300.00	6,298.44	6,365.91	6,352.93	22.31	22.23	-134.81	101.65	-647.83	730.45	686.12	44.33	16.477	
6,350.00	6,348.42	6,420.99	6,407.66	22.49	22.43	-134.66	104.45	-642.34	726.58	681.90	44.69	16.260	
6,400.00	6,398.40	6,468.49	6,454.87	22.67	22.60	-134.55	106.65	-637.54	722.64	677.59	45.04	16.043	
6,450.00	6,448.38	6,516.53	6,502.62	22.85	22.78	-134.44	108.82	-632.80	718.82	673.42	45.40	15.832	
6,500.00	6,498.36	6,564.26	6,550.08	23.03	22.96	-134.33	110.96	-628.23	715.14	669.38	45.76	15.628	
6,550.00	6,548.34	6,612.43	6,598.00	23.21	23.13	-134.21	113.16	-623.75	711.61	665.49	46.12	15.430	
6,600.00	6,598.32	6,662.87	6,648.18	23.39	23.32	-134.11	115.32	-619.09	708.10	661.63	46.48	15.236	
6,650.00	6,648.30	6,716.64	6,701.67	23.57	23.51	-134.01	117.32	-614.05	704.53	657.69	46.83	15.043	
6,700.00	6,698.27	6,779.53	6,764.19	23.75	23.75	-133.98	118.68	-607.35	700.27	653.09	47.18	14.843	
6,750.00	6,748.25	6,837.43	6,821.66	23.93	23.96	-134.01	119.17	-600.31	695.21	647.69	47.52	14.630	
6,800.00	6,798.23	6,893.89	6,877.62	24.11	24.17	-134.03	119.75	-592.87	689.66	641.80	47.86	14.410	
6,850.00	6,848.21	6,936.29	6,919.65	24.29	24.33	-134.02	120.43	-587.34	684.18	635.94	48.24	14.184	
6,900.00	6,898.19	6,979.89	6,962.91	24.47	24.49	-133.99	121.46	-582.01	679.14	630.53	48.61	13.973	
6,950.00	6,948.17	7,031.21	7,013.85	24.65	24.68	-133.93	122.90	-575.92	674.29	625.33	48.96	13.772	
7,000.00	6,998.15	7,083.10	7,065.33	24.83	24.88	-133.87	124.35	-569.60	669.28	619.96	49.31	13.572	
7,050.00	7,048.13	7,121.12	7,103.09	25.00	25.02	-133.83	125.40	-565.29	664.68	614.99	49.69	13.376	
7,100.00	7,098.11	7,160.50	7,142.26	25.18	25.16	-133.79	126.46	-561.43	660.86	610.80	50.06	13.202	
7,150.00	7,148.08	7,204.73	7,186.32	25.36	25.32	-133.75	127.71	-557.69	657.71	607.30	50.42	13.046	
7,200.00	7,198.06	7,251.21	7,232.62	25.54	25.49	-133.67	129.34	-554.01	654.85	604.08	50.77	12.898	
7,250.00	7,248.04	7,299.22	7,280.46	25.72	25.67	-133.57	131.29	-550.40	652.21	601.08	51.13	12.756	
7,300.00	7,298.02	7,348.02	7,329.10	25.90	25.85	-133.47	133.25	-546.83	649.67	598.19	51.49	12.618	
7,350.00	7,348.00	7,395.58	7,376.50	26.08	26.02	-133.38	135.08	-543.46	647.26	595.41	51.84	12.485	
7,400.00	7,397.98	7,442.65	7,423.43	26.26	26.19	-133.30	136.73	-540.35	645.06	592.86	52.20	12.358	
7,450.00	7,447.96	7,490.73	7,471.39	26.44	26.37	-133.24	138.28	-537.36	643.06	590.50	52.55	12.236	
7,500.00	7,497.94	7,539.25	7,519.80	26.62	26.54	-133.18	139.76	-534.47	641.17	588.26	52.91	12.118	
7,550.00	7,547.92	7,587.83	7,568.29	26.80	26.72	-133.13	141.19	-531.68	639.40	586.13	53.27	12.004	
7,600.00	7,597.89	7,636.44	7,616.81	26.98	26.90	-133.09	142.54	-529.00	637.73	584.11	53.62	11.893	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1

Survey Program: 147-MWD+HDGM

Offset Site Error: 5.00 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
7,650.00	7,647.87	7,684.96	7,665.24	27.16	27.07	-133.05	143.83	-526.44	636.18	582.20	53.98	11.786	
7,700.00	7,697.85	7,733.47	7,713.67	27.34	27.25	-133.01	145.06	-523.99	634.74	580.41	54.33	11.683	
7,750.00	7,747.83	7,780.56	7,760.70	27.52	27.42	-132.99	146.19	-521.77	633.46	578.78	54.68	11.585	
7,800.00	7,797.81	7,827.45	7,807.53	27.70	27.58	-132.97	147.22	-519.80	632.43	577.40	55.03	11.492	
7,850.00	7,847.79	7,875.95	7,855.98	27.88	27.76	-132.97	148.21	-517.96	631.59	576.20	55.38	11.404	
7,900.00	7,897.77	7,924.76	7,904.76	28.06	27.93	-132.97	149.12	-516.20	630.84	575.11	55.74	11.318	
7,950.00	7,947.75	7,972.95	7,952.91	28.24	28.10	-132.97	149.99	-514.57	630.21	574.13	56.09	11.236	
8,000.00	7,997.73	8,021.06	8,000.99	28.42	28.28	-132.97	150.88	-513.10	629.73	573.30	56.44	11.158	
8,050.00	8,047.70	8,068.43	8,048.34	28.60	28.44	-132.98	151.74	-511.81	629.43	572.65	56.78	11.085	
8,096.18	8,093.86	8,112.14	8,092.03	28.76	28.60	-132.99	152.46	-510.81	629.34	572.24	57.10	11.021 CC	
8,100.00	8,097.68	8,115.76	8,095.65	28.78	28.61	-132.99	152.52	-510.73	629.34	572.21	57.13	11.016	
8,150.00	8,147.66	8,164.85	8,144.72	28.96	28.79	-133.01	153.28	-509.76	629.40	571.92	57.48	10.950	
8,200.00	8,197.64	8,214.06	8,193.92	29.13	28.96	-133.04	154.03	-508.85	629.52	571.69	57.83	10.885	
8,250.00	8,247.62	8,261.09	8,240.94	29.31	29.12	-133.06	154.67	-508.13	629.79	571.61	58.18	10.826 ES	
8,300.00	8,297.60	8,308.17	8,288.01	29.49	29.29	-133.11	155.14	-507.64	630.29	571.78	58.52	10.771	
8,350.00	8,347.58	8,358.24	8,338.08	29.67	29.46	-133.17	155.48	-507.23	630.91	572.04	58.87	10.717	
8,400.00	8,397.56	8,408.30	8,388.14	29.85	29.64	-133.25	155.69	-506.84	631.52	572.29	59.23	10.663	
8,450.00	8,447.54	8,456.77	8,436.61	30.03	29.81	-133.32	155.89	-506.51	632.20	572.62	59.57	10.612	
8,500.00	8,497.51	8,505.48	8,485.32	30.21	29.98	-133.39	156.15	-506.29	632.98	573.06	59.92	10.564	
8,550.00	8,547.49	8,553.83	8,533.66	30.39	30.15	-133.43	156.67	-506.16	633.88	573.61	60.27	10.518	
8,600.00	8,597.47	8,603.61	8,583.44	30.57	30.32	-133.46	157.45	-506.09	634.85	574.24	60.62	10.473	
8,650.00	8,647.45	8,654.22	8,634.05	30.75	30.49	-133.49	158.19	-505.99	635.80	574.83	60.97	10.428	
8,700.00	8,697.43	8,702.93	8,682.74	30.93	30.66	-133.53	158.71	-505.90	636.73	575.42	61.31	10.385	
8,750.00	8,747.41	8,750.87	8,730.69	31.11	30.82	-133.58	159.18	-505.99	637.87	576.22	61.65	10.346	
8,800.00	8,797.39	8,799.10	8,778.91	31.29	30.98	-133.63	159.61	-506.22	639.13	577.14	61.99	10.310	
8,850.00	8,847.37	8,848.09	8,827.90	31.47	31.15	-133.69	159.99	-506.55	640.49	578.15	62.33	10.275	
8,900.00	8,897.35	8,896.50	8,876.30	31.65	31.31	-133.74	160.47	-506.99	641.97	579.30	62.67	10.244	
8,950.00	8,947.33	8,944.90	8,924.70	31.83	31.47	-133.79	160.98	-507.49	643.52	580.51	63.01	10.213	
9,000.00	8,997.30	8,994.74	8,974.54	32.01	31.64	-133.84	161.50	-508.11	645.18	581.82	63.35	10.184	
9,050.00	9,047.28	9,043.34	9,023.12	32.19	31.80	-133.91	161.84	-508.79	646.90	583.21	63.69	10.157	
9,100.00	9,097.26	9,093.31	9,073.09	32.37	31.97	-133.99	161.94	-509.55	648.67	584.63	64.04	10.129	
9,150.00	9,147.24	9,143.48	9,123.26	32.55	32.13	-134.09	161.95	-510.30	650.44	586.05	64.39	10.102	
9,200.00	9,197.22	9,193.05	9,172.82	32.73	32.30	-134.19	161.87	-511.05	652.19	587.47	64.73	10.076	
9,250.00	9,247.20	9,241.99	9,221.75	32.91	32.46	-134.30	161.64	-511.86	654.02	588.95	65.07	10.051	
9,300.00	9,297.18	9,290.19	9,269.95	33.09	32.62	-134.42	161.26	-512.75	655.94	590.54	65.40	10.029	
9,350.00	9,347.16	9,337.85	9,317.59	33.27	32.78	-134.55	160.90	-513.79	658.03	592.30	65.73	10.011	
9,400.00	9,397.14	9,386.80	9,366.52	33.45	32.94	-134.67	160.57	-514.99	660.27	594.20	66.07	9.993	
9,450.00	9,447.11	9,436.63	9,416.33	33.63	33.11	-134.79	160.25	-516.24	662.53	596.11	66.42	9.975	
9,500.00	9,497.09	9,488.01	9,467.70	33.81	33.28	-134.91	159.95	-517.49	664.76	597.99	66.77	9.955	
9,550.00	9,547.07	9,540.09	9,519.77	33.99	33.45	-135.03	159.64	-518.60	666.85	599.71	67.14	9.933	
9,600.00	9,597.05	9,591.55	9,571.22	34.17	33.62	-135.15	159.33	-519.55	668.79	601.30	67.49	9.909	
9,650.00	9,647.03	9,642.93	9,622.59	34.35	33.79	-135.27	159.01	-520.40	670.63	602.78	67.85	9.884	
9,700.00	9,697.01	9,692.84	9,672.49	34.53	33.96	-135.38	158.73	-521.16	672.42	604.23	68.19	9.860	
9,750.00	9,746.99	9,743.27	9,722.92	34.71	34.13	-135.49	158.49	-521.93	674.22	605.67	68.55	9.836	
9,800.00	9,796.97	9,796.67	9,776.32	34.88	34.31	-135.62	158.13	-522.58	675.85	606.94	68.91	9.807	
9,850.00	9,846.95	9,849.34	9,828.98	35.06	34.49	-135.76	157.57	-522.96	677.24	607.96	69.28	9.776	
9,900.00	9,896.92	9,900.16	9,879.80	35.24	34.66	-135.90	156.92	-523.21	678.52	608.88	69.63	9.744	
9,950.00	9,946.90	9,952.53	9,932.13	35.42	34.84	-136.14	155.16	-523.39	679.71	609.71	70.00	9.711	
10,000.00	9,996.88	9,999.33	9,978.55	35.60	35.00	-136.70	149.42	-523.51	680.85	610.52	70.32	9.682	
10,050.00	10,046.86	10,041.64	10,019.90	35.78	35.13	-137.51	140.52	-523.96	682.50	611.89	70.62	9.665	
10,100.00	10,096.84	10,087.15	10,063.21	35.96	35.27	-138.75	126.63	-524.75	684.84	613.93	70.91	9.657	
10,150.00	10,146.82	10,139.88	10,111.48	36.14	35.42	-140.59	105.48	-525.16	687.44	616.20	71.24	9.649	

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 Tomb.Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1

Offset Site Error: 5.00 ft

Survey Program: 147-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
10,200.00	10,196.80	10,186.07	10,151.44	36.32	35.54	-142.57	82.35	-524.67	690.38	618.87	71.51	9.654	
10,250.00	10,246.78	10,224.72	10,182.98	36.50	35.62	-144.46	60.05	-523.87	694.41	622.73	71.68	9.687	
10,300.00	10,296.76	10,258.40	10,208.84	36.68	35.70	-146.27	38.50	-522.91	699.99	628.22	71.76	9.754	
10,350.00	10,346.73	10,288.22	10,230.52	36.86	35.75	-147.97	18.07	-521.93	707.41	635.69	71.72	9.863	
10,400.00	10,396.71	10,314.26	10,248.55	37.04	35.79	-149.52	-0.70	-521.01	716.88	645.33	71.56	10.018	
10,450.00	10,446.69	10,336.62	10,263.17	37.22	35.83	-150.89	-17.60	-520.17	728.58	657.34	71.24	10.226	
10,500.00	10,496.67	10,358.85	10,276.86	37.40	35.86	-152.30	-35.08	-519.27	742.57	671.73	70.83	10.483	
10,550.00	10,546.65	10,382.17	10,290.50	37.58	35.91	-153.80	-53.96	-518.14	758.69	688.33	70.36	10.783	
10,600.00	10,596.63	10,402.51	10,301.79	37.76	35.97	-155.16	-70.84	-516.98	776.89	707.12	69.77	11.135	
10,650.00	10,646.62	10,419.63	10,310.80	37.94	36.02	-156.41	-85.36	-515.90	796.84	727.78	69.06	11.538	
10,700.00	10,696.62	10,435.24	10,318.58	38.12	36.06	-157.58	-98.84	-514.83	818.33	750.05	68.28	11.985	
10,750.00	10,746.62	10,450.54	10,325.84	38.30	36.10	-111.68	-112.26	-513.71	841.53	774.08	67.45	12.476	
10,800.00	10,796.62	10,466.42	10,333.12	38.47	36.15	-112.73	-126.33	-512.51	866.58	799.95	66.63	13.007	
10,850.00	10,846.62	10,481.37	10,339.77	38.65	36.19	-113.71	-139.68	-511.37	893.33	827.54	65.79	13.579	
10,900.00	10,896.62	10,492.00	10,344.37	38.83	36.22	-114.40	-149.22	-510.54	921.69	856.80	64.88	14.205	
10,950.00	10,946.62	10,509.69	10,351.82	39.00	36.27	-115.55	-165.20	-509.14	951.49	887.35	64.14	14.835	
11,000.00	10,996.62	10,522.98	10,357.25	39.18	36.31	-116.41	-177.28	-508.06	982.65	919.31	63.34	15.513	
11,050.00	11,046.62	10,539.00	10,363.59	39.36	36.36	-117.44	-191.93	-506.73	1,015.07	952.44	62.64	16.206	
11,100.00	11,096.56	10,539.00	10,363.59	39.53	36.36	59.13	-191.93	-506.73	1,047.94	986.29	61.65	16.998	
11,150.00	11,146.12	10,558.68	10,371.03	39.69	36.42	54.53	-210.08	-505.09	1,080.10	1,019.07	61.02	17.699	
11,200.00	11,194.92	10,571.71	10,375.72	39.84	36.46	50.71	-222.19	-504.03	1,111.44	1,051.15	60.29	18.436	
11,250.00	11,242.61	10,586.00	10,380.63	39.98	36.51	47.27	-235.56	-502.88	1,141.65	1,082.07	59.59	19.159	
11,300.00	11,288.80	10,599.39	10,385.03	40.12	36.55	44.26	-248.17	-501.85	1,170.52	1,111.63	58.89	19.877	
11,350.00	11,333.15	10,613.81	10,389.54	40.25	36.60	41.60	-261.82	-500.84	1,197.85	1,139.62	58.23	20.570	
11,400.00	11,375.33	10,633.00	10,395.18	40.37	36.66	39.19	-280.12	-499.64	1,223.48	1,165.80	57.68	21.213	
11,450.00	11,415.01	10,645.77	10,398.71	40.48	36.70	37.25	-292.38	-498.93	1,247.17	1,190.11	57.05	21.859	
11,500.00	11,451.88	10,663.57	10,403.34	40.59	36.76	35.51	-309.54	-498.01	1,268.80	1,212.26	56.54	22.440	
11,550.00	11,485.68	10,681.00	10,407.54	40.70	36.81	34.05	-326.44	-497.20	1,288.22	1,232.16	56.06	22.978	
11,600.00	11,516.14	10,696.64	10,410.99	40.82	36.87	32.85	-341.67	-496.58	1,305.39	1,249.78	55.61	23.474	
11,650.00	11,543.03	10,711.84	10,414.01	40.94	36.92	31.87	-356.57	-496.11	1,320.27	1,265.07	55.21	23.916	
11,700.00	11,566.14	10,728.00	10,416.84	41.05	36.97	31.07	-372.47	-495.77	1,332.80	1,277.93	54.87	24.290	
11,750.00	11,585.30	10,747.72	10,419.89	41.17	37.03	30.44	-391.96	-495.51	1,342.82	1,288.19	54.63	24.579	
11,800.00	11,600.37	10,768.61	10,422.72	41.28	37.10	29.99	-412.65	-495.39	1,350.18	1,295.72	54.47	24.789	
11,850.00	11,611.22	10,801.00	10,426.29	41.40	37.21	29.70	-444.84	-495.54	1,354.97	1,300.52	54.45	24.885	
11,900.00	11,617.78	10,817.37	10,427.81	41.51	37.27	29.62	-461.13	-495.72	1,356.75	1,302.37	54.38	24.949	
11,950.00	11,620.00	10,852.84	10,430.81	41.62	37.40	29.74	-496.48	-496.17	1,355.46	1,300.96	54.50	24.869	
12,000.00	11,620.00	10,895.00	10,433.86	41.74	37.55	29.84	-538.52	-496.80	1,352.81	1,298.12	54.70	24.734	
12,050.00	11,620.00	10,927.18	10,435.84	41.88	37.68	29.90	-570.64	-497.26	1,350.60	1,295.74	54.85	24.622	
12,100.00	11,620.00	10,966.94	10,437.88	42.01	37.84	29.97	-610.34	-497.67	1,348.79	1,293.74	55.05	24.500	
12,150.00	11,620.00	11,006.73	10,439.47	42.17	38.00	30.02	-650.10	-497.91	1,347.36	1,292.10	55.27	24.380	
12,200.00	11,620.00	11,046.56	10,440.62	42.33	38.17	30.06	-689.91	-497.98	1,346.31	1,290.83	55.48	24.266	
12,250.00	11,620.00	11,087.41	10,441.34	42.51	38.36	30.08	-730.75	-497.88	1,345.64	1,289.92	55.71	24.153	
12,300.00	11,620.00	11,136.31	10,442.00	42.69	38.59	30.10	-779.65	-497.73	1,345.13	1,289.15	55.98	24.027	
12,350.00	11,620.00	11,185.21	10,442.66	42.90	38.82	30.12	-828.55	-497.66	1,344.67	1,288.40	56.27	23.895	
12,398.44	11,620.00	11,221.80	10,442.89	43.10	39.02	30.13	-865.14	-497.58	1,344.49	1,287.97	56.53	23.785	
12,400.00	11,620.00	11,223.04	10,442.89	43.10	39.03	30.13	-866.37	-497.58	1,344.49	1,287.96	56.53	23.782	
12,450.00	11,620.00	11,262.45	10,442.74	43.33	39.23	30.13	-905.79	-497.41	1,344.70	1,287.89	56.81	23.669	
12,500.00	11,620.00	11,311.01	10,442.24	43.56	39.50	30.12	-954.34	-497.15	1,345.17	1,288.05	57.12	23.548	
12,550.00	11,620.00	11,362.09	10,441.77	43.81	39.79	30.12	-1,005.42	-496.91	1,345.61	1,288.15	57.46	23.417	
12,600.00	11,620.00	11,417.43	10,441.41	44.06	40.12	30.11	-1,060.76	-496.67	1,345.94	1,288.10	57.83	23.272	
12,650.00	11,620.00	11,473.13	10,441.33	44.33	40.46	30.11	-1,116.46	-496.45	1,346.05	1,287.83	58.23	23.118	
12,700.00	11,620.00	11,525.11	10,441.33	44.60	40.80	30.11	-1,168.44	-496.09	1,346.04	1,287.42	58.62	22.962	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1

Survey Program: 147-MWD+HDGM

Offset Site Error: 5.00 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
12,750.00	11,620.00	11,578.76	10,441.35	44.89	41.16	30.11	-1,222.09	-495.53	1,345.92	1,286.88	59.04	22.799	
12,800.00	11,620.00	11,633.76	10,441.57	45.18	41.54	30.10	-1,277.08	-494.92	1,345.63	1,286.16	59.47	22.628	
12,850.00	11,620.00	11,691.14	10,442.06	45.49	41.95	30.10	-1,334.46	-494.25	1,345.12	1,285.18	59.94	22.442	
12,900.00	11,620.00	11,749.44	10,442.87	45.80	42.37	30.10	-1,392.74	-493.39	1,344.30	1,283.88	60.42	22.251	
12,950.00	11,620.00	11,796.41	10,443.58	46.13	42.73	30.10	-1,439.70	-492.66	1,343.41	1,282.55	60.87	22.072	
13,000.00	11,620.00	11,845.54	10,444.26	46.46	43.11	30.10	-1,488.82	-491.91	1,342.59	1,281.26	61.33	21.892	
13,050.00	11,620.00	11,899.34	10,445.05	46.81	43.54	30.09	-1,542.61	-491.03	1,341.69	1,279.86	61.84	21.698	
13,100.00	11,620.00	11,950.29	10,445.91	47.15	43.95	30.09	-1,593.55	-490.12	1,340.68	1,278.34	62.33	21.509	
13,150.00	11,620.00	11,996.86	10,446.73	47.52	44.33	30.09	-1,640.10	-489.51	1,339.74	1,276.91	62.83	21.324	
13,200.00	11,620.00	12,039.55	10,447.48	47.88	44.69	30.11	-1,682.78	-489.19	1,338.95	1,275.64	63.31	21.148	
13,250.00	11,620.00	12,075.76	10,447.85	48.26	45.00	30.12	-1,718.99	-489.10	1,338.61	1,274.83	63.78	20.988	
13,258.42	11,620.00	12,081.85	10,447.88	48.32	45.05	30.12	-1,725.09	-489.10	1,338.60	1,274.74	63.86	20.962	
13,300.00	11,620.00	12,111.97	10,447.87	48.64	45.31	30.13	-1,755.20	-489.17	1,338.78	1,274.53	64.25	20.837	
13,350.00	11,620.00	12,160.78	10,447.62	49.04	45.73	30.15	-1,804.01	-489.40	1,339.28	1,274.48	64.81	20.666	
13,400.00	11,620.00	12,213.18	10,447.43	49.43	46.19	30.16	-1,856.41	-489.65	1,339.71	1,274.33	65.38	20.490	
13,450.00	11,620.00	12,269.02	10,447.37	49.84	46.69	30.18	-1,912.25	-489.81	1,339.99	1,273.99	66.00	20.302	
13,500.00	11,620.00	12,324.99	10,447.47	50.25	47.20	30.19	-1,968.22	-489.75	1,340.04	1,273.42	66.62	20.115	
13,501.08	11,620.00	12,326.19	10,447.47	50.26	47.21	30.19	-1,969.42	-489.75	1,340.04	1,273.41	66.63	20.111	
13,550.00	11,620.00	12,358.83	10,447.21	50.68	47.52	30.19	-2,002.06	-489.64	1,340.40	1,273.27	67.12	19.970	
13,600.00	11,620.00	12,397.34	10,446.56	51.10	47.88	30.18	-2,040.57	-489.46	1,341.16	1,273.51	67.64	19.827	
13,650.00	11,620.00	12,439.84	10,445.48	51.54	48.28	30.16	-2,083.05	-489.25	1,342.28	1,274.08	68.20	19.682	
13,700.00	11,620.00	12,483.33	10,444.23	51.98	48.70	30.14	-2,126.51	-489.20	1,343.66	1,274.90	68.76	19.541	
13,750.00	11,620.00	12,536.91	10,442.64	52.43	49.22	30.12	-2,180.08	-489.31	1,345.15	1,275.76	69.39	19.385	
13,800.00	11,620.00	12,596.23	10,441.32	52.88	49.80	30.11	-2,239.37	-489.48	1,346.34	1,276.27	70.07	19.215	
13,850.00	11,620.00	12,653.58	10,440.36	53.35	50.38	30.11	-2,296.72	-489.47	1,347.22	1,276.47	70.75	19.042	
13,900.00	11,620.00	12,708.36	10,439.60	53.81	50.93	30.09	-2,351.49	-489.18	1,347.84	1,276.42	71.42	18.873	
13,950.00	11,620.00	12,758.86	10,438.95	54.29	51.44	30.08	-2,402.00	-488.86	1,348.39	1,276.33	72.07	18.710	
14,000.00	11,620.00	12,818.23	10,438.37	54.76	52.06	30.07	-2,461.36	-488.54	1,348.84	1,276.06	72.78	18.532	
14,050.00	11,620.00	12,885.71	10,438.73	55.25	52.76	30.09	-2,528.83	-488.40	1,348.72	1,275.13	73.58	18.329	
14,100.00	11,620.00	12,934.39	10,439.34	55.73	53.28	30.11	-2,577.51	-488.39	1,348.32	1,274.05	74.28	18.153	
14,150.00	11,620.00	12,984.32	10,440.00	56.23	53.81	30.14	-2,627.44	-488.41	1,347.92	1,272.93	74.99	17.975	
14,200.00	11,620.00	13,032.80	10,440.59	56.73	54.33	30.16	-2,675.91	-488.40	1,347.55	1,271.85	75.69	17.803	
14,250.00	11,620.00	13,080.92	10,441.08	57.23	54.85	30.18	-2,724.03	-488.35	1,347.23	1,270.83	76.40	17.633	
14,300.00	11,620.00	13,128.10	10,441.50	57.74	55.36	30.20	-2,771.21	-488.36	1,347.01	1,269.91	77.11	17.469	
14,350.00	11,620.00	13,175.46	10,441.86	58.26	55.88	30.22	-2,818.56	-488.46	1,346.90	1,269.07	77.83	17.306	
14,394.01	11,620.00	13,217.59	10,442.11	58.71	56.35	30.24	-2,860.70	-488.58	1,346.87	1,268.40	78.47	17.165	
14,400.00	11,620.00	13,223.33	10,442.14	58.77	56.41	30.24	-2,866.43	-488.60	1,346.87	1,268.32	78.55	17.146	
14,450.00	11,620.00	13,271.54	10,442.34	59.30	56.94	30.26	-2,914.64	-488.73	1,346.92	1,267.63	79.29	16.988	
14,500.00	11,620.00	13,320.74	10,442.45	59.82	57.49	30.28	-2,963.84	-488.79	1,347.01	1,266.98	80.03	16.832	
14,550.00	11,620.00	13,374.52	10,442.48	60.35	58.10	30.29	-3,017.62	-488.70	1,347.10	1,266.30	80.80	16.671	
14,600.00	11,620.00	13,437.85	10,442.70	60.89	58.82	30.28	-3,080.95	-487.97	1,346.82	1,265.18	81.63	16.498	
14,650.00	11,620.00	13,483.48	10,442.88	61.43	59.35	30.26	-3,126.57	-487.09	1,346.32	1,263.97	82.34	16.350	
14,700.00	11,620.00	13,525.74	10,442.80	61.97	59.83	30.24	-3,168.82	-486.31	1,346.09	1,263.07	83.03	16.213	
14,750.00	11,620.00	13,578.99	10,442.53	62.52	60.45	30.21	-3,222.06	-485.38	1,346.04	1,262.25	83.79	16.065	
14,800.00	11,620.00	13,639.83	10,442.65	63.07	61.17	30.19	-3,282.89	-484.24	1,345.63	1,261.03	84.60	15.905	
14,850.00	11,620.00	13,691.98	10,442.97	63.62	61.78	30.17	-3,335.03	-483.14	1,345.00	1,259.62	85.37	15.754	
14,900.00	11,620.00	13,744.37	10,443.29	64.18	62.40	30.14	-3,387.41	-481.85	1,344.27	1,258.13	86.14	15.606	
14,950.00	11,620.00	13,795.01	10,443.65	64.74	63.01	30.11	-3,438.03	-480.59	1,343.49	1,256.59	86.90	15.460	
15,000.00	11,620.00	13,841.33	10,444.01	65.30	63.56	30.09	-3,484.33	-479.47	1,342.71	1,255.07	87.64	15.321	
15,050.00	11,620.00	13,879.83	10,444.04	65.87	64.03	30.07	-3,522.82	-478.60	1,342.27	1,253.94	88.32	15.197	
15,076.88	11,620.00	13,900.52	10,443.91	66.18	64.28	30.05	-3,543.51	-478.16	1,342.20	1,253.51	88.69	15.133	
15,100.00	11,620.00	13,918.33	10,443.73	66.44	64.49	30.04	-3,561.31	-477.80	1,342.25	1,253.25	89.01	15.081	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1

Offset Site Error: 5.00 ft

Survey Program: 147-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
15,150.00	11,620.00	13,964.02	10,443.09	67.02	65.05	30.00	-3,606.99	-476.95	1,342.54	1,252.80	89.74	14.961	
15,200.00	11,620.00	14,010.46	10,442.39	67.59	65.61	29.97	-3,653.42	-476.23	1,342.97	1,252.49	90.48	14.843	
15,250.00	11,620.00	14,070.69	10,441.70	68.17	66.34	29.94	-3,713.64	-475.45	1,343.30	1,251.97	91.33	14.708	
15,300.00	11,620.00	14,130.00	10,441.64	68.75	67.07	29.93	-3,772.94	-474.76	1,343.20	1,251.02	92.19	14.570	
15,350.00	11,620.00	14,184.16	10,441.87	69.34	67.73	29.92	-3,827.10	-474.14	1,342.89	1,249.87	93.02	14.436	
15,400.00	11,620.00	14,236.00	10,442.24	69.93	68.37	29.92	-3,878.93	-473.55	1,342.45	1,248.60	93.85	14.304	
15,450.00	11,620.00	14,286.38	10,442.64	70.52	68.99	29.92	-3,929.31	-473.00	1,341.98	1,247.31	94.67	14.175	
15,500.00	11,620.00	14,337.76	10,443.10	71.11	69.63	29.92	-3,980.69	-472.46	1,341.49	1,245.99	95.50	14.047	
15,550.00	11,620.00	14,389.51	10,443.63	71.71	70.28	29.93	-4,032.44	-471.90	1,340.93	1,244.59	96.34	13.919	
15,600.00	11,620.00	14,428.78	10,443.94	72.31	70.77	29.93	-4,071.70	-471.54	1,340.52	1,243.43	97.09	13.807	
15,621.40	11,620.00	14,445.08	10,443.97	72.56	70.97	29.93	-4,088.00	-471.43	1,340.48	1,243.07	97.41	13.761	
15,650.00	11,620.00	14,466.87	10,443.93	72.91	71.24	29.93	-4,109.79	-471.34	1,340.55	1,242.72	97.83	13.702	
15,700.00	11,620.00	14,507.16	10,443.62	73.51	71.75	29.93	-4,150.08	-471.30	1,341.01	1,242.42	98.59	13.602	
15,750.00	11,620.00	14,550.52	10,443.07	74.12	72.29	29.93	-4,193.43	-471.36	1,341.75	1,242.38	99.37	13.502	
15,800.00	11,620.00	14,595.83	10,442.30	74.72	72.86	29.93	-4,238.74	-471.52	1,342.73	1,242.56	100.17	13.404	
15,850.00	11,620.00	14,647.03	10,441.38	75.33	73.50	29.93	-4,289.93	-471.70	1,343.75	1,242.73	101.02	13.302	
15,900.00	11,620.00	14,706.79	10,440.39	75.94	74.26	29.92	-4,349.68	-471.74	1,344.65	1,242.72	101.93	13.191	
15,950.00	11,620.00	14,779.91	10,439.58	76.56	75.19	29.88	-4,422.78	-470.47	1,344.86	1,241.95	102.91	13.069	
16,000.00	11,620.00	14,855.12	10,439.78	77.17	76.16	29.81	-4,497.95	-468.23	1,344.16	1,240.29	103.87	12.941	
16,050.00	11,620.00	14,906.03	10,440.35	77.79	76.83	29.77	-4,548.83	-466.35	1,342.90	1,238.23	104.68	12.829	
16,100.00	11,620.00	14,952.37	10,440.43	78.41	77.43	29.70	-4,595.11	-464.10	1,341.77	1,236.35	105.42	12.727	
16,150.00	11,620.00	15,004.34	10,440.21	79.03	78.11	29.59	-4,647.00	-461.12	1,340.69	1,234.52	106.18	12.627	
16,200.00	11,620.00	15,058.17	10,440.05	79.65	78.82	29.48	-4,700.73	-457.88	1,339.49	1,232.56	106.93	12.527	
16,250.00	11,620.00	15,122.91	10,440.35	80.28	79.68	29.36	-4,765.35	-453.93	1,337.94	1,230.20	107.74	12.418	
16,300.00	11,620.00	15,176.40	10,441.16	80.91	80.38	29.27	-4,818.74	-450.73	1,335.96	1,227.45	108.52	12.311	
16,350.00	11,620.00	15,221.28	10,441.76	81.53	80.98	29.19	-4,863.53	-448.11	1,334.10	1,224.85	109.26	12.211	
16,400.00	11,620.00	15,268.14	10,442.23	82.16	81.60	29.11	-4,910.31	-445.43	1,332.42	1,222.41	110.01	12.112	
16,450.00	11,620.00	15,317.22	10,442.68	82.80	82.26	29.03	-4,959.32	-442.65	1,330.79	1,220.03	110.76	12.015	
16,500.00	11,620.00	15,363.27	10,443.06	83.43	82.87	28.95	-5,005.29	-440.07	1,329.23	1,217.72	111.51	11.921	
16,550.00	11,620.00	15,406.70	10,443.25	84.06	83.45	28.88	-5,048.66	-437.75	1,327.89	1,215.65	112.24	11.831	
16,600.00	11,620.00	15,454.30	10,443.30	84.70	84.09	28.80	-5,096.20	-435.33	1,326.77	1,213.78	112.99	11.742	
16,650.00	11,620.00	15,508.92	10,443.43	85.34	84.82	28.70	-5,150.75	-432.49	1,325.56	1,211.78	113.78	11.650	
16,700.00	11,620.00	15,564.81	10,443.73	85.98	85.57	28.61	-5,206.55	-429.44	1,324.16	1,209.60	114.57	11.558	
16,750.00	11,620.00	15,621.41	10,444.25	86.62	86.33	28.51	-5,263.05	-426.15	1,322.52	1,207.17	115.35	11.465	
16,800.00	11,620.00	15,656.24	10,444.43	87.26	86.80	28.44	-5,297.82	-424.09	1,321.03	1,204.99	116.04	11.384	
16,850.00	11,620.00	15,690.44	10,444.19	87.90	87.26	28.37	-5,331.97	-422.14	1,320.14	1,203.43	116.71	11.311	
16,900.00	11,620.00	15,731.49	10,443.39	88.55	87.82	28.28	-5,372.95	-419.91	1,319.82	1,202.42	117.40	11.242	
16,950.00	11,620.00	15,800.94	10,442.62	89.20	88.75	28.14	-5,442.29	-416.21	1,319.20	1,200.97	118.23	11.158	
17,000.00	11,620.00	15,865.08	10,442.83	89.84	89.62	28.02	-5,506.34	-412.78	1,317.93	1,198.88	119.05	11.070	
17,050.00	11,620.00	15,919.57	10,443.48	90.49	90.36	27.93	-5,560.74	-409.72	1,316.22	1,196.39	119.83	10.984	
17,100.00	11,620.00	15,959.12	10,443.74	91.14	90.90	27.86	-5,600.22	-407.45	1,314.73	1,194.19	120.55	10.907	
17,150.00	11,620.00	15,999.00	10,443.64	91.79	91.45	27.78	-5,640.03	-405.13	1,313.64	1,192.40	121.24	10.835	
17,200.00	11,620.00	16,055.39	10,443.35	92.44	92.22	27.66	-5,696.33	-401.76	1,312.62	1,190.62	122.00	10.759	
17,250.00	11,620.00	16,115.92	10,443.32	93.10	93.05	27.52	-5,756.73	-397.92	1,311.32	1,188.56	122.76	10.682	
17,300.00	11,620.00	16,184.11	10,443.81	93.75	93.99	27.35	-5,824.73	-392.86	1,309.43	1,185.92	123.51	10.601	
17,350.00	11,620.00	16,222.20	10,444.12	94.41	94.51	27.25	-5,862.70	-389.80	1,307.38	1,183.20	124.18	10.528	
17,400.00	11,620.00	16,258.00	10,444.04	95.06	95.01	27.15	-5,898.39	-387.06	1,305.87	1,181.04	124.83	10.461	
17,450.00	11,620.00	16,298.48	10,443.55	95.72	95.57	27.03	-5,938.76	-384.13	1,304.89	1,179.40	125.49	10.398	
17,500.00	11,620.00	16,351.39	10,442.88	96.38	96.30	26.88	-5,991.54	-380.35	1,303.96	1,177.78	126.18	10.334	
17,550.00	11,620.00	16,406.11	10,442.37	97.04	97.06	26.73	-6,046.11	-376.45	1,302.92	1,176.04	126.88	10.269	
17,600.00	11,620.00	16,462.65	10,442.15	97.70	97.84	26.59	-6,102.51	-372.44	1,301.64	1,174.05	127.59	10.202	
17,650.00	11,620.00	16,516.31	10,442.18	98.36	98.59	26.45	-6,156.03	-368.62	1,300.16	1,171.87	128.29	10.134	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 5.00 ft

Survey Program: 147-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
17,700.00	11,620.00	16,569.31	10,442.32	99.03	99.33	26.31	-6,208.89	-364.78	1,298.56	1,169.57	128.99	10.067	
17,750.00	11,620.00	16,622.13	10,442.59	99.69	100.06	26.18	-6,261.57	-360.93	1,296.86	1,167.16	129.69	9.999	
17,800.00	11,620.00	16,675.70	10,443.01	100.35	100.81	26.05	-6,315.00	-357.05	1,295.04	1,164.64	130.40	9.931	
17,850.00	11,620.00	16,731.81	10,443.70	101.02	101.59	25.91	-6,370.96	-352.96	1,293.03	1,161.92	131.11	9.862	
17,900.00	11,620.00	16,784.77	10,444.55	101.69	102.34	25.78	-6,423.76	-349.04	1,290.82	1,159.00	131.82	9.792	
17,950.00	11,620.00	16,834.95	10,445.28	102.35	103.04	25.65	-6,473.77	-345.05	1,288.57	1,156.07	132.50	9.725	
18,000.00	11,620.00	16,883.08	10,445.86	103.02	103.72	25.51	-6,521.74	-341.02	1,286.35	1,153.19	133.16	9.660	
18,050.00	11,620.00	16,930.10	10,446.37	103.69	104.38	25.38	-6,568.59	-337.19	1,284.24	1,150.41	133.83	9.596	
18,100.00	11,620.00	16,973.27	10,446.74	104.36	104.99	25.26	-6,611.63	-333.76	1,282.29	1,147.80	134.49	9.535	
18,150.00	11,620.00	17,014.08	10,446.80	105.03	105.56	25.14	-6,652.31	-330.56	1,280.68	1,145.55	135.13	9.477	
18,200.00	11,620.00	17,064.67	10,446.54	105.70	106.28	24.99	-6,702.74	-326.58	1,279.37	1,143.59	135.78	9.422	
18,250.00	11,620.00	17,136.32	10,446.66	106.37	107.29	24.74	-6,774.10	-320.05	1,277.51	1,141.11	136.40	9.366	
18,300.00	11,620.00	17,177.51	10,446.86	107.04	107.87	24.59	-6,815.09	-316.08	1,275.39	1,138.39	137.01	9.309	
18,350.00	11,620.00	17,218.45	10,446.87	107.72	108.46	24.45	-6,855.86	-312.37	1,273.63	1,136.02	137.62	9.255	
18,400.00	11,620.00	17,262.55	10,446.65	108.39	109.08	24.30	-6,899.80	-308.56	1,272.19	1,133.96	138.23	9.204	
18,450.00	11,620.00	17,307.73	10,446.23	109.07	109.72	24.14	-6,944.80	-304.60	1,270.94	1,132.12	138.83	9.155	
18,500.00	11,620.00	17,351.54	10,445.65	109.74	110.34	23.99	-6,988.45	-300.82	1,269.91	1,130.49	139.42	9.109	
18,550.00	11,620.00	17,394.67	10,445.07	110.42	110.96	23.86	-7,031.45	-297.63	1,269.15	1,129.11	140.04	9.063	
18,600.00	11,620.00	17,444.56	10,444.45	111.10	111.66	23.73	-7,081.24	-294.55	1,268.60	1,127.88	140.72	9.015	
18,650.00	11,620.00	17,502.37	10,444.08	111.77	112.47	23.60	-7,138.95	-291.14	1,267.83	1,126.40	141.43	8.965	
18,700.00	11,620.00	17,552.62	10,444.10	112.45	113.18	23.50	-7,189.13	-288.46	1,266.87	1,124.73	142.14	8.913	
18,750.00	11,620.00	17,601.22	10,444.36	113.13	113.86	23.44	-7,237.69	-286.56	1,265.97	1,123.07	142.90	8.859	
18,800.00	11,620.00	17,648.96	10,444.78	113.81	114.52	23.40	-7,285.41	-285.23	1,265.14	1,121.44	143.70	8.804	
18,850.00	11,620.00	17,696.58	10,445.22	114.49	115.19	23.38	-7,333.02	-284.19	1,264.40	1,119.88	144.51	8.749	
18,900.00	11,620.00	17,752.79	10,445.94	115.17	115.97	23.37	-7,389.21	-283.23	1,263.60	1,118.20	145.40	8.691	
18,950.00	11,620.00	17,810.08	10,447.08	115.85	116.76	23.37	-7,446.49	-282.38	1,262.52	1,116.21	146.31	8.629	
19,000.00	11,620.00	17,854.84	10,447.99	116.53	117.39	23.37	-7,491.23	-281.81	1,261.45	1,114.29	147.15	8.572	
19,050.00	11,620.00	17,899.85	10,448.84	117.22	118.01	23.38	-7,536.23	-281.32	1,260.50	1,112.49	148.00	8.517	
19,100.00	11,620.00	17,936.47	10,449.27	117.90	118.52	23.38	-7,572.84	-281.07	1,259.94	1,111.15	148.79	8.468	
19,127.48	11,620.00	17,956.59	10,449.36	118.27	118.80	23.39	-7,592.97	-281.01	1,259.86	1,110.64	149.22	8.443	
19,150.00	11,620.00	17,973.08	10,449.36	118.58	119.02	23.39	-7,609.46	-281.00	1,259.91	1,110.34	149.57	8.423	
19,200.00	11,620.00	18,032.27	10,449.23	119.27	119.84	23.40	-7,668.65	-280.97	1,260.15	1,109.62	150.53	8.371	
19,250.00	11,620.00	18,104.66	10,449.98	119.95	120.85	23.40	-7,741.02	-280.09	1,259.55	1,108.01	151.54	8.311	
19,300.00	11,620.00	18,172.42	10,451.38	120.63	121.80	23.37	-7,808.75	-278.25	1,258.18	1,105.73	152.45	8.253	
19,350.00	11,620.00	18,216.98	10,452.30	121.32	122.43	23.32	-7,853.26	-276.39	1,256.54	1,103.32	153.22	8.201	
19,400.00	11,620.00	18,259.83	10,452.64	122.01	123.04	23.23	-7,896.04	-273.98	1,255.18	1,101.27	153.91	8.155	
19,450.00	11,620.00	18,312.42	10,452.68	122.69	123.79	23.10	-7,948.51	-270.49	1,253.96	1,099.39	154.58	8.112	
19,500.00	11,620.00	18,368.47	10,453.02	123.38	124.59	22.97	-8,004.44	-266.81	1,252.52	1,097.27	155.25	8.068	
19,550.00	11,620.00	18,404.27	10,453.09	124.07	125.10	22.88	-8,040.17	-264.46	1,251.27	1,095.37	155.90	8.026	
19,600.00	11,620.00	18,440.92	10,452.73	124.76	125.63	22.78	-8,076.73	-262.04	1,250.54	1,094.03	156.52	7.990	
19,643.65	11,620.00	18,473.28	10,452.07	125.36	126.09	22.68	-8,109.01	-259.88	1,250.35	1,093.32	157.03	7.962	
19,650.00	11,620.00	18,478.08	10,451.95	125.44	126.16	22.67	-8,113.81	-259.56	1,250.35	1,093.25	157.11	7.959	
19,700.00	11,620.00	18,515.88	10,450.79	126.13	126.70	22.56	-8,151.50	-257.15	1,250.66	1,092.98	157.69	7.931	
19,750.00	11,620.00	18,557.00	10,449.13	126.82	127.29	22.43	-8,192.52	-254.66	1,251.47	1,093.20	158.26	7.907	
19,800.00	11,620.00	18,594.06	10,447.34	127.51	127.81	22.32	-8,229.47	-252.53	1,252.70	1,093.89	158.82	7.888	
19,850.00	11,620.00	18,634.70	10,445.12	128.20	128.39	22.20	-8,269.99	-250.31	1,254.32	1,094.95	159.37	7.870	
19,900.00	11,620.00	18,677.07	10,442.53	128.89	129.00	22.07	-8,312.22	-248.12	1,256.30	1,096.36	159.94	7.855	
19,950.00	11,620.00	18,720.73	10,439.68	129.58	129.62	21.95	-8,355.74	-246.00	1,258.54	1,098.03	160.51	7.841	
20,000.00	11,620.00	18,768.11	10,436.45	130.28	130.29	21.82	-8,402.96	-243.92	1,261.00	1,099.88	161.12	7.827	
20,050.00	11,620.00	18,820.70	10,433.18	130.97	131.03	21.71	-8,455.42	-242.26	1,263.42	1,101.60	161.82	7.808	
20,100.00	11,620.00	18,868.90	10,430.50	131.66	131.71	21.64	-8,503.55	-241.40	1,265.79	1,103.25	162.54	7.788	
20,150.00	11,620.00	18,914.33	10,428.00	132.35	132.35	21.59	-8,548.90	-241.05	1,268.31	1,105.05	163.26	7.769	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 5.00 ft

Survey Program: 147-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
20,200.00	11,620.00	18,975.62	10,424.84	133.05	133.20	21.56	-8,610.11	-241.08	1,270.86	1,106.67	164.19	7.740	
20,250.00	11,620.00	19,048.91	10,422.36	133.74	134.23	21.53	-8,683.36	-241.02	1,272.52	1,107.26	165.25	7.700	
20,300.00	11,620.00	19,111.66	10,421.15	134.43	135.10	21.53	-8,746.09	-240.99	1,273.52	1,107.30	166.22	7.662	
20,350.00	11,620.00	19,177.73	10,420.61	135.13	136.03	21.53	-8,812.16	-240.83	1,273.97	1,106.76	167.22	7.619	
20,400.00	11,620.00	19,234.82	10,420.65	135.82	136.83	21.52	-8,869.24	-240.19	1,273.83	1,105.72	168.11	7.577	
20,420.11	11,620.00	19,250.94	10,420.61	136.10	137.06	21.51	-8,885.37	-239.91	1,273.80	1,105.39	168.42	7.563	
20,450.00	11,620.00	19,274.91	10,420.41	136.52	137.40	21.49	-8,909.33	-239.40	1,273.87	1,105.01	168.86	7.544	
20,500.00	11,620.00	19,316.00	10,419.69	137.21	137.98	21.44	-8,950.40	-238.29	1,274.30	1,104.74	169.56	7.515	
20,550.00	11,620.00	19,358.32	10,418.57	137.91	138.58	21.38	-8,992.68	-236.93	1,275.05	1,104.81	170.24	7.490	
20,600.00	11,620.00	19,401.71	10,417.13	138.60	139.20	21.30	-9,036.02	-235.41	1,276.07	1,105.16	170.91	7.466	
20,650.00	11,620.00	19,466.77	10,414.92	139.30	140.13	21.17	-9,100.98	-232.60	1,277.01	1,105.35	171.66	7.439	
20,700.00	11,620.00	19,523.98	10,413.43	140.00	140.95	21.02	-9,158.07	-229.30	1,277.28	1,104.97	172.31	7.413	
20,750.00	11,620.00	19,564.17	10,412.10	140.69	141.53	20.90	-9,198.16	-226.64	1,277.75	1,104.89	172.87	7.392	
20,800.00	11,620.00	19,605.16	10,410.31	141.39	142.12	20.75	-9,238.99	-223.67	1,278.61	1,105.22	173.39	7.374	
20,850.00	11,620.00	19,653.14	10,407.86	142.09	142.82	20.56	-9,286.76	-219.77	1,279.68	1,105.79	173.88	7.359	
20,900.00	11,620.00	19,701.01	10,405.16	142.79	143.52	20.35	-9,334.35	-215.37	1,280.83	1,106.50	174.33	7.347	
20,950.00	11,620.00	19,744.22	10,402.55	143.49	144.15	20.15	-9,377.30	-211.39	1,282.18	1,107.42	174.76	7.337	
21,000.00	11,620.00	19,787.98	10,399.79	144.18	144.79	19.96	-9,420.80	-207.62	1,283.78	1,108.57	175.21	7.327	
21,050.00	11,620.00	19,832.90	10,396.81	144.88	145.44	19.78	-9,465.47	-203.92	1,285.61	1,109.94	175.67	7.319	
21,100.00	11,620.00	19,877.90	10,393.68	145.58	146.09	19.59	-9,510.21	-200.27	1,287.64	1,111.52	176.12	7.311	
21,150.00	11,620.00	19,934.97	10,389.76	146.28	146.92	19.36	-9,566.97	-195.76	1,289.67	1,113.05	176.62	7.302	
21,200.00	11,620.00	19,994.79	10,386.18	146.98	147.79	19.13	-9,626.51	-191.21	1,291.35	1,114.19	177.16	7.289	
21,250.00	11,620.00	20,045.67	10,383.38	147.68	148.53	18.94	-9,677.17	-187.51	1,292.87	1,115.18	177.69	7.276	
21,300.00	11,620.00	20,101.16	10,380.56	148.38	149.34	18.76	-9,732.46	-183.62	1,294.26	1,116.01	178.24	7.261	
21,350.00	11,620.00	20,160.20	10,377.95	149.08	150.19	18.56	-9,791.29	-179.52	1,295.34	1,116.52	178.82	7.244	
21,400.00	11,620.00	20,217.66	10,375.83	149.78	151.03	18.38	-9,848.59	-175.59	1,296.10	1,116.70	179.40	7.225	
21,450.00	11,620.00	20,274.85	10,374.10	150.48	151.86	18.21	-9,905.62	-171.79	1,296.60	1,116.60	179.99	7.204	
21,500.00	11,620.00	20,320.58	10,372.81	151.19	152.52	18.09	-9,951.25	-168.98	1,297.08	1,116.49	180.58	7.183	
21,550.00	11,620.00	20,368.83	10,371.45	151.89	153.22	17.97	-9,999.41	-166.30	1,297.65	1,116.45	181.20	7.161	
21,600.00	11,620.00	20,420.08	10,370.06	152.59	153.96	17.85	-10,050.56	-163.55	1,298.21	1,116.38	181.83	7.140	
21,650.00	11,620.00	20,470.00	10,368.71	153.29	154.68	17.73	-10,100.39	-160.86	1,298.76	1,116.31	182.46	7.118	
21,700.00	11,620.00	20,480.00	10,368.45	153.99	154.82	17.71	-10,110.37	-160.32	1,299.93	1,117.05	182.89	7.108 SF	
21,750.00	11,620.00	20,480.00	10,368.45	154.70	154.82	17.71	-10,110.37	-160.32	1,302.99	1,119.91	183.08	7.117	
21,800.00	11,620.00	20,480.00	10,368.45	155.40	154.82	17.71	-10,110.37	-160.32	1,307.94	1,124.87	183.07	7.145	
21,850.00	11,620.00	20,480.00	10,368.45	156.10	154.82	17.71	-10,110.37	-160.32	1,314.78	1,131.93	182.85	7.190	
21,864.06	11,620.00	20,480.00	10,368.45	156.30	154.82	17.71	-10,110.37	-160.32	1,317.04	1,134.28	182.76	7.206	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	0.10	0.10	0.50	0.50	-90.17	-0.09	-30.01	30.01				
50.00	50.00	50.10	50.10	0.50	0.50	-90.17	-0.09	-30.01	30.01	29.00	1.01	29.816	
100.00	100.00	100.10	100.10	0.52	0.52	-90.17	-0.09	-30.01	30.01	28.97	1.04	28.978	
150.00	150.00	150.10	150.10	0.59	0.59	-90.17	-0.09	-30.01	30.01	28.83	1.18	25.418	
200.00	200.00	200.10	200.10	0.70	0.70	-90.17	-0.09	-30.01	30.01	28.61	1.40	21.368	
250.00	250.00	250.10	250.10	0.84	0.84	-90.17	-0.09	-30.01	30.01	28.33	1.68	17.909	
300.00	300.00	300.10	300.10	0.99	0.99	-90.17	-0.09	-30.01	30.01	28.04	1.97	15.195	
350.00	350.00	350.10	350.10	1.15	1.15	-90.17	-0.09	-30.01	30.01	27.72	2.29	13.097	
400.00	400.00	400.10	400.10	1.31	1.31	-90.17	-0.09	-30.01	30.01	27.39	2.62	11.461	
450.00	450.00	450.10	450.10	1.48	1.48	-90.17	-0.09	-30.01	30.01	27.06	2.95	10.163	
500.00	500.00	500.10	500.10	1.65	1.65	-90.17	-0.09	-30.01	30.01	26.72	3.29	9.115	
550.00	550.00	550.10	550.10	1.82	1.82	-90.17	-0.09	-30.01	30.01	26.37	3.64	8.254	
600.00	600.00	600.10	600.10	1.99	1.99	-90.17	-0.09	-30.01	30.01	26.03	3.98	7.537	
650.00	650.00	650.10	650.10	2.16	2.16	-90.17	-0.09	-30.01	30.01	25.68	4.33	6.932	
700.00	700.00	700.10	700.10	2.34	2.34	-90.17	-0.09	-30.01	30.01	25.33	4.68	6.414	
750.00	750.00	750.10	750.10	2.51	2.52	-90.17	-0.09	-30.01	30.01	24.98	5.03	5.967	
800.00	800.00	800.10	800.10	2.69	2.69	-90.17	-0.09	-30.01	30.01	24.63	5.38	5.577	
850.00	850.00	850.10	850.10	2.87	2.87	-90.17	-0.09	-30.01	30.01	24.28	5.73	5.234	
900.00	900.00	900.10	900.10	3.04	3.04	-90.17	-0.09	-30.01	30.01	23.92	6.09	4.930	Alert
950.00	950.00	950.10	950.10	3.22	3.22	-90.17	-0.09	-30.01	30.01	23.57	6.44	4.659	Alert
1,000.00	1,000.00	1,000.10	1,000.10	3.40	3.40	-90.17	-0.09	-30.01	30.01	23.21	6.80	4.416	Alert
1,050.00	1,050.00	1,050.10	1,050.10	3.58	3.58	-90.17	-0.09	-30.01	30.01	22.86	7.15	4.197	Alert
1,100.00	1,100.00	1,100.10	1,100.10	3.75	3.75	-90.17	-0.09	-30.01	30.01	22.50	7.51	3.998	Alert
1,150.00	1,150.00	1,150.10	1,150.10	3.93	3.93	-90.17	-0.09	-30.01	30.01	22.15	7.86	3.818	Alert
1,200.00	1,200.00	1,200.10	1,200.10	4.11	4.11	-90.17	-0.09	-30.01	30.01	21.79	8.22	3.652	Alert
1,250.00	1,250.00	1,250.10	1,250.10	4.29	4.29	-90.17	-0.09	-30.01	30.01	21.44	8.57	3.501	Alert
1,300.00	1,300.00	1,300.10	1,300.10	4.46	4.46	-90.17	-0.09	-30.01	30.01	21.08	8.93	3.361	Alert
1,350.00	1,350.00	1,350.10	1,350.10	4.64	4.64	-90.17	-0.09	-30.01	30.01	20.73	9.29	3.232	Alert
1,400.00	1,400.00	1,400.10	1,400.10	4.82	4.82	-90.17	-0.09	-30.01	30.01	20.37	9.64	3.113	Alert
1,450.00	1,450.00	1,450.10	1,450.10	5.00	5.00	-90.17	-0.09	-30.01	30.01	20.01	10.00	3.002	Alert
1,500.00	1,500.00	1,500.10	1,500.10	5.18	5.18	-90.17	-0.09	-30.01	30.01	19.66	10.35	2.898	Alert
1,550.00	1,550.00	1,550.10	1,550.10	5.36	5.36	-90.17	-0.09	-30.01	30.01	19.30	10.71	2.802	Alert
1,600.00	1,600.00	1,600.10	1,600.10	5.53	5.53	-90.17	-0.09	-30.01	30.01	18.94	11.07	2.711	Alert
1,650.00	1,650.00	1,650.10	1,650.10	5.71	5.71	-90.17	-0.09	-30.01	30.01	18.58	11.43	2.627	Alert
1,700.00	1,700.00	1,700.10	1,700.10	5.89	5.89	-90.17	-0.09	-30.01	30.01	18.23	11.78	2.547	Alert
1,750.00	1,750.00	1,750.10	1,750.10	6.07	6.07	-90.17	-0.09	-30.01	30.01	17.87	12.14	2.472	Minor Risk
1,800.00	1,800.00	1,800.10	1,800.10	6.25	6.25	-90.17	-0.09	-30.01	30.01	17.51	12.50	2.401	Minor Risk
1,850.00	1,850.00	1,850.10	1,850.10	6.43	6.43	-90.17	-0.09	-30.01	30.01	17.16	12.85	2.335	Minor Risk
1,900.00	1,900.00	1,900.10	1,900.10	6.61	6.61	-90.17	-0.09	-30.01	30.01	16.80	13.21	2.271	Minor Risk
1,950.00	1,950.00	1,950.10	1,950.10	6.78	6.78	-90.17	-0.09	-30.01	30.01	16.44	13.57	2.212	Minor Risk
2,000.00	2,000.00	2,000.10	2,000.10	6.96	6.96	-90.17	-0.09	-30.01	30.01	16.08	13.93	2.155	Minor Risk
2,050.00	2,050.00	2,050.10	2,050.10	7.14	7.14	-90.17	-0.09	-30.01	30.01	15.73	14.28	2.101	Minor Risk
2,100.00	2,100.00	2,100.10	2,100.10	7.32	7.32	-90.17	-0.09	-30.01	30.01	15.37	14.64	2.050	Minor Risk
2,150.00	2,150.00	2,150.10	2,150.10	7.50	7.50	-90.17	-0.09	-30.01	30.01	15.01	15.00	2.001	Minor Risk
2,200.00	2,200.00	2,200.10	2,200.10	7.68	7.68	-90.17	-0.09	-30.01	30.01	14.65	15.36	1.954	Minor Risk
2,250.00	2,250.00	2,250.10	2,250.10	7.86	7.86	-90.17	-0.09	-30.01	30.01	14.29	15.72	1.910	Minor Risk
2,300.00	2,300.00	2,300.10	2,300.10	8.04	8.04	-90.17	-0.09	-30.01	30.01	13.94	16.07	1.867	Minor Risk
2,350.00	2,350.00	2,350.10	2,350.10	8.22	8.22	-90.17	-0.09	-30.01	30.01	13.58	16.43	1.826	Minor Risk
2,400.00	2,400.00	2,400.10	2,400.10	8.39	8.39	-90.17	-0.09	-30.01	30.01	13.22	16.79	1.788	Minor Risk
2,450.00	2,450.00	2,450.10	2,450.10	8.57	8.57	-90.17	-0.09	-30.01	30.01	12.86	17.15	1.750	Minor Risk
2,500.00	2,500.00	2,500.10	2,500.10	8.75	8.75	-90.17	-0.09	-30.01	30.01	12.51	17.50	1.714	Minor Risk, CC
2,550.00	2,550.00	2,550.10	2,550.10	8.93	8.93	-137.36	-0.09	-30.01	30.17	12.31	17.86	1.689	Minor Risk, ES

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	2,599.99	2,600.09	2,600.09	9.11	9.11	-138.18	-0.09	-30.01	30.65	12.44	18.22	1.683	Minor Risk
2,650.00	2,649.98	2,650.08	2,650.08	9.28	9.29	-139.50	-0.09	-30.01	31.48	12.90	18.57	1.695	Minor Risk
2,700.00	2,699.96	2,700.06	2,700.06	9.46	9.47	-141.13	-0.09	-30.01	32.58	13.65	18.93	1.721	Minor Risk
2,750.00	2,749.94	2,750.04	2,750.04	9.64	9.65	-142.68	-0.09	-30.01	33.72	14.44	19.28	1.749	Minor Risk
2,800.00	2,799.92	2,800.02	2,800.02	9.81	9.83	-144.13	-0.09	-30.01	34.89	15.25	19.64	1.776	Minor Risk
2,850.00	2,849.90	2,850.00	2,850.00	9.99	10.00	-145.48	-0.09	-30.01	36.07	16.08	19.99	1.804	Minor Risk
2,900.00	2,899.88	2,900.02	2,899.98	10.17	10.18	-146.74	-0.09	-30.01	37.28	16.93	20.35	1.832	Minor Risk
2,950.00	2,949.86	2,949.96	2,949.96	10.34	10.36	-147.93	-0.09	-30.01	38.50	17.80	20.70	1.860	Minor Risk
3,000.00	2,999.84	3,000.06	2,999.94	10.52	10.54	-149.04	-0.09	-30.01	39.74	18.68	21.06	1.887	Minor Risk
3,050.00	3,049.81	3,049.91	3,049.91	10.70	10.72	-150.08	-0.09	-30.01	40.99	19.58	21.42	1.914	Minor Risk
3,100.00	3,099.79	3,100.11	3,099.89	10.88	10.90	-151.07	-0.09	-30.01	42.26	20.49	21.77	1.941	Minor Risk
3,150.00	3,149.77	3,149.87	3,149.87	11.05	11.08	-151.99	-0.09	-30.01	43.53	21.41	22.13	1.967	Minor Risk
3,200.00	3,199.75	3,200.15	3,199.85	11.23	11.26	-152.86	-0.09	-30.01	44.82	22.34	22.48	1.994	Minor Risk
3,250.00	3,249.73	3,249.83	3,249.83	11.41	11.44	-153.69	-0.09	-30.01	46.12	23.28	22.84	2.019	Minor Risk
3,300.00	3,299.71	3,300.19	3,299.81	11.59	11.62	-154.46	-0.09	-30.01	47.43	24.23	23.20	2.045	Minor Risk
3,350.00	3,349.69	3,349.79	3,349.79	11.76	11.79	-155.20	-0.09	-30.01	48.74	25.19	23.55	2.070	Minor Risk
3,400.00	3,399.67	3,400.23	3,399.77	11.94	11.98	-155.90	-0.09	-30.01	50.06	26.15	23.91	2.094	Minor Risk
3,450.00	3,449.65	3,449.75	3,449.75	12.12	12.15	-156.56	-0.09	-30.01	51.39	27.13	24.26	2.118	Minor Risk
3,500.00	3,499.62	3,500.28	3,499.72	12.30	12.33	-157.19	-0.09	-30.01	52.73	28.11	24.62	2.141	Minor Risk
3,550.00	3,549.60	3,549.70	3,549.70	12.48	12.51	-157.78	-0.09	-30.01	54.07	29.09	24.98	2.165	Minor Risk
3,600.00	3,599.58	3,600.32	3,599.68	12.65	12.69	-158.35	-0.09	-30.01	55.42	30.08	25.34	2.187	Minor Risk
3,650.00	3,649.56	3,649.66	3,649.66	12.83	12.87	-158.89	-0.09	-30.01	56.77	31.08	25.69	2.210	Minor Risk
3,700.00	3,699.54	3,700.36	3,699.64	13.01	13.05	-159.41	-0.09	-30.01	58.13	32.08	26.05	2.231	Minor Risk
3,750.00	3,749.52	3,749.62	3,749.62	13.19	13.23	-159.90	-0.09	-30.01	59.49	33.09	26.40	2.253	Minor Risk
3,800.00	3,799.50	3,800.40	3,799.60	13.37	13.41	-160.37	-0.09	-30.01	60.86	34.09	26.76	2.274	Minor Risk
3,850.00	3,849.48	3,849.58	3,849.58	13.54	13.58	-160.82	-0.09	-30.01	62.23	35.11	27.12	2.295	Minor Risk
3,900.00	3,899.46	3,900.44	3,899.56	13.72	13.77	-161.25	-0.09	-30.01	63.60	36.12	27.48	2.315	Minor Risk
3,950.00	3,949.44	3,949.54	3,949.54	13.90	13.94	-161.66	-0.09	-30.01	64.98	37.14	27.83	2.335	Minor Risk
4,000.00	3,999.41	3,999.51	3,999.51	14.08	14.12	-162.05	-0.09	-30.01	66.36	38.17	28.19	2.354	Minor Risk
4,050.00	4,049.39	4,049.32	4,049.32	14.26	14.30	-162.21	0.12	-30.18	67.80	39.26	28.54	2.375	Minor Risk
4,100.00	4,099.37	4,099.12	4,099.11	14.44	14.48	-161.93	0.74	-30.68	69.38	40.48	28.90	2.401	Minor Risk
4,150.00	4,149.35	4,148.94	4,148.91	14.61	14.65	-161.24	1.79	-31.52	71.08	41.83	29.25	2.430	Minor Risk
4,200.00	4,199.33	4,201.11	4,198.85	14.79	14.84	-160.46	2.97	-32.47	72.85	43.23	29.61	2.460	Minor Risk
4,250.00	4,249.31	4,248.85	4,248.78	14.97	15.01	-159.71	4.15	-33.43	74.62	44.66	29.96	2.491	Minor Risk
4,300.00	4,299.29	4,301.19	4,298.72	15.15	15.19	-158.99	5.33	-34.38	76.41	46.08	30.32	2.520	Alert
4,350.00	4,349.27	4,348.77	4,348.65	15.33	15.36	-158.31	6.51	-35.33	78.21	47.54	30.67	2.550	Alert
4,400.00	4,399.25	4,401.27	4,398.59	15.51	15.55	-157.66	7.69	-36.28	80.02	48.98	31.04	2.578	Alert
4,450.00	4,449.22	4,448.69	4,448.53	15.69	15.72	-157.03	8.87	-37.23	81.84	50.46	31.38	2.608	Alert
4,500.00	4,499.20	4,501.35	4,498.46	15.86	15.90	-156.44	10.05	-38.18	83.67	51.92	31.75	2.636	Alert
4,550.00	4,549.18	4,548.61	4,548.40	16.04	16.07	-155.87	11.23	-39.13	85.51	53.41	32.09	2.664	Alert
4,600.00	4,599.16	4,601.43	4,598.33	16.22	16.26	-155.32	12.41	-40.09	87.35	54.89	32.46	2.691	Alert
4,650.00	4,649.14	4,648.53	4,648.27	16.40	16.43	-154.80	13.59	-41.04	89.21	56.40	32.80	2.719	Alert
4,700.00	4,699.12	4,701.51	4,698.21	16.58	16.62	-154.29	14.77	-41.99	91.07	57.90	33.17	2.745	Alert
4,750.00	4,749.10	4,748.44	4,748.14	16.76	16.78	-153.81	15.95	-42.94	92.93	59.42	33.51	2.773	Alert
4,800.00	4,799.08	4,801.60	4,798.08	16.94	16.97	-153.35	17.13	-43.89	94.81	60.93	33.88	2.798	Alert
4,850.00	4,849.06	4,848.36	4,848.02	17.12	17.14	-152.90	18.31	-44.84	96.69	62.46	34.23	2.825	Alert
4,900.00	4,899.03	4,901.68	4,897.95	17.30	17.33	-152.48	19.49	-45.80	98.57	63.98	34.59	2.849	Alert
4,950.00	4,949.01	4,948.28	4,947.89	17.47	17.50	-152.06	20.67	-46.75	100.46	65.53	34.94	2.876	Alert
5,000.00	4,998.99	5,001.76	4,997.82	17.65	17.69	-151.67	21.85	-47.70	102.36	67.05	35.31	2.899	Alert
5,050.00	5,048.97	5,048.20	5,047.76	17.83	17.85	-151.28	23.03	-48.65	104.26	68.61	35.65	2.925	Alert
5,100.00	5,098.95	5,101.84	5,097.70	18.01	18.04	-150.92	24.21	-49.60	106.16	70.14	36.02	2.947	Alert
5,150.00	5,148.93	5,148.12	5,147.63	18.19	18.21	-150.56	25.39	-50.55	108.07	71.71	36.36	2.972	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	5,198.91	5,201.92	5,197.57	18.37	18.40	-150.22	26.57	-51.51	109.99	73.25	36.73	2.994	Alert
5,250.00	5,248.89	5,248.04	5,247.50	18.55	18.56	-149.88	27.75	-52.46	111.90	74.83	37.07	3.018	Alert
5,300.00	5,298.87	5,298.00	5,297.44	18.73	18.74	-149.56	28.93	-53.41	113.82	76.39	37.43	3.041	Alert
5,350.00	5,348.84	5,347.95	5,347.38	18.91	18.92	-149.25	30.11	-54.36	115.75	77.96	37.79	3.063	Alert
5,400.00	5,398.82	5,402.09	5,397.31	19.09	19.11	-148.96	31.29	-55.31	117.67	79.52	38.16	3.084	Alert
5,450.00	5,448.80	5,447.87	5,447.25	19.27	19.28	-148.67	32.47	-56.26	119.60	81.10	38.50	3.107	Alert
5,500.00	5,498.78	5,502.17	5,497.18	19.44	19.47	-148.38	33.65	-57.21	121.54	82.67	38.87	3.127	Alert
5,550.00	5,548.76	5,547.79	5,547.12	19.62	19.63	-148.11	34.83	-58.17	123.47	84.26	39.21	3.149	Alert
5,600.00	5,598.74	5,602.25	5,597.06	19.80	19.83	-147.85	36.01	-59.12	125.41	85.83	39.59	3.168	Alert
5,650.00	5,648.72	5,647.71	5,646.99	19.98	19.99	-147.59	37.19	-60.07	127.35	87.43	39.93	3.190	Alert
5,700.00	5,698.70	5,702.33	5,696.93	20.16	20.19	-147.35	38.37	-61.02	129.30	89.00	40.30	3.208	Alert
5,750.00	5,748.68	5,747.63	5,746.87	20.34	20.35	-147.11	39.55	-61.97	131.24	90.60	40.64	3.229	Alert
5,800.00	5,798.65	5,802.41	5,796.80	20.52	20.54	-146.87	40.73	-62.92	133.19	92.18	41.01	3.248	Alert
5,850.00	5,848.63	5,847.55	5,846.74	20.70	20.70	-146.64	41.91	-63.88	135.14	93.79	41.35	3.268	Alert
5,900.00	5,898.61	5,902.50	5,896.67	20.88	20.90	-146.42	43.09	-64.83	137.09	95.37	41.73	3.285	Alert
5,950.00	5,948.59	5,947.46	5,946.61	21.06	21.06	-146.21	44.27	-65.78	139.05	96.98	42.07	3.305	Alert
6,000.00	5,998.57	6,002.58	5,996.55	21.24	21.26	-146.00	45.46	-66.73	141.01	98.56	42.44	3.322	Alert
6,050.00	6,048.55	6,047.38	6,046.48	21.42	21.42	-145.80	46.64	-67.68	142.96	100.18	42.78	3.342	Alert
6,100.00	6,098.53	6,102.66	6,096.42	21.60	21.62	-145.60	47.82	-68.63	144.92	101.77	43.16	3.358	Alert
6,150.00	6,148.51	6,147.30	6,146.35	21.77	21.78	-145.41	49.00	-69.59	146.89	103.39	43.49	3.377	Alert
6,200.00	6,198.49	6,202.74	6,196.29	21.95	21.97	-145.22	50.18	-70.54	148.85	104.98	43.87	3.393	Alert
6,250.00	6,248.46	6,247.22	6,246.23	22.13	22.13	-145.04	51.36	-71.49	150.81	106.60	44.21	3.411	Alert
6,300.00	6,298.44	6,302.82	6,296.16	22.31	22.33	-144.87	52.54	-72.44	152.78	108.19	44.59	3.427	Alert
6,350.00	6,348.42	6,347.14	6,346.10	22.49	22.49	-144.69	53.72	-73.39	154.75	109.82	44.92	3.445	Alert
6,400.00	6,398.40	6,402.90	6,396.03	22.67	22.69	-144.52	54.90	-74.34	156.72	111.42	45.30	3.459	Alert
6,450.00	6,448.38	6,447.06	6,445.97	22.85	22.85	-144.36	56.08	-75.30	158.69	113.05	45.64	3.477	Alert
6,500.00	6,498.36	6,502.99	6,495.91	23.03	23.05	-144.20	57.26	-76.25	160.66	114.64	46.02	3.491	Alert
6,550.00	6,548.34	6,546.97	6,545.84	23.21	23.21	-144.04	58.44	-77.20	162.63	116.28	46.35	3.509	Alert
6,600.00	6,598.32	6,603.07	6,595.78	23.39	23.41	-143.89	59.62	-78.15	164.61	117.87	46.73	3.522	Alert
6,650.00	6,648.30	6,646.89	6,645.72	23.57	23.56	-143.74	60.80	-79.10	166.58	119.51	47.07	3.539	Alert
6,700.00	6,698.27	6,696.85	6,695.65	23.75	23.74	-143.60	61.98	-80.05	168.56	121.13	47.42	3.554	Alert
6,750.00	6,748.25	6,746.81	6,745.59	23.93	23.92	-143.46	63.16	-81.00	170.53	122.75	47.78	3.569	Alert
6,800.00	6,798.23	6,803.23	6,795.52	24.11	24.12	-143.32	64.34	-81.96	172.51	124.35	48.16	3.582	Alert
6,850.00	6,848.21	6,846.73	6,845.46	24.29	24.28	-143.18	65.52	-82.91	174.49	126.00	48.50	3.598	Alert
6,900.00	6,898.19	6,903.31	6,895.40	24.47	24.48	-143.05	66.70	-83.86	176.47	127.59	48.88	3.610	Alert
6,950.00	6,948.17	6,946.65	6,945.33	24.65	24.64	-142.92	67.88	-84.81	178.45	129.24	49.21	3.626	Alert
7,000.00	6,998.15	7,003.39	6,995.27	24.83	24.84	-142.79	69.06	-85.76	180.43	130.84	49.59	3.638	Alert
7,050.00	7,048.13	7,046.56	7,045.20	25.00	24.99	-142.67	70.24	-86.71	182.42	132.49	49.93	3.654	Alert
7,100.00	7,098.11	7,103.48	7,095.14	25.18	25.20	-142.55	71.42	-87.67	184.40	134.09	50.31	3.665	Alert
7,150.00	7,148.08	7,146.48	7,145.08	25.36	25.35	-142.43	72.60	-88.62	186.39	135.74	50.64	3.681	Alert
7,200.00	7,198.06	7,203.56	7,195.01	25.54	25.56	-142.31	73.78	-89.57	188.37	137.35	51.02	3.692	Alert
7,250.00	7,248.04	7,246.40	7,244.95	25.72	25.71	-142.20	74.96	-90.52	190.36	139.00	51.36	3.707	Alert
7,300.00	7,298.02	7,303.64	7,294.88	25.90	25.92	-142.09	76.14	-91.47	192.34	140.60	51.74	3.717	Alert
7,350.00	7,348.00	7,346.32	7,344.82	26.08	26.07	-141.98	77.32	-92.42	194.33	142.26	52.07	3.732	Alert
7,400.00	7,397.98	7,403.72	7,394.76	26.26	26.27	-141.87	78.50	-93.38	196.32	143.86	52.46	3.743	Alert
7,450.00	7,447.96	7,446.24	7,444.69	26.44	26.43	-141.77	79.68	-94.33	198.31	145.52	52.79	3.757	Alert
7,500.00	7,497.94	7,503.80	7,494.63	26.62	26.63	-141.66	80.86	-95.28	200.30	147.13	53.17	3.767	Alert
7,550.00	7,547.92	7,546.16	7,544.57	26.80	26.79	-141.56	82.04	-96.23	202.29	148.79	53.50	3.781	Alert
7,600.00	7,597.89	7,603.89	7,594.50	26.98	26.99	-141.46	83.22	-97.18	204.28	150.39	53.89	3.791	Alert
7,650.00	7,647.87	7,646.07	7,644.44	27.16	27.14	-141.37	84.40	-98.13	206.27	152.05	54.22	3.804	Alert
7,700.00	7,697.85	7,703.97	7,694.37	27.34	27.35	-141.27	85.58	-99.08	208.26	153.66	54.60	3.814	Alert
7,750.00	7,747.83	7,745.99	7,744.31	27.52	27.50	-141.18	86.76	-100.04	210.26	155.32	54.93	3.827	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	7,797.81	7,804.05	7,794.25	27.70	27.71	-141.09	87.94	-100.99	212.25	156.93	55.32	3.837	Alert
7,850.00	7,847.79	7,845.91	7,844.18	27.88	27.86	-141.00	89.13	-101.94	214.24	158.59	55.65	3.850	Alert
7,900.00	7,897.77	7,904.13	7,894.12	28.06	28.07	-140.91	90.31	-102.89	216.24	160.20	56.04	3.859	Alert
7,950.00	7,947.75	7,945.83	7,944.05	28.24	28.22	-140.82	91.49	-103.84	218.23	161.87	56.37	3.872	Alert
8,000.00	7,997.73	8,004.21	7,993.99	28.42	28.43	-140.74	92.67	-104.79	220.23	163.47	56.75	3.880	Alert
8,050.00	8,047.70	8,045.75	8,043.93	28.60	28.58	-140.65	93.85	-105.75	222.22	165.14	57.08	3.893	Alert
8,100.00	8,097.68	8,104.29	8,093.86	28.78	28.79	-140.57	95.03	-106.70	224.22	166.75	57.47	3.901	Alert
8,150.00	8,147.66	8,145.67	8,143.80	28.96	28.94	-140.49	96.21	-107.65	226.21	168.42	57.80	3.914	Alert
8,200.00	8,197.64	8,204.38	8,193.73	29.13	29.15	-140.41	97.39	-108.60	228.21	170.03	58.19	3.922	Alert
8,250.00	8,247.62	8,245.58	8,243.67	29.31	29.29	-140.34	98.57	-109.55	230.21	171.70	58.51	3.934	Alert
8,300.00	8,297.60	8,304.46	8,293.61	29.49	29.50	-140.26	99.75	-110.50	232.21	173.30	58.90	3.942	Alert
8,350.00	8,347.58	8,345.50	8,343.54	29.67	29.65	-140.18	100.93	-111.46	234.20	174.98	59.23	3.954	Alert
8,400.00	8,397.56	8,404.54	8,393.48	29.85	29.86	-140.11	102.11	-112.41	236.20	176.58	59.62	3.962	Alert
8,450.00	8,447.54	8,445.42	8,443.42	30.03	30.01	-140.04	103.29	-113.36	238.20	178.26	59.94	3.974	Alert
8,500.00	8,497.51	8,495.38	8,493.35	30.21	30.19	-139.97	104.47	-114.31	240.20	179.90	60.30	3.983	Alert
8,550.00	8,547.49	8,545.34	8,543.29	30.39	30.37	-139.90	105.65	-115.26	242.20	181.54	60.66	3.993	Alert
8,600.00	8,597.47	8,604.70	8,593.22	30.57	30.58	-139.83	106.83	-116.21	244.20	183.15	61.05	4.000	Alert
8,650.00	8,647.45	8,645.26	8,643.16	30.75	30.73	-139.76	108.01	-117.17	246.20	184.82	61.38	4.011	Alert
8,700.00	8,697.43	8,704.78	8,693.10	30.93	30.94	-139.69	109.19	-118.12	248.20	186.43	61.77	4.018	Alert
8,750.00	8,747.41	8,745.17	8,743.03	31.11	31.09	-139.63	110.37	-119.07	250.20	188.11	62.09	4.029	Alert
8,800.00	8,797.39	8,804.87	8,792.97	31.29	31.30	-139.56	111.55	-120.02	252.21	189.72	62.49	4.036	Alert
8,850.00	8,847.37	8,845.09	8,842.90	31.47	31.45	-139.50	112.73	-120.97	254.21	191.40	62.81	4.047	Alert
8,900.00	8,897.35	8,904.95	8,892.84	31.65	31.66	-139.44	113.91	-121.92	256.21	193.01	63.20	4.054	Alert
8,950.00	8,947.33	8,945.01	8,942.78	31.83	31.80	-139.37	115.09	-122.87	258.21	194.69	63.53	4.065	Alert
9,000.00	8,997.30	9,005.03	8,992.71	32.01	32.02	-139.31	116.27	-123.83	260.21	196.29	63.92	4.071	Alert
9,050.00	9,047.28	9,044.93	9,042.65	32.19	32.16	-139.25	117.45	-124.78	262.22	197.97	64.24	4.082	Alert
9,100.00	9,097.26	9,105.11	9,092.58	32.37	32.38	-139.19	118.63	-125.73	264.22	199.58	64.64	4.088	Alert
9,150.00	9,147.24	9,144.85	9,142.52	32.55	32.52	-139.14	119.81	-126.68	266.22	201.27	64.96	4.098	Alert
9,200.00	9,197.22	9,205.19	9,192.46	32.73	32.74	-139.08	120.99	-127.63	268.23	202.87	65.35	4.104	Alert
9,250.00	9,247.20	9,244.77	9,242.39	32.91	32.88	-139.02	122.17	-128.58	270.23	204.56	65.67	4.115	Alert
9,300.00	9,297.18	9,305.28	9,292.33	33.09	33.10	-138.97	123.35	-129.54	272.24	206.16	66.07	4.120	Alert
9,350.00	9,347.16	9,344.68	9,342.27	33.27	33.24	-138.91	124.53	-130.49	274.24	207.85	66.39	4.131	Alert
9,400.00	9,397.14	9,405.36	9,392.20	33.45	33.46	-138.86	125.71	-131.44	276.24	209.46	66.79	4.136	Alert
9,450.00	9,447.11	9,444.60	9,442.14	33.63	33.60	-138.81	126.89	-132.39	278.25	211.14	67.11	4.146	Alert
9,500.00	9,497.09	9,505.44	9,492.07	33.81	33.82	-138.75	128.07	-133.34	280.26	212.75	67.51	4.152	Alert
9,550.00	9,547.07	9,544.52	9,542.01	33.99	33.96	-138.70	129.25	-134.29	282.26	214.44	67.82	4.162	Alert
9,600.00	9,597.05	9,605.52	9,591.95	34.17	34.18	-138.65	130.43	-135.25	284.27	216.04	68.22	4.167	Alert
9,650.00	9,647.03	9,644.44	9,641.88	34.35	34.32	-138.60	131.61	-136.20	286.27	217.73	68.54	4.177	Alert
9,700.00	9,697.01	9,705.60	9,691.82	34.53	34.54	-138.55	132.80	-137.15	288.28	219.34	68.94	4.182	Alert
9,750.00	9,746.99	9,744.36	9,741.75	34.71	34.67	-138.50	133.98	-138.10	290.28	221.03	69.26	4.191	Alert
9,800.00	9,796.97	9,805.68	9,791.69	34.88	34.89	-138.45	135.16	-139.05	292.29	222.63	69.66	4.196	Alert
9,850.00	9,846.95	9,844.28	9,841.63	35.06	35.03	-138.41	136.34	-140.00	294.30	224.32	69.97	4.206	Alert
9,900.00	9,896.92	9,905.77	9,891.56	35.24	35.25	-138.36	137.52	-140.95	296.31	225.93	70.37	4.210	Alert
9,950.00	9,946.90	9,944.19	9,941.50	35.42	35.39	-138.31	138.70	-141.91	298.31	227.62	70.69	4.220	Alert
10,000.00	9,996.88	10,005.85	9,991.43	35.60	35.61	-138.27	139.88	-142.86	300.32	229.23	71.09	4.224	Alert
10,050.00	10,046.86	10,044.11	10,041.37	35.78	35.75	-138.22	141.06	-143.81	302.33	230.92	71.41	4.234	Alert
10,100.00	10,096.84	10,105.93	10,091.31	35.96	35.97	-138.18	142.24	-144.76	304.33	232.53	71.81	4.238	Alert
10,150.00	10,146.82	10,144.03	10,141.24	36.14	36.11	-138.14	143.42	-145.71	306.34	234.22	72.12	4.247	Alert
10,200.00	10,196.80	10,193.99	10,191.18	36.32	36.29	-138.09	144.60	-146.66	308.35	235.87	72.48	4.254	Alert
10,250.00	10,246.78	10,243.95	10,241.12	36.50	36.47	-138.05	145.78	-147.62	310.36	237.52	72.84	4.261	Alert
10,300.00	10,296.76	10,293.91	10,291.05	36.68	36.65	-138.01	146.96	-148.57	312.37	239.17	73.20	4.267	Alert
10,350.00	10,346.73	10,343.87	10,340.99	36.86	36.83	-137.97	148.14	-149.52	314.38	240.82	73.56	4.274	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	10,396.71	10,406.17	10,390.92	37.04	37.05	-137.92	149.32	-150.47	316.38	242.42	73.96	4.278	Alert
10,450.00	10,446.69	10,443.79	10,440.86	37.22	37.19	-137.88	150.50	-151.42	318.39	244.12	74.27	4.287	Alert
10,500.00	10,496.67	10,506.26	10,490.80	37.40	37.41	-137.84	151.68	-152.37	320.40	245.72	74.68	4.290	Alert
10,550.00	10,546.65	10,543.70	10,540.73	37.58	37.55	-137.80	152.86	-153.33	322.41	247.42	74.99	4.299	Alert
10,600.00	10,596.63	10,606.34	10,590.67	37.76	37.77	-137.77	154.04	-154.28	324.41	249.01	75.40	4.303	Alert
10,650.00	10,646.62	10,643.63	10,640.61	37.94	37.91	-137.69	155.22	-155.23	326.08	250.37	75.71	4.307	Alert
10,700.00	10,696.62	10,706.39	10,690.57	38.12	38.13	-137.53	156.40	-156.18	327.26	251.15	76.11	4.300	Alert
10,750.00	10,746.62	10,743.59	10,740.52	38.30	38.26	-90.42	157.58	-157.13	328.20	251.78	76.42	4.295	Alert
10,800.00	10,796.62	10,794.10	10,791.01	38.47	38.45	-90.22	158.77	-158.09	329.14	252.36	76.78	4.287	Alert
10,850.00	10,846.62	10,846.94	10,843.84	38.65	38.64	-90.07	159.62	-158.78	329.79	252.64	77.15	4.274	Alert
10,900.00	10,896.62	10,899.80	10,896.70	38.83	38.82	-90.02	159.91	-159.01	330.01	252.49	77.52	4.257	Alert
10,950.00	10,946.62	10,949.82	10,946.72	39.00	39.00	-90.02	159.91	-159.01	330.01	252.13	77.88	4.238	Alert
11,000.00	10,996.62	11,000.18	10,996.72	39.18	39.18	-90.02	159.91	-159.01	330.01	251.78	78.23	4.218	Alert
11,050.00	11,046.62	11,049.82	11,046.72	39.36	39.36	-90.02	159.91	-159.01	330.01	251.42	78.59	4.199	Alert
11,100.00	11,096.56	11,100.24	11,096.66	39.53	39.54	90.71	159.91	-159.01	330.03	251.09	78.94	4.181	Alert
11,150.00	11,146.12	11,149.32	11,146.22	39.69	39.71	91.81	159.91	-159.01	330.17	250.91	79.27	4.165	Alert
11,200.00	11,194.92	11,201.88	11,195.02	39.84	39.90	93.58	159.91	-159.01	330.70	251.09	79.61	4.154	Alert
11,250.00	11,242.61	11,245.81	11,242.71	39.98	40.06	95.91	159.91	-159.01	332.00	252.09	79.91	4.155	Alert
11,300.00	11,288.80	11,296.39	11,293.24	40.12	40.23	98.69	158.04	-159.00	334.36	254.14	80.22	4.168	Alert
11,350.00	11,333.15	11,349.05	11,345.46	40.25	40.39	101.43	151.39	-158.96	337.57	257.08	80.49	4.194	Alert
11,400.00	11,375.33	11,403.67	11,398.74	40.37	40.56	104.11	139.46	-158.88	341.54	260.86	80.69	4.233	Alert
11,450.00	11,415.01	11,460.41	11,452.62	40.48	40.72	106.68	121.76	-158.77	346.17	265.39	80.78	4.285	Alert
11,500.00	11,451.88	11,519.42	11,506.51	40.59	40.88	109.13	97.79	-158.62	351.28	270.56	80.73	4.352	Alert
11,550.00	11,485.68	11,580.83	11,559.68	40.70	41.03	111.44	67.10	-158.43	356.71	276.22	80.49	4.432	Alert
11,600.00	11,516.14	11,644.75	11,611.18	40.82	41.17	113.57	29.31	-158.20	362.24	282.19	80.05	4.525	Alert
11,650.00	11,543.03	11,711.18	11,659.92	40.94	41.31	115.49	-15.79	-157.92	367.65	288.22	79.43	4.629	Alert
11,700.00	11,566.14	11,780.10	11,704.60	41.05	41.47	117.19	-68.20	-157.59	372.72	294.05	78.67	4.738	Alert
11,750.00	11,585.30	11,851.35	11,743.84	41.17	41.63	118.62	-127.61	-157.22	377.21	299.37	77.85	4.846	Alert
11,800.00	11,600.37	11,924.66	11,776.20	41.28	41.79	119.75	-193.34	-156.82	380.93	303.86	77.07	4.942	Alert
11,850.00	11,611.22	11,999.64	11,800.35	41.40	41.96	120.58	-264.26	-156.37	383.69	307.20	76.48	5.017	
11,900.00	11,617.78	12,075.78	11,815.18	41.51	42.12	121.07	-338.89	-155.91	385.34	309.15	76.19	5.058	
11,950.00	11,620.00	12,152.50	11,819.99	41.62	42.29	121.20	-415.40	-155.44	385.82	309.54	76.28	5.058	
11,991.57	11,620.02	12,206.75	11,820.00	41.72	42.42	121.20	-456.14	-155.18	385.81	309.33	76.48	5.045	
12,000.00	11,620.00	12,201.68	11,820.00	41.74	42.40	121.21	-464.57	-155.13	385.82	309.34	76.49	5.044	
12,050.00	11,620.00	12,251.68	11,820.00	41.88	42.53	121.21	-514.57	-154.82	385.82	309.10	76.72	5.029	
12,100.00	11,620.00	12,301.68	11,820.00	42.01	42.66	121.21	-564.57	-154.51	385.82	308.86	76.96	5.013	
12,150.00	11,620.00	12,351.68	11,820.00	42.17	42.82	121.21	-614.57	-154.20	385.82	308.58	77.24	4.995	Alert
12,200.00	11,620.00	12,401.68	11,820.00	42.33	42.97	121.21	-664.57	-153.89	385.82	308.30	77.52	4.977	Alert
12,250.00	11,620.00	12,451.68	11,820.00	42.51	43.15	121.21	-714.57	-153.58	385.82	307.98	77.85	4.956	Alert
12,300.00	11,620.00	12,501.68	11,820.00	42.69	43.33	121.21	-764.57	-153.27	385.82	307.65	78.17	4.936	Alert
12,350.00	11,620.00	12,551.68	11,820.00	42.90	43.53	121.21	-814.57	-152.95	385.82	307.29	78.53	4.913	Alert
12,400.00	11,620.00	12,601.68	11,820.00	43.10	43.73	121.21	-864.57	-152.64	385.82	306.92	78.90	4.890	Alert
12,450.00	11,620.00	12,651.68	11,820.00	43.33	43.95	121.21	-914.56	-152.33	385.82	306.52	79.30	4.865	Alert
12,500.00	11,620.00	12,701.68	11,820.00	43.56	44.18	121.21	-964.56	-152.02	385.82	306.12	79.71	4.841	Alert
12,550.00	11,620.00	12,751.68	11,820.00	43.81	44.42	121.21	-1,014.56	-151.71	385.82	305.67	80.15	4.814	Alert
12,600.00	11,620.00	12,801.68	11,820.00	44.06	44.67	121.21	-1,064.56	-151.40	385.82	305.23	80.59	4.787	Alert
12,650.00	11,620.00	12,851.68	11,820.00	44.33	44.93	121.21	-1,114.56	-151.09	385.82	304.75	81.07	4.759	Alert
12,700.00	11,620.00	12,901.68	11,820.00	44.60	45.20	121.21	-1,164.56	-150.78	385.82	304.27	81.55	4.731	Alert
12,750.00	11,620.00	12,951.68	11,820.00	44.89	45.48	121.21	-1,214.56	-150.47	385.82	303.75	82.07	4.701	Alert
12,800.00	11,620.00	13,001.68	11,820.00	45.18	45.77	121.21	-1,264.56	-150.16	385.82	303.24	82.58	4.672	Alert
12,850.00	11,620.00	13,051.68	11,820.00	45.49	46.07	121.21	-1,314.56	-149.85	385.82	302.69	83.13	4.641	Alert
12,900.00	11,620.00	13,101.68	11,820.00	45.80	46.38	121.21	-1,364.56	-149.54	385.82	302.13	83.68	4.610	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	11,620.00	13,151.68	11,820.00	46.13	46.70	121.21	-1,414.55	-149.23	385.82	301.55	84.27	4.578	Alert
13,000.00	11,620.00	13,201.68	11,820.00	46.46	47.03	121.21	-1,464.55	-148.92	385.82	300.96	84.85	4.547	Alert
13,050.00	11,620.00	13,251.68	11,820.00	46.81	47.37	121.21	-1,514.55	-148.61	385.82	300.35	85.47	4.514	Alert
13,100.00	11,620.00	13,301.68	11,820.00	47.15	47.71	121.21	-1,564.55	-148.29	385.82	299.73	86.09	4.482	Alert
13,150.00	11,620.00	13,351.68	11,820.00	47.52	48.07	121.21	-1,614.55	-147.98	385.82	299.08	86.73	4.448	Alert
13,200.00	11,620.00	13,401.68	11,820.00	47.88	48.43	121.21	-1,664.55	-147.67	385.82	298.44	87.38	4.415	Alert
13,250.00	11,620.00	13,451.68	11,820.00	48.26	48.80	121.21	-1,714.55	-147.36	385.82	297.76	88.06	4.381	Alert
13,300.00	11,620.00	13,501.68	11,820.00	48.64	49.18	121.21	-1,764.55	-147.05	385.82	297.08	88.73	4.348	Alert
13,350.00	11,620.00	13,551.68	11,820.00	49.04	49.57	121.21	-1,814.55	-146.74	385.82	296.38	89.44	4.314	Alert
13,400.00	11,620.00	13,601.68	11,820.00	49.43	49.96	121.21	-1,864.55	-146.43	385.82	295.67	90.14	4.280	Alert
13,450.00	11,620.00	13,651.68	11,820.00	49.84	50.36	121.21	-1,914.55	-146.12	385.82	294.94	90.87	4.246	Alert
13,500.00	11,620.00	13,701.68	11,820.00	50.25	50.77	121.21	-1,964.54	-145.81	385.82	294.21	91.61	4.212	Alert
13,550.00	11,620.00	13,751.68	11,820.00	50.68	51.19	121.21	-2,014.54	-145.50	385.82	293.45	92.36	4.177	Alert
13,600.00	11,620.00	13,801.68	11,820.00	51.10	51.61	121.21	-2,064.54	-145.19	385.81	292.69	93.12	4.143	Alert
13,650.00	11,620.00	13,851.68	11,820.00	51.54	52.04	121.21	-2,114.54	-144.88	385.81	291.91	93.90	4.109	Alert
13,700.00	11,620.00	13,901.68	11,820.00	51.98	52.47	121.21	-2,164.54	-144.57	385.81	291.13	94.68	4.075	Alert
13,750.00	11,620.00	13,951.68	11,820.00	52.43	52.92	121.21	-2,214.54	-144.26	385.81	290.33	95.49	4.040	Alert
13,800.00	11,620.00	14,001.68	11,820.00	52.88	53.37	121.21	-2,264.54	-143.95	385.81	289.52	96.29	4.007	Alert
13,850.00	11,620.00	14,051.68	11,820.00	53.35	53.82	121.21	-2,314.54	-143.63	385.81	288.70	97.12	3.973	Alert
13,900.00	11,620.00	14,101.68	11,820.00	53.81	54.28	121.21	-2,364.54	-143.32	385.81	287.87	97.94	3.939	Alert
13,950.00	11,620.00	14,151.68	11,820.00	54.29	54.75	121.21	-2,414.54	-143.01	385.81	287.02	98.79	3.905	Alert
14,000.00	11,620.00	14,201.68	11,820.00	54.76	55.22	121.21	-2,464.53	-142.70	385.81	286.17	99.64	3.872	Alert
14,050.00	11,620.00	14,251.68	11,820.00	55.25	55.70	121.21	-2,514.53	-142.39	385.81	285.31	100.50	3.839	Alert
14,100.00	11,620.00	14,301.68	11,820.00	55.73	56.18	121.21	-2,564.53	-142.08	385.81	284.44	101.37	3.806	Alert
14,150.00	11,620.00	14,351.68	11,820.00	56.23	56.68	121.21	-2,614.53	-141.77	385.81	283.55	102.26	3.773	Alert
14,200.00	11,620.00	14,401.68	11,820.00	56.73	57.17	121.21	-2,664.53	-141.46	385.81	282.67	103.14	3.741	Alert
14,250.00	11,620.00	14,451.68	11,820.00	57.23	57.67	121.21	-2,714.53	-141.15	385.81	281.76	104.05	3.708	Alert
14,300.00	11,620.00	14,501.68	11,820.00	57.74	58.17	121.21	-2,764.53	-140.84	385.81	280.86	104.95	3.676	Alert
14,350.00	11,620.00	14,551.68	11,820.00	58.26	58.68	121.21	-2,814.53	-140.53	385.81	279.94	105.87	3.644	Alert
14,400.00	11,620.00	14,601.68	11,820.00	58.77	59.19	121.21	-2,864.53	-140.22	385.81	279.02	106.79	3.613	Alert
14,450.00	11,620.00	14,651.68	11,820.00	59.30	59.71	121.21	-2,914.53	-139.91	385.81	278.08	107.73	3.581	Alert
14,500.00	11,620.00	14,701.68	11,820.00	59.82	60.23	121.21	-2,964.52	-139.60	385.81	277.14	108.67	3.550	Alert
14,550.00	11,620.00	14,751.68	11,820.00	60.35	60.76	121.21	-3,014.52	-139.29	385.81	276.19	109.62	3.520	Alert
14,600.00	11,620.00	14,801.68	11,820.00	60.89	61.29	121.21	-3,064.52	-138.97	385.81	275.24	110.57	3.489	Alert
14,650.00	11,620.00	14,851.68	11,820.00	61.43	61.83	121.21	-3,114.52	-138.66	385.81	274.27	111.54	3.459	Alert
14,700.00	11,620.00	14,901.68	11,820.00	61.97	62.36	121.21	-3,164.52	-138.35	385.81	273.31	112.50	3.429	Alert
14,750.00	11,620.00	14,951.68	11,820.00	62.52	62.91	121.21	-3,214.52	-138.04	385.81	272.33	113.48	3.400	Alert
14,800.00	11,620.00	15,001.68	11,820.00	63.07	63.45	121.21	-3,264.52	-137.73	385.81	271.35	114.46	3.371	Alert
14,850.00	11,620.00	15,051.68	11,820.00	63.62	64.00	121.21	-3,314.52	-137.42	385.81	270.35	115.46	3.342	Alert
14,900.00	11,620.00	15,101.68	11,820.00	64.18	64.55	121.21	-3,364.52	-137.11	385.81	269.36	116.45	3.313	Alert
14,950.00	11,620.00	15,151.68	11,820.00	64.74	65.11	121.21	-3,414.52	-136.80	385.81	268.35	117.46	3.285	Alert
15,000.00	11,620.00	15,201.68	11,820.00	65.30	65.67	121.21	-3,464.52	-136.49	385.81	267.35	118.46	3.257	Alert
15,050.00	11,620.00	15,251.68	11,820.00	65.87	66.24	121.21	-3,514.51	-136.18	385.81	266.33	119.48	3.229	Alert
15,100.00	11,620.00	15,301.68	11,820.00	66.44	66.80	121.21	-3,564.51	-135.87	385.81	265.31	120.50	3.202	Alert
15,150.00	11,620.00	15,351.68	11,820.00	67.02	67.37	121.21	-3,614.51	-135.56	385.81	264.28	121.52	3.175	Alert
15,200.00	11,620.00	15,401.68	11,820.00	67.59	67.94	121.21	-3,664.51	-135.25	385.81	263.25	122.55	3.148	Alert
15,250.00	11,620.00	15,451.68	11,820.00	68.17	68.52	121.21	-3,714.51	-134.94	385.81	262.21	123.59	3.122	Alert
15,300.00	11,620.00	15,501.68	11,820.00	68.75	69.10	121.21	-3,764.51	-134.62	385.81	261.17	124.63	3.096	Alert
15,350.00	11,620.00	15,551.68	11,820.00	69.34	69.68	121.21	-3,814.51	-134.31	385.81	260.12	125.68	3.070	Alert
15,400.00	11,620.00	15,601.68	11,820.00	69.93	70.26	121.21	-3,864.51	-134.00	385.80	259.07	126.73	3.044	Alert
15,450.00	11,620.00	15,651.68	11,820.00	70.52	70.85	121.21	-3,914.51	-133.69	385.80	258.01	127.79	3.019	Alert
15,500.00	11,620.00	15,701.68	11,820.00	71.11	71.44	121.21	-3,964.51	-133.38	385.80	256.95	128.85	2.994	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	11,620.00	15,751.68	11,820.00	71.71	72.03	121.21	-4,014.50	-133.07	385.80	255.89	129.92	2.970	Alert
15,600.00	11,620.00	15,801.68	11,820.00	72.31	72.63	121.21	-4,064.50	-132.76	385.80	254.82	130.99	2.945	Alert
15,650.00	11,620.00	15,851.68	11,820.00	72.91	73.23	121.21	-4,114.50	-132.45	385.80	253.74	132.06	2.921	Alert
15,700.00	11,620.00	15,901.68	11,820.00	73.51	73.82	121.21	-4,164.50	-132.14	385.80	252.66	133.14	2.898	Alert
15,750.00	11,620.00	15,951.68	11,820.00	74.12	74.43	121.21	-4,214.50	-131.83	385.80	251.58	134.23	2.874	Alert
15,800.00	11,620.00	16,001.68	11,820.00	74.72	75.03	121.21	-4,264.50	-131.52	385.80	250.49	135.31	2.851	Alert
15,850.00	11,620.00	16,051.68	11,820.00	75.33	75.64	121.21	-4,314.50	-131.21	385.80	249.40	136.40	2.828	Alert
15,900.00	11,620.00	16,101.68	11,820.00	75.94	76.24	121.21	-4,364.50	-130.90	385.80	248.30	137.50	2.806	Alert
15,950.00	11,620.00	16,151.68	11,820.00	76.56	76.86	121.21	-4,414.50	-130.59	385.80	247.20	138.60	2.784	Alert
16,000.00	11,620.00	16,201.68	11,820.00	77.17	77.47	121.21	-4,464.50	-130.28	385.80	246.10	139.70	2.762	Alert
16,050.00	11,620.00	16,251.68	11,820.00	77.79	78.08	121.21	-4,514.49	-129.96	385.80	244.99	140.81	2.740	Alert
16,100.00	11,620.00	16,301.68	11,820.00	78.41	78.70	121.21	-4,564.49	-129.65	385.80	243.89	141.92	2.719	Alert
16,150.00	11,620.00	16,351.68	11,820.00	79.03	79.32	121.21	-4,614.49	-129.34	385.80	242.77	143.03	2.697	Alert
16,200.00	11,620.00	16,401.68	11,820.00	79.65	79.94	121.21	-4,664.49	-129.03	385.80	241.66	144.15	2.676	Alert
16,250.00	11,620.00	16,451.68	11,820.00	80.28	80.56	121.21	-4,714.49	-128.72	385.80	240.53	145.27	2.656	Alert
16,300.00	11,620.00	16,501.68	11,820.00	80.91	81.18	121.21	-4,764.49	-128.41	385.80	239.41	146.39	2.635	Alert
16,350.00	11,620.00	16,551.68	11,820.00	81.53	81.81	121.21	-4,814.49	-128.10	385.80	238.28	147.52	2.615	Alert
16,400.00	11,620.00	16,601.68	11,820.00	82.16	82.44	121.21	-4,864.49	-127.79	385.80	237.16	148.64	2.595	Alert
16,450.00	11,620.00	16,651.68	11,820.00	82.80	83.07	121.21	-4,914.49	-127.48	385.80	236.02	149.78	2.576	Alert
16,500.00	11,620.00	16,701.68	11,820.00	83.43	83.70	121.21	-4,964.49	-127.17	385.80	234.89	150.91	2.556	Alert
16,550.00	11,620.00	16,751.68	11,820.00	84.06	84.33	121.21	-5,014.49	-126.86	385.80	233.75	152.05	2.537	Alert
16,600.00	11,620.00	16,801.68	11,820.00	84.70	84.96	121.21	-5,064.48	-126.55	385.80	232.61	153.19	2.518	Alert
16,650.00	11,620.00	16,851.68	11,820.00	85.34	85.60	121.21	-5,114.48	-126.24	385.80	231.46	154.33	2.500	Minor Risk
16,700.00	11,620.00	16,901.68	11,820.00	85.98	86.23	121.21	-5,164.48	-125.93	385.80	230.32	155.48	2.481	Minor Risk
16,750.00	11,620.00	16,951.68	11,820.00	86.62	86.87	121.21	-5,214.48	-125.62	385.80	229.17	156.63	2.463	Minor Risk
16,800.00	11,620.00	17,001.68	11,820.00	87.26	87.51	121.21	-5,264.48	-125.30	385.80	228.02	157.78	2.445	Minor Risk
16,850.00	11,620.00	17,051.68	11,820.00	87.90	88.15	121.21	-5,314.48	-124.99	385.80	226.86	158.93	2.427	Minor Risk
16,900.00	11,620.00	17,101.68	11,820.00	88.55	88.79	121.21	-5,364.48	-124.68	385.80	225.71	160.09	2.410	Minor Risk
16,950.00	11,620.00	17,151.68	11,820.00	89.20	89.44	121.21	-5,414.48	-124.37	385.80	224.55	161.25	2.393	Minor Risk
17,000.00	11,620.00	17,201.68	11,820.00	89.84	90.08	121.21	-5,464.48	-124.06	385.80	223.39	162.41	2.375	Minor Risk
17,050.00	11,620.00	17,251.68	11,820.00	90.49	90.73	121.21	-5,514.48	-123.75	385.80	222.22	163.57	2.359	Minor Risk
17,100.00	11,620.00	17,301.68	11,820.00	91.14	91.38	121.21	-5,564.47	-123.44	385.80	221.06	164.74	2.342	Minor Risk
17,150.00	11,620.00	17,351.68	11,820.00	91.79	92.03	121.21	-5,614.47	-123.13	385.80	219.89	165.91	2.325	Minor Risk
17,200.00	11,620.00	17,401.68	11,820.00	92.44	92.68	121.21	-5,664.47	-122.82	385.79	218.72	167.07	2.309	Minor Risk
17,250.00	11,620.00	17,451.68	11,820.00	93.10	93.33	121.21	-5,714.47	-122.51	385.79	217.55	168.25	2.293	Minor Risk
17,300.00	11,620.00	17,501.68	11,820.00	93.75	93.98	121.21	-5,764.47	-122.20	385.79	216.37	169.42	2.277	Minor Risk
17,350.00	11,620.00	17,551.68	11,820.00	94.41	94.63	121.21	-5,814.47	-121.89	385.79	215.20	170.60	2.261	Minor Risk
17,400.00	11,620.00	17,601.68	11,820.00	95.06	95.29	121.21	-5,864.47	-121.58	385.79	214.02	171.77	2.246	Minor Risk
17,450.00	11,620.00	17,651.68	11,820.00	95.72	95.94	121.21	-5,914.47	-121.27	385.79	212.84	172.95	2.231	Minor Risk
17,500.00	11,620.00	17,701.68	11,820.00	96.38	96.60	121.21	-5,964.47	-120.96	385.79	211.66	174.14	2.215	Minor Risk
17,550.00	11,620.00	17,751.68	11,820.00	97.04	97.26	121.21	-6,014.47	-120.64	385.79	210.47	175.32	2.201	Minor Risk
17,600.00	11,620.00	17,801.68	11,820.00	97.70	97.92	121.21	-6,064.47	-120.33	385.79	209.29	176.50	2.186	Minor Risk
17,650.00	11,620.00	17,851.68	11,820.00	98.36	98.58	121.21	-6,114.46	-120.02	385.79	208.10	177.69	2.171	Minor Risk
17,700.00	11,620.00	17,901.68	11,820.00	99.03	99.24	121.21	-6,164.46	-119.71	385.79	206.91	178.88	2.157	Minor Risk
17,750.00	11,620.00	17,951.68	11,820.00	99.69	99.90	121.21	-6,214.46	-119.40	385.79	205.72	180.07	2.142	Minor Risk
17,800.00	11,620.00	18,001.68	11,820.00	100.35	100.56	121.21	-6,264.46	-119.09	385.79	204.53	181.26	2.128	Minor Risk
17,850.00	11,620.00	18,051.68	11,820.00	101.02	101.22	121.21	-6,314.46	-118.78	385.79	203.33	182.46	2.114	Minor Risk
17,900.00	11,620.00	18,101.68	11,820.00	101.69	101.89	121.21	-6,364.46	-118.47	385.79	202.14	183.65	2.101	Minor Risk
17,950.00	11,620.00	18,151.68	11,820.00	102.35	102.55	121.21	-6,414.46	-118.16	385.79	200.94	184.85	2.087	Minor Risk
18,000.00	11,620.00	18,201.68	11,820.00	103.02	103.22	121.21	-6,464.46	-117.85	385.79	199.74	186.05	2.074	Minor Risk
18,050.00	11,620.00	18,251.68	11,820.00	103.69	103.89	121.21	-6,514.46	-117.54	385.79	198.54	187.25	2.060	Minor Risk
18,100.00	11,620.00	18,301.68	11,820.00	104.36	104.55	121.21	-6,564.46	-117.23	385.79	197.34	188.45	2.047	Minor Risk

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	11,620.00	18,351.68	11,820.00	105.03	105.22	121.21	-6,614.45	-116.92	385.79	196.13	189.66	2.034	Minor Risk
18,200.00	11,620.00	18,401.68	11,820.00	105.70	105.89	121.21	-6,664.45	-116.61	385.79	194.93	190.86	2.021	Minor Risk
18,250.00	11,620.00	18,451.68	11,820.00	106.37	106.56	121.21	-6,714.45	-116.29	385.79	193.72	192.07	2.009	Minor Risk
18,300.00	11,620.00	18,501.68	11,820.00	107.04	107.23	121.21	-6,764.45	-115.98	385.79	192.52	193.27	1.996	Minor Risk
18,350.00	11,620.00	18,551.68	11,820.00	107.72	107.90	121.21	-6,814.45	-115.67	385.79	191.31	194.48	1.984	Minor Risk
18,400.00	11,620.00	18,601.68	11,820.00	108.39	108.58	121.21	-6,864.45	-115.36	385.79	190.10	195.69	1.971	Minor Risk
18,450.00	11,620.00	18,651.68	11,820.00	109.07	109.25	121.21	-6,914.45	-115.05	385.79	188.88	196.90	1.959	Minor Risk
18,500.00	11,620.00	18,701.68	11,820.00	109.74	109.92	121.21	-6,964.45	-114.74	385.79	187.67	198.12	1.947	Minor Risk
18,550.00	11,620.00	18,751.68	11,820.00	110.42	110.60	121.21	-7,014.45	-114.43	385.79	186.46	199.33	1.935	Minor Risk
18,600.00	11,620.00	18,801.68	11,820.00	111.10	111.27	121.21	-7,064.45	-114.12	385.79	185.24	200.55	1.924	Minor Risk
18,650.00	11,620.00	18,851.68	11,820.00	111.77	111.95	121.21	-7,114.44	-113.81	385.79	184.02	201.76	1.912	Minor Risk
18,700.00	11,620.00	18,901.68	11,820.00	112.45	112.62	121.21	-7,164.44	-113.50	385.79	182.81	202.98	1.901	Minor Risk
18,750.00	11,620.00	18,951.68	11,820.00	113.13	113.30	121.21	-7,214.44	-113.19	385.79	181.59	204.20	1.889	Minor Risk
18,800.00	11,620.00	19,001.68	11,820.00	113.81	113.98	121.21	-7,264.44	-112.88	385.79	180.37	205.42	1.878	Minor Risk
18,850.00	11,620.00	19,051.68	11,820.00	114.49	114.66	121.21	-7,314.44	-112.57	385.79	179.15	206.64	1.867	Minor Risk
18,900.00	11,620.00	19,101.68	11,820.00	115.17	115.34	121.21	-7,364.44	-112.26	385.79	177.92	207.86	1.856	Minor Risk
18,950.00	11,620.00	19,151.68	11,820.00	115.85	116.02	121.21	-7,414.44	-111.95	385.78	176.70	209.09	1.845	Minor Risk
19,000.00	11,620.00	19,201.68	11,820.00	116.53	116.70	121.21	-7,464.44	-111.63	385.78	175.48	210.31	1.834	Minor Risk
19,050.00	11,620.00	19,251.68	11,820.00	117.22	117.38	121.21	-7,514.44	-111.32	385.78	174.25	211.54	1.824	Minor Risk
19,100.00	11,620.00	19,301.68	11,820.00	117.90	118.06	121.21	-7,564.44	-111.01	385.78	173.02	212.76	1.813	Minor Risk
19,150.00	11,620.00	19,351.68	11,820.00	118.58	118.74	121.21	-7,614.44	-110.70	385.78	171.79	213.99	1.803	Minor Risk
19,200.00	11,620.00	19,401.68	11,820.00	119.27	119.42	121.21	-7,664.43	-110.39	385.78	170.57	215.22	1.793	Minor Risk
19,250.00	11,620.00	19,451.68	11,820.00	119.95	120.11	121.21	-7,714.43	-110.08	385.78	169.34	216.45	1.782	Minor Risk
19,300.00	11,620.00	19,501.68	11,820.00	120.63	120.79	121.21	-7,764.43	-109.77	385.78	168.11	217.68	1.772	Minor Risk
19,350.00	11,620.00	19,551.68	11,820.00	121.32	121.48	121.21	-7,814.43	-109.46	385.78	166.87	218.91	1.762	Minor Risk
19,400.00	11,620.00	19,601.68	11,820.00	122.01	122.16	121.21	-7,864.43	-109.15	385.78	165.64	220.14	1.752	Minor Risk
19,450.00	11,620.00	19,651.68	11,820.00	122.69	122.85	121.21	-7,914.43	-108.84	385.78	164.41	221.37	1.743	Minor Risk
19,500.00	11,620.00	19,701.68	11,820.00	123.38	123.53	121.21	-7,964.43	-108.53	385.78	163.17	222.61	1.733	Minor Risk
19,550.00	11,620.00	19,751.68	11,820.00	124.07	124.22	121.21	-8,014.43	-108.22	385.78	161.94	223.84	1.723	Minor Risk
19,600.00	11,620.00	19,801.68	11,820.00	124.76	124.90	121.21	-8,064.43	-107.91	385.78	160.70	225.08	1.714	Minor Risk
19,650.00	11,620.00	19,851.68	11,820.00	125.44	125.59	121.21	-8,114.43	-107.60	385.78	159.46	226.32	1.705	Minor Risk
19,700.00	11,620.00	19,901.68	11,820.00	126.13	126.28	121.21	-8,164.42	-107.29	385.78	158.23	227.55	1.695	Minor Risk
19,750.00	11,620.00	19,951.68	11,820.00	126.82	126.97	121.21	-8,214.42	-106.97	385.78	156.99	228.79	1.686	Minor Risk
19,800.00	11,620.00	20,001.68	11,820.00	127.51	127.66	121.21	-8,264.42	-106.66	385.78	155.75	230.03	1.677	Minor Risk
19,850.00	11,620.00	20,051.68	11,820.00	128.20	128.34	121.21	-8,314.42	-106.35	385.78	154.51	231.27	1.668	Minor Risk
19,900.00	11,620.00	20,101.68	11,820.00	128.89	129.03	121.21	-8,364.42	-106.04	385.78	153.27	232.51	1.659	Minor Risk
19,950.00	11,620.00	20,151.68	11,820.00	129.58	129.72	121.21	-8,414.42	-105.73	385.78	152.03	233.75	1.650	Minor Risk
20,000.00	11,620.00	20,201.68	11,820.00	130.28	130.41	121.21	-8,464.42	-105.42	385.78	150.78	235.00	1.642	Minor Risk
20,050.00	11,620.00	20,251.68	11,820.00	130.97	131.11	121.21	-8,514.42	-105.11	385.78	149.54	236.24	1.633	Minor Risk
20,100.00	11,620.00	20,301.68	11,820.00	131.66	131.80	121.21	-8,564.42	-104.80	385.78	148.30	237.48	1.624	Minor Risk
20,150.00	11,620.00	20,351.68	11,820.00	132.35	132.49	121.21	-8,614.42	-104.49	385.78	147.05	238.73	1.616	Minor Risk
20,200.00	11,620.00	20,401.68	11,820.00	133.05	133.18	121.21	-8,664.41	-104.18	385.78	145.80	239.97	1.608	Minor Risk
20,250.00	11,620.00	20,451.68	11,820.00	133.74	133.87	121.21	-8,714.41	-103.87	385.78	144.56	241.22	1.599	Minor Risk
20,300.00	11,620.00	20,501.68	11,820.00	134.43	134.56	121.21	-8,764.41	-103.56	385.78	143.31	242.47	1.591	Minor Risk
20,350.00	11,620.00	20,551.68	11,820.00	135.13	135.26	121.21	-8,814.41	-103.25	385.78	142.06	243.71	1.583	Minor Risk
20,400.00	11,620.00	20,601.68	11,820.00	135.82	135.95	121.21	-8,864.41	-102.94	385.78	140.82	244.96	1.575	Minor Risk
20,450.00	11,620.00	20,651.68	11,820.00	136.52	136.65	121.21	-8,914.41	-102.62	385.78	139.57	246.21	1.567	Minor Risk
20,500.00	11,620.00	20,701.68	11,820.00	137.21	137.34	121.21	-8,964.41	-102.31	385.78	138.32	247.46	1.559	Minor Risk
20,550.00	11,620.00	20,751.68	11,820.00	137.91	138.03	121.21	-9,014.41	-102.00	385.78	137.07	248.71	1.551	Minor Risk
20,600.00	11,620.00	20,801.68	11,820.00	138.60	138.73	121.21	-9,064.41	-101.69	385.78	135.82	249.96	1.543	Minor Risk
20,650.00	11,620.00	20,851.68	11,820.00	139.30	139.42	121.21	-9,114.41	-101.38	385.78	134.56	251.21	1.536	Minor Risk
20,700.00	11,620.00	20,901.68	11,820.00	140.00	140.12	121.21	-9,164.41	-101.07	385.78	133.31	252.46	1.528	Minor Risk

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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
20,750.00	11,620.00	20,951.68	11,820.00	140.69	140.82	121.21	-9,214.40	-100.76	385.77	132.06	253.72	1.520	Minor Risk
20,800.00	11,620.00	21,001.68	11,820.00	141.39	141.51	121.21	-9,264.40	-100.45	385.77	130.81	254.97	1.513	Minor Risk
20,850.00	11,620.00	21,051.68	11,820.00	142.09	142.21	121.21	-9,314.40	-100.14	385.77	129.55	256.22	1.506	Minor Risk
20,900.00	11,620.00	21,101.68	11,820.00	142.79	142.91	121.21	-9,364.40	-99.83	385.77	128.30	257.48	1.498	Major Risk
20,950.00	11,620.00	21,151.68	11,820.00	143.49	143.60	121.21	-9,414.40	-99.52	385.77	127.04	258.73	1.491	Major Risk
21,000.00	11,620.00	21,201.68	11,820.00	144.18	144.30	121.21	-9,464.40	-99.21	385.77	125.79	259.99	1.484	Major Risk
21,050.00	11,620.00	21,251.68	11,820.00	144.88	145.00	121.21	-9,514.40	-98.90	385.77	124.53	261.24	1.477	Major Risk
21,100.00	11,620.00	21,301.68	11,820.00	145.58	145.70	121.21	-9,564.40	-98.59	385.77	123.27	262.50	1.470	Major Risk
21,150.00	11,620.00	21,351.68	11,820.00	146.28	146.40	121.21	-9,614.40	-98.28	385.77	122.01	263.76	1.463	Major Risk
21,200.00	11,620.00	21,401.68	11,820.00	146.98	147.09	121.21	-9,664.40	-97.96	385.77	120.76	265.02	1.456	Major Risk
21,250.00	11,620.00	21,451.68	11,820.00	147.68	147.79	121.21	-9,714.39	-97.65	385.77	119.50	266.27	1.449	Major Risk
21,300.00	11,620.00	21,501.68	11,820.00	148.38	148.49	121.21	-9,764.39	-97.34	385.77	118.24	267.53	1.442	Major Risk
21,350.00	11,620.00	21,551.68	11,820.00	149.08	149.19	121.21	-9,814.39	-97.03	385.77	116.98	268.79	1.435	Major Risk
21,400.00	11,620.00	21,601.68	11,820.00	149.78	149.89	121.21	-9,864.39	-96.72	385.77	115.72	270.05	1.429	Major Risk
21,450.00	11,620.00	21,651.68	11,820.00	150.48	150.59	121.21	-9,914.39	-96.41	385.77	114.46	271.31	1.422	Major Risk
21,500.00	11,620.00	21,701.68	11,820.00	151.19	151.29	121.21	-9,964.39	-96.10	385.77	113.20	272.57	1.415	Major Risk
21,550.00	11,620.00	21,751.68	11,820.00	151.89	151.99	121.21	-10,014.39	-95.79	385.77	111.94	273.83	1.409	Major Risk
21,600.00	11,620.00	21,801.68	11,820.00	152.59	152.70	121.21	-10,064.39	-95.48	385.77	110.68	275.09	1.402	Major Risk
21,650.00	11,620.00	21,851.68	11,820.00	153.29	153.40	121.21	-10,114.39	-95.17	385.77	109.41	276.36	1.396	Major Risk
21,700.00	11,620.00	21,901.68	11,820.00	153.99	154.10	121.21	-10,164.39	-94.86	385.77	108.15	277.62	1.390	Major Risk
21,750.00	11,620.00	21,951.68	11,820.00	154.70	154.80	121.21	-10,214.39	-94.55	385.77	106.89	278.88	1.383	Major Risk
21,800.00	11,620.00	22,001.68	11,820.00	155.40	155.50	121.21	-10,264.38	-94.24	385.77	105.62	280.15	1.377	Major Risk
21,850.00	11,620.00	22,051.68	11,820.00	156.10	156.20	121.21	-10,314.38	-93.93	385.77	104.36	281.41	1.371	Major Risk
21,864.06	11,620.00	22,065.74	11,820.00	156.30	156.40	121.21	-10,328.44	-93.84	385.77	104.00	281.77	1.369	Major Risk, SF

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals

Offset Site Error: 5.00 ft

Survey Program: 188-MWD+HDGM

Offset Well Error: 0.00 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
0.00	0.00	15.21	15.21	0.50	0.02	92.12	-26.59	717.85	718.34				
50.00	50.00	63.32	63.32	0.50	0.09	92.12	-26.62	717.95	718.45	717.85	0.60	1,205.306	
100.00	100.00	111.44	111.44	0.52	0.17	92.13	-26.67	718.18	718.69	718.00	0.68	1,051.768	
150.00	150.00	159.55	159.55	0.59	0.24	92.13	-26.76	718.53	719.05	718.23	0.83	869.242	
200.00	200.00	208.22	208.21	0.70	0.35	92.14	-26.87	719.00	719.55	718.49	1.05	682.866	
250.00	250.00	257.68	257.68	0.84	0.53	92.14	-26.86	719.55	720.09	718.73	1.37	527.085	
300.00	300.00	307.68	307.66	0.99	0.71	92.13	-26.73	720.12	720.66	718.97	1.69	425.282	
350.00	350.00	358.14	358.12	1.15	0.89	92.12	-26.69	720.68	721.21	719.18	2.03	354.708	
400.00	400.00	408.28	408.26	1.31	1.07	92.12	-26.74	721.20	721.74	719.36	2.38	303.700	
450.00	450.00	458.26	458.24	1.48	1.25	92.13	-26.78	721.72	722.26	719.54	2.72	265.254	
500.00	500.00	508.83	508.80	1.65	1.43	92.13	-26.82	722.24	722.77	719.69	3.07	235.130	
550.00	550.00	559.51	559.49	1.82	1.61	92.13	-26.83	722.70	723.23	719.80	3.43	211.028	
600.00	600.00	611.05	611.03	1.99	1.80	92.13	-26.86	723.10	723.61	719.83	3.78	191.202	
650.00	650.00	662.60	662.58	2.16	1.98	92.13	-26.95	723.38	723.89	719.74	4.14	174.729	
700.00	700.00	711.23	711.20	2.34	2.15	92.14	-27.04	723.65	724.17	719.68	4.49	161.223	
750.00	750.00	760.26	760.24	2.51	2.33	92.14	-27.10	724.00	724.52	719.68	4.84	149.612	
800.00	800.00	809.97	809.94	2.69	2.51	92.14	-27.13	724.41	724.94	719.74	5.20	139.504	
850.00	850.00	862.16	862.13	2.87	2.69	92.15	-27.17	724.75	725.27	719.71	5.56	130.446	
900.00	900.00	913.71	913.67	3.04	2.88	92.15	-27.21	724.94	725.45	719.53	5.92	122.524	
950.00	950.00	964.45	964.42	3.22	3.06	92.15	-27.21	725.06	725.57	719.30	6.28	115.558	
1,000.00	1,000.00	1,015.50	1,015.47	3.40	3.24	92.15	-27.17	725.13	725.64	719.00	6.63	109.398	
1,050.00	1,050.00	1,066.73	1,066.69	3.58	3.41	92.14	-27.13	725.11	725.62	718.63	6.98	103.883	
1,100.00	1,100.00	1,117.01	1,116.98	3.75	3.58	92.14	-27.09	725.03	725.54	718.21	7.33	98.995	
1,150.00	1,150.00	1,167.09	1,167.06	3.93	3.74	92.14	-27.07	724.95	725.46	717.78	7.67	94.564	
1,200.00	1,200.00	1,215.85	1,215.81	4.11	3.91	92.14	-27.08	724.91	725.41	717.40	8.02	90.484	
1,200.56	1,200.56	1,216.39	1,216.36	4.11	3.91	92.14	-27.08	724.91	725.41	717.39	8.02	90.441	
1,250.00	1,250.00	1,264.66	1,264.62	4.29	4.08	92.14	-27.11	724.95	725.45	717.09	8.36	86.740	
1,300.00	1,300.00	1,313.88	1,313.85	4.46	4.25	92.14	-27.15	725.05	725.56	716.84	8.72	83.234	
1,350.00	1,350.00	1,363.50	1,363.46	4.64	4.43	92.15	-27.17	725.21	725.72	716.65	9.07	79.992	
1,400.00	1,400.00	1,414.20	1,414.17	4.82	4.61	92.15	-27.19	725.34	725.86	716.42	9.43	76.958	
1,450.00	1,450.00	1,465.08	1,465.05	5.00	4.79	92.15	-27.20	725.43	725.94	716.15	9.79	74.151	
1,500.00	1,500.00	1,516.16	1,516.12	5.18	4.97	92.14	-27.12	725.45	725.96	715.81	10.15	71.546	
1,550.00	1,550.00	1,566.57	1,566.54	5.36	5.14	92.13	-26.98	725.41	725.91	715.41	10.50	69.148	
1,600.00	1,600.00	1,616.66	1,616.63	5.53	5.31	92.13	-26.96	725.36	725.86	715.01	10.85	66.921	
1,650.00	1,650.00	1,666.16	1,666.13	5.71	5.48	92.13	-27.03	725.31	725.82	714.62	11.19	64.835	
1,676.86	1,676.86	1,692.69	1,692.66	5.81	5.57	92.14	-27.07	725.30	725.81	714.43	11.38	63.768	
1,700.00	1,700.00	1,715.55	1,715.52	5.89	5.65	92.14	-27.11	725.31	725.81	714.27	11.54	62.878	
1,750.00	1,750.00	1,765.24	1,765.21	6.07	5.83	92.15	-27.19	725.33	725.84	713.95	11.90	61.012	
1,800.00	1,800.00	1,815.00	1,814.96	6.25	6.00	92.15	-27.26	725.38	725.90	713.64	12.25	59.254	
1,850.00	1,850.00	1,865.47	1,865.43	6.43	6.18	92.16	-27.30	725.42	725.94	713.33	12.61	57.583	
1,900.00	1,900.00	1,915.83	1,915.80	6.61	6.36	92.16	-27.31	725.43	725.95	712.98	12.96	56.005	
1,950.00	1,950.00	1,965.83	1,965.80	6.78	6.53	92.16	-27.31	725.43	725.95	712.63	13.31	54.525	
1,954.87	1,954.87	1,970.71	1,970.67	6.80	6.55	92.16	-27.31	725.43	725.95	712.60	13.35	54.385	
2,000.00	2,000.00	2,015.39	2,015.35	6.96	6.70	92.16	-27.31	725.44	725.95	712.29	13.67	53.124	
2,050.00	2,050.00	2,064.07	2,064.03	7.14	6.87	92.16	-27.32	725.51	726.03	712.01	14.01	51.806	
2,100.00	2,100.00	2,113.75	2,113.72	7.32	7.05	92.16	-27.34	725.66	726.18	711.81	14.37	50.542	
2,150.00	2,150.00	2,164.79	2,164.76	7.50	7.23	92.15	-27.31	725.77	726.29	711.56	14.73	49.317	
2,200.00	2,200.00	2,215.19	2,215.16	7.68	7.41	92.15	-27.25	725.83	726.34	711.25	15.08	48.155	
2,250.00	2,250.00	2,265.13	2,265.10	7.86	7.58	92.15	-27.26	725.87	726.38	710.95	15.44	47.052	
2,300.00	2,300.00	2,315.39	2,315.35	8.04	7.76	92.16	-27.32	725.91	726.43	710.63	15.79	45.992	
2,350.00	2,350.00	2,365.77	2,365.74	8.22	7.94	92.16	-27.35	725.93	726.44	710.29	16.15	44.975	
2,400.00	2,400.00	2,407.78	2,407.74	8.39	8.09	92.15	-27.28	726.12	726.68	710.20	16.48	44.094 ES	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals — **Offset Site Error:** 5.00 ft

Survey Program: 188-MWD+HDGM — **Offset Well Error:** 0.00 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
2,450.00	2,450.00	2,448.13	2,448.09	8.57	8.23	92.13	-27.03	726.84	727.56	710.76	16.80	43.308	
2,500.00	2,500.00	2,487.89	2,487.83	8.75	8.37	92.09	-26.60	728.10	729.12	712.01	17.11	42.604	
2,550.00	2,550.00	2,527.06	2,526.95	8.93	8.51	45.13	-26.01	729.91	731.25	713.83	17.42	41.975	
2,600.00	2,599.99	2,566.45	2,566.25	9.11	8.65	45.08	-25.26	732.32	733.82	716.09	17.73	41.399	
2,650.00	2,649.98	2,607.53	2,607.21	9.28	8.80	45.02	-24.25	735.38	736.72	718.69	18.03	40.851	
2,700.00	2,699.96	2,648.56	2,648.06	9.46	8.95	44.97	-22.99	738.93	739.99	721.65	18.34	40.348	
2,750.00	2,749.94	2,692.42	2,691.69	9.64	9.10	44.90	-21.38	743.19	743.76	725.10	18.66	39.859	
2,800.00	2,799.92	2,736.87	2,735.85	9.81	9.26	44.82	-19.48	747.84	747.90	728.91	18.98	39.401	
2,850.00	2,849.90	2,782.14	2,780.80	9.99	9.42	44.71	-17.36	752.88	752.37	733.06	19.31	38.966	
2,900.00	2,899.88	2,827.75	2,826.04	10.17	9.59	44.62	-15.32	758.21	757.13	737.49	19.64	38.558	
2,950.00	2,949.86	2,873.62	2,871.53	10.34	9.76	44.53	-13.42	763.81	762.15	742.18	19.97	38.173	
3,000.00	2,999.84	2,919.62	2,917.13	10.52	9.92	44.47	-11.83	769.64	767.42	747.12	20.30	37.811	
3,050.00	3,049.81	2,967.34	2,964.42	10.70	10.10	44.43	-10.47	775.89	772.89	752.26	20.64	37.451	
3,100.00	3,099.79	3,016.22	3,012.86	10.88	10.28	44.39	-9.13	782.35	778.44	757.45	20.99	37.093	
3,150.00	3,149.77	3,068.37	3,064.53	11.05	10.47	44.35	-7.70	789.22	783.97	762.61	21.36	36.710	
3,200.00	3,199.75	3,122.28	3,117.98	11.23	10.67	44.31	-6.19	796.06	789.25	767.51	21.74	36.310	
3,250.00	3,249.73	3,178.84	3,174.11	11.41	10.88	44.27	-4.55	802.85	794.19	772.06	22.13	35.882	
3,300.00	3,299.71	3,235.75	3,230.63	11.59	11.09	44.22	-2.83	809.19	798.69	776.16	22.53	35.449	
3,350.00	3,349.69	3,281.28	3,275.87	11.76	11.26	44.17	-1.42	814.26	803.19	780.33	22.86	35.132	
3,400.00	3,399.67	3,327.50	3,321.76	11.94	11.43	44.13	0.04	819.52	807.81	784.61	23.20	34.824	
3,450.00	3,449.65	3,369.17	3,363.09	12.12	11.59	44.08	1.50	824.58	812.82	789.32	23.50	34.583	
3,500.00	3,499.62	3,410.78	3,404.31	12.30	11.75	44.01	3.15	830.06	818.33	794.52	23.81	34.373	
3,550.00	3,549.60	3,454.65	3,447.71	12.48	11.91	43.94	5.03	836.19	824.26	800.13	24.13	34.166	
3,600.00	3,599.58	3,498.44	3,490.98	12.65	12.08	43.85	6.98	842.63	830.54	806.09	24.44	33.981	
3,650.00	3,649.56	3,551.79	3,543.68	12.83	12.28	43.76	9.36	850.57	836.92	812.10	24.82	33.715	
3,700.00	3,699.54	3,606.93	3,598.21	13.01	12.49	43.67	11.67	858.43	842.99	817.77	25.22	33.430	
3,750.00	3,749.52	3,655.26	3,646.02	13.19	12.68	43.61	13.46	865.23	848.96	823.40	25.57	33.208	
3,800.00	3,799.50	3,704.50	3,694.75	13.37	12.87	43.56	15.01	872.18	854.96	829.04	25.92	32.985	
3,850.00	3,849.48	3,753.92	3,743.65	13.54	13.06	43.54	16.25	879.17	860.98	834.70	26.28	32.768	
3,900.00	3,899.46	3,805.05	3,794.26	13.72	13.26	43.54	17.19	886.39	866.99	840.34	26.64	32.541	
3,950.00	3,949.44	3,859.71	3,848.40	13.90	13.47	43.56	18.00	893.87	872.78	845.75	27.03	32.286	
4,000.00	3,999.41	3,913.93	3,902.15	14.08	13.68	43.58	18.66	900.99	878.29	850.87	27.42	32.031	
4,050.00	4,049.39	3,967.87	3,955.66	14.26	13.88	43.62	19.13	907.81	883.57	855.76	27.80	31.778	
4,100.00	4,099.37	4,018.07	4,005.46	14.44	14.08	43.66	19.37	914.01	888.70	860.53	28.17	31.553	
4,150.00	4,149.35	4,067.67	4,054.69	14.61	14.27	43.73	19.34	920.13	893.83	865.31	28.52	31.338	
4,200.00	4,199.33	4,115.13	4,101.78	14.79	14.45	43.79	19.21	926.05	899.03	870.16	28.87	31.144	
4,250.00	4,249.31	4,162.47	4,148.73	14.97	14.63	43.85	19.18	932.08	904.36	875.15	29.21	30.961	
4,300.00	4,299.29	4,211.98	4,197.82	15.15	14.82	43.88	19.53	938.47	909.76	880.19	29.57	30.770	
4,350.00	4,349.27	4,262.06	4,247.48	15.33	15.02	43.87	20.59	944.94	915.17	885.24	29.93	30.579	
4,400.00	4,399.25	4,318.62	4,303.57	15.51	15.24	43.83	22.25	952.02	920.37	890.04	30.33	30.346	
4,450.00	4,449.22	4,375.29	4,359.82	15.69	15.45	43.78	24.09	958.70	925.20	894.47	30.73	30.107	
4,500.00	4,499.20	4,432.11	4,416.26	15.86	15.67	43.75	25.77	964.97	929.65	898.52	31.13	29.863	
4,550.00	4,549.18	4,483.29	4,467.13	16.04	15.87	43.72	27.15	970.35	933.85	902.35	31.50	29.648	
4,600.00	4,599.16	4,532.63	4,516.18	16.22	16.06	43.69	28.56	975.55	938.06	906.20	31.85	29.449	
4,650.00	4,649.14	4,577.84	4,561.11	16.40	16.23	43.66	29.97	980.42	942.38	910.20	32.19	29.278	
4,700.00	4,699.12	4,622.40	4,605.35	16.58	16.40	43.61	31.55	985.47	946.99	914.47	32.52	29.124	
4,750.00	4,749.10	4,664.81	4,647.42	16.76	16.56	43.56	33.27	990.54	951.91	919.08	32.83	28.995	
4,800.00	4,799.08	4,706.48	4,688.71	16.94	16.73	43.49	35.23	995.87	957.24	924.10	33.14	28.886	
4,850.00	4,849.06	4,749.44	4,731.20	17.12	16.90	43.40	37.51	1,001.71	962.98	929.52	33.45	28.786	
4,900.00	4,899.03	4,793.53	4,774.78	17.30	17.07	43.30	40.02	1,007.96	969.02	935.24	33.78	28.690	
4,950.00	4,949.01	4,839.50	4,820.16	17.47	17.25	43.19	42.76	1,014.73	975.32	941.21	34.11	28.593	
5,000.00	4,998.99	4,888.37	4,868.41	17.65	17.45	43.07	45.63	1,021.99	981.71	947.24	34.46	28.484	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals — **Offset Site Error:** 5.00 ft

Survey Program: 188-MWD+HDGM — **Offset Well Error:** 0.00 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
5,050.00	5,048.97	4,938.90	4,918.29	17.83	17.65	42.97	48.51	1,029.52	988.11	953.28	34.83	28.368	
5,100.00	5,098.95	4,991.28	4,970.03	18.01	17.86	42.86	51.31	1,037.20	994.40	959.19	35.21	28.241	
5,150.00	5,148.93	5,042.13	5,020.28	18.19	18.06	42.77	53.87	1,044.54	1,000.58	965.00	35.58	28.122	
5,200.00	5,198.91	5,092.26	5,069.82	18.37	18.26	42.69	56.33	1,051.75	1,006.74	970.79	35.94	28.009	
5,250.00	5,248.89	5,142.25	5,119.24	18.55	18.46	42.62	58.70	1,058.92	1,012.86	976.56	36.31	27.897	
5,300.00	5,298.87	5,192.21	5,168.64	18.73	18.66	42.55	60.96	1,066.06	1,018.98	982.31	36.67	27.788	
5,350.00	5,348.84	5,241.30	5,217.17	18.91	18.86	42.48	63.09	1,073.09	1,025.10	988.07	37.03	27.685	
5,400.00	5,398.82	5,290.61	5,265.93	19.09	19.06	42.43	65.13	1,080.17	1,031.24	993.86	37.39	27.584	
5,450.00	5,448.80	5,345.55	5,320.28	19.27	19.27	42.38	67.21	1,087.93	1,037.26	999.48	37.78	27.454	
5,500.00	5,498.78	5,400.26	5,374.44	19.44	19.49	42.34	69.03	1,095.39	1,043.03	1,004.86	38.18	27.322	
5,550.00	5,548.76	5,454.43	5,428.12	19.62	19.71	42.30	70.81	1,102.53	1,048.58	1,010.01	38.57	27.189	
5,600.00	5,598.74	5,507.79	5,481.01	19.80	19.92	42.27	72.61	1,109.35	1,053.93	1,014.98	38.95	27.059	
5,650.00	5,648.72	5,560.62	5,533.39	19.98	20.13	42.22	74.56	1,115.93	1,059.12	1,019.79	39.33	26.929	
5,700.00	5,698.70	5,610.72	5,583.07	20.16	20.32	42.18	76.50	1,122.09	1,064.23	1,024.53	39.69	26.811	
5,750.00	5,748.68	5,660.31	5,632.25	20.34	20.52	42.13	78.40	1,128.19	1,069.34	1,029.28	40.05	26.698	
5,800.00	5,798.65	5,711.48	5,683.00	20.52	20.72	42.09	80.30	1,134.45	1,074.42	1,034.00	40.42	26.579	
5,850.00	5,848.63	5,762.76	5,733.87	20.70	20.92	42.05	82.10	1,140.66	1,079.43	1,038.64	40.79	26.461	
5,900.00	5,898.61	5,812.96	5,783.68	20.88	21.12	42.02	83.77	1,146.69	1,084.40	1,043.24	41.16	26.348	
5,950.00	5,948.59	5,863.38	5,833.71	21.06	21.32	41.99	85.37	1,152.73	1,089.34	1,047.82	41.52	26.235	
6,000.00	5,998.57	5,914.02	5,883.96	21.24	21.52	41.97	86.92	1,158.76	1,094.25	1,052.36	41.89	26.123	
6,050.00	6,048.55	5,964.60	5,934.17	21.42	21.71	41.95	88.43	1,164.74	1,099.11	1,056.86	42.25	26.012	
6,100.00	6,098.53	6,015.10	5,984.30	21.60	21.91	41.93	89.88	1,170.67	1,103.95	1,061.33	42.62	25.902	
6,150.00	6,148.51	6,064.60	6,033.44	21.77	22.11	41.91	91.24	1,176.47	1,108.76	1,065.78	42.98	25.797	
6,200.00	6,198.49	6,113.26	6,081.74	21.95	22.30	41.90	92.56	1,182.22	1,113.61	1,070.28	43.33	25.699	
6,250.00	6,248.46	6,160.86	6,128.98	22.13	22.48	41.88	93.88	1,187.89	1,118.53	1,074.85	43.68	25.606	
6,300.00	6,298.44	6,207.79	6,175.54	22.31	22.67	41.86	95.38	1,193.60	1,123.56	1,079.54	44.03	25.521	
6,350.00	6,348.42	6,257.76	6,225.09	22.49	22.87	41.82	97.16	1,199.75	1,128.68	1,084.29	44.39	25.428	
6,400.00	6,398.40	6,309.51	6,276.43	22.67	23.07	41.79	98.98	1,206.04	1,133.73	1,088.96	44.76	25.328	
6,450.00	6,448.38	6,360.81	6,327.33	22.85	23.27	41.76	100.71	1,212.20	1,138.69	1,093.56	45.13	25.230	
6,500.00	6,498.36	6,412.02	6,378.16	23.03	23.47	41.74	102.29	1,218.29	1,143.59	1,098.09	45.50	25.132	
6,550.00	6,548.34	6,462.66	6,428.41	23.21	23.67	41.72	103.76	1,224.26	1,148.44	1,102.57	45.87	25.037	
6,600.00	6,598.32	6,513.53	6,478.92	23.39	23.87	41.70	105.18	1,230.22	1,153.26	1,107.02	46.24	24.942	
6,650.00	6,648.30	6,566.15	6,531.17	23.57	24.08	41.69	106.55	1,236.30	1,157.98	1,111.36	46.62	24.841	
6,700.00	6,698.27	6,618.46	6,583.13	23.75	24.28	41.69	107.76	1,242.21	1,162.58	1,115.59	46.99	24.740	
6,750.00	6,748.25	6,670.14	6,634.47	23.93	24.48	41.69	108.84	1,247.97	1,167.10	1,119.73	47.36	24.641	
6,800.00	6,798.23	6,721.85	6,685.86	24.11	24.68	41.70	109.81	1,253.65	1,171.53	1,123.79	47.74	24.542	
6,850.00	6,848.21	6,773.58	6,737.28	24.29	24.88	41.72	110.66	1,259.25	1,175.88	1,127.77	48.11	24.443	
6,900.00	6,898.19	6,827.15	6,790.54	24.47	25.09	41.73	111.43	1,264.93	1,180.12	1,131.63	48.49	24.338	
6,950.00	6,948.17	6,881.52	6,844.62	24.65	25.30	41.76	112.09	1,270.50	1,184.18	1,135.30	48.87	24.229	
7,000.00	6,998.15	6,934.69	6,897.53	24.83	25.50	41.79	112.61	1,275.77	1,188.07	1,138.82	49.25	24.122	
7,050.00	7,048.13	6,988.11	6,950.70	25.00	25.71	41.83	113.00	1,280.93	1,191.82	1,142.19	49.63	24.013	
7,100.00	7,098.11	7,042.75	7,005.10	25.18	25.92	41.87	113.26	1,286.00	1,195.39	1,145.38	50.02	23.900	
7,150.00	7,148.08	7,096.85	7,058.99	25.36	26.12	41.92	113.37	1,290.83	1,198.77	1,148.38	50.40	23.786	
7,200.00	7,198.06	7,150.35	7,112.29	25.54	26.32	41.98	113.34	1,295.43	1,202.00	1,151.22	50.78	23.673	
7,250.00	7,248.04	7,205.09	7,166.84	25.72	26.53	42.04	113.15	1,299.96	1,205.05	1,153.90	51.16	23.556	
7,300.00	7,298.02	7,260.41	7,221.99	25.90	26.73	42.11	112.72	1,304.29	1,207.89	1,156.35	51.54	23.435	
7,350.00	7,348.00	7,314.82	7,276.24	26.08	26.93	42.20	112.10	1,308.34	1,210.53	1,158.61	51.92	23.315	
7,400.00	7,397.98	7,369.55	7,330.83	26.26	27.13	42.29	111.30	1,312.21	1,212.98	1,160.68	52.30	23.192	
7,450.00	7,447.96	7,425.31	7,386.46	26.44	27.34	42.39	110.36	1,315.90	1,215.20	1,162.52	52.68	23.066	
7,500.00	7,497.94	7,481.28	7,442.32	26.62	27.54	42.49	109.31	1,319.33	1,217.19	1,164.13	53.07	22.938	
7,550.00	7,547.92	7,537.43	7,498.36	26.80	27.74	42.60	108.14	1,322.49	1,218.93	1,165.49	53.45	22.807	
7,600.00	7,597.89	7,591.95	7,552.80	26.98	27.93	42.71	106.93	1,325.32	1,220.45	1,166.63	53.82	22.676	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals — **Offset Site Error:** 5.00 ft

Survey Program: 188-MWD+HDGM — **Offset Well Error:** 0.00 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
7,650.00	7,647.87	7,646.27	7,607.04	27.16	28.13	42.82	105.68	1,327.94	1,221.79	1,167.60	54.19	22.545	
7,700.00	7,697.85	7,697.41	7,658.11	27.34	28.31	42.92	104.48	1,330.30	1,223.03	1,168.48	54.55	22.419	
7,750.00	7,747.83	7,749.53	7,710.16	27.52	28.49	43.03	103.24	1,332.63	1,224.20	1,169.29	54.92	22.292	
7,800.00	7,797.81	7,803.15	7,763.72	27.70	28.68	43.14	101.98	1,334.89	1,225.25	1,169.97	55.28	22.163	
7,850.00	7,847.79	7,855.82	7,816.34	27.88	28.86	43.24	100.78	1,336.97	1,226.17	1,170.52	55.65	22.034	
7,900.00	7,897.77	7,907.66	7,868.12	28.06	29.04	43.34	99.57	1,338.92	1,227.00	1,170.99	56.01	21.906	
7,950.00	7,947.75	7,959.02	7,919.43	28.24	29.22	43.45	98.32	1,340.78	1,227.77	1,171.39	56.37	21.780	
8,000.00	7,997.73	8,010.17	7,970.54	28.42	29.40	43.56	97.01	1,342.59	1,228.49	1,171.76	56.73	21.655	
8,050.00	8,047.70	8,063.96	8,024.27	28.60	29.59	43.67	95.59	1,344.38	1,229.12	1,172.02	57.10	21.527	
8,100.00	8,097.68	8,118.22	8,078.50	28.78	29.77	43.79	94.19	1,346.00	1,229.58	1,172.11	57.46	21.397	
8,150.00	8,147.66	8,169.24	8,129.48	28.96	29.95	43.90	92.84	1,347.42	1,229.94	1,172.12	57.82	21.271	
8,200.00	8,197.64	8,220.33	8,180.53	29.13	30.12	44.01	91.48	1,348.79	1,230.25	1,172.07	58.18	21.146	
8,250.00	8,247.62	8,271.04	8,231.21	29.31	30.30	44.10	90.63	1,350.11	1,230.53	1,171.99	58.54	21.021	
8,300.00	8,297.60	8,317.05	8,277.21	29.49	30.46	44.15	90.38	1,351.34	1,230.83	1,171.95	58.88	20.903	
8,350.00	8,347.58	8,358.50	8,318.64	29.67	30.61	44.18	90.51	1,352.71	1,231.43	1,172.22	59.21	20.797	
8,400.00	8,397.56	8,405.14	8,365.24	29.85	30.77	44.20	91.02	1,354.55	1,232.35	1,172.79	59.56	20.691	
8,450.00	8,447.54	8,468.23	8,428.27	30.03	31.00	44.19	92.43	1,356.71	1,233.00	1,173.04	59.96	20.565	
8,500.00	8,497.51	8,521.99	8,481.99	30.21	31.19	44.16	94.12	1,358.14	1,233.25	1,172.93	60.32	20.444	
8,550.00	8,547.49	8,572.37	8,532.33	30.39	31.36	44.14	95.63	1,359.44	1,233.47	1,172.79	60.68	20.327	
8,600.00	8,597.47	8,629.00	8,588.92	30.57	31.56	44.12	97.21	1,360.75	1,233.57	1,172.52	61.05	20.205	
8,650.00	8,647.45	8,687.54	8,647.43	30.75	31.76	44.10	98.72	1,361.75	1,233.36	1,171.93	61.43	20.078	
8,700.00	8,697.43	8,749.20	8,709.07	30.93	31.97	44.09	100.20	1,362.27	1,232.72	1,170.91	61.80	19.946	
8,750.00	8,747.41	8,807.22	8,767.08	31.11	32.16	44.09	101.42	1,362.28	1,231.66	1,169.49	62.17	19.813	
8,800.00	8,797.39	8,863.74	8,823.59	31.29	32.35	44.10	102.24	1,361.97	1,230.33	1,167.80	62.52	19.678	
8,850.00	8,847.37	8,918.07	8,877.92	31.47	32.52	44.14	102.55	1,361.42	1,228.77	1,165.91	62.87	19.545	
8,900.00	8,897.35	8,971.21	8,931.06	31.65	32.69	44.20	102.35	1,360.69	1,227.05	1,163.84	63.21	19.411	
8,950.00	8,947.33	9,021.85	8,981.68	31.83	32.84	44.27	101.93	1,359.93	1,225.27	1,161.71	63.56	19.278	
9,000.00	8,997.30	9,071.72	9,031.55	32.01	33.00	44.34	101.43	1,359.16	1,223.46	1,159.57	63.90	19.147	
9,050.00	9,047.28	9,120.74	9,080.56	32.19	33.15	44.40	101.18	1,358.43	1,221.69	1,157.45	64.24	19.018	
9,100.00	9,097.26	9,168.43	9,128.25	32.37	33.30	44.45	101.18	1,357.78	1,219.97	1,155.39	64.58	18.892	
9,150.00	9,147.24	9,214.92	9,174.73	32.55	33.45	44.49	101.14	1,357.27	1,218.38	1,153.47	64.91	18.769	
9,200.00	9,197.22	9,263.33	9,223.14	32.73	33.60	44.55	101.02	1,356.85	1,216.92	1,151.66	65.25	18.649	
9,250.00	9,247.20	9,313.47	9,273.28	32.91	33.76	44.60	100.91	1,356.43	1,215.46	1,149.87	65.60	18.529	
9,300.00	9,297.18	9,360.92	9,320.73	33.09	33.91	44.65	100.84	1,356.05	1,214.04	1,148.10	65.94	18.412	
9,350.00	9,347.16	9,406.81	9,366.62	33.27	34.06	44.69	100.83	1,355.84	1,212.77	1,146.50	66.27	18.300	
9,400.00	9,397.14	9,454.14	9,413.95	33.45	34.21	44.74	100.83	1,355.76	1,211.65	1,145.04	66.61	18.189	
9,450.00	9,447.11	9,502.50	9,462.31	33.63	34.37	44.79	100.71	1,355.74	1,210.61	1,143.65	66.96	18.080	
9,500.00	9,497.09	9,549.98	9,509.79	33.81	34.52	44.84	100.59	1,355.81	1,209.65	1,142.35	67.30	17.973	
9,550.00	9,547.07	9,596.93	9,556.74	33.99	34.68	44.87	101.05	1,356.00	1,208.81	1,141.16	67.65	17.869	
9,600.00	9,597.05	9,645.10	9,604.90	34.17	34.85	44.87	102.05	1,356.32	1,208.09	1,140.09	68.00	17.766	
9,650.00	9,647.03	9,694.03	9,653.81	34.35	35.01	44.86	103.09	1,356.70	1,207.41	1,139.06	68.35	17.665	
9,700.00	9,697.01	9,743.65	9,703.42	34.53	35.18	44.86	104.13	1,357.11	1,206.76	1,138.06	68.70	17.565	
9,750.00	9,746.99	9,793.57	9,753.32	34.71	35.35	44.86	105.12	1,357.53	1,206.12	1,137.07	69.06	17.466	
9,800.00	9,796.97	9,841.68	9,801.42	34.88	35.52	44.86	106.07	1,357.97	1,205.52	1,136.11	69.41	17.369	
9,850.00	9,846.95	9,889.31	9,849.04	35.06	35.68	44.86	107.09	1,358.50	1,205.01	1,135.25	69.75	17.275	
9,900.00	9,896.92	9,938.88	9,898.60	35.24	35.86	44.85	108.24	1,359.12	1,204.57	1,134.46	70.11	17.182	
9,950.00	9,946.90	9,989.33	9,949.03	35.42	36.03	44.84	109.47	1,359.74	1,204.12	1,133.65	70.46	17.089	
10,000.00	9,996.88	10,043.45	10,003.13	35.60	36.22	44.84	110.71	1,360.31	1,203.58	1,132.75	70.83	16.993	
10,050.00	10,046.86	10,098.33	10,058.00	35.78	36.41	44.84	111.66	1,360.66	1,202.85	1,131.66	71.19	16.896	
10,100.00	10,096.84	10,144.77	10,104.43	35.96	36.57	44.85	112.41	1,360.96	1,202.10	1,130.57	71.54	16.804	
10,150.00	10,146.82	10,192.16	10,151.82	36.14	36.73	44.86	113.27	1,361.36	1,201.47	1,129.59	71.89	16.714	
10,200.00	10,196.80	10,240.07	10,199.71	36.32	36.89	44.86	114.23	1,361.86	1,200.93	1,128.70	72.24	16.625	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals — **Offset Site Error:** 5.00 ft

Survey Program: 188-MWD+HDGM — **Offset Well Error:** 0.00 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
10,250.00	10,246.78	10,288.58	10,248.20	36.50	37.06	44.85	115.30	1,362.45	1,200.48	1,127.90	72.59	16.539	
10,300.00	10,296.76	10,340.69	10,300.30	36.68	37.24	44.85	116.48	1,363.07	1,200.01	1,127.06	72.95	16.451	
10,350.00	10,346.73	10,391.71	10,351.31	36.86	37.42	44.84	117.60	1,363.59	1,199.45	1,126.15	73.30	16.363	
10,400.00	10,396.71	10,440.64	10,400.23	37.04	37.59	44.85	118.46	1,364.09	1,198.91	1,125.26	73.66	16.277	
10,450.00	10,446.69	10,491.15	10,450.73	37.22	37.77	44.87	119.05	1,364.64	1,198.40	1,124.39	74.01	16.192	
10,500.00	10,496.67	10,544.03	10,503.60	37.40	37.95	44.90	119.40	1,365.11	1,197.81	1,123.43	74.38	16.105	
10,550.00	10,546.65	10,592.76	10,552.33	37.58	38.12	44.95	119.50	1,365.46	1,197.14	1,122.41	74.73	16.020	
10,600.00	10,596.63	10,638.99	10,598.56	37.76	38.28	45.00	119.39	1,365.92	1,196.62	1,121.55	75.08	15.939	
10,628.19	10,624.81	10,665.06	10,624.63	37.86	38.37	45.02	119.24	1,366.24	1,196.53	1,121.26	75.27	15.896	
10,650.00	10,646.62	10,685.24	10,644.81	37.94	38.44	45.04	119.07	1,366.52	1,196.59	1,121.16	75.42	15.865	
10,700.00	10,696.62	10,731.50	10,691.05	38.12	38.60	45.08	118.54	1,367.26	1,197.16	1,121.40	75.77	15.801	
10,750.00	10,746.62	10,780.14	10,739.68	38.30	38.77	92.02	117.77	1,368.14	1,198.11	1,121.99	76.11	15.741	
10,800.00	10,796.62	10,830.37	10,789.90	38.47	38.94	92.06	116.88	1,369.06	1,199.05	1,122.58	76.47	15.681	
10,850.00	10,846.62	10,881.30	10,840.80	38.65	39.12	92.10	115.94	1,369.97	1,199.97	1,123.15	76.82	15.620	
10,900.00	10,896.62	10,932.48	10,891.97	38.83	39.29	92.14	115.08	1,370.83	1,200.85	1,123.67	77.18	15.560	
10,950.00	10,946.62	10,991.64	10,951.13	39.00	39.49	92.18	114.32	1,371.61	1,201.53	1,123.98	77.55	15.494	
11,000.00	10,996.62	11,051.99	11,011.47	39.18	39.70	92.19	113.99	1,371.90	1,201.79	1,123.86	77.92	15.423	
11,050.00	11,046.62	11,102.13	11,061.61	39.36	39.87	92.20	113.82	1,372.00	1,201.89	1,123.62	78.27	15.356	
11,100.00	11,096.56	11,153.21	11,112.69	39.53	40.04	-87.55	113.73	1,371.99	1,201.79	1,123.18	78.61	15.288	
11,150.00	11,146.12	11,202.53	11,162.01	39.69	40.20	-87.88	113.70	1,371.98	1,201.52	1,122.59	78.93	15.223	
11,200.00	11,194.92	11,254.79	11,214.27	39.84	40.37	-88.46	113.71	1,371.93	1,201.12	1,121.87	79.25	15.157	
11,250.00	11,242.61	11,308.21	11,267.69	39.98	40.54	-89.29	113.78	1,371.65	1,200.53	1,120.97	79.56	15.090	
11,300.00	11,288.80	11,357.36	11,316.84	40.12	40.70	-90.24	113.77	1,371.20	1,199.96	1,120.10	79.85	15.028	
11,350.00	11,333.15	11,404.43	11,363.91	40.25	40.85	-91.29	113.41	1,370.68	1,199.67	1,119.54	80.13	14.971	
11,356.87	11,339.08	11,410.76	11,370.23	40.27	40.87	-91.44	113.34	1,370.60	1,199.66	1,119.50	80.17	14.964	
11,400.00	11,375.33	11,447.91	11,407.36	40.37	40.99	-92.33	112.29	1,370.15	1,199.91	1,119.51	80.40	14.924	
11,450.00	11,415.01	11,490.63	11,449.99	40.48	41.13	-93.37	109.62	1,369.69	1,200.91	1,120.25	80.66	14.889	
11,500.00	11,451.88	11,546.21	11,505.17	40.59	41.31	-94.75	103.16	1,368.99	1,202.64	1,121.73	80.91	14.864	
11,550.00	11,485.68	11,611.28	11,568.80	40.70	41.51	-96.35	89.71	1,367.62	1,204.73	1,123.59	81.14	14.848	
11,600.00	11,516.14	11,653.74	11,609.36	40.82	41.63	-97.23	77.21	1,366.77	1,207.57	1,126.22	81.35	14.845	
11,650.00	11,543.03	11,692.80	11,645.78	40.94	41.74	-97.92	63.12	1,366.35	1,211.61	1,130.06	81.55	14.858	
11,700.00	11,566.14	11,718.76	11,669.40	41.05	41.81	-98.12	52.35	1,366.50	1,217.21	1,135.47	81.75	14.890	
11,750.00	11,585.30	11,746.80	11,694.28	41.17	41.89	-98.22	39.44	1,367.24	1,224.59	1,142.66	81.93	14.947	
11,800.00	11,600.37	11,783.53	11,725.72	41.28	41.99	-98.45	20.55	1,368.86	1,233.56	1,151.48	82.08	15.029	
11,850.00	11,611.22	12,166.45	11,956.71	41.40	42.70	-105.41	-272.96	1,372.37	1,243.60	1,162.55	81.06	15.343	
11,899.97	11,617.78	12,220.61	11,969.85	41.51	42.79	-105.76	-325.44	1,370.57	1,243.24	1,162.05	81.19	15.314	
11,900.00	11,617.78	12,220.65	11,969.86	41.51	42.79	-105.76	-325.49	1,370.56	1,243.24	1,162.05	81.19	15.314	
11,950.00	11,620.00	12,263.13	11,975.96	41.62	42.88	-105.88	-367.50	1,370.15	1,243.86	1,162.52	81.33	15.293	
12,000.00	11,620.00	12,319.49	11,977.48	41.74	43.01	-105.93	-423.79	1,371.97	1,245.52	1,163.96	81.55	15.272	
12,050.00	11,620.00	12,410.97	11,975.33	41.88	43.27	-105.81	-515.21	1,373.96	1,245.94	1,164.04	81.90	15.212	
12,100.00	11,620.00	12,502.02	11,968.58	42.01	43.55	-105.52	-606.00	1,374.10	1,244.71	1,162.42	82.29	15.125	
12,150.00	11,620.00	12,518.03	11,968.24	42.17	43.61	-105.50	-622.03	1,374.33	1,243.83	1,161.27	82.56	15.066	
12,200.00	11,620.00	12,552.26	11,966.99	42.33	43.74	-105.45	-656.24	1,374.63	1,243.46	1,160.61	82.85	15.008	
12,203.67	11,620.00	12,554.78	11,966.94	42.34	43.75	-105.44	-658.75	1,374.66	1,243.46	1,160.59	82.87	15.004	
12,250.00	11,620.00	12,590.80	11,966.49	42.51	43.88	-105.42	-694.76	1,375.20	1,243.68	1,160.51	83.18	14.952	
12,300.00	11,620.00	12,632.55	11,966.36	42.69	44.04	-105.41	-736.51	1,375.99	1,244.26	1,160.75	83.51	14.899	
12,350.00	11,620.00	12,679.41	11,966.60	42.90	44.24	-105.41	-783.35	1,377.08	1,245.14	1,161.25	83.89	14.843	
12,400.00	11,620.00	12,737.18	11,967.01	43.10	44.49	-105.42	-841.11	1,378.18	1,245.86	1,161.56	84.30	14.779	
12,450.00	11,620.00	12,797.57	11,967.49	43.33	44.76	-105.44	-901.50	1,378.88	1,246.23	1,161.48	84.75	14.705	
12,500.00	11,620.00	12,859.22	11,968.22	43.56	45.05	-105.47	-963.14	1,378.95	1,246.14	1,160.93	85.20	14.625	
12,550.00	11,620.00	12,903.09	11,969.29	43.81	45.28	-105.52	-1,007.00	1,378.79	1,245.99	1,160.33	85.65	14.547	
12,574.99	11,620.00	12,926.15	11,970.11	43.93	45.40	-105.56	-1,030.05	1,378.69	1,245.97	1,160.09	85.88	14.509	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals — **Offset Site Error:** 5.00 ft

Survey Program: 188-MWD+HDGM — **Offset Well Error:** 0.00 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
12,600.00	11,620.00	12,950.98	11,971.18	44.06	45.53	-105.61	-1,054.85	1,378.56	1,245.98	1,159.88	86.10	14.471	
12,650.00	11,620.00	13,016.24	11,974.04	44.33	45.89	-105.76	-1,120.04	1,377.76	1,245.69	1,159.06	86.62	14.380	
12,700.00	11,620.00	13,069.36	11,976.16	44.60	46.19	-105.87	-1,173.11	1,376.67	1,244.94	1,157.81	87.13	14.289	
12,750.00	11,620.00	13,115.56	11,977.65	44.89	46.46	-105.95	-1,219.28	1,375.91	1,244.29	1,156.64	87.65	14.197	
12,800.00	11,620.00	13,168.80	11,978.89	45.18	46.78	-106.02	-1,272.50	1,375.24	1,243.71	1,155.51	88.20	14.101	
12,850.00	11,620.00	13,227.15	11,979.56	45.49	47.14	-106.06	-1,330.84	1,374.36	1,242.85	1,154.04	88.80	13.995	
12,900.00	11,620.00	13,279.55	11,979.36	45.80	47.48	-106.07	-1,383.23	1,373.56	1,241.76	1,152.34	89.42	13.887	
12,950.00	11,620.00	13,332.13	11,978.21	46.13	47.82	-106.03	-1,435.79	1,372.92	1,240.58	1,150.51	90.07	13.774	
13,000.00	11,620.00	13,386.62	11,976.33	46.46	48.20	-105.96	-1,490.24	1,372.30	1,239.25	1,148.50	90.76	13.655	
13,050.00	11,620.00	13,438.95	11,974.08	46.81	48.57	-105.87	-1,542.52	1,371.65	1,237.76	1,146.30	91.47	13.532	
13,100.00	11,620.00	13,488.37	11,971.71	47.15	48.93	-105.77	-1,591.89	1,371.08	1,236.26	1,144.09	92.18	13.412	
13,150.00	11,620.00	13,533.79	11,969.33	47.52	49.27	-105.68	-1,637.25	1,370.68	1,234.83	1,141.93	92.90	13.292	
13,200.00	11,620.00	13,575.52	11,966.76	47.88	49.59	-105.56	-1,678.89	1,370.68	1,233.70	1,140.07	93.63	13.177	
13,250.00	11,620.00	13,607.00	11,964.53	48.26	49.83	-105.46	-1,710.29	1,370.95	1,232.96	1,138.63	94.32	13.072	
13,283.59	11,620.00	13,635.48	11,962.72	48.52	50.05	-105.38	-1,738.71	1,371.42	1,232.75	1,137.91	94.84	12.999	
13,300.00	11,620.00	13,645.70	11,962.22	48.64	50.14	-105.35	-1,748.91	1,371.64	1,232.79	1,137.72	95.06	12.968	
13,350.00	11,620.00	13,676.86	11,961.20	49.04	50.39	-105.30	-1,780.04	1,372.52	1,233.42	1,137.66	95.76	12.880	
13,400.00	11,620.00	13,711.05	11,960.90	49.43	50.66	-105.27	-1,814.21	1,373.82	1,234.81	1,138.34	96.47	12.800	
13,450.00	11,620.00	13,755.63	11,960.72	49.84	51.03	-105.25	-1,858.74	1,375.77	1,236.57	1,139.32	97.25	12.716	
13,500.00	11,620.00	13,801.01	11,960.46	50.25	51.41	-105.21	-1,904.06	1,377.99	1,238.55	1,140.52	98.04	12.634	
13,550.00	11,620.00	13,852.65	11,960.99	50.68	51.86	-105.21	-1,955.65	1,380.33	1,240.58	1,141.70	98.88	12.547	
13,600.00	11,620.00	13,906.29	11,962.97	51.10	52.33	-105.28	-2,009.22	1,382.29	1,242.53	1,142.82	99.71	12.462	
13,650.00	11,620.00	13,965.26	11,965.13	51.54	52.85	-105.36	-2,068.12	1,384.10	1,244.19	1,143.60	100.59	12.369	
13,700.00	11,620.00	14,009.80	11,966.44	51.98	53.25	-105.40	-2,112.62	1,385.39	1,245.69	1,144.29	101.40	12.285	
13,750.00	11,620.00	14,047.57	11,967.66	52.43	53.60	-105.44	-2,150.34	1,386.81	1,247.64	1,145.44	102.19	12.208	
13,800.00	11,620.00	14,088.18	11,969.10	52.88	53.97	-105.48	-2,190.89	1,388.72	1,250.06	1,147.06	103.00	12.136	
13,850.00	11,620.00	14,143.14	11,970.42	53.35	54.49	-105.51	-2,245.75	1,391.51	1,252.53	1,148.60	103.93	12.051	
13,900.00	11,620.00	14,192.55	11,970.74	53.81	54.96	-105.50	-2,295.10	1,394.10	1,254.84	1,150.00	104.85	11.968	
13,950.00	11,620.00	14,234.83	11,970.66	54.29	55.37	-105.47	-2,337.30	1,396.61	1,257.38	1,151.65	105.73	11.892	
14,000.00	11,620.00	14,288.92	11,970.23	54.76	55.90	-105.41	-2,391.27	1,400.18	1,260.18	1,153.45	106.72	11.808	
14,050.00	11,620.00	14,375.02	11,969.69	55.25	56.75	-105.35	-2,477.29	1,403.92	1,261.81	1,153.87	107.94	11.690	
14,100.00	11,620.00	14,424.89	11,969.43	55.73	57.25	-105.32	-2,527.13	1,405.43	1,262.91	1,154.00	108.91	11.596	
14,150.00	11,620.00	14,475.94	11,969.09	56.23	57.76	-105.29	-2,578.15	1,407.00	1,264.01	1,154.10	109.90	11.501	
14,200.00	11,620.00	14,529.31	11,968.12	56.73	58.31	-105.23	-2,631.49	1,408.69	1,265.00	1,154.07	110.93	11.404	
14,250.00	11,620.00	14,576.13	11,966.62	57.23	58.79	-105.15	-2,678.26	1,410.29	1,265.93	1,153.99	111.94	11.309	
14,300.00	11,620.00	14,618.06	11,964.68	57.74	59.24	-105.05	-2,720.10	1,412.13	1,267.14	1,154.21	112.93	11.221	
14,350.00	11,620.00	14,675.15	11,961.19	58.26	59.84	-104.87	-2,777.01	1,415.08	1,268.59	1,154.51	114.08	11.121	
14,400.00	11,620.00	14,752.49	11,955.78	58.77	60.67	-104.61	-2,854.12	1,417.68	1,268.95	1,153.57	115.39	10.997	
14,450.00	11,620.00	14,793.85	11,954.82	59.30	61.12	-104.56	-2,895.45	1,418.36	1,269.15	1,152.76	116.39	10.904	
14,500.00	11,620.00	14,835.16	11,956.61	59.82	61.56	-104.64	-2,936.71	1,418.61	1,269.69	1,152.35	117.34	10.821	
14,550.00	11,620.00	14,890.51	11,959.65	60.35	62.16	-104.77	-2,991.97	1,418.86	1,270.31	1,151.94	118.37	10.732	
14,600.00	11,620.00	14,942.17	11,960.22	60.89	62.72	-104.79	-3,043.63	1,419.48	1,270.73	1,151.31	119.42	10.641	
14,650.00	11,620.00	14,983.80	11,961.05	61.43	63.18	-104.82	-3,085.24	1,420.04	1,271.33	1,150.92	120.42	10.558	
14,700.00	11,620.00	15,025.49	11,963.08	61.97	63.64	-104.91	-3,126.87	1,420.56	1,272.27	1,150.88	121.39	10.481	
14,750.00	11,620.00	15,083.39	11,965.53	62.52	64.28	-105.01	-3,184.71	1,421.40	1,273.22	1,150.74	122.48	10.395	
14,800.00	11,620.00	15,143.77	11,965.72	63.07	64.96	-105.01	-3,245.08	1,422.49	1,273.83	1,150.20	123.63	10.303	
14,850.00	11,620.00	15,207.92	11,964.52	63.62	65.68	-104.95	-3,309.22	1,423.34	1,273.94	1,149.10	124.84	10.205	
14,900.00	11,620.00	15,263.93	11,962.60	64.18	66.32	-104.87	-3,365.19	1,423.86	1,273.63	1,147.62	126.01	10.107	
14,950.00	11,620.00	15,343.94	11,958.68	64.74	67.23	-104.70	-3,445.10	1,424.14	1,273.03	1,145.68	127.35	9.996	
15,000.00	11,620.00	15,492.15	11,950.76	65.30	68.89	-104.45	-3,592.84	1,416.19	1,269.33	1,140.57	128.76	9.858	
15,050.00	11,620.00	15,633.43	11,947.47	65.87	70.40	-104.56	-3,732.39	1,395.08	1,260.40	1,130.86	129.53	9.730	
15,100.00	11,620.00	15,678.43	11,947.68	66.44	70.87	-104.67	-3,776.66	1,387.00	1,251.46	1,120.89	130.57	9.585	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals — **Offset Site Error:** 5.00 ft

Survey Program: 188-MWD+HDGM — **Offset Well Error:** 0.00 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
15,150.00	11,620.00	15,740.91	11,947.95	67.02	71.53	-104.82	-3,838.09	1,375.61	1,242.40	1,110.91	131.50	9.448	
15,200.00	11,620.00	15,794.36	11,947.96	67.59	72.09	-104.95	-3,890.54	1,365.33	1,232.80	1,100.31	132.48	9.305	
15,250.00	11,620.00	15,828.55	11,949.10	68.17	72.46	-105.09	-3,924.06	1,358.71	1,223.55	1,089.95	133.60	9.159	
15,300.00	11,620.00	15,862.61	11,951.64	68.75	72.83	-105.29	-3,957.39	1,352.18	1,214.92	1,080.25	134.67	9.021	
15,350.00	11,620.00	15,884.00	11,953.94	69.34	73.06	-105.45	-3,978.27	1,348.14	1,207.03	1,071.21	135.82	8.887	
15,400.00	11,620.00	15,913.45	11,957.41	69.93	73.39	-105.67	-4,007.08	1,343.10	1,200.10	1,063.21	136.89	8.767	
15,450.00	11,620.00	15,936.22	11,960.14	70.52	73.65	-105.85	-4,029.44	1,339.77	1,194.34	1,056.37	137.98	8.656	
15,500.00	11,620.00	15,979.00	11,965.38	71.11	74.13	-106.16	-4,071.61	1,334.89	1,190.07	1,051.11	138.96	8.564	
15,550.00	11,620.00	15,979.00	11,965.38	71.71	74.13	-106.16	-4,071.61	1,334.89	1,186.23	1,046.19	140.05	8.470	
15,600.00	11,620.00	16,011.23	11,968.74	72.31	74.51	-106.35	-4,103.56	1,332.41	1,183.73	1,042.69	141.04	8.393	
15,650.00	11,620.00	16,039.87	11,970.68	72.91	74.86	-106.46	-4,132.11	1,331.07	1,182.15	1,040.10	142.05	8.322	
15,700.00	11,620.00	16,073.00	11,971.68	73.51	75.25	-106.52	-4,165.21	1,330.56	1,181.48	1,038.40	143.09	8.257	
15,716.23	11,620.00	16,079.44	11,971.75	73.71	75.33	-106.52	-4,171.65	1,330.57	1,181.44	1,038.04	143.40	8.239	
15,750.00	11,620.00	16,104.31	11,972.04	74.12	75.64	-106.53	-4,196.52	1,330.74	1,181.56	1,037.44	144.13	8.198	
15,800.00	11,620.00	16,141.12	11,972.59	74.72	76.09	-106.55	-4,233.32	1,331.31	1,182.22	1,037.03	145.19	8.143	
15,850.00	11,620.00	16,178.63	11,973.25	75.33	76.55	-106.57	-4,270.81	1,332.29	1,183.43	1,037.18	146.25	8.092	
15,900.00	11,620.00	16,218.05	11,973.35	75.94	77.05	-106.56	-4,310.20	1,333.89	1,185.11	1,037.76	147.35	8.043	
15,950.00	11,620.00	16,257.41	11,972.61	76.56	77.54	-106.50	-4,349.49	1,336.11	1,187.24	1,038.77	148.48	7.996	
16,000.00	11,620.00	16,307.95	11,970.74	77.17	78.19	-106.37	-4,399.88	1,339.47	1,189.61	1,039.84	149.77	7.943	
16,050.00	11,620.00	16,359.91	11,968.18	77.79	78.85	-106.21	-4,451.66	1,343.01	1,191.91	1,040.80	151.11	7.888	
16,100.00	11,620.00	16,397.94	11,966.46	78.41	79.34	-106.10	-4,489.55	1,345.74	1,194.43	1,042.17	152.25	7.845	
16,150.00	11,620.00	16,436.74	11,965.35	79.03	79.84	-106.01	-4,528.22	1,348.71	1,197.41	1,044.02	153.39	7.806	
16,200.00	11,620.00	16,478.29	11,964.75	79.65	80.38	-105.94	-4,569.62	1,352.09	1,200.83	1,046.28	154.55	7.770	
16,250.00	11,620.00	16,521.41	11,964.32	80.28	80.94	-105.88	-4,612.58	1,355.80	1,204.53	1,048.81	155.72	7.735	
16,300.00	11,620.00	16,561.79	11,964.09	80.91	81.46	-105.82	-4,652.80	1,359.48	1,208.55	1,051.70	156.85	7.705	
16,350.00	11,620.00	16,598.86	11,964.41	81.53	81.95	-105.79	-4,689.68	1,363.08	1,213.05	1,055.14	157.91	7.682	
16,400.00	11,620.00	16,640.00	11,965.45	82.16	82.49	-105.79	-4,730.59	1,367.37	1,218.08	1,059.07	159.01	7.660	
16,450.00	11,620.00	16,699.42	11,967.60	82.80	83.27	-105.81	-4,789.67	1,373.34	1,223.14	1,062.73	160.41	7.625	
16,500.00	11,620.00	16,500.00	11,968.74	83.43	80.66	-105.78	-4,886.32	1,380.52	1,226.24	1,067.65	158.59	7.732	
16,550.00	11,620.00	16,858.43	11,967.40	84.06	85.37	-105.68	-4,948.21	1,384.25	1,228.48	1,064.63	163.85	7.497	
16,600.00	11,620.00	16,885.28	11,966.76	84.70	85.72	-105.63	-4,974.98	1,386.14	1,231.27	1,066.42	164.84	7.469	
16,650.00	11,620.00	16,923.00	11,966.55	85.34	86.22	-105.58	-5,012.55	1,389.49	1,235.08	1,069.12	165.96	7.442	
16,700.00	11,620.00	16,962.12	11,966.50	85.98	86.75	-105.53	-5,051.48	1,393.30	1,239.36	1,072.27	167.09	7.417	
16,750.00	11,620.00	17,030.22	11,965.26	86.62	87.66	-105.41	-5,119.28	1,399.48	1,243.21	1,074.49	168.72	7.368	
16,800.00	11,620.00	17,108.08	11,964.29	87.26	88.69	-105.30	-5,196.95	1,404.89	1,246.10	1,075.66	170.43	7.311	
16,850.00	11,620.00	17,186.27	11,963.79	87.90	89.73	-105.24	-5,275.06	1,408.37	1,247.86	1,075.81	172.05	7.253	
16,900.00	11,620.00	17,226.43	11,963.28	88.55	90.26	-105.21	-5,315.19	1,409.72	1,249.06	1,075.81	173.25	7.210	
16,950.00	11,620.00	17,253.72	11,963.04	89.20	90.63	-105.18	-5,342.44	1,411.11	1,251.11	1,076.83	174.28	7.179	
17,000.00	11,620.00	17,280.95	11,962.91	89.84	90.99	-105.16	-5,369.61	1,412.98	1,254.06	1,078.79	175.26	7.155	
17,050.00	11,620.00	17,313.87	11,962.90	90.49	91.43	-105.12	-5,402.41	1,415.82	1,257.88	1,081.57	176.31	7.135	
17,100.00	11,620.00	17,360.22	11,962.94	91.14	92.06	-105.08	-5,448.57	1,420.07	1,262.02	1,084.45	177.57	7.107	
17,150.00	11,620.00	17,413.06	11,963.00	91.79	92.78	-105.03	-5,501.17	1,425.02	1,266.27	1,087.32	178.95	7.076	
17,200.00	11,620.00	17,483.52	11,963.18	92.44	93.74	-104.97	-5,571.39	1,430.79	1,269.96	1,089.36	180.60	7.032	
17,250.00	11,620.00	17,548.73	11,963.09	93.10	94.62	-104.92	-5,636.45	1,435.24	1,272.93	1,090.79	182.15	6.989	
17,300.00	11,620.00	17,612.88	11,962.18	93.75	95.50	-104.84	-5,700.48	1,439.07	1,275.33	1,091.65	183.68	6.943	
17,350.00	11,620.00	17,676.21	11,959.95	94.41	96.35	-104.71	-5,763.67	1,442.49	1,277.20	1,091.98	185.22	6.895	
17,400.00	11,620.00	17,715.54	11,958.77	95.06	96.89	-104.64	-5,802.93	1,444.51	1,279.01	1,092.56	186.45	6.860	
17,450.00	11,620.00	17,450.00	11,959.74	95.72	93.35	-104.65	-5,896.73	1,447.76	1,280.81	1,097.33	183.48	6.981	
17,500.00	11,620.00	17,932.86	11,958.59	96.38	99.79	-104.63	-6,020.07	1,446.04	1,279.76	1,089.93	189.82	6.742	
17,550.00	11,620.00	17,989.24	11,957.41	97.04	100.53	-104.61	-6,076.38	1,443.52	1,277.02	1,085.90	191.13	6.682	
17,600.00	11,620.00	18,040.51	11,957.02	97.70	101.20	-104.63	-6,127.58	1,440.94	1,274.19	1,081.79	192.40	6.623	
17,650.00	11,620.00	18,087.78	11,956.99	98.36	101.82	-104.66	-6,174.78	1,438.48	1,271.37	1,077.70	193.67	6.565	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals — **Offset Site Error:** 5.00 ft

Survey Program: 188-MWD+HDGM — **Offset Well Error:** 0.00 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
17,700.00	11,620.00	18,133.65	11,956.50	99.03	102.42	-104.66	-6,220.60	1,436.36	1,268.69	1,073.74	194.95	6.508	
17,750.00	11,620.00	18,172.98	11,955.76	99.69	102.94	-104.65	-6,259.90	1,434.81	1,266.27	1,070.03	196.24	6.453	
17,800.00	11,620.00	18,209.36	11,955.18	100.35	103.42	-104.64	-6,296.26	1,433.76	1,264.36	1,066.85	197.52	6.401	
17,850.00	11,620.00	18,249.66	11,954.67	101.02	103.96	-104.63	-6,336.54	1,433.00	1,262.99	1,064.19	198.79	6.353	
17,900.00	11,620.00	18,323.58	11,955.40	101.69	104.94	-104.69	-6,410.41	1,430.63	1,261.26	1,061.14	200.12	6.303	
17,950.00	11,620.00	18,372.06	11,957.25	102.35	105.58	-104.81	-6,458.79	1,428.17	1,258.99	1,057.65	201.34	6.253	
18,000.00	11,620.00	18,414.85	11,959.69	103.02	106.15	-104.94	-6,501.46	1,426.03	1,256.99	1,054.46	202.53	6.206	
18,050.00	11,620.00	18,454.64	11,962.41	103.69	106.68	-105.09	-6,541.12	1,424.17	1,255.32	1,051.62	203.71	6.162	
18,100.00	11,620.00	18,492.72	11,964.65	104.36	107.19	-105.20	-6,579.11	1,422.85	1,254.12	1,049.24	204.88	6.121	
18,150.00	11,620.00	18,537.84	11,966.72	105.03	107.80	-105.31	-6,624.16	1,421.88	1,253.37	1,047.29	206.09	6.082	
18,200.00	11,620.00	18,630.37	11,968.33	105.70	109.04	-105.42	-6,716.63	1,418.91	1,251.76	1,044.32	207.44	6.034	
18,250.00	11,620.00	18,721.41	11,966.04	106.37	110.25	-105.39	-6,807.49	1,413.90	1,248.47	1,039.77	208.70	5.982	
18,300.00	11,620.00	18,745.19	11,965.27	107.04	110.56	-105.38	-6,831.22	1,412.59	1,244.98	1,034.90	210.08	5.926	
18,350.00	11,620.00	18,773.47	11,964.77	107.72	110.94	-105.37	-6,859.47	1,411.36	1,242.35	1,030.96	211.40	5.877	
18,400.00	11,620.00	18,810.00	11,964.83	108.39	111.43	-105.39	-6,895.99	1,410.34	1,240.64	1,027.98	212.67	5.834	
18,450.00	11,620.00	18,829.81	11,965.16	109.07	111.70	-105.41	-6,915.79	1,410.06	1,239.72	1,025.88	213.84	5.797	
18,474.46	11,620.00	18,843.46	11,965.49	109.40	111.89	-105.42	-6,929.44	1,409.99	1,239.61	1,025.21	214.40	5.782	
18,500.00	11,620.00	18,857.72	11,965.92	109.74	112.09	-105.44	-6,943.68	1,410.03	1,239.73	1,024.76	214.97	5.767	
18,550.00	11,620.00	18,885.59	11,967.01	110.42	112.47	-105.49	-6,971.54	1,410.42	1,240.63	1,024.59	216.03	5.743	
18,600.00	11,620.00	18,919.27	11,968.71	111.10	112.94	-105.56	-7,005.15	1,411.41	1,242.38	1,025.27	217.11	5.722	
18,650.00	11,620.00	18,964.32	11,970.79	111.77	113.57	-105.63	-7,050.13	1,413.07	1,244.49	1,026.17	218.32	5.700	
18,700.00	11,620.00	19,007.62	11,972.42	112.45	114.17	-105.68	-7,093.35	1,414.96	1,246.80	1,027.28	219.52	5.680	
18,750.00	11,620.00	19,045.65	11,973.97	113.13	114.71	-105.73	-7,131.31	1,416.90	1,249.50	1,028.87	220.63	5.663	
18,800.00	11,620.00	19,083.64	11,975.79	113.81	115.24	-105.79	-7,169.18	1,419.13	1,252.69	1,030.97	221.72	5.650	
18,850.00	11,620.00	19,136.91	11,978.17	114.49	116.00	-105.85	-7,222.29	1,422.58	1,256.12	1,033.04	223.08	5.631	
18,900.00	11,620.00	19,195.28	11,979.25	115.17	116.82	-105.86	-7,280.52	1,426.42	1,259.24	1,034.67	224.57	5.607	
18,950.00	11,620.00	19,243.80	11,979.65	115.85	117.51	-105.84	-7,328.93	1,429.64	1,262.25	1,036.34	225.91	5.587	
19,000.00	11,620.00	19,294.90	11,979.97	116.53	118.23	-105.81	-7,379.92	1,433.06	1,265.25	1,037.95	227.30	5.566	
19,050.00	11,620.00	19,350.08	11,980.25	117.22	119.02	-105.79	-7,434.98	1,436.60	1,268.11	1,039.35	228.76	5.543	
19,100.00	11,620.00	19,419.40	11,980.18	117.90	120.00	-105.74	-7,504.19	1,440.60	1,270.61	1,040.16	230.45	5.514	
19,150.00	11,620.00	19,493.28	11,978.42	118.58	121.04	-105.63	-7,577.97	1,443.80	1,272.04	1,039.85	232.19	5.478	
19,200.00	11,620.00	19,555.29	11,976.35	119.27	121.91	-105.52	-7,639.92	1,445.81	1,272.86	1,039.11	233.76	5.445	
19,250.00	11,620.00	19,619.63	11,974.59	119.95	122.81	-105.43	-7,704.21	1,447.11	1,273.17	1,037.87	235.30	5.411	
19,300.00	11,620.00	19,674.30	11,974.18	120.63	123.57	-105.42	-7,758.88	1,447.36	1,272.99	1,036.29	236.70	5.378	
19,320.55	11,620.00	19,690.73	11,974.14	120.92	123.80	-105.41	-7,775.31	1,447.44	1,272.95	1,035.73	237.23	5.366	
19,350.00	11,620.00	19,714.29	11,974.10	121.32	124.13	-105.41	-7,798.87	1,447.66	1,273.02	1,035.05	237.97	5.349	
19,400.00	11,620.00	19,754.40	11,974.06	122.01	124.69	-105.41	-7,838.97	1,448.27	1,273.45	1,034.21	239.24	5.323	
19,450.00	11,620.00	19,796.55	11,974.15	122.69	125.28	-105.40	-7,881.12	1,449.19	1,274.22	1,033.70	240.52	5.298	
19,500.00	11,620.00	19,838.70	11,974.43	123.38	125.87	-105.40	-7,923.25	1,450.32	1,275.30	1,033.52	241.78	5.275	
19,550.00	11,620.00	19,881.90	11,974.92	124.07	126.48	-105.41	-7,966.43	1,451.68	1,276.67	1,033.62	243.05	5.253	
19,600.00	11,620.00	19,925.32	11,975.58	124.76	127.10	-105.42	-8,009.81	1,453.23	1,278.30	1,033.99	244.31	5.232	
19,650.00	11,620.00	19,989.57	11,976.75	125.44	128.01	-105.45	-8,074.01	1,455.43	1,279.93	1,034.10	245.83	5.207	
19,700.00	11,620.00	20,053.15	11,977.85	126.13	128.90	-105.49	-8,137.57	1,456.60	1,280.72	1,033.42	247.30	5.179	
19,750.00	11,620.00	20,098.19	11,978.68	126.82	129.54	-105.52	-8,182.60	1,457.37	1,281.48	1,032.90	248.58	5.155	
19,800.00	11,620.00	20,143.23	11,979.59	127.51	130.18	-105.55	-8,227.62	1,458.29	1,282.44	1,032.59	249.86	5.133	
19,850.00	11,620.00	20,188.25	11,980.57	128.20	130.81	-105.59	-8,272.62	1,459.38	1,283.60	1,032.47	251.13	5.111	
19,900.00	11,620.00	20,279.14	11,982.56	128.89	132.09	-105.66	-8,363.47	1,460.98	1,284.76	1,031.96	252.80	5.082	
19,950.00	11,620.00	20,369.22	11,983.63	129.58	133.34	-105.74	-8,453.50	1,458.60	1,283.12	1,028.91	254.22	5.047	
20,000.00	11,620.00	20,428.20	11,983.68	130.28	134.15	-105.77	-8,512.45	1,456.41	1,281.05	1,025.51	255.53	5.013	
20,050.00	11,620.00	20,460.27	11,983.88	130.97	134.60	-105.80	-8,544.50	1,455.42	1,279.28	1,022.43	256.85	4.981	Alert
20,100.00	11,620.00	20,497.87	11,984.33	131.66	135.12	-105.83	-8,582.09	1,454.50	1,277.96	1,019.84	258.13	4.951	Alert
20,150.00	11,620.00	20,566.80	11,985.35	132.35	136.07	-105.90	-8,650.99	1,452.75	1,276.69	1,017.23	259.46	4.921	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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals — **Offset Site Error:** 5.00 ft

Survey Program: 188-MWD+HDGM — **Offset Well Error:** 0.00 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
20,200.00	11,620.00	20,630.71	11,985.76	133.05	136.96	-105.96	-8,714.84	1,450.11	1,274.46	1,013.71	260.75	4.888	Alert
20,250.00	11,620.00	20,681.79	11,985.18	133.74	137.66	-105.96	-8,765.87	1,448.07	1,272.09	1,009.99	262.09	4.854	Alert
20,300.00	11,620.00	20,742.61	11,983.38	134.43	138.50	-105.92	-8,826.61	1,445.71	1,269.53	1,006.07	263.46	4.819	Alert
20,350.00	11,620.00	20,807.45	11,980.42	135.13	139.39	-105.83	-8,891.32	1,442.74	1,266.41	1,001.57	264.84	4.782	Alert
20,400.00	11,620.00	20,853.12	11,978.40	135.82	140.02	-105.77	-8,936.89	1,440.54	1,263.17	996.91	266.26	4.744	Alert
20,450.00	11,620.00	20,900.04	11,976.50	136.52	140.67	-105.72	-8,983.72	1,438.22	1,259.95	992.28	267.67	4.707	Alert
20,500.00	11,620.00	20,941.80	11,974.93	137.21	141.25	-105.68	-9,025.41	1,436.35	1,256.98	987.89	269.09	4.671	Alert
20,550.00	11,620.00	20,983.64	11,973.43	137.91	141.83	-105.63	-9,067.19	1,434.73	1,254.33	983.83	270.51	4.637	Alert
20,600.00	11,620.00	21,026.11	11,971.79	138.60	142.42	-105.58	-9,109.61	1,433.39	1,252.00	980.07	271.92	4.604	Alert
20,650.00	11,620.00	21,068.58	11,969.91	139.30	143.01	-105.51	-9,152.02	1,432.38	1,249.96	976.61	273.35	4.573	Alert
20,700.00	11,620.00	21,104.76	11,968.25	140.00	143.52	-105.45	-9,188.15	1,431.84	1,248.33	973.58	274.76	4.543	Alert
20,750.00	11,620.00	21,139.84	11,966.83	140.69	144.02	-105.39	-9,223.21	1,431.70	1,247.30	971.17	276.13	4.517	Alert
20,800.00	11,620.00	21,170.00	11,965.77	141.39	144.44	-105.35	-9,253.35	1,431.88	1,246.88	969.47	277.41	4.495	Alert
20,814.81	11,620.00	21,183.44	11,965.42	141.60	144.63	-105.33	-9,266.78	1,432.04	1,246.87	969.04	277.83	4.488	Alert
20,850.00	11,620.00	21,205.09	11,965.25	142.09	144.94	-105.32	-9,288.43	1,432.40	1,247.14	968.47	278.68	4.475	Alert
20,900.00	11,620.00	21,235.85	11,965.83	142.79	145.38	-105.34	-9,319.17	1,433.10	1,248.19	968.39	279.80	4.461	Alert
20,950.00	11,620.00	21,267.81	11,967.46	143.49	145.84	-105.40	-9,351.08	1,434.06	1,250.00	969.16	280.84	4.451	Alert
21,000.00	11,620.00	21,324.37	11,970.68	144.18	146.65	-105.53	-9,407.51	1,435.89	1,252.02	969.82	282.20	4.437	Alert
21,050.00	11,620.00	21,376.03	11,972.98	144.88	147.40	-105.61	-9,459.10	1,437.50	1,253.82	970.30	283.52	4.422	Alert
21,100.00	11,620.00	21,419.87	11,974.90	145.58	148.03	-105.68	-9,502.87	1,439.00	1,255.77	971.03	284.73	4.410	Alert
21,150.00	11,620.00	21,501.34	11,977.79	146.28	149.20	-105.78	-9,584.24	1,441.74	1,257.80	971.35	286.45	4.391	Alert
21,200.00	11,620.00	21,588.87	11,976.09	146.98	150.45	-105.70	-9,671.74	1,442.33	1,257.32	969.11	288.21	4.363	Alert
21,250.00	11,620.00	21,641.08	11,974.31	147.68	151.19	-105.63	-9,723.92	1,442.37	1,256.60	966.93	289.67	4.338	Alert
21,300.00	11,620.00	21,688.43	11,972.56	148.38	151.86	-105.56	-9,771.23	1,442.46	1,255.89	964.78	291.11	4.314	Alert
21,350.00	11,620.00	21,735.58	11,970.76	149.08	152.54	-105.48	-9,818.35	1,442.67	1,255.30	962.74	292.56	4.291	Alert
21,400.00	11,620.00	21,782.59	11,969.24	149.78	153.21	-105.41	-9,865.33	1,442.91	1,254.82	960.83	293.99	4.268	Alert
21,450.00	11,620.00	21,829.62	11,968.41	150.48	153.87	-105.38	-9,912.36	1,443.08	1,254.46	959.08	295.38	4.247	Alert
21,475.95	11,620.00	21,848.04	11,968.30	150.85	154.14	-105.37	-9,930.78	1,443.17	1,254.38	958.33	296.05	4.237	Alert
21,500.00	11,620.00	21,864.79	11,968.36	151.19	154.38	-105.37	-9,947.52	1,443.30	1,254.45	957.80	296.65	4.229	Alert
21,550.00	11,620.00	21,899.58	11,968.96	151.89	154.88	-105.40	-9,982.31	1,443.78	1,255.04	957.20	297.85	4.214	Alert
21,600.00	11,620.00	21,937.40	11,970.31	152.59	155.42	-105.45	-10,020.09	1,444.59	1,256.23	957.21	299.02	4.201	Alert
21,650.00	11,620.00	21,984.89	11,972.15	153.29	156.10	-105.52	-10,067.53	1,445.78	1,257.66	957.37	300.29	4.188	Alert
21,700.00	11,620.00	22,035.44	11,974.01	153.99	156.83	-105.59	-10,118.03	1,447.17	1,259.18	957.57	301.61	4.175	Alert
21,750.00	11,620.00	22,095.72	11,975.95	154.70	157.70	-105.66	-10,178.26	1,448.58	1,260.44	957.38	303.06	4.159	Alert
21,800.00	11,620.00	22,144.92	11,977.31	155.40	158.41	-105.71	-10,227.43	1,449.52	1,261.44	957.06	304.38	4.144	Alert
21,850.00	11,620.00	22,191.34	11,978.54	156.10	159.08	-105.76	-10,273.82	1,450.60	1,262.62	956.95	305.67	4.131	Alert
21,864.06	11,620.00	22,205.39	11,978.91	156.30	159.28	-105.77	-10,287.87	1,450.94	1,262.96	956.92	306.04	4.127	Alert, SF

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - NTL — **Offset Site Error:** 5.00 ft

Survey Program: 188-MWD+HDGM — **Offset Well Error:** 0.00 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
0.00	0.00	15.21	15.21	0.50	0.02	92.12	-26.59	717.85	718.34				
50.00	50.00	63.32	63.32	0.50	0.09	92.12	-26.62	717.95	718.45	717.85	0.60	1,205.306	
100.00	100.00	111.44	111.44	0.52	0.17	92.13	-26.67	718.18	718.69	718.00	0.68	1,051.768	
150.00	150.00	159.55	159.55	0.59	0.24	92.13	-26.76	718.53	719.05	718.23	0.83	869.242	
200.00	200.00	208.22	208.21	0.70	0.35	92.14	-26.87	719.00	719.55	718.49	1.05	682.866	
250.00	250.00	257.68	257.68	0.84	0.53	92.14	-26.86	719.55	720.09	718.73	1.37	527.085	
300.00	300.00	307.68	307.66	0.99	0.71	92.13	-26.73	720.12	720.66	718.97	1.69	425.282	
350.00	350.00	358.14	358.12	1.15	0.89	92.12	-26.69	720.68	721.21	719.18	2.03	354.708	
400.00	400.00	408.28	408.26	1.31	1.07	92.12	-26.74	721.20	721.74	719.36	2.38	303.700	
450.00	450.00	458.26	458.24	1.48	1.25	92.13	-26.78	721.72	722.26	719.54	2.72	265.254	
500.00	500.00	508.83	508.80	1.65	1.43	92.13	-26.82	722.24	722.77	719.69	3.07	235.130	
550.00	550.00	559.51	559.49	1.82	1.61	92.13	-26.83	722.70	723.23	719.80	3.43	211.028	
600.00	600.00	611.05	611.03	1.99	1.80	92.13	-26.86	723.10	723.61	719.83	3.78	191.202	
650.00	650.00	662.60	662.58	2.16	1.98	92.13	-26.95	723.38	723.89	719.74	4.14	174.729	
700.00	700.00	711.23	711.20	2.34	2.15	92.14	-27.04	723.65	724.17	719.68	4.49	161.223	
750.00	750.00	760.26	760.24	2.51	2.33	92.14	-27.10	724.00	724.52	719.68	4.84	149.612	
800.00	800.00	809.97	809.94	2.69	2.51	92.14	-27.13	724.41	724.94	719.74	5.20	139.504	
850.00	850.00	862.16	862.13	2.87	2.69	92.15	-27.17	724.75	725.27	719.71	5.56	130.446	
900.00	900.00	913.71	913.67	3.04	2.88	92.15	-27.21	724.94	725.45	719.53	5.92	122.524	
950.00	950.00	964.45	964.42	3.22	3.06	92.15	-27.21	725.06	725.57	719.30	6.28	115.558	
1,000.00	1,000.00	1,015.50	1,015.47	3.40	3.24	92.15	-27.17	725.13	725.64	719.00	6.63	109.398	
1,050.00	1,050.00	1,066.73	1,066.69	3.58	3.41	92.14	-27.13	725.11	725.62	718.63	6.98	103.883	
1,100.00	1,100.00	1,117.01	1,116.98	3.75	3.58	92.14	-27.09	725.03	725.54	718.21	7.33	98.995	
1,150.00	1,150.00	1,167.09	1,167.06	3.93	3.74	92.14	-27.07	724.95	725.46	717.78	7.67	94.564	
1,200.00	1,200.00	1,215.85	1,215.81	4.11	3.91	92.14	-27.08	724.91	725.41	717.40	8.02	90.484	
1,200.56	1,200.56	1,216.39	1,216.36	4.11	3.91	92.14	-27.08	724.91	725.41	717.39	8.02	90.441	
1,250.00	1,250.00	1,264.66	1,264.62	4.29	4.08	92.14	-27.11	724.95	725.45	717.09	8.36	86.740	
1,300.00	1,300.00	1,313.88	1,313.85	4.46	4.25	92.14	-27.15	725.05	725.56	716.84	8.72	83.234	
1,350.00	1,350.00	1,363.50	1,363.46	4.64	4.43	92.15	-27.17	725.21	725.72	716.65	9.07	79.992	
1,400.00	1,400.00	1,414.20	1,414.17	4.82	4.61	92.15	-27.19	725.34	725.86	716.42	9.43	76.958	
1,450.00	1,450.00	1,465.08	1,465.05	5.00	4.79	92.15	-27.20	725.43	725.94	716.15	9.79	74.151	
1,500.00	1,500.00	1,516.16	1,516.12	5.18	4.97	92.14	-27.12	725.45	725.96	715.81	10.15	71.546	
1,550.00	1,550.00	1,566.57	1,566.54	5.36	5.14	92.13	-26.98	725.41	725.91	715.41	10.50	69.148	
1,600.00	1,600.00	1,616.66	1,616.63	5.53	5.31	92.13	-26.96	725.36	725.86	715.01	10.85	66.921	
1,650.00	1,650.00	1,666.16	1,666.13	5.71	5.48	92.13	-27.03	725.31	725.82	714.62	11.19	64.835	
1,676.86	1,676.86	1,692.69	1,692.66	5.81	5.57	92.14	-27.07	725.30	725.81	714.43	11.38	63.768	
1,700.00	1,700.00	1,715.55	1,715.52	5.89	5.65	92.14	-27.11	725.31	725.81	714.27	11.54	62.878	
1,750.00	1,750.00	1,765.24	1,765.21	6.07	5.83	92.15	-27.19	725.33	725.84	713.95	11.90	61.012	
1,800.00	1,800.00	1,815.00	1,814.96	6.25	6.00	92.15	-27.26	725.38	725.90	713.64	12.25	59.254	
1,850.00	1,850.00	1,865.47	1,865.43	6.43	6.18	92.16	-27.30	725.42	725.94	713.33	12.61	57.583	
1,900.00	1,900.00	1,915.83	1,915.80	6.61	6.36	92.16	-27.31	725.43	725.95	712.98	12.96	56.005	
1,950.00	1,950.00	1,965.83	1,965.80	6.78	6.53	92.16	-27.31	725.43	725.95	712.63	13.31	54.525	
1,954.87	1,954.87	1,970.71	1,970.67	6.80	6.55	92.16	-27.31	725.43	725.95	712.60	13.35	54.385	
2,000.00	2,000.00	2,015.39	2,015.35	6.96	6.70	92.16	-27.31	725.44	725.95	712.29	13.67	53.124	
2,050.00	2,050.00	2,064.07	2,064.03	7.14	6.87	92.16	-27.32	725.51	726.03	712.01	14.01	51.806	
2,100.00	2,100.00	2,113.75	2,113.72	7.32	7.05	92.16	-27.34	725.66	726.18	711.81	14.37	50.542	
2,150.00	2,150.00	2,164.79	2,164.76	7.50	7.23	92.15	-27.31	725.77	726.29	711.56	14.73	49.317	
2,200.00	2,200.00	2,215.19	2,215.16	7.68	7.41	92.15	-27.25	725.83	726.34	711.25	15.08	48.155	
2,250.00	2,250.00	2,265.13	2,265.10	7.86	7.58	92.15	-27.26	725.87	726.38	710.95	15.44	47.052	
2,300.00	2,300.00	2,315.39	2,315.35	8.04	7.76	92.16	-27.32	725.91	726.43	710.63	15.79	45.992	
2,350.00	2,350.00	2,365.77	2,365.74	8.22	7.94	92.16	-27.35	725.93	726.44	710.29	16.15	44.975	
2,400.00	2,400.00	2,407.78	2,407.74	8.39	8.09	92.15	-27.28	726.12	726.68	710.20	16.48	44.094 ES	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - NTL — **Offset Site Error:** 5.00 ft

Survey Program: 188-MWD+HDGM — **Offset Well Error:** 0.00 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
2,450.00	2,450.00	2,448.13	2,448.09	8.57	8.23	92.13	-27.03	726.84	727.56	710.76	16.80	43.308	
2,500.00	2,500.00	2,487.89	2,487.83	8.75	8.37	92.09	-26.60	728.10	729.12	712.01	17.11	42.604	
2,550.00	2,550.00	2,527.06	2,526.95	8.93	8.51	45.13	-26.01	729.91	731.25	713.83	17.42	41.975	
2,600.00	2,599.99	2,566.45	2,566.25	9.11	8.65	45.08	-25.26	732.32	733.82	716.09	17.73	41.399	
2,650.00	2,649.98	2,607.53	2,607.21	9.28	8.80	45.02	-24.25	735.38	736.72	718.69	18.03	40.851	
2,700.00	2,699.96	2,648.56	2,648.06	9.46	8.95	44.97	-22.99	738.93	739.99	721.65	18.34	40.348	
2,750.00	2,749.94	2,692.42	2,691.69	9.64	9.10	44.90	-21.38	743.19	743.76	725.10	18.66	39.859	
2,800.00	2,799.92	2,736.87	2,735.85	9.81	9.26	44.82	-19.48	747.84	747.90	728.91	18.98	39.401	
2,850.00	2,849.90	2,782.14	2,780.80	9.99	9.42	44.71	-17.36	752.88	752.37	733.06	19.31	38.966	
2,900.00	2,899.88	2,827.75	2,826.04	10.17	9.59	44.62	-15.32	758.21	757.13	737.49	19.64	38.558	
2,950.00	2,949.86	2,873.62	2,871.53	10.34	9.76	44.53	-13.42	763.81	762.15	742.18	19.97	38.173	
3,000.00	2,999.84	2,919.62	2,917.13	10.52	9.92	44.47	-11.83	769.64	767.42	747.12	20.30	37.811	
3,050.00	3,049.81	2,967.34	2,964.42	10.70	10.10	44.43	-10.47	775.89	772.89	752.26	20.64	37.451	
3,100.00	3,099.79	3,016.22	3,012.86	10.88	10.28	44.39	-9.13	782.35	778.44	757.45	20.99	37.093	
3,150.00	3,149.77	3,068.37	3,064.53	11.05	10.47	44.35	-7.70	789.22	783.97	762.61	21.36	36.710	
3,200.00	3,199.75	3,122.28	3,117.98	11.23	10.67	44.31	-6.19	796.06	789.25	767.51	21.74	36.310	
3,250.00	3,249.73	3,178.84	3,174.11	11.41	10.88	44.27	-4.55	802.85	794.19	772.06	22.13	35.882	
3,300.00	3,299.71	3,235.75	3,230.63	11.59	11.09	44.22	-2.83	809.19	798.69	776.16	22.53	35.449	
3,350.00	3,349.69	3,281.28	3,275.87	11.76	11.26	44.17	-1.42	814.26	803.19	780.33	22.86	35.132	
3,400.00	3,399.67	3,327.50	3,321.76	11.94	11.43	44.13	0.04	819.52	807.81	784.61	23.20	34.824	
3,450.00	3,449.65	3,369.17	3,363.09	12.12	11.59	44.08	1.50	824.58	812.82	789.32	23.50	34.583	
3,500.00	3,499.62	3,410.78	3,404.31	12.30	11.75	44.01	3.15	830.06	818.33	794.52	23.81	34.373	
3,550.00	3,549.60	3,454.65	3,447.71	12.48	11.91	43.94	5.03	836.19	824.26	800.13	24.13	34.166	
3,600.00	3,599.58	3,498.44	3,490.98	12.65	12.08	43.85	6.98	842.63	830.54	806.09	24.44	33.981	
3,650.00	3,649.56	3,551.79	3,543.68	12.83	12.28	43.76	9.36	850.57	836.92	812.10	24.82	33.715	
3,700.00	3,699.54	3,606.93	3,598.21	13.01	12.49	43.67	11.67	858.43	842.99	817.77	25.22	33.430	
3,750.00	3,749.52	3,655.26	3,646.02	13.19	12.68	43.61	13.46	865.23	848.96	823.40	25.57	33.208	
3,800.00	3,799.50	3,704.50	3,694.75	13.37	12.87	43.56	15.01	872.18	854.96	829.04	25.92	32.985	
3,850.00	3,849.48	3,753.92	3,743.65	13.54	13.06	43.54	16.25	879.17	860.98	834.70	26.28	32.768	
3,900.00	3,899.46	3,805.05	3,794.26	13.72	13.26	43.54	17.19	886.39	866.99	840.34	26.64	32.541	
3,950.00	3,949.44	3,859.71	3,848.40	13.90	13.47	43.56	18.00	893.87	872.78	845.75	27.03	32.286	
4,000.00	3,999.41	3,913.93	3,902.15	14.08	13.68	43.58	18.66	900.99	878.29	850.87	27.42	32.031	
4,050.00	4,049.39	3,967.87	3,955.66	14.26	13.88	43.62	19.13	907.81	883.57	855.76	27.80	31.778	
4,100.00	4,099.37	4,018.07	4,005.46	14.44	14.08	43.66	19.37	914.01	888.70	860.53	28.17	31.553	
4,150.00	4,149.35	4,067.67	4,054.69	14.61	14.27	43.73	19.34	920.13	893.83	865.31	28.52	31.338	
4,200.00	4,199.33	4,115.13	4,101.78	14.79	14.45	43.79	19.21	926.05	899.03	870.16	28.87	31.144	
4,250.00	4,249.31	4,162.47	4,148.73	14.97	14.63	43.85	19.18	932.08	904.36	875.15	29.21	30.961	
4,300.00	4,299.29	4,211.98	4,197.82	15.15	14.82	43.88	19.53	938.47	909.76	880.19	29.57	30.770	
4,350.00	4,349.27	4,262.06	4,247.48	15.33	15.02	43.87	20.59	944.94	915.17	885.24	29.93	30.579	
4,400.00	4,399.25	4,318.62	4,303.57	15.51	15.24	43.83	22.25	952.02	920.37	890.04	30.33	30.346	
4,450.00	4,449.22	4,375.29	4,359.82	15.69	15.45	43.78	24.09	958.70	925.20	894.47	30.73	30.107	
4,500.00	4,499.20	4,432.11	4,416.26	15.86	15.67	43.75	25.77	964.97	929.65	898.52	31.13	29.863	
4,550.00	4,549.18	4,483.29	4,467.13	16.04	15.87	43.72	27.15	970.35	933.85	902.35	31.50	29.648	
4,600.00	4,599.16	4,532.63	4,516.18	16.22	16.06	43.69	28.56	975.55	938.06	906.20	31.85	29.449	
4,650.00	4,649.14	4,577.84	4,561.11	16.40	16.23	43.66	29.97	980.42	942.38	910.20	32.19	29.278	
4,700.00	4,699.12	4,622.40	4,605.35	16.58	16.40	43.61	31.55	985.47	946.99	914.47	32.52	29.124	
4,750.00	4,749.10	4,664.81	4,647.42	16.76	16.56	43.56	33.27	990.54	951.91	919.08	32.83	28.995	
4,800.00	4,799.08	4,706.48	4,688.71	16.94	16.73	43.49	35.23	995.87	957.24	924.10	33.14	28.886	
4,850.00	4,849.06	4,749.44	4,731.20	17.12	16.90	43.40	37.51	1,001.71	962.98	929.52	33.45	28.786	
4,900.00	4,899.03	4,793.53	4,774.78	17.30	17.07	43.30	40.02	1,007.96	969.02	935.24	33.78	28.690	
4,950.00	4,949.01	4,839.50	4,820.16	17.47	17.25	43.19	42.76	1,014.73	975.32	941.21	34.11	28.593	
5,000.00	4,998.99	4,888.37	4,868.41	17.65	17.45	43.07	45.63	1,021.99	981.71	947.24	34.46	28.484	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - NTL — **Offset Site Error:** 5.00 ft

Survey Program: 188-MWD+HDGM — **Offset Well Error:** 0.00 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
5,050.00	5,048.97	4,938.90	4,918.29	17.83	17.65	42.97	48.51	1,029.52	988.11	953.28	34.83	28.368	
5,100.00	5,098.95	4,991.28	4,970.03	18.01	17.86	42.86	51.31	1,037.20	994.40	959.19	35.21	28.241	
5,150.00	5,148.93	5,042.13	5,020.28	18.19	18.06	42.77	53.87	1,044.54	1,000.58	965.00	35.58	28.122	
5,200.00	5,198.91	5,092.26	5,069.82	18.37	18.26	42.69	56.33	1,051.75	1,006.74	970.79	35.94	28.009	
5,250.00	5,248.89	5,142.25	5,119.24	18.55	18.46	42.62	58.70	1,058.92	1,012.86	976.56	36.31	27.897	
5,300.00	5,298.87	5,192.21	5,168.64	18.73	18.66	42.55	60.96	1,066.06	1,018.98	982.31	36.67	27.788	
5,350.00	5,348.84	5,241.30	5,217.17	18.91	18.86	42.48	63.09	1,073.09	1,025.10	988.07	37.03	27.685	
5,400.00	5,398.82	5,290.61	5,265.93	19.09	19.06	42.43	65.13	1,080.17	1,031.24	993.86	37.39	27.584	
5,450.00	5,448.80	5,345.55	5,320.28	19.27	19.27	42.38	67.21	1,087.93	1,037.26	999.48	37.78	27.454	
5,500.00	5,498.78	5,400.26	5,374.44	19.44	19.49	42.34	69.03	1,095.39	1,043.03	1,004.86	38.18	27.322	
5,550.00	5,548.76	5,454.43	5,428.12	19.62	19.71	42.30	70.81	1,102.53	1,048.58	1,010.01	38.57	27.189	
5,600.00	5,598.74	5,507.79	5,481.01	19.80	19.92	42.27	72.61	1,109.35	1,053.93	1,014.98	38.95	27.059	
5,650.00	5,648.72	5,560.62	5,533.39	19.98	20.13	42.22	74.56	1,115.93	1,059.12	1,019.79	39.33	26.929	
5,700.00	5,698.70	5,610.72	5,583.07	20.16	20.32	42.18	76.50	1,122.09	1,064.23	1,024.53	39.69	26.811	
5,750.00	5,748.68	5,660.31	5,632.25	20.34	20.52	42.13	78.40	1,128.19	1,069.34	1,029.28	40.05	26.698	
5,800.00	5,798.65	5,711.48	5,683.00	20.52	20.72	42.09	80.30	1,134.45	1,074.42	1,034.00	40.42	26.579	
5,850.00	5,848.63	5,762.76	5,733.87	20.70	20.92	42.05	82.10	1,140.66	1,079.43	1,038.64	40.79	26.461	
5,900.00	5,898.61	5,812.96	5,783.68	20.88	21.12	42.02	83.77	1,146.69	1,084.40	1,043.24	41.16	26.348	
5,950.00	5,948.59	5,863.38	5,833.71	21.06	21.32	41.99	85.37	1,152.73	1,089.34	1,047.82	41.52	26.235	
6,000.00	5,998.57	5,914.02	5,883.96	21.24	21.52	41.97	86.92	1,158.76	1,094.25	1,052.36	41.89	26.123	
6,050.00	6,048.55	5,964.60	5,934.17	21.42	21.71	41.95	88.43	1,164.74	1,099.11	1,056.86	42.25	26.012	
6,100.00	6,098.53	6,015.10	5,984.30	21.60	21.91	41.93	89.88	1,170.67	1,103.95	1,061.33	42.62	25.902	
6,150.00	6,148.51	6,064.60	6,033.44	21.77	22.11	41.91	91.24	1,176.47	1,108.76	1,065.78	42.98	25.797	
6,200.00	6,198.49	6,113.26	6,081.74	21.95	22.30	41.90	92.56	1,182.22	1,113.61	1,070.28	43.33	25.699	
6,250.00	6,248.46	6,160.86	6,128.98	22.13	22.48	41.88	93.88	1,187.89	1,118.53	1,074.85	43.68	25.606	
6,300.00	6,298.44	6,207.79	6,175.54	22.31	22.67	41.86	95.38	1,193.60	1,123.56	1,079.54	44.03	25.521	
6,350.00	6,348.42	6,257.76	6,225.09	22.49	22.87	41.82	97.16	1,199.75	1,128.68	1,084.29	44.39	25.428	
6,400.00	6,398.40	6,309.51	6,276.43	22.67	23.07	41.79	98.98	1,206.04	1,133.73	1,088.96	44.76	25.328	
6,450.00	6,448.38	6,360.81	6,327.33	22.85	23.27	41.76	100.71	1,212.20	1,138.69	1,093.56	45.13	25.230	
6,500.00	6,498.36	6,412.02	6,378.16	23.03	23.47	41.74	102.29	1,218.29	1,143.59	1,098.09	45.50	25.132	
6,550.00	6,548.34	6,462.66	6,428.41	23.21	23.67	41.72	103.76	1,224.26	1,148.44	1,102.57	45.87	25.037	
6,600.00	6,598.32	6,513.53	6,478.92	23.39	23.87	41.70	105.18	1,230.22	1,153.26	1,107.02	46.24	24.942	
6,650.00	6,648.30	6,566.15	6,531.17	23.57	24.08	41.69	106.55	1,236.30	1,157.98	1,111.36	46.62	24.841	
6,700.00	6,698.27	6,618.46	6,583.13	23.75	24.28	41.69	107.76	1,242.21	1,162.58	1,115.59	46.99	24.740	
6,750.00	6,748.25	6,670.14	6,634.47	23.93	24.48	41.69	108.84	1,247.97	1,167.10	1,119.73	47.36	24.641	
6,800.00	6,798.23	6,721.85	6,685.86	24.11	24.68	41.70	109.81	1,253.65	1,171.53	1,123.79	47.74	24.542	
6,850.00	6,848.21	6,773.58	6,737.28	24.29	24.88	41.72	110.66	1,259.25	1,175.88	1,127.77	48.11	24.443	
6,900.00	6,898.19	6,827.15	6,790.54	24.47	25.09	41.73	111.43	1,264.93	1,180.12	1,131.63	48.49	24.338	
6,950.00	6,948.17	6,881.52	6,844.62	24.65	25.30	41.76	112.09	1,270.50	1,184.18	1,135.30	48.87	24.229	
7,000.00	6,998.15	6,934.69	6,897.53	24.83	25.50	41.79	112.61	1,275.77	1,188.07	1,138.82	49.25	24.122	
7,050.00	7,048.13	6,988.11	6,950.70	25.00	25.71	41.83	113.00	1,280.93	1,191.82	1,142.19	49.63	24.013	
7,100.00	7,098.11	7,042.75	7,005.10	25.18	25.92	41.87	113.26	1,286.00	1,195.39	1,145.38	50.02	23.900	
7,150.00	7,148.08	7,096.85	7,058.99	25.36	26.12	41.92	113.37	1,290.83	1,198.77	1,148.38	50.40	23.786	
7,200.00	7,198.06	7,150.35	7,112.29	25.54	26.32	41.98	113.34	1,295.43	1,202.00	1,151.22	50.78	23.673	
7,250.00	7,248.04	7,205.09	7,166.84	25.72	26.53	42.04	113.15	1,299.96	1,205.05	1,153.90	51.16	23.556	
7,300.00	7,298.02	7,260.41	7,221.99	25.90	26.73	42.11	112.72	1,304.29	1,207.89	1,156.35	51.54	23.435	
7,350.00	7,348.00	7,314.82	7,276.24	26.08	26.93	42.20	112.10	1,308.34	1,210.53	1,158.61	51.92	23.315	
7,400.00	7,397.98	7,369.55	7,330.83	26.26	27.13	42.29	111.30	1,312.21	1,212.98	1,160.68	52.30	23.192	
7,450.00	7,447.96	7,425.31	7,386.46	26.44	27.34	42.39	110.36	1,315.90	1,215.20	1,162.52	52.68	23.066	
7,500.00	7,497.94	7,481.28	7,442.32	26.62	27.54	42.49	109.31	1,319.33	1,217.19	1,164.13	53.07	22.938	
7,550.00	7,547.92	7,537.43	7,498.36	26.80	27.74	42.60	108.14	1,322.49	1,218.93	1,165.49	53.45	22.807	
7,600.00	7,597.89	7,591.95	7,552.80	26.98	27.93	42.71	106.93	1,325.32	1,220.45	1,166.63	53.82	22.676	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - NTL

Survey Program: 188-MWD+HDGM

Offset Site Error: 5.00 ft

Offset Well Error: 0.00 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
7,650.00	7,647.87	7,646.27	7,607.04	27.16	28.13	42.82	105.68	1,327.94	1,221.79	1,167.60	54.19	22.545	
7,700.00	7,697.85	7,697.41	7,658.11	27.34	28.31	42.92	104.48	1,330.30	1,223.03	1,168.48	54.55	22.419	
7,750.00	7,747.83	7,749.53	7,710.16	27.52	28.49	43.03	103.24	1,332.63	1,224.20	1,169.29	54.92	22.292	
7,800.00	7,797.81	7,803.15	7,763.72	27.70	28.68	43.14	101.98	1,334.89	1,225.25	1,169.97	55.28	22.163	
7,850.00	7,847.79	7,855.82	7,816.34	27.88	28.86	43.24	100.78	1,336.97	1,226.17	1,170.52	55.65	22.034	
7,900.00	7,897.77	7,907.66	7,868.12	28.06	29.04	43.34	99.57	1,338.92	1,227.00	1,170.99	56.01	21.906	
7,950.00	7,947.75	7,959.02	7,919.43	28.24	29.22	43.45	98.32	1,340.78	1,227.77	1,171.39	56.37	21.780	
8,000.00	7,997.73	8,010.17	7,970.54	28.42	29.40	43.56	97.01	1,342.59	1,228.49	1,171.76	56.73	21.655	
8,050.00	8,047.70	8,063.96	8,024.27	28.60	29.59	43.67	95.59	1,344.38	1,229.12	1,172.02	57.10	21.527	
8,100.00	8,097.68	8,118.22	8,078.50	28.78	29.77	43.79	94.19	1,346.00	1,229.58	1,172.11	57.46	21.397	
8,150.00	8,147.66	8,169.24	8,129.48	28.96	29.95	43.90	92.84	1,347.42	1,229.94	1,172.12	57.82	21.271	
8,200.00	8,197.64	8,220.33	8,180.53	29.13	30.12	44.01	91.48	1,348.79	1,230.25	1,172.07	58.18	21.146	
8,250.00	8,247.62	8,271.04	8,231.21	29.31	30.30	44.10	90.63	1,350.11	1,230.53	1,171.99	58.54	21.021	
8,300.00	8,297.60	8,317.05	8,277.21	29.49	30.46	44.15	90.38	1,351.34	1,230.83	1,171.95	58.88	20.903	
8,350.00	8,347.58	8,358.50	8,318.64	29.67	30.61	44.18	90.51	1,352.71	1,231.43	1,172.22	59.21	20.797	
8,400.00	8,397.56	8,405.14	8,365.24	29.85	30.77	44.20	91.02	1,354.55	1,232.35	1,172.79	59.56	20.691	
8,450.00	8,447.54	8,468.23	8,428.27	30.03	31.00	44.19	92.43	1,356.71	1,233.00	1,173.04	59.96	20.565	
8,500.00	8,497.51	8,521.99	8,481.99	30.21	31.19	44.16	94.12	1,358.14	1,233.25	1,172.93	60.32	20.444	
8,550.00	8,547.49	8,572.37	8,532.33	30.39	31.36	44.14	95.63	1,359.44	1,233.47	1,172.79	60.68	20.327	
8,600.00	8,597.47	8,629.00	8,588.92	30.57	31.56	44.12	97.21	1,360.75	1,233.57	1,172.52	61.05	20.205	
8,650.00	8,647.45	8,687.54	8,647.43	30.75	31.76	44.10	98.72	1,361.75	1,233.36	1,171.93	61.43	20.078	
8,700.00	8,697.43	8,749.20	8,709.07	30.93	31.97	44.09	100.20	1,362.27	1,232.72	1,170.91	61.80	19.946	
8,750.00	8,747.41	8,807.22	8,767.08	31.11	32.16	44.09	101.42	1,362.28	1,231.66	1,169.49	62.17	19.813	
8,800.00	8,797.39	8,863.74	8,823.59	31.29	32.35	44.10	102.24	1,361.97	1,230.33	1,167.80	62.52	19.678	
8,850.00	8,847.37	8,918.07	8,877.92	31.47	32.52	44.14	102.55	1,361.42	1,228.77	1,165.91	62.87	19.545	
8,900.00	8,897.35	8,971.21	8,931.06	31.65	32.69	44.20	102.35	1,360.69	1,227.05	1,163.84	63.21	19.411	
8,950.00	8,947.33	9,021.85	8,981.68	31.83	32.84	44.27	101.93	1,359.93	1,225.27	1,161.71	63.56	19.278	
9,000.00	8,997.30	9,071.72	9,031.55	32.01	33.00	44.34	101.43	1,359.16	1,223.46	1,159.57	63.90	19.147	
9,050.00	9,047.28	9,120.74	9,080.56	32.19	33.15	44.40	101.18	1,358.43	1,221.69	1,157.45	64.24	19.018	
9,100.00	9,097.26	9,168.43	9,128.25	32.37	33.30	44.45	101.18	1,357.78	1,219.97	1,155.39	64.58	18.892	
9,150.00	9,147.24	9,214.92	9,174.73	32.55	33.45	44.49	101.14	1,357.27	1,218.38	1,153.47	64.91	18.769	
9,200.00	9,197.22	9,263.33	9,223.14	32.73	33.60	44.55	101.02	1,356.85	1,216.92	1,151.66	65.25	18.649	
9,250.00	9,247.20	9,313.47	9,273.28	32.91	33.76	44.60	100.91	1,356.43	1,215.46	1,149.87	65.60	18.529	
9,300.00	9,297.18	9,360.92	9,320.73	33.09	33.91	44.65	100.84	1,356.05	1,214.04	1,148.10	65.94	18.412	
9,350.00	9,347.16	9,406.81	9,366.62	33.27	34.06	44.69	100.83	1,355.84	1,212.77	1,146.50	66.27	18.300	
9,400.00	9,397.14	9,454.14	9,413.95	33.45	34.21	44.74	100.83	1,355.76	1,211.65	1,145.04	66.61	18.189	
9,450.00	9,447.11	9,502.50	9,462.31	33.63	34.37	44.79	100.71	1,355.74	1,210.61	1,143.65	66.96	18.080	
9,500.00	9,497.09	9,549.98	9,509.79	33.81	34.52	44.84	100.59	1,355.81	1,209.65	1,142.35	67.30	17.973	
9,550.00	9,547.07	9,596.93	9,556.74	33.99	34.68	44.87	101.05	1,356.00	1,208.81	1,141.16	67.65	17.869	
9,600.00	9,597.05	9,645.10	9,604.90	34.17	34.85	44.87	102.05	1,356.32	1,208.09	1,140.09	68.00	17.766	
9,650.00	9,647.03	9,694.03	9,653.81	34.35	35.01	44.86	103.09	1,356.70	1,207.41	1,139.06	68.35	17.665	
9,700.00	9,697.01	9,743.65	9,703.42	34.53	35.18	44.86	104.13	1,357.11	1,206.76	1,138.06	68.70	17.565	
9,750.00	9,746.99	9,793.57	9,753.32	34.71	35.35	44.86	105.12	1,357.53	1,206.12	1,137.07	69.06	17.466	
9,800.00	9,796.97	9,841.68	9,801.42	34.88	35.52	44.86	106.07	1,357.97	1,205.52	1,136.11	69.41	17.369	
9,850.00	9,846.95	9,889.31	9,849.04	35.06	35.68	44.86	107.09	1,358.50	1,205.01	1,135.25	69.75	17.275	
9,900.00	9,896.92	9,938.88	9,898.60	35.24	35.86	44.85	108.24	1,359.12	1,204.57	1,134.46	70.11	17.182	
9,950.00	9,946.90	9,989.33	9,949.03	35.42	36.03	44.84	109.47	1,359.74	1,204.12	1,133.65	70.46	17.089	
10,000.00	9,996.88	10,043.45	10,003.13	35.60	36.22	44.84	110.71	1,360.31	1,203.58	1,132.75	70.83	16.993	
10,050.00	10,046.86	10,098.33	10,058.00	35.78	36.41	44.84	111.66	1,360.66	1,202.85	1,131.66	71.19	16.896	
10,100.00	10,096.84	10,144.77	10,104.43	35.96	36.57	44.85	112.41	1,360.96	1,202.10	1,130.57	71.54	16.804	
10,150.00	10,146.82	10,192.16	10,151.82	36.14	36.73	44.86	113.27	1,361.36	1,201.47	1,129.59	71.89	16.714	
10,200.00	10,196.80	10,240.07	10,199.71	36.32	36.89	44.86	114.23	1,361.86	1,200.93	1,128.70	72.24	16.625	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - NTL — **Offset Site Error:** 5.00 ft

Survey Program: 188-MWD+HDGM — **Offset Well Error:** 0.00 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
10,250.00	10,246.78	10,288.58	10,248.20	36.50	37.06	44.85	115.30	1,362.45	1,200.48	1,127.90	72.59	16.539	
10,300.00	10,296.76	10,340.69	10,300.30	36.68	37.24	44.85	116.48	1,363.07	1,200.01	1,127.06	72.95	16.451	
10,350.00	10,346.73	10,391.71	10,351.31	36.86	37.42	44.84	117.60	1,363.59	1,199.45	1,126.15	73.30	16.363	
10,400.00	10,396.71	10,440.64	10,400.23	37.04	37.59	44.85	118.46	1,364.09	1,198.91	1,125.26	73.66	16.277	
10,450.00	10,446.69	10,491.15	10,450.73	37.22	37.77	44.87	119.05	1,364.64	1,198.40	1,124.39	74.01	16.192	
10,500.00	10,496.67	10,544.03	10,503.60	37.40	37.95	44.90	119.40	1,365.11	1,197.81	1,123.43	74.38	16.105	
10,550.00	10,546.65	10,592.76	10,552.33	37.58	38.12	44.95	119.50	1,365.46	1,197.14	1,122.41	74.73	16.020	
10,600.00	10,596.63	10,638.99	10,598.56	37.76	38.28	45.00	119.39	1,365.92	1,196.62	1,121.55	75.08	15.939	
10,628.19	10,624.81	10,665.06	10,624.63	37.86	38.37	45.02	119.24	1,366.24	1,196.53	1,121.26	75.27	15.896	
10,650.00	10,646.62	10,685.24	10,644.81	37.94	38.44	45.04	119.07	1,366.52	1,196.59	1,121.16	75.42	15.865	
10,700.00	10,696.62	10,731.50	10,691.05	38.12	38.60	45.08	118.54	1,367.26	1,197.16	1,121.40	75.77	15.801	
10,750.00	10,746.62	10,780.14	10,739.68	38.30	38.77	92.02	117.77	1,368.14	1,198.11	1,121.99	76.11	15.741	
10,800.00	10,796.62	10,830.37	10,789.90	38.47	38.94	92.06	116.88	1,369.06	1,199.05	1,122.58	76.47	15.681	
10,850.00	10,846.62	10,881.30	10,840.80	38.65	39.12	92.10	115.94	1,369.97	1,199.97	1,123.15	76.82	15.620	
10,900.00	10,896.62	10,932.48	10,891.97	38.83	39.29	92.14	115.08	1,370.83	1,200.85	1,123.67	77.18	15.560	
10,950.00	10,946.62	10,991.64	10,951.13	39.00	39.49	92.18	114.32	1,371.61	1,201.53	1,123.98	77.55	15.494	
11,000.00	10,996.62	11,051.99	11,011.47	39.18	39.70	92.19	113.99	1,371.90	1,201.79	1,123.86	77.92	15.423	
11,050.00	11,046.62	11,102.13	11,061.61	39.36	39.87	92.20	113.82	1,372.00	1,201.89	1,123.62	78.27	15.356	
11,100.00	11,096.56	11,153.21	11,112.69	39.53	40.04	-87.55	113.73	1,371.99	1,201.79	1,123.18	78.61	15.288	
11,150.00	11,146.12	11,202.53	11,162.01	39.69	40.20	-87.88	113.70	1,371.98	1,201.52	1,122.59	78.93	15.223	
11,200.00	11,194.92	11,254.79	11,214.27	39.84	40.37	-88.46	113.71	1,371.93	1,201.12	1,121.87	79.25	15.157	
11,250.00	11,242.61	11,308.21	11,267.69	39.98	40.54	-89.29	113.78	1,371.65	1,200.53	1,120.97	79.56	15.090	
11,300.00	11,288.80	11,357.36	11,316.84	40.12	40.70	-90.24	113.77	1,371.20	1,199.96	1,120.10	79.85	15.028	
11,350.00	11,333.15	11,404.43	11,363.91	40.25	40.85	-91.29	113.41	1,370.68	1,199.67	1,119.54	80.13	14.971	
11,356.87	11,339.08	11,410.76	11,370.23	40.27	40.87	-91.44	113.34	1,370.60	1,199.66	1,119.50	80.17	14.964	
11,400.00	11,375.33	11,447.91	11,407.36	40.37	40.99	-92.33	112.29	1,370.15	1,199.91	1,119.51	80.40	14.924	
11,450.00	11,415.01	11,490.63	11,449.99	40.48	41.13	-93.37	109.62	1,369.69	1,200.91	1,120.25	80.66	14.889	
11,500.00	11,451.88	11,546.21	11,505.17	40.59	41.31	-94.75	103.16	1,368.99	1,202.64	1,121.73	80.91	14.864	
11,550.00	11,485.68	11,611.28	11,568.80	40.70	41.51	-96.35	89.71	1,367.62	1,204.73	1,123.59	81.14	14.848	
11,600.00	11,516.14	11,653.74	11,609.36	40.82	41.63	-97.23	77.21	1,366.77	1,207.57	1,126.22	81.35	14.845 SF	
11,650.00	11,543.03	11,692.80	11,645.78	40.94	41.74	-97.92	63.12	1,366.35	1,211.61	1,130.06	81.55	14.858	
11,700.00	11,566.14	11,718.76	11,669.40	41.05	41.81	-98.12	52.35	1,366.50	1,217.21	1,135.47	81.75	14.890	
11,750.00	11,585.30	11,746.80	11,694.28	41.17	41.89	-98.22	39.44	1,367.24	1,224.59	1,142.66	81.93	14.947	
11,800.00	11,600.37	11,783.53	11,725.72	41.28	41.99	-98.45	20.55	1,368.86	1,233.56	1,151.48	82.08	15.029	
11,850.00	11,611.22	11,831.90	11,765.44	41.40	42.10	-98.93	-6.92	1,371.55	1,243.85	1,161.67	82.18	15.136	
11,900.00	11,617.78	11,913.11	11,827.71	41.51	42.28	-100.33	-58.76	1,376.02	1,254.70	1,172.57	82.13	15.277	
11,950.00	11,620.00	11,962.31	11,861.85	41.62	43.29	-100.62	-94.05	1,379.08	1,266.26	1,184.17	82.09	15.425	
12,000.00	11,620.00	11,993.00	11,882.86	41.74	44.56	-101.56	-116.34	1,381.03	1,278.95	1,196.86	82.09	15.579	
12,050.00	11,620.00	11,993.00	11,882.86	41.88	44.56	-101.56	-116.34	1,381.03	1,293.10	1,210.80	82.30	15.713	
12,100.00	11,620.00	11,993.00	11,882.86	42.01	44.56	-101.56	-116.34	1,381.03	1,308.99	1,226.49	82.50	15.867	
12,150.00	11,620.00	11,993.00	11,882.86	42.17	44.56	-101.56	-116.34	1,381.03	1,326.59	1,243.86	82.72	16.036	
12,200.00	11,620.00	11,993.00	11,882.86	42.33	44.56	-101.56	-116.34	1,381.03	1,345.81	1,262.86	82.95	16.225	
12,250.00	11,620.00	11,993.00	11,882.86	42.51	44.56	-101.56	-116.34	1,381.03	1,366.59	1,283.41	83.18	16.429	
12,300.00	11,620.00	11,993.00	11,882.86	42.69	44.56	-101.56	-116.34	1,381.03	1,388.86	1,305.45	83.41	16.650	
12,350.00	11,620.00	11,993.00	11,882.86	42.90	44.56	-101.56	-116.34	1,381.03	1,412.55	1,328.90	83.65	16.886	
12,400.00	11,620.00	11,993.00	11,882.86	43.10	44.56	-101.56	-116.34	1,381.03	1,437.60	1,353.71	83.89	17.137	
12,450.00	11,620.00	11,993.00	11,882.86	43.33	44.56	-101.56	-116.34	1,381.03	1,463.92	1,379.79	84.12	17.402	
12,500.00	11,620.00	11,993.00	11,882.86	43.56	44.56	-101.56	-116.34	1,381.03	1,491.45	1,407.10	84.35	17.682	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - T&D

Offset Site Error: 5.00 ft

Survey Program:

Offset Well Error: 0.00 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
0.00	0.00	15.80	15.80	0.50		92.12	-26.59	717.84	718.33				
50.00	50.00	65.80	65.80	0.50		92.12	-26.59	717.84	718.33	717.83	0.50	1,430.933	
100.00	100.00	115.80	115.80	0.52		92.12	-26.59	717.84	718.33	717.82	0.52	1,387.400	
150.00	150.00	165.80	165.80	0.59		92.12	-26.59	717.84	718.33	717.74	0.59	1,217.018	
200.00	200.00	215.80	215.80	0.70		92.12	-26.59	717.84	718.33	717.63	0.70	1,023.117	
250.00	250.00	268.50	268.49	0.84		92.12	-26.60	717.90	718.39	717.56	0.84	857.525	
274.21	274.21	294.79	294.78	0.91		92.12	-26.57	717.76	718.27	717.36	0.91	790.236	
300.00	300.00	315.81	315.80	0.99		92.12	-26.59	717.84	718.33	717.35	0.99	727.548	
350.00	350.00	382.18	365.80	1.15		92.12	-26.59	717.84	718.33	717.19	1.15	627.097	
400.00	400.00	415.82	415.80	1.31		92.12	-26.59	717.84	718.33	717.02	1.31	548.728	
450.00	450.00	469.79	469.78	1.48		92.12	-26.59	717.83	718.33	716.85	1.48	486.555	
460.31	460.31	481.01	480.99	1.51		92.12	-26.58	717.76	718.27	716.75	1.51	475.296	
500.00	500.00	516.02	516.00	1.65		92.12	-26.60	717.96	718.46	716.81	1.65	436.462	
550.00	550.00	570.43	570.41	1.82		92.12	-26.59	717.78	718.29	716.47	1.82	395.164	
553.47	553.47	574.21	574.18	1.83		92.12	-26.58	717.76	718.26	716.44	1.83	392.565	
600.00	600.00	616.45	616.43	1.99		92.12	-26.59	717.94	718.43	716.44	1.99	360.912	
650.00	650.00	665.83	665.80	2.16		92.12	-26.59	717.84	718.33	716.17	2.16	331.861	
700.00	700.00	715.83	715.80	2.34		92.12	-26.59	717.84	718.33	715.99	2.34	307.070	
750.00	750.00	766.79	766.76	2.51		92.12	-26.62	717.90	718.39	715.88	2.51	285.678	
800.00	800.00	815.83	815.80	2.69		92.12	-26.59	717.84	718.33	715.64	2.69	266.980	
850.00	850.00	867.35	867.32	2.87		92.12	-26.59	717.92	718.41	715.55	2.87	250.588	
900.00	900.00	915.83	915.80	3.04		92.12	-26.59	717.84	718.33	715.29	3.04	236.018	
950.00	950.00	966.62	966.58	3.22		92.12	-26.60	717.86	718.36	715.14	3.22	223.059	
1,000.00	1,000.00	1,015.83	1,015.80	3.40		92.12	-26.59	717.84	718.33	714.94	3.40	211.420	
1,050.00	1,050.00	1,066.27	1,066.24	3.58		92.12	-26.59	717.85	718.34	714.77	3.58	200.932	
1,067.79	1,067.79	1,084.27	1,084.24	3.64		92.12	-26.59	717.83	718.33	714.69	3.64	197.440	
1,100.00	1,100.00	1,115.83	1,115.80	3.75		92.12	-26.59	717.84	718.33	714.58	3.75	191.423	
1,106.48	1,106.48	1,122.30	1,122.27	3.78		92.12	-26.58	717.82	718.32	714.54	3.78	190.251	
1,150.00	1,150.00	1,165.30	1,165.27	3.93		92.12	-26.59	717.84	718.33	714.40	3.93	182.767	
1,197.17	1,197.17	1,213.00	1,212.97	4.10		92.12	-26.59	717.82	718.31	714.22	4.10	175.281	
1,200.00	1,200.00	1,215.79	1,215.76	4.11		92.12	-26.59	717.82	718.31	714.21	4.11	174.851	
1,250.00	1,250.00	1,265.83	1,265.80	4.29		92.12	-26.59	717.84	718.33	714.05	4.29	167.596	
1,300.00	1,300.00	1,315.97	1,315.94	4.46		92.12	-26.60	717.86	718.35	713.89	4.46	160.914	
1,350.00	1,350.00	1,365.83	1,365.80	4.64		92.12	-26.59	717.84	718.33	713.69	4.64	154.736	
1,400.00	1,400.00	1,416.39	1,416.35	4.82		92.12	-26.59	717.87	718.37	713.55	4.82	149.021	
1,450.00	1,450.00	1,465.83	1,465.80	5.00		92.12	-26.59	717.84	718.33	713.33	5.00	143.699	
1,500.00	1,500.00	1,516.22	1,516.19	5.18		92.12	-26.59	717.85	718.35	713.17	5.18	138.751	
1,550.00	1,550.00	1,565.83	1,565.80	5.36		92.12	-26.59	717.84	718.33	712.98	5.36	134.126	
1,562.67	1,562.67	1,578.50	1,578.47	5.40		92.12	-26.55	717.83	718.32	712.92	5.40	133.001	
1,600.00	1,600.00	1,615.56	1,615.53	5.53		92.12	-26.58	717.84	718.33	712.80	5.53	129.800	
1,650.00	1,650.00	1,665.83	1,665.80	5.71		92.12	-26.59	717.84	718.33	712.62	5.71	125.744	
1,655.80	1,655.80	1,671.62	1,671.59	5.73		92.12	-26.60	717.83	718.32	712.59	5.73	125.287	
1,700.00	1,700.00	1,715.42	1,715.39	5.89		92.12	-26.59	717.84	718.33	712.44	5.89	121.933	
1,750.00	1,750.00	1,765.84	1,765.81	6.07		92.12	-26.61	717.85	718.34	712.27	6.07	118.346	
1,800.00	1,800.00	1,815.99	1,815.96	6.25		92.12	-26.59	717.84	718.33	712.08	6.25	114.961	
1,804.66	1,804.66	1,820.67	1,820.63	6.27		92.12	-26.58	717.84	718.33	712.07	6.27	114.655	
1,850.00	1,850.00	1,865.91	1,865.87	6.43		92.12	-26.60	717.85	718.35	711.92	6.43	111.768	
1,900.00	1,900.00	1,915.83	1,915.80	6.61		92.12	-26.59	717.84	718.33	711.73	6.61	108.742	
1,950.00	1,950.00	1,965.83	1,965.80	6.78		92.12	-26.59	717.84	718.33	711.55	6.78	105.877	
2,000.00	2,000.00	2,015.83	2,015.80	6.96		92.12	-26.59	717.84	718.33	711.37	6.96	103.159	
2,050.00	2,050.00	2,065.83	2,065.80	7.14		92.12	-26.59	717.84	718.33	711.19	7.14	100.577	
2,100.00	2,100.00	2,115.83	2,115.80	7.32		92.12	-26.59	717.84	718.33	711.01	7.32	98.120	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - T&D

Survey Program:

Offset Site Error: 5.00 ft

Offset Well Error: 0.00 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
2,150.00	2,150.00	2,166.57	2,166.53	7.50		92.12	-26.59	717.87	718.36	710.86	7.50	95.784	
2,200.00	2,200.00	2,215.83	2,215.80	7.68		92.12	-26.59	717.84	718.33	710.66	7.68	93.550	
2,250.00	2,250.00	2,266.05	2,266.01	7.86		92.12	-26.58	717.85	718.34	710.48	7.86	91.421	
2,300.00	2,300.00	2,315.84	2,315.80	8.04		92.12	-26.59	717.84	718.33	710.30	8.04	89.385	
2,350.00	2,350.00	2,382.16	2,365.80	8.22		92.12	-26.59	717.84	718.33	710.12	8.22	87.439	
2,400.00	2,400.00	2,415.84	2,415.80	8.39		92.12	-26.59	717.84	718.33	709.94	8.39	85.575	
2,450.00	2,450.00	2,470.15	2,465.80	8.57		92.12	-26.59	717.84	718.33	709.76	8.57	83.789	
2,500.00	2,500.00	2,516.30	2,516.24	8.75		92.11	-26.46	718.20	718.69	709.94	8.75	82.117	
2,550.00	2,550.00	2,565.98	2,565.80	8.93		45.23	-26.59	717.84	718.18	709.25	8.93	80.428	
2,578.40	2,578.40	2,594.38	2,594.20	9.03		45.25	-26.59	717.84	717.96	708.93	9.03	79.506	
2,600.00	2,599.99	2,623.68	2,623.46	9.11		45.26	-26.37	718.55	718.46	709.35	9.11	78.895	
2,650.00	2,649.98	2,666.31	2,665.78	9.28		45.34	-26.59	717.84	716.95	707.67	9.28	77.233	
2,700.00	2,699.96	2,750.00	2,748.89	9.46		45.48	-26.59	717.84	716.71	707.26	9.45	75.836	
2,750.00	2,749.94	2,766.85	2,765.74	9.64		45.51	-26.59	717.84	714.93	705.29	9.64	74.200	
2,800.00	2,799.92	2,844.00	2,842.16	9.81		45.63	-26.59	717.84	714.40	704.60	9.81	72.855	
2,850.00	2,849.90	2,867.54	2,865.70	9.99		45.67	-26.59	717.84	712.90	702.91	9.99	71.376	
2,900.00	2,899.88	2,938.00	2,935.35	10.17		45.79	-26.59	717.84	712.15	701.99	10.16	70.088	
2,950.00	2,949.86	2,968.31	2,965.66	10.34		45.84	-26.59	717.84	710.87	700.53	10.34	68.743	
3,000.00	2,999.84	3,033.00	3,029.48	10.52		45.95	-26.59	717.84	709.99	699.48	10.52	67.518	
3,050.00	3,049.81	3,069.14	3,065.61	10.70		46.01	-26.59	717.84	708.85	698.15	10.69	66.282	
3,100.00	3,099.79	3,134.07	3,115.59	10.88		46.09	-26.59	717.84	707.84	696.97	10.87	65.111	
3,150.00	3,149.77	3,169.91	3,165.57	11.05		46.18	-26.59	717.84	706.83	695.78	11.05	63.977	
3,200.00	3,199.75	3,223.42	3,215.55	11.23		46.26	-26.59	717.84	705.83	694.60	11.23	62.878	
3,232.26	3,232.00	3,252.82	3,247.80	11.35		46.32	-26.59	717.84	705.18	693.84	11.34	62.187	
3,250.00	3,249.73	3,276.25	3,271.14	11.41		46.32	-26.24	719.10	706.08	694.68	11.40	61.927	
3,300.00	3,299.71	3,321.17	3,315.51	11.59		46.43	-26.59	717.84	703.82	692.24	11.58	60.781	
3,329.47	3,329.17	3,350.63	3,344.97	11.69		46.48	-26.59	717.84	703.23	691.55	11.68	60.187	
3,350.00	3,349.69	3,420.66	3,414.72	11.76		46.62	-26.79	717.13	703.84	692.11	11.73	60.002	
3,400.00	3,399.67	3,421.93	3,415.47	11.94		46.61	-26.59	717.84	701.82	689.89	11.93	58.807	
3,450.00	3,449.65	3,505.00	3,497.46	12.12		46.75	-26.59	717.84	701.56	689.46	12.10	57.984	
3,500.00	3,499.62	3,522.97	3,515.42	12.30		46.78	-26.59	717.84	699.83	687.54	12.29	56.947	
3,550.00	3,549.60	3,599.00	3,590.36	12.48		46.91	-26.59	717.84	699.28	686.82	12.46	56.129	
3,600.00	3,599.58	3,624.02	3,615.38	12.65		46.95	-26.59	717.84	697.84	685.20	12.64	55.190	
3,650.00	3,649.56	3,693.00	3,683.37	12.83		47.07	-26.59	717.84	697.08	684.27	12.82	54.387	
3,700.00	3,699.54	3,724.97	3,715.34	13.01		47.13	-26.59	717.84	695.86	682.86	13.00	53.529	
3,750.00	3,749.52	3,787.00	3,776.40	13.19		47.23	-26.59	717.84	694.96	681.79	13.18	52.748	
3,800.00	3,799.50	3,825.90	3,815.30	13.37		47.30	-26.59	717.84	693.89	680.53	13.36	51.956	
3,850.00	3,849.48	3,887.22	3,865.28	13.54		47.39	-26.59	717.84	692.91	679.37	13.53	51.200	
3,900.00	3,899.46	3,926.76	3,915.26	13.72		47.48	-26.59	717.84	691.92	678.21	13.71	50.464	
3,950.00	3,949.44	3,977.51	3,965.24	13.90		47.57	-26.59	717.84	690.94	677.05	13.89	49.747	
3,979.18	3,978.60	4,006.68	3,994.40	14.00		47.62	-26.59	717.84	690.37	676.38	13.99	49.337	
4,000.00	3,999.41	4,070.00	4,057.00	14.08		47.73	-26.59	717.84	691.23	677.19	14.04	49.229	
4,050.00	4,049.39	4,078.19	4,065.19	14.26		47.75	-26.59	717.84	688.98	674.74	14.25	48.366	
4,100.00	4,099.37	4,164.00	4,150.25	14.44		47.90	-26.59	717.84	688.90	674.50	14.40	47.829	
4,150.00	4,149.35	4,178.90	4,165.15	14.61		47.93	-26.59	717.84	687.03	672.43	14.60	47.053	
4,200.00	4,199.33	4,258.00	4,243.45	14.79		48.07	-26.59	717.84	686.65	671.88	14.77	46.504	
4,250.00	4,249.31	4,279.66	4,265.11	14.97		48.11	-26.59	717.84	685.09	670.13	14.96	45.802	
4,300.00	4,299.29	4,352.00	4,336.69	15.15		48.24	-26.59	717.84	684.46	669.34	15.13	45.249	
4,350.00	4,349.27	4,380.38	4,365.07	15.33		48.29	-26.59	717.84	683.15	667.84	15.31	44.609	
4,400.00	4,399.25	4,446.00	4,430.07	15.51		48.41	-26.59	717.84	682.35	666.87	15.49	44.059	
4,450.00	4,449.22	4,480.96	4,465.02	15.69		48.47	-26.59	717.84	681.22	665.55	15.67	43.471	
4,500.00	4,499.20	4,546.51	4,515.00	15.86		48.56	-26.59	717.84	680.26	664.41	15.85	42.921	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - T&D

Survey Program:

Offset Site Error: 5.00 ft

Offset Well Error: 0.00 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
4,550.00	4,549.18	4,581.47	4,564.98	16.04		48.65	-26.59	717.84	679.30	663.27	16.03	42.383	
4,600.00	4,599.16	4,633.91	4,614.96	16.22		48.74	-26.59	717.84	678.34	662.14	16.21	41.858	
4,630.75	4,629.90	4,662.83	4,645.70	16.33		48.80	-26.59	717.84	677.75	661.44	16.32	41.540	
4,650.00	4,649.14	4,697.37	4,680.11	16.40		48.82	-26.21	718.98	678.65	662.27	16.38	41.436	
4,700.00	4,699.12	4,732.90	4,714.92	16.58		48.93	-26.59	717.84	676.43	659.87	16.56	40.840	
4,730.10	4,729.21	4,762.99	4,745.01	16.69		48.99	-26.59	717.84	675.85	659.18	16.67	40.543	
4,750.00	4,749.10	4,820.00	4,800.91	16.76		49.09	-26.59	717.84	676.44	659.72	16.72	40.468	
4,800.00	4,799.08	4,833.96	4,814.88	16.94		49.12	-26.59	717.84	674.52	657.60	16.92	39.866	
4,850.00	4,849.06	4,914.00	4,893.70	17.12		49.26	-26.59	717.84	674.19	657.11	17.08	39.472	
4,900.00	4,899.03	4,935.13	4,914.83	17.30		49.30	-26.59	717.84	672.63	655.35	17.28	38.932	
4,950.00	4,949.01	5,008.00	4,986.55	17.47		49.44	-26.59	717.84	672.03	654.59	17.44	38.525	
5,000.00	4,998.99	5,036.25	5,014.79	17.65		49.49	-26.59	717.84	670.73	653.10	17.63	38.036	
5,050.00	5,048.97	5,102.00	5,079.45	17.83		49.61	-26.59	717.84	669.95	652.15	17.81	37.624	
5,100.00	5,098.95	5,137.30	5,114.75	18.01		49.68	-26.59	717.84	668.85	650.86	17.99	37.176	
5,150.00	5,148.93	5,201.67	5,164.73	18.19		49.77	-26.59	717.84	667.91	649.74	18.17	36.759	
5,200.00	5,198.91	5,238.31	5,214.71	18.37		49.87	-26.59	717.84	666.97	648.63	18.35	36.350	
5,250.00	5,248.89	5,289.34	5,264.69	18.55		49.97	-26.59	717.84	666.04	647.51	18.53	35.949	
5,278.84	5,277.71	5,318.16	5,293.51	18.65		50.02	-26.59	717.84	665.50	646.87	18.63	35.721	
5,300.00	5,298.87	5,382.00	5,356.36	18.73		50.14	-26.59	717.84	666.41	647.74	18.67	35.700	
5,350.00	5,348.84	5,390.28	5,364.64	18.91		50.16	-26.59	717.84	664.17	645.29	18.89	35.169	
5,380.14	5,378.97	5,420.40	5,394.77	19.02		50.22	-26.59	717.84	663.61	644.62	18.99	34.940	
5,400.00	5,398.82	5,476.00	5,449.49	19.09		50.32	-26.59	717.84	664.16	645.13	19.03	34.893	
5,450.00	5,448.80	5,491.11	5,464.60	19.27		50.35	-26.59	717.84	662.32	643.07	19.24	34.419	
5,500.00	5,498.78	5,569.00	5,541.70	19.44		50.50	-26.59	717.84	661.95	642.54	19.40	34.118	
5,550.00	5,548.76	5,591.86	5,564.56	19.62		50.54	-26.59	717.84	660.47	640.87	19.60	33.697	
5,600.00	5,598.74	5,663.00	5,634.92	19.80		50.68	-26.59	717.84	659.86	640.09	19.77	33.383	
5,650.00	5,648.72	5,692.60	5,664.52	19.98		50.74	-26.59	717.84	658.62	638.67	19.96	33.001	
5,700.00	5,698.70	5,756.00	5,727.16	20.16		50.86	-26.59	717.84	657.83	637.70	20.13	32.678	
5,750.00	5,748.68	5,793.31	5,764.48	20.34		50.94	-26.59	717.84	656.79	636.47	20.32	32.329	
5,800.00	5,798.65	5,855.98	5,814.45	20.52		51.03	-26.59	717.84	655.87	635.38	20.49	32.002	
5,850.00	5,848.63	5,894.00	5,864.43	20.70		51.13	-26.59	717.84	654.96	634.29	20.67	31.681	
5,900.00	5,898.61	5,944.69	5,914.41	20.88		51.23	-26.59	717.84	654.05	633.20	20.85	31.366	
5,930.36	5,928.96	5,975.04	5,944.76	20.99		51.29	-26.59	717.84	653.50	632.54	20.96	31.177	
5,950.00	5,948.59	6,010.25	5,979.84	21.06		51.32	-26.30	718.98	654.41	633.39	21.02	31.129	
6,000.00	5,998.57	6,045.34	6,014.37	21.24		51.43	-26.59	717.84	652.23	631.02	21.21	30.751	
6,029.63	6,028.19	6,074.96	6,043.99	21.34		51.49	-26.59	717.84	651.70	630.38	21.32	30.573	
6,050.00	6,048.55	6,132.00	6,100.34	21.42		51.60	-26.59	717.84	652.32	630.97	21.35	30.549	
6,100.00	6,098.53	6,145.99	6,114.33	21.60		51.63	-26.59	717.84	650.43	628.86	21.57	30.157	
6,150.00	6,148.51	6,150.00	6,164.31	21.77		51.73	-26.59	717.84	649.53	627.78	21.75	29.867	
6,200.00	6,198.49	6,246.68	6,214.29	21.95		51.83	-26.59	717.84	648.63	626.70	21.93	29.582	
6,250.00	6,248.46	6,318.00	6,284.85	22.13		51.97	-26.59	717.84	648.06	625.97	22.09	29.336	
6,300.00	6,298.44	6,347.39	6,314.24	22.31		52.03	-26.59	717.84	646.84	624.55	22.28	29.026	
6,350.00	6,348.42	6,413.00	6,379.12	22.49		52.17	-26.59	717.84	646.11	623.66	22.45	28.774	
6,400.00	6,398.40	6,448.08	6,414.20	22.67		52.24	-26.59	717.84	645.05	622.41	22.64	28.488	
6,450.00	6,448.38	6,515.25	6,464.18	22.85		52.34	-26.59	717.84	644.16	621.34	22.82	28.226	
6,500.00	6,498.36	6,548.73	6,514.16	23.03		52.44	-26.59	717.84	643.28	620.28	23.00	27.968	
6,550.00	6,548.34	6,602.64	6,564.14	23.21		52.54	-26.59	717.84	642.39	619.21	23.18	27.713	
6,581.25	6,579.58	6,630.60	6,595.38	23.32		52.61	-26.59	717.84	641.84	618.55	23.29	27.556	
6,600.00	6,598.32	6,655.77	6,620.46	23.39		52.62	-26.34	719.10	642.74	619.38	23.36	27.519	
6,650.00	6,648.30	6,699.91	6,664.10	23.57		52.75	-26.59	717.84	640.63	617.09	23.54	27.217	
6,680.18	6,678.46	6,730.08	6,694.26	23.68		52.81	-26.59	717.84	640.10	616.45	23.65	27.070	
6,700.00	6,698.27	6,772.00	6,736.04	23.75		52.88	-26.46	718.59	640.85	617.15	23.70	27.041	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - T&D

Offset Site Error: 5.00 ft

Survey Program:

Offset Well Error: 0.00 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
6,750.00	6,748.25	6,800.44	6,764.05	23.93		52.96	-26.59	717.84	638.87	614.98	23.90	26.735	
6,800.00	6,798.23	6,885.95	6,849.36	24.11		53.14	-26.62	717.66	638.81	614.77	24.04	26.578	
6,850.00	6,848.21	6,900.92	6,864.01	24.29		53.17	-26.59	717.84	637.13	612.87	24.25	26.268	
6,900.00	6,898.19	6,990.62	6,953.51	24.47		53.37	-26.67	717.11	636.78	612.39	24.38	26.115	
6,950.00	6,948.17	7,001.34	6,963.97	24.65		53.38	-26.59	717.84	635.39	610.78	24.61	25.815	
7,000.00	6,998.15	7,000.00	7,013.95	24.83		53.48	-26.59	717.84	634.53	609.73	24.79	25.594	
7,050.00	7,048.13	7,101.70	7,063.93	25.00		53.59	-26.59	717.84	633.66	608.69	24.97	25.375	
7,100.00	7,098.11	7,100.00	7,113.91	25.18		53.69	-26.59	717.84	632.80	607.65	25.15	25.160	
7,150.00	7,148.08	7,202.01	7,163.88	25.36		53.80	-26.59	717.84	631.94	606.61	25.33	24.948	
7,200.00	7,198.06	7,200.00	7,213.86	25.54		53.90	-26.59	717.84	631.08	605.58	25.51	24.739	
7,250.00	7,248.04	7,302.27	7,263.84	25.72		54.01	-26.59	717.84	630.23	604.54	25.69	24.534	
7,300.00	7,298.02	7,357.49	7,313.82	25.90		54.12	-26.59	717.84	629.38	603.51	25.87	24.331	
7,335.79	7,333.79	7,388.28	7,349.59	26.03		54.20	-26.59	717.84	628.77	602.77	26.00	24.187	
7,350.00	7,348.00	7,403.04	7,364.32	26.08		54.23	-26.77	718.66	629.36	603.32	26.05	24.163	
7,400.00	7,397.98	7,452.68	7,413.78	26.26		54.33	-26.59	717.84	627.68	601.45	26.23	23.933	
7,450.00	7,447.96	7,507.31	7,468.38	26.44		54.46	-26.80	718.54	627.57	601.17	26.40	23.769	
7,500.00	7,497.94	7,552.82	7,513.74	26.62		54.55	-26.59	717.84	625.99	599.40	26.58	23.547	
7,550.00	7,547.92	7,609.59	7,570.49	26.80		54.68	-26.81	718.38	625.76	599.00	26.76	23.384	
7,600.00	7,597.89	7,652.92	7,613.69	26.98		54.77	-26.59	717.84	624.31	597.36	26.94	23.171	
7,650.00	7,647.87	7,711.17	7,671.92	27.16		54.90	-26.79	718.25	623.96	596.85	27.12	23.009	
7,700.00	7,697.85	7,753.00	7,713.65	27.34		54.98	-26.59	717.84	622.64	595.33	27.30	22.805	
7,750.00	7,747.83	7,813.50	7,774.12	27.52		55.13	-26.74	718.11	622.19	594.71	27.47	22.646	
7,800.00	7,797.81	7,853.07	7,813.61	27.70		55.20	-26.59	717.84	620.97	593.31	27.66	22.450	
7,850.00	7,847.79	7,913.97	7,874.49	27.88		55.34	-26.68	718.00	620.42	592.58	27.83	22.291	
7,900.00	7,897.77	7,953.12	7,913.57	28.06		55.42	-26.59	717.84	619.32	591.30	28.02	22.103	
7,950.00	7,947.75	8,014.99	7,975.41	28.24		55.56	-26.62	717.89	618.67	590.48	28.19	21.946	
8,000.00	7,997.73	8,053.17	8,013.53	28.42		55.65	-26.59	717.84	617.68	589.30	28.38	21.766	
8,050.00	8,047.70	8,120.77	8,063.50	28.60		55.76	-26.59	717.84	616.86	588.30	28.56	21.600	
8,100.00	8,097.68	8,153.20	8,113.48	28.78		55.87	-26.59	717.84	616.04	587.30	28.74	21.437	
8,150.00	8,147.66	8,217.39	8,177.63	28.96		56.00	-26.34	717.56	615.06	586.16	28.91	21.279	
8,192.84	8,190.49	8,246.07	8,206.29	29.11		56.08	-26.59	717.84	614.53	585.46	29.07	21.140	
8,200.00	8,197.64	8,254.48	8,214.68	29.13		56.12	-26.91	718.15	614.79	585.70	29.10	21.130	
8,250.00	8,247.62	8,303.25	8,263.42	29.31		56.21	-26.59	717.84	613.61	584.33	29.28	20.960	
8,300.00	8,297.60	8,355.35	8,315.51	29.49		56.32	-26.64	718.12	613.09	583.63	29.45	20.815	
8,350.00	8,347.58	8,403.27	8,363.38	29.67		56.43	-26.59	717.84	611.99	582.36	29.63	20.652	
8,400.00	8,397.56	8,458.36	8,418.46	29.85		56.54	-26.47	718.24	611.58	581.76	29.81	20.515	
8,450.00	8,447.54	8,503.31	8,463.34	30.03		56.66	-26.59	717.84	610.39	580.40	29.99	20.351	
8,500.00	8,497.51	8,556.10	8,516.11	30.21		56.75	-26.31	718.07	609.76	579.58	30.17	20.210	
8,550.00	8,547.49	8,603.34	8,563.29	30.39		56.89	-26.59	717.84	608.80	578.45	30.35	20.058	
8,600.00	8,597.47	8,656.95	8,616.89	30.57		56.99	-26.40	718.01	608.14	577.61	30.53	19.920	
8,650.00	8,647.45	8,703.35	8,663.25	30.75		57.12	-26.59	717.84	607.22	576.51	30.71	19.772	
8,700.00	8,697.43	8,755.38	8,715.27	30.93		57.22	-26.46	717.92	606.48	575.59	30.89	19.634	
8,750.00	8,747.41	8,803.34	8,763.21	31.11		57.35	-26.59	717.84	605.64	574.58	31.07	19.493	
8,800.00	8,797.39	8,852.17	8,812.03	31.29		57.45	-26.51	717.85	604.85	573.60	31.25	19.355	
8,850.00	8,847.37	8,903.32	8,863.17	31.47		57.58	-26.59	717.84	604.08	572.65	31.43	19.221	
8,900.00	8,897.35	8,950.36	8,910.21	31.65		57.69	-26.57	717.83	603.29	571.68	31.61	19.086	
8,950.00	8,947.33	9,003.15	8,962.99	31.83		57.82	-26.66	717.67	602.38	570.59	31.79	18.950	
9,000.00	8,997.30	9,053.27	9,013.10	32.01		57.93	-26.59	717.84	601.76	569.79	31.97	18.824	
9,050.00	9,047.28	9,102.77	9,062.59	32.19		58.06	-26.72	717.66	600.84	568.70	32.15	18.691	
9,100.00	9,097.26	9,153.24	9,113.06	32.37		58.16	-26.59	717.84	600.22	567.89	32.33	18.568	
9,150.00	9,147.24	9,202.19	9,162.01	32.55		58.28	-26.58	717.69	599.31	566.80	32.51	18.437	
9,200.00	9,197.22	9,253.21	9,213.02	32.73		58.40	-26.59	717.84	598.69	566.01	32.69	18.317	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - T&D

Offset Site Error: 5.00 ft

Survey Program:

Offset Well Error: 0.00 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
9,250.00	9,247.20	9,302.37	9,262.18	32.91		58.52	-26.62	717.76	597.86	564.99	32.87	18.191	
9,300.00	9,297.18	9,353.17	9,312.98	33.09		58.64	-26.59	717.84	597.17	564.13	33.04	18.072	
9,350.00	9,347.16	9,402.01	9,361.82	33.27		58.76	-26.61	717.76	596.35	563.13	33.22	17.949	
9,400.00	9,397.14	9,453.13	9,412.94	33.45		58.88	-26.59	717.84	595.67	562.26	33.40	17.833	
9,450.00	9,447.11	9,502.79	9,462.60	33.63		59.00	-26.58	717.83	594.90	561.32	33.58	17.714	
9,500.00	9,497.09	9,553.09	9,512.89	33.81		59.12	-26.59	717.84	594.17	560.41	33.76	17.599	
9,550.00	9,547.07	9,603.57	9,563.38	33.99		59.24	-26.62	717.85	593.44	559.50	33.94	17.484	
9,600.00	9,597.05	9,653.05	9,612.85	34.17		59.36	-26.59	717.84	592.68	558.56	34.12	17.370	
9,650.00	9,647.03	9,714.95	9,662.83	34.35		59.48	-26.59	717.84	591.94	557.64	34.30	17.257	
9,700.00	9,697.01	9,753.03	9,712.81	34.53		59.60	-26.59	717.84	591.21	556.73	34.48	17.146	
9,750.00	9,746.99	9,804.97	9,762.79	34.71		59.72	-26.59	717.84	590.47	555.81	34.66	17.036	
9,800.00	9,796.97	9,853.01	9,812.77	34.88		59.84	-26.59	717.84	589.74	554.90	34.84	16.927	
9,850.00	9,846.95	9,904.98	9,862.75	35.06		59.97	-26.59	717.84	589.01	553.99	35.02	16.820	
9,900.00	9,896.92	9,953.07	9,912.79	35.24		60.06	-26.32	717.99	588.35	553.15	35.20	16.715	
9,950.00	9,946.90	10,004.83	9,964.54	35.42		60.22	-26.67	717.79	587.55	552.17	35.38	16.608	
10,000.00	9,996.88	10,053.20	10,012.89	35.60		60.30	-26.30	717.98	586.89	551.33	35.56	16.505	
10,050.00	10,046.86	10,102.99	10,062.66	35.78		60.46	-26.59	717.84	586.13	550.39	35.74	16.401	
10,100.00	10,096.84	10,152.98	10,112.65	35.96		60.56	-26.43	717.89	585.41	549.50	35.92	16.299	
10,150.00	10,146.82	10,202.97	10,162.62	36.14		60.70	-26.59	717.84	584.70	548.60	36.10	16.198	
10,200.00	10,196.80	10,253.34	10,212.99	36.32		60.81	-26.41	717.93	584.02	547.74	36.28	16.099	
10,250.00	10,246.78	10,302.95	10,262.58	36.50		60.95	-26.59	717.84	583.28	546.83	36.46	15.999	
10,300.00	10,296.76	10,353.79	10,313.40	36.68		61.06	-26.40	717.95	582.62	545.99	36.64	15.903	
10,350.00	10,346.73	10,402.94	10,362.53	36.86		61.20	-26.59	717.84	581.88	545.06	36.82	15.805	
10,400.00	10,396.71	10,453.36	10,412.94	37.04		61.31	-26.44	717.91	581.20	544.20	37.00	15.710	
10,450.00	10,446.69	10,502.92	10,462.49	37.22		61.45	-26.59	717.84	580.48	543.31	37.18	15.615	
10,500.00	10,496.67	10,554.53	10,514.10	37.40		61.58	-26.54	717.89	579.82	542.47	37.35	15.522	
10,550.00	10,546.65	10,602.88	10,562.45	37.58		61.71	-26.59	717.84	579.10	541.57	37.53	15.428	
10,600.00	10,596.63	10,659.14	10,612.43	37.76		61.83	-26.59	717.84	578.42	540.71	37.71	15.337	
10,650.00	10,646.62	10,702.85	10,662.42	37.94		61.91	-26.59	717.84	577.96	540.06	37.89	15.252	
10,700.00	10,696.62	10,757.50	10,717.07	38.12		61.94	-26.57	717.79	577.76	539.69	38.07	15.177	
10,706.52	10,703.14	10,764.64	10,724.20	38.14		61.94	-26.54	717.74	577.71	539.61	38.09	15.167	
10,750.00	10,746.62	10,803.83	10,763.37	38.30		108.85	-26.77	718.05	578.06	539.81	38.25	15.114	
10,800.00	10,796.62	10,861.97	10,821.50	38.47		108.83	-26.42	717.64	577.63	539.21	38.42	15.035	
10,807.52	10,804.14	10,860.42	10,819.94	38.50		108.84	-26.59	717.84	577.80	539.35	38.45	15.027	
10,850.00	10,846.62	10,904.78	10,864.29	38.65		108.85	-26.80	718.04	578.06	539.45	38.60	14.975	
10,900.00	10,896.62	10,952.93	10,912.42	38.83		108.84	-26.59	717.84	577.80	539.02	38.78	14.900	
10,950.00	10,946.62	11,005.38	10,964.87	39.00		108.85	-26.74	718.00	578.00	539.05	38.96	14.838	
11,000.00	10,996.62	11,052.94	11,012.42	39.18		108.84	-26.59	717.84	577.80	538.67	39.13	14.765	
11,050.00	11,046.62	11,103.57	11,063.04	39.36		108.84	-26.63	717.87	577.84	538.53	39.31	14.699	
11,100.00	11,096.56	11,152.88	11,112.36	39.53		-71.07	-26.59	717.84	577.10	537.62	39.48	14.618	
11,150.00	11,146.12	11,202.46	11,161.93	39.69		-71.87	-26.60	717.84	575.02	535.38	39.63	14.508	
11,200.00	11,194.92	11,251.25	11,210.72	39.84		-73.20	-26.59	717.84	571.71	531.93	39.78	14.370	
11,250.00	11,242.61	11,298.93	11,258.41	39.98		-75.00	-26.59	717.84	567.42	527.49	39.93	14.211	
11,300.00	11,288.80	11,345.12	11,304.60	40.12		-77.22	-26.59	717.84	562.48	522.42	40.06	14.039	
11,350.00	11,333.15	11,388.22	11,347.69	40.25		-79.73	-26.57	717.77	557.26	517.07	40.20	13.864	
11,400.00	11,375.33	11,431.66	11,391.13	40.37		-82.59	-26.59	717.84	552.50	512.18	40.32	13.702	
11,450.00	11,415.01	11,470.43	11,429.90	40.48		-85.41	-26.72	717.71	548.44	508.00	40.45	13.560	
11,500.00	11,451.88	11,508.37	11,467.68	40.59		-88.33	-26.59	717.84	546.13	505.57	40.57	13.462	
11,530.97	11,473.20	11,529.68	11,489.00	40.66		-90.00	-26.59	717.84	545.67	505.03	40.64	13.426	CC, ES
11,550.00	11,485.68	11,542.17	11,501.48	40.70		-90.97	-26.59	717.84	545.86	505.17	40.69	13.415	SF
11,600.00	11,516.14	11,570.32	11,529.56	40.82		-93.00	-27.44	717.75	548.16	507.35	40.81	13.431	
11,650.00	11,543.03	11,600.87	11,558.83	40.94		-95.04	-26.59	717.84	554.08	513.14	40.93	13.536	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - T&D

Offset Site Error: 5.00 ft

Survey Program:

Offset Well Error: 0.00 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
11,700.00	11,566.14	11,621.79	11,579.58	41.05		-95.94	-27.90	717.71	563.00	521.95	41.05	13.713	
11,750.00	11,585.30	11,630.24	11,587.95	41.17		-95.37	-27.63	717.74	576.41	535.24	41.17	14.001	
11,800.00	11,600.37	11,660.03	11,616.17	41.28		-96.36	-26.59	717.84	593.84	552.57	41.27	14.389	
11,850.00	11,611.22	11,667.52	11,623.36	41.40		-94.76	-28.32	717.73	613.84	572.47	41.36	14.840	
11,900.00	11,617.78	11,669.23	11,625.05	41.51		-92.16	-28.29	717.73	638.13	596.69	41.45	15.397	
11,950.00	11,620.00	11,669.52	11,625.32	41.62		-88.93	-28.28	717.74	665.43	623.92	41.51	16.030	
12,000.00	11,620.00	11,669.22	11,625.04	41.74		-88.87	-28.29	717.73	695.26	653.69	41.57	16.726	
12,050.00	11,620.00	11,668.97	11,624.79	41.88		-88.84	-28.29	717.73	727.30	685.68	41.62	17.474	
12,100.00	11,620.00	11,668.76	11,624.58	42.01		-88.82	-28.30	717.73	761.28	719.62	41.67	18.270	
12,150.00	11,620.00	11,668.58	11,624.40	42.17		-88.80	-28.30	717.73	796.96	755.24	41.71	19.105	
12,200.00	11,620.00	11,668.42	11,624.24	42.33		-88.79	-28.30	717.73	834.10	792.35	41.75	19.977	
12,250.00	11,620.00	11,668.27	11,624.10	42.51		-88.77	-28.31	717.73	872.53	830.74	41.79	20.879	
12,300.00	11,620.00	11,668.15	11,623.98	42.69		-88.76	-28.31	717.73	912.08	870.26	41.82	21.809	
12,350.00	11,620.00	11,668.03	11,623.86	42.90		-88.75	-28.31	717.73	952.61	910.76	41.85	22.761	
12,400.00	11,620.00	11,667.93	11,623.76	43.10		-88.74	-28.31	717.73	994.01	952.13	41.88	23.735	
12,450.00	11,620.00	11,667.84	11,623.67	43.33		-88.73	-28.31	717.73	1,036.17	994.26	41.91	24.726	
12,500.00	11,620.00	11,667.76	11,623.59	43.56		-88.72	-28.31	717.73	1,078.99	1,037.06	41.93	25.734	
12,550.00	11,620.00	11,667.68	11,623.51	43.81		-88.71	-28.31	717.73	1,122.41	1,080.46	41.95	26.755	
12,600.00	11,620.00	11,667.61	11,623.45	44.06		-88.70	-28.31	717.73	1,166.36	1,124.39	41.97	27.790	
12,650.00	11,620.00	11,667.54	11,623.38	44.33		-88.70	-28.32	717.73	1,210.77	1,168.78	41.99	28.834	
12,700.00	11,620.00	11,667.49	11,623.32	44.60		-88.69	-28.32	717.73	1,255.61	1,213.60	42.01	29.890	
12,750.00	11,620.00	11,667.43	11,623.27	44.89		-88.68	-28.32	717.73	1,300.82	1,258.80	42.03	30.953	
12,800.00	11,620.00	11,667.38	11,623.22	45.18		-88.68	-28.32	717.73	1,346.37	1,304.33	42.04	32.025	
12,850.00	11,620.00	11,667.33	11,623.17	45.49		-88.67	-28.32	717.73	1,392.23	1,350.17	42.06	33.102	
12,900.00	11,620.00	11,667.29	11,623.13	45.80		-88.67	-28.32	717.73	1,438.36	1,396.29	42.07	34.187	
12,950.00	11,620.00	11,667.24	11,623.09	46.13		-88.66	-28.32	717.73	1,484.75	1,442.66	42.09	35.277	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	0.20	0.20	0.50	0.50	89.69	0.16	29.99	29.99				
50.00	50.00	50.20	50.20	0.50	0.50	89.69	0.16	29.99	29.99	28.98	1.01	29.796	
100.00	100.00	100.20	100.20	0.52	0.52	89.69	0.16	29.99	29.99	28.95	1.04	28.957	
150.00	150.00	150.20	150.20	0.59	0.59	89.69	0.16	29.99	29.99	28.81	1.18	25.397	
200.00	200.00	200.20	200.20	0.70	0.70	89.69	0.16	29.99	29.99	28.59	1.40	21.350	
250.00	250.00	250.20	250.20	0.84	0.84	89.69	0.16	29.99	29.99	28.31	1.68	17.894	
300.00	300.00	300.20	300.20	0.99	0.99	89.69	0.16	29.99	29.99	28.02	1.98	15.183	
350.00	350.00	350.20	350.20	1.15	1.15	89.69	0.16	29.99	29.99	27.70	2.29	13.087	
400.00	400.00	400.20	400.20	1.31	1.31	89.69	0.16	29.99	29.99	27.37	2.62	11.452	
450.00	450.00	450.20	450.20	1.48	1.48	89.69	0.16	29.99	29.99	27.04	2.95	10.155	
500.00	500.00	500.20	500.20	1.65	1.65	89.69	0.16	29.99	29.99	26.70	3.29	9.108	
550.00	550.00	550.20	550.20	1.82	1.82	89.69	0.16	29.99	29.99	26.35	3.64	8.248	
600.00	600.00	600.20	600.20	1.99	1.99	89.69	0.16	29.99	29.99	26.01	3.98	7.532	
650.00	650.00	650.20	650.20	2.16	2.17	89.69	0.16	29.99	29.99	25.66	4.33	6.926	
700.00	700.00	700.20	700.20	2.34	2.34	89.69	0.16	29.99	29.99	25.31	4.68	6.409	
750.00	750.00	750.20	750.20	2.51	2.52	89.69	0.16	29.99	29.99	24.96	5.03	5.962	
800.00	800.00	800.20	800.20	2.69	2.69	89.69	0.16	29.99	29.99	24.61	5.38	5.572	
850.00	850.00	850.20	850.20	2.87	2.87	89.69	0.16	29.99	29.99	24.26	5.73	5.230	
900.00	900.00	900.20	900.20	3.04	3.04	89.69	0.16	29.99	29.99	23.90	6.09	4.926	Alert
950.00	950.00	950.20	950.20	3.22	3.22	89.69	0.16	29.99	29.99	23.55	6.44	4.656	Alert
1,000.00	1,000.00	1,000.20	1,000.20	3.40	3.40	89.69	0.16	29.99	29.99	23.19	6.80	4.413	Alert
1,050.00	1,050.00	1,050.20	1,050.20	3.58	3.58	89.69	0.16	29.99	29.99	22.84	7.15	4.194	Alert
1,100.00	1,100.00	1,100.20	1,100.20	3.75	3.75	89.69	0.16	29.99	29.99	22.48	7.51	3.996	Alert
1,150.00	1,150.00	1,150.20	1,150.20	3.93	3.93	89.69	0.16	29.99	29.99	22.13	7.86	3.815	Alert
1,200.00	1,200.00	1,200.20	1,200.20	4.11	4.11	89.69	0.16	29.99	29.99	21.77	8.22	3.650	Alert
1,250.00	1,250.00	1,250.20	1,250.20	4.29	4.29	89.69	0.16	29.99	29.99	21.42	8.57	3.498	Alert
1,300.00	1,300.00	1,300.20	1,300.20	4.46	4.46	89.69	0.16	29.99	29.99	21.06	8.93	3.359	Alert
1,350.00	1,350.00	1,350.20	1,350.20	4.64	4.64	89.69	0.16	29.99	29.99	20.71	9.29	3.230	Alert
1,400.00	1,400.00	1,400.20	1,400.20	4.82	4.82	89.69	0.16	29.99	29.99	20.35	9.64	3.110	Alert
1,450.00	1,450.00	1,450.20	1,450.20	5.00	5.00	89.69	0.16	29.99	29.99	19.99	10.00	3.000	Alert
1,500.00	1,500.00	1,500.20	1,500.20	5.18	5.18	89.69	0.16	29.99	29.99	19.64	10.36	2.896	Alert
1,550.00	1,550.00	1,550.20	1,550.20	5.36	5.36	89.69	0.16	29.99	29.99	19.28	10.71	2.800	Alert
1,600.00	1,600.00	1,600.20	1,600.20	5.53	5.53	89.69	0.16	29.99	29.99	18.92	11.07	2.709	Alert
1,650.00	1,650.00	1,650.20	1,650.20	5.71	5.71	89.69	0.16	29.99	29.99	18.56	11.43	2.625	Alert
1,700.00	1,700.00	1,700.20	1,700.20	5.89	5.89	89.69	0.16	29.99	29.99	18.21	11.78	2.545	Alert
1,750.00	1,750.00	1,750.20	1,750.20	6.07	6.07	89.69	0.16	29.99	29.99	17.85	12.14	2.470	Minor Risk
1,800.00	1,800.00	1,800.20	1,800.20	6.25	6.25	89.69	0.16	29.99	29.99	17.49	12.50	2.400	Minor Risk
1,850.00	1,850.00	1,850.20	1,850.20	6.43	6.43	89.69	0.16	29.99	29.99	17.14	12.86	2.333	Minor Risk
1,900.00	1,900.00	1,900.20	1,900.20	6.61	6.61	89.69	0.16	29.99	29.99	16.78	13.21	2.270	Minor Risk
1,950.00	1,950.00	1,950.20	1,950.20	6.78	6.79	89.69	0.16	29.99	29.99	16.42	13.57	2.210	Minor Risk
2,000.00	2,000.00	2,000.20	2,000.20	6.96	6.96	89.69	0.16	29.99	29.99	16.06	13.93	2.153	Minor Risk, CC
2,050.00	2,050.00	2,049.96	2,049.96	7.14	7.14	89.53	0.25	30.19	30.19	15.91	14.28	2.114	Minor Risk, ES
2,100.00	2,100.00	2,099.71	2,099.70	7.32	7.31	89.06	0.50	30.79	30.79	16.16	14.63	2.104	Minor Risk
2,150.00	2,150.00	2,149.45	2,149.43	7.50	7.49	88.32	0.93	31.78	31.80	16.82	14.98	2.123	Minor Risk
2,200.00	2,200.00	2,199.16	2,199.12	7.68	7.66	87.36	1.53	33.17	33.22	17.89	15.33	2.167	Minor Risk
2,250.00	2,250.00	2,248.84	2,248.77	7.86	7.83	86.24	2.30	34.95	35.06	19.38	15.68	2.236	Minor Risk
2,300.00	2,300.00	2,301.31	2,298.56	8.04	8.02	85.05	3.21	37.06	37.23	21.19	16.04	2.321	Minor Risk
2,350.00	2,350.00	2,348.63	2,348.45	8.22	8.18	83.99	4.13	39.19	39.44	23.06	16.38	2.408	Minor Risk
2,400.00	2,400.00	2,401.42	2,398.34	8.39	8.37	83.04	5.05	41.32	41.67	24.93	16.75	2.488	Minor Risk
2,450.00	2,450.00	2,448.52	2,448.23	8.57	8.53	82.18	5.97	43.46	43.91	26.82	17.09	2.569	Alert
2,500.00	2,500.00	2,501.53	2,498.12	8.75	8.72	81.41	6.89	45.59	46.15	28.70	17.45	2.644	Alert
2,550.00	2,550.00	2,548.43	2,548.02	8.93	8.89	33.94	7.81	47.72	48.23	30.43	17.80	2.710	Alert

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan 1 — Offset Site Error: 5.00 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	2,599.99	2,601.60	2,597.94	9.11	9.07	33.69	8.73	49.86	49.94	31.78	18.16	2.750	Alert
2,650.00	2,649.98	2,648.38	2,647.87	9.28	9.24	33.74	9.65	51.99	51.29	32.79	18.50	2.773	Alert
2,700.00	2,699.96	2,701.64	2,697.80	9.46	9.43	33.99	10.57	54.13	52.36	33.50	18.86	2.776	Alert
2,750.00	2,749.94	2,748.35	2,747.74	9.64	9.59	34.25	11.49	56.27	53.41	34.21	19.20	2.782	Alert
2,800.00	2,799.92	2,801.66	2,797.67	9.81	9.78	34.49	12.41	58.40	54.47	34.90	19.57	2.784	Alert
2,850.00	2,849.90	2,848.33	2,847.60	9.99	9.95	34.73	13.33	60.54	55.52	35.61	19.91	2.789	Alert
2,900.00	2,899.88	2,901.68	2,897.54	10.17	10.14	34.96	14.25	62.67	56.57	36.30	20.27	2.791	Alert
2,950.00	2,949.86	2,948.31	2,947.47	10.34	10.30	35.18	15.18	64.81	57.63	37.02	20.61	2.796	Alert
3,000.00	2,999.84	3,001.70	2,997.41	10.52	10.49	35.39	16.10	66.94	58.69	37.71	20.98	2.797	Alert
3,050.00	3,049.81	3,048.28	3,047.34	10.70	10.66	35.60	17.02	69.08	59.74	38.42	21.32	2.802	Alert
3,100.00	3,099.79	3,101.73	3,097.28	10.88	10.85	35.80	17.94	71.21	60.80	39.12	21.69	2.804	Alert
3,150.00	3,149.77	3,148.26	3,147.21	11.05	11.01	35.99	18.86	73.35	61.86	39.83	22.03	2.808	Alert
3,200.00	3,199.75	3,201.75	3,197.14	11.23	11.21	36.18	19.78	75.49	62.92	40.53	22.39	2.810	Alert
3,250.00	3,249.73	3,248.24	3,247.08	11.41	11.37	36.35	20.70	77.62	63.98	41.24	22.74	2.814	Alert
3,300.00	3,299.71	3,301.77	3,297.01	11.59	11.56	36.53	21.62	79.76	65.04	41.94	23.10	2.815	Alert
3,350.00	3,349.69	3,348.21	3,346.95	11.76	11.73	36.69	22.54	81.89	66.10	42.66	23.44	2.819	Alert
3,400.00	3,399.67	3,401.80	3,396.88	11.94	11.92	36.86	23.46	84.03	67.16	43.35	23.81	2.821	Alert
3,450.00	3,449.65	3,448.19	3,446.81	12.12	12.09	37.01	24.39	86.16	68.23	44.07	24.15	2.825	Alert
3,500.00	3,499.62	3,501.82	3,496.75	12.30	12.28	37.17	25.31	88.30	69.29	44.77	24.52	2.826	Alert
3,550.00	3,549.60	3,548.17	3,546.68	12.48	12.44	37.31	26.23	90.43	70.35	45.49	24.86	2.829	Alert
3,600.00	3,599.58	3,601.84	3,596.62	12.65	12.64	37.46	27.15	92.57	71.41	46.18	25.23	2.830	Alert
3,650.00	3,649.56	3,648.14	3,646.55	12.83	12.80	37.60	28.07	94.71	72.48	46.90	25.57	2.834	Alert
3,700.00	3,699.54	3,701.87	3,696.49	13.01	12.99	37.73	28.99	96.84	73.54	47.60	25.94	2.835	Alert
3,750.00	3,749.52	3,748.12	3,746.42	13.19	13.16	37.86	29.91	98.98	74.61	48.32	26.29	2.838	Alert
3,800.00	3,799.50	3,801.89	3,796.35	13.37	13.35	37.99	30.83	101.11	75.67	49.02	26.65	2.839	Alert
3,850.00	3,849.48	3,848.10	3,846.29	13.54	13.52	38.12	31.75	103.25	76.74	49.74	27.00	2.842	Alert
3,900.00	3,899.46	3,901.91	3,896.22	13.72	13.71	38.24	32.67	105.38	77.80	50.44	27.37	2.843	Alert
3,950.00	3,949.44	3,948.07	3,946.16	13.90	13.88	38.35	33.60	107.52	78.87	51.16	27.71	2.846	Alert
4,000.00	3,999.41	4,001.94	3,996.09	14.08	14.07	38.47	34.52	109.66	79.94	51.86	28.08	2.847	Alert
4,050.00	4,049.39	4,048.05	4,046.03	14.26	14.24	38.58	35.44	111.79	81.00	52.58	28.42	2.850	Alert
4,100.00	4,099.37	4,101.96	4,095.96	14.44	14.43	38.69	36.36	113.93	82.07	53.28	28.79	2.851	Alert
4,150.00	4,149.35	4,148.03	4,145.89	14.61	14.60	38.79	37.28	116.06	83.14	54.01	29.13	2.854	Alert
4,200.00	4,199.33	4,201.98	4,195.83	14.79	14.79	38.90	38.20	118.20	84.21	54.70	29.50	2.854	Alert
4,250.00	4,249.31	4,248.00	4,245.76	14.97	14.96	39.00	39.12	120.33	85.28	55.43	29.85	2.857	Alert
4,300.00	4,299.29	4,302.01	4,295.70	15.15	15.15	39.09	40.04	122.47	86.34	56.13	30.22	2.857	Alert
4,350.00	4,349.27	4,347.98	4,345.63	15.33	15.31	39.19	40.96	124.60	87.41	56.85	30.56	2.860	Alert
4,400.00	4,399.25	4,402.03	4,395.57	15.51	15.51	39.28	41.88	126.74	88.48	57.55	30.93	2.861	Alert
4,450.00	4,449.22	4,447.96	4,445.50	15.69	15.67	39.37	42.81	128.88	89.55	58.28	31.27	2.864	Alert
4,500.00	4,499.20	4,502.05	4,495.43	15.86	15.87	39.46	43.73	131.01	90.62	58.97	31.64	2.864	Alert
4,550.00	4,549.18	4,547.93	4,545.37	16.04	16.03	39.55	44.65	133.15	91.69	59.70	31.99	2.866	Alert
4,600.00	4,599.16	4,602.08	4,595.30	16.22	16.23	39.63	45.57	135.28	92.76	60.40	32.36	2.867	Alert
4,650.00	4,649.14	4,647.91	4,645.24	16.40	16.39	39.72	46.49	137.42	93.83	61.13	32.70	2.869	Alert
4,700.00	4,699.12	4,702.10	4,695.17	16.58	16.59	39.80	47.41	139.55	94.90	61.83	33.07	2.869	Alert
4,750.00	4,749.10	4,747.89	4,745.11	16.76	16.75	39.88	48.33	141.69	95.97	62.55	33.41	2.872	Alert
4,800.00	4,799.08	4,802.12	4,795.04	16.94	16.95	39.95	49.25	143.82	97.04	63.25	33.79	2.872	Alert
4,850.00	4,849.06	4,847.86	4,844.97	17.12	17.12	40.03	50.17	145.96	98.11	63.98	34.13	2.875	Alert
4,900.00	4,899.03	4,902.15	4,894.91	17.30	17.31	40.10	51.10	148.10	99.18	64.68	34.50	2.875	Alert
4,950.00	4,949.01	4,947.84	4,944.84	17.47	17.48	40.18	52.02	150.23	100.25	65.41	34.84	2.877	Alert
5,000.00	4,998.99	5,002.17	4,994.78	17.65	17.67	40.25	52.94	152.37	101.32	66.11	35.22	2.877	Alert
5,050.00	5,048.97	5,047.82	5,044.71	17.83	17.84	40.32	53.86	154.50	102.39	66.84	35.56	2.880	Alert
5,100.00	5,098.95	5,102.19	5,094.64	18.01	18.03	40.38	54.78	156.64	103.46	67.53	35.93	2.880	Alert
5,150.00	5,148.93	5,147.80	5,144.58	18.19	18.20	40.45	55.70	158.77	104.54	68.26	36.27	2.882	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	5,198.91	5,202.22	5,194.51	18.37	18.39	40.52	56.62	160.91	105.61	68.96	36.65	2.882	Alert
5,250.00	5,248.89	5,247.77	5,244.45	18.55	18.56	40.58	57.54	163.04	106.68	69.69	36.99	2.884	Alert
5,300.00	5,298.87	5,302.24	5,294.38	18.73	18.75	40.64	58.46	165.18	107.75	70.39	37.36	2.884	Alert
5,350.00	5,348.84	5,347.75	5,344.32	18.91	18.92	40.70	59.38	167.32	108.82	71.12	37.70	2.886	Alert
5,400.00	5,398.82	5,402.26	5,394.25	19.09	19.12	40.76	60.31	169.45	109.90	71.82	38.08	2.886	Alert
5,450.00	5,448.80	5,447.73	5,444.18	19.27	19.28	40.82	61.23	171.59	110.97	72.55	38.42	2.888	Alert
5,500.00	5,498.78	5,502.29	5,494.12	19.44	19.48	40.88	62.15	173.72	112.04	73.25	38.79	2.888	Alert
5,550.00	5,548.76	5,547.70	5,544.05	19.62	19.64	40.94	63.07	175.86	113.11	73.98	39.13	2.890	Alert
5,600.00	5,598.74	5,602.31	5,593.99	19.80	19.84	40.99	63.99	177.99	114.19	74.68	39.51	2.890	Alert
5,650.00	5,648.72	5,647.68	5,643.92	19.98	20.00	41.05	64.91	180.13	115.26	75.41	39.85	2.892	Alert
5,700.00	5,698.70	5,702.33	5,693.86	20.16	20.20	41.10	65.83	182.26	116.33	76.11	40.22	2.892	Alert
5,750.00	5,748.68	5,747.66	5,743.79	20.34	20.36	41.16	66.75	184.40	117.40	76.84	40.57	2.894	Alert
5,800.00	5,798.65	5,802.36	5,793.72	20.52	20.56	41.21	67.67	186.54	118.48	77.54	40.94	2.894	Alert
5,850.00	5,848.63	5,847.63	5,843.66	20.70	20.72	41.26	68.59	188.67	119.55	78.27	41.28	2.896	Alert
5,900.00	5,898.61	5,902.38	5,893.59	20.88	20.92	41.31	69.52	190.81	120.62	78.97	41.66	2.896	Alert
5,950.00	5,948.59	5,947.61	5,943.53	21.06	21.09	41.36	70.44	192.94	121.70	79.70	42.00	2.898	Alert
6,000.00	5,998.57	5,997.60	5,993.46	21.24	21.27	41.41	71.36	195.08	122.77	80.41	42.36	2.899	Alert
6,050.00	6,048.55	6,047.59	6,043.40	21.42	21.45	41.45	72.28	197.21	123.84	81.13	42.71	2.899	Alert
6,100.00	6,098.53	6,102.43	6,093.33	21.60	21.65	41.50	73.20	199.35	124.92	81.83	43.09	2.899	Alert
6,150.00	6,148.51	6,147.56	6,143.26	21.77	21.81	41.54	74.12	201.49	125.99	82.56	43.43	2.901	Alert
6,200.00	6,198.49	6,202.45	6,193.20	21.95	22.01	41.59	75.04	203.62	127.06	83.26	43.81	2.901	Alert
6,250.00	6,248.46	6,247.54	6,243.13	22.13	22.17	41.63	75.96	205.76	128.14	83.99	44.15	2.903	Alert
6,300.00	6,298.44	6,302.47	6,293.07	22.31	22.37	41.68	76.88	207.89	129.21	84.69	44.52	2.902	Alert
6,350.00	6,348.42	6,347.52	6,343.00	22.49	22.53	41.72	77.80	210.03	130.29	85.42	44.86	2.904	Alert
6,400.00	6,398.40	6,402.50	6,392.94	22.67	22.73	41.76	78.73	212.16	131.36	86.12	45.24	2.904	Alert
6,450.00	6,448.38	6,447.49	6,442.87	22.85	22.89	41.80	79.65	214.30	132.43	86.86	45.58	2.906	Alert
6,500.00	6,498.36	6,502.52	6,492.80	23.03	23.09	41.84	80.57	216.43	133.51	87.55	45.95	2.905	Alert
6,550.00	6,548.34	6,547.47	6,542.74	23.21	23.26	41.88	81.49	218.57	134.58	88.29	46.30	2.907	Alert
6,600.00	6,598.32	6,602.54	6,592.67	23.39	23.46	41.92	82.41	220.71	135.66	88.98	46.67	2.907	Alert
6,650.00	6,648.30	6,647.45	6,642.61	23.57	23.62	41.96	83.33	222.84	136.73	89.72	47.01	2.908	Alert
6,700.00	6,698.27	6,702.57	6,692.54	23.75	23.82	42.00	84.25	224.98	137.81	90.42	47.39	2.908	Alert
6,750.00	6,748.25	6,747.42	6,742.47	23.93	23.98	42.04	85.17	227.11	138.88	91.15	47.73	2.910	Alert
6,800.00	6,798.23	6,802.59	6,792.41	24.11	24.18	42.08	86.09	229.25	139.95	91.85	48.11	2.909	Alert
6,850.00	6,848.21	6,847.40	6,842.34	24.29	24.34	42.11	87.01	231.38	141.03	92.58	48.45	2.911	Alert
6,900.00	6,898.19	6,902.61	6,892.28	24.47	24.54	42.15	87.94	233.52	142.10	93.28	48.82	2.911	Alert
6,950.00	6,948.17	6,947.38	6,942.21	24.65	24.70	42.18	88.86	235.65	143.18	94.02	49.16	2.912	Alert
7,000.00	6,998.15	7,002.64	6,992.15	24.83	24.90	42.22	89.78	237.79	144.25	94.71	49.54	2.912	Alert
7,050.00	7,048.13	7,047.35	7,042.08	25.00	25.07	42.25	90.70	239.93	145.33	95.45	49.88	2.914	Alert
7,100.00	7,098.11	7,102.66	7,092.01	25.18	25.27	42.29	91.62	242.06	146.40	96.15	50.26	2.913	Alert
7,150.00	7,148.08	7,147.33	7,141.95	25.36	25.43	42.32	92.54	244.20	147.48	96.88	50.60	2.915	Alert
7,200.00	7,198.06	7,202.68	7,191.88	25.54	25.63	42.35	93.46	246.33	148.55	97.58	50.97	2.914	Alert
7,250.00	7,248.04	7,247.31	7,241.82	25.72	25.79	42.39	94.38	248.47	149.63	98.31	51.31	2.916	Alert
7,300.00	7,298.02	7,302.71	7,291.75	25.90	25.99	42.42	95.30	250.60	150.70	99.01	51.69	2.915	Alert
7,350.00	7,348.00	7,347.28	7,341.69	26.08	26.15	42.45	96.22	252.74	151.78	99.75	52.03	2.917	Alert
7,400.00	7,397.98	7,402.73	7,391.62	26.26	26.35	42.48	97.15	254.87	152.85	100.44	52.41	2.917	Alert
7,450.00	7,447.96	7,447.26	7,441.55	26.44	26.51	42.51	98.07	257.01	153.93	101.18	52.75	2.918	Alert
7,500.00	7,497.94	7,502.75	7,491.49	26.62	26.71	42.54	98.99	259.15	155.00	101.88	53.13	2.918	Alert
7,550.00	7,547.92	7,547.24	7,541.42	26.80	26.88	42.57	99.91	261.28	156.08	102.61	53.46	2.919	Alert
7,600.00	7,597.89	7,602.77	7,591.36	26.98	27.08	42.60	100.83	263.42	157.15	103.31	53.84	2.919	Alert
7,650.00	7,647.87	7,647.21	7,641.29	27.16	27.24	42.63	101.75	265.55	158.23	104.05	54.18	2.920	Alert
7,700.00	7,697.85	7,702.80	7,691.23	27.34	27.44	42.66	102.67	267.69	159.30	104.74	54.56	2.920	Alert
7,750.00	7,747.83	7,747.19	7,741.16	27.52	27.60	42.69	103.59	269.82	160.38	105.48	54.90	2.921	Alert

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	7,797.81	7,802.82	7,791.09	27.70	27.80	42.71	104.51	271.96	161.46	106.18	55.28	2.921	Alert
7,850.00	7,847.79	7,847.17	7,841.03	27.88	27.96	42.74	105.43	274.09	162.53	106.91	55.62	2.922	Alert
7,900.00	7,897.77	7,902.84	7,890.96	28.06	28.16	42.77	106.36	276.23	163.61	107.61	56.00	2.922	Alert
7,950.00	7,947.75	7,947.14	7,940.90	28.24	28.32	42.79	107.28	278.37	164.68	108.35	56.33	2.923	Alert
8,000.00	7,997.73	8,002.87	7,990.83	28.42	28.53	42.82	108.20	280.50	165.76	109.04	56.71	2.923	Alert
8,050.00	8,047.70	8,047.12	8,040.76	28.60	28.69	42.85	109.12	282.64	166.83	109.78	57.05	2.924	Alert
8,100.00	8,097.68	8,102.89	8,090.70	28.78	28.89	42.87	110.04	284.77	167.91	110.48	57.43	2.924	Alert
8,150.00	8,147.66	8,147.10	8,140.63	28.96	29.05	42.90	110.96	286.91	168.98	111.22	57.77	2.925	Alert
8,200.00	8,197.64	8,202.91	8,190.57	29.13	29.25	42.92	111.88	289.04	170.06	111.91	58.15	2.925	Alert
8,250.00	8,247.62	8,247.07	8,240.50	29.31	29.41	42.95	112.80	291.18	171.14	112.65	58.49	2.926	Alert
8,300.00	8,297.60	8,302.94	8,290.44	29.49	29.61	42.97	113.72	293.32	172.21	113.34	58.87	2.925	Alert
8,350.00	8,347.58	8,347.05	8,340.37	29.67	29.77	43.00	114.64	295.45	173.29	114.08	59.20	2.927	Alert
8,400.00	8,397.56	8,402.96	8,390.30	29.85	29.98	43.02	115.57	297.59	174.36	114.78	59.58	2.926	Alert
8,450.00	8,447.54	8,447.03	8,440.24	30.03	30.14	43.04	116.49	299.72	175.44	115.52	59.92	2.928	Alert
8,500.00	8,497.51	8,497.02	8,490.17	30.21	30.32	43.07	117.41	301.86	176.52	116.23	60.28	2.928	Alert
8,550.00	8,547.49	8,547.00	8,540.11	30.39	30.50	43.09	118.33	303.99	177.59	116.95	60.64	2.929	Alert
8,600.00	8,597.47	8,603.01	8,590.04	30.57	30.70	43.11	119.25	306.13	178.67	117.65	61.02	2.928	Alert
8,650.00	8,647.45	8,646.98	8,639.98	30.75	30.86	43.14	120.17	308.26	179.74	118.39	61.36	2.929	Alert
8,700.00	8,697.43	8,703.03	8,689.91	30.93	31.06	43.16	121.09	310.40	180.82	119.08	61.74	2.929	Alert
8,750.00	8,747.41	8,746.96	8,739.84	31.11	31.22	43.18	122.01	312.54	181.90	119.82	62.08	2.930	Alert
8,800.00	8,797.39	8,796.95	8,789.78	31.29	31.41	43.20	122.93	314.67	182.97	120.54	62.43	2.931	Alert
8,850.00	8,847.37	8,846.93	8,839.71	31.47	31.59	43.22	123.85	316.81	184.05	121.25	62.79	2.931	Alert
8,900.00	8,897.35	8,903.08	8,889.65	31.65	31.79	43.24	124.78	318.94	185.12	121.95	63.17	2.930	Alert
8,950.00	8,947.33	8,946.91	8,939.58	31.83	31.95	43.26	125.70	321.08	186.20	122.69	63.51	2.932	Alert
9,000.00	8,997.30	9,003.10	8,989.52	32.01	32.15	43.29	126.62	323.21	187.28	123.38	63.89	2.931	Alert
9,050.00	9,047.28	9,046.89	9,039.45	32.19	32.31	43.31	127.54	325.35	188.35	124.12	64.23	2.933	Alert
9,100.00	9,097.26	9,103.12	9,089.38	32.37	32.52	43.33	128.46	327.48	189.43	124.82	64.61	2.932	Alert
9,150.00	9,147.24	9,146.86	9,139.32	32.55	32.67	43.35	129.38	329.62	190.50	125.56	64.95	2.933	Alert
9,200.00	9,197.22	9,203.15	9,189.25	32.73	32.88	43.37	130.30	331.76	191.58	126.25	65.33	2.933	Alert
9,250.00	9,247.20	9,246.84	9,239.19	32.91	33.04	43.39	131.22	333.89	192.66	126.99	65.66	2.934	Alert
9,300.00	9,297.18	9,303.17	9,289.12	33.09	33.24	43.40	132.14	336.03	193.73	127.69	66.05	2.933	Alert
9,350.00	9,347.16	9,346.82	9,339.06	33.27	33.40	43.42	133.06	338.16	194.81	128.43	66.38	2.935	Alert
9,400.00	9,397.14	9,396.81	9,388.99	33.45	33.58	43.44	133.99	340.30	195.89	129.14	66.74	2.935	Alert
9,450.00	9,447.11	9,446.80	9,438.92	33.63	33.76	43.46	134.91	342.43	196.96	129.86	67.10	2.935	Alert
9,500.00	9,497.09	9,503.22	9,488.86	33.81	33.97	43.48	135.83	344.57	198.04	130.56	67.48	2.935	Alert
9,550.00	9,547.07	9,546.77	9,538.79	33.99	34.12	43.50	136.75	346.70	199.12	131.30	67.82	2.936	Alert
9,600.00	9,597.05	9,596.76	9,588.73	34.17	34.31	43.52	137.67	348.84	200.19	132.01	68.18	2.936	Alert
9,650.00	9,647.03	9,646.75	9,638.66	34.35	34.49	43.53	138.59	350.98	201.27	132.73	68.54	2.937	Alert
9,700.00	9,697.01	9,696.74	9,688.59	34.53	34.67	43.55	139.51	353.11	202.35	133.45	68.90	2.937	Alert
9,750.00	9,746.99	9,746.73	9,738.53	34.71	34.85	43.57	140.43	355.25	203.42	134.17	69.25	2.937	Alert
9,800.00	9,796.97	9,803.29	9,788.46	34.88	35.05	43.59	141.35	357.38	204.50	134.86	69.64	2.937	Alert
9,850.00	9,846.95	9,846.70	9,838.40	35.06	35.21	43.60	142.27	359.52	205.57	135.60	69.97	2.938	Alert
9,900.00	9,896.92	9,896.69	9,888.33	35.24	35.39	43.62	143.20	361.65	206.65	136.32	70.33	2.938	Alert
9,950.00	9,946.90	9,946.68	9,938.27	35.42	35.57	43.64	144.12	363.79	207.73	137.04	70.69	2.939	Alert
10,000.00	9,996.88	10,003.33	9,988.20	35.60	35.78	43.65	145.04	365.92	208.80	137.73	71.07	2.938	Alert
10,050.00	10,046.86	10,046.66	10,038.13	35.78	35.94	43.67	145.96	368.06	209.88	138.47	71.41	2.939	Alert
10,100.00	10,096.84	10,103.36	10,088.07	35.96	36.14	43.69	146.88	370.20	210.96	139.17	71.79	2.938	Alert
10,150.00	10,146.82	10,146.63	10,138.00	36.14	36.30	43.70	147.80	372.33	212.03	139.91	72.13	2.940	Alert
10,200.00	10,196.80	10,203.38	10,187.94	36.32	36.51	43.72	148.72	374.47	213.11	140.60	72.51	2.939	Alert
10,250.00	10,246.78	10,246.61	10,237.87	36.50	36.66	43.73	149.64	376.60	214.19	141.34	72.85	2.940	Alert
10,300.00	10,296.76	10,303.40	10,287.81	36.68	36.87	43.75	150.56	378.74	215.26	142.04	73.23	2.940	Alert
10,350.00	10,346.73	10,346.59	10,337.74	36.86	37.03	43.77	151.48	380.87	216.34	142.78	73.56	2.941	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	10,396.71	10,403.43	10,387.67	37.04	37.23	43.78	152.41	383.01	217.42	143.47	73.95	2.940	Alert
10,450.00	10,446.69	10,446.56	10,437.61	37.22	37.39	43.80	153.33	385.15	218.49	144.21	74.28	2.941	Alert
10,500.00	10,496.67	10,503.45	10,487.54	37.40	37.59	43.81	154.25	387.28	219.57	144.91	74.67	2.941	Alert
10,550.00	10,546.65	10,546.54	10,537.48	37.58	37.75	43.83	155.17	389.42	220.65	145.65	75.00	2.942	Alert
10,600.00	10,596.63	10,603.47	10,587.41	37.76	37.96	43.84	156.09	391.55	221.74	146.35	75.38	2.941	Alert
10,650.00	10,646.62	10,646.51	10,637.34	37.94	38.11	43.79	157.01	393.69	223.15	147.43	75.72	2.947	Alert
10,700.00	10,696.62	10,696.47	10,687.24	38.12	38.29	43.62	157.93	395.82	225.03	148.96	76.07	2.958	Alert
10,750.00	10,746.62	10,747.44	10,738.16	38.30	38.48	90.29	158.85	397.96	227.12	150.69	76.44	2.971	Alert
10,800.00	10,796.62	10,800.30	10,790.99	38.47	38.67	90.11	159.58	399.64	228.71	151.90	76.81	2.978	Alert
10,850.00	10,846.62	10,853.21	10,843.88	38.65	38.86	90.00	160.01	400.65	229.67	152.50	77.17	2.976	Alert
10,900.00	10,896.62	10,906.13	10,896.81	38.83	39.04	89.96	160.16	400.99	229.99	152.47	77.52	2.967	Alert
10,950.00	10,946.62	10,956.14	10,946.82	39.00	39.22	89.96	160.16	400.99	229.99	152.11	77.88	2.953	Alert
11,000.00	10,996.62	11,006.14	10,996.82	39.18	39.39	89.96	160.16	400.99	229.99	151.76	78.23	2.940	Alert
11,050.00	11,046.62	11,056.14	11,046.82	39.36	39.57	89.96	160.16	400.99	229.99	151.41	78.58	2.927	Alert
11,088.28	11,084.87	11,105.60	11,085.07	39.49	39.74	-90.00	160.16	400.99	229.99	151.11	78.88	2.916	Alert
11,100.00	11,096.56	11,106.08	11,096.76	39.53	39.74	-90.22	160.16	400.99	229.99	151.07	78.92	2.914	Alert
11,150.00	11,146.12	11,155.64	11,146.32	39.69	39.91	-91.81	160.16	400.99	230.10	150.86	79.25	2.904	Alert
11,200.00	11,194.92	11,204.45	11,195.12	39.84	40.09	-94.36	160.16	400.99	230.70	151.14	79.57	2.900	Alert
11,250.00	11,242.61	11,252.13	11,242.81	39.98	40.25	-97.71	160.16	400.99	232.36	152.49	79.88	2.909	Alert
11,300.00	11,288.80	11,302.43	11,293.06	40.12	40.42	-101.64	158.31	401.00	235.48	155.32	80.16	2.938	Alert
11,350.00	11,333.15	11,354.75	11,344.95	40.25	40.59	-105.48	151.73	401.04	239.79	159.42	80.37	2.984	Alert
11,400.00	11,375.33	11,409.00	11,397.88	40.37	40.76	-109.16	139.95	401.12	245.15	164.69	80.46	3.047	Alert
11,450.00	11,415.01	11,465.34	11,451.41	40.48	40.92	-112.64	122.47	401.22	251.39	171.03	80.36	3.128	Alert
11,500.00	11,451.88	11,523.92	11,504.97	40.59	41.08	-115.89	98.82	401.37	258.26	178.25	80.01	3.228	Alert
11,550.00	11,485.68	11,584.88	11,557.85	40.70	41.23	-118.87	68.54	401.56	265.51	186.15	79.36	3.346	Alert
11,600.00	11,516.14	11,648.32	11,609.13	40.82	41.37	-121.57	31.25	401.79	272.86	194.47	78.39	3.481	Alert
11,650.00	11,543.03	11,714.28	11,657.74	40.94	41.50	-123.96	-13.29	402.07	280.03	202.90	77.13	3.631	Alert
11,700.00	11,566.14	11,782.74	11,702.43	41.05	41.63	-126.03	-65.09	402.39	286.73	211.09	75.64	3.791	Alert
11,750.00	11,585.30	11,853.56	11,741.83	41.17	41.76	-127.76	-123.89	402.75	292.68	218.63	74.05	3.953	Alert
11,800.00	11,600.37	11,926.49	11,774.50	41.28	41.92	-129.13	-189.04	403.16	297.64	225.12	72.53	4.104	Alert
11,850.00	11,611.22	12,001.18	11,799.11	41.40	42.09	-130.13	-259.50	403.59	301.39	230.12	71.27	4.229	Alert
11,900.00	11,617.78	12,077.13	11,814.53	41.51	42.27	-130.75	-333.81	404.05	303.76	233.29	70.47	4.310	Alert
11,950.00	11,620.00	12,153.77	11,819.99	41.62	42.46	-130.98	-410.19	404.53	304.65	234.36	70.28	4.335	Alert
12,000.00	11,620.00	12,204.67	11,820.00	41.74	42.58	-130.98	-461.10	404.84	304.65	234.20	70.45	4.324	Alert
12,050.00	11,620.00	12,254.67	11,820.00	41.88	42.72	-130.98	-511.10	405.15	304.65	234.00	70.65	4.312	Alert
12,100.00	11,620.00	12,304.67	11,820.00	42.01	42.86	-130.98	-561.09	405.46	304.65	233.80	70.86	4.300	Alert
12,150.00	11,620.00	12,354.67	11,820.00	42.17	43.02	-130.98	-611.09	405.77	304.65	233.56	71.09	4.285	Alert
12,200.00	11,620.00	12,404.67	11,820.00	42.33	43.18	-130.98	-661.09	406.08	304.65	233.32	71.34	4.271	Alert
12,250.00	11,620.00	12,454.67	11,820.00	42.51	43.36	-130.98	-711.09	406.39	304.65	233.04	71.62	4.254	Alert
12,300.00	11,620.00	12,504.67	11,820.00	42.69	43.55	-130.98	-761.09	406.70	304.65	232.76	71.90	4.237	Alert
12,350.00	11,620.00	12,554.67	11,820.00	42.90	43.75	-130.98	-811.09	407.01	304.65	232.44	72.21	4.219	Alert
12,400.00	11,620.00	12,604.67	11,820.00	43.10	43.96	-130.98	-861.09	407.32	304.65	232.12	72.53	4.200	Alert
12,450.00	11,620.00	12,654.67	11,820.00	43.33	44.19	-130.98	-911.09	407.64	304.65	231.76	72.89	4.180	Alert
12,500.00	11,620.00	12,704.67	11,820.00	43.56	44.41	-130.98	-961.09	407.95	304.65	231.41	73.24	4.159	Alert
12,550.00	11,620.00	12,754.67	11,820.00	43.81	44.66	-130.98	-1,011.09	408.26	304.65	231.01	73.64	4.137	Alert
12,600.00	11,620.00	12,804.67	11,820.00	44.06	44.91	-130.98	-1,061.08	408.57	304.65	230.62	74.03	4.115	Alert
12,650.00	11,620.00	12,854.67	11,820.00	44.33	45.18	-130.98	-1,111.08	408.88	304.65	230.19	74.46	4.092	Alert
12,700.00	11,620.00	12,904.67	11,820.00	44.60	45.45	-130.98	-1,161.08	409.19	304.65	229.76	74.88	4.068	Alert
12,750.00	11,620.00	12,954.67	11,820.00	44.89	45.73	-130.98	-1,211.08	409.50	304.65	229.30	75.35	4.043	Alert
12,800.00	11,620.00	13,004.67	11,820.00	45.18	46.02	-130.98	-1,261.08	409.81	304.65	228.84	75.81	4.019	Alert
12,850.00	11,620.00	13,054.67	11,820.00	45.49	46.33	-130.98	-1,311.08	410.12	304.65	228.35	76.30	3.993	Alert
12,900.00	11,620.00	13,104.67	11,820.00	45.80	46.64	-130.98	-1,361.08	410.43	304.65	227.85	76.80	3.967	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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	11,620.00	13,154.67	11,820.00	46.13	46.96	-130.98	-1,411.08	410.74	304.65	227.33	77.32	3.940	Alert
13,000.00	11,620.00	13,204.67	11,820.00	46.46	47.29	-130.98	-1,461.08	411.05	304.65	226.80	77.85	3.913	Alert
13,050.00	11,620.00	13,254.67	11,820.00	46.81	47.63	-130.98	-1,511.08	411.36	304.65	226.24	78.41	3.886	Alert
13,100.00	11,620.00	13,304.67	11,820.00	47.15	47.97	-130.98	-1,561.07	411.67	304.65	225.68	78.96	3.858	Alert
13,150.00	11,620.00	13,354.67	11,820.00	47.52	48.33	-130.98	-1,611.07	411.98	304.65	225.10	79.55	3.830	Alert
13,200.00	11,620.00	13,404.67	11,820.00	47.88	48.69	-130.98	-1,661.07	412.29	304.65	224.51	80.14	3.802	Alert
13,250.00	11,620.00	13,454.67	11,820.00	48.26	49.07	-130.98	-1,711.07	412.60	304.65	223.90	80.75	3.773	Alert
13,300.00	11,620.00	13,504.67	11,820.00	48.64	49.44	-130.98	-1,761.07	412.91	304.65	223.29	81.36	3.744	Alert
13,350.00	11,620.00	13,554.67	11,820.00	49.04	49.83	-130.98	-1,811.07	413.22	304.65	222.65	82.00	3.715	Alert
13,400.00	11,620.00	13,604.67	11,820.00	49.43	50.23	-130.98	-1,861.07	413.53	304.65	222.00	82.64	3.686	Alert
13,450.00	11,620.00	13,654.67	11,820.00	49.84	50.63	-130.98	-1,911.07	413.84	304.65	221.34	83.31	3.657	Alert
13,500.00	11,620.00	13,704.67	11,820.00	50.25	51.04	-130.98	-1,961.07	414.15	304.65	220.67	83.97	3.628	Alert
13,550.00	11,620.00	13,754.67	11,820.00	50.68	51.46	-130.98	-2,011.07	414.46	304.65	219.98	84.66	3.598	Alert
13,600.00	11,620.00	13,804.67	11,820.00	51.10	51.88	-130.98	-2,061.07	414.77	304.65	219.29	85.35	3.569	Alert
13,650.00	11,620.00	13,854.67	11,820.00	51.54	52.31	-130.98	-2,111.06	415.08	304.65	218.58	86.07	3.540	Alert
13,700.00	11,620.00	13,904.67	11,820.00	51.98	52.75	-130.98	-2,161.06	415.39	304.65	217.87	86.78	3.511	Alert
13,750.00	11,620.00	13,954.67	11,820.00	52.43	53.19	-130.98	-2,211.06	415.70	304.65	217.13	87.51	3.481	Alert
13,800.00	11,620.00	14,004.67	11,820.00	52.88	53.64	-130.98	-2,261.06	416.01	304.65	216.40	88.25	3.452	Alert
13,850.00	11,620.00	14,054.67	11,820.00	53.35	54.10	-130.98	-2,311.06	416.32	304.65	215.64	89.00	3.423	Alert
13,900.00	11,620.00	14,104.67	11,820.00	53.81	54.56	-130.98	-2,361.06	416.63	304.65	214.89	89.76	3.394	Alert
13,950.00	11,620.00	14,154.67	11,820.00	54.29	55.03	-130.98	-2,411.06	416.94	304.65	214.11	90.53	3.365	Alert
14,000.00	11,620.00	14,204.67	11,820.00	54.76	55.50	-130.98	-2,461.06	417.25	304.65	213.34	91.31	3.336	Alert
14,050.00	11,620.00	14,254.67	11,820.00	55.25	55.98	-130.98	-2,511.06	417.56	304.65	212.54	92.10	3.308	Alert
14,100.00	11,620.00	14,304.67	11,820.00	55.73	56.46	-130.98	-2,561.06	417.87	304.65	211.75	92.90	3.279	Alert
14,150.00	11,620.00	14,354.67	11,820.00	56.23	56.95	-130.98	-2,611.05	418.18	304.65	210.93	93.71	3.251	Alert
14,200.00	11,620.00	14,404.67	11,820.00	56.73	57.45	-130.98	-2,661.05	418.49	304.65	210.12	94.52	3.223	Alert
14,250.00	11,620.00	14,454.67	11,820.00	57.23	57.95	-130.98	-2,711.05	418.80	304.64	209.29	95.35	3.195	Alert
14,300.00	11,620.00	14,504.67	11,820.00	57.74	58.45	-130.98	-2,761.05	419.11	304.64	208.46	96.18	3.167	Alert
14,350.00	11,620.00	14,554.67	11,820.00	58.26	58.96	-130.98	-2,811.05	419.42	304.64	207.62	97.03	3.140	Alert
14,400.00	11,620.00	14,604.67	11,820.00	58.77	59.47	-130.98	-2,861.05	419.73	304.64	206.77	97.87	3.113	Alert
14,450.00	11,620.00	14,654.67	11,820.00	59.30	59.99	-130.98	-2,911.05	420.04	304.64	205.91	98.73	3.086	Alert
14,500.00	11,620.00	14,704.67	11,820.00	59.82	60.51	-130.98	-2,961.05	420.35	304.64	205.05	99.59	3.059	Alert
14,550.00	11,620.00	14,754.67	11,820.00	60.35	61.04	-130.98	-3,011.05	420.66	304.64	204.18	100.47	3.032	Alert
14,600.00	11,620.00	14,804.67	11,820.00	60.89	61.57	-130.98	-3,061.05	420.97	304.64	203.30	101.34	3.006	Alert
14,650.00	11,620.00	14,854.67	11,820.00	61.43	62.10	-130.98	-3,111.05	421.28	304.64	202.41	102.23	2.980	Alert
14,700.00	11,620.00	14,904.67	11,820.00	61.97	62.64	-130.98	-3,161.04	421.59	304.64	201.52	103.12	2.954	Alert
14,750.00	11,620.00	14,954.67	11,820.00	62.52	63.18	-130.98	-3,211.04	421.90	304.64	200.62	104.02	2.929	Alert
14,800.00	11,620.00	15,004.67	11,820.00	63.07	63.73	-130.98	-3,261.04	422.21	304.64	199.72	104.92	2.903	Alert
14,850.00	11,620.00	15,054.67	11,820.00	63.62	64.28	-130.98	-3,311.04	422.52	304.64	198.81	105.84	2.878	Alert
14,900.00	11,620.00	15,104.67	11,820.00	64.18	64.83	-130.98	-3,361.04	422.83	304.64	197.89	106.75	2.854	Alert
14,950.00	11,620.00	15,154.67	11,820.00	64.74	65.39	-130.98	-3,411.04	423.14	304.64	196.97	107.68	2.829	Alert
15,000.00	11,620.00	15,204.67	11,820.00	65.30	65.95	-130.98	-3,461.04	423.45	304.64	196.04	108.60	2.805	Alert
15,050.00	11,620.00	15,254.67	11,820.00	65.87	66.51	-130.98	-3,511.04	423.76	304.64	195.10	109.54	2.781	Alert
15,100.00	11,620.00	15,304.67	11,820.00	66.44	67.08	-130.98	-3,561.04	424.07	304.64	194.16	110.48	2.758	Alert
15,150.00	11,620.00	15,354.67	11,820.00	67.02	67.65	-130.98	-3,611.04	424.38	304.64	193.22	111.42	2.734	Alert
15,200.00	11,620.00	15,404.67	11,820.00	67.59	68.22	-130.98	-3,661.03	424.69	304.64	192.27	112.37	2.711	Alert
15,250.00	11,620.00	15,454.67	11,820.00	68.17	68.80	-130.98	-3,711.03	425.00	304.64	191.31	113.33	2.688	Alert
15,300.00	11,620.00	15,504.67	11,820.00	68.75	69.37	-130.98	-3,761.03	425.31	304.64	190.35	114.29	2.666	Alert
15,350.00	11,620.00	15,554.67	11,820.00	69.34	69.96	-130.98	-3,811.03	425.62	304.64	189.39	115.26	2.643	Alert
15,400.00	11,620.00	15,604.67	11,820.00	69.93	70.54	-130.98	-3,861.03	425.93	304.64	188.42	116.22	2.621	Alert
15,450.00	11,620.00	15,654.67	11,820.00	70.52	71.13	-130.98	-3,911.03	426.24	304.64	187.44	117.20	2.599	Alert
15,500.00	11,620.00	15,704.67	11,820.00	71.11	71.72	-130.98	-3,961.03	426.55	304.64	186.46	118.18	2.578	Alert

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	11,620.00	15,754.67	11,820.00	71.71	72.31	-130.98	-4,011.03	426.86	304.64	185.48	119.16	2.557	Alert
15,600.00	11,620.00	15,804.67	11,820.00	72.31	72.90	-130.98	-4,061.03	427.17	304.64	184.49	120.15	2.536	Alert
15,650.00	11,620.00	15,854.67	11,820.00	72.91	73.50	-130.98	-4,111.03	427.48	304.64	183.50	121.14	2.515	Alert
15,700.00	11,620.00	15,904.67	11,820.00	73.51	74.10	-130.98	-4,161.02	427.79	304.64	182.51	122.13	2.494	Minor Risk
15,750.00	11,620.00	15,954.67	11,820.00	74.12	74.70	-130.98	-4,211.02	428.10	304.64	181.50	123.14	2.474	Minor Risk
15,800.00	11,620.00	16,004.67	11,820.00	74.72	75.30	-130.98	-4,261.02	428.41	304.64	180.50	124.14	2.454	Minor Risk
15,850.00	11,620.00	16,054.67	11,820.00	75.33	75.91	-130.98	-4,311.02	428.73	304.64	179.49	125.15	2.434	Minor Risk
15,900.00	11,620.00	16,104.67	11,820.00	75.94	76.52	-130.98	-4,361.02	429.04	304.64	178.49	126.15	2.415	Minor Risk
15,950.00	11,620.00	16,154.67	11,820.00	76.56	77.13	-130.98	-4,411.02	429.35	304.64	177.47	127.17	2.396	Minor Risk
16,000.00	11,620.00	16,204.67	11,820.00	77.17	77.74	-130.98	-4,461.02	429.66	304.64	176.45	128.19	2.377	Minor Risk
16,050.00	11,620.00	16,254.67	11,820.00	77.79	78.35	-130.98	-4,511.02	429.97	304.64	175.43	129.21	2.358	Minor Risk
16,100.00	11,620.00	16,304.67	11,820.00	78.41	78.97	-130.98	-4,561.02	430.28	304.64	174.41	130.23	2.339	Minor Risk
16,150.00	11,620.00	16,354.67	11,820.00	79.03	79.59	-130.98	-4,611.02	430.59	304.64	173.38	131.26	2.321	Minor Risk
16,200.00	11,620.00	16,404.67	11,820.00	79.65	80.21	-130.98	-4,661.02	430.90	304.64	172.35	132.29	2.303	Minor Risk
16,250.00	11,620.00	16,454.67	11,820.00	80.28	80.83	-130.98	-4,711.01	431.21	304.64	171.31	133.33	2.285	Minor Risk
16,300.00	11,620.00	16,504.67	11,820.00	80.91	81.45	-130.98	-4,761.01	431.52	304.64	170.28	134.36	2.267	Minor Risk
16,350.00	11,620.00	16,554.67	11,820.00	81.53	82.08	-130.98	-4,811.01	431.83	304.64	169.24	135.40	2.250	Minor Risk
16,400.00	11,620.00	16,604.67	11,820.00	82.16	82.70	-130.98	-4,861.01	432.14	304.64	168.19	136.44	2.233	Minor Risk
16,450.00	11,620.00	16,654.67	11,820.00	82.80	83.33	-130.98	-4,911.01	432.45	304.64	167.15	137.49	2.216	Minor Risk
16,500.00	11,620.00	16,704.67	11,820.00	83.43	83.96	-130.98	-4,961.01	432.76	304.64	166.10	138.54	2.199	Minor Risk
16,550.00	11,620.00	16,754.67	11,820.00	84.06	84.60	-130.98	-5,011.01	433.07	304.64	165.05	139.59	2.182	Minor Risk
16,600.00	11,620.00	16,804.67	11,820.00	84.70	85.23	-130.98	-5,061.01	433.38	304.64	163.99	140.64	2.166	Minor Risk
16,650.00	11,620.00	16,854.67	11,820.00	85.34	85.86	-130.99	-5,111.01	433.69	304.64	162.94	141.70	2.150	Minor Risk
16,700.00	11,620.00	16,904.67	11,820.00	85.98	86.50	-130.99	-5,161.01	434.00	304.64	161.88	142.76	2.134	Minor Risk
16,750.00	11,620.00	16,954.67	11,820.00	86.62	87.14	-130.99	-5,211.00	434.31	304.64	160.82	143.82	2.118	Minor Risk
16,800.00	11,620.00	17,004.67	11,820.00	87.26	87.78	-130.99	-5,261.00	434.62	304.64	159.75	144.88	2.103	Minor Risk
16,850.00	11,620.00	17,054.67	11,820.00	87.90	88.42	-130.99	-5,311.00	434.93	304.64	158.69	145.95	2.087	Minor Risk
16,900.00	11,620.00	17,104.67	11,820.00	88.55	89.06	-130.99	-5,361.00	435.24	304.64	157.62	147.02	2.072	Minor Risk
16,950.00	11,620.00	17,154.67	11,820.00	89.20	89.70	-130.99	-5,411.00	435.55	304.64	156.55	148.09	2.057	Minor Risk
17,000.00	11,620.00	17,204.67	11,820.00	89.84	90.35	-130.99	-5,461.00	435.86	304.64	155.48	149.16	2.042	Minor Risk
17,050.00	11,620.00	17,254.67	11,820.00	90.49	90.99	-130.99	-5,511.00	436.17	304.64	154.40	150.24	2.028	Minor Risk
17,100.00	11,620.00	17,304.67	11,820.00	91.14	91.64	-130.99	-5,561.00	436.48	304.64	153.32	151.31	2.013	Minor Risk
17,150.00	11,620.00	17,354.67	11,820.00	91.79	92.29	-130.99	-5,611.00	436.79	304.64	152.24	152.39	1.999	Minor Risk
17,200.00	11,620.00	17,404.67	11,820.00	92.44	92.94	-130.99	-5,661.00	437.10	304.64	151.16	153.47	1.985	Minor Risk
17,250.00	11,620.00	17,454.67	11,820.00	93.10	93.59	-130.99	-5,711.00	437.41	304.64	150.08	154.56	1.971	Minor Risk
17,300.00	11,620.00	17,504.67	11,820.00	93.75	94.24	-130.99	-5,760.99	437.72	304.64	148.99	155.64	1.957	Minor Risk
17,350.00	11,620.00	17,554.67	11,820.00	94.41	94.89	-130.99	-5,810.99	438.03	304.64	147.91	156.73	1.944	Minor Risk
17,400.00	11,620.00	17,604.67	11,820.00	95.06	95.55	-130.99	-5,860.99	438.34	304.64	146.82	157.82	1.930	Minor Risk
17,450.00	11,620.00	17,654.67	11,820.00	95.72	96.20	-130.99	-5,910.99	438.65	304.64	145.73	158.91	1.917	Minor Risk
17,500.00	11,620.00	17,704.67	11,820.00	96.38	96.86	-130.99	-5,960.99	438.96	304.63	144.63	160.00	1.904	Minor Risk
17,550.00	11,620.00	17,754.67	11,820.00	97.04	97.52	-130.99	-6,010.99	439.27	304.63	143.54	161.10	1.891	Minor Risk
17,600.00	11,620.00	17,804.67	11,820.00	97.70	98.18	-130.99	-6,060.99	439.58	304.63	142.44	162.19	1.878	Minor Risk
17,650.00	11,620.00	17,854.67	11,820.00	98.36	98.83	-130.99	-6,110.99	439.89	304.63	141.34	163.29	1.866	Minor Risk
17,700.00	11,620.00	17,904.67	11,820.00	99.03	99.49	-130.99	-6,160.99	440.20	304.63	140.25	164.39	1.853	Minor Risk
17,750.00	11,620.00	17,954.67	11,820.00	99.69	100.16	-130.99	-6,210.99	440.51	304.63	139.14	165.49	1.841	Minor Risk
17,800.00	11,620.00	18,004.67	11,820.00	100.35	100.82	-130.99	-6,260.98	440.82	304.63	138.04	166.59	1.829	Minor Risk
17,850.00	11,620.00	18,054.67	11,820.00	101.02	101.48	-130.99	-6,310.98	441.13	304.63	136.94	167.70	1.817	Minor Risk
17,900.00	11,620.00	18,104.67	11,820.00	101.69	102.15	-130.99	-6,360.98	441.44	304.63	135.83	168.80	1.805	Minor Risk
17,950.00	11,620.00	18,154.67	11,820.00	102.35	102.81	-130.99	-6,410.98	441.75	304.63	134.73	169.91	1.793	Minor Risk
18,000.00	11,620.00	18,204.67	11,820.00	103.02	103.48	-130.99	-6,460.98	442.06	304.63	133.62	171.02	1.781	Minor Risk
18,050.00	11,620.00	18,254.67	11,820.00	103.69	104.14	-130.99	-6,510.98	442.37	304.63	132.51	172.13	1.770	Minor Risk
18,100.00	11,620.00	18,304.67	11,820.00	104.36	104.81	-130.99	-6,560.98	442.68	304.63	131.40	173.24	1.758	Minor Risk

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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	11,620.00	18,354.67	11,820.00	105.03	105.48	-130.99	-6,610.98	442.99	304.63	130.28	174.35	1.747	Minor Risk
18,200.00	11,620.00	18,404.67	11,820.00	105.70	106.15	-130.99	-6,660.98	443.30	304.63	129.17	175.46	1.736	Minor Risk
18,250.00	11,620.00	18,454.67	11,820.00	106.37	106.82	-130.99	-6,710.98	443.61	304.63	128.05	176.58	1.725	Minor Risk
18,300.00	11,620.00	18,504.67	11,820.00	107.04	107.49	-130.99	-6,760.97	443.92	304.63	126.94	177.70	1.714	Minor Risk
18,350.00	11,620.00	18,554.67	11,820.00	107.72	108.16	-130.99	-6,810.97	444.23	304.63	125.82	178.81	1.704	Minor Risk
18,400.00	11,620.00	18,604.67	11,820.00	108.39	108.83	-130.99	-6,860.97	444.54	304.63	124.70	179.93	1.693	Minor Risk
18,450.00	11,620.00	18,654.67	11,820.00	109.07	109.50	-130.99	-6,910.97	444.85	304.63	123.58	181.05	1.683	Minor Risk
18,500.00	11,620.00	18,704.67	11,820.00	109.74	110.18	-130.99	-6,960.97	445.16	304.63	122.46	182.17	1.672	Minor Risk
18,550.00	11,620.00	18,754.67	11,820.00	110.42	110.85	-130.99	-7,010.97	445.47	304.63	121.33	183.30	1.662	Minor Risk
18,600.00	11,620.00	18,804.67	11,820.00	111.10	111.53	-130.99	-7,060.97	445.78	304.63	120.21	184.42	1.652	Minor Risk
18,650.00	11,620.00	18,854.67	11,820.00	111.77	112.20	-130.99	-7,110.97	446.09	304.63	119.08	185.55	1.642	Minor Risk
18,700.00	11,620.00	18,904.67	11,820.00	112.45	112.88	-130.99	-7,160.97	446.40	304.63	117.96	186.67	1.632	Minor Risk
18,750.00	11,620.00	18,954.67	11,820.00	113.13	113.56	-130.99	-7,210.97	446.71	304.63	116.83	187.80	1.622	Minor Risk
18,800.00	11,620.00	19,004.67	11,820.00	113.81	114.23	-130.99	-7,260.97	447.02	304.63	115.70	188.93	1.612	Minor Risk
18,850.00	11,620.00	19,054.67	11,820.00	114.49	114.91	-130.99	-7,310.96	447.33	304.63	114.57	190.06	1.603	Minor Risk
18,900.00	11,620.00	19,104.67	11,820.00	115.17	115.59	-130.99	-7,360.96	447.64	304.63	113.44	191.19	1.593	Minor Risk
18,950.00	11,620.00	19,154.67	11,820.00	115.85	116.27	-130.99	-7,410.96	447.95	304.63	112.31	192.32	1.584	Minor Risk
19,000.00	11,620.00	19,204.67	11,820.00	116.53	116.95	-130.99	-7,460.96	448.26	304.63	111.18	193.45	1.575	Minor Risk
19,050.00	11,620.00	19,254.67	11,820.00	117.22	117.63	-130.99	-7,510.96	448.57	304.63	110.04	194.59	1.566	Minor Risk
19,100.00	11,620.00	19,304.67	11,820.00	117.90	118.31	-130.99	-7,560.96	448.88	304.63	108.91	195.72	1.556	Minor Risk
19,150.00	11,620.00	19,354.67	11,820.00	118.58	118.99	-130.99	-7,610.96	449.19	304.63	107.77	196.86	1.547	Minor Risk
19,200.00	11,620.00	19,404.67	11,820.00	119.27	119.68	-130.99	-7,660.96	449.50	304.63	106.64	197.99	1.539	Minor Risk
19,250.00	11,620.00	19,454.68	11,820.00	119.95	120.36	-130.99	-7,710.96	449.82	304.63	105.50	199.13	1.530	Minor Risk
19,300.00	11,620.00	19,504.68	11,820.00	120.63	121.04	-130.99	-7,760.96	450.13	304.63	104.36	200.27	1.521	Minor Risk
19,350.00	11,620.00	19,554.68	11,820.00	121.32	121.73	-130.99	-7,810.95	450.44	304.63	103.22	201.41	1.513	Minor Risk
19,400.00	11,620.00	19,604.68	11,820.00	122.01	122.41	-130.99	-7,860.95	450.75	304.63	102.08	202.55	1.504	Minor Risk
19,450.00	11,620.00	19,654.68	11,820.00	122.69	123.09	-130.99	-7,910.95	451.06	304.63	100.94	203.69	1.496	Major Risk
19,500.00	11,620.00	19,704.68	11,820.00	123.38	123.78	-130.99	-7,960.95	451.37	304.63	99.80	204.83	1.487	Major Risk
19,550.00	11,620.00	19,754.68	11,820.00	124.07	124.47	-130.99	-8,010.95	451.68	304.63	98.66	205.97	1.479	Major Risk
19,600.00	11,620.00	19,804.68	11,820.00	124.76	125.15	-130.99	-8,060.95	451.99	304.63	97.51	207.12	1.471	Major Risk
19,650.00	11,620.00	19,854.68	11,820.00	125.44	125.84	-130.99	-8,110.95	452.30	304.63	96.37	208.26	1.463	Major Risk
19,700.00	11,620.00	19,904.68	11,820.00	126.13	126.53	-130.99	-8,160.95	452.61	304.63	95.22	209.40	1.455	Major Risk
19,750.00	11,620.00	19,954.68	11,820.00	126.82	127.21	-130.99	-8,210.95	452.92	304.63	94.08	210.55	1.447	Major Risk
19,800.00	11,620.00	20,004.68	11,820.00	127.51	127.90	-130.99	-8,260.95	453.23	304.63	92.93	211.70	1.439	Major Risk
19,850.00	11,620.00	20,054.68	11,820.00	128.20	128.59	-130.99	-8,310.95	453.54	304.63	91.78	212.84	1.431	Major Risk
19,900.00	11,620.00	20,104.68	11,820.00	128.89	129.28	-130.99	-8,360.94	453.85	304.63	90.64	213.99	1.424	Major Risk
19,950.00	11,620.00	20,154.68	11,820.00	129.58	129.97	-130.99	-8,410.94	454.16	304.63	89.49	215.14	1.416	Major Risk
20,000.00	11,620.00	20,204.68	11,820.00	130.28	130.66	-130.99	-8,460.94	454.47	304.63	88.34	216.29	1.408	Major Risk
20,050.00	11,620.00	20,254.68	11,820.00	130.97	131.35	-130.99	-8,510.94	454.78	304.63	87.19	217.44	1.401	Major Risk
20,100.00	11,620.00	20,304.68	11,820.00	131.66	132.04	-130.99	-8,560.94	455.09	304.63	86.04	218.59	1.394	Major Risk
20,150.00	11,620.00	20,354.68	11,820.00	132.35	132.73	-130.99	-8,610.94	455.40	304.63	84.88	219.74	1.386	Major Risk
20,200.00	11,620.00	20,404.68	11,820.00	133.05	133.43	-130.99	-8,660.94	455.71	304.63	83.73	220.89	1.379	Major Risk
20,250.00	11,620.00	20,454.68	11,820.00	133.74	134.12	-130.99	-8,710.94	456.02	304.63	82.58	222.05	1.372	Major Risk
20,300.00	11,620.00	20,504.68	11,820.00	134.43	134.81	-130.99	-8,760.94	456.33	304.63	81.43	223.20	1.365	Major Risk
20,350.00	11,620.00	20,554.68	11,820.00	135.13	135.50	-130.99	-8,810.94	456.64	304.63	80.27	224.36	1.358	Major Risk
20,400.00	11,620.00	20,604.68	11,820.00	135.82	136.20	-130.99	-8,860.93	456.95	304.63	79.12	225.51	1.351	Major Risk
20,450.00	11,620.00	20,654.68	11,820.00	136.52	136.89	-130.99	-8,910.93	457.26	304.63	77.96	226.67	1.344	Major Risk
20,500.00	11,620.00	20,704.68	11,820.00	137.21	137.58	-130.99	-8,960.93	457.57	304.63	76.80	227.82	1.337	Major Risk
20,550.00	11,620.00	20,754.68	11,820.00	137.91	138.28	-130.99	-9,010.93	457.88	304.63	75.65	228.98	1.330	Major Risk
20,600.00	11,620.00	20,804.68	11,820.00	138.60	138.97	-130.99	-9,060.93	458.19	304.63	74.49	230.14	1.324	Major Risk
20,650.00	11,620.00	20,854.68	11,820.00	139.30	139.67	-130.99	-9,110.93	458.50	304.63	73.33	231.29	1.317	Major Risk
20,700.00	11,620.00	20,904.68	11,820.00	140.00	140.36	-130.99	-9,160.93	458.81	304.62	72.17	232.45	1.310	Major Risk

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E - Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 5.00 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
20,750.00	11,620.00	20,954.68	11,820.00	140.69	141.06	-130.99	-9,210.93	459.12	304.62	71.01	233.61	1.304	Major Risk
20,800.00	11,620.00	21,004.68	11,820.00	141.39	141.76	-130.99	-9,260.93	459.43	304.62	69.85	234.77	1.298	Major Risk
20,850.00	11,620.00	21,054.68	11,820.00	142.09	142.45	-130.99	-9,310.93	459.74	304.62	68.69	235.93	1.291	Major Risk
20,900.00	11,620.00	21,104.68	11,820.00	142.79	143.15	-130.99	-9,360.93	460.05	304.62	67.53	237.09	1.285	Major Risk
20,950.00	11,620.00	21,154.68	11,820.00	143.49	143.85	-130.99	-9,410.92	460.36	304.62	66.37	238.25	1.279	Major Risk
21,000.00	11,620.00	21,204.68	11,820.00	144.18	144.54	-130.99	-9,460.92	460.67	304.62	65.21	239.41	1.272	Major Risk
21,050.00	11,620.00	21,254.68	11,820.00	144.88	145.24	-130.99	-9,510.92	460.98	304.62	64.05	240.58	1.266	Major Risk
21,100.00	11,620.00	21,304.68	11,820.00	145.58	145.94	-130.99	-9,560.92	461.29	304.62	62.89	241.74	1.260	Major Risk
21,150.00	11,620.00	21,354.68	11,820.00	146.28	146.64	-130.99	-9,610.92	461.60	304.62	61.72	242.90	1.254	Major Risk
21,200.00	11,620.00	21,404.68	11,820.00	146.98	147.34	-130.99	-9,660.92	461.91	304.62	60.56	244.07	1.248	Major Risk
21,250.00	11,620.00	21,454.68	11,820.00	147.68	148.03	-130.99	-9,710.92	462.22	304.62	59.39	245.23	1.242	Major Risk
21,300.00	11,620.00	21,504.68	11,820.00	148.38	148.73	-130.99	-9,760.92	462.53	304.62	58.23	246.39	1.236	Major Risk
21,350.00	11,620.00	21,554.68	11,820.00	149.08	149.43	-130.99	-9,810.92	462.84	304.62	57.06	247.56	1.231	Major Risk
21,400.00	11,620.00	21,604.68	11,820.00	149.78	150.13	-130.99	-9,860.92	463.15	304.62	55.90	248.73	1.225	Major Risk
21,450.00	11,620.00	21,654.68	11,820.00	150.48	150.83	-130.99	-9,910.91	463.46	304.62	54.73	249.89	1.219	Major Risk
21,500.00	11,620.00	21,704.68	11,820.00	151.19	151.53	-130.99	-9,960.91	463.77	304.62	53.56	251.06	1.213	Major Risk
21,550.00	11,620.00	21,754.68	11,820.00	151.89	152.23	-130.99	-10,010.91	464.08	304.62	52.40	252.22	1.208	Major Risk
21,600.00	11,620.00	21,804.68	11,820.00	152.59	152.93	-130.99	-10,060.91	464.39	304.62	51.23	253.39	1.202	Major Risk
21,650.00	11,620.00	21,854.68	11,820.00	153.29	153.64	-130.99	-10,110.91	464.70	304.62	50.06	254.56	1.197	Major Risk
21,700.00	11,620.00	21,904.68	11,820.00	153.99	154.34	-130.99	-10,160.91	465.01	304.62	48.89	255.73	1.191	Major Risk
21,750.00	11,620.00	21,954.68	11,820.00	154.70	155.04	-130.99	-10,210.91	465.32	304.62	47.72	256.90	1.186	Major Risk
21,800.00	11,620.00	22,004.68	11,820.00	155.40	155.74	-130.99	-10,260.91	465.63	304.62	46.56	258.07	1.180	Major Risk
21,850.00	11,620.00	22,054.68	11,820.00	156.10	156.44	-130.99	-10,310.91	465.94	304.62	45.39	259.24	1.175	Major Risk
21,864.06	11,620.00	22,068.73	11,820.00	156.30	156.64	-130.99	-10,324.96	466.03	304.62	45.06	259.56	1.174	Major Risk, SF

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - 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
10,900.00	10,896.62	21,729.53	11,620.00	39.15	154.96	-90.36	151.59	-1,150.11	1,496.06	1,315.91	180.15	8.305	
10,950.00	10,946.62	21,729.53	11,620.00	39.32	154.96	-90.36	151.59	-1,150.11	1,473.26	1,291.25	182.01	8.094	
11,000.00	10,996.62	21,729.53	11,620.00	39.50	154.96	-90.36	151.59	-1,150.11	1,451.82	1,268.00	183.82	7.898	
11,050.00	11,046.62	21,729.53	11,620.00	39.67	154.96	-90.36	151.59	-1,150.11	1,431.81	1,246.25	185.56	7.716	
11,100.00	11,096.56	21,727.38	11,620.00	39.84	154.93	91.87	149.44	-1,150.10	1,413.31	1,226.13	187.18	7.550	
11,150.00	11,146.12	21,720.90	11,620.00	40.00	154.83	93.38	142.96	-1,150.06	1,396.48	1,207.84	188.63	7.403	
11,200.00	11,194.92	21,710.11	11,620.00	40.15	154.68	94.50	132.17	-1,149.99	1,381.43	1,191.54	189.89	7.275	
11,250.00	11,242.61	21,704.88	11,620.00	40.30	154.61	95.25	117.18	-1,149.89	1,368.26	1,177.19	191.07	7.161	
11,300.00	11,288.80	21,676.02	11,620.00	40.43	154.20	95.64	98.09	-1,149.77	1,356.97	1,165.20	191.76	7.076	
11,350.00	11,333.15	21,652.98	11,620.00	40.56	153.88	95.72	75.04	-1,149.62	1,347.53	1,155.16	192.37	7.005	
11,400.00	11,375.33	21,626.15	11,620.00	40.68	153.51	95.52	48.21	-1,149.45	1,339.86	1,147.10	192.76	6.951	
11,450.00	11,415.01	21,604.25	11,620.00	40.78	153.20	95.09	17.82	-1,149.26	1,333.81	1,140.75	193.06	6.909	
11,500.00	11,451.88	21,562.01	11,620.00	40.89	152.61	94.48	-15.93	-1,149.05	1,329.23	1,136.30	192.94	6.889	
11,550.00	11,485.68	21,525.18	11,620.00	41.01	152.09	93.74	-52.75	-1,148.81	1,325.92	1,133.15	192.77	6.878	
11,600.00	11,516.14	21,485.55	11,620.00	41.13	151.53	92.92	-92.38	-1,148.56	1,323.67	1,131.21	192.46	6.878 SF	
11,650.00	11,543.03	21,443.42	11,620.00	41.24	150.94	92.08	-134.52	-1,148.29	1,322.26	1,130.22	192.04	6.885	
11,700.00	11,566.14	21,400.90	11,620.00	41.36	150.35	91.27	-178.84	-1,148.01	1,321.48	1,129.92	191.56	6.898 ES	
11,750.00	11,585.30	21,352.93	11,620.00	41.47	149.68	90.54	-225.00	-1,147.71	1,321.15	1,130.17	190.98	6.918	
11,796.20	11,599.37	21,308.94	11,620.00	41.58	149.06	89.97	-269.00	-1,147.43	1,321.07	1,130.65	190.43	6.937	
11,800.00	11,600.37	21,305.27	11,620.00	41.58	149.01	89.92	-272.66	-1,147.41	1,321.07	1,130.69	190.38	6.939	
11,850.00	11,611.22	21,256.48	11,620.00	41.70	148.33	89.46	-321.45	-1,147.10	1,321.12	1,131.36	189.77	6.962	
11,900.00	11,617.78	21,206.93	11,620.00	41.81	147.63	89.17	-371.00	-1,146.78	1,321.19	1,132.04	189.15	6.985	
11,950.00	11,620.00	21,156.99	11,620.00	41.92	146.94	89.07	-420.94	-1,146.47	1,321.22	1,132.67	188.55	7.007	
12,000.00	11,620.00	21,106.99	11,620.00	42.04	146.24	89.07	-470.93	-1,146.15	1,321.21	1,133.24	187.97	7.029	
12,050.00	11,620.00	21,056.99	11,620.00	42.17	145.54	89.07	-520.93	-1,145.83	1,321.20	1,133.80	187.40	7.050	
12,100.00	11,620.00	21,006.99	11,620.00	42.31	144.84	89.07	-570.93	-1,145.51	1,321.20	1,134.36	186.84	7.071	
12,150.00	11,620.00	20,956.99	11,620.00	42.47	144.14	89.07	-620.93	-1,145.19	1,321.19	1,134.89	186.29	7.092	
12,200.00	11,620.00	20,906.99	11,620.00	42.62	143.45	89.07	-670.93	-1,144.87	1,321.18	1,135.43	185.75	7.113	
12,250.00	11,620.00	20,856.99	11,620.00	42.80	142.75	89.07	-720.93	-1,144.56	1,321.17	1,135.94	185.24	7.132	
12,300.00	11,620.00	20,806.99	11,620.00	42.99	142.05	89.07	-770.93	-1,144.24	1,321.16	1,136.45	184.72	7.152	
12,350.00	11,620.00	20,756.99	11,620.00	43.19	141.36	89.07	-820.93	-1,143.92	1,321.16	1,136.93	184.22	7.171	
12,400.00	11,620.00	20,706.99	11,620.00	43.39	140.66	89.07	-870.93	-1,143.60	1,321.15	1,137.42	183.73	7.191	
12,450.00	11,620.00	20,656.99	11,620.00	43.62	139.97	89.07	-920.93	-1,143.28	1,321.14	1,137.88	183.26	7.209	
12,500.00	11,620.00	20,606.99	11,620.00	43.85	139.27	89.07	-970.92	-1,142.96	1,321.13	1,138.34	182.79	7.228	
12,550.00	11,620.00	20,556.99	11,620.00	44.09	138.58	89.07	-1,020.92	-1,142.65	1,321.12	1,138.78	182.34	7.245	
12,600.00	11,620.00	20,506.99	11,620.00	44.34	137.88	89.07	-1,070.92	-1,142.33	1,321.12	1,139.22	181.89	7.263	
12,650.00	11,620.00	20,456.99	11,620.00	44.61	137.19	89.07	-1,120.92	-1,142.01	1,321.11	1,139.64	181.47	7.280	
12,700.00	11,620.00	20,406.99	11,620.00	44.88	136.49	89.07	-1,170.92	-1,141.69	1,321.10	1,140.06	181.04	7.297	
12,750.00	11,620.00	20,356.99	11,620.00	45.17	135.80	89.07	-1,220.92	-1,141.37	1,321.09	1,140.46	180.63	7.314	
12,800.00	11,620.00	20,306.99	11,620.00	45.46	135.11	89.07	-1,270.92	-1,141.05	1,321.08	1,140.85	180.23	7.330	
12,850.00	11,620.00	20,256.99	11,620.00	45.77	134.41	89.07	-1,320.92	-1,140.74	1,321.08	1,141.23	179.84	7.346	
12,900.00	11,620.00	20,206.99	11,620.00	46.07	133.72	89.07	-1,370.92	-1,140.42	1,321.07	1,141.61	179.46	7.361	
12,950.00	11,620.00	20,156.99	11,620.00	46.40	133.03	89.07	-1,420.92	-1,140.10	1,321.06	1,141.97	179.09	7.376	
13,000.00	11,620.00	20,106.99	11,620.00	46.73	132.34	89.07	-1,470.91	-1,139.78	1,321.05	1,142.33	178.73	7.391	
13,050.00	11,620.00	20,056.99	11,620.00	47.07	131.65	89.07	-1,520.91	-1,139.46	1,321.04	1,142.66	178.38	7.406	
13,100.00	11,620.00	20,006.99	11,620.00	47.42	130.96	89.07	-1,570.91	-1,139.14	1,321.04	1,143.00	178.03	7.420	
13,150.00	11,620.00	19,956.99	11,620.00	47.78	130.26	89.07	-1,620.91	-1,138.83	1,321.03	1,143.32	177.70	7.434	
13,200.00	11,620.00	19,906.99	11,620.00	48.14	129.57	89.07	-1,670.91	-1,138.51	1,321.02	1,143.65	177.37	7.448	
13,250.00	11,620.00	19,856.99	11,620.00	48.52	128.89	89.07	-1,720.91	-1,138.19	1,321.01	1,143.95	177.06	7.461	
13,300.00	11,620.00	19,806.99	11,620.00	48.90	128.20	89.07	-1,770.91	-1,137.87	1,321.00	1,144.25	176.75	7.474	
13,350.00	11,620.00	19,756.99	11,620.00	49.29	127.51	89.07	-1,820.91	-1,137.55	1,321.00	1,144.54	176.45	7.486	
13,400.00	11,620.00	19,706.99	11,620.00	49.69	126.82	89.07	-1,870.91	-1,137.23	1,320.99	1,144.83	176.16	7.499	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - 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
13,450.00	11,620.00	19,656.99	11,620.00	50.09	126.13	89.07	-1,920.91	-1,136.91	1,320.98	1,145.10	175.88	7.511	
13,500.00	11,620.00	19,606.99	11,620.00	50.50	125.44	89.07	-1,970.90	-1,136.60	1,320.97	1,145.37	175.60	7.523	
13,550.00	11,620.00	19,556.99	11,620.00	50.93	124.76	89.07	-2,020.90	-1,136.28	1,320.96	1,145.63	175.33	7.534	
13,600.00	11,620.00	19,506.99	11,620.00	51.35	124.07	89.07	-2,070.90	-1,135.96	1,320.96	1,145.89	175.07	7.545	
13,650.00	11,620.00	19,456.99	11,620.00	51.79	123.39	89.07	-2,120.90	-1,135.64	1,320.95	1,146.13	174.82	7.556	
13,700.00	11,620.00	19,406.99	11,620.00	52.22	122.70	89.07	-2,170.90	-1,135.32	1,320.94	1,146.37	174.57	7.567	
13,750.00	11,620.00	19,356.99	11,620.00	52.67	122.01	89.07	-2,220.90	-1,135.00	1,320.93	1,146.60	174.33	7.577	
13,800.00	11,620.00	19,306.99	11,620.00	53.12	121.33	89.07	-2,270.90	-1,134.69	1,320.92	1,146.83	174.10	7.587	
13,850.00	11,620.00	19,256.99	11,620.00	53.58	120.65	89.07	-2,320.90	-1,134.37	1,320.92	1,147.04	173.87	7.597	
13,900.00	11,620.00	19,206.99	11,620.00	54.04	119.96	89.07	-2,370.90	-1,134.05	1,320.91	1,147.26	173.65	7.607	
13,950.00	11,620.00	19,156.99	11,620.00	54.52	119.28	89.07	-2,420.89	-1,133.73	1,320.90	1,147.46	173.44	7.616	
14,000.00	11,620.00	19,106.99	11,620.00	54.99	118.60	89.07	-2,470.89	-1,133.41	1,320.89	1,147.66	173.23	7.625	
14,050.00	11,620.00	19,056.99	11,620.00	55.47	117.92	89.07	-2,520.89	-1,133.09	1,320.88	1,147.85	173.03	7.634	
14,100.00	11,620.00	19,006.99	11,620.00	55.96	117.24	89.07	-2,570.89	-1,132.78	1,320.87	1,148.04	172.83	7.642	
14,150.00	11,620.00	18,956.99	11,620.00	56.45	116.56	89.07	-2,620.89	-1,132.46	1,320.87	1,148.22	172.65	7.651	
14,200.00	11,620.00	18,906.99	11,620.00	56.95	115.88	89.07	-2,670.89	-1,132.14	1,320.86	1,148.40	172.46	7.659	
14,250.00	11,620.00	18,856.99	11,620.00	57.45	115.20	89.07	-2,720.89	-1,131.82	1,320.85	1,148.57	172.29	7.667	
14,300.00	11,620.00	18,806.99	11,620.00	57.96	114.52	89.07	-2,770.89	-1,131.50	1,320.84	1,148.73	172.11	7.674	
14,350.00	11,620.00	18,756.99	11,620.00	58.47	113.84	89.07	-2,820.89	-1,131.18	1,320.83	1,148.89	171.94	7.682	
14,400.00	11,620.00	18,706.99	11,620.00	58.98	113.16	89.07	-2,870.89	-1,130.87	1,320.83	1,149.05	171.78	7.689	
14,450.00	11,620.00	18,656.99	11,620.00	59.51	112.49	89.07	-2,920.88	-1,130.55	1,320.82	1,149.19	171.62	7.696	
14,500.00	11,620.00	18,606.99	11,620.00	60.03	111.81	89.07	-2,970.88	-1,130.23	1,320.81	1,149.34	171.47	7.703	
14,550.00	11,620.00	18,556.99	11,620.00	60.56	111.13	89.07	-3,020.88	-1,129.91	1,320.80	1,149.48	171.32	7.709	
14,600.00	11,620.00	18,506.99	11,620.00	61.09	110.46	89.07	-3,070.88	-1,129.59	1,320.79	1,149.61	171.18	7.716	
14,650.00	11,620.00	18,456.99	11,620.00	61.63	109.78	89.07	-3,120.88	-1,129.27	1,320.79	1,149.74	171.04	7.722	
14,700.00	11,620.00	18,406.99	11,620.00	62.17	109.11	89.07	-3,170.88	-1,128.96	1,320.78	1,149.87	170.91	7.728	
14,750.00	11,620.00	18,356.99	11,620.00	62.72	108.44	89.07	-3,220.88	-1,128.64	1,320.77	1,149.99	170.78	7.734	
14,800.00	11,620.00	18,306.99	11,620.00	63.26	107.77	89.07	-3,270.88	-1,128.32	1,320.76	1,150.11	170.66	7.739	
14,850.00	11,620.00	18,256.99	11,620.00	63.82	107.10	89.07	-3,320.88	-1,128.00	1,320.75	1,150.22	170.54	7.745	
14,900.00	11,620.00	18,206.99	11,620.00	64.37	106.42	89.07	-3,370.88	-1,127.68	1,320.75	1,150.33	170.42	7.750	
14,950.00	11,620.00	18,156.99	11,620.00	64.93	105.76	89.07	-3,420.87	-1,127.36	1,320.74	1,150.43	170.31	7.755	
15,000.00	11,620.00	18,106.99	11,620.00	65.49	105.09	89.07	-3,470.87	-1,127.05	1,320.73	1,150.53	170.20	7.760	
15,050.00	11,620.00	18,056.99	11,620.00	66.06	104.42	89.07	-3,520.87	-1,126.73	1,320.72	1,150.62	170.10	7.764	
15,100.00	11,620.00	18,006.99	11,620.00	66.63	103.75	89.07	-3,570.87	-1,126.41	1,320.71	1,150.72	170.00	7.769	
15,150.00	11,620.00	17,956.99	11,620.00	67.20	103.08	89.07	-3,620.87	-1,126.09	1,320.71	1,150.80	169.90	7.773	
15,200.00	11,620.00	17,906.99	11,620.00	67.78	102.42	89.07	-3,670.87	-1,125.77	1,320.70	1,150.89	169.81	7.778	
15,250.00	11,620.00	17,856.99	11,620.00	68.36	101.75	89.07	-3,720.87	-1,125.45	1,320.69	1,150.97	169.72	7.781	
15,300.00	11,620.00	17,806.99	11,620.00	68.94	101.09	89.07	-3,770.87	-1,125.13	1,320.68	1,151.05	169.64	7.785	
15,350.00	11,620.00	17,756.99	11,620.00	69.52	100.43	89.07	-3,820.87	-1,124.82	1,320.67	1,151.12	169.56	7.789	
15,400.00	11,620.00	17,706.99	11,620.00	70.11	99.76	89.07	-3,870.87	-1,124.50	1,320.67	1,151.19	169.48	7.793	
15,450.00	11,620.00	17,656.99	11,620.00	70.70	99.10	89.07	-3,920.86	-1,124.18	1,320.66	1,151.25	169.41	7.796	
15,500.00	11,620.00	17,606.99	11,620.00	71.29	98.44	89.07	-3,970.86	-1,123.86	1,320.65	1,151.31	169.34	7.799	
15,550.00	11,620.00	17,556.99	11,620.00	71.88	97.78	89.07	-4,020.86	-1,123.54	1,320.64	1,151.37	169.27	7.802	
15,600.00	11,620.00	17,506.99	11,620.00	72.48	97.13	89.07	-4,070.86	-1,123.22	1,320.63	1,151.43	169.21	7.805	
15,650.00	11,620.00	17,456.99	11,620.00	73.08	96.47	89.07	-4,120.86	-1,122.91	1,320.63	1,151.48	169.15	7.808	
15,700.00	11,620.00	17,406.99	11,620.00	73.68	95.81	89.07	-4,170.86	-1,122.59	1,320.62	1,151.53	169.09	7.810	
15,750.00	11,620.00	17,356.99	11,620.00	74.28	95.16	89.07	-4,220.86	-1,122.27	1,320.61	1,151.57	169.04	7.812	
15,800.00	11,620.00	17,306.99	11,620.00	74.89	94.50	89.07	-4,270.86	-1,121.95	1,320.60	1,151.61	168.99	7.815	
15,850.00	11,620.00	17,256.99	11,620.00	75.50	93.85	89.07	-4,320.86	-1,121.63	1,320.59	1,151.65	168.94	7.817	
15,900.00	11,620.00	17,206.99	11,620.00	76.11	93.20	89.07	-4,370.86	-1,121.31	1,320.59	1,151.69	168.90	7.819	
15,950.00	11,620.00	17,156.99	11,620.00	76.72	92.55	89.07	-4,420.85	-1,121.00	1,320.58	1,151.72	168.86	7.821	
16,000.00	11,620.00	17,106.99	11,620.00	77.33	91.90	89.07	-4,470.85	-1,120.68	1,320.57	1,151.75	168.82	7.822	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - 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
16,050.00	11,620.00	17,056.99	11,620.00	77.95	91.25	89.07	-4,520.85	-1,120.36	1,320.56	1,151.77	168.79	7.824	
16,100.00	11,620.00	17,006.99	11,620.00	78.57	90.60	89.07	-4,570.85	-1,120.04	1,320.55	1,151.80	168.76	7.825	
16,150.00	11,620.00	16,956.99	11,620.00	79.19	89.96	89.07	-4,620.85	-1,119.72	1,320.55	1,151.81	168.73	7.826	
16,200.00	11,620.00	16,906.99	11,620.00	79.81	89.31	89.07	-4,670.85	-1,119.40	1,320.54	1,151.83	168.71	7.827	
16,250.00	11,620.00	16,856.99	11,620.00	80.44	88.67	89.07	-4,720.85	-1,119.09	1,320.53	1,151.84	168.69	7.828	
16,300.00	11,620.00	16,806.99	11,620.00	81.06	88.03	89.07	-4,770.85	-1,118.77	1,320.52	1,151.86	168.67	7.829	
16,350.00	11,620.00	16,756.99	11,620.00	81.69	87.39	89.07	-4,820.85	-1,118.45	1,320.51	1,151.86	168.65	7.830	
16,400.00	11,620.00	16,706.99	11,620.00	82.32	86.75	89.07	-4,870.85	-1,118.13	1,320.51	1,151.87	168.64	7.830	
16,450.00	11,620.00	16,656.99	11,620.00	82.95	86.11	89.07	-4,920.84	-1,117.81	1,320.50	1,151.87	168.63	7.831	
16,500.00	11,620.00	16,606.99	11,620.00	83.58	85.48	89.07	-4,970.84	-1,117.49	1,320.49	1,151.87	168.62	7.831	
16,550.00	11,620.00	16,556.99	11,620.00	84.21	84.84	89.07	-5,020.84	-1,117.18	1,320.48	1,151.86	168.62	7.831	
16,600.00	11,620.00	16,506.99	11,620.00	84.85	84.21	89.07	-5,070.84	-1,116.86	1,320.47	1,151.85	168.62	7.831	
16,650.00	11,620.00	16,456.99	11,620.00	85.49	83.58	89.07	-5,120.84	-1,116.54	1,320.47	1,151.84	168.63	7.831	
16,700.00	11,620.00	16,406.99	11,620.00	86.12	82.95	89.07	-5,170.84	-1,116.22	1,320.46	1,151.83	168.63	7.830	
16,750.00	11,620.00	16,356.99	11,620.00	86.76	82.32	89.07	-5,220.84	-1,115.90	1,320.45	1,151.81	168.64	7.830	
16,800.00	11,620.00	16,306.99	11,620.00	87.40	81.69	89.07	-5,270.84	-1,115.58	1,320.44	1,151.79	168.65	7.829	
16,850.00	11,620.00	16,256.99	11,620.00	88.05	81.07	89.07	-5,320.84	-1,115.26	1,320.43	1,151.76	168.67	7.829	
16,900.00	11,620.00	16,206.99	11,620.00	88.69	80.44	89.07	-5,370.84	-1,114.95	1,320.43	1,151.74	168.69	7.828	
16,950.00	11,620.00	16,156.99	11,620.00	89.34	79.82	89.07	-5,420.83	-1,114.63	1,320.42	1,151.71	168.71	7.827	
17,000.00	11,620.00	16,106.99	11,620.00	89.98	79.20	89.07	-5,470.83	-1,114.31	1,320.41	1,151.68	168.73	7.825	
17,050.00	11,620.00	16,056.99	11,620.00	90.63	78.58	89.07	-5,520.83	-1,113.99	1,320.40	1,151.64	168.76	7.824	
17,100.00	11,620.00	16,006.99	11,620.00	91.28	77.97	89.07	-5,570.83	-1,113.67	1,320.39	1,151.60	168.79	7.823	
17,150.00	11,620.00	15,956.99	11,620.00	91.93	77.35	89.07	-5,620.83	-1,113.35	1,320.39	1,151.56	168.83	7.821	
17,200.00	11,620.00	15,906.99	11,620.00	92.58	76.74	89.07	-5,670.83	-1,113.04	1,320.38	1,151.52	168.86	7.819	
17,250.00	11,620.00	15,856.99	11,620.00	93.23	76.13	89.07	-5,720.83	-1,112.72	1,320.37	1,151.47	168.90	7.817	
17,300.00	11,620.00	15,806.99	11,620.00	93.89	75.52	89.07	-5,770.83	-1,112.40	1,320.36	1,151.42	168.94	7.815	
17,350.00	11,620.00	15,756.99	11,620.00	94.54	74.92	89.07	-5,820.83	-1,112.08	1,320.35	1,151.36	168.99	7.813	
17,400.00	11,620.00	15,706.99	11,620.00	95.20	74.31	89.07	-5,870.83	-1,111.76	1,320.34	1,151.30	169.04	7.811	
17,450.00	11,620.00	15,656.99	11,620.00	95.85	73.71	89.07	-5,920.82	-1,111.44	1,320.34	1,151.24	169.10	7.808	
17,500.00	11,620.00	15,606.99	11,620.00	96.51	73.11	89.07	-5,970.82	-1,111.13	1,320.33	1,151.18	169.15	7.806	
17,550.00	11,620.00	15,556.99	11,620.00	97.17	72.52	89.07	-6,020.82	-1,110.81	1,320.32	1,151.11	169.21	7.803	
17,600.00	11,620.00	15,506.99	11,620.00	97.83	71.92	89.07	-6,070.82	-1,110.49	1,320.31	1,151.04	169.27	7.800	
17,650.00	11,620.00	15,456.99	11,620.00	98.49	71.33	89.07	-6,120.82	-1,110.17	1,320.30	1,150.96	169.34	7.797	
17,700.00	11,620.00	15,406.99	11,620.00	99.15	70.74	89.07	-6,170.82	-1,109.85	1,320.30	1,150.89	169.41	7.793	
17,750.00	11,620.00	15,356.99	11,620.00	99.81	70.16	89.07	-6,220.82	-1,109.53	1,320.29	1,150.80	169.49	7.790	
17,800.00	11,620.00	15,306.99	11,620.00	100.48	69.57	89.07	-6,270.82	-1,109.22	1,320.28	1,150.72	169.56	7.786	
17,850.00	11,620.00	15,256.99	11,620.00	101.14	68.99	89.07	-6,320.82	-1,108.90	1,320.27	1,150.63	169.64	7.783	
17,900.00	11,620.00	15,206.99	11,620.00	101.81	68.41	89.07	-6,370.81	-1,108.58	1,320.26	1,150.54	169.73	7.779	
17,950.00	11,620.00	15,156.99	11,620.00	102.47	67.84	89.07	-6,420.81	-1,108.26	1,320.26	1,150.44	169.82	7.775	
18,000.00	11,620.00	15,106.99	11,620.00	103.14	67.27	89.07	-6,470.81	-1,107.94	1,320.25	1,150.34	169.91	7.770	
18,050.00	11,620.00	15,056.99	11,620.00	103.81	66.70	89.07	-6,520.81	-1,107.62	1,320.24	1,150.23	170.01	7.766	
18,100.00	11,620.00	15,006.99	11,620.00	104.48	66.13	89.07	-6,570.81	-1,107.31	1,320.23	1,150.13	170.11	7.761	
18,150.00	11,620.00	14,956.99	11,620.00	105.15	65.57	89.07	-6,620.81	-1,106.99	1,320.22	1,150.01	170.21	7.756	
18,200.00	11,620.00	14,906.99	11,620.00	105.82	65.01	89.07	-6,670.81	-1,106.67	1,320.22	1,149.90	170.32	7.752	
18,250.00	11,620.00	14,856.99	11,620.00	106.49	64.45	89.07	-6,720.81	-1,106.35	1,320.21	1,149.78	170.43	7.746	
18,300.00	11,620.00	14,806.99	11,620.00	107.16	63.90	89.07	-6,770.81	-1,106.03	1,320.20	1,149.65	170.55	7.741	
18,350.00	11,620.00	14,756.99	11,620.00	107.83	63.35	89.07	-6,820.81	-1,105.71	1,320.19	1,149.52	170.67	7.735	
18,400.00	11,620.00	14,706.99	11,620.00	108.51	62.81	89.07	-6,870.80	-1,105.40	1,320.18	1,149.39	170.79	7.730	
18,450.00	11,620.00	14,656.99	11,620.00	109.18	62.27	89.07	-6,920.80	-1,105.08	1,320.18	1,149.25	170.92	7.724	
18,500.00	11,620.00	14,606.99	11,620.00	109.86	61.73	89.07	-6,970.80	-1,104.76	1,320.17	1,149.11	171.06	7.718	
18,550.00	11,620.00	14,556.99	11,620.00	110.53	61.19	89.07	-7,020.80	-1,104.44	1,320.16	1,148.96	171.20	7.711	
18,600.00	11,620.00	14,506.99	11,620.00	111.21	60.66	89.07	-7,070.80	-1,104.12	1,320.15	1,148.81	171.34	7.705	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - 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	11,620.00	14,456.99	11,620.00	111.88	60.14	89.07	-7,120.80	-1,103.80	1,320.14	1,148.66	171.49	7.698	
18,700.00	11,620.00	14,406.99	11,620.00	112.56	59.62	89.07	-7,170.80	-1,103.48	1,320.14	1,148.50	171.64	7.691	
18,750.00	11,620.00	14,356.99	11,620.00	113.24	59.10	89.07	-7,220.80	-1,103.17	1,320.13	1,148.33	171.80	7.684	
18,800.00	11,620.00	14,306.99	11,620.00	113.92	58.59	89.07	-7,270.80	-1,102.85	1,320.12	1,148.16	171.96	7.677	
18,850.00	11,620.00	14,256.99	11,620.00	114.60	58.08	89.07	-7,320.80	-1,102.53	1,320.11	1,147.98	172.13	7.669	
18,900.00	11,620.00	14,206.99	11,620.00	115.28	57.57	89.07	-7,370.79	-1,102.21	1,320.10	1,147.80	172.30	7.662	
18,950.00	11,620.00	14,156.99	11,620.00	115.96	57.08	89.07	-7,420.79	-1,101.89	1,320.10	1,147.61	172.48	7.653	
19,000.00	11,620.00	14,106.99	11,620.00	116.64	56.58	89.07	-7,470.79	-1,101.57	1,320.09	1,147.42	172.67	7.645	
19,050.00	11,620.00	14,056.99	11,620.00	117.32	56.09	89.07	-7,520.79	-1,101.26	1,320.08	1,147.22	172.86	7.637	
19,100.00	11,620.00	14,006.99	11,620.00	118.00	55.61	89.07	-7,570.79	-1,100.94	1,320.07	1,147.02	173.05	7.628	
19,150.00	11,620.00	13,956.99	11,620.00	118.69	55.13	89.07	-7,620.79	-1,100.62	1,320.06	1,146.81	173.26	7.619	
19,200.00	11,620.00	13,906.99	11,620.00	119.37	54.66	89.07	-7,670.79	-1,100.30	1,320.06	1,146.59	173.46	7.610	
19,250.00	11,620.00	13,856.99	11,620.00	120.05	54.19	89.07	-7,720.79	-1,099.98	1,320.05	1,146.37	173.68	7.600	
19,300.00	11,620.00	13,806.99	11,620.00	120.74	53.73	89.07	-7,770.79	-1,099.66	1,320.04	1,146.14	173.90	7.591	
19,350.00	11,620.00	13,756.99	11,620.00	121.42	53.28	89.07	-7,820.79	-1,099.35	1,320.03	1,145.90	174.13	7.581	
19,400.00	11,620.00	13,706.99	11,620.00	122.11	52.83	89.07	-7,870.78	-1,099.03	1,320.02	1,145.66	174.36	7.571	
19,450.00	11,620.00	13,656.99	11,620.00	122.80	52.39	89.07	-7,920.78	-1,098.71	1,320.02	1,145.41	174.61	7.560	
19,500.00	11,620.00	13,606.99	11,620.00	123.48	51.95	89.07	-7,970.78	-1,098.39	1,320.01	1,145.16	174.85	7.549	
19,550.00	11,620.00	13,556.99	11,620.00	124.17	51.52	89.07	-8,020.78	-1,098.07	1,320.00	1,144.89	175.11	7.538	
19,600.00	11,620.00	13,506.99	11,620.00	124.86	51.10	89.07	-8,070.78	-1,097.75	1,319.99	1,144.62	175.37	7.527	
19,650.00	11,620.00	13,456.99	11,620.00	125.54	50.68	89.07	-8,120.78	-1,097.44	1,319.98	1,144.34	175.64	7.515	
19,700.00	11,620.00	13,406.99	11,620.00	126.23	50.27	89.07	-8,170.78	-1,097.12	1,319.98	1,144.06	175.92	7.503	
19,750.00	11,620.00	13,356.99	11,620.00	126.92	49.87	89.07	-8,220.78	-1,096.80	1,319.97	1,143.76	176.20	7.491	
19,800.00	11,620.00	13,306.99	11,620.00	127.61	49.48	89.07	-8,270.78	-1,096.48	1,319.96	1,143.46	176.50	7.479	
19,850.00	11,620.00	13,256.99	11,620.00	128.30	49.09	89.07	-8,320.78	-1,096.16	1,319.95	1,143.15	176.80	7.466	
19,900.00	11,620.00	13,206.99	11,620.00	128.99	48.71	89.07	-8,370.77	-1,095.84	1,319.94	1,142.84	177.11	7.453	
19,950.00	11,620.00	13,156.99	11,620.00	129.68	48.34	89.07	-8,420.77	-1,095.53	1,319.94	1,142.51	177.43	7.439	
20,000.00	11,620.00	13,106.99	11,620.00	130.37	47.98	89.07	-8,470.77	-1,095.21	1,319.93	1,142.18	177.75	7.426	
20,050.00	11,620.00	13,056.99	11,620.00	131.06	47.63	89.07	-8,520.77	-1,094.89	1,319.92	1,141.83	178.09	7.411	
20,100.00	11,620.00	13,006.99	11,620.00	131.76	47.28	89.07	-8,570.77	-1,094.57	1,319.91	1,141.48	178.43	7.397	
20,150.00	11,620.00	12,956.99	11,620.00	132.45	46.94	89.07	-8,620.77	-1,094.25	1,319.90	1,141.11	178.79	7.382	
20,200.00	11,620.00	12,906.99	11,620.00	133.14	46.61	89.07	-8,670.77	-1,093.93	1,319.90	1,140.74	179.15	7.368	
20,250.00	11,620.00	12,856.99	11,620.00	133.83	46.30	89.07	-8,720.77	-1,093.62	1,319.89	1,140.36	179.53	7.352	
20,300.00	11,620.00	12,806.99	11,620.00	134.53	45.98	89.07	-8,770.77	-1,093.30	1,319.88	1,139.97	179.91	7.336	
20,350.00	11,620.00	12,756.99	11,620.00	135.22	45.69	89.07	-8,820.77	-1,092.98	1,319.87	1,139.57	180.30	7.320	
20,400.00	11,620.00	12,706.99	11,620.00	135.91	45.39	89.07	-8,870.76	-1,092.66	1,319.86	1,139.16	180.70	7.304	
20,450.00	11,620.00	12,656.99	11,620.00	136.61	45.11	89.07	-8,920.76	-1,092.34	1,319.86	1,138.73	181.12	7.287	
20,500.00	11,620.00	12,606.99	11,620.00	137.30	44.84	89.07	-8,970.76	-1,092.02	1,319.85	1,138.30	181.54	7.270	
20,550.00	11,620.00	12,556.99	11,620.00	138.00	44.58	89.07	-9,020.76	-1,091.70	1,319.84	1,137.86	181.98	7.253	
20,600.00	11,620.00	12,506.99	11,620.00	138.69	44.33	89.07	-9,070.76	-1,091.39	1,319.83	1,137.41	182.42	7.235	
20,650.00	11,620.00	12,456.99	11,620.00	139.39	44.10	89.07	-9,120.76	-1,091.07	1,319.82	1,136.94	182.89	7.217	
20,700.00	11,620.00	12,406.99	11,620.00	140.09	43.87	89.07	-9,170.76	-1,090.75	1,319.81	1,136.47	183.35	7.198	
20,750.00	11,620.00	12,356.99	11,620.00	140.78	43.65	89.07	-9,220.76	-1,090.43	1,319.81	1,135.97	183.83	7.179	
20,800.00	11,620.00	12,306.99	11,620.00	141.48	43.45	89.07	-9,270.76	-1,090.11	1,319.80	1,135.48	184.32	7.160	
20,850.00	11,620.00	12,256.99	11,620.00	142.18	43.26	89.07	-9,320.76	-1,089.79	1,319.79	1,134.96	184.83	7.141	
20,900.00	11,620.00	12,206.99	11,620.00	142.87	43.08	89.07	-9,370.75	-1,089.48	1,319.78	1,134.44	185.34	7.121	
20,950.00	11,620.00	12,156.99	11,620.00	143.57	42.92	89.07	-9,420.75	-1,089.16	1,319.77	1,133.90	185.87	7.100	
21,000.00	11,620.00	12,106.99	11,620.00	144.27	42.77	89.07	-9,470.75	-1,088.84	1,319.77	1,133.36	186.41	7.080	
21,050.00	11,620.00	12,056.99	11,620.00	144.97	42.64	89.07	-9,520.75	-1,088.52	1,319.76	1,132.80	186.96	7.059	
21,100.00	11,620.00	12,006.99	11,620.00	145.67	42.52	89.07	-9,570.75	-1,088.20	1,319.75	1,132.23	187.52	7.038	
21,120.07	11,620.00	11,987.13	11,619.97	145.95	42.48	89.07	-9,590.61	-1,088.08	1,319.75	1,132.00	187.75	7.029	CC
21,150.00	11,620.00	11,958.32	11,618.96	146.37	42.43	89.03	-9,619.40	-1,087.89	1,319.76	1,131.67	188.09	7.017	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - 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
21,200.00	11,620.00	11,910.65	11,614.12	147.07	42.35	88.82	-9,666.81	-1,087.59	1,319.85	1,131.20	188.65	6.996	
21,250.00	11,620.00	11,864.09	11,605.60	147.77	42.28	88.45	-9,712.57	-1,087.30	1,320.06	1,130.88	189.18	6.978	
21,300.00	11,620.00	11,819.20	11,593.90	148.47	42.23	87.94	-9,755.90	-1,087.02	1,320.48	1,130.79	189.69	6.961	
21,350.00	11,620.00	11,776.40	11,579.62	149.17	42.18	87.32	-9,796.23	-1,086.77	1,321.21	1,131.05	190.16	6.948	
21,400.00	11,620.00	11,735.99	11,563.40	149.87	42.14	86.62	-9,833.24	-1,086.53	1,322.36	1,131.78	190.59	6.938	
21,450.00	11,620.00	11,698.14	11,545.89	150.57	42.09	85.86	-9,866.78	-1,086.32	1,324.07	1,133.11	190.96	6.934	
21,500.00	11,620.00	11,662.92	11,527.63	151.27	42.05	85.07	-9,896.89	-1,086.13	1,326.47	1,135.20	191.26	6.935	
21,550.00	11,620.00	11,630.30	11,509.10	151.97	42.00	84.27	-9,923.73	-1,085.95	1,329.66	1,138.18	191.49	6.944	
21,600.00	11,620.00	11,600.00	11,490.55	152.67	41.96	83.48	-9,947.68	-1,085.80	1,333.78	1,142.16	191.62	6.961	
21,650.00	11,620.00	11,572.46	11,472.60	153.37	41.91	82.71	-9,968.57	-1,085.67	1,338.92	1,147.26	191.66	6.986	
21,700.00	11,620.00	11,550.00	11,457.24	154.08	41.87	82.05	-9,984.95	-1,085.56	1,345.16	1,153.56	191.60	7.021	
21,750.00	11,620.00	11,523.50	11,438.31	154.78	41.82	81.25	-10,003.49	-1,085.45	1,352.57	1,161.16	191.42	7.066	
21,800.00	11,620.00	11,500.00	11,420.82	155.48	41.77	80.51	-10,019.18	-1,085.35	1,361.22	1,170.10	191.12	7.122	
21,850.00	11,620.00	11,482.10	11,407.07	156.18	41.73	79.93	-10,030.65	-1,085.27	1,371.14	1,180.42	190.72	7.189	
21,864.06	11,620.00	11,476.81	11,402.94	156.38	41.72	79.76	-10,033.95	-1,085.25	1,374.17	1,183.58	190.59	7.210	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - 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
10,800.00	10,796.62	22,102.68	11,820.00	38.80	156.28	-90.36	153.27	-900.18	1,466.64	1,303.42	163.22	8.986	
10,850.00	10,846.62	22,102.68	11,820.00	38.97	156.28	-90.36	153.27	-900.18	1,432.95	1,267.55	165.41	8.663	
10,900.00	10,896.62	22,102.68	11,820.00	39.15	156.28	-90.36	153.27	-900.18	1,400.24	1,232.60	167.64	8.353	
10,950.00	10,946.62	22,102.68	11,820.00	39.32	156.28	-90.36	153.27	-900.18	1,368.58	1,198.65	169.92	8.054	
11,000.00	10,996.62	22,102.68	11,820.00	39.50	156.28	-90.36	153.27	-900.18	1,338.03	1,165.79	172.24	7.769	
11,050.00	11,046.62	22,102.68	11,820.00	39.67	156.28	-90.36	153.27	-900.18	1,308.68	1,134.11	174.57	7.497	
11,100.00	11,096.56	22,095.17	11,820.00	39.84	156.17	93.24	151.13	-900.16	1,280.64	1,103.83	176.81	7.243	
11,150.00	11,146.12	22,088.69	11,820.00	40.00	156.08	96.01	144.64	-900.12	1,254.17	1,075.14	179.03	7.006	
11,200.00	11,194.92	22,077.90	11,820.00	40.15	155.93	98.27	133.86	-900.06	1,229.49	1,048.37	181.12	6.788	
11,250.00	11,242.61	22,062.91	11,820.00	40.30	155.72	100.04	118.86	-899.96	1,206.80	1,023.74	183.06	6.592	
11,300.00	11,288.80	22,043.81	11,820.00	40.43	155.45	101.35	99.77	-899.84	1,186.23	1,001.41	184.82	6.418	
11,350.00	11,333.15	22,020.77	11,820.00	40.56	155.13	102.23	76.72	-899.70	1,167.86	981.50	186.37	6.267	
11,400.00	11,375.33	22,006.06	11,820.00	40.68	154.92	102.75	49.90	-899.53	1,151.71	963.87	187.84	6.131	
11,450.00	11,415.01	21,963.54	11,820.00	40.78	154.33	102.94	19.50	-899.34	1,137.73	948.97	188.76	6.027	
11,500.00	11,451.88	21,929.80	11,820.00	40.89	153.86	102.87	-14.24	-899.13	1,125.84	936.25	189.59	5.938	
11,550.00	11,485.68	21,907.03	11,820.00	41.01	153.54	102.60	-51.07	-898.89	1,115.90	925.51	190.38	5.861	
11,600.00	11,516.14	21,853.34	11,820.00	41.13	152.79	102.17	-90.70	-898.64	1,107.75	917.17	190.57	5.813	
11,650.00	11,543.03	21,811.20	11,820.00	41.24	152.20	101.66	-132.84	-898.38	1,101.20	910.45	190.75	5.773	
11,700.00	11,566.14	21,766.89	11,820.00	41.36	151.58	101.11	-177.15	-898.10	1,096.07	905.31	190.75	5.746	
11,750.00	11,585.30	21,720.72	11,820.00	41.47	150.94	100.58	-223.32	-897.81	1,092.16	901.56	190.60	5.730	
11,800.00	11,600.37	21,673.06	11,820.00	41.58	150.27	100.12	-270.98	-897.51	1,089.32	898.99	190.32	5.723	
11,850.00	11,611.22	21,624.27	11,820.00	41.70	149.59	99.76	-319.77	-897.21	1,087.39	897.45	189.94	5.725	
11,900.00	11,617.78	21,574.72	11,820.00	41.81	148.90	99.53	-369.32	-896.89	1,086.28	896.81	189.47	5.733	
11,950.00	11,620.00	21,524.78	11,820.00	41.92	148.20	99.46	-419.25	-896.58	1,085.91	896.99	188.92	5.748	
12,000.00	11,620.00	21,474.78	11,820.00	42.04	147.50	99.46	-469.25	-896.27	1,085.91	897.56	188.34	5.766	
12,050.00	11,620.00	21,424.78	11,820.00	42.17	146.81	99.46	-519.25	-895.95	1,085.90	898.12	187.78	5.783	
12,100.00	11,620.00	21,374.78	11,820.00	42.31	146.11	99.46	-569.25	-895.64	1,085.90	898.67	187.23	5.800	
12,150.00	11,620.00	21,324.78	11,820.00	42.47	145.42	99.46	-619.25	-895.32	1,085.90	899.20	186.69	5.816	
12,200.00	11,620.00	21,274.78	11,820.00	42.62	144.72	99.46	-669.25	-895.01	1,085.89	899.73	186.16	5.833	
12,250.00	11,620.00	21,224.78	11,820.00	42.80	144.02	99.46	-719.25	-894.70	1,085.89	900.24	185.65	5.849	
12,300.00	11,620.00	21,174.78	11,820.00	42.99	143.33	99.46	-769.25	-894.38	1,085.88	900.74	185.14	5.865	
12,350.00	11,620.00	21,124.78	11,820.00	43.19	142.63	99.46	-819.24	-894.07	1,085.88	901.22	184.66	5.881	
12,400.00	11,620.00	21,074.78	11,820.00	43.39	141.94	99.46	-869.24	-893.75	1,085.88	901.71	184.17	5.896	
12,450.00	11,620.00	21,024.78	11,820.00	43.62	141.25	99.46	-919.24	-893.44	1,085.87	902.17	183.71	5.911	
12,500.00	11,620.00	20,974.78	11,820.00	43.85	140.55	99.46	-969.24	-893.13	1,085.87	902.63	183.24	5.926	
12,550.00	11,620.00	20,924.78	11,820.00	44.09	139.86	99.46	-1,019.24	-892.81	1,085.87	903.06	182.80	5.940	
12,600.00	11,620.00	20,874.78	11,820.00	44.34	139.17	99.46	-1,069.24	-892.50	1,085.86	903.50	182.36	5.954	
12,650.00	11,620.00	20,824.78	11,820.00	44.61	138.47	99.46	-1,119.24	-892.18	1,085.86	903.92	181.94	5.968	
12,700.00	11,620.00	20,774.78	11,820.00	44.88	137.78	99.46	-1,169.24	-891.87	1,085.86	904.33	181.52	5.982	
12,750.00	11,620.00	20,724.78	11,820.00	45.17	137.09	99.46	-1,219.24	-891.56	1,085.85	904.73	181.12	5.995	
12,800.00	11,620.00	20,674.78	11,820.00	45.46	136.40	99.46	-1,269.24	-891.24	1,085.85	905.12	180.72	6.008	
12,850.00	11,620.00	20,624.78	11,820.00	45.77	135.71	99.46	-1,319.23	-890.93	1,085.84	905.50	180.35	6.021	
12,900.00	11,620.00	20,574.78	11,820.00	46.07	135.02	99.46	-1,369.23	-890.61	1,085.84	905.87	179.97	6.034	
12,950.00	11,620.00	20,524.78	11,820.00	46.40	134.33	99.46	-1,419.23	-890.30	1,085.84	906.23	179.61	6.046	
13,000.00	11,620.00	20,474.78	11,820.00	46.73	133.64	99.46	-1,469.23	-889.99	1,085.83	906.59	179.25	6.058	
13,050.00	11,620.00	20,424.78	11,820.00	47.07	132.95	99.46	-1,519.23	-889.67	1,085.83	906.92	178.91	6.069	
13,100.00	11,620.00	20,374.78	11,820.00	47.42	132.26	99.46	-1,569.23	-889.36	1,085.83	907.26	178.56	6.081	
13,150.00	11,620.00	20,324.78	11,820.00	47.78	131.57	99.46	-1,619.23	-889.04	1,085.82	907.58	178.24	6.092	
13,200.00	11,620.00	20,274.78	11,820.00	48.14	130.88	99.46	-1,669.23	-888.73	1,085.82	907.90	177.92	6.103	
13,250.00	11,620.00	20,224.78	11,820.00	48.52	130.19	99.46	-1,719.23	-888.41	1,085.81	908.20	177.61	6.113	
13,300.00	11,620.00	20,174.78	11,820.00	48.90	129.51	99.46	-1,769.23	-888.10	1,085.81	908.51	177.30	6.124	
13,350.00	11,620.00	20,124.78	11,820.00	49.29	128.82	99.46	-1,819.22	-887.79	1,085.81	908.79	177.01	6.134	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - 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
13,400.00	11,620.00	20,074.78	11,820.00	49.69	128.13	99.46	-1,869.22	-887.47	1,085.80	909.08	176.72	6.144	
13,450.00	11,620.00	20,024.78	11,820.00	50.09	127.45	99.46	-1,919.22	-887.16	1,085.80	909.35	176.45	6.154	
13,500.00	11,620.00	19,974.78	11,820.00	50.50	126.76	99.46	-1,969.22	-886.84	1,085.80	909.62	176.18	6.163	
13,550.00	11,620.00	19,924.78	11,820.00	50.93	126.08	99.46	-2,019.22	-886.53	1,085.79	909.88	175.92	6.172	
13,600.00	11,620.00	19,874.78	11,820.00	51.35	125.39	99.46	-2,069.22	-886.22	1,085.79	910.13	175.66	6.181	
13,650.00	11,620.00	19,824.78	11,820.00	51.79	124.71	99.46	-2,119.22	-885.90	1,085.79	910.37	175.41	6.190	
13,700.00	11,620.00	19,774.78	11,820.00	52.22	124.03	99.46	-2,169.22	-885.59	1,085.78	910.62	175.17	6.199	
13,750.00	11,620.00	19,724.78	11,820.00	52.67	123.34	99.46	-2,219.22	-885.27	1,085.78	910.84	174.93	6.207	
13,800.00	11,620.00	19,674.78	11,820.00	53.12	122.66	99.46	-2,269.22	-884.96	1,085.77	911.07	174.70	6.215	
13,850.00	11,620.00	19,624.78	11,820.00	53.58	121.98	99.46	-2,319.21	-884.65	1,085.77	911.29	174.48	6.223	
13,900.00	11,620.00	19,574.78	11,820.00	54.04	121.30	99.46	-2,369.21	-884.33	1,085.77	911.50	174.26	6.231	
13,950.00	11,620.00	19,524.78	11,820.00	54.52	120.62	99.46	-2,419.21	-884.02	1,085.76	911.70	174.06	6.238	
14,000.00	11,620.00	19,474.78	11,820.00	54.99	119.94	99.46	-2,469.21	-883.70	1,085.76	911.91	173.85	6.245	
14,050.00	11,620.00	19,424.78	11,820.00	55.47	119.26	99.46	-2,519.21	-883.39	1,085.76	912.10	173.66	6.252	
14,100.00	11,620.00	19,374.78	11,820.00	55.96	118.58	99.46	-2,569.21	-883.08	1,085.75	912.29	173.46	6.259	
14,150.00	11,620.00	19,324.78	11,820.00	56.45	117.90	99.46	-2,619.21	-882.76	1,085.75	912.47	173.28	6.266	
14,200.00	11,620.00	19,274.78	11,820.00	56.95	117.22	99.46	-2,669.21	-882.45	1,085.74	912.65	173.10	6.272	
14,250.00	11,620.00	19,224.78	11,820.00	57.45	116.54	99.46	-2,719.21	-882.13	1,085.74	912.81	172.93	6.279	
14,300.00	11,620.00	19,174.78	11,820.00	57.96	115.87	99.46	-2,769.21	-881.82	1,085.74	912.98	172.76	6.285	
14,350.00	11,620.00	19,124.78	11,820.00	58.47	115.19	99.46	-2,819.20	-881.50	1,085.73	913.14	172.59	6.291	
14,400.00	11,620.00	19,074.78	11,820.00	58.98	114.52	99.46	-2,869.20	-881.19	1,085.73	913.30	172.43	6.297	
14,450.00	11,620.00	19,024.78	11,820.00	59.51	113.84	99.46	-2,919.20	-880.88	1,085.73	913.45	172.28	6.302	
14,500.00	11,620.00	18,974.78	11,820.00	60.03	113.17	99.46	-2,969.20	-880.56	1,085.72	913.59	172.13	6.308	
14,550.00	11,620.00	18,924.78	11,820.00	60.56	112.49	99.46	-3,019.20	-880.25	1,085.72	913.73	171.99	6.313	
14,600.00	11,620.00	18,874.78	11,820.00	61.09	111.82	99.46	-3,069.20	-879.93	1,085.72	913.87	171.85	6.318	
14,650.00	11,620.00	18,824.78	11,820.00	61.63	111.15	99.46	-3,119.20	-879.62	1,085.71	914.00	171.71	6.323	
14,700.00	11,620.00	18,774.78	11,820.00	62.17	110.48	99.46	-3,169.20	-879.31	1,085.71	914.13	171.58	6.328	
14,750.00	11,620.00	18,724.78	11,820.00	62.72	109.81	99.46	-3,219.20	-878.99	1,085.70	914.25	171.46	6.332	
14,800.00	11,620.00	18,674.78	11,820.00	63.26	109.14	99.46	-3,269.20	-878.68	1,085.70	914.36	171.34	6.337	
14,850.00	11,620.00	18,624.78	11,820.00	63.82	108.47	99.46	-3,319.20	-878.36	1,085.70	914.48	171.22	6.341	
14,900.00	11,620.00	18,574.78	11,820.00	64.37	107.80	99.46	-3,369.19	-878.05	1,085.69	914.59	171.11	6.345	
14,950.00	11,620.00	18,524.78	11,820.00	64.93	107.14	99.46	-3,419.19	-877.74	1,085.69	914.69	171.00	6.349	
15,000.00	11,620.00	18,474.78	11,820.00	65.49	106.47	99.46	-3,469.19	-877.42	1,085.69	914.79	170.89	6.353	
15,050.00	11,620.00	18,424.78	11,820.00	66.06	105.80	99.46	-3,519.19	-877.11	1,085.68	914.89	170.79	6.357	
15,100.00	11,620.00	18,374.78	11,820.00	66.63	105.14	99.46	-3,569.19	-876.79	1,085.68	914.98	170.70	6.360	
15,150.00	11,620.00	18,324.78	11,820.00	67.20	104.47	99.46	-3,619.19	-876.48	1,085.67	915.07	170.61	6.364	
15,200.00	11,620.00	18,274.78	11,820.00	67.78	103.81	99.46	-3,669.19	-876.17	1,085.67	915.16	170.52	6.367	
15,250.00	11,620.00	18,224.78	11,820.00	68.36	103.15	99.46	-3,719.19	-875.85	1,085.67	915.24	170.43	6.370	
15,300.00	11,620.00	18,174.78	11,820.00	68.94	102.49	99.46	-3,769.19	-875.54	1,085.66	915.31	170.35	6.373	
15,350.00	11,620.00	18,124.78	11,820.00	69.52	101.83	99.46	-3,819.19	-875.22	1,085.66	915.39	170.27	6.376	
15,400.00	11,620.00	18,074.78	11,820.00	70.11	101.17	99.46	-3,869.18	-874.91	1,085.66	915.46	170.20	6.379	
15,450.00	11,620.00	18,024.78	11,820.00	70.70	100.51	99.46	-3,919.18	-874.60	1,085.65	915.52	170.13	6.381	
15,500.00	11,620.00	17,974.78	11,820.00	71.29	99.85	99.46	-3,969.18	-874.28	1,085.65	915.59	170.06	6.384	
15,550.00	11,620.00	17,924.78	11,820.00	71.88	99.20	99.46	-4,019.18	-873.97	1,085.65	915.65	170.00	6.386	
15,600.00	11,620.00	17,874.78	11,820.00	72.48	98.54	99.46	-4,069.18	-873.65	1,085.64	915.71	169.94	6.389	
15,650.00	11,620.00	17,824.78	11,820.00	73.08	97.89	99.46	-4,119.18	-873.34	1,085.64	915.76	169.88	6.391	
15,700.00	11,620.00	17,774.78	11,820.00	73.68	97.23	99.46	-4,169.18	-873.02	1,085.63	915.81	169.83	6.393	
15,750.00	11,620.00	17,724.78	11,820.00	74.28	96.58	99.46	-4,219.18	-872.71	1,085.63	915.85	169.78	6.394	
15,800.00	11,620.00	17,674.78	11,820.00	74.89	95.93	99.46	-4,269.18	-872.40	1,085.63	915.90	169.73	6.396	
15,850.00	11,620.00	17,624.78	11,820.00	75.50	95.28	99.46	-4,319.18	-872.08	1,085.62	915.94	169.69	6.398	
15,900.00	11,620.00	17,574.78	11,820.00	76.11	94.63	99.46	-4,369.17	-871.77	1,085.62	915.98	169.64	6.399	
15,950.00	11,620.00	17,524.78	11,820.00	76.72	93.98	99.46	-4,419.17	-871.45	1,085.62	916.01	169.61	6.401	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - 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
16,000.00	11,620.00	17,474.78	11,820.00	77.33	93.33	99.46	-4,469.17	-871.14	1,085.61	916.04	169.57	6.402	
16,050.00	11,620.00	17,424.78	11,820.00	77.95	92.69	99.46	-4,519.17	-870.83	1,085.61	916.07	169.54	6.403	
16,100.00	11,620.00	17,374.78	11,820.00	78.57	92.04	99.46	-4,569.17	-870.51	1,085.60	916.09	169.51	6.404	
16,150.00	11,620.00	17,324.78	11,820.00	79.19	91.40	99.46	-4,619.17	-870.20	1,085.60	916.11	169.49	6.405	
16,200.00	11,620.00	17,274.78	11,820.00	79.81	90.76	99.46	-4,669.17	-869.88	1,085.60	916.13	169.47	6.406	
16,250.00	11,620.00	17,224.78	11,820.00	80.44	90.12	99.46	-4,719.17	-869.57	1,085.59	916.15	169.45	6.407	
16,300.00	11,620.00	17,174.78	11,820.00	81.06	89.48	99.46	-4,769.17	-869.26	1,085.59	916.16	169.43	6.407	
16,350.00	11,620.00	17,124.78	11,820.00	81.69	88.84	99.46	-4,819.17	-868.94	1,085.59	916.17	169.42	6.408	
16,400.00	11,620.00	17,074.78	11,820.00	82.32	88.21	99.46	-4,869.16	-868.63	1,085.58	916.17	169.41	6.408	
16,450.00	11,620.00	17,024.78	11,820.00	82.95	87.57	99.46	-4,919.16	-868.31	1,085.58	916.18	169.40	6.408	
16,500.00	11,620.00	16,974.78	11,820.00	83.58	86.94	99.46	-4,969.16	-868.00	1,085.58	916.18	169.40	6.408	
16,550.00	11,620.00	16,924.78	11,820.00	84.21	86.31	99.46	-5,019.16	-867.69	1,085.57	916.17	169.40	6.408	
16,600.00	11,620.00	16,874.78	11,820.00	84.85	85.68	99.46	-5,069.16	-867.37	1,085.57	916.17	169.40	6.408	
16,650.00	11,620.00	16,824.78	11,820.00	85.49	85.05	99.46	-5,119.16	-867.06	1,085.56	916.16	169.41	6.408	
16,700.00	11,620.00	16,774.78	11,820.00	86.12	84.42	99.46	-5,169.16	-866.74	1,085.56	916.15	169.41	6.408	
16,750.00	11,620.00	16,724.78	11,820.00	86.76	83.80	99.46	-5,219.16	-866.43	1,085.56	916.13	169.43	6.407	
16,800.00	11,620.00	16,674.78	11,820.00	87.40	83.17	99.46	-5,269.16	-866.11	1,085.55	916.11	169.44	6.407	
16,850.00	11,620.00	16,624.78	11,820.00	88.05	82.55	99.46	-5,319.16	-865.80	1,085.55	916.09	169.46	6.406	
16,900.00	11,620.00	16,574.78	11,820.00	88.69	81.93	99.46	-5,369.15	-865.49	1,085.55	916.07	169.48	6.405	
16,950.00	11,620.00	16,524.78	11,820.00	89.34	81.31	99.46	-5,419.15	-865.17	1,085.54	916.04	169.50	6.404	
17,000.00	11,620.00	16,474.78	11,820.00	89.98	80.69	99.46	-5,469.15	-864.86	1,085.54	916.01	169.53	6.403	
17,050.00	11,620.00	16,424.78	11,820.00	90.63	80.08	99.46	-5,519.15	-864.54	1,085.53	915.98	169.56	6.402	
17,100.00	11,620.00	16,374.78	11,820.00	91.28	79.47	99.46	-5,569.15	-864.23	1,085.53	915.94	169.59	6.401	
17,150.00	11,620.00	16,324.78	11,820.00	91.93	78.86	99.46	-5,619.15	-863.92	1,085.53	915.90	169.62	6.400	
17,200.00	11,620.00	16,274.78	11,820.00	92.58	78.25	99.46	-5,669.15	-863.60	1,085.52	915.86	169.66	6.398	
17,250.00	11,620.00	16,224.78	11,820.00	93.23	77.64	99.46	-5,719.15	-863.29	1,085.52	915.82	169.71	6.397	
17,300.00	11,620.00	16,174.78	11,820.00	93.89	77.04	99.46	-5,769.15	-862.97	1,085.52	915.77	169.75	6.395	
17,350.00	11,620.00	16,124.78	11,820.00	94.54	76.43	99.46	-5,819.15	-862.66	1,085.51	915.71	169.80	6.393	
17,400.00	11,620.00	16,074.78	11,820.00	95.20	75.83	99.46	-5,869.14	-862.35	1,085.51	915.66	169.85	6.391	
17,450.00	11,620.00	16,024.78	11,820.00	95.85	75.24	99.46	-5,919.14	-862.03	1,085.51	915.60	169.90	6.389	
17,500.00	11,620.00	15,974.78	11,820.00	96.51	74.64	99.46	-5,969.14	-861.72	1,085.50	915.54	169.96	6.387	
17,550.00	11,620.00	15,924.78	11,820.00	97.17	74.05	99.46	-6,019.14	-861.40	1,085.50	915.48	170.02	6.384	
17,600.00	11,620.00	15,874.78	11,820.00	97.83	73.45	99.46	-6,069.14	-861.09	1,085.49	915.41	170.09	6.382	
17,650.00	11,620.00	15,824.78	11,820.00	98.49	72.87	99.46	-6,119.14	-860.78	1,085.49	915.34	170.16	6.379	
17,700.00	11,620.00	15,774.78	11,820.00	99.15	72.28	99.46	-6,169.14	-860.46	1,085.49	915.26	170.23	6.377	
17,750.00	11,620.00	15,724.78	11,820.00	99.81	71.70	99.46	-6,219.14	-860.15	1,085.48	915.18	170.30	6.374	
17,800.00	11,620.00	15,674.78	11,820.00	100.48	71.12	99.46	-6,269.14	-859.83	1,085.48	915.10	170.38	6.371	
17,850.00	11,620.00	15,624.78	11,820.00	101.14	70.54	99.46	-6,319.14	-859.52	1,085.48	915.02	170.46	6.368	
17,900.00	11,620.00	15,574.78	11,820.00	101.81	69.96	99.46	-6,369.13	-859.20	1,085.47	914.93	170.55	6.365	
17,950.00	11,620.00	15,524.78	11,820.00	102.47	69.39	99.46	-6,419.13	-858.89	1,085.47	914.83	170.64	6.361	
18,000.00	11,620.00	15,474.78	11,820.00	103.14	68.82	99.46	-6,469.13	-858.58	1,085.46	914.74	170.73	6.358	
18,050.00	11,620.00	15,424.78	11,820.00	103.81	68.26	99.46	-6,519.13	-858.26	1,085.46	914.64	170.82	6.354	
18,100.00	11,620.00	15,374.78	11,820.00	104.48	67.69	99.46	-6,569.13	-857.95	1,085.46	914.53	170.92	6.351	
18,150.00	11,620.00	15,324.78	11,820.00	105.15	67.13	99.46	-6,619.13	-857.63	1,085.45	914.43	171.03	6.347	
18,200.00	11,620.00	15,274.78	11,820.00	105.82	66.58	99.46	-6,669.13	-857.32	1,085.45	914.31	171.14	6.343	
18,250.00	11,620.00	15,224.78	11,820.00	106.49	66.02	99.46	-6,719.13	-857.01	1,085.45	914.20	171.25	6.338	
18,300.00	11,620.00	15,174.78	11,820.00	107.16	65.47	99.46	-6,769.13	-856.69	1,085.44	914.08	171.36	6.334	
18,350.00	11,620.00	15,124.78	11,820.00	107.83	64.92	99.46	-6,819.13	-856.38	1,085.44	913.95	171.48	6.330	
18,400.00	11,620.00	15,074.78	11,820.00	108.51	64.38	99.46	-6,869.13	-856.06	1,085.44	913.83	171.61	6.325	
18,450.00	11,620.00	15,024.78	11,820.00	109.18	63.84	99.46	-6,919.12	-855.75	1,085.43	913.69	171.74	6.320	
18,500.00	11,620.00	14,974.78	11,820.00	109.86	63.31	99.46	-6,969.12	-855.44	1,085.43	913.56	171.87	6.315	
18,550.00	11,620.00	14,924.78	11,820.00	110.53	62.78	99.46	-7,019.12	-855.12	1,085.42	913.42	172.01	6.310	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - 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
18,600.00	11,620.00	14,874.78	11,820.00	111.21	62.25	99.46	-7,069.12	-854.81	1,085.42	913.27	172.15	6.305	
18,650.00	11,620.00	14,824.78	11,820.00	111.88	61.72	99.46	-7,119.12	-854.49	1,085.42	913.12	172.30	6.300	
18,700.00	11,620.00	14,774.78	11,820.00	112.56	61.20	99.46	-7,169.12	-854.18	1,085.41	912.97	172.45	6.294	
18,750.00	11,620.00	14,724.78	11,820.00	113.24	60.69	99.46	-7,219.12	-853.87	1,085.41	912.81	172.60	6.288	
18,800.00	11,620.00	14,674.78	11,820.00	113.92	60.18	99.46	-7,269.12	-853.55	1,085.41	912.64	172.76	6.283	
18,850.00	11,620.00	14,624.78	11,820.00	114.60	59.67	99.46	-7,319.12	-853.24	1,085.40	912.47	172.93	6.277	
18,900.00	11,620.00	14,574.78	11,820.00	115.28	59.17	99.46	-7,369.12	-852.92	1,085.40	912.30	173.10	6.270	
18,950.00	11,620.00	14,524.78	11,820.00	115.96	58.67	99.46	-7,419.11	-852.61	1,085.39	912.12	173.28	6.264	
19,000.00	11,620.00	14,474.78	11,820.00	116.64	58.18	99.46	-7,469.11	-852.30	1,085.39	911.93	173.46	6.257	
19,050.00	11,620.00	14,424.78	11,820.00	117.32	57.69	99.46	-7,519.11	-851.98	1,085.39	911.74	173.65	6.251	
19,100.00	11,620.00	14,374.78	11,820.00	118.00	57.21	99.46	-7,569.11	-851.67	1,085.38	911.54	173.84	6.244	
19,150.00	11,620.00	14,324.78	11,820.00	118.69	56.73	99.46	-7,619.11	-851.35	1,085.38	911.34	174.04	6.236	
19,200.00	11,620.00	14,274.78	11,820.00	119.37	56.26	99.46	-7,669.11	-851.04	1,085.38	911.13	174.24	6.229	
19,250.00	11,620.00	14,224.78	11,820.00	120.05	55.80	99.46	-7,719.11	-850.72	1,085.37	910.92	174.45	6.222	
19,300.00	11,620.00	14,174.78	11,820.00	120.74	55.34	99.46	-7,769.11	-850.41	1,085.37	910.70	174.67	6.214	
19,350.00	11,620.00	14,124.78	11,820.00	121.42	54.88	99.46	-7,819.11	-850.10	1,085.37	910.48	174.89	6.206	
19,400.00	11,620.00	14,074.78	11,820.00	122.11	54.43	99.46	-7,869.11	-849.78	1,085.36	910.24	175.12	6.198	
19,450.00	11,620.00	14,024.78	11,820.00	122.80	53.99	99.46	-7,919.10	-849.47	1,085.36	910.00	175.35	6.190	
19,500.00	11,620.00	13,974.78	11,820.00	123.48	53.55	99.46	-7,969.10	-849.15	1,085.35	909.76	175.59	6.181	
19,550.00	11,620.00	13,924.78	11,820.00	124.17	53.12	99.46	-8,019.10	-848.84	1,085.35	909.51	175.84	6.172	
19,600.00	11,620.00	13,874.78	11,820.00	124.86	52.70	99.46	-8,069.10	-848.53	1,085.35	909.25	176.10	6.163	
19,650.00	11,620.00	13,824.78	11,820.00	125.54	52.28	99.46	-8,119.10	-848.21	1,085.34	908.98	176.36	6.154	
19,700.00	11,620.00	13,774.78	11,820.00	126.23	51.87	99.46	-8,169.10	-847.90	1,085.34	908.71	176.63	6.145	
19,750.00	11,620.00	13,724.78	11,820.00	126.92	51.47	99.46	-8,219.10	-847.58	1,085.34	908.43	176.91	6.135	
19,800.00	11,620.00	13,674.78	11,820.00	127.61	51.07	99.46	-8,269.10	-847.27	1,085.33	908.14	177.19	6.125	
19,850.00	11,620.00	13,624.78	11,820.00	128.30	50.68	99.46	-8,319.10	-846.96	1,085.33	907.85	177.48	6.115	
19,900.00	11,620.00	13,574.78	11,820.00	128.99	50.30	99.46	-8,369.10	-846.64	1,085.32	907.54	177.78	6.105	
19,950.00	11,620.00	13,524.78	11,820.00	129.68	49.93	99.46	-8,419.09	-846.33	1,085.32	907.23	178.09	6.094	
20,000.00	11,620.00	13,474.78	11,820.00	130.37	49.56	99.46	-8,469.09	-846.01	1,085.32	906.91	178.40	6.083	
20,050.00	11,620.00	13,424.78	11,820.00	131.06	49.20	99.46	-8,519.09	-845.70	1,085.31	906.59	178.73	6.072	
20,100.00	11,620.00	13,374.78	11,820.00	131.76	48.85	99.46	-8,569.09	-845.39	1,085.31	906.25	179.06	6.061	
20,150.00	11,620.00	13,324.78	11,820.00	132.45	48.51	99.46	-8,619.09	-845.07	1,085.31	905.91	179.40	6.050	
20,200.00	11,620.00	13,274.78	11,820.00	133.14	48.18	99.46	-8,669.09	-844.76	1,085.30	905.55	179.75	6.038	
20,250.00	11,620.00	13,224.78	11,820.00	133.83	47.86	99.46	-8,719.09	-844.44	1,085.30	905.19	180.11	6.026	
20,300.00	11,620.00	13,174.78	11,820.00	134.53	47.54	99.46	-8,769.09	-844.13	1,085.30	904.82	180.48	6.013	
20,350.00	11,620.00	13,124.78	11,820.00	135.22	47.24	99.46	-8,819.09	-843.81	1,085.29	904.44	180.85	6.001	
20,400.00	11,620.00	13,074.78	11,820.00	135.91	46.94	99.46	-8,869.09	-843.50	1,085.29	904.05	181.24	5.988	
20,450.00	11,620.00	13,024.78	11,820.00	136.61	46.65	99.46	-8,919.08	-843.19	1,085.28	903.65	181.64	5.975	
20,500.00	11,620.00	12,974.78	11,820.00	137.30	46.38	99.46	-8,969.08	-842.87	1,085.28	903.24	182.04	5.962	
20,550.00	11,620.00	12,924.78	11,820.00	138.00	46.11	99.46	-9,019.08	-842.56	1,085.28	902.82	182.46	5.948	
20,600.00	11,620.00	12,874.78	11,820.00	138.69	45.86	99.46	-9,069.08	-842.24	1,085.27	902.39	182.89	5.934	
20,650.00	11,620.00	12,824.78	11,820.00	139.39	45.61	99.46	-9,119.08	-841.93	1,085.27	901.94	183.32	5.920	
20,700.00	11,620.00	12,774.78	11,820.00	140.09	45.38	99.46	-9,169.08	-841.62	1,085.27	901.49	183.77	5.905	
20,750.00	11,620.00	12,724.78	11,820.00	140.78	45.16	99.46	-9,219.08	-841.30	1,085.26	901.03	184.23	5.891	
20,800.00	11,620.00	12,674.78	11,820.00	141.48	44.95	99.46	-9,269.08	-840.99	1,085.26	900.56	184.70	5.876	
20,850.00	11,620.00	12,624.78	11,820.00	142.18	44.76	99.46	-9,319.08	-840.67	1,085.25	900.08	185.18	5.861	
20,900.00	11,620.00	12,574.78	11,820.00	142.87	44.58	99.46	-9,369.08	-840.36	1,085.25	899.58	185.67	5.845	
20,950.00	11,620.00	12,524.78	11,820.00	143.57	44.42	99.46	-9,419.07	-840.05	1,085.25	899.07	186.17	5.829	
21,000.00	11,620.00	12,474.78	11,820.00	144.27	44.28	99.46	-9,469.07	-839.73	1,085.24	898.56	186.69	5.813	
21,050.00	11,620.00	12,424.78	11,820.00	144.97	44.16	99.46	-9,519.07	-839.42	1,085.24	898.03	187.21	5.797	
21,100.00	11,620.00	12,374.78	11,820.00	145.67	44.06	99.46	-9,569.07	-839.10	1,085.24	897.49	187.75	5.780	
21,150.00	11,620.00	12,324.78	11,820.00	146.37	43.98	99.46	-9,619.07	-838.79	1,085.23	896.93	188.30	5.763	

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 Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - 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
21,200.00	11,620.00	12,274.78	11,820.00	147.07	43.92	99.46	-9,669.07	-838.48	1,085.23	896.37	188.86	5.746	
21,250.00	11,620.00	12,224.78	11,820.00	147.77	43.88	99.46	-9,719.07	-838.16	1,085.23	895.79	189.43	5.729	
21,300.00	11,620.00	12,159.39	11,817.84	148.47	43.84	99.35	-9,784.40	-837.75	1,084.98	894.95	190.03	5.710	
21,350.00	11,620.00	12,088.47	11,807.35	149.17	43.82	98.80	-9,854.49	-837.31	1,083.79	893.08	190.71	5.683	
21,400.00	11,620.00	12,021.10	11,789.43	149.87	43.80	97.86	-9,919.39	-836.90	1,081.78	890.31	191.47	5.650	
21,450.00	11,620.00	11,958.70	11,766.15	150.57	43.78	96.64	-9,977.25	-836.54	1,079.24	886.96	192.28	5.613	
21,500.00	11,620.00	11,902.05	11,739.67	151.27	43.74	95.23	-10,027.31	-836.23	1,076.50	883.41	193.10	5.575	
21,550.00	11,620.00	11,851.34	11,711.88	151.97	43.70	93.76	-10,069.71	-835.96	1,073.94	880.05	193.89	5.539	
21,600.00	11,620.00	11,806.35	11,684.17	152.67	43.65	92.28	-10,105.14	-835.74	1,071.89	877.27	194.61	5.508	
21,650.00	11,620.00	11,766.63	11,657.47	153.37	43.60	90.85	-10,134.52	-835.55	1,070.66	875.42	195.24	5.484	
21,681.28	11,620.00	11,744.22	11,641.52	153.81	43.57	90.00	-10,150.26	-835.45	1,070.43	874.87	195.56	5.474 CC	
21,700.00	11,620.00	11,731.64	11,632.30	154.08	43.55	89.50	-10,158.83	-835.40	1,070.52	874.79	195.73	5.469 ES	
21,750.00	11,620.00	11,700.79	11,608.92	154.78	43.49	88.25	-10,178.95	-835.27	1,071.67	875.61	196.06	5.466 SF	
21,800.00	11,620.00	11,673.54	11,587.39	155.48	43.44	87.10	-10,195.65	-835.17	1,074.30	878.10	196.21	5.475	
21,850.00	11,620.00	11,650.00	11,568.17	156.18	43.40	86.08	-10,209.24	-835.08	1,078.54	882.37	196.16	5.498	
21,864.06	11,620.00	11,643.11	11,562.44	156.38	43.38	85.77	-10,213.07	-835.06	1,080.03	883.92	196.11	5.507	

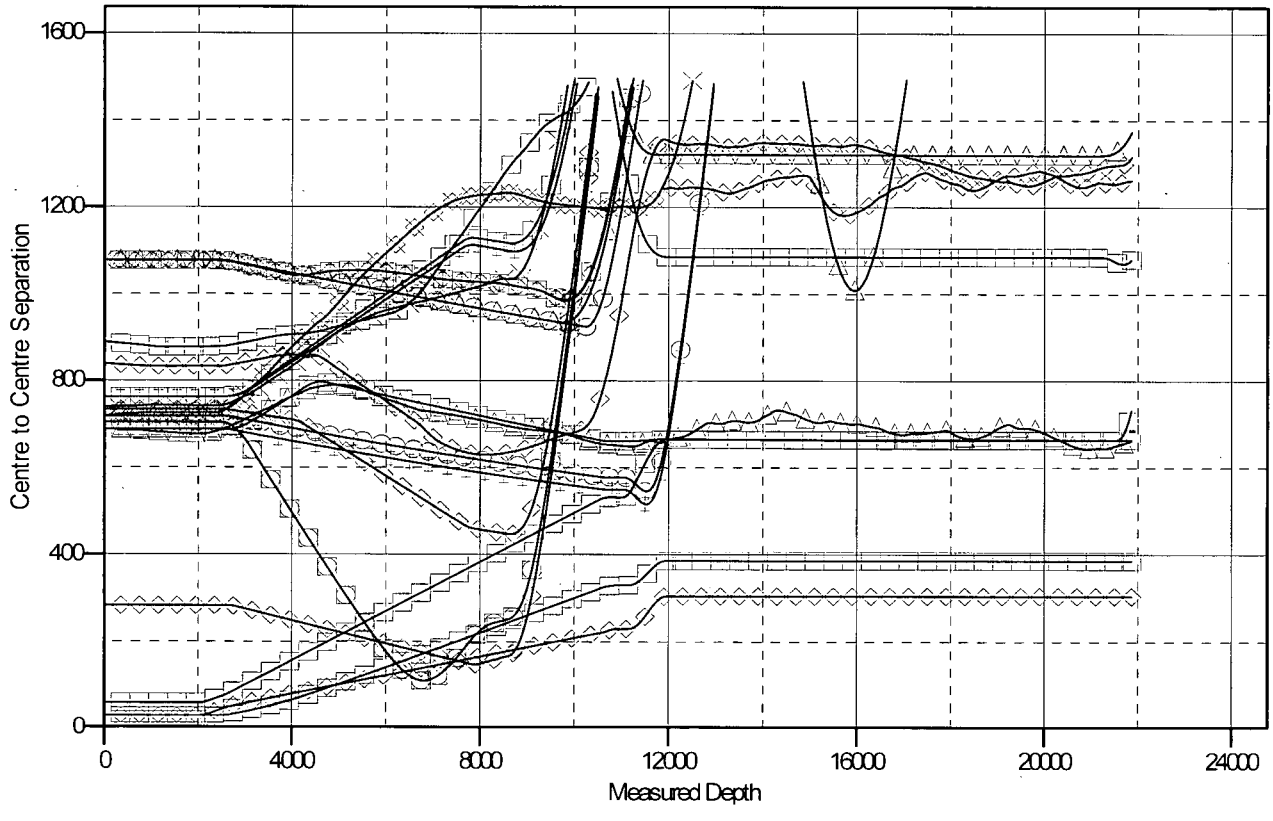
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 @ 3492.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Tomb Raider 1-12 Fed 332H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.32°

Ladder Plot



LEGEND

Tomb Raider 1-12 Fed 62H, Wellbore # 1, Wellbore #1 V0
Tomb Raider 1 Fed 1H, Original, Plan 2 V0
Tomb Raider 1 Fed 1H, Original, T&D V0
Tomb Raider 1 Fed 1H, Original, PTL V 0
Tomb Raider 1 Fed 1H, Original, Actual V0
Tomb Raider 1-12 Fed 525H, Wellbore #1, Permit Plan 2 V0
Tomb Raider 1-12 Fed 525H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 524H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 524H, Wellbore #1, Permit Plan 2 V0
Tomb Raider 1-12 Fed 523H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 714H, Original H ole, NTL V0
Tomb Raider 1-12 Fed 714H, Original H ole, T&D V0
Barclay Fed #1 (P&A), Wellbore #1, W ellbore #1 V0
Tomb Raider 1-12 Fed 514H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 512H, Wellbore #1, Wellbore #1 V0
Tomb Raider 1-12 Fed 732H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 714H, Original H ole, Actuals V0
Tomb Raider 1-12 Fed 61H, Original H ole, Original Hole V0
Tomb Raider 1 Fed 1H, Original, Plan1 v2 V0
Tomb Raider 1-12 Fed 614H, Wellbore #1, Wellbore #1 V0
Tomb Raider 1-12 Fed 614H, Wellbore #1, T&D V0
Tomb Raider 1-12 Fed 614H, Wellbore #1, Prelim 1 V0
Tomb Raider 1-12 Fed 702H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 612H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 12-1 Fed 331H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 12-1 Fed 731H, Wellbore #1, Permit Plan 1 V0

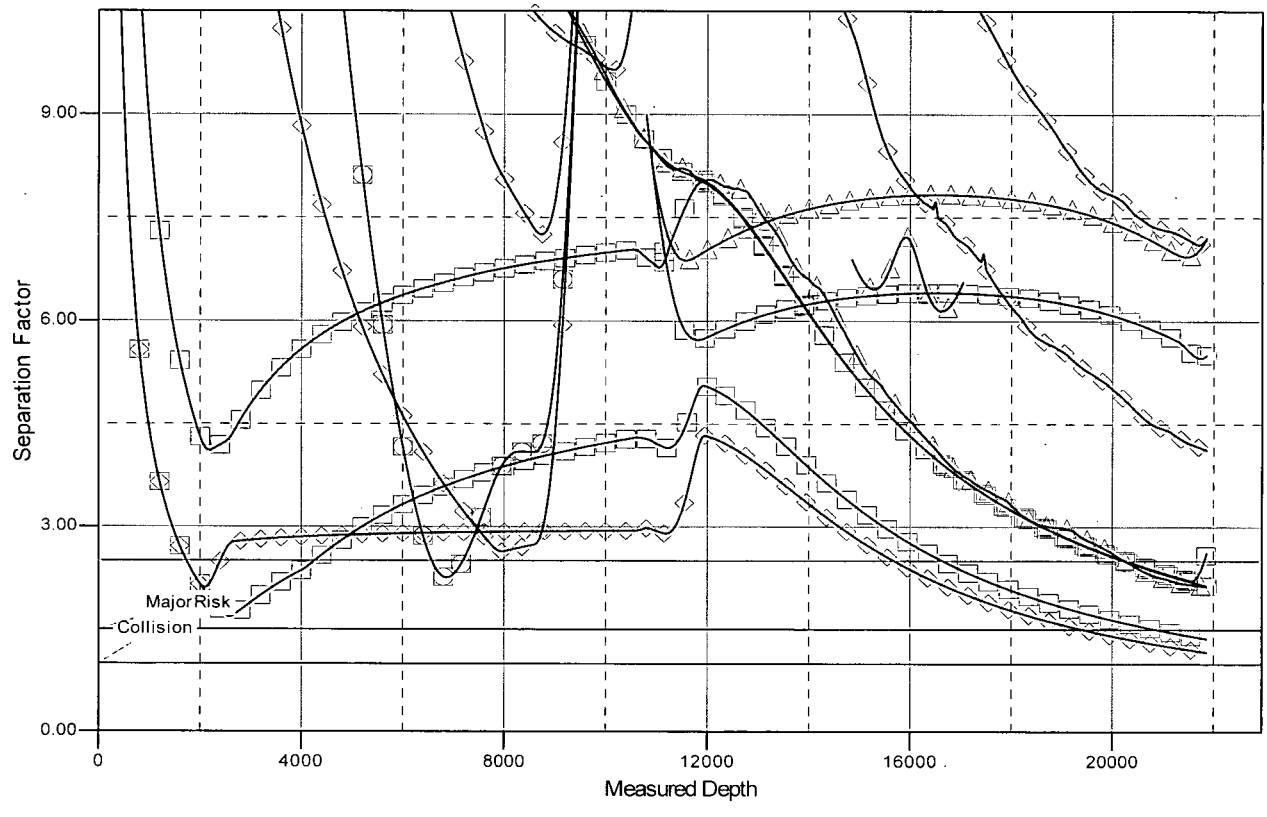
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3492.00ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3492.00ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 332H	**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 @ 3492.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Tomb Raider 1-12 Fed 332H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.32°

Separation Factor Plot



LEGEND

Tomb Raider 1-12 Fed 62H, Wellbore # 1, Wellbore #1 V0
Tomb Raider 1 Fed 1H, Original, Plan 2 V0
Tomb Raider 1 Fed 1H, Original, T&D V0
Tomb Raider 1 Fed 1H, Original, PTL V 0
Tomb Raider 1 Fed 1H, Original, Actual V0
Tomb Raider 1-12 Fed 525H, Wellbore #1, Permit Plan 2 V0
Tomb Raider 1-12 Fed 525H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 524H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 524H, Wellbore #1, Permit Plan 2 V0
Tomb Raider 1-12 Fed 523H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 714H, Original Hole, NTL V0
Tomb Raider 1-12 Fed 714H, Original Hole, T&D V0
Barclay Fed #1 (P&A), Wellbore #1, Wellbore #1 V0
Tomb Raider 1-12 Fed 514H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 512H, Wellbore #1, Wellbore #1 V0
Tomb Raider 1-12 Fed 732H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 714H, Original Hole, Actuals V0
Tomb Raider 1-12 Fed 61H, Original Hole, Original Hole V0
Tomb Raider 1 Fed 1H, Original, Plan1 v2 V0
Tomb Raider 1-12 Fed 614H, Wellbore #1, Wellbore #1 V0
Tomb Raider 1-12 Fed 614H, Wellbore #1, T&D V0
Tomb Raider 1-12 Fed 614H, Wellbore #1, Prelim 1 V0
Tomb Raider 1-12 Fed 702H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 612H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 12-1 Fed 331H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 12-1 Fed 731H, Wellbore #1, Permit Plan 1 V0

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)
Sec 01-T23S-R31E
Tomb Raider 1-12 Fed 332H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

30 November, 2018

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3492.00ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3492.00ft
Site:	Sec 01-T23S-R31E	**North Reference:**	Grid
Well:	Tomb Raider 1-12 Fed 332H	**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 01-T23S-R31E

Site Position:		**Northing:**	488,170.26 usft	**Latitude:**	32.340736
From:	Map	**Easting:**	719,281.88 usft	**Longitude:**	-103.757161
Position Uncertainty:	5.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.31 °

Well Tomb Raider 1-12 Fed 332H

Well Position	**+N/-S**	0.00 ft	**Northing:**	487,995.34 usft	**Latitude:**	32.340142
	+E/-W	0.00 ft	**Easting:**	726,764.84 usft	**Longitude:**	-103.732936
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:**	3,467.00 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/29/2018	6.88	60.12	47,840.29674970

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	178.69

Plan Survey Tool Program **Date** 11/30/2018

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,864.06	Permit Plan 1 (Wellbore #1)	MWD+HDGM	
				OWSG MWD + HDGM	

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	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,666.46	1.66	46.90	2,666.44	1.65	1.77	1.00	1.00	0.00	46.90	
10,589.41	1.66	46.90	10,586.04	158.90	169.82	0.00	0.00	0.00	0.00	
10,700.38	0.00	0.00	10,697.00	160.00	171.00	1.50	-1.50	0.00	180.00	
11,050.42	0.00	0.00	11,047.04	160.00	171.00	0.00	0.00	0.00	0.00	
11,950.42	90.00	179.64	11,620.00	-412.95	174.56	10.00	10.00	0.00	179.64	PBHL - Tomb Raider
21,864.06	90.00	179.64	11,620.00	-10,326.39	236.09	0.00	0.00	0.00	0.00	PBHL - Tomb Raider

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3492.00ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3492.00ft
Site:	Sec 01-T23S-R31E	**North Reference:**	Grid
Well:	Tomb Raider 1-12 Fed 332H	**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	487,995.34	726,764.84	32.340142	-103.732936
100.00	0.00	0.00	100.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
200.00	0.00	0.00	200.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
300.00	0.00	0.00	300.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
400.00	0.00	0.00	400.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
500.00	0.00	0.00	500.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
600.00	0.00	0.00	600.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
700.00	0.00	0.00	700.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
800.00	0.00	0.00	800.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
900.00	0.00	0.00	900.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
1,000.00	0.00	0.00	1,000.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
1,100.00	0.00	0.00	1,100.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
1,200.00	0.00	0.00	1,200.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
1,300.00	0.00	0.00	1,300.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
1,400.00	0.00	0.00	1,400.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
1,500.00	0.00	0.00	1,500.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
1,600.00	0.00	0.00	1,600.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
1,700.00	0.00	0.00	1,700.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
1,800.00	0.00	0.00	1,800.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
1,900.00	0.00	0.00	1,900.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
2,000.00	0.00	0.00	2,000.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
2,100.00	0.00	0.00	2,100.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
2,200.00	0.00	0.00	2,200.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
2,300.00	0.00	0.00	2,300.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
2,400.00	0.00	0.00	2,400.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
2,500.00	0.00	0.00	2,500.00	0.00	0.00	487,995.34	726,764.84	32.340142	-103.732936
2,600.00	1.00	46.90	2,599.99	0.60	0.64	487,995.94	726,765.47	32.340144	-103.732933
2,666.46	1.66	46.90	2,666.44	1.65	1.77	487,996.99	726,766.60	32.340146	-103.732930
2,700.00	1.66	46.90	2,699.96	2.32	2.48	487,997.66	726,767.31	32.340148	-103.732927
2,800.00	1.66	46.90	2,799.92	4.30	4.60	487,999.64	726,769.43	32.340154	-103.732921
2,900.00	1.66	46.90	2,899.88	6.29	6.72	488,001.63	726,771.56	32.340159	-103.732914
3,000.00	1.66	46.90	2,999.84	8.27	8.84	488,003.61	726,773.68	32.340165	-103.732907
3,100.00	1.66	46.90	3,099.79	10.26	10.96	488,005.60	726,775.80	32.340170	-103.732900
3,200.00	1.66	46.90	3,199.75	12.24	13.08	488,007.58	726,777.92	32.340175	-103.732893
3,300.00	1.66	46.90	3,299.71	14.23	15.20	488,009.57	726,780.04	32.340181	-103.732886
3,400.00	1.66	46.90	3,399.67	16.21	17.33	488,011.55	726,782.16	32.340186	-103.732879
3,500.00	1.66	46.90	3,499.62	18.20	19.45	488,013.54	726,784.28	32.340192	-103.732872
3,600.00	1.66	46.90	3,599.58	20.18	21.57	488,015.52	726,786.40	32.340197	-103.732865
3,700.00	1.66	46.90	3,699.54	22.16	23.69	488,017.51	726,788.52	32.340203	-103.732858
3,800.00	1.66	46.90	3,799.50	24.15	25.81	488,019.49	726,790.65	32.340208	-103.732852
3,900.00	1.66	46.90	3,899.46	26.13	27.93	488,021.47	726,792.77	32.340213	-103.732845
4,000.00	1.66	46.90	3,999.41	28.12	30.05	488,023.46	726,794.89	32.340219	-103.732838
4,100.00	1.66	46.90	4,099.37	30.10	32.17	488,025.44	726,797.01	32.340224	-103.732831
4,200.00	1.66	46.90	4,199.33	32.09	34.29	488,027.43	726,799.13	32.340230	-103.732824
4,300.00	1.66	46.90	4,299.29	34.07	36.42	488,029.41	726,801.25	32.340235	-103.732817
4,400.00	1.66	46.90	4,399.25	36.06	38.54	488,031.40	726,803.37	32.340240	-103.732810
4,500.00	1.66	46.90	4,499.20	38.04	40.66	488,033.38	726,805.49	32.340246	-103.732803
4,600.00	1.66	46.90	4,599.16	40.03	42.78	488,035.37	726,807.61	32.340251	-103.732796
4,700.00	1.66	46.90	4,699.12	42.01	44.90	488,037.35	726,809.74	32.340257	-103.732789
4,800.00	1.66	46.90	4,799.08	44.00	47.02	488,039.34	726,811.86	32.340262	-103.732782
4,900.00	1.66	46.90	4,899.03	45.98	49.14	488,041.32	726,813.98	32.340268	-103.732776
5,000.00	1.66	46.90	4,998.99	47.97	51.26	488,043.31	726,816.10	32.340273	-103.732769
5,100.00	1.66	46.90	5,098.95	49.95	53.38	488,045.29	726,818.22	32.340278	-103.732762
5,200.00	1.66	46.90	5,198.91	51.94	55.51	488,047.28	726,820.34	32.340284	-103.732755
5,300.00	1.66	46.90	5,298.87	53.92	57.63	488,049.26	726,822.46	32.340289	-103.732748

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3492.00ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3492.00ft
Site:	Sec 01-T23S-R31E	**North Reference:**	Grid
Well:	Tomb Raider 1-12 Fed 332H	**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	1.66	46.90	5,398.82	55.90	59.75	488,051.25	726,824.58	32.340295	-103.732741
5,500.00	1.66	46.90	5,498.78	57.89	61.87	488,053.23	726,826.71	32.340300	-103.732734
5,600.00	1.66	46.90	5,598.74	59.87	63.99	488,055.21	726,828.83	32.340306	-103.732727
5,700.00	1.66	46.90	5,698.70	61.86	66.11	488,057.20	726,830.95	32.340311	-103.732720
5,800.00	1.66	46.90	5,798.65	63.84	68.23	488,059.18	726,833.07	32.340316	-103.732713
5,900.00	1.66	46.90	5,898.61	65.83	70.35	488,061.17	726,835.19	32.340322	-103.732707
6,000.00	1.66	46.90	5,998.57	67.81	72.47	488,063.15	726,837.31	32.340327	-103.732700
6,100.00	1.66	46.90	6,098.53	69.80	74.60	488,065.14	726,839.43	32.340333	-103.732693
6,200.00	1.66	46.90	6,198.49	71.78	76.72	488,067.12	726,841.55	32.340338	-103.732686
6,300.00	1.66	46.90	6,298.44	73.77	78.84	488,069.11	726,843.67	32.340343	-103.732679
6,400.00	1.66	46.90	6,398.40	75.75	80.96	488,071.09	726,845.80	32.340349	-103.732672
6,500.00	1.66	46.90	6,498.36	77.74	83.08	488,073.08	726,847.92	32.340354	-103.732665
6,600.00	1.66	46.90	6,598.32	79.72	85.20	488,075.06	726,850.04	32.340360	-103.732658
6,700.00	1.66	46.90	6,698.27	81.71	87.32	488,077.05	726,852.16	32.340365	-103.732651
6,800.00	1.66	46.90	6,798.23	83.69	89.44	488,079.03	726,854.28	32.340371	-103.732644
6,900.00	1.66	46.90	6,898.19	85.68	91.57	488,081.02	726,856.40	32.340376	-103.732637
7,000.00	1.66	46.90	6,998.15	87.66	93.69	488,083.00	726,858.52	32.340381	-103.732631
7,100.00	1.66	46.90	7,098.11	89.64	95.81	488,084.99	726,860.64	32.340387	-103.732624
7,200.00	1.66	46.90	7,198.06	91.63	97.93	488,086.97	726,862.76	32.340392	-103.732617
7,300.00	1.66	46.90	7,298.02	93.61	100.05	488,088.95	726,864.89	32.340398	-103.732610
7,400.00	1.66	46.90	7,397.98	95.60	102.17	488,090.94	726,867.01	32.340403	-103.732603
7,500.00	1.66	46.90	7,497.94	97.58	104.29	488,092.92	726,869.13	32.340409	-103.732596
7,600.00	1.66	46.90	7,597.89	99.57	106.41	488,094.91	726,871.25	32.340414	-103.732589
7,700.00	1.66	46.90	7,697.85	101.55	108.53	488,096.89	726,873.37	32.340419	-103.732582
7,800.00	1.66	46.90	7,797.81	103.54	110.66	488,098.88	726,875.49	32.340425	-103.732575
7,900.00	1.66	46.90	7,897.77	105.52	112.78	488,100.86	726,877.61	32.340430	-103.732568
8,000.00	1.66	46.90	7,997.73	107.51	114.90	488,102.85	726,879.73	32.340436	-103.732562
8,100.00	1.66	46.90	8,097.68	109.49	117.02	488,104.83	726,881.85	32.340441	-103.732555
8,200.00	1.66	46.90	8,197.64	111.48	119.14	488,106.82	726,883.98	32.340447	-103.732548
8,300.00	1.66	46.90	8,297.60	113.46	121.26	488,108.80	726,886.10	32.340452	-103.732541
8,400.00	1.66	46.90	8,397.56	115.45	123.38	488,110.79	726,888.22	32.340457	-103.732534
8,500.00	1.66	46.90	8,497.51	117.43	125.50	488,112.77	726,890.34	32.340463	-103.732527
8,600.00	1.66	46.90	8,597.47	119.41	127.62	488,114.76	726,892.46	32.340468	-103.732520
8,700.00	1.66	46.90	8,697.43	121.40	129.75	488,116.74	726,894.58	32.340474	-103.732513
8,800.00	1.66	46.90	8,797.39	123.38	131.87	488,118.72	726,896.70	32.340479	-103.732506
8,900.00	1.66	46.90	8,897.35	125.37	133.99	488,120.71	726,898.82	32.340484	-103.732499
9,000.00	1.66	46.90	8,997.30	127.35	136.11	488,122.69	726,900.95	32.340490	-103.732493
9,100.00	1.66	46.90	9,097.26	129.34	138.23	488,124.68	726,903.07	32.340495	-103.732486
9,200.00	1.66	46.90	9,197.22	131.32	140.35	488,126.66	726,905.19	32.340501	-103.732479
9,300.00	1.66	46.90	9,297.18	133.31	142.47	488,128.65	726,907.31	32.340506	-103.732472
9,400.00	1.66	46.90	9,397.14	135.29	144.59	488,130.63	726,909.43	32.340512	-103.732465
9,500.00	1.66	46.90	9,497.09	137.28	146.71	488,132.62	726,911.55	32.340517	-103.732458
9,600.00	1.66	46.90	9,597.05	139.26	148.84	488,134.60	726,913.67	32.340522	-103.732451
9,700.00	1.66	46.90	9,697.01	141.25	150.96	488,136.59	726,915.79	32.340528	-103.732444
9,800.00	1.66	46.90	9,796.97	143.23	153.08	488,138.57	726,917.91	32.340533	-103.732437
9,900.00	1.66	46.90	9,896.92	145.22	155.20	488,140.56	726,920.04	32.340539	-103.732430
10,000.00	1.66	46.90	9,996.88	147.20	157.32	488,142.54	726,922.16	32.340544	-103.732423
10,100.00	1.66	46.90	10,096.84	149.19	159.44	488,144.53	726,924.28	32.340550	-103.732417
10,200.00	1.66	46.90	10,196.80	151.17	161.56	488,146.51	726,926.40	32.340555	-103.732410
10,300.00	1.66	46.90	10,296.76	153.15	163.68	488,148.50	726,928.52	32.340560	-103.732403
10,400.00	1.66	46.90	10,396.71	155.14	165.81	488,150.48	726,930.64	32.340566	-103.732396
10,500.00	1.66	46.90	10,496.67	157.12	167.93	488,152.46	726,932.76	32.340571	-103.732389
10,589.41	1.66	46.90	10,586.04	158.90	169.82	488,154.24	726,934.66	32.340576	-103.732383
10,600.00	1.51	46.90	10,596.63	159.10	170.04	488,154.44	726,934.87	32.340577	-103.732382
10,700.00	0.01	46.90	10,696.62	160.00	171.00	488,155.34	726,935.84	32.340579	-103.732379

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3492.00ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3492.00ft
Site:	Sec 01-T23S-R31E	**North Reference:**	Grid
Well:	Tomb Raider 1-12 Fed 332H	**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
10,700.38	0.00	0.00	10,697.00	160.00	171.00	488,155.34	726,935.84	32.340579	-103.732379
10,800.00	0.00	0.00	10,796.62	160.00	171.00	488,155.34	726,935.84	32.340579	-103.732379
10,900.00	0.00	0.00	10,896.62	160.00	171.00	488,155.34	726,935.84	32.340579	-103.732379
11,000.00	0.00	0.00	10,996.62	160.00	171.00	488,155.34	726,935.84	32.340579	-103.732379
11,050.42	0.00	0.00	11,047.04	160.00	171.00	488,155.34	726,935.84	32.340579	-103.732379
KOP @ 11050' MD, 50' FNL, 2370' FWL									
11,100.00	4.96	179.64	11,096.56	157.86	171.01	488,153.20	726,935.85	32.340573	-103.732379
11,200.00	14.96	179.64	11,194.92	140.59	171.12	488,135.93	726,935.96	32.340526	-103.732379
11,291.57	24.11	179.64	11,281.13	110.00	171.31	488,105.34	726,936.15	32.340442	-103.732379
FTP @ 11292' MD, 100' FNL, 2370' FWL									
11,300.00	24.96	179.64	11,288.80	106.50	171.33	488,101.84	726,936.17	32.340432	-103.732379
11,400.00	34.96	179.64	11,375.33	56.63	171.64	488,051.97	726,936.48	32.340295	-103.732379
11,500.00	44.96	179.64	11,451.88	-7.51	172.04	487,987.83	726,936.88	32.340119	-103.732379
11,600.00	54.96	179.64	11,516.14	-83.97	172.51	487,911.37	726,937.35	32.339908	-103.732378
11,700.00	64.96	179.64	11,566.14	-170.43	173.05	487,824.92	726,937.89	32.339671	-103.732378
11,800.00	74.96	179.64	11,600.37	-264.25	173.63	487,731.09	726,938.47	32.339413	-103.732378
11,900.00	84.96	179.64	11,617.78	-362.59	174.24	487,632.75	726,939.08	32.339143	-103.732378
11,950.42	90.00	179.64	11,620.00	-412.95	174.56	487,582.39	726,939.39	32.339004	-103.732378
12,000.00	90.00	179.64	11,620.00	-462.52	174.86	487,532.82	726,939.70	32.338868	-103.732378
12,100.00	90.00	179.64	11,620.00	-562.52	175.48	487,432.82	726,940.32	32.338593	-103.732378
12,200.00	90.00	179.64	11,620.00	-662.52	176.11	487,332.82	726,940.94	32.338318	-103.732377
12,300.00	90.00	179.64	11,620.00	-762.52	176.73	487,232.83	726,941.56	32.338043	-103.732377
12,400.00	90.00	179.64	11,620.00	-862.51	177.35	487,132.83	726,942.18	32.337768	-103.732377
12,500.00	90.00	179.64	11,620.00	-962.51	177.97	487,032.83	726,942.80	32.337494	-103.732377
12,600.00	90.00	179.64	11,620.00	-1,062.51	178.59	486,932.83	726,943.42	32.337219	-103.732377
12,700.00	90.00	179.64	11,620.00	-1,162.51	179.21	486,832.83	726,944.04	32.336944	-103.732376
12,800.00	90.00	179.64	11,620.00	-1,262.51	179.83	486,732.84	726,944.67	32.336669	-103.732376
12,900.00	90.00	179.64	11,620.00	-1,362.51	180.45	486,632.84	726,945.29	32.336394	-103.732376
13,000.00	90.00	179.64	11,620.00	-1,462.50	181.07	486,532.84	726,945.91	32.336119	-103.732376
13,100.00	90.00	179.64	11,620.00	-1,562.50	181.69	486,432.84	726,946.53	32.335844	-103.732376
13,200.00	90.00	179.64	11,620.00	-1,662.50	182.31	486,332.84	726,947.15	32.335569	-103.732375
13,300.00	90.00	179.64	11,620.00	-1,762.50	182.93	486,232.85	726,947.77	32.335295	-103.732375
13,400.00	90.00	179.64	11,620.00	-1,862.50	183.55	486,132.85	726,948.39	32.335020	-103.732375
13,500.00	90.00	179.64	11,620.00	-1,962.49	184.17	486,032.85	726,949.01	32.334745	-103.732375
13,600.00	90.00	179.64	11,620.00	-2,062.49	184.80	485,932.85	726,949.63	32.334470	-103.732375
13,700.00	90.00	179.64	11,620.00	-2,162.49	185.42	485,832.86	726,950.25	32.334195	-103.732374
13,800.00	90.00	179.64	11,620.00	-2,262.49	186.04	485,732.86	726,950.87	32.333920	-103.732374
13,900.00	90.00	179.64	11,620.00	-2,362.49	186.66	485,632.86	726,951.49	32.333645	-103.732374
14,000.00	90.00	179.64	11,620.00	-2,462.48	187.28	485,532.86	726,952.11	32.333370	-103.732374
14,100.00	90.00	179.64	11,620.00	-2,562.48	187.90	485,432.86	726,952.73	32.333096	-103.732374
14,200.00	90.00	179.64	11,620.00	-2,662.48	188.52	485,332.87	726,953.36	32.332821	-103.732373
14,300.00	90.00	179.64	11,620.00	-2,762.48	189.14	485,232.87	726,953.98	32.332546	-103.732373
14,400.00	90.00	179.64	11,620.00	-2,862.48	189.76	485,132.87	726,954.60	32.332271	-103.732373
14,500.00	90.00	179.64	11,620.00	-2,962.47	190.38	485,032.87	726,955.22	32.331996	-103.732373
14,600.00	90.00	179.64	11,620.00	-3,062.47	191.00	484,932.87	726,955.84	32.331721	-103.732373
14,700.00	90.00	179.64	11,620.00	-3,162.47	191.62	484,832.88	726,956.46	32.331446	-103.732373
14,800.00	90.00	179.64	11,620.00	-3,262.47	192.24	484,732.88	726,957.08	32.331171	-103.732372
14,900.00	90.00	179.64	11,620.00	-3,362.47	192.86	484,632.88	726,957.70	32.330897	-103.732372
15,000.00	90.00	179.64	11,620.00	-3,462.46	193.49	484,532.88	726,958.32	32.330622	-103.732372
15,100.00	90.00	179.64	11,620.00	-3,562.46	194.11	484,432.89	726,958.94	32.330347	-103.732372
15,200.00	90.00	179.64	11,620.00	-3,662.46	194.73	484,332.89	726,959.56	32.330072	-103.732372
15,300.00	90.00	179.64	11,620.00	-3,762.46	195.35	484,232.89	726,960.18	32.329797	-103.732371
15,400.00	90.00	179.64	11,620.00	-3,862.46	195.97	484,132.89	726,960.80	32.329522	-103.732371
15,500.00	90.00	179.64	11,620.00	-3,962.46	196.59	484,032.89	726,961.42	32.329247	-103.732371

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3492.00ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3492.00ft
Site:	Sec 01-T23S-R31E	**North Reference:**	Grid
Well:	Tomb Raider 1-12 Fed 332H	**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
15,600.00	90.00	179.64	11,620.00	-4,062.45	197.21	483,932.90	726,962.05	32.328972	-103.732371
15,700.00	90.00	179.64	11,620.00	-4,162.45	197.83	483,832.90	726,962.67	32.328698	-103.732371
15,800.00	90.00	179.64	11,620.00	-4,262.45	198.45	483,732.90	726,963.29	32.328423	-103.732370
15,900.00	90.00	179.64	11,620.00	-4,362.45	199.07	483,632.90	726,963.91	32.328148	-103.732370
16,000.00	90.00	179.64	11,620.00	-4,462.45	199.69	483,532.90	726,964.53	32.327873	-103.732370
16,100.00	90.00	179.64	11,620.00	-4,562.44	200.31	483,432.91	726,965.15	32.327598	-103.732370
16,200.00	90.00	179.64	11,620.00	-4,662.44	200.93	483,332.91	726,965.77	32.327323	-103.732370
16,300.00	90.00	179.64	11,620.00	-4,762.44	201.55	483,232.91	726,966.39	32.327048	-103.732369
16,400.00	90.00	179.64	11,620.00	-4,862.44	202.17	483,132.91	726,967.01	32.326773	-103.732369
16,500.00	90.00	179.64	11,620.00	-4,962.44	202.80	483,032.91	726,967.63	32.326499	-103.732369
16,600.00	90.00	179.64	11,620.00	-5,062.43	203.42	482,932.92	726,968.25	32.326224	-103.732369
16,608.00	90.00	179.64	11,620.00	-5,070.43	203.47	482,924.92	726,968.30	32.326202	-103.732369
Cross Section @ 16608' MD, 0' FNL, 2370' FWL									
16,700.00	90.00	179.64	11,620.00	-5,162.43	204.04	482,832.92	726,968.87	32.325949	-103.732369
16,800.00	90.00	179.64	11,620.00	-5,262.43	204.66	482,732.92	726,969.49	32.325674	-103.732368
16,900.00	90.00	179.64	11,620.00	-5,362.43	205.28	482,632.92	726,970.11	32.325399	-103.732368
17,000.00	90.00	179.64	11,620.00	-5,462.43	205.90	482,532.93	726,970.74	32.325124	-103.732368
17,100.00	90.00	179.64	11,620.00	-5,562.42	206.52	482,432.93	726,971.36	32.324849	-103.732368
17,200.00	90.00	179.64	11,620.00	-5,662.42	207.14	482,332.93	726,971.98	32.324574	-103.732368
17,300.00	90.00	179.64	11,620.00	-5,762.42	207.76	482,232.93	726,972.60	32.324300	-103.732367
17,400.00	90.00	179.64	11,620.00	-5,862.42	208.38	482,132.93	726,973.22	32.324025	-103.732367
17,500.00	90.00	179.64	11,620.00	-5,962.42	209.00	482,032.94	726,973.84	32.323750	-103.732367
17,600.00	90.00	179.64	11,620.00	-6,062.41	209.62	481,932.94	726,974.46	32.323475	-103.732367
17,700.00	90.00	179.64	11,620.00	-6,162.41	210.24	481,832.94	726,975.08	32.323200	-103.732367
17,800.00	90.00	179.64	11,620.00	-6,262.41	210.86	481,732.94	726,975.70	32.322925	-103.732367
17,900.00	90.00	179.64	11,620.00	-6,362.41	211.49	481,632.94	726,976.32	32.322650	-103.732366
18,000.00	90.00	179.64	11,620.00	-6,462.41	212.11	481,532.95	726,976.94	32.322375	-103.732366
18,100.00	90.00	179.64	11,620.00	-6,562.41	212.73	481,432.95	726,977.56	32.322101	-103.732366
18,200.00	90.00	179.64	11,620.00	-6,662.40	213.35	481,332.95	726,978.18	32.321826	-103.732366
18,300.00	90.00	179.64	11,620.00	-6,762.40	213.97	481,232.95	726,978.80	32.321551	-103.732366
18,400.00	90.00	179.64	11,620.00	-6,862.40	214.59	481,132.96	726,979.42	32.321276	-103.732365
18,500.00	90.00	179.64	11,620.00	-6,962.40	215.21	481,032.96	726,980.05	32.321001	-103.732365
18,600.00	90.00	179.64	11,620.00	-7,062.40	215.83	480,932.96	726,980.67	32.320726	-103.732365
18,700.00	90.00	179.64	11,620.00	-7,162.39	216.45	480,832.96	726,981.29	32.320451	-103.732365
18,800.00	90.00	179.64	11,620.00	-7,262.39	217.07	480,732.96	726,981.91	32.320176	-103.732365
18,900.00	90.00	179.64	11,620.00	-7,362.39	217.69	480,632.97	726,982.53	32.319902	-103.732364
19,000.00	90.00	179.64	11,620.00	-7,462.39	218.31	480,532.97	726,983.15	32.319627	-103.732364
19,100.00	90.00	179.64	11,620.00	-7,562.39	218.93	480,432.97	726,983.77	32.319352	-103.732364
19,200.00	90.00	179.64	11,620.00	-7,662.38	219.55	480,332.97	726,984.39	32.319077	-103.732364
19,300.00	90.00	179.64	11,620.00	-7,762.38	220.18	480,232.97	726,985.01	32.318802	-103.732364
19,400.00	90.00	179.64	11,620.00	-7,862.38	220.80	480,132.98	726,985.63	32.318527	-103.732363
19,500.00	90.00	179.64	11,620.00	-7,962.38	221.42	480,032.98	726,986.25	32.318252	-103.732363
19,600.00	90.00	179.64	11,620.00	-8,062.38	222.04	479,932.98	726,986.87	32.317977	-103.732363
19,700.00	90.00	179.64	11,620.00	-8,162.37	222.66	479,832.98	726,987.49	32.317703	-103.732363
19,800.00	90.00	179.64	11,620.00	-8,262.37	223.28	479,732.98	726,988.11	32.317428	-103.732363
19,900.00	90.00	179.64	11,620.00	-8,362.37	223.90	479,632.99	726,988.74	32.317153	-103.732362
20,000.00	90.00	179.64	11,620.00	-8,462.37	224.52	479,532.99	726,989.36	32.316878	-103.732362
20,100.00	90.00	179.64	11,620.00	-8,562.37	225.14	479,432.99	726,989.98	32.316603	-103.732362
20,200.00	90.00	179.64	11,620.00	-8,662.36	225.76	479,332.99	726,990.60	32.316328	-103.732362
20,300.00	90.00	179.64	11,620.00	-8,762.36	226.38	479,233.00	726,991.22	32.316053	-103.732362
20,400.00	90.00	179.64	11,620.00	-8,862.36	227.00	479,133.00	726,991.84	32.315778	-103.732361
20,500.00	90.00	179.64	11,620.00	-8,962.36	227.62	479,033.00	726,992.46	32.315504	-103.732361
20,600.00	90.00	179.64	11,620.00	-9,062.36	228.24	478,933.00	726,993.08	32.315229	-103.732361
20,700.00	90.00	179.64	11,620.00	-9,162.36	228.87	478,833.00	726,993.70	32.314954	-103.732361

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 332H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3492.00ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3492.00ft
Site:	Sec 01-T23S-R31E	**North Reference:**	Grid
Well:	Tomb Raider 1-12 Fed 332H	**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
20,800.00	90.00	179.64	11,620.00	-9,262.35	229.49	478,733.01	726,994.32	32.314679	-103.732361
20,900.00	90.00	179.64	11,620.00	-9,362.35	230.11	478,633.01	726,994.94	32.314404	-103.732361
21,000.00	90.00	179.64	11,620.00	-9,462.35	230.73	478,533.01	726,995.56	32.314129	-103.732360
21,100.00	90.00	179.64	11,620.00	-9,562.35	231.35	478,433.01	726,996.18	32.313854	-103.732360
21,200.00	90.00	179.64	11,620.00	-9,662.35	231.97	478,333.01	726,996.80	32.313579	-103.732360
21,300.00	90.00	179.64	11,620.00	-9,762.34	232.59	478,233.02	726,997.43	32.313305	-103.732360
21,400.00	90.00	179.64	11,620.00	-9,862.34	233.21	478,133.02	726,998.05	32.313030	-103.732360
21,500.00	90.00	179.64	11,620.00	-9,962.34	233.83	478,033.02	726,998.67	32.312755	-103.732359
21,600.00	90.00	179.64	11,620.00	-10,062.34	234.45	477,933.02	726,999.29	32.312480	-103.732359
21,700.00	90.00	179.64	11,620.00	-10,162.34	235.07	477,833.03	726,999.91	32.312205	-103.732359
21,784.05	90.00	179.64	11,620.00	-10,246.38	235.59	477,748.98	727,000.43	32.311974	-103.732359
LTP @ 21784' MD, 100' FSL, 2370' FWL									
21,800.00	90.00	179.64	11,620.00	-10,262.33	235.69	477,733.03	727,000.53	32.311930	-103.732359
21,864.05	90.00	179.64	11,620.00	-10,326.38	236.09	477,668.98	727,000.93	32.311754	-103.732359
PBHL; 20' FSL, 2370' FWL									
21,864.06	90.00	179.64	11,620.00	-10,326.39	236.09	477,668.97	727,000.93	32.311754	-103.732359

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 - Tomb Raider 1-1	0.00	0.00	0.00	-10,326.39	236.09	477,668.97	727,000.93	32.311754	-103.732359
- plan misses target center by 10329.09ft 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
11,050.42	11,047.04	160.00	171.00	KOP @ 11050' MD, 50' FNL, 2370' FWL
11,291.57	11,281.13	110.00	171.31	FTP @ 11292' MD, 100' FNL, 2370' FWL
16,608.00	11,620.00	-5,070.43	203.47	Cross Section @ 16608' MD, 0' FNL, 2370' FWL
21,784.05	11,620.00	-10,246.38	235.59	LTP @ 21784' MD, 100' FSL, 2370' FWL
21,864.05	11,620.00	-10,326.38	236.09	PBHL; 20' FSL, 2370' FWL

Devon Energy

WELL DETAILS: Tomb Raider 1-12 Fed 332H

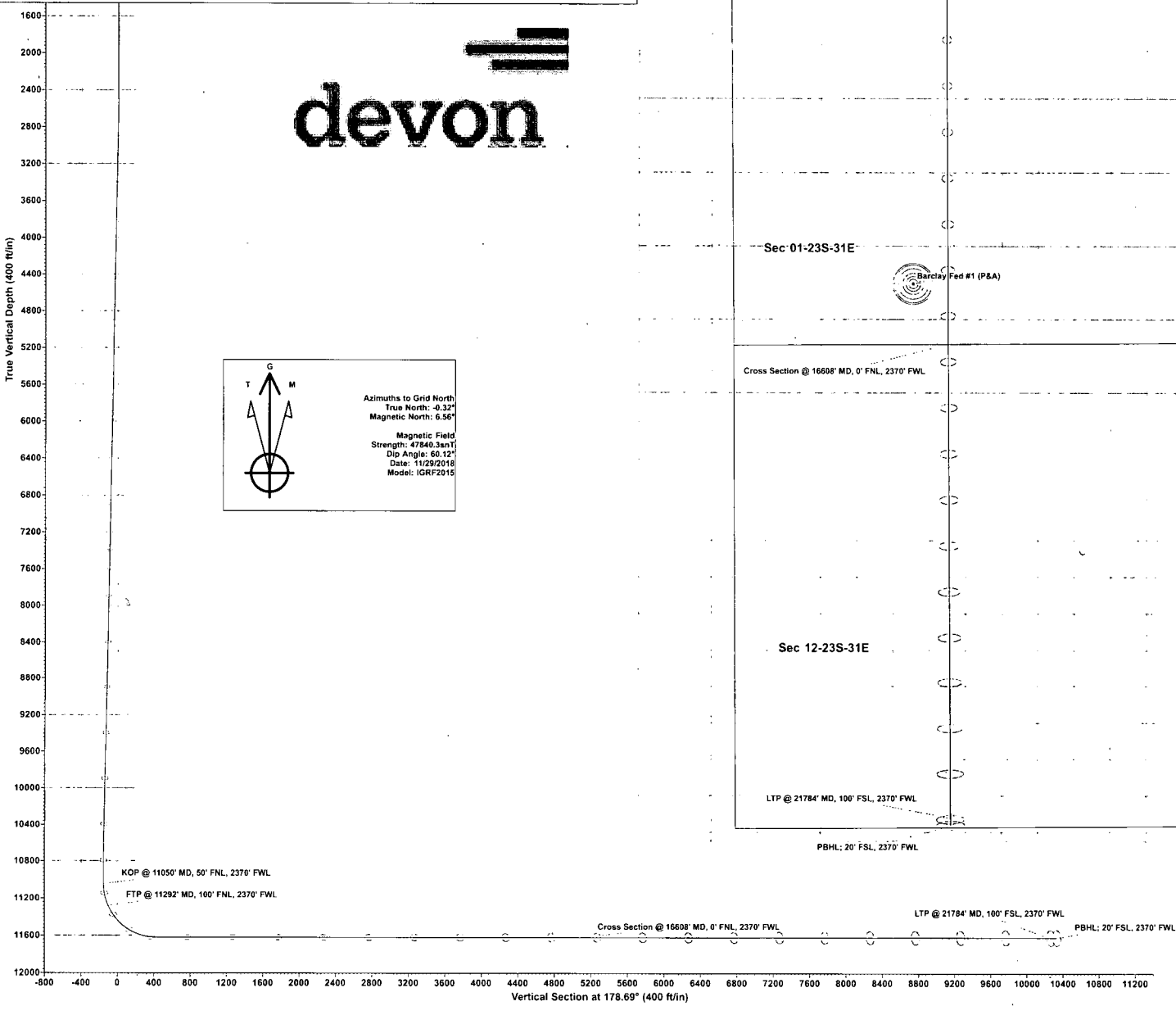
RKB @ 3492.00ft
3467.00

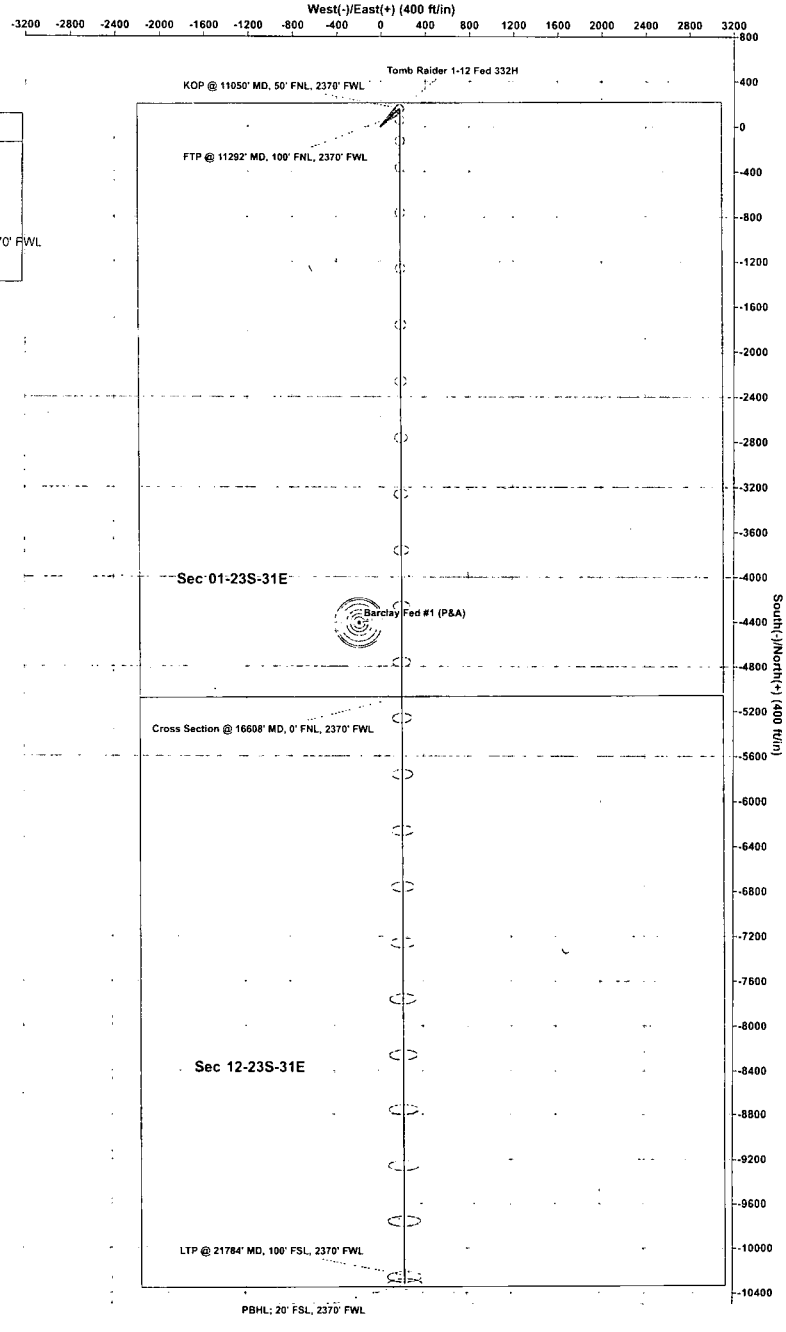
Northing	Easting	Latitude	Longitude
487995.34	726764.84	32.340142	-103.732935

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	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	
2666.46	1.66	46.90	2666.44	1.65	1.77	1.00	-1.61	
10589.41	1.66	46.90	10586.04	158.90	169.82	0.00	-154.98	
10700.38	0.00	0.00	10697.00	160.00	171.00	1.50	-156.05	
11050.42	0.00	0.00	11047.04	160.00	171.00	0.00	-156.05	KOP @ 11050' MD, 50' FNL, 2370' FWL
11950.42	90.00	179.64	11620.00	-412.95	174.56	10.00	416.83	
21864.06	90.00	179.64	11620.00	-10326.39	236.09	0.00	10329.09	PBHL; 20' FSL, 2370' FWL

devon





Devon Energy
APD VARIANCE DATA

OPERATOR NAME: Devon Energy

1. SUMMARY OF Variance:

Devon Energy respectfully requests approval for the following additions to the drilling plan:

1. Potential utilization of a spudder rig to pre-set surface casing.

2. Description of Operations

1. A spudder rig contractor may move in their rig to drill the surface hole section and pre-set surface casing on this well.
    a. After drilling the surface hole section, the rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
    b. Rig will utilize fresh water based mud to drill surface hole to TD.
2. The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
3. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wingvalves.
    a. A means for intervention will be maintained while the drilling rig is not over the well.
4. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
5. Drilling operation will be performed with the big 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 BLM will be contacted / notified 24 hours before the big rig moves back on to the pad with the pre-set surface casing.
6. Devon Energy will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
7. Once the rig is removed, Devon Energy will secure the wellhead area by placing a guard rail around the cellar area.

CASING PERFORMANCE Data Sheet

vallourec

O.D.	PE LB/FT	T&C LB/FT	GRADE
8.625	31.13	32.00	P110EC

Grade - Material Properties

Minimum Yield Strength:	125	ksi
Maximum Yield Strength:	140	ksi
Minimum Tensile Strength:	135	ksi

Pipe Body Data (PE)

Geometry

Nominal ID:	7.921	inch
Wall:	0.352	inch
Min. Wall % (API = 87.5%):	87.5	%
API Drift:	7.796	inch
Special Drift*:	7.875	inch

Performance

Pipe Body Yield Strength:	1,144	kips
Collapse Resistance:	3,470	psi
Internal Yield Pressure (*API Historical*):	8,930	psi

API Connection Data

SC Internal Pressure:	8,930	psi
SC Joint Strength:	793	kips
LC Internal Pressure:	8,930	psi
LC Joint Strength:	887	kips
BC Internal Pressure:	8,930	psi
BC Joint Strength:	1,121	kips

SC Torque (ft-lbs)

minimum:	optimum:	maximum:
5,950	7,933	9,916

LC Torque (ft-lbs)

minimum:	optimum:	maximum:
6,651	8,868	11,085

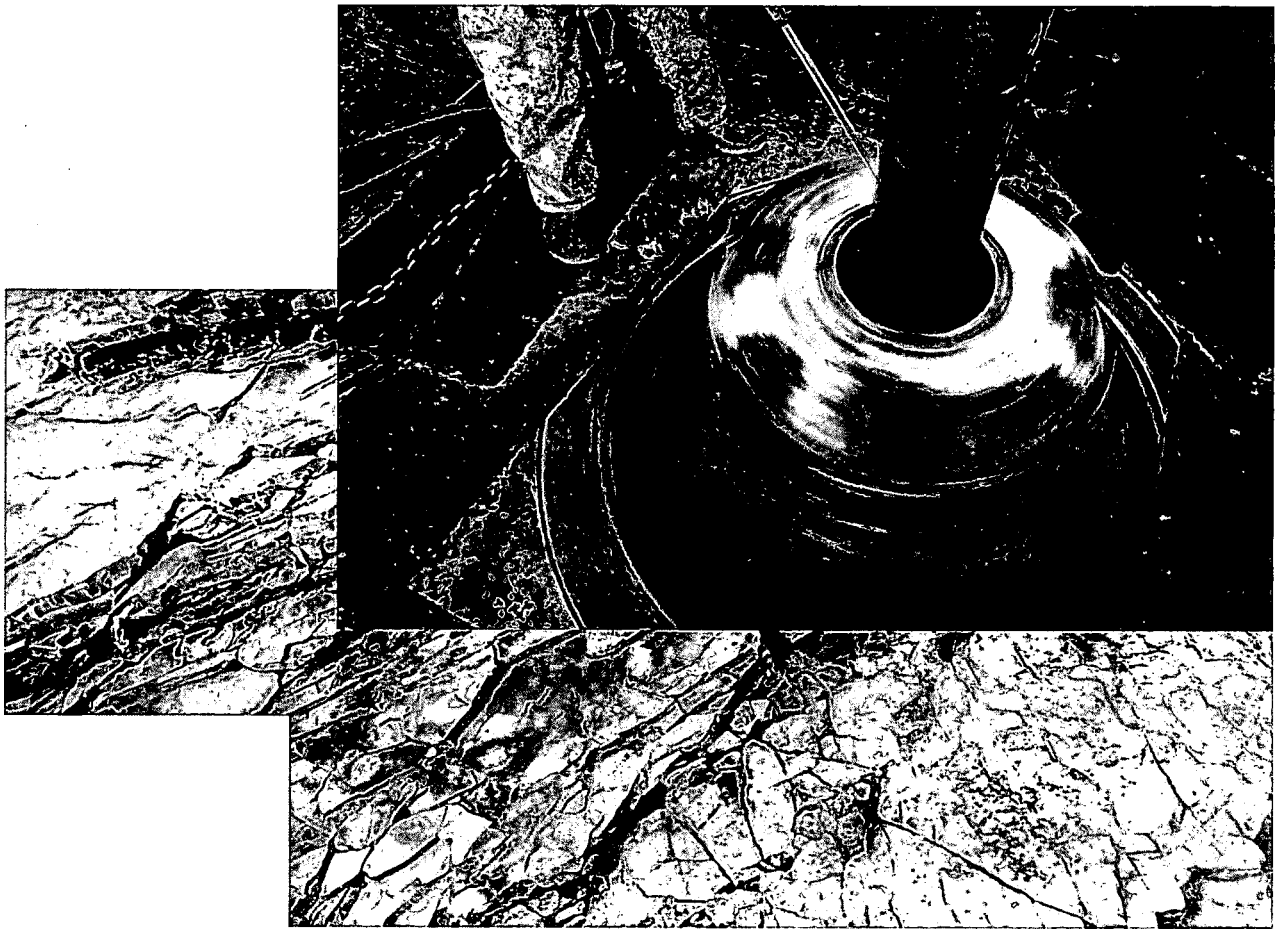
*Special drift must be ordered or API drift will be used for actual drifting of product.

**If above API connections do not suit your needs, VAM® premium connections are available up to 100% of pipe body ratings.

This data sheet is for informational purposes only. While every effort has been made to ensure the accuracy of all data and that the information contained herein is correct, this material is presented as a reference guide only. Vallourec assumes no responsibility for the results obtained through the use of this material.

devon

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.

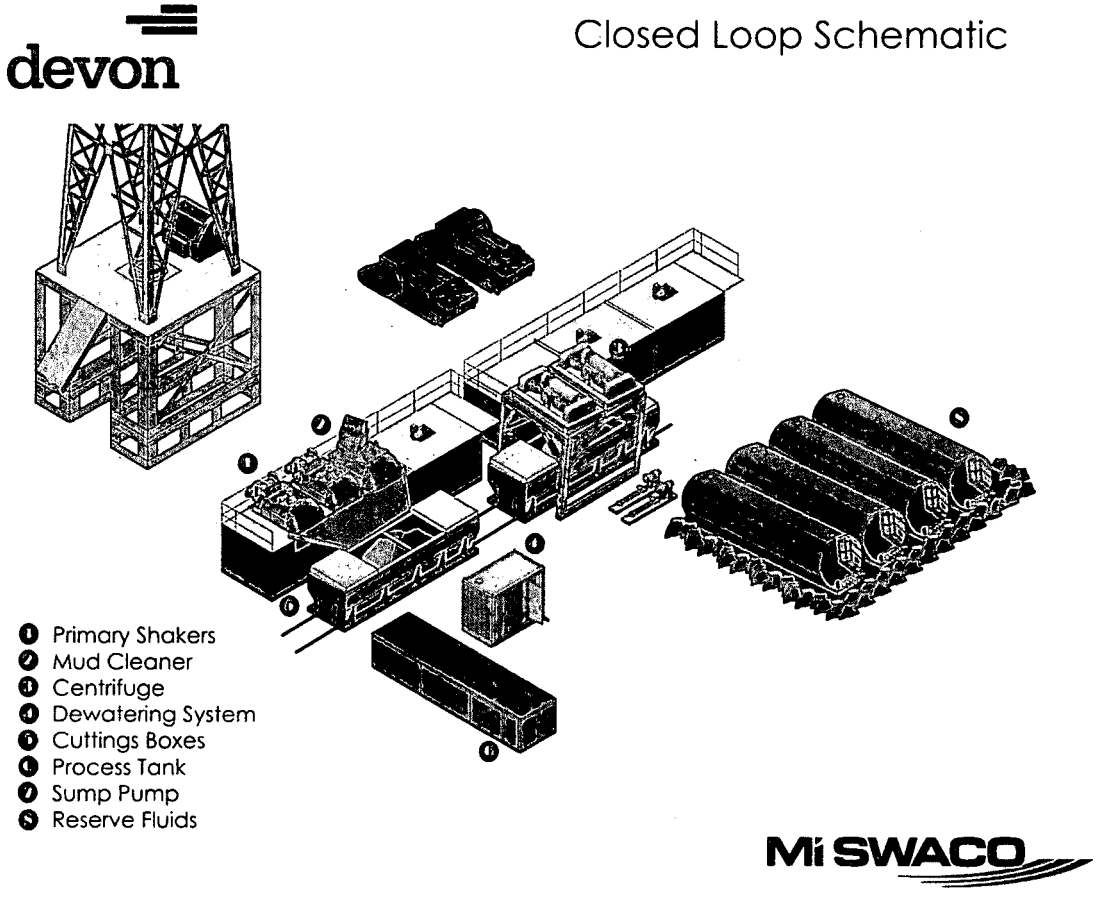
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

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.

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.

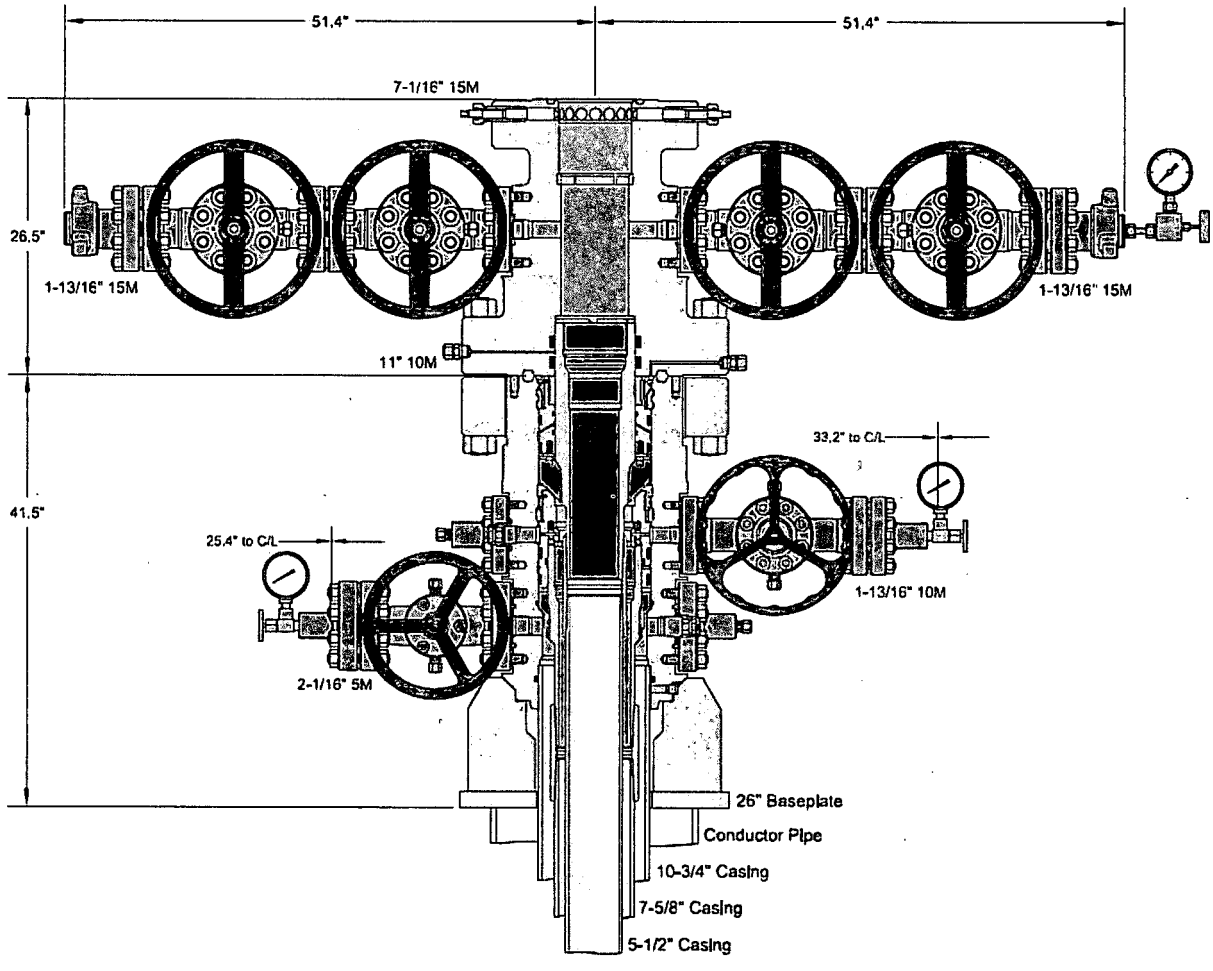
- Wellhead will be installed by wellhead representatives.
- If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- Wellhead representative will install the test plug for the initial 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 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 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.


51.4"
51.4"
7-1/16" 15M
26.5"
1-13/16" 15M
1-13/16" 15M
11" 10M
41.5"
33.2" to C/L
25.4" to C/L
1-13/16" 10M
2-1/16" 5M
26" Baseplate
Conductor Pipe
10-3/4" Casing
7-5/8" Casing
5-1/2" Casing

Tomb Raider 12-1 Fed 332H

1. Geologic Formations

TVD of target	11620	Pilot hole depth	N/A
MD at TD:	21864	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	766		
Salado	1141		
Base of Salt	4451		
Delaware	4481		
L Brushy Canyon	8061		
Bone Spring	8356		
Leonard 'A'	8461		
Leonard 'B'	8976		
Leonard 'C'	9171		
1st BSPG Sand	9421		
2nd BSPG Sand	9981		
3rd BSPG Lime	10496		
3rd BSPG Sand	11206		

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

2. Casing Program (Primary Design)

Hole Size	Casing Interval		Csg. Size	Wt. (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
14.75"	0	791	10.75"	40.5	J-55	STC	1.125	1.25	1.6
9.875"	0	10006	7.625"	29.7	P110	BTC	1.125	1.25	1.6
6.75"	0	TD	5.5"	20	P110	Vam SG	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1.00	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.
- Int casing shoe will be selected based on drilling data / gamma, setting depth with be revised accordingly if needed.
- A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.

Casing Program (Alternate Design)

Hole Size	Casing Interval		Csg. Size	Wt. (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
17.5"	0	Same as above	13.375"	48	H-40	STC	1.125	1.25	1.6
10.625"	0	Same as above	8.625"	32	P110EC	BTC	1.125	1.25	1.6
7.875"	0	TD	5.5"	17	P110	BTC	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1.00	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.
- Int 1 casing shoe will be selected based on drilling data / gamma, setting depth with be revised accordingly if needed.
- If 9.875" hole is drilled for intermediate 1, the 8.625" connection will change from BTC to TLW
- A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.
- 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.

	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 (Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	513	Surf	13.2	1.33	Lead: Class C Cement + additives
Int 1	882	Surf	9	3.31	Lead: Class C Cement + additives
	847	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	440	Surf	9	3.31	1st stage Lead: Class C Cement + additives
	55	500' above shoe	13.2	1.33	1st stage Tail: Class H / C + additives
	460	Surf	9	3.31	2st stage Lead: Class C Cement + additives
	55	500' above DV	13.2	1.33	2st stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.33	Squeeze Lead: Class C Cement + additives
	882	Surf	9	3.31	Lead: Class C Cement + additives
	847	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Production	862	500' tieback	13.2	1.33	Lead: 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	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

Cementing Program (Alternate Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	660	Surf	13.2	1.33	Lead: Class C Cement + additives
Int 1	967	Surf	9	3.31	Lead: Class C Cement + additives
	831	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	490	Surf	9	3.31	1st stage Lead: Class C Cement + additives
	55	500' above shoe	13.2	1.33	1st stage Tail: Class H / C + additives
	500	Surf	9	3.31	2st stage Lead: Class C Cement + additives
	55	500' above DV	13.2	1.33	2st stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.33	Squeeze Lead: Class C Cement + additives
	967	Surf	9	3.31	Lead: Class C Cement + additives
	831	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Production	1769	500' tieback	13.2	1.33	Lead: 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	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

Devon - Internal

4. Pressure Control Equipment (Three String Design)

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	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	5M	Annular (5M)	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		
N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.				

Devon - Internal

5. Mud Program (3 String Design)

Section	Type	Weight (ppg)	Vis	Water Loss
Surface	FW Gel	8.5 - 9	28-34	N/C
Intermediate	DBE / Cut Brine	9 - 10	28-34	N/C
Production	OBM	10-10.5	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 fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	6345 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.

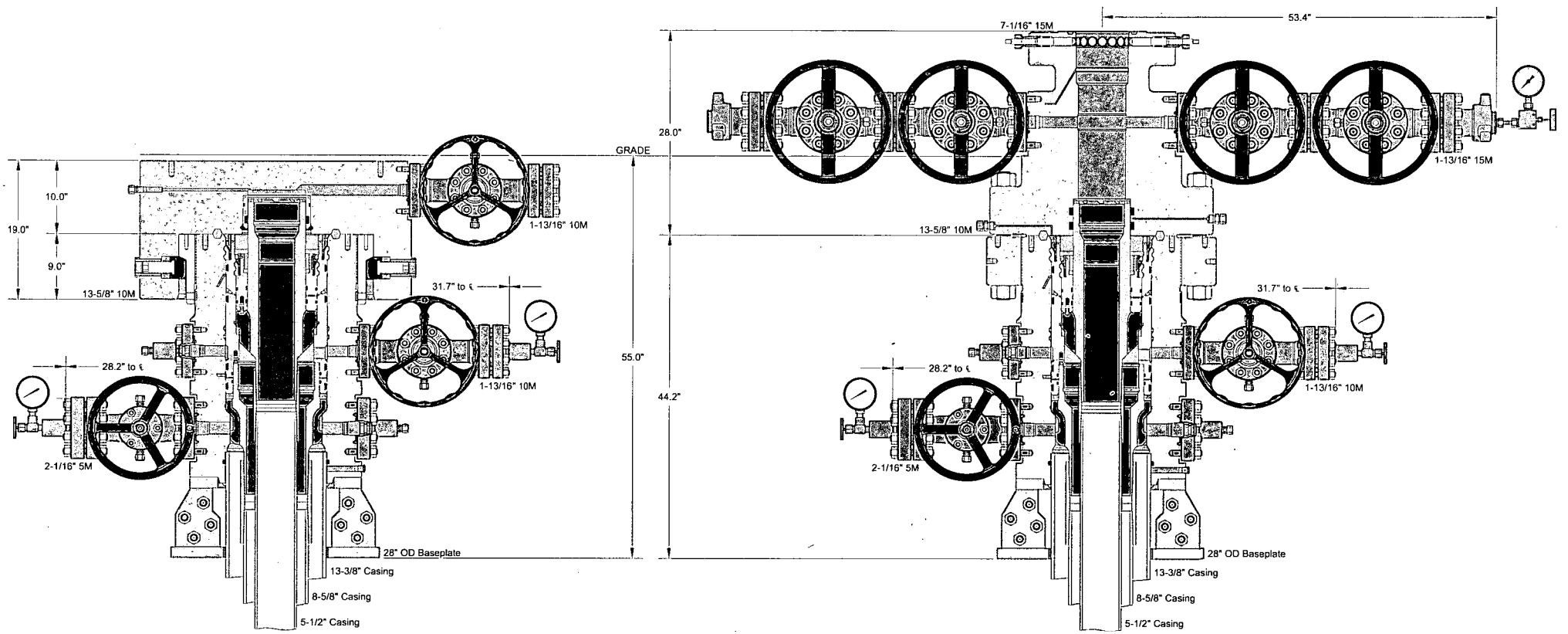
Will be pre-setting casing? Potentially

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



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CACTUS WELLHEAD LLC

DEVON ENERGY CORPORATION

13-3/8" x 8-5/8" x 5-1/2" 5M MBU-3T Wellhead System
With 8-5/8" & 5-1/2" Pin Down Rotating Mandrel Hangers
And 13-5/8" 10M x 7-1/16" 15M CTH-P-DBLHPS Tubing Head

DRAWN	DLE	10MAY18
APPRV		
DRAWING NO.	ODE0002309	

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

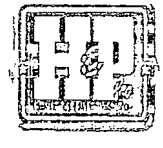
Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

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) 566-737 • Fax: (3662) 566-738

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

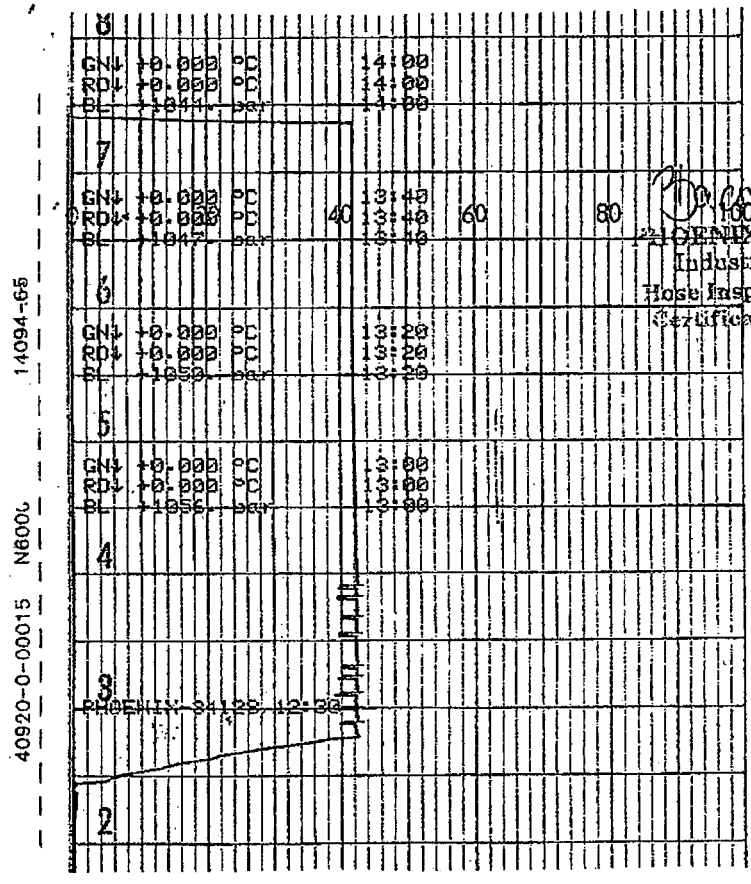
API Spec 16 C
Temperature rate:"B"

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.

VERIFIED TRUE COPY
PHOENIX RUBBER Q.C.



PHOENIX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE COPY
PHOENIX RUBBER Q.C.

APD ID: 10400037335 **Submission Date:** 12/14/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

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:

TOMB_RAIDER_1_12_FED_332H_EX_RD_20181214130549.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:

AA000055129_ACCESS_TA_1_1_PAD_1_CTB_1_P_20181214130619.pdf

New road type: COLLECTOR,RESOURCE

Length: 1670 Feet **Width (ft.):** 30

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

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 20

New road access erosion control: Water Drainage Ditch

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: GRAVEL

Access topsoil source: ONSITE

Access surfacing type description:

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: 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,OTHER

Drainage Control comments: Culvert installed when deemed necessary, per conditions of approval

Road Drainage Control Structures (DCS) description: na

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:

TOMB_RAIDER_1_12_FED_332H_OneMileBuffer_WA017301189_20181214130748.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: All flowlines will be buried going to the TODD APACHE 1-1 CTB 1. Please attached CTB.

Section 5 - Location and Types of Water Supply

Water Source Table

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

Water source use type: STIMULATION **Water source type:** RECYCLED

Describe type:

Source latitude: **Source longitude:**

Source datum:

Water source permit type: OTHER

Source land ownership: FEDERAL

Water source transport method: PIPELINE

Source transportation land ownership: FEDERAL

Water source volume (barrels): 320000 **Source volume (acre-feet):** 41.245792

Source volume (gal): 13440000

Water source and transportation map:

TOMB_RAIDER_1_12_FED_332H_612H_702H_732H_water_map_20181214131203.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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

Section 6 - Construction Materials

Construction Materials description: Dirt fill and caliche will be used to construct well pad. Map attached.

Construction Materials source location attachment:

Todd_Apache_1_1_Pad_1_Caliche_Map_20181214131226.pdf

Section 7 - Methods for Handling Waste

Waste type: PRODUCED WATER

Waste content description: Average produced BWPD over the first year of production

Amount of waste: 1000 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: OFF-LEASE INJECTION **Disposal location ownership:** PRIVATE

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: 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: FLOWBACK

Waste content description: Average produced BWPD over the flowback period (first 30 days of production).

Amount of waste: 2000 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: OFF-LEASE INJECTION **Disposal location ownership:** STATE

Disposal type description:

Disposal location description: Produced water during flowback will be disposed of at various disposals in Lea and Eddy County.

Waste type: DRILLING

Waste content description: Water Based Cuttings

Amount of waste: 1565.8 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

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

RIGLAYOUT_20181214131500.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: TODD APACHE 1-1 PAD

Multiple Well Pad Number: 1

Recontouring attachment:

TOMB_RAIDER_1_12_FED_332H_RECLAMATION_20181214131516.pdf

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): 6.406
Road proposed disturbance (acres): 1.15
Powerline proposed disturbance (acres): 0.032
Pipeline proposed disturbance (acres): 0.168
Other proposed disturbance (acres): 5.74
Total proposed disturbance: 13.496

Well pad interim reclamation (acres): 2.759
Road interim reclamation (acres): 0
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 0
Other interim reclamation (acres): 0
Total interim reclamation: 2.759

Well pad long term disturbance (acres): 3.647
Road long term disturbance (acres): 1.15
Powerline long term disturbance (acres): 0.032
Pipeline long term disturbance (acres): 0.168
Other long term disturbance (acres): 5.74
Total long term disturbance: 10.737

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? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: 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: 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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

Other Local Office:

USFS Region:

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

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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

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:**

Section 12 - Other Information

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

ROW Type(s):

ROW Applications

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 332H

SUPO Additional Information: *ALL FLOWLINES ARE BURIED*

Use a previously conducted onsite? YES

Previous Onsite information: 7/2016-Todd Apache MDP 1-Wellpad 1

Other SUPO Attachment

AA000056016_TODD_APACHE_1_1_CTB_1_R2_20181214133131.pdf

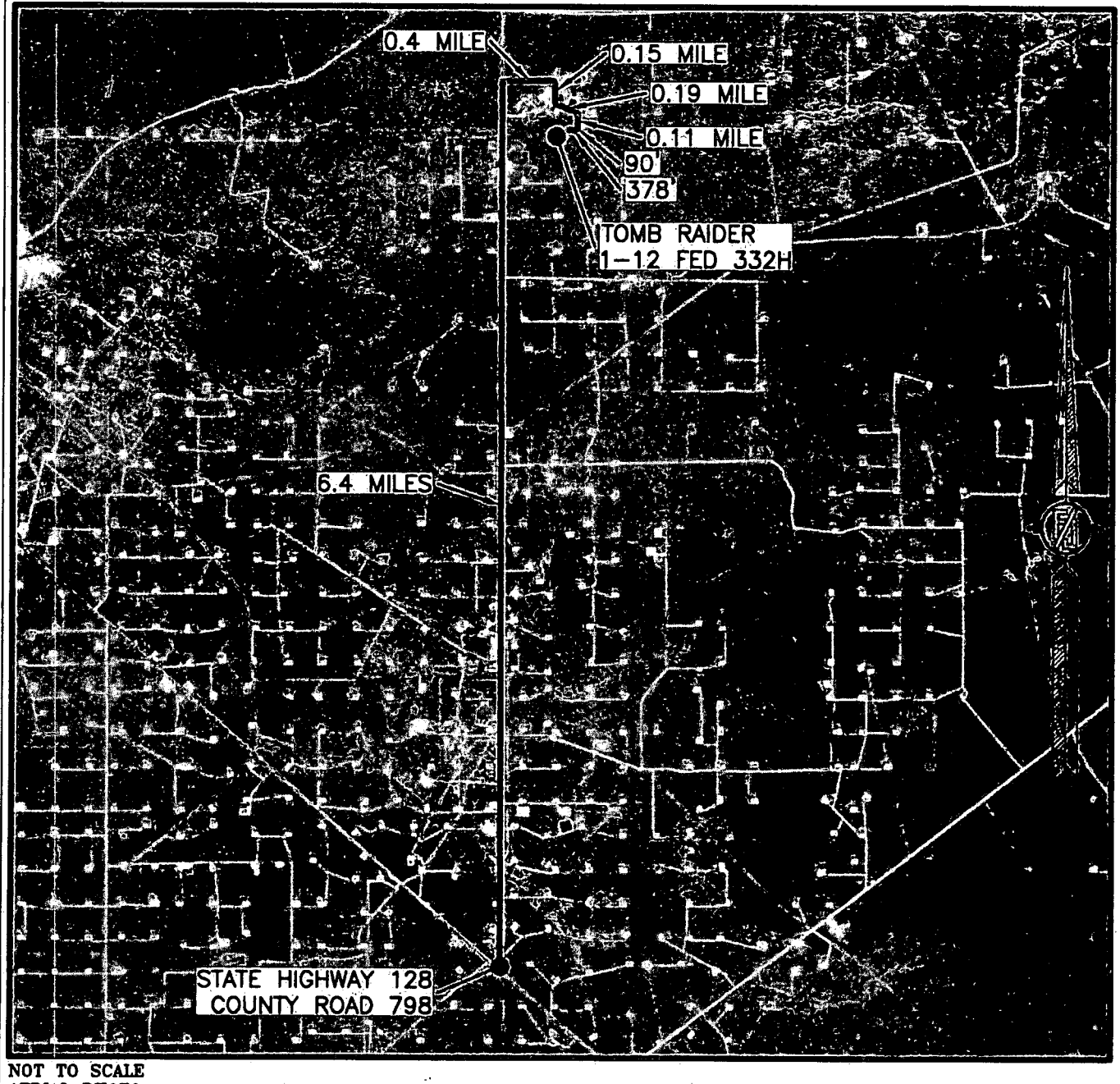
EL7834_FINAL_TODD_APACHE_1_1_PAD_1_PAD_ELECTRIC_P_20181214133133.PDF

Pay.gov___Receipt_332H_702H_732H_612H_20181214151504.pdf

7660154F_5FL_1GL_TR_12_WP_2_TR_12_CTB_2_P_BURIED_FLOWLINES_20190507074232.pdf

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 332H

LOCATED 210 FT. FROM THE NORTH LINE
AND 2199 FT. FROM THE WEST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6665

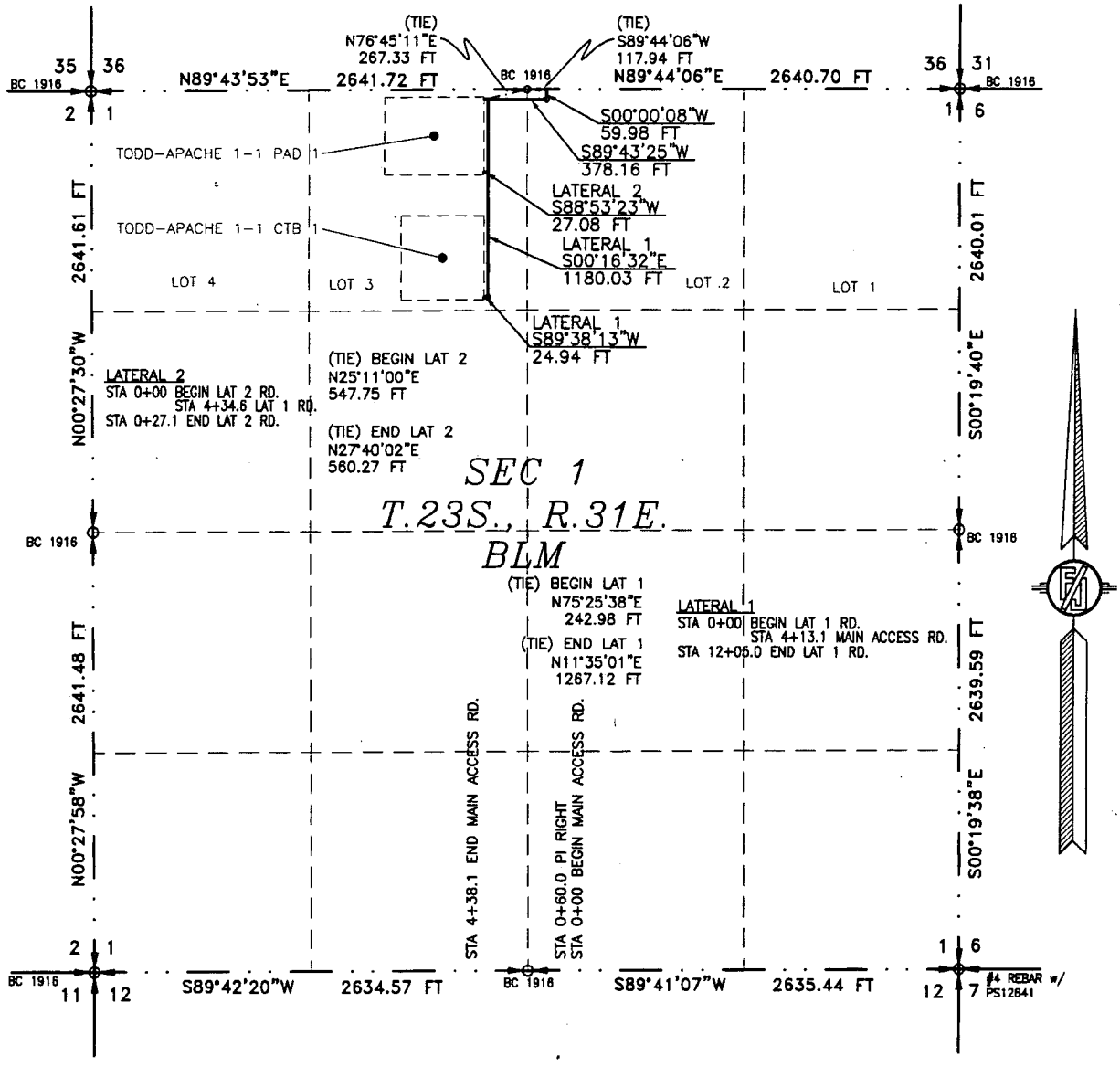
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT (AA000055129)

ACCESS ROAD TO THE TODD-APACHE 1-1 PAD 1 & TODD-APACHE 1-1 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AUGUST 22, 2016



SEE NEXT SHEET (2-4) FOR DESCRIPTION

1000 0 1000
Scale: 1" = 1000'

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 22 DAY OF AUGUST 2016

FILIMON F. JARAMILLO, PLS 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SHEET: 1-4

SURVEY NO. 4864

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT (AA000055129)

ACCESS ROAD TO THE TODD-APACHE 1-1 PAD 1 & TODD-APACHE 1-1 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AUGUST 22, 2016

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

MAIN ACCESS ROAD
BEGINNING AT A POINT WITHIN LOT 2 OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S89°44'06"W, A DISTANCE OF 117.94 FEET;
THENCE S00°00'08"W A DISTANCE OF 59.98 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S89°43'25"W A DISTANCE OF 378.16 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N76°45'11"E, A DISTANCE OF 267.33 FEET;

SAID STRIP OF LAND BEING 438.14 FEET OR 26.56 RODS IN LENGTH, CONTAINING 0.301 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

LOT 2	177.52 L.F.	10.76 RODS	0.122 ACRES
LOT 3	260.62 L.F.	15.80 RODS	0.179 ACRES

LATERAL 1 ACCESS ROAD
BEGINNING AT A POINT WITHIN LOT 3 OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N75°25'38"E, A DISTANCE OF 242.98 FEET;
THENCE S00°16'32"E A DISTANCE OF 1180.03 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S89°38'13"W A DISTANCE OF 24.94 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N11°35'01"E, A DISTANCE OF 1267.12 FEET;

SAID STRIP OF LAND BEING 1204.97 FEET OR 73.03 RODS IN LENGTH, CONTAINING 0.830 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

LOT 3	1204.97 L.F.	73.03 RODS	0.830 ACRES

LATERAL 2 ACCESS ROAD
BEGINNING AT A POINT WITHIN LOT 3 OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N25°11'00"E, A DISTANCE OF 547.75 FEET;
THENCE S88°53'23"W A DISTANCE OF 27.08 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N27°40'02"E, A DISTANCE OF 560.27 FEET;

SAID STRIP OF LAND BEING 27.08 FEET OR 1.64 RODS IN LENGTH, CONTAINING 0.019 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

LOT 3	27.08 L.F.	1.64 RODS	0.019 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 22nd DAY OF AUGUST, 2016

FILIMON F. JARAMILLO, PLS 12797

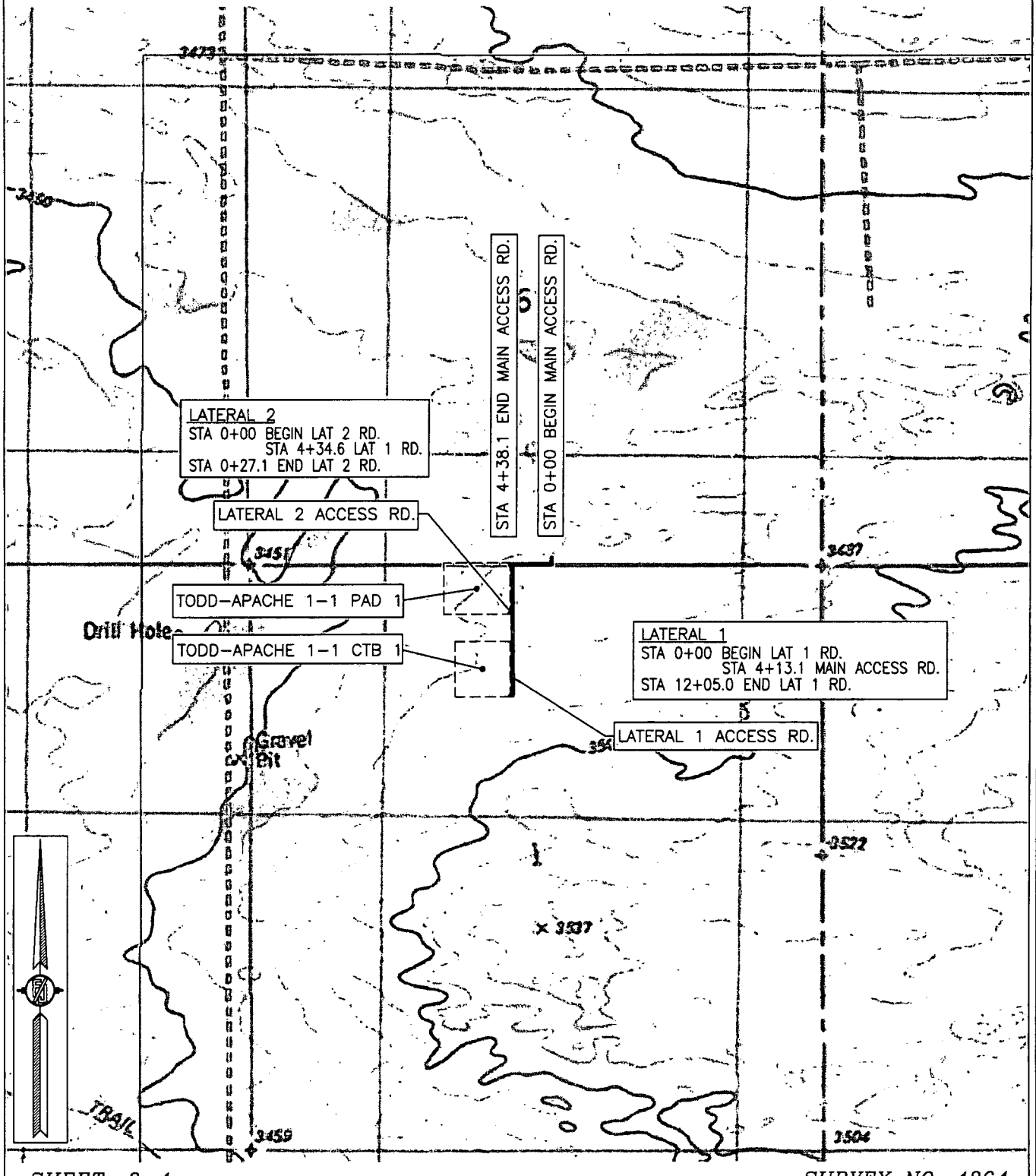
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

ACCESS ROAD PLAT (AA000055129)

ACCESS ROAD TO THE TODD-APACHE 1-1 PAD 1 & TODD-APACHE 1-1 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AUGUST 22, 2016



SHEET: 3-4

SURVEY NO. 4864

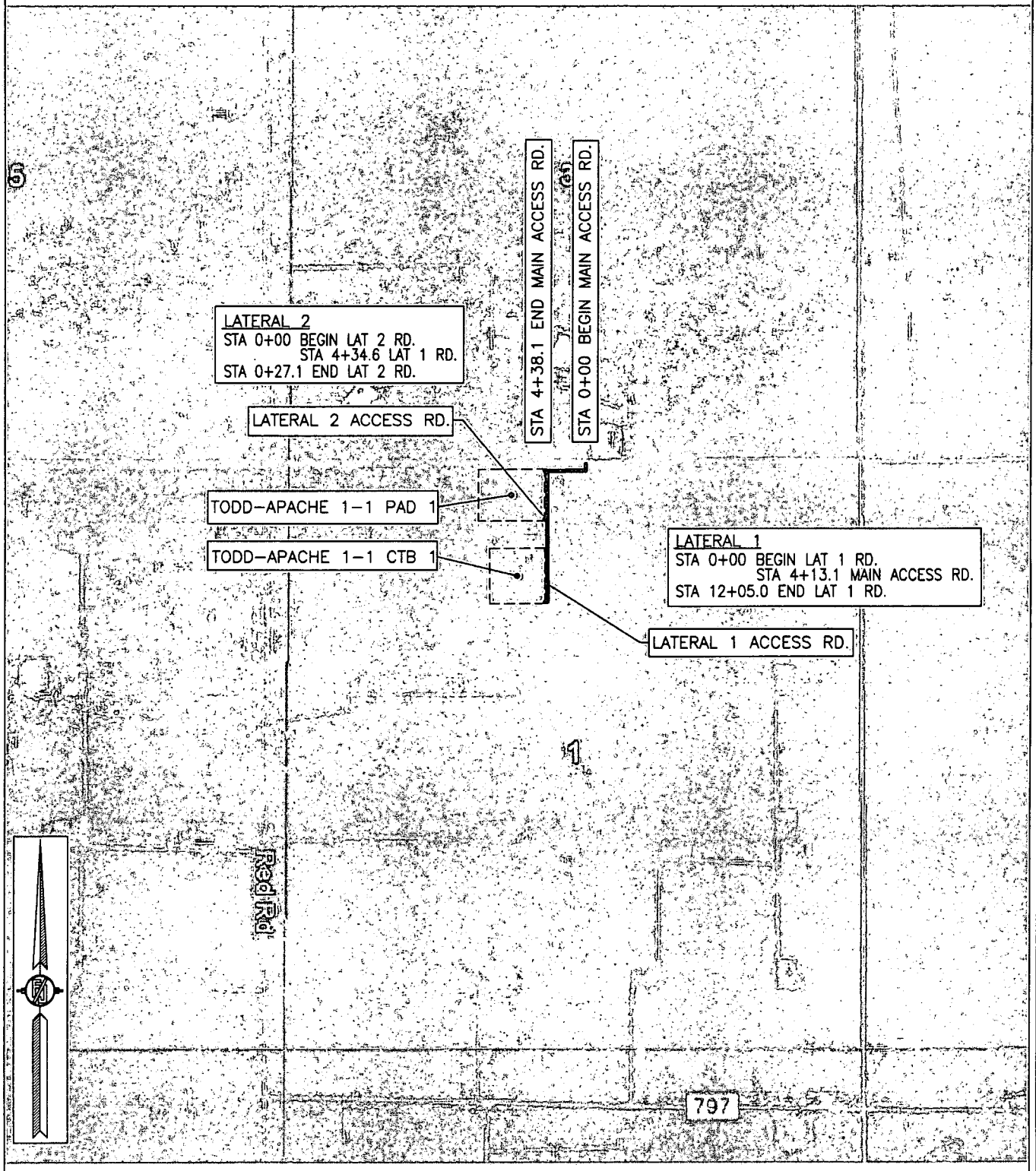
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT (AA000055129)

ACCESS ROAD TO THE TODD-APACHE 1-1 PAD 1 & TODD-APACHE 1-1 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AUGUST 22, 2016



SHEET: 4-4 SURVEY NO. 4864

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

PLAT

One Mile Radius Map

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 12/12/2018

N

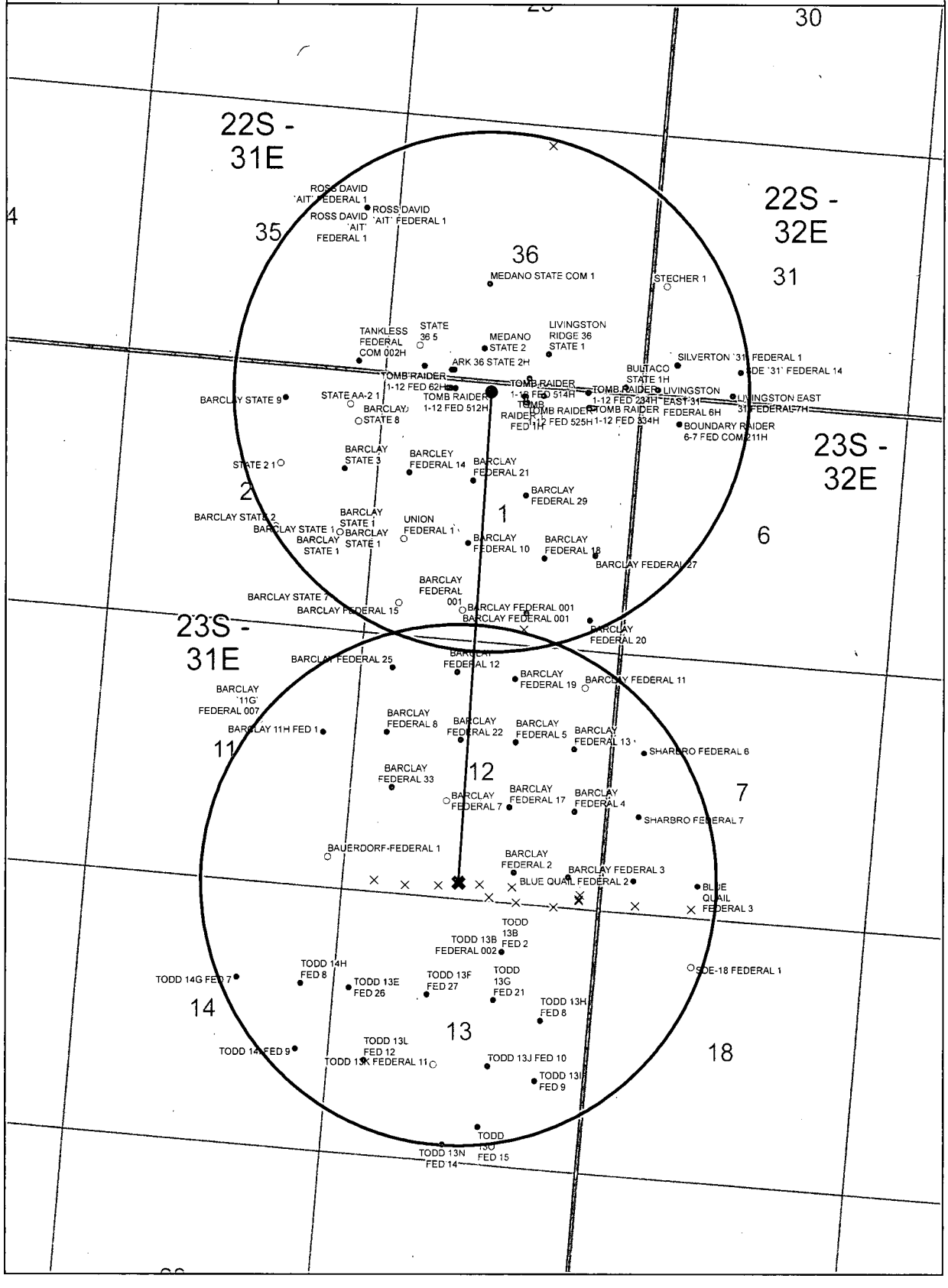
Miles
0 0.3
1 inch = 0.44 miles

TOMB RAIDER 1-12 FED 332H
WA017301189

TOMB RAIDER 1-12 FED 62H
Nearest wellbore to SHL: 525 ft.

TOMB RAIDER 1-12 FED 62H
Nearest wellbore to BHL: 403 ft.

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



TOMB RAIDER 1-12 FED

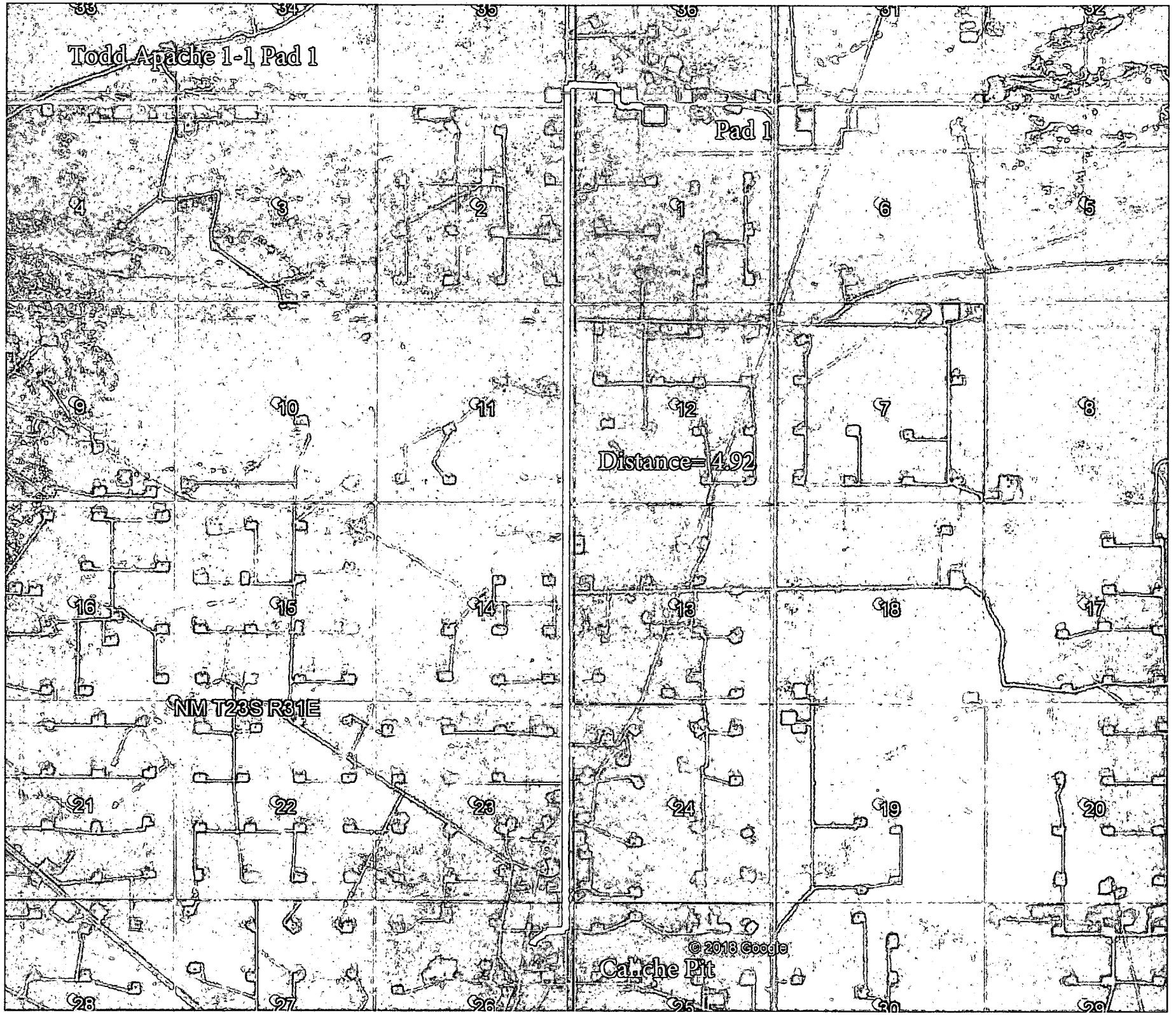
332H/612H/702H/732H

devon

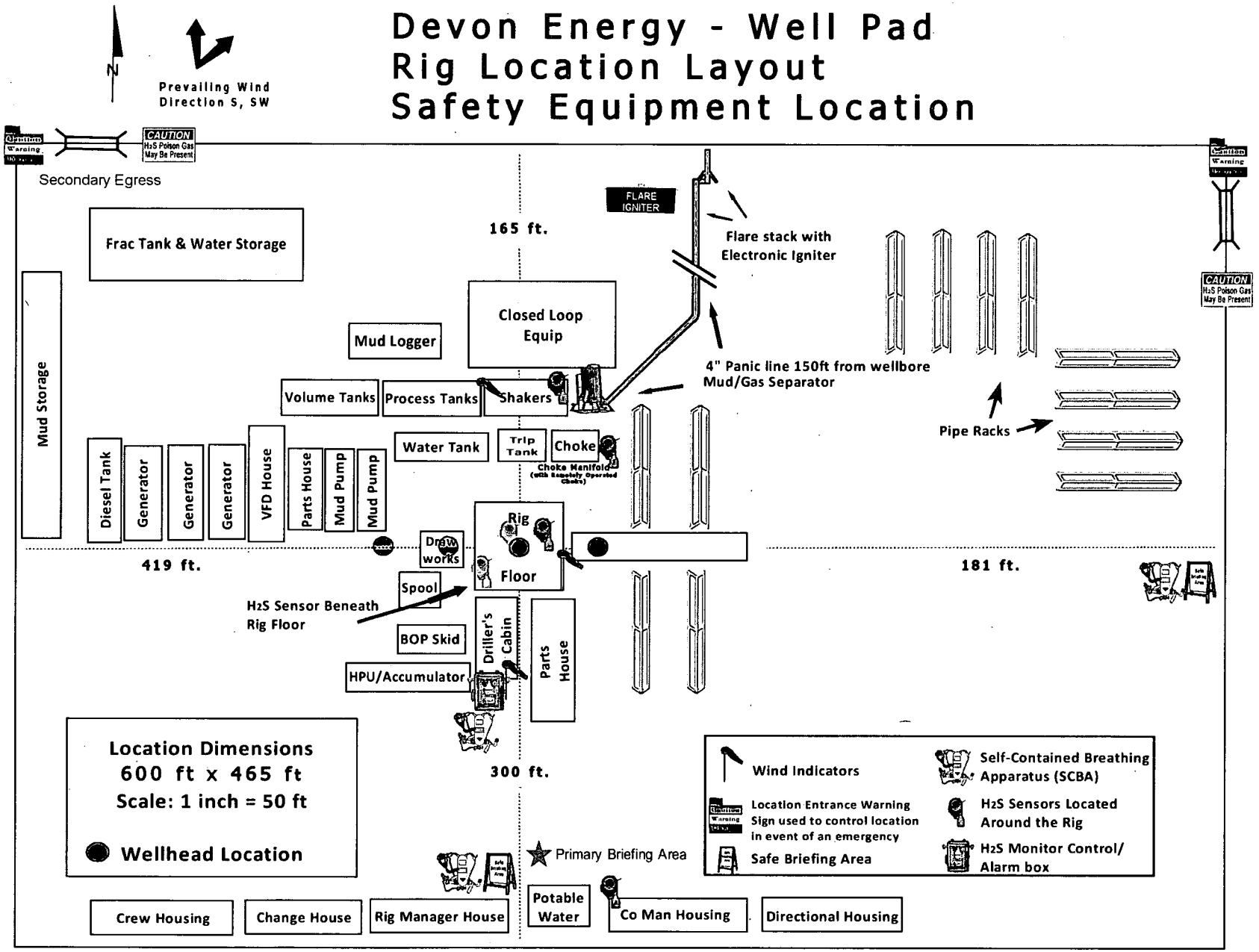
This map is for illustrative purposes only and is neither a legally recorded map nor survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.

WGS_1984_Web_Mercator_Auxiliary_Sphere
Prepared by: _User
Map is current as of: 07-Dec-2018

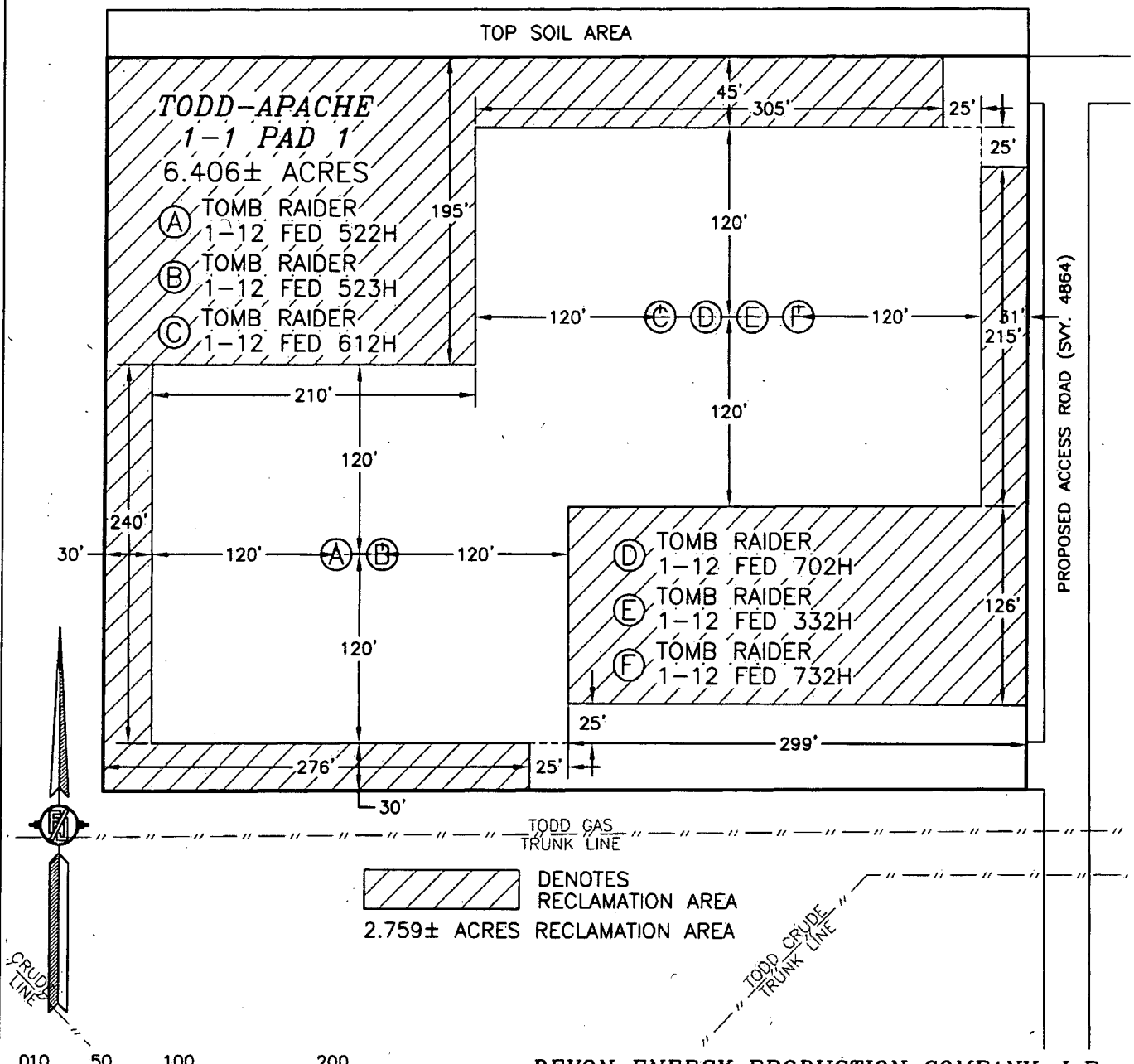
Miles
0 0.07 0.14 0.28 1:14,228


Todd Apache 1-1 Pad 1
Pad 1
Distance= 4.92
NM T23S R31E
Caliche Pit
© 2018 Google

Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location



SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
INTERIM SITE RECLAMATION



DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 332H

LOCATED 210 FT. FROM THE NORTH LINE AND 2199 FT. FROM THE WEST LINE OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6665

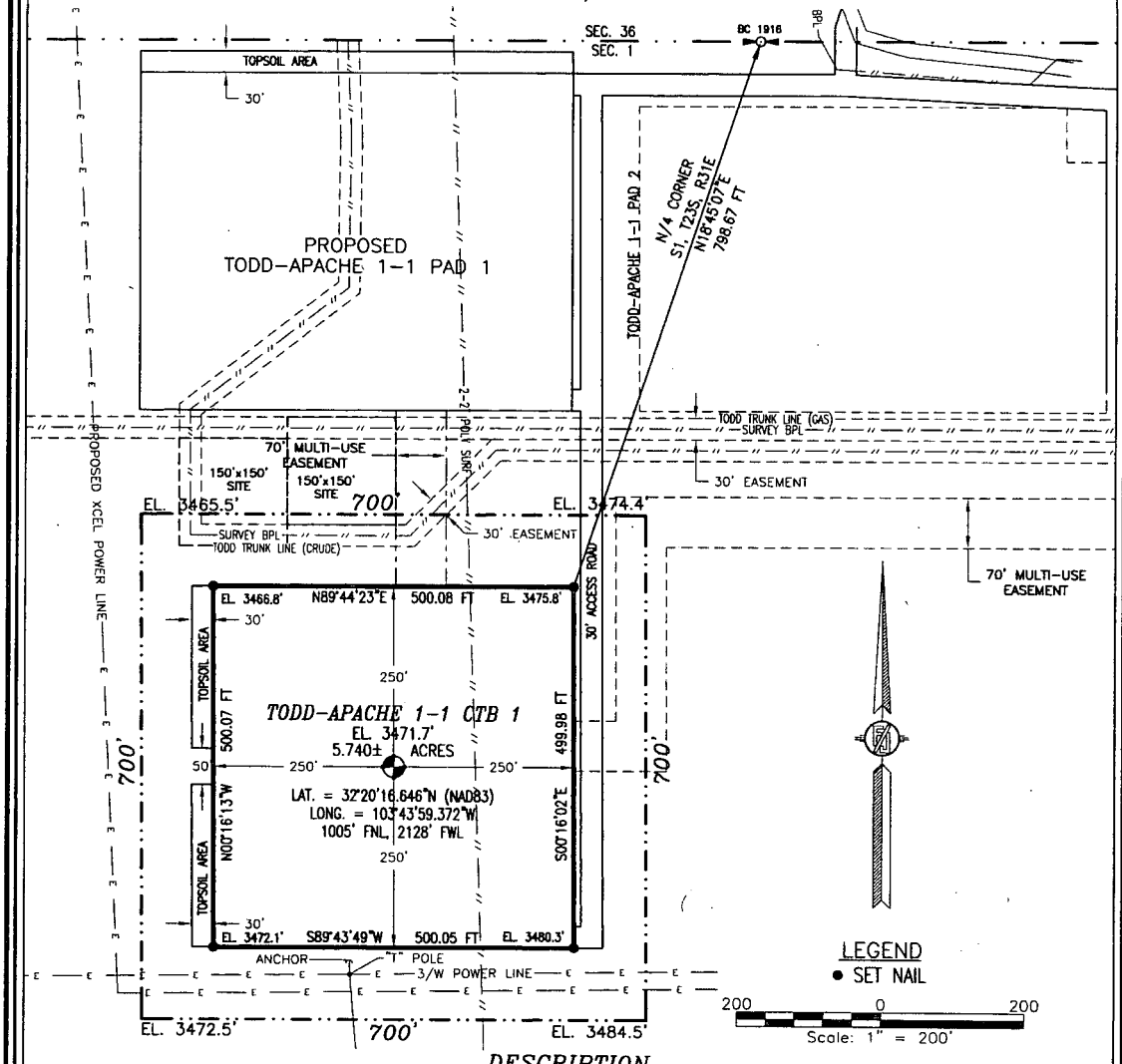
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

TODD-APACHE 1-1 CTB 1 (AA000056016)

DEVON ENERGY PRODUCTION COMPANY, L.P.

IN LOT 3 OF
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 20, 2016



DESCRIPTION

A CERTAIN PIECE OR PARCEL OF LAND AND REAL ESTATE LYING IN LOT 3 OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST N.M.P.M., EDDY COUNTY, NEW MEXICO.

BEGINNING AT THE NORTHEAST CORNER OF THE PARCEL, WHENCE THE NORTH QUARTER CORNER OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N18°45'07"E, A DISTANCE OF 798.67 FEET;
THENCE S00°16'02"E A DISTANCE OF 499.98 FEET TO THE SOUTHEAST CORNER OF THE PARCEL;
THENCE S89°43'49"W A DISTANCE OF 500.05 FEET TO THE SOUTHWEST CORNER OF THE PARCEL;
THENCE N00°16'13"W A DISTANCE OF 500.07 FEET TO THE NORTHWEST CORNER OF THE PARCEL;
THENCE N89°44'23"E A DISTANCE OF 500.08 FEET TO THE NORTHEAST CORNER OF THE PARCEL, TO THE POINT OF BEGINNING;
CONTAINING 5.740 ACRES MORE OR LESS.

GENERAL NOTES

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

2.) BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST ZONE MODIFIED TO THE SURFACE (NAD83)

DRIVING DIRECTION: FROM STATE HIGHWAY 128 AND CR 798 (RED ROAD) GO NORTH ON CR 798 6.4 MILES, TURN RIGHT ON CALICHE ROAD AND GO EAST 0.4 OF A MILE, BEND RIGHT AND GO SOUTH 0.15 OF A MILE, BEND LEFT AND GO SOUTHEAST 0.19 OF A MILE, TURN RIGHT AND GO SOUTH 0.11 OF A MILE TO A PROPOSED ROAD SURVEY WHERE ROAD BENDS LEFT. FOLLOW FLAGS SOUTH 90', THEN WEST 378', THEN SOUTH 1180', THEN WEST 25' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 29TH DAY OF JULY, 2016

FILIMON F. JARAMILLO
NEW MEXICO
12797
REGISTERED PROFESSIONAL SURVEYOR

FILIMON F. JARAMILLO, N.M.P.S. 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SHEET: 1-3

SURVEY NO. 4527D

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

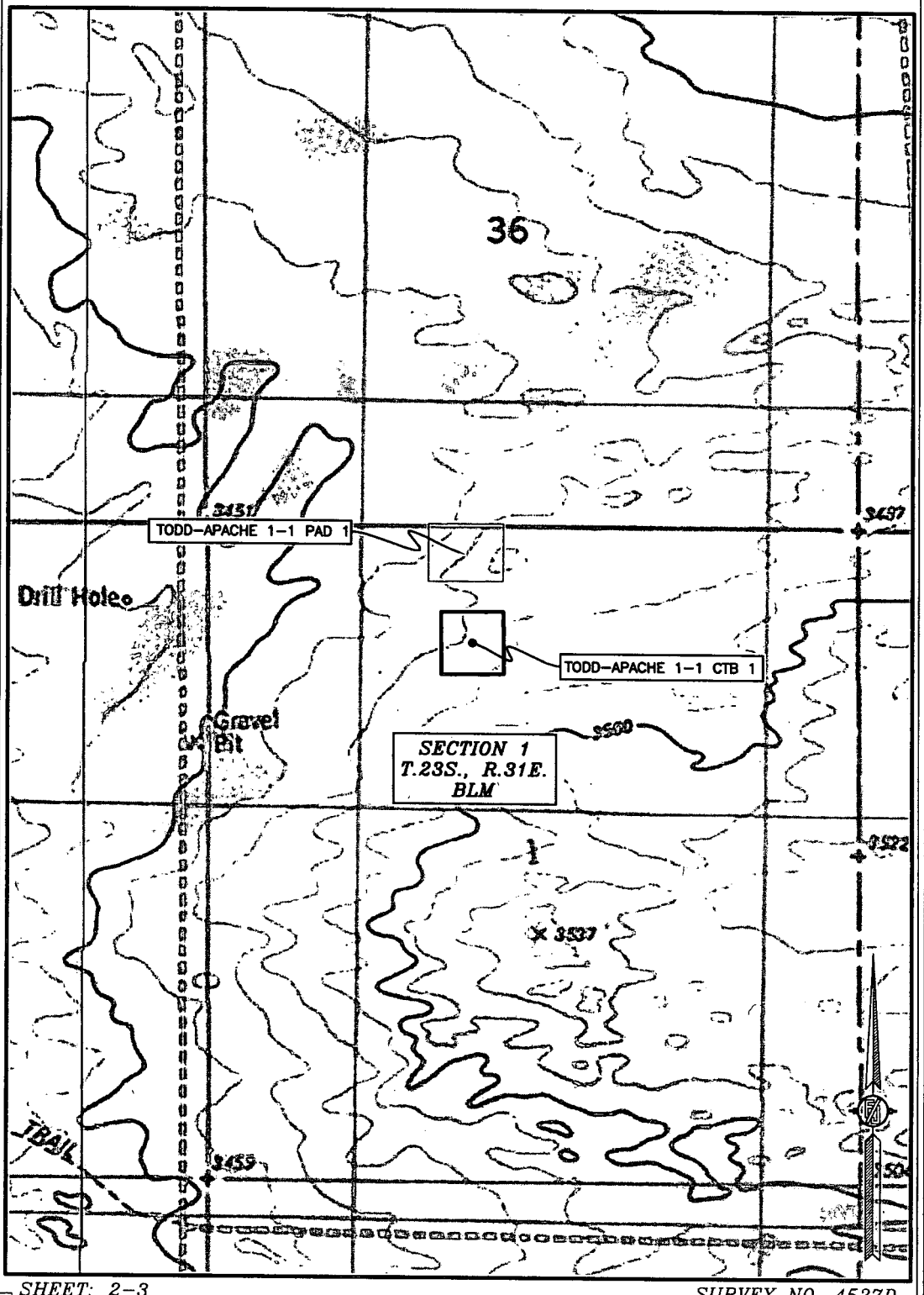
TODD-APACHE 1-1 CTB 1 (AA000056016)

DEVON ENERGY PRODUCTION COMPANY, L.P.

IN LOT 3 OF
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 20, 2016

QUAD MAP



SHEET: 2-3

SURVEY NO. 4527D

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

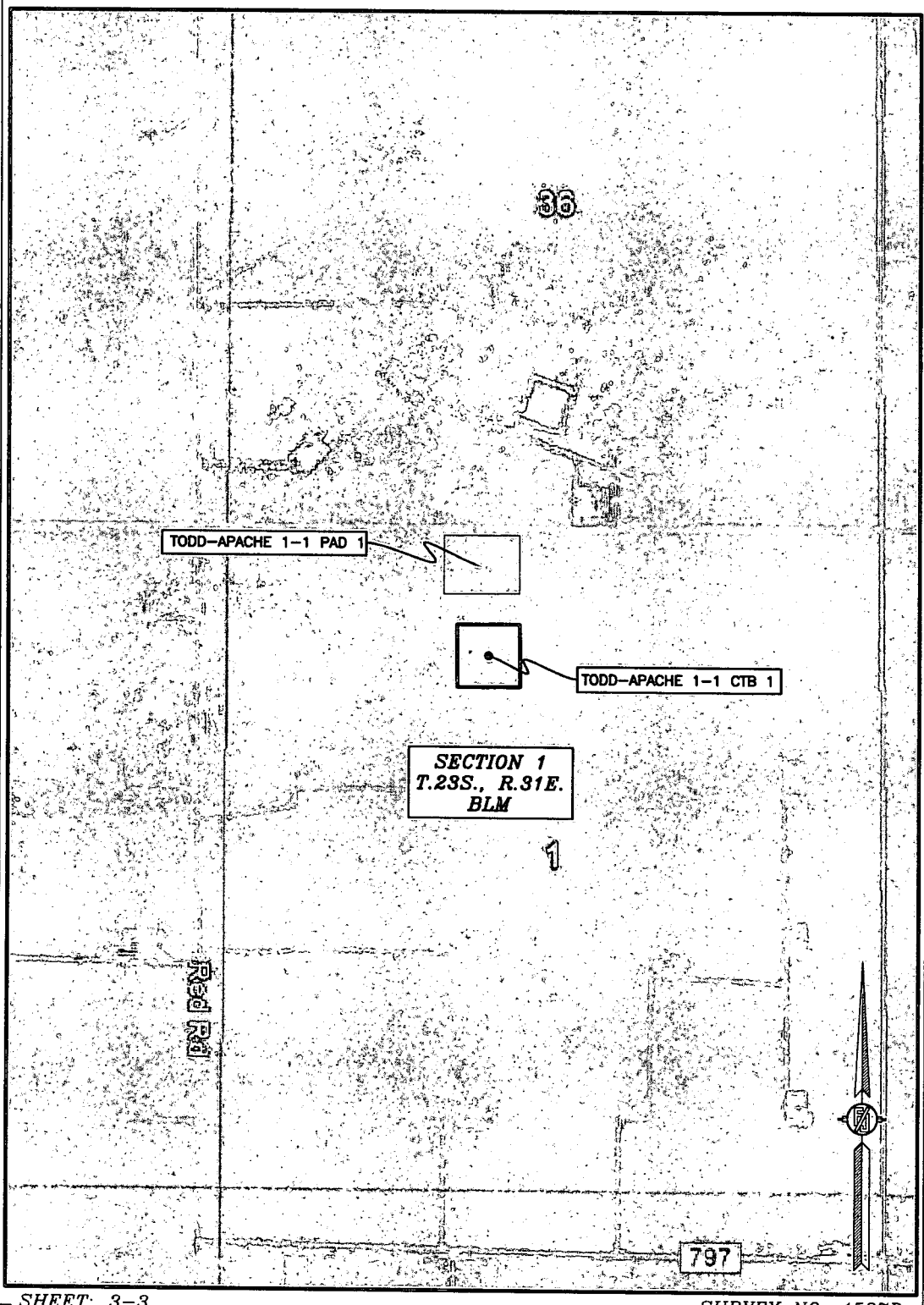
TODD-APACHE 1-1 CTB 1 (AA000056016)

DEVON ENERGY PRODUCTION COMPANY, L.P.

IN LOT 3 OF
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 20, 2016

AERIAL PHOTO

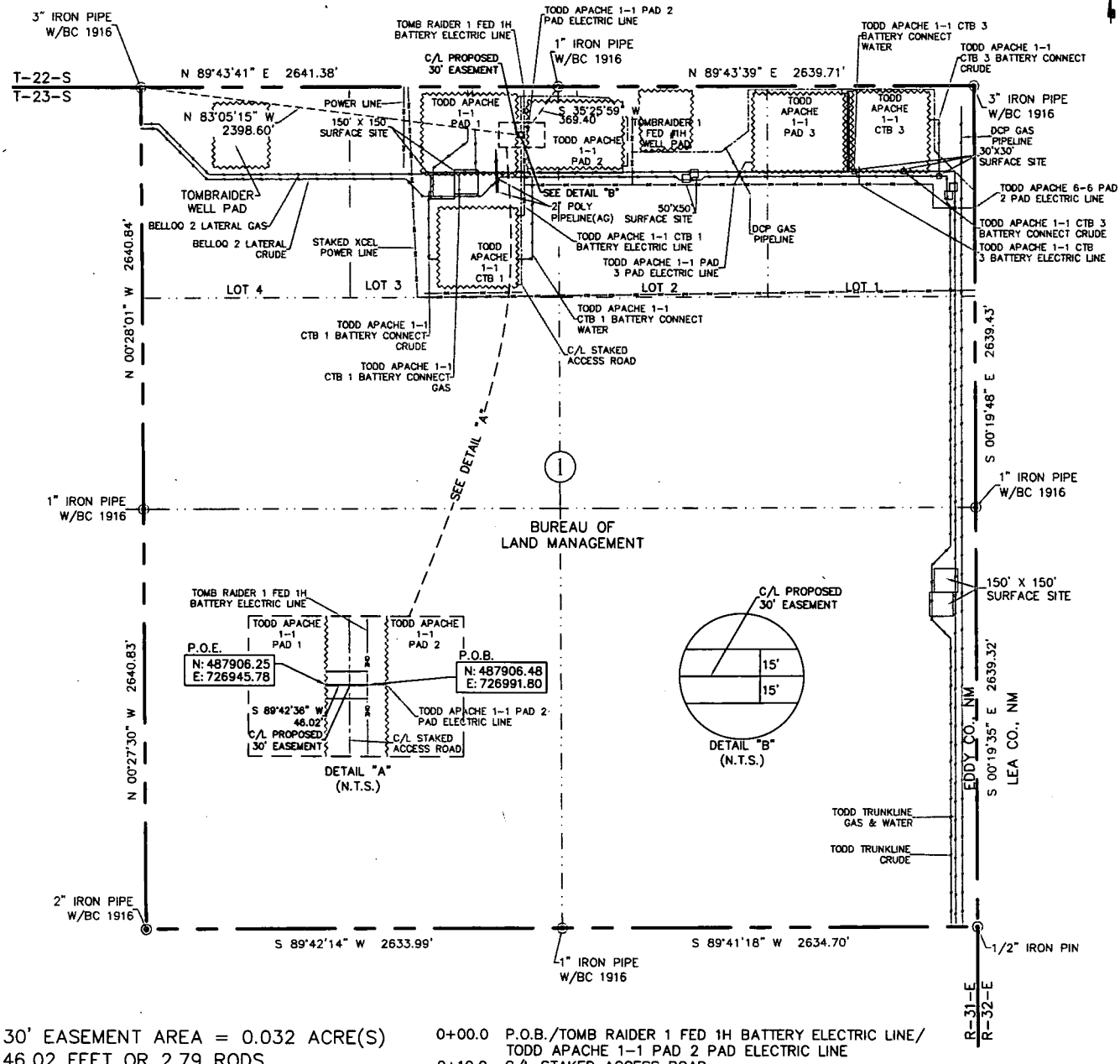


SHEET: 3-3

SURVEY NO. 4527D

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

EXHIBIT "A"
PAGE 1 of 4
ELECTRIC LINE PLAT
SECTION 1, T23S–R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.032 ACRE(S)
46.02 FEET OR 2.79 RODS

0+00.0 P.O.B./TOMB RAIDER 1 FED 1H BATTERY ELECTRIC LINE/ TODD APACHE 1–1 PAD 2 PAD ELECTRIC LINE
0+19.9 C/L STAKED ACCESS ROAD
0+46.0 P.O.E./TODD APACHE 1–1 PAD 1

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 NEW MEXICO 22404 PROFESSIONAL SURVEYOR

B.L. Laman PLS #22404
Date Signed: 08–05–2016
571 State Street, Jasper, TX.
(409) 202–5111 75951
Employee of Horizonrow, LLC

0 1000 2000

HORIZON ROW LLC Drawn for: devon	DEVON ENERGY PRODUCTION COMPANY, L.P. TODD APACHE 1–1 PAD 1 PAD ELECTRIC LINE	LINE NUMBER: EL7834 WBS NUMBER: XX–117680 SCALE: 1" = 1000'
Drawn by: CHRIS MAAS Date: 08/04/2016	PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 1, T23S–R31E, N.M.P.M.	REVISIONS: SHEET: 1 OF 4

SECTION 1, 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 Lot 3 of Section 1, 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 1916 for the north quarter corner of Section 1, T23S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence S 35°25'59" W a distance of 369.40' to the **Point of Beginning** of this easement having coordinates of Northing=487906.48, Easting=726991.80 feet, and continuing the following course;

Thence S 89°42'36" W a distance of 46.02' to the **Point of Ending** having coordinates of Northing=487906.25, Easting=726945.78 feet in Lot 3, from said point a 3" iron pipe w/ BC 1916 for the northwest corner of Section 1, T23S-R31E bears N 83°05'15" W a distance of 2398.60', covering **46.02' or 2.79 rods** and having an area of **0.032 acres**.

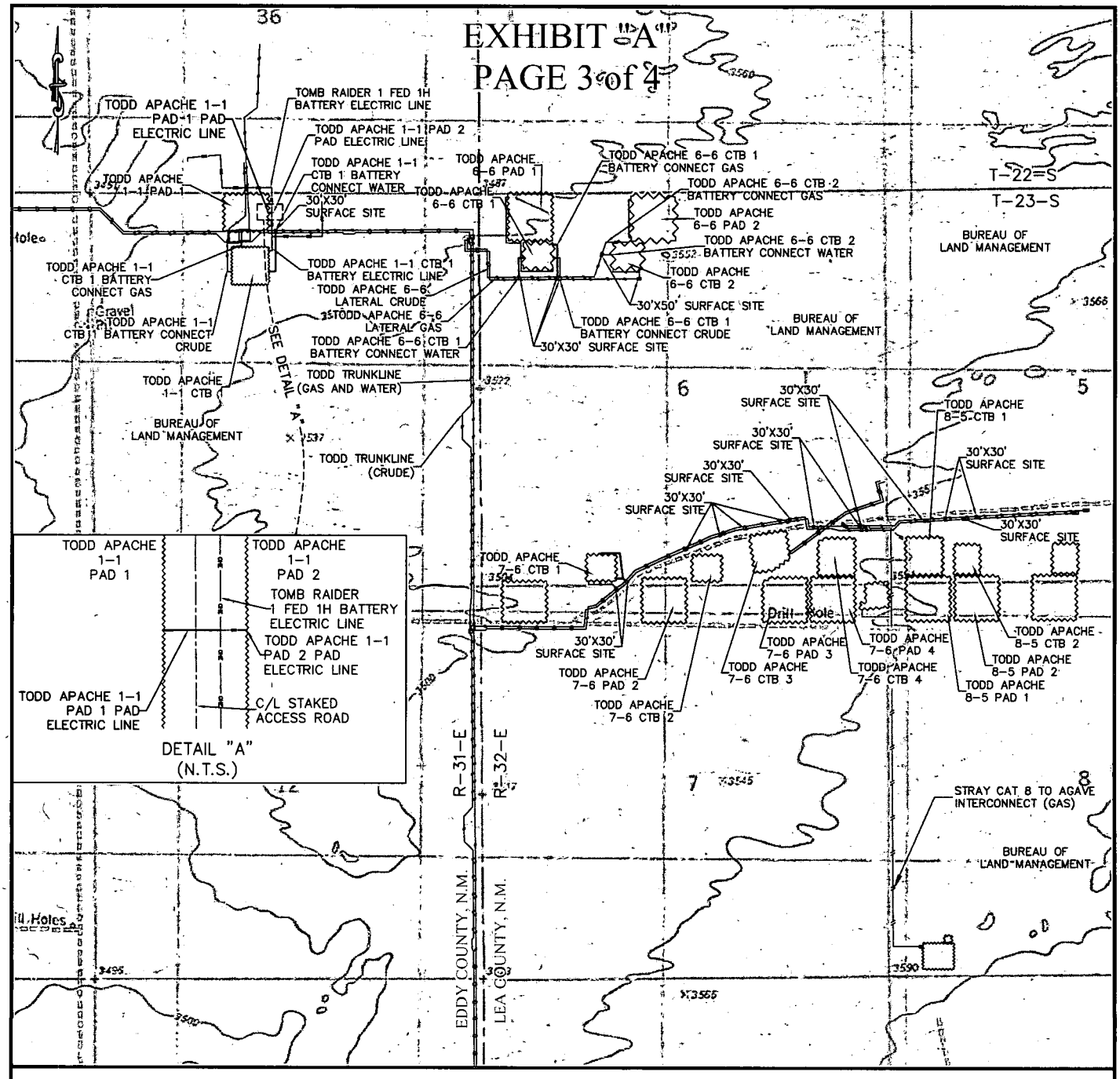
NOTES:

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: 08/05/2016
Horizon Row, LLC
571 State Street, Jasper, TX
(409) 202-5111 75951
Employee of Horizon Row, LLC

EXHIBIT "A"
PAGE 3 of 4

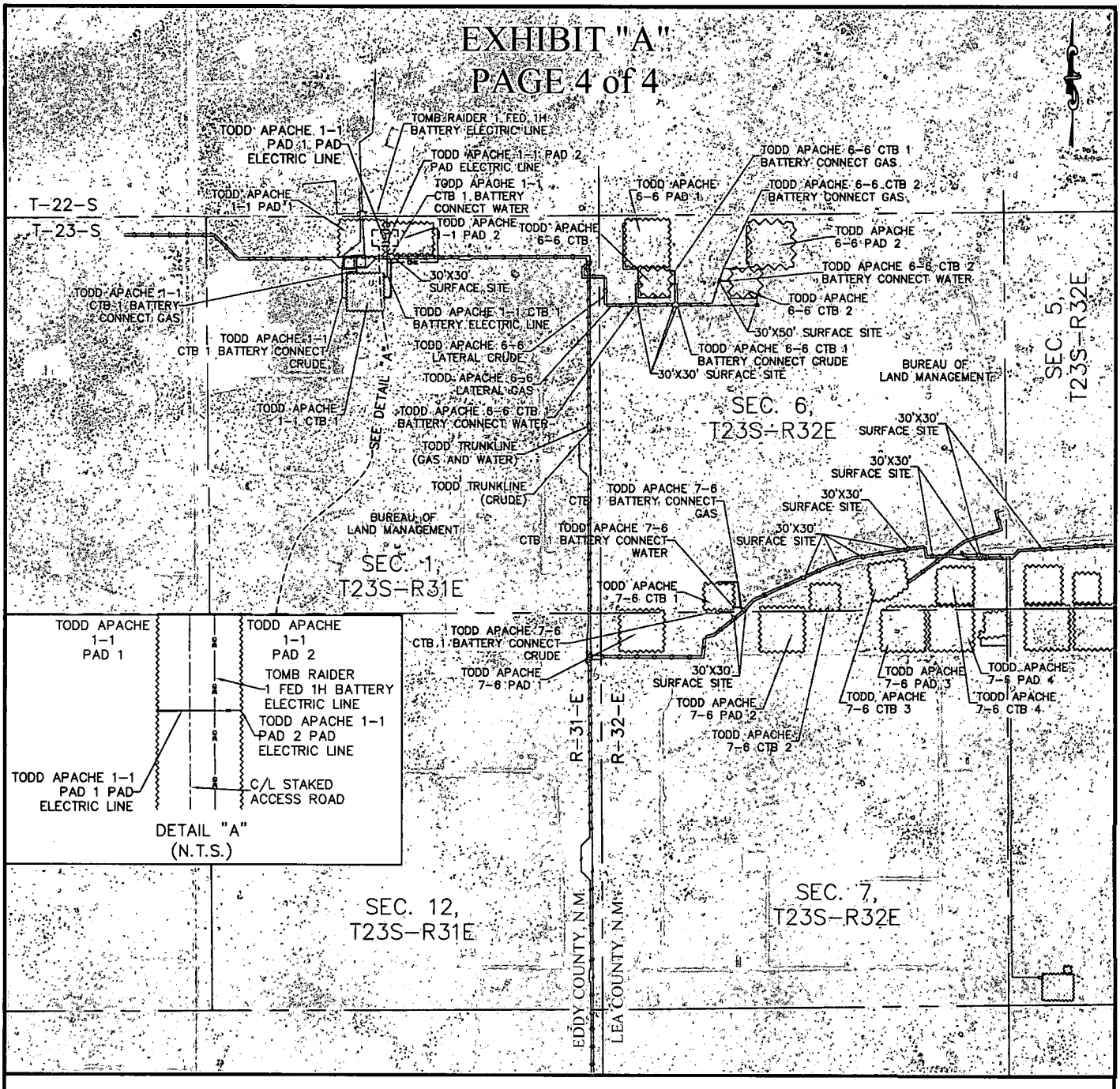


QUAD MAP

SECTION 1, T23S-R31E, N.M.P.M.;
EDDY COUNTY, NEW MEXICO

HORIZON ROW LLC	Drawn for:		LINE NUMBER: EL7834
DEVON ENERGY PRODUCTION CO., L.P.			WBS NUMBER: XX-117680
PROPOSED 30' EASEMENT			SCALE: 1" = 2000'
Drawn by: CHRIS MAAS	Date: 08/04/2016	devon	REVISIONS:
			SHEET: 3 OF 4

EXHIBIT "A"
PAGE 4 of 4



AERIAL MAP

SECTION 1, T23S-R31E, N.M.P.M.;
EDDY COUNTY, NEW MEXICO

HORIZON ROW LLC	Drawn for:		LINE NUMBER: EL7834
DEVON ENERGY PRODUCTION CO., L.P.			WBS NUMBER: XX-117680
PROPOSED 30' EASEMENT			SCALE: 1" = 2000'
Drawn by: CHRIS MAAS	Date: 08/04/2016	devon	REVISIONS:
			SHEET: 4 OF 4

Pay.gov

Receipt

Tracking Information

Pay.gov Tracking ID: 26E4A189

Agency Tracking ID: 75636331050

Form Name: Bureau of Land Management (BLM) Application for Permit to Drill (APD) Fee

Application Name: BLM Oil and Gas Online Payment

Payment Information

Payment Type: Bank account (ACH)

Payment Amount: $40,200.00

Transaction Date: 12/14/2018 05:13:02 PM EST

Payment Date: 12/17/2018

Company: DEVON ENERGY PRODUCTION CO., L.P.

APD IDs: 10400037343, 10400037342, 10400037339, 10400037335

Lease Numbers: NMNM022080, NMNM022080, NMNM022080, NMNM022080

Well Numbers: 612H, 732H, 702H, 332H

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.

Account Information

Account Holder Name: Devon Energy Production Company, L.P.

Routing Number: 061000052

Account Number: **********9892

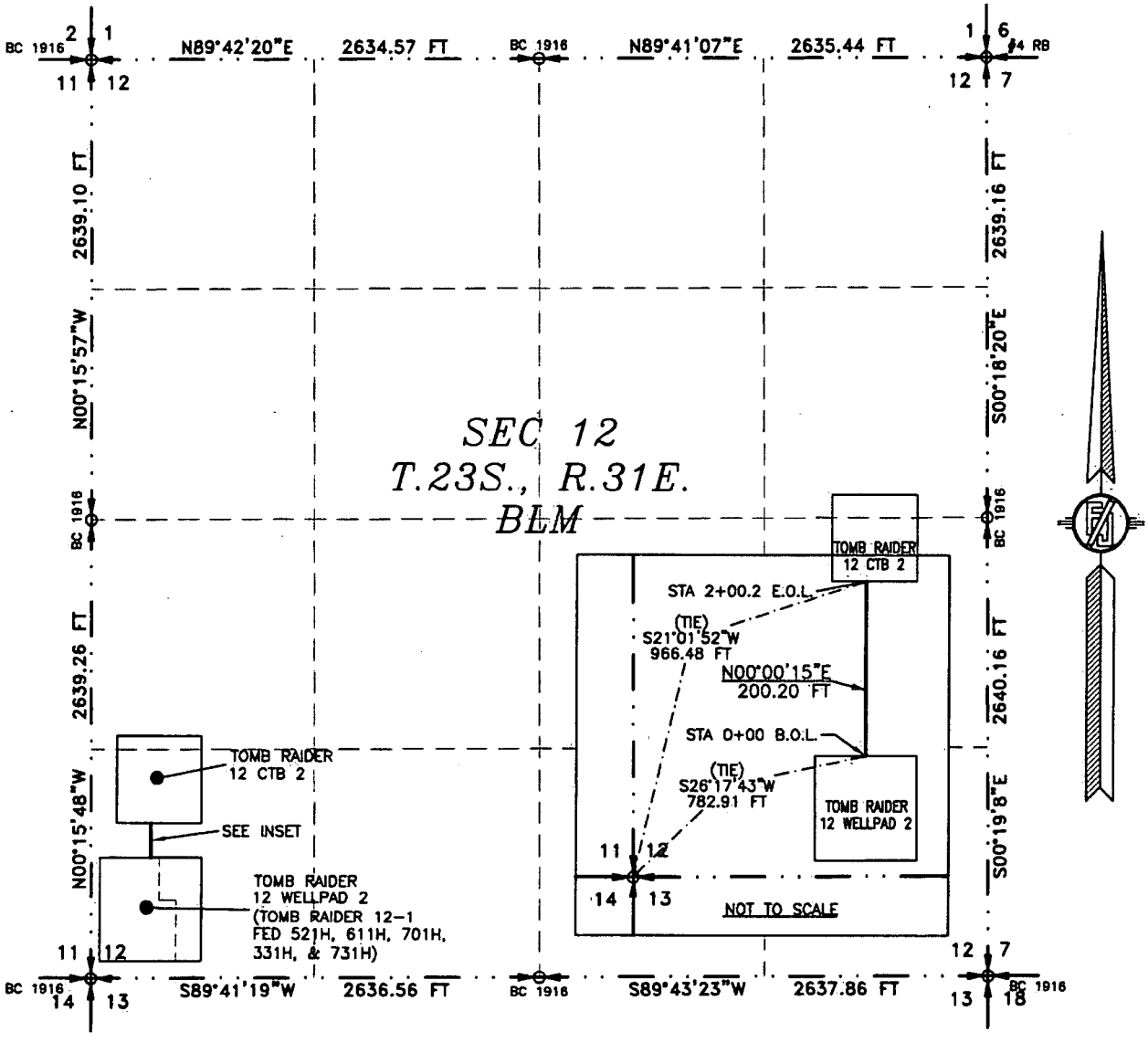
FLOWLINE PLAT

FIVE-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TOMB RAIDER 12 WELLPAD 2 (TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H) TO TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

ALL FLOWLINES ARE BURIED *NOVEMBER 6, 2018*



SEE NEXT SHEET (2-4) FOR DESCRIPTION

1000 0 1000
Scale: 1" = 1000'

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 15 DAY OF NOVEMBER, 2018

FILIMON F. JARAMILLO, NMPS 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SHEET: 1-4

SURVEY NO. 6673

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

FLOWLINE PLAT

FIVE-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TOMB RAIDER 12 WELLPAD 2 (TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H) TO TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018

ALL FLOWLINES ARE BURIED

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S26°17'43"W, A DISTANCE OF 782.91 FEET;
THENCE N00°00'15"E A DISTANCE OF 200.20 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S21°01'52"W, A DISTANCE OF 966.48 FEET;

SAID STRIP OF LAND BEING 200.20 FEET OR 12.13 RODS IN LENGTH, CONTAINING 0.138 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4	200.20 L.F.	12.13 RODS	0.138 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 10 DAY OF NOVEMBER 2018

FILIMON F. JARAMILLO PLS. 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

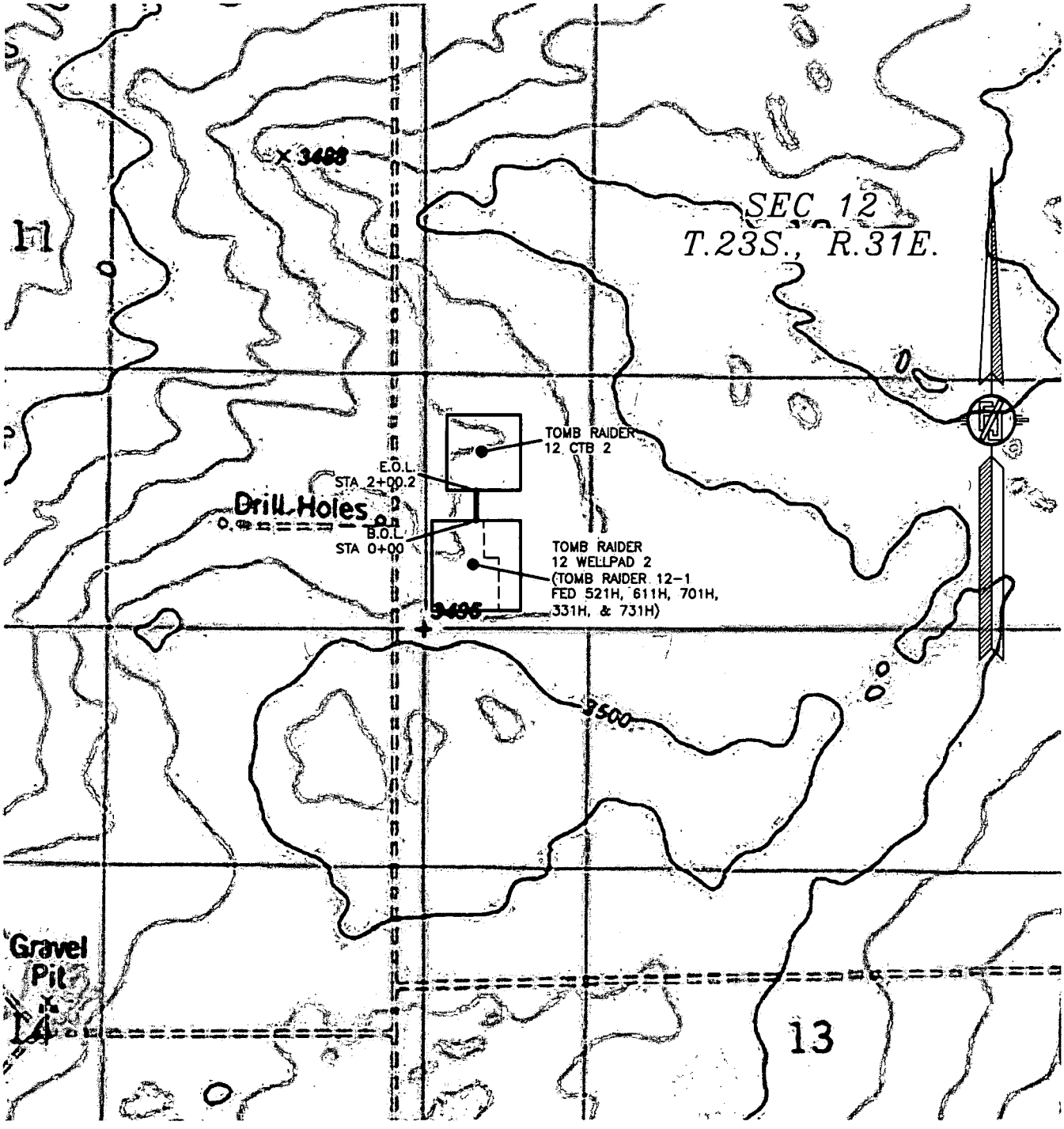
FLOWLINE PLAT

FIVE-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TOMB RAIDER 12 WELLPAD 2 (TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H) TO TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

ALL FLOWLINES ARE BURIED *NOVEMBER 6, 2018*



SHEET: 3-4 *SURVEY NO. 6673*

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

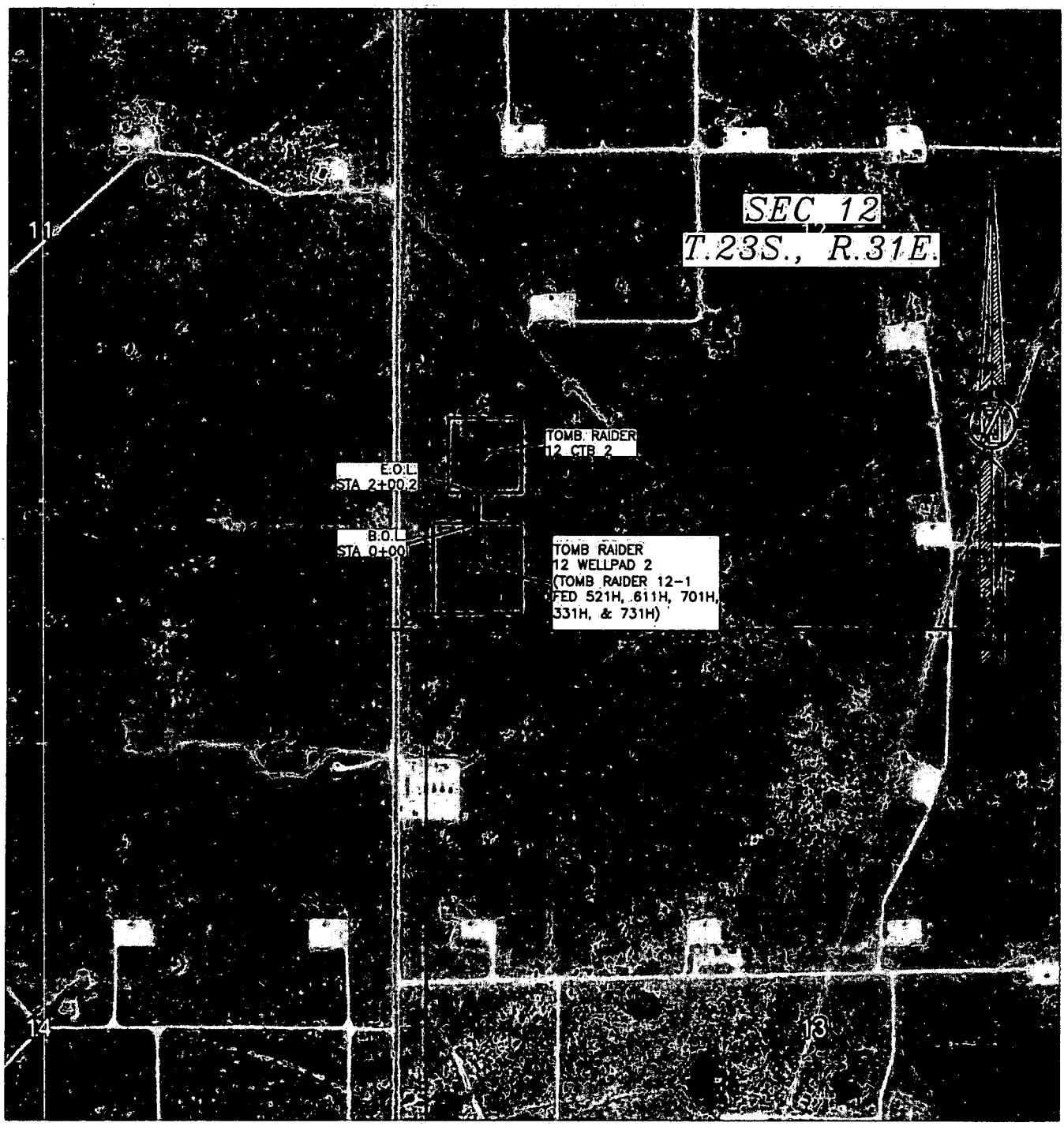
FLOWLINE PLAT

FIVE-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TOMB RAIDER 12 WELLPAD 2 (TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H) TO TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

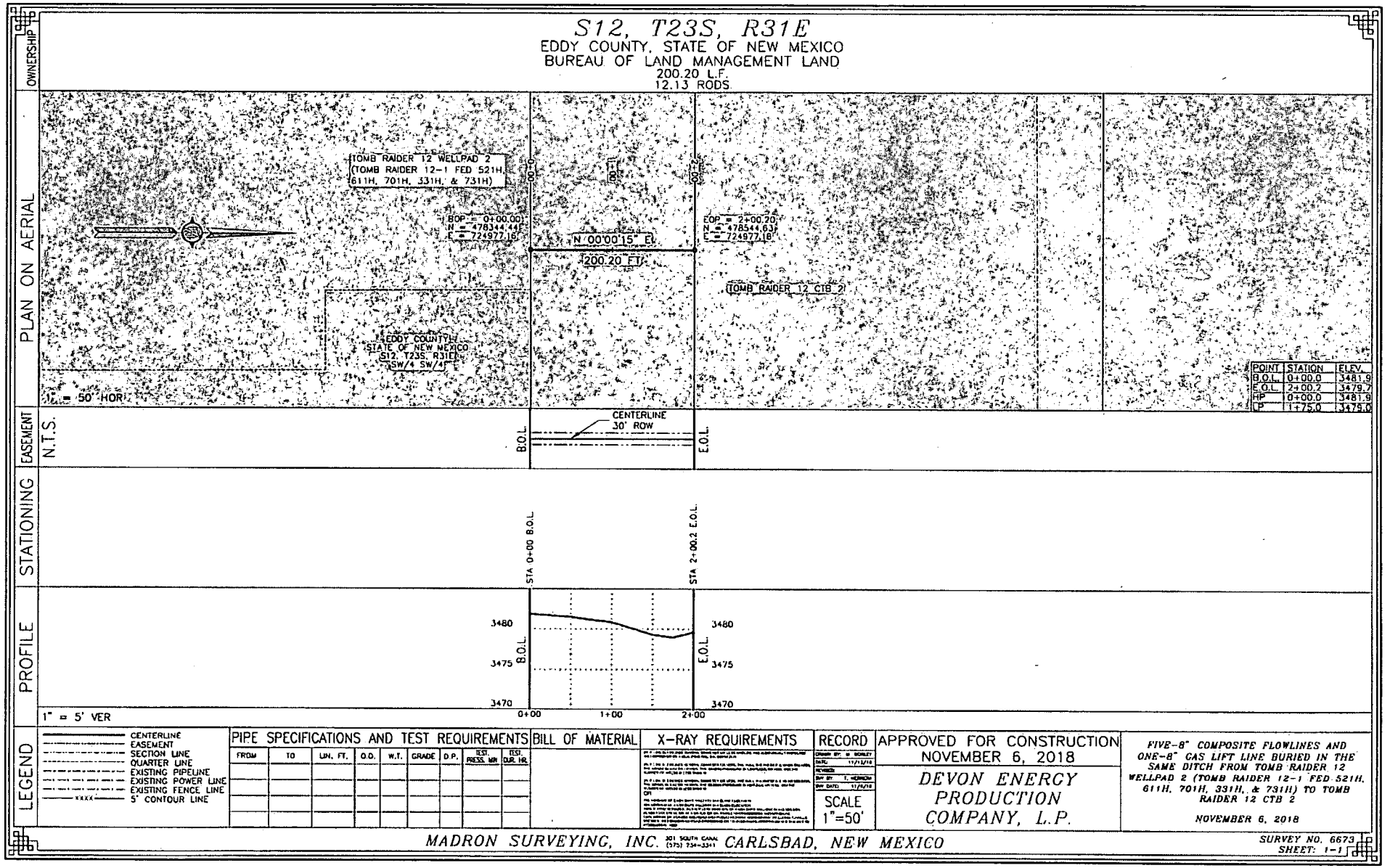
ALL FLOWLINES ARE BURIED *NOVEMBER 6, 2018*



SHEET: 4-4 SURVEY NO. 6673

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

ALL FLOWLINES ARE BURIED



AFMSS

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

PWD Data Report
06/27/2019

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

06/27/2019

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: