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Form 3160-3
(June 2015)

MAY 07 2019

DISTRICT II-ARTESIA O.C.D.

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
612H 316879

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP 6137

9. API Well No.
30-015-45977

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	WC-015 G-08 S233102C / WOLFCAMP

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

At surface LOT 3 / 210 FNL / 2139 FWL / LAT 32.3401421 / LONG -103.7331295

At proposed prod. zone SESW / 20 FSL / 1710 FWL / LAT 32.3117543 / LONG -103.7344942

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**
527 feet	11700 feet / 21964 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)* (Electronic Submission)	Name *(Printed/Typed)* Cody Layton / Ph: (575)234-5959	Date 05/03/2019
Title: Assistant Field Manager Lands & Minerals	Office: CARLSBAD	

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

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

APPROVED WITH CONDITIONS

Approval Date: 05/03/2019

RWP 5-10-19

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

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

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the 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 / 2139 FWL / TWSP: 23S / RANGE: 31E / SECTION: 1 / LAT: 32.3401421 / LONG: -103.7331295 (TVD: 0 feet, MD: 0 feet)
   PPP: LOT 3 / 120 FNL / 1170 FWL / TWSP: 23S / RANGE: 31E / SECTION: 1 / LAT: 32.312016 / LONG: -103.736243 (TVD: 11537 feet, MD: 11581 feet)
   BHL: SESW / 20 FSL / 1710 FWL / TWSP: 23S / RANGE: 31E / SECTION: 12 / LAT: 32.3117543 / LONG: -103.7344942 (TVD: 11700 feet, MD: 21964 feet)

BLM Point of Contact

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

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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 612H
SURFACE HOLE FOOTAGE:	210'/N & 2139'/W
BOTTOM HOLE FOOTAGE	20'/S & 1710'/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 612H
SURFACE HOLE FOOTAGE:	210'/N & 2139'/W
BOTTOM HOLE FOOTAGE	20'/S & 1710'/W
LOCATION:	Section 1, T.23 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

☐ **General Provisions**
☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☒ **Special Requirements**
- 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
- Roads

☐ **Road Section Diagram**
☒ **Production (Post Drilling)**
- 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.

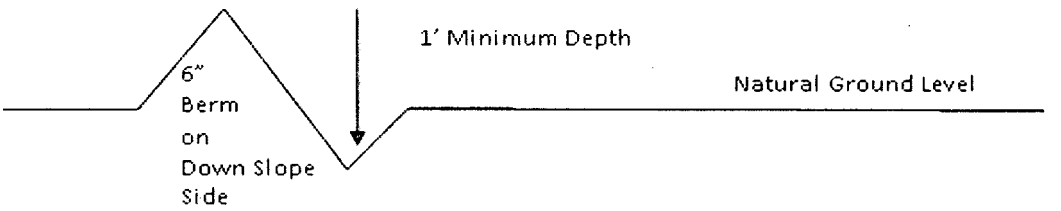
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

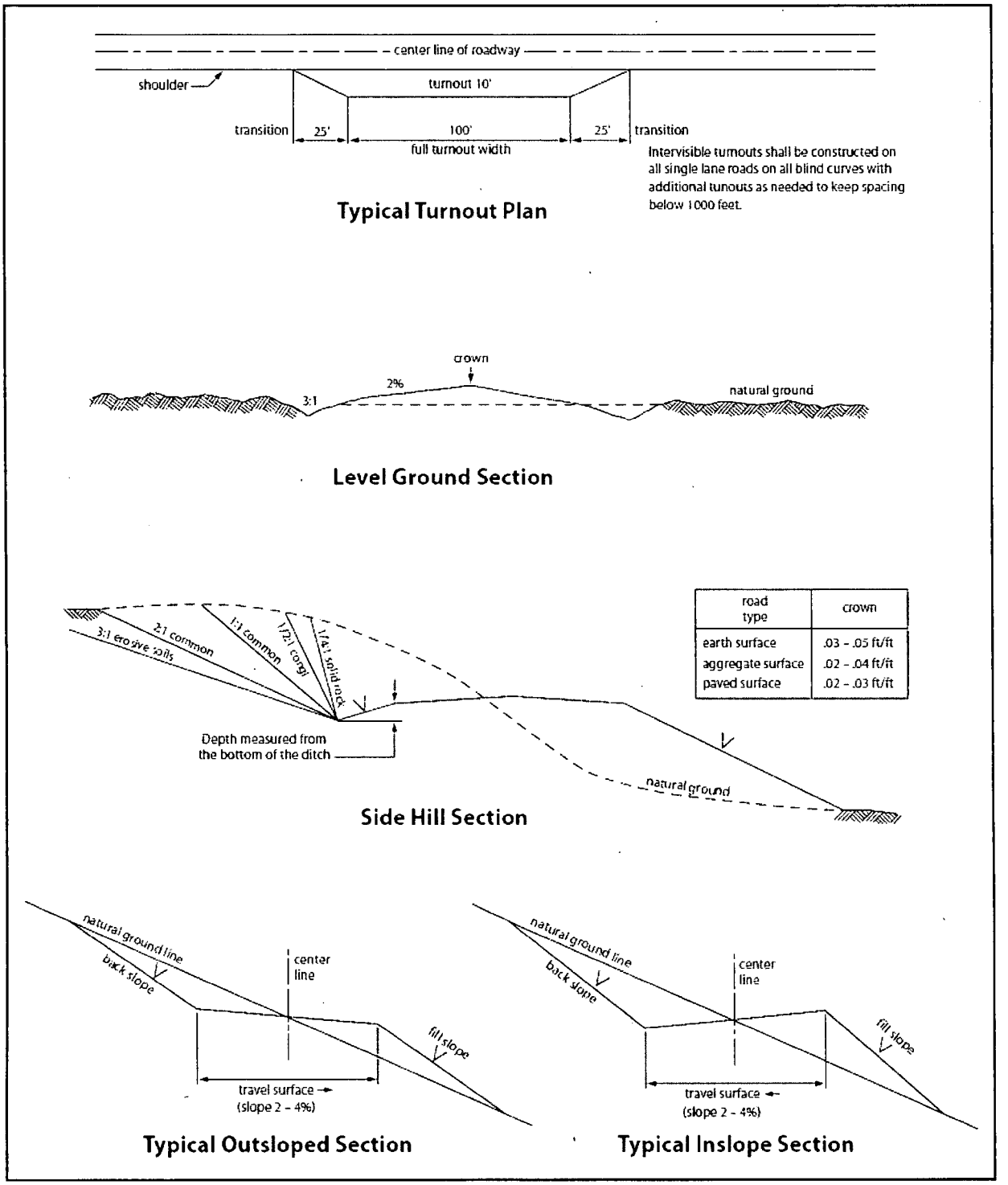


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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

05/06/2019

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
05/06/2019

APD ID: 10400037343 **Submission Date:** 12/14/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 612H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400037343 **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:** 612H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** WC-015 G-08 S233102C **Pool Name:** WOLFCAMP

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 612H

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

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: TOMB_RAIDER_1_12_FED_612H_C102_20181214145504.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: 6667

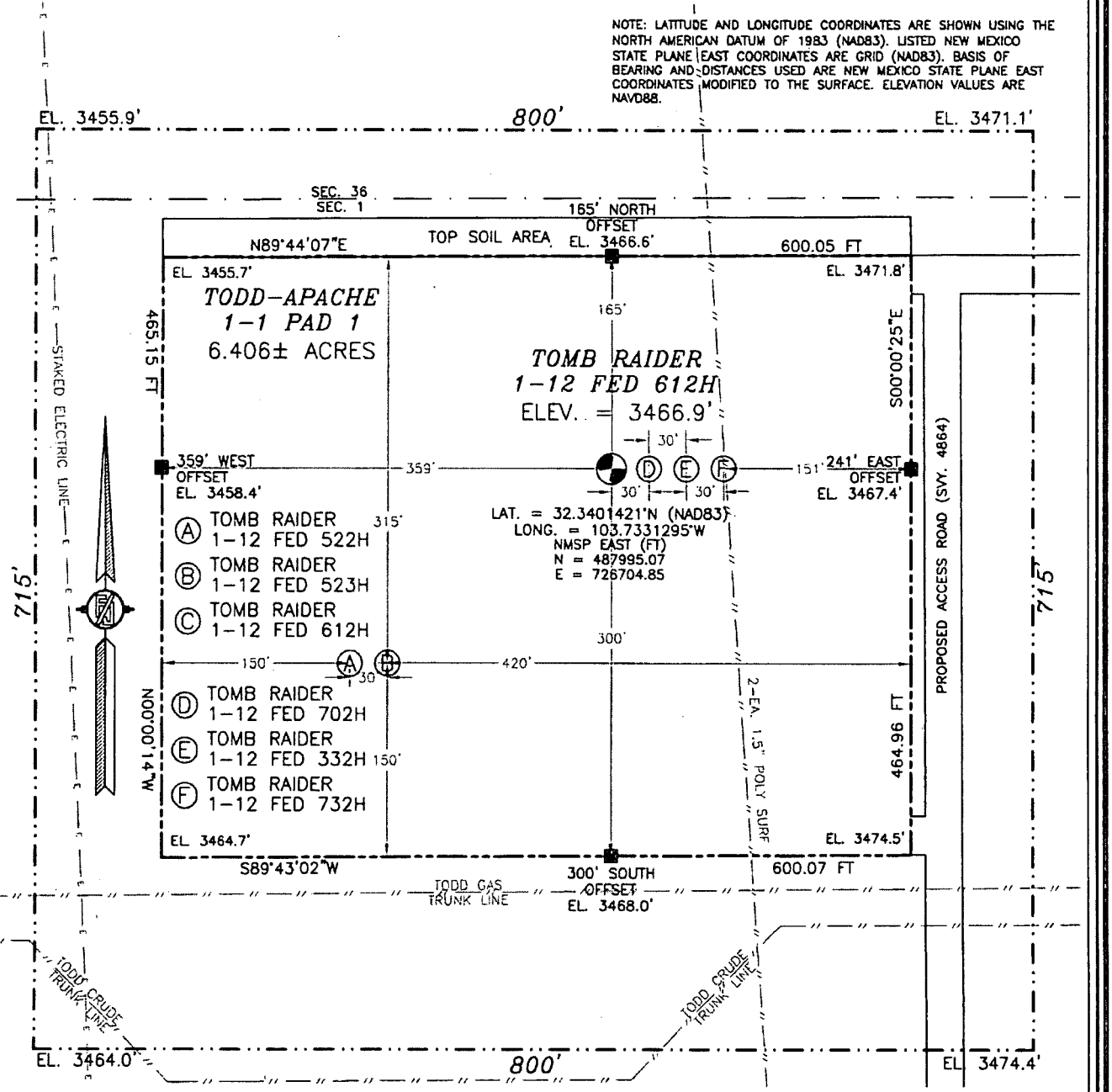
	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	210	FNL	2139	FWL	23S	31E	1	Lot 3	32.3401421	-103.7331295	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 022080	3467	0	0
KOP Leg #1	50	FNL	1839	FWL	23S	31E	1	Lot 3	32.340587	-103.734098	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 022080	-7548	11021	11015
PPP Leg #1	120	FNL	1170	FWL	23S	31E	1	Lot 3	32.312016	-103.736243	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 022080	-8070	11581	11537

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 612H

	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	1839	FWL	23S	31E	12	Aliquot SESW	32.311973	-103.734492	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 022080	-8233	21884	11700
BHL Leg #1	20	FSL	1710	FWL	23S	31E	12	Aliquot SESW	32.311754 3	-103.734942	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 022080	-8233	21964	11700

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 612H

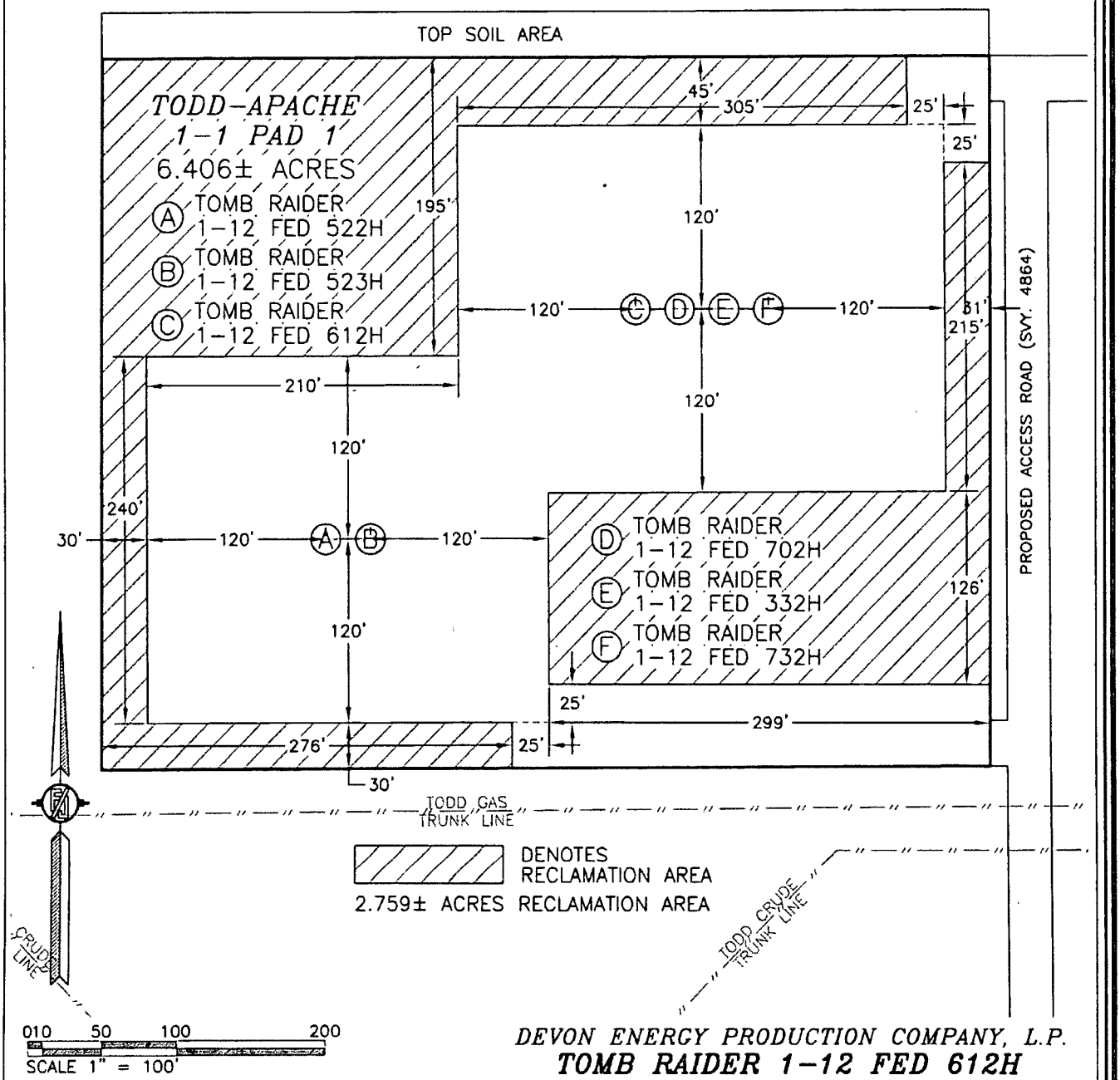
LOCATED 210 FT. FROM THE NORTH LINE AND 2139 FT. FROM THE WEST LINE OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6667

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 612H

LOCATED 210 FT. FROM THE NORTH LINE AND 2139 FT. FROM THE WEST LINE OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

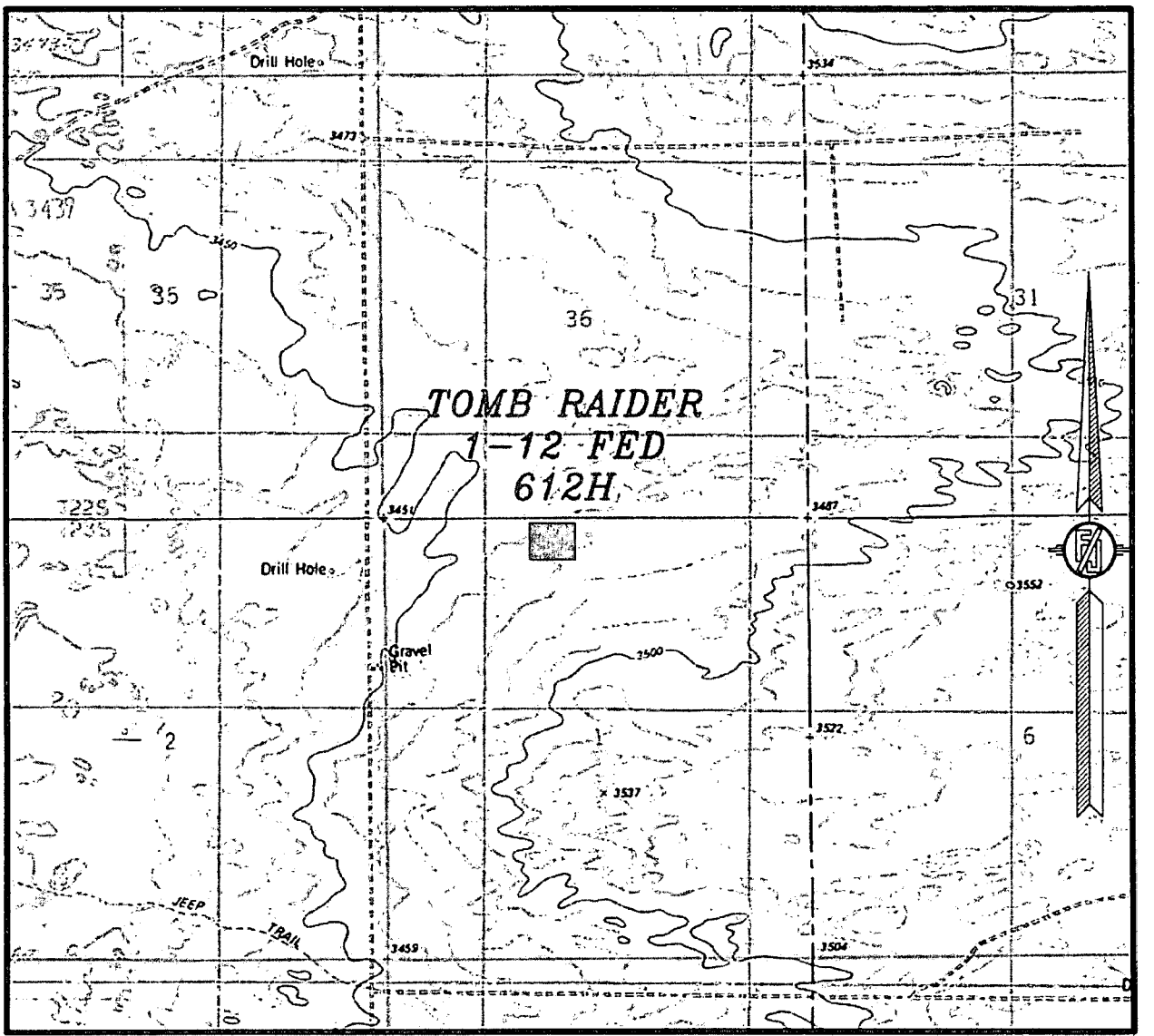
NOVEMBER 6, 2018

SURVEY NO. 6667

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

LOCATION VERIFICATION MAP



USGS QUAD MAP:
BOOTLEG RIDGE

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 612H

LOCATED 210 FT. FROM THE NORTH LINE
AND 2139 FT. FROM THE WEST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

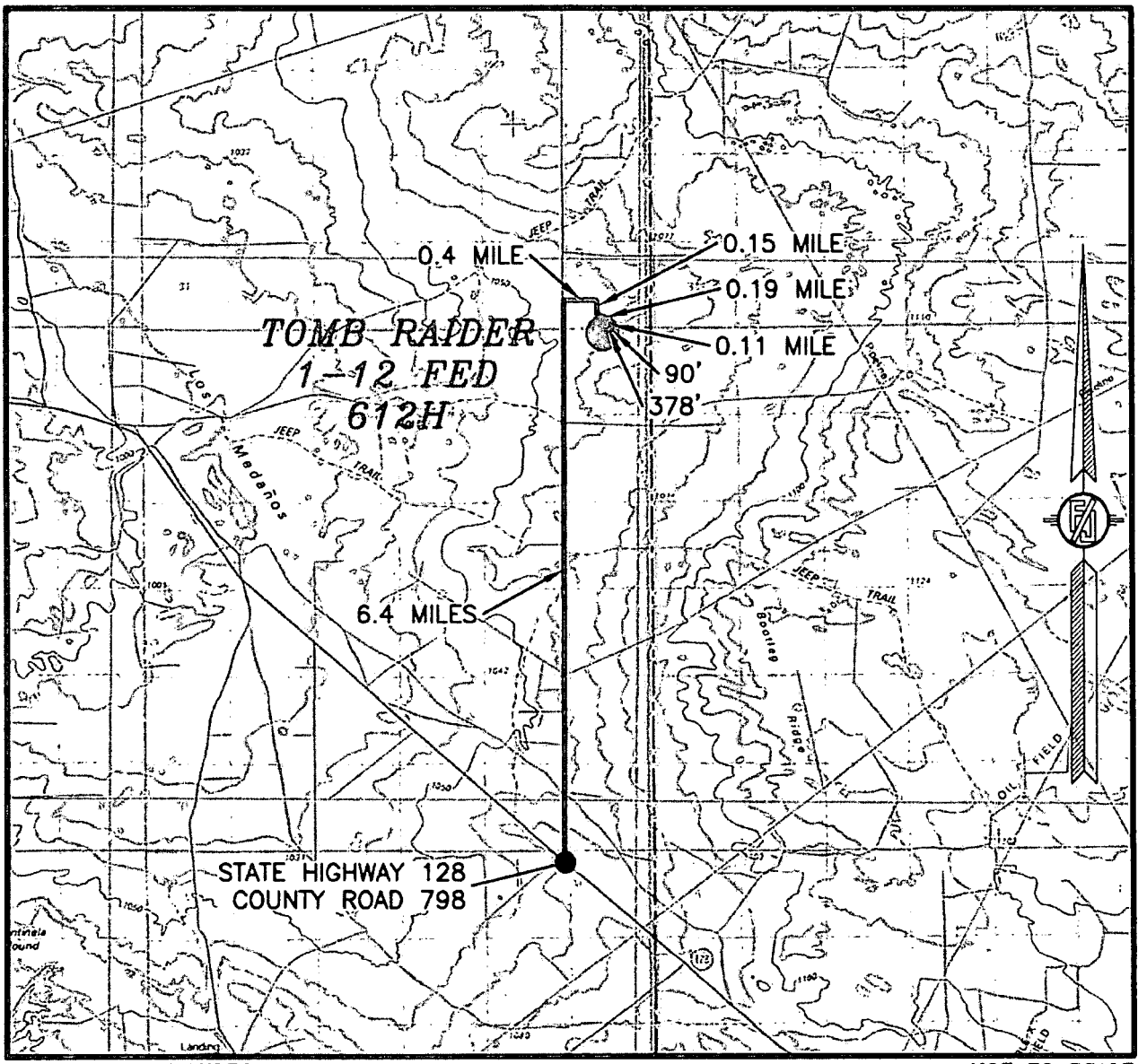
NOVEMBER 6, 2018

SURVEY NO. 6667

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 612H
LOCATED 210 FT. FROM THE NORTH LINE AND 2139 FT. FROM THE WEST LINE OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

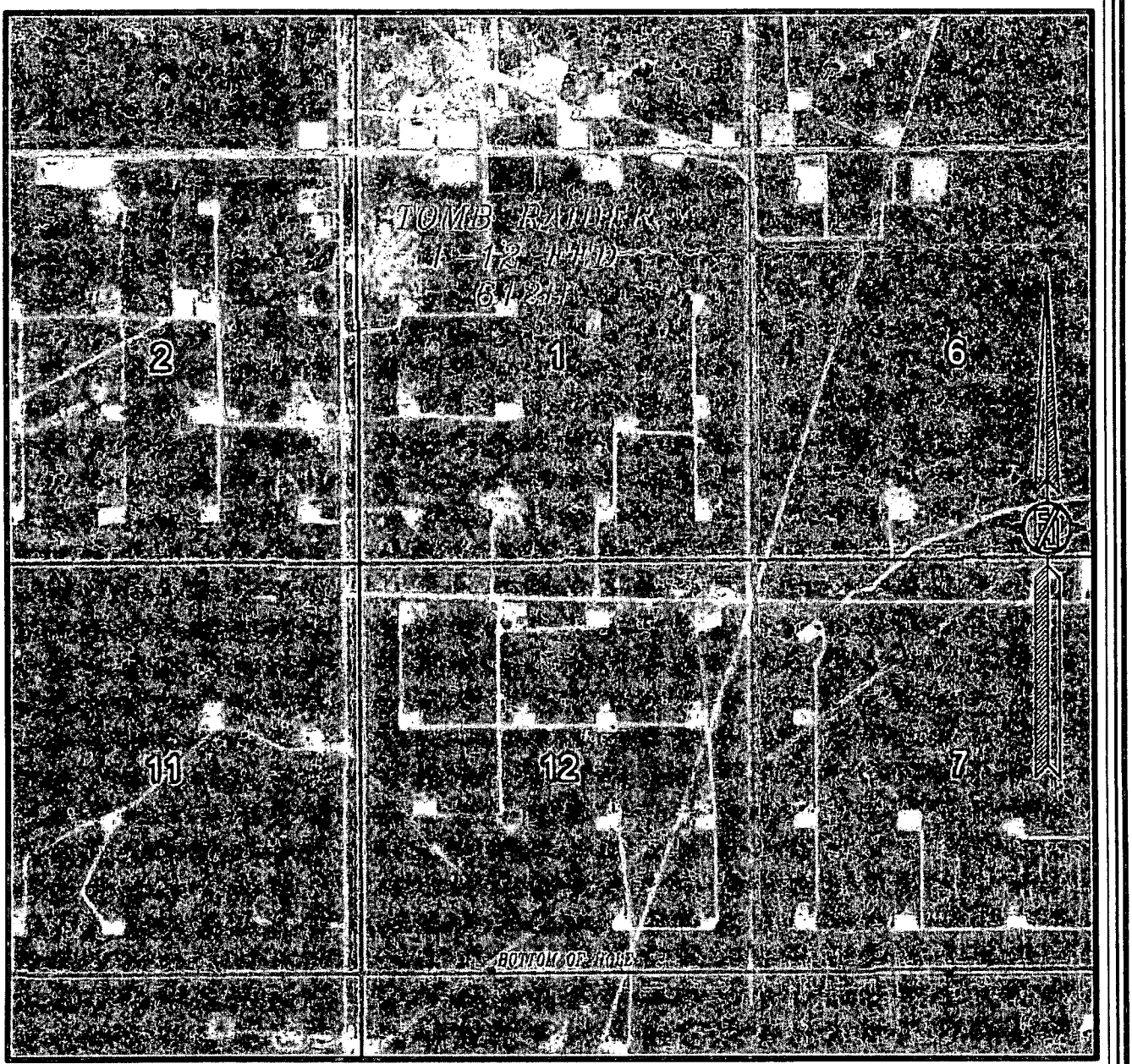
NOVEMBER 6, 2018

SURVEY NO. 6667

MADRON SURVEYING, INC. 501 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 PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 612H

LOCATED 210 FT. FROM THE NORTH LINE
AND 2139 FT. FROM THE WEST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

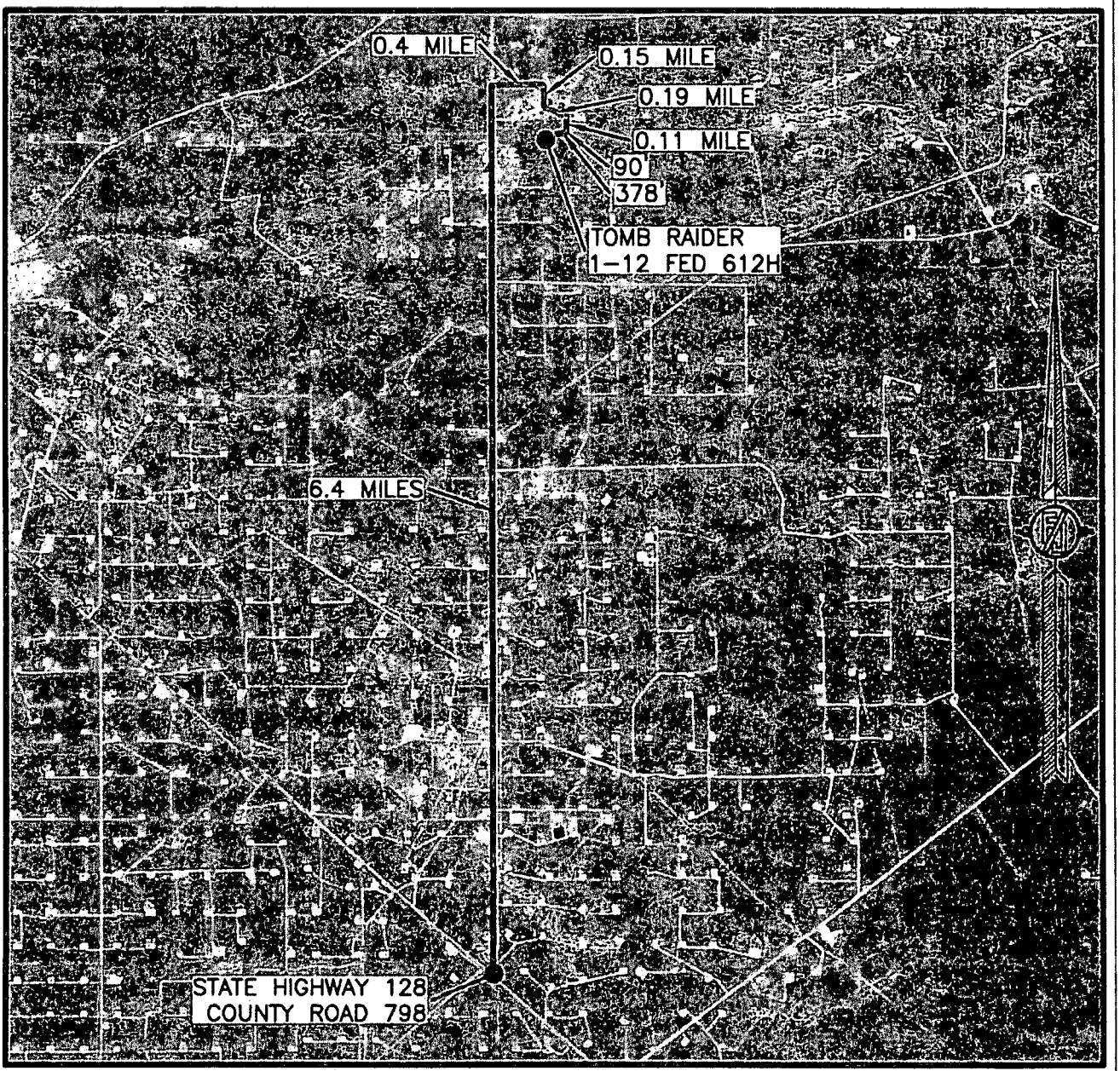
NOVEMBER 6, 2018

SURVEY NO. 6667

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 612H

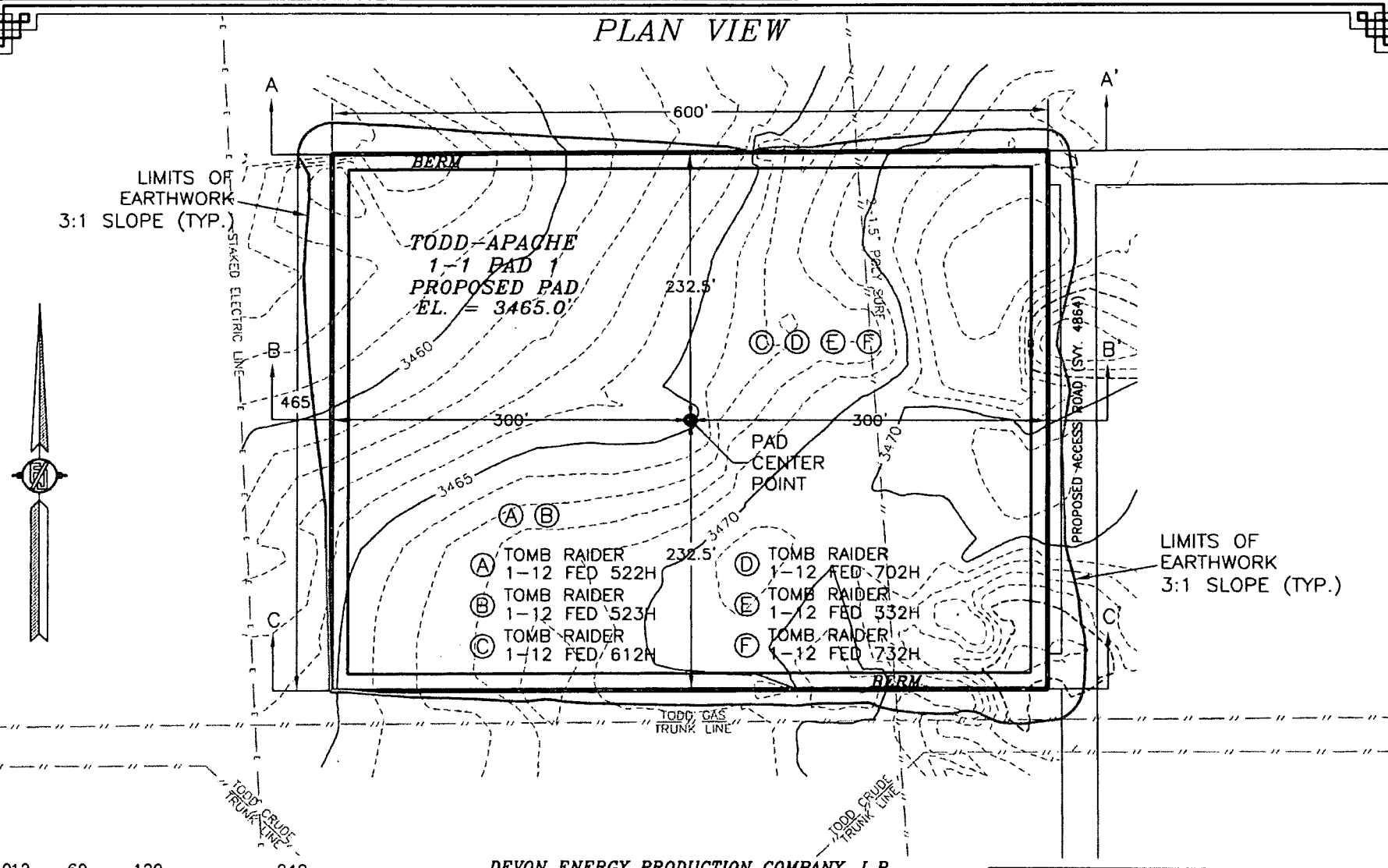
LOCATED 210 FT. FROM THE NORTH LINE
AND 2139 FT. FROM THE WEST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6667

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

PLAN VIEW



012 60 120 240
SCALE 1" = 120'

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 612H
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

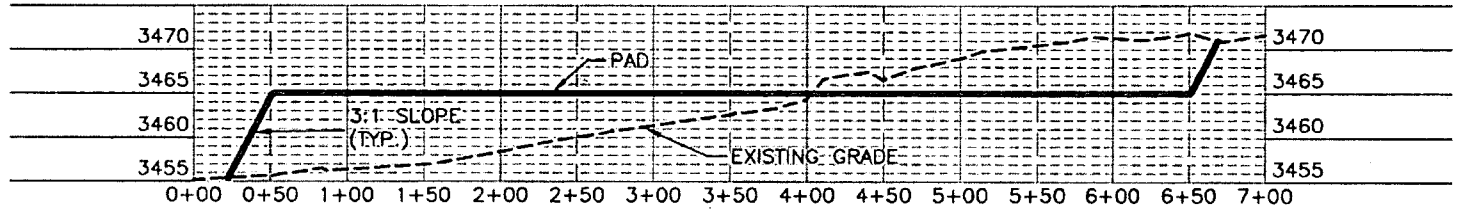
NOVEMBER 6, 2018

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

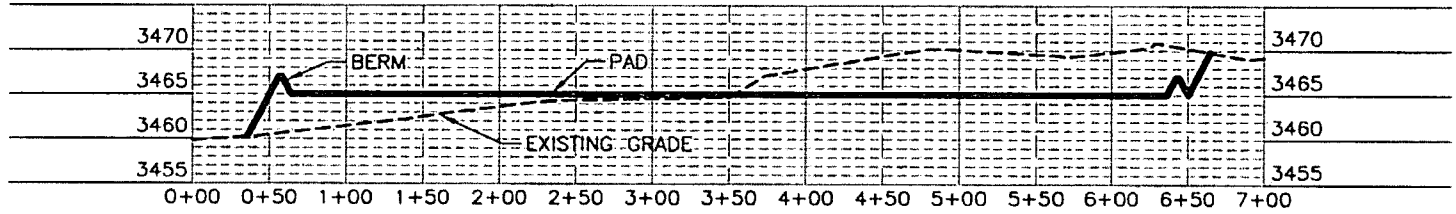
SHEET 1-2
SURVEY NO. 6667

CROSS-SECTIONS

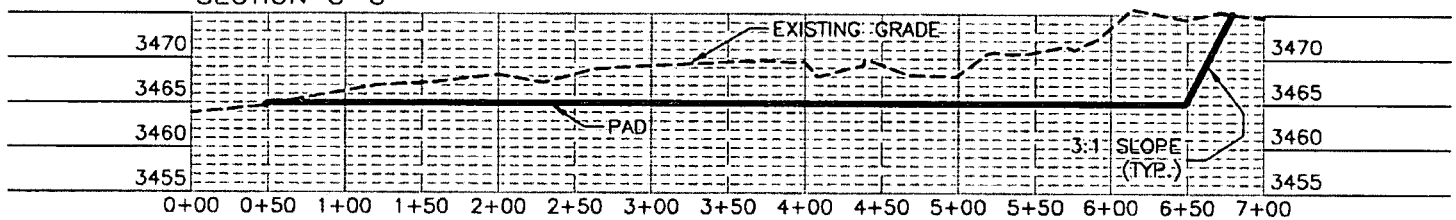
SECTION A-A'



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 612H
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. 6667

APD ID: 10400037343 **Submission Date:** 12/14/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 612H

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	ALLUVIUM,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	WOLFCAMP	-8233	11700	11700	SANDSTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M **Rating Depth:** 11700

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:

WLFMP_10M_BOPE_Double_Ram_and_CLS_Schematic_Remote_Kill_Line_20181214093048.pdf

BOP Diagram Attachment:

WLFMP_10M_BOPE_Double_Ram_and_CLS_Schematic_Remote_Kill_Line_20181214093104.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 612H

Pressure Rating (PSI): 5M **Rating Depth:** 11231

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_20181214075309.pdf

BOP Diagram Attachment:

5M_BOPE_20180716121144_20181214075317.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	11231	0	11231	-6768	-11036	11231	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	21964	0	11700	-6768	-16768	21964	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:** 612H

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:** 612H

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	7231	1067	3.31	9	1974	30	TUNED	TUNED LIGHT
INTERMEDIATE	Tail		7231	11231	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		10731	21964	785	1.33	13.2	1044	10	CLASS H	0.125 lbs/sack Poly-E-Flake
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
791	11231	OTHER : DBE/CUT BRINE	9	10				2			

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 612H

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			
11231	11700	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: 6388 **Anticipated Surface Pressure:** 3723.8

Anticipated Bottom Hole Temperature(F): 170

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_612H_H2S_20181214150443.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 612H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Devon_Tomb_Raider_1_12_Fed_612H_AC_Report_Permit_Plan_1_20181214150524.pdf

Devon_Tomb_Raider_1_12_Fed_612H_Permit_Plan_1_20181214150524.pdf

Devon_Tomb_Raider_1_12_Fed_612H_Plot_Permit_Plan_1_20181214150525.pdf

Tomb_Raider_12_1_Fed_612H_Drilling_Plan_4_15_20190416135705.pdf

Other proposed operations facets description:

DRILLING PLAN - REVISED 4/16/2019
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

WLFMP_Wellhead_Schematic_10.75x7.625_x5.5_20181214094333.pdf

WLFMP_MB_Verb_10M_Alt_Design_20181214094331.pdf

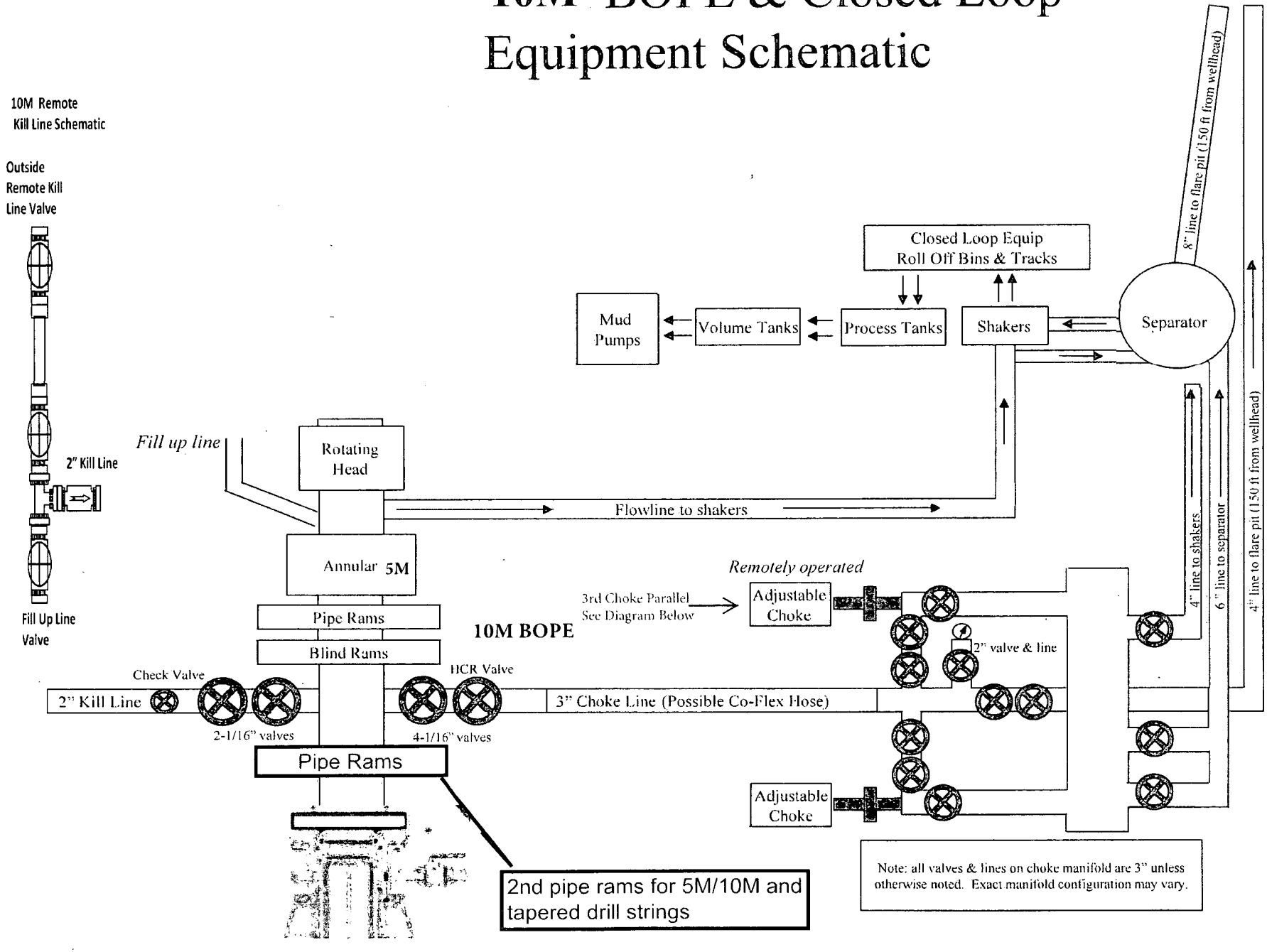
WLFMP_Wellhead_Schematic_Contingency_13.375x8.625x5.5_20181214094334.pdf

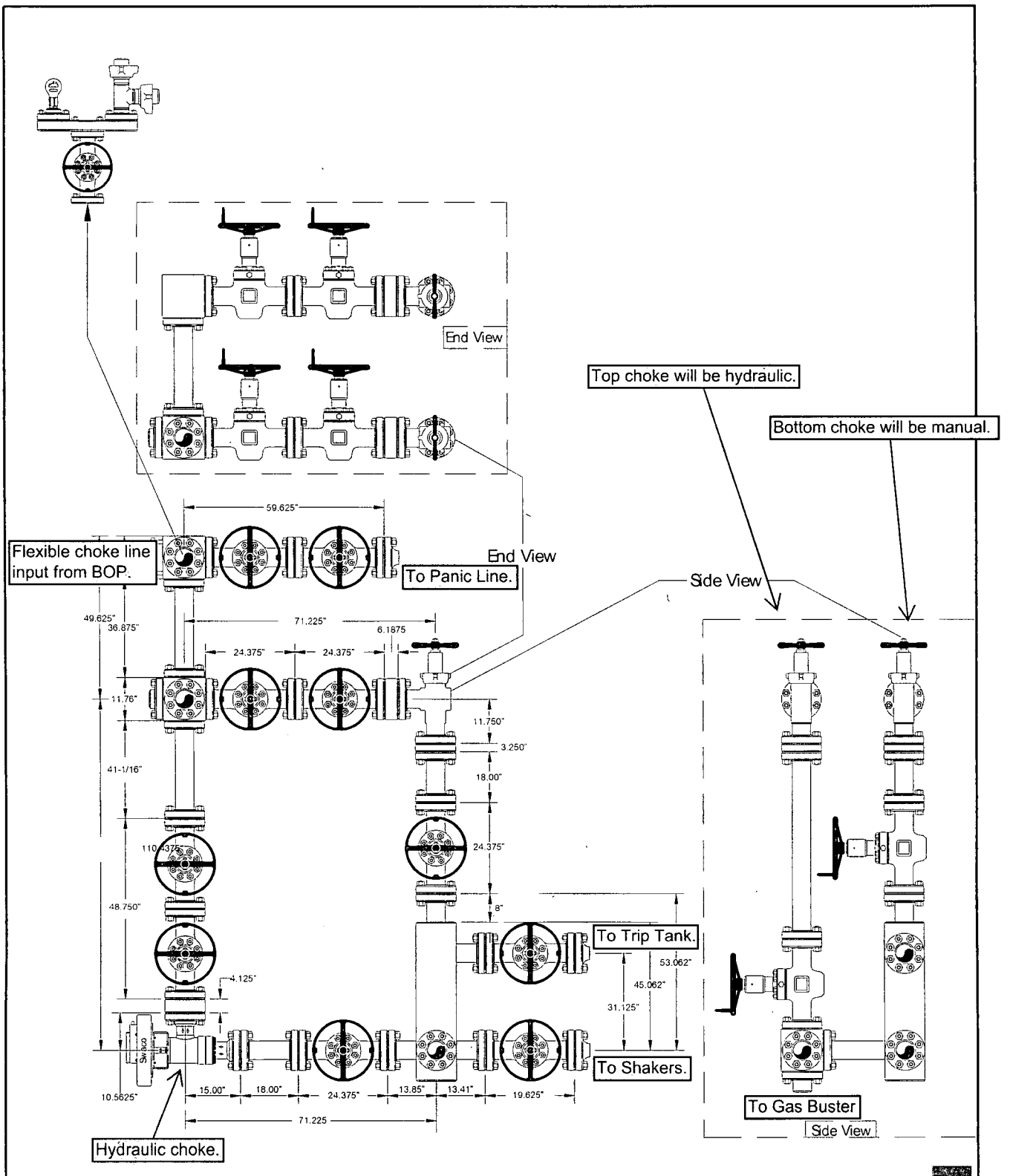
TODD_1_12_GasCapturePlan_12_13_2018_20181214140554.pdf

Other Variance attachment:

Co_flex_20181214085236.pdf

10M BOPE & Closed Loop Equipment Schematic





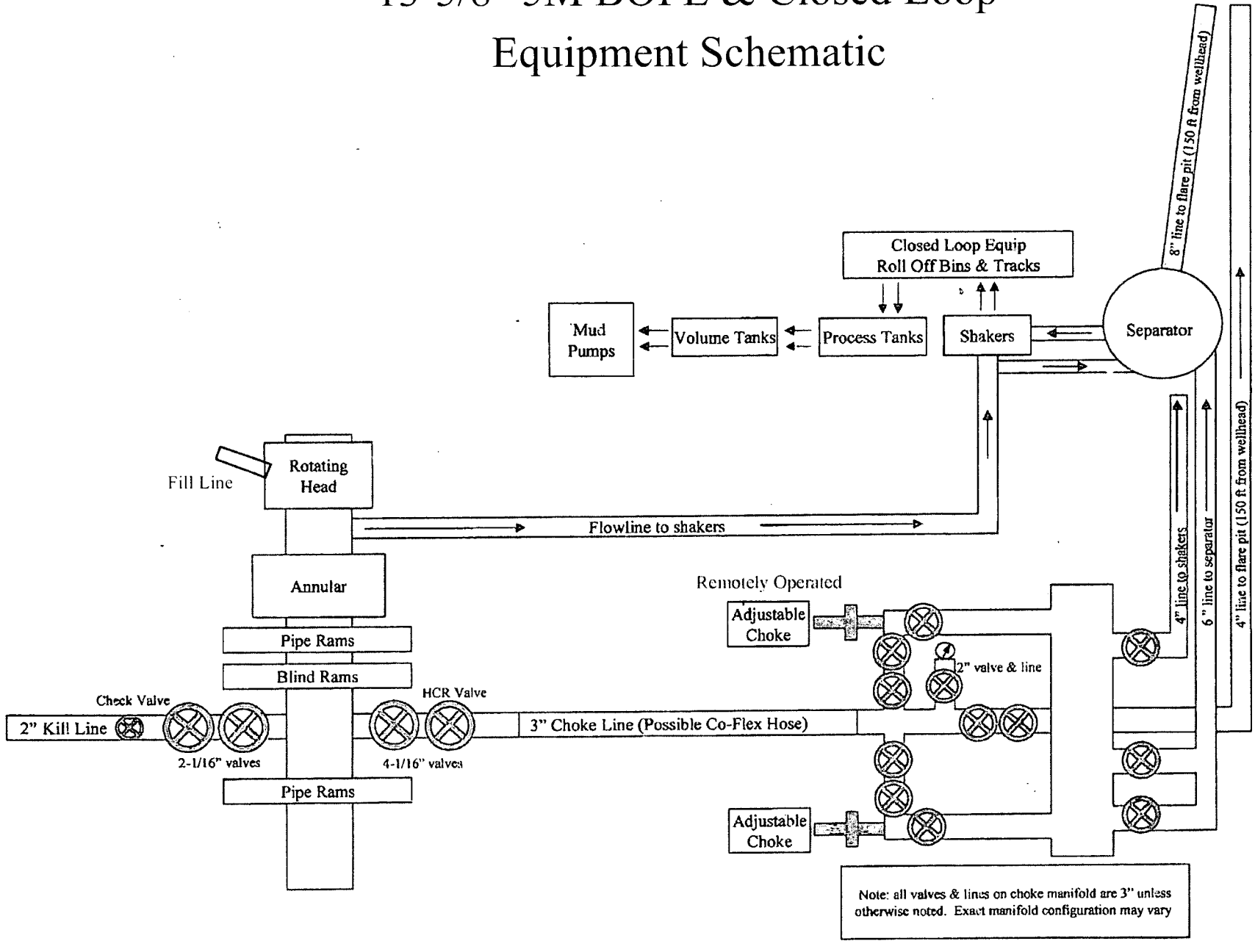
Helmerich & Payne

Flex 3 Rig w/ 3 Chokes

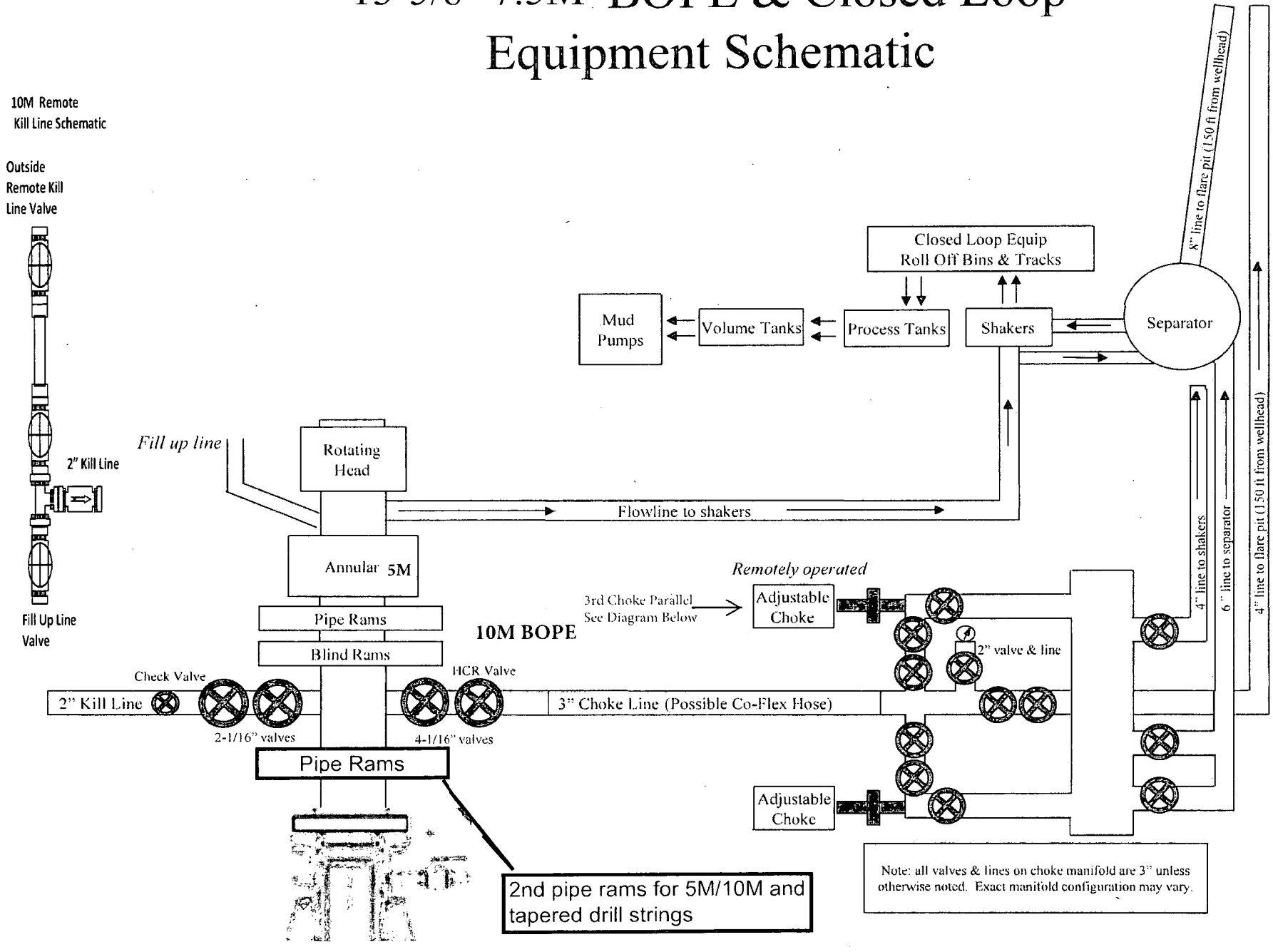
devon

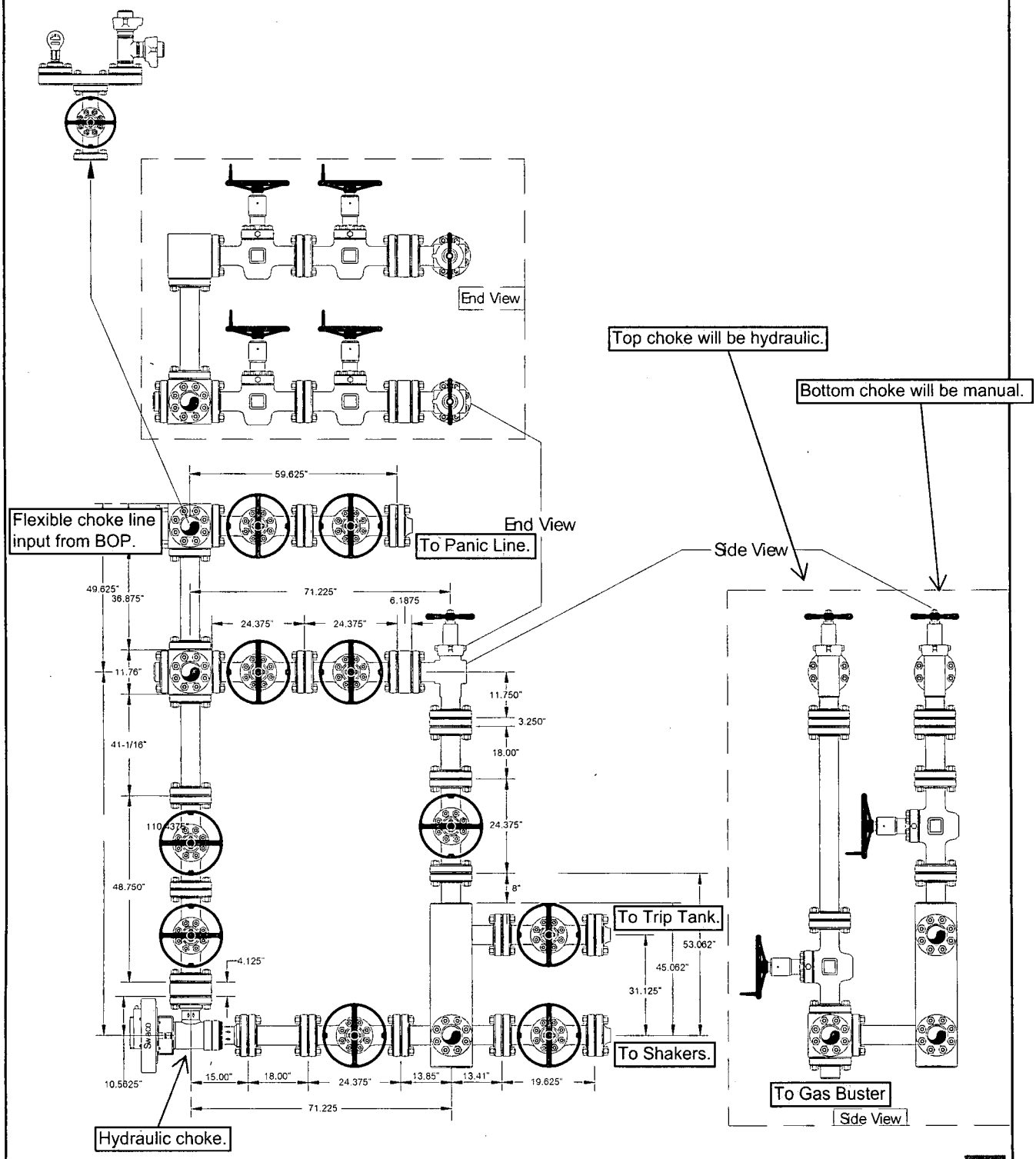
Name	Date	Working Pressure	
Mike Potts	6-23-2010	10M	J-5132-E

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



13-5/8" 7.5M BOPE & Closed Loop Equipment Schematic





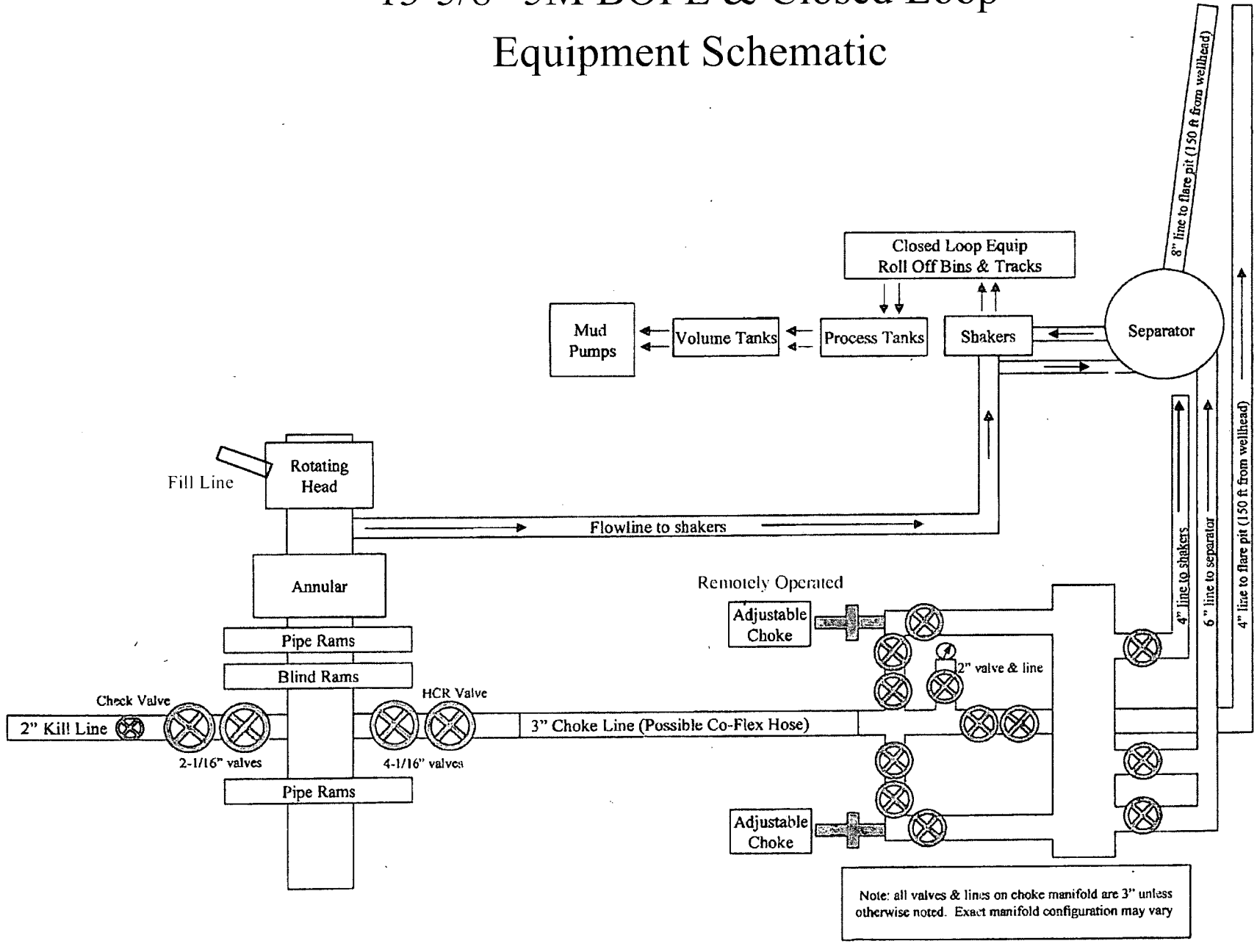
Helmerich & Payne

Flex 3 Rig w/ 3 Chokes

devon

Name: Mike Potts	Date: 6-23-2010	Working Pressure: 10M	J-5132-E

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

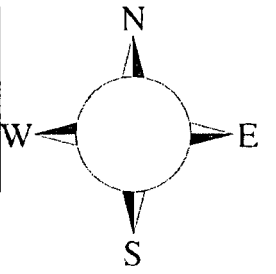
Tomb Raider 1-12 Fed 612H

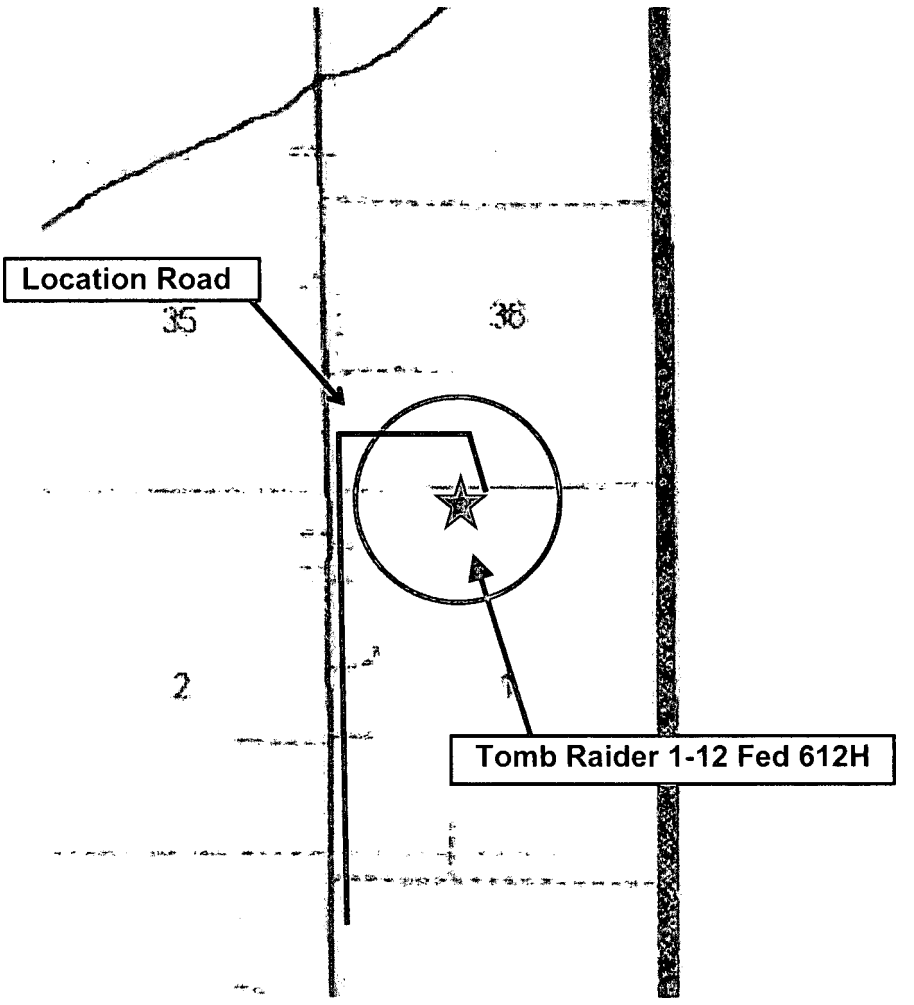
Sec-1 T-23S R-31E
210' FNL & 2139' FWL
LAT. = 32.3401421' N (NAD83)
LONG = 103.7331295' W

Eddy County NM

Tomb Raider 1-12 Fed 612H

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 3000' ( )
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

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)
Sec 01-T23S-R31E
Tomb Raider 1-12 Fed 612H

Wellbore #1
Permit Plan 1

Anticollision Report

30 November, 2018

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	21,964.16	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	16,046.77	10,704.00	1,050.67	936.56	9.208	CC
Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1	16,050.00	10,704.00	1,050.67	936.53	9.205	ES
Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1	16,850.00	10,704.00	1,322.52	1,126.53	6.748	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	588.21	600.23	1,137.12	1,133.30	297.199	CC
Tomb Raider 1 Fed 1H - Original - Actual	2,100.00	2,117.57	1,138.42	1,123.93	78.573	ES
Tomb Raider 1 Fed 1H - Original - Actual	10,000.00	9,966.47	1,477.53	1,408.69	21.464	SF
Tomb Raider 1 Fed 1H - Original - Plan 2	588.21	600.23	1,137.12	1,133.30	297.199	CC
Tomb Raider 1 Fed 1H - Original - Plan 2	2,100.00	2,117.57	1,138.42	1,123.93	78.573	ES
Tomb Raider 1 Fed 1H - Original - Plan 2	10,000.00	9,939.62	1,475.99	1,406.06	21.104	SF
Tomb Raider 1 Fed 1H - Original - Plan1v2	2,000.00	2,012.00	1,137.65	1,130.68	163.371	CC, ES
Tomb Raider 1 Fed 1H - Original - Plan1v2	10,050.00	9,950.00	1,438.72	1,403.17	40.472	SF
Tomb Raider 1 Fed 1H - Original - PTL	588.21	600.23	1,137.12	1,133.30	297.199	CC
Tomb Raider 1 Fed 1H - Original - PTL	2,100.00	2,117.57	1,138.42	1,123.93	78.573	ES
Tomb Raider 1 Fed 1H - Original - PTL	9,950.00	9,929.27	1,474.30	1,405.64	21.471	SF
Tomb Raider 1 Fed 1H - Original - T&D	1,541.21	1,553.26	1,137.61	1,132.29	213.664	CC
Tomb Raider 1 Fed 1H - Original - T&D	2,000.00	2,012.05	1,137.65	1,130.68	163.376	ES
Tomb Raider 1 Fed 1H - Original - T&D	10,300.00	12,316.00	1,435.34	1,398.81	39.288	SF
Tomb Raider 1-12 Fed 332H - Wellbore #1 - Permit Plan	2,000.00	2,000.10	60.00	46.07	4.308	Alert, CC
Tomb Raider 1-12 Fed 332H - Wellbore #1 - Permit Plan	2,050.00	2,050.10	60.19	45.91	4.215	Alert, ES
Tomb Raider 1-12 Fed 332H - Wellbore #1 - Permit Plan	21,964.16	21,864.40	664.02	353.30	2.137	Minor Risk, SF
Tomb Raider 1-12 Fed 334H - Wellbore #1 - Wellbore #1						Out of range
Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1	8,692.10	8,672.88	616.12	554.92	10.068	CC
Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1	8,700.00	8,678.00	616.14	554.90	10.061	ES
Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1	8,750.00	8,705.14	617.53	556.12	10.055	SF
Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan	2,000.00	2,008.80	792.14	778.18	56.751	CC
Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan	7,700.00	7,739.21	828.26	773.54	15.136	ES
Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan	8,750.00	8,734.54	866.26	804.34	13.990	SF
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Prelim Plan	8,108.45	8,179.79	235.11	176.92	4.040	Alert, CC
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Prelim Plan	8,150.00	8,219.31	235.29	176.81	4.023	Alert, ES
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Prelim Plan	8,250.00	8,314.38	237.20	178.06	4.011	Alert, 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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 525H - Wellbore #1 - Permit Plan	2,000.00	2,008.90	821.57	807.61	58.858	CC
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan	2,050.00	2,058.90	821.78	807.46	57.412	ES
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan	8,150.00	8,178.68	1,498.84	1,440.93	25.881	SF
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan	2,000.00	2,008.90	821.57	807.61	58.858	CC
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan	2,050.00	2,058.90	821.78	807.46	57.412	ES
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan	7,850.00	7,848.12	1,499.99	1,444.44	27.002	SF
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1	2,000.00	2,010.10	748.33	734.37	53.608	CC
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1	2,050.00	2,060.10	748.53	734.21	52.292	ES
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1	21,700.00	21,657.56	1,314.97	1,011.28	4.330	Alert, SF
Tomb Raider 1-12 Fed 614H - Wellbore #1 - T&D	1,016.80	1,026.85	748.21	744.25	189.073	CC
Tomb Raider 1-12 Fed 614H - Wellbore #1 - T&D	2,000.00	2,010.32	748.33	740.87	100.267	ES
Tomb Raider 1-12 Fed 614H - Wellbore #1 - T&D	11,100.00	11,114.52	1,069.59	1,029.66	26.790	SF
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1	1,998.52	2,008.82	737.02	723.21	53.387	CC
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1	2,050.00	2,059.96	737.23	723.06	52.031	ES
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1	21,964.16	21,860.05	1,317.20	1,005.36	4.224	Alert, SF
Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole	6,270.02	6,229.90	679.56	635.95	15.583	CC
Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole	6,300.00	6,256.98	679.63	635.82	15.514	ES
Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole	9,900.00	9,818.16	936.10	866.90	13.527	SF
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	10,053.90	10,049.08	183.66	113.03	2.600	Alert, CC, ES, SF
Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan	2,000.00	2,000.20	29.99	16.06	2.153	Minor Risk, CC
Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan	2,050.00	2,050.20	30.18	15.90	2.113	Minor Risk, ES
Tomb Raider 1-12 Fed 702H - Wellbore #1 - Permit Plan	2,100.00	2,100.19	30.76	16.12	2.101	Minor Risk, SF
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals	0.00	15.25	778.29			
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals	2,050.00	2,064.02	786.18	772.16	56.108	ES
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals	6,900.00	6,787.76	1,498.83	1,450.59	31.071	SF
Tomb Raider 1-12 Fed 714H - Original Hole - NTL	0.00	15.25	778.29			
Tomb Raider 1-12 Fed 714H - Original Hole - NTL	2,050.00	2,064.02	786.18	772.16	56.108	ES
Tomb Raider 1-12 Fed 714H - Original Hole - NTL	6,900.00	6,787.76	1,498.83	1,450.59	31.071	SF
Tomb Raider 1-12 Fed 714H - Original Hole - T&D	460.29	481.55	778.22	776.71	514.983	CC
Tomb Raider 1-12 Fed 714H - Original Hole - T&D	2,000.00	2,015.93	778.29	771.32	111.769	ES
Tomb Raider 1-12 Fed 714H - Original Hole - T&D	11,100.00	11,149.41	1,099.12	1,059.70	27.877	SF
Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan	2,000.00	2,000.30	89.99	76.06	6.461	CC, ES
Tomb Raider 1-12 Fed 732H - Wellbore #1 - Permit Plan	21,964.16	22,068.85	897.14	586.37	2.887	Alert, 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	11,800.00	21,400.45	673.56	482.29	3.522	Alert, SF
Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan	11,900.00	21,305.50	670.08	480.72	3.539	Alert, ES
Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan	21,214.98	11,993.49	668.10	482.05	3.591	Alert, 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	12,049.96	21,342.92	1,311.20	1,121.08	6.897	CC
Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan	21,550.00	11,855.52	1,312.16	1,120.65	6.851	ES
Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan	21,750.00	11,700.00	1,318.38	1,124.78	6.810	SF
Tomb Raider 12-1 Fed 701H - Wellbore #1 - Permit Plan	21,683.93	11,823.57	986.21	792.49	5.091	CC
Tomb Raider 12-1 Fed 701H - Wellbore #1 - Permit Plan	21,700.00	11,810.47	986.26	792.31	5.085	ES
Tomb Raider 12-1 Fed 701H - Wellbore #1 - Permit Plan	21,800.00	11,737.94	988.86	793.82	5.070	SF
Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan	21,686.62	11,868.49	411.24	216.85	2.116	Minor Risk, CC
Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan	21,700.00	11,857.55	411.31	216.75	2.114	Minor Risk, ES, SF

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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: 228-INC-ONLY — **Offset Well Error:** 10.00 ft

Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance				
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	Warning
15,000.00	11,700.00	10,704.00	10,701.98	64.40	224.09	-15.30	-4,411.31	-122.99	1,483.12	1,278.18	204.94	7.237	
15,050.00	11,700.00	10,704.00	10,701.98	64.96	224.09	-15.30	-4,411.31	-122.99	1,448.26	1,246.65	201.61	7.184	
15,100.00	11,700.00	10,704.00	10,701.98	65.51	224.09	-15.30	-4,411.31	-122.99	1,414.31	1,216.26	198.06	7.141	
15,150.00	11,700.00	10,704.00	10,701.98	66.08	224.09	-15.30	-4,411.31	-122.99	1,381.34	1,187.06	194.28	7.110	
15,200.00	11,700.00	10,704.00	10,701.98	66.64	224.09	-15.30	-4,411.31	-122.99	1,349.42	1,159.16	190.26	7.093	
15,250.00	11,700.00	10,704.00	10,701.98	67.21	224.09	-15.30	-4,411.31	-122.99	1,318.62	1,132.62	186.00	7.089	
15,300.00	11,700.00	10,704.00	10,701.98	67.78	224.09	-15.30	-4,411.31	-122.99	1,289.02	1,107.53	181.49	7.102	
15,350.00	11,700.00	10,704.00	10,701.98	68.36	224.09	-15.30	-4,411.31	-122.99	1,260.71	1,083.98	176.73	7.133	
15,400.00	11,700.00	10,704.00	10,701.98	68.94	224.09	-15.30	-4,411.31	-122.99	1,233.78	1,062.05	171.73	7.184	
15,450.00	11,700.00	10,704.00	10,701.98	69.52	224.09	-15.30	-4,411.31	-122.99	1,208.32	1,041.82	166.50	7.257	
15,500.00	11,700.00	10,704.00	10,701.98	70.10	224.09	-15.30	-4,411.31	-122.99	1,184.42	1,023.36	161.07	7.354	
15,550.00	11,700.00	10,704.00	10,701.98	70.69	224.09	-15.30	-4,411.31	-122.99	1,162.19	1,006.73	155.46	7.476	
15,600.00	11,700.00	10,704.00	10,701.98	71.28	224.09	-15.30	-4,411.31	-122.99	1,141.71	991.98	149.73	7.625	
15,650.00	11,700.00	10,704.00	10,701.98	71.87	224.09	-15.30	-4,411.31	-122.99	1,123.09	979.14	143.95	7.802	
15,700.00	11,700.00	10,704.00	10,701.98	72.46	224.09	-15.30	-4,411.31	-122.99	1,106.41	968.19	138.22	8.005	
15,750.00	11,700.00	10,704.00	10,701.98	73.06	224.09	-15.30	-4,411.31	-122.99	1,091.78	959.11	132.67	8.230	
15,800.00	11,700.00	10,704.00	10,701.98	73.66	224.09	-15.30	-4,411.31	-122.99	1,079.26	951.81	127.45	8.468	
15,850.00	11,700.00	10,704.00	10,701.98	74.26	224.09	-15.30	-4,411.31	-122.99	1,068.93	946.17	122.77	8.707	
15,900.00	11,700.00	10,704.00	10,701.98	74.86	224.09	-15.30	-4,411.31	-122.99	1,060.87	942.01	118.86	8.926	
15,950.00	11,700.00	10,704.00	10,701.98	75.47	224.09	-15.30	-4,411.31	-122.99	1,055.11	939.14	115.97	9.098	
16,000.00	11,700.00	10,704.00	10,701.98	76.08	224.09	-15.30	-4,411.31	-122.99	1,051.71	937.36	114.35	9.198	
16,046.77	11,700.00	10,704.00	10,701.98	76.65	224.09	-15.30	-4,411.31	-122.99	1,050.67	936.56	114.11	9.208	CC
16,050.00	11,700.00	10,704.00	10,701.98	76.69	224.09	-15.30	-4,411.31	-122.99	1,050.67	936.53	114.14	9.205	ES
16,100.00	11,700.00	10,704.00	10,701.98	77.30	224.09	-15.30	-4,411.31	-122.99	1,052.01	936.61	115.41	9.116	
16,150.00	11,700.00	10,704.00	10,701.98	77.92	224.09	-15.30	-4,411.31	-122.99	1,055.72	937.65	118.07	8.941	
16,200.00	11,700.00	10,704.00	10,701.98	78.53	224.09	-15.30	-4,411.31	-122.99	1,061.78	939.83	121.95	8.707	
16,250.00	11,700.00	10,704.00	10,701.98	79.15	224.09	-15.30	-4,411.31	-122.99	1,070.14	943.35	126.79	8.441	
16,300.00	11,700.00	10,704.00	10,701.98	79.77	224.09	-15.30	-4,411.31	-122.99	1,080.75	948.42	132.33	8.167	
16,350.00	11,700.00	10,704.00	10,701.98	80.39	224.09	-15.30	-4,411.31	-122.99	1,093.55	955.20	138.34	7.905	
16,400.00	11,700.00	10,704.00	10,701.98	81.02	224.09	-15.30	-4,411.31	-122.99	1,108.45	963.83	144.62	7.665	
16,450.00	11,700.00	10,704.00	10,701.98	81.64	224.09	-15.30	-4,411.31	-122.99	1,125.38	974.39	151.00	7.453	
16,500.00	11,700.00	10,704.00	10,701.98	82.27	224.09	-15.30	-4,411.31	-122.99	1,144.25	986.90	157.36	7.272	
16,550.00	11,700.00	10,704.00	10,701.98	82.90	224.09	-15.30	-4,411.31	-122.99	1,164.96	1,001.37	163.60	7.121	
16,600.00	11,700.00	10,704.00	10,701.98	83.53	224.09	-15.30	-4,411.31	-122.99	1,187.42	1,017.77	169.65	6.999	
16,650.00	11,700.00	10,704.00	10,701.98	84.16	224.09	-15.30	-4,411.31	-122.99	1,211.52	1,036.05	175.47	6.904	
16,700.00	11,700.00	10,704.00	10,701.98	84.79	224.09	-15.30	-4,411.31	-122.99	1,237.18	1,056.14	181.03	6.834	
16,750.00	11,700.00	10,704.00	10,701.98	85.43	224.09	-15.30	-4,411.31	-122.99	1,264.29	1,077.98	186.31	6.786	
16,800.00	11,700.00	10,704.00	10,701.98	86.06	224.09	-15.30	-4,411.31	-122.99	1,292.77	1,101.47	191.30	6.758	
16,850.00	11,700.00	10,704.00	10,701.98	86.70	224.09	-15.30	-4,411.31	-122.99	1,322.52	1,126.53	196.00	6.748	SF
16,900.00	11,700.00	10,704.00	10,701.98	87.34	224.09	-15.30	-4,411.31	-122.99	1,353.47	1,153.07	200.41	6.754	
16,950.00	11,700.00	10,704.00	10,701.98	87.98	224.09	-15.30	-4,411.31	-122.99	1,385.54	1,181.00	204.54	6.774	
17,000.00	11,700.00	10,704.00	10,701.98	88.62	224.09	-15.30	-4,411.31	-122.99	1,418.64	1,210.23	208.41	6.807	
17,050.00	11,700.00	10,704.00	10,701.98	89.27	224.09	-15.30	-4,411.31	-122.99	1,452.71	1,240.69	212.02	6.852	
17,100.00	11,700.00	10,704.00	10,701.98	89.91	224.09	-15.30	-4,411.31	-122.99	1,487.68	1,272.29	215.39	6.907	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	12.14	12.14	0.50	0.02	89.23	15.31	1,137.54	1,137.64				
50.00	50.00	62.71	62.71	0.50	0.08	89.22	15.47	1,137.52	1,137.63	1,137.04	0.59	1,941.635	
100.00	100.00	113.40	113.40	0.52	0.18	89.20	15.86	1,137.47	1,137.58	1,136.89	0.69	1,639.555	
150.00	150.00	164.53	164.53	0.59	0.35	89.18	16.25	1,137.38	1,137.50	1,136.55	0.95	1,203.272	
200.00	200.00	215.05	215.05	0.70	0.53	89.17	16.55	1,137.24	1,137.36	1,136.13	1.23	921.815	
250.00	250.00	264.62	264.61	0.84	0.70	89.15	16.82	1,137.11	1,137.24	1,135.70	1.54	737.345	
300.00	300.00	312.94	312.93	0.99	0.87	89.14	17.07	1,137.02	1,137.15	1,135.29	1.86	611.238	
315.95	315.95	327.96	327.95	1.04	0.93	89.14	17.13	1,137.01	1,137.14	1,135.18	1.96	579.462	
350.00	350.00	360.01	360.01	1.15	1.04	89.13	17.24	1,137.04	1,137.17	1,134.99	2.18	521.033	
400.00	400.00	410.07	410.07	1.31	1.21	89.12	17.39	1,137.16	1,137.29	1,134.77	2.52	451.181	
450.00	450.00	462.99	462.98	1.48	1.40	89.11	17.76	1,137.17	1,137.31	1,134.44	2.87	395.913	
500.00	500.00	513.78	513.77	1.65	1.58	89.08	18.29	1,137.09	1,137.24	1,134.02	3.22	353.179	
550.00	550.00	563.83	563.82	1.82	1.75	89.05	18.79	1,137.00	1,137.16	1,133.59	3.57	318.823	
588.21	588.21	600.23	600.21	1.95	1.88	89.03	19.16	1,136.96	1,137.12	1,133.30	3.83	297.199 CC	
600.00	600.00	611.34	611.32	1.99	1.92	89.03	19.28	1,136.96	1,137.13	1,133.22	3.91	291.133	
650.00	650.00	658.47	658.45	2.16	2.08	89.00	19.84	1,137.04	1,137.22	1,132.98	4.24	267.916	
700.00	700.00	709.17	709.14	2.34	2.26	88.97	20.42	1,137.18	1,137.37	1,132.77	4.60	247.437	
750.00	750.00	760.39	760.36	2.51	2.44	88.95	20.86	1,137.28	1,137.47	1,132.52	4.95	229.748	
800.00	800.00	812.53	812.51	2.69	2.62	88.93	21.30	1,137.30	1,137.50	1,132.19	5.31	214.259	
850.00	850.00	864.17	864.14	2.87	2.81	88.90	21.88	1,137.22	1,137.43	1,131.76	5.67	200.759	
900.00	900.00	914.36	914.33	3.04	2.98	88.87	22.46	1,137.11	1,137.33	1,131.31	6.02	188.997	
950.00	950.00	963.35	963.31	3.22	3.15	88.84	22.99	1,137.00	1,137.23	1,130.87	6.37	178.648	
972.86	972.86	984.90	984.86	3.30	3.23	88.83	23.18	1,136.99	1,137.22	1,130.70	6.52	174.367	
1,000.00	1,000.00	1,010.49	1,010.45	3.40	3.32	88.82	23.39	1,137.00	1,137.24	1,130.53	6.71	169.548	
1,050.00	1,050.00	1,060.16	1,060.12	3.58	3.49	88.81	23.71	1,137.10	1,137.35	1,130.29	7.06	161.138	
1,100.00	1,100.00	1,113.51	1,113.46	3.75	3.68	88.78	24.12	1,137.10	1,137.36	1,129.94	7.42	153.243	
1,150.00	1,150.00	1,162.27	1,162.23	3.93	3.85	88.76	24.54	1,137.02	1,137.29	1,129.52	7.77	146.373	
1,153.11	1,153.11	1,165.16	1,165.11	3.94	3.86	88.76	24.56	1,137.02	1,137.29	1,129.49	7.79	145.975	
1,200.00	1,200.00	1,208.62	1,208.57	4.11	4.01	88.75	24.81	1,137.08	1,137.36	1,129.25	8.11	140.253	
1,250.00	1,250.00	1,257.53	1,257.48	4.29	4.18	88.74	24.95	1,137.27	1,137.55	1,129.09	8.46	134.496	
1,300.00	1,300.00	1,307.92	1,307.88	4.46	4.36	88.74	25.04	1,137.46	1,137.74	1,128.93	8.81	129.115	
1,350.00	1,350.00	1,360.56	1,360.52	4.64	4.54	88.73	25.12	1,137.60	1,137.88	1,128.70	9.17	124.037	
1,400.00	1,400.00	1,413.85	1,413.80	4.82	4.73	88.73	25.32	1,137.59	1,137.87	1,128.33	9.54	119.301	
1,450.00	1,450.00	1,464.59	1,464.55	5.00	4.91	88.71	25.63	1,137.48	1,137.77	1,127.88	9.89	115.006	
1,500.00	1,500.00	1,515.39	1,515.34	5.18	5.09	88.68	26.11	1,137.34	1,137.64	1,127.40	10.25	111.003	
1,550.00	1,550.00	1,564.34	1,564.29	5.36	5.26	88.66	26.50	1,137.22	1,137.53	1,126.93	10.60	107.334	
1,600.00	1,600.00	1,613.76	1,613.71	5.53	5.43	88.65	26.75	1,137.13	1,137.44	1,126.49	10.95	103.886	
1,650.00	1,650.00	1,663.70	1,663.65	5.71	5.61	88.64	26.93	1,137.05	1,137.37	1,126.07	11.30	100.637	
1,700.00	1,700.00	1,712.56	1,712.51	5.89	5.78	88.64	27.08	1,136.99	1,137.31	1,125.66	11.65	97.617	
1,709.29	1,709.29	1,721.34	1,721.29	5.92	5.81	88.63	27.10	1,136.98	1,137.31	1,125.59	11.71	97.085	
1,750.00	1,750.00	1,759.81	1,759.75	6.07	5.94	88.63	27.12	1,137.02	1,137.35	1,125.35	11.99	94.825	
1,800.00	1,800.00	1,808.14	1,808.09	6.25	6.11	88.64	27.06	1,137.17	1,137.50	1,125.15	12.34	92.169	
1,850.00	1,850.00	1,858.00	1,857.95	6.43	6.28	88.64	26.96	1,137.34	1,137.67	1,124.98	12.69	89.622	
1,900.00	1,900.00	1,908.13	1,908.08	6.61	6.46	88.65	26.87	1,137.52	1,137.85	1,124.80	13.05	87.206	
1,950.00	1,950.00	1,958.49	1,958.44	6.78	6.63	88.65	26.77	1,137.69	1,138.01	1,124.61	13.40	84.911	
2,000.00	2,000.00	2,012.82	2,012.76	6.96	6.82	88.66	26.70	1,137.79	1,138.10	1,124.33	13.77	82.646	
2,015.47	2,015.47	2,030.20	2,030.15	7.02	6.88	150.58	26.70	1,137.76	1,138.10	1,124.21	13.89	81.960	
2,050.00	2,050.00	2,069.00	2,068.95	7.14	7.02	150.59	26.71	1,137.60	1,138.12	1,123.98	14.14	80.473	
2,100.00	2,099.99	2,117.57	2,117.51	7.32	7.18	150.60	26.76	1,137.33	1,138.42	1,123.93	14.49	78.573 ES	
2,150.00	2,149.98	2,166.47	2,166.41	7.49	7.35	150.62	26.81	1,137.12	1,139.16	1,124.32	14.83	76.796	
2,200.00	2,199.96	2,217.67	2,217.61	7.67	7.53	150.65	26.85	1,136.90	1,140.27	1,125.08	15.19	75.085	
2,250.00	2,249.92	2,267.45	2,267.39	7.84	7.71	150.69	26.83	1,136.63	1,141.68	1,126.15	15.53	73.492	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
2,300.00	2,299.88	2,313.26	2,313.20	8.02	7.87	150.74	26.80	1,136.50	1,143.28	1,127.41	15.87	72.043	
2,350.00	2,349.84	2,360.90	2,360.85	8.19	8.03	150.79	26.76	1,136.52	1,145.06	1,128.85	16.21	70.636	
2,400.00	2,399.80	2,415.10	2,415.04	8.37	8.22	150.84	26.73	1,136.47	1,146.76	1,130.18	16.57	69.187	
2,450.00	2,449.76	2,467.27	2,467.21	8.54	8.40	150.90	26.71	1,136.25	1,148.30	1,131.37	16.93	67.818	
2,500.00	2,499.72	2,517.33	2,517.28	8.72	8.58	150.95	26.68	1,136.01	1,149.81	1,132.53	17.28	66.531	
2,550.00	2,549.68	2,564.69	2,564.63	8.90	8.74	150.99	26.65	1,135.81	1,151.36	1,133.73	17.62	65.331	
2,600.00	2,599.64	2,610.39	2,610.33	9.07	8.90	151.04	26.60	1,135.78	1,153.07	1,135.12	17.96	64.208	
2,650.00	2,649.60	2,658.22	2,658.16	9.25	9.07	151.09	26.53	1,135.90	1,154.95	1,136.65	18.30	63.108	
2,700.00	2,699.56	2,707.64	2,707.58	9.43	9.24	151.14	26.45	1,136.06	1,156.87	1,138.22	18.65	62.032	
2,750.00	2,749.52	2,759.83	2,759.77	9.61	9.42	151.19	26.38	1,136.21	1,158.77	1,139.76	19.01	60.961	
2,800.00	2,799.48	2,813.34	2,813.28	9.78	9.61	151.25	26.37	1,136.21	1,160.52	1,141.15	19.37	59.909	
2,850.00	2,849.44	2,863.43	2,863.37	9.96	9.78	151.29	26.41	1,136.12	1,162.20	1,142.47	19.72	58.927	
2,900.00	2,899.40	2,913.30	2,913.24	10.14	9.96	151.34	26.46	1,136.04	1,163.88	1,143.80	20.07	57.981	
2,950.00	2,949.36	2,963.88	2,963.82	10.32	10.13	151.38	26.53	1,135.95	1,165.54	1,145.12	20.43	57.060	
3,000.00	2,999.32	3,013.61	3,013.55	10.49	10.31	151.42	26.63	1,135.83	1,167.19	1,146.41	20.78	56.177	
3,050.00	3,049.28	3,059.97	3,059.91	10.67	10.47	151.46	26.72	1,135.81	1,168.93	1,147.82	21.12	55.359	
3,100.00	3,099.24	3,107.00	3,106.94	10.85	10.63	151.50	26.80	1,135.94	1,170.83	1,149.37	21.46	54.568	
3,150.00	3,149.20	3,157.19	3,157.13	11.03	10.81	151.55	26.87	1,136.12	1,172.77	1,150.96	21.81	53.776	
3,200.00	3,199.16	3,209.43	3,209.37	11.21	10.99	151.59	26.93	1,136.28	1,174.68	1,152.52	22.17	52.990	
3,250.00	3,249.12	3,266.19	3,266.13	11.38	11.19	151.64	27.07	1,136.20	1,176.38	1,153.84	22.54	52.181	
3,300.00	3,299.08	3,318.62	3,318.56	11.56	11.37	151.68	27.28	1,135.89	1,177.85	1,154.94	22.90	51.425	
3,350.00	3,349.04	3,368.85	3,368.79	11.74	11.55	151.71	27.56	1,135.56	1,179.29	1,156.03	23.26	50.706	
3,400.00	3,399.00	3,415.73	3,415.66	11.92	11.71	151.74	27.85	1,135.30	1,180.78	1,157.18	23.60	50.037	
3,450.00	3,448.96	3,461.76	3,461.69	12.10	11.87	151.77	28.10	1,135.20	1,182.43	1,158.50	23.94	49.399	
3,500.00	3,498.92	3,511.44	3,511.37	12.28	12.05	151.80	28.34	1,135.19	1,184.19	1,159.90	24.29	48.758	
3,550.00	3,548.88	3,562.24	3,562.17	12.46	12.23	151.84	28.55	1,135.15	1,185.92	1,161.28	24.64	48.125	
3,600.00	3,598.84	3,616.57	3,616.50	12.63	12.42	151.88	28.79	1,135.00	1,187.55	1,162.54	25.01	47.483	
3,650.00	3,648.80	3,671.21	3,671.14	12.81	12.61	151.91	29.11	1,134.63	1,188.98	1,163.60	25.38	46.850	
3,700.00	3,698.76	3,719.32	3,719.24	12.99	12.78	151.94	29.46	1,134.28	1,190.38	1,164.66	25.72	46.274	
3,750.00	3,748.72	3,768.43	3,768.36	13.17	12.95	151.96	29.88	1,133.94	1,191.81	1,165.74	26.07	45.709	
3,800.00	3,798.68	3,817.27	3,817.19	13.35	13.12	151.98	30.39	1,133.65	1,193.29	1,166.86	26.42	45.162	
3,850.00	3,848.64	3,864.65	3,864.56	13.53	13.28	152.00	30.97	1,133.43	1,194.82	1,168.05	26.77	44.640	
3,900.00	3,898.60	3,909.75	3,909.66	13.71	13.44	152.01	31.56	1,133.37	1,196.53	1,169.43	27.10	44.151	
3,950.00	3,948.56	3,954.94	3,954.84	13.89	13.60	152.02	32.14	1,133.50	1,198.44	1,171.00	27.44	43.682	
4,000.00	3,998.52	4,000.30	4,000.20	14.07	13.76	152.04	32.59	1,133.81	1,200.54	1,172.77	27.77	43.231	
4,050.00	4,048.47	4,045.64	4,045.54	14.25	13.92	152.07	32.83	1,134.28	1,202.84	1,174.73	28.11	42.798	
4,100.00	4,098.43	4,090.95	4,090.85	14.43	14.08	152.10	32.96	1,134.93	1,205.33	1,176.89	28.44	42.383	
4,150.00	4,148.39	4,136.09	4,135.98	14.61	14.23	152.14	32.99	1,135.75	1,208.01	1,179.23	28.77	41.985	
4,200.00	4,198.35	4,180.53	4,180.40	14.79	14.39	152.19	32.89	1,136.75	1,210.90	1,181.80	29.10	41.609	
4,250.00	4,248.31	4,225.18	4,225.04	14.97	14.54	152.24	32.62	1,137.95	1,214.02	1,184.59	29.43	41.249	
4,300.00	4,298.27	4,272.80	4,272.63	15.14	14.71	152.30	32.19	1,139.38	1,217.30	1,187.52	29.77	40.884	
4,350.00	4,348.23	4,320.39	4,320.20	15.32	14.88	152.37	31.63	1,140.89	1,220.66	1,190.55	30.12	40.532	
4,400.00	4,398.19	4,367.14	4,366.92	15.50	15.04	152.44	30.90	1,142.48	1,224.14	1,193.69	30.45	40.195	
4,450.00	4,448.15	4,414.31	4,414.05	15.68	15.21	152.53	29.97	1,144.19	1,227.75	1,196.95	30.80	39.868	
4,500.00	4,498.11	4,464.36	4,464.05	15.86	15.38	152.62	28.93	1,146.06	1,231.40	1,200.25	31.15	39.534	
4,550.00	4,548.07	4,513.37	4,513.01	16.04	15.55	152.70	27.97	1,147.88	1,235.05	1,203.55	31.50	39.212	
4,600.00	4,598.03	4,559.10	4,558.70	16.22	15.71	152.77	27.25	1,149.69	1,238.82	1,206.99	31.83	38.920	
4,650.00	4,647.99	4,606.79	4,606.35	16.40	15.88	152.84	26.72	1,151.73	1,242.75	1,210.57	32.17	38.628	
4,700.00	4,697.95	4,662.67	4,662.18	16.58	16.08	152.91	26.12	1,153.99	1,246.57	1,214.01	32.55	38.294	
4,750.00	4,747.91	4,717.53	4,717.00	16.76	16.27	152.99	25.46	1,155.96	1,250.16	1,217.23	32.93	37.967	
4,800.00	4,797.87	4,771.44	4,770.88	16.94	16.46	153.07	24.66	1,157.71	1,253.58	1,220.28	33.30	37.648	
4,850.00	4,847.83	4,821.57	4,820.98	17.12	16.63	153.14	23.82	1,159.23	1,256.90	1,223.25	33.65	37.351	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
4,900.00	4,897.79	4,870.66	4,870.03	17.30	16.80	153.22	23.02	1,160.75	1,260.25	1,226.25	34.00	37.066	
4,950.00	4,947.75	4,922.66	4,922.01	17.48	16.99	153.30	22.25	1,162.33	1,263.58	1,229.22	34.36	36.772	
5,000.00	4,997.71	4,975.10	4,974.42	17.66	17.17	153.36	21.64	1,163.83	1,266.81	1,232.09	34.73	36.480	
5,050.00	5,047.67	5,026.46	5,025.76	17.84	17.35	153.43	21.14	1,165.22	1,269.97	1,234.88	35.09	36.197	
5,100.00	5,097.63	5,077.24	5,076.52	18.02	17.53	153.49	20.70	1,166.54	1,273.07	1,237.63	35.44	35.920	
5,150.00	5,147.59	5,126.19	5,125.45	18.20	17.70	153.55	20.17	1,167.82	1,276.18	1,240.39	35.79	35.657	
5,200.00	5,197.55	5,176.98	5,176.22	18.38	17.87	153.62	19.46	1,169.16	1,279.32	1,243.17	36.15	35.391	
5,250.00	5,247.51	5,231.11	5,230.33	18.56	18.06	153.70	18.58	1,170.45	1,282.34	1,245.82	36.52	35.114	
5,300.00	5,297.47	5,282.26	5,281.45	18.74	18.24	153.77	17.77	1,171.55	1,285.22	1,248.35	36.88	34.852	
5,350.00	5,347.43	5,331.64	5,330.83	18.92	18.41	153.83	17.36	1,172.62	1,288.12	1,250.90	37.23	34.601	
5,400.00	5,397.39	5,382.81	5,381.98	19.10	18.59	153.87	17.31	1,173.74	1,291.02	1,253.43	37.59	34.348	
5,450.00	5,447.35	5,434.65	5,433.81	19.28	18.77	153.90	17.45	1,174.81	1,293.84	1,255.89	37.95	34.095	
5,500.00	5,497.31	5,484.86	5,484.01	19.46	18.95	153.94	17.52	1,175.79	1,296.62	1,258.32	38.30	33.852	
5,550.00	5,547.27	5,535.04	5,534.18	19.64	19.13	153.99	17.19	1,176.76	1,299.39	1,260.74	38.66	33.614	
5,600.00	5,597.23	5,586.98	5,586.10	19.82	19.31	154.05	16.68	1,177.70	1,302.12	1,263.10	39.02	33.372	
5,650.00	5,647.19	5,639.31	5,638.43	20.00	19.49	154.11	16.21	1,178.57	1,304.77	1,265.39	39.38	33.132	
5,700.00	5,697.15	5,692.80	5,691.92	20.18	19.68	154.17	15.86	1,179.33	1,307.30	1,267.55	39.75	32.889	
5,750.00	5,747.11	5,744.79	5,743.90	20.36	19.86	154.21	15.66	1,179.96	1,309.71	1,269.60	40.11	32.652	
5,800.00	5,797.07	5,795.29	5,794.39	20.54	20.03	154.26	15.52	1,180.53	1,312.09	1,271.62	40.47	32.424	
5,850.00	5,847.03	5,845.64	5,844.74	20.73	20.21	154.30	15.37	1,181.08	1,314.44	1,273.62	40.82	32.200	
5,900.00	5,896.99	5,895.90	5,895.00	20.91	20.38	154.35	15.08	1,181.60	1,316.79	1,275.61	41.18	31.979	
5,950.00	5,946.95	5,946.89	5,945.99	21.09	20.56	154.41	14.67	1,182.11	1,319.11	1,277.57	41.53	31.760	
6,000.00	5,996.91	5,998.09	5,997.18	21.27	20.74	154.46	14.29	1,182.57	1,321.38	1,279.49	41.89	31.542	
6,050.00	6,046.87	6,047.94	6,047.03	21.45	20.91	154.51	13.92	1,183.00	1,323.64	1,281.39	42.25	31.332	
6,100.00	6,096.83	6,097.92	6,097.01	21.63	21.09	154.57	13.55	1,183.43	1,325.90	1,283.30	42.60	31.125	
6,150.00	6,146.79	6,150.04	6,149.12	21.81	21.27	154.61	13.29	1,183.84	1,328.11	1,285.15	42.96	30.914	
6,200.00	6,196.75	6,201.67	6,200.75	21.99	21.45	154.65	13.23	1,184.18	1,330.25	1,286.93	43.32	30.706	
6,250.00	6,246.71	6,252.03	6,251.11	22.17	21.63	154.69	13.25	1,184.47	1,332.35	1,288.68	43.68	30.505	
6,300.00	6,296.67	6,301.89	6,300.97	22.35	21.80	154.73	13.26	1,184.75	1,334.45	1,290.42	44.03	30.307	
6,350.00	6,346.63	6,351.08	6,350.16	22.53	21.97	154.77	13.11	1,185.04	1,336.56	1,292.18	44.38	30.116	
6,400.00	6,396.59	6,400.82	6,399.89	22.71	22.15	154.82	12.80	1,185.35	1,338.70	1,293.97	44.73	29.926	
6,450.00	6,446.55	6,451.07	6,450.15	22.89	22.32	154.87	12.49	1,185.66	1,340.84	1,295.75	45.09	29.738	
6,500.00	6,496.51	6,502.44	6,501.52	23.07	22.50	154.91	12.24	1,185.95	1,342.95	1,297.50	45.45	29.549	
6,550.00	6,546.46	6,554.41	6,553.48	23.25	22.68	154.96	12.14	1,186.17	1,344.98	1,299.18	45.81	29.360	
6,600.00	6,596.42	6,605.89	6,604.97	23.43	22.86	154.99	12.11	1,186.33	1,346.96	1,300.79	46.17	29.174	
6,650.00	6,646.38	6,657.30	6,656.38	23.61	23.04	155.03	12.07	1,186.44	1,348.88	1,302.35	46.53	28.990	
6,700.00	6,696.34	6,705.40	6,704.48	23.79	23.21	155.07	11.96	1,186.54	1,350.80	1,303.93	46.88	28.817	
6,750.00	6,746.30	6,753.72	6,752.79	23.97	23.38	155.12	11.70	1,186.69	1,352.80	1,305.58	47.22	28.647	
6,800.00	6,796.26	6,803.21	6,802.28	24.15	23.55	155.16	11.39	1,186.88	1,354.83	1,307.25	47.57	28.478	
6,850.00	6,846.22	6,852.79	6,851.86	24.33	23.72	155.21	11.10	1,187.10	1,356.88	1,308.95	47.93	28.312	
6,900.00	6,896.18	6,902.71	6,901.78	24.51	23.90	155.25	10.95	1,187.32	1,358.93	1,310.65	48.28	28.147	
6,950.00	6,946.14	6,952.49	6,951.55	24.70	24.07	155.29	10.98	1,187.56	1,360.99	1,312.36	48.63	27.985	
7,000.00	6,996.10	7,001.95	7,001.02	24.88	24.24	155.32	11.01	1,187.81	1,363.06	1,314.08	48.99	27.826	
7,050.00	7,046.06	7,050.75	7,049.81	25.06	24.41	155.35	10.97	1,188.08	1,365.16	1,315.82	49.33	27.671	
7,100.00	7,096.02	7,098.66	7,097.73	25.24	24.58	155.40	10.75	1,188.39	1,367.32	1,317.64	49.68	27.522	
7,150.00	7,145.98	7,148.82	7,147.88	25.42	24.76	155.45	10.35	1,188.76	1,369.54	1,319.50	50.04	27.371	
7,200.00	7,195.94	7,201.44	7,200.50	25.60	24.94	155.49	10.06	1,189.08	1,371.68	1,321.28	50.40	27.216	
7,250.00	7,245.90	7,251.17	7,250.22	25.78	25.11	155.54	9.91	1,189.33	1,373.77	1,323.01	50.75	27.068	
7,300.00	7,295.86	7,299.63	7,298.69	25.96	25.28	155.58	9.73	1,189.61	1,375.90	1,324.80	51.10	26.925	
7,350.00	7,345.82	7,346.72	7,345.78	26.14	25.45	155.62	9.45	1,189.95	1,378.10	1,326.66	51.44	26.789	
7,400.00	7,395.78	7,393.37	7,392.42	26.32	25.61	155.67	8.87	1,190.38	1,380.42	1,328.64	51.78	26.658	
7,450.00	7,445.74	7,442.10	7,441.14	26.50	25.78	155.74	7.99	1,190.89	1,382.84	1,330.71	52.13	26.526	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
7,500.00	7,495.70	7,491.47	7,490.50	26.68	25.95	155.82	6.96	1,191.43	1,385.28	1,332.79	52.48	26.394	
7,550.00	7,545.66	7,544.48	7,543.49	26.86	26.14	155.90	5.81	1,191.96	1,387.68	1,334.83	52.85	26.257	
7,600.00	7,595.62	7,598.08	7,597.08	27.04	26.32	155.97	4.83	1,192.37	1,389.96	1,336.74	53.22	26.118	
7,650.00	7,645.58	7,646.86	7,645.85	27.22	26.49	156.04	3.93	1,192.71	1,392.20	1,338.63	53.57	25.990	
7,700.00	7,695.54	7,695.52	7,694.49	27.40	26.66	156.12	2.91	1,193.06	1,394.47	1,340.55	53.92	25.864	
7,750.00	7,745.50	7,741.95	7,740.91	27.58	26.83	156.19	1.82	1,193.47	1,396.83	1,342.58	54.26	25.745	
7,800.00	7,795.46	7,788.51	7,787.46	27.77	26.99	156.27	0.60	1,193.99	1,399.32	1,344.73	54.60	25.631	
7,850.00	7,845.42	7,835.68	7,834.60	27.95	27.15	156.35	-0.63	1,194.62	1,401.92	1,346.98	54.94	25.519	
7,900.00	7,895.38	7,884.88	7,883.78	28.13	27.32	156.43	-1.84	1,195.37	1,404.61	1,349.32	55.29	25.405	
7,950.00	7,945.34	7,941.44	7,940.32	28.31	27.52	156.51	-3.07	1,196.09	1,407.17	1,351.50	55.67	25.277	
8,000.00	7,995.30	7,993.63	7,992.50	28.49	27.70	156.59	-4.07	1,196.56	1,409.54	1,353.51	56.03	25.156	
8,050.00	8,045.26	8,042.39	8,041.25	28.67	27.87	156.66	-5.08	1,197.01	1,411.93	1,355.55	56.38	25.042	
8,100.00	8,095.22	8,090.90	8,089.75	28.85	28.04	156.73	-6.19	1,197.50	1,414.36	1,357.63	56.73	24.931	
8,150.00	8,145.18	8,139.27	8,138.10	29.03	28.21	156.81	-7.44	1,198.02	1,416.85	1,359.77	57.08	24.823	
8,200.00	8,195.14	8,189.85	8,188.65	29.21	28.39	156.90	-8.87	1,198.58	1,419.36	1,361.93	57.43	24.713	
8,250.00	8,245.10	8,241.35	8,240.14	29.39	28.57	156.99	-10.31	1,199.09	1,421.83	1,364.04	57.79	24.602	
8,300.00	8,295.06	8,296.58	8,295.34	29.57	28.76	157.08	-11.80	1,199.53	1,424.19	1,366.02	58.17	24.483	
8,350.00	8,345.02	8,352.30	8,351.04	29.75	28.96	157.17	-13.14	1,199.75	1,426.35	1,367.80	58.55	24.363	
8,400.00	8,394.98	8,406.36	8,405.09	29.93	29.14	157.25	-14.34	1,199.80	1,428.34	1,369.42	58.92	24.244	
8,450.00	8,444.94	8,456.19	8,454.91	30.11	29.32	157.32	-15.38	1,199.73	1,430.22	1,370.95	59.27	24.131	
8,500.00	8,494.90	8,501.19	8,499.90	30.30	29.48	157.39	-16.42	1,199.77	1,432.22	1,372.62	59.60	24.029	
8,550.00	8,544.86	8,550.51	8,549.20	30.48	29.65	157.47	-17.68	1,199.95	1,434.37	1,374.42	59.95	23.924	
8,600.00	8,594.82	8,606.21	8,604.89	30.66	29.84	157.56	-19.02	1,200.00	1,436.39	1,376.06	60.33	23.808	
8,650.00	8,644.78	8,661.41	8,660.08	30.84	30.03	157.64	-20.19	1,199.85	1,438.22	1,377.52	60.70	23.692	
8,700.00	8,694.74	8,716.44	8,715.09	31.02	30.23	157.71	-21.14	1,199.54	1,439.87	1,378.80	61.08	23.575	
8,750.00	8,744.70	8,764.08	8,762.73	31.20	30.39	157.77	-21.91	1,199.22	1,441.48	1,380.06	61.42	23.469	
8,800.00	8,794.66	8,811.91	8,810.54	31.38	30.56	157.84	-22.78	1,198.97	1,443.17	1,381.40	61.77	23.365	
8,850.00	8,844.62	8,860.21	8,858.83	31.56	30.73	157.90	-23.59	1,198.78	1,444.92	1,382.80	62.11	23.262	
8,900.00	8,894.58	8,908.51	8,907.14	31.74	30.89	157.95	-24.23	1,198.66	1,446.73	1,384.27	62.46	23.162	
8,950.00	8,944.54	8,952.24	8,950.86	31.92	31.05	158.00	-24.73	1,198.70	1,448.69	1,385.89	62.79	23.071	
9,000.00	8,994.50	8,996.57	8,995.19	32.10	31.20	158.04	-25.21	1,198.91	1,450.84	1,387.72	63.12	22.984	
9,050.00	9,044.45	9,052.96	9,051.58	32.28	31.40	158.10	-25.80	1,199.16	1,452.98	1,389.48	63.50	22.881	
9,100.00	9,094.41	9,110.99	9,109.61	32.46	31.60	158.15	-26.37	1,199.15	1,454.89	1,391.00	63.89	22.773	
9,150.00	9,144.37	9,172.09	9,170.70	32.65	31.81	158.20	-26.69	1,198.75	1,456.45	1,392.17	64.28	22.658	
9,200.00	9,194.33	9,224.93	9,223.54	32.83	32.00	158.25	-26.89	1,198.13	1,457.74	1,393.10	64.64	22.550	
9,250.00	9,244.29	9,275.91	9,274.51	33.01	32.18	158.30	-27.46	1,197.44	1,459.00	1,394.00	65.00	22.446	
9,300.00	9,294.25	9,338.90	9,337.48	33.19	32.39	158.38	-28.33	1,196.27	1,460.02	1,394.62	65.40	22.326	
9,350.00	9,344.21	9,399.09	9,397.64	33.37	32.60	158.45	-29.04	1,194.66	1,460.61	1,394.83	65.78	22.204	
9,400.00	9,394.17	9,456.23	9,454.75	33.55	32.80	158.51	-29.72	1,192.81	1,460.94	1,394.78	66.15	22.084	
9,450.00	9,444.13	9,515.69	9,514.17	33.73	33.01	158.59	-30.54	1,190.54	1,460.98	1,394.45	66.53	21.959	
9,500.00	9,494.09	9,568.48	9,566.89	33.91	33.17	158.66	-31.40	1,188.22	1,460.77	1,393.89	66.87	21.844	
9,550.00	9,544.05	9,612.66	9,611.03	34.09	33.25	158.73	-32.19	1,186.37	1,460.65	1,393.52	67.14	21.757	
9,553.48	9,547.53	9,615.74	9,614.11	34.10	33.26	158.73	-32.25	1,186.24	1,460.65	1,393.50	67.15	21.751	
9,600.00	9,594.01	9,655.76	9,654.08	34.27	33.31	158.80	-33.14	1,184.71	1,460.74	1,393.36	67.38	21.679	
9,650.00	9,643.97	9,690.36	9,688.60	34.45	33.32	158.90	-35.14	1,183.46	1,461.18	1,393.61	67.57	21.625	
9,700.00	9,693.93	9,721.99	9,720.02	34.63	33.32	159.06	-38.61	1,182.55	1,462.29	1,394.53	67.76	21.582	
9,750.00	9,743.89	9,758.15	9,755.69	34.82	33.32	159.31	-44.46	1,181.63	1,463.92	1,395.98	67.94	21.549	
9,800.00	9,793.85	9,798.65	9,795.08	35.00	33.32	159.70	-53.79	1,180.57	1,466.02	1,397.90	68.11	21.523	
9,850.00	9,843.81	9,831.07	9,826.10	35.18	33.33	160.08	-63.14	1,179.67	1,468.57	1,400.28	68.29	21.506	
9,900.00	9,893.77	9,894.76	9,885.89	35.36	33.35	160.97	-84.97	1,177.53	1,471.46	1,402.97	68.49	21.485	
9,950.00	9,943.73	9,936.27	9,924.10	35.54	33.36	161.62	-101.04	1,175.49	1,474.17	1,405.50	68.67	21.467	
10,000.00	9,993.69	9,966.47	9,951.33	35.72	33.38	162.14	-114.01	1,174.01	1,477.53	1,408.69	68.84	21.464 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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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		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	
10,050.00	10,043.65	9,992.00	9,973.77	35.90	33.39	162.62	-126.12	1,172.77	1,481.69	1,412.71	68.98	21.480	
10,100.00	10,093.61	10,023.00	10,000.20	36.08	33.41	163.26	-142.24	1,171.28	1,486.72	1,417.59	69.13	21.507	
10,150.00	10,143.57	10,041.52	10,015.50	36.26	33.43	163.67	-152.63	1,170.45	1,492.76	1,423.54	69.22	21.566	
10,200.00	10,193.53	10,055.00	10,026.35	36.44	33.44	163.98	-160.61	1,169.90	1,499.98	1,430.69	69.26	21.655	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	12.14	12.14	0.50	0.02	89.23	15.31	1,137.54	1,137.64				
50.00	50.00	62.71	62.71	0.50	0.08	89.22	15.47	1,137.52	1,137.63	1,137.04	0.59	1,941.635	
100.00	100.00	113.40	113.40	0.52	0.18	89.20	15.86	1,137.47	1,137.58	1,136.89	0.69	1,639.555	
150.00	150.00	164.53	164.53	0.59	0.35	89.18	16.25	1,137.38	1,137.50	1,136.55	0.95	1,203.272	
200.00	200.00	215.05	215.05	0.70	0.53	89.17	16.55	1,137.24	1,137.36	1,136.13	1.23	921.815	
250.00	250.00	264.62	264.61	0.84	0.70	89.15	16.82	1,137.11	1,137.24	1,135.70	1.54	737.345	
300.00	300.00	312.94	312.93	0.99	0.87	89.14	17.07	1,137.02	1,137.15	1,135.29	1.86	611.238	
315.95	315.95	327.96	327.95	1.04	0.93	89.14	17.13	1,137.01	1,137.14	1,135.18	1.96	579.462	
350.00	350.00	360.01	360.01	1.15	1.04	89.13	17.24	1,137.04	1,137.17	1,134.99	2.18	521.033	
400.00	400.00	410.07	410.07	1.31	1.21	89.12	17.39	1,137.16	1,137.29	1,134.77	2.52	451.181	
450.00	450.00	462.99	462.98	1.48	1.40	89.11	17.76	1,137.17	1,137.31	1,134.44	2.87	395.913	
500.00	500.00	513.78	513.77	1.65	1.58	89.08	18.29	1,137.09	1,137.24	1,134.02	3.22	353.179	
550.00	550.00	563.83	563.82	1.82	1.75	89.05	18.79	1,137.00	1,137.16	1,133.59	3.57	318.823	
588.21	588.21	600.23	600.21	1.95	1.88	89.03	19.16	1,136.96	1,137.12	1,133.30	3.83	297.199 CC	
600.00	600.00	611.34	611.32	1.99	1.92	89.03	19.28	1,136.96	1,137.13	1,133.22	3.91	291.133	
650.00	650.00	658.47	658.45	2.16	2.08	89.00	19.84	1,137.04	1,137.22	1,132.98	4.24	267.916	
700.00	700.00	709.17	709.14	2.34	2.26	88.97	20.42	1,137.18	1,137.37	1,132.77	4.60	247.437	
750.00	750.00	760.39	760.36	2.51	2.44	88.95	20.86	1,137.28	1,137.47	1,132.52	4.95	229.748	
800.00	800.00	812.53	812.51	2.69	2.62	88.93	21.30	1,137.30	1,137.50	1,132.19	5.31	214.259	
850.00	850.00	864.17	864.14	2.87	2.81	88.90	21.88	1,137.22	1,137.43	1,131.76	5.67	200.759	
900.00	900.00	914.36	914.33	3.04	2.98	88.87	22.46	1,137.11	1,137.33	1,131.31	6.02	188.997	
950.00	950.00	963.35	963.31	3.22	3.15	88.84	22.99	1,137.00	1,137.23	1,130.87	6.37	178.648	
972.86	972.86	984.90	984.86	3.30	3.23	88.83	23.18	1,136.99	1,137.22	1,130.70	6.52	174.367	
1,000.00	1,000.00	1,010.49	1,010.45	3.40	3.32	88.82	23.39	1,137.00	1,137.24	1,130.53	6.71	169.548	
1,050.00	1,050.00	1,060.16	1,060.12	3.58	3.49	88.81	23.71	1,137.10	1,137.35	1,130.29	7.06	161.138	
1,100.00	1,100.00	1,113.51	1,113.46	3.75	3.68	88.78	24.12	1,137.10	1,137.36	1,129.94	7.42	153.243	
1,150.00	1,150.00	1,162.27	1,162.23	3.93	3.85	88.76	24.54	1,137.02	1,137.29	1,129.52	7.77	146.373	
1,153.11	1,153.11	1,165.16	1,165.11	3.94	3.86	88.76	24.56	1,137.02	1,137.29	1,129.49	7.79	145.975	
1,200.00	1,200.00	1,208.62	1,208.57	4.11	4.01	88.75	24.81	1,137.08	1,137.36	1,129.25	8.11	140.253	
1,250.00	1,250.00	1,257.53	1,257.48	4.29	4.18	88.74	24.95	1,137.27	1,137.55	1,129.09	8.46	134.496	
1,300.00	1,300.00	1,307.92	1,307.88	4.46	4.36	88.74	25.04	1,137.46	1,137.74	1,128.93	8.81	129.116	
1,350.00	1,350.00	1,360.56	1,360.52	4.64	4.54	88.73	25.12	1,137.60	1,137.88	1,128.70	9.17	124.037	
1,400.00	1,400.00	1,413.85	1,413.80	4.82	4.73	88.73	25.32	1,137.59	1,137.87	1,128.33	9.54	119.301	
1,450.00	1,450.00	1,464.59	1,464.55	5.00	4.91	88.71	25.63	1,137.48	1,137.77	1,127.88	9.89	115.006	
1,500.00	1,500.00	1,515.39	1,515.34	5.18	5.09	88.68	26.11	1,137.34	1,137.64	1,127.40	10.25	111.003	
1,550.00	1,550.00	1,564.34	1,564.29	5.36	5.26	88.66	26.50	1,137.22	1,137.53	1,126.93	10.60	107.334	
1,600.00	1,600.00	1,613.76	1,613.71	5.53	5.43	88.65	26.75	1,137.13	1,137.44	1,126.49	10.95	103.886	
1,650.00	1,650.00	1,663.70	1,663.65	5.71	5.61	88.64	26.93	1,137.05	1,137.37	1,126.07	11.30	100.637	
1,700.00	1,700.00	1,712.56	1,712.51	5.89	5.78	88.64	27.08	1,136.99	1,137.31	1,125.66	11.65	97.617	
1,709.29	1,709.29	1,721.34	1,721.29	5.92	5.81	88.63	27.10	1,136.98	1,137.31	1,125.59	11.71	97.085	
1,750.00	1,750.00	1,759.81	1,759.75	6.07	5.94	88.63	27.12	1,137.02	1,137.35	1,125.35	11.99	94.825	
1,800.00	1,800.00	1,808.14	1,808.09	6.25	6.11	88.64	27.06	1,137.17	1,137.50	1,125.15	12.34	92.169	
1,850.00	1,850.00	1,858.00	1,857.95	6.43	6.28	88.64	26.96	1,137.34	1,137.67	1,124.98	12.69	89.622	
1,900.00	1,900.00	1,908.13	1,908.08	6.61	6.46	88.65	26.87	1,137.52	1,137.85	1,124.80	13.05	87.206	
1,950.00	1,950.00	1,958.49	1,958.44	6.78	6.63	88.65	26.77	1,137.69	1,138.01	1,124.61	13.40	84.911	
2,000.00	2,000.00	2,012.82	2,012.76	6.96	6.82	88.66	26.70	1,137.79	1,138.10	1,124.33	13.77	82.646	
2,015.47	2,015.47	2,030.20	2,030.15	7.02	6.88	150.58	26.70	1,137.76	1,138.10	1,124.21	13.89	81.960	
2,050.00	2,050.00	2,069.00	2,068.95	7.14	7.02	150.59	26.71	1,137.60	1,138.12	1,123.98	14.14	80.473	
2,100.00	2,099.99	2,117.57	2,117.51	7.32	7.18	150.60	26.76	1,137.33	1,138.42	1,123.93	14.49	78.573 ES	
2,150.00	2,149.98	2,166.47	2,166.41	7.49	7.35	150.62	26.81	1,137.12	1,139.16	1,124.32	14.83	76.796	
2,200.00	2,199.96	2,217.67	2,217.61	7.67	7.53	150.65	26.85	1,136.90	1,140.27	1,125.08	15.19	75.085	
2,250.00	2,249.92	2,267.45	2,267.39	7.84	7.71	150.69	26.83	1,136.63	1,141.68	1,126.15	15.53	73.492	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
2,300.00	2,299.88	2,313.26	2,313.20	8.02	7.87	150.74	26.80	1,136.50	1,143.28	1,127.41	15.87	72.043	
2,350.00	2,349.84	2,360.90	2,360.85	8.19	8.03	150.79	26.76	1,136.52	1,145.06	1,128.85	16.21	70.636	
2,400.00	2,399.80	2,415.10	2,415.04	8.37	8.22	150.84	26.73	1,136.47	1,146.76	1,130.18	16.57	69.187	
2,450.00	2,449.76	2,467.27	2,467.21	8.54	8.40	150.90	26.71	1,136.25	1,148.30	1,131.37	16.93	67.818	
2,500.00	2,499.72	2,517.33	2,517.28	8.72	8.58	150.95	26.68	1,136.01	1,149.81	1,132.53	17.28	66.531	
2,550.00	2,549.68	2,564.69	2,564.63	8.90	8.74	150.99	26.65	1,135.81	1,151.36	1,133.73	17.62	65.331	
2,600.00	2,599.64	2,610.39	2,610.33	9.07	8.90	151.04	26.60	1,135.78	1,153.07	1,135.12	17.96	64.208	
2,650.00	2,649.60	2,658.22	2,658.16	9.25	9.07	151.09	26.53	1,135.90	1,154.95	1,136.65	18.30	63.108	
2,700.00	2,699.56	2,707.64	2,707.58	9.43	9.24	151.14	26.45	1,136.06	1,156.87	1,138.22	18.65	62.032	
2,750.00	2,749.52	2,759.83	2,759.77	9.61	9.42	151.19	26.38	1,136.21	1,158.77	1,139.76	19.01	60.961	
2,800.00	2,799.48	2,813.34	2,813.28	9.78	9.61	151.25	26.37	1,136.21	1,160.52	1,141.15	19.37	59.909	
2,850.00	2,849.44	2,863.43	2,863.37	9.96	9.78	151.29	26.41	1,136.12	1,162.20	1,142.47	19.72	58.927	
2,900.00	2,899.40	2,913.30	2,913.24	10.14	9.96	151.34	26.46	1,136.04	1,163.88	1,143.80	20.07	57.981	
2,950.00	2,949.36	2,963.88	2,963.82	10.32	10.13	151.38	26.53	1,135.95	1,165.54	1,145.12	20.43	57.060	
3,000.00	2,999.32	3,013.61	3,013.55	10.49	10.31	151.42	26.63	1,135.83	1,167.19	1,146.41	20.78	56.177	
3,050.00	3,049.28	3,059.97	3,059.91	10.67	10.47	151.46	26.72	1,135.81	1,168.93	1,147.82	21.12	55.359	
3,100.00	3,099.24	3,107.00	3,106.94	10.85	10.63	151.50	26.80	1,135.94	1,170.83	1,149.37	21.46	54.568	
3,150.00	3,149.20	3,157.19	3,157.13	11.03	10.81	151.55	26.87	1,136.12	1,172.77	1,150.96	21.81	53.776	
3,200.00	3,199.16	3,209.43	3,209.37	11.21	10.99	151.59	26.93	1,136.28	1,174.68	1,152.52	22.17	52.990	
3,250.00	3,249.12	3,266.19	3,266.13	11.38	11.19	151.64	27.07	1,136.20	1,176.38	1,153.84	22.54	52.181	
3,300.00	3,299.08	3,318.62	3,318.56	11.56	11.37	151.68	27.28	1,135.89	1,177.85	1,154.94	22.90	51.425	
3,350.00	3,349.04	3,368.85	3,368.79	11.74	11.55	151.71	27.56	1,135.56	1,179.29	1,156.03	23.26	50.706	
3,400.00	3,399.00	3,415.73	3,415.66	11.92	11.71	151.74	27.85	1,135.30	1,180.78	1,157.18	23.60	50.037	
3,450.00	3,448.96	3,461.76	3,461.69	12.10	11.87	151.77	28.10	1,135.20	1,182.43	1,158.50	23.94	49.399	
3,500.00	3,498.92	3,511.44	3,511.37	12.28	12.05	151.80	28.34	1,135.19	1,184.19	1,159.90	24.29	48.758	
3,550.00	3,548.88	3,562.24	3,562.17	12.46	12.23	151.84	28.55	1,135.15	1,185.92	1,161.28	24.64	48.125	
3,600.00	3,598.84	3,616.57	3,616.50	12.63	12.42	151.88	28.79	1,135.00	1,187.55	1,162.54	25.01	47.483	
3,650.00	3,648.80	3,671.21	3,671.14	12.81	12.61	151.91	29.11	1,134.63	1,188.98	1,163.60	25.38	46.850	
3,700.00	3,698.76	3,719.32	3,719.24	12.99	12.78	151.94	29.46	1,134.28	1,190.38	1,164.66	25.72	46.274	
3,750.00	3,748.72	3,768.43	3,768.36	13.17	12.95	151.96	29.88	1,133.94	1,191.81	1,165.74	26.07	45.709	
3,800.00	3,798.68	3,817.27	3,817.19	13.35	13.12	151.98	30.39	1,133.65	1,193.29	1,166.86	26.42	45.162	
3,850.00	3,848.64	3,864.65	3,864.56	13.53	13.28	152.00	30.97	1,133.43	1,194.82	1,168.05	26.77	44.640	
3,900.00	3,898.60	3,909.75	3,909.66	13.71	13.44	152.01	31.56	1,133.37	1,196.53	1,169.43	27.10	44.151	
3,950.00	3,948.56	3,954.94	3,954.84	13.89	13.60	152.02	32.14	1,133.50	1,198.44	1,171.00	27.44	43.682	
4,000.00	3,998.52	4,000.30	4,000.20	14.07	13.76	152.04	32.59	1,133.81	1,200.54	1,172.77	27.77	43.231	
4,050.00	4,048.47	4,045.64	4,045.54	14.25	13.92	152.07	32.83	1,134.28	1,202.84	1,174.73	28.11	42.798	
4,100.00	4,098.43	4,090.95	4,090.85	14.43	14.08	152.10	32.96	1,134.93	1,205.33	1,176.89	28.44	42.383	
4,150.00	4,148.39	4,136.09	4,135.98	14.61	14.23	152.14	32.99	1,135.75	1,208.01	1,179.23	28.77	41.985	
4,200.00	4,198.35	4,180.53	4,180.40	14.79	14.39	152.19	32.89	1,136.75	1,210.90	1,181.80	29.10	41.609	
4,250.00	4,248.31	4,225.18	4,225.04	14.97	14.54	152.24	32.62	1,137.95	1,214.02	1,184.59	29.43	41.249	
4,300.00	4,298.27	4,272.80	4,272.63	15.14	14.71	152.30	32.19	1,139.38	1,217.30	1,187.52	29.77	40.884	
4,350.00	4,348.23	4,320.39	4,320.20	15.32	14.88	152.37	31.63	1,140.89	1,220.66	1,190.55	30.12	40.532	
4,400.00	4,398.19	4,367.14	4,366.92	15.50	15.04	152.44	30.90	1,142.48	1,224.14	1,193.69	30.45	40.195	
4,450.00	4,448.15	4,414.31	4,414.05	15.68	15.21	152.53	29.97	1,144.19	1,227.75	1,196.95	30.80	39.868	
4,500.00	4,498.11	4,464.36	4,464.05	15.86	15.38	152.62	28.93	1,146.06	1,231.40	1,200.25	31.15	39.534	
4,550.00	4,548.07	4,513.37	4,513.01	16.04	15.55	152.70	27.97	1,147.88	1,235.05	1,203.55	31.50	39.212	
4,600.00	4,598.03	4,559.10	4,558.70	16.22	15.71	152.77	27.25	1,149.69	1,238.82	1,206.99	31.83	38.920	
4,650.00	4,647.99	4,606.79	4,606.35	16.40	15.88	152.84	26.72	1,151.73	1,242.75	1,210.57	32.17	38.628	
4,700.00	4,697.95	4,662.67	4,662.18	16.58	16.08	152.91	26.12	1,153.99	1,246.57	1,214.01	32.55	38.294	
4,750.00	4,747.91	4,717.53	4,717.00	16.76	16.27	152.99	25.46	1,155.96	1,250.16	1,217.23	32.93	37.967	
4,800.00	4,797.87	4,771.44	4,770.88	16.94	16.46	153.07	24.66	1,157.71	1,253.58	1,220.28	33.30	37.648	
4,850.00	4,847.83	4,821.57	4,820.98	17.12	16.63	153.14	23.82	1,159.23	1,256.90	1,223.25	33.65	37.351	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
4,900.00	4,897.79	4,870.66	4,870.03	17.30	16.80	153.22	23.02	1,160.75	1,260.25	1,226.25	34.00	37.066	
4,950.00	4,947.75	4,922.66	4,922.01	17.48	16.99	153.30	22.25	1,162.33	1,263.58	1,229.22	34.36	36.772	
5,000.00	4,997.71	4,975.10	4,974.42	17.66	17.17	153.36	21.64	1,163.83	1,266.81	1,232.09	34.73	36.480	
5,050.00	5,047.67	5,026.46	5,025.76	17.84	17.35	153.43	21.14	1,165.22	1,269.97	1,234.88	35.09	36.197	
5,100.00	5,097.63	5,077.24	5,076.52	18.02	17.53	153.49	20.70	1,166.54	1,273.07	1,237.63	35.44	35.920	
5,150.00	5,147.59	5,126.19	5,125.45	18.20	17.70	153.55	20.17	1,167.82	1,276.18	1,240.39	35.79	35.657	
5,200.00	5,197.55	5,176.98	5,176.22	18.38	17.87	153.62	19.46	1,169.16	1,279.32	1,243.17	36.15	35.391	
5,250.00	5,247.51	5,231.11	5,230.33	18.56	18.06	153.70	18.58	1,170.45	1,282.34	1,245.82	36.52	35.114	
5,300.00	5,297.47	5,282.26	5,281.45	18.74	18.24	153.77	17.77	1,171.55	1,285.22	1,248.35	36.88	34.852	
5,350.00	5,347.43	5,331.64	5,330.83	18.92	18.41	153.83	17.36	1,172.62	1,288.12	1,250.90	37.23	34.601	
5,400.00	5,397.39	5,382.81	5,381.98	19.10	18.59	153.87	17.31	1,173.74	1,291.02	1,253.43	37.59	34.348	
5,450.00	5,447.35	5,434.65	5,433.81	19.28	18.77	153.90	17.45	1,174.81	1,293.84	1,255.89	37.95	34.095	
5,500.00	5,497.31	5,484.86	5,484.01	19.46	18.95	153.94	17.52	1,175.79	1,296.62	1,258.32	38.30	33.852	
5,550.00	5,547.27	5,535.04	5,534.18	19.64	19.13	153.99	17.19	1,176.76	1,299.39	1,260.74	38.66	33.614	
5,600.00	5,597.23	5,586.98	5,586.10	19.82	19.31	154.05	16.68	1,177.70	1,302.12	1,263.10	39.02	33.372	
5,650.00	5,647.19	5,639.31	5,638.43	20.00	19.49	154.11	16.21	1,178.57	1,304.77	1,265.39	39.38	33.132	
5,700.00	5,697.15	5,692.80	5,691.92	20.18	19.68	154.17	15.86	1,179.33	1,307.30	1,267.55	39.75	32.889	
5,750.00	5,747.11	5,744.79	5,743.90	20.36	19.86	154.21	15.66	1,179.96	1,309.71	1,269.60	40.11	32.652	
5,800.00	5,797.07	5,795.29	5,794.39	20.54	20.03	154.26	15.52	1,180.53	1,312.09	1,271.62	40.47	32.424	
5,850.00	5,847.03	5,845.64	5,844.74	20.73	20.21	154.30	15.37	1,181.08	1,314.44	1,273.62	40.82	32.200	
5,900.00	5,896.99	5,895.90	5,895.00	20.91	20.38	154.35	15.08	1,181.60	1,316.79	1,275.61	41.18	31.979	
5,950.00	5,946.95	5,946.89	5,945.99	21.09	20.56	154.41	14.67	1,182.11	1,319.11	1,277.57	41.53	31.760	
6,000.00	5,996.91	5,998.09	5,997.18	21.27	20.74	154.46	14.29	1,182.57	1,321.38	1,279.49	41.89	31.542	
6,050.00	6,046.87	6,047.94	6,047.03	21.45	20.91	154.51	13.92	1,183.00	1,323.64	1,281.39	42.25	31.332	
6,100.00	6,096.83	6,097.92	6,097.01	21.63	21.09	154.57	13.55	1,183.43	1,325.90	1,283.30	42.60	31.125	
6,150.00	6,146.79	6,150.04	6,149.12	21.81	21.27	154.61	13.29	1,183.84	1,328.11	1,285.15	42.96	30.914	
6,200.00	6,196.75	6,201.67	6,200.75	21.99	21.45	154.65	13.23	1,184.18	1,330.25	1,286.93	43.32	30.706	
6,250.00	6,246.71	6,252.03	6,251.11	22.17	21.63	154.69	13.25	1,184.47	1,332.35	1,288.68	43.68	30.505	
6,300.00	6,296.67	6,301.89	6,300.97	22.35	21.80	154.73	13.26	1,184.75	1,334.45	1,290.42	44.03	30.307	
6,350.00	6,346.63	6,351.08	6,350.16	22.53	21.97	154.77	13.11	1,185.04	1,336.56	1,292.18	44.38	30.116	
6,400.00	6,396.59	6,400.82	6,399.89	22.71	22.15	154.82	12.80	1,185.35	1,338.70	1,293.97	44.73	29.926	
6,450.00	6,446.55	6,451.07	6,450.15	22.89	22.32	154.87	12.49	1,185.66	1,340.84	1,295.75	45.09	29.738	
6,500.00	6,496.51	6,502.44	6,501.52	23.07	22.50	154.91	12.24	1,185.95	1,342.95	1,297.50	45.45	29.549	
6,550.00	6,546.46	6,554.41	6,553.48	23.25	22.68	154.96	12.14	1,186.17	1,344.98	1,299.18	45.81	29.360	
6,600.00	6,596.42	6,605.89	6,604.97	23.43	22.86	154.99	12.11	1,186.33	1,346.96	1,300.79	46.17	29.174	
6,650.00	6,646.38	6,657.30	6,656.38	23.61	23.04	155.03	12.07	1,186.44	1,348.88	1,302.35	46.53	28.990	
6,700.00	6,696.34	6,705.40	6,704.48	23.79	23.21	155.07	11.96	1,186.54	1,350.80	1,303.93	46.88	28.817	
6,750.00	6,746.30	6,753.72	6,752.79	23.97	23.38	155.12	11.70	1,186.69	1,352.80	1,305.58	47.22	28.647	
6,800.00	6,796.26	6,803.21	6,802.28	24.15	23.55	155.16	11.39	1,186.88	1,354.83	1,307.25	47.57	28.478	
6,850.00	6,846.22	6,852.79	6,851.86	24.33	23.72	155.21	11.10	1,187.10	1,356.88	1,308.95	47.93	28.312	
6,900.00	6,896.18	6,902.71	6,901.78	24.51	23.90	155.25	10.95	1,187.32	1,358.93	1,310.65	48.28	28.147	
6,950.00	6,946.14	6,952.49	6,951.55	24.70	24.07	155.29	10.98	1,187.56	1,360.99	1,312.36	48.63	27.985	
7,000.00	6,996.10	7,001.95	7,001.02	24.88	24.24	155.32	11.01	1,187.81	1,363.06	1,314.08	48.99	27.826	
7,050.00	7,046.06	7,050.75	7,049.81	25.06	24.41	155.35	10.97	1,188.08	1,365.16	1,315.82	49.33	27.671	
7,100.00	7,096.02	7,098.66	7,097.73	25.24	24.58	155.40	10.75	1,188.39	1,367.32	1,317.64	49.68	27.522	
7,150.00	7,145.98	7,148.82	7,147.88	25.42	24.76	155.45	10.35	1,188.76	1,369.54	1,319.50	50.04	27.371	
7,200.00	7,195.94	7,201.44	7,200.50	25.60	24.94	155.49	10.06	1,189.08	1,371.68	1,321.28	50.40	27.216	
7,250.00	7,245.90	7,251.17	7,250.22	25.78	25.11	155.54	9.91	1,189.33	1,373.77	1,323.01	50.75	27.068	
7,300.00	7,295.86	7,299.63	7,298.69	25.96	25.28	155.58	9.73	1,189.61	1,375.90	1,324.80	51.10	26.925	
7,350.00	7,345.82	7,346.72	7,345.78	26.14	25.45	155.62	9.45	1,189.95	1,378.10	1,326.66	51.44	26.789	
7,400.00	7,395.78	7,393.37	7,392.42	26.32	25.61	155.67	8.87	1,190.38	1,380.42	1,328.64	51.78	26.658	
7,450.00	7,445.74	7,442.10	7,441.14	26.50	25.78	155.74	7.99	1,190.89	1,382.84	1,330.71	52.13	26.526	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
7,500.00	7,495.70	7,491.47	7,490.50	26.68	25.95	155.82	6.96	1,191.43	1,385.28	1,332.79	52.48	26.394	
7,550.00	7,545.66	7,544.48	7,543.49	26.86	26.14	155.90	5.81	1,191.96	1,387.68	1,334.83	52.85	26.257	
7,600.00	7,595.62	7,598.08	7,597.08	27.04	26.32	155.97	4.83	1,192.37	1,389.96	1,336.74	53.22	26.118	
7,650.00	7,645.58	7,646.86	7,645.85	27.22	26.49	156.04	3.93	1,192.71	1,392.20	1,338.63	53.57	25.990	
7,700.00	7,695.54	7,695.52	7,694.49	27.40	26.66	156.12	2.91	1,193.06	1,394.47	1,340.55	53.92	25.864	
7,750.00	7,745.50	7,741.95	7,740.91	27.58	26.83	156.19	1.82	1,193.47	1,396.83	1,342.58	54.26	25.745	
7,800.00	7,795.46	7,788.51	7,787.46	27.77	26.99	156.27	0.60	1,193.99	1,399.32	1,344.73	54.60	25.631	
7,850.00	7,845.42	7,835.68	7,834.60	27.95	27.15	156.35	-0.63	1,194.62	1,401.92	1,346.98	54.94	25.519	
7,900.00	7,895.38	7,884.88	7,883.78	28.13	27.32	156.43	-1.84	1,195.37	1,404.61	1,349.32	55.29	25.405	
7,950.00	7,945.34	7,941.44	7,940.32	28.31	27.52	156.51	-3.07	1,196.09	1,407.17	1,351.50	55.67	25.277	
8,000.00	7,995.30	7,993.63	7,992.50	28.49	27.70	156.59	-4.07	1,196.56	1,409.54	1,353.51	56.03	25.156	
8,050.00	8,045.26	8,042.39	8,041.25	28.67	27.87	156.66	-5.08	1,197.01	1,411.93	1,355.55	56.38	25.042	
8,100.00	8,095.22	8,090.90	8,089.75	28.85	28.04	156.73	-6.19	1,197.50	1,414.36	1,357.63	56.73	24.931	
8,150.00	8,145.18	8,139.27	8,138.10	29.03	28.21	156.81	-7.44	1,198.02	1,416.85	1,359.77	57.08	24.823	
8,200.00	8,195.14	8,189.85	8,188.65	29.21	28.39	156.90	-8.87	1,198.58	1,419.36	1,361.93	57.43	24.713	
8,250.00	8,245.10	8,241.35	8,240.14	29.39	28.57	156.99	-10.31	1,199.09	1,421.83	1,364.04	57.79	24.602	
8,300.00	8,295.06	8,296.58	8,295.34	29.57	28.76	157.08	-11.80	1,199.53	1,424.19	1,366.02	58.17	24.483	
8,350.00	8,345.02	8,352.30	8,351.04	29.75	28.96	157.17	-13.14	1,199.75	1,426.35	1,367.80	58.55	24.363	
8,400.00	8,394.98	8,406.36	8,405.09	29.93	29.14	157.25	-14.34	1,199.80	1,428.34	1,369.42	58.92	24.244	
8,450.00	8,444.94	8,456.19	8,454.91	30.11	29.32	157.32	-15.38	1,199.73	1,430.22	1,370.95	59.27	24.131	
8,500.00	8,494.90	8,501.19	8,499.90	30.30	29.48	157.39	-16.42	1,199.77	1,432.22	1,372.62	59.60	24.029	
8,550.00	8,544.86	8,550.51	8,549.20	30.48	29.65	157.47	-17.68	1,199.95	1,434.37	1,374.42	59.95	23.924	
8,600.00	8,594.82	8,606.21	8,604.89	30.66	29.84	157.56	-19.02	1,200.00	1,436.39	1,376.06	60.33	23.808	
8,650.00	8,644.78	8,661.41	8,660.08	30.84	30.03	157.64	-20.19	1,199.85	1,438.22	1,377.52	60.70	23.692	
8,700.00	8,694.74	8,716.44	8,715.09	31.02	30.23	157.71	-21.14	1,199.54	1,439.87	1,378.80	61.08	23.575	
8,750.00	8,744.70	8,764.08	8,762.73	31.20	30.39	157.77	-21.91	1,199.22	1,441.48	1,380.06	61.42	23.469	
8,800.00	8,794.66	8,811.91	8,810.54	31.38	30.56	157.84	-22.78	1,198.97	1,443.17	1,381.40	61.77	23.365	
8,850.00	8,844.62	8,860.21	8,858.83	31.56	30.73	157.90	-23.59	1,198.78	1,444.92	1,382.80	62.11	23.262	
8,900.00	8,894.58	8,908.51	8,907.14	31.74	30.89	157.95	-24.23	1,198.66	1,446.73	1,384.27	62.46	23.162	
8,950.00	8,944.54	8,952.24	8,950.86	31.92	31.05	158.00	-24.73	1,198.70	1,448.69	1,385.89	62.79	23.071	
9,000.00	8,994.50	8,996.57	8,995.19	32.10	31.20	158.04	-25.21	1,198.91	1,450.84	1,387.72	63.12	22.984	
9,050.00	9,044.45	9,052.96	9,051.58	32.28	31.40	158.10	-25.80	1,199.16	1,452.98	1,389.48	63.50	22.881	
9,100.00	9,094.41	9,110.99	9,109.61	32.46	31.60	158.15	-26.37	1,199.15	1,454.89	1,391.00	63.89	22.773	
9,150.00	9,144.37	9,172.09	9,170.70	32.65	31.81	158.20	-26.69	1,198.75	1,456.45	1,392.17	64.28	22.658	
9,200.00	9,194.33	9,224.93	9,223.54	32.83	32.00	158.25	-26.89	1,198.13	1,457.74	1,393.10	64.64	22.550	
9,250.00	9,244.29	9,275.91	9,274.51	33.01	32.18	158.30	-27.46	1,197.44	1,459.00	1,394.00	65.00	22.446	
9,300.00	9,294.25	9,338.90	9,337.48	33.19	32.39	158.38	-28.33	1,196.27	1,460.02	1,394.62	65.40	22.326	
9,350.00	9,344.21	9,399.09	9,397.64	33.37	32.60	158.45	-29.04	1,194.66	1,460.61	1,394.83	65.78	22.204	
9,400.00	9,394.17	9,456.23	9,454.75	33.55	32.80	158.51	-29.72	1,192.81	1,460.94	1,394.78	66.15	22.084	
9,450.00	9,444.13	9,515.69	9,514.17	33.73	33.01	158.59	-30.54	1,190.54	1,460.98	1,394.45	66.53	21.959	
9,500.00	9,494.09	9,569.88	9,568.29	33.91	33.20	158.67	-31.42	1,188.15	1,460.76	1,393.86	66.90	21.836	
9,550.00	9,544.05	9,619.85	9,618.20	34.09	33.37	158.74	-32.19	1,185.92	1,460.50	1,393.25	67.25	21.718	
9,600.00	9,594.01	9,665.12	9,663.42	34.27	33.53	158.81	-33.08	1,183.90	1,460.27	1,392.68	67.59	21.605	
9,611.75	9,605.75	9,674.06	9,672.34	34.32	33.56	158.83	-33.52	1,183.50	1,460.26	1,392.59	67.67	21.581	
9,650.00	9,643.97	9,703.02	9,701.17	34.45	33.66	158.94	-35.84	1,182.23	1,460.38	1,392.47	67.91	21.504	
9,700.00	9,693.93	9,740.33	9,738.10	34.63	33.79	159.17	-40.89	1,180.61	1,460.93	1,392.70	68.23	21.412	
9,750.00	9,743.89	9,776.78	9,773.81	34.82	33.92	159.47	-48.05	1,179.06	1,461.94	1,393.40	68.54	21.330	
9,800.00	9,793.85	9,812.15	9,807.96	35.00	34.05	159.85	-57.07	1,177.59	1,463.48	1,394.63	68.84	21.258	
9,850.00	9,843.81	9,846.23	9,840.32	35.18	34.17	160.29	-67.68	1,176.21	1,465.58	1,396.45	69.14	21.198	
9,900.00	9,893.77	9,878.90	9,870.72	35.36	34.30	160.77	-79.56	1,174.93	1,468.33	1,398.91	69.42	21.151	
9,950.00	9,943.73	9,910.04	9,899.05	35.54	34.42	161.29	-92.43	1,173.75	1,471.78	1,402.09	69.69	21.119	
10,000.00	9,993.69	9,939.62	9,925.29	35.72	34.53	161.83	-106.01	1,172.67	1,475.99	1,406.06	69.94	21.104	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
10,050.00	10,043.65	9,967.59	9,949.48	35.90	34.65	162.39	-120.04	1,171.68	1,481.04	1,410.88	70.17	21.108	
10,100.00	10,093.61	10,000.00	9,976.63	36.08	34.78	163.08	-137.70	1,170.59	1,487.01	1,416.60	70.41	21.119	
10,150.00	10,143.57	10,018.84	9,991.96	36.26	34.87	163.51	-148.63	1,169.97	1,493.88	1,423.33	70.55	21.175	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	12.00	12.00	0.50	0.00	89.23	15.30	1,137.54	1,137.65				
50.00	50.00	62.00	62.00	0.50	0.00	89.23	15.30	1,137.54	1,137.65	1,137.14	0.50	2,265.648	
100.00	100.00	112.00	112.00	0.52	0.00	89.23	15.30	1,137.54	1,137.65	1,137.13	0.52	2,196.415	
150.00	150.00	162.00	162.00	0.59	0.00	89.23	15.30	1,137.54	1,137.65	1,137.05	0.59	1,926.772	
200.00	200.00	212.00	212.00	0.70	0.00	89.23	15.30	1,137.54	1,137.65	1,136.94	0.70	1,619.877	
250.00	250.00	262.00	262.00	0.84	0.00	89.23	15.30	1,137.54	1,137.65	1,136.81	0.84	1,357.711	
300.00	300.00	312.00	312.00	0.99	0.00	89.23	15.30	1,137.54	1,137.65	1,136.66	0.99	1,152.005	
350.00	350.00	362.00	362.00	1.15	0.00	89.23	15.30	1,137.54	1,137.65	1,136.50	1.15	992.978	
400.00	400.00	412.00	412.00	1.31	0.00	89.23	15.30	1,137.54	1,137.65	1,136.34	1.31	868.902	
450.00	450.00	462.00	462.00	1.48	0.00	89.23	15.30	1,137.54	1,137.65	1,136.17	1.48	770.488	
500.00	500.00	512.00	512.00	1.65	0.00	89.23	15.30	1,137.54	1,137.65	1,136.00	1.65	691.036	
550.00	550.00	562.00	562.00	1.82	0.00	89.23	15.30	1,137.54	1,137.65	1,135.83	1.82	625.812	
600.00	600.00	612.00	612.00	1.99	0.00	89.23	15.30	1,137.54	1,137.65	1,135.65	1.99	571.450	
650.00	650.00	662.00	662.00	2.16	0.00	89.23	15.30	1,137.54	1,137.65	1,135.48	2.16	525.529	
700.00	700.00	712.00	712.00	2.34	0.00	89.23	15.30	1,137.54	1,137.65	1,135.31	2.34	486.274	
750.00	750.00	762.00	762.00	2.51	0.00	89.23	15.30	1,137.54	1,137.65	1,135.13	2.51	452.362	
800.00	800.00	812.00	812.00	2.69	0.00	89.23	15.30	1,137.54	1,137.65	1,134.95	2.69	422.792	
850.00	850.00	862.00	862.00	2.87	0.00	89.23	15.30	1,137.54	1,137.65	1,134.78	2.87	396.793	
900.00	900.00	912.00	912.00	3.04	0.00	89.23	15.30	1,137.54	1,137.65	1,134.60	3.04	373.764	
950.00	950.00	962.00	962.00	3.22	0.00	89.23	15.30	1,137.54	1,137.65	1,134.42	3.22	353.231	
1,000.00	1,000.00	1,012.00	1,012.00	3.40	0.00	89.23	15.30	1,137.54	1,137.65	1,134.25	3.40	334.812	
1,050.00	1,050.00	1,062.00	1,062.00	3.58	0.00	89.23	15.30	1,137.54	1,137.65	1,134.07	3.58	318.201	
1,100.00	1,100.00	1,112.00	1,112.00	3.75	0.00	89.23	15.30	1,137.54	1,137.65	1,133.89	3.75	303.146	
1,150.00	1,150.00	1,162.00	1,162.00	3.93	0.00	89.23	15.30	1,137.54	1,137.65	1,133.71	3.93	289.439	
1,200.00	1,200.00	1,212.00	1,212.00	4.11	0.00	89.23	15.30	1,137.54	1,137.65	1,133.54	4.11	276.910	
1,250.00	1,250.00	1,262.00	1,262.00	4.29	0.00	89.23	15.30	1,137.54	1,137.65	1,133.36	4.29	265.413	
1,300.00	1,300.00	1,312.00	1,312.00	4.46	0.00	89.23	15.30	1,137.54	1,137.65	1,133.18	4.46	254.827	
1,350.00	1,350.00	1,362.00	1,362.00	4.64	0.00	89.23	15.30	1,137.54	1,137.65	1,133.00	4.64	245.049	
1,400.00	1,400.00	1,412.00	1,412.00	4.82	0.00	89.23	15.30	1,137.54	1,137.65	1,132.82	4.82	235.989	
1,450.00	1,450.00	1,462.00	1,462.00	5.00	0.00	89.23	15.30	1,137.54	1,137.65	1,132.65	5.00	227.572	
1,500.00	1,500.00	1,512.00	1,512.00	5.18	0.00	89.23	15.30	1,137.54	1,137.65	1,132.47	5.18	219.732	
1,550.00	1,550.00	1,562.00	1,562.00	5.36	0.00	89.23	15.30	1,137.54	1,137.65	1,132.29	5.36	212.411	
1,600.00	1,600.00	1,612.00	1,612.00	5.53	0.00	89.23	15.30	1,137.54	1,137.65	1,132.11	5.53	205.561	
1,650.00	1,650.00	1,662.00	1,662.00	5.71	0.00	89.23	15.30	1,137.54	1,137.65	1,131.93	5.71	199.138	
1,700.00	1,700.00	1,712.00	1,712.00	5.89	0.00	89.23	15.30	1,137.54	1,137.65	1,131.75	5.89	193.102	
1,750.00	1,750.00	1,762.00	1,762.00	6.07	0.00	89.23	15.30	1,137.54	1,137.65	1,131.58	6.07	187.420	
1,800.00	1,800.00	1,812.00	1,812.00	6.25	0.00	89.23	15.30	1,137.54	1,137.65	1,131.40	6.25	182.062	
1,850.00	1,850.00	1,862.00	1,862.00	6.43	0.00	89.23	15.30	1,137.54	1,137.65	1,131.22	6.43	177.000	
1,900.00	1,900.00	1,912.00	1,912.00	6.61	0.00	89.23	15.30	1,137.54	1,137.65	1,131.04	6.61	172.212	
1,950.00	1,950.00	1,962.00	1,962.00	6.78	0.00	89.23	15.30	1,137.54	1,137.65	1,130.86	6.78	167.676	
2,000.00	2,000.00	2,012.00	2,012.00	6.96	0.00	89.23	15.30	1,137.54	1,137.65	1,130.68	6.96	163.371	CC, ES
2,050.00	2,050.00	2,062.00	2,062.00	7.14	0.00	151.16	15.30	1,137.54	1,137.84	1,130.70	7.14	159.362	
2,100.00	2,099.99	2,111.99	2,111.99	7.32	0.00	151.17	15.30	1,137.54	1,138.41	1,131.09	7.32	155.599	
2,150.00	2,149.98	2,161.98	2,161.98	7.49	0.00	151.20	15.30	1,137.54	1,139.37	1,131.87	7.49	152.105	
2,200.00	2,199.96	2,211.96	2,211.96	7.67	0.00	151.23	15.30	1,137.54	1,140.70	1,133.04	7.66	148.820	
2,250.00	2,249.92	2,261.92	2,261.92	7.84	0.00	151.27	15.30	1,137.54	1,142.39	1,134.55	7.84	145.719	
2,300.00	2,299.88	2,311.88	2,311.88	8.02	0.00	151.32	15.30	1,137.54	1,144.15	1,136.14	8.01	142.762	
2,350.00	2,349.84	2,361.84	2,361.84	8.19	0.00	151.36	15.30	1,137.54	1,145.91	1,137.72	8.19	139.927	
2,400.00	2,399.80	2,411.80	2,411.80	8.37	0.00	151.41	15.30	1,137.54	1,147.67	1,139.31	8.36	137.210	
2,450.00	2,449.76	2,461.76	2,461.76	8.54	0.00	151.46	15.30	1,137.54	1,149.43	1,140.89	8.54	134.599	
2,500.00	2,499.72	2,511.72	2,511.72	8.72	0.00	151.51	15.30	1,137.54	1,151.19	1,142.48	8.72	132.092	
2,550.00	2,549.68	2,561.68	2,561.68	8.90	0.00	151.56	15.30	1,137.54	1,152.96	1,144.07	8.89	129.680	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	2,599.64	2,611.64	2,611.64	9.07	0.00	151.60	15.30	1,137.54	1,154.72	1,145.65	9.07	127.361	
2,650.00	2,649.60	2,661.60	2,661.60	9.25	0.00	151.65	15.30	1,137.54	1,156.48	1,147.24	9.24	125.127	
2,700.00	2,699.56	2,711.56	2,711.56	9.43	0.00	151.70	15.30	1,137.54	1,158.25	1,148.83	9.42	122.976	
2,750.00	2,749.52	2,761.52	2,761.52	9.61	0.00	151.74	15.30	1,137.54	1,160.02	1,150.42	9.59	120.901	
2,800.00	2,799.48	2,811.48	2,811.48	9.78	0.00	151.79	15.30	1,137.54	1,161.78	1,152.01	9.77	118.900	
2,850.00	2,849.44	2,861.44	2,861.44	9.96	0.00	151.84	15.30	1,137.54	1,163.55	1,153.60	9.95	116.968	
2,900.00	2,899.40	2,911.40	2,911.40	10.14	0.00	151.88	15.30	1,137.54	1,165.32	1,155.19	10.12	115.103	
2,950.00	2,949.36	2,961.36	2,961.36	10.32	0.00	151.93	15.30	1,137.54	1,167.09	1,156.79	10.30	113.300	
3,000.00	2,999.32	3,011.32	3,011.32	10.49	0.00	151.98	15.30	1,137.54	1,168.86	1,158.38	10.48	111.558	
3,050.00	3,049.28	3,061.28	3,061.28	10.67	0.00	152.02	15.30	1,137.54	1,170.63	1,159.97	10.65	109.871	
3,100.00	3,099.24	3,111.24	3,111.24	10.85	0.00	152.07	15.30	1,137.54	1,172.40	1,161.57	10.83	108.240	
3,150.00	3,149.20	3,161.20	3,161.20	11.03	0.00	152.11	15.30	1,137.54	1,174.17	1,163.16	11.01	106.659	
3,200.00	3,199.16	3,211.16	3,211.16	11.21	0.00	152.16	15.30	1,137.54	1,175.94	1,164.76	11.19	105.129	
3,250.00	3,249.12	3,261.12	3,261.12	11.38	0.00	152.21	15.30	1,137.54	1,177.71	1,166.35	11.36	103.645	
3,300.00	3,299.08	3,311.08	3,311.08	11.56	0.00	152.25	15.30	1,137.54	1,179.49	1,167.95	11.54	102.207	
3,350.00	3,349.04	3,361.04	3,361.04	11.74	0.00	152.30	15.30	1,137.54	1,181.26	1,169.55	11.72	100.811	
3,400.00	3,399.00	3,411.00	3,411.00	11.92	0.00	152.34	15.30	1,137.54	1,183.04	1,171.14	11.90	99.456	
3,450.00	3,448.96	3,460.96	3,460.96	12.10	0.00	152.39	15.30	1,137.54	1,184.82	1,172.74	12.07	98.141	
3,500.00	3,498.92	3,510.92	3,510.92	12.28	0.00	152.43	15.30	1,137.54	1,186.59	1,174.34	12.25	96.863	
3,550.00	3,548.88	3,560.88	3,560.88	12.46	0.00	152.48	15.30	1,137.54	1,188.37	1,175.94	12.43	95.622	
3,600.00	3,598.84	3,610.84	3,610.84	12.63	0.00	152.52	15.30	1,137.54	1,190.15	1,177.54	12.61	94.415	
3,650.00	3,648.80	3,660.80	3,660.80	12.81	0.00	152.57	15.30	1,137.54	1,191.93	1,179.14	12.78	93.241	
3,700.00	3,698.76	3,710.76	3,710.76	12.99	0.00	152.61	15.30	1,137.54	1,193.71	1,180.75	12.96	92.099	
3,750.00	3,748.72	3,760.72	3,760.72	13.17	0.00	152.65	15.30	1,137.54	1,195.49	1,182.35	13.14	90.988	
3,800.00	3,798.68	3,810.68	3,810.68	13.35	0.00	152.70	15.30	1,137.54	1,197.27	1,183.95	13.32	89.906	
3,850.00	3,848.64	3,860.64	3,860.64	13.53	0.00	152.74	15.30	1,137.54	1,199.05	1,185.56	13.49	88.853	
3,900.00	3,898.60	3,910.60	3,910.60	13.71	0.00	152.79	15.30	1,137.54	1,200.83	1,187.16	13.67	87.826	
3,950.00	3,948.56	3,960.56	3,960.56	13.89	0.00	152.83	15.30	1,137.54	1,202.62	1,188.77	13.85	86.826	
4,000.00	3,998.52	4,010.52	4,010.52	14.07	0.00	152.87	15.30	1,137.54	1,204.40	1,190.37	14.03	85.851	
4,050.00	4,048.47	4,060.47	4,060.47	14.25	0.00	152.92	15.30	1,137.54	1,206.19	1,191.98	14.21	84.900	
4,100.00	4,098.43	4,110.43	4,110.43	14.43	0.00	152.96	15.30	1,137.54	1,207.97	1,193.59	14.39	83.973	
4,150.00	4,148.39	4,160.39	4,160.39	14.61	0.00	153.00	15.30	1,137.54	1,209.76	1,195.19	14.56	83.068	
4,200.00	4,198.35	4,210.35	4,210.35	14.79	0.00	153.05	15.30	1,137.54	1,211.54	1,196.80	14.74	82.185	
4,250.00	4,248.31	4,260.31	4,260.31	14.97	0.00	153.09	15.30	1,137.54	1,213.33	1,198.41	14.92	81.322	
4,300.00	4,298.27	4,310.27	4,310.27	15.14	0.00	153.13	15.30	1,137.54	1,215.12	1,200.02	15.10	80.481	
4,350.00	4,348.23	4,360.23	4,360.23	15.32	0.00	153.17	15.30	1,137.54	1,216.91	1,201.63	15.28	79.658	
4,400.00	4,398.19	4,410.19	4,410.19	15.50	0.00	153.22	15.30	1,137.54	1,218.70	1,203.24	15.46	78.855	
4,450.00	4,448.15	4,460.15	4,460.15	15.68	0.00	153.26	15.30	1,137.54	1,220.49	1,204.86	15.63	78.069	
4,500.00	4,498.11	4,510.11	4,510.11	15.86	0.00	153.30	15.30	1,137.54	1,222.28	1,206.47	15.81	77.301	
4,550.00	4,548.07	4,560.07	4,560.07	16.04	0.00	153.34	15.30	1,137.54	1,224.07	1,208.08	15.99	76.551	
4,600.00	4,598.03	4,610.03	4,610.03	16.22	0.00	153.39	15.30	1,137.54	1,225.86	1,209.69	16.17	75.817	
4,650.00	4,647.99	4,659.99	4,659.99	16.40	0.00	153.43	15.30	1,137.54	1,227.66	1,211.31	16.35	75.098	
4,700.00	4,697.95	4,709.95	4,709.95	16.58	0.00	153.47	15.30	1,137.54	1,229.45	1,212.92	16.53	74.396	
4,750.00	4,747.91	4,759.91	4,759.91	16.76	0.00	153.51	15.30	1,137.54	1,231.24	1,214.54	16.70	73.708	
4,800.00	4,797.87	4,809.87	4,809.87	16.94	0.00	153.55	15.30	1,137.54	1,233.04	1,216.16	16.88	73.034	
4,850.00	4,847.83	4,859.83	4,859.83	17.12	0.00	153.59	15.30	1,137.54	1,234.83	1,217.77	17.06	72.375	
4,900.00	4,897.79	4,909.79	4,909.79	17.30	0.00	153.64	15.30	1,137.54	1,236.63	1,219.39	17.24	71.729	
4,950.00	4,947.75	4,959.75	4,959.75	17.48	0.00	153.68	15.30	1,137.54	1,238.43	1,221.01	17.42	71.097	
5,000.00	4,997.71	5,009.71	5,009.71	17.66	0.00	153.72	15.30	1,137.54	1,240.22	1,222.63	17.60	70.477	
5,050.00	5,047.67	5,059.67	5,059.67	17.84	0.00	153.76	15.30	1,137.54	1,242.02	1,224.25	17.78	69.870	
5,100.00	5,097.63	5,109.63	5,109.63	18.02	0.00	153.80	15.30	1,137.54	1,243.82	1,225.87	17.95	69.274	
5,150.00	5,147.59	5,159.59	5,159.59	18.20	0.00	153.84	15.30	1,137.54	1,245.62	1,227.49	18.13	68.691	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	5,197.55	5,209.55	5,209.55	18.38	0.00	153.88	15.30	1,137.54	1,247.42	1,229.11	18.31	68.119	
5,250.00	5,247.51	5,259.51	5,259.51	18.56	0.00	153.92	15.30	1,137.54	1,249.22	1,230.73	18.49	67.557	
5,300.00	5,297.47	5,309.47	5,309.47	18.74	0.00	153.96	15.30	1,137.54	1,251.02	1,232.35	18.67	67.007	
5,350.00	5,347.43	5,359.43	5,359.43	18.92	0.00	154.00	15.30	1,137.54	1,252.82	1,233.97	18.85	66.467	
5,400.00	5,397.39	5,409.39	5,409.39	19.10	0.00	154.04	15.30	1,137.54	1,254.63	1,235.60	19.03	65.937	
5,450.00	5,447.35	5,459.35	5,459.35	19.28	0.00	154.08	15.30	1,137.54	1,256.43	1,237.22	19.21	65.417	
5,500.00	5,497.31	5,509.31	5,509.31	19.46	0.00	154.12	15.30	1,137.54	1,258.23	1,238.85	19.39	64.906	
5,550.00	5,547.27	5,559.27	5,559.27	19.64	0.00	154.16	15.30	1,137.54	1,260.04	1,240.47	19.56	64.405	
5,600.00	5,597.23	5,609.23	5,609.23	19.82	0.00	154.20	15.30	1,137.54	1,261.84	1,242.10	19.74	63.913	
5,650.00	5,647.19	5,659.19	5,659.19	20.00	0.00	154.24	15.30	1,137.54	1,263.65	1,243.72	19.92	63.430	
5,700.00	5,697.15	5,709.15	5,709.15	20.18	0.00	154.28	15.30	1,137.54	1,265.45	1,245.35	20.10	62.955	
5,750.00	5,747.11	5,759.11	5,759.11	20.36	0.00	154.32	15.30	1,137.54	1,267.26	1,246.98	20.28	62.489	
5,800.00	5,797.07	5,809.07	5,809.07	20.54	0.00	154.36	15.30	1,137.54	1,269.07	1,248.61	20.46	62.030	
5,850.00	5,847.03	5,859.03	5,859.03	20.73	0.00	154.40	15.30	1,137.54	1,270.87	1,250.24	20.64	61.580	
5,900.00	5,896.99	5,908.99	5,908.99	20.91	0.00	154.44	15.30	1,137.54	1,272.68	1,251.87	20.82	61.138	
5,950.00	5,946.95	5,958.95	5,958.95	21.09	0.00	154.48	15.30	1,137.54	1,274.49	1,253.50	21.00	60.703	
6,000.00	5,996.91	6,008.91	6,008.91	21.27	0.00	154.51	15.30	1,137.54	1,276.30	1,255.13	21.17	60.275	
6,050.00	6,046.87	6,058.87	6,058.87	21.45	0.00	154.55	15.30	1,137.54	1,278.11	1,256.76	21.35	59.855	
6,100.00	6,096.83	6,108.83	6,108.83	21.63	0.00	154.59	15.30	1,137.54	1,279.92	1,258.39	21.53	59.441	
6,150.00	6,146.79	6,158.79	6,158.79	21.81	0.00	154.63	15.30	1,137.54	1,281.73	1,260.02	21.71	59.034	
6,200.00	6,196.75	6,208.75	6,208.75	21.99	0.00	154.67	15.30	1,137.54	1,283.55	1,261.65	21.89	58.634	
6,250.00	6,246.71	6,258.71	6,258.71	22.17	0.00	154.71	15.30	1,137.54	1,285.36	1,263.29	22.07	58.241	
6,300.00	6,296.67	6,308.67	6,308.67	22.35	0.00	154.74	15.30	1,137.54	1,287.17	1,264.92	22.25	57.854	
6,350.00	6,346.63	6,358.63	6,358.63	22.53	0.00	154.78	15.30	1,137.54	1,288.98	1,266.56	22.43	57.473	
6,400.00	6,396.59	6,408.59	6,408.59	22.71	0.00	154.82	15.30	1,137.54	1,290.80	1,268.19	22.61	57.098	
6,450.00	6,446.55	6,458.55	6,458.55	22.89	0.00	154.86	15.30	1,137.54	1,292.61	1,269.83	22.79	56.728	
6,500.00	6,496.51	6,508.51	6,508.51	23.07	0.00	154.90	15.30	1,137.54	1,294.43	1,271.46	22.97	56.365	
6,550.00	6,546.46	6,558.46	6,558.46	23.25	0.00	154.93	15.30	1,137.54	1,296.24	1,273.10	23.14	56.007	
6,600.00	6,596.42	6,608.42	6,608.42	23.43	0.00	154.97	15.30	1,137.54	1,298.06	1,274.74	23.32	55.655	
6,650.00	6,646.38	6,658.38	6,658.38	23.61	0.00	155.01	15.30	1,137.54	1,299.88	1,276.38	23.50	55.308	
6,700.00	6,696.34	6,708.34	6,708.34	23.79	0.00	155.05	15.30	1,137.54	1,301.70	1,278.01	23.68	54.967	
6,750.00	6,746.30	6,758.30	6,758.30	23.97	0.00	155.08	15.30	1,137.54	1,303.51	1,279.65	23.86	54.630	
6,800.00	6,796.26	6,808.26	6,808.26	24.15	0.00	155.12	15.30	1,137.54	1,305.33	1,281.29	24.04	54.299	
6,850.00	6,846.22	6,858.22	6,858.22	24.33	0.00	155.16	15.30	1,137.54	1,307.15	1,282.93	24.22	53.972	
6,900.00	6,896.18	6,908.18	6,908.18	24.51	0.00	155.19	15.30	1,137.54	1,308.97	1,284.57	24.40	53.651	
6,950.00	6,946.14	6,958.14	6,958.14	24.70	0.00	155.23	15.30	1,137.54	1,310.79	1,286.21	24.58	53.333	
7,000.00	6,996.10	7,008.10	7,008.10	24.88	0.00	155.27	15.30	1,137.54	1,312.61	1,287.86	24.76	53.021	
7,050.00	7,046.06	7,058.06	7,058.06	25.06	0.00	155.30	15.30	1,137.54	1,314.43	1,289.50	24.94	52.713	
7,100.00	7,096.02	7,108.02	7,108.02	25.24	0.00	155.34	15.30	1,137.54	1,316.25	1,291.14	25.11	52.410	
7,150.00	7,145.98	7,157.98	7,157.98	25.42	0.00	155.38	15.30	1,137.54	1,318.08	1,292.78	25.29	52.110	
7,200.00	7,195.94	7,207.94	7,207.94	25.60	0.00	155.41	15.30	1,137.54	1,319.90	1,294.43	25.47	51.815	
7,250.00	7,245.90	7,257.90	7,257.90	25.78	0.00	155.45	15.30	1,137.54	1,321.72	1,296.07	25.65	51.524	
7,300.00	7,295.86	7,307.86	7,307.86	25.96	0.00	155.49	15.30	1,137.54	1,323.55	1,297.72	25.83	51.238	
7,350.00	7,345.82	7,357.82	7,357.82	26.14	0.00	155.52	15.30	1,137.54	1,325.37	1,299.36	26.01	50.955	
7,400.00	7,395.78	7,407.78	7,407.78	26.32	0.00	155.56	15.30	1,137.54	1,327.20	1,301.01	26.19	50.676	
7,450.00	7,445.74	7,457.74	7,457.74	26.50	0.00	155.59	15.30	1,137.54	1,329.02	1,302.65	26.37	50.400	
7,500.00	7,495.70	7,507.70	7,507.70	26.68	0.00	155.63	15.30	1,137.54	1,330.85	1,304.30	26.55	50.129	
7,550.00	7,545.66	7,557.66	7,557.66	26.86	0.00	155.66	15.30	1,137.54	1,332.67	1,305.95	26.73	49.861	
7,600.00	7,595.62	7,607.62	7,607.62	27.04	0.00	155.70	15.30	1,137.54	1,334.50	1,307.59	26.91	49.597	
7,650.00	7,645.58	7,657.58	7,657.58	27.22	0.00	155.73	15.30	1,137.54	1,336.33	1,309.24	27.09	49.336	
7,700.00	7,695.54	7,707.54	7,707.54	27.40	0.00	155.77	15.30	1,137.54	1,338.16	1,310.89	27.27	49.079	
7,750.00	7,745.50	7,757.50	7,757.50	27.58	0.00	155.81	15.30	1,137.54	1,339.99	1,312.54	27.44	48.825	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	7,795.46	7,807.46	7,807.46	27.77	0.00	155.84	15.30	1,137.54	1,341.81	1,314.19	27.62	48.574	
7,850.00	7,845.42	7,857.42	7,857.42	27.95	0.00	155.88	15.30	1,137.54	1,343.64	1,315.84	27.80	48.327	
7,900.00	7,895.38	7,907.38	7,907.38	28.13	0.00	155.91	15.30	1,137.54	1,345.47	1,317.49	27.98	48.082	
7,950.00	7,945.34	7,957.34	7,957.34	28.31	0.00	155.94	15.30	1,137.54	1,347.30	1,319.14	28.16	47.841	
8,000.00	7,995.30	8,007.30	8,007.30	28.49	0.00	155.98	15.30	1,137.54	1,349.14	1,320.79	28.34	47.603	
8,050.00	8,045.26	8,057.26	8,057.26	28.67	0.00	156.01	15.30	1,137.54	1,350.97	1,322.45	28.52	47.368	
8,100.00	8,095.22	8,107.22	8,107.22	28.85	0.00	156.05	15.30	1,137.54	1,352.80	1,324.10	28.70	47.136	
8,150.00	8,145.18	8,157.18	8,157.18	29.03	0.00	156.08	15.30	1,137.54	1,354.63	1,325.75	28.88	46.907	
8,200.00	8,195.14	8,207.14	8,207.14	29.21	0.00	156.12	15.30	1,137.54	1,356.47	1,327.41	29.06	46.681	
8,250.00	8,245.10	8,257.10	8,257.10	29.39	0.00	156.15	15.30	1,137.54	1,358.30	1,329.06	29.24	46.457	
8,300.00	8,295.06	8,307.06	8,307.06	29.57	0.00	156.19	15.30	1,137.54	1,360.13	1,330.72	29.42	46.236	
8,350.00	8,345.02	8,357.02	8,357.02	29.75	0.00	156.22	15.30	1,137.54	1,361.97	1,332.37	29.60	46.018	
8,400.00	8,394.98	8,406.98	8,406.98	29.93	0.00	156.25	15.30	1,137.54	1,363.80	1,334.03	29.78	45.802	
8,450.00	8,444.94	8,456.94	8,456.94	30.11	0.00	156.29	15.30	1,137.54	1,365.64	1,335.68	29.96	45.590	
8,500.00	8,494.90	8,506.90	8,506.90	30.30	0.00	156.32	15.30	1,137.54	1,367.47	1,337.34	30.13	45.379	
8,550.00	8,544.86	8,556.86	8,556.86	30.48	0.00	156.36	15.30	1,137.54	1,369.31	1,339.00	30.31	45.171	
8,600.00	8,594.82	8,606.82	8,606.82	30.66	0.00	156.39	15.30	1,137.54	1,371.15	1,340.65	30.49	44.966	
8,650.00	8,644.78	8,656.78	8,656.78	30.84	0.00	156.42	15.30	1,137.54	1,372.98	1,342.31	30.67	44.763	
8,700.00	8,694.74	8,706.74	8,706.74	31.02	0.00	156.46	15.30	1,137.54	1,374.82	1,343.97	30.85	44.562	
8,750.00	8,744.70	8,756.70	8,756.70	31.20	0.00	156.49	15.30	1,137.54	1,376.66	1,345.63	31.03	44.364	
8,800.00	8,794.66	8,806.66	8,806.66	31.38	0.00	156.52	15.30	1,137.54	1,378.50	1,347.29	31.21	44.168	
8,850.00	8,844.62	8,856.62	8,856.62	31.56	0.00	156.56	15.30	1,137.54	1,380.34	1,348.95	31.39	43.974	
8,900.00	8,894.58	8,906.58	8,906.58	31.74	0.00	156.59	15.30	1,137.54	1,382.18	1,350.61	31.57	43.782	
8,950.00	8,944.54	8,956.54	8,956.54	31.92	0.00	156.62	15.30	1,137.54	1,384.02	1,352.27	31.75	43.593	
9,000.00	8,994.50	9,006.50	9,006.50	32.10	0.00	156.65	15.30	1,137.54	1,385.86	1,353.93	31.93	43.406	
9,050.00	9,044.45	9,056.45	9,056.45	32.28	0.00	156.69	15.30	1,137.54	1,387.70	1,355.59	32.11	43.221	
9,100.00	9,094.41	9,106.41	9,106.41	32.46	0.00	156.72	15.30	1,137.54	1,389.54	1,357.25	32.29	43.037	
9,150.00	9,144.37	9,156.37	9,156.37	32.65	0.00	156.75	15.30	1,137.54	1,391.38	1,358.92	32.47	42.856	
9,200.00	9,194.33	9,206.33	9,206.33	32.83	0.00	156.78	15.30	1,137.54	1,393.22	1,360.58	32.65	42.677	
9,250.00	9,244.29	9,256.29	9,256.29	33.01	0.00	156.82	15.30	1,137.54	1,395.07	1,362.24	32.82	42.500	
9,300.00	9,294.25	9,306.25	9,306.25	33.19	0.00	156.85	15.30	1,137.54	1,396.91	1,363.91	33.00	42.325	
9,350.00	9,344.21	9,356.21	9,356.21	33.37	0.00	156.88	15.30	1,137.54	1,398.75	1,365.57	33.18	42.152	
9,400.00	9,394.17	9,406.17	9,406.17	33.55	0.00	156.91	15.30	1,137.54	1,400.60	1,367.23	33.36	41.980	
9,450.00	9,444.13	9,456.13	9,456.13	33.73	0.00	156.95	15.30	1,137.54	1,402.44	1,368.90	33.54	41.811	
9,500.00	9,494.09	9,506.09	9,506.09	33.91	0.00	156.98	15.30	1,137.54	1,404.29	1,370.57	33.72	41.643	
9,550.00	9,544.05	9,556.05	9,556.05	34.09	0.00	157.01	15.30	1,137.54	1,406.13	1,372.23	33.90	41.477	
9,600.00	9,594.01	9,606.01	9,606.01	34.27	0.00	157.04	15.30	1,137.54	1,407.98	1,373.90	34.08	41.313	
9,650.00	9,643.97	9,655.97	9,655.97	34.45	0.00	157.07	15.30	1,137.54	1,409.83	1,375.56	34.26	41.150	
9,700.00	9,693.93	9,696.89	9,696.86	34.63	0.00	157.15	14.18	1,137.55	1,411.82	1,377.38	34.43	41.000	
9,750.00	9,743.89	9,736.34	9,736.13	34.82	0.00	157.32	10.36	1,137.60	1,414.17	1,379.56	34.61	40.864	
9,800.00	9,793.85	9,774.99	9,774.24	35.00	0.00	157.60	4.01	1,137.67	1,416.93	1,382.15	34.78	40.744	
9,850.00	9,843.81	9,812.52	9,810.76	35.18	0.00	157.97	-4.61	1,137.77	1,420.13	1,385.18	34.94	40.642	
9,900.00	9,893.77	9,850.00	9,846.59	35.36	0.00	158.43	-15.58	1,137.89	1,423.83	1,388.73	35.10	40.559	
9,950.00	9,943.73	9,883.24	9,877.71	35.54	0.00	158.92	-27.25	1,138.02	1,428.12	1,392.86	35.26	40.504	
10,000.00	9,993.69	9,916.11	9,907.76	35.72	0.00	159.47	-40.54	1,138.17	1,433.05	1,397.65	35.41	40.475	
10,050.00	10,043.65	9,950.00	9,937.91	35.90	0.00	160.10	-56.03	1,138.35	1,438.72	1,403.17	35.55	40.472 SF	
10,100.00	10,093.61	9,976.46	9,960.77	36.08	0.00	160.64	-69.34	1,138.49	1,445.18	1,409.51	35.67	40.514	
10,150.00	10,143.57	10,000.00	9,980.57	36.26	0.00	161.15	-82.07	1,138.64	1,452.53	1,416.75	35.78	40.599	
10,200.00	10,193.53	10,029.65	10,004.75	36.44	0.00	161.84	-99.23	1,138.83	1,460.79	1,424.90	35.89	40.706	
10,250.00	10,243.49	10,050.00	10,020.81	36.62	0.00	162.33	-111.72	1,138.97	1,470.05	1,434.09	35.96	40.876	
10,300.00	10,293.45	10,076.13	10,040.76	36.81	0.00	163.00	-128.59	1,139.16	1,480.34	1,444.29	36.04	41.072	
10,350.00	10,343.41	10,100.00	10,058.30	36.99	0.00	163.63	-144.77	1,139.34	1,491.70	1,455.60	36.10	41.316	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	12.14	12.14	0.50	0.02	89.23	15.31	1,137.54	1,137.64				
50.00	50.00	62.71	62.71	0.50	0.08	89.22	15.47	1,137.52	1,137.63	1,137.04	0.59	1,941.635	
100.00	100.00	113.40	113.40	0.52	0.18	89.20	15.86	1,137.47	1,137.58	1,136.89	0.69	1,639.555	
150.00	150.00	164.53	164.53	0.59	0.35	89.18	16.25	1,137.38	1,137.50	1,136.55	0.95	1,203.272	
200.00	200.00	215.05	215.05	0.70	0.53	89.17	16.55	1,137.24	1,137.36	1,136.13	1.23	921.815	
250.00	250.00	264.62	264.61	0.84	0.70	89.15	16.82	1,137.11	1,137.24	1,135.70	1.54	737.345	
300.00	300.00	312.94	312.93	0.99	0.87	89.14	17.07	1,137.02	1,137.15	1,135.29	1.86	611.238	
315.95	315.95	327.96	327.95	1.04	0.93	89.14	17.13	1,137.01	1,137.14	1,135.18	1.96	579.462	
350.00	350.00	360.01	360.01	1.15	1.04	89.13	17.24	1,137.04	1,137.17	1,134.99	2.18	521.033	
400.00	400.00	410.07	410.07	1.31	1.21	89.12	17.39	1,137.16	1,137.29	1,134.77	2.52	451.181	
450.00	450.00	462.99	462.98	1.48	1.40	89.11	17.76	1,137.17	1,137.31	1,134.44	2.87	395.913	
500.00	500.00	513.78	513.77	1.65	1.58	89.08	18.29	1,137.09	1,137.24	1,134.02	3.22	353.179	
550.00	550.00	563.83	563.82	1.82	1.75	89.05	18.79	1,137.00	1,137.16	1,133.59	3.57	318.823	
588.21	588.21	600.23	600.21	1.95	1.88	89.03	19.16	1,136.96	1,137.12	1,133.30	3.83	297.199 CC	
600.00	600.00	611.34	611.32	1.99	1.92	89.03	19.28	1,136.96	1,137.13	1,133.22	3.91	291.133	
650.00	650.00	658.47	658.45	2.16	2.08	89.00	19.84	1,137.04	1,137.22	1,132.98	4.24	267.916	
700.00	700.00	709.17	709.14	2.34	2.26	88.97	20.42	1,137.18	1,137.37	1,132.77	4.60	247.437	
750.00	750.00	760.39	760.36	2.51	2.44	88.95	20.86	1,137.28	1,137.47	1,132.52	4.95	229.748	
800.00	800.00	812.53	812.51	2.69	2.62	88.93	21.30	1,137.30	1,137.50	1,132.19	5.31	214.259	
850.00	850.00	864.17	864.14	2.87	2.81	88.90	21.88	1,137.22	1,137.43	1,131.76	5.67	200.759	
900.00	900.00	914.36	914.33	3.04	2.98	88.87	22.46	1,137.11	1,137.33	1,131.31	6.02	188.997	
950.00	950.00	963.35	963.31	3.22	3.15	88.84	22.99	1,137.00	1,137.23	1,130.87	6.37	178.648	
972.86	972.86	984.90	984.86	3.30	3.23	88.83	23.18	1,136.99	1,137.22	1,130.70	6.52	174.367	
1,000.00	1,000.00	1,010.49	1,010.45	3.40	3.32	88.82	23.39	1,137.00	1,137.24	1,130.53	6.71	169.548	
1,050.00	1,050.00	1,060.16	1,060.12	3.58	3.49	88.81	23.71	1,137.10	1,137.35	1,130.29	7.06	161.138	
1,100.00	1,100.00	1,113.51	1,113.46	3.75	3.68	88.78	24.12	1,137.10	1,137.36	1,129.94	7.42	153.243	
1,150.00	1,150.00	1,162.27	1,162.23	3.93	3.85	88.76	24.54	1,137.02	1,137.29	1,129.52	7.77	146.373	
1,153.11	1,153.11	1,165.16	1,165.11	3.94	3.86	88.76	24.56	1,137.02	1,137.29	1,129.49	7.79	145.975	
1,200.00	1,200.00	1,208.62	1,208.57	4.11	4.01	88.75	24.81	1,137.08	1,137.36	1,129.25	8.11	140.253	
1,250.00	1,250.00	1,257.53	1,257.48	4.29	4.18	88.74	24.95	1,137.27	1,137.55	1,129.09	8.46	134.496	
1,300.00	1,300.00	1,307.92	1,307.88	4.46	4.36	88.74	25.04	1,137.46	1,137.74	1,128.93	8.81	129.116	
1,350.00	1,350.00	1,360.56	1,360.52	4.64	4.54	88.73	25.12	1,137.60	1,137.88	1,128.70	9.17	124.037	
1,400.00	1,400.00	1,413.85	1,413.80	4.82	4.73	88.73	25.32	1,137.59	1,137.87	1,128.33	9.54	119.301	
1,450.00	1,450.00	1,464.59	1,464.55	5.00	4.91	88.71	25.63	1,137.48	1,137.77	1,127.88	9.89	115.006	
1,500.00	1,500.00	1,515.39	1,515.34	5.18	5.09	88.68	26.11	1,137.34	1,137.64	1,127.40	10.25	111.003	
1,550.00	1,550.00	1,564.34	1,564.29	5.36	5.26	88.66	26.50	1,137.22	1,137.53	1,126.93	10.60	107.334	
1,600.00	1,600.00	1,613.76	1,613.71	5.53	5.43	88.65	26.75	1,137.13	1,137.44	1,126.49	10.95	103.886	
1,650.00	1,650.00	1,663.70	1,663.65	5.71	5.61	88.64	26.93	1,137.05	1,137.37	1,126.07	11.30	100.637	
1,700.00	1,700.00	1,712.56	1,712.51	5.89	5.78	88.64	27.08	1,136.99	1,137.31	1,125.66	11.65	97.617	
1,709.29	1,709.29	1,721.34	1,721.29	5.92	5.81	88.63	27.10	1,136.98	1,137.31	1,125.59	11.71	97.085	
1,750.00	1,750.00	1,759.81	1,759.75	6.07	5.94	88.63	27.12	1,137.02	1,137.35	1,125.35	11.99	94.825	
1,800.00	1,800.00	1,808.14	1,808.09	6.25	6.11	88.64	27.06	1,137.17	1,137.50	1,125.15	12.34	92.169	
1,850.00	1,850.00	1,858.00	1,857.95	6.43	6.28	88.64	26.96	1,137.34	1,137.67	1,124.98	12.69	89.622	
1,900.00	1,900.00	1,908.13	1,908.08	6.61	6.46	88.65	26.87	1,137.52	1,137.85	1,124.80	13.05	87.206	
1,950.00	1,950.00	1,958.49	1,958.44	6.78	6.63	88.65	26.77	1,137.69	1,138.01	1,124.61	13.40	84.911	
2,000.00	2,000.00	2,012.82	2,012.76	6.96	6.82	88.66	26.70	1,137.79	1,138.10	1,124.33	13.77	82.646	
2,015.47	2,015.47	2,030.20	2,030.15	7.02	6.88	150.58	26.70	1,137.76	1,138.10	1,124.21	13.89	81.960	
2,050.00	2,050.00	2,069.00	2,068.95	7.14	7.02	150.59	26.71	1,137.60	1,138.12	1,123.98	14.14	80.473	
2,100.00	2,099.99	2,117.57	2,117.51	7.32	7.18	150.60	26.76	1,137.33	1,138.42	1,123.93	14.49	78.573 ES	
2,150.00	2,149.98	2,166.47	2,166.41	7.49	7.35	150.62	26.81	1,137.12	1,139.16	1,124.32	14.83	76.796	
2,200.00	2,199.96	2,217.67	2,217.61	7.67	7.53	150.65	26.85	1,136.90	1,140.27	1,125.08	15.19	75.085	
2,250.00	2,249.92	2,267.45	2,267.39	7.84	7.71	150.69	26.83	1,136.63	1,141.68	1,126.15	15.53	73.492	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
2,300.00	2,299.88	2,313.26	2,313.20	8.02	7.87	150.74	26.80	1,136.50	1,143.28	1,127.41	15.87	72.043	
2,350.00	2,349.84	2,360.90	2,360.85	8.19	8.03	150.79	26.76	1,136.52	1,145.06	1,128.85	16.21	70.636	
2,400.00	2,399.80	2,415.10	2,415.04	8.37	8.22	150.84	26.73	1,136.47	1,146.76	1,130.18	16.57	69.187	
2,450.00	2,449.76	2,467.27	2,467.21	8.54	8.40	150.90	26.71	1,136.25	1,148.30	1,131.37	16.93	67.818	
2,500.00	2,499.72	2,517.33	2,517.28	8.72	8.58	150.95	26.68	1,136.01	1,149.81	1,132.53	17.28	66.531	
2,550.00	2,549.68	2,564.69	2,564.63	8.90	8.74	150.99	26.65	1,135.81	1,151.36	1,133.73	17.62	65.331	
2,600.00	2,599.64	2,610.39	2,610.33	9.07	8.90	151.04	26.60	1,135.78	1,153.07	1,135.12	17.96	64.208	
2,650.00	2,649.60	2,658.22	2,658.16	9.25	9.07	151.09	26.53	1,135.90	1,154.95	1,136.65	18.30	63.108	
2,700.00	2,699.56	2,707.64	2,707.58	9.43	9.24	151.14	26.45	1,136.06	1,156.87	1,138.22	18.65	62.032	
2,750.00	2,749.52	2,759.83	2,759.77	9.61	9.42	151.19	26.38	1,136.21	1,158.77	1,139.76	19.01	60.961	
2,800.00	2,799.48	2,813.34	2,813.28	9.78	9.61	151.25	26.37	1,136.21	1,160.52	1,141.15	19.37	59.909	
2,850.00	2,849.44	2,863.43	2,863.37	9.96	9.78	151.29	26.41	1,136.12	1,162.20	1,142.47	19.72	58.927	
2,900.00	2,899.40	2,913.30	2,913.24	10.14	9.96	151.34	26.46	1,136.04	1,163.88	1,143.80	20.07	57.981	
2,950.00	2,949.36	2,963.88	2,963.82	10.32	10.13	151.38	26.53	1,135.95	1,165.54	1,145.12	20.43	57.060	
3,000.00	2,999.32	3,013.61	3,013.55	10.49	10.31	151.42	26.63	1,135.83	1,167.19	1,146.41	20.78	56.177	
3,050.00	3,049.28	3,059.97	3,059.91	10.67	10.47	151.46	26.72	1,135.81	1,168.93	1,147.82	21.12	55.359	
3,100.00	3,099.24	3,107.00	3,106.94	10.85	10.63	151.50	26.80	1,135.94	1,170.83	1,149.37	21.46	54.568	
3,150.00	3,149.20	3,157.19	3,157.13	11.03	10.81	151.55	26.87	1,136.12	1,172.77	1,150.96	21.81	53.776	
3,200.00	3,199.16	3,209.43	3,209.37	11.21	10.99	151.59	26.93	1,136.28	1,174.68	1,152.52	22.17	52.990	
3,250.00	3,249.12	3,266.19	3,266.13	11.38	11.19	151.64	27.07	1,136.20	1,176.38	1,153.84	22.54	52.181	
3,300.00	3,299.08	3,318.62	3,318.56	11.56	11.37	151.68	27.28	1,135.89	1,177.85	1,154.94	22.90	51.425	
3,350.00	3,349.04	3,368.85	3,368.79	11.74	11.55	151.71	27.56	1,135.56	1,179.29	1,156.03	23.26	50.706	
3,400.00	3,399.00	3,415.73	3,415.66	11.92	11.71	151.74	27.85	1,135.30	1,180.78	1,157.18	23.60	50.037	
3,450.00	3,448.96	3,461.76	3,461.69	12.10	11.87	151.77	28.10	1,135.20	1,182.43	1,158.50	23.94	49.399	
3,500.00	3,498.92	3,511.44	3,511.37	12.28	12.05	151.80	28.34	1,135.19	1,184.19	1,159.90	24.29	48.758	
3,550.00	3,548.88	3,562.24	3,562.17	12.46	12.23	151.84	28.55	1,135.15	1,185.92	1,161.28	24.64	48.125	
3,600.00	3,598.84	3,616.57	3,616.50	12.63	12.42	151.88	28.79	1,135.00	1,187.55	1,162.54	25.01	47.483	
3,650.00	3,648.80	3,671.21	3,671.14	12.81	12.61	151.91	29.11	1,134.63	1,188.98	1,163.60	25.38	46.850	
3,700.00	3,698.76	3,719.32	3,719.24	12.99	12.78	151.94	29.46	1,134.28	1,190.38	1,164.66	25.72	46.274	
3,750.00	3,748.72	3,768.43	3,768.36	13.17	12.95	151.96	29.88	1,133.94	1,191.81	1,165.74	26.07	45.709	
3,800.00	3,798.68	3,817.27	3,817.19	13.35	13.12	151.98	30.39	1,133.65	1,193.29	1,166.86	26.42	45.162	
3,850.00	3,848.64	3,864.65	3,864.56	13.53	13.28	152.00	30.97	1,133.43	1,194.82	1,168.05	26.77	44.640	
3,900.00	3,898.60	3,909.75	3,909.66	13.71	13.44	152.01	31.56	1,133.37	1,196.53	1,169.43	27.10	44.151	
3,950.00	3,948.56	3,954.94	3,954.84	13.89	13.60	152.02	32.14	1,133.50	1,198.44	1,171.00	27.44	43.682	
4,000.00	3,998.52	4,000.30	4,000.20	14.07	13.76	152.04	32.59	1,133.81	1,200.54	1,172.77	27.77	43.231	
4,050.00	4,048.47	4,045.64	4,045.54	14.25	13.92	152.07	32.83	1,134.28	1,202.84	1,174.73	28.11	42.798	
4,100.00	4,098.43	4,090.95	4,090.85	14.43	14.08	152.10	32.96	1,134.93	1,205.33	1,176.89	28.44	42.383	
4,150.00	4,148.39	4,136.09	4,135.98	14.61	14.23	152.14	32.99	1,135.75	1,208.01	1,179.23	28.77	41.985	
4,200.00	4,198.35	4,180.53	4,180.40	14.79	14.39	152.19	32.89	1,136.75	1,210.90	1,181.80	29.10	41.609	
4,250.00	4,248.31	4,225.18	4,225.04	14.97	14.54	152.24	32.62	1,137.95	1,214.02	1,184.59	29.43	41.249	
4,300.00	4,298.27	4,272.80	4,272.63	15.14	14.71	152.30	32.19	1,139.38	1,217.30	1,187.52	29.77	40.884	
4,350.00	4,348.23	4,320.39	4,320.20	15.32	14.88	152.37	31.63	1,140.89	1,220.66	1,190.55	30.12	40.532	
4,400.00	4,398.19	4,367.14	4,366.92	15.50	15.04	152.44	30.90	1,142.48	1,224.14	1,193.69	30.45	40.195	
4,450.00	4,448.15	4,414.31	4,414.05	15.68	15.21	152.53	29.97	1,144.19	1,227.75	1,196.95	30.80	39.868	
4,500.00	4,498.11	4,464.36	4,464.05	15.86	15.38	152.62	28.93	1,146.06	1,231.40	1,200.25	31.15	39.534	
4,550.00	4,548.07	4,513.37	4,513.01	16.04	15.55	152.70	27.97	1,147.88	1,235.05	1,203.55	31.50	39.212	
4,600.00	4,598.03	4,559.10	4,558.70	16.22	15.71	152.77	27.25	1,149.69	1,238.82	1,206.99	31.83	38.920	
4,650.00	4,647.99	4,606.79	4,606.35	16.40	15.88	152.84	26.72	1,151.73	1,242.75	1,210.57	32.17	38.628	
4,700.00	4,697.95	4,662.67	4,662.18	16.58	16.08	152.91	26.12	1,153.99	1,246.57	1,214.01	32.55	38.294	
4,750.00	4,747.91	4,717.53	4,717.00	16.76	16.27	152.99	25.46	1,155.96	1,250.16	1,217.23	32.93	37.967	
4,800.00	4,797.87	4,771.44	4,770.88	16.94	16.46	153.07	24.66	1,157.71	1,253.58	1,220.28	33.30	37.648	
4,850.00	4,847.83	4,821.57	4,820.98	17.12	16.63	153.14	23.82	1,159.23	1,256.90	1,223.25	33.65	37.351	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
4,900.00	4,897.79	4,870.66	4,870.03	17.30	16.80	153.22	23.02	1,160.75	1,260.25	1,226.25	34.00	37.066	
4,950.00	4,947.75	4,922.66	4,922.01	17.48	16.99	153.30	22.25	1,162.33	1,263.58	1,229.22	34.36	36.772	
5,000.00	4,997.71	4,975.10	4,974.42	17.66	17.17	153.36	21.64	1,163.83	1,266.81	1,232.09	34.73	36.480	
5,050.00	5,047.67	5,026.46	5,025.76	17.84	17.35	153.43	21.14	1,165.22	1,269.97	1,234.88	35.09	36.197	
5,100.00	5,097.63	5,077.24	5,076.52	18.02	17.53	153.49	20.70	1,166.54	1,273.07	1,237.63	35.44	35.920	
5,150.00	5,147.59	5,126.19	5,125.45	18.20	17.70	153.55	20.17	1,167.82	1,276.18	1,240.39	35.79	35.657	
5,200.00	5,197.55	5,176.98	5,176.22	18.38	17.87	153.62	19.46	1,169.16	1,279.32	1,243.17	36.15	35.391	
5,250.00	5,247.51	5,231.11	5,230.33	18.56	18.06	153.70	18.58	1,170.45	1,282.34	1,245.82	36.52	35.114	
5,300.00	5,297.47	5,282.26	5,281.45	18.74	18.24	153.77	17.77	1,171.55	1,285.22	1,248.35	36.88	34.852	
5,350.00	5,347.43	5,331.64	5,330.83	18.92	18.41	153.83	17.36	1,172.62	1,288.12	1,250.90	37.23	34.601	
5,400.00	5,397.39	5,382.81	5,381.98	19.10	18.59	153.87	17.31	1,173.74	1,291.02	1,253.43	37.59	34.348	
5,450.00	5,447.35	5,434.65	5,433.81	19.28	18.77	153.90	17.45	1,174.81	1,293.84	1,255.89	37.95	34.095	
5,500.00	5,497.31	5,484.86	5,484.01	19.46	18.95	153.94	17.52	1,175.79	1,296.62	1,258.32	38.30	33.852	
5,550.00	5,547.27	5,535.04	5,534.18	19.64	19.13	153.99	17.19	1,176.76	1,299.39	1,260.74	38.66	33.614	
5,600.00	5,597.23	5,586.98	5,586.10	19.82	19.31	154.05	16.68	1,177.70	1,302.12	1,263.10	39.02	33.372	
5,650.00	5,647.19	5,639.31	5,638.43	20.00	19.49	154.11	16.21	1,178.57	1,304.77	1,265.39	39.38	33.132	
5,700.00	5,697.15	5,692.80	5,691.92	20.18	19.68	154.17	15.86	1,179.33	1,307.30	1,267.55	39.75	32.889	
5,750.00	5,747.11	5,744.79	5,743.90	20.36	19.86	154.21	15.66	1,179.96	1,309.71	1,269.60	40.11	32.652	
5,800.00	5,797.07	5,795.29	5,794.39	20.54	20.03	154.26	15.52	1,180.53	1,312.09	1,271.62	40.47	32.424	
5,850.00	5,847.03	5,845.64	5,844.74	20.73	20.21	154.30	15.37	1,181.08	1,314.44	1,273.62	40.82	32.200	
5,900.00	5,896.99	5,895.90	5,895.00	20.91	20.38	154.35	15.08	1,181.60	1,316.79	1,275.61	41.18	31.979	
5,950.00	5,946.95	5,946.89	5,945.99	21.09	20.56	154.41	14.67	1,182.11	1,319.11	1,277.57	41.53	31.760	
6,000.00	5,996.91	5,998.09	5,997.18	21.27	20.74	154.46	14.29	1,182.57	1,321.38	1,279.49	41.89	31.542	
6,050.00	6,046.87	6,047.94	6,047.03	21.45	20.91	154.51	13.92	1,183.00	1,323.64	1,281.39	42.25	31.332	
6,100.00	6,096.83	6,097.92	6,097.01	21.63	21.09	154.57	13.55	1,183.43	1,325.90	1,283.30	42.60	31.125	
6,150.00	6,146.79	6,150.04	6,149.12	21.81	21.27	154.61	13.29	1,183.84	1,328.11	1,285.15	42.96	30.914	
6,200.00	6,196.75	6,201.67	6,200.75	21.99	21.45	154.65	13.23	1,184.18	1,330.25	1,286.93	43.32	30.706	
6,250.00	6,246.71	6,252.03	6,251.11	22.17	21.63	154.69	13.25	1,184.47	1,332.35	1,288.68	43.68	30.505	
6,300.00	6,296.67	6,301.89	6,300.97	22.35	21.80	154.73	13.26	1,184.75	1,334.45	1,290.42	44.03	30.307	
6,350.00	6,346.63	6,351.08	6,350.16	22.53	21.97	154.77	13.11	1,185.04	1,336.56	1,292.18	44.38	30.116	
6,400.00	6,396.59	6,400.82	6,399.89	22.71	22.15	154.82	12.80	1,185.35	1,338.70	1,293.97	44.73	29.926	
6,450.00	6,446.55	6,451.07	6,450.15	22.89	22.32	154.87	12.49	1,185.66	1,340.84	1,295.75	45.09	29.738	
6,500.00	6,496.51	6,502.44	6,501.52	23.07	22.50	154.91	12.24	1,185.95	1,342.95	1,297.50	45.45	29.549	
6,550.00	6,546.46	6,554.41	6,553.48	23.25	22.68	154.96	12.14	1,186.17	1,344.98	1,299.18	45.81	29.360	
6,600.00	6,596.42	6,605.89	6,604.97	23.43	22.86	154.99	12.11	1,186.33	1,346.96	1,300.79	46.17	29.174	
6,650.00	6,646.38	6,657.30	6,656.38	23.61	23.04	155.03	12.07	1,186.44	1,348.88	1,302.35	46.53	28.990	
6,700.00	6,696.34	6,705.40	6,704.48	23.79	23.21	155.07	11.96	1,186.54	1,350.80	1,303.93	46.88	28.817	
6,750.00	6,746.30	6,753.72	6,752.79	23.97	23.38	155.12	11.70	1,186.69	1,352.80	1,305.58	47.22	28.647	
6,800.00	6,796.26	6,803.21	6,802.28	24.15	23.55	155.16	11.39	1,186.88	1,354.83	1,307.25	47.57	28.478	
6,850.00	6,846.22	6,852.79	6,851.86	24.33	23.72	155.21	11.10	1,187.10	1,356.88	1,308.95	47.93	28.312	
6,900.00	6,896.18	6,902.71	6,901.78	24.51	23.90	155.25	10.95	1,187.32	1,358.93	1,310.65	48.28	28.147	
6,950.00	6,946.14	6,952.49	6,951.55	24.70	24.07	155.29	10.98	1,187.56	1,360.99	1,312.36	48.63	27.985	
7,000.00	6,996.10	7,001.95	7,001.02	24.88	24.24	155.32	11.01	1,187.81	1,363.06	1,314.08	48.99	27.826	
7,050.00	7,046.06	7,050.75	7,049.81	25.06	24.41	155.35	10.97	1,188.08	1,365.16	1,315.82	49.33	27.671	
7,100.00	7,096.02	7,098.66	7,097.73	25.24	24.58	155.40	10.75	1,188.39	1,367.32	1,317.64	49.68	27.522	
7,150.00	7,145.98	7,148.82	7,147.88	25.42	24.76	155.45	10.35	1,188.76	1,369.54	1,319.50	50.04	27.371	
7,200.00	7,195.94	7,201.44	7,200.50	25.60	24.94	155.49	10.06	1,189.08	1,371.68	1,321.28	50.40	27.216	
7,250.00	7,245.90	7,251.17	7,250.22	25.78	25.11	155.54	9.91	1,189.33	1,373.77	1,323.01	50.75	27.068	
7,300.00	7,295.86	7,299.63	7,298.69	25.96	25.28	155.58	9.73	1,189.61	1,375.90	1,324.80	51.10	26.925	
7,350.00	7,345.82	7,346.72	7,345.78	26.14	25.45	155.62	9.45	1,189.95	1,378.10	1,326.66	51.44	26.789	
7,400.00	7,395.78	7,393.37	7,392.42	26.32	25.61	155.67	8.87	1,190.38	1,380.42	1,328.64	51.78	26.658	
7,450.00	7,445.74	7,442.10	7,441.14	26.50	25.78	155.74	7.99	1,190.89	1,382.84	1,330.71	52.13	26.526	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
7,500.00	7,495.70	7,491.47	7,490.50	26.68	25.95	155.82	6.96	1,191.43	1,385.28	1,332.79	52.48	26.394	
7,550.00	7,545.66	7,544.48	7,543.49	26.86	26.14	155.90	5.81	1,191.96	1,387.68	1,334.83	52.85	26.257	
7,600.00	7,595.62	7,598.08	7,597.08	27.04	26.32	155.97	4.83	1,192.37	1,389.96	1,336.74	53.22	26.118	
7,650.00	7,645.58	7,646.86	7,645.85	27.22	26.49	156.04	3.93	1,192.71	1,392.20	1,338.63	53.57	25.990	
7,700.00	7,695.54	7,695.52	7,694.49	27.40	26.66	156.12	2.91	1,193.06	1,394.47	1,340.55	53.92	25.864	
7,750.00	7,745.50	7,741.95	7,740.91	27.58	26.83	156.19	1.82	1,193.47	1,396.83	1,342.58	54.26	25.745	
7,800.00	7,795.46	7,788.51	7,787.46	27.77	26.99	156.27	0.60	1,193.99	1,399.32	1,344.73	54.60	25.631	
7,850.00	7,845.42	7,835.68	7,834.60	27.95	27.15	156.35	-0.63	1,194.62	1,401.92	1,346.98	54.94	25.519	
7,900.00	7,895.38	7,884.88	7,883.78	28.13	27.32	156.43	-1.84	1,195.37	1,404.61	1,349.32	55.29	25.405	
7,950.00	7,945.34	7,941.44	7,940.32	28.31	27.52	156.51	-3.07	1,196.09	1,407.17	1,351.50	55.67	25.277	
8,000.00	7,995.30	7,993.63	7,992.50	28.49	27.70	156.59	-4.07	1,196.56	1,409.54	1,353.51	56.03	25.156	
8,050.00	8,045.26	8,042.39	8,041.25	28.67	27.87	156.66	-5.08	1,197.01	1,411.93	1,355.55	56.38	25.042	
8,100.00	8,095.22	8,090.90	8,089.75	28.85	28.04	156.73	-6.19	1,197.50	1,414.36	1,357.63	56.73	24.931	
8,150.00	8,145.18	8,139.27	8,138.10	29.03	28.21	156.81	-7.44	1,198.02	1,416.85	1,359.77	57.08	24.823	
8,200.00	8,195.14	8,189.85	8,188.65	29.21	28.39	156.90	-8.87	1,198.58	1,419.36	1,361.93	57.43	24.713	
8,250.00	8,245.10	8,241.35	8,240.14	29.39	28.57	156.99	-10.31	1,199.09	1,421.83	1,364.04	57.79	24.602	
8,300.00	8,295.06	8,296.58	8,295.34	29.57	28.76	157.08	-11.80	1,199.53	1,424.19	1,366.02	58.17	24.483	
8,350.00	8,345.02	8,352.30	8,351.04	29.75	28.96	157.17	-13.14	1,199.75	1,426.35	1,367.80	58.55	24.363	
8,400.00	8,394.98	8,406.36	8,405.09	29.93	29.14	157.25	-14.34	1,199.80	1,428.34	1,369.42	58.92	24.244	
8,450.00	8,444.94	8,456.19	8,454.91	30.11	29.32	157.32	-15.38	1,199.73	1,430.22	1,370.95	59.27	24.131	
8,500.00	8,494.90	8,501.19	8,499.90	30.30	29.48	157.39	-16.42	1,199.77	1,432.22	1,372.62	59.60	24.029	
8,550.00	8,544.86	8,550.51	8,549.20	30.48	29.65	157.47	-17.68	1,199.95	1,434.37	1,374.42	59.95	23.924	
8,600.00	8,594.82	8,606.21	8,604.89	30.66	29.84	157.56	-19.02	1,200.00	1,436.39	1,376.06	60.33	23.808	
8,650.00	8,644.78	8,661.41	8,660.08	30.84	30.03	157.64	-20.19	1,199.85	1,438.22	1,377.52	60.70	23.692	
8,700.00	8,694.74	8,716.44	8,715.09	31.02	30.23	157.71	-21.14	1,199.54	1,439.87	1,378.80	61.08	23.575	
8,750.00	8,744.70	8,764.08	8,762.73	31.20	30.39	157.77	-21.91	1,199.22	1,441.48	1,380.06	61.42	23.469	
8,800.00	8,794.66	8,811.91	8,810.54	31.38	30.56	157.84	-22.78	1,198.97	1,443.17	1,381.40	61.77	23.365	
8,850.00	8,844.62	8,860.21	8,858.83	31.56	30.73	157.90	-23.59	1,198.78	1,444.92	1,382.80	62.11	23.262	
8,900.00	8,894.58	8,908.51	8,907.14	31.74	30.89	157.95	-24.23	1,198.66	1,446.73	1,384.27	62.46	23.162	
8,950.00	8,944.54	8,952.24	8,950.86	31.92	31.05	158.00	-24.73	1,198.70	1,448.69	1,385.89	62.79	23.071	
9,000.00	8,994.50	8,996.57	8,995.19	32.10	31.20	158.04	-25.21	1,198.91	1,450.84	1,387.72	63.12	22.984	
9,050.00	9,044.45	9,052.96	9,051.58	32.28	31.40	158.10	-25.80	1,199.16	1,452.98	1,389.48	63.50	22.881	
9,100.00	9,094.41	9,110.99	9,109.61	32.46	31.60	158.15	-26.37	1,199.15	1,454.89	1,391.00	63.89	22.773	
9,150.00	9,144.37	9,172.09	9,170.70	32.65	31.81	158.20	-26.69	1,198.75	1,456.45	1,392.17	64.28	22.658	
9,200.00	9,194.33	9,224.93	9,223.54	32.83	32.00	158.25	-26.89	1,198.13	1,457.74	1,393.10	64.64	22.550	
9,250.00	9,244.29	9,275.91	9,274.51	33.01	32.18	158.30	-27.46	1,197.44	1,459.00	1,394.00	65.00	22.446	
9,300.00	9,294.25	9,338.90	9,337.48	33.19	32.39	158.38	-28.33	1,196.27	1,460.02	1,394.62	65.40	22.326	
9,350.00	9,344.21	9,399.09	9,397.64	33.37	32.60	158.45	-29.04	1,194.66	1,460.61	1,394.83	65.78	22.204	
9,400.00	9,394.17	9,456.23	9,454.75	33.55	32.80	158.51	-29.72	1,192.81	1,460.94	1,394.78	66.15	22.084	
9,450.00	9,444.13	9,515.69	9,514.17	33.73	33.01	158.59	-30.54	1,190.54	1,460.98	1,394.45	66.53	21.959	
9,500.00	9,494.09	9,568.48	9,566.89	33.91	33.17	158.66	-31.40	1,188.22	1,460.77	1,393.89	66.87	21.844	
9,550.00	9,544.05	9,612.66	9,611.03	34.09	33.25	158.73	-32.19	1,186.37	1,460.65	1,393.52	67.14	21.757	
9,553.48	9,547.53	9,615.74	9,614.11	34.10	33.26	158.73	-32.25	1,186.24	1,460.65	1,393.50	67.15	21.751	
9,600.00	9,594.01	9,655.76	9,654.08	34.27	33.31	158.80	-33.14	1,184.71	1,460.74	1,393.36	67.38	21.679	
9,650.00	9,643.97	9,690.36	9,688.60	34.45	33.32	158.90	-35.14	1,183.46	1,461.18	1,393.61	67.57	21.625	
9,700.00	9,693.93	9,721.99	9,720.02	34.63	33.32	159.06	-38.61	1,182.55	1,462.29	1,394.53	67.76	21.582	
9,750.00	9,743.89	9,758.15	9,755.69	34.82	33.32	159.31	-44.46	1,181.63	1,463.92	1,395.98	67.94	21.549	
9,800.00	9,793.85	9,798.65	9,795.08	35.00	33.32	159.70	-53.79	1,180.57	1,466.02	1,397.90	68.11	21.523	
9,850.00	9,843.81	9,831.07	9,826.10	35.18	33.33	160.08	-63.14	1,179.67	1,468.57	1,400.28	68.29	21.506	
9,900.00	9,893.77	9,894.76	9,885.89	35.36	33.35	160.97	-84.97	1,177.53	1,471.46	1,402.97	68.49	21.485	
9,950.00	9,943.73	9,929.27	9,917.71	35.54	33.36	161.51	-98.23	1,175.95	1,474.30	1,405.64	68.66	21.471 SF	
10,000.00	9,993.69	9,956.00	9,942.05	35.72	33.37	161.95	-109.21	1,174.83	1,477.86	1,409.05	68.82	21.475	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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		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	
10,050.00	10,043.65	9,987.70	9,970.32	35.90	33.39	162.51	-123.49	1,173.59	1,482.20	1,413.23	68.97	21.490	
10,100.00	10,093.61	10,013.44	9,992.58	36.08	33.40	163.02	-136.37	1,172.62	1,487.44	1,418.34	69.10	21.526	
10,150.00	10,143.57	10,037.61	10,012.86	36.26	33.42	163.54	-149.49	1,171.75	1,493.64	1,424.43	69.21	21.582	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	12.00	12.00	0.50		89.23	15.30	1,137.54	1,137.65				
50.00	50.00	62.00	62.00	0.50		89.23	15.30	1,137.54	1,137.65	1,137.14	0.50	2,266.208	
100.00	100.00	112.00	112.00	0.52		89.23	15.30	1,137.54	1,137.65	1,137.13	0.52	2,197.264	
138.20	138.20	150.18	150.18	0.57		89.22	15.41	1,137.53	1,137.63	1,137.06	0.57	1,999.745	
150.00	150.00	161.83	161.83	0.59		89.22	15.40	1,137.53	1,137.63	1,137.04	0.59	1,927.405	
200.00	200.00	212.00	212.00	0.70		89.23	15.30	1,137.54	1,137.65	1,136.94	0.70	1,620.339	
231.57	231.57	243.54	243.53	0.79		89.23	15.36	1,137.51	1,137.61	1,136.83	0.79	1,447.925	
250.00	250.00	261.35	261.35	0.84		89.23	15.35	1,137.51	1,137.62	1,136.78	0.84	1,358.001	
300.00	300.00	312.01	312.00	0.99		89.23	15.30	1,137.54	1,137.65	1,136.66	0.99	1,152.238	
324.74	324.74	336.73	336.72	1.06		89.23	15.36	1,137.52	1,137.62	1,136.56	1.06	1,068.440	
350.00	350.00	361.35	361.34	1.15		89.23	15.34	1,137.52	1,137.63	1,136.48	1.15	993.135	
400.00	400.00	412.01	412.00	1.31		89.23	15.30	1,137.54	1,137.65	1,136.34	1.31	869.035	
450.00	450.00	463.22	463.22	1.48		89.23	15.31	1,137.56	1,137.66	1,136.19	1.48	770.604	
500.00	500.00	512.01	512.00	1.65		89.23	15.30	1,137.54	1,137.65	1,136.00	1.65	691.120	
511.43	511.43	523.44	523.43	1.69		89.22	15.42	1,137.52	1,137.63	1,135.94	1.69	675.082	
550.00	550.00	561.27	561.26	1.82		89.23	15.34	1,137.54	1,137.64	1,135.82	1.82	625.877	
600.00	600.00	612.01	612.00	1.99		89.23	15.30	1,137.54	1,137.65	1,135.65	1.99	571.508	
607.01	607.01	618.99	618.97	2.01		89.22	15.41	1,137.52	1,137.63	1,135.61	2.01	564.594	
650.00	650.00	661.11	661.10	2.16		89.23	15.31	1,137.54	1,137.64	1,135.48	2.16	525.577	
700.00	700.00	712.08	712.06	2.34		89.22	15.45	1,137.58	1,137.68	1,135.34	2.34	486.332	
750.00	750.00	764.17	764.14	2.51		89.23	15.25	1,137.53	1,137.64	1,135.12	2.51	452.394	
752.94	752.94	767.23	767.20	2.53		89.23	15.23	1,137.53	1,137.63	1,135.10	2.53	450.543	
800.00	800.00	812.17	812.14	2.69		89.23	15.38	1,137.56	1,137.66	1,134.97	2.69	422.829	
850.00	850.00	862.03	862.00	2.87		89.23	15.30	1,137.54	1,137.65	1,134.78	2.87	396.820	
887.95	887.95	899.93	899.90	3.00		89.22	15.44	1,137.52	1,137.62	1,134.62	3.00	379.089	
900.00	900.00	911.70	911.67	3.04		89.22	15.43	1,137.52	1,137.62	1,134.58	3.04	373.782	
950.00	950.00	962.04	962.00	3.22		89.23	15.30	1,137.54	1,137.65	1,134.42	3.22	353.253	
981.24	981.24	993.23	993.20	3.33		89.22	15.43	1,137.51	1,137.62	1,134.29	3.33	341.506	
1,000.00	1,000.00	1,011.49	1,011.45	3.40		89.22	15.40	1,137.52	1,137.62	1,134.23	3.40	334.825	
1,050.00	1,050.00	1,062.04	1,062.00	3.58		89.23	15.30	1,137.54	1,137.65	1,134.07	3.58	318.219	
1,100.00	1,100.00	1,112.98	1,112.94	3.75		89.23	15.34	1,137.56	1,137.67	1,133.91	3.75	303.167	
1,150.00	1,150.00	1,162.04	1,162.00	3.93		89.23	15.30	1,137.54	1,137.65	1,133.71	3.93	289.454	
1,167.37	1,167.37	1,179.40	1,179.35	3.99		89.22	15.41	1,137.51	1,137.62	1,133.62	3.99	284.968	
1,200.00	1,200.00	1,211.09	1,211.05	4.11		89.23	15.36	1,137.53	1,137.63	1,133.52	4.11	276.920	
1,250.00	1,250.00	1,262.04	1,262.00	4.29		89.23	15.30	1,137.54	1,137.65	1,133.36	4.29	265.426	
1,300.00	1,300.00	1,326.37	1,312.00	4.46		89.23	15.30	1,137.54	1,137.65	1,133.18	4.46	254.839	
1,350.00	1,350.00	1,362.05	1,362.00	4.64		89.23	15.30	1,137.54	1,137.65	1,133.00	4.64	245.059	
1,400.00	1,400.00	1,414.11	1,414.06	4.82		89.23	15.30	1,137.54	1,137.64	1,132.82	4.82	235.999	
1,447.79	1,447.79	1,459.83	1,459.78	4.99		89.23	15.35	1,137.52	1,137.63	1,132.64	4.99	227.937	
1,450.00	1,450.00	1,462.00	1,461.95	5.00		89.23	15.35	1,137.52	1,137.63	1,132.63	5.00	227.577	
1,500.00	1,500.00	1,512.05	1,512.00	5.18		89.23	15.30	1,137.54	1,137.65	1,132.47	5.18	219.740	
1,541.21	1,541.21	1,553.26	1,553.21	5.32		89.22	15.42	1,137.51	1,137.61	1,132.29	5.32	213.664	CC
1,550.00	1,550.00	1,561.74	1,561.69	5.36		89.22	15.42	1,137.51	1,137.61	1,132.26	5.36	212.413	
1,600.00	1,600.00	1,612.05	1,612.00	5.53		89.23	15.30	1,137.54	1,137.65	1,132.11	5.53	205.569	
1,634.84	1,634.84	1,646.90	1,646.84	5.66		89.23	15.35	1,137.52	1,137.63	1,131.97	5.66	201.046	
1,650.00	1,650.00	1,661.77	1,661.71	5.71		89.23	15.34	1,137.53	1,137.63	1,131.92	5.71	199.142	
1,700.00	1,700.00	1,712.05	1,712.00	5.89		89.23	15.30	1,137.54	1,137.65	1,131.75	5.89	193.108	
1,728.46	1,728.46	1,740.51	1,740.46	5.99		89.23	15.34	1,137.52	1,137.63	1,131.64	5.99	189.830	
1,750.00	1,750.00	1,761.67	1,761.62	6.07		89.23	15.33	1,137.53	1,137.63	1,131.56	6.07	187.424	
1,800.00	1,800.00	1,812.05	1,812.00	6.25		89.23	15.30	1,137.54	1,137.65	1,131.40	6.25	182.068	
1,850.00	1,850.00	1,863.26	1,863.21	6.43		89.23	15.29	1,137.57	1,137.67	1,131.24	6.43	177.010	
1,900.00	1,900.00	1,912.05	1,912.00	6.61		89.23	15.30	1,137.54	1,137.65	1,131.04	6.61	172.217	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	1,963.65	1,963.59	6.78		89.23	15.29	1,137.56	1,137.66	1,130.88	6.78	167.683	
1,971.84	1,971.84	1,986.50	1,986.45	6.86		89.23	15.31	1,137.52	1,137.62	1,130.76	6.86	165.770	
2,000.00	2,000.00	2,012.05	2,012.00	6.96		89.23	15.30	1,137.54	1,137.65	1,130.68	6.96	163.376 ES	
2,050.00	2,050.00	2,074.29	2,062.00	7.14		151.16	15.30	1,137.54	1,137.84	1,130.70	7.14	159.367	
2,100.00	2,099.99	2,112.05	2,111.99	7.32		151.17	15.30	1,137.54	1,138.41	1,131.09	7.32	155.603	
2,150.00	2,149.98	2,158.82	2,158.76	7.49		151.19	15.30	1,137.53	1,139.36	1,131.87	7.49	152.109	
2,200.00	2,199.96	2,211.86	2,211.81	7.67		151.23	15.31	1,137.50	1,140.66	1,132.99	7.66	148.818	
2,250.00	2,249.92	2,261.98	2,261.92	7.84		151.27	15.30	1,137.54	1,142.39	1,134.55	7.84	145.722	
2,300.00	2,299.88	2,311.30	2,311.25	8.02		151.32	15.29	1,137.48	1,144.09	1,136.07	8.01	142.758	
2,350.00	2,349.84	2,361.90	2,361.84	8.19		151.36	15.30	1,137.54	1,145.91	1,137.72	8.19	139.931	
2,400.00	2,399.80	2,412.20	2,412.14	8.37		151.41	15.29	1,137.56	1,147.69	1,139.33	8.36	137.215	
2,450.00	2,449.76	2,461.82	2,461.76	8.54		151.46	15.30	1,137.54	1,149.43	1,140.89	8.54	134.602	
2,500.00	2,499.72	2,510.56	2,510.50	8.72		151.51	15.30	1,137.50	1,151.15	1,142.44	8.71	132.091	
2,550.00	2,549.68	2,561.74	2,561.68	8.90		151.56	15.30	1,137.54	1,152.96	1,144.07	8.89	129.683	
2,600.00	2,599.64	2,610.08	2,610.02	9.07		151.60	15.30	1,137.50	1,154.68	1,145.62	9.07	127.361	
2,650.00	2,649.60	2,661.66	2,661.60	9.25		151.65	15.30	1,137.54	1,156.48	1,147.24	9.24	125.130	
2,700.00	2,699.56	2,712.85	2,712.79	9.43		151.70	15.29	1,137.56	1,158.26	1,148.84	9.42	122.979	
2,750.00	2,749.52	2,761.58	2,761.52	9.61		151.74	15.30	1,137.54	1,160.02	1,150.42	9.59	120.903	
2,800.00	2,799.48	2,822.72	2,811.48	9.78		151.79	15.30	1,137.54	1,161.78	1,152.01	9.77	118.903	
2,850.00	2,849.44	2,861.50	2,861.44	9.96		151.84	15.30	1,137.54	1,163.55	1,153.60	9.95	116.970	
2,900.00	2,899.40	2,911.46	2,911.40	10.14		151.88	15.30	1,137.54	1,165.32	1,155.19	10.12	115.105	
2,950.00	2,949.36	2,961.35	2,961.29	10.32		151.93	15.31	1,137.52	1,167.07	1,156.77	10.30	113.300	
3,000.00	2,999.32	3,011.38	3,011.32	10.49		151.98	15.30	1,137.54	1,168.86	1,158.38	10.48	111.560	
3,050.00	3,049.28	3,061.02	3,060.96	10.67		152.02	15.32	1,137.51	1,170.60	1,159.94	10.65	109.871	
3,100.00	3,099.24	3,111.30	3,111.24	10.85		152.07	15.30	1,137.54	1,172.40	1,161.57	10.83	108.242	
3,150.00	3,149.20	3,162.06	3,162.00	11.03		152.11	15.32	1,137.58	1,174.21	1,163.20	11.01	106.664	
3,200.00	3,199.16	3,211.22	3,211.16	11.21		152.16	15.30	1,137.54	1,175.94	1,164.76	11.19	105.131	
3,250.00	3,249.12	3,262.17	3,262.11	11.38		152.21	15.31	1,137.57	1,177.74	1,166.38	11.36	103.649	
3,300.00	3,299.08	3,311.14	3,311.08	11.56		152.25	15.30	1,137.54	1,179.49	1,167.95	11.54	102.208	
3,350.00	3,349.04	3,358.97	3,358.91	11.74		152.29	15.33	1,137.49	1,181.22	1,169.50	11.72	100.810	
3,400.00	3,399.00	3,411.06	3,411.00	11.92		152.34	15.30	1,137.54	1,183.04	1,171.14	11.89	99.458	
3,450.00	3,448.96	3,458.25	3,458.18	12.10		152.38	15.34	1,137.50	1,184.78	1,172.71	12.07	98.142	
3,500.00	3,498.92	3,510.98	3,510.92	12.28		152.43	15.30	1,137.54	1,186.59	1,174.34	12.25	96.865	
3,550.00	3,548.88	3,571.23	3,560.88	12.46		152.48	15.30	1,137.54	1,188.37	1,175.94	12.43	95.623	
3,600.00	3,598.84	3,610.91	3,610.84	12.63		152.52	15.30	1,137.54	1,190.15	1,177.54	12.61	94.416	
3,650.00	3,648.80	3,660.87	3,660.80	12.81		152.57	15.30	1,137.54	1,191.93	1,179.14	12.78	93.242	
3,700.00	3,698.76	3,710.43	3,710.36	12.99		152.61	15.37	1,137.45	1,193.61	1,180.65	12.96	92.094	
3,750.00	3,748.72	3,760.79	3,760.72	13.17		152.65	15.30	1,137.54	1,195.49	1,182.35	13.14	90.989	
3,800.00	3,798.68	3,809.90	3,809.82	13.35		152.69	15.40	1,137.47	1,197.19	1,183.88	13.32	89.903	
3,850.00	3,848.64	3,860.72	3,860.64	13.53		152.74	15.30	1,137.54	1,199.05	1,185.56	13.49	88.854	
3,900.00	3,898.60	3,909.64	3,909.55	13.71		152.78	15.43	1,137.49	1,200.78	1,187.11	13.67	87.825	
3,950.00	3,948.56	3,960.65	3,960.56	13.89		152.83	15.30	1,137.54	1,202.62	1,188.77	13.85	86.827	
4,000.00	3,998.52	4,011.63	4,011.54	14.07		152.87	15.41	1,137.57	1,204.43	1,190.40	14.03	85.853	
4,050.00	4,048.47	4,060.57	4,060.47	14.25		152.92	15.30	1,137.54	1,206.19	1,191.98	14.21	84.901	
4,100.00	4,098.43	4,115.61	4,115.51	14.43		152.96	15.32	1,137.60	1,208.04	1,193.66	14.39	83.975	
4,150.00	4,148.39	4,160.50	4,160.39	14.61		153.00	15.30	1,137.54	1,209.76	1,195.19	14.56	83.069	
4,200.00	4,198.35	4,222.47	4,222.36	14.79		153.06	15.30	1,137.53	1,211.59	1,196.85	14.74	82.181	
4,250.00	4,248.31	4,260.45	4,260.31	14.97		153.09	15.30	1,137.54	1,213.33	1,198.41	14.92	81.324	
4,300.00	4,298.27	4,319.64	4,310.27	15.14		153.13	15.30	1,137.54	1,215.12	1,200.02	15.10	80.482	
4,350.00	4,348.23	4,360.42	4,360.23	15.32		153.17	15.30	1,137.54	1,216.91	1,201.63	15.28	79.659	
4,400.00	4,398.19	4,410.45	4,410.19	15.50		153.22	15.30	1,137.54	1,218.70	1,203.24	15.45	78.856	
4,450.00	4,448.15	4,465.30	4,465.03	15.68		153.27	15.06	1,137.96	1,220.92	1,205.29	15.63	78.094	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
4,500.00	4,498.11	4,510.46	4,510.11	15.86		153.30	15.30	1,137.54	1,222.28	1,206.47	15.81	77.302	
4,550.00	4,548.07	4,571.46	4,571.10	16.04		153.36	15.13	1,137.88	1,224.46	1,208.47	15.99	76.568	
4,600.00	4,598.03	4,610.46	4,610.03	16.22		153.39	15.30	1,137.54	1,225.86	1,209.69	16.17	75.818	
4,650.00	4,647.99	4,685.10	4,684.64	16.40		153.45	15.28	1,137.63	1,228.00	1,211.65	16.35	75.109	
4,700.00	4,697.95	4,710.46	4,709.95	16.58		153.47	15.30	1,137.54	1,229.45	1,212.92	16.53	74.396	
4,750.00	4,747.91	4,782.39	4,781.86	16.76		153.53	15.30	1,137.56	1,231.45	1,214.75	16.71	73.710	
4,800.00	4,797.87	4,810.44	4,809.87	16.94		153.55	15.30	1,137.54	1,233.04	1,216.16	16.88	73.035	
4,850.00	4,847.83	4,881.15	4,880.56	17.12		153.61	15.34	1,137.47	1,234.94	1,217.87	17.06	72.370	
4,900.00	4,897.79	4,910.42	4,909.79	17.30		153.64	15.30	1,137.54	1,236.63	1,219.39	17.24	71.730	
4,950.00	4,947.75	4,987.26	4,986.60	17.48		153.69	15.46	1,137.23	1,238.40	1,220.98	17.42	71.084	
5,000.00	4,997.71	5,010.39	5,009.71	17.66		153.72	15.30	1,137.54	1,240.22	1,222.63	17.60	70.478	
5,050.00	5,047.67	5,067.64	5,059.67	17.84		153.76	15.30	1,137.54	1,242.02	1,224.25	17.78	69.870	
5,100.00	5,097.63	5,110.34	5,109.63	18.02		153.80	15.30	1,137.54	1,243.82	1,225.87	17.95	69.275	
5,150.00	5,147.59	5,160.34	5,159.59	18.20		153.84	15.30	1,137.54	1,245.62	1,227.49	18.13	68.692	
5,200.00	5,197.55	5,213.69	5,212.93	18.38		153.89	15.14	1,137.84	1,247.73	1,229.42	18.31	68.133	
5,250.00	5,247.51	5,260.30	5,259.51	18.56		153.92	15.30	1,137.54	1,249.22	1,230.73	18.49	67.558	
5,300.00	5,297.47	5,315.26	5,314.46	18.74		153.97	15.12	1,137.76	1,251.25	1,232.58	18.67	67.016	
5,350.00	5,347.43	5,360.25	5,359.43	18.92		154.00	15.30	1,137.54	1,252.82	1,233.97	18.85	66.468	
5,400.00	5,397.39	5,418.13	5,417.31	19.10		154.05	15.29	1,137.72	1,254.83	1,235.80	19.03	65.942	
5,450.00	5,447.35	5,460.19	5,459.35	19.28		154.08	15.30	1,137.54	1,256.43	1,237.22	19.21	65.418	
5,500.00	5,497.31	5,519.04	5,518.20	19.46		154.13	15.33	1,137.65	1,258.37	1,238.99	19.39	64.907	
5,550.00	5,547.27	5,560.13	5,559.27	19.64		154.16	15.30	1,137.54	1,260.04	1,240.47	19.56	64.406	
5,600.00	5,597.23	5,621.21	5,620.35	19.82		154.21	15.28	1,137.58	1,261.93	1,242.19	19.75	63.910	
5,650.00	5,647.19	5,660.07	5,659.19	20.00		154.24	15.30	1,137.54	1,263.65	1,243.73	19.92	63.430	
5,700.00	5,697.15	5,728.66	5,709.15	20.18		154.28	15.30	1,137.54	1,265.45	1,245.35	20.10	62.956	
5,750.00	5,747.11	5,760.00	5,759.11	20.36		154.32	15.30	1,137.54	1,267.26	1,246.98	20.28	62.489	
5,800.00	5,797.07	5,818.35	5,817.46	20.54		154.36	15.31	1,137.51	1,269.06	1,248.60	20.46	62.024	
5,850.00	5,847.03	5,859.95	5,859.05	20.73		154.40	15.28	1,137.67	1,271.00	1,250.37	20.64	61.587	
5,900.00	5,896.99	5,918.75	5,917.85	20.91		154.44	15.31	1,137.47	1,272.64	1,251.82	20.82	61.129	
5,950.00	5,946.95	5,960.94	5,960.04	21.09		154.48	15.21	1,137.66	1,274.61	1,253.62	21.00	60.708	
6,000.00	5,996.91	6,009.82	6,008.91	21.27		154.51	15.30	1,137.54	1,276.30	1,255.13	21.17	60.276	
6,050.00	6,046.87	6,061.54	6,060.63	21.45		154.56	15.22	1,137.63	1,278.21	1,256.85	21.35	59.858	
6,100.00	6,096.83	6,109.74	6,108.83	21.63		154.59	15.30	1,137.54	1,279.92	1,258.39	21.53	59.442	
6,150.00	6,146.79	6,162.41	6,161.50	21.81		154.63	15.23	1,137.62	1,281.82	1,260.11	21.71	59.037	
6,200.00	6,196.75	6,209.66	6,208.75	21.99		154.67	15.30	1,137.54	1,283.55	1,261.65	21.89	58.635	
6,250.00	6,246.71	6,261.94	6,261.02	22.17		154.71	15.30	1,137.59	1,285.41	1,263.34	22.07	58.242	
6,300.00	6,296.67	6,309.59	6,308.67	22.35		154.74	15.30	1,137.54	1,287.17	1,264.92	22.25	57.854	
6,350.00	6,346.63	6,362.15	6,361.23	22.53		154.78	15.30	1,137.57	1,289.02	1,266.59	22.43	57.472	
6,400.00	6,396.59	6,409.51	6,408.59	22.71		154.82	15.30	1,137.54	1,290.80	1,268.19	22.61	57.098	
6,450.00	6,446.55	6,477.15	6,458.55	22.89		154.86	15.30	1,137.54	1,292.61	1,269.83	22.79	56.729	
6,500.00	6,496.51	6,509.43	6,508.51	23.07		154.90	15.30	1,137.54	1,294.43	1,271.46	22.96	56.366	
6,550.00	6,546.46	6,564.47	6,558.46	23.25		154.93	15.30	1,137.54	1,296.24	1,273.10	23.14	56.008	
6,600.00	6,596.42	6,609.38	6,608.46	23.43		154.97	15.30	1,137.58	1,298.10	1,274.78	23.32	55.657	
6,650.00	6,646.38	6,661.89	6,660.96	23.61		155.01	15.30	1,137.53	1,299.87	1,276.37	23.50	55.306	
6,700.00	6,696.34	6,709.42	6,708.49	23.79		155.05	15.29	1,137.56	1,301.71	1,278.03	23.68	54.968	
6,750.00	6,746.30	6,759.23	6,758.30	23.97		155.08	15.30	1,137.54	1,303.51	1,279.65	23.86	54.631	
6,800.00	6,796.26	6,809.99	6,809.06	24.15		155.12	15.23	1,137.58	1,305.38	1,281.34	24.04	54.300	
6,850.00	6,846.22	6,859.16	6,858.22	24.33		155.16	15.30	1,137.54	1,307.15	1,282.93	24.22	53.973	
6,900.00	6,896.18	6,910.49	6,909.56	24.51		155.20	15.25	1,137.58	1,309.02	1,284.62	24.40	53.652	
6,950.00	6,946.14	6,959.08	6,958.14	24.70		155.23	15.30	1,137.54	1,310.79	1,286.21	24.58	53.334	
7,000.00	6,996.10	7,010.86	7,009.93	24.88		155.27	15.31	1,137.58	1,312.65	1,287.89	24.76	53.022	
7,050.00	7,046.06	7,059.00	7,058.06	25.06		155.30	15.30	1,137.54	1,314.43	1,289.50	24.94	52.713	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
7,100.00	7,096.02	7,111.60	7,110.66	25.24		155.34	15.30	1,137.57	1,316.29	1,291.17	25.12	52.409	
7,150.00	7,145.98	7,158.92	7,157.98	25.42		155.38	15.30	1,137.54	1,318.08	1,292.78	25.29	52.111	
7,200.00	7,195.94	7,225.66	7,207.94	25.60		155.41	15.30	1,137.54	1,319.90	1,294.43	25.47	51.816	
7,250.00	7,245.90	7,258.84	7,257.90	25.78		155.45	15.30	1,137.54	1,321.72	1,296.07	25.65	51.525	
7,300.00	7,295.86	7,312.98	7,307.86	25.96		155.49	15.30	1,137.54	1,323.55	1,297.72	25.83	51.238	
7,350.00	7,345.82	7,358.88	7,357.94	26.14		155.52	15.25	1,137.62	1,325.45	1,299.44	26.01	50.958	
7,400.00	7,395.78	7,414.29	7,413.35	26.32		155.56	15.32	1,137.51	1,327.17	1,300.98	26.19	50.671	
7,450.00	7,445.74	7,460.18	7,459.22	26.50		155.60	15.11	1,137.66	1,329.16	1,302.79	26.37	50.405	
7,500.00	7,495.70	7,508.68	7,507.70	26.68		155.63	15.30	1,137.54	1,330.85	1,304.30	26.55	50.129	
7,550.00	7,545.66	7,561.62	7,560.64	26.86		155.68	15.07	1,137.66	1,332.81	1,306.08	26.73	49.864	
7,600.00	7,595.62	7,608.62	7,607.62	27.04		155.70	15.30	1,137.54	1,334.50	1,307.59	26.91	49.597	
7,650.00	7,645.58	7,661.14	7,660.13	27.22		155.74	15.15	1,137.60	1,336.40	1,309.32	27.09	49.337	
7,700.00	7,695.54	7,708.56	7,707.54	27.40		155.77	15.30	1,137.54	1,338.16	1,310.89	27.27	49.079	
7,750.00	7,745.50	7,762.34	7,761.31	27.58		155.81	15.15	1,137.59	1,340.05	1,312.61	27.45	48.825	
7,800.00	7,795.46	7,808.51	7,807.46	27.77		155.84	15.30	1,137.54	1,341.81	1,314.19	27.62	48.574	
7,850.00	7,845.42	7,866.63	7,865.56	27.95		155.88	15.22	1,137.58	1,343.71	1,315.90	27.81	48.324	
7,900.00	7,895.38	7,908.47	7,907.38	28.13		155.91	15.30	1,137.54	1,345.47	1,317.49	27.98	48.083	
7,950.00	7,945.34	7,974.00	7,957.34	28.31		155.94	15.30	1,137.54	1,347.30	1,319.14	28.16	47.842	
8,000.00	7,995.30	8,008.42	8,007.30	28.49		155.98	15.30	1,137.54	1,349.14	1,320.79	28.34	47.604	
8,050.00	8,045.26	8,066.01	8,064.88	28.67		156.02	15.36	1,137.51	1,350.96	1,322.43	28.52	47.363	
8,100.00	8,095.22	8,108.71	8,107.56	28.85		156.06	15.04	1,137.66	1,352.93	1,324.23	28.70	47.141	
8,150.00	8,145.18	8,168.71	8,167.56	29.03		156.08	15.50	1,137.45	1,354.57	1,325.69	28.88	46.899	
8,200.00	8,195.14	8,210.30	8,209.12	29.21		156.13	14.98	1,137.67	1,356.62	1,327.56	29.06	46.685	
8,250.00	8,245.10	8,258.32	8,257.10	29.39		156.15	15.30	1,137.54	1,358.30	1,329.06	29.24	46.457	
8,300.00	8,295.06	8,311.20	8,309.97	29.57		156.20	15.02	1,137.64	1,360.25	1,330.83	29.42	46.239	
8,350.00	8,345.02	8,358.27	8,357.02	29.75		156.22	15.30	1,137.54	1,361.97	1,332.37	29.60	46.018	
8,400.00	8,394.98	8,409.80	8,408.54	29.93		156.26	15.09	1,137.57	1,363.85	1,334.07	29.78	45.803	
8,450.00	8,444.94	8,458.21	8,456.94	30.11		156.29	15.30	1,137.54	1,365.64	1,335.68	29.95	45.590	
8,500.00	8,494.90	8,507.99	8,506.71	30.30		156.33	15.14	1,137.53	1,367.47	1,337.34	30.13	45.379	
8,550.00	8,544.86	8,558.16	8,556.86	30.48		156.36	15.30	1,137.54	1,369.31	1,339.00	30.31	45.172	
8,600.00	8,594.82	8,611.73	8,610.41	30.66		156.40	15.19	1,137.56	1,371.18	1,340.69	30.49	44.965	
8,650.00	8,644.78	8,658.11	8,656.78	30.84		156.42	15.30	1,137.54	1,372.98	1,342.31	30.67	44.763	
8,700.00	8,694.74	8,708.04	8,706.70	31.02		156.46	15.23	1,137.54	1,374.82	1,343.97	30.85	44.562	
8,750.00	8,744.70	8,758.04	8,756.70	31.20		156.49	15.30	1,137.54	1,376.66	1,345.63	31.03	44.364	
8,800.00	8,794.66	8,804.30	8,802.95	31.38		156.52	15.27	1,137.53	1,378.49	1,347.28	31.21	44.170	
8,850.00	8,844.62	8,857.88	8,856.51	31.56		156.56	15.08	1,137.49	1,380.30	1,348.91	31.39	43.973	
8,900.00	8,894.58	8,907.95	8,906.58	31.74		156.59	15.30	1,137.54	1,382.18	1,350.61	31.57	43.783	
8,950.00	8,944.54	8,957.82	8,956.44	31.92		156.63	15.17	1,137.52	1,384.01	1,352.26	31.75	43.593	
9,000.00	8,994.50	9,007.88	9,006.50	32.10		156.65	15.30	1,137.54	1,385.86	1,353.93	31.93	43.406	
9,050.00	9,044.45	9,059.76	9,058.37	32.28		156.69	15.19	1,137.61	1,387.78	1,355.67	32.11	43.222	
9,100.00	9,094.41	9,107.80	9,106.41	32.46		156.72	15.30	1,137.54	1,389.54	1,357.25	32.29	43.038	
9,150.00	9,144.37	9,157.85	9,156.47	32.65		156.76	15.21	1,137.54	1,391.38	1,358.92	32.47	42.857	
9,200.00	9,194.33	9,207.73	9,206.33	32.83		156.78	15.30	1,137.54	1,393.22	1,360.58	32.65	42.678	
9,250.00	9,244.29	9,253.72	9,252.32	33.01		156.82	15.29	1,137.44	1,394.97	1,362.15	32.82	42.500	
9,300.00	9,294.25	9,307.66	9,306.25	33.19		156.85	15.30	1,137.54	1,396.91	1,363.91	33.00	42.325	
9,350.00	9,344.21	9,352.18	9,350.77	33.37		156.88	15.19	1,137.44	1,398.67	1,365.49	33.18	42.153	
9,400.00	9,394.17	9,407.61	9,406.17	33.55		156.91	15.30	1,137.54	1,400.60	1,367.24	33.36	41.981	
9,450.00	9,444.13	9,446.23	9,444.79	33.73		156.94	15.22	1,137.34	1,402.30	1,368.76	33.54	41.815	
9,500.00	9,494.09	9,503.81	9,502.32	33.91		156.98	15.20	1,137.25	1,404.01	1,370.29	33.72	41.637	
9,550.00	9,544.05	9,548.92	9,547.37	34.09		157.01	15.25	1,137.42	1,406.04	1,372.14	33.90	41.480	
9,600.00	9,594.01	9,605.25	9,603.66	34.27		157.05	15.13	1,137.05	1,407.51	1,373.43	34.08	41.301	
9,650.00	9,643.97	9,657.64	9,655.97	34.45		157.07	15.30	1,137.54	1,409.83	1,375.57	34.26	41.151	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
9,700.00	9,693.93	9,699.18	9,697.45	34.63		157.11	15.09	1,137.42	1,411.59	1,377.16	34.43	40.993	
9,750.00	9,743.89	9,757.35	9,755.12	34.82		157.16	14.68	1,137.45	1,413.48	1,378.86	34.62	40.830	
9,800.00	9,793.85	9,809.59	9,805.85	35.00		157.17	15.30	1,137.54	1,415.37	1,380.57	34.80	40.673	
9,850.00	9,843.81	9,868.05	9,862.25	35.18		157.18	15.85	1,137.58	1,417.22	1,382.24	34.98	40.514	
9,900.00	9,893.77	9,914.07	9,904.67	35.36		157.28	13.98	1,137.38	1,419.03	1,383.87	35.16	40.363	
9,950.00	9,943.73	9,970.29	9,955.73	35.54		157.26	15.30	1,137.54	1,420.91	1,385.58	35.34	40.211	
10,000.00	9,993.69	10,028.49	10,005.69	35.72		157.29	15.30	1,137.54	1,422.76	1,387.25	35.52	40.060	
10,050.00	10,043.65	10,091.29	10,055.65	35.90		157.33	15.30	1,137.54	1,424.61	1,388.92	35.70	39.910	
10,100.00	10,093.61	10,100.00	10,105.61	36.08		157.36	15.30	1,137.54	1,426.46	1,390.59	35.87	39.762	
10,150.00	10,143.57	10,250.20	10,155.57	36.26		157.39	15.30	1,137.54	1,428.31	1,392.26	36.05	39.615	
10,200.00	10,193.53	10,402.89	10,205.53	36.44		157.42	15.30	1,137.54	1,430.16	1,393.93	36.23	39.470	
10,250.00	10,243.49	12,316.00	10,240.39	36.62		157.44	15.30	1,137.54	1,432.09	1,395.69	36.40	39.339	
10,300.00	10,293.45	12,316.00	10,240.39	36.81		157.44	15.30	1,137.54	1,435.34	1,398.81	36.53	39.288	SF
10,350.00	10,343.41	12,316.00	10,240.39	36.99		157.44	15.30	1,137.54	1,440.32	1,403.69	36.63	39.318	
10,400.00	10,393.37	12,316.00	10,240.39	37.17		157.44	15.30	1,137.54	1,447.01	1,410.30	36.70	39.426	
10,450.00	10,443.33	12,316.00	10,240.39	37.35		157.44	15.30	1,137.54	1,455.38	1,418.64	36.74	39.611	
10,500.00	10,493.29	12,316.00	10,240.39	37.53		157.44	15.30	1,137.54	1,465.42	1,428.66	36.75	39.871	
10,550.00	10,543.25	12,316.00	10,240.39	37.71		157.48	15.30	1,137.54	1,476.96	1,440.22	36.74	40.199	
10,600.00	10,593.24	12,316.00	10,240.39	37.89		157.56	15.30	1,137.54	1,489.56	1,452.85	36.70	40.584	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 332H - 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	89.74	0.27	60.00	60.00				
50.00	50.00	50.10	50.10	0.50	0.50	89.74	0.27	60.00	60.00	58.99	1.01	59.612	
100.00	100.00	100.10	100.10	0.52	0.52	89.74	0.27	60.00	60.00	58.97	1.04	57.938	
150.00	150.00	150.10	150.10	0.59	0.59	89.74	0.27	60.00	60.00	58.82	1.18	50.819	
200.00	200.00	200.10	200.10	0.70	0.70	89.74	0.27	60.00	60.00	58.60	1.40	42.722	
250.00	250.00	250.10	250.10	0.84	0.84	89.74	0.27	60.00	60.00	58.33	1.68	35.806	
300.00	300.00	300.10	300.10	0.99	0.99	89.74	0.27	60.00	60.00	58.03	1.97	30.380	
350.00	350.00	350.10	350.10	1.15	1.15	89.74	0.27	60.00	60.00	57.71	2.29	26.186	
400.00	400.00	400.10	400.10	1.31	1.31	89.74	0.27	60.00	60.00	57.38	2.62	22.914	
450.00	450.00	450.10	450.10	1.48	1.48	89.74	0.27	60.00	60.00	57.05	2.95	20.319	
500.00	500.00	500.10	500.10	1.65	1.65	89.74	0.27	60.00	60.00	56.71	3.29	18.223	
550.00	550.00	550.10	550.10	1.82	1.82	89.74	0.27	60.00	60.00	56.37	3.64	16.503	
600.00	600.00	600.10	600.10	1.99	1.99	89.74	0.27	60.00	60.00	56.02	3.98	15.070	
650.00	650.00	650.10	650.10	2.16	2.16	89.74	0.27	60.00	60.00	55.67	4.33	13.859	
700.00	700.00	700.10	700.10	2.34	2.34	89.74	0.27	60.00	60.00	55.32	4.68	12.823	
750.00	750.00	750.10	750.10	2.51	2.52	89.74	0.27	60.00	60.00	54.97	5.03	11.929	
800.00	800.00	800.10	800.10	2.69	2.69	89.74	0.27	60.00	60.00	54.62	5.38	11.149	
850.00	850.00	850.10	850.10	2.87	2.87	89.74	0.27	60.00	60.00	54.27	5.73	10.464	
900.00	900.00	900.10	900.10	3.04	3.04	89.74	0.27	60.00	60.00	53.91	6.09	9.856	
950.00	950.00	950.10	950.10	3.22	3.22	89.74	0.27	60.00	60.00	53.56	6.44	9.315	
1,000.00	1,000.00	1,000.10	1,000.10	3.40	3.40	89.74	0.27	60.00	60.00	53.21	6.80	8.829	
1,050.00	1,050.00	1,050.10	1,050.10	3.58	3.58	89.74	0.27	60.00	60.00	52.85	7.15	8.391	
1,100.00	1,100.00	1,100.10	1,100.10	3.75	3.75	89.74	0.27	60.00	60.00	52.50	7.51	7.994	
1,150.00	1,150.00	1,150.10	1,150.10	3.93	3.93	89.74	0.27	60.00	60.00	52.14	7.86	7.633	
1,200.00	1,200.00	1,200.10	1,200.10	4.11	4.11	89.74	0.27	60.00	60.00	51.78	8.22	7.302	
1,250.00	1,250.00	1,250.10	1,250.10	4.29	4.29	89.74	0.27	60.00	60.00	51.43	8.57	6.999	
1,300.00	1,300.00	1,300.10	1,300.10	4.46	4.46	89.74	0.27	60.00	60.00	51.07	8.93	6.720	
1,350.00	1,350.00	1,350.10	1,350.10	4.64	4.64	89.74	0.27	60.00	60.00	50.72	9.29	6.462	
1,400.00	1,400.00	1,400.10	1,400.10	4.82	4.82	89.74	0.27	60.00	60.00	50.36	9.64	6.223	
1,450.00	1,450.00	1,450.10	1,450.10	5.00	5.00	89.74	0.27	60.00	60.00	50.00	10.00	6.001	
1,500.00	1,500.00	1,500.10	1,500.10	5.18	5.18	89.74	0.27	60.00	60.00	49.65	10.35	5.794	
1,550.00	1,550.00	1,550.10	1,550.10	5.36	5.36	89.74	0.27	60.00	60.00	49.29	10.71	5.601	
1,600.00	1,600.00	1,600.10	1,600.10	5.53	5.53	89.74	0.27	60.00	60.00	48.93	11.07	5.421	
1,650.00	1,650.00	1,650.10	1,650.10	5.71	5.71	89.74	0.27	60.00	60.00	48.58	11.43	5.251	
1,700.00	1,700.00	1,700.10	1,700.10	5.89	5.89	89.74	0.27	60.00	60.00	48.22	11.78	5.092	
1,750.00	1,750.00	1,750.10	1,750.10	6.07	6.07	89.74	0.27	60.00	60.00	47.86	12.14	4.942	Alert
1,800.00	1,800.00	1,800.10	1,800.10	6.25	6.25	89.74	0.27	60.00	60.00	47.50	12.50	4.801	Alert
1,850.00	1,850.00	1,850.10	1,850.10	6.43	6.43	89.74	0.27	60.00	60.00	47.15	12.85	4.668	Alert
1,900.00	1,900.00	1,900.10	1,900.10	6.61	6.61	89.74	0.27	60.00	60.00	46.79	13.21	4.541	Alert
1,950.00	1,950.00	1,950.10	1,950.10	6.78	6.78	89.74	0.27	60.00	60.00	46.43	13.57	4.422	Alert
2,000.00	2,000.00	2,000.10	2,000.10	6.96	6.96	89.74	0.27	60.00	60.00	46.07	13.93	4.308	Alert, CC
2,050.00	2,050.00	2,050.10	2,050.10	7.14	7.14	151.77	0.27	60.00	60.19	45.91	14.28	4.215	Alert, ES
2,100.00	2,099.99	2,100.09	2,100.09	7.32	7.32	152.06	0.27	60.00	60.77	46.13	14.64	4.152	Alert
2,150.00	2,149.98	2,150.08	2,150.08	7.49	7.50	152.53	0.27	60.00	61.74	46.75	14.99	4.118	Alert
2,200.00	2,199.96	2,200.06	2,200.06	7.67	7.68	153.16	0.27	60.00	63.09	47.75	15.34	4.112	Alert
2,250.00	2,249.92	2,250.02	2,250.02	7.84	7.86	153.92	0.27	60.00	64.82	49.12	15.70	4.129	Alert
2,300.00	2,299.88	2,300.02	2,299.98	8.02	8.04	154.68	0.27	60.00	66.63	50.58	16.05	4.151	Alert
2,350.00	2,349.84	2,349.94	2,349.94	8.19	8.22	155.40	0.27	60.00	68.44	52.04	16.40	4.172	Alert
2,400.00	2,399.80	2,400.10	2,399.90	8.37	8.39	156.08	0.27	60.00	70.27	53.51	16.76	4.193	Alert
2,450.00	2,449.76	2,449.86	2,449.86	8.54	8.57	156.73	0.27	60.00	72.11	55.00	17.11	4.214	Alert
2,500.00	2,499.72	2,500.18	2,499.82	8.72	8.75	157.34	0.27	60.00	73.96	56.49	17.47	4.234	Alert
2,550.00	2,549.68	2,549.78	2,549.78	8.90	8.93	157.92	0.27	60.00	75.81	57.99	17.82	4.254	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 332H - 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	2,599.64	2,600.26	2,599.74	9.07	9.11	158.48	0.27	60.00	77.67	59.49	18.18	4.273	Alert
2,650.00	2,649.60	2,649.70	2,649.70	9.25	9.29	159.01	0.27	60.00	79.54	61.01	18.53	4.293	Alert
2,700.00	2,699.56	2,700.34	2,699.66	9.43	9.47	159.51	0.27	60.00	81.42	62.53	18.89	4.311	Alert
2,750.00	2,749.52	2,749.62	2,749.62	9.61	9.65	160.00	0.27	60.00	83.30	64.06	19.24	4.329	Alert
2,800.00	2,799.48	2,800.42	2,799.58	9.78	9.83	160.46	0.27	60.00	85.18	65.58	19.60	4.347	Alert
2,850.00	2,849.44	2,849.54	2,849.54	9.96	10.00	160.90	0.27	60.00	87.07	67.12	19.95	4.365	Alert
2,900.00	2,899.40	2,900.50	2,899.50	10.14	10.19	161.32	0.27	60.00	88.97	68.66	20.31	4.381	Alert
2,950.00	2,949.36	2,949.46	2,949.46	10.32	10.36	161.73	0.27	60.00	90.87	70.21	20.66	4.398	Alert
3,000.00	2,999.32	2,999.42	2,999.42	10.49	10.54	162.11	0.27	60.00	92.78	71.76	21.02	4.415	Alert
3,050.00	3,049.28	3,048.90	3,048.90	10.67	10.72	162.38	0.41	60.15	94.81	73.45	21.37	4.437	Alert
3,100.00	3,099.24	3,098.35	3,098.35	10.85	10.89	162.43	0.85	60.62	97.11	75.39	21.72	4.471	Alert
3,150.00	3,149.20	3,147.79	3,147.77	11.03	11.07	162.29	1.57	61.39	99.65	77.58	22.07	4.516	Alert
3,200.00	3,199.16	3,202.61	3,197.35	11.21	11.26	161.97	2.57	62.46	102.44	80.00	22.44	4.566	Alert
3,250.00	3,249.12	3,247.31	3,247.25	11.38	11.42	161.63	3.63	63.59	105.28	82.50	22.77	4.623	Alert
3,300.00	3,299.08	3,302.78	3,297.14	11.56	11.61	161.31	4.68	64.72	108.12	84.97	23.14	4.671	Alert
3,350.00	3,349.04	3,347.14	3,347.03	11.74	11.77	161.01	5.74	65.85	110.96	87.48	23.48	4.726	Alert
3,400.00	3,399.00	3,402.95	3,396.92	11.92	11.97	160.72	6.80	66.98	113.81	89.96	23.85	4.771	Alert
3,450.00	3,448.96	3,446.97	3,446.81	12.10	12.12	160.44	7.86	68.11	116.66	92.47	24.19	4.823	Alert
3,500.00	3,498.92	3,503.11	3,496.70	12.28	12.32	160.18	8.91	69.24	119.51	94.95	24.56	4.866	Alert
3,550.00	3,548.88	3,546.80	3,546.60	12.46	12.48	159.93	9.97	70.37	122.36	97.47	24.89	4.916	Alert
3,600.00	3,598.84	3,603.28	3,596.49	12.63	12.68	159.70	11.03	71.50	125.22	99.95	25.27	4.955	Alert
3,650.00	3,648.80	3,646.63	3,646.38	12.81	12.83	159.47	12.09	72.63	128.08	102.48	25.60	5.003	
3,700.00	3,698.76	3,703.45	3,696.27	12.99	13.03	159.25	13.14	73.76	130.94	104.96	25.98	5.040	
3,750.00	3,748.72	3,746.46	3,746.16	13.17	13.19	159.04	14.20	74.89	133.80	107.49	26.31	5.086	
3,800.00	3,798.68	3,803.62	3,796.05	13.35	13.39	158.85	15.26	76.02	136.66	109.97	26.69	5.120	
3,850.00	3,848.64	3,846.30	3,845.95	13.53	13.54	158.65	16.32	77.15	139.53	112.51	27.02	5.164	
3,900.00	3,898.60	3,903.79	3,895.84	13.71	13.74	158.47	17.37	78.28	142.40	115.00	27.40	5.197	
3,950.00	3,948.56	3,946.13	3,945.73	13.89	13.89	158.30	18.43	79.41	145.26	117.54	27.73	5.239	
4,000.00	3,998.52	4,003.96	3,995.62	14.07	14.10	158.13	19.49	80.54	148.13	120.02	28.11	5.270	
4,050.00	4,048.47	4,045.96	4,045.51	14.25	14.25	157.96	20.55	81.67	151.01	122.57	28.44	5.310	
4,100.00	4,098.43	4,104.13	4,095.40	14.43	14.46	157.81	21.60	82.80	153.88	125.05	28.82	5.339	
4,150.00	4,148.39	4,145.79	4,145.30	14.61	14.60	157.66	22.66	83.93	156.75	127.60	29.15	5.378	
4,200.00	4,198.35	4,204.29	4,195.19	14.79	14.81	157.51	23.72	85.06	159.62	130.09	29.53	5.405	
4,250.00	4,248.31	4,245.62	4,245.08	14.97	14.96	157.37	24.78	86.19	162.50	132.64	29.86	5.442	
4,300.00	4,298.27	4,304.46	4,294.97	15.14	15.17	157.23	25.83	87.32	165.38	135.13	30.25	5.467	
4,350.00	4,348.23	4,345.45	4,344.86	15.32	15.32	157.10	26.89	88.45	168.25	137.68	30.57	5.504	
4,400.00	4,398.19	4,404.63	4,394.75	15.50	15.53	156.98	27.95	89.58	171.13	140.17	30.96	5.528	
4,450.00	4,448.15	4,445.28	4,444.65	15.68	15.67	156.86	29.01	90.71	174.01	142.73	31.28	5.563	
4,500.00	4,498.11	4,504.80	4,494.54	15.86	15.88	156.74	30.06	91.84	176.89	145.22	31.67	5.585	
4,550.00	4,548.07	4,545.12	4,544.43	16.04	16.03	156.62	31.12	92.97	179.77	147.77	31.99	5.619	
4,600.00	4,598.03	4,604.97	4,594.32	16.22	16.24	156.51	32.18	94.10	182.65	150.26	32.39	5.640	
4,650.00	4,647.99	4,644.95	4,644.21	16.40	16.38	156.40	33.24	95.23	185.53	152.82	32.71	5.673	
4,700.00	4,697.95	4,705.14	4,694.10	16.58	16.60	156.30	34.29	96.36	188.41	155.31	33.10	5.692	
4,750.00	4,747.91	4,744.78	4,744.00	16.76	16.74	156.20	35.35	97.49	191.30	157.88	33.42	5.724	
4,800.00	4,797.87	4,805.31	4,793.89	16.94	16.96	156.10	36.41	98.62	194.18	160.37	33.81	5.743	
4,850.00	4,847.83	4,844.61	4,843.78	17.12	17.10	156.01	37.47	99.75	197.06	162.93	34.13	5.774	
4,900.00	4,897.79	4,905.47	4,893.67	17.30	17.31	155.91	38.52	100.88	199.95	165.42	34.53	5.791	
4,950.00	4,947.75	4,944.44	4,943.56	17.48	17.45	155.82	39.58	102.01	202.83	167.99	34.84	5.821	
5,000.00	4,997.71	5,005.64	4,993.46	17.66	17.67	155.74	40.64	103.14	205.72	170.48	35.24	5.838	
5,050.00	5,047.67	5,044.27	5,043.35	17.84	17.81	155.65	41.70	104.27	208.60	173.05	35.56	5.867	
5,100.00	5,097.63	5,105.81	5,093.24	18.02	18.03	155.57	42.75	105.40	211.49	175.53	35.95	5.882	
5,150.00	5,147.59	5,144.10	5,143.13	18.20	18.17	155.49	43.81	106.53	214.38	178.11	36.27	5.911	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 332H - 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	5,197.55	5,205.98	5,193.02	18.38	18.39	155.41	44.87	107.66	217.26	180.59	36.67	5.925	
5,250.00	5,247.51	5,243.94	5,242.91	18.56	18.52	155.33	45.93	108.79	220.15	183.17	36.98	5.953	
5,300.00	5,297.47	5,306.15	5,292.81	18.74	18.75	155.26	46.98	109.92	223.04	185.65	37.38	5.966	
5,350.00	5,347.43	5,343.77	5,342.70	18.92	18.88	155.19	48.04	111.05	225.93	188.23	37.70	5.993	
5,400.00	5,397.39	5,393.68	5,392.59	19.10	19.06	155.12	49.10	112.19	228.82	190.76	38.05	6.013	
5,450.00	5,447.35	5,443.60	5,442.48	19.28	19.24	155.05	50.16	113.32	231.70	193.29	38.41	6.032	
5,500.00	5,497.31	5,506.49	5,492.37	19.46	19.46	154.98	51.21	114.45	234.59	195.78	38.81	6.044	
5,550.00	5,547.27	5,543.43	5,542.26	19.64	19.60	154.92	52.27	115.58	237.48	198.36	39.12	6.070	
5,600.00	5,597.23	5,593.35	5,592.16	19.82	19.77	154.85	53.33	116.71	240.37	200.89	39.48	6.088	
5,650.00	5,647.19	5,643.26	5,642.05	20.00	19.95	154.79	54.39	117.84	243.26	203.42	39.84	6.106	
5,700.00	5,697.15	5,706.82	5,691.94	20.18	20.18	154.73	55.44	118.97	246.15	205.91	40.24	6.117	
5,750.00	5,747.11	5,743.09	5,741.83	20.36	20.31	154.67	56.50	120.10	249.04	208.49	40.55	6.141	
5,800.00	5,797.07	5,806.99	5,791.72	20.54	20.54	154.61	57.56	121.23	251.94	210.98	40.96	6.151	
5,850.00	5,847.03	5,842.92	5,841.61	20.73	20.67	154.56	58.62	122.36	254.83	213.56	41.27	6.175	
5,900.00	5,896.99	5,892.84	5,891.51	20.91	20.85	154.50	59.67	123.49	257.72	216.09	41.62	6.192	
5,950.00	5,946.95	5,942.76	5,941.40	21.09	21.02	154.45	60.73	124.62	260.61	218.63	41.98	6.208	
6,000.00	5,996.91	6,007.33	5,991.29	21.27	21.26	154.39	61.79	125.75	263.50	221.11	42.39	6.216	
6,050.00	6,046.87	6,042.59	6,041.18	21.45	21.38	154.34	62.84	126.88	266.39	223.70	42.70	6.239	
6,100.00	6,096.83	6,107.50	6,091.07	21.63	21.61	154.29	63.90	128.01	269.29	226.18	43.11	6.247	
6,150.00	6,146.79	6,142.42	6,140.96	21.81	21.74	154.24	64.96	129.14	272.18	228.77	43.41	6.270	
6,200.00	6,196.75	6,207.67	6,190.86	21.99	21.97	154.19	66.02	130.27	275.07	231.25	43.82	6.277	
6,250.00	6,246.71	6,242.25	6,240.75	22.17	22.10	154.14	67.07	131.40	277.96	233.84	44.12	6.299	
6,300.00	6,296.67	6,307.83	6,290.64	22.35	22.33	154.10	68.13	132.53	280.86	236.32	44.54	6.306	
6,350.00	6,346.63	6,342.08	6,340.53	22.53	22.46	154.05	69.19	133.66	283.75	238.91	44.84	6.328	
6,400.00	6,396.59	6,408.00	6,390.42	22.71	22.69	154.01	70.25	134.79	286.64	241.39	45.25	6.334	
6,450.00	6,446.55	6,441.91	6,440.31	22.89	22.81	153.96	71.30	135.92	289.54	243.98	45.55	6.356	
6,500.00	6,496.51	6,508.17	6,490.21	23.07	23.05	153.92	72.36	137.05	292.43	246.46	45.97	6.361	
6,550.00	6,546.46	6,541.74	6,540.10	23.25	23.17	153.88	73.42	138.18	295.33	249.06	46.27	6.383	
6,600.00	6,596.42	6,608.34	6,589.99	23.43	23.41	153.84	74.48	139.31	298.22	251.53	46.69	6.388	
6,650.00	6,646.38	6,641.58	6,639.88	23.61	23.53	153.80	75.53	140.44	301.11	254.13	46.98	6.409	
6,700.00	6,696.34	6,708.51	6,689.77	23.79	23.77	153.76	76.59	141.57	304.01	256.60	47.40	6.413	
6,750.00	6,746.30	6,741.41	6,739.67	23.97	23.89	153.72	77.65	142.70	306.90	259.20	47.70	6.434	
6,800.00	6,796.26	6,808.68	6,789.56	24.15	24.13	153.68	78.71	143.83	309.80	261.68	48.12	6.438	
6,850.00	6,846.22	6,841.24	6,839.45	24.33	24.25	153.64	79.76	144.96	312.69	264.28	48.42	6.459	
6,900.00	6,896.18	6,908.85	6,889.34	24.51	24.49	153.60	80.82	146.09	315.59	266.75	48.84	6.462	
6,950.00	6,946.14	6,941.07	6,939.23	24.70	24.60	153.57	81.88	147.22	318.48	269.35	49.13	6.482	
7,000.00	6,996.10	7,009.01	6,989.12	24.88	24.85	153.53	82.94	148.35	321.38	271.82	49.55	6.486	
7,050.00	7,046.06	7,040.90	7,039.02	25.06	24.96	153.50	83.99	149.48	324.27	274.43	49.85	6.505	
7,100.00	7,096.02	7,090.82	7,088.91	25.24	25.14	153.46	85.05	150.61	327.17	276.96	50.20	6.517	
7,150.00	7,145.98	7,140.73	7,138.80	25.42	25.32	153.43	86.11	151.74	330.06	279.50	50.56	6.528	
7,200.00	7,195.94	7,209.35	7,188.69	25.60	25.57	153.40	87.17	152.87	332.96	281.97	50.99	6.530	
7,250.00	7,245.90	7,240.56	7,238.58	25.78	25.68	153.36	88.22	154.00	335.86	284.58	51.28	6.550	
7,300.00	7,295.86	7,309.52	7,288.47	25.96	25.93	153.33	89.28	155.13	338.75	287.05	51.70	6.552	
7,350.00	7,345.82	7,340.40	7,338.37	26.14	26.04	153.30	90.34	156.26	341.65	289.65	51.99	6.571	
7,400.00	7,395.78	7,409.69	7,388.26	26.32	26.29	153.27	91.40	157.39	344.54	292.12	52.42	6.573	
7,450.00	7,445.74	7,440.23	7,438.15	26.50	26.39	153.24	92.45	158.52	347.44	294.73	52.71	6.592	
7,500.00	7,495.70	7,509.86	7,488.04	26.68	26.64	153.21	93.51	159.65	350.34	297.20	53.14	6.593	
7,550.00	7,545.66	7,540.06	7,537.93	26.86	26.75	153.18	94.57	160.78	353.23	299.81	53.42	6.612	
7,600.00	7,595.62	7,589.97	7,587.82	27.04	26.93	153.15	95.63	161.91	356.13	302.35	53.78	6.622	
7,650.00	7,645.58	7,639.89	7,637.72	27.22	27.11	153.12	96.68	163.04	359.03	304.88	54.14	6.631	
7,700.00	7,695.54	7,689.81	7,687.61	27.40	27.29	153.09	97.74	164.17	361.92	307.42	54.50	6.641	
7,750.00	7,745.50	7,739.72	7,737.50	27.58	27.47	153.07	98.80	165.30	364.82	309.96	54.86	6.650	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 332H - 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	7,795.46	7,789.64	7,787.39	27.77	27.65	153.04	99.86	166.43	367.72	312.50	55.21	6.660	
7,850.00	7,845.42	7,839.55	7,837.28	27.95	27.83	153.01	100.91	167.56	370.61	315.04	55.57	6.669	
7,900.00	7,895.38	7,889.47	7,887.17	28.13	28.01	152.99	101.97	168.69	373.51	317.58	55.93	6.678	
7,950.00	7,945.34	7,939.38	7,937.07	28.31	28.19	152.96	103.03	169.82	376.41	320.12	56.29	6.687	
8,000.00	7,995.30	7,989.30	7,986.96	28.49	28.37	152.94	104.09	170.95	379.30	322.66	56.65	6.696	
8,050.00	8,045.26	8,039.22	8,036.85	28.67	28.55	152.91	105.14	172.08	382.20	325.20	57.01	6.705	
8,100.00	8,095.22	8,089.13	8,086.74	28.85	28.72	152.89	106.20	173.21	385.10	327.73	57.36	6.713	
8,150.00	8,145.18	8,139.05	8,136.63	29.03	28.90	152.86	107.26	174.34	388.00	330.27	57.72	6.722	
8,200.00	8,195.14	8,188.96	8,186.52	29.21	29.08	152.84	108.32	175.47	390.89	332.81	58.08	6.730	
8,250.00	8,245.10	8,238.88	8,236.42	29.39	29.26	152.81	109.37	176.60	393.79	335.35	58.44	6.739	
8,300.00	8,295.06	8,288.79	8,286.31	29.57	29.44	152.79	110.43	177.73	396.69	337.89	58.80	6.747	
8,350.00	8,345.02	8,338.71	8,336.20	29.75	29.62	152.77	111.49	178.86	399.59	340.43	59.15	6.755	
8,400.00	8,394.98	8,388.63	8,386.09	29.93	29.80	152.74	112.55	179.99	402.48	342.97	59.51	6.763	
8,450.00	8,444.94	8,438.54	8,435.98	30.11	29.98	152.72	113.60	181.12	405.38	345.51	59.87	6.771	
8,500.00	8,494.90	8,488.46	8,485.88	30.30	30.16	152.70	114.66	182.25	408.28	348.05	60.23	6.779	
8,550.00	8,544.86	8,538.37	8,535.77	30.48	30.34	152.68	115.72	183.39	411.18	350.59	60.59	6.787	
8,600.00	8,594.82	8,588.29	8,585.66	30.66	30.52	152.66	116.78	184.52	414.07	353.13	60.94	6.794	
8,650.00	8,644.78	8,638.20	8,635.55	30.84	30.70	152.64	117.83	185.65	416.97	355.67	61.30	6.802	
8,700.00	8,694.74	8,688.12	8,685.44	31.02	30.88	152.62	118.89	186.78	419.87	358.21	61.66	6.809	
8,750.00	8,744.70	8,738.04	8,735.33	31.20	31.06	152.60	119.95	187.91	422.77	360.75	62.02	6.817	
8,800.00	8,794.66	8,787.95	8,785.23	31.38	31.23	152.57	121.01	189.04	425.67	363.29	62.38	6.824	
8,850.00	8,844.62	8,837.87	8,835.12	31.56	31.41	152.55	122.06	190.17	428.57	365.83	62.74	6.831	
8,900.00	8,894.58	8,887.78	8,885.01	31.74	31.59	152.54	123.12	191.30	431.46	368.37	63.09	6.838	
8,950.00	8,944.54	8,937.70	8,934.90	31.92	31.77	152.52	124.18	192.43	434.36	370.91	63.45	6.845	
9,000.00	8,994.50	8,987.61	8,984.79	32.10	31.95	152.50	125.24	193.56	437.26	373.45	63.81	6.852	
9,050.00	9,044.45	9,037.53	9,034.68	32.28	32.13	152.48	126.29	194.69	440.16	375.99	64.17	6.859	
9,100.00	9,094.41	9,087.45	9,084.58	32.46	32.31	152.46	127.35	195.82	443.06	378.53	64.53	6.866	
9,150.00	9,144.37	9,137.36	9,134.47	32.65	32.49	152.44	128.41	196.95	445.96	381.07	64.89	6.873	
9,200.00	9,194.33	9,187.28	9,184.36	32.83	32.67	152.42	129.46	198.08	448.85	383.61	65.24	6.880	
9,250.00	9,244.29	9,237.19	9,234.25	33.01	32.85	152.40	130.52	199.21	451.75	386.15	65.60	6.886	
9,300.00	9,294.25	9,287.11	9,284.14	33.19	33.03	152.39	131.58	200.34	454.65	388.69	65.96	6.893	
9,350.00	9,344.21	9,337.02	9,334.03	33.37	33.21	152.37	132.64	201.47	457.55	391.23	66.32	6.899	
9,400.00	9,394.17	9,386.94	9,383.93	33.55	33.39	152.35	133.69	202.60	460.45	393.77	66.68	6.906	
9,450.00	9,444.13	9,436.86	9,433.82	33.73	33.57	152.33	134.75	203.73	463.35	396.31	67.04	6.912	
9,500.00	9,494.09	9,486.77	9,483.71	33.91	33.75	152.32	135.81	204.86	466.25	398.85	67.39	6.918	
9,550.00	9,544.05	9,536.69	9,533.60	34.09	33.93	152.30	136.87	205.99	469.14	401.39	67.75	6.924	
9,600.00	9,594.01	9,586.60	9,583.49	34.27	34.11	152.29	137.92	207.12	472.04	403.93	68.11	6.930	
9,650.00	9,643.97	9,636.52	9,633.38	34.45	34.28	152.27	138.98	208.25	474.94	406.47	68.47	6.937	
9,700.00	9,693.93	9,686.43	9,683.28	34.63	34.46	152.25	140.04	209.38	477.84	409.01	68.83	6.943	
9,750.00	9,743.89	9,736.35	9,733.17	34.82	34.64	152.24	141.10	210.51	480.74	411.55	69.19	6.948	
9,800.00	9,793.85	9,786.27	9,783.06	35.00	34.82	152.22	142.15	211.64	483.64	414.09	69.54	6.954	
9,850.00	9,843.81	9,836.18	9,832.95	35.18	35.00	152.21	143.21	212.77	486.54	416.64	69.90	6.960	
9,900.00	9,893.77	9,886.10	9,882.84	35.36	35.18	152.19	144.27	213.90	489.44	419.18	70.26	6.966	
9,950.00	9,943.73	9,936.01	9,932.73	35.54	35.36	152.18	145.33	215.03	492.34	421.72	70.62	6.972	
10,000.00	9,993.69	9,985.93	9,982.63	35.72	35.54	152.16	146.38	216.16	495.24	424.26	70.98	6.977	
10,050.00	10,043.65	10,035.84	10,032.52	35.90	35.72	152.15	147.44	217.29	498.14	426.80	71.34	6.983	
10,100.00	10,093.61	10,085.76	10,082.41	36.08	35.90	152.13	148.50	218.42	501.03	429.34	71.70	6.988	
10,150.00	10,143.57	10,135.68	10,132.30	36.26	36.08	152.12	149.56	219.55	503.93	431.88	72.05	6.994	
10,200.00	10,193.53	10,185.59	10,182.19	36.44	36.26	152.10	150.61	220.68	506.83	434.42	72.41	6.999	
10,250.00	10,243.49	10,235.51	10,232.08	36.62	36.44	152.09	151.67	221.81	509.73	436.96	72.77	7.005	
10,300.00	10,293.45	10,285.42	10,281.98	36.81	36.62	152.07	152.73	222.94	512.63	439.50	73.13	7.010	
10,350.00	10,343.41	10,335.34	10,331.87	36.99	36.80	152.06	153.79	224.07	515.53	442.04	73.49	7.015	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 332H - Wellbore #1 - Permit Plan 1 — Offset Site Error: 5.00 ft

Survey Program: 0-MWD+HDGM — Offset Well Error: 0.50 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	
10,400.00	10,393.37	10,385.25	10,381.76	37.17	36.98	152.05	154.84	225.20	518.43	444.58	73.85	7.020	
10,450.00	10,443.33	10,435.17	10,431.65	37.35	37.16	152.03	155.90	226.33	521.33	447.12	74.21	7.026	
10,500.00	10,493.29	10,485.09	10,481.54	37.53	37.34	152.02	156.96	227.46	524.23	449.67	74.56	7.031	
10,550.00	10,543.25	10,535.01	10,531.44	37.71	37.52	152.01	158.02	228.59	527.01	452.09	74.92	7.034	
10,600.00	10,593.24	10,585.27	10,581.68	37.89	37.70	151.98	159.08	229.73	529.26	453.98	75.28	7.030	
10,650.00	10,643.23	10,640.88	10,637.27	38.07	37.89	151.93	159.95	230.66	530.64	454.97	75.67	7.012	
10,700.00	10,693.23	10,696.53	10,692.92	38.24	38.09	89.97	160.27	231.00	531.00	454.95	76.05	6.982	
10,750.00	10,743.23	10,746.94	10,743.33	38.42	38.27	89.97	160.27	231.00	531.00	454.59	76.41	6.950	
10,800.00	10,793.23	10,803.06	10,793.33	38.59	38.47	89.97	160.27	231.00	531.00	454.22	76.78	6.916	
10,850.00	10,843.23	10,846.94	10,843.33	38.77	38.63	89.97	160.27	231.00	531.00	453.89	77.11	6.886	
10,900.00	10,893.23	10,903.06	10,893.33	38.94	38.83	89.97	160.27	231.00	531.00	453.51	77.49	6.853	
10,950.00	10,943.23	10,946.94	10,943.33	39.12	38.98	89.97	160.27	231.00	531.00	453.18	77.82	6.824	
11,000.00	10,993.23	11,003.06	10,993.33	39.29	39.18	89.97	160.27	231.00	531.00	452.81	78.19	6.791	
11,000.02	10,993.25	11,003.04	10,993.35	39.29	39.18	89.97	160.27	231.00	531.00	452.81	78.19	6.791	
11,050.00	11,043.22	11,046.93	11,043.32	39.47	39.34	176.35	160.27	231.00	531.69	453.17	78.53	6.771	
11,100.00	11,092.99	11,096.33	11,092.67	39.65	39.50	176.55	158.45	231.01	536.33	457.46	78.87	6.800	
11,150.00	11,142.19	11,144.41	11,140.38	39.84	39.66	-176.97	152.62	231.05	545.25	466.05	79.20	6.885	
11,200.00	11,191.09	11,191.53	11,186.51	40.03	39.80	-152.52	143.04	231.11	555.52	476.01	79.51	6.987	
11,250.00	11,239.59	11,238.14	11,231.21	40.21	39.94	-134.06	129.87	231.19	565.79	485.98	79.81	7.090	
11,300.00	11,287.32	11,284.30	11,274.27	40.38	40.07	-121.41	113.29	231.29	575.96	495.87	80.09	7.192	
11,350.00	11,333.92	11,330.05	11,315.50	40.54	40.19	-112.61	93.49	231.41	585.93	505.58	80.35	7.293	
11,400.00	11,379.03	11,375.45	11,354.72	40.69	40.30	-106.21	70.65	231.56	595.62	515.03	80.59	7.391	
11,450.00	11,422.32	11,420.54	11,391.77	40.83	40.40	-101.34	44.96	231.72	604.94	524.12	80.82	7.485	
11,500.00	11,463.45	11,465.38	11,426.49	40.97	40.49	-97.51	16.61	231.89	613.81	532.78	81.03	7.575	
11,550.00	11,502.11	11,510.00	11,458.74	41.09	40.59	-94.41	-14.21	232.08	622.16	540.93	81.23	7.659	
11,600.00	11,538.00	11,554.43	11,488.37	41.21	40.70	-91.87	-47.30	232.29	629.92	548.50	81.42	7.737	
11,650.00	11,570.86	11,598.71	11,515.26	41.32	40.80	-89.78	-82.46	232.51	637.02	555.42	81.60	7.807	
11,700.00	11,600.43	11,642.86	11,539.30	41.43	40.90	-88.04	-119.49	232.74	643.41	561.63	81.78	7.868	
11,750.00	11,626.48	11,686.92	11,560.37	41.54	41.01	-86.62	-158.17	232.98	649.03	567.08	81.95	7.920	
11,800.00	11,648.83	11,730.90	11,578.37	41.65	41.11	-85.46	-198.28	233.23	653.85	571.73	82.12	7.962	
11,850.00	11,667.29	11,774.82	11,593.23	41.76	41.21	-84.55	-239.60	233.48	657.82	575.53	82.30	7.993	
11,900.00	11,681.74	11,818.71	11,604.87	41.87	41.31	-83.87	-281.90	233.74	660.92	578.45	82.47	8.014	
11,950.00	11,692.05	11,862.57	11,613.24	41.98	41.41	-83.40	-324.95	234.01	663.12	580.46	82.65	8.023	
12,000.00	11,698.15	11,906.43	11,618.29	42.09	41.51	-83.14	-368.50	234.28	664.40	581.56	82.84	8.020	
12,050.00	11,700.00	11,951.07	11,620.00	42.21	41.61	-83.08	-412.26	234.55	664.77	581.73	83.04	8.006	
12,100.00	11,700.00	12,000.23	11,620.00	42.32	41.72	-83.08	-462.26	234.86	664.76	581.51	83.25	7.985	
12,150.00	11,700.00	12,050.23	11,620.00	42.45	41.86	-83.08	-512.26	235.17	664.76	581.25	83.51	7.960	
12,200.00	11,700.00	12,100.23	11,620.00	42.59	41.99	-83.08	-562.26	235.48	664.76	580.99	83.77	7.935	
12,250.00	11,700.00	12,150.23	11,620.00	42.74	42.15	-83.08	-612.26	235.80	664.75	580.67	84.08	7.906	
12,300.00	11,700.00	12,200.23	11,620.00	42.90	42.31	-83.08	-662.26	236.11	664.75	580.36	84.39	7.877	
12,350.00	11,700.00	12,250.23	11,620.00	43.08	42.49	-83.08	-712.26	236.42	664.75	580.01	84.74	7.845	
12,400.00	11,700.00	12,300.23	11,620.00	43.25	42.68	-83.08	-762.26	236.73	664.74	579.65	85.09	7.812	
12,450.00	11,700.00	12,350.23	11,620.00	43.45	42.88	-83.08	-812.25	237.04	664.74	579.24	85.50	7.775	
12,500.00	11,700.00	12,400.23	11,620.00	43.65	43.09	-83.08	-862.25	237.35	664.73	578.84	85.90	7.739	
12,550.00	11,700.00	12,450.23	11,620.00	43.87	43.31	-83.08	-912.25	237.66	664.73	578.39	86.34	7.699	
12,600.00	11,700.00	12,500.23	11,620.00	44.09	43.54	-83.08	-962.25	237.97	664.73	577.94	86.79	7.659	
12,650.00	11,700.00	12,550.23	11,620.00	44.34	43.79	-83.08	-1,012.25	238.28	664.72	577.45	87.27	7.616	
12,700.00	11,700.00	12,600.23	11,620.00	44.58	44.04	-83.08	-1,062.25	238.59	664.72	576.96	87.76	7.574	
12,750.00	11,700.00	12,650.23	11,620.00	44.84	44.31	-83.08	-1,112.25	238.90	664.72	576.42	88.29	7.528	
12,800.00	11,700.00	12,700.23	11,620.00	45.10	44.58	-83.08	-1,162.25	239.21	664.71	575.89	88.82	7.483	
12,850.00	11,700.00	12,750.23	11,620.00	45.39	44.87	-83.08	-1,212.25	239.52	664.71	575.31	89.40	7.436	
12,900.00	11,700.00	12,800.23	11,620.00	45.67	45.16	-83.08	-1,262.25	239.83	664.70	574.74	89.97	7.388	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 332H - 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	11,700.00	12,850.23	11,620.00	45.97	45.47	-83.08	-1,312.25	240.14	664.70	574.12	90.58	7.338	
13,000.00	11,700.00	12,900.23	11,620.00	46.28	45.78	-83.08	-1,362.24	240.45	664.70	573.51	91.19	7.289	
13,050.00	11,700.00	12,950.23	11,620.00	46.60	46.11	-83.08	-1,412.24	240.76	664.69	572.86	91.84	7.238	
13,100.00	11,700.00	13,000.23	11,620.00	46.92	46.44	-83.08	-1,462.24	241.07	664.69	572.21	92.48	7.187	
13,150.00	11,700.00	13,050.23	11,620.00	47.26	46.79	-83.08	-1,512.24	241.38	664.69	571.52	93.17	7.134	
13,200.00	11,700.00	13,100.23	11,620.00	47.60	47.13	-83.08	-1,562.24	241.69	664.68	570.83	93.85	7.082	
13,250.00	11,700.00	13,150.23	11,620.00	47.95	47.50	-83.08	-1,612.24	242.00	664.68	570.11	94.57	7.028	
13,300.00	11,700.00	13,200.23	11,620.00	48.31	47.86	-83.08	-1,662.24	242.31	664.67	569.39	95.29	6.975	
13,350.00	11,700.00	13,250.23	11,620.00	48.68	48.24	-83.08	-1,712.24	242.62	664.67	568.63	96.04	6.921	
13,400.00	11,700.00	13,300.23	11,620.00	49.06	48.62	-83.08	-1,762.24	242.93	664.67	567.88	96.79	6.867	
13,450.00	11,700.00	13,350.23	11,620.00	49.44	49.02	-83.08	-1,812.24	243.24	664.66	567.09	97.57	6.812	
13,500.00	11,700.00	13,400.23	11,620.00	49.83	49.41	-83.08	-1,862.23	243.55	664.66	566.31	98.35	6.758	
13,550.00	11,700.00	13,450.23	11,620.00	50.24	49.82	-83.08	-1,912.23	243.86	664.66	565.49	99.17	6.702	
13,600.00	11,700.00	13,500.23	11,620.00	50.64	50.23	-83.08	-1,962.23	244.17	664.65	564.67	99.98	6.648	
13,650.00	11,700.00	13,550.23	11,620.00	51.06	50.66	-83.08	-2,012.23	244.49	664.65	563.83	100.82	6.593	
13,700.00	11,700.00	13,600.23	11,620.00	51.48	51.08	-83.08	-2,062.23	244.80	664.64	562.99	101.66	6.538	
13,750.00	11,700.00	13,650.23	11,620.00	51.91	51.52	-83.08	-2,112.23	245.11	664.64	562.11	102.53	6.483	
13,800.00	11,700.00	13,700.23	11,620.00	52.34	51.96	-83.08	-2,162.23	245.42	664.64	561.24	103.39	6.428	
13,850.00	11,700.00	13,750.23	11,620.00	52.78	52.41	-83.08	-2,212.23	245.73	664.63	560.35	104.29	6.373	
13,900.00	11,700.00	13,800.23	11,620.00	53.23	52.86	-83.08	-2,262.23	246.04	664.63	559.45	105.18	6.319	
13,950.00	11,700.00	13,850.23	11,620.00	53.69	53.33	-83.08	-2,312.23	246.35	664.63	558.53	106.10	6.264	
14,000.00	11,700.00	13,900.23	11,620.00	54.14	53.79	-83.08	-2,362.22	246.66	664.62	557.60	107.02	6.210	
14,050.00	11,700.00	13,950.23	11,620.00	54.61	54.27	-83.08	-2,412.22	246.97	664.62	556.66	107.96	6.156	
14,100.00	11,700.00	14,000.23	11,620.00	55.08	54.74	-83.08	-2,462.22	247.28	664.61	555.72	108.90	6.103	
14,150.00	11,700.00	14,050.23	11,620.00	55.56	55.23	-83.08	-2,512.22	247.59	664.61	554.75	109.86	6.050	
14,200.00	11,700.00	14,100.23	11,620.00	56.04	55.71	-83.08	-2,562.22	247.90	664.61	553.78	110.82	5.997	
14,250.00	11,700.00	14,150.23	11,620.00	56.53	56.21	-83.08	-2,612.22	248.21	664.60	552.79	111.81	5.944	
14,300.00	11,700.00	14,200.23	11,620.00	57.02	56.71	-83.08	-2,662.22	248.52	664.60	551.81	112.79	5.892	
14,350.00	11,700.00	14,250.23	11,620.00	57.52	57.21	-83.08	-2,712.22	248.83	664.59	550.80	113.80	5.840	
14,400.00	11,700.00	14,300.23	11,620.00	58.02	57.72	-83.08	-2,762.22	249.14	664.59	549.79	114.80	5.789	
14,450.00	11,700.00	14,350.23	11,620.00	58.53	58.24	-83.08	-2,812.22	249.45	664.59	548.77	115.82	5.738	
14,500.00	11,700.00	14,400.23	11,620.00	59.04	58.75	-83.08	-2,862.22	249.76	664.58	547.74	116.84	5.688	
14,550.00	11,700.00	14,450.23	11,620.00	59.56	59.28	-83.08	-2,912.21	250.07	664.58	546.70	117.88	5.638	
14,600.00	11,700.00	14,500.23	11,620.00	60.08	59.80	-83.08	-2,962.21	250.38	664.58	545.65	118.92	5.588	
14,650.00	11,700.00	14,550.23	11,620.00	60.61	60.33	-83.08	-3,012.21	250.69	664.57	544.59	119.98	5.539	
14,700.00	11,700.00	14,600.23	11,620.00	61.14	60.87	-83.08	-3,062.21	251.00	664.57	543.53	121.04	5.491	
14,750.00	11,700.00	14,650.23	11,620.00	61.67	61.41	-83.08	-3,112.21	251.31	664.56	542.45	122.11	5.442	
14,800.00	11,700.00	14,700.23	11,620.00	62.21	61.95	-83.08	-3,162.21	251.62	664.56	541.38	123.19	5.395	
14,850.00	11,700.00	14,750.23	11,620.00	62.75	62.50	-83.08	-3,212.21	251.93	664.56	540.28	124.27	5.348	
14,900.00	11,700.00	14,800.23	11,620.00	63.30	63.05	-83.08	-3,262.21	252.24	664.55	539.19	125.36	5.301	
14,950.00	11,700.00	14,850.23	11,620.00	63.85	63.60	-83.08	-3,312.21	252.55	664.55	538.08	126.47	5.255	
15,000.00	11,700.00	14,900.23	11,620.00	64.40	64.16	-83.08	-3,362.21	252.86	664.55	536.98	127.57	5.209	
15,050.00	11,700.00	14,950.23	11,620.00	64.96	64.72	-83.08	-3,412.20	253.17	664.54	535.86	128.68	5.164	
15,100.00	11,700.00	15,000.23	11,620.00	65.51	65.28	-83.08	-3,462.20	253.49	664.54	534.74	129.80	5.120	
15,150.00	11,700.00	15,050.23	11,620.00	66.08	65.85	-83.08	-3,512.20	253.80	664.53	533.60	130.93	5.075	
15,200.00	11,700.00	15,100.23	11,620.00	66.64	66.42	-83.08	-3,562.20	254.11	664.53	532.47	132.06	5.032	
15,250.00	11,700.00	15,150.23	11,620.00	67.21	67.00	-83.08	-3,612.20	254.42	664.53	531.32	133.20	4.989	Alert
15,300.00	11,700.00	15,200.23	11,620.00	67.78	67.57	-83.08	-3,662.20	254.73	664.52	530.18	134.34	4.946	Alert
15,350.00	11,700.00	15,250.23	11,620.00	68.36	68.15	-83.08	-3,712.20	255.04	664.52	529.02	135.50	4.904	Alert
15,400.00	11,700.00	15,300.23	11,620.00	68.94	68.73	-83.08	-3,762.20	255.35	664.52	527.86	136.65	4.863	Alert
15,450.00	11,700.00	15,350.23	11,620.00	69.52	69.32	-83.08	-3,812.20	255.66	664.51	526.70	137.82	4.822	Alert
15,500.00	11,700.00	15,400.23	11,620.00	70.10	69.91	-83.08	-3,862.20	255.97	664.51	525.53	138.98	4.781	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 332H - 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	11,700.00	15,450.23	11,620.00	70.69	70.50	-83.08	-3,912.19	256.28	664.50	524.35	140.16	4.741	Alert
15,600.00	11,700.00	15,500.23	11,620.00	71.28	71.09	-83.08	-3,962.19	256.59	664.50	523.17	141.33	4.702	Alert
15,650.00	11,700.00	15,550.23	11,620.00	71.87	71.69	-83.08	-4,012.19	256.90	664.50	521.98	142.52	4.663	Alert
15,700.00	11,700.00	15,600.23	11,620.00	72.46	72.29	-83.08	-4,062.19	257.21	664.49	520.79	143.70	4.624	Alert
15,750.00	11,700.00	15,650.23	11,620.00	73.06	72.89	-83.08	-4,112.19	257.52	664.49	519.59	144.90	4.586	Alert
15,800.00	11,700.00	15,700.23	11,620.00	73.66	73.49	-83.08	-4,162.19	257.83	664.49	518.39	146.09	4.548	Alert
15,850.00	11,700.00	15,750.23	11,620.00	74.26	74.10	-83.08	-4,212.19	258.14	664.48	517.19	147.30	4.511	Alert
15,900.00	11,700.00	15,800.23	11,620.00	74.86	74.70	-83.08	-4,262.19	258.45	664.48	515.98	148.50	4.475	Alert
15,950.00	11,700.00	15,850.23	11,620.00	75.47	75.31	-83.08	-4,312.19	258.76	664.47	514.76	149.71	4.438	Alert
16,000.00	11,700.00	15,900.23	11,620.00	76.08	75.92	-83.08	-4,362.19	259.07	664.47	513.54	150.93	4.403	Alert
16,050.00	11,700.00	15,950.23	11,620.00	76.69	76.54	-83.08	-4,412.19	259.38	664.47	512.32	152.15	4.367	Alert
16,100.00	11,700.00	16,000.23	11,620.00	77.30	77.15	-83.08	-4,462.18	259.69	664.46	511.09	153.37	4.332	Alert
16,150.00	11,700.00	16,050.23	11,620.00	77.92	77.77	-83.08	-4,512.18	260.00	664.46	509.86	154.60	4.298	Alert
16,200.00	11,700.00	16,100.23	11,620.00	78.53	78.39	-83.08	-4,562.18	260.31	664.46	508.63	155.83	4.264	Alert
16,250.00	11,700.00	16,150.23	11,620.00	79.15	79.01	-83.08	-4,612.18	260.62	664.45	507.39	157.06	4.231	Alert
16,300.00	11,700.00	16,200.23	11,620.00	79.77	79.63	-83.08	-4,662.18	260.93	664.45	506.15	158.30	4.197	Alert
16,350.00	11,700.00	16,250.23	11,620.00	80.39	80.26	-83.08	-4,712.18	261.24	664.44	504.90	159.54	4.165	Alert
16,400.00	11,700.00	16,300.23	11,620.00	81.02	80.89	-83.08	-4,762.18	261.55	664.44	503.65	160.79	4.132	Alert
16,450.00	11,700.00	16,350.23	11,620.00	81.64	81.52	-83.08	-4,812.18	261.86	664.44	502.40	162.04	4.101	Alert
16,500.00	11,700.00	16,400.23	11,620.00	82.27	82.14	-83.08	-4,862.18	262.18	664.43	501.15	163.29	4.069	Alert
16,550.00	11,700.00	16,450.23	11,620.00	82.90	82.78	-83.08	-4,912.18	262.49	664.43	499.89	164.54	4.038	Alert
16,600.00	11,700.00	16,500.23	11,620.00	83.53	83.41	-83.08	-4,962.17	262.80	664.42	498.62	165.80	4.007	Alert
16,650.00	11,700.00	16,550.23	11,620.00	84.16	84.05	-83.08	-5,012.17	263.11	664.42	497.36	167.06	3.977	Alert
16,700.00	11,700.00	16,600.23	11,620.00	84.79	84.68	-83.08	-5,062.17	263.42	664.42	496.09	168.33	3.947	Alert
16,750.00	11,700.00	16,650.23	11,620.00	85.43	85.32	-83.08	-5,112.17	263.73	664.41	494.82	169.60	3.918	Alert
16,800.00	11,700.00	16,700.23	11,620.00	86.06	85.96	-83.08	-5,162.17	264.04	664.41	493.54	170.87	3.889	Alert
16,850.00	11,700.00	16,750.23	11,620.00	86.70	86.60	-83.08	-5,212.17	264.35	664.41	492.27	172.14	3.860	Alert
16,900.00	11,700.00	16,800.23	11,620.00	87.34	87.24	-83.08	-5,262.17	264.66	664.40	490.99	173.41	3.831	Alert
16,950.00	11,700.00	16,850.23	11,620.00	87.98	87.89	-83.08	-5,312.17	264.97	664.40	489.70	174.70	3.803	Alert
17,000.00	11,700.00	16,900.23	11,620.00	88.62	88.53	-83.08	-5,362.17	265.28	664.39	488.42	175.98	3.775	Alert
17,050.00	11,700.00	16,950.23	11,620.00	89.27	89.18	-83.08	-5,412.17	265.59	664.39	487.13	177.26	3.748	Alert
17,100.00	11,700.00	17,000.23	11,620.00	89.91	89.82	-83.08	-5,462.17	265.90	664.39	485.84	178.55	3.721	Alert
17,150.00	11,700.00	17,050.23	11,620.00	90.56	90.47	-83.08	-5,512.16	266.21	664.38	484.55	179.84	3.694	Alert
17,200.00	11,700.00	17,100.23	11,620.00	91.21	91.12	-83.08	-5,562.16	266.52	664.38	483.25	181.13	3.668	Alert
17,250.00	11,700.00	17,150.23	11,620.00	91.86	91.77	-83.08	-5,612.16	266.83	664.38	481.95	182.42	3.642	Alert
17,300.00	11,700.00	17,200.23	11,620.00	92.50	92.43	-83.08	-5,662.16	267.14	664.37	480.65	183.72	3.616	Alert
17,350.00	11,700.00	17,250.23	11,620.00	93.16	93.08	-83.08	-5,712.16	267.45	664.37	479.35	185.02	3.591	Alert
17,400.00	11,700.00	17,300.23	11,620.00	93.81	93.73	-83.08	-5,762.16	267.76	664.36	478.05	186.32	3.566	Alert
17,450.00	11,700.00	17,350.23	11,620.00	94.46	94.39	-83.08	-5,812.16	268.07	664.36	476.74	187.62	3.541	Alert
17,500.00	11,700.00	17,400.23	11,620.00	95.12	95.05	-83.08	-5,862.16	268.38	664.36	475.43	188.93	3.516	Alert
17,550.00	11,700.00	17,450.23	11,620.00	95.77	95.70	-83.08	-5,912.16	268.69	664.35	474.12	190.23	3.492	Alert
17,600.00	11,700.00	17,500.23	11,620.00	96.43	96.36	-83.07	-5,962.16	269.00	664.35	472.81	191.54	3.468	Alert
17,650.00	11,700.00	17,550.23	11,620.00	97.09	97.02	-83.07	-6,012.15	269.31	664.35	471.49	192.86	3.445	Alert
17,700.00	11,700.00	17,600.23	11,620.00	97.74	97.68	-83.07	-6,062.15	269.62	664.34	470.17	194.17	3.421	Alert
17,750.00	11,700.00	17,650.23	11,620.00	98.40	98.34	-83.07	-6,112.15	269.93	664.34	468.85	195.48	3.398	Alert
17,800.00	11,700.00	17,700.23	11,620.00	99.06	99.01	-83.07	-6,162.15	270.24	664.33	467.53	196.80	3.376	Alert
17,850.00	11,700.00	17,750.23	11,620.00	99.73	99.67	-83.07	-6,212.15	270.55	664.33	466.21	198.12	3.353	Alert
17,900.00	11,700.00	17,800.23	11,620.00	100.39	100.33	-83.07	-6,262.15	270.86	664.33	464.89	199.44	3.331	Alert
17,950.00	11,700.00	17,850.23	11,620.00	101.05	101.00	-83.07	-6,312.15	271.18	664.32	463.56	200.77	3.309	Alert
18,000.00	11,700.00	17,900.23	11,620.00	101.71	101.67	-83.07	-6,362.15	271.49	664.32	462.23	202.09	3.287	Alert
18,050.00	11,700.00	17,950.23	11,620.00	102.38	102.33	-83.07	-6,412.15	271.80	664.32	460.90	203.42	3.266	Alert
18,100.00	11,700.00	18,000.23	11,620.00	103.05	103.00	-83.07	-6,462.15	272.11	664.31	459.57	204.74	3.245	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 332H - 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	11,700.00	18,050.23	11,620.00	103.71	103.67	-83.07	-6,512.14	272.42	664.31	458.23	206.07	3.224	Alert
18,200.00	11,700.00	18,100.23	11,620.00	104.38	104.34	-83.07	-6,562.14	272.73	664.30	456.90	207.40	3.203	Alert
18,250.00	11,700.00	18,150.23	11,620.00	105.05	105.01	-83.07	-6,612.14	273.04	664.30	455.56	208.74	3.182	Alert
18,300.00	11,700.00	18,200.23	11,620.00	105.72	105.68	-83.07	-6,662.14	273.35	664.30	454.22	210.07	3.162	Alert
18,350.00	11,700.00	18,250.23	11,620.00	106.39	106.35	-83.07	-6,712.14	273.66	664.29	452.88	211.41	3.142	Alert
18,400.00	11,700.00	18,300.23	11,620.00	107.06	107.03	-83.07	-6,762.14	273.97	664.29	451.54	212.74	3.122	Alert
18,450.00	11,700.00	18,350.23	11,620.00	107.73	107.70	-83.07	-6,812.14	274.28	664.29	450.20	214.08	3.103	Alert
18,500.00	11,700.00	18,400.23	11,620.00	108.40	108.37	-83.07	-6,862.14	274.59	664.28	448.86	215.42	3.084	Alert
18,550.00	11,700.00	18,450.23	11,620.00	109.08	109.05	-83.07	-6,912.14	274.90	664.28	447.51	216.77	3.064	Alert
18,600.00	11,700.00	18,500.23	11,620.00	109.75	109.72	-83.07	-6,962.14	275.21	664.27	446.16	218.11	3.046	Alert
18,650.00	11,700.00	18,550.23	11,620.00	110.42	110.40	-83.07	-7,012.14	275.52	664.27	444.82	219.45	3.027	Alert
18,700.00	11,700.00	18,600.23	11,620.00	111.10	111.08	-83.07	-7,062.13	275.83	664.27	443.47	220.80	3.008	Alert
18,750.00	11,700.00	18,650.23	11,620.00	111.78	111.75	-83.07	-7,112.13	276.14	664.26	442.11	222.15	2.990	Alert
18,800.00	11,700.00	18,700.23	11,620.00	112.45	112.43	-83.07	-7,162.13	276.45	664.26	440.76	223.50	2.972	Alert
18,850.00	11,700.00	18,750.23	11,620.00	113.13	113.11	-83.07	-7,212.13	276.76	664.25	439.41	224.85	2.954	Alert
18,900.00	11,700.00	18,800.23	11,620.00	113.81	113.79	-83.07	-7,262.13	277.07	664.25	438.05	226.20	2.937	Alert
18,950.00	11,700.00	18,850.23	11,620.00	114.49	114.47	-83.07	-7,312.13	277.38	664.25	436.70	227.55	2.919	Alert
19,000.00	11,700.00	18,900.23	11,620.00	115.16	115.15	-83.07	-7,362.13	277.69	664.24	435.34	228.90	2.902	Alert
19,050.00	11,700.00	18,950.23	11,620.00	115.84	115.83	-83.07	-7,412.13	278.00	664.24	433.98	230.26	2.885	Alert
19,100.00	11,700.00	19,000.23	11,620.00	116.52	116.51	-83.07	-7,462.13	278.31	664.24	432.62	231.61	2.868	Alert
19,150.00	11,700.00	19,050.23	11,620.00	117.21	117.20	-83.07	-7,512.13	278.62	664.23	431.26	232.97	2.851	Alert
19,200.00	11,700.00	19,100.23	11,620.00	117.89	117.88	-83.07	-7,562.12	278.93	664.23	429.90	234.33	2.835	Alert
19,250.00	11,700.00	19,150.23	11,620.00	118.57	118.56	-83.07	-7,612.12	279.24	664.22	428.54	235.69	2.818	Alert
19,300.00	11,700.00	19,200.23	11,620.00	119.25	119.25	-83.07	-7,662.12	279.55	664.22	427.17	237.05	2.802	Alert
19,350.00	11,700.00	19,250.23	11,620.00	119.93	119.93	-83.07	-7,712.12	279.87	664.22	425.81	238.41	2.786	Alert
19,400.00	11,700.00	19,300.23	11,620.00	120.62	120.62	-83.07	-7,762.12	280.18	664.21	424.44	239.77	2.770	Alert
19,450.00	11,700.00	19,350.23	11,620.00	121.30	121.30	-83.07	-7,812.12	280.49	664.21	423.07	241.14	2.755	Alert
19,500.00	11,700.00	19,400.23	11,620.00	121.99	121.99	-83.07	-7,862.12	280.80	664.21	421.71	242.50	2.739	Alert
19,550.00	11,700.00	19,450.23	11,620.00	122.67	122.68	-83.07	-7,912.12	281.11	664.20	420.34	243.87	2.724	Alert
19,600.00	11,700.00	19,500.23	11,620.00	123.36	123.36	-83.07	-7,962.12	281.42	664.20	418.97	245.23	2.708	Alert
19,650.00	11,700.00	19,550.23	11,620.00	124.04	124.05	-83.07	-8,012.12	281.73	664.19	417.60	246.60	2.693	Alert
19,700.00	11,700.00	19,600.23	11,620.00	124.73	124.74	-83.07	-8,062.12	282.04	664.19	416.22	247.97	2.679	Alert
19,750.00	11,700.00	19,650.23	11,620.00	125.42	125.43	-83.07	-8,112.11	282.35	664.19	414.85	249.34	2.664	Alert
19,800.00	11,700.00	19,700.23	11,620.00	126.11	126.12	-83.07	-8,162.11	282.66	664.18	413.48	250.71	2.649	Alert
19,850.00	11,700.00	19,750.23	11,620.00	126.79	126.80	-83.07	-8,212.11	282.97	664.18	412.10	252.08	2.635	Alert
19,900.00	11,700.00	19,800.23	11,620.00	127.48	127.49	-83.07	-8,262.11	283.28	664.18	410.73	253.45	2.621	Alert
19,950.00	11,700.00	19,850.23	11,620.00	128.17	128.19	-83.07	-8,312.11	283.59	664.17	409.35	254.82	2.606	Alert
20,000.00	11,700.00	19,900.23	11,620.00	128.86	128.88	-83.07	-8,362.11	283.90	664.17	407.97	256.20	2.592	Alert
20,050.00	11,700.00	19,950.23	11,620.00	129.55	129.57	-83.07	-8,412.11	284.21	664.16	406.59	257.57	2.579	Alert
20,100.00	11,700.00	20,000.23	11,620.00	130.24	130.26	-83.07	-8,462.11	284.52	664.16	405.21	258.95	2.565	Alert
20,150.00	11,700.00	20,050.23	11,620.00	130.93	130.95	-83.07	-8,512.11	284.83	664.16	403.83	260.32	2.551	Alert
20,200.00	11,700.00	20,100.23	11,620.00	131.62	131.64	-83.07	-8,562.11	285.14	664.15	402.45	261.70	2.538	Alert
20,250.00	11,700.00	20,150.23	11,620.00	132.31	132.34	-83.07	-8,612.10	285.45	664.15	401.07	263.08	2.525	Alert
20,300.00	11,700.00	20,200.23	11,620.00	133.01	133.03	-83.07	-8,662.10	285.76	664.15	399.69	264.46	2.511	Alert
20,350.00	11,700.00	20,250.23	11,620.00	133.70	133.72	-83.07	-8,712.10	286.07	664.14	398.31	265.84	2.498	Minor Risk
20,400.00	11,700.00	20,300.23	11,620.00	134.39	134.42	-83.07	-8,762.10	286.38	664.14	396.92	267.22	2.485	Minor Risk
20,450.00	11,700.00	20,350.23	11,620.00	135.09	135.11	-83.07	-8,812.10	286.69	664.13	395.54	268.60	2.473	Minor Risk
20,500.00	11,700.00	20,400.23	11,620.00	135.78	135.80	-83.07	-8,862.10	287.00	664.13	394.15	269.98	2.460	Minor Risk
20,550.00	11,700.00	20,450.23	11,620.00	136.47	136.50	-83.07	-8,912.10	287.31	664.13	392.77	271.36	2.447	Minor Risk
20,600.00	11,700.00	20,500.23	11,620.00	137.17	137.20	-83.07	-8,962.10	287.62	664.12	391.38	272.74	2.435	Minor Risk
20,650.00	11,700.00	20,550.23	11,620.00	137.86	137.89	-83.07	-9,012.10	287.93	664.12	389.99	274.13	2.423	Minor Risk
20,700.00	11,700.00	20,600.23	11,620.00	138.56	138.59	-83.07	-9,062.10	288.24	664.12	388.60	275.51	2.410	Minor Risk

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 332H - 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	11,700.00	20,650.23	11,620.00	139.25	139.28	-83.07	-9,112.09	288.55	664.11	387.21	276.90	2.398	Minor Risk
20,800.00	11,700.00	20,700.23	11,620.00	139.95	139.98	-83.07	-9,162.09	288.87	664.11	385.83	278.28	2.386	Minor Risk
20,850.00	11,700.00	20,750.23	11,620.00	140.64	140.68	-83.07	-9,212.09	289.18	664.10	384.44	279.67	2.375	Minor Risk
20,900.00	11,700.00	20,800.23	11,620.00	141.34	141.37	-83.07	-9,262.09	289.49	664.10	383.04	281.06	2.363	Minor Risk
20,950.00	11,700.00	20,850.23	11,620.00	142.04	142.07	-83.07	-9,312.09	289.80	664.10	381.65	282.44	2.351	Minor Risk
21,000.00	11,700.00	20,900.23	11,620.00	142.73	142.77	-83.07	-9,362.09	290.11	664.09	380.26	283.83	2.340	Minor Risk
21,050.00	11,700.00	20,950.23	11,620.00	143.43	143.47	-83.07	-9,412.09	290.42	664.09	378.87	285.22	2.328	Minor Risk
21,100.00	11,700.00	21,000.23	11,620.00	144.13	144.17	-83.07	-9,462.09	290.73	664.08	377.47	286.61	2.317	Minor Risk
21,150.00	11,700.00	21,050.23	11,620.00	144.83	144.87	-83.07	-9,512.09	291.04	664.08	376.08	288.00	2.306	Minor Risk
21,200.00	11,700.00	21,100.23	11,620.00	145.52	145.56	-83.07	-9,562.09	291.35	664.08	374.69	289.39	2.295	Minor Risk
21,250.00	11,700.00	21,150.23	11,620.00	146.22	146.26	-83.07	-9,612.09	291.66	664.07	373.29	290.78	2.284	Minor Risk
21,300.00	11,700.00	21,200.23	11,620.00	146.92	146.96	-83.07	-9,662.08	291.97	664.07	371.90	292.17	2.273	Minor Risk
21,350.00	11,700.00	21,250.23	11,620.00	147.62	147.66	-83.07	-9,712.08	292.28	664.07	370.50	293.57	2.262	Minor Risk
21,400.00	11,700.00	21,300.23	11,620.00	148.32	148.36	-83.07	-9,762.08	292.59	664.06	369.10	294.96	2.251	Minor Risk
21,450.00	11,700.00	21,350.23	11,620.00	149.02	149.07	-83.07	-9,812.08	292.90	664.06	367.70	296.35	2.241	Minor Risk
21,500.00	11,700.00	21,400.23	11,620.00	149.72	149.77	-83.07	-9,862.08	293.21	664.05	366.31	297.75	2.230	Minor Risk
21,550.00	11,700.00	21,450.23	11,620.00	150.42	150.47	-83.07	-9,912.08	293.52	664.05	364.91	299.14	2.220	Minor Risk
21,600.00	11,700.00	21,500.23	11,620.00	151.12	151.17	-83.07	-9,962.08	293.83	664.05	363.51	300.54	2.210	Minor Risk
21,650.00	11,700.00	21,550.23	11,620.00	151.82	151.87	-83.07	-10,012.08	294.14	664.04	362.11	301.93	2.199	Minor Risk
21,700.00	11,700.00	21,600.23	11,620.00	152.52	152.57	-83.07	-10,062.08	294.45	664.04	360.71	303.33	2.189	Minor Risk
21,750.00	11,700.00	21,650.23	11,620.00	153.22	153.27	-83.07	-10,112.08	294.76	664.04	359.31	304.73	2.179	Minor Risk
21,800.00	11,700.00	21,700.23	11,620.00	153.93	153.98	-83.07	-10,162.07	295.07	664.03	357.91	306.12	2.169	Minor Risk
21,850.00	11,700.00	21,750.23	11,620.00	154.63	154.68	-83.07	-10,212.07	295.38	664.03	356.51	307.52	2.159	Minor Risk
21,900.00	11,700.00	21,800.23	11,620.00	155.33	155.38	-83.07	-10,262.07	295.69	664.02	355.10	308.92	2.150	Minor Risk
21,950.00	11,700.00	21,850.23	11,620.00	156.03	156.09	-83.07	-10,312.07	296.00	664.02	353.70	310.32	2.140	Minor Risk
21,964.16	11,700.00	21,864.40	11,620.00	156.23	156.29	-83.07	-10,326.23	296.09	664.02	353.30	310.71	2.137	Minor Risk, SF

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	-89.43	6.81	-678.92	679.06				
50.00	50.00	38.45	38.45	0.50	0.50	-89.43	6.81	-678.91	678.95	677.94	1.00	675.655	
100.00	100.00	88.92	88.92	0.52	0.52	-89.43	6.78	-678.87	678.90	677.87	1.03	657.277	
150.00	150.00	138.79	138.79	0.59	0.55	-89.43	6.76	-678.80	678.83	677.69	1.14	593.200	
189.93	189.93	178.03	178.03	0.68	0.63	-89.43	6.76	-678.78	678.81	677.51	1.30	521.240	
200.00	200.00	187.93	187.93	0.70	0.65	-89.43	6.77	-678.78	678.82	677.47	1.35	503.425	
250.00	250.00	237.06	237.06	0.84	0.77	-89.42	6.83	-678.83	678.86	677.26	1.60	423.333	
300.00	300.00	286.20	286.20	0.99	0.90	-89.41	6.94	-678.93	678.97	677.08	1.89	359.320	
350.00	350.00	335.36	335.36	1.15	1.05	-89.40	7.06	-679.10	679.14	676.95	2.19	309.448	
400.00	400.00	385.43	385.43	1.31	1.21	-89.40	7.17	-679.31	679.36	676.84	2.52	270.102	
450.00	450.00	436.59	436.59	1.48	1.37	-89.39	7.21	-679.47	679.51	676.66	2.85	238.587	
500.00	500.00	485.77	485.76	1.65	1.53	-89.39	7.20	-679.59	679.63	676.45	3.18	213.670	
550.00	550.00	533.92	533.91	1.82	1.70	-89.39	7.23	-679.82	679.87	676.35	3.51	193.462	
600.00	600.00	583.23	583.22	1.99	1.86	-89.38	7.32	-680.15	680.21	676.36	3.86	176.439	
650.00	650.00	632.92	632.92	2.16	2.04	-89.37	7.49	-680.52	680.58	676.38	4.20	162.044	
700.00	700.00	681.96	681.96	2.34	2.21	-89.36	7.66	-680.92	681.00	676.45	4.54	149.852	
750.00	750.00	731.02	731.01	2.51	2.38	-89.35	7.74	-681.40	681.48	676.59	4.89	139.353	
800.00	800.00	781.89	781.88	2.69	2.55	-89.34	7.82	-681.90	681.97	676.73	5.24	130.053	
850.00	850.00	832.76	832.75	2.87	2.73	-89.33	7.99	-682.33	682.40	676.80	5.60	121.896	
900.00	900.00	883.63	883.62	3.04	2.91	-89.31	8.25	-682.69	682.76	676.80	5.95	114.686	
950.00	950.00	934.51	934.49	3.22	3.09	-89.29	8.48	-682.99	683.05	676.74	6.31	108.263	
1,000.00	1,000.00	985.72	985.70	3.40	3.27	-89.27	8.65	-683.22	683.28	676.61	6.67	102.500	
1,050.00	1,050.00	1,037.67	1,037.65	3.58	3.45	-89.26	8.81	-683.33	683.39	676.36	7.02	97.285	
1,100.00	1,100.00	1,088.86	1,088.84	3.75	3.63	-89.25	8.98	-683.30	683.36	675.98	7.38	92.608	
1,150.00	1,150.00	1,139.39	1,139.37	3.93	3.80	-89.23	9.13	-683.23	683.29	675.56	7.73	88.392	
1,200.00	1,200.00	1,189.45	1,189.44	4.11	3.97	-89.22	9.25	-683.12	683.19	675.11	8.08	84.571	
1,250.00	1,250.00	1,239.33	1,239.31	4.29	4.14	-89.22	9.30	-683.03	683.09	674.67	8.43	81.076	
1,300.00	1,300.00	1,289.38	1,289.36	4.46	4.31	-89.22	9.35	-682.94	683.00	674.23	8.77	77.839	
1,350.00	1,350.00	1,339.49	1,339.47	4.64	4.48	-89.20	9.53	-682.84	682.91	673.79	9.12	74.844	
1,400.00	1,400.00	1,390.53	1,390.51	4.82	4.66	-89.19	9.67	-682.70	682.77	673.29	9.48	72.040	
1,450.00	1,450.00	1,441.57	1,441.55	5.00	4.83	-89.19	9.61	-682.48	682.56	672.73	9.83	69.429	
1,500.00	1,500.00	1,488.87	1,488.85	5.18	4.99	-89.20	9.49	-682.37	682.43	672.26	10.17	67.101	
1,518.33	1,518.33	1,506.45	1,506.43	5.24	5.05	-89.21	9.44	-682.36	682.42	672.13	10.30	66.284	
1,550.00	1,550.00	1,537.69	1,537.67	5.36	5.16	-89.22	9.34	-682.38	682.44	671.93	10.52	64.902	
1,600.00	1,600.00	1,588.67	1,588.65	5.53	5.33	-89.23	9.22	-682.38	682.44	671.57	10.87	62.794	
1,650.00	1,650.00	1,639.35	1,639.32	5.71	5.51	-89.23	9.18	-682.30	682.37	671.15	11.22	60.815	
1,700.00	1,700.00	1,689.68	1,689.65	5.89	5.68	-89.23	9.23	-682.20	682.27	670.69	11.57	58.956	
1,750.00	1,750.00	1,740.41	1,740.39	6.07	5.86	-89.22	9.33	-682.06	682.13	670.20	11.93	57.194	
1,800.00	1,800.00	1,791.41	1,791.39	6.25	6.03	-89.21	9.35	-681.85	681.93	669.64	12.28	55.523	
1,850.00	1,850.00	1,839.89	1,839.87	6.43	6.20	-89.22	9.33	-681.65	681.72	669.09	12.63	53.980	
1,887.79	1,887.79	1,875.92	1,875.89	6.56	6.33	-89.22	9.33	-681.61	681.67	668.78	12.89	52.885	
1,900.00	1,900.00	1,887.55	1,887.53	6.61	6.37	-89.22	9.34	-681.61	681.67	668.70	12.97	52.543	
1,950.00	1,950.00	1,938.31	1,938.29	6.78	6.55	-89.21	9.38	-681.65	681.71	668.38	13.33	51.142	
2,000.00	2,000.00	1,989.95	1,989.93	6.96	6.73	-89.20	9.47	-681.57	681.64	667.95	13.69	49.794	
2,050.00	2,050.00	2,038.46	2,038.43	7.14	6.90	-27.27	9.61	-681.49	681.36	667.33	14.04	48.545	
2,100.00	2,099.99	2,086.84	2,086.82	7.32	7.07	-27.28	9.81	-681.52	680.82	666.43	14.38	47.339	
2,150.00	2,149.98	2,135.69	2,135.66	7.49	7.24	-27.32	9.97	-681.65	679.98	665.25	14.73	46.172	
2,200.00	2,199.96	2,184.85	2,184.82	7.67	7.41	-27.38	9.97	-681.86	678.84	663.77	15.07	45.036	
2,250.00	2,249.92	2,237.09	2,237.07	7.84	7.59	-27.47	9.91	-682.03	677.29	661.86	15.43	43.898	
2,300.00	2,299.88	2,288.74	2,288.71	8.02	7.77	-27.55	9.84	-682.02	675.50	659.72	15.78	42.803	
2,350.00	2,349.84	2,338.98	2,338.95	8.19	7.94	-27.64	9.79	-681.96	673.66	657.53	16.13	41.764	
2,400.00	2,399.80	2,387.58	2,387.55	8.37	8.11	-27.71	9.80	-681.90	671.83	655.35	16.47	40.782	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
2,450.00	2,449.76	2,433.95	2,433.93	8.54	8.27	-27.77	9.97	-682.04	670.21	653.40	16.81	39.868	
2,500.00	2,499.72	2,480.84	2,480.81	8.72	8.44	-27.82	10.33	-682.44	668.86	651.71	17.15	39.001	
2,550.00	2,549.68	2,528.49	2,528.46	8.90	8.60	-27.85	10.84	-683.02	667.69	650.20	17.49	38.170	
2,600.00	2,599.64	2,575.18	2,575.13	9.07	8.77	-27.87	11.47	-683.76	666.72	648.89	17.83	37.390	
2,650.00	2,649.60	2,620.54	2,620.47	9.25	8.93	-27.88	12.23	-684.77	666.07	647.90	18.17	36.667	
2,700.00	2,699.56	2,667.21	2,667.12	9.43	9.09	-27.88	13.15	-686.13	665.75	647.24	18.50	35.979	
2,750.00	2,749.52	2,716.29	2,716.17	9.61	9.27	-27.87	14.15	-687.67	665.55	646.70	18.85	35.303	
2,800.00	2,799.48	2,766.71	2,766.55	9.78	9.44	-27.87	15.14	-689.31	665.40	646.20	19.21	34.644	
2,850.00	2,849.44	2,818.86	2,818.66	9.96	9.63	-27.86	16.15	-690.87	665.13	645.56	19.57	33.990	
2,900.00	2,899.40	2,869.87	2,869.64	10.14	9.81	-27.86	17.13	-692.26	664.73	644.80	19.93	33.360	
2,950.00	2,949.36	2,920.22	2,919.96	10.32	9.99	-27.86	18.13	-693.59	664.28	644.00	20.28	32.754	
3,000.00	2,999.32	2,967.09	2,966.80	10.49	10.15	-27.85	19.16	-694.90	663.91	643.29	20.62	32.195	
3,033.87	3,033.16	2,998.04	2,997.73	10.61	10.26	-27.83	19.97	-695.92	663.84	642.99	20.85	31.840	
3,050.00	3,049.28	3,012.77	3,012.45	10.67	10.32	-27.81	20.40	-696.46	663.85	642.90	20.96	31.677	
3,100.00	3,099.24	3,060.73	3,060.34	10.85	10.49	-27.76	21.92	-698.35	664.06	642.76	21.30	31.173	
3,150.00	3,149.20	3,109.72	3,109.26	11.03	10.66	-27.70	23.54	-700.37	664.36	642.71	21.65	30.683	
3,200.00	3,199.16	3,158.03	3,157.50	11.21	10.83	-27.64	25.13	-702.46	664.75	642.75	22.00	30.217	
3,250.00	3,249.12	3,206.14	3,205.54	11.38	11.00	-27.59	26.59	-704.67	665.29	642.94	22.34	29.773	
3,300.00	3,299.08	3,255.08	3,254.40	11.56	11.18	-27.56	27.95	-707.03	665.94	643.24	22.69	29.343	
3,350.00	3,349.04	3,304.21	3,303.46	11.74	11.35	-27.53	29.20	-709.47	666.65	643.61	23.05	28.928	
3,400.00	3,399.00	3,354.86	3,354.03	11.92	11.53	-27.50	30.46	-712.00	667.38	643.98	23.40	28.517	
3,450.00	3,448.96	3,405.68	3,404.77	12.10	11.71	-27.47	31.85	-714.47	668.05	644.29	23.76	28.114	
3,500.00	3,498.92	3,452.00	3,451.01	12.28	11.88	-27.43	33.20	-716.83	668.84	644.74	24.10	27.752	
3,550.00	3,548.88	3,498.72	3,497.63	12.46	12.05	-27.38	34.63	-719.45	669.88	645.44	24.44	27.410	
3,600.00	3,598.84	3,550.78	3,549.59	12.63	12.23	-27.33	36.18	-722.41	670.96	646.16	24.81	27.049	
3,650.00	3,648.80	3,603.27	3,601.98	12.81	12.42	-27.30	37.62	-725.23	671.88	646.71	25.17	26.691	
3,700.00	3,698.76	3,657.19	3,655.82	12.99	12.62	-27.27	38.99	-727.85	672.56	647.01	25.55	26.326	
3,750.00	3,748.72	3,708.57	3,707.13	13.17	12.80	-27.24	40.25	-730.11	672.98	647.07	25.91	25.974	
3,800.00	3,798.68	3,757.22	3,755.72	13.35	12.97	-27.20	41.65	-732.28	673.46	647.20	26.26	25.646	
3,850.00	3,848.64	3,804.44	3,802.86	13.53	13.14	-27.14	43.26	-734.51	674.06	647.46	26.60	25.338	
3,900.00	3,898.60	3,850.60	3,848.92	13.71	13.31	-27.07	45.02	-736.93	674.93	647.99	26.94	25.052	
3,950.00	3,948.56	3,899.18	3,897.38	13.89	13.49	-26.98	47.00	-739.71	676.04	648.75	27.29	24.772	
4,000.00	3,998.52	3,950.09	3,948.17	14.07	13.67	-26.90	48.87	-742.59	677.13	649.48	27.65	24.488	
4,050.00	4,048.47	4,000.19	3,998.17	14.25	13.85	-26.85	50.49	-745.39	678.17	650.16	28.01	24.213	
4,100.00	4,098.43	4,049.89	4,047.77	14.43	14.03	-26.81	51.95	-748.19	679.22	650.86	28.36	23.947	
4,150.00	4,148.39	4,097.32	4,095.10	14.61	14.20	-26.77	53.30	-750.93	680.36	651.66	28.71	23.699	
4,200.00	4,198.35	4,144.09	4,141.75	14.79	14.37	-26.72	54.83	-753.86	681.74	652.69	29.05	23.469	
4,250.00	4,248.31	4,193.64	4,191.16	14.97	14.55	-26.65	56.62	-757.10	683.27	653.86	29.40	23.238	
4,300.00	4,298.27	4,244.04	4,241.42	15.14	14.73	-26.57	58.51	-760.38	684.77	655.01	29.76	23.008	
4,350.00	4,348.23	4,298.44	4,295.68	15.32	14.93	-26.50	60.48	-763.74	686.12	655.97	30.14	22.762	
4,400.00	4,398.19	4,353.31	4,350.44	15.50	15.13	-26.44	62.25	-766.75	687.11	656.59	30.52	22.510	
4,450.00	4,448.15	4,400.11	4,397.14	15.68	15.30	-26.39	63.78	-769.31	688.10	657.23	30.87	22.293	
4,500.00	4,498.11	4,448.81	4,445.74	15.86	15.47	-26.32	65.48	-772.09	689.21	657.99	31.22	22.078	
4,550.00	4,548.07	4,499.60	4,496.41	16.04	15.66	-26.26	67.30	-774.99	690.32	658.74	31.58	21.860	
4,600.00	4,598.03	4,549.12	4,545.82	16.22	15.84	-26.19	69.07	-777.77	691.39	659.46	31.93	21.651	
4,650.00	4,647.99	4,596.58	4,593.16	16.40	16.01	-26.12	70.81	-780.57	692.60	660.32	32.28	21.457	
4,700.00	4,697.95	4,644.61	4,641.07	16.58	16.19	-26.05	72.60	-783.57	693.99	661.36	32.63	21.271	
4,750.00	4,747.91	4,693.52	4,689.85	16.76	16.36	-25.98	74.48	-786.71	695.47	662.49	32.98	21.088	
4,800.00	4,797.87	4,744.52	4,740.69	16.94	16.55	-25.90	76.48	-790.03	696.99	663.65	33.34	20.904	
4,850.00	4,847.83	4,797.79	4,793.83	17.12	16.74	-25.82	78.49	-793.29	698.32	664.60	33.72	20.711	
4,900.00	4,897.79	4,851.61	4,847.52	17.30	16.94	-25.75	80.41	-796.32	699.40	665.30	34.09	20.513	
4,950.00	4,947.75	4,905.64	4,901.46	17.48	17.14	-25.69	82.22	-799.05	700.19	665.72	34.47	20.312	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
5,000.00	4,997.71	4,958.63	4,954.36	17.66	17.33	-25.64	83.86	-801.47	700.74	665.89	34.84	20.111	
5,050.00	5,047.67	5,011.60	5,007.26	17.84	17.52	-25.60	85.36	-803.68	701.07	665.85	35.22	19.908	
5,100.00	5,097.63	5,061.98	5,057.59	18.02	17.70	-25.57	86.69	-805.68	701.30	665.72	35.57	19.713	
5,150.00	5,147.59	5,112.80	5,108.36	18.20	17.88	-25.54	87.93	-807.63	701.47	665.53	35.94	19.520	
5,200.00	5,197.55	5,163.62	5,159.13	18.38	18.07	-25.54	88.98	-809.54	701.58	665.28	36.30	19.328	
5,250.00	5,247.51	5,215.17	5,210.64	18.56	18.25	-25.55	89.85	-811.41	701.62	664.95	36.66	19.137	
5,300.00	5,297.47	5,267.46	5,262.90	18.74	18.44	-25.57	90.59	-813.15	701.50	664.48	37.03	18.945	
5,350.00	5,347.43	5,318.40	5,313.81	18.92	18.62	-25.59	91.20	-814.72	701.26	663.87	37.39	18.756	
5,400.00	5,397.39	5,368.77	5,364.16	19.10	18.80	-25.63	91.72	-816.25	700.99	663.24	37.75	18.570	
5,450.00	5,447.35	5,418.62	5,413.98	19.28	18.98	-25.67	92.16	-817.75	700.71	662.60	38.11	18.389	
5,500.00	5,497.31	5,468.36	5,463.70	19.46	19.16	-25.71	92.51	-819.27	700.44	661.98	38.46	18.212	
5,550.00	5,547.27	5,520.50	5,515.81	19.64	19.35	-25.77	92.86	-820.80	700.11	661.29	38.83	18.032	
5,600.00	5,597.23	5,572.78	5,568.07	19.82	19.54	-25.81	93.27	-822.16	699.62	660.43	39.19	17.851	
5,650.00	5,647.19	5,622.23	5,617.51	20.00	19.71	-25.86	93.65	-823.40	699.09	659.54	39.55	17.677	
5,700.00	5,697.15	5,672.64	5,667.90	20.18	19.89	-25.90	93.98	-824.67	698.56	658.65	39.91	17.505	
5,750.00	5,747.11	5,724.70	5,719.95	20.36	20.08	-25.96	94.31	-825.87	697.92	657.65	40.27	17.331	
5,800.00	5,797.07	5,776.52	5,771.75	20.54	20.26	-26.01	94.64	-826.92	697.14	656.51	40.63	17.156	
5,850.00	5,847.03	5,828.02	5,823.24	20.73	20.45	-26.06	94.98	-827.85	696.25	655.25	41.00	16.983	
5,900.00	5,896.99	5,879.89	5,875.10	20.91	20.63	-26.10	95.34	-828.66	695.24	653.88	41.36	16.809	
5,950.00	5,946.95	5,931.99	5,927.20	21.09	20.82	-26.15	95.73	-829.31	694.08	652.35	41.72	16.635	
6,000.00	5,996.91	5,983.82	5,979.02	21.27	21.00	-26.19	96.15	-829.81	692.77	650.69	42.09	16.461	
6,050.00	6,046.87	6,035.22	6,030.42	21.45	21.19	-26.23	96.57	-830.19	691.35	648.91	42.45	16.287	
6,100.00	6,096.83	6,084.79	6,079.99	21.63	21.36	-26.27	97.01	-830.50	689.89	647.08	42.80	16.117	
6,150.00	6,146.79	6,133.99	6,129.18	21.81	21.54	-26.31	97.45	-830.87	688.48	645.32	43.16	15.952	
6,200.00	6,196.75	6,184.71	6,179.90	21.99	21.72	-26.34	97.93	-831.25	687.07	643.55	43.52	15.788	
6,250.00	6,246.71	6,235.57	6,230.75	22.17	21.90	-26.38	98.46	-831.57	685.60	641.72	43.88	15.625	
6,300.00	6,296.67	6,284.40	6,279.58	22.35	22.07	-26.41	98.96	-831.89	684.15	639.92	44.23	15.467	
6,350.00	6,346.63	6,333.57	6,328.75	22.53	22.25	-26.45	99.41	-832.28	682.77	638.18	44.59	15.313	
6,400.00	6,396.59	6,383.95	6,379.12	22.71	22.43	-26.48	99.86	-832.70	681.39	636.45	44.95	15.160	
6,450.00	6,446.55	6,434.32	6,429.49	22.89	22.61	-26.52	100.34	-833.08	679.99	634.69	45.30	15.010	
6,500.00	6,496.51	6,484.68	6,479.85	23.07	22.79	-26.55	100.84	-833.43	678.56	632.90	45.66	14.861	
6,550.00	6,546.46	6,535.25	6,530.42	23.25	22.97	-26.59	101.36	-833.76	677.10	631.08	46.02	14.713	
6,600.00	6,596.42	6,586.11	6,581.27	23.43	23.15	-26.62	101.88	-834.02	675.58	629.20	46.38	14.566	
6,650.00	6,646.38	6,637.24	6,632.40	23.61	23.33	-26.66	102.35	-834.22	674.00	627.26	46.74	14.420	
6,700.00	6,696.34	6,688.59	6,683.75	23.79	23.51	-26.71	102.72	-834.31	672.31	625.21	47.10	14.274	
6,750.00	6,746.30	6,737.97	6,733.13	23.97	23.69	-26.76	102.99	-834.36	670.57	623.12	47.45	14.131	
6,800.00	6,796.26	6,786.59	6,781.75	24.15	23.86	-26.81	103.25	-834.50	668.92	621.12	47.81	13.992	
6,850.00	6,846.22	6,835.94	6,831.10	24.33	24.03	-26.87	103.53	-834.71	667.36	619.20	48.16	13.856	
6,900.00	6,896.18	6,885.49	6,880.64	24.51	24.21	-26.92	103.85	-834.96	665.83	617.31	48.52	13.723	
6,950.00	6,946.14	6,935.56	6,930.71	24.70	24.39	-26.96	104.24	-835.22	664.31	615.44	48.88	13.592	
7,000.00	6,996.10	6,985.69	6,980.84	24.88	24.57	-27.00	104.75	-835.48	662.79	613.55	49.23	13.462	
7,050.00	7,046.06	7,034.91	7,030.06	25.06	24.74	-27.03	105.28	-835.74	661.28	611.69	49.59	13.335	
7,100.00	7,096.02	7,084.22	7,079.36	25.24	24.92	-27.06	105.79	-836.07	659.84	609.89	49.95	13.211	
7,150.00	7,145.98	7,134.10	7,129.24	25.42	25.10	-27.10	106.25	-836.42	658.41	608.11	50.30	13.089	
7,200.00	7,195.94	7,183.86	7,178.99	25.60	25.27	-27.15	106.64	-836.79	657.00	606.34	50.66	12.969	
7,250.00	7,245.90	7,233.21	7,228.34	25.78	25.45	-27.20	107.02	-837.18	655.63	604.61	51.02	12.851	
7,300.00	7,295.86	7,282.99	7,278.12	25.96	25.63	-27.24	107.41	-837.63	654.29	602.92	51.37	12.736	
7,350.00	7,345.82	7,333.74	7,328.86	26.14	25.81	-27.29	107.82	-838.05	652.93	601.20	51.73	12.621	
7,400.00	7,395.78	7,383.88	7,379.00	26.32	25.99	-27.34	108.21	-838.41	651.52	599.42	52.09	12.507	
7,450.00	7,445.74	7,433.33	7,428.45	26.50	26.16	-27.38	108.62	-838.80	650.13	597.68	52.45	12.395	
7,500.00	7,495.70	7,483.20	7,478.31	26.68	26.34	-27.43	109.03	-839.22	648.78	595.97	52.81	12.286	
7,550.00	7,545.66	7,533.42	7,528.54	26.86	26.52	-27.48	109.33	-839.63	647.41	594.25	53.17	12.177	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
7,600.00	7,595.62	7,583.65	7,578.76	27.04	26.70	-27.55	109.52	-840.02	646.03	592.50	53.52	12.070	
7,650.00	7,645.58	7,633.88	7,628.98	27.22	26.88	-27.61	109.75	-840.40	644.62	590.74	53.88	11.964	
7,700.00	7,695.54	7,684.12	7,679.23	27.40	27.06	-27.67	109.98	-840.75	643.20	588.96	54.24	11.858	
7,750.00	7,745.50	7,734.37	7,729.47	27.58	27.24	-27.74	110.15	-841.08	641.76	587.16	54.60	11.754	
7,800.00	7,795.46	7,783.62	7,778.72	27.77	27.41	-27.82	110.26	-841.42	640.33	585.38	54.95	11.652	
7,850.00	7,845.42	7,832.81	7,827.92	27.95	27.59	-27.90	110.29	-841.83	638.97	583.66	55.31	11.553	
7,900.00	7,895.38	7,881.09	7,876.19	28.13	27.76	-27.98	110.26	-842.31	637.70	582.04	55.66	11.457	
7,950.00	7,945.34	7,929.56	7,924.65	28.31	27.93	-28.07	110.17	-842.93	636.57	580.55	56.01	11.365	
8,000.00	7,995.30	7,979.51	7,974.60	28.49	28.11	-28.16	110.08	-843.62	635.49	579.12	56.37	11.274	
8,050.00	8,045.26	8,029.12	8,024.20	28.67	28.28	-28.26	110.00	-844.31	634.42	577.70	56.72	11.184	
8,100.00	8,095.22	8,077.44	8,072.52	28.85	28.45	-28.35	109.90	-845.07	633.44	576.37	57.08	11.098	
8,150.00	8,145.18	8,126.37	8,121.44	29.03	28.62	-28.44	109.76	-845.96	632.59	575.16	57.43	11.015	
8,200.00	8,195.14	8,176.98	8,172.04	29.21	28.80	-28.55	109.59	-846.88	631.74	573.95	57.79	10.932	
8,250.00	8,245.10	8,226.96	8,222.01	29.39	28.98	-28.65	109.41	-847.75	630.85	572.71	58.14	10.850	
8,300.00	8,295.06	8,276.02	8,271.06	29.57	29.15	-28.75	109.17	-848.66	630.01	571.52	58.49	10.770	
8,350.00	8,345.02	8,325.85	8,320.89	29.75	29.33	-28.87	108.86	-849.63	629.24	570.39	58.85	10.692	
8,400.00	8,394.98	8,376.84	8,371.86	29.93	29.51	-28.98	108.58	-850.59	628.42	569.21	59.21	10.614	
8,450.00	8,444.94	8,427.58	8,422.56	30.11	29.71	-29.25	106.83	-851.25	627.27	567.68	59.59	10.527	
8,500.00	8,494.90	8,502.22	8,496.62	30.30	29.93	-30.13	98.53	-850.32	624.98	565.03	59.95	10.425	
8,550.00	8,544.86	8,559.80	8,552.35	30.48	30.10	-31.55	84.34	-848.16	621.92	561.64	60.29	10.316	
8,600.00	8,594.82	8,606.14	8,595.67	30.66	30.24	-33.15	68.13	-845.68	618.78	558.14	60.63	10.206	
8,650.00	8,644.78	8,643.55	8,629.43	30.84	30.34	-34.71	52.12	-843.77	616.71	555.75	60.96	10.117	
8,692.10	8,686.84	8,672.88	8,654.98	30.99	30.42	-36.10	37.82	-842.40	616.12	554.92	61.20	10.068 CC	
8,700.00	8,694.74	8,678.00	8,659.36	31.02	30.43	-36.36	35.17	-842.17	616.14	554.90	61.24	10.061 ES	
8,750.00	8,744.70	8,705.14	8,682.08	31.20	30.49	-37.79	20.36	-841.18	617.53	556.12	61.41	10.055 SF	
8,800.00	8,794.66	8,730.20	8,702.31	31.38	30.55	-39.19	5.58	-840.60	621.25	559.77	61.48	10.106	
8,850.00	8,844.62	8,753.41	8,720.35	31.56	30.60	-40.56	-9.01	-840.37	627.43	566.03	61.41	10.218	
8,900.00	8,894.58	8,772.00	8,734.29	31.74	30.65	-41.70	-21.31	-840.38	636.19	575.04	61.16	10.403	
8,950.00	8,944.54	8,798.94	8,753.70	31.92	30.70	-43.40	-39.99	-840.59	647.39	586.48	60.91	10.628	
9,000.00	8,994.50	8,820.53	8,768.56	32.10	30.75	-44.80	-55.64	-840.82	661.02	600.53	60.50	10.927	
9,050.00	9,044.45	8,840.34	8,781.64	32.28	30.81	-46.11	-70.51	-841.09	677.07	617.11	59.96	11.292	
9,100.00	9,094.41	8,866.00	8,797.78	32.46	30.88	-47.83	-90.46	-841.51	695.55	636.08	59.46	11.697	
9,150.00	9,144.37	8,866.00	8,797.78	32.65	30.88	-47.83	-90.46	-841.51	716.28	657.89	58.39	12.267	
9,200.00	9,194.33	8,887.80	8,810.66	32.83	30.94	-49.31	-108.03	-841.97	739.12	681.39	57.73	12.802	
9,250.00	9,244.29	8,900.31	8,817.68	33.01	30.97	-50.17	-118.38	-842.30	764.18	707.32	56.85	13.441	
9,300.00	9,294.25	8,911.83	8,823.89	33.19	31.00	-50.96	-128.08	-842.64	791.19	735.25	55.95	14.141	
9,350.00	9,344.21	8,922.47	8,829.41	33.37	31.03	-51.69	-137.17	-843.00	820.02	764.99	55.04	14.900	
9,400.00	9,394.17	8,932.31	8,834.32	33.55	31.06	-52.36	-145.69	-843.35	850.52	796.39	54.13	15.713	
9,450.00	9,444.13	8,960.00	8,847.16	33.73	31.13	-54.26	-170.19	-844.50	883.05	829.40	53.66	16.458	
9,500.00	9,494.09	8,960.00	8,847.16	33.91	31.13	-54.26	-170.19	-844.50	916.11	863.50	52.61	17.413	
9,550.00	9,544.05	8,960.00	8,847.16	34.09	31.13	-54.26	-170.19	-844.50	950.65	899.03	51.62	18.418	
9,600.00	9,594.01	8,960.00	8,847.16	34.27	31.13	-54.26	-170.19	-844.50	986.51	935.83	50.68	19.466	
9,650.00	9,643.97	8,960.00	8,847.16	34.45	31.13	-54.26	-170.19	-844.50	1,023.56	973.76	49.80	20.554	
9,700.00	9,693.93	8,960.00	8,847.16	34.63	31.13	-54.26	-170.19	-844.50	1,061.67	1,012.69	48.98	21.675	
9,750.00	9,743.89	8,960.00	8,847.16	34.82	31.13	-54.26	-170.19	-844.50	1,100.74	1,052.51	48.22	22.825	
9,800.00	9,793.85	8,991.80	8,860.09	35.00	31.22	-56.40	-199.20	-846.02	1,139.27	1,091.14	48.13	23.670	
9,850.00	9,843.81	8,997.41	8,862.17	35.18	31.23	-56.77	-204.40	-846.30	1,179.44	1,131.86	47.58	24.791	
9,900.00	9,893.77	9,002.69	8,864.08	35.36	31.25	-57.12	-209.31	-846.57	1,220.25	1,173.19	47.06	25.929	
9,950.00	9,943.73	9,007.66	8,865.82	35.54	31.26	-57.45	-213.97	-846.82	1,261.66	1,215.07	46.59	27.083	
10,000.00	9,993.69	9,012.36	8,867.42	35.72	31.27	-57.76	-218.37	-847.07	1,303.60	1,257.45	46.15	28.248	
10,050.00	10,043.65	9,016.80	8,868.90	35.90	31.29	-58.05	-222.56	-847.30	1,346.05	1,300.30	45.75	29.423	
10,100.00	10,093.61	9,021.00	8,870.26	36.08	31.30	-58.33	-226.53	-847.52	1,388.94	1,343.56	45.38	30.606	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
10,150.00	10,143.57	9,054.00	8,879.72	36.26	31.39	-60.44	-258.08	-849.35	1,433.38	1,387.88	45.50	31.506	
10,200.00	10,193.53	9,054.00	8,879.72	36.44	31.39	-60.44	-258.08	-849.35	1,476.80	1,431.68	45.12	32.729	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	8.80	8.80	0.50	0.50	100.65	-146.34	778.50	792.14				
50.00	50.00	58.80	58.80	0.50	0.51	100.65	-146.34	778.50	792.14	791.13	1.01	785.684	
100.00	100.00	108.80	108.80	0.52	0.53	100.65	-146.34	778.50	792.14	791.09	1.04	758.328	
150.00	150.00	158.80	158.80	0.59	0.61	100.65	-146.34	778.50	792.14	790.94	1.20	661.308	
200.00	200.00	208.80	208.80	0.70	0.72	100.65	-146.34	778.50	792.14	790.71	1.43	555.223	
250.00	250.00	258.80	258.80	0.84	0.86	100.65	-146.34	778.50	792.14	790.44	1.70	465.704	
300.00	300.00	308.80	308.80	0.99	1.01	100.65	-146.34	778.50	792.14	790.13	2.00	395.673	
350.00	350.00	358.80	358.80	1.15	1.17	100.65	-146.34	778.50	792.14	789.82	2.32	341.520	
400.00	400.00	408.80	408.80	1.31	1.34	100.65	-146.34	778.50	792.14	789.49	2.65	299.214	
450.00	450.00	458.80	458.80	1.48	1.51	100.65	-146.34	778.50	792.14	789.15	2.98	265.606	
500.00	500.00	508.80	508.80	1.65	1.68	100.65	-146.34	778.50	792.14	788.81	3.32	238.433	
550.00	550.00	558.80	558.80	1.82	1.85	100.65	-146.34	778.50	792.14	788.47	3.67	216.095	
600.00	600.00	608.80	608.80	1.99	2.02	100.65	-146.34	778.50	792.14	788.12	4.01	197.454	
650.00	650.00	658.80	658.80	2.16	2.20	100.65	-146.34	778.50	792.14	787.78	4.36	181.690	
700.00	700.00	708.80	708.80	2.34	2.37	100.65	-146.34	778.50	792.14	787.43	4.71	168.201	
750.00	750.00	758.80	758.80	2.51	2.55	100.65	-146.34	778.50	792.14	787.08	5.06	156.539	
800.00	800.00	808.80	808.80	2.69	2.72	100.65	-146.34	778.50	792.14	786.72	5.41	146.362	
850.00	850.00	858.80	858.80	2.87	2.90	100.65	-146.34	778.50	792.14	786.37	5.76	137.408	
900.00	900.00	908.80	908.80	3.04	3.07	100.65	-146.34	778.50	792.14	786.02	6.12	129.472	
950.00	950.00	958.80	958.80	3.22	3.25	100.65	-146.34	778.50	792.14	785.66	6.47	122.392	
1,000.00	1,000.00	1,008.80	1,008.80	3.40	3.43	100.65	-146.34	778.50	792.14	785.31	6.83	116.038	
1,050.00	1,050.00	1,058.80	1,058.80	3.58	3.61	100.65	-146.34	778.50	792.14	784.96	7.18	110.305	
1,100.00	1,100.00	1,108.80	1,108.80	3.75	3.78	100.65	-146.34	778.50	792.14	784.60	7.54	105.107	
1,150.00	1,150.00	1,158.80	1,158.80	3.93	3.96	100.65	-146.34	778.50	792.14	784.24	7.89	100.373	
1,200.00	1,200.00	1,208.80	1,208.80	4.11	4.14	100.65	-146.34	778.50	792.14	783.89	8.25	96.044	
1,250.00	1,250.00	1,258.80	1,258.80	4.29	4.32	100.65	-146.34	778.50	792.14	783.53	8.60	92.071	
1,300.00	1,300.00	1,308.80	1,308.80	4.46	4.50	100.65	-146.34	778.50	792.14	783.18	8.96	88.411	
1,350.00	1,350.00	1,358.80	1,358.80	4.64	4.67	100.65	-146.34	778.50	792.14	782.82	9.32	85.030	
1,400.00	1,400.00	1,408.80	1,408.80	4.82	4.85	100.65	-146.34	778.50	792.14	782.46	9.67	81.896	
1,450.00	1,450.00	1,458.80	1,458.80	5.00	5.03	100.65	-146.34	778.50	792.14	782.11	10.03	78.984	
1,500.00	1,500.00	1,508.80	1,508.80	5.18	5.21	100.65	-146.34	778.50	792.14	781.75	10.39	76.271	
1,550.00	1,550.00	1,558.80	1,558.80	5.36	5.39	100.65	-146.34	778.50	792.14	781.39	10.74	73.737	
1,600.00	1,600.00	1,608.80	1,608.80	5.53	5.57	100.65	-146.34	778.50	792.14	781.04	11.10	71.366	
1,650.00	1,650.00	1,658.80	1,658.80	5.71	5.74	100.65	-146.34	778.50	792.14	780.68	11.46	69.142	
1,700.00	1,700.00	1,708.80	1,708.80	5.89	5.92	100.65	-146.34	778.50	792.14	780.32	11.81	67.051	
1,750.00	1,750.00	1,758.80	1,758.80	6.07	6.10	100.65	-146.34	778.50	792.14	779.97	12.17	65.083	
1,800.00	1,800.00	1,808.80	1,808.80	6.25	6.28	100.65	-146.34	778.50	792.14	779.61	12.53	63.227	
1,850.00	1,850.00	1,858.80	1,858.80	6.43	6.46	100.65	-146.34	778.50	792.14	779.25	12.89	61.474	
1,900.00	1,900.00	1,908.80	1,908.80	6.61	6.64	100.65	-146.34	778.50	792.14	778.89	13.24	59.815	
1,950.00	1,950.00	1,958.80	1,958.80	6.78	6.82	100.65	-146.34	778.50	792.14	778.54	13.60	58.243	
2,000.00	2,000.00	2,008.80	2,008.80	6.96	6.99	100.65	-146.34	778.50	792.14	778.18	13.96	56.751 CC	
2,050.00	2,050.00	2,058.80	2,058.80	7.14	7.17	162.58	-146.34	778.50	792.34	778.03	14.31	55.357	
2,100.00	2,099.99	2,108.79	2,108.79	7.32	7.35	162.59	-146.34	778.50	792.97	778.30	14.67	54.059	
2,150.00	2,149.98	2,158.78	2,158.78	7.49	7.53	162.61	-146.34	778.50	794.01	778.99	15.02	52.858	
2,200.00	2,199.96	2,208.76	2,208.76	7.67	7.71	162.64	-146.34	778.50	795.47	780.09	15.37	51.738	
2,250.00	2,249.92	2,258.72	2,258.72	7.84	7.89	162.68	-146.34	778.50	797.31	781.58	15.73	50.693	
2,300.00	2,299.88	2,308.68	2,308.68	8.02	8.07	162.72	-146.34	778.50	799.22	783.14	16.08	49.698	
2,350.00	2,349.84	2,358.64	2,358.64	8.19	8.25	162.76	-146.34	778.50	801.14	784.70	16.44	48.745	
2,400.00	2,399.80	2,408.60	2,408.60	8.37	8.42	162.80	-146.34	778.50	803.05	786.26	16.79	47.832	
2,450.00	2,449.76	2,458.56	2,458.56	8.54	8.60	162.85	-146.34	778.50	804.97	787.82	17.14	46.955	
2,500.00	2,499.72	2,508.52	2,508.52	8.72	8.78	162.89	-146.34	778.50	806.88	789.38	17.50	46.115	
2,550.00	2,549.68	2,558.48	2,558.48	8.90	8.96	162.93	-146.34	778.50	808.80	790.95	17.85	45.306	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	2,599.64	2,608.44	2,608.44	9.07	9.14	162.97	-146.34	778.50	810.71	792.51	18.21	44.529	
2,650.00	2,649.60	2,658.40	2,658.40	9.25	9.32	163.01	-146.34	778.50	812.63	794.07	18.56	43.782	
2,700.00	2,699.56	2,708.36	2,708.36	9.43	9.50	163.05	-146.34	778.50	814.55	795.63	18.92	43.062	
2,750.00	2,749.52	2,758.32	2,758.32	9.61	9.68	163.10	-146.34	778.50	816.47	797.20	19.27	42.368	
2,800.00	2,799.48	2,808.28	2,808.28	9.78	9.86	163.14	-146.34	778.50	818.39	798.76	19.63	41.699	
2,850.00	2,849.44	2,858.24	2,858.24	9.96	10.03	163.18	-146.34	778.50	820.30	800.32	19.98	41.053	
2,900.00	2,899.40	2,908.20	2,908.20	10.14	10.21	163.22	-146.34	778.50	822.22	801.89	20.34	40.430	
2,950.00	2,949.36	2,958.16	2,958.16	10.32	10.39	163.26	-146.34	778.50	824.14	803.45	20.69	39.829	
3,000.00	2,999.32	3,008.12	3,008.12	10.49	10.57	163.30	-146.34	778.50	826.06	805.02	21.05	39.247	
3,050.00	3,049.28	3,058.08	3,058.08	10.67	10.75	163.34	-146.34	778.50	827.98	806.58	21.40	38.684	
3,100.00	3,099.24	3,108.04	3,108.04	10.85	10.93	163.38	-146.34	778.50	829.90	808.15	21.76	38.140	
3,150.00	3,149.20	3,158.00	3,158.00	11.03	11.11	163.42	-146.34	778.50	831.83	809.71	22.12	37.613	
3,200.00	3,199.16	3,207.96	3,207.96	11.21	11.29	163.46	-146.34	778.50	833.75	811.28	22.47	37.103	
3,250.00	3,249.12	3,257.92	3,257.92	11.38	11.47	163.50	-146.34	778.50	835.67	812.84	22.83	36.608	
3,300.00	3,299.08	3,307.88	3,307.88	11.56	11.64	163.53	-146.34	778.50	837.59	814.41	23.18	36.129	
3,350.00	3,349.04	3,357.84	3,357.84	11.74	11.82	163.57	-146.34	778.50	839.51	815.97	23.54	35.663	
3,400.00	3,399.00	3,407.80	3,407.80	11.92	12.00	163.61	-146.34	778.50	841.44	817.54	23.90	35.212	
3,450.00	3,448.96	3,457.76	3,457.76	12.10	12.18	163.65	-146.34	778.50	843.36	819.11	24.25	34.774	
3,500.00	3,498.92	3,507.72	3,507.72	12.28	12.36	163.69	-146.34	778.50	845.28	820.68	24.61	34.349	
3,550.00	3,548.88	3,557.68	3,557.68	12.46	12.54	163.73	-146.34	778.50	847.21	822.24	24.97	33.935	
3,600.00	3,598.84	3,607.64	3,607.64	12.63	12.72	163.76	-146.34	778.50	849.13	823.81	25.32	33.533	
3,650.00	3,648.80	3,657.60	3,657.60	12.81	12.90	163.80	-146.34	778.50	851.06	825.38	25.68	33.142	
3,700.00	3,698.76	3,707.56	3,707.56	12.99	13.08	163.84	-146.34	778.50	852.98	826.95	26.04	32.762	
3,750.00	3,748.72	3,757.52	3,757.52	13.17	13.26	163.88	-146.34	778.50	854.91	828.52	26.39	32.392	
3,800.00	3,798.68	3,807.48	3,807.48	13.35	13.43	163.91	-146.34	778.50	856.84	830.09	26.75	32.032	
3,850.00	3,848.64	3,857.44	3,857.44	13.53	13.61	163.95	-146.34	778.50	858.76	831.66	27.11	31.682	
3,900.00	3,898.60	3,907.40	3,907.40	13.71	13.79	163.99	-146.34	778.50	860.69	833.23	27.46	31.340	
3,950.00	3,948.56	3,957.36	3,957.36	13.89	13.97	164.03	-146.34	778.50	862.62	834.80	27.82	31.007	
4,000.00	3,998.52	4,008.68	4,008.68	14.07	14.15	164.06	-146.33	778.50	864.54	836.36	28.18	30.677	
4,050.00	4,048.47	4,058.01	4,058.01	14.25	14.37	164.09	-145.98	778.15	866.12	837.55	28.57	30.314	
4,100.00	4,098.43	4,127.38	4,127.36	14.43	14.58	164.08	-145.08	777.26	867.15	838.20	28.96	29.946	
4,150.00	4,148.39	4,186.76	4,186.71	14.61	14.79	164.05	-143.63	775.84	867.65	838.31	29.34	29.573	
4,200.00	4,198.35	4,246.14	4,246.02	14.79	15.00	164.00	-141.63	773.87	867.61	837.89	29.72	29.194	
4,250.00	4,248.31	4,301.54	4,301.32	14.97	15.19	163.92	-139.30	771.59	867.07	836.99	30.09	28.819	
4,300.00	4,298.27	4,351.52	4,351.21	15.14	15.37	163.84	-137.12	769.45	866.45	836.01	30.44	28.463	
4,350.00	4,348.23	4,401.50	4,401.10	15.32	15.55	163.77	-134.94	767.30	865.83	835.03	30.80	28.115	
4,400.00	4,398.19	4,451.49	4,450.99	15.50	15.72	163.69	-132.76	765.16	865.21	834.06	31.15	27.775	
4,450.00	4,448.15	4,501.47	4,500.88	15.68	15.90	163.62	-130.58	763.02	864.59	833.09	31.51	27.442	
4,500.00	4,498.11	4,551.45	4,550.77	15.86	16.08	163.54	-128.40	760.88	863.97	832.11	31.86	27.117	
4,550.00	4,548.07	4,601.43	4,600.66	16.04	16.26	163.47	-126.22	758.74	863.36	831.14	32.22	26.799	
4,600.00	4,598.03	4,651.42	4,650.55	16.22	16.44	163.39	-124.04	756.60	862.75	830.17	32.57	26.488	
4,650.00	4,647.99	4,701.40	4,700.44	16.40	16.61	163.31	-121.86	754.46	862.13	829.21	32.93	26.183	
4,700.00	4,697.95	4,751.38	4,750.33	16.58	16.79	163.24	-119.68	752.32	861.52	828.24	33.28	25.885	
4,750.00	4,747.91	4,801.37	4,800.22	16.76	16.97	163.16	-117.50	750.17	860.91	827.27	33.64	25.593	
4,800.00	4,797.87	4,851.35	4,850.11	16.94	17.15	163.09	-115.32	748.03	860.30	826.31	33.99	25.307	
4,850.00	4,847.83	4,901.33	4,900.00	17.12	17.33	163.01	-113.14	745.89	859.70	825.35	34.35	25.027	
4,900.00	4,897.79	4,951.32	4,949.89	17.30	17.50	162.93	-110.97	743.75	859.09	824.39	34.71	24.753	
4,950.00	4,947.75	5,001.30	4,999.78	17.48	17.68	162.86	-108.79	741.61	858.49	823.43	35.06	24.485	
5,000.00	4,997.71	5,051.28	5,049.67	17.66	17.86	162.78	-106.61	739.47	857.89	822.47	35.42	24.221	
5,050.00	5,047.67	5,101.27	5,099.56	17.84	18.04	162.71	-104.43	737.33	857.29	821.51	35.77	23.963	
5,100.00	5,097.63	5,151.25	5,149.45	18.02	18.22	162.63	-102.25	735.18	856.69	820.56	36.13	23.710	
5,150.00	5,147.59	5,201.23	5,199.34	18.20	18.40	162.55	-100.07	733.04	856.09	819.60	36.49	23.462	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
5,200.00	5,197.55	5,251.22	5,249.23	18.38	18.58	162.48	-97.89	730.90	855.50	818.65	36.84	23.219	
5,250.00	5,247.51	5,301.20	5,299.12	18.56	18.76	162.40	-95.71	728.76	854.90	817.70	37.20	22.981	
5,300.00	5,297.47	5,351.18	5,349.01	18.74	18.94	162.32	-93.53	726.62	854.31	816.75	37.56	22.746	
5,350.00	5,347.43	5,401.17	5,398.90	18.92	19.12	162.24	-91.35	724.48	853.72	815.80	37.91	22.517	
5,400.00	5,397.39	5,451.15	5,448.79	19.10	19.29	162.17	-89.17	722.34	853.13	814.86	38.27	22.291	
5,450.00	5,447.35	5,501.13	5,498.68	19.28	19.47	162.09	-86.99	720.19	852.54	813.91	38.63	22.070	
5,500.00	5,497.31	5,551.12	5,548.57	19.46	19.65	162.01	-84.81	718.05	851.95	812.97	38.99	21.853	
5,550.00	5,547.27	5,601.10	5,598.46	19.64	19.83	161.93	-82.63	715.91	851.37	812.03	39.34	21.640	
5,600.00	5,597.23	5,651.08	5,648.35	19.82	20.01	161.86	-80.45	713.77	850.79	811.09	39.70	21.430	
5,650.00	5,647.19	5,701.07	5,698.23	20.00	20.19	161.78	-78.27	711.63	850.20	810.15	40.06	21.225	
5,700.00	5,697.15	5,751.05	5,748.12	20.18	20.37	161.70	-76.09	709.49	849.62	809.21	40.41	21.023	
5,750.00	5,747.11	5,801.03	5,798.01	20.36	20.55	161.62	-73.91	707.35	849.04	808.27	40.77	20.824	
5,800.00	5,797.07	5,851.02	5,847.90	20.54	20.73	161.55	-71.73	705.20	848.47	807.34	41.13	20.629	
5,850.00	5,847.03	5,901.00	5,897.79	20.73	20.91	161.47	-69.55	703.06	847.89	806.41	41.49	20.437	
5,900.00	5,896.99	5,950.98	5,947.68	20.91	21.09	161.39	-67.37	700.92	847.32	805.47	41.85	20.249	
5,950.00	5,946.95	6,000.97	5,997.57	21.09	21.27	161.31	-65.19	698.78	846.75	804.54	42.20	20.064	
6,000.00	5,996.91	6,050.95	6,047.46	21.27	21.45	161.23	-63.01	696.64	846.18	803.62	42.56	19.882	
6,050.00	6,046.87	6,100.93	6,097.35	21.45	21.63	161.15	-60.83	694.50	845.61	802.69	42.92	19.703	
6,100.00	6,096.83	6,150.92	6,147.24	21.63	21.81	161.07	-58.65	692.36	845.04	801.76	43.28	19.527	
6,150.00	6,146.79	6,200.90	6,197.13	21.81	21.99	161.00	-56.47	690.22	844.47	800.84	43.63	19.354	
6,200.00	6,196.75	6,250.88	6,247.02	21.99	22.17	160.92	-54.29	688.07	843.91	799.92	43.99	19.183	
6,250.00	6,246.71	6,300.87	6,296.91	22.17	22.35	160.84	-52.11	685.93	843.35	799.00	44.35	19.016	
6,300.00	6,296.67	6,350.85	6,346.80	22.35	22.53	160.76	-49.93	683.79	842.79	798.08	44.71	18.851	
6,350.00	6,346.63	6,400.83	6,396.69	22.53	22.72	160.68	-47.75	681.65	842.23	797.16	45.07	18.689	
6,400.00	6,396.59	6,450.82	6,446.58	22.71	22.90	160.60	-45.57	679.51	841.67	796.24	45.42	18.529	
6,450.00	6,446.55	6,500.80	6,496.47	22.89	23.08	160.52	-43.39	677.37	841.11	795.33	45.78	18.372	
6,500.00	6,496.51	6,550.78	6,546.36	23.07	23.26	160.44	-41.21	675.23	840.56	794.42	46.14	18.217	
6,550.00	6,546.46	6,600.77	6,596.25	23.25	23.44	160.36	-39.03	673.08	840.00	793.50	46.50	18.065	
6,600.00	6,596.42	6,650.75	6,646.14	23.43	23.62	160.28	-36.85	670.94	839.45	792.60	46.86	17.915	
6,650.00	6,646.38	6,700.73	6,696.03	23.61	23.80	160.20	-34.67	668.80	838.90	791.69	47.22	17.767	
6,700.00	6,696.34	6,750.72	6,745.92	23.79	23.98	160.12	-32.49	666.66	838.35	790.78	47.57	17.622	
6,750.00	6,746.30	6,800.70	6,795.81	23.97	24.16	160.04	-30.31	664.52	837.81	789.88	47.93	17.479	
6,800.00	6,796.26	6,850.68	6,845.70	24.15	24.34	159.96	-28.13	662.38	837.26	788.97	48.29	17.338	
6,850.00	6,846.22	6,900.67	6,895.59	24.33	24.52	159.88	-25.95	660.24	836.72	788.07	48.65	17.199	
6,900.00	6,896.18	6,950.65	6,945.48	24.51	24.70	159.80	-23.77	658.09	836.18	787.17	49.01	17.062	
6,950.00	6,946.14	7,000.63	6,995.37	24.70	24.88	159.72	-21.59	655.95	835.64	786.27	49.37	16.927	
7,000.00	6,996.10	7,050.62	7,045.26	24.88	25.07	159.64	-19.41	653.81	835.10	785.37	49.73	16.794	
7,050.00	7,046.06	7,100.60	7,095.15	25.06	25.25	159.56	-17.23	651.67	834.56	784.48	50.09	16.663	
7,100.00	7,096.02	7,150.58	7,145.04	25.24	25.43	159.48	-15.05	649.53	834.03	783.59	50.44	16.534	
7,150.00	7,145.98	7,200.57	7,194.93	25.42	25.61	159.40	-12.87	647.39	833.50	782.69	50.80	16.407	
7,200.00	7,195.94	7,250.55	7,244.82	25.60	25.79	159.32	-10.69	645.25	832.96	781.80	51.16	16.281	
7,250.00	7,245.90	7,300.53	7,294.71	25.78	25.97	159.23	-8.52	643.10	832.43	780.91	51.52	16.157	
7,300.00	7,295.86	7,350.52	7,344.60	25.96	26.15	159.15	-6.34	640.96	831.91	780.03	51.88	16.035	
7,350.00	7,345.82	7,400.50	7,394.49	26.14	26.33	159.07	-4.16	638.82	831.38	779.14	52.24	15.915	
7,400.00	7,395.78	7,450.48	7,444.38	26.32	26.51	158.99	-1.98	636.68	830.86	778.26	52.60	15.796	
7,450.00	7,445.74	7,500.46	7,494.27	26.50	26.70	158.91	0.20	634.54	830.33	777.38	52.96	15.679	
7,500.00	7,495.70	7,550.45	7,544.16	26.68	26.88	158.83	2.38	632.40	829.81	776.49	53.32	15.564	
7,550.00	7,545.66	7,600.43	7,594.05	26.86	27.06	158.74	4.56	630.26	829.29	775.62	53.67	15.450	
7,600.00	7,595.62	7,650.41	7,643.94	27.04	27.24	158.66	6.74	628.12	828.77	774.74	54.03	15.338	
7,650.00	7,645.58	7,696.44	7,689.88	27.22	27.41	158.59	8.70	626.19	828.32	773.94	54.38	15.231	
7,681.67	7,677.23	7,723.53	7,716.94	27.34	27.50	158.56	9.69	625.22	828.23	773.64	54.60	15.170	
7,700.00	7,695.54	7,739.21	7,732.60	27.40	27.56	158.54	10.21	624.71	828.26	773.54	54.72	15.136 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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
7,750.00	7,745.50	7,781.99	7,775.34	27.58	27.72	158.51	11.37	623.57	828.64	773.58	55.06	15.051	
7,800.00	7,795.46	7,824.76	7,818.10	27.77	27.87	158.51	12.20	622.76	829.46	774.07	55.39	14.975	
7,850.00	7,845.42	7,867.51	7,860.85	27.95	28.02	158.52	12.68	622.28	830.70	774.99	55.72	14.910	
7,900.00	7,895.38	7,910.85	7,904.18	28.13	28.18	158.56	12.83	622.14	832.39	776.34	56.04	14.853	
7,950.00	7,945.34	7,960.81	7,954.14	28.31	28.35	158.61	12.83	622.14	834.25	777.85	56.40	14.792	
8,000.00	7,995.30	8,010.77	8,004.10	28.49	28.53	158.66	12.83	622.14	836.12	779.36	56.76	14.732	
8,050.00	8,045.26	8,060.72	8,054.06	28.67	28.71	158.71	12.83	622.14	837.99	780.87	57.11	14.672	
8,100.00	8,095.22	8,110.68	8,104.02	28.85	28.89	158.76	12.83	622.14	839.86	782.39	57.47	14.613	
8,150.00	8,145.18	8,160.64	8,153.98	29.03	29.06	158.81	12.83	622.14	841.73	783.90	57.83	14.556	
8,200.00	8,195.14	8,210.60	8,203.94	29.21	29.24	158.86	12.83	622.14	843.60	785.41	58.19	14.498	
8,250.00	8,245.10	8,260.56	8,253.90	29.39	29.42	158.90	12.83	622.14	845.47	786.92	58.54	14.442	
8,300.00	8,295.06	8,310.52	8,303.86	29.57	29.60	158.95	12.83	622.14	847.34	788.44	58.90	14.386	
8,350.00	8,345.02	8,360.48	8,353.82	29.75	29.77	159.00	12.83	622.14	849.21	789.95	59.26	14.331	
8,400.00	8,394.98	8,410.44	8,403.78	29.93	29.95	159.05	12.83	622.14	851.08	791.47	59.61	14.276	
8,450.00	8,444.94	8,460.40	8,453.74	30.11	30.13	159.10	12.83	622.14	852.95	792.98	59.97	14.223	
8,500.00	8,494.90	8,510.36	8,503.70	30.30	30.31	159.15	12.83	622.14	854.83	794.50	60.33	14.170	
8,550.00	8,544.86	8,560.32	8,553.66	30.48	30.49	159.19	12.83	622.14	856.70	796.01	60.69	14.117	
8,600.00	8,594.82	8,610.28	8,603.62	30.66	30.66	159.24	12.83	622.14	858.57	797.53	61.04	14.065	
8,650.00	8,644.78	8,653.24	8,646.56	30.84	30.81	159.35	11.78	622.15	860.62	799.26	61.36	14.026	
8,700.00	8,694.74	8,694.33	8,687.44	31.02	30.94	159.65	7.84	622.17	863.16	801.51	61.65	14.002	
8,750.00	8,744.70	8,734.54	8,727.08	31.20	31.06	160.12	1.16	622.21	866.26	804.34	61.92	13.990 SF	
8,800.00	8,794.66	8,773.52	8,764.98	31.38	31.18	160.75	-7.96	622.26	870.01	807.83	62.18	13.993	
8,850.00	8,844.62	8,810.98	8,800.73	31.56	31.29	161.51	-19.14	622.32	874.50	812.10	62.41	14.013	
8,900.00	8,894.58	8,846.72	8,834.08	31.74	31.39	162.37	-31.95	622.39	879.87	817.26	62.60	14.055	
8,950.00	8,944.54	8,880.59	8,864.90	31.92	31.47	163.29	-45.99	622.47	886.22	823.47	62.76	14.121	
9,000.00	8,994.50	8,912.51	8,893.14	32.10	31.55	164.26	-60.87	622.56	893.70	830.83	62.87	14.215	
9,050.00	9,044.45	8,942.47	8,918.85	32.28	31.63	165.25	-76.24	622.64	902.41	839.48	62.93	14.340	
9,100.00	9,094.41	8,970.50	8,942.14	32.46	31.69	166.24	-91.82	622.73	912.45	849.52	62.93	14.499	
9,150.00	9,144.37	9,000.00	8,965.81	32.65	31.75	167.34	-109.43	622.83	923.92	861.00	62.91	14.686	
9,200.00	9,194.33	9,021.00	8,982.09	32.83	31.79	168.16	-122.70	622.90	936.84	874.10	62.75	14.930	
9,250.00	9,244.29	9,050.00	9,003.74	33.01	31.85	169.34	-141.98	623.01	951.34	888.70	62.64	15.186	
9,300.00	9,294.25	9,064.75	9,014.37	33.19	31.88	169.96	-152.20	623.07	967.32	905.01	62.31	15.524	
9,350.00	9,344.21	9,084.35	9,028.09	33.37	31.91	170.79	-166.20	623.15	984.90	922.89	62.00	15.885	
9,400.00	9,394.17	9,100.00	9,038.70	33.55	31.94	171.47	-177.71	623.21	1,004.03	942.42	61.60	16.299	
9,450.00	9,444.13	9,119.55	9,051.49	33.73	31.98	172.34	-192.48	623.30	1,024.67	963.44	61.23	16.735	
9,500.00	9,494.09	9,135.35	9,061.47	33.91	32.02	173.05	-204.74	623.37	1,046.81	986.03	60.78	17.224	
9,550.00	9,544.05	9,150.00	9,070.40	34.09	32.06	173.71	-216.35	623.43	1,070.40	1,010.11	60.29	17.755	
9,600.00	9,594.01	9,163.84	9,078.57	34.27	32.09	174.34	-227.52	623.50	1,095.38	1,035.61	59.77	18.325	
9,650.00	9,643.97	9,176.70	9,085.92	34.45	32.12	174.94	-238.07	623.55	1,121.70	1,062.46	59.24	18.936	
9,700.00	9,693.93	9,200.00	9,098.62	34.63	32.18	176.02	-257.60	623.66	1,149.43	1,090.56	58.87	19.524	
9,750.00	9,743.89	9,200.00	9,098.62	34.82	32.18	176.02	-257.60	623.66	1,178.12	1,119.99	58.13	20.268	
9,800.00	9,793.85	9,200.00	9,098.62	35.00	32.18	176.02	-257.60	623.66	1,208.19	1,150.80	57.39	21.052	
9,850.00	9,843.81	9,220.49	9,109.12	35.18	32.23	176.97	-275.19	623.76	1,239.14	1,182.13	57.01	21.737	
9,900.00	9,893.77	9,229.82	9,113.70	35.36	32.25	177.41	-283.33	623.81	1,271.22	1,214.77	56.45	22.519	
9,950.00	9,943.73	9,250.00	9,123.14	35.54	32.30	178.36	-301.16	623.91	1,304.39	1,248.31	56.09	23.257	
10,000.00	9,993.69	9,250.00	9,123.14	35.72	32.30	178.36	-301.16	623.91	1,338.23	1,282.80	55.42	24.146	
10,050.00	10,043.65	9,250.00	9,123.14	35.90	32.30	178.36	-301.16	623.91	1,373.05	1,318.26	54.78	25.063	
10,100.00	10,093.61	9,250.00	9,123.14	36.08	32.30	178.36	-301.16	623.91	1,408.78	1,354.61	54.17	26.007	
10,150.00	10,143.57	9,269.14	9,131.50	36.26	32.35	179.26	-318.38	624.01	1,444.99	1,391.11	53.87	26.821	
10,200.00	10,193.53	9,275.78	9,134.27	36.44	32.37	179.57	-324.42	624.04	1,482.05	1,428.63	53.41	27.748	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 - Prelim Plan 3 — **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	8.70	8.70	0.50	0.50	101.08	-146.54	748.48	762.69				
50.00	50.00	58.70	58.70	0.50	0.51	101.08	-146.54	748.48	762.69	761.68	1.01	756.494	
100.00	100.00	108.70	108.70	0.52	0.53	101.08	-146.54	748.48	762.69	761.65	1.04	730.219	
150.00	150.00	158.70	158.70	0.59	0.61	101.08	-146.54	748.48	762.69	761.49	1.20	636.834	
200.00	200.00	208.70	208.70	0.70	0.72	101.08	-146.54	748.48	762.69	761.27	1.43	534.681	
250.00	250.00	258.70	258.70	0.84	0.86	101.08	-146.54	748.48	762.69	760.99	1.70	448.470	
300.00	300.00	308.70	308.70	0.99	1.01	101.08	-146.54	748.48	762.69	760.69	2.00	381.025	
350.00	350.00	358.70	358.70	1.15	1.17	101.08	-146.54	748.48	762.69	760.37	2.32	328.871	
400.00	400.00	408.70	408.70	1.31	1.34	101.08	-146.54	748.48	762.69	760.04	2.65	288.128	
450.00	450.00	458.70	458.70	1.48	1.51	101.08	-146.54	748.48	762.69	759.71	2.98	255.762	
500.00	500.00	508.70	508.70	1.65	1.68	101.08	-146.54	748.48	762.69	759.37	3.32	229.594	
550.00	550.00	558.70	558.70	1.82	1.85	101.08	-146.54	748.48	762.69	759.03	3.67	208.082	
600.00	600.00	608.70	608.70	1.99	2.02	101.08	-146.54	748.48	762.69	758.68	4.01	190.131	
650.00	650.00	658.70	658.70	2.16	2.19	101.08	-146.54	748.48	762.69	758.33	4.36	174.950	
700.00	700.00	708.70	708.70	2.34	2.37	101.08	-146.54	748.48	762.69	757.98	4.71	161.961	
750.00	750.00	758.70	758.70	2.51	2.55	101.08	-146.54	748.48	762.69	757.63	5.06	150.730	
800.00	800.00	808.70	808.70	2.69	2.72	101.08	-146.54	748.48	762.69	757.28	5.41	140.930	
850.00	850.00	858.70	858.70	2.87	2.90	101.08	-146.54	748.48	762.69	756.93	5.76	132.308	
900.00	900.00	908.70	908.70	3.04	3.07	101.08	-146.54	748.48	762.69	756.57	6.12	124.666	
950.00	950.00	958.70	958.70	3.22	3.25	101.08	-146.54	748.48	762.69	756.22	6.47	117.849	
1,000.00	1,000.00	1,008.70	1,008.70	3.40	3.43	101.08	-146.54	748.48	762.69	755.87	6.83	111.730	
1,050.00	1,050.00	1,058.70	1,058.70	3.58	3.61	101.08	-146.54	748.48	762.69	755.51	7.18	106.210	
1,100.00	1,100.00	1,108.70	1,108.70	3.75	3.78	101.08	-146.54	748.48	762.69	755.16	7.54	101.205	
1,150.00	1,150.00	1,158.70	1,158.70	3.93	3.96	101.08	-146.54	748.48	762.69	754.80	7.89	96.647	
1,200.00	1,200.00	1,208.70	1,208.70	4.11	4.14	101.08	-146.54	748.48	762.69	754.44	8.25	92.478	
1,250.00	1,250.00	1,258.70	1,258.70	4.29	4.32	101.08	-146.54	748.48	762.69	754.09	8.60	88.652	
1,300.00	1,300.00	1,308.70	1,308.70	4.46	4.50	101.08	-146.54	748.48	762.69	753.73	8.96	85.128	
1,350.00	1,350.00	1,358.70	1,358.70	4.64	4.67	101.08	-146.54	748.48	762.69	753.38	9.32	81.872	
1,400.00	1,400.00	1,408.70	1,408.70	4.82	4.85	101.08	-146.54	748.48	762.69	753.02	9.67	78.855	
1,450.00	1,450.00	1,458.70	1,458.70	5.00	5.03	101.08	-146.54	748.48	762.69	752.66	10.03	76.050	
1,500.00	1,500.00	1,508.70	1,508.70	5.18	5.21	101.08	-146.54	748.48	762.69	752.31	10.39	73.438	
1,550.00	1,550.00	1,558.70	1,558.70	5.36	5.39	101.08	-146.54	748.48	762.69	751.95	10.74	70.999	
1,600.00	1,600.00	1,608.70	1,608.70	5.53	5.57	101.08	-146.54	748.48	762.69	751.59	11.10	68.715	
1,650.00	1,650.00	1,658.70	1,658.70	5.71	5.74	101.08	-146.54	748.48	762.69	751.24	11.46	66.573	
1,700.00	1,700.00	1,708.70	1,708.70	5.89	5.92	101.08	-146.54	748.48	762.69	750.88	11.81	64.561	
1,750.00	1,750.00	1,758.70	1,758.70	6.07	6.10	101.08	-146.54	748.48	762.69	750.52	12.17	62.666	
1,800.00	1,800.00	1,808.70	1,808.70	6.25	6.28	101.08	-146.54	748.48	762.69	750.16	12.53	60.879	
1,850.00	1,850.00	1,858.70	1,858.70	6.43	6.46	101.08	-146.54	748.48	762.69	749.81	12.89	59.190	
1,900.00	1,900.00	1,908.70	1,908.70	6.61	6.64	101.08	-146.54	748.48	762.69	749.45	13.24	57.593	
1,950.00	1,950.00	1,958.70	1,958.70	6.78	6.82	101.08	-146.54	748.48	762.69	749.09	13.60	56.079	
2,000.00	2,000.00	2,008.70	2,008.70	6.96	6.99	101.08	-146.54	748.48	762.69	748.73	13.96	54.643	
2,050.00	2,050.00	2,058.70	2,058.70	7.14	7.17	163.01	-146.54	748.48	762.90	748.59	14.31	53.301	
2,100.00	2,099.99	2,108.69	2,108.69	7.32	7.35	163.02	-146.54	748.48	763.53	748.86	14.67	52.053	
2,150.00	2,149.98	2,158.68	2,158.68	7.49	7.53	163.04	-146.54	748.48	764.57	749.55	15.02	50.899	
2,200.00	2,199.96	2,208.66	2,208.66	7.67	7.71	163.07	-146.54	748.48	766.03	750.66	15.37	49.825	
2,250.00	2,249.92	2,258.62	2,258.62	7.84	7.89	163.11	-146.54	748.48	767.87	752.15	15.73	48.822	
2,300.00	2,299.88	2,308.58	2,308.58	8.02	8.07	163.15	-146.54	748.48	769.79	753.71	16.08	47.869	
2,350.00	2,349.84	2,358.54	2,358.54	8.19	8.25	163.20	-146.54	748.48	771.71	755.28	16.44	46.955	
2,400.00	2,399.80	2,408.50	2,408.50	8.37	8.42	163.24	-146.54	748.48	773.63	756.84	16.79	46.080	
2,450.00	2,449.76	2,458.46	2,458.46	8.54	8.60	163.28	-146.54	748.48	775.55	758.41	17.14	45.241	
2,500.00	2,499.72	2,510.14	2,510.14	8.72	8.79	163.33	-146.54	748.47	777.46	759.96	17.50	44.421	
2,550.00	2,549.68	2,570.31	2,570.30	8.90	9.00	163.38	-146.47	747.95	778.95	761.06	17.89	43.547	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 - Prelim Plan 3 — **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	2,599.64	2,630.51	2,630.49	9.07	9.21	163.44	-146.29	746.64	779.77	761.51	18.27	42.686	
2,650.00	2,649.60	2,690.73	2,690.67	9.25	9.41	163.50	-146.01	744.55	779.95	761.30	18.64	41.834	
2,700.00	2,699.56	2,750.94	2,750.81	9.43	9.62	163.56	-145.62	741.68	779.47	760.45	19.02	40.987	
2,750.00	2,749.52	2,811.12	2,810.88	9.61	9.83	163.63	-145.13	738.02	778.33	758.94	19.39	40.144	
2,800.00	2,799.48	2,871.26	2,870.85	9.78	10.04	163.70	-144.53	733.59	776.54	756.79	19.76	39.304	
2,850.00	2,849.44	2,931.33	2,930.69	9.96	10.25	163.78	-143.83	728.38	774.10	753.98	20.12	38.468	
2,900.00	2,899.40	2,991.31	2,990.37	10.14	10.46	163.87	-143.02	722.41	771.01	750.53	20.49	37.636	
2,950.00	2,949.36	3,051.18	3,049.85	10.32	10.67	163.95	-142.11	715.68	767.27	746.43	20.85	36.807	
3,000.00	2,999.32	3,110.92	3,109.11	10.49	10.88	164.05	-141.10	708.20	762.88	741.68	21.20	35.982	
3,050.00	3,049.28	3,170.51	3,168.12	10.67	11.09	164.14	-139.99	699.97	757.85	736.30	21.55	35.159	
3,100.00	3,099.24	3,225.12	3,222.11	10.85	11.28	164.24	-138.89	691.83	752.26	730.35	21.90	34.342	
3,150.00	3,149.20	3,274.78	3,271.19	11.03	11.46	164.33	-137.88	684.33	746.58	724.33	22.25	33.548	
3,200.00	3,199.16	3,324.45	3,320.28	11.21	11.63	164.42	-136.87	676.84	740.91	718.30	22.60	32.777	
3,250.00	3,249.12	3,374.11	3,369.36	11.38	11.81	164.51	-135.85	669.35	735.24	712.28	22.95	32.030	
3,300.00	3,299.08	3,423.77	3,418.45	11.56	11.99	164.60	-134.84	661.85	729.57	706.26	23.31	31.304	
3,350.00	3,349.04	3,473.44	3,467.53	11.74	12.17	164.69	-133.83	654.36	723.90	700.24	23.66	30.600	
3,400.00	3,399.00	3,523.10	3,516.62	11.92	12.34	164.79	-132.82	646.87	718.23	694.22	24.01	29.915	
3,450.00	3,448.96	3,572.76	3,565.70	12.10	12.52	164.89	-131.81	639.38	712.57	688.21	24.36	29.250	
3,500.00	3,498.92	3,622.43	3,614.79	12.28	12.70	164.99	-130.80	631.88	706.91	682.19	24.71	28.604	
3,550.00	3,548.88	3,672.09	3,663.87	12.46	12.88	165.09	-129.78	624.39	701.25	676.18	25.07	27.975	
3,600.00	3,598.84	3,721.75	3,712.95	12.63	13.06	165.19	-128.77	616.90	695.59	670.17	25.42	27.364	
3,650.00	3,648.80	3,771.42	3,762.04	12.81	13.24	165.29	-127.76	609.41	689.93	664.16	25.77	26.769	
3,700.00	3,698.76	3,821.08	3,811.12	12.99	13.42	165.40	-126.75	601.91	684.28	658.15	26.13	26.190	
3,750.00	3,748.72	3,870.74	3,860.21	13.17	13.60	165.50	-125.74	594.42	678.63	652.15	26.48	25.626	
3,800.00	3,798.68	3,920.41	3,909.29	13.35	13.78	165.61	-124.73	586.93	672.98	646.14	26.84	25.077	
3,850.00	3,848.64	3,970.07	3,958.38	13.53	13.96	165.72	-123.71	579.44	667.33	640.14	27.19	24.542	
3,900.00	3,898.60	4,019.74	4,007.46	13.71	14.14	165.84	-122.70	571.94	661.69	634.14	27.55	24.021	
3,950.00	3,948.56	4,069.40	4,056.55	13.89	14.33	165.95	-121.69	564.45	656.05	628.15	27.90	23.513	
4,000.00	3,998.52	4,119.06	4,105.63	14.07	14.51	166.07	-120.68	556.96	650.41	622.15	28.26	23.017	
4,050.00	4,048.47	4,168.73	4,154.72	14.25	14.69	166.18	-119.67	549.47	644.78	616.16	28.61	22.534	
4,100.00	4,098.43	4,218.39	4,203.80	14.43	14.87	166.31	-118.65	541.97	639.14	610.17	28.97	22.062	
4,150.00	4,148.39	4,268.05	4,252.89	14.61	15.05	166.43	-117.64	534.48	633.51	604.19	29.33	21.602	
4,200.00	4,198.35	4,317.72	4,301.97	14.79	15.24	166.55	-116.63	526.99	627.89	598.20	29.68	21.153	
4,250.00	4,248.31	4,367.38	4,351.06	14.97	15.42	166.68	-115.62	519.50	622.26	592.22	30.04	20.714	
4,300.00	4,298.27	4,417.04	4,400.14	15.14	15.60	166.81	-114.61	512.00	616.64	586.24	30.40	20.286	
4,350.00	4,348.23	4,466.71	4,449.23	15.32	15.79	166.94	-113.60	504.51	611.02	580.27	30.75	19.868	
4,400.00	4,398.19	4,516.37	4,498.31	15.50	15.97	167.08	-112.58	497.02	605.41	574.30	31.11	19.459	
4,450.00	4,448.15	4,566.03	4,547.39	15.68	16.15	167.21	-111.57	489.53	599.80	568.33	31.47	19.059	
4,500.00	4,498.11	4,615.70	4,596.48	15.86	16.34	167.35	-110.56	482.03	594.19	562.36	31.83	18.669	
4,550.00	4,548.07	4,665.36	4,645.56	16.04	16.52	167.49	-109.55	474.54	588.58	556.40	32.19	18.287	
4,600.00	4,598.03	4,715.03	4,694.65	16.22	16.70	167.64	-108.54	467.05	582.98	550.44	32.54	17.913	
4,650.00	4,647.99	4,764.69	4,743.73	16.40	16.89	167.79	-107.53	459.56	577.39	544.48	32.90	17.548	
4,700.00	4,697.95	4,814.35	4,792.82	16.58	17.07	167.94	-106.51	452.06	571.79	538.53	33.26	17.191	
4,750.00	4,747.91	4,864.02	4,841.90	16.76	17.26	168.09	-105.50	444.57	566.21	532.58	33.62	16.841	
4,800.00	4,797.87	4,913.68	4,890.99	16.94	17.44	168.25	-104.49	437.08	560.62	526.64	33.98	16.498	
4,850.00	4,847.83	4,963.34	4,940.07	17.12	17.63	168.41	-103.48	429.59	555.04	520.70	34.34	16.163	
4,900.00	4,897.79	5,013.01	4,989.16	17.30	17.81	168.57	-102.47	422.09	549.46	514.76	34.70	15.835	
4,950.00	4,947.75	5,062.67	5,038.24	17.48	18.00	168.73	-101.45	414.60	543.89	508.83	35.06	15.514	
5,000.00	4,997.71	5,112.33	5,087.33	17.66	18.18	168.90	-100.44	407.11	538.32	502.90	35.42	15.199	
5,050.00	5,047.67	5,162.00	5,136.41	17.84	18.37	169.08	-99.43	399.62	532.76	496.98	35.78	14.890	
5,100.00	5,097.63	5,211.66	5,185.50	18.02	18.55	169.25	-98.42	392.12	527.20	491.06	36.14	14.588	
5,150.00	5,147.59	5,261.32	5,234.58	18.20	18.74	169.43	-97.41	384.63	521.65	485.15	36.50	14.292	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 - Prelim Plan 3 — **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	5,197.55	5,310.99	5,283.67	18.38	18.92	169.62	-96.40	377.14	516.10	479.24	36.86	14.002	
5,250.00	5,247.51	5,360.65	5,332.75	18.56	19.11	169.81	-95.38	369.65	510.56	473.34	37.22	13.717	
5,300.00	5,297.47	5,410.31	5,381.83	18.74	19.29	170.00	-94.37	362.15	505.02	467.44	37.58	13.438	
5,350.00	5,347.43	5,459.98	5,430.92	18.92	19.48	170.20	-93.36	354.66	499.49	461.55	37.94	13.164	
5,400.00	5,397.39	5,509.64	5,480.00	19.10	19.67	170.40	-92.35	347.17	493.97	455.67	38.30	12.896	
5,450.00	5,447.35	5,559.31	5,529.09	19.28	19.85	170.60	-91.34	339.68	488.45	449.79	38.67	12.633	
5,500.00	5,497.31	5,608.97	5,578.17	19.46	20.04	170.81	-90.33	332.18	482.94	443.91	39.03	12.375	
5,550.00	5,547.27	5,658.63	5,627.26	19.64	20.22	171.03	-89.31	324.69	477.43	438.05	39.39	12.121	
5,600.00	5,597.23	5,708.30	5,676.34	19.82	20.41	171.25	-88.30	317.20	471.93	432.18	39.75	11.873	
5,650.00	5,647.19	5,757.96	5,725.43	20.00	20.60	171.48	-87.29	309.71	466.44	426.33	40.11	11.628	
5,700.00	5,697.15	5,807.62	5,774.51	20.18	20.78	171.71	-86.28	302.21	460.96	420.48	40.47	11.389	
5,750.00	5,747.11	5,857.29	5,823.60	20.36	20.97	171.94	-85.27	294.72	455.48	414.65	40.84	11.154	
5,800.00	5,797.07	5,906.95	5,872.68	20.54	21.16	172.18	-84.26	287.23	450.01	408.81	41.20	10.923	
5,850.00	5,847.03	5,956.61	5,921.77	20.73	21.34	172.43	-83.24	279.74	444.55	402.99	41.56	10.696	
5,900.00	5,896.99	6,006.28	5,970.85	20.91	21.53	172.69	-82.23	272.24	439.10	397.18	41.92	10.474	
5,950.00	5,946.95	6,055.94	6,019.94	21.09	21.72	172.95	-81.22	264.75	433.66	391.37	42.29	10.255	
6,000.00	5,996.91	6,105.60	6,069.02	21.27	21.90	173.22	-80.21	257.26	428.22	385.57	42.65	10.040	
6,050.00	6,046.87	6,155.27	6,118.10	21.45	22.09	173.49	-79.20	249.77	422.80	379.78	43.01	9.829	
6,100.00	6,096.83	6,204.93	6,167.19	21.63	22.28	173.77	-78.18	242.27	417.38	374.00	43.38	9.622	
6,150.00	6,146.79	6,254.60	6,216.27	21.81	22.46	174.06	-77.17	234.78	411.98	368.24	43.74	9.418	
6,200.00	6,196.75	6,304.26	6,265.36	21.99	22.65	174.36	-76.16	227.29	406.58	362.48	44.11	9.218	
6,250.00	6,246.71	6,353.92	6,314.44	22.17	22.84	174.66	-75.15	219.80	401.20	356.73	44.47	9.022	
6,300.00	6,296.67	6,403.59	6,363.53	22.35	23.02	174.97	-74.14	212.30	395.83	350.99	44.83	8.829	
6,350.00	6,346.63	6,453.25	6,412.61	22.53	23.21	175.29	-73.13	204.81	390.47	345.27	45.20	8.639	
6,400.00	6,396.59	6,502.91	6,461.70	22.71	23.40	175.62	-72.11	197.32	385.12	339.56	45.56	8.452	
6,450.00	6,446.55	6,552.58	6,510.78	22.89	23.59	175.96	-71.10	189.83	379.79	333.86	45.93	8.269	
6,500.00	6,496.51	6,602.24	6,559.87	23.07	23.77	176.31	-70.09	182.33	374.47	328.17	46.29	8.089	
6,550.00	6,546.46	6,651.90	6,608.95	23.25	23.96	176.67	-69.08	174.84	369.16	322.50	46.66	7.912	
6,600.00	6,596.42	6,701.57	6,658.04	23.43	24.15	177.04	-68.07	167.35	363.87	316.84	47.02	7.738	
6,650.00	6,646.38	6,751.23	6,707.12	23.61	24.34	177.42	-67.06	159.86	358.59	311.20	47.39	7.567	
6,700.00	6,696.34	6,800.89	6,756.21	23.79	24.52	177.81	-66.04	152.36	353.33	305.57	47.76	7.399	
6,750.00	6,746.30	6,850.56	6,805.29	23.97	24.71	178.21	-65.03	144.87	348.09	299.96	48.12	7.233	
6,800.00	6,796.26	6,900.22	6,854.38	24.15	24.90	178.63	-64.02	137.38	342.86	294.37	48.49	7.071	
6,850.00	6,846.22	6,949.88	6,903.46	24.33	25.09	179.06	-63.01	129.89	337.65	288.80	48.86	6.911	
6,900.00	6,896.18	7,000.45	6,952.54	24.51	25.28	179.50	-62.00	122.39	332.47	283.24	49.23	6.754	
6,950.00	6,946.14	7,049.21	7,001.63	24.70	25.46	179.95	-60.98	114.90	327.30	277.71	49.59	6.600	
7,000.00	6,996.10	7,101.12	7,050.71	24.88	25.66	-179.58	-59.97	107.41	322.15	272.18	49.97	6.447	
7,050.00	7,046.06	7,148.54	7,099.80	25.06	25.84	-179.09	-58.96	99.92	317.03	266.70	50.33	6.299	
7,100.00	7,096.02	7,201.80	7,148.88	25.24	26.04	-178.59	-57.95	92.42	311.92	261.21	50.71	6.151	
7,150.00	7,145.98	7,247.87	7,197.97	25.42	26.21	-178.07	-56.94	84.93	306.85	255.78	51.07	6.009	
7,200.00	7,195.94	7,302.47	7,247.05	25.60	26.42	-177.54	-55.93	77.44	301.80	250.34	51.45	5.865	
7,250.00	7,245.90	7,347.19	7,296.14	25.78	26.59	-176.98	-54.91	69.95	296.77	244.97	51.81	5.729	
7,300.00	7,295.86	7,403.14	7,345.22	25.96	26.80	-176.41	-53.90	62.45	291.78	239.58	52.20	5.590	
7,350.00	7,345.82	7,446.52	7,394.31	26.14	26.97	-175.82	-52.89	54.96	286.81	234.26	52.55	5.458	
7,400.00	7,395.78	7,503.82	7,443.39	26.32	27.18	-175.21	-51.88	47.47	281.88	228.93	52.95	5.324	
7,450.00	7,445.74	7,545.85	7,492.48	26.50	27.34	-174.57	-50.87	39.98	276.98	223.69	53.29	5.197	
7,500.00	7,495.70	7,604.49	7,541.56	26.68	27.56	-173.92	-49.86	32.48	272.11	218.41	53.70	5.068	
7,550.00	7,545.66	7,645.17	7,590.65	26.86	27.72	-173.24	-48.84	24.99	267.28	213.24	54.04	4.946	Alert
7,600.00	7,595.62	7,705.16	7,639.73	27.04	27.95	-172.53	-47.83	17.50	262.49	208.04	54.45	4.821	Alert
7,650.00	7,645.58	7,744.50	7,688.82	27.22	28.10	-171.80	-46.82	10.01	257.74	202.96	54.78	4.705	Alert
7,700.00	7,695.54	7,793.09	7,736.85	27.40	28.28	-171.06	-45.84	2.72	253.08	197.91	55.17	4.587	Alert
7,750.00	7,745.50	7,840.12	7,783.41	27.58	28.46	-170.38	-44.95	-3.87	248.89	193.33	55.56	4.480	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 - Prelim Plan 3 — **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
7,800.00	7,795.46	7,887.27	7,830.16	27.77	28.63	-169.74	-44.13	-9.90	245.27	189.32	55.95	4.384	Alert
7,850.00	7,845.42	7,934.52	7,877.08	27.95	28.81	-169.15	-43.39	-15.37	242.22	185.89	56.33	4.300	Alert
7,900.00	7,895.38	7,981.85	7,924.16	28.13	28.98	-168.62	-42.73	-20.28	239.72	183.01	56.71	4.227	Alert
7,950.00	7,945.34	8,029.26	7,971.36	28.31	29.16	-168.16	-42.15	-24.61	237.77	180.69	57.07	4.166	Alert
8,000.00	7,995.30	8,076.72	8,018.67	28.49	29.33	-167.76	-41.64	-28.37	236.35	178.92	57.44	4.115	Alert
8,050.00	8,045.26	8,124.23	8,066.07	28.67	29.50	-167.44	-41.21	-31.54	235.47	177.68	57.79	4.075	Alert
8,100.00	8,095.22	8,171.76	8,113.53	28.85	29.67	-167.19	-40.86	-34.13	235.12	176.98	58.14	4.044	Alert
8,108.45	8,103.66	8,179.79	8,121.55	28.88	29.70	-167.16	-40.81	-34.51	235.11	176.92	58.20	4.040	Alert, CC
8,150.00	8,145.18	8,219.31	8,161.03	29.03	29.84	-167.03	-40.59	-36.14	235.29	176.81	58.48	4.023	Alert, ES
8,200.00	8,195.14	8,266.85	8,208.55	29.21	30.00	-166.94	-40.40	-37.56	235.99	177.17	58.82	4.012	Alert
8,250.00	8,245.10	8,314.38	8,256.07	29.39	30.17	-166.93	-40.28	-38.40	237.20	178.06	59.14	4.011	Alert, SF
8,300.00	8,295.06	8,362.06	8,303.76	29.57	30.33	-167.00	-40.25	-38.65	238.93	179.47	59.46	4.018	Alert
8,350.00	8,345.02	8,412.02	8,353.72	29.75	30.50	-167.11	-40.25	-38.65	240.89	181.07	59.81	4.027	Alert
8,400.00	8,394.98	8,461.98	8,403.68	29.93	30.68	-167.21	-40.25	-38.65	242.84	182.68	60.16	4.036	Alert
8,450.00	8,444.94	8,511.94	8,453.64	30.11	30.85	-167.32	-40.25	-38.65	244.80	184.29	60.51	4.045	Alert
8,500.00	8,494.90	8,561.90	8,503.60	30.30	31.02	-167.42	-40.25	-38.65	246.75	185.89	60.86	4.054	Alert
8,550.00	8,544.86	8,611.86	8,553.56	30.48	31.19	-167.52	-40.25	-38.65	248.71	187.50	61.21	4.063	Alert
8,600.00	8,594.82	8,661.82	8,603.52	30.66	31.36	-167.62	-40.25	-38.65	250.67	189.11	61.56	4.072	Alert
8,650.00	8,644.78	8,702.50	8,644.17	30.84	31.49	-167.54	-41.15	-38.64	253.39	191.64	61.75	4.103	Alert
8,700.00	8,694.74	8,740.88	8,682.40	31.02	31.62	-167.04	-44.59	-38.62	258.29	196.47	61.82	4.178	Alert
8,750.00	8,744.70	8,778.54	8,719.60	31.20	31.73	-166.15	-50.44	-38.58	265.44	203.65	61.79	4.296	Alert
8,800.00	8,794.66	8,815.19	8,755.35	31.38	31.85	-164.96	-58.46	-38.53	274.90	213.25	61.64	4.460	Alert
8,850.00	8,844.62	8,850.00	8,788.76	31.56	31.95	-163.57	-68.19	-38.47	286.72	225.38	61.34	4.674	Alert
8,900.00	8,894.58	8,884.52	8,821.26	31.74	32.05	-161.99	-79.81	-38.40	300.96	240.00	60.96	4.937	Alert
8,950.00	8,944.54	8,916.87	8,851.02	31.92	32.14	-160.38	-92.47	-38.32	317.62	257.21	60.42	5.257	
9,000.00	8,994.50	8,950.00	8,880.72	32.10	32.23	-158.63	-107.15	-38.22	336.69	276.79	59.90	5.621	
9,050.00	9,044.45	8,976.52	8,903.85	32.28	32.30	-157.19	-120.13	-38.14	358.06	299.06	59.00	6.068	
9,100.00	9,094.41	9,000.00	8,923.80	32.46	32.35	-155.90	-132.49	-38.06	381.70	323.77	57.94	6.588	
9,150.00	9,144.37	9,029.40	8,948.05	32.65	32.42	-154.28	-149.12	-37.96	407.38	350.10	57.29	7.111	
9,200.00	9,194.33	9,050.00	8,964.51	32.83	32.47	-153.16	-161.50	-37.88	435.07	378.90	56.17	7.746	
9,250.00	9,244.29	9,075.83	8,984.52	33.01	32.52	-151.77	-177.84	-37.78	464.52	409.07	55.45	8.377	
9,300.00	9,294.25	9,100.00	9,002.54	33.19	32.57	-150.50	-193.93	-37.67	495.67	440.95	54.72	9.058	
9,350.00	9,344.21	9,116.43	9,014.40	33.37	32.60	-149.65	-205.30	-37.60	528.30	474.65	53.64	9.849	
9,400.00	9,394.17	9,134.75	9,027.24	33.55	32.63	-148.73	-218.37	-37.52	562.32	509.54	52.78	10.654	
9,450.00	9,444.13	9,150.00	9,037.60	33.73	32.66	-147.98	-229.56	-37.45	597.59	545.73	51.86	11.523	
9,500.00	9,494.09	9,167.90	9,049.37	33.91	32.69	-147.13	-243.04	-37.36	633.98	582.80	51.17	12.389	
9,550.00	9,544.05	9,182.88	9,058.90	34.09	32.71	-146.43	-254.60	-37.29	671.40	620.96	50.44	13.311	
9,600.00	9,594.01	9,200.00	9,069.42	34.27	32.74	-145.65	-268.11	-37.21	709.76	659.87	49.89	14.226	
9,650.00	9,643.97	9,200.00	9,069.42	34.45	32.74	-145.65	-268.11	-37.21	749.08	700.41	48.67	15.391	
9,700.00	9,693.93	9,222.42	9,082.57	34.63	32.76	-144.67	-286.27	-37.09	788.87	740.36	48.51	16.261	
9,750.00	9,743.89	9,234.02	9,089.09	34.82	32.78	-144.17	-295.86	-37.03	829.51	781.55	47.96	17.295	
9,800.00	9,793.85	9,250.00	9,097.75	35.00	32.80	-143.51	-309.29	-36.95	870.81	823.16	47.64	18.278	
9,850.00	9,843.81	9,250.00	9,097.75	35.18	32.80	-143.51	-309.29	-36.95	912.64	865.85	46.80	19.502	
9,900.00	9,893.77	9,264.87	9,105.47	35.36	32.82	-142.92	-321.99	-36.86	954.96	908.41	46.55	20.513	
9,950.00	9,943.73	9,274.00	9,110.05	35.54	32.82	-142.56	-329.89	-36.81	997.79	951.63	46.16	21.617	
10,000.00	9,993.69	9,282.62	9,114.26	35.72	32.83	-142.23	-337.42	-36.77	1,041.06	995.26	45.80	22.731	
10,050.00	10,043.65	9,300.00	9,122.39	35.90	32.85	-141.58	-352.77	-36.67	1,084.84	1,039.08	45.76	23.708	
10,100.00	10,093.61	9,300.00	9,122.39	36.08	32.85	-141.58	-352.77	-36.67	1,128.76	1,083.53	45.23	24.957	
10,150.00	10,143.57	9,300.00	9,122.39	36.26	32.85	-141.58	-352.77	-36.67	1,173.18	1,128.41	44.76	26.210	
10,200.00	10,193.53	9,300.00	9,122.39	36.44	32.85	-141.58	-352.77	-36.67	1,218.02	1,173.67	44.35	27.466	
10,250.00	10,243.49	9,319.36	9,130.90	36.62	32.87	-140.88	-370.16	-36.56	1,262.78	1,218.32	44.46	28.400	
10,300.00	10,293.45	9,325.63	9,133.53	36.81	32.87	-140.66	-375.86	-36.52	1,308.02	1,263.74	44.27	29.545	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 - Prelim Plan 3

Survey Program: 0-MWD+IFR1

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
10,350.00	10,343.41	9,331.60	9,135.97	36.99	32.88	-140.45	-381.30	-36.49	1,353.50	1,309.39	44.10	30.690	
10,400.00	10,393.37	9,350.00	9,143.15	37.17	32.89	-139.83	-398.25	-36.38	1,399.40	1,355.16	44.24	31.634	
10,450.00	10,443.33	9,350.00	9,143.15	37.35	32.89	-139.83	-398.25	-36.38	1,445.19	1,401.21	43.98	32.860	
10,500.00	10,493.29	9,350.00	9,143.15	37.53	32.89	-139.83	-398.25	-36.38	1,491.25	1,447.49	43.75	34.083	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	8.90	8.90	0.50	0.50	100.25	-146.23	808.45	821.57				
50.00	50.00	58.90	58.90	0.50	0.51	100.25	-146.23	808.45	821.57	820.56	1.01	814.860	
100.00	100.00	108.90	108.90	0.52	0.53	100.25	-146.23	808.45	821.57	820.53	1.04	786.420	
150.00	150.00	158.90	158.90	0.59	0.61	100.25	-146.23	808.45	821.57	820.37	1.20	685.763	
200.00	200.00	208.90	208.90	0.70	0.72	100.25	-146.23	808.45	821.57	820.14	1.43	575.748	
250.00	250.00	258.90	258.90	0.84	0.86	100.25	-146.23	808.45	821.57	819.87	1.70	482.925	
300.00	300.00	308.90	308.90	0.99	1.01	100.25	-146.23	808.45	821.57	819.57	2.00	410.311	
350.00	350.00	358.90	358.90	1.15	1.17	100.25	-146.23	808.45	821.57	819.25	2.32	354.160	
400.00	400.00	408.90	408.90	1.31	1.34	100.25	-146.23	808.45	821.57	818.92	2.65	310.293	
450.00	450.00	458.90	458.90	1.48	1.51	100.25	-146.23	808.45	821.57	818.59	2.98	275.444	
500.00	500.00	508.90	508.90	1.65	1.68	100.25	-146.23	808.45	821.57	818.25	3.32	247.267	
550.00	550.00	558.90	558.90	1.82	1.85	100.25	-146.23	808.45	821.57	817.90	3.67	224.103	
600.00	600.00	608.90	608.90	1.99	2.02	100.25	-146.23	808.45	821.57	817.56	4.01	204.773	
650.00	650.00	658.90	658.90	2.16	2.20	100.25	-146.23	808.45	821.57	817.21	4.36	188.426	
700.00	700.00	708.90	708.90	2.34	2.37	100.25	-146.23	808.45	821.57	816.86	4.71	174.438	
750.00	750.00	758.90	758.90	2.51	2.55	100.25	-146.23	808.45	821.57	816.51	5.06	162.344	
800.00	800.00	808.90	808.90	2.69	2.72	100.25	-146.23	808.45	821.57	816.16	5.41	151.790	
850.00	850.00	858.90	858.90	2.87	2.90	100.25	-146.23	808.45	821.57	815.80	5.77	142.504	
900.00	900.00	908.90	908.90	3.04	3.08	100.25	-146.23	808.45	821.57	815.45	6.12	134.275	
950.00	950.00	958.90	958.90	3.22	3.25	100.25	-146.23	808.45	821.57	815.10	6.47	126.933	
1,000.00	1,000.00	1,008.90	1,008.90	3.40	3.43	100.25	-146.23	808.45	821.57	814.74	6.83	120.343	
1,050.00	1,050.00	1,058.90	1,058.90	3.58	3.61	100.25	-146.23	808.45	821.57	814.39	7.18	114.398	
1,100.00	1,100.00	1,108.90	1,108.90	3.75	3.78	100.25	-146.23	808.45	821.57	814.03	7.54	109.007	
1,150.00	1,150.00	1,158.90	1,158.90	3.93	3.96	100.25	-146.23	808.45	821.57	813.68	7.89	104.098	
1,200.00	1,200.00	1,208.90	1,208.90	4.11	4.14	100.25	-146.23	808.45	821.57	813.32	8.25	99.609	
1,250.00	1,250.00	1,258.90	1,258.90	4.29	4.32	100.25	-146.23	808.45	821.57	812.97	8.60	95.488	
1,300.00	1,300.00	1,308.90	1,308.90	4.46	4.50	100.25	-146.23	808.45	821.57	812.61	8.96	91.693	
1,350.00	1,350.00	1,358.90	1,358.90	4.64	4.67	100.25	-146.23	808.45	821.57	812.25	9.32	88.186	
1,400.00	1,400.00	1,408.90	1,408.90	4.82	4.85	100.25	-146.23	808.45	821.57	811.90	9.67	84.936	
1,450.00	1,450.00	1,458.90	1,458.90	5.00	5.03	100.25	-146.23	808.45	821.57	811.54	10.03	81.916	
1,500.00	1,500.00	1,508.90	1,508.90	5.18	5.21	100.25	-146.23	808.45	821.57	811.18	10.39	79.102	
1,550.00	1,550.00	1,558.90	1,558.90	5.36	5.39	100.25	-146.23	808.45	821.57	810.83	10.74	76.474	
1,600.00	1,600.00	1,608.90	1,608.90	5.53	5.57	100.25	-146.23	808.45	821.57	810.47	11.10	74.015	
1,650.00	1,650.00	1,658.90	1,658.90	5.71	5.74	100.25	-146.23	808.45	821.57	810.11	11.46	71.708	
1,700.00	1,700.00	1,708.90	1,708.90	5.89	5.92	100.25	-146.23	808.45	821.57	809.76	11.81	69.541	
1,750.00	1,750.00	1,758.90	1,758.90	6.07	6.10	100.25	-146.23	808.45	821.57	809.40	12.17	67.500	
1,800.00	1,800.00	1,808.90	1,808.90	6.25	6.28	100.25	-146.23	808.45	821.57	809.04	12.53	65.575	
1,850.00	1,850.00	1,858.90	1,858.90	6.43	6.46	100.25	-146.23	808.45	821.57	808.68	12.89	63.756	
1,900.00	1,900.00	1,908.90	1,908.90	6.61	6.64	100.25	-146.23	808.45	821.57	808.33	13.24	62.036	
1,950.00	1,950.00	1,958.90	1,958.90	6.78	6.82	100.25	-146.23	808.45	821.57	807.97	13.60	60.405	
2,000.00	2,000.00	2,008.90	2,008.90	6.96	7.00	100.25	-146.23	808.45	821.57	807.61	13.96	58.858 CC	
2,050.00	2,050.00	2,058.90	2,058.90	7.14	7.17	162.18	-146.23	808.45	821.78	807.46	14.31	57.412 ES	
2,100.00	2,099.99	2,108.89	2,108.89	7.32	7.35	162.20	-146.23	808.45	822.40	807.73	14.67	56.064	
2,150.00	2,149.98	2,158.88	2,158.88	7.49	7.53	162.22	-146.23	808.45	823.44	808.42	15.02	54.815	
2,200.00	2,199.96	2,208.86	2,208.86	7.67	7.71	162.24	-146.23	808.45	824.89	809.52	15.38	53.651	
2,250.00	2,249.92	2,258.82	2,258.82	7.84	7.89	162.28	-146.23	808.45	826.73	811.00	15.73	52.562	
2,300.00	2,299.88	2,308.78	2,308.78	8.02	8.07	162.32	-146.23	808.45	828.64	812.56	16.08	51.526	
2,350.00	2,349.84	2,358.74	2,358.74	8.19	8.25	162.37	-146.23	808.45	830.55	814.11	16.44	50.533	
2,400.00	2,399.80	2,408.70	2,408.70	8.37	8.43	162.41	-146.23	808.45	832.46	815.67	16.79	49.582	
2,450.00	2,449.76	2,458.66	2,458.66	8.54	8.60	162.45	-146.23	808.45	834.37	817.23	17.14	48.670	
2,500.00	2,499.72	2,508.62	2,508.62	8.72	8.78	162.49	-146.23	808.45	836.28	818.79	17.50	47.794	
2,550.00	2,549.68	2,551.96	2,551.96	8.90	8.93	162.52	-146.15	808.67	838.43	820.60	17.82	47.038	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	2,599.64	2,596.25	2,596.25	9.07	9.09	162.54	-145.97	809.22	840.90	822.75	18.15	46.319	
2,650.00	2,649.60	2,640.51	2,640.50	9.25	9.24	162.54	-145.67	810.08	843.71	825.23	18.48	45.651	
2,700.00	2,699.56	2,684.74	2,684.70	9.43	9.40	162.54	-145.27	811.27	846.86	828.05	18.81	45.027	
2,750.00	2,749.52	2,728.92	2,728.86	9.61	9.55	162.52	-144.75	812.78	850.34	831.21	19.13	44.443	
2,800.00	2,799.48	2,773.06	2,772.95	9.78	9.71	162.49	-144.12	814.61	854.15	834.70	19.46	43.898	
2,850.00	2,849.44	2,817.14	2,816.98	9.96	9.86	162.45	-143.39	816.75	858.30	838.52	19.78	43.390	
2,900.00	2,899.40	2,861.17	2,860.93	10.14	10.01	162.40	-142.55	819.22	862.79	842.68	20.10	42.916	
2,950.00	2,949.36	2,905.14	2,904.80	10.32	10.17	162.34	-141.59	822.00	867.61	847.18	20.43	42.476	
3,000.00	2,999.32	2,949.04	2,948.59	10.49	10.32	162.27	-140.53	825.09	872.76	852.01	20.75	42.067	
3,050.00	3,049.28	2,992.88	2,992.27	10.67	10.48	162.19	-139.37	828.50	878.24	857.18	21.07	41.689	
3,100.00	3,099.24	3,036.63	3,035.85	10.85	10.63	162.10	-138.10	832.21	884.06	862.68	21.39	41.340	
3,150.00	3,149.20	3,083.17	3,079.13	11.03	10.80	162.00	-136.73	836.21	890.22	868.51	21.71	41.000	
3,200.00	3,199.16	3,129.69	3,128.44	11.21	10.96	161.88	-135.10	840.97	896.55	874.50	22.05	40.658	
3,250.00	3,249.12	3,179.25	3,177.75	11.38	11.14	161.77	-133.47	845.72	902.89	880.49	22.40	40.307	
3,300.00	3,299.08	3,228.81	3,227.06	11.56	11.31	161.65	-131.85	850.47	909.23	886.48	22.75	39.966	
3,350.00	3,349.04	3,278.38	3,276.37	11.74	11.49	161.54	-130.22	855.22	915.57	892.47	23.10	39.634	
3,400.00	3,399.00	3,327.94	3,325.68	11.92	11.67	161.43	-128.60	859.98	921.92	898.47	23.45	39.313	
3,450.00	3,448.96	3,377.51	3,374.98	12.10	11.85	161.32	-126.97	864.73	928.27	904.47	23.80	39.000	
3,500.00	3,498.92	3,427.07	3,424.29	12.28	12.03	161.21	-125.34	869.48	934.63	910.47	24.15	38.696	
3,550.00	3,548.88	3,476.63	3,473.60	12.46	12.20	161.11	-123.72	874.23	940.98	916.48	24.50	38.401	
3,600.00	3,598.84	3,526.20	3,522.91	12.63	12.38	161.00	-122.09	878.98	947.34	922.49	24.86	38.114	
3,650.00	3,648.80	3,575.76	3,572.22	12.81	12.56	160.90	-120.46	883.74	953.71	928.50	25.21	37.834	
3,700.00	3,698.76	3,625.33	3,621.53	12.99	12.74	160.79	-118.84	888.49	960.08	934.52	25.56	37.562	
3,750.00	3,748.72	3,674.89	3,670.84	13.17	12.92	160.69	-117.21	893.24	966.44	940.53	25.91	37.297	
3,800.00	3,798.68	3,724.45	3,720.15	13.35	13.10	160.59	-115.58	897.99	972.82	946.55	26.26	37.039	
3,850.00	3,848.64	3,774.02	3,769.45	13.53	13.28	160.49	-113.96	902.75	979.19	952.58	26.62	36.787	
3,900.00	3,898.60	3,823.58	3,818.76	13.71	13.46	160.40	-112.33	907.50	985.57	958.60	26.97	36.542	
3,950.00	3,948.56	3,873.15	3,868.07	13.89	13.65	160.30	-110.70	912.25	991.95	964.63	27.32	36.303	
4,000.00	3,998.52	3,922.71	3,917.38	14.07	13.83	160.21	-109.08	917.00	998.34	970.66	27.68	36.070	
4,050.00	4,048.47	3,972.27	3,966.69	14.25	14.01	160.11	-107.45	921.75	1,004.72	976.69	28.03	35.843	
4,100.00	4,098.43	4,021.84	4,016.00	14.43	14.19	160.02	-105.82	926.51	1,011.11	982.73	28.38	35.621	
4,150.00	4,148.39	4,071.40	4,065.31	14.61	14.37	159.93	-104.20	931.26	1,017.50	988.76	28.74	35.405	
4,200.00	4,198.35	4,120.97	4,114.62	14.79	14.55	159.84	-102.57	936.01	1,023.90	994.80	29.09	35.194	
4,250.00	4,248.31	4,170.53	4,163.92	14.97	14.74	159.75	-100.94	940.76	1,030.29	1,000.85	29.45	34.988	
4,300.00	4,298.27	4,220.09	4,213.23	15.14	14.92	159.66	-99.32	945.52	1,036.69	1,006.89	29.80	34.786	
4,350.00	4,348.23	4,269.66	4,262.54	15.32	15.10	159.58	-97.69	950.27	1,043.09	1,012.94	30.16	34.589	
4,400.00	4,398.19	4,319.22	4,311.85	15.50	15.29	159.49	-96.06	955.02	1,049.50	1,018.99	30.51	34.397	
4,450.00	4,448.15	4,368.79	4,361.16	15.68	15.47	159.41	-94.44	959.77	1,055.90	1,025.04	30.87	34.209	
4,500.00	4,498.11	4,418.35	4,410.47	15.86	15.65	159.32	-92.81	964.52	1,062.31	1,031.09	31.22	34.026	
4,550.00	4,548.07	4,467.91	4,459.78	16.04	15.84	159.24	-91.18	969.28	1,068.72	1,037.15	31.58	33.846	
4,600.00	4,598.03	4,517.48	4,509.09	16.22	16.02	159.16	-89.56	974.03	1,075.13	1,043.20	31.93	33.670	
4,650.00	4,647.99	4,567.04	4,558.40	16.40	16.20	159.08	-87.93	978.78	1,081.55	1,049.26	32.29	33.498	
4,700.00	4,697.95	4,616.60	4,607.70	16.58	16.39	159.00	-86.30	983.53	1,087.97	1,055.32	32.64	33.330	
4,750.00	4,747.91	4,666.17	4,657.01	16.76	16.57	158.92	-84.68	988.29	1,094.38	1,061.39	33.00	33.165	
4,800.00	4,797.87	4,715.73	4,706.32	16.94	16.75	158.84	-83.05	993.04	1,100.81	1,067.45	33.35	33.004	
4,850.00	4,847.83	4,765.30	4,755.63	17.12	16.94	158.77	-81.42	997.79	1,107.23	1,073.52	33.71	32.846	
4,900.00	4,897.79	4,814.86	4,804.94	17.30	17.12	158.69	-79.80	1,002.54	1,113.65	1,079.59	34.07	32.692	
4,950.00	4,947.75	4,864.42	4,854.25	17.48	17.31	158.61	-78.17	1,007.30	1,120.08	1,085.66	34.42	32.540	
5,000.00	4,997.71	4,913.99	4,903.56	17.66	17.49	158.54	-76.54	1,012.05	1,126.51	1,091.73	34.78	32.392	
5,050.00	5,047.67	4,963.55	4,952.87	17.84	17.68	158.47	-74.92	1,016.80	1,132.94	1,097.80	35.13	32.247	
5,100.00	5,097.63	5,013.12	5,002.17	18.02	17.86	158.39	-73.29	1,021.55	1,139.37	1,103.88	35.49	32.104	
5,150.00	5,147.59	5,062.68	5,051.48	18.20	18.05	158.32	-71.66	1,026.30	1,145.80	1,109.96	35.85	31.964	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	5,197.55	5,112.24	5,100.79	18.38	18.23	158.25	-70.04	1,031.06	1,152.24	1,116.04	36.20	31.828	
5,250.00	5,247.51	5,161.81	5,150.10	18.56	18.42	158.18	-68.41	1,035.81	1,158.68	1,122.12	36.56	31.693	
5,300.00	5,297.47	5,211.37	5,199.41	18.74	18.60	158.11	-66.79	1,040.56	1,165.12	1,128.20	36.92	31.562	
5,350.00	5,347.43	5,260.94	5,248.72	18.92	18.79	158.04	-65.16	1,045.31	1,171.56	1,134.29	37.27	31.432	
5,400.00	5,397.39	5,310.50	5,298.03	19.10	18.97	157.97	-63.53	1,050.07	1,178.00	1,140.37	37.63	31.306	
5,450.00	5,447.35	5,360.06	5,347.34	19.28	19.16	157.91	-61.91	1,054.82	1,184.44	1,146.46	37.99	31.181	
5,500.00	5,497.31	5,409.63	5,396.64	19.46	19.35	157.84	-60.28	1,059.57	1,190.89	1,152.55	38.34	31.059	
5,550.00	5,547.27	5,459.19	5,445.95	19.64	19.53	157.77	-58.65	1,064.32	1,197.34	1,158.64	38.70	30.939	
5,600.00	5,597.23	5,508.76	5,495.26	19.82	19.72	157.71	-57.03	1,069.07	1,203.79	1,164.73	39.06	30.821	
5,650.00	5,647.19	5,558.32	5,544.57	20.00	19.90	157.65	-55.40	1,073.83	1,210.24	1,170.82	39.41	30.706	
5,700.00	5,697.15	5,607.88	5,593.88	20.18	20.09	157.58	-53.77	1,078.58	1,216.69	1,176.92	39.77	30.592	
5,750.00	5,747.11	5,657.45	5,643.19	20.36	20.28	157.52	-52.15	1,083.33	1,223.14	1,183.01	40.13	30.481	
5,800.00	5,797.07	5,707.01	5,692.50	20.54	20.46	157.46	-50.52	1,088.08	1,229.60	1,189.11	40.49	30.371	
5,850.00	5,847.03	5,756.58	5,741.81	20.73	20.65	157.39	-48.89	1,092.84	1,236.05	1,195.21	40.84	30.264	
5,900.00	5,896.99	5,806.14	5,791.11	20.91	20.83	157.33	-47.27	1,097.59	1,242.51	1,201.31	41.20	30.158	
5,950.00	5,946.95	5,855.70	5,840.42	21.09	21.02	157.27	-45.64	1,102.34	1,248.97	1,207.41	41.56	30.054	
6,000.00	5,996.91	5,905.27	5,889.73	21.27	21.21	157.21	-44.01	1,107.09	1,255.43	1,213.51	41.92	29.952	
6,050.00	6,046.87	5,954.83	5,939.04	21.45	21.39	157.15	-42.39	1,111.84	1,261.89	1,219.62	42.27	29.851	
6,100.00	6,096.83	6,004.40	5,988.35	21.63	21.58	157.10	-40.76	1,116.60	1,268.35	1,225.72	42.63	29.752	
6,150.00	6,146.79	6,053.96	6,037.66	21.81	21.77	157.04	-39.13	1,121.35	1,274.82	1,231.83	42.99	29.655	
6,200.00	6,196.75	6,103.52	6,086.97	21.99	21.95	156.98	-37.51	1,126.10	1,281.28	1,237.94	43.35	29.560	
6,250.00	6,246.71	6,153.09	6,136.28	22.17	22.14	156.92	-35.88	1,130.85	1,287.75	1,244.04	43.70	29.466	
6,300.00	6,296.67	6,202.65	6,185.58	22.35	22.33	156.87	-34.25	1,135.61	1,294.22	1,250.15	44.06	29.373	
6,350.00	6,346.63	6,252.22	6,234.89	22.53	22.51	156.81	-32.63	1,140.36	1,300.68	1,256.27	44.42	29.282	
6,400.00	6,396.59	6,301.78	6,284.20	22.71	22.70	156.76	-31.00	1,145.11	1,307.15	1,262.38	44.78	29.193	
6,450.00	6,446.55	6,351.34	6,333.51	22.89	22.89	156.70	-29.37	1,149.86	1,313.63	1,268.49	45.14	29.104	
6,500.00	6,496.51	6,400.91	6,382.82	23.07	23.07	156.65	-27.75	1,154.61	1,320.10	1,274.61	45.49	29.018	
6,550.00	6,546.46	6,450.47	6,432.13	23.25	23.26	156.59	-26.12	1,159.37	1,326.57	1,280.72	45.85	28.932	
6,600.00	6,596.42	6,500.04	6,481.44	23.43	23.45	156.54	-24.49	1,164.12	1,333.05	1,286.84	46.21	28.848	
6,650.00	6,646.38	6,549.60	6,530.75	23.61	23.64	156.49	-22.87	1,168.87	1,339.52	1,292.96	46.57	28.765	
6,700.00	6,696.34	6,600.84	6,580.06	23.79	23.83	156.44	-21.24	1,173.62	1,346.00	1,299.07	46.93	28.680	
6,750.00	6,746.30	6,648.73	6,629.36	23.97	24.01	156.38	-19.61	1,178.38	1,352.48	1,305.20	47.28	28.604	
6,800.00	6,796.26	6,701.71	6,678.67	24.15	24.21	156.33	-17.99	1,183.13	1,358.96	1,311.30	47.65	28.517	
6,850.00	6,846.22	6,747.85	6,727.98	24.33	24.38	156.28	-16.36	1,187.88	1,365.44	1,317.44	48.00	28.447	
6,900.00	6,896.18	6,802.58	6,777.29	24.51	24.59	156.23	-14.73	1,192.63	1,371.92	1,323.54	48.38	28.359	
6,950.00	6,946.14	6,846.98	6,826.60	24.70	24.76	156.18	-13.11	1,197.39	1,378.40	1,329.69	48.72	28.294	
7,000.00	6,996.10	6,896.55	6,875.91	24.88	24.95	156.13	-11.48	1,202.14	1,384.89	1,335.81	49.07	28.220	
7,050.00	7,046.06	6,946.11	6,925.22	25.06	25.13	156.09	-9.86	1,206.89	1,391.37	1,341.94	49.43	28.146	
7,100.00	7,096.02	7,004.33	6,974.53	25.24	25.35	156.04	-8.23	1,211.64	1,397.86	1,348.03	49.82	28.056	
7,150.00	7,145.98	7,045.24	7,023.83	25.42	25.51	155.99	-6.60	1,216.39	1,404.34	1,354.19	50.15	28.003	
7,200.00	7,195.94	7,105.20	7,073.14	25.60	25.74	155.94	-4.98	1,221.15	1,410.83	1,360.28	50.55	27.911	
7,250.00	7,245.90	7,144.37	7,122.45	25.78	25.89	155.90	-3.35	1,225.90	1,417.32	1,366.45	50.87	27.863	
7,300.00	7,295.86	7,206.07	7,171.76	25.96	26.12	155.85	-1.72	1,230.65	1,423.81	1,372.54	51.27	27.771	
7,350.00	7,345.82	7,243.49	7,221.07	26.14	26.26	155.80	-0.10	1,235.40	1,430.30	1,378.71	51.58	27.727	
7,400.00	7,395.78	7,306.94	7,270.38	26.32	26.50	155.76	1.53	1,240.16	1,436.79	1,384.79	51.99	27.634	
7,450.00	7,445.74	7,342.62	7,319.69	26.50	26.64	155.71	3.16	1,244.91	1,443.28	1,390.98	52.30	27.595	
7,500.00	7,495.70	7,407.81	7,369.00	26.68	26.88	155.67	4.78	1,249.66	1,449.77	1,397.05	52.72	27.501	
7,550.00	7,545.66	7,441.75	7,418.30	26.86	27.01	155.62	6.41	1,254.41	1,456.26	1,403.25	53.02	27.467	
7,600.00	7,595.62	7,491.31	7,467.61	27.04	27.20	155.58	8.04	1,259.16	1,462.76	1,409.38	53.38	27.404	
7,650.00	7,645.58	7,543.11	7,519.14	27.22	27.40	155.53	9.74	1,264.13	1,469.25	1,415.50	53.75	27.335	
7,700.00	7,695.54	7,620.20	7,595.92	27.40	27.68	155.48	11.97	1,270.67	1,475.21	1,420.95	54.26	27.187	
7,750.00	7,745.50	7,697.62	7,673.15	27.58	27.97	155.45	13.72	1,275.76	1,480.24	1,425.48	54.76	27.032	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	7,795.46	7,775.32	7,750.76	27.77	28.25	155.44	14.95	1,279.38	1,484.34	1,429.10	55.24	26.871	
7,850.00	7,845.42	7,853.23	7,828.64	27.95	28.53	155.46	15.68	1,281.50	1,487.49	1,431.79	55.70	26.703	
7,900.00	7,895.38	7,928.88	7,904.28	28.13	28.79	155.50	15.90	1,282.13	1,489.71	1,433.57	56.15	26.533	
7,950.00	7,945.34	7,978.84	7,954.24	28.31	28.96	155.53	15.90	1,282.13	1,491.54	1,435.04	56.50	26.399	
8,000.00	7,995.30	8,028.80	8,004.20	28.49	29.13	155.56	15.90	1,282.13	1,493.36	1,436.51	56.85	26.267	
8,050.00	8,045.26	8,078.76	8,054.16	28.67	29.31	155.59	15.90	1,282.13	1,495.19	1,437.98	57.21	26.137	
8,100.00	8,095.22	8,128.72	8,104.12	28.85	29.48	155.63	15.90	1,282.13	1,497.01	1,439.45	57.56	26.008	
8,150.00	8,145.18	8,178.68	8,154.08	29.03	29.65	155.66	15.90	1,282.13	1,498.84	1,440.93	57.91	25.881	SF

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	8.90	8.90	0.50	0.50	100.25	-146.23	808.45	821.57				
50.00	50.00	58.90	58.90	0.50	0.51	100.25	-146.23	808.45	821.57	820.56	1.01	814.860	
100.00	100.00	108.90	108.90	0.52	0.53	100.25	-146.23	808.45	821.57	820.53	1.04	786.420	
150.00	150.00	158.90	158.90	0.59	0.61	100.25	-146.23	808.45	821.57	820.37	1.20	685.763	
200.00	200.00	208.90	208.90	0.70	0.72	100.25	-146.23	808.45	821.57	820.14	1.43	575.748	
250.00	250.00	258.90	258.90	0.84	0.86	100.25	-146.23	808.45	821.57	819.87	1.70	482.925	
300.00	300.00	308.90	308.90	0.99	1.01	100.25	-146.23	808.45	821.57	819.57	2.00	410.311	
350.00	350.00	358.90	358.90	1.15	1.17	100.25	-146.23	808.45	821.57	819.25	2.32	354.160	
400.00	400.00	408.90	408.90	1.31	1.34	100.25	-146.23	808.45	821.57	818.92	2.65	310.293	
450.00	450.00	458.90	458.90	1.48	1.51	100.25	-146.23	808.45	821.57	818.59	2.98	275.444	
500.00	500.00	508.90	508.90	1.65	1.68	100.25	-146.23	808.45	821.57	818.25	3.32	247.267	
550.00	550.00	558.90	558.90	1.82	1.85	100.25	-146.23	808.45	821.57	817.90	3.67	224.103	
600.00	600.00	608.90	608.90	1.99	2.02	100.25	-146.23	808.45	821.57	817.56	4.01	204.773	
650.00	650.00	658.90	658.90	2.16	2.20	100.25	-146.23	808.45	821.57	817.21	4.36	188.426	
700.00	700.00	708.90	708.90	2.34	2.37	100.25	-146.23	808.45	821.57	816.86	4.71	174.438	
750.00	750.00	758.90	758.90	2.51	2.55	100.25	-146.23	808.45	821.57	816.51	5.06	162.344	
800.00	800.00	808.90	808.90	2.69	2.72	100.25	-146.23	808.45	821.57	816.16	5.41	151.790	
850.00	850.00	858.90	858.90	2.87	2.90	100.25	-146.23	808.45	821.57	815.80	5.77	142.504	
900.00	900.00	908.90	908.90	3.04	3.08	100.25	-146.23	808.45	821.57	815.45	6.12	134.275	
950.00	950.00	958.90	958.90	3.22	3.25	100.25	-146.23	808.45	821.57	815.10	6.47	126.933	
1,000.00	1,000.00	1,008.90	1,008.90	3.40	3.43	100.25	-146.23	808.45	821.57	814.74	6.83	120.343	
1,050.00	1,050.00	1,058.90	1,058.90	3.58	3.61	100.25	-146.23	808.45	821.57	814.39	7.18	114.398	
1,100.00	1,100.00	1,108.90	1,108.90	3.75	3.78	100.25	-146.23	808.45	821.57	814.03	7.54	109.007	
1,150.00	1,150.00	1,158.90	1,158.90	3.93	3.96	100.25	-146.23	808.45	821.57	813.68	7.89	104.098	
1,200.00	1,200.00	1,208.90	1,208.90	4.11	4.14	100.25	-146.23	808.45	821.57	813.32	8.25	99.609	
1,250.00	1,250.00	1,258.90	1,258.90	4.29	4.32	100.25	-146.23	808.45	821.57	812.97	8.60	95.488	
1,300.00	1,300.00	1,308.90	1,308.90	4.46	4.50	100.25	-146.23	808.45	821.57	812.61	8.96	91.693	
1,350.00	1,350.00	1,358.90	1,358.90	4.64	4.67	100.25	-146.23	808.45	821.57	812.25	9.32	88.186	
1,400.00	1,400.00	1,408.90	1,408.90	4.82	4.85	100.25	-146.23	808.45	821.57	811.90	9.67	84.936	
1,450.00	1,450.00	1,458.90	1,458.90	5.00	5.03	100.25	-146.23	808.45	821.57	811.54	10.03	81.916	
1,500.00	1,500.00	1,508.90	1,508.90	5.18	5.21	100.25	-146.23	808.45	821.57	811.18	10.39	79.102	
1,550.00	1,550.00	1,558.90	1,558.90	5.36	5.39	100.25	-146.23	808.45	821.57	810.83	10.74	76.474	
1,600.00	1,600.00	1,608.90	1,608.90	5.53	5.57	100.25	-146.23	808.45	821.57	810.47	11.10	74.015	
1,650.00	1,650.00	1,658.90	1,658.90	5.71	5.74	100.25	-146.23	808.45	821.57	810.11	11.46	71.708	
1,700.00	1,700.00	1,708.90	1,708.90	5.89	5.92	100.25	-146.23	808.45	821.57	809.76	11.81	69.541	
1,750.00	1,750.00	1,758.90	1,758.90	6.07	6.10	100.25	-146.23	808.45	821.57	809.40	12.17	67.500	
1,800.00	1,800.00	1,808.90	1,808.90	6.25	6.28	100.25	-146.23	808.45	821.57	809.04	12.53	65.575	
1,850.00	1,850.00	1,858.90	1,858.90	6.43	6.46	100.25	-146.23	808.45	821.57	808.68	12.89	63.756	
1,900.00	1,900.00	1,908.90	1,908.90	6.61	6.64	100.25	-146.23	808.45	821.57	808.33	13.24	62.036	
1,950.00	1,950.00	1,958.90	1,958.90	6.78	6.82	100.25	-146.23	808.45	821.57	807.97	13.60	60.405	
2,000.00	2,000.00	2,008.90	2,008.90	6.96	7.00	100.25	-146.23	808.45	821.57	807.61	13.96	58.858 CC	
2,050.00	2,050.00	2,058.90	2,058.90	7.14	7.17	162.18	-146.23	808.45	821.78	807.46	14.31	57.412 ES	
2,100.00	2,099.99	2,108.89	2,108.89	7.32	7.35	162.20	-146.23	808.45	822.40	807.73	14.67	56.064	
2,150.00	2,149.98	2,158.88	2,158.88	7.49	7.53	162.22	-146.23	808.45	823.44	808.42	15.02	54.815	
2,200.00	2,199.96	2,208.86	2,208.86	7.67	7.71	162.24	-146.23	808.45	824.89	809.52	15.38	53.651	
2,250.00	2,249.92	2,258.82	2,258.82	7.84	7.89	162.28	-146.23	808.45	826.73	811.00	15.73	52.562	
2,300.00	2,299.88	2,308.78	2,308.78	8.02	8.07	162.32	-146.23	808.45	828.64	812.56	16.08	51.526	
2,350.00	2,349.84	2,358.74	2,358.74	8.19	8.25	162.37	-146.23	808.45	830.55	814.11	16.44	50.533	
2,400.00	2,399.80	2,408.70	2,408.70	8.37	8.43	162.41	-146.23	808.45	832.46	815.67	16.79	49.582	
2,450.00	2,449.76	2,458.66	2,458.66	8.54	8.60	162.45	-146.23	808.45	834.37	817.23	17.14	48.670	
2,500.00	2,499.72	2,508.62	2,508.62	8.72	8.78	162.49	-146.23	808.45	836.28	818.79	17.50	47.794	
2,550.00	2,549.68	2,551.34	2,551.34	8.90	8.93	162.52	-146.21	808.68	838.45	820.63	17.82	47.048	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	2,599.64	2,595.09	2,595.09	9.07	9.08	162.55	-146.16	809.24	840.98	822.83	18.15	46.340	
2,650.00	2,649.60	2,638.81	2,638.80	9.25	9.23	162.57	-146.09	810.13	843.87	825.40	18.47	45.685	
2,700.00	2,699.56	2,682.50	2,682.46	9.43	9.38	162.58	-145.99	811.35	847.13	828.34	18.79	45.077	
2,750.00	2,749.52	2,726.13	2,726.07	9.61	9.53	162.59	-145.85	812.90	850.76	831.65	19.11	44.509	
2,800.00	2,799.48	2,769.72	2,769.62	9.78	9.69	162.59	-145.70	814.78	854.76	835.32	19.43	43.982	
2,850.00	2,849.44	2,813.26	2,813.10	9.96	9.84	162.58	-145.51	816.98	859.11	839.36	19.75	43.492	
2,900.00	2,899.40	2,856.74	2,856.50	10.14	9.99	162.57	-145.30	819.51	863.84	843.77	20.07	43.038	
2,950.00	2,949.36	2,900.15	2,899.82	10.32	10.14	162.56	-145.06	822.37	868.93	848.54	20.39	42.618	
3,000.00	2,999.32	2,943.49	2,943.05	10.49	10.29	162.54	-144.79	825.55	874.37	853.67	20.70	42.231	
3,050.00	3,049.28	2,986.77	2,986.18	10.67	10.44	162.51	-144.49	829.04	880.19	859.17	21.02	41.875	
3,100.00	3,099.24	3,029.96	3,029.21	10.85	10.59	162.48	-144.17	832.86	886.36	865.03	21.33	41.549	
3,150.00	3,149.20	3,076.62	3,075.66	11.03	10.75	162.44	-143.80	837.28	892.84	871.18	21.66	41.212	
3,200.00	3,199.16	3,126.19	3,125.00	11.21	10.93	162.39	-143.40	842.01	899.36	877.35	22.01	40.857	
3,250.00	3,249.12	3,175.76	3,174.34	11.38	11.10	162.35	-143.00	846.73	905.88	883.52	22.36	40.512	
3,300.00	3,299.08	3,225.33	3,223.68	11.56	11.28	162.31	-142.60	851.46	912.39	889.68	22.71	40.178	
3,350.00	3,349.04	3,274.90	3,273.02	11.74	11.46	162.27	-142.20	856.19	918.91	895.85	23.06	39.853	
3,400.00	3,399.00	3,324.47	3,322.36	11.92	11.63	162.23	-141.80	860.92	925.43	902.03	23.41	39.537	
3,450.00	3,448.96	3,374.04	3,371.70	12.10	11.81	162.19	-141.40	865.65	931.95	908.20	23.76	39.230	
3,500.00	3,498.92	3,423.61	3,421.04	12.28	11.99	162.15	-141.00	870.38	938.47	914.37	24.11	38.932	
3,550.00	3,548.88	3,473.17	3,470.39	12.46	12.16	162.11	-140.60	875.11	944.99	920.54	24.46	38.641	
3,600.00	3,598.84	3,522.74	3,519.73	12.63	12.34	162.08	-140.20	879.84	951.51	926.71	24.81	38.359	
3,650.00	3,648.80	3,572.31	3,569.07	12.81	12.52	162.04	-139.80	884.57	958.03	932.88	25.16	38.083	
3,700.00	3,698.76	3,621.88	3,618.41	12.99	12.70	162.00	-139.40	889.30	964.56	939.05	25.51	37.815	
3,750.00	3,748.72	3,671.45	3,667.75	13.17	12.88	161.97	-139.00	894.03	971.08	945.22	25.86	37.554	
3,800.00	3,798.68	3,721.02	3,717.09	13.35	13.06	161.93	-138.60	898.76	977.60	951.39	26.21	37.300	
3,850.00	3,848.64	3,770.59	3,766.43	13.53	13.24	161.89	-138.20	903.49	984.12	957.56	26.56	37.052	
3,900.00	3,898.60	3,820.16	3,815.77	13.71	13.42	161.86	-137.81	908.22	990.65	963.73	26.91	36.810	
3,950.00	3,948.56	3,869.73	3,865.12	13.89	13.60	161.82	-137.41	912.95	997.17	969.90	27.26	36.574	
4,000.00	3,998.52	3,919.30	3,914.46	14.07	13.78	161.79	-137.01	917.68	1,003.69	976.08	27.62	36.344	
4,050.00	4,048.47	3,968.87	3,963.80	14.25	13.96	161.76	-136.61	922.41	1,010.22	982.25	27.97	36.120	
4,100.00	4,098.43	4,018.43	4,013.14	14.43	14.14	161.72	-136.21	927.14	1,016.74	988.42	28.32	35.901	
4,150.00	4,148.39	4,068.00	4,062.48	14.61	14.32	161.69	-135.81	931.87	1,023.27	994.59	28.67	35.687	
4,200.00	4,198.35	4,117.57	4,111.82	14.79	14.50	161.66	-135.41	936.60	1,029.79	1,000.77	29.03	35.478	
4,250.00	4,248.31	4,167.14	4,161.16	14.97	14.68	161.63	-135.01	941.33	1,036.32	1,006.94	29.38	35.274	
4,300.00	4,298.27	4,216.71	4,210.51	15.14	14.86	161.60	-134.61	946.05	1,042.84	1,013.11	29.73	35.074	
4,350.00	4,348.23	4,266.28	4,259.85	15.32	15.04	161.56	-134.21	950.78	1,049.37	1,019.28	30.09	34.879	
4,400.00	4,398.19	4,315.85	4,309.19	15.50	15.23	161.53	-133.81	955.51	1,055.90	1,025.46	30.44	34.689	
4,450.00	4,448.15	4,365.42	4,358.53	15.68	15.41	161.50	-133.41	960.24	1,062.42	1,031.63	30.79	34.503	
4,500.00	4,498.11	4,414.99	4,407.87	15.86	15.59	161.47	-133.01	964.97	1,068.95	1,037.80	31.15	34.320	
4,550.00	4,548.07	4,464.56	4,457.21	16.04	15.77	161.44	-132.61	969.70	1,075.48	1,043.98	31.50	34.142	
4,600.00	4,598.03	4,514.12	4,506.55	16.22	15.95	161.41	-132.21	974.43	1,082.00	1,050.15	31.85	33.968	
4,650.00	4,647.99	4,563.69	4,555.89	16.40	16.14	161.39	-131.81	979.16	1,088.53	1,056.32	32.21	33.797	
4,700.00	4,697.95	4,613.26	4,605.24	16.58	16.32	161.36	-131.42	983.89	1,095.06	1,062.50	32.56	33.630	
4,750.00	4,747.91	4,662.83	4,654.58	16.76	16.50	161.33	-131.02	988.62	1,101.59	1,068.67	32.92	33.466	
4,800.00	4,797.87	4,712.40	4,703.92	16.94	16.69	161.30	-130.62	993.35	1,108.12	1,074.85	33.27	33.306	
4,850.00	4,847.83	4,761.97	4,753.26	17.12	16.87	161.27	-130.22	998.08	1,114.65	1,081.02	33.63	33.149	
4,900.00	4,897.79	4,811.54	4,802.60	17.30	17.05	161.25	-129.82	1,002.81	1,121.17	1,087.19	33.98	32.995	
4,950.00	4,947.75	4,861.11	4,851.94	17.48	17.24	161.22	-129.42	1,007.54	1,127.70	1,093.37	34.34	32.844	
5,000.00	4,997.71	4,910.68	4,901.28	17.66	17.42	161.19	-129.02	1,012.27	1,134.23	1,099.54	34.69	32.696	
5,050.00	5,047.67	4,960.25	4,950.63	17.84	17.60	161.17	-128.62	1,017.00	1,140.76	1,105.72	35.04	32.551	
5,100.00	5,097.63	5,009.82	4,999.97	18.02	17.79	161.14	-128.22	1,021.73	1,147.29	1,111.89	35.40	32.409	
5,150.00	5,147.59	5,059.38	5,049.31	18.20	17.97	161.12	-127.82	1,026.46	1,153.82	1,118.07	35.76	32.270	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
5,200.00	5,197.55	5,108.95	5,098.65	18.38	18.16	161.09	-127.42	1,031.19	1,160.35	1,124.24	36.11	32.133	
5,250.00	5,247.51	5,158.52	5,147.99	18.56	18.34	161.06	-127.02	1,035.92	1,166.89	1,130.42	36.47	31.999	
5,300.00	5,297.47	5,208.09	5,197.33	18.74	18.52	161.04	-126.62	1,040.65	1,173.42	1,136.59	36.82	31.868	
5,350.00	5,347.43	5,257.66	5,246.67	18.92	18.71	161.02	-126.22	1,045.37	1,179.95	1,142.77	37.18	31.739	
5,400.00	5,397.39	5,307.23	5,296.01	19.10	18.89	160.99	-125.82	1,050.10	1,186.48	1,148.95	37.53	31.612	
5,450.00	5,447.35	5,356.80	5,345.36	19.28	19.08	160.97	-125.42	1,054.83	1,193.01	1,155.12	37.89	31.488	
5,500.00	5,497.31	5,406.37	5,394.70	19.46	19.26	160.94	-125.03	1,059.56	1,199.54	1,161.30	38.24	31.366	
5,550.00	5,547.27	5,455.94	5,444.04	19.64	19.45	160.92	-124.63	1,064.29	1,206.07	1,167.47	38.60	31.246	
5,600.00	5,597.23	5,505.51	5,493.38	19.82	19.63	160.90	-124.23	1,069.02	1,212.61	1,173.65	38.96	31.128	
5,650.00	5,647.19	5,555.08	5,542.72	20.00	19.82	160.87	-123.83	1,073.75	1,219.14	1,179.83	39.31	31.012	
5,700.00	5,697.15	5,604.64	5,592.06	20.18	20.00	160.85	-123.43	1,078.48	1,225.67	1,186.00	39.67	30.899	
5,750.00	5,747.11	5,654.21	5,641.40	20.36	20.19	160.83	-123.03	1,083.21	1,232.20	1,192.18	40.02	30.787	
5,800.00	5,797.07	5,703.78	5,690.74	20.54	20.37	160.81	-122.63	1,087.94	1,238.74	1,198.36	40.38	30.677	
5,850.00	5,847.03	5,753.35	5,740.09	20.73	20.56	160.78	-122.23	1,092.67	1,245.27	1,204.53	40.74	30.569	
5,900.00	5,896.99	5,802.92	5,789.43	20.91	20.74	160.76	-121.83	1,097.40	1,251.80	1,210.71	41.09	30.463	
5,950.00	5,946.95	5,852.49	5,838.77	21.09	20.93	160.74	-121.43	1,102.13	1,258.34	1,216.89	41.45	30.359	
6,000.00	5,996.91	5,902.06	5,888.11	21.27	21.11	160.72	-121.03	1,106.86	1,264.87	1,223.07	41.80	30.256	
6,050.00	6,046.87	5,951.63	5,937.45	21.45	21.30	160.70	-120.63	1,111.59	1,271.40	1,229.24	42.16	30.156	
6,100.00	6,096.83	6,001.20	5,986.79	21.63	21.48	160.68	-120.23	1,116.32	1,277.94	1,235.42	42.52	30.056	
6,150.00	6,146.79	6,050.77	6,036.13	21.81	21.67	160.66	-119.83	1,121.05	1,284.47	1,241.60	42.87	29.959	
6,200.00	6,196.75	6,100.34	6,085.48	21.99	21.86	160.64	-119.43	1,125.78	1,291.01	1,247.78	43.23	29.863	
6,250.00	6,246.71	6,149.90	6,134.82	22.17	22.04	160.62	-119.03	1,130.51	1,297.54	1,253.95	43.59	29.768	
6,300.00	6,296.67	6,200.53	6,184.16	22.35	22.23	160.60	-118.64	1,135.24	1,304.08	1,260.13	43.95	29.673	
6,350.00	6,346.63	6,249.04	6,233.50	22.53	22.41	160.58	-118.24	1,139.97	1,310.61	1,266.31	44.30	29.584	
6,400.00	6,396.59	6,298.61	6,282.84	22.71	22.60	160.56	-117.84	1,144.69	1,317.15	1,272.49	44.66	29.494	
6,450.00	6,446.55	6,348.18	6,332.18	22.89	22.78	160.54	-117.44	1,149.42	1,323.68	1,278.67	45.02	29.405	
6,500.00	6,496.51	6,402.25	6,381.52	23.07	22.99	160.52	-117.04	1,154.15	1,330.22	1,284.83	45.39	29.307	
6,550.00	6,546.46	6,447.32	6,430.86	23.25	23.16	160.50	-116.64	1,158.88	1,336.75	1,291.02	45.73	29.232	
6,600.00	6,596.42	6,503.11	6,480.21	23.43	23.37	160.48	-116.24	1,163.61	1,343.29	1,297.18	46.11	29.133	
6,650.00	6,646.38	6,546.46	6,529.55	23.61	23.53	160.46	-115.84	1,168.34	1,349.82	1,303.38	46.44	29.064	
6,700.00	6,696.34	6,603.97	6,578.89	23.79	23.74	160.44	-115.44	1,173.07	1,356.36	1,309.53	46.83	28.964	
6,750.00	6,746.30	6,645.60	6,628.23	23.97	23.90	160.42	-115.04	1,177.80	1,362.89	1,315.74	47.16	28.901	
6,800.00	6,796.26	6,704.84	6,677.57	24.15	24.12	160.40	-114.64	1,182.53	1,369.43	1,321.88	47.55	28.800	
6,850.00	6,846.22	6,744.73	6,726.91	24.33	24.27	160.39	-114.24	1,187.26	1,375.97	1,328.10	47.87	28.743	
6,900.00	6,896.18	6,805.70	6,776.25	24.51	24.50	160.37	-113.84	1,191.99	1,382.50	1,334.23	48.27	28.641	
6,950.00	6,946.14	6,843.87	6,825.60	24.70	24.65	160.35	-113.44	1,196.72	1,389.04	1,340.45	48.59	28.589	
7,000.00	6,996.10	6,906.56	6,874.94	24.88	24.88	160.33	-113.04	1,201.45	1,395.58	1,346.59	48.99	28.486	
7,050.00	7,046.06	6,943.01	6,924.28	25.06	25.02	160.32	-112.64	1,206.18	1,402.11	1,352.81	49.30	28.440	
7,100.00	7,096.02	7,007.42	6,973.62	25.24	25.26	160.30	-112.25	1,210.91	1,408.65	1,358.94	49.71	28.336	
7,150.00	7,145.98	7,042.15	7,022.96	25.42	25.39	160.28	-111.85	1,215.64	1,415.19	1,365.17	50.02	28.294	
7,200.00	7,195.94	7,091.72	7,072.30	25.60	25.58	160.26	-111.45	1,220.37	1,421.72	1,371.35	50.37	28.223	
7,250.00	7,245.90	7,141.29	7,121.64	25.78	25.77	160.25	-111.05	1,225.10	1,428.26	1,377.53	50.73	28.153	
7,300.00	7,295.86	7,190.86	7,170.98	25.96	25.95	160.23	-110.65	1,229.83	1,434.80	1,383.71	51.09	28.084	
7,350.00	7,345.82	7,240.42	7,220.33	26.14	26.14	160.22	-110.25	1,234.56	1,441.34	1,389.89	51.45	28.016	
7,400.00	7,395.78	7,289.99	7,269.67	26.32	26.33	160.20	-109.85	1,239.28	1,447.87	1,396.07	51.80	27.949	
7,450.00	7,445.74	7,339.56	7,319.01	26.50	26.51	160.18	-109.45	1,244.01	1,454.41	1,402.25	52.16	27.883	
7,500.00	7,495.70	7,389.13	7,368.35	26.68	26.70	160.17	-109.05	1,248.74	1,460.95	1,408.43	52.52	27.817	
7,550.00	7,545.66	7,438.70	7,417.69	26.86	26.89	160.15	-108.65	1,253.47	1,467.49	1,414.61	52.88	27.752	
7,600.00	7,595.62	7,488.27	7,467.03	27.04	27.07	160.14	-108.25	1,258.20	1,474.03	1,420.79	53.24	27.689	
7,650.00	7,645.58	7,537.84	7,516.37	27.22	27.26	160.12	-107.85	1,262.93	1,480.56	1,426.97	53.59	27.626	
7,700.00	7,695.54	7,606.72	7,584.97	27.40	27.52	160.10	-107.33	1,269.17	1,486.90	1,432.84	54.06	27.504	
7,750.00	7,745.50	7,686.89	7,664.93	27.58	27.81	160.09	-106.84	1,274.92	1,492.28	1,437.71	54.58	27.344	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	7,795.46	7,767.38	7,745.31	27.77	28.11	160.10	-106.49	1,279.01	1,496.65	1,441.58	55.07	27.176	
7,850.00	7,845.42	7,848.12	7,826.02	27.95	28.39	160.12	-106.29	1,281.42	1,499.99	1,444.44	55.55	27.002 SF	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	10.10	10.10	0.50	0.50	92.03	-26.49	747.86	748.33				
50.00	50.00	60.10	60.10	0.50	0.51	92.03	-26.49	747.86	748.33	747.32	1.01	742.281	
100.00	100.00	110.10	110.10	0.52	0.53	92.03	-26.49	747.86	748.33	747.29	1.04	716.159	
150.00	150.00	160.10	160.10	0.59	0.61	92.03	-26.49	747.86	748.33	747.13	1.20	624.418	
200.00	200.00	210.10	210.10	0.70	0.73	92.03	-26.49	747.86	748.33	746.90	1.43	524.232	
250.00	250.00	260.10	260.10	0.84	0.86	92.03	-26.49	747.86	748.33	746.63	1.70	439.724	
300.00	300.00	310.10	310.10	0.99	1.02	92.03	-26.49	747.86	748.33	746.33	2.00	373.617	
350.00	350.00	360.10	360.10	1.15	1.17	92.03	-26.49	747.86	748.33	746.01	2.32	322.498	
400.00	400.00	410.10	410.10	1.31	1.34	92.03	-26.49	747.86	748.33	745.68	2.65	282.561	
450.00	450.00	460.10	460.10	1.48	1.51	92.03	-26.49	747.86	748.33	745.35	2.98	250.833	
500.00	500.00	510.10	510.10	1.65	1.68	92.03	-26.49	747.86	748.33	745.01	3.32	225.178	
550.00	550.00	560.10	560.10	1.82	1.85	92.03	-26.49	747.86	748.33	744.66	3.67	204.087	
600.00	600.00	610.10	610.10	1.99	2.02	92.03	-26.49	747.86	748.33	744.32	4.01	186.486	
650.00	650.00	660.10	660.10	2.16	2.20	92.03	-26.49	747.86	748.33	743.97	4.36	171.601	
700.00	700.00	710.10	710.10	2.34	2.37	92.03	-26.49	747.86	748.33	743.62	4.71	158.864	
750.00	750.00	760.10	760.10	2.51	2.55	92.03	-26.49	747.86	748.33	743.27	5.06	147.851	
800.00	800.00	810.10	810.10	2.69	2.72	92.03	-26.49	747.86	748.33	742.92	5.41	138.241	
850.00	850.00	860.10	860.10	2.87	2.90	92.03	-26.49	747.86	748.33	742.56	5.77	129.785	
900.00	900.00	910.10	910.10	3.04	3.08	92.03	-26.49	747.86	748.33	742.21	6.12	122.291	
950.00	950.00	960.10	960.10	3.22	3.25	92.03	-26.49	747.86	748.33	741.86	6.47	115.604	
1,000.00	1,000.00	1,010.10	1,010.10	3.40	3.43	92.03	-26.49	747.86	748.33	741.50	6.83	109.604	
1,050.00	1,050.00	1,060.10	1,060.10	3.58	3.61	92.03	-26.49	747.86	748.33	741.15	7.18	104.190	
1,100.00	1,100.00	1,110.10	1,110.10	3.75	3.78	92.03	-26.49	747.86	748.33	740.79	7.54	99.281	
1,150.00	1,150.00	1,160.10	1,160.10	3.93	3.96	92.03	-26.49	747.86	748.33	740.44	7.89	94.810	
1,200.00	1,200.00	1,210.10	1,210.10	4.11	4.14	92.03	-26.49	747.86	748.33	740.08	8.25	90.721	
1,250.00	1,250.00	1,260.10	1,260.10	4.29	4.32	92.03	-26.49	747.86	748.33	739.73	8.60	86.968	
1,300.00	1,300.00	1,310.10	1,310.10	4.46	4.50	92.03	-26.49	747.86	748.33	739.37	8.96	83.512	
1,350.00	1,350.00	1,360.10	1,360.10	4.64	4.67	92.03	-26.49	747.86	748.33	739.01	9.32	80.318	
1,400.00	1,400.00	1,410.10	1,410.10	4.82	4.85	92.03	-26.49	747.86	748.33	738.66	9.67	77.358	
1,450.00	1,450.00	1,460.10	1,460.10	5.00	5.03	92.03	-26.49	747.86	748.33	738.30	10.03	74.608	
1,500.00	1,500.00	1,510.10	1,510.10	5.18	5.21	92.03	-26.49	747.86	748.33	737.94	10.39	72.045	
1,550.00	1,550.00	1,560.10	1,560.10	5.36	5.39	92.03	-26.49	747.86	748.33	737.59	10.74	69.652	
1,600.00	1,600.00	1,610.10	1,610.10	5.53	5.57	92.03	-26.49	747.86	748.33	737.23	11.10	67.413	
1,650.00	1,650.00	1,660.10	1,660.10	5.71	5.75	92.03	-26.49	747.86	748.33	736.87	11.46	65.312	
1,700.00	1,700.00	1,710.10	1,710.10	5.89	5.92	92.03	-26.49	747.86	748.33	736.52	11.81	63.338	
1,750.00	1,750.00	1,760.10	1,760.10	6.07	6.10	92.03	-26.49	747.86	748.33	736.16	12.17	61.479	
1,800.00	1,800.00	1,810.10	1,810.10	6.25	6.28	92.03	-26.49	747.86	748.33	735.80	12.53	59.726	
1,850.00	1,850.00	1,860.10	1,860.10	6.43	6.46	92.03	-26.49	747.86	748.33	735.44	12.89	58.069	
1,900.00	1,900.00	1,910.10	1,910.10	6.61	6.64	92.03	-26.49	747.86	748.33	735.09	13.24	56.502	
1,950.00	1,950.00	1,960.10	1,960.10	6.78	6.82	92.03	-26.49	747.86	748.33	734.73	13.60	55.017	
2,000.00	2,000.00	2,010.10	2,010.10	6.96	7.00	92.03	-26.49	747.86	748.33	734.37	13.96	53.608 CC	
2,050.00	2,050.00	2,060.10	2,060.10	7.14	7.17	153.96	-26.49	747.86	748.53	734.21	14.31	52.292 ES	
2,100.00	2,099.99	2,110.09	2,110.09	7.32	7.35	153.98	-26.49	747.86	749.11	734.45	14.67	51.066	
2,150.00	2,149.98	2,160.08	2,160.08	7.49	7.53	154.01	-26.49	747.86	750.10	735.07	15.02	49.931	
2,200.00	2,199.96	2,210.06	2,210.06	7.67	7.71	154.06	-26.49	747.86	751.47	736.09	15.38	48.873	
2,250.00	2,249.92	2,260.02	2,260.02	7.84	7.89	154.12	-26.49	747.86	753.20	737.47	15.73	47.885	
2,300.00	2,299.88	2,309.98	2,309.98	8.02	8.07	154.19	-26.49	747.86	755.01	738.92	16.08	46.945	
2,350.00	2,349.84	2,359.94	2,359.94	8.19	8.25	154.25	-26.49	747.86	756.81	740.38	16.44	46.045	
2,400.00	2,399.80	2,409.90	2,409.90	8.37	8.43	154.32	-26.49	747.86	758.62	741.83	16.79	45.182	
2,450.00	2,449.76	2,459.86	2,459.86	8.54	8.60	154.38	-26.49	747.86	760.43	743.28	17.14	44.355	
2,500.00	2,499.72	2,509.82	2,509.82	8.72	8.78	154.45	-26.49	747.86	762.23	744.74	17.50	43.560	
2,550.00	2,549.68	2,553.69	2,553.68	8.90	8.94	154.48	-26.19	748.09	764.28	746.45	17.83	42.867	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	2,599.64	2,598.53	2,598.52	9.07	9.10	154.48	-25.48	748.63	766.66	748.49	18.16	42.210	
2,650.00	2,649.60	2,643.34	2,643.31	9.25	9.26	154.45	-24.35	749.49	769.36	750.87	18.50	41.598	
2,700.00	2,699.56	2,688.10	2,688.03	9.43	9.42	154.39	-22.80	750.66	772.40	753.58	18.83	41.027	
2,750.00	2,749.52	2,732.81	2,732.66	9.61	9.58	154.30	-20.84	752.15	775.78	756.62	19.16	40.496	
2,800.00	2,799.48	2,777.44	2,777.20	9.78	9.73	154.18	-18.46	753.95	779.49	760.00	19.49	40.003	
2,850.00	2,849.44	2,821.99	2,821.61	9.96	9.89	154.02	-15.68	756.05	783.54	763.72	19.81	39.545	
2,900.00	2,899.40	2,866.45	2,865.89	10.14	10.05	153.84	-12.49	758.47	787.93	767.79	20.14	39.121	
2,950.00	2,949.36	2,910.80	2,910.01	10.32	10.21	153.63	-8.90	761.19	792.66	772.20	20.47	38.730	
3,000.00	2,999.32	2,955.04	2,953.96	10.49	10.37	153.39	-4.91	764.21	797.75	776.96	20.79	38.371	
3,050.00	3,049.28	2,999.14	2,997.73	10.67	10.52	153.13	-0.54	767.53	803.19	782.08	21.11	38.042	
3,100.00	3,099.24	3,044.34	3,042.50	10.85	10.69	152.83	4.36	771.24	808.98	787.54	21.44	37.730	
3,150.00	3,149.20	3,093.77	3,091.45	11.03	10.86	152.50	9.84	775.40	814.90	793.11	21.79	37.394	
3,200.00	3,199.16	3,143.20	3,140.40	11.21	11.04	152.18	15.32	779.55	820.85	798.70	22.14	37.068	
3,250.00	3,249.12	3,207.37	3,189.35	11.38	11.28	151.86	20.80	783.71	826.82	804.27	22.55	36.666	
3,300.00	3,299.08	3,242.06	3,238.30	11.56	11.40	151.54	26.29	787.86	832.82	809.97	22.85	36.447	
3,350.00	3,349.04	3,308.51	3,287.24	11.74	11.65	151.23	31.77	792.02	838.84	815.58	23.27	36.056	
3,400.00	3,399.00	3,340.92	3,336.19	11.92	11.76	150.93	37.25	796.17	844.89	821.33	23.56	35.864	
3,450.00	3,448.96	3,409.65	3,385.14	12.10	12.02	150.62	42.73	800.33	850.96	826.98	23.98	35.483	
3,500.00	3,498.92	3,439.78	3,434.09	12.28	12.13	150.33	48.22	804.48	857.05	832.78	24.27	35.317	
3,550.00	3,548.88	3,489.21	3,483.04	12.46	12.31	150.03	53.70	808.64	863.17	838.55	24.62	35.056	
3,600.00	3,598.84	3,538.64	3,531.99	12.63	12.49	149.74	59.18	812.79	869.31	844.33	24.98	34.802	
3,650.00	3,648.80	3,588.06	3,580.93	12.81	12.68	149.46	64.66	816.95	875.47	850.13	25.33	34.556	
3,700.00	3,698.76	3,637.49	3,629.88	12.99	12.86	149.17	70.15	821.11	881.65	855.96	25.69	34.317	
3,750.00	3,748.72	3,686.92	3,678.83	13.17	13.05	148.90	75.63	825.26	887.85	861.80	26.05	34.086	
3,800.00	3,798.68	3,736.35	3,727.78	13.35	13.23	148.62	81.11	829.42	894.07	867.67	26.40	33.860	
3,850.00	3,848.64	3,785.78	3,776.73	13.53	13.42	148.35	86.59	833.57	900.32	873.55	26.76	33.641	
3,900.00	3,898.60	3,835.21	3,825.68	13.71	13.60	148.09	92.07	837.73	906.58	879.46	27.12	33.429	
3,950.00	3,948.56	3,884.64	3,874.63	13.89	13.79	147.82	97.56	841.88	912.86	885.38	27.48	33.222	
4,000.00	3,998.52	3,934.07	3,923.57	14.07	13.98	147.56	103.04	846.04	919.16	891.32	27.84	33.021	
4,050.00	4,048.47	3,983.50	3,972.52	14.25	14.16	147.31	108.52	850.19	925.48	897.28	28.19	32.825	
4,100.00	4,098.43	4,032.93	4,021.47	14.43	14.35	147.06	114.00	854.35	931.81	903.26	28.55	32.634	
4,150.00	4,148.39	4,082.36	4,070.42	14.61	14.54	146.81	119.49	858.50	938.17	909.26	28.91	32.449	
4,200.00	4,198.35	4,131.79	4,119.37	14.79	14.73	146.56	124.97	862.66	944.54	915.27	29.27	32.269	
4,250.00	4,248.31	4,181.22	4,168.32	14.97	14.91	146.32	130.45	866.81	950.93	921.30	29.63	32.093	
4,300.00	4,298.27	4,234.33	4,220.91	15.14	15.12	146.07	136.29	871.24	957.30	927.29	30.01	31.898	
4,350.00	4,348.23	4,294.15	4,280.27	15.32	15.34	145.82	142.29	875.79	963.26	932.83	30.43	31.654	
4,400.00	4,398.19	4,354.22	4,339.96	15.50	15.57	145.61	147.57	879.79	968.71	937.86	30.85	31.403	
4,450.00	4,448.15	4,414.49	4,399.96	15.68	15.79	145.44	152.12	883.23	973.61	942.35	31.26	31.144	
4,500.00	4,498.11	4,474.94	4,460.22	15.86	16.02	145.32	155.91	886.11	977.99	946.31	31.67	30.878	
4,550.00	4,548.07	4,535.53	4,520.70	16.04	16.24	145.24	158.96	888.42	981.81	949.73	32.08	30.605	
4,600.00	4,598.03	4,596.25	4,581.35	16.22	16.46	145.20	161.24	890.15	985.09	952.61	32.48	30.325	
4,650.00	4,647.99	4,657.06	4,642.12	16.40	16.67	145.20	162.76	891.30	987.82	954.94	32.88	30.040	
4,700.00	4,697.95	4,717.92	4,702.98	16.58	16.89	145.24	163.50	891.87	990.00	956.72	33.28	29.748	
4,750.00	4,747.91	4,772.95	4,758.01	16.76	17.08	145.31	163.59	891.93	991.71	958.06	33.65	29.470	
4,800.00	4,797.87	4,822.91	4,807.97	16.94	17.26	145.38	163.59	891.93	993.36	959.35	34.01	29.211	
4,850.00	4,847.83	4,872.87	4,857.93	17.12	17.43	145.44	163.59	891.93	995.01	960.65	34.36	28.957	
4,900.00	4,897.79	4,922.83	4,907.89	17.30	17.61	145.51	163.59	891.93	996.66	961.94	34.72	28.708	
4,950.00	4,947.75	4,972.79	4,957.85	17.48	17.79	145.57	163.59	891.93	998.31	963.24	35.07	28.464	
5,000.00	4,997.71	5,022.75	5,007.81	17.66	17.96	145.64	163.59	891.93	999.97	964.54	35.43	28.225	
5,050.00	5,047.67	5,072.71	5,057.77	17.84	18.14	145.70	163.59	891.93	1,001.63	965.84	35.78	27.991	
5,100.00	5,097.63	5,122.67	5,107.73	18.02	18.31	145.77	163.59	891.93	1,003.28	967.14	36.14	27.762	
5,150.00	5,147.59	5,172.63	5,157.69	18.20	18.49	145.83	163.59	891.93	1,004.94	968.45	36.49	27.537	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	5,197.55	5,222.59	5,207.65	18.38	18.66	145.90	163.59	891.93	1,006.60	969.75	36.85	27.316	
5,250.00	5,247.51	5,272.55	5,257.61	18.56	18.84	145.96	163.59	891.93	1,008.26	971.05	37.21	27.099	
5,300.00	5,297.47	5,322.51	5,307.57	18.74	19.02	146.02	163.59	891.93	1,009.92	972.36	37.56	26.887	
5,350.00	5,347.43	5,372.47	5,357.53	18.92	19.19	146.09	163.59	891.93	1,011.59	973.67	37.92	26.678	
5,400.00	5,397.39	5,422.43	5,407.49	19.10	19.37	146.15	163.59	891.93	1,013.25	974.98	38.27	26.474	
5,450.00	5,447.35	5,472.39	5,457.45	19.28	19.55	146.21	163.59	891.93	1,014.92	976.29	38.63	26.273	
5,500.00	5,497.31	5,522.35	5,507.41	19.46	19.72	146.28	163.59	891.93	1,016.58	977.60	38.99	26.076	
5,550.00	5,547.27	5,572.31	5,557.37	19.64	19.90	146.34	163.59	891.93	1,018.25	978.91	39.34	25.882	
5,600.00	5,597.23	5,622.27	5,607.33	19.82	20.07	146.40	163.59	891.93	1,019.92	980.22	39.70	25.692	
5,650.00	5,647.19	5,672.23	5,657.29	20.00	20.25	146.46	163.59	891.93	1,021.59	981.54	40.05	25.505	
5,700.00	5,697.15	5,722.19	5,707.25	20.18	20.43	146.53	163.59	891.93	1,023.27	982.85	40.41	25.322	
5,750.00	5,747.11	5,772.15	5,757.21	20.36	20.60	146.59	163.59	891.93	1,024.94	984.17	40.77	25.141	
5,800.00	5,797.07	5,822.11	5,807.17	20.54	20.78	146.65	163.59	891.93	1,026.61	985.49	41.12	24.964	
5,850.00	5,847.03	5,872.07	5,857.13	20.73	20.96	146.71	163.59	891.93	1,028.29	986.81	41.48	24.790	
5,900.00	5,896.99	5,922.03	5,907.09	20.91	21.13	146.77	163.59	891.93	1,029.97	988.13	41.84	24.619	
5,950.00	5,946.95	5,971.99	5,957.05	21.09	21.31	146.83	163.59	891.93	1,031.64	989.45	42.19	24.451	
6,000.00	5,996.91	6,021.95	6,007.01	21.27	21.49	146.89	163.59	891.93	1,033.32	990.77	42.55	24.285	
6,050.00	6,046.87	6,071.91	6,056.97	21.45	21.66	146.95	163.59	891.93	1,035.00	992.10	42.91	24.123	
6,100.00	6,096.83	6,121.87	6,106.93	21.63	21.84	147.01	163.59	891.93	1,036.68	993.42	43.26	23.963	
6,150.00	6,146.79	6,171.83	6,156.89	21.81	22.02	147.08	163.59	891.93	1,038.37	994.75	43.62	23.805	
6,200.00	6,196.75	6,221.79	6,206.85	21.99	22.19	147.14	163.59	891.93	1,040.05	996.07	43.98	23.651	
6,250.00	6,246.71	6,271.75	6,256.81	22.17	22.37	147.19	163.59	891.93	1,041.73	997.40	44.33	23.498	
6,300.00	6,296.67	6,321.71	6,306.77	22.35	22.55	147.25	163.59	891.93	1,043.42	998.73	44.69	23.348	
6,350.00	6,346.63	6,371.67	6,356.73	22.53	22.72	147.31	163.59	891.93	1,045.11	1,000.06	45.05	23.201	
6,400.00	6,396.59	6,421.63	6,406.69	22.71	22.90	147.37	163.59	891.93	1,046.80	1,001.39	45.40	23.056	
6,450.00	6,446.55	6,471.59	6,456.65	22.89	23.08	147.43	163.59	891.93	1,048.48	1,002.73	45.76	22.913	
6,500.00	6,496.51	6,521.55	6,506.61	23.07	23.26	147.49	163.59	891.93	1,050.18	1,004.06	46.12	22.772	
6,550.00	6,546.46	6,571.51	6,556.56	23.25	23.43	147.55	163.59	891.93	1,051.87	1,005.39	46.47	22.634	
6,600.00	6,596.42	6,621.47	6,606.52	23.43	23.61	147.61	163.59	891.93	1,053.56	1,006.73	46.83	22.497	
6,650.00	6,646.38	6,671.43	6,656.48	23.61	23.79	147.67	163.59	891.93	1,055.25	1,008.07	47.19	22.363	
6,700.00	6,696.34	6,721.39	6,706.44	23.79	23.96	147.72	163.59	891.93	1,056.95	1,009.40	47.54	22.231	
6,750.00	6,746.30	6,771.35	6,756.40	23.97	24.14	147.78	163.59	891.93	1,058.64	1,010.74	47.90	22.101	
6,800.00	6,796.26	6,821.31	6,806.36	24.15	24.32	147.84	163.59	891.93	1,060.34	1,012.08	48.26	21.972	
6,850.00	6,846.22	6,871.27	6,856.32	24.33	24.50	147.90	163.59	891.93	1,062.04	1,013.42	48.61	21.846	
6,900.00	6,896.18	6,921.23	6,906.28	24.51	24.67	147.96	163.59	891.93	1,063.74	1,014.77	48.97	21.721	
6,950.00	6,946.14	6,971.18	6,956.24	24.70	24.85	148.01	163.59	891.93	1,065.44	1,016.11	49.33	21.599	
7,000.00	6,996.10	7,021.14	7,006.20	24.88	25.03	148.07	163.59	891.93	1,067.14	1,017.45	49.69	21.478	
7,050.00	7,046.06	7,071.10	7,056.16	25.06	25.21	148.13	163.59	891.93	1,068.84	1,018.80	50.04	21.358	
7,100.00	7,096.02	7,121.06	7,106.12	25.24	25.38	148.18	163.59	891.93	1,070.54	1,020.14	50.40	21.241	
7,150.00	7,145.98	7,171.02	7,156.08	25.42	25.56	148.24	163.59	891.93	1,072.25	1,021.49	50.76	21.125	
7,200.00	7,195.94	7,220.98	7,206.04	25.60	25.74	148.30	163.59	891.93	1,073.95	1,022.84	51.11	21.011	
7,250.00	7,245.90	7,270.94	7,256.00	25.78	25.92	148.35	163.59	891.93	1,075.66	1,024.19	51.47	20.898	
7,300.00	7,295.86	7,320.90	7,305.96	25.96	26.09	148.41	163.59	891.93	1,077.37	1,025.54	51.83	20.787	
7,350.00	7,345.82	7,370.86	7,355.92	26.14	26.27	148.46	163.59	891.93	1,079.08	1,026.89	52.19	20.677	
7,400.00	7,395.78	7,420.82	7,405.88	26.32	26.45	148.52	163.59	891.93	1,080.79	1,028.24	52.54	20.569	
7,450.00	7,445.74	7,470.78	7,455.84	26.50	26.63	148.57	163.59	891.93	1,082.50	1,029.59	52.90	20.463	
7,500.00	7,495.70	7,520.74	7,505.80	26.68	26.80	148.63	163.59	891.93	1,084.21	1,030.95	53.26	20.357	
7,550.00	7,545.66	7,570.70	7,555.76	26.86	26.98	148.68	163.59	891.93	1,085.92	1,032.30	53.62	20.254	
7,600.00	7,595.62	7,620.66	7,605.72	27.04	27.16	148.74	163.59	891.93	1,087.63	1,033.66	53.97	20.151	
7,650.00	7,645.58	7,670.62	7,655.68	27.22	27.34	148.79	163.59	891.93	1,089.35	1,035.02	54.33	20.050	
7,700.00	7,695.54	7,720.58	7,705.64	27.40	27.51	148.85	163.59	891.93	1,091.06	1,036.38	54.69	19.951	
7,750.00	7,745.50	7,770.54	7,755.60	27.58	27.69	148.90	163.59	891.93	1,092.78	1,037.73	55.05	19.852	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	7,795.46	7,820.50	7,805.56	27.77	27.87	148.96	163.59	891.93	1,094.50	1,039.09	55.40	19.755	
7,850.00	7,845.42	7,870.46	7,855.52	27.95	28.05	149.01	163.59	891.93	1,096.22	1,040.46	55.76	19.659	
7,900.00	7,895.38	7,920.42	7,905.48	28.13	28.22	149.07	163.59	891.93	1,097.93	1,041.82	56.12	19.565	
7,950.00	7,945.34	7,970.38	7,955.44	28.31	28.40	149.12	163.59	891.93	1,099.66	1,043.18	56.48	19.471	
8,000.00	7,995.30	8,020.34	8,005.40	28.49	28.58	149.17	163.59	891.93	1,101.38	1,044.54	56.83	19.379	
8,050.00	8,045.26	8,070.30	8,055.36	28.67	28.76	149.23	163.59	891.93	1,103.10	1,045.91	57.19	19.288	
8,100.00	8,095.22	8,120.26	8,105.32	28.85	28.94	149.28	163.59	891.93	1,104.82	1,047.27	57.55	19.198	
8,150.00	8,145.18	8,170.22	8,155.28	29.03	29.11	149.33	163.59	891.93	1,106.55	1,048.64	57.91	19.110	
8,200.00	8,195.14	8,220.18	8,205.24	29.21	29.29	149.38	163.59	891.93	1,108.27	1,050.01	58.26	19.022	
8,250.00	8,245.10	8,270.14	8,255.20	29.39	29.47	149.44	163.59	891.93	1,110.00	1,051.38	58.62	18.935	
8,300.00	8,295.06	8,320.10	8,305.16	29.57	29.65	149.49	163.59	891.93	1,111.72	1,052.75	58.98	18.850	
8,350.00	8,345.02	8,370.06	8,355.12	29.75	29.82	149.54	163.59	891.93	1,113.45	1,054.12	59.34	18.765	
8,400.00	8,394.98	8,420.02	8,405.08	29.93	30.00	149.59	163.59	891.93	1,115.18	1,055.49	59.69	18.682	
8,450.00	8,444.94	8,469.98	8,455.04	30.11	30.18	149.65	163.59	891.93	1,116.91	1,056.86	60.05	18.599	
8,500.00	8,494.90	8,519.94	8,505.00	30.30	30.36	149.70	163.59	891.93	1,118.64	1,058.23	60.41	18.518	
8,550.00	8,544.86	8,569.90	8,554.96	30.48	30.54	149.75	163.59	891.93	1,120.37	1,059.61	60.77	18.437	
8,600.00	8,594.82	8,619.86	8,604.92	30.66	30.71	149.80	163.59	891.93	1,122.11	1,060.98	61.12	18.358	
8,650.00	8,644.78	8,669.82	8,654.88	30.84	30.89	149.85	163.59	891.93	1,123.84	1,062.36	61.48	18.279	
8,700.00	8,694.74	8,719.78	8,704.84	31.02	31.07	149.90	163.59	891.93	1,125.57	1,063.73	61.84	18.202	
8,750.00	8,744.70	8,769.74	8,754.80	31.20	31.25	149.96	163.59	891.93	1,127.31	1,065.11	62.20	18.125	
8,800.00	8,794.66	8,819.70	8,804.76	31.38	31.43	150.01	163.59	891.93	1,129.04	1,066.49	62.55	18.049	
8,850.00	8,844.62	8,869.66	8,854.72	31.56	31.60	150.06	163.59	891.93	1,130.78	1,067.87	62.91	17.974	
8,900.00	8,894.58	8,919.62	8,904.68	31.74	31.78	150.11	163.59	891.93	1,132.52	1,069.25	63.27	17.900	
8,950.00	8,944.54	8,969.58	8,954.64	31.92	31.96	150.16	163.59	891.93	1,134.26	1,070.63	63.63	17.826	
9,000.00	8,994.50	9,019.54	9,004.60	32.10	32.14	150.21	163.59	891.93	1,136.00	1,072.01	63.99	17.754	
9,050.00	9,044.45	9,069.50	9,054.55	32.28	32.32	150.26	163.59	891.93	1,137.74	1,073.39	64.34	17.682	
9,100.00	9,094.41	9,119.46	9,104.51	32.46	32.49	150.31	163.59	891.93	1,139.48	1,074.78	64.70	17.611	
9,150.00	9,144.37	9,169.42	9,154.47	32.65	32.67	150.36	163.59	891.93	1,141.22	1,076.16	65.06	17.541	
9,200.00	9,194.33	9,219.38	9,204.43	32.83	32.85	150.41	163.59	891.93	1,142.96	1,077.55	65.42	17.472	
9,250.00	9,244.29	9,269.34	9,254.39	33.01	33.03	150.46	163.59	891.93	1,144.71	1,078.93	65.77	17.403	
9,300.00	9,294.25	9,319.30	9,304.35	33.19	33.21	150.51	163.59	891.93	1,146.45	1,080.32	66.13	17.336	
9,350.00	9,344.21	9,369.26	9,354.31	33.37	33.39	150.56	163.59	891.93	1,148.20	1,081.71	66.49	17.269	
9,400.00	9,394.17	9,419.22	9,404.27	33.55	33.56	150.61	163.59	891.93	1,149.95	1,083.10	66.85	17.202	
9,450.00	9,444.13	9,469.17	9,454.23	33.73	33.74	150.65	163.59	891.93	1,151.69	1,084.49	67.21	17.137	
9,500.00	9,494.09	9,519.13	9,504.19	33.91	33.92	150.70	163.59	891.93	1,153.44	1,085.88	67.56	17.072	
9,550.00	9,544.05	9,569.09	9,554.15	34.09	34.10	150.75	163.59	891.93	1,155.19	1,087.27	67.92	17.008	
9,600.00	9,594.01	9,619.05	9,604.11	34.27	34.28	150.80	163.59	891.93	1,156.94	1,088.66	68.28	16.944	
9,650.00	9,643.97	9,669.01	9,654.07	34.45	34.45	150.85	163.59	891.93	1,158.69	1,090.05	68.64	16.881	
9,700.00	9,693.93	9,718.97	9,704.03	34.63	34.63	150.90	163.59	891.93	1,160.44	1,091.45	69.00	16.819	
9,750.00	9,743.89	9,768.93	9,753.99	34.82	34.81	150.94	163.59	891.93	1,162.19	1,092.84	69.35	16.758	
9,800.00	9,793.85	9,818.89	9,803.95	35.00	34.99	150.99	163.59	891.93	1,163.95	1,094.24	69.71	16.697	
9,850.00	9,843.81	9,868.85	9,853.91	35.18	35.17	151.04	163.59	891.93	1,165.70	1,095.63	70.07	16.636	
9,900.00	9,893.77	9,918.81	9,903.87	35.36	35.35	151.09	163.59	891.93	1,167.46	1,097.03	70.43	16.577	
9,950.00	9,943.73	9,968.77	9,953.83	35.54	35.52	151.14	163.59	891.93	1,169.21	1,098.43	70.79	16.518	
10,000.00	9,993.69	10,018.73	10,003.79	35.72	35.70	151.18	163.59	891.93	1,170.97	1,099.82	71.14	16.459	
10,050.00	10,043.65	10,068.69	10,053.75	35.90	35.88	151.23	163.59	891.93	1,172.73	1,101.22	71.50	16.401	
10,100.00	10,093.61	10,118.65	10,103.71	36.08	36.06	151.28	163.59	891.93	1,174.48	1,102.62	71.86	16.344	
10,150.00	10,143.57	10,168.61	10,153.67	36.26	36.24	151.32	163.59	891.93	1,176.24	1,104.02	72.22	16.288	
10,200.00	10,193.53	10,218.57	10,203.63	36.44	36.42	151.37	163.59	891.93	1,178.00	1,105.43	72.58	16.231	
10,250.00	10,243.49	10,268.53	10,253.59	36.62	36.59	151.42	163.59	891.93	1,179.76	1,106.83	72.93	16.176	
10,300.00	10,293.45	10,318.49	10,303.55	36.81	36.77	151.46	163.59	891.93	1,181.52	1,108.23	73.29	16.121	
10,350.00	10,343.41	10,368.45	10,353.51	36.99	36.95	151.51	163.59	891.93	1,183.28	1,109.64	73.65	16.066	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
10,400.00	10,393.37	10,418.41	10,403.47	37.17	37.13	151.56	163.59	891.93	1,185.05	1,111.04	74.01	16.013	
10,450.00	10,443.33	10,468.37	10,453.43	37.35	37.31	151.60	163.59	891.93	1,186.81	1,112.44	74.37	15.959	
10,500.00	10,493.29	10,518.33	10,503.39	37.53	37.48	151.65	163.59	891.93	1,188.57	1,113.85	74.72	15.906	
10,550.00	10,543.25	10,568.30	10,553.35	37.71	37.66	151.70	163.59	891.93	1,190.23	1,115.14	75.08	15.852	
10,600.00	10,593.24	10,618.28	10,603.34	37.89	37.84	151.74	163.59	891.93	1,191.34	1,115.90	75.44	15.792	
10,650.00	10,643.23	10,668.27	10,653.33	38.07	38.02	151.75	163.59	891.93	1,191.88	1,116.09	75.79	15.725	
10,700.00	10,693.23	10,718.27	10,703.33	38.24	38.20	89.83	163.59	891.93	1,191.93	1,115.79	76.15	15.653	
10,750.00	10,743.23	10,768.27	10,753.33	38.42	38.38	89.83	163.59	891.93	1,191.93	1,115.43	76.50	15.580	
10,800.00	10,793.23	10,818.27	10,803.33	38.59	38.56	89.83	163.59	891.93	1,191.93	1,115.08	76.86	15.508	
10,850.00	10,843.23	10,868.27	10,853.33	38.77	38.73	89.83	163.59	891.93	1,191.93	1,114.72	77.21	15.437	
10,900.00	10,893.23	10,918.27	10,903.33	38.94	38.91	89.83	163.59	891.93	1,191.93	1,114.37	77.57	15.367	
10,950.00	10,943.23	10,968.27	10,953.33	39.12	39.09	89.83	163.59	891.93	1,191.93	1,114.01	77.92	15.297	
11,000.00	10,993.23	11,018.27	11,003.33	39.29	39.27	89.83	163.59	891.93	1,191.93	1,113.66	78.27	15.228	
11,000.02	10,993.25	11,018.29	11,003.35	39.29	39.27	89.83	163.59	891.93	1,191.93	1,113.66	78.27	15.228	
11,050.00	11,043.22	11,068.26	11,053.32	39.47	39.45	176.20	163.59	891.93	1,192.63	1,114.00	78.63	15.168	
11,100.00	11,092.99	11,118.03	11,103.09	39.65	39.63	176.19	163.59	891.93	1,197.25	1,118.26	78.99	15.158	
11,150.00	11,142.19	11,167.14	11,152.20	39.84	39.80	-177.98	163.44	891.93	1,206.07	1,126.73	79.34	15.202	
11,200.00	11,191.09	11,215.73	11,200.67	40.03	39.96	-154.26	160.26	891.95	1,216.14	1,136.47	79.67	15.265	
11,250.00	11,239.59	11,264.30	11,248.68	40.21	40.11	-136.48	153.00	891.99	1,226.12	1,146.14	79.98	15.330	
11,300.00	11,287.32	11,312.86	11,295.89	40.38	40.25	-124.45	141.70	892.05	1,235.94	1,155.66	80.28	15.395	
11,350.00	11,333.92	11,361.46	11,342.01	40.54	40.39	-116.23	126.43	892.14	1,245.53	1,164.95	80.57	15.459	
11,400.00	11,379.03	11,410.11	11,386.72	40.69	40.52	-110.35	107.28	892.24	1,254.80	1,173.95	80.85	15.521	
11,450.00	11,422.32	11,458.84	11,429.72	40.83	40.64	-105.95	84.37	892.37	1,263.69	1,182.58	81.11	15.580	
11,500.00	11,463.45	11,507.69	11,470.70	40.97	40.75	-102.54	57.83	892.52	1,272.14	1,190.78	81.37	15.635	
11,550.00	11,502.11	11,556.65	11,509.37	41.09	40.85	-99.82	27.82	892.69	1,280.08	1,198.47	81.61	15.685	
11,600.00	11,538.00	11,605.75	11,545.43	41.21	40.95	-97.61	-5.48	892.87	1,287.44	1,205.60	81.85	15.730	
11,650.00	11,570.86	11,654.99	11,578.60	41.32	41.04	-95.80	-41.86	893.08	1,294.18	1,212.10	82.08	15.768	
11,700.00	11,600.43	11,704.38	11,608.61	41.43	41.14	-94.31	-81.07	893.30	1,300.24	1,217.94	82.30	15.799	
11,750.00	11,626.48	11,753.92	11,635.20	41.54	41.24	-93.09	-122.84	893.53	1,305.57	1,223.05	82.52	15.822	
11,800.00	11,648.83	11,803.60	11,658.15	41.65	41.34	-92.11	-166.89	893.78	1,310.14	1,227.41	82.73	15.836	
11,850.00	11,667.29	11,853.41	11,677.24	41.76	41.45	-91.34	-212.87	894.03	1,313.91	1,230.96	82.95	15.840	
11,900.00	11,681.74	11,903.33	11,692.30	41.87	41.55	-90.76	-260.45	894.30	1,316.85	1,233.69	83.16	15.835	
11,950.00	11,692.05	11,953.35	11,703.17	41.98	41.66	-90.36	-309.26	894.57	1,318.94	1,235.57	83.37	15.821	
12,000.00	11,698.15	12,003.45	11,709.76	42.09	41.76	-90.14	-358.90	894.85	1,320.16	1,236.58	83.58	15.796	
12,050.00	11,700.00	12,053.59	11,711.99	42.21	41.86	-90.08	-408.98	895.13	1,320.51	1,236.73	83.78	15.761	
12,100.00	11,700.00	12,103.59	11,711.99	42.32	41.97	-90.08	-458.98	895.41	1,320.47	1,236.47	84.00	15.720	
12,150.00	11,700.00	12,153.59	11,711.99	42.45	42.10	-90.08	-508.98	895.69	1,320.44	1,236.19	84.25	15.673	
12,200.00	11,700.00	12,203.59	11,711.99	42.59	42.22	-90.08	-558.98	895.97	1,320.40	1,235.90	84.50	15.625	
12,250.00	11,700.00	12,253.59	11,711.99	42.74	42.37	-90.08	-608.98	896.24	1,320.37	1,235.56	84.81	15.569	
12,300.00	11,700.00	12,303.59	11,711.99	42.90	42.52	-90.08	-658.98	896.52	1,320.33	1,235.23	85.11	15.514	
12,350.00	11,700.00	12,353.59	11,711.99	43.08	42.70	-90.08	-708.98	896.80	1,320.30	1,234.84	85.46	15.450	
12,400.00	11,700.00	12,403.59	11,711.99	43.25	42.87	-90.08	-758.98	897.08	1,320.26	1,234.46	85.81	15.386	
12,450.00	11,700.00	12,453.59	11,711.99	43.45	43.07	-90.08	-808.98	897.36	1,320.23	1,234.03	86.20	15.316	
12,500.00	11,700.00	12,503.59	11,711.99	43.65	43.26	-90.08	-858.98	897.64	1,320.19	1,233.60	86.60	15.245	
12,550.00	11,700.00	12,553.59	11,711.99	43.87	43.48	-90.08	-908.98	897.92	1,320.16	1,233.12	87.04	15.168	
12,600.00	11,700.00	12,603.59	11,711.99	44.09	43.70	-90.08	-958.97	898.20	1,320.12	1,232.65	87.48	15.091	
12,650.00	11,700.00	12,653.59	11,711.99	44.34	43.94	-90.08	-1,008.97	898.48	1,320.09	1,232.13	87.96	15.007	
12,700.00	11,700.00	12,703.59	11,711.99	44.58	44.18	-90.08	-1,058.97	898.76	1,320.05	1,231.61	88.45	14.925	
12,750.00	11,700.00	12,753.59	11,711.99	44.84	44.45	-90.08	-1,108.97	899.04	1,320.02	1,231.05	88.97	14.836	
12,800.00	11,700.00	12,803.59	11,711.99	45.10	44.71	-90.08	-1,158.97	899.32	1,319.98	1,230.48	89.50	14.748	
12,850.00	11,700.00	12,853.59	11,711.99	45.39	44.99	-90.08	-1,208.97	899.60	1,319.95	1,229.88	90.07	14.655	
12,900.00	11,700.00	12,903.59	11,711.99	45.67	45.27	-90.08	-1,258.97	899.87	1,319.91	1,229.28	90.63	14.563	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
12,950.00	11,700.00	12,953.59	11,711.99	45.97	45.57	-90.08	-1,308.97	900.15	1,319.88	1,228.64	91.24	14.466	
13,000.00	11,700.00	13,003.59	11,711.99	46.28	45.88	-90.08	-1,358.97	900.43	1,319.84	1,228.00	91.85	14.370	
13,050.00	11,700.00	13,053.59	11,711.99	46.60	46.20	-90.08	-1,408.97	900.71	1,319.81	1,227.32	92.49	14.270	
13,100.00	11,700.00	13,103.59	11,711.99	46.92	46.52	-90.08	-1,458.97	900.99	1,319.77	1,226.64	93.14	14.170	
13,150.00	11,700.00	13,153.59	11,711.99	47.26	46.86	-90.08	-1,508.97	901.27	1,319.74	1,225.92	93.82	14.067	
13,200.00	11,700.00	13,203.59	11,711.99	47.60	47.20	-90.08	-1,558.97	901.55	1,319.71	1,225.21	94.50	13.966	
13,250.00	11,700.00	13,253.59	11,711.99	47.95	47.55	-90.08	-1,608.96	901.83	1,319.67	1,224.46	95.21	13.860	
13,300.00	11,700.00	13,303.59	11,711.99	48.31	47.91	-90.08	-1,658.96	902.11	1,319.64	1,223.71	95.93	13.756	
13,350.00	11,700.00	13,353.59	11,711.99	48.68	48.28	-90.08	-1,708.96	902.39	1,319.60	1,222.92	96.68	13.650	
13,400.00	11,700.00	13,403.59	11,711.99	49.06	48.65	-90.08	-1,758.96	902.67	1,319.57	1,222.14	97.42	13.545	
13,450.00	11,700.00	13,453.59	11,711.99	49.44	49.04	-90.08	-1,808.96	902.95	1,319.53	1,221.33	98.20	13.437	
13,500.00	11,700.00	13,503.59	11,711.99	49.83	49.43	-90.08	-1,858.96	903.23	1,319.50	1,220.51	98.99	13.330	
13,550.00	11,700.00	13,553.59	11,711.99	50.24	49.84	-90.08	-1,908.96	903.50	1,319.46	1,219.67	99.80	13.222	
13,600.00	11,700.00	13,603.59	11,711.99	50.64	50.24	-90.08	-1,958.96	903.78	1,319.43	1,218.82	100.61	13.115	
13,650.00	11,700.00	13,653.59	11,711.99	51.06	50.66	-90.08	-2,008.96	904.06	1,319.39	1,217.95	101.44	13.006	
13,700.00	11,700.00	13,703.59	11,711.99	51.48	51.08	-90.08	-2,058.96	904.34	1,319.36	1,217.07	102.28	12.899	
13,750.00	11,700.00	13,753.59	11,711.99	51.91	51.51	-90.08	-2,108.96	904.62	1,319.32	1,216.17	103.15	12.790	
13,800.00	11,700.00	13,803.59	11,711.99	52.34	51.94	-90.08	-2,158.96	904.90	1,319.29	1,215.27	104.02	12.683	
13,850.00	11,700.00	13,853.59	11,711.99	52.78	52.39	-90.08	-2,208.95	905.18	1,319.25	1,214.34	104.91	12.575	
13,900.00	11,700.00	13,903.59	11,711.99	53.23	52.83	-90.08	-2,258.95	905.46	1,319.22	1,213.41	105.80	12.469	
13,950.00	11,700.00	13,953.59	11,711.99	53.69	53.29	-90.08	-2,308.95	905.74	1,319.18	1,212.46	106.72	12.361	
14,000.00	11,700.00	14,003.59	11,711.99	54.14	53.75	-90.08	-2,358.95	906.02	1,319.15	1,211.51	107.64	12.256	
14,050.00	11,700.00	14,053.59	11,711.99	54.61	54.22	-90.08	-2,408.95	906.30	1,319.11	1,210.54	108.58	12.149	
14,100.00	11,700.00	14,103.59	11,711.99	55.08	54.69	-90.08	-2,458.95	906.58	1,319.08	1,209.56	109.52	12.045	
14,150.00	11,700.00	14,153.59	11,711.99	55.56	55.17	-90.08	-2,508.95	906.86	1,319.04	1,208.56	110.48	11.939	
14,200.00	11,700.00	14,203.59	11,711.99	56.04	55.65	-90.08	-2,558.95	907.14	1,319.01	1,207.56	111.44	11.836	
14,250.00	11,700.00	14,253.59	11,711.99	56.53	56.14	-90.08	-2,608.95	907.41	1,318.97	1,206.55	112.43	11.732	
14,300.00	11,700.00	14,303.59	11,711.99	57.02	56.63	-90.08	-2,658.95	907.69	1,318.94	1,205.53	113.41	11.630	
14,350.00	11,700.00	14,353.59	11,711.99	57.52	57.13	-90.08	-2,708.95	907.97	1,318.90	1,204.49	114.41	11.527	
14,400.00	11,700.00	14,403.59	11,711.99	58.02	57.63	-90.08	-2,758.95	908.25	1,318.87	1,203.45	115.42	11.427	
14,450.00	11,700.00	14,453.59	11,711.99	58.53	58.14	-90.08	-2,808.95	908.53	1,318.83	1,202.39	116.44	11.326	
14,500.00	11,700.00	14,503.59	11,711.99	59.04	58.65	-90.08	-2,858.94	908.81	1,318.80	1,201.33	117.46	11.227	
14,550.00	11,700.00	14,553.59	11,711.99	59.56	59.17	-90.08	-2,908.94	909.09	1,318.76	1,200.26	118.51	11.128	
14,600.00	11,700.00	14,603.59	11,711.99	60.08	59.69	-90.08	-2,958.94	909.37	1,318.73	1,199.18	119.55	11.031	
14,650.00	11,700.00	14,653.59	11,711.99	60.61	60.22	-90.08	-3,008.94	909.65	1,318.69	1,198.09	120.60	10.934	
14,700.00	11,700.00	14,703.59	11,711.99	61.14	60.75	-90.08	-3,058.94	909.93	1,318.66	1,196.99	121.66	10.839	
14,750.00	11,700.00	14,753.59	11,711.99	61.67	61.29	-90.08	-3,108.94	910.21	1,318.62	1,195.89	122.74	10.743	
14,800.00	11,700.00	14,803.59	11,711.99	62.21	61.82	-90.08	-3,158.94	910.49	1,318.59	1,194.78	123.81	10.650	
14,850.00	11,700.00	14,853.59	11,711.99	62.75	62.37	-90.08	-3,208.94	910.77	1,318.55	1,193.65	124.90	10.557	
14,900.00	11,700.00	14,903.59	11,711.99	63.30	62.91	-90.08	-3,258.94	911.04	1,318.52	1,192.53	125.99	10.465	
14,950.00	11,700.00	14,953.59	11,711.99	63.85	63.46	-90.08	-3,308.94	911.32	1,318.48	1,191.39	127.10	10.374	
15,000.00	11,700.00	15,003.59	11,711.99	64.40	64.02	-90.08	-3,358.94	911.60	1,318.45	1,190.25	128.20	10.284	
15,050.00	11,700.00	15,053.59	11,711.99	64.96	64.58	-90.08	-3,408.94	911.88	1,318.41	1,189.09	129.32	10.195	
15,100.00	11,700.00	15,103.59	11,711.99	65.51	65.13	-90.08	-3,458.94	912.16	1,318.38	1,187.94	130.44	10.107	
15,150.00	11,700.00	15,153.59	11,711.99	66.08	65.70	-90.08	-3,508.93	912.44	1,318.34	1,186.77	131.57	10.020	
15,200.00	11,700.00	15,203.59	11,711.99	66.64	66.26	-90.08	-3,558.93	912.72	1,318.31	1,185.61	132.70	9.934	
15,250.00	11,700.00	15,253.59	11,711.99	67.21	66.84	-90.08	-3,608.93	913.00	1,318.27	1,184.43	133.85	9.849	
15,300.00	11,700.00	15,303.59	11,711.99	67.78	67.41	-90.08	-3,658.93	913.28	1,318.24	1,183.25	134.99	9.765	
15,350.00	11,700.00	15,353.59	11,711.99	68.36	67.98	-90.08	-3,708.93	913.56	1,318.20	1,182.06	136.15	9.682	
15,400.00	11,700.00	15,403.59	11,711.99	68.94	68.56	-90.08	-3,758.93	913.84	1,318.17	1,180.87	137.30	9.601	
15,450.00	11,700.00	15,453.59	11,711.99	69.52	69.15	-90.08	-3,808.93	914.12	1,318.13	1,179.66	138.47	9.519	
15,500.00	11,700.00	15,503.59	11,711.99	70.10	69.73	-90.08	-3,858.93	914.40	1,318.10	1,178.46	139.64	9.439	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
15,550.00	11,700.00	15,553.59	11,711.99	70.69	70.32	-90.08	-3,908.93	914.67	1,318.06	1,177.25	140.81	9.360	
15,600.00	11,700.00	15,603.59	11,711.99	71.28	70.91	-90.08	-3,958.93	914.95	1,318.03	1,176.04	141.99	9.282	
15,650.00	11,700.00	15,653.59	11,711.99	71.87	71.50	-90.08	-4,008.93	915.23	1,317.99	1,174.81	143.18	9.205	
15,700.00	11,700.00	15,703.59	11,711.99	72.46	72.09	-90.08	-4,058.93	915.51	1,317.96	1,173.59	144.37	9.129	
15,750.00	11,700.00	15,753.59	11,711.99	73.06	72.69	-90.08	-4,108.92	915.79	1,317.92	1,172.36	145.57	9.054	
15,800.00	11,700.00	15,803.59	11,711.99	73.66	73.29	-90.08	-4,158.92	916.07	1,317.89	1,171.12	146.77	8.980	
15,850.00	11,700.00	15,853.59	11,711.99	74.26	73.89	-90.08	-4,208.92	916.35	1,317.86	1,169.88	147.97	8.906	
15,900.00	11,700.00	15,903.59	11,711.99	74.86	74.50	-90.08	-4,258.92	916.63	1,317.82	1,168.64	149.18	8.834	
15,950.00	11,700.00	15,953.59	11,711.99	75.47	75.10	-90.08	-4,308.92	916.91	1,317.79	1,167.39	150.40	8.762	
16,000.00	11,700.00	16,003.59	11,711.99	76.08	75.71	-90.08	-4,358.92	917.19	1,317.75	1,166.14	151.61	8.692	
16,050.00	11,700.00	16,053.59	11,711.99	76.69	76.32	-90.08	-4,408.92	917.47	1,317.72	1,164.88	152.84	8.622	
16,100.00	11,700.00	16,103.59	11,711.99	77.30	76.94	-90.08	-4,458.92	917.75	1,317.68	1,163.62	154.06	8.553	
16,150.00	11,700.00	16,153.59	11,711.99	77.92	77.55	-90.08	-4,508.92	918.03	1,317.65	1,162.35	155.29	8.485	
16,200.00	11,700.00	16,203.59	11,711.99	78.53	78.17	-90.08	-4,558.92	918.31	1,317.61	1,161.08	156.53	8.418	
16,250.00	11,700.00	16,253.59	11,711.99	79.15	78.79	-90.08	-4,608.92	918.58	1,317.58	1,159.81	157.77	8.351	
16,300.00	11,700.00	16,303.59	11,711.99	79.77	79.41	-90.08	-4,658.92	918.86	1,317.54	1,158.53	159.01	8.286	
16,350.00	11,700.00	16,353.59	11,711.99	80.39	80.03	-90.08	-4,708.92	919.14	1,317.51	1,157.25	160.26	8.221	
16,400.00	11,700.00	16,403.59	11,711.99	81.02	80.65	-90.08	-4,758.91	919.42	1,317.47	1,155.97	161.50	8.158	
16,450.00	11,700.00	16,453.59	11,711.99	81.64	81.28	-90.08	-4,808.91	919.70	1,317.44	1,154.68	162.76	8.094	
16,500.00	11,700.00	16,503.59	11,711.99	82.27	81.91	-90.08	-4,858.91	919.98	1,317.40	1,153.39	164.01	8.032	
16,550.00	11,700.00	16,553.59	11,711.99	82.90	82.54	-90.08	-4,908.91	920.26	1,317.37	1,152.09	165.27	7.971	
16,600.00	11,700.00	16,603.59	11,711.99	83.53	83.17	-90.08	-4,958.91	920.54	1,317.33	1,150.80	166.53	7.910	
16,650.00	11,700.00	16,653.59	11,711.99	84.16	83.80	-90.08	-5,008.91	920.82	1,317.30	1,149.50	167.80	7.850	
16,700.00	11,700.00	16,703.59	11,711.99	84.79	84.44	-90.08	-5,058.91	921.10	1,317.26	1,148.19	169.07	7.791	
16,750.00	11,700.00	16,753.58	11,712.20	85.43	85.07	-90.09	-5,108.90	921.38	1,317.23	1,146.89	170.34	7.733	
16,800.00	11,700.00	16,803.58	11,712.50	86.06	85.71	-90.10	-5,158.89	921.66	1,317.19	1,145.58	171.62	7.675	
16,850.00	11,700.00	16,853.58	11,712.81	86.70	86.35	-90.12	-5,208.89	921.94	1,317.16	1,144.26	172.90	7.618	
16,900.00	11,700.00	16,903.58	11,713.11	87.34	86.99	-90.13	-5,258.89	922.21	1,317.12	1,142.95	174.18	7.562	
16,950.00	11,700.00	16,953.58	11,713.42	87.98	87.63	-90.14	-5,308.89	922.49	1,317.09	1,141.63	175.46	7.506	
17,000.00	11,700.00	17,003.58	11,713.73	88.62	88.27	-90.16	-5,358.88	922.77	1,317.06	1,140.31	176.75	7.452	
17,050.00	11,700.00	17,053.57	11,714.03	89.27	88.92	-90.17	-5,408.88	923.05	1,317.02	1,138.98	178.04	7.397	
17,100.00	11,700.00	17,103.57	11,714.34	89.91	89.56	-90.18	-5,458.88	923.33	1,316.99	1,137.66	179.33	7.344	
17,150.00	11,700.00	17,153.57	11,714.64	90.56	90.21	-90.20	-5,508.88	923.61	1,316.95	1,136.33	180.62	7.291	
17,200.00	11,700.00	17,203.57	11,714.95	91.21	90.86	-90.21	-5,558.87	923.89	1,316.92	1,135.00	181.92	7.239	
17,250.00	11,700.00	17,253.57	11,715.25	91.86	91.51	-90.22	-5,608.87	924.17	1,316.89	1,133.66	183.22	7.187	
17,300.00	11,700.00	17,303.57	11,715.56	92.50	92.16	-90.24	-5,658.87	924.45	1,316.85	1,132.33	184.52	7.137	
17,350.00	11,700.00	17,353.57	11,715.86	93.16	92.81	-90.25	-5,708.86	924.73	1,316.82	1,130.99	185.83	7.086	
17,400.00	11,700.00	17,403.57	11,716.17	93.81	93.47	-90.26	-5,758.86	925.01	1,316.79	1,129.65	187.13	7.037	
17,450.00	11,700.00	17,453.57	11,716.47	94.46	94.12	-90.28	-5,808.86	925.29	1,316.75	1,128.31	188.44	6.988	
17,500.00	11,700.00	17,503.57	11,716.78	95.12	94.78	-90.29	-5,858.86	925.57	1,316.72	1,126.97	189.75	6.939	
17,550.00	11,700.00	17,553.57	11,717.08	95.77	95.43	-90.30	-5,908.85	925.84	1,316.69	1,125.62	191.07	6.891	
17,600.00	11,700.00	17,603.56	11,717.39	96.43	96.09	-90.32	-5,958.85	926.12	1,316.65	1,124.27	192.38	6.844	
17,650.00	11,700.00	17,653.56	11,717.70	97.09	96.75	-90.33	-6,008.85	926.40	1,316.62	1,122.92	193.70	6.797	
17,700.00	11,700.00	17,703.56	11,718.00	97.74	97.41	-90.34	-6,058.85	926.68	1,316.59	1,121.57	195.02	6.751	
17,750.00	11,700.00	17,753.56	11,718.31	98.40	98.07	-90.36	-6,108.84	926.96	1,316.55	1,120.21	196.34	6.706	
17,800.00	11,700.00	17,803.56	11,718.61	99.06	98.73	-90.37	-6,158.84	927.24	1,316.52	1,118.86	197.66	6.661	
17,850.00	11,700.00	17,853.56	11,718.92	99.73	99.39	-90.38	-6,208.84	927.52	1,316.49	1,117.50	198.99	6.616	
17,900.00	11,700.00	17,903.56	11,719.22	100.39	100.05	-90.40	-6,258.84	927.80	1,316.45	1,116.14	200.31	6.572	
17,950.00	11,700.00	17,953.56	11,719.53	101.05	100.72	-90.41	-6,308.83	928.08	1,316.42	1,114.78	201.64	6.529	
18,000.00	11,700.00	18,003.56	11,719.83	101.71	101.38	-90.42	-6,358.83	928.36	1,316.39	1,113.42	202.97	6.486	
18,050.00	11,700.00	18,053.56	11,720.14	102.38	102.05	-90.44	-6,408.83	928.64	1,316.36	1,112.05	204.30	6.443	
18,100.00	11,700.00	18,103.55	11,720.44	103.05	102.72	-90.45	-6,458.82	928.92	1,316.32	1,110.69	205.64	6.401	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
18,150.00	11,700.00	18,153.55	11,720.75	103.71	103.38	-90.46	-6,508.82	929.20	1,316.29	1,109.32	206.97	6.360	
18,200.00	11,700.00	18,203.55	11,721.06	104.38	104.05	-90.48	-6,558.82	929.47	1,316.26	1,107.95	208.31	6.319	
18,250.00	11,700.00	18,253.55	11,721.36	105.05	104.72	-90.49	-6,608.82	929.75	1,316.23	1,106.58	209.65	6.278	
18,300.00	11,700.00	18,303.55	11,721.67	105.72	105.39	-90.50	-6,658.81	930.03	1,316.19	1,105.21	210.99	6.238	
18,350.00	11,700.00	18,353.55	11,721.97	106.39	106.06	-90.52	-6,708.81	930.31	1,316.16	1,103.83	212.33	6.199	
18,400.00	11,700.00	18,403.55	11,722.28	107.06	106.73	-90.53	-6,758.81	930.59	1,316.13	1,102.46	213.67	6.160	
18,450.00	11,700.00	18,453.55	11,722.58	107.73	107.41	-90.54	-6,808.81	930.87	1,316.10	1,101.08	215.02	6.121	
18,500.00	11,700.00	18,503.55	11,722.89	108.40	108.08	-90.56	-6,858.80	931.15	1,316.07	1,099.70	216.36	6.083	
18,550.00	11,700.00	18,553.55	11,723.19	109.08	108.75	-90.57	-6,908.80	931.43	1,316.03	1,098.32	217.71	6.045	
18,600.00	11,700.00	18,603.55	11,723.50	109.75	109.43	-90.58	-6,958.80	931.71	1,316.00	1,096.94	219.06	6.008	
18,650.00	11,700.00	18,653.54	11,723.80	110.42	110.10	-90.60	-7,008.80	931.99	1,315.97	1,095.56	220.41	5.971	
18,700.00	11,700.00	18,703.54	11,724.11	111.10	110.78	-90.61	-7,058.79	932.27	1,315.94	1,094.18	221.76	5.934	
18,750.00	11,700.00	18,753.54	11,724.42	111.78	111.46	-90.62	-7,108.79	932.55	1,315.91	1,092.79	223.11	5.898	
18,800.00	11,700.00	18,803.54	11,724.72	112.45	112.13	-90.64	-7,158.79	932.83	1,315.88	1,091.41	224.47	5.862	
18,850.00	11,700.00	18,853.54	11,725.03	113.13	112.81	-90.65	-7,208.78	933.11	1,315.84	1,090.02	225.82	5.827	
18,900.00	11,700.00	18,903.54	11,725.33	113.81	113.49	-90.66	-7,258.78	933.38	1,315.81	1,088.63	227.18	5.792	
18,950.00	11,700.00	18,953.54	11,725.64	114.49	114.17	-90.68	-7,308.78	933.66	1,315.78	1,087.24	228.54	5.757	
19,000.00	11,700.00	19,003.54	11,725.94	115.16	114.85	-90.69	-7,358.78	933.94	1,315.75	1,085.85	229.90	5.723	
19,050.00	11,700.00	19,053.54	11,726.25	115.84	115.53	-90.70	-7,408.77	934.22	1,315.72	1,084.46	231.26	5.689	
19,100.00	11,700.00	19,103.54	11,726.55	116.52	116.21	-90.72	-7,458.77	934.50	1,315.69	1,083.07	232.62	5.656	
19,150.00	11,700.00	19,153.53	11,726.86	117.21	116.89	-90.73	-7,508.77	934.78	1,315.66	1,081.67	233.98	5.623	
19,200.00	11,700.00	19,203.53	11,727.16	117.89	117.57	-90.74	-7,558.77	935.06	1,315.63	1,080.28	235.35	5.590	
19,250.00	11,700.00	19,253.53	11,727.47	118.57	118.26	-90.76	-7,608.76	935.34	1,315.59	1,078.88	236.71	5.558	
19,300.00	11,700.00	19,303.53	11,727.77	119.25	118.94	-90.77	-7,658.76	935.62	1,315.56	1,077.49	238.08	5.526	
19,350.00	11,700.00	19,353.53	11,728.08	119.93	119.62	-90.78	-7,708.76	935.90	1,315.53	1,076.09	239.45	5.494	
19,400.00	11,700.00	19,403.53	11,728.39	120.62	120.31	-90.80	-7,758.76	936.18	1,315.50	1,074.69	240.81	5.463	
19,450.00	11,700.00	19,453.53	11,728.69	121.30	120.99	-90.81	-7,808.75	936.46	1,315.47	1,073.29	242.18	5.432	
19,500.00	11,700.00	19,503.53	11,729.00	121.99	121.68	-90.82	-7,858.75	936.74	1,315.44	1,071.89	243.55	5.401	
19,550.00	11,700.00	19,553.53	11,729.30	122.67	122.36	-90.84	-7,908.75	937.01	1,315.41	1,070.49	244.92	5.371	
19,600.00	11,700.00	19,603.53	11,729.61	123.36	123.05	-90.85	-7,958.74	937.29	1,315.38	1,069.08	246.30	5.341	
19,650.00	11,700.00	19,653.53	11,729.91	124.04	123.74	-90.86	-8,008.74	937.57	1,315.35	1,067.68	247.67	5.311	
19,700.00	11,700.00	19,703.52	11,730.22	124.73	124.42	-90.88	-8,058.74	937.85	1,315.32	1,066.28	249.04	5.281	
19,750.00	11,700.00	19,753.52	11,730.52	125.42	125.11	-90.89	-8,108.74	938.13	1,315.29	1,064.87	250.42	5.252	
19,800.00	11,700.00	19,803.52	11,730.83	126.11	125.80	-90.90	-8,158.73	938.41	1,315.26	1,063.46	251.79	5.224	
19,850.00	11,700.00	19,853.52	11,731.13	126.79	126.49	-90.92	-8,208.73	938.69	1,315.23	1,062.06	253.17	5.195	
19,900.00	11,700.00	19,903.52	11,731.44	127.48	127.18	-90.93	-8,258.73	938.97	1,315.20	1,060.65	254.55	5.167	
19,950.00	11,700.00	19,953.52	11,731.75	128.17	127.87	-90.94	-8,308.73	939.25	1,315.17	1,059.24	255.93	5.139	
20,000.00	11,700.00	20,003.52	11,732.05	128.86	128.56	-90.96	-8,358.72	939.53	1,315.14	1,057.83	257.31	5.111	
20,050.00	11,700.00	20,053.52	11,732.36	129.55	129.25	-90.97	-8,408.72	939.81	1,315.11	1,056.42	258.69	5.084	
20,100.00	11,700.00	20,103.52	11,732.66	130.24	129.94	-90.98	-8,458.72	940.09	1,315.08	1,055.01	260.07	5.057	
20,150.00	11,700.00	20,153.52	11,732.97	130.93	130.63	-91.00	-8,508.72	940.37	1,315.05	1,053.60	261.45	5.030	
20,200.00	11,700.00	20,203.52	11,733.27	131.62	131.32	-91.01	-8,558.71	940.64	1,315.02	1,052.19	262.83	5.003	
20,250.00	11,700.00	20,253.51	11,733.58	132.31	132.01	-91.02	-8,608.71	940.92	1,314.99	1,050.77	264.22	4.977	Alert
20,300.00	11,700.00	20,303.51	11,733.88	133.01	132.71	-91.04	-8,658.71	941.20	1,314.96	1,049.36	265.60	4.951	Alert
20,350.00	11,700.00	20,353.51	11,734.19	133.70	133.40	-91.05	-8,708.71	941.48	1,314.93	1,047.95	266.99	4.925	Alert
20,400.00	11,700.00	20,403.51	11,734.49	134.39	134.09	-91.06	-8,758.70	941.76	1,314.90	1,046.53	268.37	4.900	Alert
20,450.00	11,700.00	20,453.51	11,734.80	135.09	134.79	-91.08	-8,808.70	942.04	1,314.87	1,045.12	269.76	4.874	Alert
20,500.00	11,700.00	20,503.51	11,735.10	135.78	135.48	-91.09	-8,858.70	942.32	1,314.85	1,043.70	271.15	4.849	Alert
20,550.00	11,700.00	20,553.51	11,735.41	136.47	136.18	-91.10	-8,908.69	942.60	1,314.82	1,042.28	272.53	4.824	Alert
20,600.00	11,700.00	20,603.51	11,735.72	137.17	136.87	-91.12	-8,958.69	942.88	1,314.79	1,040.86	273.92	4.800	Alert
20,650.00	11,700.00	20,653.51	11,736.02	137.86	137.57	-91.13	-9,008.69	943.16	1,314.76	1,039.45	275.31	4.776	Alert
20,700.00	11,700.00	20,703.51	11,736.33	138.56	138.26	-91.14	-9,058.69	943.44	1,314.73	1,038.03	276.70	4.751	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
20,750.00	11,700.00	20,753.50	11,736.63	139.25	138.96	-91.16	-9,108.68	943.72	1,314.70	1,036.61	278.09	4.728	Alert
20,800.00	11,700.00	20,803.50	11,736.94	139.95	139.65	-91.17	-9,158.68	944.00	1,314.67	1,035.19	279.48	4.704	Alert
20,850.00	11,700.00	20,853.50	11,737.24	140.64	140.35	-91.18	-9,208.68	944.27	1,314.64	1,033.77	280.88	4.681	Alert
20,900.00	11,700.00	20,903.50	11,737.55	141.34	141.05	-91.20	-9,258.68	944.55	1,314.61	1,032.35	282.27	4.657	Alert
20,950.00	11,700.00	20,953.50	11,737.85	142.04	141.74	-91.21	-9,308.67	944.83	1,314.59	1,030.92	283.66	4.634	Alert
21,000.00	11,700.00	21,003.50	11,738.16	142.73	142.44	-91.22	-9,358.67	945.11	1,314.56	1,029.50	285.06	4.612	Alert
21,050.00	11,700.00	21,053.50	11,738.46	143.43	143.14	-91.24	-9,408.67	945.39	1,314.53	1,028.08	286.45	4.589	Alert
21,100.00	11,700.00	21,103.50	11,738.77	144.13	143.84	-91.25	-9,458.67	945.67	1,314.50	1,026.66	287.85	4.567	Alert
21,150.00	11,700.00	21,153.50	11,739.08	144.83	144.53	-91.26	-9,508.66	945.95	1,314.47	1,025.23	289.24	4.545	Alert
21,200.00	11,700.00	21,203.50	11,739.38	145.52	145.23	-91.28	-9,558.66	946.23	1,314.44	1,023.81	290.64	4.523	Alert
21,250.00	11,700.00	21,253.50	11,739.69	146.22	145.93	-91.29	-9,608.66	946.51	1,314.42	1,022.38	292.03	4.501	Alert
21,300.00	11,700.00	21,303.49	11,739.99	146.92	146.63	-91.30	-9,658.65	946.79	1,314.39	1,020.96	293.43	4.479	Alert
21,350.00	11,700.00	21,353.49	11,740.30	147.62	147.33	-91.32	-9,708.65	947.07	1,314.36	1,019.53	294.83	4.458	Alert
21,400.00	11,700.00	21,403.49	11,740.60	148.32	148.03	-91.33	-9,758.65	947.35	1,314.33	1,018.10	296.23	4.437	Alert
21,450.00	11,700.00	21,453.49	11,740.91	149.02	148.73	-91.34	-9,808.65	947.63	1,314.31	1,016.68	297.63	4.416	Alert
21,500.00	11,700.00	21,503.49	11,741.21	149.72	149.43	-91.36	-9,858.64	947.90	1,314.28	1,015.25	299.03	4.395	Alert
21,550.00	11,700.00	21,553.49	11,741.52	150.42	150.13	-91.37	-9,908.64	948.18	1,314.25	1,013.82	300.43	4.375	Alert
21,600.00	11,700.00	21,603.49	11,741.82	151.12	150.83	-91.38	-9,958.64	948.46	1,314.22	1,012.39	301.83	4.354	Alert
21,650.00	11,700.00	21,653.49	11,742.13	151.82	151.53	-91.40	-10,008.64	948.74	1,314.19	1,010.97	303.23	4.334	Alert
21,658.55	11,700.00	21,662.04	11,742.18	151.94	151.65	-91.40	-10,017.19	948.79	1,314.19	1,010.72	303.47	4.331	Alert
21,700.00	11,700.00	21,657.56	11,742.15	152.52	151.59	-91.40	-10,012.71	948.77	1,314.97	1,011.28	303.69	4.330	Alert, SF
21,750.00	11,700.00	21,657.56	11,742.15	153.22	151.59	-91.40	-10,012.71	948.77	1,317.64	1,013.94	303.70	4.339	Alert
21,800.00	11,700.00	21,657.56	11,742.15	153.93	151.59	-91.40	-10,012.71	948.77	1,322.19	1,018.88	303.31	4.359	Alert
21,850.00	11,700.00	21,657.56	11,742.15	154.63	151.59	-91.40	-10,012.71	948.77	1,328.61	1,026.08	302.53	4.392	Alert
21,900.00	11,700.00	21,657.56	11,742.15	155.33	151.59	-91.40	-10,012.71	948.77	1,336.87	1,035.48	301.39	4.436	Alert
21,950.00	11,700.00	21,657.56	11,742.15	156.03	151.59	-91.40	-10,012.71	948.77	1,346.94	1,047.04	299.90	4.491	Alert
21,964.16	11,700.00	21,657.56	11,742.15	156.23	151.59	-91.40	-10,012.71	948.77	1,350.11	1,050.70	299.42	4.509	Alert

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	10.10	10.10	0.50		92.03	-26.49	747.86	748.33				
50.00	50.00	60.10	60.10	0.50		92.03	-26.49	747.86	748.33	747.33	1.00	746.834	
100.00	100.00	110.10	110.10	0.52		92.03	-26.49	747.86	748.33	747.31	1.02	735.275	
131.36	131.36	141.46	141.46	0.56		92.06	-26.92	747.82	748.31	747.25	1.06	707.543	
150.00	150.00	160.07	160.06	0.59		92.06	-26.91	747.82	748.31	747.22	1.09	686.369	
200.00	200.00	209.98	209.98	0.70		92.05	-26.81	747.83	748.31	747.11	1.20	622.503	
250.00	250.00	259.90	259.89	0.84		92.04	-26.60	747.85	748.32	746.99	1.34	559.405	
300.00	300.00	310.13	310.10	0.99		92.03	-26.49	747.86	748.33	746.84	1.49	503.135	
317.30	317.30	327.39	327.36	1.04		92.04	-26.68	747.78	748.26	746.71	1.54	485.471	
350.00	350.00	358.48	358.44	1.15		92.04	-26.59	747.82	748.29	746.65	1.65	454.752	
400.00	400.00	410.15	410.10	1.31		92.03	-26.49	747.86	748.33	746.52	1.81	413.650	
409.64	409.64	419.76	419.72	1.34		92.04	-26.69	747.76	748.23	746.39	1.84	406.408	
450.00	450.00	457.54	457.49	1.48		92.03	-26.55	747.83	748.30	746.33	1.98	378.631	
500.00	500.00	510.16	510.10	1.65		92.03	-26.49	747.86	748.33	746.18	2.15	348.695	
505.88	505.88	515.80	515.74	1.67		92.04	-26.63	747.75	748.23	746.06	2.17	345.411	
550.00	550.00	556.93	556.86	1.82		92.03	-26.50	747.85	748.33	746.01	2.32	322.878	
596.57	596.57	606.71	606.64	1.98		92.04	-26.66	747.80	748.28	745.80	2.48	301.882	
600.00	600.00	610.02	609.95	1.99		92.04	-26.66	747.80	748.28	745.78	2.49	300.440	
650.00	650.00	660.18	660.10	2.16		92.03	-26.49	747.86	748.33	745.67	2.66	280.846	
700.00	700.00	710.18	710.10	2.34		92.03	-26.49	747.86	748.33	745.49	2.84	263.560	
717.05	717.05	727.17	727.08	2.40		92.04	-26.69	747.77	748.25	745.35	2.90	258.102	
750.00	750.00	759.36	759.28	2.51		92.04	-26.64	747.79	748.27	745.26	3.01	248.207	
800.00	800.00	810.19	810.10	2.69		92.03	-26.49	747.86	748.33	745.14	3.19	234.543	
831.81	831.81	842.00	841.91	2.80		92.04	-26.58	747.81	748.28	744.98	3.30	226.566	
850.00	850.00	859.57	859.48	2.87		92.03	-26.56	747.82	748.29	744.92	3.37	222.248	
900.00	900.00	910.20	910.10	3.04		92.03	-26.49	747.86	748.33	744.79	3.54	211.181	
924.39	924.39	934.51	934.41	3.13		92.04	-26.61	747.76	748.23	744.60	3.63	206.135	
950.00	950.00	958.43	958.34	3.22		92.04	-26.58	747.79	748.26	744.54	3.72	201.120	
1,000.00	1,000.00	1,010.21	1,010.10	3.40		92.03	-26.49	747.86	748.33	744.43	3.90	191.995	
1,016.80	1,016.80	1,026.85	1,026.74	3.46		92.04	-26.65	747.74	748.21	744.25	3.96	189.073 CC	
1,050.00	1,050.00	1,057.47	1,057.36	3.58		92.03	-26.57	747.80	748.28	744.20	4.08	183.625	
1,100.00	1,100.00	1,110.22	1,110.10	3.75		92.03	-26.49	747.86	748.33	744.08	4.25	175.970	
1,107.46	1,107.46	1,117.61	1,117.49	3.78		92.04	-26.65	747.77	748.25	743.97	4.28	174.861	
1,150.00	1,150.00	1,157.76	1,157.64	3.93		92.03	-26.52	747.85	748.32	743.89	4.43	168.910	
1,197.26	1,197.26	1,207.49	1,207.36	4.10		92.04	-26.66	747.76	748.23	743.64	4.60	162.716	
1,200.00	1,200.00	1,210.05	1,209.92	4.11		92.04	-26.66	747.76	748.24	743.63	4.61	162.372	
1,250.00	1,250.00	1,260.25	1,260.10	4.29		92.03	-26.49	747.86	748.33	743.54	4.79	156.355	
1,288.75	1,288.75	1,298.99	1,298.85	4.42		92.04	-26.66	747.76	748.24	743.31	4.92	151.954	
1,300.00	1,300.00	1,309.56	1,309.41	4.46		92.04	-26.66	747.77	748.24	743.28	4.96	150.729	
1,350.00	1,350.00	1,360.26	1,360.10	4.64		92.03	-26.49	747.86	748.33	743.19	5.14	145.524	
1,382.75	1,382.75	1,393.01	1,392.84	4.76		92.04	-26.66	747.74	748.21	742.95	5.26	142.271	
1,400.00	1,400.00	1,409.03	1,408.87	4.82		92.04	-26.64	747.75	748.23	742.91	5.32	140.630	
1,450.00	1,450.00	1,460.27	1,460.10	5.00		92.03	-26.49	747.86	748.33	742.83	5.50	136.088	
1,477.72	1,477.72	1,488.00	1,487.82	5.10		92.04	-26.65	747.77	748.24	742.65	5.60	133.669	
1,500.00	1,500.00	1,509.04	1,508.86	5.18		92.04	-26.62	747.79	748.26	742.58	5.68	131.801	
1,550.00	1,550.00	1,560.28	1,560.10	5.36		92.03	-26.49	747.86	748.33	742.47	5.86	127.796	
1,571.73	1,571.73	1,582.01	1,581.82	5.43		92.04	-26.64	747.79	748.26	742.33	5.93	126.114	
1,600.00	1,600.00	1,609.01	1,608.82	5.53		92.04	-26.59	747.81	748.28	742.25	6.03	124.009	
1,650.00	1,650.00	1,660.29	1,660.10	5.71		92.03	-26.49	747.86	748.33	742.12	6.21	120.453	
1,666.88	1,666.88	1,677.09	1,676.89	5.77		92.04	-26.61	747.78	748.26	741.98	6.27	119.283	
1,700.00	1,700.00	1,708.60	1,708.41	5.89		92.03	-26.55	747.82	748.30	741.90	6.39	117.082	
1,750.00	1,750.00	1,760.30	1,760.10	6.07		92.03	-26.49	747.86	748.33	741.76	6.57	113.904	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	1,769.64	1,769.44	6.10		92.04	-26.61	747.78	748.26	741.65	6.60	113.315	
1,800.00	1,800.00	1,808.35	1,808.15	6.25		92.03	-26.53	747.84	748.31	741.56	6.75	110.886	
1,850.00	1,850.00	1,860.31	1,860.10	6.43		92.03	-26.49	747.86	748.33	741.40	6.93	108.029	
1,855.74	1,855.74	1,865.97	1,865.76	6.45		92.04	-26.63	747.82	748.29	741.35	6.95	107.704	
1,900.00	1,900.00	1,909.16	1,908.95	6.61		92.03	-26.49	747.86	748.33	741.22	7.11	105.312	
1,946.70	1,946.70	1,957.01	1,956.80	6.77		92.04	-26.60	747.82	748.29	741.02	7.27	102.889	
1,950.00	1,950.00	1,960.22	1,960.01	6.78		92.04	-26.60	747.82	748.29	741.01	7.28	102.722	
2,000.00	2,000.00	2,010.32	2,010.10	6.96		92.03	-26.49	747.86	748.33	740.87	7.46	100.267 ES	
2,050.00	2,050.00	2,060.29	2,060.07	7.14		153.97	-26.59	747.85	748.52	740.88	7.64	97.978	
2,100.00	2,099.99	2,110.31	2,110.09	7.32		153.98	-26.49	747.86	749.11	741.30	7.82	95.842	
2,150.00	2,149.98	2,160.36	2,160.14	7.49		154.02	-26.60	747.86	750.10	742.11	7.99	93.875	
2,200.00	2,199.96	2,210.29	2,210.06	7.67		154.06	-26.49	747.86	751.47	743.30	8.16	92.038	
2,250.00	2,249.92	2,264.15	2,263.92	7.84		154.11	-26.37	748.03	753.37	745.03	8.34	90.339	
2,300.00	2,299.88	2,310.25	2,309.98	8.02		154.19	-26.49	747.86	755.01	746.49	8.51	88.676	
2,350.00	2,349.84	2,367.40	2,367.11	8.19		154.25	-26.38	748.01	756.99	748.30	8.69	87.122	
2,400.00	2,399.80	2,410.28	2,409.90	8.37		154.32	-26.49	747.86	758.62	749.75	8.86	85.583	
2,450.00	2,449.76	2,473.81	2,473.38	8.54		154.40	-26.49	747.86	760.55	751.51	9.04	84.145	
2,500.00	2,499.72	2,510.39	2,509.82	8.72		154.45	-26.49	747.86	762.23	753.02	9.21	82.718	
2,550.00	2,549.68	2,578.28	2,577.63	8.90		154.56	-26.80	747.63	764.03	754.64	9.39	81.375	
2,600.00	2,599.64	2,610.60	2,609.74	9.07		154.58	-26.49	747.86	765.85	756.29	9.57	80.058	
2,650.00	2,649.60	2,664.89	2,659.70	9.25		154.64	-26.49	747.86	767.66	757.92	9.74	78.798	
2,700.00	2,699.56	2,712.78	2,711.27	9.43		154.62	-25.30	748.67	770.23	760.31	9.92	77.658	
2,750.00	2,749.52	2,761.80	2,759.62	9.61		154.77	-26.49	747.86	771.29	761.20	10.09	76.408	
2,800.00	2,799.48	2,821.97	2,819.64	9.78		154.76	-25.38	748.61	773.86	763.59	10.27	75.347	
2,850.00	2,849.44	2,862.56	2,859.54	9.96		154.90	-26.49	747.86	774.92	764.47	10.45	74.175	
2,900.00	2,899.40	2,930.36	2,927.15	10.14		154.92	-25.76	748.35	777.39	766.76	10.62	73.180	
2,950.00	2,949.36	2,963.32	2,959.46	10.32		155.02	-26.49	747.86	778.55	767.75	10.80	72.086	
3,000.00	2,999.32	3,043.61	3,039.44	10.49		155.14	-26.73	747.70	780.80	769.82	10.97	71.154	
3,006.01	3,005.33	3,006.01	3,015.43	10.51		155.09	-26.49	747.86	780.59	769.59	11.00	70.973	
3,050.00	3,049.28	3,064.09	3,059.38	10.67		155.14	-26.49	747.86	782.19	771.03	11.15	70.126	
3,100.00	3,099.24	3,152.31	3,147.18	10.85		155.34	-27.67	747.07	784.20	772.87	11.32	69.250	
3,100.89	3,100.12	3,100.89	3,110.22	10.85		155.21	-26.49	747.86	784.04	772.71	11.33	69.176	
3,150.00	3,149.20	3,164.87	3,159.30	11.03		155.27	-26.49	747.86	785.83	774.32	11.51	68.285	
3,200.00	3,199.16	3,200.00	3,209.26	11.21		155.33	-26.49	747.86	787.65	775.97	11.69	67.406	
3,250.00	3,249.12	3,265.58	3,259.22	11.38		155.39	-26.49	747.86	789.47	777.61	11.86	66.553	
3,300.00	3,299.08	3,329.70	3,309.18	11.56		155.45	-26.49	747.86	791.30	779.26	12.04	65.724	
3,350.00	3,349.04	3,366.26	3,359.14	11.74		155.51	-26.49	747.86	793.12	780.90	12.22	64.919	
3,400.00	3,399.00	3,417.06	3,409.10	11.92		155.57	-26.49	747.86	794.95	782.55	12.39	64.138	
3,450.00	3,448.96	3,469.49	3,461.55	12.10		155.54	-25.30	748.60	797.43	784.86	12.57	63.428	
3,500.00	3,498.92	3,517.60	3,509.02	12.28		155.69	-26.49	747.86	798.60	785.85	12.75	62.638	
3,550.00	3,548.88	3,579.52	3,570.79	12.46		155.69	-25.50	748.54	801.13	788.20	12.93	61.968	
3,600.00	3,598.84	3,618.28	3,608.94	12.63		155.81	-26.49	747.86	802.25	789.15	13.10	61.219	
3,650.00	3,648.80	3,690.17	3,680.63	12.81		155.86	-26.06	748.17	804.66	791.37	13.28	60.580	
3,700.00	3,698.76	3,718.87	3,708.86	12.99		155.92	-26.49	747.86	805.91	792.45	13.46	59.874	
3,750.00	3,748.72	3,802.62	3,792.36	13.17		156.05	-26.90	747.50	808.10	794.47	13.64	59.267	
3,754.26	3,752.97	3,754.26	3,763.07	13.19		155.99	-26.49	747.86	807.90	794.25	13.65	59.173	
3,800.00	3,798.68	3,819.31	3,808.78	13.35		156.04	-26.49	747.86	809.58	795.76	13.82	58.597	
3,850.00	3,848.64	3,850.00	3,858.74	13.53		156.10	-26.49	747.86	811.41	797.41	13.99	57.983	
3,900.00	3,898.60	3,919.63	3,908.70	13.71		156.15	-26.49	747.86	813.24	799.07	14.17	57.384	
3,950.00	3,948.56	3,950.00	3,958.66	13.89		156.21	-26.49	747.86	815.08	800.73	14.35	56.800	
4,000.00	3,998.52	4,019.88	4,008.62	14.07		156.27	-26.49	747.86	816.91	802.38	14.53	56.230	
4,050.00	4,048.47	4,081.87	4,058.57	14.25		156.32	-26.49	747.86	818.75	804.04	14.71	55.674	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
4,100.00	4,098.43	4,120.09	4,108.53	14.43		156.38	-26.49	747.86	820.58	805.70	14.88	55.131	
4,150.00	4,148.39	4,170.32	4,158.49	14.61		156.44	-26.49	747.86	822.42	807.36	15.06	54.601	
4,200.00	4,198.35	4,225.83	4,213.96	14.79		156.47	-26.15	748.62	825.01	809.76	15.24	54.128	
4,250.00	4,248.31	4,270.51	4,258.41	14.97		156.55	-26.49	747.86	826.10	810.68	15.42	53.577	
4,300.00	4,298.27	4,338.17	4,326.01	15.14		156.61	-26.31	748.40	828.65	813.05	15.60	53.122	
4,350.00	4,348.23	4,370.67	4,358.33	15.32		156.66	-26.49	747.86	829.78	814.00	15.78	52.600	
4,400.00	4,398.19	4,435.12	4,422.74	15.50		156.71	-26.25	748.22	832.08	816.13	15.96	52.149	
4,450.00	4,448.15	4,470.79	4,458.25	15.68		156.77	-26.49	747.86	833.46	817.33	16.13	51.665	
4,500.00	4,498.11	4,532.40	4,519.82	15.86		156.81	-26.23	748.09	835.59	819.27	16.31	51.223	
4,550.00	4,548.07	4,570.90	4,558.17	16.04		156.87	-26.49	747.86	837.15	820.66	16.49	50.770	
4,600.00	4,598.03	4,633.93	4,621.14	16.22		156.93	-26.37	747.95	839.17	822.50	16.67	50.341	
4,650.00	4,647.99	4,671.00	4,658.09	16.40		156.98	-26.49	747.86	840.84	823.99	16.85	49.913	
4,700.00	4,697.95	4,735.11	4,722.15	16.58		157.05	-26.54	747.82	842.76	825.74	17.03	49.496	
4,750.00	4,747.91	4,771.08	4,758.01	16.76		157.09	-26.49	747.86	844.53	827.32	17.20	49.092	
4,800.00	4,797.87	4,838.76	4,825.63	16.94		157.18	-26.81	747.59	846.32	828.94	17.38	48.684	
4,850.00	4,847.83	4,871.15	4,857.93	17.12		157.19	-26.49	747.86	848.22	830.66	17.56	48.304	
4,900.00	4,897.79	4,932.34	4,919.07	17.30		157.28	-26.86	747.67	849.99	832.25	17.74	47.911	
4,950.00	4,947.75	4,971.78	4,958.40	17.48		157.25	-25.83	748.05	852.04	834.12	17.92	47.554	
5,000.00	4,997.71	5,027.19	5,013.75	17.66		157.39	-26.96	747.73	853.70	835.61	18.10	47.172	
5,050.00	5,047.67	5,072.29	5,058.75	17.84		157.36	-25.89	748.01	855.71	837.43	18.27	46.824	
5,100.00	5,097.63	5,121.40	5,107.73	18.02		157.45	-26.49	747.86	857.47	839.02	18.45	46.467	
5,150.00	5,147.59	5,172.68	5,158.98	18.20		157.47	-25.98	747.98	859.39	840.76	18.63	46.123	
5,200.00	5,197.55	5,221.47	5,207.65	18.38		157.56	-26.49	747.86	861.18	842.37	18.81	45.781	
5,250.00	5,247.51	5,271.88	5,258.02	18.56		157.58	-26.02	747.92	863.04	844.05	18.99	45.448	
5,300.00	5,297.47	5,321.53	5,307.57	18.74		157.66	-26.49	747.86	864.88	845.72	19.17	45.121	
5,350.00	5,347.43	5,370.10	5,356.10	18.92		157.68	-26.15	747.86	866.71	847.36	19.35	44.800	
5,400.00	5,397.39	5,421.55	5,407.49	19.10		157.76	-26.49	747.86	868.59	849.07	19.53	44.485	
5,450.00	5,447.35	5,466.33	5,452.25	19.28		157.79	-26.28	747.78	870.37	850.66	19.70	44.176	
5,500.00	5,497.31	5,521.53	5,507.41	19.46		157.86	-26.49	747.86	872.31	852.42	19.88	43.871	
5,550.00	5,547.27	5,560.94	5,546.80	19.64		157.89	-26.37	747.69	874.04	853.98	20.06	43.579	
5,600.00	5,597.23	5,621.39	5,607.20	19.82		157.96	-26.44	747.47	875.63	855.39	20.24	43.260	
5,650.00	5,647.19	5,659.56	5,645.36	20.00		157.99	-26.48	747.74	877.83	857.42	20.41	43.003	
5,700.00	5,697.15	5,720.51	5,706.29	20.18		158.06	-26.58	747.64	879.53	858.93	20.60	42.699	
5,750.00	5,747.11	5,771.44	5,757.21	20.36		158.10	-26.49	747.86	881.60	860.82	20.78	42.430	
5,800.00	5,797.07	5,819.75	5,805.51	20.54		158.16	-26.60	747.68	883.29	862.34	20.96	42.150	
5,850.00	5,847.03	5,871.38	5,857.13	20.73		158.20	-26.49	747.86	885.32	864.19	21.14	41.888	
5,900.00	5,896.99	5,919.18	5,904.93	20.91		158.25	-26.59	747.72	887.06	865.75	21.31	41.620	
5,950.00	5,946.95	5,971.31	5,957.05	21.09		158.30	-26.49	747.86	889.05	867.55	21.49	41.364	
6,000.00	5,996.91	6,018.70	6,004.43	21.27		158.35	-26.59	747.74	890.81	869.13	21.67	41.106	
6,050.00	6,046.87	6,071.25	6,056.97	21.45		158.39	-26.49	747.86	892.77	870.92	21.85	40.857	
6,100.00	6,096.83	6,117.69	6,103.41	21.63		158.44	-26.56	747.75	894.54	872.51	22.03	40.608	
6,150.00	6,146.79	6,171.18	6,156.89	21.81		158.48	-26.49	747.86	896.50	874.29	22.21	40.366	
6,200.00	6,196.75	6,217.74	6,203.45	21.99		158.53	-26.53	747.80	898.31	875.93	22.39	40.128	
6,250.00	6,246.71	6,271.11	6,256.81	22.17		158.58	-26.49	747.86	900.23	877.67	22.57	39.891	
6,300.00	6,296.67	6,316.85	6,302.55	22.35		158.62	-26.52	747.82	902.07	879.32	22.74	39.662	
6,350.00	6,346.63	6,371.04	6,356.73	22.53		158.67	-26.49	747.86	903.97	881.04	22.93	39.431	
6,400.00	6,396.59	6,415.09	6,400.77	22.71		158.71	-26.50	747.83	905.83	882.73	23.10	39.212	
6,450.00	6,446.55	6,470.44	6,456.12	22.89		158.77	-26.55	747.71	907.56	884.28	23.28	38.979	
6,500.00	6,496.51	6,520.93	6,506.61	23.07		158.81	-26.49	747.86	909.57	886.11	23.46	38.767	
6,550.00	6,546.46	6,569.85	6,555.52	23.25		158.86	-26.56	747.72	911.31	887.67	23.64	38.548	
6,600.00	6,596.42	6,620.86	6,606.52	23.43		158.90	-26.49	747.86	913.31	889.49	23.82	38.341	
6,650.00	6,646.38	6,669.15	6,654.81	23.61		158.95	-26.55	747.72	915.05	891.06	24.00	38.129	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
6,700.00	6,696.34	6,720.79	6,706.44	23.79		158.99	-26.49	747.86	917.05	892.87	24.18	37.928	
6,750.00	6,746.30	6,768.87	6,754.52	23.97		159.03	-26.51	747.76	918.83	894.47	24.36	37.724	
6,800.00	6,796.26	6,820.71	6,806.36	24.15		159.08	-26.49	747.86	920.80	896.26	24.54	37.527	
6,850.00	6,846.22	6,872.99	6,858.64	24.33		159.12	-26.40	747.94	922.74	898.02	24.72	37.332	
6,900.00	6,896.18	6,920.65	6,906.28	24.51		159.17	-26.49	747.86	924.54	899.65	24.90	37.137	
6,950.00	6,946.14	6,973.71	6,959.35	24.70		159.21	-26.42	747.91	926.47	901.39	25.08	36.947	
7,000.00	6,996.10	7,020.58	7,006.20	24.88		159.26	-26.49	747.86	928.29	903.04	25.25	36.759	
7,050.00	7,046.06	7,089.46	7,056.16	25.06		159.30	-26.49	747.86	930.17	904.74	25.43	36.574	
7,100.00	7,096.02	7,120.50	7,106.12	25.24		159.34	-26.49	747.86	932.04	906.43	25.61	36.391	
7,150.00	7,145.98	7,179.53	7,156.08	25.42		159.39	-26.49	747.86	933.92	908.13	25.79	36.211	
7,200.00	7,195.94	7,220.43	7,206.04	25.60		159.43	-26.49	747.86	935.80	909.83	25.97	36.034	
7,250.00	7,245.90	7,273.66	7,259.27	25.78		159.48	-26.52	747.84	937.66	911.51	26.15	35.856	
7,300.00	7,295.86	7,320.46	7,306.06	25.96		159.51	-26.33	747.91	939.58	913.25	26.33	35.687	
7,350.00	7,345.82	7,371.74	7,357.34	26.14		159.56	-26.55	747.84	941.42	914.91	26.51	35.514	
7,400.00	7,395.78	7,420.48	7,406.08	26.32		159.59	-26.34	747.91	943.33	916.65	26.69	35.348	
7,450.00	7,445.74	7,470.25	7,455.84	26.50		159.64	-26.49	747.86	945.19	918.32	26.87	35.182	
7,500.00	7,495.70	7,520.84	7,506.43	26.68		159.68	-26.40	747.92	947.11	920.07	27.05	35.019	
7,550.00	7,545.66	7,570.18	7,555.76	26.86		159.73	-26.49	747.86	948.95	921.72	27.22	34.856	
7,600.00	7,595.62	7,620.73	7,606.31	27.04		159.77	-26.43	747.90	950.86	923.45	27.40	34.698	
7,650.00	7,645.58	7,670.10	7,655.68	27.22		159.81	-26.49	747.86	952.71	925.13	27.58	34.540	
7,700.00	7,695.54	7,720.63	7,706.21	27.40		159.85	-26.45	747.88	954.61	926.85	27.76	34.385	
7,750.00	7,745.50	7,770.02	7,755.60	27.58		159.89	-26.49	747.86	956.48	928.53	27.94	34.231	
7,800.00	7,795.46	7,820.96	7,806.54	27.77		159.93	-26.46	747.88	958.38	930.25	28.12	34.080	
7,850.00	7,845.42	7,869.94	7,855.52	27.95		159.98	-26.49	747.86	960.24	931.94	28.30	33.931	
7,900.00	7,895.38	7,920.98	7,906.56	28.13		160.02	-26.47	747.88	962.14	933.66	28.48	33.783	
7,950.00	7,945.34	7,969.86	7,955.44	28.31		160.06	-26.49	747.86	964.01	935.35	28.66	33.638	
8,000.00	7,995.30	8,030.18	8,005.40	28.49		160.10	-26.49	747.86	965.89	937.06	28.84	33.494	
8,050.00	8,045.26	8,069.78	8,055.36	28.67		160.14	-26.49	747.86	967.78	938.76	29.02	33.352	
8,100.00	8,095.22	8,120.22	8,105.80	28.85		160.18	-26.49	747.86	969.67	940.47	29.20	33.212	
8,150.00	8,145.18	8,169.67	8,155.25	29.03		160.22	-26.45	747.86	971.54	942.17	29.38	33.073	
8,200.00	8,195.14	8,219.66	8,205.24	29.21		160.26	-26.49	747.86	973.44	943.88	29.55	32.937	
8,250.00	8,245.10	8,269.62	8,255.20	29.39		160.30	-26.49	747.86	975.33	945.59	29.73	32.802	
8,300.00	8,295.06	8,319.58	8,305.16	29.57		160.34	-26.49	747.86	977.21	947.30	29.91	32.668	
8,350.00	8,345.02	8,369.54	8,355.12	29.75		160.38	-26.45	747.87	979.10	949.01	30.09	32.536	
8,400.00	8,394.98	8,419.50	8,405.08	29.93		160.42	-26.49	747.86	980.99	950.72	30.27	32.406	
8,450.00	8,444.94	8,468.98	8,454.56	30.11		160.45	-26.46	747.84	982.86	952.41	30.45	32.277	
8,500.00	8,494.90	8,519.42	8,505.00	30.30		160.50	-26.49	747.86	984.77	954.14	30.63	32.150	
8,550.00	8,544.86	8,568.10	8,553.68	30.48		160.53	-26.47	747.83	986.62	955.81	30.81	32.024	
8,600.00	8,594.82	8,619.34	8,604.92	30.66		160.57	-26.49	747.86	988.55	957.56	30.99	31.900	
8,650.00	8,644.78	8,668.94	8,654.51	30.84		160.61	-26.46	747.86	990.43	959.27	31.17	31.777	
8,700.00	8,694.74	8,719.27	8,704.84	31.02		160.65	-26.49	747.86	992.33	960.98	31.35	31.655	
8,750.00	8,744.70	8,768.98	8,754.55	31.20		160.69	-26.44	747.87	994.22	962.69	31.53	31.535	
8,800.00	8,794.66	8,819.19	8,804.76	31.38		160.73	-26.49	747.86	996.12	964.41	31.71	31.417	
8,850.00	8,844.62	8,876.85	8,854.72	31.56		160.76	-26.49	747.86	998.01	966.12	31.89	31.299	
8,900.00	8,894.58	8,919.11	8,904.68	31.74		160.80	-26.49	747.86	999.90	967.84	32.07	31.183	
8,950.00	8,944.54	8,972.01	8,957.57	31.92		160.84	-26.51	747.84	1,001.78	969.54	32.25	31.066	
9,000.00	8,994.50	9,019.44	9,005.00	32.10		160.87	-26.43	747.94	1,003.76	971.33	32.42	30.957	
9,050.00	9,044.45	9,072.76	9,058.32	32.28		160.92	-26.53	747.81	1,005.55	972.94	32.61	30.840	
9,100.00	9,094.41	9,120.67	9,106.22	32.46		160.95	-26.51	747.99	1,007.61	974.83	32.78	30.735	
9,150.00	9,144.37	9,168.93	9,154.47	32.65		160.99	-26.49	747.86	1,009.37	976.41	32.96	30.622	
9,200.00	9,194.33	9,222.52	9,208.06	32.83		161.03	-26.57	748.01	1,011.43	978.29	33.14	30.517	
9,250.00	9,244.29	9,268.87	9,254.39	33.01		161.06	-26.49	747.86	1,013.17	979.84	33.32	30.406	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
9,300.00	9,294.25	9,322.59	9,308.12	33.19		161.11	-26.60	747.96	1,015.18	981.68	33.50	30.302	
9,350.00	9,344.21	9,368.80	9,354.31	33.37		161.14	-26.49	747.86	1,016.96	983.28	33.68	30.195	
9,400.00	9,394.17	9,423.15	9,408.66	33.55		161.18	-26.57	747.92	1,018.94	985.08	33.86	30.091	
9,450.00	9,444.13	9,468.73	9,454.23	33.73		161.21	-26.49	747.86	1,020.75	986.72	34.04	29.988	
9,500.00	9,494.09	9,522.19	9,507.69	33.91		161.25	-26.55	747.89	1,022.70	988.48	34.22	29.886	
9,550.00	9,544.05	9,568.67	9,554.15	34.09		161.28	-26.49	747.86	1,024.55	990.15	34.40	29.786	
9,600.00	9,594.01	9,635.35	9,604.11	34.27		161.32	-26.49	747.86	1,026.45	991.87	34.58	29.686	
9,650.00	9,643.97	9,668.61	9,654.07	34.45		161.35	-26.49	747.86	1,028.35	993.59	34.76	29.588	
9,700.00	9,693.93	9,725.41	9,710.87	34.63		161.39	-26.44	747.84	1,030.24	995.30	34.94	29.486	
9,750.00	9,743.89	9,768.62	9,754.07	34.82		161.43	-26.67	747.91	1,032.22	997.11	35.11	29.396	
9,800.00	9,793.85	9,822.21	9,807.65	35.00		161.46	-26.43	747.85	1,034.03	998.74	35.30	29.295	
9,850.00	9,843.81	9,868.41	9,853.84	35.18		161.51	-26.69	747.81	1,035.94	1,000.46	35.47	29.203	
9,900.00	9,893.77	9,918.45	9,903.87	35.36		161.53	-26.49	747.86	1,037.85	1,002.20	35.65	29.110	
9,950.00	9,943.73	9,968.19	9,953.61	35.54		161.57	-26.66	747.81	1,039.73	1,003.90	35.83	29.017	
10,000.00	9,993.69	10,018.38	10,003.79	35.72		161.60	-26.49	747.86	1,041.66	1,005.64	36.01	28.925	
10,050.00	10,043.65	10,066.94	10,052.35	35.90		161.64	-26.63	747.75	1,043.47	1,007.28	36.19	28.833	
10,100.00	10,093.61	10,118.32	10,103.71	36.08		161.67	-26.49	747.86	1,045.46	1,009.09	36.37	28.745	
10,150.00	10,143.57	10,165.26	10,150.65	36.26		161.71	-26.64	747.69	1,047.22	1,010.67	36.55	28.653	
10,200.00	10,193.53	10,218.26	10,203.63	36.44		161.74	-26.49	747.86	1,049.27	1,012.54	36.73	28.567	
10,250.00	10,243.49	10,265.73	10,251.10	36.62		161.78	-26.57	747.77	1,051.10	1,014.19	36.91	28.479	
10,300.00	10,293.45	10,318.18	10,303.55	36.81		161.81	-26.49	747.86	1,053.08	1,015.99	37.09	28.394	
10,350.00	10,343.41	10,366.11	10,351.47	36.99		161.84	-26.54	747.82	1,054.95	1,017.68	37.27	28.308	
10,400.00	10,393.37	10,418.11	10,403.47	37.17		161.87	-26.49	747.86	1,056.89	1,019.44	37.45	28.223	
10,450.00	10,443.33	10,466.34	10,451.70	37.35		161.91	-26.51	747.84	1,058.78	1,021.15	37.63	28.140	
10,500.00	10,493.29	10,518.03	10,503.39	37.53		161.94	-26.49	747.86	1,060.70	1,022.89	37.81	28.056	
10,550.00	10,543.25	10,568.32	10,553.68	37.71		161.98	-26.49	747.86	1,062.48	1,024.50	37.99	27.970	
10,600.00	10,593.24	10,618.01	10,603.37	37.89		162.01	-26.55	747.86	1,063.70	1,025.54	38.16	27.871	
10,650.00	10,643.23	10,668.69	10,654.05	38.07		162.02	-26.47	747.86	1,064.26	1,025.92	38.34	27.757	
10,700.00	10,693.23	10,717.75	10,703.11	38.24		100.09	-26.54	747.82	1,064.30	1,025.78	38.52	27.631	
10,750.00	10,743.23	10,767.98	10,753.33	38.42		100.09	-26.49	747.86	1,064.33	1,025.63	38.69	27.506	
10,788.38	10,781.61	10,806.22	10,791.58	38.55		100.09	-26.54	747.77	1,064.25	1,025.42	38.83	27.409	
10,800.00	10,793.23	10,817.01	10,802.36	38.59		100.09	-26.53	747.78	1,064.25	1,025.38	38.87	27.381	
10,850.00	10,843.23	10,867.98	10,853.33	38.77		100.09	-26.49	747.86	1,064.33	1,025.28	39.04	27.259	
10,881.82	10,875.05	10,899.76	10,885.11	38.88		100.10	-26.61	747.78	1,064.27	1,025.11	39.16	27.180	
10,900.00	10,893.23	10,916.93	10,902.28	38.94		100.10	-26.59	747.79	1,064.28	1,025.06	39.22	27.136	
10,950.00	10,943.23	10,967.99	10,953.33	39.12		100.09	-26.49	747.86	1,064.33	1,024.93	39.40	27.016	
10,975.66	10,968.89	10,993.63	10,978.98	39.21		100.10	-26.60	747.73	1,064.22	1,024.73	39.49	26.952	
11,000.00	10,993.23	11,015.74	11,001.08	39.29		100.10	-26.57	747.76	1,064.25	1,024.68	39.57	26.895	
11,050.00	11,043.22	11,067.99	11,053.32	39.47		-173.53	-26.49	747.86	1,065.02	1,025.27	39.75	26.794	
11,100.00	11,092.99	11,114.52	11,099.85	39.65		-173.50	-26.53	747.82	1,069.59	1,029.66	39.92	26.790 SF	
11,150.00	11,142.19	11,167.07	11,152.29	39.84		-167.65	-26.49	747.86	1,078.38	1,038.28	40.11	26.889	
11,200.00	11,191.09	11,222.41	11,201.19	40.03		-144.27	-26.49	747.86	1,087.85	1,047.57	40.28	27.009	
11,250.00	11,239.59	11,268.37	11,249.69	40.21		-127.11	-26.49	747.86	1,096.51	1,056.06	40.44	27.111	
11,300.00	11,287.32	11,319.63	11,297.42	40.38		-115.95	-26.49	747.86	1,104.39	1,063.79	40.61	27.198	
11,350.00	11,333.92	11,371.32	11,344.02	40.54		-108.81	-26.49	747.86	1,111.59	1,070.83	40.76	27.271	
11,400.00	11,379.03	11,423.42	11,389.13	40.69		-104.18	-26.49	747.86	1,118.21	1,077.30	40.91	27.334	
11,450.00	11,422.32	11,450.00	11,432.42	40.83		-101.14	-26.49	747.86	1,124.42	1,083.36	41.05	27.391	
11,500.00	11,463.45	11,500.00	11,473.55	40.97		-99.14	-26.49	747.86	1,130.40	1,089.21	41.19	27.446	
11,550.00	11,502.11	11,550.00	11,512.21	41.09		-97.84	-26.49	747.86	1,136.37	1,095.05	41.31	27.506	
11,600.00	11,538.00	11,644.97	11,548.10	41.21		-96.98	-26.49	747.86	1,142.54	1,101.10	41.43	27.574	
11,650.00	11,570.86	11,697.41	11,580.96	41.32		-96.39	-26.49	747.86	1,149.14	1,107.59	41.55	27.658	
11,700.00	11,600.43	11,749.14	11,610.53	41.43		-95.94	-26.49	747.86	1,156.37	1,114.72	41.65	27.762	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
11,750.00	11,626.48	11,796.07	11,631.29	41.54		-95.22	-28.98	747.77	1,164.14	1,122.39	41.75	27.885	
11,800.00	11,648.83	11,842.58	11,651.52	41.65		-94.64	-28.84	747.81	1,173.18	1,131.34	41.83	28.043	
11,850.00	11,667.29	11,888.18	11,669.57	41.76		-94.01	-28.57	747.90	1,183.39	1,141.48	41.91	28.234	
11,900.00	11,681.74	11,933.17	11,684.42	41.87		-93.24	-28.23	747.91	1,194.76	1,152.78	41.98	28.458	
11,950.00	11,692.05	16,815.98	11,702.58	41.98		-92.63	-26.65	747.86	1,207.58	1,165.53	42.05	28.718	
12,000.00	11,698.15	15,022.52	11,709.19	42.09		-91.42	-26.89	747.85	1,221.28	1,179.19	42.10	29.010	
12,050.00	11,700.00	18,607.37	11,710.10	42.21		-90.00	-26.49	747.86	1,236.30	1,194.17	42.14	29.340	
12,100.00	11,700.00	18,607.37	11,710.10	42.32		-90.00	-26.49	747.86	1,252.67	1,210.50	42.17	29.704	
12,150.00	11,700.00	18,607.37	11,710.10	42.45		-90.00	-26.49	747.86	1,270.80	1,228.59	42.22	30.102	
12,200.00	11,700.00	18,607.37	11,710.10	42.59		-90.00	-26.49	747.86	1,290.62	1,248.36	42.25	30.546	
12,250.00	11,700.00	18,607.37	11,710.10	42.74		-90.00	-26.49	747.86	1,312.04	1,269.74	42.30	31.018	
12,300.00	11,700.00	18,607.37	11,710.10	42.90		-90.00	-26.49	747.86	1,334.99	1,292.65	42.34	31.533	
12,350.00	11,700.00	18,607.37	11,710.10	43.08		-90.00	-26.49	747.86	1,359.39	1,317.00	42.39	32.072	
12,400.00	11,700.00	18,607.37	11,710.10	43.25		-90.00	-26.49	747.86	1,385.17	1,342.74	42.42	32.650	
12,450.00	11,700.00	18,607.37	11,710.10	43.45		-90.00	-26.49	747.86	1,412.24	1,369.77	42.47	33.250	
12,500.00	11,700.00	18,607.37	11,710.10	43.65		-90.00	-26.49	747.86	1,440.55	1,398.04	42.51	33.885	
12,550.00	11,700.00	18,607.37	11,710.10	43.87		-90.00	-26.49	747.86	1,470.01	1,427.45	42.56	34.539	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
0.00	0.00	10.13	10.13	0.50	0.50	92.03	-26.49	747.86	748.33				
50.00	50.00	60.26	60.26	0.50	0.51	92.04	-26.61	747.85	748.32	747.31	1.01	740.541	
100.00	100.00	110.40	110.40	0.52	0.53	92.06	-26.89	747.83	748.31	747.26	1.05	715.565	
150.00	150.00	160.53	160.53	0.59	0.56	92.09	-27.33	747.79	748.28	747.14	1.15	651.931	
200.00	200.00	211.74	211.73	0.70	0.63	92.14	-27.94	747.71	748.23	746.91	1.33	563.482	
250.00	250.00	264.16	264.15	0.84	0.75	92.20	-28.69	747.48	748.04	746.45	1.59	469.902	
300.00	300.00	315.49	315.47	0.99	0.90	92.26	-29.51	747.12	747.72	745.83	1.89	396.055	
350.00	350.00	366.35	366.32	1.15	1.06	92.33	-30.35	746.69	747.33	745.13	2.20	339.252	
400.00	400.00	416.64	416.60	1.31	1.22	92.39	-31.16	746.22	746.90	744.37	2.53	295.393	
450.00	450.00	466.85	466.81	1.48	1.39	92.44	-31.84	745.75	746.46	743.60	2.86	260.814	
500.00	500.00	515.12	515.07	1.65	1.55	92.49	-32.47	745.35	746.07	742.88	3.19	233.536	
550.00	550.00	563.57	563.51	1.82	1.71	92.55	-33.17	745.05	745.79	742.26	3.53	211.166	
600.00	600.00	613.48	613.42	1.99	1.89	92.60	-33.85	744.79	745.57	741.69	3.88	192.304	
650.00	650.00	663.41	663.35	2.16	2.06	92.65	-34.44	744.55	745.35	741.12	4.22	176.436	
700.00	700.00	713.37	713.30	2.34	2.23	92.69	-34.95	744.31	745.13	740.56	4.57	162.921	
750.00	750.00	763.33	763.26	2.51	2.41	92.72	-35.40	744.07	744.92	739.99	4.92	151.283	
800.00	800.00	813.93	813.85	2.69	2.59	92.75	-35.79	743.83	744.70	739.42	5.28	141.102	
850.00	850.00	865.71	865.63	2.87	2.77	92.79	-36.26	743.48	744.39	738.75	5.64	132.068	
900.00	900.00	916.88	916.80	3.04	2.95	92.84	-36.81	743.03	743.97	737.98	5.99	124.125	
950.00	950.00	967.60	967.51	3.22	3.13	92.89	-37.44	742.51	743.49	737.14	6.35	117.084	
1,000.00	1,000.00	1,016.80	1,016.71	3.40	3.30	92.94	-38.11	742.00	743.01	736.31	6.70	110.867	
1,050.00	1,050.00	1,065.56	1,065.46	3.58	3.48	92.99	-38.77	741.58	742.61	735.56	7.05	105.297	
1,100.00	1,100.00	1,115.83	1,115.73	3.75	3.66	93.05	-39.48	741.17	742.24	734.84	7.41	100.182	
1,150.00	1,150.00	1,166.29	1,166.18	3.93	3.84	93.11	-40.22	740.73	741.85	734.08	7.77	95.520	
1,200.00	1,200.00	1,216.07	1,215.94	4.11	4.01	93.17	-40.96	740.29	741.45	733.33	8.12	91.291	
1,250.00	1,250.00	1,266.13	1,266.00	4.29	4.19	93.23	-41.72	739.86	741.06	732.58	8.48	87.405	
1,300.00	1,300.00	1,316.87	1,316.73	4.46	4.37	93.29	-42.47	739.39	740.64	731.80	8.84	83.805	
1,350.00	1,350.00	1,366.87	1,366.72	4.64	4.55	93.34	-43.18	738.89	740.18	730.98	9.19	80.503	
1,400.00	1,400.00	1,415.94	1,415.79	4.82	4.73	93.40	-43.86	738.44	739.76	730.21	9.55	77.478	
1,450.00	1,450.00	1,465.20	1,465.04	5.00	4.90	93.45	-44.52	738.05	739.40	729.50	9.90	74.669	
1,500.00	1,500.00	1,514.65	1,514.49	5.18	5.08	93.50	-45.17	737.69	739.09	728.83	10.26	72.053	
1,550.00	1,550.00	1,564.53	1,564.36	5.36	5.26	93.55	-45.78	737.37	738.80	728.19	10.61	69.604	
1,600.00	1,600.00	1,614.71	1,614.53	5.53	5.44	93.60	-46.33	737.04	738.51	727.54	10.97	67.307	
1,650.00	1,650.00	1,664.72	1,664.54	5.71	5.62	93.64	-46.85	736.70	738.21	726.88	11.33	65.157	
1,700.00	1,700.00	1,714.66	1,714.48	5.89	5.80	93.68	-47.36	736.37	737.91	726.22	11.69	63.140	
1,750.00	1,750.00	1,763.63	1,763.44	6.07	5.97	93.72	-47.88	736.08	737.64	725.60	12.04	61.263	
1,800.00	1,800.00	1,812.42	1,812.24	6.25	6.15	93.77	-48.43	735.86	737.45	725.06	12.39	59.502	
1,850.00	1,850.00	1,862.45	1,862.26	6.43	6.33	93.81	-48.99	735.68	737.31	724.56	12.75	57.822	
1,900.00	1,900.00	1,912.58	1,912.38	6.61	6.51	93.85	-49.50	735.49	737.16	724.05	13.11	56.231	
1,950.00	1,950.00	1,961.35	1,961.15	6.78	6.68	93.89	-49.96	735.35	737.05	723.59	13.46	54.749	
1,998.52	1,998.52	2,008.82	2,008.62	6.96	6.85	93.92	-50.39	735.29	737.02	723.21	13.81	53.387 CC	
2,000.00	2,000.00	2,010.29	2,010.09	6.96	6.85	93.92	-50.40	735.29	737.02	723.20	13.82	53.346	
2,050.00	2,050.00	2,059.96	2,059.76	7.14	7.03	155.89	-50.86	735.27	737.23	723.06	14.17	52.031 ES	
2,100.00	2,099.99	2,108.25	2,108.05	7.32	7.20	155.94	-51.34	735.28	737.87	723.36	14.52	50.832	
2,150.00	2,149.98	2,152.05	2,151.84	7.49	7.35	155.97	-51.43	735.58	739.22	724.38	14.84	49.820	
2,200.00	2,199.96	2,196.14	2,195.93	7.67	7.50	155.97	-51.01	736.29	741.38	726.22	15.16	48.905	
2,250.00	2,249.92	2,243.67	2,243.44	7.84	7.65	155.96	-50.25	737.33	744.17	728.68	15.49	48.049	
2,300.00	2,299.88	2,291.18	2,290.92	8.02	7.81	155.94	-49.37	738.53	747.19	731.38	15.82	47.245	
2,350.00	2,349.84	2,337.67	2,337.38	8.19	7.96	155.89	-48.04	739.92	750.42	734.28	16.14	46.494	
2,400.00	2,399.80	2,384.42	2,384.05	8.37	8.11	155.79	-46.06	741.57	753.86	737.39	16.47	45.785	
2,450.00	2,449.76	2,433.26	2,432.80	8.54	8.27	155.66	-43.64	743.44	757.43	740.63	16.80	45.086	
2,500.00	2,499.72	2,482.08	2,481.51	8.72	8.43	155.52	-41.11	745.39	761.08	743.95	17.13	44.419	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	2,549.68	2,526.97	2,526.28	8.90	8.58	155.37	-38.45	747.39	764.95	747.49	17.45	43.827	
2,600.00	2,599.64	2,572.33	2,571.47	9.07	8.73	155.18	-35.31	749.70	769.10	751.33	17.77	43.269	
2,650.00	2,649.60	2,616.60	2,615.52	9.25	8.88	154.96	-31.71	752.27	773.59	755.50	18.09	42.759	
2,700.00	2,699.56	2,660.82	2,659.44	9.43	9.03	154.69	-27.52	755.16	778.44	760.03	18.41	42.290	
2,750.00	2,749.52	2,708.49	2,706.74	9.61	9.19	154.38	-22.57	758.53	783.55	764.81	18.74	41.811	
2,800.00	2,799.48	2,756.30	2,754.14	9.78	9.35	154.05	-17.43	762.02	788.79	769.72	19.07	41.356	
2,850.00	2,849.44	2,805.85	2,803.26	9.96	9.52	153.71	-12.00	765.69	794.12	774.70	19.42	40.899	
2,900.00	2,899.40	2,855.42	2,852.39	10.14	9.69	153.37	-6.57	769.36	799.46	779.70	19.76	40.457	
2,950.00	2,949.36	2,904.06	2,900.60	10.32	9.86	153.04	-1.22	772.99	804.86	784.76	20.10	40.039	
3,000.00	2,999.32	2,952.85	2,948.95	10.49	10.03	152.72	4.16	776.67	810.34	789.90	20.44	39.638	
3,050.00	3,049.28	3,002.41	2,998.07	10.67	10.20	152.39	9.67	780.43	815.86	795.06	20.79	39.241	
3,100.00	3,099.24	3,052.43	3,047.62	10.85	10.38	152.06	15.28	784.21	821.39	800.25	21.14	38.854	
3,150.00	3,149.20	3,103.90	3,098.63	11.03	10.56	151.72	21.06	788.02	826.87	805.37	21.50	38.461	
3,200.00	3,199.16	3,155.22	3,149.50	11.21	10.74	151.39	26.77	791.69	832.25	810.39	21.86	38.077	
3,250.00	3,249.12	3,206.30	3,200.14	11.38	10.92	151.08	32.36	795.24	837.56	815.34	22.21	37.703	
3,300.00	3,299.08	3,256.81	3,250.24	11.56	11.10	150.78	37.80	798.68	842.81	820.24	22.57	37.342	
3,350.00	3,349.04	3,306.85	3,299.88	11.74	11.28	150.48	43.20	802.04	848.05	825.12	22.92	36.995	
3,400.00	3,399.00	3,357.77	3,350.39	11.92	11.46	150.19	48.66	805.42	853.26	829.98	23.28	36.650	
3,450.00	3,448.96	3,409.15	3,401.38	12.10	11.65	149.90	54.02	808.73	858.39	834.75	23.64	36.307	
3,500.00	3,498.92	3,455.50	3,447.39	12.28	11.81	149.65	58.79	811.74	863.56	839.58	23.98	36.014	
3,550.00	3,548.88	3,500.89	3,492.42	12.46	11.98	149.41	63.55	814.89	868.98	844.67	24.31	35.746	
3,600.00	3,598.84	3,549.11	3,540.24	12.63	12.15	149.15	68.63	818.41	874.59	849.94	24.66	35.473	
3,650.00	3,648.80	3,598.28	3,589.01	12.81	12.33	148.89	73.68	822.03	880.26	855.25	25.01	35.201	
3,700.00	3,698.76	3,647.65	3,638.01	12.99	12.51	148.66	78.53	825.70	885.95	860.59	25.36	34.936	
3,750.00	3,748.72	3,697.12	3,687.14	13.17	12.69	148.45	82.95	829.40	891.66	865.95	25.71	34.678	
3,800.00	3,798.68	3,749.23	3,738.93	13.35	12.88	148.27	87.12	833.27	897.32	871.24	26.08	34.408	
3,850.00	3,848.64	3,801.83	3,791.27	13.53	13.07	148.12	90.82	837.06	902.84	876.39	26.45	34.136	
3,900.00	3,898.60	3,856.00	3,845.21	13.71	13.27	147.99	94.26	840.75	908.15	881.33	26.83	33.855	
3,950.00	3,948.56	3,908.25	3,897.26	13.89	13.46	147.88	97.30	844.10	913.24	886.05	27.19	33.586	
4,000.00	3,998.52	3,957.63	3,946.46	14.07	13.63	147.79	99.97	847.25	918.31	890.76	27.54	33.341	
4,050.00	4,048.47	4,006.93	3,995.60	14.25	13.81	147.72	102.45	850.42	923.39	895.50	27.89	33.103	
4,100.00	4,098.43	4,056.17	4,044.69	14.43	13.99	147.66	104.63	853.64	928.51	900.26	28.24	32.873	
4,150.00	4,148.39	4,105.29	4,093.66	14.61	14.16	147.63	106.52	856.91	933.65	905.05	28.59	32.651	
4,200.00	4,198.35	4,154.31	4,142.55	14.79	14.34	147.60	108.19	860.21	938.83	909.88	28.94	32.436	
4,250.00	4,248.31	4,202.52	4,190.62	14.97	14.51	147.59	109.66	863.53	944.06	914.77	29.29	32.233	
4,300.00	4,298.27	4,250.32	4,238.28	15.14	14.68	147.59	110.94	866.92	949.39	919.76	29.63	32.040	
4,350.00	4,348.23	4,306.87	4,294.67	15.32	14.88	147.59	112.45	870.86	954.65	924.63	30.02	31.800	
4,400.00	4,398.19	4,366.69	4,354.35	15.50	15.10	147.56	114.47	874.39	959.41	928.99	30.42	31.535	
4,450.00	4,448.15	4,423.22	4,410.77	15.68	15.30	147.51	116.82	877.22	963.75	932.94	30.81	31.280	
4,500.00	4,498.11	4,477.30	4,464.73	15.86	15.49	147.44	119.43	879.53	967.75	936.57	31.18	31.033	
4,550.00	4,548.07	4,528.56	4,515.88	16.04	15.68	147.36	122.01	881.60	971.65	940.11	31.55	30.801	
4,600.00	4,598.03	4,580.07	4,567.28	16.22	15.86	147.28	124.62	883.60	975.48	943.57	31.91	30.571	
4,650.00	4,647.99	4,631.71	4,618.83	16.40	16.05	147.21	127.13	885.52	979.21	946.94	32.27	30.343	
4,700.00	4,697.95	4,681.66	4,668.69	16.58	16.23	147.14	129.45	887.33	982.89	950.26	32.63	30.125	
4,750.00	4,747.91	4,731.32	4,718.27	16.76	16.40	147.09	131.69	889.14	986.58	953.60	32.98	29.913	
4,800.00	4,797.87	4,781.91	4,774.77	16.94	16.61	147.02	134.26	891.03	990.11	956.75	33.37	29.674	
4,850.00	4,847.83	4,844.02	4,830.80	17.12	16.81	146.94	136.95	892.50	993.30	959.55	33.75	29.433	
4,900.00	4,897.79	4,898.60	4,885.29	17.30	17.00	146.85	139.81	893.62	996.23	962.11	34.12	29.196	
4,950.00	4,947.75	4,951.08	4,937.67	17.48	17.19	146.75	142.78	894.46	998.96	964.47	34.49	28.965	
5,000.00	4,997.71	5,002.29	4,988.81	17.66	17.37	146.66	145.67	895.20	1,001.61	966.76	34.85	28.741	
5,050.00	5,047.67	5,053.16	5,039.59	17.84	17.55	146.56	148.50	895.89	1,004.21	969.00	35.21	28.522	
5,100.00	5,097.63	5,103.94	5,090.29	18.02	17.73	146.47	151.29	896.53	1,006.77	971.20	35.57	28.306	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
5,150.00	5,147.59	5,156.40	5,142.66	18.20	17.92	146.38	154.18	897.10	1,009.25	973.31	35.93	28.086	
5,200.00	5,197.55	5,209.28	5,195.45	18.38	18.11	146.28	157.18	897.53	1,011.59	975.29	36.30	27.867	
5,250.00	5,247.51	5,263.64	5,249.73	18.56	18.30	146.18	160.18	897.77	1,013.76	977.08	36.67	27.643	
5,300.00	5,297.47	5,320.48	5,306.50	18.74	18.50	146.08	163.11	897.76	1,015.68	978.62	37.05	27.412	
5,350.00	5,347.43	5,380.27	5,366.24	18.92	18.71	146.01	165.63	897.28	1,017.15	979.71	37.44	27.169	
5,400.00	5,397.39	5,443.26	5,429.18	19.10	18.93	145.97	167.66	896.13	1,018.07	980.25	37.83	26.913	
5,450.00	5,447.35	5,501.82	5,487.69	19.28	19.13	145.96	169.01	894.42	1,018.39	980.19	38.20	26.659	
5,500.00	5,497.31	5,553.75	5,539.59	19.46	19.30	145.98	169.68	892.75	1,018.52	979.96	38.56	26.416	
5,550.00	5,547.27	5,600.92	5,586.75	19.64	19.46	146.02	169.86	891.25	1,018.63	979.73	38.90	26.186	
5,600.00	5,597.23	5,645.06	5,630.86	19.82	19.61	146.08	169.76	890.11	1,018.99	979.76	39.24	25.971	
5,650.00	5,647.19	5,691.33	5,677.12	20.00	19.77	146.15	169.43	889.18	1,019.62	980.04	39.58	25.764	
5,700.00	5,697.15	5,739.93	5,725.71	20.18	19.94	146.23	169.00	888.30	1,020.35	980.43	39.92	25.559	
5,750.00	5,747.11	5,788.54	5,774.32	20.36	20.10	146.31	168.53	887.50	1,021.14	980.88	40.27	25.359	
5,800.00	5,797.07	5,837.17	5,822.94	20.54	20.27	146.39	168.05	886.76	1,022.01	981.39	40.61	25.164	
5,850.00	5,847.03	5,886.40	5,872.16	20.73	20.43	146.48	167.53	886.07	1,022.93	981.97	40.96	24.973	
5,900.00	5,896.99	5,935.97	5,921.72	20.91	20.60	146.57	166.98	885.40	1,023.88	982.57	41.31	24.784	
5,950.00	5,946.95	5,986.32	5,972.07	21.09	20.77	146.66	166.42	884.73	1,024.83	983.17	41.66	24.598	
6,000.00	5,996.91	6,036.94	6,022.67	21.27	20.95	146.75	165.90	884.01	1,025.76	983.75	42.02	24.414	
6,050.00	6,046.87	6,085.52	6,071.25	21.45	21.11	146.83	165.45	883.34	1,026.70	984.34	42.36	24.236	
6,100.00	6,096.83	6,133.82	6,119.55	21.63	21.28	146.91	165.05	882.74	1,027.73	985.02	42.71	24.064	
6,150.00	6,146.79	6,183.98	6,169.70	21.81	21.45	146.99	164.66	882.15	1,028.79	985.73	43.06	23.892	
6,200.00	6,196.75	6,234.33	6,220.05	21.99	21.62	147.06	164.31	881.54	1,029.85	986.43	43.41	23.722	
6,250.00	6,246.71	6,285.75	6,271.46	22.17	21.80	147.14	163.99	880.87	1,030.85	987.08	43.77	23.553	
6,300.00	6,296.67	6,336.57	6,322.28	22.35	21.97	147.21	163.73	880.14	1,031.80	987.67	44.12	23.385	
6,350.00	6,346.63	6,385.47	6,371.17	22.53	22.14	147.28	163.48	879.45	1,032.76	988.29	44.47	23.223	
6,400.00	6,396.59	6,434.65	6,420.34	22.71	22.31	147.35	163.22	878.80	1,033.77	988.95	44.82	23.065	
6,450.00	6,446.55	6,484.43	6,470.12	22.89	22.48	147.43	162.93	878.17	1,034.80	989.63	45.17	22.908	
6,500.00	6,496.51	6,534.38	6,520.06	23.07	22.65	147.50	162.62	877.54	1,035.84	990.32	45.52	22.754	
6,550.00	6,546.46	6,584.54	6,570.22	23.25	22.83	147.57	162.33	876.91	1,036.88	991.01	45.88	22.602	
6,600.00	6,596.42	6,633.80	6,619.48	23.43	23.00	147.64	162.07	876.28	1,037.92	991.70	46.23	22.453	
6,650.00	6,646.38	6,682.27	6,667.94	23.61	23.16	147.71	161.91	875.72	1,039.03	992.46	46.57	22.309	
6,700.00	6,696.34	6,726.03	6,711.70	23.79	23.32	147.76	161.87	875.33	1,040.28	993.37	46.91	22.177	
6,750.00	6,746.30	6,766.56	6,752.23	23.97	23.46	147.80	162.07	875.29	1,041.95	994.72	47.23	22.062	
6,800.00	6,796.26	6,809.30	6,794.97	24.15	23.60	147.82	162.52	875.62	1,044.06	996.50	47.55	21.956	
6,850.00	6,846.22	6,858.80	6,844.46	24.33	23.78	147.85	163.15	876.13	1,046.31	998.41	47.90	21.842	
6,900.00	6,896.18	6,908.97	6,894.63	24.51	23.95	147.87	163.83	876.65	1,048.58	1,000.32	48.26	21.728	
6,950.00	6,946.14	6,960.51	6,946.16	24.70	24.13	147.90	164.48	877.14	1,050.80	1,002.18	48.62	21.613	
7,000.00	6,996.10	7,012.68	6,998.32	24.88	24.31	147.93	165.07	877.56	1,052.93	1,003.95	48.98	21.497	
7,050.00	7,046.06	7,065.43	7,051.06	25.06	24.49	147.96	165.57	877.85	1,054.94	1,005.59	49.34	21.379	
7,100.00	7,096.02	7,114.41	7,100.04	25.24	24.67	148.00	165.98	878.05	1,056.88	1,007.18	49.69	21.268	
7,150.00	7,145.98	7,161.94	7,147.57	25.42	24.83	148.03	166.47	878.35	1,058.92	1,008.88	50.04	21.162	
7,200.00	7,195.94	7,212.67	7,198.30	25.60	25.01	148.05	167.06	878.72	1,061.03	1,010.63	50.39	21.055	
7,250.00	7,245.90	7,264.62	7,250.24	25.78	25.19	148.08	167.72	879.01	1,063.05	1,012.29	50.76	20.944	
7,300.00	7,295.86	7,314.93	7,300.54	25.96	25.36	148.10	168.39	879.22	1,065.01	1,013.90	51.11	20.837	
7,350.00	7,345.82	7,365.08	7,350.69	26.14	25.54	148.12	169.06	879.43	1,066.96	1,015.49	51.47	20.732	
7,400.00	7,395.78	7,414.40	7,400.01	26.32	25.71	148.15	169.66	879.65	1,068.92	1,017.11	51.82	20.629	
7,450.00	7,445.74	7,463.91	7,449.51	26.50	25.88	148.18	170.15	879.90	1,070.92	1,018.75	52.17	20.528	
7,500.00	7,495.70	7,514.96	7,500.56	26.68	26.06	148.22	170.55	880.15	1,072.89	1,020.36	52.53	20.425	
7,550.00	7,545.66	7,565.88	7,551.48	26.86	26.24	148.26	170.87	880.36	1,074.81	1,021.93	52.88	20.324	
7,600.00	7,595.62	7,616.42	7,602.03	27.04	26.41	148.30	171.14	880.53	1,076.70	1,023.46	53.24	20.223	
7,650.00	7,645.58	7,666.53	7,652.13	27.22	26.59	148.34	171.37	880.68	1,078.57	1,024.98	53.59	20.125	
7,700.00	7,695.54	7,715.90	7,701.50	27.40	26.76	148.39	171.62	880.84	1,080.46	1,026.51	53.95	20.028	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	7,745.50	7,765.57	7,751.17	27.58	26.93	148.43	171.91	881.02	1,082.37	1,028.07	54.30	19.933	
7,800.00	7,795.46	7,815.60	7,801.20	27.77	27.11	148.47	172.21	881.21	1,084.28	1,029.62	54.65	19.839	
7,850.00	7,845.42	7,866.68	7,852.28	27.95	27.29	148.51	172.49	881.38	1,086.17	1,031.16	55.01	19.744	
7,900.00	7,895.38	7,918.43	7,904.02	28.13	27.47	148.56	172.66	881.48	1,087.99	1,032.62	55.37	19.649	
7,950.00	7,945.34	7,968.67	7,954.26	28.31	27.64	148.61	172.73	881.53	1,089.75	1,034.03	55.73	19.555	
8,000.00	7,995.30	8,018.47	8,004.07	28.49	27.82	148.66	172.80	881.58	1,091.52	1,035.44	56.08	19.463	
8,050.00	8,045.26	8,069.12	8,054.71	28.67	27.99	148.71	172.89	881.63	1,093.29	1,036.85	56.44	19.372	
8,100.00	8,095.22	8,119.90	8,105.49	28.85	28.17	148.76	173.04	881.63	1,095.01	1,038.22	56.79	19.280	
8,150.00	8,145.18	8,169.76	8,155.35	29.03	28.34	148.81	173.16	881.62	1,096.72	1,039.57	57.15	19.191	
8,200.00	8,195.14	8,219.63	8,205.23	29.21	28.52	148.86	173.20	881.61	1,098.43	1,040.93	57.50	19.102	
8,250.00	8,245.10	8,269.15	8,254.75	29.39	28.69	148.91	173.25	881.62	1,100.16	1,042.31	57.85	19.016	
8,300.00	8,295.06	8,319.15	8,304.74	29.57	28.87	148.96	173.40	881.64	1,101.91	1,043.70	58.21	18.930	
8,350.00	8,345.02	8,370.55	8,356.14	29.75	29.05	149.00	173.57	881.62	1,103.61	1,045.04	58.57	18.843	
8,400.00	8,394.98	8,421.97	8,407.56	29.93	29.22	149.05	173.72	881.53	1,105.25	1,046.32	58.93	18.756	
8,450.00	8,444.94	8,473.41	8,459.01	30.11	29.40	149.10	173.87	881.37	1,106.83	1,047.54	59.29	18.669	
8,500.00	8,494.90	8,522.71	8,508.30	30.30	29.58	149.14	174.03	881.18	1,108.36	1,048.72	59.64	18.585	
8,550.00	8,544.86	8,570.31	8,555.90	30.48	29.74	149.18	174.23	881.08	1,109.99	1,050.00	59.98	18.505	
8,600.00	8,594.82	8,618.70	8,604.29	30.66	29.91	149.22	174.51	881.07	1,111.71	1,051.37	60.33	18.426	
8,650.00	8,644.78	8,667.60	8,653.19	30.84	30.08	149.25	174.96	881.10	1,113.48	1,052.80	60.68	18.349	
8,700.00	8,694.74	8,716.42	8,702.00	31.02	30.25	149.27	175.52	881.17	1,115.31	1,054.27	61.04	18.273	
8,750.00	8,744.70	8,765.19	8,750.77	31.20	30.43	149.30	175.99	881.30	1,117.18	1,055.80	61.39	18.199	
8,800.00	8,794.66	8,813.74	8,799.32	31.38	30.60	149.33	176.37	881.48	1,119.12	1,057.38	61.74	18.128	
8,850.00	8,844.62	8,862.20	8,847.78	31.56	30.77	149.36	176.70	881.74	1,121.12	1,059.04	62.08	18.058	
8,900.00	8,894.58	8,911.56	8,897.13	31.74	30.94	149.40	177.00	882.05	1,123.17	1,060.73	62.44	17.989	
8,950.00	8,944.54	8,961.16	8,946.74	31.92	31.11	149.44	177.28	882.38	1,125.24	1,062.45	62.79	17.921	
9,000.00	8,994.50	9,008.56	8,994.13	32.10	31.28	149.48	177.46	882.75	1,127.37	1,064.24	63.13	17.857	
9,050.00	9,044.45	9,055.70	9,041.27	32.28	31.44	149.53	177.48	883.25	1,129.62	1,066.15	63.48	17.796	
9,100.00	9,094.41	9,103.84	9,089.41	32.46	31.61	149.59	177.32	883.86	1,131.98	1,068.16	63.82	17.737	
9,150.00	9,144.37	9,152.07	9,137.63	32.65	31.78	149.65	177.01	884.55	1,134.42	1,070.25	64.17	17.679	
9,200.00	9,194.33	9,204.21	9,189.76	32.83	31.96	149.73	176.51	885.30	1,136.85	1,072.32	64.53	17.618	
9,250.00	9,244.29	9,256.61	9,242.15	33.01	32.14	149.82	175.87	885.94	1,139.17	1,074.28	64.89	17.555	
9,300.00	9,294.25	9,307.21	9,292.75	33.19	32.31	149.91	175.19	886.50	1,141.43	1,076.19	65.24	17.495	
9,350.00	9,344.21	9,358.46	9,343.99	33.37	32.48	150.00	174.47	887.03	1,143.65	1,078.05	65.60	17.434	
9,400.00	9,394.17	9,410.78	9,396.30	33.55	32.66	150.09	173.72	887.47	1,145.79	1,079.83	65.96	17.371	
9,450.00	9,444.13	9,460.37	9,445.89	33.73	32.83	150.17	172.99	887.81	1,147.85	1,081.54	66.31	17.310	
9,500.00	9,494.09	9,507.21	9,492.72	33.91	32.99	150.26	172.21	888.24	1,150.02	1,083.37	66.65	17.255	
9,550.00	9,544.05	9,556.27	9,541.76	34.09	33.16	150.35	171.28	888.80	1,152.31	1,085.31	67.00	17.199	
9,600.00	9,594.01	9,607.85	9,593.34	34.27	33.34	150.45	170.36	889.34	1,154.55	1,087.20	67.36	17.141	
9,650.00	9,643.97	9,660.68	9,646.16	34.45	33.52	150.55	169.47	889.80	1,156.71	1,088.99	67.72	17.081	
9,700.00	9,693.93	9,714.25	9,699.72	34.63	33.71	150.64	168.62	890.10	1,158.72	1,090.64	68.08	17.019	
9,750.00	9,743.89	9,769.23	9,754.69	34.82	33.89	150.74	167.76	890.21	1,160.55	1,092.10	68.45	16.954	
9,800.00	9,793.85	9,824.39	9,809.84	35.00	34.08	150.84	166.84	890.07	1,162.16	1,093.34	68.82	16.886	
9,850.00	9,843.81	9,873.74	9,859.19	35.18	34.25	150.92	166.04	889.87	1,163.70	1,094.52	69.17	16.823	
9,900.00	9,893.77	9,925.06	9,910.50	35.36	34.43	151.01	165.26	889.64	1,165.21	1,095.68	69.53	16.758	
9,950.00	9,943.73	9,979.30	9,964.73	35.54	34.61	151.10	164.47	889.24	1,166.59	1,096.69	69.90	16.690	
10,000.00	9,993.69	10,033.59	10,019.01	35.72	34.80	151.19	163.72	888.65	1,167.79	1,097.53	70.26	16.621	
10,050.00	10,043.65	10,087.92	10,073.34	35.90	34.99	151.28	162.95	887.85	1,168.80	1,098.17	70.63	16.549	
10,100.00	10,093.61	10,135.74	10,121.14	36.08	35.15	151.35	162.29	887.07	1,169.74	1,098.77	70.97	16.482	
10,150.00	10,143.57	10,181.89	10,167.29	36.26	35.31	151.42	161.78	886.46	1,170.84	1,099.52	71.31	16.419	
10,200.00	10,193.53	10,229.22	10,214.61	36.44	35.47	151.49	161.36	885.97	1,172.08	1,100.42	71.65	16.357	
10,250.00	10,243.49	10,276.96	10,262.35	36.62	35.64	151.55	160.97	885.57	1,173.42	1,101.42	72.00	16.298	
10,300.00	10,293.45	10,325.55	10,310.94	36.81	35.81	151.61	160.59	885.25	1,174.84	1,102.50	72.35	16.239	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	10,343.41	10,374.40	10,359.78	36.99	35.97	151.68	160.24	884.96	1,176.32	1,103.62	72.69	16.182	
10,400.00	10,393.37	10,421.67	10,407.05	37.17	36.14	151.74	159.92	884.76	1,177.87	1,104.83	73.04	16.127	
10,450.00	10,443.33	10,468.74	10,454.12	37.35	36.30	151.79	159.65	884.68	1,179.55	1,106.17	73.38	16.075	
10,500.00	10,493.29	10,518.04	10,503.42	37.53	36.47	151.85	159.39	884.67	1,181.30	1,107.57	73.73	16.022	
10,550.00	10,543.25	10,567.63	10,553.01	37.71	36.64	151.91	159.13	884.68	1,182.96	1,108.88	74.08	15.969	
10,600.00	10,593.24	10,619.96	10,605.33	37.89	36.82	151.96	158.88	884.64	1,184.05	1,109.61	74.44	15.906	
10,650.00	10,643.23	10,672.42	10,657.80	38.07	37.00	151.99	158.65	884.50	1,184.45	1,109.65	74.80	15.835	
10,700.00	10,693.23	10,725.36	10,710.74	38.24	37.19	90.08	158.44	884.23	1,184.26	1,109.10	75.16	15.756	
10,750.00	10,743.23	10,776.94	10,762.32	38.42	37.36	90.09	158.22	883.86	1,183.89	1,108.38	75.51	15.678	
10,800.00	10,793.23	10,826.52	10,811.89	38.59	37.54	90.10	157.88	883.49	1,183.52	1,107.66	75.86	15.601	
10,850.00	10,843.23	10,877.48	10,862.85	38.77	37.71	90.13	157.40	883.12	1,183.16	1,106.94	76.21	15.524	
10,900.00	10,893.23	10,929.92	10,915.28	38.94	37.89	90.15	156.90	882.64	1,182.70	1,106.13	76.57	15.446	
10,950.00	10,943.23	10,980.30	10,965.66	39.12	38.07	90.17	156.45	882.11	1,182.18	1,105.26	76.92	15.369	
11,000.00	10,993.23	11,029.78	11,015.14	39.29	38.24	90.19	155.98	881.60	1,181.67	1,104.40	77.27	15.293	
11,010.08	11,003.31	11,039.76	11,025.11	39.33	38.27	176.58	155.88	881.50	1,181.62	1,104.28	77.34	15.279	
11,050.00	11,043.22	11,080.88	11,066.21	39.47	38.42	176.63	154.79	881.07	1,181.84	1,104.22	77.62	15.226	
11,100.00	11,092.99	11,132.04	11,117.26	39.65	38.59	176.79	151.38	880.46	1,185.90	1,107.92	77.97	15.209	
11,150.00	11,142.19	11,173.33	11,158.14	39.84	38.73	-177.11	145.69	880.08	1,194.33	1,116.04	78.29	15.255	
11,200.00	11,191.09	11,214.71	11,198.52	40.03	38.86	-153.11	136.69	879.89	1,204.27	1,125.67	78.60	15.322	
11,250.00	11,239.59	11,246.76	11,229.22	40.21	38.97	-135.10	127.55	879.98	1,214.52	1,135.66	78.85	15.402	
11,300.00	11,287.32	11,286.38	11,266.41	40.38	39.09	-122.79	113.90	880.60	1,225.16	1,146.04	79.12	15.484	
11,350.00	11,333.92	11,326.72	11,303.34	40.54	39.21	-114.30	97.69	881.16	1,235.52	1,156.13	79.38	15.564	
11,400.00	11,379.03	11,351.09	11,325.04	40.69	39.28	-108.21	86.63	881.87	1,246.22	1,166.66	79.55	15.665	
11,450.00	11,422.32	11,378.28	11,348.64	40.83	39.35	-103.55	73.19	883.15	1,257.29	1,177.57	79.72	15.772	
11,500.00	11,463.45	11,408.00	11,373.74	40.97	39.44	-99.88	57.38	884.95	1,268.50	1,188.62	79.88	15.879	
11,550.00	11,502.11	11,454.19	11,411.69	41.09	39.56	-97.00	31.25	888.06	1,279.42	1,199.28	80.14	15.964	
11,600.00	11,538.00	11,540.58	11,477.94	41.21	39.79	-94.84	-23.92	892.15	1,288.70	1,208.09	80.61	15.987	
11,650.00	11,570.86	11,589.95	11,512.35	41.32	39.92	-93.01	-59.28	893.60	1,296.56	1,215.69	80.87	16.032	
11,700.00	11,600.43	11,643.30	11,546.72	41.43	40.07	-91.57	-100.05	894.98	1,303.53	1,222.39	81.15	16.063	
11,750.00	11,626.48	11,763.61	11,611.93	41.54	40.40	-90.53	-200.94	892.82	1,307.04	1,225.36	81.68	16.002	
11,800.00	11,648.83	11,799.10	11,628.14	41.65	40.50	-89.73	-232.47	891.58	1,309.61	1,227.72	81.89	15.993	
11,850.00	11,667.29	11,832.00	11,642.55	41.76	40.60	-89.20	-262.05	890.78	1,311.77	1,229.69	82.08	15.981	
11,900.00	11,681.74	11,857.50	11,653.26	41.87	40.68	-88.84	-285.18	890.54	1,313.75	1,231.50	82.25	15.972	
11,950.00	11,692.05	11,883.06	11,663.47	41.98	40.75	-88.66	-308.61	890.78	1,315.73	1,233.30	82.43	15.963	
12,000.00	11,698.15	11,918.05	11,676.00	42.09	40.86	-88.73	-341.27	891.54	1,317.47	1,234.83	82.64	15.943	
12,050.00	11,700.00	11,965.48	11,690.00	42.21	41.01	-89.13	-386.56	892.82	1,318.67	1,235.77	82.90	15.906	
12,100.00	11,700.00	12,010.94	11,700.10	42.32	41.15	-89.57	-430.85	894.02	1,319.58	1,236.43	83.16	15.869	
12,150.00	11,700.00	12,050.00	11,705.74	42.45	41.27	-89.81	-469.48	895.20	1,320.77	1,237.37	83.40	15.837	
12,200.00	11,700.00	12,109.83	11,711.21	42.59	41.47	-90.05	-529.02	897.13	1,322.08	1,238.34	83.73	15.789	
12,250.00	11,700.00	12,171.27	11,714.79	42.74	41.67	-90.20	-590.33	898.59	1,322.96	1,238.86	84.10	15.731	
12,300.00	11,700.00	12,223.17	11,716.38	42.90	41.86	-90.27	-642.20	899.53	1,323.55	1,239.11	84.44	15.675	
12,350.00	11,700.00	12,272.05	11,717.16	43.08	42.04	-90.31	-691.06	900.44	1,324.17	1,239.38	84.79	15.617	
12,400.00	11,700.00	12,306.71	11,717.50	43.25	42.18	-90.32	-725.71	901.25	1,325.06	1,239.96	85.09	15.572	
12,450.00	11,700.00	12,338.58	11,718.05	43.45	42.31	-90.34	-757.55	902.44	1,326.62	1,241.22	85.40	15.534	
12,500.00	11,700.00	12,374.00	11,718.95	43.65	42.46	-90.38	-792.92	904.28	1,328.87	1,243.14	85.73	15.501	
12,550.00	11,700.00	12,421.99	11,719.86	43.87	42.68	-90.42	-840.82	907.06	1,331.46	1,245.29	86.17	15.452	
12,600.00	11,700.00	12,476.14	11,719.68	44.09	42.94	-90.41	-894.89	910.05	1,333.90	1,247.26	86.64	15.396	
12,650.00	11,700.00	12,509.34	11,720.05	44.34	43.11	-90.43	-928.02	912.08	1,336.63	1,249.60	87.03	15.358	
12,700.00	11,700.00	12,544.87	11,721.55	44.58	43.29	-90.49	-963.42	914.61	1,339.89	1,252.46	87.43	15.325	
12,750.00	11,700.00	12,595.94	11,724.83	44.84	43.57	-90.63	-1,014.23	918.63	1,343.55	1,255.58	87.97	15.273	
12,800.00	11,700.00	12,665.79	11,725.90	45.10	43.96	-90.67	-1,083.90	923.41	1,346.67	1,258.02	88.66	15.190	
12,850.00	11,700.00	12,697.20	11,725.73	45.39	44.15	-90.66	-1,115.23	925.62	1,349.83	1,260.74	89.09	15.151	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
12,900.00	11,700.00	12,731.97	11,725.73	45.67	44.36	-90.66	-1,149.89	928.41	1,353.54	1,264.00	89.54	15.116	
12,950.00	11,700.00	12,869.58	11,724.97	45.97	45.22	-90.63	-1,287.21	936.47	1,356.57	1,265.71	90.86	14.930	
13,000.00	11,700.00	12,949.69	11,724.22	46.28	45.75	-90.60	-1,367.31	937.31	1,356.78	1,265.05	91.73	14.792	
13,050.00	11,700.00	12,999.65	11,723.29	46.60	46.09	-90.56	-1,417.26	937.35	1,356.49	1,264.09	92.39	14.682	
13,100.00	11,700.00	13,050.43	11,721.48	46.92	46.45	-90.48	-1,468.01	937.29	1,356.10	1,263.03	93.07	14.570	
13,150.00	11,700.00	13,096.67	11,720.57	47.26	46.78	-90.44	-1,514.23	937.31	1,355.79	1,262.05	93.74	14.463	
13,192.63	11,700.00	13,136.10	11,720.78	47.55	47.06	-90.45	-1,553.67	937.41	1,355.64	1,261.33	94.31	14.374	
13,200.00	11,700.00	13,131.00	11,720.70	47.60	47.03	-90.45	-1,548.57	937.39	1,355.68	1,261.37	94.31	14.375	
13,250.00	11,700.00	13,172.04	11,721.56	47.95	47.34	-90.48	-1,589.60	937.86	1,355.99	1,261.03	94.97	14.278	
13,300.00	11,700.00	13,204.64	11,722.64	48.31	47.59	-90.53	-1,622.17	938.71	1,356.99	1,261.44	95.54	14.203	
13,350.00	11,700.00	13,248.54	11,724.49	48.68	47.93	-90.61	-1,666.00	940.34	1,358.54	1,262.29	96.25	14.115	
13,400.00	11,700.00	13,311.45	11,726.44	49.06	48.43	-90.69	-1,728.84	942.35	1,359.85	1,262.70	97.15	13.997	
13,450.00	11,700.00	13,369.59	11,727.24	49.44	48.90	-90.72	-1,786.96	943.76	1,360.75	1,262.72	98.03	13.881	
13,500.00	11,700.00	13,428.28	11,726.95	49.83	49.39	-90.71	-1,845.64	944.86	1,361.37	1,262.46	98.91	13.763	
13,550.00	11,700.00	13,490.98	11,726.24	50.24	49.91	-90.68	-1,908.33	945.53	1,361.58	1,261.72	99.87	13.634	
13,600.00	11,700.00	13,562.49	11,724.69	50.64	50.53	-90.61	-1,979.82	945.45	1,361.21	1,260.30	100.91	13.489	
13,650.00	11,700.00	13,621.16	11,721.86	51.06	51.04	-90.50	-2,038.41	944.55	1,360.09	1,258.23	101.85	13.354	
13,700.00	11,700.00	13,660.91	11,720.26	51.48	51.39	-90.43	-2,078.13	944.07	1,359.15	1,256.53	102.62	13.245	
13,750.00	11,700.00	13,697.00	11,719.36	51.91	51.71	-90.39	-2,114.21	943.88	1,358.59	1,255.24	103.35	13.145	
13,789.89	11,700.00	13,730.48	11,718.93	52.25	52.02	-90.37	-2,147.68	943.96	1,358.44	1,254.45	103.99	13.063	
13,800.00	11,700.00	13,738.08	11,718.88	52.34	52.09	-90.37	-2,155.28	944.02	1,358.45	1,254.30	104.15	13.043	
13,850.00	11,700.00	13,775.66	11,718.85	52.78	52.43	-90.37	-2,192.86	944.49	1,358.77	1,253.86	104.92	12.951	
13,900.00	11,700.00	13,812.43	11,719.19	53.23	52.77	-90.38	-2,229.62	945.30	1,359.56	1,253.88	105.68	12.865	
13,950.00	11,700.00	13,848.62	11,719.85	53.69	53.12	-90.41	-2,265.78	946.46	1,360.85	1,254.40	106.45	12.784	
14,000.00	11,700.00	13,885.00	11,720.84	54.14	53.46	-90.45	-2,302.12	947.98	1,362.65	1,255.43	107.21	12.710	
14,050.00	11,700.00	13,917.55	11,721.75	54.61	53.78	-90.49	-2,334.61	949.72	1,365.01	1,257.06	107.95	12.645	
14,100.00	11,700.00	13,950.28	11,722.46	55.08	54.10	-90.52	-2,367.26	951.88	1,368.00	1,259.33	108.67	12.588	
14,150.00	11,700.00	13,990.25	11,723.02	55.56	54.50	-90.54	-2,407.10	955.03	1,371.61	1,262.11	109.51	12.525	
14,200.00	11,700.00	14,200.00	11,722.56	56.04	56.60	-90.52	-2,477.69	959.42	1,374.19	1,262.02	112.17	12.251	
14,250.00	11,700.00	14,111.90	11,721.99	56.53	55.73	-90.50	-2,528.51	962.34	1,376.73	1,264.94	111.79	12.315	
14,300.00	11,700.00	14,141.33	11,721.96	57.02	56.03	-90.49	-2,557.87	964.44	1,379.98	1,267.48	112.50	12.267	
14,350.00	11,700.00	14,177.51	11,722.38	57.52	56.40	-90.51	-2,593.91	967.57	1,383.95	1,270.65	113.31	12.214	
14,400.00	11,700.00	14,317.85	11,722.63	58.02	57.87	-90.52	-2,734.01	975.32	1,386.35	1,270.76	115.59	11.994	
14,450.00	11,700.00	14,397.13	11,721.40	58.53	58.70	-90.47	-2,813.27	976.06	1,386.39	1,269.40	116.98	11.851	
14,500.00	11,700.00	14,453.05	11,719.46	59.04	59.29	-90.39	-2,869.16	976.08	1,386.08	1,267.98	118.09	11.737	
14,550.00	11,700.00	14,537.22	11,715.92	59.56	60.18	-90.24	-2,953.25	974.89	1,385.04	1,265.52	119.53	11.588	
14,600.00	11,700.00	14,595.05	11,714.25	60.08	60.80	-90.17	-3,011.02	973.13	1,383.19	1,262.53	120.66	11.463	
14,650.00	11,700.00	14,649.03	11,714.46	60.61	61.37	-90.18	-3,064.96	971.31	1,381.19	1,259.42	121.77	11.343	
14,700.00	11,700.00	14,686.13	11,715.15	61.14	61.77	-90.21	-3,102.04	970.21	1,379.39	1,256.68	122.71	11.241	
14,750.00	11,700.00	14,725.19	11,716.08	61.67	62.20	-90.25	-3,141.08	969.35	1,377.98	1,254.31	123.67	11.143	
14,800.00	11,700.00	14,801.48	11,716.95	62.21	63.03	-90.29	-3,217.34	967.45	1,376.49	1,251.45	125.04	11.009	
14,850.00	11,700.00	14,863.05	11,715.35	62.75	63.71	-90.22	-3,278.82	964.73	1,373.93	1,247.68	126.25	10.883	
14,900.00	11,700.00	14,909.43	11,713.69	63.30	64.22	-90.15	-3,325.13	962.69	1,371.41	1,244.10	127.31	10.772	
14,950.00	11,700.00	14,952.09	11,712.13	63.85	64.69	-90.08	-3,367.72	960.95	1,369.06	1,240.71	128.34	10.667	
15,000.00	11,700.00	14,992.72	11,711.23	64.40	65.14	-90.05	-3,408.33	959.56	1,367.03	1,237.68	129.35	10.568	
15,050.00	11,700.00	15,038.82	11,710.83	64.96	65.66	-90.03	-3,454.41	958.28	1,365.32	1,234.89	130.43	10.468	
15,100.00	11,700.00	15,095.92	11,709.19	65.51	66.31	-89.96	-3,511.45	956.54	1,363.48	1,231.85	131.63	10.358	
15,150.00	11,700.00	15,138.69	11,707.31	66.08	66.80	-89.88	-3,554.16	955.15	1,361.56	1,228.87	132.69	10.261	
15,200.00	11,700.00	15,174.38	11,707.14	66.64	67.21	-89.88	-3,589.83	954.34	1,360.11	1,226.45	133.67	10.176	
15,250.00	11,700.00	15,209.00	11,708.42	67.21	67.61	-89.93	-3,624.42	953.92	1,359.20	1,224.57	134.63	10.096	
15,300.00	11,700.00	15,244.97	11,710.50	67.78	68.03	-90.02	-3,660.33	953.87	1,358.83	1,223.22	135.60	10.021	
15,308.52	11,700.00	15,250.92	11,710.85	67.88	68.10	-90.03	-3,666.28	953.91	1,358.82	1,223.05	135.77	10.008	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
15,350.00	11,700.00	15,279.92	11,712.55	68.36	68.44	-90.10	-3,695.22	954.22	1,359.01	1,222.45	136.56	9.951	
15,400.00	11,700.00	15,317.77	11,714.72	68.94	68.89	-90.19	-3,733.00	955.00	1,359.73	1,222.17	137.56	9.885	
15,450.00	11,700.00	15,361.35	11,716.25	69.52	69.41	-90.26	-3,776.54	956.17	1,360.76	1,222.12	138.64	9.815	
15,500.00	11,700.00	15,409.89	11,716.49	70.10	69.99	-90.27	-3,825.05	957.69	1,362.01	1,222.21	139.80	9.743	
15,550.00	11,700.00	15,484.23	11,714.69	70.69	70.88	-90.19	-3,899.34	959.28	1,362.76	1,221.41	141.35	9.641	
15,600.00	11,700.00	15,600.00	11,711.27	71.28	72.26	-90.05	-3,984.16	958.39	1,361.56	1,218.19	143.37	9.497	
15,650.00	11,700.00	15,628.91	11,709.48	71.87	72.61	-89.97	-4,043.89	956.96	1,359.98	1,215.67	144.31	9.424	
15,700.00	11,700.00	15,661.59	11,709.27	72.46	73.00	-89.96	-4,076.57	956.50	1,358.97	1,213.68	145.29	9.354	
15,750.00	11,700.00	15,701.83	11,709.60	73.06	73.48	-89.98	-4,116.81	956.43	1,358.54	1,212.18	146.36	9.282	
15,800.00	11,700.00	15,753.10	11,709.62	73.66	74.10	-89.98	-4,168.08	956.38	1,358.18	1,210.60	147.58	9.203	
15,850.00	11,700.00	15,809.49	11,708.75	74.26	74.79	-89.94	-4,224.46	956.22	1,357.73	1,208.85	148.88	9.120	
15,900.00	11,700.00	15,869.92	11,706.31	74.86	75.52	-89.84	-4,284.84	955.62	1,356.92	1,206.69	150.23	9.032	
15,950.00	11,700.00	15,906.68	11,704.74	75.47	75.98	-89.77	-4,321.56	955.28	1,356.16	1,204.88	151.27	8.965	
16,000.00	11,700.00	15,943.07	11,704.05	76.08	76.42	-89.74	-4,357.94	955.32	1,355.90	1,203.59	152.31	8.902	
16,000.67	11,700.00	15,943.56	11,704.04	76.09	76.43	-89.74	-4,358.44	955.32	1,355.90	1,203.58	152.32	8.902	
16,050.00	11,700.00	15,983.91	11,704.13	76.69	76.93	-89.75	-4,398.78	955.76	1,356.11	1,202.71	153.40	8.840	
16,100.00	11,700.00	16,031.47	11,703.94	77.30	77.52	-89.74	-4,446.33	956.41	1,356.49	1,201.89	154.60	8.774	
16,150.00	11,700.00	16,097.87	11,702.75	77.92	78.34	-89.69	-4,512.72	957.19	1,356.81	1,200.74	156.08	8.693	
16,200.00	11,700.00	16,176.50	11,700.40	78.53	79.32	-89.59	-4,591.31	956.38	1,355.93	1,198.23	157.69	8.599	
16,250.00	11,700.00	16,230.79	11,699.53	79.15	79.99	-89.55	-4,645.58	955.28	1,354.61	1,195.63	158.98	8.520	
16,300.00	11,700.00	16,277.29	11,699.61	79.77	80.57	-89.56	-4,692.06	954.29	1,353.23	1,193.05	160.18	8.448	
16,350.00	11,700.00	16,319.86	11,700.00	80.39	81.10	-89.57	-4,734.62	953.60	1,352.10	1,190.76	161.34	8.381	
16,400.00	11,700.00	16,369.08	11,700.77	81.02	81.72	-89.60	-4,783.84	953.02	1,351.19	1,188.61	162.58	8.311	
16,450.00	11,700.00	16,426.20	11,702.07	81.64	82.44	-89.66	-4,840.94	952.13	1,350.09	1,186.17	163.93	8.236	
16,500.00	11,700.00	16,476.65	11,703.42	82.27	83.07	-89.72	-4,891.36	951.18	1,348.83	1,183.64	165.19	8.165	
16,550.00	11,700.00	16,525.38	11,704.55	82.90	83.68	-89.76	-4,940.07	950.31	1,347.61	1,181.17	166.44	8.097	
16,600.00	11,700.00	16,606.23	11,704.98	83.53	84.70	-89.78	-5,020.88	948.03	1,345.92	1,177.87	168.06	8.009	
16,650.00	11,700.00	16,660.68	11,703.99	84.16	85.39	-89.74	-5,075.27	945.59	1,343.36	1,173.99	169.36	7.932	
16,700.00	11,700.00	16,705.15	11,703.63	84.79	85.94	-89.72	-5,119.70	943.73	1,340.95	1,170.38	170.57	7.862	
16,750.00	11,700.00	16,747.26	11,703.63	85.43	86.48	-89.72	-5,161.78	942.15	1,338.77	1,167.02	171.75	7.795	
16,800.00	11,700.00	16,788.08	11,703.49	86.06	86.99	-89.72	-5,202.57	940.91	1,336.93	1,164.01	172.92	7.732	
16,850.00	11,700.00	16,829.50	11,703.16	86.70	87.52	-89.70	-5,243.98	939.92	1,335.42	1,161.34	174.09	7.671	
16,900.00	11,700.00	16,872.08	11,702.70	87.34	88.06	-89.68	-5,286.55	939.15	1,334.21	1,158.94	175.27	7.612	
16,950.00	11,700.00	16,914.67	11,702.15	87.98	88.61	-89.66	-5,329.14	938.62	1,333.28	1,156.82	176.46	7.556	
17,000.00	11,700.00	16,957.32	11,701.47	88.62	89.16	-89.63	-5,371.78	938.32	1,332.62	1,154.97	177.64	7.502	
17,050.00	11,700.00	16,999.98	11,700.65	89.27	89.71	-89.59	-5,414.43	938.26	1,332.23	1,153.41	178.83	7.450	
17,076.48	11,700.00	17,019.92	11,700.29	89.61	89.97	-89.58	-5,434.37	938.32	1,332.16	1,152.75	179.41	7.425	
17,100.00	11,700.00	17,037.13	11,700.12	89.91	90.20	-89.57	-5,451.58	938.47	1,332.22	1,152.29	179.93	7.404	
17,150.00	11,700.00	17,073.72	11,700.19	90.56	90.67	-89.57	-5,488.16	939.06	1,332.71	1,151.70	181.01	7.363	
17,200.00	11,700.00	17,115.20	11,700.91	91.21	91.22	-89.61	-5,529.62	940.13	1,333.67	1,151.51	182.16	7.321	
17,250.00	11,700.00	17,166.39	11,701.70	91.86	91.89	-89.64	-5,580.79	941.52	1,334.71	1,151.21	183.49	7.274	
17,300.00	11,700.00	17,243.51	11,702.36	92.50	92.90	-89.67	-5,657.89	943.03	1,335.46	1,150.21	185.25	7.209	
17,350.00	11,700.00	17,310.70	11,702.89	93.16	93.78	-89.69	-5,725.07	942.74	1,334.85	1,148.04	186.81	7.145	
17,400.00	11,700.00	17,351.68	11,704.01	93.81	94.32	-89.74	-5,766.04	942.62	1,334.37	1,146.38	187.99	7.098	
17,445.52	11,700.00	17,389.07	11,705.73	94.40	94.81	-89.81	-5,803.39	942.74	1,334.24	1,145.17	189.06	7.057	
17,450.00	11,700.00	17,392.80	11,705.90	94.46	94.86	-89.82	-5,807.11	942.77	1,334.24	1,145.07	189.17	7.053	
17,500.00	11,700.00	17,434.43	11,707.18	95.12	95.41	-89.87	-5,848.72	943.19	1,334.42	1,144.07	190.35	7.010	
17,550.00	11,700.00	17,476.20	11,707.29	95.77	95.97	-89.88	-5,890.48	943.87	1,334.92	1,143.39	191.53	6.970	
17,600.00	11,700.00	17,521.79	11,707.46	96.43	96.57	-89.89	-5,936.06	944.82	1,335.66	1,142.88	192.78	6.928	
17,650.00	11,700.00	17,567.34	11,708.84	97.09	97.18	-89.95	-5,981.58	945.93	1,336.55	1,142.53	194.03	6.888	
17,700.00	11,700.00	17,634.96	11,711.51	97.74	98.08	-90.06	-6,049.13	947.26	1,337.23	1,141.57	195.66	6.834	
17,750.00	11,700.00	17,688.87	11,713.09	98.40	98.80	-90.13	-6,103.01	947.76	1,337.37	1,140.32	197.05	6.787	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
17,800.00	11,700.00	17,732.43	11,714.31	99.06	99.38	-90.18	-6,146.55	948.29	1,337.67	1,139.40	198.28	6.747	
17,850.00	11,700.00	17,775.62	11,715.44	99.73	99.96	-90.23	-6,189.72	949.03	1,338.22	1,138.73	199.49	6.708	
17,900.00	11,700.00	17,818.30	11,715.83	100.39	100.53	-90.25	-6,232.39	949.99	1,339.03	1,138.34	200.69	6.672	
17,950.00	11,700.00	17,864.35	11,715.28	101.05	101.15	-90.22	-6,278.41	951.27	1,340.11	1,138.15	201.96	6.636	
18,000.00	11,700.00	17,923.04	11,713.86	101.71	101.94	-90.16	-6,337.06	952.74	1,341.04	1,137.59	203.45	6.591	
18,050.00	11,700.00	18,072.56	11,707.12	102.38	103.93	-89.87	-6,486.36	950.58	1,340.08	1,134.01	206.06	6.503	
18,100.00	11,700.00	18,152.37	11,706.48	103.05	104.97	-89.84	-6,565.99	945.51	1,336.59	1,129.01	207.58	6.439	
18,150.00	11,700.00	18,177.70	11,706.34	103.71	105.30	-89.84	-6,591.29	944.07	1,333.22	1,124.48	208.74	6.387	
18,200.00	11,700.00	18,212.82	11,706.05	104.38	105.76	-89.83	-6,626.36	942.29	1,330.37	1,120.43	209.95	6.337	
18,250.00	11,700.00	18,249.12	11,705.55	105.05	106.24	-89.80	-6,662.63	940.84	1,328.07	1,116.92	211.14	6.290	
18,300.00	11,700.00	18,286.43	11,705.59	105.72	106.74	-89.81	-6,699.93	939.72	1,326.24	1,113.90	212.34	6.246	
18,350.00	11,700.00	18,324.00	11,706.31	106.39	107.24	-89.84	-6,737.48	938.95	1,324.90	1,111.37	213.52	6.205	
18,400.00	11,700.00	18,369.16	11,707.23	107.06	107.84	-89.88	-6,782.62	938.31	1,323.88	1,109.08	214.80	6.163	
18,450.00	11,700.00	18,414.64	11,707.46	107.73	108.45	-89.89	-6,828.10	937.83	1,323.03	1,106.95	216.08	6.123	
18,500.00	11,700.00	18,457.57	11,707.33	108.40	109.03	-89.88	-6,871.03	937.55	1,322.40	1,105.07	217.33	6.085	
18,550.00	11,700.00	18,500.31	11,707.23	109.08	109.60	-89.88	-6,913.77	937.52	1,322.04	1,103.47	218.57	6.049	
18,577.42	11,700.00	18,521.88	11,707.21	109.45	109.90	-89.87	-6,935.34	937.59	1,321.97	1,102.75	219.21	6.030	
18,600.00	11,700.00	18,537.84	11,707.35	109.75	110.11	-89.88	-6,951.30	937.73	1,322.03	1,102.31	219.72	6.017	
18,650.00	11,700.00	18,573.15	11,708.21	110.42	110.59	-89.92	-6,986.59	938.33	1,322.55	1,101.74	220.81	5.989	
18,700.00	11,700.00	18,608.75	11,709.85	111.10	111.08	-89.99	-7,022.14	939.33	1,323.64	1,101.74	221.89	5.965	
18,750.00	11,700.00	18,653.24	11,712.47	111.78	111.69	-90.10	-7,066.52	940.90	1,325.09	1,101.95	223.15	5.938	
18,800.00	11,700.00	18,697.68	11,715.34	112.45	112.31	-90.23	-7,110.84	942.65	1,326.76	1,102.37	224.40	5.913	
18,850.00	11,700.00	18,739.90	11,717.30	113.13	112.89	-90.31	-7,152.96	944.52	1,328.68	1,103.08	225.59	5.890	
18,900.00	11,700.00	18,781.93	11,717.04	113.81	113.47	-90.30	-7,194.94	946.65	1,330.89	1,104.11	226.78	5.869	
18,950.00	11,700.00	18,821.52	11,715.49	114.49	114.02	-90.23	-7,234.43	948.91	1,333.44	1,105.53	227.91	5.851	
19,000.00	11,700.00	18,859.93	11,715.28	115.16	114.55	-90.22	-7,272.75	951.43	1,336.41	1,107.42	228.99	5.836	
19,050.00	11,700.00	18,901.24	11,716.65	115.84	115.13	-90.28	-7,313.92	954.49	1,339.80	1,109.66	230.14	5.822	
19,100.00	11,700.00	18,955.28	11,718.39	116.52	115.89	-90.35	-7,367.78	958.52	1,343.22	1,111.60	231.63	5.799	
19,150.00	11,700.00	19,019.43	11,719.26	117.21	116.78	-90.39	-7,431.78	962.98	1,346.41	1,113.05	233.37	5.770	
19,200.00	11,700.00	19,095.99	11,719.58	117.89	117.84	-90.40	-7,508.23	967.03	1,348.74	1,113.38	235.36	5.731	
19,250.00	11,700.00	19,131.42	11,719.49	118.57	118.34	-90.40	-7,543.61	968.90	1,351.01	1,114.60	236.41	5.715	
19,300.00	11,700.00	19,173.94	11,719.16	119.25	118.93	-90.38	-7,586.05	971.30	1,353.52	1,115.91	237.61	5.696	
19,350.00	11,700.00	19,350.00	11,713.19	119.93	121.35	-90.13	-7,732.94	974.76	1,354.36	1,113.17	241.19	5.615	
19,400.00	11,700.00	19,412.67	11,709.09	120.62	122.20	-89.96	-7,824.37	971.84	1,352.27	1,109.68	242.59	5.574	
19,450.00	11,700.00	19,452.67	11,707.63	121.30	122.73	-89.89	-7,864.31	970.27	1,349.99	1,106.13	243.86	5.536	
19,500.00	11,700.00	19,483.54	11,706.55	121.99	123.16	-89.85	-7,895.16	969.37	1,348.23	1,103.21	245.03	5.502	
19,550.00	11,700.00	19,513.33	11,705.52	122.67	123.56	-89.81	-7,924.93	968.95	1,347.22	1,101.08	246.14	5.473	
19,600.00	11,700.00	19,549.00	11,704.30	123.36	124.05	-89.75	-7,960.57	969.03	1,346.98	1,099.69	247.29	5.447	
19,602.82	11,700.00	19,549.00	11,704.30	123.40	124.05	-89.75	-7,960.57	969.03	1,346.98	1,099.65	247.33	5.446	
19,650.00	11,700.00	19,587.73	11,702.85	124.04	124.58	-89.69	-7,999.27	969.49	1,347.23	1,098.74	248.48	5.422	
19,700.00	11,700.00	19,635.92	11,700.64	124.73	125.25	-89.60	-8,047.40	970.12	1,347.57	1,097.75	249.83	5.394	
19,750.00	11,700.00	19,701.36	11,697.46	125.42	126.15	-89.46	-8,112.77	970.68	1,347.72	1,096.27	251.45	5.360	
19,800.00	11,700.00	19,769.83	11,694.67	126.11	127.09	-89.34	-8,181.17	970.36	1,347.19	1,094.11	253.08	5.323	
19,850.00	11,700.00	19,825.11	11,693.31	126.79	127.85	-89.29	-8,236.43	969.55	1,346.16	1,091.63	254.52	5.289	
19,900.00	11,700.00	19,892.28	11,693.84	127.48	128.77	-89.31	-8,303.59	968.16	1,344.81	1,088.72	256.09	5.251	
19,950.00	11,700.00	19,954.58	11,695.10	128.17	129.62	-89.36	-8,365.84	966.09	1,342.81	1,085.23	257.58	5.213	
20,000.00	11,700.00	20,010.18	11,696.26	128.86	130.37	-89.41	-8,421.38	963.93	1,340.55	1,081.54	259.00	5.176	
20,050.00	11,700.00	20,061.97	11,697.19	129.55	131.08	-89.45	-8,473.12	961.76	1,338.13	1,077.74	260.39	5.139	
20,100.00	11,700.00	20,112.96	11,697.78	130.24	131.77	-89.47	-8,524.05	959.58	1,335.67	1,073.90	261.77	5.103	
20,150.00	11,700.00	20,171.44	11,698.56	130.93	132.56	-89.50	-8,582.47	956.87	1,333.03	1,069.84	263.20	5.065	
20,200.00	11,700.00	20,223.50	11,699.79	131.62	133.27	-89.55	-8,634.45	954.17	1,330.11	1,065.53	264.58	5.027	
20,250.00	11,700.00	20,263.75	11,701.02	132.31	133.82	-89.61	-8,674.62	952.26	1,327.42	1,061.52	265.89	4.992	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
20,300.00	11,700.00	20,304.00	11,702.50	133.01	134.37	-89.67	-8,714.82	950.65	1,325.09	1,057.89	267.19	4.959	Alert
20,350.00	11,700.00	20,368.09	11,705.15	133.70	135.24	-89.79	-8,778.80	947.97	1,322.67	1,053.99	268.68	4.923	Alert
20,400.00	11,700.00	20,421.45	11,707.55	134.39	135.97	-89.89	-8,832.04	945.29	1,319.83	1,049.75	270.08	4.887	Alert
20,450.00	11,700.00	20,465.47	11,709.68	135.09	136.57	-89.98	-8,875.95	943.20	1,317.14	1,045.72	271.42	4.853	Alert
20,500.00	11,700.00	20,518.63	11,712.34	135.78	137.30	-90.10	-8,928.99	940.83	1,314.60	1,041.78	272.82	4.819	Alert
20,550.00	11,700.00	20,587.03	11,715.12	136.47	138.23	-90.22	-8,997.24	937.08	1,311.55	1,037.26	274.29	4.782	Alert
20,600.00	11,700.00	20,621.85	11,716.17	137.17	138.70	-90.27	-9,031.99	935.13	1,308.44	1,032.84	275.59	4.748	Alert
20,650.00	11,700.00	20,656.75	11,716.92	137.86	139.18	-90.30	-9,066.85	933.57	1,305.89	1,029.03	276.87	4.717	Alert
20,700.00	11,700.00	20,696.02	11,717.42	138.56	139.72	-90.32	-9,106.09	932.27	1,303.91	1,025.75	278.15	4.688	Alert
20,750.00	11,700.00	20,746.56	11,718.12	139.25	140.41	-90.35	-9,156.60	930.70	1,302.05	1,022.51	279.54	4.658	Alert
20,800.00	11,700.00	20,794.15	11,719.03	139.95	141.07	-90.39	-9,204.16	929.23	1,300.20	1,019.30	280.90	4.629	Alert
20,850.00	11,700.00	20,837.62	11,720.49	140.64	141.67	-90.46	-9,247.58	928.06	1,298.55	1,016.33	282.22	4.601	Alert
20,900.00	11,700.00	20,879.40	11,722.52	141.34	142.25	-90.55	-9,289.30	927.14	1,297.16	1,013.65	283.51	4.575	Alert
20,950.00	11,700.00	20,915.76	11,724.00	142.04	142.75	-90.61	-9,325.63	926.67	1,296.22	1,011.49	284.73	4.553	Alert
21,000.00	11,700.00	20,952.17	11,724.84	142.73	143.26	-90.65	-9,362.03	926.59	1,295.80	1,009.89	285.91	4.532	Alert
21,016.82	11,700.00	20,965.00	11,724.97	142.97	143.44	-90.66	-9,374.86	926.65	1,295.78	1,009.47	286.31	4.526	Alert
21,050.00	11,700.00	20,993.59	11,725.31	143.43	143.84	-90.67	-9,403.45	926.89	1,295.85	1,008.69	287.16	4.513	Alert
21,100.00	11,700.00	21,037.71	11,726.28	144.13	144.46	-90.72	-9,447.55	927.41	1,296.14	1,007.69	288.45	4.493	Alert
21,150.00	11,700.00	21,085.65	11,727.67	144.83	145.13	-90.78	-9,495.47	928.15	1,296.62	1,006.81	289.81	4.474	Alert
21,200.00	11,700.00	21,137.55	11,727.88	145.52	145.86	-90.79	-9,547.36	928.94	1,297.07	1,005.82	291.25	4.454	Alert
21,250.00	11,700.00	21,196.59	11,726.57	146.22	146.69	-90.73	-9,606.38	929.66	1,297.35	1,004.54	292.81	4.431	Alert
21,300.00	11,700.00	21,259.22	11,724.55	146.92	147.56	-90.64	-9,668.98	929.85	1,297.17	1,002.76	294.42	4.406	Alert
21,342.47	11,700.00	21,290.76	11,723.27	147.52	148.01	-90.58	-9,700.49	930.00	1,297.06	1,001.63	295.43	4.390	Alert
21,350.00	11,700.00	21,296.98	11,723.00	147.62	148.09	-90.57	-9,706.70	930.04	1,297.07	1,001.45	295.62	4.388	Alert
21,400.00	11,700.00	21,338.18	11,720.97	148.32	148.67	-90.48	-9,747.85	930.50	1,297.29	1,000.42	296.86	4.370	Alert
21,450.00	11,700.00	21,374.28	11,719.30	149.02	149.18	-90.41	-9,783.91	931.20	1,297.93	999.94	297.99	4.356	Alert
21,500.00	11,700.00	21,409.58	11,718.46	149.72	149.68	-90.37	-9,819.18	932.29	1,299.15	1,000.07	299.07	4.344	Alert
21,550.00	11,700.00	21,447.62	11,718.40	150.42	150.22	-90.37	-9,857.18	933.88	1,300.91	1,000.72	300.19	4.334	Alert
21,600.00	11,700.00	21,499.34	11,718.12	151.12	150.95	-90.35	-9,908.85	936.19	1,302.83	1,001.19	301.65	4.319	Alert
21,650.00	11,700.00	21,549.74	11,717.03	151.82	151.67	-90.30	-9,959.19	938.39	1,304.70	1,001.63	303.07	4.305	Alert
21,700.00	11,700.00	21,597.66	11,715.35	152.52	152.35	-90.23	-10,007.03	940.53	1,306.60	1,002.18	304.43	4.292	Alert
21,750.00	11,700.00	21,646.32	11,713.09	153.22	153.04	-90.13	-10,055.58	942.77	1,308.59	1,002.78	305.81	4.279	Alert
21,800.00	11,700.00	21,696.22	11,710.67	153.93	153.75	-90.02	-10,105.37	945.08	1,310.59	1,003.37	307.22	4.266	Alert
21,850.00	11,700.00	21,746.12	11,708.24	154.63	154.46	-89.92	-10,155.16	947.40	1,312.60	1,003.97	308.63	4.253	Alert
21,900.00	11,700.00	21,796.02	11,705.81	155.33	155.18	-89.81	-10,204.95	949.71	1,314.61	1,004.57	310.04	4.240	Alert
21,950.00	11,700.00	21,845.92	11,703.38	156.03	155.89	-89.71	-10,254.73	952.02	1,316.63	1,005.18	311.45	4.227	Alert
21,964.16	11,700.00	21,860.05	11,702.69	156.23	156.09	-89.68	-10,268.84	952.68	1,317.20	1,005.36	311.85	4.224	Alert, SF

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	-89.57	6.15	-828.97	829.12				
50.00	50.00	37.33	37.33	0.50	0.06	-89.58	6.15	-828.93	828.95	828.39	0.56	1,484.066	
100.00	100.00	89.90	89.90	0.52	0.14	-89.58	6.13	-828.73	828.76	828.11	0.65	1,267.420	
150.00	150.00	142.47	142.47	0.59	0.22	-89.58	6.08	-828.37	828.42	827.61	0.81	1,027.894	
200.00	200.00	194.08	194.07	0.70	0.38	-89.58	6.12	-827.88	827.95	826.86	1.09	761.815	
250.00	250.00	245.52	245.52	0.84	0.57	-89.56	6.37	-827.30	827.38	825.98	1.41	588.414	
300.00	300.00	294.16	294.15	0.99	0.74	-89.54	6.60	-826.75	826.82	825.10	1.73	478.089	
350.00	350.00	343.01	343.00	1.15	0.92	-89.54	6.61	-826.28	826.34	824.28	2.06	400.726	
400.00	400.00	392.42	392.40	1.31	1.09	-89.55	6.55	-825.85	825.90	823.50	2.40	343.752	
450.00	450.00	442.03	442.01	1.48	1.27	-89.55	6.49	-825.45	825.50	822.75	2.75	300.459	
500.00	500.00	492.45	492.43	1.65	1.45	-89.55	6.43	-825.04	825.09	822.00	3.10	266.348	
550.00	550.00	542.94	542.92	1.82	1.63	-89.56	6.33	-824.60	824.66	821.21	3.45	239.021	
600.00	600.00	593.56	593.54	1.99	1.81	-89.57	6.16	-824.13	824.19	820.39	3.80	216.654	
650.00	650.00	644.03	644.01	2.16	2.00	-89.59	5.93	-823.62	823.69	819.53	4.16	198.069	
700.00	700.00	694.36	694.33	2.34	2.18	-89.61	5.65	-823.09	823.16	818.65	4.51	182.389	
750.00	750.00	744.51	744.48	2.51	2.35	-89.62	5.41	-822.56	822.63	817.76	4.87	168.983	
800.00	800.00	795.56	795.52	2.69	2.54	-89.64	5.22	-821.97	822.05	816.82	5.23	157.271	
850.00	850.00	846.61	846.57	2.87	2.72	-89.65	4.99	-821.32	821.41	815.82	5.59	147.043	
900.00	900.00	896.33	896.28	3.04	2.90	-89.67	4.77	-820.65	820.73	814.79	5.94	138.146	
950.00	950.00	945.95	945.90	3.22	3.08	-89.68	4.59	-820.01	820.09	813.79	6.30	130.257	
1,000.00	1,000.00	995.63	995.57	3.40	3.26	-89.69	4.37	-819.39	819.46	812.81	6.65	123.205	
1,050.00	1,050.00	1,045.56	1,045.50	3.58	3.44	-89.71	4.21	-818.78	818.85	811.84	7.01	116.852	
1,100.00	1,100.00	1,094.03	1,093.96	3.75	3.61	-89.71	4.13	-818.20	818.26	810.90	7.36	111.206	
1,150.00	1,150.00	1,140.02	1,139.96	3.93	3.77	-89.71	4.17	-817.84	817.86	810.16	7.70	106.239	
1,200.00	1,200.00	1,187.37	1,187.30	4.11	3.94	-89.70	4.32	-817.68	817.70	809.65	8.04	101.681	
1,250.00	1,250.00	1,236.80	1,236.74	4.29	4.11	-89.69	4.49	-817.59	817.60	809.21	8.39	97.445	
1,300.00	1,300.00	1,286.24	1,286.18	4.46	4.28	-89.67	4.65	-817.53	817.55	808.81	8.74	93.550	
1,350.00	1,350.00	1,335.68	1,335.61	4.64	4.45	-89.66	4.79	-817.51	817.52	808.43	9.09	89.957	
1,359.99	1,359.99	1,345.56	1,345.49	4.68	4.48	-89.66	4.82	-817.51	817.52	808.36	9.16	89.272	
1,400.00	1,400.00	1,384.76	1,384.69	4.82	4.61	-89.66	4.92	-817.52	817.54	808.11	9.43	86.672	
1,450.00	1,450.00	1,433.69	1,433.62	5.00	4.78	-89.65	5.01	-817.60	817.62	807.85	9.78	83.640	
1,500.00	1,500.00	1,484.14	1,484.08	5.18	4.95	-89.64	5.09	-817.71	817.73	807.61	10.12	80.771	
1,550.00	1,550.00	1,534.87	1,534.80	5.36	5.12	-89.64	5.20	-817.78	817.79	807.32	10.47	78.081	
1,600.00	1,600.00	1,585.10	1,585.03	5.53	5.29	-89.63	5.34	-817.81	817.83	807.00	10.83	75.542	
1,650.00	1,650.00	1,635.33	1,635.26	5.71	5.47	-89.62	5.47	-817.83	817.85	806.67	11.18	73.161	
1,700.00	1,700.00	1,685.56	1,685.49	5.89	5.64	-89.61	5.61	-817.84	817.86	806.33	11.53	70.924	
1,750.00	1,750.00	1,735.79	1,735.72	6.07	5.82	-89.60	5.75	-817.83	817.85	805.97	11.88	68.819	
1,800.00	1,800.00	1,785.84	1,785.77	6.25	5.99	-89.59	5.90	-817.82	817.84	805.60	12.24	66.820	
1,850.00	1,850.00	1,835.94	1,835.87	6.43	6.17	-89.58	6.07	-817.80	817.82	805.23	12.59	64.937	
1,900.00	1,900.00	1,886.03	1,885.96	6.61	6.35	-89.56	6.24	-817.77	817.79	804.85	12.95	63.156	
1,950.00	1,950.00	1,935.70	1,935.63	6.78	6.52	-89.55	6.43	-817.75	817.77	804.47	13.30	61.479	
1,959.27	1,959.27	1,944.84	1,944.77	6.82	6.55	-89.55	6.47	-817.74	817.77	804.40	13.37	61.179	
2,000.00	2,000.00	1,985.00	1,984.93	6.96	6.69	-89.53	6.64	-817.76	817.78	804.13	13.65	59.897	
2,050.00	2,050.00	2,034.31	2,034.24	7.14	6.87	-27.60	6.87	-817.81	817.65	803.64	14.00	58.395	
2,100.00	2,099.99	2,083.61	2,083.54	7.32	7.04	-27.60	7.13	-817.91	817.17	802.81	14.35	56.942	
2,150.00	2,149.98	2,133.13	2,133.06	7.49	7.21	-27.62	7.40	-818.04	816.33	801.64	14.70	55.542	
2,200.00	2,199.96	2,182.74	2,182.67	7.67	7.38	-27.66	7.67	-818.19	815.14	800.10	15.04	54.183	
2,250.00	2,249.92	2,232.34	2,232.27	7.84	7.56	-27.71	7.93	-818.37	813.62	798.23	15.39	52.862	
2,300.00	2,299.88	2,281.94	2,281.87	8.02	7.73	-27.76	8.18	-818.58	812.05	796.31	15.74	51.597	
2,350.00	2,349.84	2,332.08	2,332.00	8.19	7.90	-27.81	8.42	-818.79	810.49	794.40	16.09	50.379	
2,400.00	2,399.80	2,382.27	2,382.19	8.37	8.08	-27.86	8.66	-818.99	808.91	792.47	16.44	49.211	
2,450.00	2,449.76	2,432.46	2,432.38	8.54	8.25	-27.91	8.88	-819.17	807.32	790.54	16.79	48.091	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	2,499.72	2,482.65	2,482.57	8.72	8.43	-27.96	9.09	-819.34	805.72	788.59	17.14	47.015	
2,550.00	2,549.68	2,532.78	2,532.70	8.90	8.60	-28.01	9.28	-819.50	804.11	786.63	17.49	45.979	
2,600.00	2,599.64	2,582.91	2,582.83	9.07	8.78	-28.07	9.46	-819.65	802.49	784.65	17.84	44.984	
2,650.00	2,649.60	2,633.04	2,632.96	9.25	8.95	-28.12	9.62	-819.79	800.86	782.67	18.19	44.026	
2,700.00	2,699.56	2,683.34	2,683.26	9.43	9.13	-28.18	9.77	-819.92	799.22	780.68	18.54	43.100	
2,750.00	2,749.52	2,733.99	2,733.91	9.61	9.31	-28.24	9.93	-820.01	797.55	778.65	18.90	42.202	
2,800.00	2,799.48	2,784.63	2,784.55	9.78	9.49	-28.30	10.09	-820.06	795.83	776.58	19.25	41.334	
2,850.00	2,849.44	2,835.28	2,835.20	9.96	9.67	-28.35	10.27	-820.07	794.07	774.46	19.61	40.495	
2,900.00	2,899.40	2,885.63	2,885.55	10.14	9.84	-28.41	10.46	-820.04	792.27	772.31	19.96	39.685	
2,950.00	2,949.36	2,935.80	2,935.72	10.32	10.02	-28.46	10.66	-819.99	790.46	770.14	20.32	38.902	
3,000.00	2,999.32	2,985.97	2,985.89	10.49	10.20	-28.52	10.86	-819.93	788.64	767.96	20.68	38.145	
3,050.00	3,049.28	3,036.14	3,036.06	10.67	10.38	-28.57	11.06	-819.86	786.80	765.77	21.03	37.412	
3,100.00	3,099.24	3,085.71	3,085.63	10.85	10.56	-28.63	11.26	-819.79	784.97	763.59	21.38	36.708	
3,150.00	3,149.20	3,135.20	3,135.11	11.03	10.73	-28.68	11.45	-819.75	783.17	761.43	21.74	36.029	
3,200.00	3,199.16	3,184.68	3,184.60	11.21	10.91	-28.74	11.64	-819.74	781.40	759.31	22.09	35.373	
3,250.00	3,249.12	3,234.17	3,234.09	11.38	11.09	-28.80	11.83	-819.76	779.66	757.22	22.44	34.738	
3,300.00	3,299.08	3,283.74	3,283.66	11.56	11.26	-28.85	12.06	-819.81	777.95	755.16	22.80	34.125	
3,350.00	3,349.04	3,333.32	3,333.24	11.74	11.44	-28.90	12.34	-819.88	776.27	753.12	23.15	33.531	
3,400.00	3,399.00	3,382.91	3,382.82	11.92	11.61	-28.94	12.70	-819.98	774.61	751.11	23.50	32.956	
3,450.00	3,448.96	3,432.84	3,432.75	12.10	11.79	-28.98	13.12	-820.11	772.97	749.11	23.86	32.397	
3,500.00	3,498.92	3,483.82	3,483.73	12.28	11.97	-29.03	13.51	-820.19	771.30	747.08	24.22	31.848	
3,550.00	3,548.88	3,534.80	3,534.71	12.46	12.15	-29.08	13.81	-820.21	769.56	744.98	24.58	31.313	
3,600.00	3,598.84	3,585.77	3,585.68	12.63	12.33	-29.14	14.03	-820.16	767.75	742.81	24.94	30.790	
3,650.00	3,648.80	3,636.89	3,636.80	12.81	12.52	-29.20	14.16	-820.04	765.88	740.58	25.29	30.279	
3,700.00	3,698.76	3,688.13	3,688.04	12.99	12.70	-29.27	14.24	-819.83	763.92	738.27	25.65	29.781	
3,750.00	3,748.72	3,739.37	3,739.27	13.17	12.88	-29.35	14.25	-819.53	761.88	735.87	26.01	29.293	
3,800.00	3,798.68	3,790.59	3,790.50	13.35	13.06	-29.43	14.21	-819.15	759.76	733.40	26.37	28.815	
3,850.00	3,848.64	3,841.66	3,841.56	13.53	13.23	-29.51	14.12	-818.68	757.56	730.84	26.72	28.350	
3,900.00	3,898.60	3,892.69	3,892.59	13.71	13.41	-29.60	13.99	-818.14	755.29	728.22	27.08	27.894	
3,950.00	3,948.56	3,943.71	3,943.61	13.89	13.59	-29.69	13.81	-817.52	752.95	725.52	27.43	27.448	
4,000.00	3,998.52	3,994.73	3,994.62	14.07	13.77	-29.79	13.59	-816.83	750.54	722.75	27.79	27.011	
4,050.00	4,048.47	4,045.58	4,045.47	14.25	13.94	-29.89	13.27	-816.07	748.07	719.93	28.14	26.584	
4,100.00	4,098.43	4,096.44	4,096.31	14.43	14.12	-30.00	12.84	-815.25	745.53	717.04	28.49	26.165	
4,150.00	4,148.39	4,147.28	4,147.15	14.61	14.30	-30.13	12.29	-814.35	742.93	714.09	28.85	25.754	
4,200.00	4,198.35	4,196.37	4,196.22	14.79	14.46	-30.26	11.66	-813.45	740.31	711.11	29.20	25.357	
4,250.00	4,248.31	4,243.37	4,243.22	14.97	14.63	-30.38	11.08	-812.73	737.84	708.30	29.54	24.980	
4,300.00	4,298.27	4,290.40	4,290.24	15.14	14.79	-30.49	10.54	-812.21	735.57	705.69	29.88	24.619	
4,350.00	4,348.23	4,337.45	4,337.28	15.32	14.95	-30.61	10.06	-811.86	733.51	703.29	30.22	24.272	
4,400.00	4,398.19	4,385.65	4,385.48	15.50	15.11	-30.72	9.61	-811.69	731.62	701.06	30.56	23.938	
4,450.00	4,448.15	4,435.62	4,435.44	15.68	15.28	-30.84	9.16	-811.55	729.78	698.86	30.91	23.607	
4,500.00	4,498.11	4,485.58	4,485.41	15.86	15.46	-30.95	8.73	-811.40	727.93	696.67	31.26	23.285	
4,550.00	4,548.07	4,535.54	4,535.37	16.04	15.63	-31.07	8.31	-811.26	726.09	694.48	31.61	22.969	
4,600.00	4,598.03	4,583.90	4,583.72	16.22	15.79	-31.18	7.92	-811.15	724.29	692.33	31.96	22.665	
4,650.00	4,647.99	4,631.24	4,631.06	16.40	15.95	-31.28	7.60	-811.21	722.65	690.35	32.30	22.375	
4,700.00	4,697.95	4,678.59	4,678.41	16.58	16.11	-31.38	7.33	-811.44	721.19	688.56	32.64	22.097	
4,750.00	4,747.91	4,725.96	4,725.78	16.76	16.28	-31.47	7.13	-811.84	719.92	686.95	32.98	21.830	
4,800.00	4,797.87	4,775.77	4,775.58	16.94	16.45	-31.56	6.97	-812.40	718.78	685.46	33.33	21.568	
4,850.00	4,847.83	4,827.07	4,826.89	17.12	16.62	-31.66	6.81	-812.90	717.57	683.89	33.68	21.305	
4,900.00	4,897.79	4,878.37	4,878.18	17.30	16.80	-31.76	6.63	-813.30	716.27	682.23	34.03	21.045	
4,950.00	4,947.75	4,929.66	4,929.47	17.48	16.97	-31.86	6.45	-813.61	714.87	680.49	34.39	20.788	
5,000.00	4,997.71	4,980.15	4,979.96	17.66	17.14	-31.96	6.29	-813.85	713.42	678.68	34.74	20.536	
5,050.00	5,047.67	5,030.59	5,030.39	17.84	17.32	-32.05	6.16	-814.05	711.93	676.84	35.09	20.288	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	5,097.63	5,081.02	5,080.83	18.02	17.49	-32.15	6.07	-814.23	710.41	674.96	35.44	20.044	
5,150.00	5,147.59	5,131.45	5,131.26	18.20	17.66	-32.24	6.01	-814.37	708.86	673.06	35.79	19.804	
5,200.00	5,197.55	5,180.55	5,180.36	18.38	17.83	-32.32	5.97	-814.53	707.33	671.19	36.14	19.571	
5,250.00	5,247.51	5,229.87	5,229.67	18.56	18.00	-32.41	5.92	-814.74	705.85	669.36	36.49	19.343	
5,300.00	5,297.47	5,279.18	5,278.99	18.74	18.17	-32.50	5.88	-814.99	704.42	667.58	36.84	19.121	
5,350.00	5,347.43	5,328.79	5,328.60	18.92	18.34	-32.59	5.84	-815.29	703.03	665.84	37.19	18.904	
5,400.00	5,397.39	5,378.99	5,378.80	19.10	18.51	-32.68	5.81	-815.59	701.64	664.10	37.54	18.689	
5,450.00	5,447.35	5,429.19	5,429.00	19.28	18.69	-32.76	5.82	-815.88	700.24	662.34	37.90	18.478	
5,500.00	5,497.31	5,479.39	5,479.20	19.46	18.86	-32.85	5.84	-816.15	698.82	660.57	38.25	18.270	
5,550.00	5,547.27	5,529.45	5,529.25	19.64	19.03	-32.93	5.89	-816.41	697.39	658.79	38.60	18.066	
5,600.00	5,597.23	5,579.39	5,579.19	19.82	19.21	-33.02	5.91	-816.66	695.96	657.00	38.95	17.866	
5,650.00	5,647.19	5,629.33	5,629.13	20.00	19.38	-33.11	5.90	-816.92	694.53	655.23	39.31	17.670	
5,700.00	5,697.15	5,679.27	5,679.06	20.18	19.55	-33.20	5.86	-817.17	693.11	653.45	39.66	17.477	
5,750.00	5,747.11	5,729.35	5,729.14	20.36	19.73	-33.29	5.81	-817.42	691.69	651.68	40.01	17.287	
5,800.00	5,797.07	5,779.47	5,779.27	20.54	19.90	-33.39	5.77	-817.67	690.26	649.89	40.36	17.101	
5,850.00	5,847.03	5,829.60	5,829.39	20.73	20.08	-33.48	5.75	-817.90	688.82	648.10	40.72	16.917	
5,900.00	5,896.99	5,879.72	5,879.52	20.91	20.25	-33.57	5.76	-818.12	687.37	646.30	41.07	16.736	
5,950.00	5,946.95	5,929.50	5,929.29	21.09	20.42	-33.66	5.71	-818.34	685.92	644.50	41.42	16.559	
6,000.00	5,996.91	5,979.27	5,979.07	21.27	20.60	-33.77	5.58	-818.57	684.49	642.72	41.78	16.385	
6,050.00	6,046.87	6,029.06	6,028.86	21.45	20.77	-33.86	5.51	-818.81	683.08	640.95	42.13	16.214	
6,100.00	6,096.83	6,077.40	6,077.19	21.63	20.94	-33.95	5.52	-819.08	681.69	639.21	42.48	16.049	
6,150.00	6,146.79	6,121.97	6,121.76	21.81	21.09	-34.01	5.72	-819.61	680.60	637.79	42.81	15.898	
6,200.00	6,196.75	6,166.65	6,166.43	21.99	21.25	-34.05	6.15	-820.53	679.91	636.77	43.14	15.759	
6,250.00	6,246.71	6,211.82	6,211.57	22.17	21.41	-34.07	6.86	-821.82	679.59	636.11	43.48	15.631	
6,270.02	6,266.71	6,229.90	6,229.64	22.24	21.47	-34.07	7.22	-822.44	679.56	635.95	43.61	15.583 CC	
6,300.00	6,296.67	6,256.98	6,256.69	22.35	21.57	-34.05	7.86	-823.47	679.63	635.82	43.81	15.514 ES	
6,350.00	6,346.63	6,300.87	6,300.52	22.53	21.72	-34.03	9.00	-825.44	680.07	635.94	44.13	15.410	
6,400.00	6,396.59	6,344.83	6,344.40	22.71	21.88	-33.99	10.20	-827.82	680.95	636.50	44.45	15.319	
6,450.00	6,446.55	6,390.93	6,390.40	22.89	22.04	-33.93	11.57	-830.66	682.21	637.42	44.78	15.234	
6,500.00	6,496.51	6,437.24	6,436.58	23.07	22.20	-33.87	13.12	-833.79	683.73	638.62	45.11	15.156	
6,550.00	6,546.46	6,481.69	6,480.87	23.25	22.36	-33.79	14.71	-837.09	685.59	640.16	45.43	15.091	
6,600.00	6,596.42	6,525.85	6,524.85	23.43	22.51	-33.71	16.31	-840.74	687.86	642.12	45.74	15.037	
6,650.00	6,646.38	6,569.40	6,568.19	23.61	22.66	-33.62	17.88	-844.72	690.57	644.52	46.05	14.997	
6,700.00	6,696.34	6,612.70	6,611.25	23.79	22.82	-33.55	19.36	-849.08	693.76	647.41	46.35	14.968	
6,750.00	6,746.30	6,655.67	6,653.93	23.97	22.97	-33.48	20.73	-853.82	697.42	650.78	46.64	14.953	
6,800.00	6,796.26	6,698.32	6,696.25	24.15	23.12	-33.41	22.03	-858.94	701.60	654.67	46.93	14.950	
6,850.00	6,846.22	6,742.16	6,739.70	24.33	23.27	-33.34	23.32	-864.64	706.27	659.05	47.23	14.955	
6,900.00	6,896.18	6,788.54	6,785.63	24.51	23.44	-33.26	24.67	-870.94	711.24	663.70	47.54	14.960	
6,950.00	6,946.14	6,836.68	6,833.28	24.70	23.61	-33.19	26.07	-877.70	716.43	668.55	47.88	14.963	
7,000.00	6,996.10	6,889.49	6,885.55	24.88	23.80	-33.10	27.69	-885.01	721.53	673.26	48.26	14.950	
7,050.00	7,046.06	6,939.02	6,934.60	25.06	23.97	-33.01	29.33	-891.72	726.46	677.85	48.61	14.943	
7,100.00	7,096.02	6,984.93	6,980.03	25.24	24.14	-32.91	30.98	-898.13	731.60	682.67	48.93	14.952	
7,150.00	7,145.98	7,033.97	7,028.52	25.42	24.32	-32.80	32.89	-905.20	736.95	687.68	49.27	14.956	
7,200.00	7,195.94	7,087.25	7,081.22	25.60	24.51	-32.68	34.94	-912.71	742.15	692.49	49.66	14.944	
7,250.00	7,245.90	7,141.14	7,134.58	25.78	24.70	-32.57	36.93	-920.03	747.10	697.04	50.06	14.925	
7,300.00	7,295.86	7,195.41	7,188.36	25.96	24.90	-32.48	38.84	-927.07	751.75	701.30	50.45	14.900	
7,350.00	7,345.82	7,241.74	7,234.27	26.14	25.06	-32.39	40.43	-933.02	756.35	705.57	50.78	14.896	
7,400.00	7,395.78	7,287.27	7,279.36	26.32	25.23	-32.31	42.05	-939.13	761.22	710.13	51.09	14.900	
7,450.00	7,445.74	7,340.70	7,332.27	26.50	25.42	-32.22	43.92	-946.35	766.16	714.68	51.48	14.883	
7,500.00	7,495.70	7,395.83	7,386.91	26.68	25.62	-32.13	45.72	-953.43	770.76	718.88	51.88	14.856	
7,550.00	7,545.66	7,443.83	7,434.50	26.86	25.80	-32.05	47.35	-959.52	775.28	723.05	52.22	14.846	
7,600.00	7,595.62	7,491.90	7,482.14	27.04	25.97	-31.96	49.17	-965.68	779.86	727.30	52.56	14.837	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
7,650.00	7,645.58	7,536.67	7,526.46	27.22	26.14	-31.86	51.07	-971.65	784.68	731.81	52.87	14.842	
7,700.00	7,695.54	7,581.88	7,571.18	27.40	26.30	-31.75	53.22	-977.97	789.81	736.63	53.18	14.852	
7,750.00	7,745.50	7,633.45	7,622.17	27.58	26.49	-31.61	55.72	-985.25	795.02	741.47	53.55	14.846	
7,800.00	7,795.46	7,685.64	7,673.81	27.77	26.68	-31.48	58.11	-992.49	800.11	746.18	53.93	14.836	
7,850.00	7,845.42	7,739.64	7,727.26	27.95	26.88	-31.37	60.46	-999.73	804.98	750.65	54.33	14.818	
7,900.00	7,895.38	7,790.79	7,777.93	28.13	27.07	-31.27	62.56	-1,006.36	809.63	754.93	54.69	14.803	
7,950.00	7,945.34	7,839.17	7,825.86	28.31	27.25	-31.17	64.54	-1,012.67	814.33	759.29	55.04	14.796	
8,000.00	7,995.30	7,889.01	7,875.23	28.49	27.43	-31.08	66.58	-1,019.23	819.09	763.69	55.39	14.787	
8,050.00	8,045.26	7,940.08	7,925.82	28.67	27.62	-30.98	68.59	-1,025.89	823.79	768.03	55.76	14.773	
8,100.00	8,095.22	7,987.33	7,972.63	28.85	27.80	-30.90	70.42	-1,032.04	828.49	772.40	56.10	14.769	
8,150.00	8,145.18	8,032.96	8,017.81	29.03	27.97	-30.82	72.29	-1,038.21	833.43	777.02	56.41	14.774	
8,200.00	8,195.14	8,084.27	8,068.58	29.21	28.16	-30.72	74.46	-1,045.28	838.52	781.73	56.78	14.767	
8,250.00	8,245.10	8,139.41	8,123.19	29.39	28.36	-30.63	76.57	-1,052.58	843.33	786.14	57.19	14.746	
8,300.00	8,295.06	8,185.25	8,168.61	29.57	28.54	-30.56	78.20	-1,058.57	848.07	790.56	57.51	14.746	
8,350.00	8,345.02	8,229.77	8,212.69	29.75	28.70	-30.50	79.81	-1,064.66	853.11	795.29	57.82	14.755	
8,400.00	8,394.98	8,279.26	8,261.65	29.93	28.89	-30.42	81.58	-1,071.61	858.34	800.17	58.17	14.755	
8,450.00	8,444.94	8,330.45	8,312.31	30.11	29.08	-30.36	83.33	-1,078.74	863.51	804.96	58.54	14.750	
8,500.00	8,494.90	8,388.00	8,369.32	30.30	29.29	-30.30	85.07	-1,086.45	868.43	809.46	58.97	14.726	
8,550.00	8,544.86	8,446.43	8,427.28	30.48	29.51	-30.27	86.40	-1,093.69	872.86	813.45	59.40	14.694	
8,600.00	8,594.82	8,497.41	8,477.88	30.66	29.70	-30.24	87.69	-1,099.79	877.06	817.29	59.77	14.674	
8,650.00	8,644.78	8,551.92	8,532.00	30.84	29.90	-30.19	89.25	-1,106.10	881.08	820.91	60.16	14.645	
8,700.00	8,694.74	8,608.79	8,588.51	31.02	30.12	-30.15	90.88	-1,112.29	884.73	824.16	60.58	14.605	
8,750.00	8,744.70	8,664.56	8,643.97	31.20	30.32	-30.10	92.51	-1,117.94	888.02	827.04	60.98	14.563	
8,800.00	8,794.66	8,720.06	8,699.18	31.38	30.53	-30.04	94.37	-1,123.22	890.99	829.61	61.37	14.517	
8,850.00	8,844.62	8,765.01	8,743.90	31.56	30.69	-29.99	95.95	-1,127.51	893.96	832.26	61.70	14.489	
8,900.00	8,894.58	8,810.65	8,789.28	31.74	30.86	-29.93	97.53	-1,132.08	897.17	835.15	62.03	14.465	
8,950.00	8,944.54	8,852.59	8,830.96	31.92	31.02	-29.88	99.00	-1,136.55	900.72	838.40	62.32	14.452	
9,000.00	8,994.50	8,894.44	8,872.50	32.10	31.18	-29.83	100.52	-1,141.39	904.71	842.09	62.62	14.448	
9,050.00	9,044.45	8,952.60	8,930.22	32.28	31.39	-29.76	102.56	-1,148.21	908.81	845.77	63.04	14.416	
9,100.00	9,094.41	9,016.43	8,993.68	32.46	31.63	-29.71	104.41	-1,154.79	912.18	848.68	63.50	14.364	
9,150.00	9,144.37	9,054.54	9,031.56	32.65	31.77	-29.70	105.21	-1,158.86	915.70	851.92	63.78	14.358	
9,200.00	9,194.33	9,100.82	9,077.56	32.83	31.95	-29.71	105.86	-1,164.00	919.49	855.38	64.11	14.343	
9,250.00	9,244.29	9,164.69	9,141.08	33.01	32.18	-29.77	105.91	-1,170.63	922.94	858.37	64.57	14.294	
9,300.00	9,294.25	9,231.15	9,207.28	33.19	32.42	-29.91	104.93	-1,176.42	925.59	860.56	65.03	14.233	
9,350.00	9,344.21	9,299.14	9,275.09	33.37	32.67	-30.08	103.37	-1,181.03	927.28	861.79	65.49	14.159	
9,400.00	9,394.17	9,346.74	9,322.58	33.55	32.84	-30.20	102.26	-1,183.99	928.70	862.87	65.83	14.107	
9,450.00	9,444.13	9,399.72	9,375.46	33.73	33.03	-30.33	101.09	-1,187.14	929.98	863.78	66.20	14.047	
9,500.00	9,494.09	9,454.50	9,430.15	33.91	33.22	-30.46	99.92	-1,190.15	931.04	864.46	66.58	13.983	
9,550.00	9,544.05	9,507.04	9,482.61	34.09	33.41	-30.59	98.83	-1,192.80	931.88	864.93	66.95	13.919	
9,600.00	9,594.01	9,558.60	9,534.10	34.27	33.60	-30.71	97.77	-1,195.31	932.64	865.32	67.32	13.855	
9,650.00	9,643.97	9,617.97	9,593.40	34.45	33.81	-30.84	96.72	-1,197.88	933.12	865.41	67.71	13.781	
9,700.00	9,693.93	9,684.21	9,659.60	34.63	34.04	-30.98	95.71	-1,199.90	932.98	864.86	68.12	13.695	
9,750.00	9,743.89	9,728.88	9,704.22	34.82	34.19	-31.14	93.91	-1,200.65	932.24	863.78	68.46	13.617	
9,768.78	9,762.66	9,740.83	9,716.14	34.88	34.23	-31.22	93.00	-1,200.96	932.17	863.60	68.57	13.595	
9,800.00	9,793.85	9,755.00	9,730.23	35.00	34.28	-31.32	91.64	-1,201.43	932.39	863.67	68.72	13.569	
9,850.00	9,843.81	9,787.59	9,762.39	35.18	34.39	-31.66	86.68	-1,202.98	933.63	864.65	68.98	13.536	
9,900.00	9,893.77	9,818.16	9,792.03	35.36	34.49	-32.13	79.45	-1,204.99	936.10	866.90	69.20	13.527 SF	
9,950.00	9,943.73	9,852.89	9,824.99	35.54	34.60	-32.80	68.89	-1,207.57	939.54	870.11	69.43	13.532	
10,000.00	9,993.69	9,896.16	9,864.72	35.72	34.73	-33.86	52.06	-1,210.62	943.65	873.95	69.70	13.538	
10,050.00	10,043.65	9,924.54	9,889.80	35.90	34.81	-34.68	38.93	-1,212.56	948.70	878.87	69.83	13.585	
10,100.00	10,093.61	9,944.00	9,906.54	36.08	34.87	-35.28	29.11	-1,214.01	955.15	885.30	69.84	13.676	
10,150.00	10,143.57	9,972.83	9,930.65	36.26	34.94	-36.24	13.49	-1,216.45	963.04	893.14	69.89	13.778	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
10,200.00	10,193.53	9,991.00	9,945.42	36.44	34.99	-36.86	3.06	-1,218.20	972.56	902.78	69.79	13.936	
10,250.00	10,243.49	10,020.22	9,968.55	36.62	35.06	-37.91	-14.53	-1,221.23	983.55	913.78	69.77	14.098	
10,300.00	10,293.45	10,039.00	9,983.03	36.81	35.11	-38.60	-26.31	-1,223.26	996.01	926.43	69.57	14.316	
10,350.00	10,343.41	10,067.24	10,004.25	36.99	35.17	-39.67	-44.67	-1,226.43	1,009.87	940.40	69.47	14.537	
10,400.00	10,393.37	10,086.00	10,017.98	37.17	35.22	-40.40	-57.27	-1,228.62	1,025.21	956.01	69.20	14.815	
10,450.00	10,443.33	10,104.59	10,031.24	37.35	35.26	-41.12	-70.10	-1,230.91	1,042.09	973.20	68.89	15.126	
10,500.00	10,493.29	10,119.95	10,041.90	37.53	35.29	-41.73	-80.96	-1,232.95	1,060.55	992.05	68.50	15.482	
10,550.00	10,543.25	10,133.00	10,050.74	37.71	35.33	-42.40	-90.38	-1,234.79	1,080.63	1,012.58	68.05	15.880	
10,600.00	10,593.24	10,146.54	10,059.67	37.89	35.36	-43.19	-100.36	-1,236.80	1,102.61	1,035.03	67.58	16.314	
10,650.00	10,643.23	10,158.11	10,067.09	38.07	35.39	-43.94	-109.05	-1,238.61	1,126.46	1,059.39	67.07	16.795	
10,700.00	10,693.23	10,180.00	10,080.54	38.24	35.44	-106.88	-125.92	-1,242.29	1,152.17	1,085.44	66.73	17.266	
10,750.00	10,743.23	10,180.00	10,080.54	38.42	35.44	-106.88	-125.92	-1,242.29	1,178.90	1,112.89	66.01	17.860	
10,800.00	10,793.23	10,193.61	10,088.55	38.59	35.47	-107.44	-136.67	-1,244.65	1,206.95	1,141.43	65.52	18.421	
10,850.00	10,843.23	10,206.99	10,096.15	38.77	35.51	-107.99	-147.43	-1,246.93	1,236.07	1,171.04	65.03	19.006	
10,900.00	10,893.23	10,228.00	10,107.58	38.94	35.56	-108.86	-164.71	-1,250.43	1,266.27	1,201.58	64.69	19.575	
10,950.00	10,943.23	10,228.00	10,107.58	39.12	35.56	-108.86	-164.71	-1,250.43	1,297.33	1,233.33	63.99	20.273	
11,000.00	10,993.23	10,228.00	10,107.58	39.29	35.56	-108.86	-164.71	-1,250.43	1,329.54	1,266.22	63.32	20.999	
11,050.00	11,043.22	10,245.97	10,116.78	39.47	35.61	-22.32	-179.86	-1,253.44	1,361.94	1,299.00	62.95	21.636	
11,100.00	11,092.99	10,253.27	10,120.34	39.65	35.63	-21.18	-186.10	-1,254.69	1,392.61	1,330.24	62.37	22.328	
11,150.00	11,142.19	10,275.00	10,130.36	39.84	35.69	-16.20	-205.01	-1,258.50	1,421.37	1,359.38	62.00	22.927	
11,200.00	11,191.09	10,275.00	10,130.36	40.03	35.69	3.34	-205.01	-1,258.50	1,448.96	1,387.70	61.26	23.652	
11,250.00	11,239.59	10,275.00	10,130.36	40.21	35.69	17.04	-205.01	-1,258.50	1,476.44	1,415.92	60.53	24.394	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	-89.53	6.44	-779.01	779.17				
50.00	50.00	37.13	37.13	0.50	0.50	-89.53	6.45	-778.98	779.01	778.00	1.01	775.032	
100.00	100.00	88.99	88.99	0.52	0.52	-89.52	6.48	-778.83	778.86	777.83	1.04	752.166	
150.00	150.00	140.85	140.85	0.59	0.54	-89.52	6.55	-778.55	778.60	777.46	1.13	686.877	
200.00	200.00	191.54	191.53	0.70	0.63	-89.51	6.65	-778.20	778.25	776.92	1.33	584.750	
250.00	250.00	242.06	242.06	0.84	0.75	-89.50	6.81	-777.81	777.86	776.27	1.59	489.190	
300.00	300.00	291.61	291.60	0.99	0.89	-89.49	6.93	-777.42	777.48	775.60	1.88	413.522	
350.00	350.00	341.03	341.02	1.15	1.04	-89.48	7.00	-777.07	777.12	774.93	2.19	354.905	
400.00	400.00	389.82	389.81	1.31	1.20	-89.48	7.04	-776.78	776.82	774.31	2.51	309.533	
450.00	450.00	439.75	439.74	1.48	1.37	-89.48	7.09	-776.54	776.59	773.74	2.84	273.302	
500.00	500.00	491.50	491.49	1.65	1.54	-89.48	7.10	-776.22	776.28	773.09	3.19	243.716	
550.00	550.00	541.88	541.87	1.82	1.71	-89.48	7.08	-775.82	775.88	772.35	3.53	219.898	
600.00	600.00	591.44	591.43	1.99	1.88	-89.48	7.08	-775.45	775.50	771.63	3.87	200.300	
650.00	650.00	641.05	641.03	2.16	2.05	-89.47	7.11	-775.10	775.15	770.94	4.22	183.792	
700.00	700.00	690.67	690.65	2.34	2.23	-89.47	7.14	-774.78	774.83	770.26	4.57	169.724	
750.00	750.00	740.30	740.28	2.51	2.40	-89.47	7.20	-774.48	774.53	769.61	4.91	157.608	
800.00	800.00	789.45	789.43	2.69	2.57	-89.46	7.25	-774.22	774.26	769.00	5.26	147.130	
850.00	850.00	838.59	838.58	2.87	2.75	-89.46	7.26	-774.02	774.06	768.44	5.61	137.940	
900.00	900.00	887.87	887.85	3.04	2.92	-89.46	7.25	-773.87	773.90	767.94	5.96	129.812	
950.00	950.00	937.54	937.52	3.22	3.09	-89.46	7.23	-773.75	773.78	767.47	6.31	122.555	
1,000.00	1,000.00	987.21	987.19	3.40	3.27	-89.47	7.21	-773.65	773.68	767.01	6.67	116.059	
1,050.00	1,050.00	1,036.88	1,036.86	3.58	3.45	-89.47	7.19	-773.57	773.60	766.58	7.02	110.211	
1,100.00	1,100.00	1,086.78	1,086.77	3.75	3.62	-89.47	7.17	-773.51	773.54	766.17	7.37	104.927	
1,150.00	1,150.00	1,136.87	1,136.85	3.93	3.80	-89.47	7.11	-773.44	773.47	765.75	7.73	100.125	
1,200.00	1,200.00	1,186.95	1,186.94	4.11	3.97	-89.48	7.01	-773.37	773.40	765.33	8.08	95.739	
1,250.00	1,250.00	1,237.04	1,237.02	4.29	4.15	-89.49	6.88	-773.30	773.33	764.90	8.43	91.716	
1,300.00	1,300.00	1,287.53	1,287.51	4.46	4.32	-89.50	6.70	-773.20	773.23	764.45	8.79	88.012	
1,350.00	1,350.00	1,338.04	1,338.02	4.64	4.50	-89.52	6.48	-773.08	773.11	763.97	9.14	84.588	
1,399.06	1,399.06	1,384.88	1,384.86	4.82	4.66	-89.53	6.29	-773.02	773.05	763.57	9.47	81.596	
1,400.00	1,400.00	1,385.78	1,385.76	4.82	4.66	-89.53	6.29	-773.02	773.05	763.57	9.48	81.541	
1,450.00	1,450.00	1,434.38	1,434.36	5.00	4.83	-89.55	6.12	-773.08	773.11	763.28	9.82	78.693	
1,500.00	1,500.00	1,484.57	1,484.55	5.18	5.00	-89.56	5.97	-773.17	773.20	763.02	10.17	76.008	
1,550.00	1,550.00	1,534.76	1,534.74	5.36	5.17	-89.57	5.83	-773.25	773.27	762.75	10.52	73.499	
1,600.00	1,600.00	1,584.95	1,584.93	5.53	5.34	-89.58	5.69	-773.31	773.33	762.46	10.87	71.149	
1,650.00	1,650.00	1,634.80	1,634.78	5.71	5.50	-89.59	5.57	-773.37	773.39	762.17	11.22	68.951	
1,700.00	1,700.00	1,684.44	1,684.42	5.89	5.67	-89.59	5.47	-773.45	773.47	761.90	11.56	66.892	
1,750.00	1,750.00	1,734.08	1,734.06	6.07	5.84	-89.60	5.41	-773.55	773.57	761.66	11.91	64.954	
1,800.00	1,800.00	1,783.72	1,783.70	6.25	6.01	-89.60	5.37	-773.67	773.69	761.44	12.26	63.127	
1,850.00	1,850.00	1,835.11	1,835.09	6.43	6.19	-89.60	5.35	-773.77	773.79	761.18	12.61	61.354	
1,900.00	1,900.00	1,886.75	1,886.73	6.61	6.36	-89.61	5.29	-773.76	773.78	760.81	12.97	59.664	
1,941.77	1,941.77	1,927.59	1,927.57	6.76	6.51	-89.61	5.22	-773.74	773.76	760.50	13.26	58.347	
1,950.00	1,950.00	1,935.66	1,935.63	6.78	6.53	-89.61	5.21	-773.74	773.76	760.44	13.32	58.095	
2,000.00	2,000.00	1,984.75	1,984.73	6.96	6.71	-89.62	5.10	-773.79	773.80	760.13	13.67	56.608	
2,050.00	2,050.00	2,034.85	2,034.82	7.14	6.88	-27.71	4.98	-773.85	773.88	759.66	14.02	55.186	
2,100.00	2,099.99	2,085.22	2,085.20	7.32	7.06	-27.75	4.85	-773.91	773.16	758.78	14.37	53.800	
2,150.00	2,149.98	2,136.60	2,136.57	7.49	7.24	-27.80	4.74	-773.91	772.18	757.46	14.73	52.436	
2,200.00	2,199.96	2,187.40	2,187.38	7.67	7.42	-27.87	4.64	-773.82	770.74	755.66	15.08	51.111	
2,250.00	2,249.92	2,237.32	2,237.30	7.84	7.59	-27.95	4.50	-773.71	768.94	753.51	15.43	49.828	
2,300.00	2,299.88	2,287.23	2,287.21	8.02	7.77	-28.03	4.30	-773.61	767.07	751.28	15.78	48.598	
2,350.00	2,349.84	2,337.14	2,337.12	8.19	7.95	-28.12	4.06	-773.52	765.20	749.06	16.14	47.421	
2,400.00	2,399.80	2,386.10	2,386.08	8.37	8.12	-28.21	3.77	-773.44	763.36	746.87	16.48	46.310	
2,450.00	2,449.76	2,434.40	2,434.37	8.54	8.29	-28.30	3.48	-773.46	761.61	744.78	16.83	45.259	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
2,500.00	2,499.72	2,482.69	2,482.67	8.72	8.46	-28.39	3.20	-773.59	759.98	742.81	17.17	44.257	
2,550.00	2,549.68	2,531.00	2,530.97	8.90	8.63	-28.48	2.92	-773.82	758.46	740.94	17.52	43.299	
2,600.00	2,599.64	2,581.79	2,581.76	9.07	8.80	-28.58	2.65	-774.12	757.00	739.13	17.87	42.362	
2,650.00	2,649.60	2,633.80	2,633.77	9.25	8.98	-28.67	2.41	-774.30	755.41	737.18	18.23	41.445	
2,700.00	2,699.56	2,684.72	2,684.69	9.43	9.16	-28.76	2.19	-774.37	753.72	735.14	18.58	40.561	
2,750.00	2,749.52	2,735.43	2,735.40	9.61	9.34	-28.86	1.95	-774.39	751.99	733.05	18.94	39.708	
2,800.00	2,799.48	2,786.14	2,786.11	9.78	9.52	-28.95	1.69	-774.35	750.20	730.91	19.29	38.884	
2,850.00	2,849.44	2,836.85	2,836.82	9.96	9.70	-29.05	1.39	-774.27	748.37	728.72	19.65	38.086	
2,900.00	2,899.40	2,886.78	2,886.74	10.14	9.88	-29.15	1.12	-774.16	746.51	726.51	20.00	37.319	
2,950.00	2,949.36	2,936.58	2,936.54	10.32	10.06	-29.24	0.88	-774.05	744.66	724.30	20.36	36.578	
3,000.00	2,999.32	2,985.76	2,985.72	10.49	10.23	-29.33	0.66	-773.98	742.85	722.14	20.71	35.869	
3,050.00	3,049.28	3,035.29	3,035.25	10.67	10.41	-29.42	0.47	-773.96	741.08	720.02	21.06	35.184	
3,100.00	3,099.24	3,085.48	3,085.44	10.85	10.59	-29.51	0.33	-773.94	739.31	717.90	21.42	34.517	
3,150.00	3,149.20	3,135.21	3,135.18	11.03	10.76	-29.59	0.23	-773.91	737.54	715.77	21.77	33.875	
3,200.00	3,199.16	3,184.43	3,184.39	11.21	10.94	-29.68	0.06	-773.92	735.81	713.69	22.12	33.257	
3,250.00	3,249.12	3,234.32	3,234.29	11.38	11.12	-29.78	-0.18	-773.96	734.12	711.64	22.48	32.658	
3,300.00	3,299.08	3,284.80	3,284.76	11.56	11.30	-29.87	-0.38	-773.98	732.41	709.57	22.84	32.073	
3,350.00	3,349.04	3,334.21	3,334.17	11.74	11.47	-29.96	-0.54	-773.99	730.69	707.50	23.19	31.511	
3,400.00	3,399.00	3,383.11	3,383.08	11.92	11.64	-30.06	-0.76	-774.06	729.03	705.49	23.54	30.971	
3,450.00	3,448.96	3,433.31	3,433.27	12.10	11.82	-30.16	-1.06	-774.17	727.42	703.52	23.89	30.443	
3,500.00	3,498.92	3,483.96	3,483.92	12.28	12.00	-30.27	-1.40	-774.24	725.76	701.51	24.25	29.927	
3,550.00	3,548.88	3,535.24	3,535.20	12.46	12.18	-30.38	-1.79	-774.24	724.05	699.43	24.61	29.419	
3,600.00	3,598.84	3,586.60	3,586.56	12.63	12.37	-30.50	-2.24	-774.13	722.23	697.26	24.97	28.922	
3,650.00	3,648.80	3,637.95	3,637.90	12.81	12.55	-30.62	-2.75	-773.93	720.32	694.99	25.33	28.435	
3,700.00	3,698.76	3,689.56	3,689.51	12.99	12.73	-30.75	-3.34	-773.61	718.32	692.63	25.69	27.957	
3,750.00	3,748.72	3,742.39	3,742.34	13.17	12.92	-30.90	-4.05	-773.10	716.15	690.10	26.06	27.482	
3,800.00	3,798.68	3,794.15	3,794.08	13.35	13.11	-31.06	-4.90	-772.41	713.80	687.38	26.42	27.017	
3,850.00	3,848.64	3,844.35	3,844.27	13.53	13.29	-31.21	-5.74	-771.68	711.41	684.63	26.78	26.567	
3,900.00	3,898.60	3,895.01	3,894.91	13.71	13.47	-31.37	-6.59	-770.91	708.98	681.85	27.14	26.127	
3,950.00	3,948.56	3,946.10	3,945.99	13.89	13.65	-31.54	-7.55	-770.06	706.49	679.00	27.50	25.694	
4,000.00	3,998.52	3,997.18	3,997.05	14.07	13.83	-31.71	-8.60	-769.11	703.92	676.07	27.86	25.270	
4,050.00	4,048.47	4,048.24	4,048.08	14.25	14.02	-31.90	-9.77	-768.07	701.27	673.06	28.22	24.854	
4,100.00	4,098.43	4,099.00	4,098.82	14.43	14.20	-32.10	-11.00	-766.95	698.56	669.98	28.57	24.447	
4,150.00	4,148.39	4,149.69	4,149.48	14.61	14.38	-32.29	-12.24	-765.77	695.79	666.86	28.93	24.048	
4,200.00	4,198.35	4,200.38	4,200.14	14.79	14.56	-32.50	-13.50	-764.53	692.97	663.68	29.29	23.657	
4,250.00	4,248.31	4,251.05	4,250.78	14.97	14.74	-32.70	-14.77	-763.23	690.10	660.45	29.65	23.274	
4,300.00	4,298.27	4,300.32	4,300.01	15.14	14.92	-32.91	-16.16	-761.95	687.24	657.23	30.01	22.902	
4,350.00	4,348.23	4,349.84	4,349.49	15.32	15.10	-33.15	-17.82	-760.68	684.42	654.06	30.36	22.541	
4,400.00	4,398.19	4,400.70	4,400.30	15.50	15.28	-33.39	-19.40	-759.35	681.58	650.86	30.72	22.185	
4,450.00	4,448.15	4,453.84	4,453.41	15.68	15.47	-33.61	-20.67	-757.88	678.65	647.56	31.09	21.830	
4,500.00	4,498.11	4,510.56	4,510.08	15.86	15.67	-33.81	-21.67	-755.86	675.30	643.84	31.46	21.467	
4,550.00	4,548.07	4,571.82	4,571.27	16.04	15.89	-34.01	-22.26	-752.94	671.32	639.49	31.83	21.092	
4,600.00	4,598.03	4,634.64	4,633.95	16.22	16.11	-34.14	-22.03	-748.83	666.39	634.20	32.19	20.702	
4,650.00	4,647.99	4,690.41	4,689.55	16.40	16.30	-34.20	-20.96	-744.53	660.80	628.27	32.54	20.308	
4,700.00	4,697.95	4,745.69	4,744.59	16.58	16.49	-34.19	-19.10	-739.77	654.69	621.81	32.89	19.908	
4,750.00	4,747.91	4,799.66	4,798.27	16.76	16.68	-34.13	-16.71	-734.80	648.23	615.00	33.23	19.507	
4,800.00	4,797.87	4,850.55	4,848.86	16.94	16.85	-34.05	-14.07	-729.91	641.53	607.95	33.58	19.106	
4,850.00	4,847.83	4,900.71	4,898.71	17.12	17.03	-33.95	-11.37	-725.04	634.77	600.85	33.92	18.711	
4,900.00	4,897.79	4,949.60	4,947.30	17.30	17.20	-33.85	-8.71	-720.29	628.01	593.74	34.27	18.323	
4,950.00	4,947.75	4,998.39	4,995.80	17.48	17.36	-33.76	-6.12	-715.61	621.32	586.69	34.62	17.945	
5,000.00	4,997.71	5,047.35	5,044.45	17.66	17.53	-33.64	-3.31	-710.98	614.68	579.70	34.97	17.576	
5,050.00	5,047.67	5,096.38	5,093.16	17.84	17.70	-33.47	0.00	-706.44	608.09	572.76	35.32	17.215	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
5,100.00	5,097.63	5,147.16	5,143.58	18.02	17.88	-33.26	3.73	-701.74	601.47	565.80	35.67	16.862	
5,150.00	5,147.59	5,197.90	5,193.94	18.20	18.05	-33.04	7.58	-696.94	594.75	558.74	36.02	16.513	
5,200.00	5,197.55	5,244.70	5,240.41	18.38	18.22	-32.83	11.10	-692.61	588.14	551.77	36.37	16.170	
5,250.00	5,247.51	5,292.95	5,288.34	18.56	18.38	-32.62	14.65	-688.29	581.70	544.98	36.72	15.840	
5,300.00	5,297.47	5,344.34	5,339.36	18.74	18.56	-32.37	18.65	-683.65	575.21	538.14	37.07	15.517	
5,350.00	5,347.43	5,395.50	5,390.12	18.92	18.74	-32.07	22.97	-678.90	568.58	531.17	37.42	15.196	
5,400.00	5,397.39	5,446.31	5,440.50	19.10	18.92	-31.76	27.47	-674.06	561.84	524.08	37.77	14.877	
5,450.00	5,447.35	5,495.63	5,489.38	19.28	19.10	-31.43	31.96	-669.29	555.03	516.91	38.12	14.561	
5,500.00	5,497.31	5,543.49	5,536.83	19.46	19.27	-31.11	36.27	-664.76	548.34	509.87	38.47	14.253	
5,550.00	5,547.27	5,592.14	5,585.08	19.64	19.44	-30.78	40.59	-660.28	541.80	502.98	38.83	13.955	
5,600.00	5,597.23	5,641.52	5,634.05	19.82	19.61	-30.43	45.03	-655.75	535.30	496.12	39.18	13.663	
5,650.00	5,647.19	5,690.41	5,682.54	20.00	19.79	-30.07	49.48	-651.30	528.85	489.31	39.53	13.378	
5,700.00	5,697.15	5,739.00	5,730.72	20.18	19.96	-29.70	53.95	-646.95	522.49	482.60	39.89	13.099	
5,750.00	5,747.11	5,787.64	5,778.96	20.36	20.13	-29.32	58.46	-642.67	516.24	475.99	40.24	12.828	
5,800.00	5,797.07	5,836.31	5,827.24	20.54	20.31	-28.93	62.97	-638.48	510.09	469.49	40.60	12.564	
5,850.00	5,847.03	5,886.65	5,877.18	20.73	20.49	-28.52	67.60	-634.16	503.98	463.03	40.95	12.307	
5,900.00	5,896.99	5,937.56	5,927.69	20.91	20.67	-28.11	72.09	-629.65	497.77	456.47	41.30	12.052	
5,950.00	5,946.95	5,991.78	5,981.48	21.09	20.87	-27.70	76.64	-624.53	491.30	449.65	41.64	11.798	
6,000.00	5,996.91	6,046.37	6,035.60	21.27	21.07	-27.30	80.91	-618.81	484.32	442.34	41.98	11.537	
6,050.00	6,046.87	6,093.14	6,081.97	21.45	21.24	-26.98	84.34	-613.84	477.29	434.95	42.35	11.271	
6,100.00	6,096.83	6,140.82	6,129.28	21.63	21.41	-26.67	87.66	-608.94	470.45	427.74	42.71	11.016	
6,150.00	6,146.79	6,188.14	6,176.27	21.81	21.58	-26.36	90.83	-604.28	463.83	420.76	43.07	10.769	
6,200.00	6,196.75	6,235.85	6,223.67	21.99	21.76	-26.06	93.92	-599.81	457.46	414.02	43.43	10.533	
6,250.00	6,246.71	6,285.04	6,272.55	22.17	21.93	-25.75	97.04	-595.30	451.20	407.41	43.79	10.304	
6,300.00	6,296.67	6,335.10	6,322.31	22.35	22.12	-25.44	100.15	-590.73	444.98	400.83	44.14	10.080	
6,350.00	6,346.63	6,387.72	6,374.61	22.53	22.31	-25.14	103.09	-585.70	438.53	394.04	44.49	9.857	
6,400.00	6,396.59	6,438.46	6,425.02	22.71	22.49	-24.89	105.54	-580.56	431.79	386.95	44.84	9.630	
6,450.00	6,446.55	6,486.91	6,473.18	22.89	22.67	-24.66	107.76	-575.71	425.11	379.91	45.20	9.405	
6,500.00	6,496.51	6,535.31	6,521.30	23.07	22.85	-24.44	109.93	-570.99	418.57	373.01	45.56	9.187	
6,550.00	6,546.46	6,583.64	6,569.36	23.25	23.03	-24.20	112.11	-566.41	412.17	366.25	45.92	8.975	
6,600.00	6,596.42	6,632.89	6,618.35	23.43	23.21	-23.96	114.33	-561.86	405.90	359.62	46.28	8.770	
6,650.00	6,646.38	6,682.84	6,668.05	23.61	23.39	-23.73	116.38	-557.23	399.61	352.97	46.64	8.568	
6,700.00	6,696.34	6,736.98	6,721.90	23.79	23.59	-23.54	118.17	-552.00	393.10	346.13	46.97	8.369	
6,750.00	6,746.30	6,793.10	6,777.67	23.97	23.80	-23.46	119.08	-545.76	385.79	338.51	47.28	8.160	
6,800.00	6,796.26	6,845.92	6,830.08	24.15	23.99	-23.44	119.52	-539.23	377.84	330.24	47.61	7.937	
6,850.00	6,846.22	6,898.59	6,882.27	24.33	24.19	-23.40	120.07	-532.23	369.45	321.52	47.93	7.708	
6,900.00	6,896.18	6,943.10	6,926.41	24.51	24.35	-23.31	120.83	-526.48	361.25	312.92	48.33	7.474	
6,950.00	6,946.14	6,989.60	6,972.55	24.70	24.53	-23.17	122.00	-520.87	353.51	304.80	48.71	7.257	
7,000.00	6,996.10	7,040.08	7,022.65	24.88	24.71	-22.97	123.42	-514.85	345.87	296.81	49.06	7.050	
7,050.00	7,046.06	7,088.80	7,070.99	25.06	24.90	-22.78	124.78	-508.92	338.10	288.68	49.42	6.841	
7,100.00	7,096.02	7,132.43	7,114.34	25.24	25.06	-22.61	125.98	-504.12	330.92	281.09	49.83	6.641	
7,150.00	7,145.98	7,176.57	7,158.27	25.42	25.22	-22.46	127.16	-500.04	324.60	274.37	50.22	6.463	
7,200.00	7,195.94	7,224.39	7,205.91	25.60	25.40	-22.25	128.63	-496.11	318.82	268.23	50.59	6.302	
7,250.00	7,245.90	7,272.39	7,253.73	25.78	25.57	-21.98	130.46	-492.40	313.32	262.37	50.96	6.149	
7,300.00	7,295.86	7,321.56	7,302.72	25.96	25.75	-21.68	132.46	-488.75	308.00	256.68	51.32	6.002	
7,350.00	7,345.82	7,370.75	7,351.74	26.14	25.93	-21.37	134.41	-485.19	302.77	251.09	51.68	5.859	
7,400.00	7,395.78	7,419.02	7,399.87	26.32	26.11	-21.09	136.19	-481.88	297.73	245.68	52.04	5.721	
7,450.00	7,445.74	7,467.63	7,448.35	26.50	26.28	-20.83	137.82	-478.78	292.90	240.49	52.41	5.589	
7,500.00	7,495.70	7,516.77	7,497.37	26.68	26.46	-20.59	139.35	-475.79	288.21	235.45	52.77	5.462	
7,550.00	7,545.66	7,565.93	7,546.44	26.86	26.64	-20.36	140.82	-472.92	283.64	230.52	53.13	5.339	
7,600.00	7,595.62	7,615.15	7,595.55	27.04	26.82	-20.14	142.23	-470.16	279.18	225.70	53.49	5.220	
7,650.00	7,645.58	7,664.36	7,644.68	27.22	27.00	-19.93	143.56	-467.51	274.83	220.98	53.85	5.104	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
7,700.00	7,695.54	7,713.56	7,693.80	27.40	27.18	-19.73	144.83	-464.98	270.58	216.38	54.21	4.992	Alert
7,750.00	7,745.50	7,762.46	7,742.62	27.58	27.35	-19.54	146.03	-462.60	266.47	211.90	54.57	4.884	Alert
7,800.00	7,795.46	7,811.01	7,791.11	27.77	27.53	-19.37	147.14	-460.47	262.58	207.66	54.93	4.781	Alert
7,850.00	7,845.42	7,860.01	7,840.06	27.95	27.70	-19.23	148.16	-458.55	258.92	203.64	55.28	4.684	Alert
7,900.00	7,895.38	7,909.44	7,889.45	28.13	27.88	-19.10	149.11	-456.74	255.37	199.73	55.64	4.590	Alert
7,950.00	7,945.34	7,958.68	7,938.65	28.31	28.05	-18.99	150.00	-455.04	251.91	195.91	56.00	4.499	Alert
8,000.00	7,995.30	8,007.79	7,987.73	28.49	28.23	-18.88	150.90	-453.49	248.60	192.25	56.36	4.411	Alert
8,050.00	8,045.26	8,056.75	8,036.66	28.67	28.40	-18.76	151.81	-452.11	245.46	188.75	56.71	4.328	Alert
8,100.00	8,095.22	8,105.65	8,085.54	28.85	28.58	-18.68	152.63	-450.94	242.53	185.46	57.07	4.250	Alert
8,150.00	8,145.18	8,155.08	8,134.95	29.03	28.75	-18.61	153.40	-449.95	239.76	182.34	57.42	4.175	Alert
8,200.00	8,195.14	8,204.71	8,184.57	29.21	28.93	-18.54	154.16	-449.02	237.07	179.29	57.78	4.103	Alert
8,250.00	8,245.10	8,253.73	8,233.58	29.39	29.10	-18.50	154.85	-448.23	234.49	176.36	58.13	4.034	Alert
8,300.00	8,295.06	8,302.65	8,282.49	29.57	29.27	-18.50	155.36	-447.68	232.12	173.64	58.48	3.969	Alert
8,350.00	8,345.02	8,352.57	8,332.41	29.75	29.44	-18.56	155.72	-447.28	229.89	171.05	58.84	3.907	Alert
8,400.00	8,394.98	8,402.60	8,382.44	29.93	29.62	-18.64	155.95	-446.88	227.63	168.44	59.19	3.846	Alert
8,450.00	8,444.94	8,452.03	8,431.87	30.11	29.79	-18.74	156.14	-446.54	225.42	165.88	59.54	3.786	Alert
8,500.00	8,494.90	8,501.47	8,481.31	30.30	29.97	-18.83	156.39	-446.30	223.33	163.44	59.90	3.729	Alert
8,550.00	8,544.86	8,550.64	8,530.47	30.48	30.13	-18.86	156.90	-446.16	221.37	161.13	60.24	3.675	Alert
8,600.00	8,594.82	8,600.50	8,580.33	30.66	30.31	-18.83	157.67	-446.09	219.53	158.94	60.60	3.623	Alert
8,650.00	8,644.78	8,650.77	8,630.59	30.84	30.48	-18.80	158.41	-445.99	217.66	156.71	60.95	3.571	Alert
8,700.00	8,694.74	8,700.48	8,680.29	31.02	30.65	-18.83	158.95	-445.90	215.75	154.45	61.30	3.520	Alert
8,750.00	8,744.70	8,749.67	8,729.49	31.20	30.82	-18.88	159.43	-445.99	214.03	152.38	61.64	3.472	Alert
8,800.00	8,794.66	8,799.10	8,778.91	31.38	30.98	-18.94	159.88	-446.22	212.43	150.44	61.99	3.427	Alert
8,850.00	8,844.62	8,848.73	8,828.53	31.56	31.15	-19.03	160.26	-446.55	210.93	148.59	62.34	3.384	Alert
8,900.00	8,894.58	8,898.17	8,877.98	31.74	31.31	-19.09	160.76	-447.00	209.56	146.88	62.68	3.343	Alert
8,950.00	8,944.54	8,947.65	8,927.45	31.92	31.48	-19.15	161.28	-447.52	208.26	145.24	63.02	3.305	Alert
9,000.00	8,994.50	8,997.58	8,977.37	32.10	31.65	-19.21	161.80	-448.15	207.07	143.70	63.37	3.268	Alert
9,050.00	9,044.45	9,047.28	9,027.07	32.28	31.81	-19.34	162.12	-448.85	205.92	142.21	63.71	3.232	Alert
9,100.00	9,094.41	9,097.34	9,077.12	32.46	31.98	-19.53	162.21	-449.61	204.80	140.74	64.06	3.197	Alert
9,150.00	9,144.37	9,147.41	9,127.19	32.65	32.15	-19.75	162.21	-450.36	203.65	139.25	64.41	3.162	Alert
9,200.00	9,194.33	9,197.29	9,177.06	32.83	32.31	-20.00	162.13	-451.12	202.50	137.75	64.75	3.127	Alert
9,250.00	9,244.29	9,247.02	9,226.79	33.01	32.48	-20.30	161.87	-451.94	201.41	136.32	65.10	3.094	Alert
9,300.00	9,294.25	9,296.43	9,276.18	33.19	32.64	-20.64	161.48	-452.87	200.41	134.98	65.44	3.063	Alert
9,350.00	9,344.21	9,345.68	9,325.42	33.37	32.80	-20.98	161.12	-453.97	199.60	133.82	65.78	3.035	Alert
9,400.00	9,394.17	9,395.46	9,375.19	33.55	32.97	-21.33	160.78	-455.21	198.92	132.80	66.12	3.009	Alert
9,450.00	9,444.13	9,445.41	9,425.11	33.73	33.14	-21.67	160.47	-456.46	198.26	131.80	66.46	2.983	Alert
9,500.00	9,494.09	9,495.92	9,475.61	33.91	33.30	-22.01	160.17	-457.67	197.56	130.75	66.82	2.957	Alert
9,550.00	9,544.05	9,546.52	9,526.19	34.09	33.47	-22.36	159.87	-458.73	196.71	129.55	67.17	2.929	Alert
9,600.00	9,594.01	9,596.90	9,576.57	34.27	33.64	-22.70	159.56	-459.65	195.74	128.22	67.52	2.899	Alert
9,650.00	9,643.97	9,647.29	9,626.95	34.45	33.81	-23.04	159.25	-460.46	194.67	126.80	67.87	2.868	Alert
9,700.00	9,693.93	9,697.20	9,676.85	34.63	33.98	-23.37	158.98	-461.23	193.57	125.36	68.21	2.838	Alert
9,750.00	9,743.89	9,747.39	9,727.04	34.82	34.14	-23.70	158.74	-461.99	192.47	123.91	68.56	2.807	Alert
9,800.00	9,793.85	9,798.33	9,777.97	35.00	34.32	-24.07	158.38	-462.59	191.20	122.28	68.92	2.774	Alert
9,850.00	9,843.81	9,849.04	9,828.68	35.18	34.49	-24.49	157.84	-462.96	189.70	120.43	69.27	2.739	Alert
9,900.00	9,893.77	9,899.25	9,878.89	35.36	34.66	-24.94	157.21	-463.21	188.08	118.46	69.62	2.702	Alert
9,950.00	9,943.73	9,950.14	9,929.74	35.54	34.83	-25.70	155.61	-463.39	186.37	116.40	69.97	2.663	Alert
10,000.00	9,993.69	9,999.23	9,978.46	35.72	35.00	-27.80	149.70	-463.51	184.57	114.26	70.32	2.625	Alert
10,050.00	10,043.65	10,045.57	10,023.69	35.90	35.14	-31.16	139.77	-464.02	183.67	113.05	70.62	2.601	Alert
10,053.90	10,047.55	10,049.08	10,027.07	35.91	35.16	-31.48	138.82	-464.08	183.66	113.03	70.64	2.600	Alert, CC, ES, SF
10,100.00	10,093.61	10,091.22	10,067.02	36.08	35.28	-35.87	125.46	-464.81	184.48	113.63	70.84	2.604	Alert
10,150.00	10,143.57	10,135.52	10,107.59	36.26	35.41	-41.55	107.72	-465.16	187.43	116.50	70.93	2.643	Alert
10,200.00	10,193.53	10,175.66	10,142.63	36.44	35.51	-47.56	88.18	-464.83	193.55	122.91	70.64	2.740	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
10,250.00	10,243.49	10,211.34	10,172.28	36.62	35.60	-53.32	68.34	-464.19	204.00	134.18	69.82	2.922	Alert
10,300.00	10,293.45	10,242.99	10,197.20	36.81	35.66	-58.57	48.87	-463.38	219.29	150.85	68.44	3.204	Alert
10,350.00	10,343.41	10,272.03	10,218.88	36.99	35.72	-63.34	29.57	-462.48	239.35	172.64	66.71	3.588	Alert
10,400.00	10,393.37	10,298.76	10,237.93	37.17	35.77	-67.55	10.85	-461.57	263.61	198.76	64.85	4.065	Alert
10,450.00	10,443.33	10,321.46	10,253.35	37.35	35.80	-70.95	-5.79	-460.74	291.55	228.70	62.85	4.639	Alert
10,500.00	10,493.29	10,341.56	10,266.28	37.53	35.83	-73.82	-21.16	-459.97	322.71	261.80	60.91	5.298	
10,550.00	10,543.25	10,361.32	10,278.34	37.71	35.86	-76.92	-36.78	-459.16	356.51	297.25	59.26	6.016	
10,600.00	10,593.24	10,380.54	10,289.57	37.89	35.90	-80.08	-52.35	-458.22	392.39	334.52	57.87	6.781	
10,650.00	10,643.23	10,397.00	10,298.79	38.07	35.95	-82.83	-65.96	-457.31	429.96	373.40	56.56	7.601	
10,700.00	10,693.23	10,413.43	10,307.59	38.24	36.00	-146.90	-79.80	-456.30	468.94	413.44	55.49	8.450	
10,750.00	10,743.23	10,427.35	10,314.70	38.42	36.04	-148.32	-91.73	-455.38	509.10	454.62	54.48	9.345	
10,800.00	10,793.23	10,444.00	10,322.77	38.59	36.08	-149.92	-106.24	-454.19	550.30	496.51	53.79	10.230	
10,850.00	10,843.23	10,454.23	10,327.55	38.77	36.11	-150.86	-115.26	-453.43	592.28	539.35	52.92	11.191	
10,900.00	10,893.23	10,468.69	10,334.14	38.94	36.15	-152.13	-128.08	-452.34	634.91	582.51	52.40	12.117	
10,950.00	10,943.23	10,482.36	10,340.20	39.12	36.19	-153.26	-140.29	-451.29	678.08	626.13	51.94	13.054	
11,000.00	10,993.23	10,492.00	10,344.37	39.29	36.22	-154.02	-148.95	-450.54	721.74	670.33	51.41	14.038	
11,050.00	11,043.22	10,508.17	10,351.19	39.47	36.27	-64.15	-163.55	-449.26	765.67	714.45	51.21	14.950	
11,100.00	11,092.99	10,519.91	10,356.01	39.65	36.30	-57.46	-174.22	-448.31	809.19	758.32	50.87	15.908	
11,150.00	11,142.19	10,530.67	10,360.32	39.84	36.34	-48.76	-184.04	-447.43	852.05	801.53	50.52	16.866	
11,200.00	11,191.09	10,539.00	10,363.59	40.03	36.36	-31.33	-191.66	-446.73	893.81	843.73	50.08	17.849	
11,250.00	11,239.59	10,553.13	10,368.98	40.21	36.41	-19.10	-204.67	-445.55	934.13	884.35	49.78	18.767	
11,300.00	11,287.32	10,565.59	10,373.54	40.38	36.44	-11.57	-216.22	-444.53	972.82	923.43	49.39	19.698	
11,350.00	11,333.92	10,586.00	10,380.63	40.54	36.51	-7.40	-235.29	-442.88	1,009.72	960.54	49.18	20.529	
11,400.00	11,379.03	10,586.00	10,380.63	40.69	36.51	-4.29	-235.29	-442.88	1,044.56	996.14	48.43	21.570	
11,450.00	11,422.32	10,608.92	10,388.04	40.83	36.58	-2.89	-256.91	-441.17	1,077.15	1,028.91	48.24	22.330	
11,500.00	11,463.45	10,633.00	10,395.18	40.97	36.66	-2.00	-279.85	-439.64	1,107.53	1,059.48	48.05	23.050	
11,550.00	11,502.11	10,633.00	10,395.18	41.09	36.66	-1.04	-279.85	-439.64	1,135.40	1,088.06	47.34	23.986	
11,600.00	11,538.00	10,660.75	10,402.63	41.21	36.75	-0.75	-306.55	-438.15	1,160.55	1,113.34	47.20	24.585	
11,650.00	11,570.86	10,681.00	10,407.54	41.32	36.81	-0.46	-326.17	-437.20	1,183.07	1,136.15	46.92	25.213	
11,700.00	11,600.43	10,696.08	10,410.87	41.43	36.86	-0.21	-340.86	-436.60	1,202.83	1,156.26	46.57	25.830	
11,750.00	11,626.48	10,712.60	10,414.15	41.54	36.92	-0.03	-357.05	-436.09	1,219.82	1,173.56	46.26	26.367	
11,800.00	11,648.83	10,728.00	10,416.84	41.65	36.97	0.11	-372.20	-435.77	1,233.99	1,188.01	45.98	26.836	
11,850.00	11,667.29	10,752.09	10,420.51	41.76	37.05	0.19	-396.01	-435.47	1,245.16	1,199.32	45.84	27.162	
11,900.00	11,681.74	10,774.60	10,423.45	41.87	37.12	0.27	-418.32	-435.39	1,253.21	1,207.49	45.71	27.416	
11,950.00	11,692.05	10,801.00	10,426.29	41.98	37.21	0.35	-444.57	-435.54	1,258.11	1,212.46	45.65	27.562	
12,000.00	11,698.15	10,830.97	10,429.00	42.09	37.32	0.43	-474.41	-435.88	1,259.62	1,213.99	45.64	27.601	
12,050.00	11,700.00	10,866.81	10,431.88	42.21	37.45	0.53	-510.14	-436.36	1,257.47	1,211.78	45.69	27.524	
12,100.00	11,700.00	10,902.84	10,434.37	42.32	37.58	0.57	-546.08	-436.92	1,254.02	1,208.27	45.75	27.409	
12,150.00	11,700.00	10,939.72	10,436.53	42.45	37.73	0.60	-582.89	-437.41	1,251.10	1,205.25	45.85	27.286	
12,200.00	11,700.00	10,976.65	10,438.31	42.59	37.87	0.63	-619.78	-437.75	1,248.71	1,202.75	45.96	27.168	
12,250.00	11,700.00	11,013.71	10,439.70	42.74	38.03	0.65	-656.80	-437.93	1,246.83	1,200.73	46.10	27.044	
12,300.00	11,700.00	11,050.84	10,440.71	42.90	38.19	0.66	-693.92	-437.98	1,245.47	1,199.21	46.26	26.924	
12,350.00	11,700.00	11,090.05	10,441.38	43.08	38.37	0.67	-733.13	-437.87	1,244.62	1,198.18	46.44	26.799	
12,400.00	11,700.00	11,140.03	10,442.05	43.25	38.61	0.68	-783.10	-437.72	1,243.95	1,197.29	46.66	26.658	
12,450.00	11,700.00	11,186.83	10,442.67	43.45	38.84	0.69	-829.90	-437.66	1,243.30	1,196.41	46.89	26.515	
12,500.00	11,700.00	11,224.64	10,442.89	43.65	39.03	0.69	-867.71	-437.57	1,243.00	1,195.89	47.11	26.383	
12,505.19	11,700.00	11,228.57	10,442.89	43.67	39.05	0.69	-871.64	-437.56	1,243.00	1,195.86	47.14	26.369	
12,550.00	11,700.00	11,262.45	10,442.74	43.87	39.23	0.70	-905.52	-437.41	1,243.20	1,195.84	47.36	26.251	
12,600.00	11,700.00	11,310.97	10,442.24	44.09	39.50	0.70	-954.03	-437.15	1,243.71	1,196.09	47.62	26.117	
12,650.00	11,700.00	11,362.61	10,441.76	44.34	39.79	0.70	-1,005.67	-436.91	1,244.18	1,196.28	47.90	25.974	
12,700.00	11,700.00	11,418.60	10,441.41	44.58	40.13	0.71	-1,061.66	-436.67	1,244.50	1,196.30	48.19	25.823	
12,750.00	11,700.00	11,474.91	10,441.33	44.84	40.47	0.71	-1,117.96	-436.44	1,244.56	1,196.06	48.50	25.661	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
12,763.30	11,700.00	11,486.68	10,441.33	44.91	40.55	0.71	-1,129.74	-436.37	1,244.57	1,195.99	48.58	25.617	
12,800.00	11,700.00	11,523.42	10,441.33	45.10	40.79	0.71	-1,166.48	-436.10	1,244.57	1,195.76	48.81	25.498	
12,850.00	11,700.00	11,575.44	10,441.34	45.39	41.14	0.70	-1,218.49	-435.57	1,244.55	1,195.42	49.14	25.328	
12,900.00	11,700.00	11,630.81	10,441.55	45.67	41.52	0.69	-1,273.86	-434.96	1,244.36	1,194.89	49.47	25.151	
12,950.00	11,700.00	11,686.94	10,442.01	45.97	41.92	0.68	-1,329.99	-434.30	1,243.95	1,194.11	49.83	24.963	
13,000.00	11,700.00	11,743.44	10,442.77	46.28	42.33	0.66	-1,386.48	-433.48	1,243.27	1,193.08	50.19	24.770	
13,050.00	11,700.00	11,791.67	10,443.51	46.60	42.69	0.64	-1,434.70	-432.73	1,242.50	1,191.95	50.56	24.576	
13,100.00	11,700.00	11,840.38	10,444.19	46.92	43.07	0.62	-1,483.39	-431.99	1,241.80	1,190.88	50.92	24.386	
13,150.00	11,700.00	11,892.91	10,444.95	47.26	43.48	0.59	-1,535.91	-431.14	1,241.07	1,189.75	51.31	24.186	
13,200.00	11,700.00	11,944.98	10,445.82	47.60	43.90	0.56	-1,587.96	-430.21	1,240.23	1,188.53	51.71	23.986	
13,250.00	11,700.00	11,995.71	10,446.71	47.95	44.32	0.55	-1,638.68	-429.52	1,239.35	1,187.24	52.11	23.783	
13,300.00	11,700.00	12,041.22	10,447.51	48.31	44.70	0.55	-1,684.18	-429.19	1,238.48	1,185.97	52.51	23.587	
13,350.00	11,700.00	12,079.00	10,447.86	48.68	45.02	0.55	-1,721.96	-429.10	1,238.01	1,185.10	52.90	23.401	
13,372.74	11,700.00	12,096.19	10,447.90	48.85	45.17	0.56	-1,739.15	-429.12	1,237.95	1,184.87	53.09	23.319	
13,400.00	11,700.00	12,120.00	10,447.83	49.06	45.37	0.57	-1,762.96	-429.20	1,238.03	1,184.72	53.31	23.222	
13,450.00	11,700.00	12,168.04	10,447.58	49.44	45.79	0.59	-1,811.00	-429.43	1,238.30	1,184.55	53.75	23.039	
13,500.00	11,700.00	12,220.65	10,447.41	49.83	46.26	0.62	-1,863.61	-429.68	1,238.46	1,184.27	54.19	22.855	
13,550.00	11,700.00	12,274.10	10,447.37	50.24	46.74	0.64	-1,917.06	-429.81	1,238.51	1,183.86	54.64	22.665	
13,596.15	11,700.00	12,323.44	10,447.46	50.61	47.18	0.65	-1,966.40	-429.76	1,238.42	1,183.36	55.06	22.490	
13,600.00	11,700.00	12,322.17	10,447.43	50.64	47.18	0.65	-1,965.13	-429.76	1,238.45	1,183.35	55.09	22.479	
13,650.00	11,700.00	12,359.21	10,447.20	51.06	47.52	0.66	-2,002.17	-429.64	1,238.76	1,183.21	55.55	22.301	
13,700.00	11,700.00	12,396.24	10,446.58	51.48	47.87	0.66	-2,039.19	-429.46	1,239.60	1,183.59	56.01	22.133	
13,750.00	11,700.00	12,439.76	10,445.49	51.91	48.28	0.66	-2,082.69	-429.25	1,240.86	1,184.37	56.48	21.969	
13,800.00	11,700.00	12,485.27	10,444.17	52.34	48.72	0.67	-2,128.19	-429.20	1,242.31	1,185.34	56.96	21.810	
13,850.00	11,700.00	12,541.34	10,442.52	52.78	49.26	0.69	-2,184.23	-429.32	1,243.79	1,186.33	57.45	21.649	
13,900.00	11,700.00	12,601.99	10,441.22	53.23	49.86	0.72	-2,244.87	-429.49	1,244.87	1,186.92	57.95	21.482	
13,950.00	11,700.00	12,654.55	10,440.35	53.69	50.39	0.73	-2,297.42	-429.47	1,245.70	1,187.24	58.46	21.310	
14,000.00	11,700.00	12,707.10	10,439.61	54.14	50.92	0.73	-2,349.97	-429.18	1,246.40	1,187.43	58.97	21.138	
14,050.00	11,700.00	12,757.92	10,438.96	54.61	51.43	0.73	-2,400.78	-428.86	1,247.04	1,187.56	59.48	20.965	
14,100.00	11,700.00	12,820.05	10,438.37	55.08	52.08	0.74	-2,462.90	-428.53	1,247.54	1,187.53	60.01	20.787	
14,150.00	11,700.00	12,893.20	10,438.85	55.56	52.84	0.75	-2,536.06	-428.40	1,247.22	1,186.64	60.57	20.590	
14,200.00	11,700.00	12,939.67	10,439.41	56.04	53.33	0.77	-2,582.52	-428.39	1,246.60	1,185.50	61.10	20.402	
14,250.00	11,700.00	12,989.42	10,440.07	56.53	53.86	0.78	-2,632.27	-428.41	1,245.95	1,184.31	61.64	20.212	
14,300.00	11,700.00	13,037.14	10,440.64	57.02	54.37	0.79	-2,679.98	-428.40	1,245.36	1,183.18	62.18	20.028	
14,350.00	11,700.00	13,085.10	10,441.12	57.52	54.89	0.81	-2,727.94	-428.34	1,244.86	1,182.13	62.73	19.845	
14,400.00	11,700.00	13,133.51	10,441.54	58.02	55.42	0.82	-2,776.35	-428.36	1,244.43	1,181.15	63.28	19.665	
14,450.00	11,700.00	13,181.66	10,441.90	58.53	55.95	0.84	-2,824.49	-428.48	1,244.06	1,180.22	63.84	19.488	
14,500.00	11,700.00	13,229.39	10,442.17	59.04	56.48	0.86	-2,872.22	-428.61	1,243.78	1,179.39	64.40	19.314	
14,550.00	11,700.00	13,277.12	10,442.36	59.56	57.01	0.88	-2,919.96	-428.74	1,243.60	1,178.63	64.96	19.143	
14,600.00	11,700.00	13,324.87	10,442.45	60.08	57.54	0.90	-2,967.71	-428.79	1,243.50	1,177.97	65.53	18.975	
14,650.00	11,700.00	13,375.30	10,442.48	60.61	58.11	0.91	-3,018.14	-428.70	1,243.47	1,177.36	66.11	18.809	
14,700.00	11,700.00	13,429.93	10,442.66	61.14	58.73	0.90	-3,072.76	-428.11	1,243.31	1,176.62	66.70	18.642	
14,750.00	11,700.00	13,476.44	10,442.87	61.67	59.26	0.87	-3,119.26	-427.22	1,243.07	1,175.80	67.28	18.477	
14,768.89	11,700.00	13,492.50	10,442.89	61.88	59.45	0.86	-3,135.31	-426.92	1,243.05	1,175.56	67.49	18.417	
14,800.00	11,700.00	13,518.94	10,442.83	62.21	59.76	0.84	-3,161.75	-426.44	1,243.11	1,175.26	67.85	18.321	
14,850.00	11,700.00	13,569.33	10,442.55	62.75	60.34	0.82	-3,212.14	-425.55	1,243.38	1,174.93	68.45	18.166	
14,900.00	11,700.00	13,630.02	10,442.60	63.30	61.05	0.78	-3,272.82	-424.43	1,243.34	1,174.28	69.05	18.006	
14,950.00	11,700.00	13,681.47	10,442.91	63.85	61.66	0.75	-3,324.26	-423.38	1,243.03	1,173.37	69.65	17.846	
15,000.00	11,700.00	13,731.52	10,443.21	64.40	62.25	0.71	-3,374.29	-422.19	1,242.71	1,172.45	70.25	17.689	
15,050.00	11,700.00	13,783.11	10,443.56	64.96	62.87	0.67	-3,425.87	-420.88	1,242.36	1,171.50	70.86	17.532	
15,100.00	11,700.00	13,834.76	10,443.98	65.51	63.48	0.62	-3,477.49	-419.63	1,241.95	1,170.47	71.47	17.376	
15,141.02	11,700.00	13,864.67	10,444.07	65.98	63.85	0.60	-3,507.40	-418.94	1,241.80	1,169.84	71.96	17.256	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	11,700.00	13,871.64	10,444.06	66.08	63.93	0.59	-3,514.37	-418.78	1,241.81	1,169.73	72.07	17.230	
15,200.00	11,700.00	13,910.46	10,443.82	66.64	64.40	0.57	-3,553.17	-417.96	1,242.11	1,169.44	72.68	17.091	
15,250.00	11,700.00	13,956.00	10,443.21	67.21	64.95	0.54	-3,598.70	-417.09	1,242.78	1,169.48	73.29	16.957	
15,300.00	11,700.00	14,004.39	10,442.48	67.78	65.54	0.52	-3,647.08	-416.32	1,243.52	1,169.61	73.91	16.825	
15,350.00	11,700.00	14,054.95	10,441.74	68.36	66.27	0.50	-3,707.63	-415.53	1,244.14	1,169.59	74.55	16.689	
15,400.00	11,700.00	14,129.37	10,441.66	68.94	67.06	0.48	-3,772.04	-414.77	1,244.20	1,169.01	75.19	16.547	
15,450.00	11,700.00	14,180.91	10,441.85	69.52	67.69	0.47	-3,823.58	-414.18	1,244.02	1,168.19	75.83	16.406	
15,500.00	11,700.00	14,233.30	10,442.22	70.10	68.34	0.46	-3,875.97	-413.58	1,243.66	1,167.20	76.46	16.265	
15,550.00	11,700.00	14,284.11	10,442.63	70.69	68.97	0.45	-3,926.77	-413.03	1,243.26	1,166.15	77.10	16.125	
15,600.00	11,700.00	14,335.51	10,443.08	71.28	69.60	0.44	-3,978.17	-412.48	1,242.81	1,165.07	77.74	15.986	
15,650.00	11,700.00	14,387.18	10,443.60	71.87	70.25	0.43	-4,029.83	-411.93	1,242.30	1,163.92	78.39	15.848	
15,700.00	11,700.00	14,428.53	10,443.94	72.46	70.76	0.42	-4,071.18	-411.54	1,241.91	1,162.88	79.02	15.715	
15,723.70	11,700.00	14,447.40	10,443.97	72.75	71.00	0.42	-4,090.04	-411.42	1,241.86	1,162.53	79.33	15.655	
15,750.00	11,700.00	14,468.33	10,443.93	73.06	71.26	0.42	-4,110.97	-411.34	1,241.92	1,162.26	79.66	15.590	
15,800.00	11,700.00	14,510.26	10,443.59	73.66	71.79	0.43	-4,152.91	-411.30	1,242.32	1,162.02	80.30	15.470	
15,850.00	11,700.00	14,554.52	10,443.01	74.26	72.34	0.45	-4,197.16	-411.37	1,242.98	1,162.02	80.95	15.355	
15,900.00	11,700.00	14,601.10	10,442.20	74.86	72.93	0.47	-4,243.74	-411.54	1,243.85	1,162.24	81.60	15.243	
15,950.00	11,700.00	14,651.91	10,441.30	75.47	73.57	0.49	-4,294.54	-411.71	1,244.74	1,162.48	82.26	15.132	
16,000.00	11,700.00	14,705.54	10,440.41	76.08	74.25	0.51	-4,348.16	-411.75	1,245.57	1,162.65	82.92	15.021	
16,050.00	11,700.00	14,762.14	10,439.73	76.69	74.97	0.49	-4,404.75	-410.93	1,246.17	1,162.58	83.59	14.908	
16,100.00	11,700.00	14,831.42	10,439.57	77.30	75.86	0.42	-4,474.00	-408.99	1,246.29	1,162.02	84.27	14.789	
16,150.00	11,700.00	14,887.13	10,440.19	77.92	76.58	0.35	-4,529.68	-407.12	1,245.71	1,160.77	84.94	14.665	
16,200.00	11,700.00	14,926.96	10,440.44	78.53	77.10	0.28	-4,569.47	-405.40	1,245.38	1,159.78	85.60	14.549	
16,215.42	11,700.00	14,939.24	10,440.46	78.72	77.26	0.26	-4,581.73	-404.79	1,245.36	1,159.55	85.80	14.514	
16,250.00	11,700.00	14,968.17	10,440.37	79.15	77.64	0.19	-4,610.62	-403.21	1,245.45	1,159.19	86.26	14.438	
16,300.00	11,700.00	15,019.78	10,440.16	79.77	78.31	0.07	-4,662.14	-400.21	1,245.65	1,158.72	86.93	14.329	
16,350.00	11,700.00	15,076.01	10,440.04	80.39	79.05	-0.07	-4,718.27	-396.79	1,245.76	1,158.15	87.61	14.219	
16,400.00	11,700.00	15,143.14	10,440.62	81.02	79.94	-0.24	-4,785.27	-392.71	1,245.34	1,157.03	88.30	14.103	
16,450.00	11,700.00	15,191.19	10,441.37	81.64	80.58	-0.36	-4,833.23	-389.86	1,244.57	1,155.59	88.98	13.987	
16,500.00	11,700.00	15,236.71	10,441.93	82.27	81.18	-0.47	-4,878.67	-387.22	1,243.98	1,154.32	89.66	13.874	
16,550.00	11,700.00	15,285.20	10,442.39	82.90	81.83	-0.58	-4,927.08	-384.46	1,243.52	1,153.17	90.34	13.764	
16,600.00	11,700.00	15,334.35	10,442.83	83.53	82.48	-0.69	-4,976.15	-381.68	1,243.10	1,152.07	91.03	13.656	
16,650.00	11,700.00	15,379.75	10,443.15	84.16	83.09	-0.80	-5,021.48	-379.17	1,242.78	1,151.07	91.71	13.550	
16,700.00	11,700.00	15,424.68	10,443.28	84.79	83.69	-0.89	-5,066.34	-376.82	1,242.67	1,150.27	92.40	13.449	
16,750.00	11,700.00	15,476.25	10,443.33	85.43	84.38	-1.00	-5,117.85	-374.20	1,242.66	1,149.56	93.10	13.348	
16,800.00	11,700.00	15,529.56	10,443.52	86.06	85.09	-1.11	-5,171.09	-371.38	1,242.52	1,148.73	93.80	13.247	
16,850.00	11,700.00	15,583.79	10,443.88	86.70	85.82	-1.24	-5,225.22	-368.36	1,242.24	1,147.74	94.50	13.145	
16,900.00	11,700.00	15,632.55	10,444.35	87.34	86.48	-1.35	-5,273.91	-365.48	1,241.82	1,146.62	95.20	13.044	
16,925.25	11,700.00	15,650.01	10,444.43	87.67	86.71	-1.40	-5,291.33	-364.45	1,241.74	1,146.19	95.55	12.996	
16,950.00	11,700.00	15,667.11	10,444.40	87.98	86.95	-1.44	-5,308.40	-363.46	1,241.82	1,145.93	95.89	12.951	
17,000.00	11,700.00	15,701.67	10,444.01	88.62	87.41	-1.52	-5,342.90	-361.52	1,242.44	1,145.87	96.57	12.866	
17,050.00	11,700.00	15,756.20	10,442.98	89.27	88.15	-1.64	-5,397.35	-358.59	1,243.47	1,146.18	97.28	12.782	
17,100.00	11,700.00	15,828.67	10,442.64	89.91	89.13	-1.79	-5,469.72	-354.76	1,243.77	1,145.75	98.02	12.688	
17,150.00	11,700.00	15,887.89	10,443.06	90.56	89.93	-1.92	-5,528.84	-351.51	1,243.50	1,144.75	98.75	12.593	
17,200.00	11,700.00	15,932.96	10,443.61	91.21	90.55	-2.03	-5,573.83	-348.95	1,242.99	1,143.53	99.46	12.497	
17,234.50	11,700.00	15,959.64	10,443.74	91.65	90.91	-2.09	-5,600.47	-347.42	1,242.88	1,142.94	99.95	12.435	
17,250.00	11,700.00	15,971.63	10,443.75	91.86	91.07	-2.12	-5,612.44	-346.72	1,242.91	1,142.74	100.17	12.409	
17,300.00	11,700.00	16,015.09	10,443.53	92.50	91.67	-2.22	-5,655.82	-344.19	1,243.25	1,142.37	100.88	12.324	
17,350.00	11,700.00	16,070.14	10,443.31	93.16	92.42	-2.36	-5,710.78	-340.85	1,243.56	1,141.95	101.61	12.239	
17,400.00	11,700.00	16,127.24	10,443.36	93.81	93.20	-2.52	-5,767.76	-337.15	1,243.64	1,141.29	102.35	12.151	
17,450.00	11,700.00	16,185.84	10,443.83	94.46	94.01	-2.70	-5,826.18	-332.72	1,243.40	1,140.30	103.10	12.060	
17,493.95	11,700.00	16,219.58	10,444.11	95.04	94.48	-2.82	-5,859.82	-330.00	1,243.19	1,139.46	103.74	11.984	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
17,500.00	11,700.00	16,224.07	10,444.12	95.12	94.54	-2.83	-5,864.29	-329.65	1,243.20	1,139.37	103.83	11.974	
17,550.00	11,700.00	16,261.17	10,444.01	95.77	95.05	-2.95	-5,901.28	-326.83	1,243.52	1,138.98	104.55	11.894	
17,600.00	11,700.00	16,304.53	10,443.46	96.43	95.65	-3.08	-5,944.53	-323.69	1,244.32	1,139.04	105.28	11.820	
17,650.00	11,700.00	16,357.89	10,442.81	97.09	96.39	-3.24	-5,997.74	-319.88	1,245.11	1,139.08	106.03	11.743	
17,700.00	11,700.00	16,413.66	10,442.32	97.74	97.16	-3.41	-6,053.37	-315.92	1,245.74	1,138.95	106.79	11.665	
17,750.00	11,700.00	16,470.90	10,442.14	98.40	97.96	-3.58	-6,110.46	-311.86	1,246.10	1,138.53	107.56	11.585	
17,800.00	11,700.00	16,523.38	10,442.19	99.06	98.69	-3.73	-6,162.81	-308.11	1,246.26	1,137.93	108.33	11.505	
17,850.00	11,700.00	16,575.83	10,442.34	99.73	99.42	-3.89	-6,215.12	-304.30	1,246.33	1,137.24	109.09	11.424	
17,900.00	11,700.00	16,629.16	10,442.64	100.39	100.16	-4.06	-6,268.31	-300.42	1,246.29	1,136.42	109.87	11.344	
17,950.00	11,700.00	16,683.51	10,443.09	101.05	100.92	-4.22	-6,322.52	-296.48	1,246.11	1,135.47	110.64	11.262	
18,000.00	11,700.00	16,739.61	10,443.81	101.71	101.70	-4.40	-6,378.47	-292.39	1,245.72	1,134.29	111.43	11.179	
18,050.00	11,700.00	16,789.18	10,444.62	102.38	102.40	-4.56	-6,427.89	-288.70	1,245.17	1,132.96	112.21	11.097	
18,100.00	11,700.00	16,835.54	10,445.29	103.05	103.05	-4.71	-6,474.09	-285.00	1,244.75	1,131.76	112.99	11.016	
18,150.00	11,700.00	16,883.27	10,445.86	103.71	103.72	-4.89	-6,521.65	-281.01	1,244.47	1,130.69	113.78	10.937	
18,200.00	11,700.00	16,931.86	10,446.39	104.38	104.40	-5.06	-6,570.08	-277.05	1,244.26	1,129.68	114.58	10.860	
18,238.14	11,700.00	16,965.56	10,446.69	104.89	104.88	-5.17	-6,603.67	-274.37	1,244.17	1,128.99	115.18	10.802	
18,250.00	11,700.00	16,975.23	10,446.75	105.05	105.01	-5.20	-6,613.31	-273.61	1,244.18	1,128.82	115.36	10.785	
18,300.00	11,700.00	17,016.00	10,446.79	105.72	105.59	-5.34	-6,653.96	-270.41	1,244.45	1,128.32	116.14	10.715	
18,350.00	11,700.00	17,063.60	10,446.54	106.39	106.26	-5.49	-6,701.41	-266.66	1,245.06	1,128.12	116.93	10.647	
18,400.00	11,700.00	17,123.12	10,446.58	107.06	107.10	-5.72	-6,760.69	-261.35	1,245.43	1,127.65	117.78	10.574	
18,450.00	11,700.00	17,170.79	10,446.85	107.73	107.78	-5.92	-6,808.13	-256.71	1,245.62	1,127.01	118.61	10.502	
18,500.00	11,700.00	17,214.93	10,446.87	108.40	108.41	-6.09	-6,852.09	-252.68	1,246.03	1,126.61	119.43	10.434	
18,550.00	11,700.00	17,259.01	10,446.68	109.08	109.03	-6.25	-6,896.00	-248.86	1,246.69	1,126.45	120.24	10.369	
18,600.00	11,700.00	17,303.04	10,446.28	109.75	109.66	-6.41	-6,939.86	-245.01	1,247.59	1,126.54	121.05	10.307	
18,650.00	11,700.00	17,351.30	10,445.66	110.42	110.34	-6.59	-6,987.94	-240.84	1,248.69	1,126.81	121.88	10.245	
18,700.00	11,700.00	17,403.51	10,444.95	111.10	111.08	-6.74	-7,040.01	-237.04	1,249.74	1,127.03	122.71	10.184	
18,750.00	11,700.00	17,461.15	10,444.30	111.78	111.89	-6.88	-7,097.53	-233.56	1,250.63	1,127.09	123.55	10.123	
18,800.00	11,700.00	17,520.94	10,444.06	112.45	112.73	-7.02	-7,157.22	-230.07	1,251.15	1,126.76	124.39	10.058	
18,850.00	11,700.00	17,581.47	10,444.22	113.13	113.58	-7.13	-7,217.69	-227.25	1,251.26	1,126.05	125.21	9.993	
18,900.00	11,700.00	17,637.01	10,444.67	113.81	114.36	-7.20	-7,273.19	-225.53	1,251.01	1,125.01	126.00	9.928	
18,950.00	11,700.00	17,688.87	10,445.15	114.49	115.08	-7.24	-7,325.04	-224.34	1,250.66	1,123.88	126.78	9.865	
19,000.00	11,700.00	17,746.67	10,445.84	115.16	115.88	-7.27	-7,382.83	-223.33	1,250.14	1,122.59	127.55	9.801	
19,050.00	11,700.00	17,806.48	10,446.99	115.84	116.71	-7.30	-7,442.61	-222.43	1,249.24	1,120.93	128.31	9.736	
19,100.00	11,700.00	17,852.81	10,447.95	116.52	117.36	-7.32	-7,488.93	-221.84	1,248.26	1,119.18	129.08	9.671	
19,150.00	11,700.00	17,899.27	10,448.83	117.21	118.00	-7.34	-7,535.39	-221.33	1,247.35	1,117.51	129.84	9.607	
19,200.00	11,700.00	17,937.84	10,449.28	117.89	118.54	-7.34	-7,573.95	-221.07	1,246.77	1,116.18	130.59	9.547	
19,238.19	11,700.00	17,967.30	10,449.37	118.41	118.94	-7.34	-7,603.41	-221.00	1,246.64	1,115.49	131.15	9.505	
19,250.00	11,700.00	17,976.41	10,449.35	118.57	119.07	-7.33	-7,612.52	-221.01	1,246.65	1,115.33	131.32	9.493	
19,300.00	11,700.00	18,033.33	10,449.23	119.25	119.86	-7.32	-7,669.44	-220.96	1,246.73	1,114.66	132.07	9.440	
19,350.00	11,700.00	18,098.13	10,449.89	119.93	120.76	-7.34	-7,734.23	-220.22	1,246.27	1,113.42	132.84	9.382	
19,400.00	11,700.00	18,153.16	10,450.92	120.62	121.53	-7.39	-7,789.23	-218.88	1,245.45	1,111.82	133.63	9.320	
19,450.00	11,700.00	18,197.66	10,451.97	121.30	122.16	-7.46	-7,833.69	-217.28	1,244.49	1,110.06	134.43	9.258	
19,500.00	11,700.00	18,233.18	10,452.49	121.99	122.66	-7.53	-7,869.17	-215.55	1,244.04	1,108.81	135.23	9.200	
19,513.68	11,700.00	18,242.89	10,452.57	122.17	122.80	-7.55	-7,878.86	-215.00	1,244.02	1,108.57	135.45	9.185	
19,550.00	11,700.00	18,271.00	10,452.65	122.67	123.20	-7.62	-7,906.92	-213.25	1,244.18	1,108.14	136.04	9.146	
19,600.00	11,700.00	18,324.59	10,452.73	123.36	123.96	-7.77	-7,960.39	-209.69	1,244.51	1,107.60	136.91	9.090	
19,650.00	11,700.00	18,381.96	10,453.14	124.04	124.78	-7.93	-8,017.63	-205.93	1,244.55	1,106.77	137.79	9.032	
19,651.72	11,700.00	18,383.93	10,453.17	124.07	124.81	-7.93	-8,019.59	-205.81	1,244.55	1,106.73	137.82	9.030	
19,700.00	11,700.00	18,411.58	10,453.05	124.73	125.21	-8.01	-8,047.19	-203.98	1,245.02	1,106.44	138.58	8.984	
19,750.00	11,700.00	18,447.24	10,452.63	125.42	125.72	-8.10	-8,082.77	-201.61	1,246.03	1,106.65	139.38	8.940	
19,800.00	11,700.00	18,484.88	10,451.76	126.11	126.25	-8.20	-8,120.31	-199.12	1,247.59	1,107.41	140.17	8.900	
19,850.00	11,700.00	18,523.76	10,450.50	126.79	126.81	-8.29	-8,159.09	-196.66	1,249.61	1,108.64	140.96	8.865	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
19,900.00	11,700.00	18,563.05	10,448.86	127.48	127.37	-8.38	-8,198.28	-194.31	1,252.07	1,110.32	141.74	8.833	
19,950.00	11,700.00	18,604.81	10,446.78	128.17	127.97	-8.46	-8,239.92	-191.93	1,254.90	1,112.37	142.53	8.804	
20,000.00	11,700.00	18,646.55	10,444.42	128.86	128.56	-8.53	-8,281.54	-189.68	1,258.05	1,114.75	143.31	8.779	
20,050.00	11,700.00	18,691.45	10,441.61	129.55	129.20	-8.60	-8,326.28	-187.40	1,261.48	1,117.38	144.10	8.754	
20,100.00	11,700.00	18,736.81	10,438.58	130.24	129.85	-8.67	-8,371.49	-185.26	1,265.09	1,120.20	144.88	8.732	
20,150.00	11,700.00	18,798.81	10,434.49	130.93	130.73	-8.73	-8,433.32	-182.86	1,268.61	1,122.84	145.77	8.703	
20,200.00	11,700.00	18,859.96	10,430.99	131.62	131.59	-8.75	-8,494.34	-181.52	1,271.54	1,124.93	146.61	8.673	
20,250.00	11,700.00	18,912.02	10,428.13	132.31	132.32	-8.73	-8,546.33	-181.05	1,274.28	1,126.91	147.37	8.647	
20,300.00	11,700.00	18,976.93	10,424.79	133.01	133.22	-8.69	-8,611.15	-181.08	1,276.80	1,128.63	148.17	8.617	
20,350.00	11,700.00	19,050.52	10,422.32	133.70	134.25	-8.66	-8,684.70	-181.02	1,278.40	1,129.42	148.99	8.581	
20,400.00	11,700.00	19,115.88	10,421.09	134.39	135.16	-8.63	-8,750.04	-180.99	1,279.29	1,129.52	149.77	8.542	
20,450.00	11,700.00	19,176.84	10,420.62	135.09	136.02	-8.62	-8,811.00	-180.84	1,279.64	1,129.10	150.54	8.500	
20,500.00	11,700.00	19,236.99	10,420.71	135.78	136.86	-8.63	-8,871.15	-180.16	1,279.60	1,128.27	151.33	8.456	
20,501.86	11,700.00	19,239.23	10,420.73	135.80	136.89	-8.63	-8,873.39	-180.12	1,279.59	1,128.23	151.36	8.454	
20,550.00	11,700.00	19,266.16	10,420.50	136.47	137.27	-8.65	-8,900.31	-179.60	1,279.94	1,127.85	152.09	8.416	
20,600.00	11,700.00	19,302.13	10,419.98	137.17	137.78	-8.67	-8,936.27	-178.70	1,280.78	1,127.94	152.85	8.380	
20,650.00	11,700.00	19,341.39	10,419.05	137.86	138.34	-8.71	-8,975.49	-177.49	1,282.14	1,128.52	153.61	8.346	
20,700.00	11,700.00	19,382.70	10,417.80	138.56	138.93	-8.75	-9,016.76	-176.09	1,283.85	1,129.46	154.39	8.316	
20,750.00	11,700.00	19,429.43	10,416.12	139.25	139.59	-8.81	-9,063.43	-174.33	1,285.86	1,130.66	155.20	8.285	
20,800.00	11,700.00	19,487.99	10,414.33	139.95	140.43	-8.90	-9,121.89	-171.47	1,287.70	1,131.61	156.09	8.250	
20,850.00	11,700.00	19,531.37	10,413.21	140.64	141.06	-9.00	-9,165.18	-168.83	1,289.41	1,132.48	156.93	8.216	
20,900.00	11,700.00	19,567.98	10,411.95	141.34	141.59	-9.09	-9,201.68	-166.37	1,291.60	1,133.87	157.73	8.189	
20,950.00	11,700.00	19,605.17	10,410.31	142.04	142.12	-9.19	-9,238.74	-163.67	1,294.30	1,135.78	158.52	8.165	
21,000.00	11,700.00	19,646.81	10,408.20	142.73	142.73	-9.31	-9,280.18	-160.32	1,297.40	1,138.04	159.36	8.141	
21,050.00	11,700.00	19,688.36	10,405.90	143.43	143.33	-9.44	-9,321.50	-156.58	1,300.83	1,140.61	160.21	8.119	
21,100.00	11,700.00	19,734.73	10,403.13	144.13	144.01	-9.60	-9,367.59	-152.24	1,304.50	1,143.38	161.12	8.096	
21,150.00	11,700.00	19,782.07	10,400.17	144.83	144.70	-9.74	-9,414.66	-148.11	1,308.28	1,146.25	162.03	8.074	
21,200.00	11,700.00	19,827.92	10,397.15	145.52	145.37	-9.87	-9,460.25	-144.33	1,312.18	1,149.27	162.91	8.055	
21,250.00	11,700.00	19,873.41	10,394.00	146.22	146.03	-9.99	-9,505.48	-140.63	1,316.24	1,152.46	163.79	8.036	
21,300.00	11,700.00	19,931.84	10,389.96	146.92	146.88	-10.15	-9,563.59	-136.00	1,320.30	1,155.50	164.80	8.012	
21,350.00	11,700.00	19,995.32	10,386.15	147.62	147.80	-10.31	-9,626.77	-131.17	1,323.88	1,158.02	165.86	7.982	
21,400.00	11,700.00	20,048.55	10,383.23	148.32	148.57	-10.43	-9,679.77	-127.30	1,327.18	1,160.37	166.81	7.956	
21,450.00	11,700.00	20,106.28	10,380.31	149.02	149.41	-10.57	-9,737.29	-123.26	1,330.26	1,162.46	167.80	7.928	
21,500.00	11,700.00	20,166.31	10,377.70	149.72	150.28	-10.71	-9,797.12	-119.10	1,332.98	1,164.17	168.81	7.896	
21,550.00	11,700.00	20,225.79	10,375.56	150.42	151.15	-10.84	-9,856.42	-115.04	1,335.33	1,165.52	169.82	7.863	
21,600.00	11,700.00	20,282.58	10,373.87	151.12	151.97	-10.97	-9,913.06	-111.30	1,337.35	1,166.56	170.79	7.830	
21,650.00	11,700.00	20,334.22	10,372.42	151.82	152.72	-11.08	-9,964.59	-108.20	1,339.25	1,167.53	171.72	7.799	
21,700.00	11,700.00	20,385.81	10,370.98	152.52	153.46	-11.17	-10,016.08	-105.39	1,341.08	1,168.45	172.63	7.768	
21,750.00	11,700.00	20,436.42	10,369.62	153.22	154.19	-11.26	-10,066.60	-102.67	1,342.87	1,169.33	173.54	7.738	
21,800.00	11,700.00	20,486.35	10,368.28	153.93	154.91	-11.35	-10,116.44	-99.98	1,344.66	1,170.21	174.45	7.708	
21,850.00	11,700.00	20,480.00	10,368.45	154.63	154.82	-11.34	-10,110.10	-100.32	1,347.62	1,172.76	174.86	7.707	
21,900.00	11,700.00	20,480.00	10,368.45	155.33	154.82	-11.34	-10,110.10	-100.32	1,352.42	1,177.28	175.14	7.722	
21,950.00	11,700.00	20,480.00	10,368.45	156.03	154.82	-11.34	-10,110.10	-100.32	1,359.03	1,183.80	175.24	7.755	
21,964.16	11,700.00	20,480.00	10,368.45	156.23	154.82	-11.34	-10,110.10	-100.32	1,361.23	1,186.00	175.23	7.768	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	0.20	0.20	0.50	0.50	89.66	0.18	29.99	29.99				
50.00	50.00	50.20	50.20	0.50	0.50	89.66	0.18	29.99	29.99	28.98	1.01	29.796	
100.00	100.00	100.20	100.20	0.52	0.52	89.66	0.18	29.99	29.99	28.95	1.04	28.957	
150.00	150.00	150.20	150.20	0.59	0.59	89.66	0.18	29.99	29.99	28.81	1.18	25.397	
200.00	200.00	200.20	200.20	0.70	0.70	89.66	0.18	29.99	29.99	28.59	1.40	21.350	
250.00	250.00	250.20	250.20	0.84	0.84	89.66	0.18	29.99	29.99	28.31	1.68	17.894	
300.00	300.00	300.20	300.20	0.99	0.99	89.66	0.18	29.99	29.99	28.02	1.98	15.183	
350.00	350.00	350.20	350.20	1.15	1.15	89.66	0.18	29.99	29.99	27.70	2.29	13.087	
400.00	400.00	400.20	400.20	1.31	1.31	89.66	0.18	29.99	29.99	27.37	2.62	11.452	
450.00	450.00	450.20	450.20	1.48	1.48	89.66	0.18	29.99	29.99	27.04	2.95	10.155	
500.00	500.00	500.20	500.20	1.65	1.65	89.66	0.18	29.99	29.99	26.70	3.29	9.108	
550.00	550.00	550.20	550.20	1.82	1.82	89.66	0.18	29.99	29.99	26.35	3.64	8.248	
600.00	600.00	600.20	600.20	1.99	1.99	89.66	0.18	29.99	29.99	26.01	3.98	7.532	
650.00	650.00	650.20	650.20	2.16	2.17	89.66	0.18	29.99	29.99	25.66	4.33	6.927	
700.00	700.00	700.20	700.20	2.34	2.34	89.66	0.18	29.99	29.99	25.31	4.68	6.409	
750.00	750.00	750.20	750.20	2.51	2.52	89.66	0.18	29.99	29.99	24.96	5.03	5.962	
800.00	800.00	800.20	800.20	2.69	2.69	89.66	0.18	29.99	29.99	24.61	5.38	5.573	
850.00	850.00	850.20	850.20	2.87	2.87	89.66	0.18	29.99	29.99	24.26	5.73	5.230	
900.00	900.00	900.20	900.20	3.04	3.04	89.66	0.18	29.99	29.99	23.90	6.09	4.926	Alert
950.00	950.00	950.20	950.20	3.22	3.22	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	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	89.66	0.18	29.99	29.99	16.06	13.93	2.153	Minor Risk, CC
2,050.00	2,050.00	2,050.20	2,050.20	7.14	7.14	151.78	0.18	29.99	30.18	15.90	14.28	2.113	Minor Risk, ES
2,100.00	2,099.99	2,100.19	2,100.19	7.32	7.32	152.35	0.18	29.99	30.76	16.12	14.64	2.101	Minor Risk, SF
2,150.00	2,149.98	2,150.18	2,150.18	7.49	7.50	153.26	0.18	29.99	31.73	16.74	14.99	2.117	Minor Risk
2,200.00	2,199.96	2,200.16	2,200.16	7.67	7.68	154.45	0.18	29.99	33.10	17.76	15.34	2.157	Minor Risk
2,250.00	2,249.92	2,250.12	2,250.12	7.84	7.86	155.81	0.18	29.99	34.85	19.15	15.70	2.220	Minor Risk
2,300.00	2,299.88	2,300.08	2,300.08	8.02	8.04	157.09	0.18	29.99	36.69	20.64	16.05	2.286	Minor Risk
2,350.00	2,349.84	2,350.04	2,350.04	8.19	8.22	158.25	0.18	29.99	38.54	22.14	16.40	2.350	Minor Risk
2,400.00	2,399.80	2,400.00	2,400.00	8.37	8.39	159.30	0.18	29.99	40.41	23.65	16.76	2.412	Minor Risk
2,450.00	2,449.76	2,449.96	2,449.96	8.54	8.57	160.26	0.18	29.99	42.29	25.18	17.11	2.472	Minor Risk
2,500.00	2,499.72	2,500.08	2,499.92	8.72	8.75	161.14	0.18	29.99	44.19	26.72	17.47	2.530	Alert
2,550.00	2,549.68	2,549.88	2,549.88	8.90	8.93	161.95	0.18	29.99	46.09	28.27	17.82	2.586	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	2,599.64	2,600.16	2,599.84	9.07	9.11	162.69	0.18	29.99	48.00	29.82	18.18	2.641	Alert
2,650.00	2,649.60	2,649.80	2,649.80	9.25	9.29	163.37	0.18	29.99	49.92	31.39	18.53	2.694	Alert
2,700.00	2,699.56	2,700.24	2,699.76	9.43	9.47	164.01	0.18	29.99	51.84	32.95	18.89	2.745	Alert
2,750.00	2,749.52	2,749.72	2,749.72	9.61	9.65	164.60	0.18	29.99	53.77	34.53	19.24	2.795	Alert
2,800.00	2,799.48	2,800.32	2,799.68	9.78	9.83	165.14	0.18	29.99	55.71	36.11	19.60	2.842	Alert
2,850.00	2,849.44	2,849.64	2,849.64	9.96	10.00	165.65	0.18	29.99	57.65	37.69	19.95	2.889	Alert
2,900.00	2,899.40	2,900.40	2,899.60	10.14	10.19	166.13	0.18	29.99	59.59	39.28	20.31	2.934	Alert
2,950.00	2,949.36	2,949.56	2,949.56	10.32	10.36	166.58	0.18	29.99	61.54	40.88	20.66	2.978	Alert
3,000.00	2,999.32	3,000.48	2,999.52	10.49	10.54	167.00	0.18	29.99	63.49	42.47	21.02	3.020	Alert
3,050.00	3,049.28	3,049.48	3,049.48	10.67	10.72	167.39	0.18	29.99	65.44	44.07	21.37	3.062	Alert
3,100.00	3,099.24	3,100.56	3,099.44	10.85	10.90	167.77	0.18	29.99	67.40	45.67	21.73	3.101	Alert
3,150.00	3,149.20	3,149.40	3,149.40	11.03	11.08	168.12	0.18	29.99	69.36	47.28	22.08	3.141	Alert
3,200.00	3,199.16	3,200.64	3,199.36	11.21	11.26	168.45	0.18	29.99	71.33	48.88	22.45	3.178	Alert
3,250.00	3,249.12	3,249.32	3,249.32	11.38	11.43	168.76	0.18	29.99	73.29	50.49	22.80	3.215	Alert
3,300.00	3,299.08	3,300.72	3,299.28	11.56	11.62	169.06	0.18	29.99	75.26	52.10	23.16	3.250	Alert
3,350.00	3,349.04	3,349.24	3,349.24	11.74	11.79	169.34	0.18	29.99	77.23	53.72	23.51	3.285	Alert
3,400.00	3,399.00	3,400.80	3,399.20	11.92	11.98	169.61	0.18	29.99	79.20	55.33	23.87	3.318	Alert
3,450.00	3,448.96	3,449.16	3,449.16	12.10	12.15	169.87	0.18	29.99	81.17	56.95	24.22	3.351	Alert
3,500.00	3,498.92	3,500.88	3,499.12	12.28	12.34	170.11	0.18	29.99	83.14	58.56	24.58	3.382	Alert
3,550.00	3,548.88	3,549.08	3,549.08	12.46	12.51	170.34	0.18	29.99	85.12	60.19	24.94	3.414	Alert
3,600.00	3,598.84	3,600.96	3,599.04	12.63	12.69	170.56	0.18	29.99	87.10	61.80	25.30	3.443	Alert
3,650.00	3,648.80	3,649.00	3,649.00	12.81	12.87	170.77	0.18	29.99	89.08	63.43	25.65	3.473	Alert
3,700.00	3,698.76	3,701.04	3,698.96	12.99	13.05	170.98	0.18	29.99	91.05	65.04	26.01	3.500	Alert
3,750.00	3,748.72	3,748.92	3,748.92	13.17	13.22	171.17	0.18	29.99	93.04	66.67	26.36	3.529	Alert
3,800.00	3,798.68	3,801.12	3,798.88	13.35	13.41	171.35	0.18	29.99	95.02	68.29	26.73	3.555	Alert
3,850.00	3,848.64	3,848.84	3,848.84	13.53	13.58	171.53	0.18	29.99	97.00	69.92	27.08	3.583	Alert
3,900.00	3,898.60	3,901.20	3,898.80	13.71	13.77	171.70	0.18	29.99	98.98	71.54	27.44	3.607	Alert
3,950.00	3,948.56	3,948.76	3,948.76	13.89	13.94	171.87	0.18	29.99	100.97	73.18	27.79	3.633	Alert
4,000.00	3,998.52	3,998.72	3,998.72	14.07	14.12	172.03	0.18	29.99	102.95	74.80	28.15	3.658	Alert
4,050.00	4,048.47	4,049.65	4,049.65	14.25	14.30	172.10	0.39	29.82	104.71	76.20	28.51	3.673	Alert
4,100.00	4,098.43	4,100.64	4,100.63	14.43	14.48	172.02	1.04	29.30	105.99	77.13	28.87	3.672	Alert
4,150.00	4,148.39	4,151.10	4,151.07	14.61	14.66	171.81	2.06	28.48	106.87	77.65	29.22	3.657	Alert
4,200.00	4,198.35	4,201.09	4,201.04	14.79	14.84	171.59	3.11	27.63	107.70	78.12	29.58	3.641	Alert
4,250.00	4,248.31	4,251.08	4,251.02	14.97	15.02	171.37	4.17	26.78	108.53	78.59	29.93	3.626	Alert
4,300.00	4,298.27	4,301.07	4,300.99	15.14	15.19	171.16	5.22	25.93	109.36	79.07	30.29	3.611	Alert
4,350.00	4,348.23	4,351.06	4,350.96	15.32	15.37	170.95	6.27	25.08	110.19	79.55	30.64	3.596	Alert
4,400.00	4,398.19	4,401.05	4,400.94	15.50	15.55	170.74	7.33	24.23	111.02	80.02	31.00	3.582	Alert
4,450.00	4,448.15	4,451.04	4,450.91	15.68	15.73	170.53	8.38	23.38	111.86	80.50	31.35	3.568	Alert
4,500.00	4,498.11	4,501.04	4,500.88	15.86	15.90	170.33	9.44	22.53	112.69	80.98	31.71	3.554	Alert
4,550.00	4,548.07	4,551.03	4,550.86	16.04	16.08	170.13	10.49	21.68	113.53	81.46	32.07	3.541	Alert
4,600.00	4,598.03	4,601.02	4,600.83	16.22	16.26	169.93	11.55	20.83	114.37	81.95	32.42	3.528	Alert
4,650.00	4,647.99	4,651.01	4,650.80	16.40	16.44	169.74	12.60	19.98	115.21	82.43	32.78	3.515	Alert
4,700.00	4,697.95	4,701.00	4,700.77	16.58	16.61	169.55	13.66	19.13	116.05	82.92	33.13	3.503	Alert
4,750.00	4,747.91	4,750.99	4,750.75	16.76	16.79	169.36	14.71	18.28	116.89	83.40	33.49	3.490	Alert
4,800.00	4,797.87	4,800.98	4,800.72	16.94	16.97	169.17	15.76	17.43	117.74	83.89	33.84	3.479	Alert
4,850.00	4,847.83	4,850.98	4,850.69	17.12	17.15	168.99	16.82	16.58	118.58	84.38	34.20	3.467	Alert
4,900.00	4,897.79	4,900.97	4,900.67	17.30	17.33	168.81	17.87	15.72	119.43	84.87	34.56	3.456	Alert
4,950.00	4,947.75	4,950.96	4,950.64	17.48	17.50	168.63	18.93	14.87	120.28	85.36	34.91	3.445	Alert
5,000.00	4,997.71	5,000.95	5,000.61	17.66	17.68	168.46	19.98	14.02	121.12	85.85	35.27	3.434	Alert
5,050.00	5,047.67	5,050.94	5,050.59	17.84	17.86	168.29	21.04	13.17	121.97	86.35	35.63	3.424	Alert
5,100.00	5,097.63	5,100.93	5,100.56	18.02	18.04	168.12	22.09	12.32	122.82	86.84	35.98	3.413	Alert
5,150.00	5,147.59	5,150.92	5,150.53	18.20	18.22	167.95	23.15	11.47	123.68	87.34	36.34	3.403	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	5,197.55	5,200.92	5,200.51	18.38	18.39	167.78	24.20	10.62	124.53	87.83	36.70	3.394	Alert
5,250.00	5,247.51	5,250.91	5,250.48	18.56	18.57	167.62	25.25	9.77	125.38	88.33	37.05	3.384	Alert
5,300.00	5,297.47	5,300.90	5,300.45	18.74	18.75	167.46	26.31	8.92	126.24	88.83	37.41	3.375	Alert
5,350.00	5,347.43	5,350.89	5,350.42	18.92	18.93	167.30	27.36	8.07	127.09	89.33	37.77	3.365	Alert
5,400.00	5,397.39	5,400.88	5,400.40	19.10	19.11	167.14	28.42	7.22	127.95	89.83	38.12	3.356	Alert
5,450.00	5,447.35	5,450.87	5,450.37	19.28	19.29	166.99	29.47	6.37	128.81	90.33	38.48	3.347	Alert
5,500.00	5,497.31	5,500.86	5,500.34	19.46	19.46	166.83	30.53	5.52	129.67	90.83	38.84	3.339	Alert
5,550.00	5,547.27	5,550.86	5,550.32	19.64	19.64	166.68	31.58	4.67	130.53	91.33	39.19	3.330	Alert
5,600.00	5,597.23	5,600.85	5,600.29	19.82	19.82	166.53	32.63	3.82	131.39	91.84	39.55	3.322	Alert
5,650.00	5,647.19	5,650.84	5,650.26	20.00	20.00	166.39	33.69	2.97	132.25	92.34	39.91	3.314	Alert
5,700.00	5,697.15	5,700.83	5,700.24	20.18	20.18	166.24	34.74	2.12	133.11	92.85	40.26	3.306	Alert
5,750.00	5,747.11	5,750.82	5,750.21	20.36	20.36	166.10	35.80	1.27	133.98	93.35	40.62	3.298	Alert
5,800.00	5,797.07	5,800.81	5,800.18	20.54	20.54	165.96	36.85	0.42	134.84	93.86	40.98	3.291	Alert
5,850.00	5,847.03	5,850.80	5,850.16	20.73	20.71	165.82	37.91	-0.43	135.70	94.37	41.34	3.283	Alert
5,900.00	5,896.99	5,900.80	5,900.13	20.91	20.89	165.68	38.96	-1.28	136.57	94.88	41.69	3.276	Alert
5,950.00	5,946.95	5,950.79	5,950.10	21.09	21.07	165.54	40.02	-2.13	137.44	95.39	42.05	3.268	Alert
6,000.00	5,996.91	6,000.78	6,000.07	21.27	21.25	165.41	41.07	-2.98	138.30	95.90	42.41	3.261	Alert
6,050.00	6,046.87	6,050.77	6,050.05	21.45	21.43	165.28	42.12	-3.83	139.17	96.41	42.76	3.254	Alert
6,100.00	6,096.83	6,100.76	6,100.02	21.63	21.61	165.14	43.18	-4.68	140.04	96.92	43.12	3.248	Alert
6,150.00	6,146.79	6,150.75	6,149.99	21.81	21.79	165.02	44.23	-5.53	140.91	97.43	43.48	3.241	Alert
6,200.00	6,196.75	6,200.74	6,199.97	21.99	21.96	164.89	45.29	-6.38	141.78	97.94	43.84	3.234	Alert
6,250.00	6,246.71	6,250.74	6,249.94	22.17	22.14	164.76	46.34	-7.23	142.65	98.46	44.19	3.228	Alert
6,300.00	6,296.67	6,300.73	6,299.91	22.35	22.32	164.64	47.40	-8.08	143.52	98.97	44.55	3.222	Alert
6,350.00	6,346.63	6,350.72	6,349.89	22.53	22.50	164.51	48.45	-8.93	144.39	99.49	44.91	3.215	Alert
6,400.00	6,396.59	6,400.71	6,399.86	22.71	22.68	164.39	49.51	-9.78	145.27	100.00	45.27	3.209	Alert
6,450.00	6,446.55	6,450.70	6,449.83	22.89	22.86	164.27	50.56	-10.63	146.14	100.52	45.62	3.203	Alert
6,500.00	6,496.51	6,500.69	6,499.81	23.07	23.04	164.15	51.61	-11.48	147.01	101.03	45.98	3.197	Alert
6,550.00	6,546.46	6,550.68	6,549.78	23.25	23.22	164.04	52.67	-12.33	147.89	101.55	46.34	3.191	Alert
6,600.00	6,596.42	6,600.68	6,599.75	23.43	23.39	163.92	53.72	-13.18	148.77	102.07	46.70	3.186	Alert
6,650.00	6,646.38	6,650.67	6,649.72	23.61	23.57	163.80	54.78	-14.03	149.64	102.59	47.05	3.180	Alert
6,700.00	6,696.34	6,700.66	6,699.70	23.79	23.75	163.69	55.83	-14.88	150.52	103.11	47.41	3.175	Alert
6,750.00	6,746.30	6,750.65	6,749.67	23.97	23.93	163.58	56.89	-15.73	151.39	103.63	47.77	3.169	Alert
6,800.00	6,796.26	6,800.64	6,799.64	24.15	24.11	163.47	57.94	-16.58	152.27	104.15	48.13	3.164	Alert
6,850.00	6,846.22	6,850.63	6,849.62	24.33	24.29	163.36	58.99	-17.43	153.15	104.67	48.48	3.159	Alert
6,900.00	6,896.18	6,900.62	6,899.59	24.51	24.47	163.25	60.05	-18.28	154.03	105.19	48.84	3.154	Alert
6,950.00	6,946.14	6,950.62	6,949.56	24.70	24.65	163.14	61.10	-19.13	154.91	105.71	49.20	3.149	Alert
7,000.00	6,996.10	7,000.61	6,999.54	24.88	24.83	163.04	62.16	-19.98	155.79	106.23	49.56	3.144	Alert
7,050.00	7,046.06	7,050.60	7,049.51	25.06	25.00	162.93	63.21	-20.83	156.67	106.75	49.92	3.139	Alert
7,100.00	7,096.02	7,100.59	7,099.48	25.24	25.18	162.83	64.27	-21.68	157.55	107.28	50.27	3.134	Alert
7,150.00	7,145.98	7,150.58	7,149.46	25.42	25.36	162.73	65.32	-22.53	158.43	107.80	50.63	3.129	Alert
7,200.00	7,195.94	7,200.57	7,199.43	25.60	25.54	162.63	66.38	-23.38	159.31	108.32	50.99	3.124	Alert
7,250.00	7,245.90	7,250.56	7,249.40	25.78	25.72	162.53	67.43	-24.23	160.20	108.85	51.35	3.120	Alert
7,300.00	7,295.86	7,300.56	7,299.37	25.96	25.90	162.43	68.48	-25.08	161.08	109.37	51.71	3.115	Alert
7,350.00	7,345.82	7,350.55	7,349.35	26.14	26.08	162.33	69.54	-25.93	161.96	109.90	52.06	3.111	Alert
7,400.00	7,395.78	7,400.54	7,399.32	26.32	26.26	162.23	70.59	-26.78	162.85	110.42	52.42	3.106	Alert
7,450.00	7,445.74	7,450.53	7,449.29	26.50	26.44	162.14	71.65	-27.63	163.73	110.95	52.78	3.102	Alert
7,500.00	7,495.70	7,500.52	7,499.27	26.68	26.62	162.04	72.70	-28.48	164.62	111.48	53.14	3.098	Alert
7,550.00	7,545.66	7,550.51	7,549.24	26.86	26.79	161.95	73.76	-29.33	165.50	112.01	53.50	3.094	Alert
7,600.00	7,595.62	7,600.50	7,599.21	27.04	26.97	161.86	74.81	-30.18	166.39	112.53	53.85	3.090	Alert
7,650.00	7,645.58	7,650.50	7,649.19	27.22	27.15	161.76	75.87	-31.03	167.27	113.06	54.21	3.086	Alert
7,700.00	7,695.54	7,700.49	7,699.16	27.40	27.33	161.67	76.92	-31.88	168.16	113.59	54.57	3.082	Alert
7,750.00	7,745.50	7,750.48	7,749.13	27.58	27.51	161.58	77.97	-32.73	169.05	114.12	54.93	3.078	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	7,795.46	7,800.47	7,799.11	27.77	27.69	161.49	79.03	-33.58	169.93	114.65	55.29	3.074	Alert
7,850.00	7,845.42	7,850.46	7,849.08	27.95	27.87	161.41	80.08	-34.43	170.82	115.18	55.64	3.070	Alert
7,900.00	7,895.38	7,900.45	7,899.05	28.13	28.05	161.32	81.14	-35.28	171.71	115.71	56.00	3.066	Alert
7,950.00	7,945.34	7,950.44	7,949.02	28.31	28.23	161.23	82.19	-36.13	172.60	116.24	56.36	3.062	Alert
8,000.00	7,995.30	8,000.44	7,999.00	28.49	28.41	161.15	83.25	-36.98	173.49	116.77	56.72	3.059	Alert
8,050.00	8,045.26	8,050.43	8,048.97	28.67	28.59	161.06	84.30	-37.83	174.38	117.30	57.08	3.055	Alert
8,100.00	8,095.22	8,100.42	8,098.94	28.85	28.77	160.98	85.36	-38.68	175.27	117.83	57.43	3.052	Alert
8,150.00	8,145.18	8,150.41	8,148.92	29.03	28.94	160.90	86.41	-39.53	176.16	118.36	57.79	3.048	Alert
8,200.00	8,195.14	8,200.40	8,198.89	29.21	29.12	160.82	87.46	-40.38	177.05	118.89	58.15	3.045	Alert
8,250.00	8,245.10	8,250.39	8,248.86	29.39	29.30	160.73	88.52	-41.23	177.94	119.43	58.51	3.041	Alert
8,300.00	8,295.06	8,300.38	8,298.84	29.57	29.48	160.65	89.57	-42.08	178.83	119.96	58.87	3.038	Alert
8,350.00	8,345.02	8,350.38	8,348.81	29.75	29.66	160.57	90.63	-42.93	179.72	120.49	59.23	3.034	Alert
8,400.00	8,394.98	8,400.37	8,398.78	29.93	29.84	160.50	91.68	-43.78	180.61	121.03	59.58	3.031	Alert
8,450.00	8,444.94	8,450.36	8,448.76	30.11	30.02	160.42	92.74	-44.63	181.50	121.56	59.94	3.028	Alert
8,500.00	8,494.90	8,500.35	8,498.73	30.30	30.20	160.34	93.79	-45.48	182.40	122.09	60.30	3.025	Alert
8,550.00	8,544.86	8,550.34	8,548.70	30.48	30.38	160.26	94.84	-46.33	183.29	122.63	60.66	3.022	Alert
8,600.00	8,594.82	8,600.33	8,598.67	30.66	30.56	160.19	95.90	-47.18	184.18	123.16	61.02	3.018	Alert
8,650.00	8,644.78	8,650.32	8,648.65	30.84	30.74	160.11	96.95	-48.03	185.08	123.70	61.38	3.015	Alert
8,700.00	8,694.74	8,700.32	8,698.62	31.02	30.92	160.04	98.01	-48.88	185.97	124.23	61.73	3.012	Alert
8,750.00	8,744.70	8,750.31	8,748.59	31.20	31.10	159.97	99.06	-49.73	186.86	124.77	62.09	3.009	Alert
8,800.00	8,794.66	8,800.30	8,798.57	31.38	31.27	159.89	100.12	-50.58	187.76	125.31	62.45	3.006	Alert
8,850.00	8,844.62	8,850.29	8,848.54	31.56	31.45	159.82	101.17	-51.43	188.65	125.84	62.81	3.004	Alert
8,900.00	8,894.58	8,900.28	8,898.51	31.74	31.63	159.75	102.23	-52.28	189.55	126.38	63.17	3.001	Alert
8,950.00	8,944.54	8,950.27	8,948.49	31.92	31.81	159.68	103.28	-53.13	190.44	126.92	63.53	2.998	Alert
9,000.00	8,994.50	9,000.26	8,998.46	32.10	31.99	159.61	104.33	-53.98	191.34	127.45	63.89	2.995	Alert
9,050.00	9,044.45	9,050.26	9,048.43	32.28	32.17	159.54	105.39	-54.83	192.23	127.99	64.24	2.992	Alert
9,100.00	9,094.41	9,100.25	9,098.41	32.46	32.35	159.47	106.44	-55.68	193.13	128.53	64.60	2.990	Alert
9,150.00	9,144.37	9,150.24	9,148.38	32.65	32.53	159.40	107.50	-56.53	194.03	129.07	64.96	2.987	Alert
9,200.00	9,194.33	9,200.23	9,198.35	32.83	32.71	159.34	108.55	-57.38	194.92	129.60	65.32	2.984	Alert
9,250.00	9,244.29	9,250.22	9,248.33	33.01	32.89	159.27	109.61	-58.23	195.82	130.14	65.68	2.982	Alert
9,300.00	9,294.25	9,300.21	9,298.30	33.19	33.07	159.20	110.66	-59.09	196.72	130.68	66.04	2.979	Alert
9,350.00	9,344.21	9,350.20	9,348.27	33.37	33.25	159.14	111.72	-59.94	197.61	131.22	66.39	2.976	Alert
9,400.00	9,394.17	9,400.20	9,398.24	33.55	33.43	159.07	112.77	-60.79	198.51	131.76	66.75	2.974	Alert
9,450.00	9,444.13	9,450.19	9,448.22	33.73	33.61	159.01	113.82	-61.64	199.41	132.30	67.11	2.971	Alert
9,500.00	9,494.09	9,500.18	9,498.19	33.91	33.79	158.94	114.88	-62.49	200.31	132.84	67.47	2.969	Alert
9,550.00	9,544.05	9,550.17	9,548.16	34.09	33.97	158.88	115.93	-63.34	201.21	133.38	67.83	2.966	Alert
9,600.00	9,594.01	9,600.16	9,598.14	34.27	34.14	158.82	116.99	-64.19	202.11	133.92	68.19	2.964	Alert
9,650.00	9,643.97	9,650.15	9,648.11	34.45	34.32	158.75	118.04	-65.04	203.00	134.46	68.55	2.962	Alert
9,700.00	9,693.93	9,700.14	9,698.08	34.63	34.50	158.69	119.10	-65.89	203.90	135.00	68.90	2.959	Alert
9,750.00	9,743.89	9,750.14	9,748.06	34.82	34.68	158.63	120.15	-66.74	204.80	135.54	69.26	2.957	Alert
9,800.00	9,793.85	9,800.13	9,798.03	35.00	34.86	158.57	121.20	-67.59	205.70	136.08	69.62	2.955	Alert
9,850.00	9,843.81	9,850.12	9,848.00	35.18	35.04	158.51	122.26	-68.44	206.60	136.62	69.98	2.952	Alert
9,900.00	9,893.77	9,900.11	9,897.98	35.36	35.22	158.45	123.31	-69.29	207.50	137.16	70.34	2.950	Alert
9,950.00	9,943.73	9,950.10	9,947.95	35.54	35.40	158.39	124.37	-70.14	208.40	137.71	70.70	2.948	Alert
10,000.00	9,993.69	10,000.09	9,997.92	35.72	35.58	158.33	125.42	-70.99	209.30	138.25	71.06	2.946	Alert
10,050.00	10,043.65	10,050.08	10,047.89	35.90	35.76	158.28	126.48	-71.84	210.20	138.79	71.41	2.943	Alert
10,100.00	10,093.61	10,100.08	10,097.87	36.08	35.94	158.22	127.53	-72.69	211.11	139.33	71.77	2.941	Alert
10,150.00	10,143.57	10,150.07	10,147.84	36.26	36.12	158.16	128.59	-73.54	212.01	139.87	72.13	2.939	Alert
10,200.00	10,193.53	10,200.06	10,197.81	36.44	36.30	158.10	129.64	-74.39	212.91	140.42	72.49	2.937	Alert
10,250.00	10,243.49	10,250.05	10,247.79	36.62	36.48	158.05	130.69	-75.24	213.81	140.96	72.85	2.935	Alert
10,300.00	10,293.45	10,300.04	10,297.76	36.81	36.66	157.99	131.75	-76.09	214.71	141.50	73.21	2.933	Alert
10,350.00	10,343.41	10,350.03	10,347.73	36.99	36.84	157.94	132.80	-76.94	215.61	142.05	73.57	2.931	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	10,393.37	10,400.02	10,397.71	37.17	37.02	157.88	133.86	-77.79	216.52	142.59	73.93	2.929	Alert
10,450.00	10,443.33	10,450.02	10,447.68	37.35	37.20	157.83	134.91	-78.64	217.42	143.13	74.28	2.927	Alert
10,500.00	10,493.29	10,500.01	10,497.65	37.53	37.37	157.78	135.97	-79.49	218.32	143.68	74.64	2.925	Alert
10,550.00	10,543.25	10,550.00	10,547.63	37.71	37.55	157.71	137.02	-80.34	219.10	144.10	75.00	2.921	Alert
10,600.00	10,593.24	10,600.00	10,597.61	37.89	37.73	157.59	138.08	-81.19	219.32	143.96	75.36	2.910	Alert
10,650.00	10,643.23	10,649.99	10,647.58	38.07	37.91	157.39	139.13	-82.04	218.94	143.22	75.72	2.892	Alert
10,700.00	10,693.23	10,700.03	10,697.54	38.24	38.09	95.21	140.18	-82.89	218.05	141.98	76.07	2.866	Alert
10,750.00	10,743.23	10,749.96	10,747.51	38.42	38.27	94.96	141.24	-83.74	217.11	140.68	76.43	2.841	Alert
10,800.00	10,793.23	10,800.06	10,797.47	38.59	38.45	94.70	142.29	-84.59	216.18	139.39	76.78	2.815	Alert
10,850.00	10,843.23	10,849.92	10,847.43	38.77	38.63	94.44	143.35	-85.44	215.24	138.11	77.14	2.790	Alert
10,900.00	10,893.23	10,900.10	10,897.40	38.94	38.81	94.17	144.40	-86.29	214.32	136.82	77.49	2.766	Alert
10,950.00	10,943.23	10,949.88	10,947.36	39.12	38.99	93.91	145.46	-87.14	213.39	135.55	77.85	2.741	Alert
11,000.00	10,993.23	11,000.14	10,997.32	39.29	39.17	93.64	146.51	-87.99	212.48	134.27	78.20	2.717	Alert
11,033.16	11,026.39	11,033.02	11,030.47	39.41	39.29	179.84	147.21	-88.55	212.41	133.97	78.44	2.708	Alert
11,050.00	11,043.22	11,049.85	11,047.29	39.47	39.35	179.75	147.56	-88.84	212.26	133.70	78.56	2.702	Alert
11,100.00	11,092.99	11,100.32	11,097.11	39.65	39.53	179.49	148.61	-89.69	215.98	137.07	78.92	2.737	Alert
11,150.00	11,142.19	11,149.02	11,146.43	39.84	39.70	-174.96	149.66	-90.52	223.92	144.65	79.27	2.825	Alert
11,200.00	11,191.09	11,198.02	11,195.41	40.03	39.88	-152.39	150.69	-91.36	232.99	153.37	79.62	2.926	Alert
11,250.00	11,239.59	11,246.52	11,243.89	40.21	40.06	-136.68	151.71	-92.18	241.98	162.02	79.97	3.026	Alert
11,300.00	11,287.32	11,305.83	11,291.52	40.38	40.27	-127.46	152.72	-92.99	251.24	170.90	80.34	3.127	Alert
11,350.00	11,333.92	11,340.59	11,337.92	40.54	40.39	-122.57	153.70	-93.78	261.24	180.61	80.63	3.240	Alert
11,400.00	11,379.03	11,385.43	11,382.75	40.69	40.55	-120.32	154.64	-94.54	272.53	191.59	80.94	3.367	Alert
11,450.00	11,422.32	11,428.36	11,425.66	40.83	40.71	-119.61	155.55	-95.27	285.71	204.47	81.24	3.517	Alert
11,500.00	11,463.45	11,469.04	11,466.33	40.97	40.85	-119.71	156.40	-95.97	301.33	219.80	81.53	3.696	Alert
11,550.00	11,502.11	11,507.17	11,504.45	41.09	40.99	-120.14	157.21	-96.61	319.83	238.04	81.79	3.910	Alert
11,600.00	11,538.00	11,542.46	11,539.72	41.21	41.12	-120.52	157.95	-97.21	341.51	259.48	82.03	4.163	Alert
11,650.00	11,570.86	11,574.63	11,571.88	41.32	41.23	-120.58	158.63	-97.76	366.52	284.28	82.24	4.457	Alert
11,700.00	11,600.43	11,603.44	11,600.68	41.43	41.34	-120.11	159.23	-98.25	394.85	312.43	82.43	4.790	Alert
11,750.00	11,626.48	11,628.93	11,626.16	41.54	41.43	-118.95	159.67	-98.60	426.33	343.75	82.58	5.162	
11,800.00	11,648.83	11,651.03	11,648.26	41.65	41.51	-116.96	159.94	-98.81	460.69	377.97	82.71	5.570	
11,850.00	11,667.29	11,669.51	11,666.74	41.76	41.57	-113.96	160.09	-98.93	497.57	414.75	82.82	6.008	
11,900.00	11,681.74	11,684.17	11,681.40	41.87	41.63	-109.80	160.16	-98.99	536.60	453.70	82.89	6.473	
11,950.00	11,692.05	11,694.80	11,692.03	41.98	41.66	-104.32	160.18	-99.01	577.37	494.43	82.95	6.961	
12,000.00	11,698.15	11,701.19	11,698.42	42.09	41.69	-97.50	160.18	-99.01	619.48	536.51	82.97	7.466	
12,050.00	11,700.00	11,703.19	11,700.42	42.21	41.69	-90.04	160.18	-99.01	662.49	579.52	82.98	7.984	
12,100.00	11,700.00	11,703.23	11,700.46	42.32	41.69	-90.04	160.18	-99.01	706.29	623.32	82.97	8.512	
12,150.00	11,700.00	11,703.27	11,700.50	42.45	41.69	-90.05	160.18	-99.01	750.86	667.89	82.98	9.049	
12,200.00	11,700.00	11,703.31	11,700.53	42.59	41.69	-90.06	160.18	-99.01	796.08	713.11	82.97	9.594	
12,250.00	11,700.00	11,703.35	11,700.58	42.74	41.69	-90.07	160.18	-99.01	841.84	758.86	82.98	10.146	
12,300.00	11,700.00	11,703.39	11,700.62	42.90	41.69	-90.07	160.18	-99.01	888.05	805.08	82.98	10.703	
12,350.00	11,700.00	11,703.43	11,700.66	43.08	41.69	-90.08	160.18	-99.01	934.66	851.68	82.98	11.264	
12,400.00	11,700.00	13,301.35	12,620.00	43.25	46.09	-160.27	-764.30	-93.27	977.17	917.34	59.83	16.333	
12,450.00	11,700.00	13,351.35	12,620.00	43.45	46.27	-160.27	-814.30	-92.95	977.17	917.10	60.07	16.267	
12,500.00	11,700.00	13,401.35	12,620.00	43.65	46.46	-160.27	-864.30	-92.64	977.17	916.86	60.31	16.202	
12,550.00	11,700.00	13,451.35	12,620.00	43.87	46.67	-160.27	-914.30	-92.33	977.17	916.59	60.58	16.131	
12,600.00	11,700.00	13,501.35	12,620.00	44.09	46.88	-160.27	-964.30	-92.02	977.17	916.32	60.84	16.060	
12,650.00	11,700.00	13,551.35	12,620.00	44.34	47.11	-160.27	-1,014.30	-91.71	977.17	916.03	61.13	15.984	
12,700.00	11,700.00	13,601.35	12,620.00	44.58	47.34	-160.27	-1,064.30	-91.40	977.16	915.74	61.42	15.909	
12,750.00	11,700.00	13,651.35	12,620.00	44.84	47.59	-160.27	-1,114.30	-91.09	977.16	915.43	61.73	15.829	
12,800.00	11,700.00	13,701.35	12,620.00	45.10	47.84	-160.27	-1,164.29	-90.78	977.16	915.12	62.05	15.749	
12,850.00	11,700.00	13,751.35	12,620.00	45.39	48.11	-160.27	-1,214.29	-90.47	977.16	914.78	62.38	15.665	
12,900.00	11,700.00	13,801.35	12,620.00	45.67	48.38	-160.27	-1,264.29	-90.16	977.16	914.45	62.71	15.581	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	11,700.00	13,851.35	12,620.00	45.97	48.66	-160.27	-1,314.29	-89.85	977.16	914.09	63.07	15.494	
13,000.00	11,700.00	13,901.35	12,620.00	46.28	48.95	-160.27	-1,364.29	-89.54	977.16	913.73	63.42	15.407	
13,050.00	11,700.00	13,951.35	12,620.00	46.60	49.26	-160.27	-1,414.29	-89.23	977.16	913.36	63.80	15.316	
13,100.00	11,700.00	14,001.35	12,620.00	46.92	49.56	-160.27	-1,464.29	-88.92	977.16	912.98	64.18	15.226	
13,150.00	11,700.00	14,051.35	12,620.00	47.26	49.89	-160.27	-1,514.29	-88.61	977.15	912.58	64.57	15.133	
13,200.00	11,700.00	14,101.35	12,620.00	47.60	50.21	-160.27	-1,564.29	-88.29	977.15	912.19	64.97	15.041	
13,250.00	11,700.00	14,151.35	12,620.00	47.95	50.55	-160.27	-1,614.29	-87.98	977.15	911.77	65.38	14.945	
13,300.00	11,700.00	14,201.35	12,620.00	48.31	50.89	-160.27	-1,664.28	-87.67	977.15	911.35	65.80	14.851	
13,350.00	11,700.00	14,251.35	12,620.00	48.68	51.25	-160.27	-1,714.28	-87.36	977.15	910.92	66.23	14.754	
13,400.00	11,700.00	14,301.35	12,620.00	49.06	51.60	-160.27	-1,764.28	-87.05	977.15	910.48	66.66	14.658	
13,450.00	11,700.00	14,351.35	12,620.00	49.44	51.98	-160.27	-1,814.28	-86.74	977.15	910.03	67.11	14.559	
13,500.00	11,700.00	14,401.35	12,620.00	49.83	52.35	-160.27	-1,864.28	-86.43	977.15	909.58	67.57	14.462	
13,550.00	11,700.00	14,451.35	12,620.00	50.24	52.73	-160.27	-1,914.28	-86.12	977.14	909.11	68.03	14.363	
13,600.00	11,700.00	14,501.35	12,620.00	50.64	53.12	-160.27	-1,964.28	-85.81	977.14	908.64	68.50	14.265	
13,650.00	11,700.00	14,551.35	12,620.00	51.06	53.52	-160.27	-2,014.28	-85.50	977.14	908.16	68.99	14.164	
13,700.00	11,700.00	14,601.35	12,620.00	51.48	53.92	-160.27	-2,064.28	-85.19	977.14	907.67	69.47	14.066	
13,750.00	11,700.00	14,651.35	12,620.00	51.91	54.34	-160.27	-2,114.28	-84.88	977.14	907.17	69.97	13.965	
13,800.00	11,700.00	14,701.35	12,620.00	52.34	54.75	-160.27	-2,164.27	-84.57	977.14	906.67	70.47	13.866	
13,850.00	11,700.00	14,751.35	12,620.00	52.78	55.18	-160.27	-2,214.27	-84.26	977.14	906.15	70.99	13.765	
13,900.00	11,700.00	14,801.35	12,620.00	53.23	55.60	-160.27	-2,264.27	-83.95	977.14	905.64	71.50	13.666	
13,950.00	11,700.00	14,851.35	12,620.00	53.69	56.04	-160.27	-2,314.27	-83.63	977.14	905.11	72.03	13.566	
14,000.00	11,700.00	14,901.35	12,620.00	54.14	56.48	-160.27	-2,364.27	-83.32	977.13	904.57	72.56	13.467	
14,050.00	11,700.00	14,951.35	12,620.00	54.61	56.94	-160.28	-2,414.27	-83.01	977.13	904.03	73.10	13.367	
14,100.00	11,700.00	15,001.35	12,620.00	55.08	57.39	-160.28	-2,464.27	-82.70	977.13	903.49	73.65	13.268	
14,150.00	11,700.00	15,051.35	12,620.00	55.56	57.85	-160.28	-2,514.27	-82.39	977.13	902.93	74.20	13.169	
14,200.00	11,700.00	15,101.35	12,620.00	56.04	58.31	-160.28	-2,564.27	-82.08	977.13	902.37	74.76	13.071	
14,250.00	11,700.00	15,151.35	12,620.00	56.53	58.78	-160.28	-2,614.27	-81.77	977.13	901.80	75.33	12.972	
14,300.00	11,700.00	15,201.35	12,620.00	57.02	59.26	-160.28	-2,664.27	-81.46	977.13	901.23	75.90	12.875	
14,350.00	11,700.00	15,251.35	12,620.00	57.52	59.74	-160.28	-2,714.26	-81.15	977.13	900.65	76.48	12.777	
14,400.00	11,700.00	15,301.35	12,620.00	58.02	60.23	-160.28	-2,764.26	-80.84	977.12	900.07	77.06	12.681	
14,450.00	11,700.00	15,351.35	12,620.00	58.53	60.72	-160.28	-2,814.26	-80.53	977.12	899.47	77.65	12.584	
14,500.00	11,700.00	15,401.35	12,620.00	59.04	61.21	-160.28	-2,864.26	-80.22	977.12	898.88	78.24	12.489	
14,550.00	11,700.00	15,451.35	12,620.00	59.56	61.71	-160.28	-2,914.26	-79.91	977.12	898.28	78.84	12.393	
14,600.00	11,700.00	15,501.35	12,620.00	60.08	62.22	-160.28	-2,964.26	-79.60	977.12	897.67	79.45	12.299	
14,650.00	11,700.00	15,551.35	12,620.00	60.61	62.73	-160.28	-3,014.26	-79.28	977.12	897.06	80.06	12.205	
14,700.00	11,700.00	15,601.35	12,620.00	61.14	63.24	-160.28	-3,064.26	-78.97	977.12	896.44	80.68	12.112	
14,750.00	11,700.00	15,651.35	12,620.00	61.67	63.76	-160.28	-3,114.26	-78.66	977.12	895.82	81.30	12.019	
14,800.00	11,700.00	15,701.35	12,620.00	62.21	64.28	-160.28	-3,164.26	-78.35	977.12	895.19	81.92	11.927	
14,850.00	11,700.00	15,751.35	12,620.00	62.75	64.81	-160.28	-3,214.25	-78.04	977.11	894.56	82.56	11.836	
14,900.00	11,700.00	15,801.35	12,620.00	63.30	65.33	-160.28	-3,264.25	-77.73	977.11	893.92	83.19	11.746	
14,950.00	11,700.00	15,851.35	12,620.00	63.85	65.87	-160.28	-3,314.25	-77.42	977.11	893.28	83.83	11.656	
15,000.00	11,700.00	15,901.35	12,620.00	64.40	66.41	-160.28	-3,364.25	-77.11	977.11	892.64	84.47	11.567	
15,050.00	11,700.00	15,951.35	12,620.00	64.96	66.95	-160.28	-3,414.25	-76.80	977.11	891.98	85.12	11.479	
15,100.00	11,700.00	16,001.35	12,620.00	65.51	67.49	-160.28	-3,464.25	-76.49	977.11	891.33	85.78	11.391	
15,150.00	11,700.00	16,051.35	12,620.00	66.08	68.04	-160.28	-3,514.25	-76.18	977.11	890.67	86.43	11.305	
15,200.00	11,700.00	16,101.35	12,620.00	66.64	68.59	-160.28	-3,564.25	-75.87	977.11	890.01	87.09	11.219	
15,250.00	11,700.00	16,151.35	12,620.00	67.21	69.15	-160.28	-3,614.25	-75.56	977.10	889.34	87.76	11.134	
15,300.00	11,700.00	16,201.35	12,620.00	67.78	69.70	-160.28	-3,664.25	-75.25	977.10	888.67	88.43	11.050	
15,350.00	11,700.00	16,251.35	12,620.00	68.36	70.26	-160.28	-3,714.24	-74.94	977.10	888.00	89.10	10.966	
15,400.00	11,700.00	16,301.35	12,620.00	68.94	70.83	-160.28	-3,764.24	-74.62	977.10	887.32	89.78	10.883	
15,450.00	11,700.00	16,351.35	12,620.00	69.52	71.39	-160.28	-3,814.24	-74.31	977.10	886.64	90.46	10.801	
15,500.00	11,700.00	16,401.35	12,620.00	70.10	71.96	-160.28	-3,864.24	-74.00	977.10	885.96	91.14	10.721	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	11,700.00	16,451.35	12,620.00	70.69	72.54	-160.28	-3,914.24	-73.69	977.10	885.27	91.83	10.640	
15,600.00	11,700.00	16,501.35	12,620.00	71.28	73.11	-160.28	-3,964.24	-73.38	977.10	884.58	92.52	10.561	
15,650.00	11,700.00	16,551.35	12,620.00	71.87	73.69	-160.28	-4,014.24	-73.07	977.10	883.88	93.22	10.482	
15,700.00	11,700.00	16,601.35	12,620.00	72.46	74.27	-160.28	-4,064.24	-72.76	977.09	883.18	93.91	10.404	
15,750.00	11,700.00	16,651.35	12,620.00	73.06	74.86	-160.28	-4,114.24	-72.45	977.09	882.48	94.61	10.327	
15,800.00	11,700.00	16,701.35	12,620.00	73.66	75.44	-160.28	-4,164.24	-72.14	977.09	881.78	95.32	10.251	
15,850.00	11,700.00	16,751.35	12,620.00	74.26	76.03	-160.28	-4,214.24	-71.83	977.09	881.07	96.02	10.175	
15,900.00	11,700.00	16,801.35	12,620.00	74.86	76.62	-160.28	-4,264.23	-71.52	977.09	880.36	96.73	10.101	
15,950.00	11,700.00	16,851.35	12,620.00	75.47	77.21	-160.28	-4,314.23	-71.21	977.09	879.64	97.45	10.027	
16,000.00	11,700.00	16,901.35	12,620.00	76.08	77.81	-160.28	-4,364.23	-70.90	977.09	878.93	98.16	9.954	
16,050.00	11,700.00	16,951.35	12,620.00	76.69	78.41	-160.28	-4,414.23	-70.59	977.09	878.21	98.88	9.882	
16,100.00	11,700.00	17,001.35	12,620.00	77.30	79.01	-160.28	-4,464.23	-70.28	977.08	877.49	99.60	9.810	
16,150.00	11,700.00	17,051.35	12,620.00	77.92	79.61	-160.28	-4,514.23	-69.96	977.08	876.76	100.32	9.739	
16,200.00	11,700.00	17,101.35	12,620.00	78.53	80.21	-160.28	-4,564.23	-69.65	977.08	876.03	101.05	9.669	
16,250.00	11,700.00	17,151.35	12,620.00	79.15	80.82	-160.28	-4,614.23	-69.34	977.08	875.30	101.78	9.600	
16,300.00	11,700.00	17,201.35	12,620.00	79.77	81.43	-160.28	-4,664.23	-69.03	977.08	874.57	102.51	9.532	
16,350.00	11,700.00	17,251.35	12,620.00	80.39	82.04	-160.28	-4,714.23	-68.72	977.08	873.84	103.24	9.464	
16,400.00	11,700.00	17,301.35	12,620.00	81.02	82.65	-160.28	-4,764.22	-68.41	977.08	873.10	103.98	9.397	
16,450.00	11,700.00	17,351.35	12,620.00	81.64	83.26	-160.28	-4,814.22	-68.10	977.08	872.36	104.72	9.331	
16,500.00	11,700.00	17,401.35	12,620.00	82.27	83.88	-160.28	-4,864.22	-67.79	977.08	871.62	105.46	9.265	
16,550.00	11,700.00	17,451.35	12,620.00	82.90	84.50	-160.28	-4,914.22	-67.48	977.07	870.87	106.20	9.200	
16,600.00	11,700.00	17,501.35	12,620.00	83.53	85.12	-160.28	-4,964.22	-67.17	977.07	870.13	106.94	9.136	
16,650.00	11,700.00	17,551.35	12,620.00	84.16	85.74	-160.29	-5,014.22	-66.86	977.07	869.38	107.69	9.073	
16,700.00	11,700.00	17,601.35	12,620.00	84.79	86.36	-160.29	-5,064.22	-66.55	977.07	868.63	108.44	9.010	
16,750.00	11,700.00	17,651.35	12,620.00	85.43	86.99	-160.29	-5,114.22	-66.24	977.07	867.88	109.19	8.948	
16,800.00	11,700.00	17,701.35	12,620.00	86.06	87.61	-160.29	-5,164.22	-65.93	977.07	867.12	109.94	8.887	
16,850.00	11,700.00	17,751.35	12,620.00	86.70	88.24	-160.29	-5,214.22	-65.62	977.07	866.37	110.70	8.826	
16,900.00	11,700.00	17,801.35	12,620.00	87.34	88.87	-160.29	-5,264.21	-65.30	977.07	865.61	111.46	8.766	
16,950.00	11,700.00	17,851.35	12,620.00	87.98	89.50	-160.29	-5,314.21	-64.99	977.06	864.85	112.22	8.707	
17,000.00	11,700.00	17,901.35	12,620.00	88.62	90.13	-160.29	-5,364.21	-64.68	977.06	864.09	112.98	8.648	
17,050.00	11,700.00	17,951.35	12,620.00	89.27	90.77	-160.29	-5,414.21	-64.37	977.06	863.32	113.74	8.590	
17,100.00	11,700.00	18,001.35	12,620.00	89.91	91.40	-160.29	-5,464.21	-64.06	977.06	862.56	114.50	8.533	
17,150.00	11,700.00	18,051.35	12,620.00	90.56	92.04	-160.29	-5,514.21	-63.75	977.06	861.79	115.27	8.476	
17,200.00	11,700.00	18,101.35	12,620.00	91.21	92.68	-160.29	-5,564.21	-63.44	977.06	861.02	116.04	8.420	
17,250.00	11,700.00	18,151.35	12,620.00	91.86	93.32	-160.29	-5,614.21	-63.13	977.06	860.25	116.81	8.365	
17,300.00	11,700.00	18,201.35	12,620.00	92.50	93.96	-160.29	-5,664.21	-62.82	977.06	859.48	117.58	8.310	
17,350.00	11,700.00	18,251.35	12,620.00	93.16	94.60	-160.29	-5,714.21	-62.51	977.06	858.70	118.35	8.255	
17,400.00	11,700.00	18,301.35	12,620.00	93.81	95.24	-160.29	-5,764.21	-62.20	977.05	857.93	119.13	8.202	
17,450.00	11,700.00	18,351.35	12,620.00	94.46	95.89	-160.29	-5,814.20	-61.89	977.05	857.15	119.90	8.149	
17,500.00	11,700.00	18,401.35	12,620.00	95.12	96.53	-160.29	-5,864.20	-61.58	977.05	856.37	120.68	8.096	
17,550.00	11,700.00	18,451.35	12,620.00	95.77	97.18	-160.29	-5,914.20	-61.27	977.05	855.59	121.46	8.044	
17,600.00	11,700.00	18,501.35	12,620.00	96.43	97.83	-160.29	-5,964.20	-60.95	977.05	854.81	122.24	7.993	
17,650.00	11,700.00	18,551.35	12,620.00	97.09	98.48	-160.29	-6,014.20	-60.64	977.05	854.03	123.02	7.942	
17,700.00	11,700.00	18,601.35	12,620.00	97.74	99.12	-160.29	-6,064.20	-60.33	977.05	853.24	123.80	7.892	
17,750.00	11,700.00	18,651.35	12,620.00	98.40	99.78	-160.29	-6,114.20	-60.02	977.05	852.46	124.59	7.842	
17,800.00	11,700.00	18,701.35	12,620.00	99.06	100.43	-160.29	-6,164.20	-59.71	977.04	851.67	125.38	7.793	
17,850.00	11,700.00	18,751.35	12,620.00	99.73	101.08	-160.29	-6,214.20	-59.40	977.04	850.88	126.16	7.744	
17,900.00	11,700.00	18,801.35	12,620.00	100.39	101.74	-160.29	-6,264.20	-59.09	977.04	850.09	126.95	7.696	
17,950.00	11,700.00	18,851.35	12,620.00	101.05	102.39	-160.29	-6,314.19	-58.78	977.04	849.30	127.74	7.649	
18,000.00	11,700.00	18,901.35	12,620.00	101.71	103.05	-160.29	-6,364.19	-58.47	977.04	848.51	128.53	7.601	
18,050.00	11,700.00	18,951.35	12,620.00	102.38	103.71	-160.29	-6,414.19	-58.16	977.04	847.71	129.33	7.555	
18,100.00	11,700.00	19,001.35	12,620.00	103.05	104.36	-160.29	-6,464.19	-57.85	977.04	846.92	130.12	7.509	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	11,700.00	19,051.35	12,620.00	103.71	105.02	-160.29	-6,514.19	-57.54	977.04	846.12	130.91	7.463	
18,200.00	11,700.00	19,101.35	12,620.00	104.38	105.68	-160.29	-6,564.19	-57.23	977.04	845.33	131.71	7.418	
18,250.00	11,700.00	19,151.35	12,620.00	105.05	106.34	-160.29	-6,614.19	-56.92	977.03	844.53	132.51	7.373	
18,300.00	11,700.00	19,201.35	12,620.00	105.72	107.01	-160.29	-6,664.19	-56.61	977.03	843.73	133.31	7.329	
18,350.00	11,700.00	19,251.35	12,620.00	106.39	107.67	-160.29	-6,714.19	-56.29	977.03	842.93	134.11	7.286	
18,400.00	11,700.00	19,301.35	12,620.00	107.06	108.33	-160.29	-6,764.19	-55.98	977.03	842.12	134.91	7.242	
18,450.00	11,700.00	19,351.35	12,620.00	107.73	109.00	-160.29	-6,814.19	-55.67	977.03	841.32	135.71	7.199	
18,500.00	11,700.00	19,401.35	12,620.00	108.40	109.66	-160.29	-6,864.18	-55.36	977.03	840.52	136.51	7.157	
18,550.00	11,700.00	19,451.35	12,620.00	109.08	110.33	-160.29	-6,914.18	-55.05	977.03	839.71	137.31	7.115	
18,600.00	11,700.00	19,501.35	12,620.00	109.75	111.00	-160.29	-6,964.18	-54.74	977.03	838.91	138.12	7.074	
18,650.00	11,700.00	19,551.35	12,620.00	110.42	111.66	-160.29	-7,014.18	-54.43	977.02	838.10	138.92	7.033	
18,700.00	11,700.00	19,601.35	12,620.00	111.10	112.33	-160.29	-7,064.18	-54.12	977.02	837.29	139.73	6.992	
18,750.00	11,700.00	19,651.35	12,620.00	111.78	113.00	-160.29	-7,114.18	-53.81	977.02	836.48	140.54	6.952	
18,800.00	11,700.00	19,701.35	12,620.00	112.45	113.67	-160.29	-7,164.18	-53.50	977.02	835.67	141.35	6.912	
18,850.00	11,700.00	19,751.35	12,620.00	113.13	114.34	-160.29	-7,214.18	-53.19	977.02	834.86	142.16	6.873	
18,900.00	11,700.00	19,801.35	12,620.00	113.81	115.01	-160.29	-7,264.18	-52.88	977.02	834.05	142.97	6.834	
18,950.00	11,700.00	19,851.35	12,620.00	114.49	115.69	-160.29	-7,314.18	-52.57	977.02	833.24	143.78	6.795	
19,000.00	11,700.00	19,901.35	12,620.00	115.16	116.36	-160.29	-7,364.17	-52.26	977.02	832.43	144.59	6.757	
19,050.00	11,700.00	19,951.35	12,620.00	115.84	117.03	-160.29	-7,414.17	-51.95	977.02	831.61	145.40	6.719	
19,100.00	11,700.00	20,001.35	12,620.00	116.52	117.71	-160.29	-7,464.17	-51.63	977.01	830.80	146.22	6.682	
19,150.00	11,700.00	20,051.35	12,620.00	117.21	118.38	-160.29	-7,514.17	-51.32	977.01	829.98	147.03	6.645	
19,200.00	11,700.00	20,101.35	12,620.00	117.89	119.06	-160.29	-7,564.17	-51.01	977.01	829.16	147.85	6.608	
19,250.00	11,700.00	20,151.35	12,620.00	118.57	119.73	-160.30	-7,614.17	-50.70	977.01	828.35	148.66	6.572	
19,300.00	11,700.00	20,201.35	12,620.00	119.25	120.41	-160.30	-7,664.17	-50.39	977.01	827.53	149.48	6.536	
19,350.00	11,700.00	20,251.35	12,620.00	119.93	121.09	-160.30	-7,714.17	-50.08	977.01	826.71	150.30	6.500	
19,400.00	11,700.00	20,301.35	12,620.00	120.62	121.76	-160.30	-7,764.17	-49.77	977.01	825.89	151.12	6.465	
19,450.00	11,700.00	20,351.35	12,620.00	121.30	122.44	-160.30	-7,814.17	-49.46	977.01	825.07	151.94	6.430	
19,500.00	11,700.00	20,401.35	12,620.00	121.99	123.12	-160.30	-7,864.16	-49.15	977.00	824.25	152.76	6.396	
19,550.00	11,700.00	20,451.35	12,620.00	122.67	123.80	-160.30	-7,914.16	-48.84	977.00	823.42	153.58	6.362	
19,600.00	11,700.00	20,501.35	12,620.00	123.36	124.48	-160.30	-7,964.16	-48.53	977.00	822.60	154.40	6.328	
19,650.00	11,700.00	20,551.35	12,620.00	124.04	125.16	-160.30	-8,014.16	-48.22	977.00	821.78	155.22	6.294	
19,700.00	11,700.00	20,601.35	12,620.00	124.73	125.84	-160.30	-8,064.16	-47.91	977.00	820.95	156.05	6.261	
19,750.00	11,700.00	20,651.35	12,620.00	125.42	126.52	-160.30	-8,114.16	-47.60	977.00	820.13	156.87	6.228	
19,800.00	11,700.00	20,701.35	12,620.00	126.11	127.21	-160.30	-8,164.16	-47.28	977.00	819.30	157.69	6.196	
19,850.00	11,700.00	20,751.35	12,620.00	126.79	127.89	-160.30	-8,214.16	-46.97	977.00	818.48	158.52	6.163	
19,900.00	11,700.00	20,801.35	12,620.00	127.48	128.57	-160.30	-8,264.16	-46.66	977.00	817.65	159.35	6.131	
19,950.00	11,700.00	20,851.35	12,620.00	128.17	129.26	-160.30	-8,314.16	-46.35	976.99	816.82	160.17	6.100	
20,000.00	11,700.00	20,901.35	12,620.00	128.86	129.94	-160.30	-8,364.16	-46.04	976.99	815.99	161.00	6.068	
20,050.00	11,700.00	20,951.35	12,620.00	129.55	130.63	-160.30	-8,414.15	-45.73	976.99	815.16	161.83	6.037	
20,100.00	11,700.00	21,001.35	12,620.00	130.24	131.31	-160.30	-8,464.15	-45.42	976.99	814.34	162.66	6.007	
20,150.00	11,700.00	21,051.35	12,620.00	130.93	132.00	-160.30	-8,514.15	-45.11	976.99	813.51	163.48	5.976	
20,200.00	11,700.00	21,101.35	12,620.00	131.62	132.68	-160.30	-8,564.15	-44.80	976.99	812.67	164.31	5.946	
20,250.00	11,700.00	21,151.35	12,620.00	132.31	133.37	-160.30	-8,614.15	-44.49	976.99	811.84	165.14	5.916	
20,300.00	11,700.00	21,201.35	12,620.00	133.01	134.06	-160.30	-8,664.15	-44.18	976.99	811.01	165.97	5.886	
20,350.00	11,700.00	21,251.35	12,620.00	133.70	134.74	-160.30	-8,714.15	-43.87	976.99	810.18	166.81	5.857	
20,400.00	11,700.00	21,301.35	12,620.00	134.39	135.43	-160.30	-8,764.15	-43.56	976.98	809.35	167.64	5.828	
20,450.00	11,700.00	21,351.35	12,620.00	135.09	136.12	-160.30	-8,814.15	-43.25	976.98	808.51	168.47	5.799	
20,500.00	11,700.00	21,401.35	12,620.00	135.78	136.81	-160.30	-8,864.15	-42.94	976.98	807.68	169.30	5.771	
20,550.00	11,700.00	21,451.35	12,620.00	136.47	137.50	-160.30	-8,914.14	-42.62	976.98	806.84	170.14	5.742	
20,600.00	11,700.00	21,501.35	12,620.00	137.17	138.19	-160.30	-8,964.14	-42.31	976.98	806.01	170.97	5.714	
20,650.00	11,700.00	21,551.35	12,620.00	137.86	138.88	-160.30	-9,014.14	-42.00	976.98	805.17	171.81	5.687	
20,700.00	11,700.00	21,601.35	12,620.00	138.56	139.57	-160.30	-9,064.14	-41.69	976.98	804.34	172.64	5.659	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	11,700.00	21,651.35	12,620.00	139.25	140.26	-160.30	-9,114.14	-41.38	976.98	803.50	173.48	5.632	
20,800.00	11,700.00	21,701.35	12,620.00	139.95	140.95	-160.30	-9,164.14	-41.07	976.97	802.66	174.31	5.605	
20,850.00	11,700.00	21,751.35	12,620.00	140.64	141.64	-160.30	-9,214.14	-40.76	976.97	801.82	175.15	5.578	
20,900.00	11,700.00	21,801.35	12,620.00	141.34	142.34	-160.30	-9,264.14	-40.45	976.97	800.99	175.99	5.551	
20,950.00	11,700.00	21,851.35	12,620.00	142.04	143.03	-160.30	-9,314.14	-40.14	976.97	800.15	176.82	5.525	
21,000.00	11,700.00	21,901.35	12,620.00	142.73	143.72	-160.30	-9,364.14	-39.83	976.97	799.31	177.66	5.499	
21,050.00	11,700.00	21,951.35	12,620.00	143.43	144.41	-160.30	-9,414.13	-39.52	976.97	798.47	178.50	5.473	
21,100.00	11,700.00	22,001.35	12,620.00	144.13	145.11	-160.30	-9,464.13	-39.21	976.97	797.63	179.34	5.448	
21,150.00	11,700.00	22,051.35	12,620.00	144.83	145.80	-160.30	-9,514.13	-38.90	976.97	796.79	180.18	5.422	
21,200.00	11,700.00	22,101.35	12,620.00	145.52	146.49	-160.30	-9,564.13	-38.59	976.97	795.95	181.02	5.397	
21,250.00	11,700.00	22,151.35	12,620.00	146.22	147.19	-160.30	-9,614.13	-38.28	976.96	795.11	181.86	5.372	
21,300.00	11,700.00	22,201.35	12,620.00	146.92	147.88	-160.30	-9,664.13	-37.96	976.96	794.26	182.70	5.347	
21,350.00	11,700.00	22,251.35	12,620.00	147.62	148.58	-160.30	-9,714.13	-37.65	976.96	793.42	183.54	5.323	
21,400.00	11,700.00	22,301.35	12,620.00	148.32	149.27	-160.30	-9,764.13	-37.34	976.96	792.58	184.38	5.299	
21,450.00	11,700.00	22,351.35	12,620.00	149.02	149.97	-160.30	-9,814.13	-37.03	976.96	791.74	185.22	5.274	
21,500.00	11,700.00	22,401.35	12,620.00	149.72	150.67	-160.30	-9,864.13	-36.72	976.96	790.89	186.07	5.251	
21,550.00	11,700.00	22,451.35	12,620.00	150.42	151.36	-160.30	-9,914.13	-36.41	976.96	790.05	186.91	5.227	
21,600.00	11,700.00	22,501.35	12,620.00	151.12	152.06	-160.30	-9,964.12	-36.10	976.96	789.20	187.75	5.203	
21,650.00	11,700.00	22,551.35	12,620.00	151.82	152.76	-160.30	-10,014.12	-35.79	976.95	788.36	188.60	5.180	
21,700.00	11,700.00	22,601.35	12,620.00	152.52	153.45	-160.30	-10,064.12	-35.48	976.95	787.51	189.44	5.157	
21,750.00	11,700.00	22,651.35	12,620.00	153.22	154.15	-160.30	-10,114.12	-35.17	976.95	786.67	190.28	5.134	
21,800.00	11,700.00	22,701.35	12,620.00	153.93	154.85	-160.30	-10,164.12	-34.86	976.95	785.82	191.13	5.111	
21,850.00	11,700.00	22,751.35	12,620.00	154.63	155.55	-160.31	-10,214.12	-34.55	976.95	784.98	191.97	5.089	
21,900.00	11,700.00	22,801.35	12,620.00	155.33	156.25	-160.31	-10,264.12	-34.24	976.95	784.13	192.82	5.067	
21,950.00	11,700.00	22,851.35	12,620.00	156.03	156.95	-160.31	-10,314.12	-33.93	976.95	783.28	193.66	5.045	
21,964.16	11,700.00	22,865.52	12,620.00	156.23	157.14	-160.31	-10,328.28	-33.84	976.95	783.04	193.90	5.038	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	15.25	15.25	0.50	0.02	91.94	-26.32	777.85	778.29				
50.00	50.00	63.22	63.22	0.50	0.09	91.94	-26.35	777.95	778.40	777.80	0.60	1,306.213	
100.00	100.00	111.19	111.19	0.52	0.17	91.94	-26.40	778.18	778.64	777.95	0.68	1,140.125	
150.00	150.00	159.15	159.15	0.59	0.24	91.95	-26.49	778.53	779.01	778.18	0.83	942.391	
200.00	200.00	207.70	207.69	0.70	0.35	91.96	-26.60	779.00	779.50	778.44	1.05	741.078	
250.00	250.00	257.11	257.10	0.84	0.53	91.95	-26.59	779.54	780.04	778.68	1.36	571.826	
300.00	300.00	307.09	307.08	0.99	0.71	91.94	-26.46	780.12	780.62	778.92	1.69	461.233	
350.00	350.00	357.59	357.58	1.15	0.89	91.94	-26.42	780.67	781.16	779.13	2.03	384.560	
400.00	400.00	407.75	407.73	1.31	1.07	91.94	-26.47	781.20	781.69	779.31	2.37	329.186	
450.00	450.00	457.74	457.72	1.48	1.25	91.94	-26.51	781.72	782.21	779.49	2.72	287.470	
500.00	500.00	508.34	508.32	1.65	1.43	91.94	-26.55	782.23	782.72	779.65	3.07	254.777	
550.00	550.00	559.08	559.06	1.82	1.61	91.94	-26.56	782.70	783.18	779.75	3.43	228.623	
600.00	600.00	610.75	610.72	1.99	1.79	91.94	-26.59	783.09	783.56	779.78	3.78	207.103	
650.00	650.00	662.44	662.41	2.16	1.98	91.95	-26.68	783.38	783.84	779.70	4.14	189.227	
700.00	700.00	710.95	710.93	2.34	2.15	91.96	-26.77	783.65	784.13	779.63	4.49	174.608	
750.00	750.00	759.91	759.88	2.51	2.33	91.96	-26.83	783.99	784.48	779.63	4.84	162.034	
800.00	800.00	809.56	809.53	2.69	2.51	91.96	-26.86	784.40	784.89	779.69	5.20	151.082	
850.00	850.00	861.95	861.92	2.87	2.69	91.96	-26.90	784.75	785.22	779.66	5.56	141.248	
900.00	900.00	913.63	913.60	3.04	2.88	91.97	-26.94	784.94	785.40	779.48	5.92	132.656	
950.00	950.00	964.43	964.40	3.22	3.06	91.97	-26.94	785.06	785.53	779.25	6.28	125.107	
1,000.00	1,000.00	1,015.57	1,015.54	3.40	3.24	91.96	-26.90	785.13	785.59	778.96	6.63	118.432	
1,050.00	1,050.00	1,066.90	1,066.87	3.58	3.41	91.96	-26.86	785.11	785.57	778.58	6.99	112.456	
1,100.00	1,100.00	1,117.21	1,117.18	3.75	3.58	91.96	-26.82	785.03	785.49	778.16	7.33	107.165	
1,150.00	1,150.00	1,167.30	1,167.27	3.93	3.74	91.96	-26.80	784.95	785.41	777.74	7.67	102.370	
1,200.00	1,200.00	1,215.95	1,215.91	4.11	3.91	91.96	-26.81	784.91	785.36	777.35	8.02	97.958	
1,200.49	1,200.49	1,216.42	1,216.39	4.11	3.91	91.96	-26.81	784.91	785.36	777.34	8.02	97.916	
1,250.00	1,250.00	1,264.66	1,264.63	4.29	4.08	91.96	-26.84	784.95	785.41	777.04	8.36	93.908	
1,300.00	1,300.00	1,313.82	1,313.79	4.46	4.25	91.96	-26.88	785.05	785.51	776.80	8.72	90.114	
1,350.00	1,350.00	1,363.40	1,363.37	4.64	4.43	91.96	-26.90	785.21	785.67	776.60	9.07	86.604	
1,400.00	1,400.00	1,414.17	1,414.14	4.82	4.61	91.96	-26.92	785.35	785.81	776.38	9.43	83.315	
1,450.00	1,450.00	1,465.12	1,465.08	5.00	4.79	91.96	-26.93	785.43	785.89	776.10	9.79	80.273	
1,500.00	1,500.00	1,516.28	1,516.25	5.18	4.97	91.96	-26.85	785.45	785.91	775.76	10.15	77.451	
1,550.00	1,550.00	1,566.73	1,566.70	5.36	5.14	91.95	-26.71	785.41	785.86	775.37	10.50	74.855	
1,600.00	1,600.00	1,616.83	1,616.80	5.53	5.31	91.95	-26.69	785.36	785.81	774.96	10.85	72.445	
1,650.00	1,650.00	1,666.29	1,666.25	5.71	5.48	91.95	-26.76	785.31	785.77	774.57	11.20	70.187	
1,677.06	1,677.06	1,692.99	1,692.96	5.81	5.58	91.95	-26.80	785.30	785.76	774.38	11.38	69.025	
1,700.00	1,700.00	1,715.63	1,715.60	5.89	5.65	91.96	-26.84	785.31	785.77	774.22	11.54	68.070	
1,750.00	1,750.00	1,765.30	1,765.26	6.07	5.83	91.96	-26.92	785.33	785.80	773.90	11.90	66.050	
1,800.00	1,800.00	1,815.03	1,815.00	6.25	6.00	91.97	-26.99	785.38	785.85	773.60	12.25	64.147	
1,850.00	1,850.00	1,865.54	1,865.50	6.43	6.18	91.97	-27.03	785.42	785.89	773.28	12.61	62.337	
1,900.00	1,900.00	1,915.93	1,915.90	6.61	6.36	91.97	-27.04	785.43	785.90	772.94	12.96	60.629	
1,950.00	1,950.00	1,965.93	1,965.90	6.78	6.53	91.97	-27.04	785.43	785.90	772.58	13.31	59.026	
1,954.80	1,954.80	1,970.73	1,970.70	6.80	6.55	91.97	-27.04	785.43	785.90	772.55	13.35	58.877	
2,000.00	2,000.00	2,015.45	2,015.42	6.96	6.70	91.97	-27.04	785.44	785.90	772.24	13.67	57.510	
2,050.00	2,050.00	2,064.02	2,063.99	7.14	6.87	153.91	-27.05	785.51	786.18	772.16	14.01	56.108 ES	
2,100.00	2,099.99	2,113.67	2,113.64	7.32	7.05	153.92	-27.07	785.66	786.92	772.55	14.36	54.788	
2,150.00	2,149.98	2,164.78	2,164.75	7.49	7.23	153.95	-27.04	785.77	788.00	773.29	14.72	53.541	
2,200.00	2,199.96	2,215.19	2,215.16	7.67	7.41	153.99	-26.98	785.83	789.42	774.36	15.07	52.386	
2,250.00	2,249.92	2,265.09	2,265.06	7.84	7.58	154.05	-26.99	785.87	791.20	775.78	15.42	51.311	
2,300.00	2,299.88	2,315.33	2,315.29	8.02	7.76	154.12	-27.05	785.91	793.05	777.28	15.77	50.282	
2,350.00	2,349.84	2,365.71	2,365.67	8.19	7.94	154.18	-27.08	785.93	794.87	778.75	16.13	49.292	
2,400.00	2,399.80	2,407.09	2,407.05	8.37	8.09	154.23	-27.01	786.11	796.90	780.46	16.45	48.452	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	2,449.76	2,446.66	2,446.62	8.54	8.23	154.26	-26.77	786.81	799.58	782.82	16.76	47.706	
2,500.00	2,499.72	2,485.63	2,485.56	8.72	8.36	154.27	-26.35	788.01	802.90	785.83	17.07	47.040	
2,550.00	2,549.68	2,523.88	2,523.77	8.90	8.50	154.28	-25.79	789.74	806.94	789.57	17.37	46.454	
2,600.00	2,599.64	2,561.00	2,560.82	9.07	8.63	154.27	-25.10	791.96	811.69	794.03	17.66	45.952	
2,650.00	2,649.60	2,602.27	2,601.96	9.25	8.78	154.24	-24.12	794.96	817.08	799.11	17.97	45.459	
2,700.00	2,699.56	2,642.33	2,641.87	9.43	8.92	154.19	-22.93	798.36	823.06	804.78	18.28	45.034	
2,750.00	2,749.52	2,684.78	2,684.10	9.61	9.08	154.13	-21.41	802.43	829.57	810.98	18.59	44.625	
2,800.00	2,799.48	2,728.44	2,727.48	9.78	9.23	154.04	-19.59	806.93	836.44	817.53	18.91	44.237	
2,850.00	2,849.44	2,772.67	2,771.40	9.96	9.39	153.94	-17.53	811.80	843.65	824.42	19.23	43.873	
2,900.00	2,899.40	2,817.49	2,815.87	10.14	9.55	153.85	-15.50	816.99	851.14	831.58	19.55	43.528	
2,950.00	2,949.36	2,862.44	2,860.45	10.32	9.71	153.76	-13.59	822.43	858.89	839.02	19.88	43.207	
3,000.00	2,999.32	2,907.63	2,905.25	10.49	9.88	153.69	-11.94	828.10	866.90	846.69	20.20	42.906	
3,050.00	3,049.28	2,953.83	2,951.04	10.67	10.05	153.64	-10.58	834.11	875.13	854.59	20.54	42.613	
3,100.00	3,099.24	3,002.22	2,998.98	10.85	10.23	153.59	-9.24	840.49	883.45	862.57	20.88	42.306	
3,150.00	3,149.20	3,052.66	3,048.96	11.03	10.41	153.55	-7.87	847.17	891.81	870.57	21.24	41.985	
3,200.00	3,199.16	3,106.78	3,102.61	11.21	10.61	153.50	-6.36	854.12	899.97	878.34	21.62	41.622	
3,250.00	3,249.12	3,163.09	3,158.48	11.38	10.82	153.45	-4.74	861.01	907.82	885.81	22.02	41.233	
3,300.00	3,299.08	3,220.79	3,215.77	11.56	11.04	153.40	-3.02	867.57	915.24	892.83	22.42	40.827	
3,350.00	3,349.04	3,268.17	3,262.84	11.74	11.21	153.35	-1.56	872.80	922.49	899.73	22.76	40.532	
3,400.00	3,399.00	3,315.29	3,309.63	11.92	11.39	153.30	-0.09	878.11	929.87	906.77	23.10	40.254	
3,450.00	3,448.96	3,355.93	3,349.97	12.10	11.54	153.25	1.28	882.93	937.53	914.13	23.40	40.061	
3,500.00	3,498.92	3,396.21	3,389.88	12.28	11.69	153.20	2.82	888.09	945.67	921.97	23.70	39.901	
3,550.00	3,548.88	3,438.06	3,431.31	12.46	11.85	153.13	4.58	893.84	954.25	930.25	24.01	39.748	
3,600.00	3,598.84	3,480.71	3,473.46	12.63	12.01	153.05	6.45	899.99	963.18	938.87	24.32	39.608	
3,650.00	3,648.80	3,528.83	3,520.99	12.81	12.20	152.96	8.63	907.19	972.39	947.73	24.66	39.424	
3,700.00	3,698.76	3,584.46	3,575.98	12.99	12.41	152.87	11.02	915.27	981.38	956.32	25.06	39.160	
3,750.00	3,748.72	3,634.96	3,625.94	13.17	12.60	152.80	13.01	922.38	990.14	964.72	25.42	38.946	
3,800.00	3,798.68	3,683.63	3,674.10	13.35	12.79	152.75	14.66	929.23	998.92	973.15	25.77	38.757	
3,850.00	3,848.64	3,732.50	3,722.46	13.53	12.98	152.72	16.02	936.14	1,007.73	981.60	26.13	38.571	
3,900.00	3,898.60	3,781.42	3,770.87	13.71	13.17	152.70	17.06	943.06	1,016.54	990.06	26.48	38.390	
3,950.00	3,948.56	3,835.85	3,824.76	13.89	13.38	152.71	17.94	950.64	1,025.26	998.39	26.87	38.160	
4,000.00	3,998.52	3,891.09	3,879.50	14.07	13.59	152.71	18.68	958.02	1,033.69	1,006.43	27.26	37.919	
4,050.00	4,048.47	3,945.23	3,933.19	14.25	13.80	152.73	19.23	964.98	1,041.87	1,014.22	27.65	37.687	
4,100.00	4,098.43	3,997.27	3,984.82	14.43	14.00	152.76	19.58	971.44	1,049.84	1,021.82	28.02	37.471	
4,150.00	4,148.39	4,046.46	4,033.64	14.61	14.18	152.80	19.65	977.51	1,057.78	1,029.40	28.37	37.282	
4,200.00	4,198.35	4,094.30	4,081.11	14.79	14.37	152.85	19.52	983.44	1,065.74	1,037.02	28.72	37.109	
4,250.00	4,248.31	4,140.87	4,127.31	14.97	14.55	152.90	19.45	989.32	1,073.82	1,044.76	29.06	36.955	
4,300.00	4,298.27	4,188.77	4,174.82	15.14	14.73	152.93	19.54	995.47	1,082.01	1,052.60	29.40	36.797	
4,350.00	4,348.23	4,238.02	4,223.64	15.32	14.92	152.93	20.26	1,001.83	1,090.21	1,060.45	29.76	36.633	
4,400.00	4,398.19	4,292.27	4,277.43	15.50	15.13	152.90	21.72	1,008.78	1,098.36	1,068.21	30.15	36.433	
4,450.00	4,448.15	4,350.05	4,334.75	15.68	15.36	152.86	23.53	1,015.78	1,106.16	1,075.61	30.56	36.202	
4,500.00	4,498.11	4,408.03	4,392.33	15.86	15.58	152.81	25.36	1,022.37	1,113.59	1,082.62	30.96	35.966	
4,550.00	4,548.07	4,462.96	4,446.93	16.04	15.79	152.78	26.87	1,028.22	1,120.65	1,089.30	31.35	35.746	
4,600.00	4,598.03	4,511.90	4,495.57	16.22	15.98	152.75	28.23	1,033.36	1,127.66	1,095.95	31.70	35.567	
4,650.00	4,647.99	4,558.37	4,541.76	16.40	16.15	152.72	29.61	1,038.29	1,134.71	1,102.67	32.05	35.410	
4,700.00	4,697.95	4,601.72	4,584.83	16.58	16.32	152.68	31.06	1,043.10	1,142.00	1,109.63	32.37	35.283	
4,750.00	4,747.91	4,644.14	4,626.93	16.76	16.48	152.64	32.67	1,048.03	1,149.55	1,116.87	32.68	35.173	
4,800.00	4,797.87	4,684.21	4,666.65	16.94	16.64	152.58	34.42	1,052.98	1,157.47	1,124.49	32.98	35.092	
4,850.00	4,847.83	4,724.15	4,706.19	17.12	16.80	152.52	36.41	1,058.24	1,165.79	1,132.51	33.28	35.028	
4,900.00	4,897.79	4,766.78	4,748.34	17.30	16.96	152.44	38.75	1,064.14	1,174.45	1,140.85	33.60	34.958	
4,950.00	4,947.75	4,809.45	4,790.50	17.48	17.13	152.35	41.22	1,070.28	1,183.38	1,149.47	33.91	34.898	
5,000.00	4,997.71	4,856.33	4,836.77	17.66	17.32	152.25	44.03	1,077.22	1,192.52	1,158.27	34.25	34.816	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	5,047.67	4,904.61	4,884.44	17.84	17.51	152.16	46.84	1,084.41	1,201.70	1,167.10	34.60	34.728	
5,100.00	5,097.63	4,956.31	4,935.48	18.02	17.72	152.06	49.73	1,092.09	1,210.87	1,175.89	34.98	34.618	
5,150.00	5,147.59	5,008.89	4,987.42	18.20	17.93	151.98	52.48	1,099.75	1,219.90	1,184.54	35.36	34.501	
5,200.00	5,197.55	5,058.63	5,036.59	18.38	18.13	151.90	54.96	1,106.92	1,228.86	1,193.14	35.72	34.402	
5,250.00	5,247.51	5,108.44	5,085.82	18.56	18.33	151.83	57.38	1,114.07	1,237.79	1,201.71	36.08	34.304	
5,300.00	5,297.47	5,158.00	5,134.82	18.74	18.52	151.77	59.69	1,121.17	1,246.70	1,210.26	36.44	34.210	
5,350.00	5,347.43	5,207.32	5,183.58	18.92	18.72	151.71	61.90	1,128.22	1,255.60	1,218.80	36.80	34.118	
5,400.00	5,397.39	5,255.79	5,231.50	19.10	18.92	151.66	63.97	1,135.17	1,264.52	1,227.36	37.16	34.033	
5,450.00	5,447.35	5,306.70	5,281.84	19.28	19.12	151.61	66.03	1,142.47	1,273.45	1,235.92	37.53	33.936	
5,500.00	5,497.31	5,362.55	5,337.10	19.46	19.34	151.57	68.07	1,150.28	1,282.19	1,244.26	37.93	33.807	
5,550.00	5,547.27	5,417.79	5,391.81	19.64	19.56	151.53	69.87	1,157.72	1,290.68	1,252.36	38.32	33.678	
5,600.00	5,597.23	5,472.74	5,446.26	19.82	19.78	151.50	71.68	1,164.89	1,298.95	1,260.24	38.72	33.549	
5,650.00	5,647.19	5,526.06	5,499.12	20.00	19.99	151.47	73.54	1,171.64	1,307.04	1,267.94	39.10	33.427	
5,700.00	5,697.15	5,579.33	5,551.94	20.18	20.20	151.42	75.56	1,178.23	1,314.99	1,275.50	39.48	33.304	
5,750.00	5,747.11	5,627.71	5,599.92	20.36	20.39	151.39	77.43	1,184.18	1,322.90	1,283.06	39.84	33.207	
5,800.00	5,797.07	5,677.48	5,649.27	20.54	20.59	151.35	79.32	1,190.30	1,330.80	1,290.61	40.20	33.106	
5,850.00	5,847.03	5,728.73	5,700.11	20.73	20.79	151.31	81.19	1,196.55	1,338.66	1,298.09	40.57	32.997	
5,900.00	5,896.99	5,779.45	5,750.43	20.91	20.99	151.28	82.94	1,202.67	1,346.46	1,305.52	40.94	32.892	
5,950.00	5,946.95	5,829.54	5,800.13	21.09	21.18	151.25	84.58	1,208.68	1,354.22	1,312.92	41.30	32.790	
6,000.00	5,996.91	5,879.87	5,850.08	21.27	21.38	151.23	86.15	1,214.70	1,361.96	1,320.29	41.66	32.689	
6,050.00	6,046.87	5,930.37	5,900.19	21.45	21.58	151.21	87.68	1,220.69	1,369.65	1,327.62	42.03	32.588	
6,100.00	6,096.83	5,980.73	5,950.18	21.63	21.78	151.19	89.17	1,226.64	1,377.31	1,334.92	42.39	32.488	
6,150.00	6,146.79	6,031.05	6,000.13	21.81	21.97	151.17	90.59	1,232.54	1,384.94	1,342.18	42.76	32.389	
6,200.00	6,196.75	6,079.41	6,048.14	21.99	22.16	151.16	91.91	1,238.22	1,392.56	1,349.45	43.11	32.301	
6,250.00	6,246.71	6,127.44	6,095.81	22.17	22.35	151.15	93.21	1,243.90	1,400.24	1,356.77	43.46	32.217	
6,300.00	6,296.67	6,173.62	6,141.64	22.35	22.53	151.13	94.54	1,249.43	1,407.99	1,364.18	43.80	32.144	
6,350.00	6,346.63	6,219.57	6,187.22	22.53	22.71	151.11	96.07	1,255.05	1,415.86	1,371.72	44.14	32.076	
6,400.00	6,396.59	6,270.76	6,237.99	22.71	22.92	151.08	97.90	1,261.34	1,423.77	1,379.25	44.51	31.986	
6,450.00	6,446.55	6,322.68	6,289.49	22.89	23.12	151.05	99.71	1,267.63	1,431.59	1,386.70	44.89	31.894	
6,500.00	6,496.51	6,373.80	6,340.22	23.07	23.32	151.03	101.39	1,273.76	1,439.34	1,394.08	45.26	31.804	
6,550.00	6,546.46	6,424.84	6,390.88	23.25	23.52	151.01	102.94	1,279.81	1,447.03	1,401.41	45.63	31.715	
6,600.00	6,596.42	6,475.33	6,440.99	23.43	23.72	150.99	104.39	1,285.75	1,454.68	1,408.69	45.99	31.629	
6,650.00	6,646.38	6,526.76	6,492.05	23.61	23.92	150.98	105.81	1,291.76	1,462.28	1,415.92	46.36	31.540	
6,700.00	6,696.34	6,579.79	6,544.72	23.79	24.13	150.97	107.15	1,297.85	1,469.78	1,423.04	46.74	31.444	
6,750.00	6,746.30	6,632.11	6,596.69	23.97	24.33	150.97	108.33	1,303.74	1,477.17	1,430.05	47.12	31.349	
6,800.00	6,796.26	6,683.95	6,648.19	24.15	24.54	150.97	109.38	1,309.49	1,484.47	1,436.97	47.49	31.257	
6,850.00	6,846.22	6,735.84	6,699.77	24.33	24.74	150.98	110.32	1,315.17	1,491.69	1,443.82	47.87	31.164	
6,900.00	6,896.18	6,787.76	6,751.38	24.51	24.94	150.99	111.15	1,320.77	1,498.83	1,450.59	48.24	31.071	SF

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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		Offset		Semi Major Axis			Offset Wellbore Centre		Distance				
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	Warning
0.00	0.00	15.25	15.25	0.50	0.02	91.94	-26.32	777.85	778.29				
50.00	50.00	63.22	63.22	0.50	0.09	91.94	-26.35	777.95	778.40	777.80	0.60	1,306.213	
100.00	100.00	111.19	111.19	0.52	0.17	91.94	-26.40	778.18	778.64	777.95	0.68	1,140.125	
150.00	150.00	159.15	159.15	0.59	0.24	91.95	-26.49	778.53	779.01	778.18	0.83	942.391	
200.00	200.00	207.70	207.69	0.70	0.35	91.96	-26.60	779.00	779.50	778.44	1.05	741.078	
250.00	250.00	257.11	257.10	0.84	0.53	91.95	-26.59	779.54	780.04	778.68	1.36	571.826	
300.00	300.00	307.09	307.08	0.99	0.71	91.94	-26.46	780.12	780.62	778.92	1.69	461.233	
350.00	350.00	357.59	357.58	1.15	0.89	91.94	-26.42	780.67	781.16	779.13	2.03	384.560	
400.00	400.00	407.75	407.73	1.31	1.07	91.94	-26.47	781.20	781.69	779.31	2.37	329.186	
450.00	450.00	457.74	457.72	1.48	1.25	91.94	-26.51	781.72	782.21	779.49	2.72	287.470	
500.00	500.00	508.34	508.32	1.65	1.43	91.94	-26.55	782.23	782.72	779.65	3.07	254.777	
550.00	550.00	559.08	559.06	1.82	1.61	91.94	-26.56	782.70	783.18	779.75	3.43	228.623	
600.00	600.00	610.75	610.72	1.99	1.79	91.94	-26.59	783.09	783.56	779.78	3.78	207.103	
650.00	650.00	662.44	662.41	2.16	1.98	91.95	-26.68	783.38	783.84	779.70	4.14	189.227	
700.00	700.00	710.95	710.93	2.34	2.15	91.96	-26.77	783.65	784.13	779.63	4.49	174.608	
750.00	750.00	759.91	759.88	2.51	2.33	91.96	-26.83	783.99	784.48	779.63	4.84	162.034	
800.00	800.00	809.56	809.53	2.69	2.51	91.96	-26.86	784.40	784.89	779.69	5.20	151.082	
850.00	850.00	861.95	861.92	2.87	2.69	91.96	-26.90	784.75	785.22	779.66	5.56	141.248	
900.00	900.00	913.63	913.60	3.04	2.88	91.97	-26.94	784.94	785.40	779.48	5.92	132.656	
950.00	950.00	964.43	964.40	3.22	3.06	91.97	-26.94	785.06	785.53	779.25	6.28	125.107	
1,000.00	1,000.00	1,015.57	1,015.54	3.40	3.24	91.96	-26.90	785.13	785.59	778.96	6.63	118.432	
1,050.00	1,050.00	1,066.90	1,066.87	3.58	3.41	91.96	-26.86	785.11	785.57	778.58	6.99	112.456	
1,100.00	1,100.00	1,117.21	1,117.18	3.75	3.58	91.96	-26.82	785.03	785.49	778.16	7.33	107.165	
1,150.00	1,150.00	1,167.30	1,167.27	3.93	3.74	91.96	-26.80	784.95	785.41	777.74	7.67	102.370	
1,200.00	1,200.00	1,215.95	1,215.91	4.11	3.91	91.96	-26.81	784.91	785.36	777.35	8.02	97.958	
1,200.49	1,200.49	1,216.42	1,216.39	4.11	3.91	91.96	-26.81	784.91	785.36	777.34	8.02	97.916	
1,250.00	1,250.00	1,264.66	1,264.63	4.29	4.08	91.96	-26.84	784.95	785.41	777.04	8.36	93.908	
1,300.00	1,300.00	1,313.82	1,313.79	4.46	4.25	91.96	-26.88	785.05	785.51	776.80	8.72	90.114	
1,350.00	1,350.00	1,363.40	1,363.37	4.64	4.43	91.96	-26.90	785.21	785.67	776.60	9.07	86.604	
1,400.00	1,400.00	1,414.17	1,414.14	4.82	4.61	91.96	-26.92	785.35	785.81	776.38	9.43	83.315	
1,450.00	1,450.00	1,465.12	1,465.08	5.00	4.79	91.96	-26.93	785.43	785.89	776.10	9.79	80.273	
1,500.00	1,500.00	1,516.28	1,516.25	5.18	4.97	91.96	-26.85	785.45	785.91	775.76	10.15	77.451	
1,550.00	1,550.00	1,566.73	1,566.70	5.36	5.14	91.95	-26.71	785.41	785.86	775.37	10.50	74.855	
1,600.00	1,600.00	1,616.83	1,616.80	5.53	5.31	91.95	-26.69	785.36	785.81	774.96	10.85	72.445	
1,650.00	1,650.00	1,666.29	1,666.25	5.71	5.48	91.95	-26.76	785.31	785.77	774.57	11.20	70.187	
1,677.06	1,677.06	1,692.99	1,692.96	5.81	5.58	91.95	-26.80	785.30	785.76	774.38	11.38	69.025	
1,700.00	1,700.00	1,715.63	1,715.60	5.89	5.65	91.96	-26.84	785.31	785.77	774.22	11.54	68.070	
1,750.00	1,750.00	1,765.30	1,765.26	6.07	5.83	91.96	-26.92	785.33	785.80	773.90	11.90	66.050	
1,800.00	1,800.00	1,815.03	1,815.00	6.25	6.00	91.97	-26.99	785.38	785.85	773.60	12.25	64.147	
1,850.00	1,850.00	1,865.54	1,865.50	6.43	6.18	91.97	-27.03	785.42	785.89	773.28	12.61	62.337	
1,900.00	1,900.00	1,915.93	1,915.90	6.61	6.36	91.97	-27.04	785.43	785.90	772.94	12.96	60.629	
1,950.00	1,950.00	1,965.93	1,965.90	6.78	6.53	91.97	-27.04	785.43	785.90	772.58	13.31	59.026	
1,954.80	1,954.80	1,970.73	1,970.70	6.80	6.55	91.97	-27.04	785.43	785.90	772.55	13.35	58.877	
2,000.00	2,000.00	2,015.45	2,015.42	6.96	6.70	91.97	-27.04	785.44	785.90	772.24	13.67	57.510	
2,050.00	2,050.00	2,064.02	2,063.99	7.14	6.87	153.91	-27.05	785.51	786.18	772.16	14.01	56.108 ES	
2,100.00	2,099.99	2,113.67	2,113.64	7.32	7.05	153.92	-27.07	785.66	786.92	772.55	14.36	54.788	
2,150.00	2,149.98	2,164.78	2,164.75	7.49	7.23	153.95	-27.04	785.77	788.00	773.29	14.72	53.541	
2,200.00	2,199.96	2,215.19	2,215.16	7.67	7.41	153.99	-26.98	785.83	789.42	774.36	15.07	52.386	
2,250.00	2,249.92	2,265.09	2,265.06	7.84	7.58	154.05	-26.99	785.87	791.20	775.78	15.42	51.311	
2,300.00	2,299.88	2,315.33	2,315.29	8.02	7.76	154.12	-27.05	785.91	793.05	777.28	15.77	50.282	
2,350.00	2,349.84	2,365.71	2,365.67	8.19	7.94	154.18	-27.08	785.93	794.87	778.75	16.13	49.292	
2,400.00	2,399.80	2,407.09	2,407.05	8.37	8.09	154.23	-27.01	786.11	796.90	780.46	16.45	48.452	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	2,449.76	2,446.66	2,446.62	8.54	8.23	154.26	-26.77	786.81	799.58	782.82	16.76	47.706	
2,500.00	2,499.72	2,485.63	2,485.56	8.72	8.36	154.27	-26.35	788.01	802.90	785.83	17.07	47.040	
2,550.00	2,549.68	2,523.88	2,523.77	8.90	8.50	154.28	-25.79	789.74	806.94	789.57	17.37	46.454	
2,600.00	2,599.64	2,561.00	2,560.82	9.07	8.63	154.27	-25.10	791.96	811.69	794.03	17.66	45.952	
2,650.00	2,649.60	2,602.27	2,601.96	9.25	8.78	154.24	-24.12	794.96	817.08	799.11	17.97	45.459	
2,700.00	2,699.56	2,642.33	2,641.87	9.43	8.92	154.19	-22.93	798.36	823.06	804.78	18.28	45.034	
2,750.00	2,749.52	2,684.78	2,684.10	9.61	9.08	154.13	-21.41	802.43	829.57	810.98	18.59	44.625	
2,800.00	2,799.48	2,728.44	2,727.48	9.78	9.23	154.04	-19.59	806.93	836.44	817.53	18.91	44.237	
2,850.00	2,849.44	2,772.67	2,771.40	9.96	9.39	153.94	-17.53	811.80	843.65	824.42	19.23	43.873	
2,900.00	2,899.40	2,817.49	2,815.87	10.14	9.55	153.85	-15.50	816.99	851.14	831.58	19.55	43.528	
2,950.00	2,949.36	2,862.44	2,860.45	10.32	9.71	153.76	-13.59	822.43	858.89	839.02	19.88	43.207	
3,000.00	2,999.32	2,907.63	2,905.25	10.49	9.88	153.69	-11.94	828.10	866.90	846.69	20.20	42.906	
3,050.00	3,049.28	2,953.83	2,951.04	10.67	10.05	153.64	-10.58	834.11	875.13	854.59	20.54	42.613	
3,100.00	3,099.24	3,002.22	2,998.98	10.85	10.23	153.59	-9.24	840.49	883.45	862.57	20.88	42.306	
3,150.00	3,149.20	3,052.66	3,048.96	11.03	10.41	153.55	-7.87	847.17	891.81	870.57	21.24	41.985	
3,200.00	3,199.16	3,106.78	3,102.61	11.21	10.61	153.50	-6.36	854.12	899.97	878.34	21.62	41.622	
3,250.00	3,249.12	3,163.09	3,158.48	11.38	10.82	153.45	-4.74	861.01	907.82	885.81	22.02	41.233	
3,300.00	3,299.08	3,220.79	3,215.77	11.56	11.04	153.40	-3.02	867.57	915.24	892.83	22.42	40.827	
3,350.00	3,349.04	3,268.17	3,262.84	11.74	11.21	153.35	-1.56	872.80	922.49	899.73	22.76	40.532	
3,400.00	3,399.00	3,315.29	3,309.63	11.92	11.39	153.30	-0.09	878.11	929.87	906.77	23.10	40.254	
3,450.00	3,448.96	3,355.93	3,349.97	12.10	11.54	153.25	1.28	882.93	937.53	914.13	23.40	40.061	
3,500.00	3,498.92	3,396.21	3,389.88	12.28	11.69	153.20	2.82	888.09	945.67	921.97	23.70	39.901	
3,550.00	3,548.88	3,438.06	3,431.31	12.46	11.85	153.13	4.58	893.84	954.25	930.25	24.01	39.748	
3,600.00	3,598.84	3,480.71	3,473.46	12.63	12.01	153.05	6.45	899.99	963.18	938.87	24.32	39.608	
3,650.00	3,648.80	3,528.83	3,520.99	12.81	12.20	152.96	8.63	907.19	972.39	947.73	24.66	39.424	
3,700.00	3,698.76	3,584.46	3,575.98	12.99	12.41	152.87	11.02	915.27	981.38	956.32	25.06	39.160	
3,750.00	3,748.72	3,634.96	3,625.94	13.17	12.60	152.80	13.01	922.38	990.14	964.72	25.42	38.946	
3,800.00	3,798.68	3,683.63	3,674.10	13.35	12.79	152.75	14.66	929.23	998.92	973.15	25.77	38.757	
3,850.00	3,848.64	3,732.50	3,722.46	13.53	12.98	152.72	16.02	936.14	1,007.73	981.60	26.13	38.571	
3,900.00	3,898.60	3,781.42	3,770.87	13.71	13.17	152.70	17.06	943.06	1,016.54	990.06	26.48	38.390	
3,950.00	3,948.56	3,835.85	3,824.76	13.89	13.38	152.71	17.94	950.64	1,025.26	998.39	26.87	38.160	
4,000.00	3,998.52	3,891.09	3,879.50	14.07	13.59	152.71	18.68	958.02	1,033.69	1,006.43	27.26	37.919	
4,050.00	4,048.47	3,945.23	3,933.19	14.25	13.80	152.73	19.23	964.98	1,041.87	1,014.22	27.65	37.687	
4,100.00	4,098.43	3,997.27	3,984.82	14.43	14.00	152.76	19.58	971.44	1,049.84	1,021.82	28.02	37.471	
4,150.00	4,148.39	4,046.46	4,033.64	14.61	14.18	152.80	19.65	977.51	1,057.78	1,029.40	28.37	37.282	
4,200.00	4,198.35	4,094.30	4,081.11	14.79	14.37	152.85	19.52	983.44	1,065.74	1,037.02	28.72	37.109	
4,250.00	4,248.31	4,140.87	4,127.31	14.97	14.55	152.90	19.45	989.32	1,073.82	1,044.76	29.06	36.955	
4,300.00	4,298.27	4,188.77	4,174.82	15.14	14.73	152.93	19.54	995.47	1,082.01	1,052.60	29.40	36.797	
4,350.00	4,348.23	4,238.02	4,223.64	15.32	14.92	152.93	20.26	1,001.83	1,090.21	1,060.45	29.76	36.633	
4,400.00	4,398.19	4,292.27	4,277.43	15.50	15.13	152.90	21.72	1,008.78	1,098.36	1,068.21	30.15	36.433	
4,450.00	4,448.15	4,350.05	4,334.75	15.68	15.36	152.86	23.53	1,015.78	1,106.16	1,075.61	30.56	36.202	
4,500.00	4,498.11	4,408.03	4,392.33	15.86	15.58	152.81	25.36	1,022.37	1,113.59	1,082.62	30.96	35.966	
4,550.00	4,548.07	4,462.96	4,446.93	16.04	15.79	152.78	26.87	1,028.22	1,120.65	1,089.30	31.35	35.746	
4,600.00	4,598.03	4,511.90	4,495.57	16.22	15.98	152.75	28.23	1,033.36	1,127.66	1,095.95	31.70	35.567	
4,650.00	4,647.99	4,558.37	4,541.76	16.40	16.15	152.72	29.61	1,038.29	1,134.71	1,102.67	32.05	35.410	
4,700.00	4,697.95	4,601.72	4,584.83	16.58	16.32	152.68	31.06	1,043.10	1,142.00	1,109.63	32.37	35.283	
4,750.00	4,747.91	4,644.14	4,626.93	16.76	16.48	152.64	32.67	1,048.03	1,149.55	1,116.87	32.68	35.173	
4,800.00	4,797.87	4,684.21	4,666.65	16.94	16.64	152.58	34.42	1,052.98	1,157.47	1,124.49	32.98	35.092	
4,850.00	4,847.83	4,724.15	4,706.19	17.12	16.80	152.52	36.41	1,058.24	1,165.79	1,132.51	33.28	35.028	
4,900.00	4,897.79	4,766.78	4,748.34	17.30	16.96	152.44	38.75	1,064.14	1,174.45	1,140.85	33.60	34.958	
4,950.00	4,947.75	4,809.45	4,790.50	17.48	17.13	152.35	41.22	1,070.28	1,183.38	1,149.47	33.91	34.898	
5,000.00	4,997.71	4,856.33	4,836.77	17.66	17.32	152.25	44.03	1,077.22	1,192.52	1,158.27	34.25	34.816	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	5,047.67	4,904.61	4,884.44	17.84	17.51	152.16	46.84	1,084.41	1,201.70	1,167.10	34.60	34.728	
5,100.00	5,097.63	4,956.31	4,935.48	18.02	17.72	152.06	49.73	1,092.09	1,210.87	1,175.89	34.98	34.618	
5,150.00	5,147.59	5,008.89	4,987.42	18.20	17.93	151.98	52.48	1,099.75	1,219.90	1,184.54	35.36	34.501	
5,200.00	5,197.55	5,058.63	5,036.59	18.38	18.13	151.90	54.96	1,106.92	1,228.86	1,193.14	35.72	34.402	
5,250.00	5,247.51	5,108.44	5,085.82	18.56	18.33	151.83	57.38	1,114.07	1,237.79	1,201.71	36.08	34.304	
5,300.00	5,297.47	5,158.00	5,134.82	18.74	18.52	151.77	59.69	1,121.17	1,246.70	1,210.26	36.44	34.210	
5,350.00	5,347.43	5,207.32	5,183.58	18.92	18.72	151.71	61.90	1,128.22	1,255.60	1,218.80	36.80	34.118	
5,400.00	5,397.39	5,255.79	5,231.50	19.10	18.92	151.66	63.97	1,135.17	1,264.52	1,227.36	37.16	34.033	
5,450.00	5,447.35	5,306.70	5,281.84	19.28	19.12	151.61	66.03	1,142.47	1,273.45	1,235.92	37.53	33.936	
5,500.00	5,497.31	5,362.55	5,337.10	19.46	19.34	151.57	68.07	1,150.28	1,282.19	1,244.26	37.93	33.807	
5,550.00	5,547.27	5,417.79	5,391.81	19.64	19.56	151.53	69.87	1,157.72	1,290.68	1,252.36	38.32	33.678	
5,600.00	5,597.23	5,472.74	5,446.26	19.82	19.78	151.50	71.68	1,164.89	1,298.95	1,260.24	38.72	33.549	
5,650.00	5,647.19	5,526.06	5,499.12	20.00	19.99	151.47	73.54	1,171.64	1,307.04	1,267.94	39.10	33.427	
5,700.00	5,697.15	5,579.33	5,551.94	20.18	20.20	151.42	75.56	1,178.23	1,314.99	1,275.50	39.48	33.304	
5,750.00	5,747.11	5,627.71	5,599.92	20.36	20.39	151.39	77.43	1,184.18	1,322.90	1,283.06	39.84	33.207	
5,800.00	5,797.07	5,677.48	5,649.27	20.54	20.59	151.35	79.32	1,190.30	1,330.80	1,290.61	40.20	33.106	
5,850.00	5,847.03	5,728.73	5,700.11	20.73	20.79	151.31	81.19	1,196.55	1,338.66	1,298.09	40.57	32.997	
5,900.00	5,896.99	5,779.45	5,750.43	20.91	20.99	151.28	82.94	1,202.67	1,346.46	1,305.52	40.94	32.892	
5,950.00	5,946.95	5,829.54	5,800.13	21.09	21.18	151.25	84.58	1,208.68	1,354.22	1,312.92	41.30	32.790	
6,000.00	5,996.91	5,879.87	5,850.08	21.27	21.38	151.23	86.15	1,214.70	1,361.96	1,320.29	41.66	32.689	
6,050.00	6,046.87	5,930.37	5,900.19	21.45	21.58	151.21	87.68	1,220.69	1,369.65	1,327.62	42.03	32.588	
6,100.00	6,096.83	5,980.73	5,950.18	21.63	21.78	151.19	89.17	1,226.64	1,377.31	1,334.92	42.39	32.488	
6,150.00	6,146.79	6,031.05	6,000.13	21.81	21.97	151.17	90.59	1,232.54	1,384.94	1,342.18	42.76	32.389	
6,200.00	6,196.75	6,079.41	6,048.14	21.99	22.16	151.16	91.91	1,238.22	1,392.56	1,349.45	43.11	32.301	
6,250.00	6,246.71	6,127.44	6,095.81	22.17	22.35	151.15	93.21	1,243.90	1,400.24	1,356.77	43.46	32.217	
6,300.00	6,296.67	6,173.62	6,141.64	22.35	22.53	151.13	94.54	1,249.43	1,407.99	1,364.18	43.80	32.144	
6,350.00	6,346.63	6,219.57	6,187.22	22.53	22.71	151.11	96.07	1,255.05	1,415.86	1,371.72	44.14	32.076	
6,400.00	6,396.59	6,270.76	6,237.99	22.71	22.92	151.08	97.90	1,261.34	1,423.77	1,379.25	44.51	31.986	
6,450.00	6,446.55	6,322.68	6,289.49	22.89	23.12	151.05	99.71	1,267.63	1,431.59	1,386.70	44.89	31.894	
6,500.00	6,496.51	6,373.80	6,340.22	23.07	23.32	151.03	101.39	1,273.76	1,439.34	1,394.08	45.26	31.804	
6,550.00	6,546.46	6,424.84	6,390.88	23.25	23.52	151.01	102.94	1,279.81	1,447.03	1,401.41	45.63	31.715	
6,600.00	6,596.42	6,475.33	6,440.99	23.43	23.72	150.99	104.39	1,285.75	1,454.68	1,408.69	45.99	31.629	
6,650.00	6,646.38	6,526.76	6,492.05	23.61	23.92	150.98	105.81	1,291.76	1,462.28	1,415.92	46.36	31.540	
6,700.00	6,696.34	6,579.79	6,544.72	23.79	24.13	150.97	107.15	1,297.85	1,469.78	1,423.04	46.74	31.444	
6,750.00	6,746.30	6,632.11	6,596.69	23.97	24.33	150.97	108.33	1,303.74	1,477.17	1,430.05	47.12	31.349	
6,800.00	6,796.26	6,683.95	6,648.19	24.15	24.54	150.97	109.38	1,309.49	1,484.47	1,436.97	47.49	31.257	
6,850.00	6,846.22	6,735.84	6,699.77	24.33	24.74	150.98	110.32	1,315.17	1,491.69	1,443.82	47.87	31.164	
6,900.00	6,896.18	6,787.76	6,751.38	24.51	24.94	150.99	111.15	1,320.77	1,498.83	1,450.59	48.24	31.071	SF

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	15.90	15.90	0.50		91.94	-26.32	777.84	778.29				
50.00	50.00	65.90	65.90	0.50		91.94	-26.32	777.84	778.29	777.78	0.50	1,550.360	
100.00	100.00	115.90	115.90	0.52		91.94	-26.32	777.84	778.29	777.77	0.52	1,503.194	
150.00	150.00	165.90	165.90	0.59		91.94	-26.32	777.84	778.29	777.70	0.59	1,318.592	
200.00	200.00	215.90	215.90	0.70		91.94	-26.32	777.84	778.29	777.58	0.70	1,108.508	
250.00	250.00	268.85	268.84	0.84		91.94	-26.33	777.90	778.35	777.51	0.84	929.087	
272.62	272.62	293.59	293.59	0.90		91.94	-26.30	777.77	778.23	777.33	0.90	860.702	
300.00	300.00	315.91	315.90	0.99		91.94	-26.32	777.84	778.29	777.30	0.99	788.270	
350.00	350.00	382.08	365.90	1.15		91.94	-26.32	777.84	778.29	777.14	1.15	679.435	
400.00	400.00	415.92	415.90	1.31		91.94	-26.32	777.84	778.29	776.98	1.31	594.525	
450.00	450.00	470.27	470.25	1.48		91.94	-26.32	777.82	778.28	776.80	1.48	527.162	
460.29	460.29	481.55	481.53	1.51		91.94	-26.31	777.75	778.22	776.71	1.51	514.983 CC	
500.00	500.00	516.15	516.13	1.65		91.94	-26.33	777.96	778.41	776.76	1.65	472.884	
550.00	550.00	570.96	570.93	1.82		91.94	-26.32	777.78	778.24	776.42	1.82	428.145	
558.39	558.39	574.31	574.29	1.85		91.94	-26.32	777.84	778.29	776.44	1.85	421.471	
600.00	600.00	616.62	616.59	1.99		91.94	-26.32	777.94	778.39	776.39	1.99	391.030	
650.00	650.00	665.93	665.90	2.16		91.94	-26.32	777.84	778.29	776.12	2.16	359.559	
700.00	700.00	715.93	715.90	2.34		91.94	-26.32	777.84	778.29	775.95	2.34	332.699	
750.00	750.00	766.97	766.94	2.51		91.94	-26.35	777.90	778.35	775.83	2.51	309.519	
800.00	800.00	815.93	815.90	2.69		91.94	-26.32	777.84	778.29	775.60	2.69	289.262	
850.00	850.00	867.60	867.57	2.87		91.94	-26.32	777.92	778.36	775.50	2.87	271.500	
900.00	900.00	915.93	915.90	3.04		91.94	-26.32	777.84	778.29	775.24	3.04	255.717	
950.00	950.00	966.79	966.75	3.22		91.94	-26.33	777.86	778.31	775.09	3.22	241.675	
1,000.00	1,000.00	1,015.93	1,015.90	3.40		91.94	-26.32	777.84	778.29	774.89	3.40	229.065	
1,050.00	1,050.00	1,066.41	1,066.37	3.58		91.94	-26.32	777.85	778.29	774.72	3.58	217.702	
1,067.44	1,067.44	1,084.08	1,084.05	3.64		91.94	-26.32	777.83	778.28	774.64	3.64	213.991	
1,100.00	1,100.00	1,115.93	1,115.90	3.75		91.94	-26.32	777.84	778.29	774.53	3.75	207.399	
1,106.43	1,106.43	1,122.35	1,122.32	3.78		91.94	-26.31	777.82	778.27	774.49	3.78	206.139	
1,150.00	1,150.00	1,165.36	1,165.32	3.93		91.94	-26.32	777.84	778.29	774.36	3.93	198.021	
1,197.07	1,197.07	1,213.00	1,212.97	4.10		91.94	-26.32	777.82	778.27	774.17	4.10	189.926	
1,200.00	1,200.00	1,215.89	1,215.86	4.11		91.94	-26.32	777.82	778.27	774.16	4.11	189.444	
1,250.00	1,250.00	1,265.93	1,265.90	4.29		91.94	-26.32	777.84	778.29	774.00	4.29	181.583	
1,300.00	1,300.00	1,316.08	1,316.05	4.46		91.94	-26.33	777.86	778.30	773.84	4.46	174.344	
1,350.00	1,350.00	1,365.93	1,365.90	4.64		91.94	-26.32	777.84	778.29	773.64	4.64	167.650	
1,400.00	1,400.00	1,416.54	1,416.50	4.82		91.94	-26.32	777.87	778.32	773.50	4.82	161.458	
1,450.00	1,450.00	1,465.93	1,465.90	5.00		91.94	-26.32	777.84	778.29	773.29	5.00	155.693	
1,500.00	1,500.00	1,516.36	1,516.32	5.18		91.94	-26.32	777.85	778.30	773.12	5.18	150.331	
1,550.00	1,550.00	1,565.93	1,565.90	5.36		91.94	-26.32	777.84	778.29	772.93	5.36	145.321	
1,562.57	1,562.57	1,578.51	1,578.47	5.40		91.94	-26.28	777.83	778.28	772.88	5.40	144.111	
1,600.00	1,600.00	1,615.64	1,615.61	5.53		91.94	-26.31	777.84	778.28	772.75	5.53	140.633	
1,650.00	1,650.00	1,665.93	1,665.90	5.71		91.94	-26.32	777.84	778.29	772.57	5.71	136.239	
1,655.75	1,655.75	1,671.67	1,671.63	5.73		91.94	-26.33	777.83	778.27	772.54	5.73	135.749	
1,700.00	1,700.00	1,715.49	1,715.45	5.89		91.94	-26.32	777.84	778.29	772.40	5.89	132.109	
1,750.00	1,750.00	1,765.94	1,765.91	6.07		91.94	-26.34	777.85	778.29	772.22	6.07	128.223	
1,800.00	1,800.00	1,816.10	1,816.07	6.25		91.94	-26.32	777.84	778.29	772.04	6.25	124.556	
1,804.37	1,804.37	1,820.49	1,820.45	6.26		91.94	-26.31	777.84	778.28	772.02	6.26	124.245	
1,850.00	1,850.00	1,866.01	1,865.98	6.43		91.94	-26.33	777.85	778.30	771.87	6.43	121.096	
1,900.00	1,900.00	1,915.93	1,915.90	6.61		91.94	-26.32	777.84	778.29	771.68	6.61	117.818	
1,950.00	1,950.00	1,965.93	1,965.90	6.78		91.94	-26.32	777.84	778.29	771.50	6.78	114.714	
2,000.00	2,000.00	2,015.93	2,015.90	6.96		91.94	-26.32	777.84	778.29	771.32	6.96	111.769 ES	
2,050.00	2,050.00	2,065.93	2,065.90	7.14		153.87	-26.32	777.84	778.48	771.34	7.14	109.035	
2,100.00	2,099.99	2,115.93	2,115.89	7.32		153.89	-26.32	777.84	779.07	771.75	7.32	106.487	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
2,150.00	2,149.98	2,166.72	2,166.68	7.49		153.92	-26.32	777.87	780.08	772.59	7.49	104.143	
2,200.00	2,199.96	2,215.89	2,215.86	7.67		153.96	-26.32	777.84	781.42	773.76	7.66	101.949	
2,250.00	2,249.92	2,266.09	2,266.05	7.84		154.02	-26.31	777.85	783.16	775.32	7.84	99.899	
2,300.00	2,299.88	2,315.82	2,315.78	8.02		154.09	-26.32	777.84	784.96	776.94	8.01	97.946	
2,350.00	2,349.84	2,382.22	2,365.74	8.19		154.15	-26.32	777.84	786.76	778.57	8.19	96.074	
2,400.00	2,399.80	2,415.74	2,415.70	8.37		154.21	-26.32	777.84	788.57	780.20	8.36	94.280	
2,450.00	2,449.76	2,470.29	2,465.66	8.54		154.28	-26.32	777.84	790.37	781.83	8.54	92.555	
2,500.00	2,499.72	2,516.12	2,516.06	8.72		154.33	-26.19	778.20	792.54	783.82	8.71	90.941	
2,550.00	2,549.68	2,565.76	2,565.58	8.90		154.40	-26.32	777.84	793.99	785.10	8.89	89.307	
2,600.00	2,599.64	2,624.94	2,624.72	9.07		154.46	-26.11	778.53	796.53	787.46	9.07	87.858	
2,650.00	2,649.60	2,666.03	2,665.50	9.25		154.53	-26.32	777.84	797.60	788.36	9.24	86.300	
2,700.00	2,699.56	2,700.00	2,715.46	9.43		154.59	-26.32	777.84	799.41	790.00	9.42	84.880	
2,750.00	2,749.52	2,766.53	2,765.42	9.61		154.65	-26.32	777.84	801.23	791.63	9.59	83.510	
2,800.00	2,799.48	2,844.00	2,842.16	9.78		154.74	-26.32	777.84	803.48	793.72	9.77	82.256	
2,850.00	2,849.44	2,867.18	2,865.34	9.96		154.77	-26.32	777.84	804.85	794.90	9.95	80.912	
2,900.00	2,899.40	2,938.00	2,935.35	10.14		154.86	-26.32	777.84	806.91	796.79	10.12	79.713	
2,950.00	2,949.36	2,967.91	2,965.26	10.32		154.89	-26.32	777.84	808.48	798.18	10.30	78.490	
3,000.00	2,999.32	3,033.00	3,029.48	10.49		154.97	-26.32	777.84	810.42	799.94	10.48	77.351	
3,050.00	3,049.28	3,068.70	3,065.18	10.67		155.01	-26.32	777.84	812.11	801.46	10.65	76.226	
3,100.00	3,099.24	3,134.53	3,115.14	10.85		155.07	-26.32	777.84	813.93	803.10	10.83	75.149	
3,150.00	3,149.20	3,169.43	3,165.10	11.03		155.13	-26.32	777.84	815.75	804.74	11.01	74.105	
3,200.00	3,199.16	3,223.92	3,215.06	11.21		155.19	-26.32	777.84	817.57	806.38	11.19	73.094	
3,250.00	3,249.12	3,317.00	3,311.34	11.38		155.30	-26.32	777.84	820.70	809.34	11.35	72.287	
3,266.44	3,265.55	3,317.00	3,311.34	11.44		155.30	-26.32	777.84	820.53	809.11	11.42	71.861	
3,300.00	3,299.08	3,320.64	3,314.98	11.56		155.31	-26.32	777.84	821.21	809.67	11.54	71.164	
3,350.00	3,349.04	3,410.00	3,403.54	11.74		155.41	-26.32	777.84	823.94	812.23	11.71	70.351	
3,358.57	3,357.60	3,410.00	3,403.54	11.77		155.41	-26.32	777.84	823.89	812.15	11.75	70.147	
3,400.00	3,399.00	3,421.36	3,414.90	11.92		155.42	-26.32	777.84	824.86	812.96	11.89	69.348	
3,450.00	3,448.96	3,505.00	3,497.46	12.10		155.52	-26.32	777.84	827.32	815.25	12.07	68.548	
3,452.41	3,451.37	3,505.00	3,497.46	12.11		155.52	-26.32	777.84	827.32	815.24	12.08	68.495	
3,500.00	3,498.92	3,522.36	3,514.82	12.28		155.54	-26.32	777.84	828.50	816.25	12.25	67.636	
3,550.00	3,548.88	3,550.00	3,564.78	12.46		155.60	-26.32	777.84	830.33	817.90	12.43	66.816	
3,600.00	3,598.84	3,623.37	3,614.74	12.63		155.65	-26.32	777.84	832.16	819.55	12.60	66.019	
3,650.00	3,648.80	3,693.00	3,683.37	12.81		155.73	-26.32	777.84	834.19	821.41	12.78	65.257	
3,700.00	3,698.76	3,724.29	3,714.66	12.99		155.77	-26.32	777.84	835.81	822.85	12.96	64.490	
3,750.00	3,748.72	3,787.00	3,776.40	13.17		155.84	-26.32	777.84	837.72	824.58	13.14	63.757	
3,800.00	3,798.68	3,825.18	3,814.58	13.35		155.88	-26.32	777.84	839.47	826.15	13.32	63.042	
3,850.00	3,848.64	3,887.96	3,864.54	13.53		155.94	-26.32	777.84	841.30	827.80	13.49	62.347	
3,900.00	3,898.60	3,926.00	3,914.50	13.71		155.99	-26.32	777.84	843.13	829.46	13.67	61.669	
3,950.00	3,948.56	3,976.73	3,964.46	13.89		156.05	-26.32	777.84	844.96	831.11	13.85	61.008	
4,000.00	3,998.52	4,070.00	4,057.00	14.07		156.15	-26.32	777.84	847.86	833.84	14.02	60.463	
4,011.51	4,010.01	4,070.00	4,057.00	14.11		156.15	-26.32	777.84	847.79	833.72	14.07	60.263	
4,050.00	4,048.47	4,077.37	4,064.37	14.25		156.16	-26.32	777.84	848.63	834.42	14.21	59.737	
4,100.00	4,098.43	4,164.00	4,150.25	14.43		156.25	-26.32	777.84	851.22	836.84	14.38	59.186	
4,104.68	4,103.11	4,164.00	4,150.25	14.44		156.25	-26.32	777.84	851.21	836.81	14.40	59.111	
4,150.00	4,148.39	4,178.04	4,164.29	14.61		156.27	-26.32	777.84	852.30	837.73	14.56	58.527	
4,200.00	4,198.35	4,258.00	4,243.45	14.79		156.35	-26.32	777.84	854.63	839.89	14.74	57.978	
4,250.00	4,248.31	4,278.76	4,264.21	14.97		156.37	-26.32	777.84	855.97	841.05	14.92	57.375	
4,300.00	4,298.27	4,352.00	4,336.69	15.14		156.45	-26.32	777.84	858.10	843.00	15.10	56.833	
4,350.00	4,348.23	4,379.44	4,364.13	15.32		156.48	-26.32	777.84	859.64	844.37	15.28	56.276	
4,400.00	4,398.19	4,446.00	4,430.07	15.50		156.55	-26.32	777.84	861.63	846.18	15.46	55.748	
4,450.00	4,448.15	4,479.99	4,464.05	15.68		156.59	-26.32	777.84	863.32	847.69	15.63	55.227	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
4,500.00	4,498.11	4,547.50	4,514.01	15.86		156.64	-26.32	777.84	865.16	849.35	15.81	54.721	
4,550.00	4,548.07	4,580.46	4,563.97	16.04		156.69	-26.32	777.84	867.00	851.01	15.99	54.225	
4,600.00	4,598.03	4,634.94	4,613.93	16.22		156.74	-26.32	777.84	868.85	852.68	16.17	53.741	
4,650.00	4,647.99	4,726.00	4,708.02	16.40		156.84	-26.32	777.84	871.81	855.46	16.34	53.348	
4,662.00	4,659.99	4,726.00	4,708.02	16.45		156.84	-26.32	777.84	871.72	855.33	16.39	53.189	
4,700.00	4,697.95	4,731.83	4,713.85	16.58		156.85	-26.32	777.84	872.53	856.01	16.52	52.803	
4,750.00	4,747.91	4,750.00	4,763.81	16.76		156.90	-26.32	777.84	874.37	857.67	16.70	52.349	
4,800.00	4,797.87	4,832.86	4,813.77	16.94		156.95	-26.32	777.84	876.22	859.34	16.88	51.904	
4,850.00	4,847.83	4,850.00	4,863.73	17.12		157.00	-26.32	777.84	878.06	861.00	17.06	51.469	
4,900.00	4,897.79	4,933.99	4,913.69	17.30		157.05	-26.32	777.84	879.91	862.67	17.24	51.043	
4,950.00	4,947.75	4,950.00	4,963.65	17.48		157.10	-26.32	777.84	881.76	864.34	17.42	50.625	
5,000.00	4,997.71	5,035.07	5,013.61	17.66		157.15	-26.32	777.84	883.60	866.01	17.60	50.216	
5,050.00	5,047.67	5,050.00	5,063.57	17.84		157.21	-26.32	777.84	885.45	867.68	17.77	49.816	
5,100.00	5,097.63	5,136.08	5,113.53	18.02		157.26	-26.32	777.84	887.30	869.35	17.95	49.423	
5,150.00	5,147.59	5,202.90	5,163.49	18.20		157.31	-26.32	777.84	889.15	871.02	18.13	49.038	
5,200.00	5,197.55	5,237.06	5,213.45	18.38		157.35	-26.32	777.84	891.00	872.69	18.31	48.660	
5,250.00	5,247.51	5,288.06	5,263.41	18.56		157.40	-26.32	777.84	892.85	874.36	18.49	48.290	
5,300.00	5,297.47	5,300.00	5,313.37	18.74		157.45	-26.32	777.84	894.70	876.03	18.67	47.927	
5,350.00	5,347.43	5,388.97	5,363.33	18.92		157.50	-26.32	777.84	896.55	877.71	18.85	47.570	
5,400.00	5,397.39	5,400.00	5,413.29	19.10		157.55	-26.32	777.84	898.41	879.38	19.03	47.221	
5,450.00	5,447.35	5,489.76	5,463.25	19.28		157.60	-26.32	777.84	900.26	881.06	19.20	46.877	
5,500.00	5,497.31	5,500.00	5,513.21	19.46		157.65	-26.32	777.84	902.11	882.73	19.38	46.541	
5,550.00	5,547.27	5,590.47	5,563.17	19.64		157.70	-26.32	777.84	903.97	884.41	19.56	46.210	
5,600.00	5,597.23	5,663.00	5,634.92	19.82		157.77	-26.32	777.84	906.09	886.34	19.75	45.889	
5,650.00	5,647.19	5,691.17	5,663.09	20.00		157.79	-26.32	777.84	907.68	887.76	19.92	45.566	
5,700.00	5,697.15	5,756.00	5,727.16	20.18		157.85	-26.32	777.84	909.65	889.54	20.10	45.250	
5,750.00	5,747.11	5,791.85	5,763.01	20.36		157.89	-26.32	777.84	911.39	891.12	20.28	44.946	
5,800.00	5,797.07	5,857.46	5,812.97	20.54		157.94	-26.32	777.84	913.25	892.79	20.46	44.643	
5,850.00	5,847.03	5,892.50	5,862.93	20.73		157.98	-26.32	777.84	915.11	894.47	20.64	44.346	
5,900.00	5,896.99	5,944.83	5,912.89	20.91		158.03	-26.32	777.84	916.97	896.15	20.81	44.054	
5,950.00	5,946.95	5,950.00	5,962.85	21.09		158.08	-26.32	777.84	918.83	897.83	20.99	43.767	
6,000.00	5,996.91	6,043.78	6,012.81	21.27		158.12	-26.32	777.84	920.69	899.52	21.17	43.485	
6,050.00	6,046.87	6,132.00	6,100.34	21.45		158.20	-26.32	777.84	923.31	901.96	21.35	43.239	
6,053.20	6,050.06	6,132.00	6,100.34	21.46		158.20	-26.32	777.84	923.31	901.94	21.37	43.214	
6,100.00	6,096.83	6,144.39	6,112.73	21.63		158.22	-26.32	777.84	924.41	902.88	21.53	42.935	
6,150.00	6,146.79	6,225.00	6,192.61	21.81		158.29	-26.32	777.84	926.75	905.04	21.71	42.681	
6,200.00	6,196.75	6,245.04	6,212.65	21.99		158.31	-26.32	777.84	928.13	906.25	21.89	42.403	
6,250.00	6,246.71	6,318.00	6,284.85	22.17		158.37	-26.32	777.84	930.26	908.19	22.07	42.146	
6,300.00	6,296.67	6,345.71	6,312.57	22.35		158.40	-26.32	777.84	931.86	909.62	22.25	41.888	
6,350.00	6,346.63	6,413.00	6,379.12	22.53		158.46	-26.32	777.84	933.87	911.44	22.43	41.634	
6,400.00	6,396.59	6,446.36	6,412.49	22.71		158.49	-26.32	777.84	935.59	912.99	22.60	41.390	
6,450.00	6,446.55	6,507.00	6,472.43	22.89		158.54	-26.32	777.84	937.51	914.72	22.79	41.142	
6,500.00	6,496.51	6,546.97	6,512.41	23.07		158.58	-26.32	777.84	939.32	916.36	22.96	40.907	
6,550.00	6,546.46	6,604.42	6,562.36	23.25		158.62	-26.32	777.84	941.19	918.05	23.14	40.671	
6,600.00	6,596.42	6,600.00	6,612.32	23.43		158.67	-26.32	777.84	943.06	919.74	23.32	40.439	
6,650.00	6,646.38	6,698.10	6,662.28	23.61		158.71	-26.32	777.84	944.92	921.42	23.50	40.210	
6,700.00	6,696.34	6,789.00	6,752.61	23.79		158.79	-26.32	777.84	947.65	923.97	23.68	40.016	
6,704.95	6,701.29	6,789.00	6,752.61	23.81		158.79	-26.32	777.84	947.64	923.94	23.70	39.983	
6,750.00	6,746.30	6,798.59	6,762.20	23.97		158.80	-26.32	777.84	948.66	924.80	23.86	39.763	
6,800.00	6,796.26	6,883.00	6,846.09	24.15		158.87	-26.32	777.84	951.14	927.09	24.04	39.561	
6,850.00	6,846.22	6,899.03	6,862.12	24.33		158.89	-26.32	777.84	952.40	928.18	24.22	39.329	
6,900.00	6,896.18	6,978.00	6,940.63	24.51		158.96	-26.32	777.84	954.70	930.30	24.40	39.125	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
6,950.00	6,946.14	6,999.41	6,962.04	24.70		158.97	-26.32	777.84	956.14	931.57	24.57	38.908	
7,000.00	6,996.10	7,072.00	7,034.23	24.88		159.04	-26.32	777.84	958.27	933.51	24.76	38.703	
7,050.00	7,046.06	7,099.73	7,061.96	25.06		159.06	-26.32	777.84	959.89	934.95	24.93	38.499	
7,100.00	7,096.02	7,167.00	7,128.88	25.24		159.12	-26.32	777.84	961.91	936.79	25.12	38.296	
7,150.00	7,145.98	7,200.01	7,161.88	25.42		159.14	-26.32	777.84	963.63	938.34	25.29	38.102	
7,200.00	7,195.94	7,262.00	7,223.57	25.60		159.20	-26.32	777.84	965.58	940.10	25.48	37.903	
7,250.00	7,245.90	7,300.23	7,261.80	25.78		159.23	-26.32	777.84	967.38	941.73	25.65	37.715	
7,300.00	7,295.86	7,359.55	7,311.76	25.96		159.27	-26.32	777.84	969.25	943.43	25.83	37.526	
7,350.00	7,345.82	7,400.41	7,361.72	26.14		159.31	-26.32	777.84	971.13	945.12	26.01	37.340	
7,400.00	7,395.78	7,450.58	7,411.68	26.32		159.35	-26.32	777.84	973.01	946.82	26.19	37.156	
7,450.00	7,445.74	7,508.44	7,469.51	26.50		159.41	-26.53	778.53	975.62	949.25	26.37	36.997	
7,500.00	7,495.70	7,550.68	7,511.60	26.68		159.44	-26.32	777.84	976.76	950.21	26.55	36.796	
7,550.00	7,545.66	7,613.13	7,574.02	26.86		159.50	-26.53	778.34	979.24	952.51	26.73	36.634	
7,600.00	7,595.62	7,650.74	7,611.52	27.04		159.52	-26.32	777.84	980.51	953.61	26.90	36.445	
7,650.00	7,645.58	7,715.85	7,676.60	27.22		159.58	-26.49	778.18	982.87	955.78	27.09	36.283	
7,700.00	7,695.54	7,750.79	7,711.44	27.40		159.60	-26.32	777.84	984.27	957.01	27.26	36.104	
7,750.00	7,745.50	7,820.47	7,781.09	27.58		159.66	-26.40	777.99	986.51	959.06	27.45	35.940	
7,800.00	7,795.46	7,850.82	7,811.36	27.77		159.68	-26.32	777.84	988.03	960.41	27.62	35.771	
7,850.00	7,845.42	7,920.63	7,881.14	27.95		159.74	-26.35	777.89	990.16	962.35	27.81	35.608	
7,900.00	7,895.38	7,950.83	7,911.28	28.13		159.76	-26.32	777.84	991.79	963.81	27.98	35.447	
7,950.00	7,945.34	8,022.20	7,982.62	28.31		159.82	-26.27	777.76	993.82	965.65	28.17	35.284	
8,000.00	7,995.30	8,050.84	8,011.20	28.49		159.84	-26.32	777.84	995.56	967.22	28.34	35.132	
8,050.00	8,045.26	8,125.13	8,085.45	28.67		159.89	-26.12	777.58	997.45	968.92	28.53	34.967	
8,100.00	8,095.22	8,150.84	8,111.12	28.85		159.92	-26.32	777.84	999.32	970.62	28.70	34.824	
8,150.00	8,145.18	8,201.14	8,161.08	29.03		159.96	-26.32	777.84	1,001.20	972.33	28.88	34.673	
8,200.00	8,195.14	8,251.93	8,212.13	29.21		160.02	-26.65	778.15	1,003.44	974.39	29.06	34.535	
8,250.00	8,245.10	8,300.83	8,261.00	29.39		160.04	-26.32	777.84	1,004.97	975.74	29.23	34.376	
8,300.00	8,295.06	8,353.84	8,314.01	29.57		160.08	-26.37	778.13	1,007.15	977.74	29.42	34.239	
8,350.00	8,345.02	8,400.81	8,360.92	29.75		160.12	-26.32	777.84	1,008.74	979.15	29.59	34.087	
8,400.00	8,394.98	8,460.53	8,420.62	29.93		160.15	-26.21	778.22	1,011.03	981.26	29.78	33.953	
8,450.00	8,444.94	8,500.81	8,460.84	30.11		160.19	-26.32	777.84	1,012.51	982.56	29.95	33.805	
8,500.00	8,494.90	8,556.40	8,516.41	30.30		160.22	-26.04	778.07	1,014.60	984.46	30.13	33.670	
8,550.00	8,544.86	8,600.80	8,560.76	30.48		160.27	-26.32	777.84	1,016.29	985.98	30.31	33.530	
8,600.00	8,594.82	8,658.17	8,618.11	30.66		160.30	-26.14	778.00	1,018.33	987.84	30.49	33.395	
8,650.00	8,644.78	8,700.78	8,660.68	30.84		160.35	-26.32	777.84	1,020.06	989.39	30.67	33.261	
8,700.00	8,694.74	8,755.21	8,715.09	31.02		160.38	-26.19	777.92	1,022.02	991.17	30.85	33.128	
8,750.00	8,744.70	8,800.73	8,760.60	31.20		160.42	-26.32	777.84	1,023.84	992.81	31.03	32.998	
8,800.00	8,794.66	8,849.76	8,809.62	31.38		160.45	-26.22	777.85	1,025.72	994.51	31.21	32.869	
8,850.00	8,844.62	8,900.66	8,860.52	31.56		160.50	-26.32	777.84	1,027.62	996.23	31.39	32.741	
8,900.00	8,894.58	8,946.50	8,906.35	31.74		160.53	-26.28	777.81	1,029.48	997.92	31.56	32.617	
8,950.00	8,944.54	9,000.59	8,960.44	31.92		160.57	-26.32	777.84	1,031.40	999.65	31.74	32.490	
9,000.00	8,994.50	9,044.30	9,004.14	32.10		160.61	-26.33	777.81	1,033.28	1,001.36	31.92	32.371	
9,050.00	9,044.45	9,100.00	9,059.83	32.28		160.65	-26.45	777.66	1,035.02	1,002.91	32.10	32.240	
9,100.00	9,094.41	9,150.50	9,110.31	32.46		160.68	-26.32	777.84	1,037.07	1,004.79	32.28	32.124	
9,150.00	9,144.37	9,199.12	9,158.93	32.65		160.72	-26.31	777.69	1,038.81	1,006.35	32.46	32.001	
9,200.00	9,194.33	9,250.42	9,210.23	32.83		160.76	-26.32	777.84	1,040.86	1,008.21	32.64	31.887	
9,250.00	9,244.29	9,299.13	9,258.94	33.01		160.79	-26.35	777.75	1,042.67	1,009.85	32.82	31.769	
9,300.00	9,294.25	9,350.35	9,310.15	33.19		160.83	-26.32	777.84	1,044.64	1,011.64	33.00	31.655	
9,350.00	9,344.21	9,398.53	9,358.33	33.37		160.86	-26.34	777.76	1,046.46	1,013.28	33.18	31.540	
9,400.00	9,394.17	9,450.27	9,410.07	33.55		160.90	-26.32	777.84	1,048.43	1,015.07	33.36	31.429	
9,450.00	9,444.13	9,499.74	9,459.55	33.73		160.94	-26.31	777.83	1,050.31	1,016.77	33.54	31.317	
9,500.00	9,494.09	9,550.19	9,509.99	33.91		160.97	-26.32	777.84	1,052.22	1,018.50	33.72	31.206	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
9,550.00	9,544.05	9,600.76	9,560.56	34.09		161.01	-26.35	777.85	1,054.13	1,020.23	33.90	31.097	
9,600.00	9,594.01	9,650.11	9,609.91	34.27		161.04	-26.32	777.84	1,056.01	1,021.93	34.08	30.989	
9,650.00	9,643.97	9,717.90	9,659.87	34.45		161.08	-26.32	777.84	1,057.91	1,023.65	34.26	30.882	
9,700.00	9,693.93	9,750.06	9,709.83	34.63		161.11	-26.32	777.84	1,059.80	1,025.37	34.44	30.776	
9,750.00	9,743.89	9,807.96	9,759.79	34.82		161.15	-26.32	777.84	1,061.70	1,027.09	34.62	30.672	
9,800.00	9,793.85	9,850.00	9,809.75	35.00		161.18	-26.32	777.84	1,063.60	1,028.80	34.79	30.568	
9,850.00	9,843.81	9,908.01	9,859.71	35.18		161.22	-26.32	777.84	1,065.50	1,030.52	34.97	30.466	
9,900.00	9,893.77	9,949.95	9,909.67	35.36		161.25	-26.32	777.84	1,067.40	1,032.24	35.15	30.364	
9,950.00	9,943.73	10,005.38	9,965.09	35.54		161.30	-26.41	777.79	1,069.27	1,033.94	35.34	30.260	
10,000.00	9,993.69	10,050.38	10,010.07	35.72		161.30	-26.03	777.98	1,071.28	1,035.77	35.51	30.166	
10,050.00	10,043.65	10,105.25	10,064.92	35.90		161.37	-26.51	777.75	1,073.05	1,037.35	35.69	30.062	
10,100.00	10,093.61	10,150.13	10,109.80	36.08		161.38	-26.15	777.89	1,075.02	1,039.15	35.87	29.969	
10,150.00	10,143.57	10,199.82	10,159.47	36.26		161.42	-26.32	777.84	1,076.89	1,040.84	36.05	29.872	
10,200.00	10,193.53	10,251.00	10,210.65	36.44		161.45	-26.13	777.94	1,078.86	1,042.63	36.23	29.777	
10,250.00	10,243.49	10,299.77	10,259.39	36.62		161.49	-26.32	777.84	1,080.69	1,044.28	36.41	29.682	
10,300.00	10,293.45	10,352.24	10,311.85	36.81		161.52	-26.12	777.95	1,082.67	1,046.08	36.59	29.589	
10,350.00	10,343.41	10,399.71	10,359.31	36.99		161.56	-26.32	777.84	1,084.50	1,047.73	36.77	29.495	
10,400.00	10,393.37	10,451.63	10,411.22	37.17		161.58	-26.15	777.91	1,086.44	1,049.49	36.95	29.404	
10,450.00	10,443.33	10,499.65	10,459.23	37.35		161.63	-26.32	777.84	1,088.30	1,051.17	37.13	29.313	
10,500.00	10,493.29	10,553.46	10,513.04	37.53		161.66	-26.27	777.89	1,090.25	1,052.94	37.31	29.222	
10,550.00	10,543.25	10,599.58	10,559.15	37.71		161.69	-26.32	777.84	1,091.98	1,054.50	37.49	29.131	
10,600.00	10,593.24	10,662.43	10,609.14	37.89		161.72	-26.32	777.84	1,093.19	1,055.52	37.67	29.024	
10,650.00	10,643.23	10,699.57	10,659.13	38.07		161.73	-26.32	777.84	1,093.77	1,055.93	37.84	28.903	
10,700.00	10,693.23	10,758.19	10,717.75	38.24		99.81	-26.29	777.79	1,093.80	1,055.78	38.02	28.766	
10,709.36	10,702.60	10,769.29	10,728.85	38.27		99.81	-26.25	777.70	1,093.72	1,055.66	38.06	28.739	
10,750.00	10,743.23	10,800.43	10,759.97	38.42		99.82	-26.51	778.06	1,094.07	1,055.88	38.19	28.645	
10,800.00	10,793.23	10,849.62	10,809.13	38.59		99.81	-26.32	777.84	1,093.83	1,055.46	38.37	28.508	
10,850.00	10,843.23	10,902.22	10,861.73	38.77		99.82	-26.53	778.04	1,094.07	1,055.52	38.55	28.383	
10,900.00	10,893.23	10,949.64	10,909.13	38.94		99.81	-26.32	777.84	1,093.83	1,055.11	38.72	28.249	
10,950.00	10,943.23	11,003.46	10,962.95	39.12		99.81	-26.48	778.01	1,094.02	1,055.12	38.90	28.125	
11,000.00	10,993.23	11,049.65	11,009.13	39.29		99.81	-26.32	777.84	1,093.83	1,054.75	39.07	27.995	
11,000.00	10,993.23	11,049.65	11,009.13	39.29		99.81	-26.32	777.84	1,093.83	1,054.75	39.07	27.995	
11,050.00	11,043.22	11,100.56	11,060.04	39.47		-173.81	-26.36	777.87	1,094.56	1,055.31	39.25	27.887	
11,100.00	11,092.99	11,149.41	11,108.89	39.65		-173.79	-26.32	777.84	1,099.12	1,059.70	39.43	27.877 SF	
11,150.00	11,142.19	11,198.57	11,158.05	39.84		-167.93	-26.33	777.84	1,107.89	1,068.28	39.61	27.973	
11,200.00	11,191.09	11,247.51	11,206.99	40.03		-144.54	-26.32	777.84	1,117.37	1,077.60	39.78	28.090	
11,250.00	11,239.59	11,296.01	11,255.49	40.21		-127.36	-26.32	777.84	1,126.07	1,086.13	39.94	28.191	
11,300.00	11,287.32	11,343.74	11,303.22	40.38		-116.18	-26.32	777.84	1,134.02	1,093.91	40.11	28.276	
11,350.00	11,333.92	11,387.82	11,347.29	40.54		-108.96	-26.30	777.77	1,141.20	1,100.94	40.26	28.347	
11,400.00	11,379.03	11,435.46	11,394.93	40.69		-104.34	-26.32	777.84	1,147.97	1,107.56	40.41	28.409	
11,450.00	11,422.32	11,476.05	11,435.51	40.83		-101.19	-26.44	777.72	1,154.14	1,113.59	40.55	28.463	
11,500.00	11,463.45	11,520.04	11,479.35	40.97		-99.24	-26.32	777.84	1,160.29	1,119.61	40.69	28.518	
11,550.00	11,502.11	11,558.08	11,517.33	41.09		-97.83	-27.35	777.73	1,166.24	1,125.43	40.81	28.575	
11,600.00	11,538.00	11,590.37	11,549.57	41.21		-96.84	-26.55	777.82	1,172.50	1,131.57	40.93	28.646	
11,650.00	11,570.86	11,625.05	11,582.81	41.32		-96.19	-27.57	777.71	1,178.97	1,137.93	41.05	28.724	
11,700.00	11,600.43	11,660.19	11,616.33	41.43		-95.90	-26.32	777.84	1,186.32	1,145.17	41.15	28.826	
11,750.00	11,626.48	11,675.34	11,631.06	41.54		-94.94	-27.75	777.75	1,194.16	1,152.92	41.24	28.955	
11,800.00	11,648.83	11,711.61	11,664.73	41.65		-94.95	-26.32	777.84	1,203.27	1,161.92	41.34	29.106	
11,850.00	11,667.29	11,720.10	11,672.63	41.76		-93.82	-28.43	777.81	1,212.96	1,171.55	41.41	29.289	
11,900.00	11,681.74	11,749.57	11,697.64	41.87		-93.55	-26.32	777.84	1,224.45	1,182.95	41.49	29.510	
11,950.00	11,692.05	11,759.88	11,707.95	41.98		-92.55	-26.32	777.84	1,236.79	1,195.23	41.55	29.764	
12,000.00	11,698.15	11,761.81	11,709.26	42.09		-91.10	-28.54	778.00	1,249.83	1,208.23	41.60	30.044	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
12,050.00	11,700.00	11,762.02	11,709.47	42.21		-89.69	-28.53	778.00	1,264.32	1,222.68	41.64	30.363	
12,100.00	11,700.00	11,761.84	11,709.29	42.32		-89.69	-28.54	778.00	1,280.25	1,238.57	41.68	30.719	
12,150.00	11,700.00	11,761.69	11,709.15	42.45		-89.68	-28.54	778.00	1,297.91	1,256.18	41.72	31.107	
12,200.00	11,700.00	11,761.57	11,709.03	42.59		-89.67	-28.54	778.00	1,317.23	1,275.47	41.76	31.543	
12,250.00	11,700.00	11,761.47	11,708.94	42.74		-89.67	-28.54	778.00	1,338.14	1,296.33	41.81	32.005	
12,300.00	11,700.00	11,761.39	11,708.86	42.90		-89.67	-28.54	778.00	1,360.57	1,318.71	41.85	32.510	
12,350.00	11,700.00	11,761.32	11,708.79	43.08		-89.66	-28.54	778.00	1,384.44	1,342.53	41.90	33.040	
12,400.00	11,700.00	11,761.26	11,708.73	43.25		-89.66	-28.55	778.00	1,409.68	1,367.73	41.94	33.608	
12,450.00	11,700.00	11,761.20	11,708.68	43.45		-89.66	-28.55	778.00	1,436.21	1,394.22	42.00	34.199	
12,500.00	11,700.00	11,761.16	11,708.63	43.65		-89.65	-28.55	778.00	1,463.98	1,421.94	42.04	34.825	
12,550.00	11,700.00	11,761.12	11,708.59	43.87		-89.65	-28.55	778.00	1,492.90	1,450.81	42.09	35.470	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	0.30	0.30	0.50	0.50	89.73	0.43	89.99	89.99				
50.00	50.00	50.30	50.30	0.50	0.50	89.73	0.43	89.99	89.99	88.98	1.01	89.405	
100.00	100.00	100.30	100.30	0.52	0.52	89.73	0.43	89.99	89.99	88.96	1.04	86.882	
150.00	150.00	150.30	150.30	0.59	0.59	89.73	0.43	89.99	89.99	88.81	1.18	76.196	
200.00	200.00	200.30	200.30	0.70	0.70	89.73	0.43	89.99	89.99	88.59	1.40	64.052	
250.00	250.00	250.30	250.30	0.84	0.84	89.73	0.43	89.99	89.99	88.31	1.68	53.685	
300.00	300.00	300.30	300.30	0.99	0.99	89.73	0.43	89.99	89.99	88.02	1.98	45.551	
350.00	350.00	350.30	350.30	1.15	1.15	89.73	0.43	89.99	89.99	87.70	2.29	39.264	
400.00	400.00	400.30	400.30	1.31	1.31	89.73	0.43	89.99	89.99	87.37	2.62	34.359	
450.00	450.00	450.30	450.30	1.48	1.48	89.73	0.43	89.99	89.99	87.04	2.95	30.468	
500.00	500.00	500.30	500.30	1.65	1.65	89.73	0.43	89.99	89.99	86.70	3.29	27.326	
550.00	550.00	550.30	550.30	1.82	1.82	89.73	0.43	89.99	89.99	86.35	3.64	24.748	
600.00	600.00	600.30	600.30	1.99	1.99	89.73	0.43	89.99	89.99	86.01	3.98	22.598	
650.00	650.00	650.30	650.30	2.16	2.17	89.73	0.43	89.99	89.99	85.66	4.33	20.782	
700.00	700.00	700.30	700.30	2.34	2.34	89.73	0.43	89.99	89.99	85.31	4.68	19.230	
750.00	750.00	750.30	750.30	2.51	2.52	89.73	0.43	89.99	89.99	84.96	5.03	17.889	
800.00	800.00	800.30	800.30	2.69	2.69	89.73	0.43	89.99	89.99	84.61	5.38	16.720	
850.00	850.00	850.30	850.30	2.87	2.87	89.73	0.43	89.99	89.99	84.26	5.73	15.692	
900.00	900.00	900.30	900.30	3.04	3.04	89.73	0.43	89.99	89.99	83.90	6.09	14.781	
950.00	950.00	950.30	950.30	3.22	3.22	89.73	0.43	89.99	89.99	83.55	6.44	13.969	
1,000.00	1,000.00	1,000.30	1,000.30	3.40	3.40	89.73	0.43	89.99	89.99	83.19	6.80	13.241	
1,050.00	1,050.00	1,050.30	1,050.30	3.58	3.58	89.73	0.43	89.99	89.99	82.84	7.15	12.584	
1,100.00	1,100.00	1,100.30	1,100.30	3.75	3.75	89.73	0.43	89.99	89.99	82.48	7.51	11.989	
1,150.00	1,150.00	1,150.30	1,150.30	3.93	3.93	89.73	0.43	89.99	89.99	82.13	7.86	11.447	
1,200.00	1,200.00	1,200.30	1,200.30	4.11	4.11	89.73	0.43	89.99	89.99	81.77	8.22	10.951	
1,250.00	1,250.00	1,250.30	1,250.30	4.29	4.29	89.73	0.43	89.99	89.99	81.42	8.57	10.497	
1,300.00	1,300.00	1,300.30	1,300.30	4.46	4.47	89.73	0.43	89.99	89.99	81.06	8.93	10.078	
1,350.00	1,350.00	1,350.30	1,350.30	4.64	4.64	89.73	0.43	89.99	89.99	80.71	9.29	9.691	
1,400.00	1,400.00	1,400.30	1,400.30	4.82	4.82	89.73	0.43	89.99	89.99	80.35	9.64	9.333	
1,450.00	1,450.00	1,450.30	1,450.30	5.00	5.00	89.73	0.43	89.99	89.99	79.99	10.00	9.000	
1,500.00	1,500.00	1,500.30	1,500.30	5.18	5.18	89.73	0.43	89.99	89.99	79.64	10.36	8.690	
1,550.00	1,550.00	1,550.30	1,550.30	5.36	5.36	89.73	0.43	89.99	89.99	79.28	10.71	8.401	
1,600.00	1,600.00	1,600.30	1,600.30	5.53	5.54	89.73	0.43	89.99	89.99	78.92	11.07	8.130	
1,650.00	1,650.00	1,650.30	1,650.30	5.71	5.71	89.73	0.43	89.99	89.99	78.56	11.43	7.876	
1,700.00	1,700.00	1,700.30	1,700.30	5.89	5.89	89.73	0.43	89.99	89.99	78.21	11.78	7.637	
1,750.00	1,750.00	1,750.30	1,750.30	6.07	6.07	89.73	0.43	89.99	89.99	77.85	12.14	7.412	
1,800.00	1,800.00	1,800.30	1,800.30	6.25	6.25	89.73	0.43	89.99	89.99	77.49	12.50	7.200	
1,850.00	1,850.00	1,850.30	1,850.30	6.43	6.43	89.73	0.43	89.99	89.99	77.14	12.86	7.000	
1,900.00	1,900.00	1,900.30	1,900.30	6.61	6.61	89.73	0.43	89.99	89.99	76.78	13.21	6.811	
1,950.00	1,950.00	1,950.30	1,950.30	6.78	6.79	89.73	0.43	89.99	89.99	76.42	13.57	6.631	
2,000.00	2,000.00	2,000.30	2,000.30	6.96	6.96	89.73	0.43	89.99	89.99	76.06	13.93	6.461	CC, ES
2,050.00	2,050.00	2,049.58	2,049.58	7.14	7.14	151.66	0.51	90.19	90.38	76.11	14.28	6.331	
2,100.00	2,099.99	2,098.85	2,098.84	7.32	7.31	151.69	0.77	90.77	91.56	76.93	14.63	6.260	
2,150.00	2,149.98	2,148.08	2,148.06	7.49	7.48	151.74	1.19	91.75	93.51	78.54	14.97	6.246	
2,200.00	2,199.96	2,197.25	2,197.22	7.67	7.65	151.80	1.77	93.11	96.24	80.92	15.31	6.285	
2,250.00	2,249.92	2,246.36	2,246.29	7.84	7.83	151.88	2.53	94.85	99.71	84.06	15.65	6.370	
2,300.00	2,299.88	2,304.11	2,295.76	8.02	8.03	151.90	3.43	96.94	103.58	87.55	16.03	6.462	
2,350.00	2,349.84	2,345.73	2,345.55	8.19	8.17	151.91	4.34	99.07	107.48	91.13	16.35	6.575	
2,400.00	2,399.80	2,395.58	2,395.34	8.37	8.35	151.92	5.26	101.19	111.38	94.69	16.70	6.671	
2,450.00	2,449.76	2,445.43	2,445.14	8.54	8.52	151.93	6.18	103.32	115.29	98.24	17.05	6.763	
2,500.00	2,499.72	2,495.28	2,494.93	8.72	8.70	151.94	7.10	105.45	119.19	101.79	17.39	6.852	
2,550.00	2,549.68	2,545.12	2,544.73	8.90	8.88	151.95	8.02	107.58	123.09	105.34	17.74	6.937	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	2,599.64	2,605.03	2,594.52	9.07	9.09	151.96	8.94	109.71	126.99	108.86	18.13	7.004	
2,650.00	2,649.60	2,644.82	2,644.31	9.25	9.23	151.97	9.85	111.84	130.89	112.45	18.45	7.096	
2,700.00	2,699.56	2,705.33	2,694.11	9.43	9.44	151.98	10.77	113.97	134.79	115.96	18.83	7.157	
2,750.00	2,749.52	2,744.51	2,743.90	9.61	9.58	151.98	11.69	116.10	138.70	119.55	19.15	7.243	
2,800.00	2,799.48	2,805.64	2,793.69	9.78	9.80	151.99	12.61	118.23	142.60	123.06	19.54	7.298	
2,850.00	2,849.44	2,844.21	2,843.49	9.96	9.93	152.00	13.53	120.36	146.50	126.65	19.85	7.380	
2,900.00	2,899.40	2,905.94	2,893.28	10.14	10.15	152.00	14.45	122.49	150.40	130.16	20.25	7.429	
2,950.00	2,949.36	2,943.90	2,943.07	10.32	10.29	152.01	15.36	124.62	154.30	133.75	20.56	7.507	
3,000.00	2,999.32	3,006.25	2,992.87	10.49	10.51	152.01	16.28	126.75	158.21	137.25	20.95	7.551	
3,050.00	3,049.28	3,043.60	3,042.66	10.67	10.64	152.02	17.20	128.88	162.11	140.85	21.26	7.625	
3,100.00	3,099.24	3,106.55	3,092.45	10.85	10.87	152.02	18.12	131.01	166.01	144.35	21.66	7.664	
3,150.00	3,149.20	3,143.29	3,142.25	11.03	11.00	152.03	19.04	133.14	169.91	147.95	21.97	7.735	
3,200.00	3,199.16	3,206.86	3,192.04	11.21	11.22	152.03	19.96	135.27	173.81	151.45	22.37	7.771	
3,250.00	3,249.12	3,242.99	3,241.83	11.38	11.35	152.04	20.88	137.40	177.72	155.04	22.67	7.838	
3,300.00	3,299.08	3,307.16	3,291.63	11.56	11.58	152.04	21.79	139.53	181.62	158.54	23.08	7.870	
3,350.00	3,349.04	3,342.68	3,341.42	11.74	11.71	152.05	22.71	141.66	185.52	162.14	23.38	7.935	
3,400.00	3,399.00	3,407.47	3,391.22	11.92	11.94	152.05	23.63	143.79	189.42	165.63	23.79	7.963	
3,450.00	3,448.96	3,442.38	3,441.01	12.10	12.06	152.05	24.55	145.92	193.32	169.24	24.09	8.026	
3,500.00	3,498.92	3,507.77	3,490.80	12.28	12.30	152.06	25.47	148.05	197.23	172.73	24.50	8.051	
3,550.00	3,548.88	3,542.07	3,540.60	12.46	12.42	152.06	26.39	150.17	201.13	176.33	24.80	8.111	
3,600.00	3,598.84	3,608.08	3,590.39	12.63	12.66	152.06	27.30	152.30	205.03	179.82	25.21	8.133	
3,650.00	3,648.80	3,641.77	3,640.18	12.81	12.78	152.07	28.22	154.43	208.93	183.43	25.51	8.191	
3,700.00	3,698.76	3,708.38	3,689.98	12.99	13.02	152.07	29.14	156.56	212.83	186.91	25.92	8.211	
3,750.00	3,748.72	3,741.46	3,739.77	13.17	13.14	152.07	30.06	158.69	216.74	190.52	26.22	8.267	
3,800.00	3,798.68	3,808.69	3,789.56	13.35	13.38	152.07	30.98	160.82	220.64	194.01	26.63	8.285	
3,850.00	3,848.64	3,841.16	3,839.36	13.53	13.49	152.08	31.90	162.95	224.54	197.61	26.93	8.339	
3,900.00	3,898.60	3,908.99	3,889.15	13.71	13.74	152.08	32.81	165.08	228.44	201.10	27.34	8.354	
3,950.00	3,948.56	3,940.85	3,938.94	13.89	13.85	152.08	33.73	167.21	232.34	204.71	27.64	8.407	
4,000.00	3,998.52	4,009.30	3,988.74	14.07	14.10	152.08	34.65	169.34	236.25	208.19	28.06	8.420	
4,050.00	4,048.47	4,040.55	4,038.53	14.25	14.21	152.09	35.57	171.47	240.15	211.80	28.35	8.472	
4,100.00	4,098.43	4,109.60	4,088.32	14.43	14.46	152.09	36.49	173.60	244.05	215.28	28.77	8.483	
4,150.00	4,148.39	4,140.24	4,138.12	14.61	14.57	152.09	37.41	175.73	247.95	218.89	29.06	8.533	
4,200.00	4,198.35	4,209.91	4,187.91	14.79	14.82	152.09	38.32	177.86	251.85	222.37	29.48	8.542	
4,250.00	4,248.31	4,239.94	4,237.71	14.97	14.93	152.10	39.24	179.99	255.76	225.99	29.77	8.591	
4,300.00	4,298.27	4,289.79	4,287.50	15.14	15.11	152.10	40.16	182.12	259.66	229.53	30.13	8.619	
4,350.00	4,348.23	4,339.63	4,337.29	15.32	15.28	152.10	41.08	184.25	263.56	233.08	30.48	8.647	
4,400.00	4,398.19	4,389.48	4,387.09	15.50	15.46	152.10	42.00	186.38	267.46	236.62	30.84	8.673	
4,450.00	4,448.15	4,439.33	4,436.88	15.68	15.64	152.10	42.92	188.51	271.36	240.17	31.19	8.700	
4,500.00	4,498.11	4,489.18	4,486.67	15.86	15.82	152.11	43.84	190.64	275.27	243.72	31.55	8.725	
4,550.00	4,548.07	4,539.02	4,536.47	16.04	16.00	152.11	44.75	192.77	279.17	247.26	31.91	8.750	
4,600.00	4,598.03	4,588.87	4,586.26	16.22	16.18	152.11	45.67	194.90	283.07	250.81	32.26	8.774	
4,650.00	4,647.99	4,638.72	4,636.05	16.40	16.36	152.11	46.59	197.03	286.97	254.35	32.62	8.798	
4,700.00	4,697.95	4,688.57	4,685.85	16.58	16.54	152.11	47.51	199.15	290.87	257.90	32.97	8.821	
4,750.00	4,747.91	4,738.41	4,735.64	16.76	16.72	152.11	48.43	201.28	294.78	261.45	33.33	8.844	
4,800.00	4,797.87	4,788.26	4,785.43	16.94	16.90	152.12	49.35	203.41	298.68	264.99	33.69	8.866	
4,850.00	4,847.83	4,838.11	4,835.23	17.12	17.08	152.12	50.26	205.54	302.58	268.54	34.04	8.888	
4,900.00	4,897.79	4,887.96	4,885.02	17.30	17.26	152.12	51.18	207.67	306.48	272.08	34.40	8.909	
4,950.00	4,947.75	4,937.80	4,934.81	17.48	17.44	152.12	52.10	209.80	310.38	275.63	34.76	8.930	
5,000.00	4,997.71	4,987.65	4,984.61	17.66	17.62	152.12	53.02	211.93	314.29	279.17	35.11	8.951	
5,050.00	5,047.67	5,037.50	5,034.40	17.84	17.80	152.12	53.94	214.06	318.19	282.72	35.47	8.971	
5,100.00	5,097.63	5,087.35	5,084.20	18.02	17.98	152.12	54.86	216.19	322.09	286.26	35.83	8.990	
5,150.00	5,147.59	5,137.19	5,133.99	18.20	18.16	152.12	55.77	218.32	325.99	289.81	36.18	9.009	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	5,197.55	5,187.04	5,183.78	18.38	18.34	152.13	56.69	220.45	329.89	293.35	36.54	9.028	
5,250.00	5,247.51	5,236.89	5,233.58	18.56	18.52	152.13	57.61	222.58	333.80	296.90	36.90	9.047	
5,300.00	5,297.47	5,286.74	5,283.37	18.74	18.70	152.13	58.53	224.71	337.70	300.44	37.25	9.065	
5,350.00	5,347.43	5,336.58	5,333.16	18.92	18.88	152.13	59.45	226.84	341.60	303.99	37.61	9.082	
5,400.00	5,397.39	5,386.43	5,382.96	19.10	19.06	152.13	60.37	228.97	345.50	307.53	37.97	9.100	
5,450.00	5,447.35	5,436.28	5,432.75	19.28	19.24	152.13	61.29	231.10	349.40	311.08	38.33	9.117	
5,500.00	5,497.31	5,486.13	5,482.54	19.46	19.42	152.13	62.20	233.23	353.31	314.62	38.68	9.134	
5,550.00	5,547.27	5,535.97	5,532.34	19.64	19.60	152.13	63.12	235.36	357.21	318.17	39.04	9.150	
5,600.00	5,597.23	5,585.82	5,582.13	19.82	19.78	152.13	64.04	237.49	361.11	321.71	39.40	9.166	
5,650.00	5,647.19	5,635.67	5,631.92	20.00	19.96	152.14	64.96	239.62	365.01	325.26	39.75	9.182	
5,700.00	5,697.15	5,685.52	5,681.72	20.18	20.14	152.14	65.88	241.75	368.91	328.80	40.11	9.197	
5,750.00	5,747.11	5,735.36	5,731.51	20.36	20.32	152.14	66.80	243.88	372.82	332.35	40.47	9.213	
5,800.00	5,797.07	5,785.21	5,781.30	20.54	20.50	152.14	67.71	246.01	376.72	335.89	40.83	9.228	
5,850.00	5,847.03	5,835.06	5,831.10	20.73	20.68	152.14	68.63	248.13	380.62	339.44	41.18	9.242	
5,900.00	5,896.99	5,884.91	5,880.89	20.91	20.86	152.14	69.55	250.26	384.52	342.98	41.54	9.257	
5,950.00	5,946.95	5,934.75	5,930.69	21.09	21.04	152.14	70.47	252.39	388.42	346.53	41.90	9.271	
6,000.00	5,996.91	5,984.60	5,980.48	21.27	21.22	152.14	71.39	254.52	392.33	350.07	42.25	9.285	
6,050.00	6,046.87	6,034.45	6,030.27	21.45	21.40	152.14	72.31	256.65	396.23	353.62	42.61	9.299	
6,100.00	6,096.83	6,084.30	6,080.07	21.63	21.58	152.14	73.22	258.78	400.13	357.16	42.97	9.312	
6,150.00	6,146.79	6,134.14	6,129.86	21.81	21.76	152.14	74.14	260.91	404.03	360.70	43.33	9.325	
6,200.00	6,196.75	6,183.99	6,179.65	21.99	21.94	152.15	75.06	263.04	407.93	364.25	43.68	9.338	
6,250.00	6,246.71	6,233.84	6,229.45	22.17	22.12	152.15	75.98	265.17	411.84	367.79	44.04	9.351	
6,300.00	6,296.67	6,283.69	6,279.24	22.35	22.30	152.15	76.90	267.30	415.74	371.34	44.40	9.364	
6,350.00	6,346.63	6,333.53	6,329.03	22.53	22.48	152.15	77.82	269.43	419.64	374.88	44.76	9.376	
6,400.00	6,396.59	6,383.38	6,378.83	22.71	22.66	152.15	78.73	271.56	423.54	378.43	45.11	9.388	
6,450.00	6,446.55	6,433.23	6,428.62	22.89	22.84	152.15	79.65	273.69	427.44	381.97	45.47	9.400	
6,500.00	6,496.51	6,483.08	6,478.41	23.07	23.02	152.15	80.57	275.82	431.35	385.52	45.83	9.412	
6,550.00	6,546.46	6,532.92	6,528.21	23.25	23.20	152.15	81.49	277.95	435.25	389.06	46.19	9.424	
6,600.00	6,596.42	6,582.77	6,578.00	23.43	23.38	152.15	82.41	280.08	439.15	392.60	46.55	9.435	
6,650.00	6,646.38	6,632.62	6,627.79	23.61	23.56	152.15	83.33	282.21	443.05	396.15	46.90	9.446	
6,700.00	6,696.34	6,682.47	6,677.59	23.79	23.74	152.15	84.25	284.34	446.95	399.69	47.26	9.457	
6,750.00	6,746.30	6,732.31	6,727.38	23.97	23.92	152.15	85.16	286.47	450.86	403.24	47.62	9.468	
6,800.00	6,796.26	6,782.16	6,777.18	24.15	24.11	152.15	86.08	288.60	454.76	406.78	47.98	9.479	
6,850.00	6,846.22	6,832.01	6,826.97	24.33	24.29	152.16	87.00	290.73	458.66	410.33	48.33	9.489	
6,900.00	6,896.18	6,881.86	6,876.76	24.51	24.47	152.16	87.92	292.86	462.56	413.87	48.69	9.500	
6,950.00	6,946.14	6,931.70	6,926.56	24.70	24.65	152.16	88.84	294.99	466.46	417.41	49.05	9.510	
7,000.00	6,996.10	6,981.55	6,976.35	24.88	24.83	152.16	89.76	297.11	470.37	420.96	49.41	9.520	
7,050.00	7,046.06	7,031.40	7,026.14	25.06	25.01	152.16	90.67	299.24	474.27	424.50	49.76	9.530	
7,100.00	7,096.02	7,081.25	7,075.94	25.24	25.19	152.16	91.59	301.37	478.17	428.05	50.12	9.540	
7,150.00	7,145.98	7,131.09	7,125.73	25.42	25.37	152.16	92.51	303.50	482.07	431.59	50.48	9.550	
7,200.00	7,195.94	7,180.94	7,175.52	25.60	25.55	152.16	93.43	305.63	485.97	435.13	50.84	9.559	
7,250.00	7,245.90	7,230.79	7,225.32	25.78	25.73	152.16	94.35	307.76	489.87	438.68	51.20	9.569	
7,300.00	7,295.86	7,280.64	7,275.11	25.96	25.91	152.16	95.27	309.89	493.78	442.22	51.55	9.578	
7,350.00	7,345.82	7,330.48	7,324.90	26.14	26.09	152.16	96.18	312.02	497.68	445.77	51.91	9.587	
7,400.00	7,395.78	7,380.33	7,374.70	26.32	26.27	152.16	97.10	314.15	501.58	449.31	52.27	9.596	
7,450.00	7,445.74	7,430.18	7,424.49	26.50	26.45	152.16	98.02	316.28	505.48	452.85	52.63	9.605	
7,500.00	7,495.70	7,480.03	7,474.29	26.68	26.63	152.16	98.94	318.41	509.38	456.40	52.99	9.614	
7,550.00	7,545.66	7,529.87	7,524.08	26.86	26.81	152.16	99.86	320.54	513.29	459.94	53.34	9.622	
7,600.00	7,595.62	7,579.72	7,573.87	27.04	26.99	152.16	100.78	322.67	517.19	463.49	53.70	9.631	
7,650.00	7,645.58	7,629.57	7,623.67	27.22	27.17	152.16	101.70	324.80	521.09	467.03	54.06	9.639	
7,700.00	7,695.54	7,679.42	7,673.46	27.40	27.35	152.16	102.61	326.93	524.99	470.57	54.42	9.647	
7,750.00	7,745.50	7,729.26	7,723.25	27.58	27.54	152.16	103.53	329.06	528.89	474.12	54.78	9.655	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	7,795.46	7,779.11	7,773.05	27.77	27.72	152.17	104.45	331.19	532.80	477.66	55.13	9.664	
7,850.00	7,845.42	7,828.96	7,822.84	27.95	27.90	152.17	105.37	333.32	536.70	481.21	55.49	9.672	
7,900.00	7,895.38	7,878.81	7,872.63	28.13	28.08	152.17	106.29	335.45	540.60	484.75	55.85	9.679	
7,950.00	7,945.34	7,928.65	7,922.43	28.31	28.26	152.17	107.21	337.58	544.50	488.29	56.21	9.687	
8,000.00	7,995.30	7,978.50	7,972.22	28.49	28.44	152.17	108.12	339.71	548.40	491.84	56.57	9.695	
8,050.00	8,045.26	8,028.35	8,022.01	28.67	28.62	152.17	109.04	341.84	552.31	495.38	56.93	9.702	
8,100.00	8,095.22	8,078.20	8,071.81	28.85	28.80	152.17	109.96	343.97	556.21	498.93	57.28	9.710	
8,150.00	8,145.18	8,128.04	8,121.60	29.03	28.98	152.17	110.88	346.09	560.11	502.47	57.64	9.717	
8,200.00	8,195.14	8,177.89	8,171.39	29.21	29.16	152.17	111.80	348.22	564.01	506.01	58.00	9.724	
8,250.00	8,245.10	8,227.74	8,221.19	29.39	29.34	152.17	112.72	350.35	567.91	509.56	58.36	9.732	
8,300.00	8,295.06	8,277.59	8,270.98	29.57	29.52	152.17	113.63	352.48	571.82	513.10	58.72	9.739	
8,350.00	8,345.02	8,327.43	8,320.78	29.75	29.70	152.17	114.55	354.61	575.72	516.64	59.07	9.746	
8,400.00	8,394.98	8,377.28	8,370.57	29.93	29.88	152.17	115.47	356.74	579.62	520.19	59.43	9.753	
8,450.00	8,444.94	8,427.13	8,420.36	30.11	30.06	152.17	116.39	358.87	583.52	523.73	59.79	9.759	
8,500.00	8,494.90	8,476.98	8,470.16	30.30	30.25	152.17	117.31	361.00	587.42	527.28	60.15	9.766	
8,550.00	8,544.86	8,526.82	8,519.95	30.48	30.43	152.17	118.23	363.13	591.33	530.82	60.51	9.773	
8,600.00	8,594.82	8,576.67	8,569.74	30.66	30.61	152.17	119.15	365.26	595.23	534.36	60.87	9.779	
8,650.00	8,644.78	8,626.52	8,619.54	30.84	30.79	152.17	120.06	367.39	599.13	537.91	61.22	9.786	
8,700.00	8,694.74	8,676.37	8,669.33	31.02	30.97	152.17	120.98	369.52	603.03	541.45	61.58	9.792	
8,750.00	8,744.70	8,726.21	8,719.12	31.20	31.15	152.17	121.90	371.65	606.93	544.99	61.94	9.799	
8,800.00	8,794.66	8,776.06	8,768.92	31.38	31.33	152.17	122.82	373.78	610.84	548.54	62.30	9.805	
8,850.00	8,844.62	8,825.91	8,818.71	31.56	31.51	152.17	123.74	375.91	614.74	552.08	62.66	9.811	
8,900.00	8,894.58	8,875.76	8,868.50	31.74	31.69	152.17	124.66	378.04	618.64	555.62	63.02	9.817	
8,950.00	8,944.54	8,925.60	8,918.30	31.92	31.87	152.17	125.57	380.17	622.54	559.17	63.37	9.823	
9,000.00	8,994.50	8,975.45	8,968.09	32.10	32.05	152.17	126.49	382.30	626.44	562.71	63.73	9.829	
9,050.00	9,044.45	9,025.30	9,017.88	32.28	32.23	152.18	127.41	384.43	630.35	566.26	64.09	9.835	
9,100.00	9,094.41	9,075.15	9,067.68	32.46	32.41	152.18	128.33	386.56	634.25	569.80	64.45	9.841	
9,150.00	9,144.37	9,124.99	9,117.47	32.65	32.59	152.18	129.25	388.69	638.15	573.34	64.81	9.847	
9,200.00	9,194.33	9,174.84	9,167.27	32.83	32.78	152.18	130.17	390.82	642.05	576.89	65.17	9.853	
9,250.00	9,244.29	9,224.69	9,217.06	33.01	32.96	152.18	131.08	392.94	645.95	580.43	65.52	9.858	
9,300.00	9,294.25	9,274.54	9,266.85	33.19	33.14	152.18	132.00	395.07	649.86	583.97	65.88	9.864	
9,350.00	9,344.21	9,324.38	9,316.65	33.37	33.32	152.18	132.92	397.20	653.76	587.52	66.24	9.869	
9,400.00	9,394.17	9,374.23	9,366.44	33.55	33.50	152.18	133.84	399.33	657.66	591.06	66.60	9.875	
9,450.00	9,444.13	9,424.08	9,416.23	33.73	33.68	152.18	134.76	401.46	661.56	594.60	66.96	9.880	
9,500.00	9,494.09	9,473.93	9,466.03	33.91	33.86	152.18	135.68	403.59	665.46	598.15	67.32	9.886	
9,550.00	9,544.05	9,523.77	9,515.82	34.09	34.04	152.18	136.59	405.72	669.37	601.69	67.68	9.891	
9,600.00	9,594.01	9,573.62	9,565.61	34.27	34.22	152.18	137.51	407.85	673.27	605.23	68.03	9.896	
9,650.00	9,643.97	9,623.47	9,615.41	34.45	34.40	152.18	138.43	409.98	677.17	608.78	68.39	9.901	
9,700.00	9,693.93	9,673.32	9,665.20	34.63	34.58	152.18	139.35	412.11	681.07	612.32	68.75	9.906	
9,750.00	9,743.89	9,723.16	9,714.99	34.82	34.76	152.18	140.27	414.24	684.97	615.87	69.11	9.911	
9,800.00	9,793.85	9,773.01	9,764.79	35.00	34.94	152.18	141.19	416.37	688.88	619.41	69.47	9.916	
9,850.00	9,843.81	9,822.86	9,814.58	35.18	35.13	152.18	142.11	418.50	692.78	622.95	69.83	9.921	
9,900.00	9,893.77	9,872.71	9,864.37	35.36	35.31	152.18	143.02	420.63	696.68	626.50	70.18	9.926	
9,950.00	9,943.73	9,922.55	9,914.17	35.54	35.49	152.18	143.94	422.76	700.58	630.04	70.54	9.931	
10,000.00	9,993.69	9,972.40	9,963.96	35.72	35.67	152.18	144.86	424.89	704.48	633.58	70.90	9.936	
10,050.00	10,043.65	10,022.25	10,013.76	35.90	35.85	152.18	145.78	427.02	708.39	637.13	71.26	9.941	
10,100.00	10,093.61	10,072.10	10,063.55	36.08	36.03	152.18	146.70	429.15	712.29	640.67	71.62	9.946	
10,150.00	10,143.57	10,121.94	10,113.34	36.26	36.21	152.18	147.62	431.28	716.19	644.21	71.98	9.950	
10,200.00	10,193.53	10,171.79	10,163.14	36.44	36.39	152.18	148.53	433.41	720.09	647.76	72.34	9.955	
10,250.00	10,243.49	10,221.64	10,212.93	36.62	36.57	152.18	149.45	435.54	723.99	651.30	72.69	9.959	
10,300.00	10,293.45	10,271.49	10,262.72	36.81	36.75	152.18	150.37	437.67	727.90	654.84	73.05	9.964	
10,350.00	10,343.41	10,321.33	10,312.52	36.99	36.93	152.18	151.29	439.80	731.80	658.39	73.41	9.968	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	10,393.37	10,371.18	10,362.31	37.17	37.11	152.18	152.21	441.92	735.70	661.93	73.77	9.973	
10,450.00	10,443.33	10,421.03	10,412.10	37.35	37.30	152.18	153.13	444.05	739.60	665.47	74.13	9.977	
10,500.00	10,493.29	10,470.88	10,461.90	37.53	37.48	152.18	154.04	446.18	743.50	669.02	74.49	9.982	
10,550.00	10,543.25	10,520.73	10,511.70	37.71	37.66	152.20	154.96	448.31	747.29	672.45	74.85	9.984	
10,600.00	10,593.24	10,570.63	10,561.54	37.89	37.84	152.19	155.88	450.45	750.54	675.34	75.20	9.980	
10,650.00	10,643.23	10,620.55	10,611.41	38.07	38.02	152.16	156.80	452.58	753.22	677.65	75.56	9.968	
10,700.00	10,693.23	10,670.49	10,661.30	38.24	38.20	90.17	157.72	454.71	755.40	679.49	75.92	9.950	
10,750.00	10,743.23	10,720.44	10,711.19	38.42	38.38	90.10	158.64	456.85	757.54	681.27	76.27	9.932	
10,800.00	10,793.23	10,770.43	10,770.43	38.59	38.60	90.03	159.60	459.06	759.42	682.73	76.68	9.903	
10,850.00	10,843.23	10,840.89	10,831.57	38.77	38.81	89.98	160.21	460.48	760.57	683.48	77.09	9.866	
10,900.00	10,893.23	10,902.08	10,892.76	38.94	39.03	89.97	160.43	460.99	760.99	683.50	77.49	9.821	
10,950.00	10,943.23	10,952.86	10,943.53	39.12	39.21	89.97	160.43	460.99	760.99	683.15	77.84	9.776	
11,000.00	10,993.23	11,002.86	10,993.53	39.29	39.38	89.97	160.43	460.99	760.99	682.80	78.19	9.733	
11,000.02	10,993.25	11,002.88	10,993.55	39.29	39.38	89.97	160.43	460.99	760.99	682.80	78.19	9.732	
11,050.00	11,043.22	11,052.85	11,043.52	39.47	39.56	176.34	160.43	460.99	761.68	683.14	78.54	9.698	
11,100.00	11,092.99	11,102.61	11,093.29	39.65	39.73	176.34	160.43	460.99	766.31	687.41	78.89	9.713	
11,150.00	11,142.19	11,151.82	11,142.49	39.84	39.90	-177.82	160.43	460.99	775.13	695.88	79.25	9.781	
11,200.00	11,191.09	11,200.71	11,191.39	40.03	40.07	-154.33	160.43	460.99	785.18	705.59	79.59	9.866	
11,250.00	11,239.59	11,249.21	11,239.89	40.21	40.24	-137.07	160.43	460.99	795.17	715.25	79.92	9.949	
11,300.00	11,287.32	11,297.98	11,288.62	40.38	40.41	-125.73	158.92	461.00	805.11	724.86	80.25	10.033	
11,350.00	11,333.92	11,347.68	11,337.97	40.54	40.57	-118.19	153.17	461.04	814.92	734.37	80.56	10.116	
11,400.00	11,379.03	11,398.33	11,387.56	40.69	40.72	-112.97	142.93	461.10	824.55	743.70	80.85	10.198	
11,450.00	11,422.32	11,450.00	11,437.01	40.83	40.88	-109.20	128.02	461.19	833.91	752.77	81.14	10.277	
11,500.00	11,463.45	11,502.75	11,485.91	40.97	41.02	-106.39	108.26	461.31	842.92	761.51	81.41	10.353	
11,550.00	11,502.11	11,556.64	11,533.76	41.09	41.16	-104.25	83.53	461.47	851.51	769.84	81.67	10.426	
11,600.00	11,538.00	11,611.70	11,580.04	41.21	41.29	-102.58	53.73	461.65	859.59	777.68	81.91	10.494	
11,650.00	11,570.86	11,667.96	11,624.14	41.32	41.41	-101.27	18.84	461.87	867.09	784.96	82.14	10.557	
11,700.00	11,600.43	11,725.40	11,665.42	41.43	41.52	-100.23	-21.07	462.12	873.94	791.59	82.35	10.613	
11,750.00	11,626.48	11,784.01	11,703.20	41.54	41.63	-99.42	-65.83	462.39	880.05	797.50	82.54	10.661	
11,800.00	11,648.83	11,843.71	11,736.79	41.65	41.74	-98.80	-115.16	462.70	885.35	802.62	82.74	10.701	
11,850.00	11,667.29	11,904.42	11,765.49	41.76	41.87	-98.33	-168.62	463.03	889.79	806.87	82.92	10.730	
11,900.00	11,681.74	11,966.01	11,788.67	41.87	42.01	-97.99	-225.64	463.39	893.31	810.20	83.12	10.748	
11,950.00	11,692.05	12,028.30	11,805.75	41.98	42.16	-97.77	-285.52	463.76	895.86	812.54	83.32	10.752	
12,000.00	11,698.15	12,091.12	11,816.29	42.09	42.31	-97.67	-347.41	464.14	897.40	813.87	83.53	10.743	
12,050.00	11,700.00	12,154.24	11,820.00	42.21	42.46	-97.66	-410.39	464.53	897.92	814.16	83.77	10.719	
12,100.00	11,700.00	12,204.69	11,820.00	42.32	42.58	-97.66	-460.84	464.84	897.92	813.93	83.99	10.691	
12,150.00	11,700.00	12,254.69	11,820.00	42.45	42.72	-97.66	-510.84	465.15	897.92	813.66	84.25	10.658	
12,200.00	11,700.00	12,304.69	11,820.00	42.59	42.86	-97.66	-560.84	465.46	897.91	813.40	84.51	10.625	
12,250.00	11,700.00	12,354.69	11,820.00	42.74	43.02	-97.66	-610.83	465.77	897.91	813.09	84.82	10.586	
12,300.00	11,700.00	12,404.69	11,820.00	42.90	43.18	-97.66	-660.83	466.08	897.90	812.78	85.13	10.548	
12,350.00	11,700.00	12,454.69	11,820.00	43.08	43.36	-97.66	-710.83	466.39	897.90	812.42	85.48	10.504	
12,400.00	11,700.00	12,504.69	11,820.00	43.25	43.55	-97.66	-760.83	466.70	897.90	812.06	85.84	10.460	
12,450.00	11,700.00	12,554.69	11,820.00	43.45	43.75	-97.66	-810.83	467.01	897.89	811.66	86.24	10.412	
12,500.00	11,700.00	12,604.69	11,820.00	43.65	43.96	-97.66	-860.83	467.33	897.89	811.25	86.64	10.364	
12,550.00	11,700.00	12,654.69	11,820.00	43.87	44.19	-97.66	-910.83	467.64	897.88	810.80	87.08	10.311	
12,600.00	11,700.00	12,704.69	11,820.00	44.09	44.41	-97.66	-960.83	467.95	897.88	810.35	87.53	10.258	
12,650.00	11,700.00	12,754.69	11,820.00	44.34	44.66	-97.66	-1,010.83	468.26	897.88	809.86	88.01	10.202	
12,700.00	11,700.00	12,804.69	11,820.00	44.58	44.91	-97.66	-1,060.83	468.57	897.87	809.37	88.50	10.145	
12,750.00	11,700.00	12,854.69	11,820.00	44.84	45.18	-97.66	-1,110.83	468.88	897.87	808.84	89.03	10.085	
12,800.00	11,700.00	12,904.69	11,820.00	45.10	45.45	-97.66	-1,160.82	469.19	897.86	808.30	89.56	10.025	
12,850.00	11,700.00	12,954.69	11,820.00	45.39	45.73	-97.66	-1,210.82	469.50	897.86	807.73	90.13	9.962	
12,900.00	11,700.00	13,004.69	11,820.00	45.67	46.02	-97.66	-1,260.82	469.81	897.86	807.16	90.70	9.899	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	11,700.00	13,054.69	11,820.00	45.97	46.33	-97.66	-1,310.82	470.12	897.85	806.55	91.31	9.834	
13,000.00	11,700.00	13,104.69	11,820.00	46.28	46.64	-97.66	-1,360.82	470.43	897.85	805.93	91.91	9.768	
13,050.00	11,700.00	13,154.69	11,820.00	46.60	46.96	-97.66	-1,410.82	470.74	897.84	805.29	92.56	9.700	
13,100.00	11,700.00	13,204.69	11,820.00	46.92	47.29	-97.66	-1,460.82	471.05	897.84	804.64	93.20	9.633	
13,150.00	11,700.00	13,254.69	11,820.00	47.26	47.63	-97.66	-1,510.82	471.36	897.84	803.95	93.88	9.563	
13,200.00	11,700.00	13,304.69	11,820.00	47.60	47.97	-97.66	-1,560.82	471.67	897.83	803.27	94.56	9.494	
13,250.00	11,700.00	13,354.69	11,820.00	47.95	48.33	-97.66	-1,610.82	471.98	897.83	802.55	95.28	9.423	
13,300.00	11,700.00	13,404.69	11,820.00	48.31	48.69	-97.66	-1,660.81	472.29	897.82	801.83	95.99	9.353	
13,350.00	11,700.00	13,454.69	11,820.00	48.68	49.07	-97.66	-1,710.81	472.60	897.82	801.08	96.74	9.281	
13,400.00	11,700.00	13,504.69	11,820.00	49.06	49.44	-97.66	-1,760.81	472.91	897.82	800.33	97.49	9.209	
13,450.00	11,700.00	13,554.69	11,820.00	49.44	49.83	-97.66	-1,810.81	473.22	897.81	799.55	98.27	9.136	
13,500.00	11,700.00	13,604.69	11,820.00	49.83	50.23	-97.66	-1,860.81	473.53	897.81	798.76	99.05	9.065	
13,550.00	11,700.00	13,654.69	11,820.00	50.24	50.63	-97.66	-1,910.81	473.84	897.80	797.95	99.85	8.991	
13,600.00	11,700.00	13,704.69	11,820.00	50.64	51.04	-97.66	-1,960.81	474.15	897.80	797.14	100.66	8.919	
13,650.00	11,700.00	13,754.69	11,820.00	51.06	51.46	-97.66	-2,010.81	474.46	897.80	796.30	101.50	8.845	
13,700.00	11,700.00	13,804.69	11,820.00	51.48	51.88	-97.66	-2,060.81	474.77	897.79	795.46	102.33	8.773	
13,750.00	11,700.00	13,854.69	11,820.00	51.91	52.31	-97.66	-2,110.81	475.08	897.79	794.59	103.20	8.700	
13,800.00	11,700.00	13,904.69	11,820.00	52.34	52.75	-97.66	-2,160.80	475.39	897.78	793.72	104.06	8.627	
13,850.00	11,700.00	13,954.69	11,820.00	52.78	53.19	-97.66	-2,210.80	475.70	897.78	792.83	104.95	8.554	
13,900.00	11,700.00	14,004.69	11,820.00	53.23	53.64	-97.66	-2,260.80	476.01	897.78	791.94	105.84	8.482	
13,950.00	11,700.00	14,054.69	11,820.00	53.69	54.10	-97.66	-2,310.80	476.32	897.77	791.02	106.75	8.410	
14,000.00	11,700.00	14,104.69	11,820.00	54.14	54.56	-97.66	-2,360.80	476.63	897.77	790.10	107.67	8.339	
14,050.00	11,700.00	14,154.69	11,820.00	54.61	55.03	-97.66	-2,410.80	476.94	897.76	789.16	108.60	8.267	
14,100.00	11,700.00	14,204.69	11,820.00	55.08	55.50	-97.66	-2,460.80	477.25	897.76	788.22	109.54	8.196	
14,150.00	11,700.00	14,254.69	11,820.00	55.56	55.98	-97.66	-2,510.80	477.56	897.76	787.26	110.50	8.125	
14,200.00	11,700.00	14,304.69	11,820.00	56.04	56.46	-97.66	-2,560.80	477.87	897.75	786.30	111.45	8.055	
14,250.00	11,700.00	14,354.69	11,820.00	56.53	56.95	-97.66	-2,610.80	478.18	897.75	785.32	112.43	7.985	
14,300.00	11,700.00	14,404.69	11,820.00	57.02	57.45	-97.66	-2,660.80	478.49	897.74	784.33	113.41	7.916	
14,350.00	11,700.00	14,454.69	11,820.00	57.52	57.95	-97.66	-2,710.79	478.80	897.74	783.33	114.41	7.847	
14,400.00	11,700.00	14,504.69	11,820.00	58.02	58.45	-97.66	-2,760.79	479.11	897.74	782.33	115.41	7.779	
14,450.00	11,700.00	14,554.69	11,820.00	58.53	58.96	-97.66	-2,810.79	479.42	897.73	781.31	116.43	7.711	
14,500.00	11,700.00	14,604.69	11,820.00	59.04	59.47	-97.66	-2,860.79	479.73	897.73	780.28	117.45	7.644	
14,550.00	11,700.00	14,654.69	11,820.00	59.56	59.99	-97.66	-2,910.79	480.04	897.72	779.24	118.48	7.577	
14,600.00	11,700.00	14,704.69	11,820.00	60.08	60.51	-97.66	-2,960.79	480.35	897.72	778.20	119.52	7.511	
14,650.00	11,700.00	14,754.69	11,820.00	60.61	61.04	-97.66	-3,010.79	480.66	897.72	777.15	120.57	7.446	
14,700.00	11,700.00	14,804.69	11,820.00	61.14	61.57	-97.66	-3,060.79	480.97	897.71	776.09	121.62	7.381	
14,750.00	11,700.00	14,854.69	11,820.00	61.67	62.10	-97.66	-3,110.79	481.28	897.71	775.02	122.69	7.317	
14,800.00	11,700.00	14,904.69	11,820.00	62.21	62.64	-97.66	-3,160.79	481.59	897.70	773.95	123.76	7.254	
14,850.00	11,700.00	14,954.69	11,820.00	62.75	63.18	-97.66	-3,210.78	481.90	897.70	772.86	124.84	7.191	
14,900.00	11,700.00	15,004.69	11,820.00	63.30	63.73	-97.66	-3,260.78	482.21	897.70	771.77	125.92	7.129	
14,950.00	11,700.00	15,054.69	11,820.00	63.85	64.28	-97.66	-3,310.78	482.52	897.69	770.67	127.02	7.067	
15,000.00	11,700.00	15,104.69	11,820.00	64.40	64.83	-97.66	-3,360.78	482.83	897.69	769.57	128.12	7.007	
15,050.00	11,700.00	15,154.69	11,820.00	64.96	65.39	-97.66	-3,410.78	483.14	897.69	768.45	129.23	6.946	
15,100.00	11,700.00	15,204.69	11,820.00	65.51	65.95	-97.66	-3,460.78	483.45	897.68	767.34	130.34	6.887	
15,150.00	11,700.00	15,254.69	11,820.00	66.08	66.51	-97.66	-3,510.78	483.76	897.68	766.21	131.47	6.828	
15,200.00	11,700.00	15,304.69	11,820.00	66.64	67.08	-97.66	-3,560.78	484.07	897.67	765.08	132.59	6.770	
15,250.00	11,700.00	15,354.69	11,820.00	67.21	67.65	-97.66	-3,610.78	484.38	897.67	763.94	133.73	6.713	
15,300.00	11,700.00	15,404.69	11,820.00	67.78	68.22	-97.66	-3,660.78	484.69	897.67	762.80	134.87	6.656	
15,350.00	11,700.00	15,454.69	11,820.00	68.36	68.80	-97.66	-3,710.78	485.00	897.66	761.65	136.02	6.600	
15,400.00	11,700.00	15,504.69	11,820.00	68.94	69.37	-97.66	-3,760.77	485.31	897.66	760.49	137.17	6.544	
15,450.00	11,700.00	15,554.69	11,820.00	69.52	69.96	-97.66	-3,810.77	485.62	897.65	759.33	138.32	6.489	
15,500.00	11,700.00	15,604.69	11,820.00	70.10	70.54	-97.66	-3,860.77	485.93	897.65	758.16	139.49	6.435	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	11,700.00	15,654.69	11,820.00	70.69	71.13	-97.66	-3,910.77	486.24	897.65	756.99	140.66	6.382	
15,600.00	11,700.00	15,704.69	11,820.00	71.28	71.72	-97.66	-3,960.77	486.55	897.64	755.81	141.83	6.329	
15,650.00	11,700.00	15,754.69	11,820.00	71.87	72.31	-97.66	-4,010.77	486.86	897.64	754.63	143.01	6.277	
15,700.00	11,700.00	15,804.69	11,820.00	72.46	72.90	-97.66	-4,060.77	487.17	897.63	753.45	144.19	6.225	
15,750.00	11,700.00	15,854.69	11,820.00	73.06	73.50	-97.66	-4,110.77	487.48	897.63	752.25	145.38	6.174	
15,800.00	11,700.00	15,904.69	11,820.00	73.66	74.10	-97.66	-4,160.77	487.79	897.63	751.06	146.57	6.124	
15,850.00	11,700.00	15,954.69	11,820.00	74.26	74.70	-97.66	-4,210.77	488.10	897.62	749.85	147.77	6.075	
15,900.00	11,700.00	16,004.69	11,820.00	74.86	75.30	-97.66	-4,260.76	488.42	897.62	748.65	148.97	6.026	
15,950.00	11,700.00	16,054.69	11,820.00	75.47	75.91	-97.66	-4,310.76	488.73	897.61	747.44	150.18	5.977	
16,000.00	11,700.00	16,104.69	11,820.00	76.08	76.52	-97.66	-4,360.76	489.04	897.61	746.23	151.38	5.929	
16,050.00	11,700.00	16,154.69	11,820.00	76.69	77.13	-97.66	-4,410.76	489.35	897.61	745.00	152.60	5.882	
16,100.00	11,700.00	16,204.69	11,820.00	77.30	77.74	-97.66	-4,460.76	489.66	897.60	743.78	153.82	5.835	
16,150.00	11,700.00	16,254.69	11,820.00	77.92	78.35	-97.66	-4,510.76	489.97	897.60	742.56	155.04	5.789	
16,200.00	11,700.00	16,304.69	11,820.00	78.53	78.97	-97.66	-4,560.76	490.28	897.59	741.33	156.27	5.744	
16,250.00	11,700.00	16,354.69	11,820.00	79.15	79.59	-97.66	-4,610.76	490.59	897.59	740.09	157.50	5.699	
16,300.00	11,700.00	16,404.69	11,820.00	79.77	80.21	-97.66	-4,660.76	490.90	897.59	738.86	158.73	5.655	
16,350.00	11,700.00	16,454.69	11,820.00	80.39	80.83	-97.66	-4,710.76	491.21	897.58	737.61	159.97	5.611	
16,400.00	11,700.00	16,504.69	11,820.00	81.02	81.45	-97.66	-4,760.75	491.52	897.58	736.37	161.21	5.568	
16,450.00	11,700.00	16,554.69	11,820.00	81.64	82.08	-97.66	-4,810.75	491.83	897.57	735.12	162.46	5.525	
16,500.00	11,700.00	16,604.69	11,820.00	82.27	82.70	-97.66	-4,860.75	492.14	897.57	733.87	163.70	5.483	
16,550.00	11,700.00	16,654.69	11,820.00	82.90	83.33	-97.66	-4,910.75	492.45	897.57	732.61	164.95	5.441	
16,600.00	11,700.00	16,704.69	11,820.00	83.53	83.96	-97.66	-4,960.75	492.76	897.56	731.35	166.21	5.400	
16,650.00	11,700.00	16,754.69	11,820.00	84.16	84.60	-97.66	-5,010.75	493.07	897.56	730.09	167.47	5.360	
16,700.00	11,700.00	16,804.69	11,820.00	84.79	85.23	-97.66	-5,060.75	493.38	897.55	728.83	168.72	5.320	
16,750.00	11,700.00	16,854.69	11,820.00	85.43	85.86	-97.66	-5,110.75	493.69	897.55	727.56	169.99	5.280	
16,800.00	11,700.00	16,904.69	11,820.00	86.06	86.50	-97.66	-5,160.75	494.00	897.55	726.29	171.25	5.241	
16,850.00	11,700.00	16,954.69	11,820.00	86.70	87.14	-97.66	-5,210.75	494.31	897.54	725.02	172.53	5.202	
16,900.00	11,700.00	17,004.69	11,820.00	87.34	87.78	-97.66	-5,260.75	494.62	897.54	723.74	173.80	5.164	
16,950.00	11,700.00	17,054.69	11,820.00	87.98	88.42	-97.66	-5,310.74	494.93	897.53	722.46	175.07	5.127	
17,000.00	11,700.00	17,104.69	11,820.00	88.62	89.06	-97.66	-5,360.74	495.24	897.53	721.18	176.35	5.090	
17,050.00	11,700.00	17,154.69	11,820.00	89.27	89.70	-97.66	-5,410.74	495.55	897.53	719.90	177.63	5.053	
17,100.00	11,700.00	17,204.69	11,820.00	89.91	90.35	-97.66	-5,460.74	495.86	897.52	718.61	178.91	5.017	
17,150.00	11,700.00	17,254.69	11,820.00	90.56	90.99	-97.66	-5,510.74	496.17	897.52	717.32	180.20	4.981	Alert
17,200.00	11,700.00	17,304.69	11,820.00	91.21	91.64	-97.66	-5,560.74	496.48	897.51	716.03	181.48	4.945	Alert
17,250.00	11,700.00	17,354.69	11,820.00	91.86	92.29	-97.66	-5,610.74	496.79	897.51	714.73	182.78	4.910	Alert
17,300.00	11,700.00	17,404.69	11,820.00	92.50	92.94	-97.66	-5,660.74	497.10	897.51	713.44	184.07	4.876	Alert
17,350.00	11,700.00	17,454.69	11,820.00	93.16	93.59	-97.66	-5,710.74	497.41	897.50	712.14	185.36	4.842	Alert
17,400.00	11,700.00	17,504.69	11,820.00	93.81	94.24	-97.66	-5,760.74	497.72	897.50	710.84	186.66	4.808	Alert
17,450.00	11,700.00	17,554.69	11,820.00	94.46	94.89	-97.66	-5,810.73	498.03	897.49	709.53	187.96	4.775	Alert
17,500.00	11,700.00	17,604.69	11,820.00	95.12	95.55	-97.66	-5,860.73	498.34	897.49	708.23	189.26	4.742	Alert
17,550.00	11,700.00	17,654.69	11,820.00	95.77	96.20	-97.66	-5,910.73	498.65	897.49	706.92	190.57	4.710	Alert
17,600.00	11,700.00	17,704.69	11,820.00	96.43	96.86	-97.66	-5,960.73	498.96	897.48	705.61	191.87	4.678	Alert
17,650.00	11,700.00	17,754.69	11,820.00	97.09	97.52	-97.66	-6,010.73	499.27	897.48	704.30	193.18	4.646	Alert
17,700.00	11,700.00	17,804.69	11,820.00	97.74	98.18	-97.66	-6,060.73	499.58	897.47	702.99	194.49	4.615	Alert
17,750.00	11,700.00	17,854.69	11,820.00	98.40	98.84	-97.66	-6,110.73	499.89	897.47	701.67	195.80	4.584	Alert
17,800.00	11,700.00	17,904.69	11,820.00	99.06	99.50	-97.66	-6,160.73	500.20	897.47	700.35	197.11	4.553	Alert
17,850.00	11,700.00	17,954.69	11,820.00	99.73	100.16	-97.66	-6,210.73	500.51	897.46	699.03	198.43	4.523	Alert
17,900.00	11,700.00	18,004.69	11,820.00	100.39	100.82	-97.66	-6,260.73	500.82	897.46	697.71	199.75	4.493	Alert
17,950.00	11,700.00	18,054.69	11,820.00	101.05	101.48	-97.66	-6,310.73	501.13	897.45	696.39	201.07	4.463	Alert
18,000.00	11,700.00	18,104.69	11,820.00	101.71	102.15	-97.66	-6,360.72	501.44	897.45	695.06	202.39	4.434	Alert
18,050.00	11,700.00	18,154.69	11,820.00	102.38	102.81	-97.66	-6,410.72	501.75	897.45	693.74	203.71	4.406	Alert
18,100.00	11,700.00	18,204.69	11,820.00	103.05	103.48	-97.66	-6,460.72	502.06	897.44	692.41	205.03	4.377	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	11,700.00	18,254.69	11,820.00	103.71	104.14	-97.66	-6,510.72	502.37	897.44	691.08	206.36	4.349	Alert
18,200.00	11,700.00	18,304.69	11,820.00	104.38	104.81	-97.66	-6,560.72	502.68	897.43	689.75	207.69	4.321	Alert
18,250.00	11,700.00	18,354.69	11,820.00	105.05	105.48	-97.66	-6,610.72	502.99	897.43	688.41	209.02	4.294	Alert
18,300.00	11,700.00	18,404.69	11,820.00	105.72	106.15	-97.66	-6,660.72	503.30	897.43	687.08	210.35	4.266	Alert
18,350.00	11,700.00	18,454.69	11,820.00	106.39	106.82	-97.67	-6,710.72	503.61	897.42	685.74	211.68	4.240	Alert
18,400.00	11,700.00	18,504.69	11,820.00	107.06	107.49	-97.67	-6,760.72	503.92	897.42	684.41	213.01	4.213	Alert
18,450.00	11,700.00	18,554.69	11,820.00	107.73	108.16	-97.67	-6,810.72	504.23	897.41	683.07	214.35	4.187	Alert
18,500.00	11,700.00	18,604.69	11,820.00	108.40	108.83	-97.67	-6,860.71	504.54	897.41	681.73	215.69	4.161	Alert
18,550.00	11,700.00	18,654.69	11,820.00	109.08	109.50	-97.67	-6,910.71	504.85	897.41	680.38	217.02	4.135	Alert
18,600.00	11,700.00	18,704.69	11,820.00	109.75	110.18	-97.67	-6,960.71	505.16	897.40	679.04	218.36	4.110	Alert
18,650.00	11,700.00	18,754.69	11,820.00	110.42	110.85	-97.67	-7,010.71	505.47	897.40	677.69	219.71	4.085	Alert
18,700.00	11,700.00	18,804.69	11,820.00	111.10	111.53	-97.67	-7,060.71	505.78	897.39	676.35	221.05	4.060	Alert
18,750.00	11,700.00	18,854.69	11,820.00	111.78	112.20	-97.67	-7,110.71	506.09	897.39	675.00	222.39	4.035	Alert
18,800.00	11,700.00	18,904.69	11,820.00	112.45	112.88	-97.67	-7,160.71	506.40	897.39	673.65	223.74	4.011	Alert
18,850.00	11,700.00	18,954.69	11,820.00	113.13	113.56	-97.67	-7,210.71	506.71	897.38	672.30	225.08	3.987	Alert
18,900.00	11,700.00	19,004.69	11,820.00	113.81	114.23	-97.67	-7,260.71	507.02	897.38	670.95	226.43	3.963	Alert
18,950.00	11,700.00	19,054.69	11,820.00	114.49	114.91	-97.67	-7,310.71	507.33	897.38	669.60	227.78	3.940	Alert
19,000.00	11,700.00	19,104.69	11,820.00	115.16	115.59	-97.67	-7,360.70	507.64	897.37	668.24	229.13	3.916	Alert
19,050.00	11,700.00	19,154.69	11,820.00	115.84	116.27	-97.67	-7,410.70	507.95	897.37	666.89	230.48	3.893	Alert
19,100.00	11,700.00	19,204.69	11,820.00	116.52	116.95	-97.67	-7,460.70	508.26	897.36	665.53	231.83	3.871	Alert
19,150.00	11,700.00	19,254.69	11,820.00	117.21	117.63	-97.67	-7,510.70	508.57	897.36	664.17	233.19	3.848	Alert
19,200.00	11,700.00	19,304.69	11,820.00	117.89	118.31	-97.67	-7,560.70	508.88	897.36	662.81	234.54	3.826	Alert
19,250.00	11,700.00	19,354.69	11,820.00	118.57	118.99	-97.67	-7,610.70	509.19	897.35	661.45	235.90	3.804	Alert
19,300.00	11,700.00	19,404.69	11,820.00	119.25	119.68	-97.67	-7,660.70	509.51	897.35	660.09	237.25	3.782	Alert
19,350.00	11,700.00	19,454.69	11,820.00	119.93	120.36	-97.67	-7,710.70	509.82	897.34	658.73	238.61	3.761	Alert
19,400.00	11,700.00	19,504.69	11,820.00	120.62	121.04	-97.67	-7,760.70	510.13	897.34	657.37	239.97	3.739	Alert
19,450.00	11,700.00	19,554.69	11,820.00	121.30	121.73	-97.67	-7,810.70	510.44	897.34	656.00	241.33	3.718	Alert
19,500.00	11,700.00	19,604.69	11,820.00	121.99	122.41	-97.67	-7,860.70	510.75	897.33	654.64	242.69	3.697	Alert
19,550.00	11,700.00	19,654.69	11,820.00	122.67	123.10	-97.67	-7,910.69	511.06	897.33	653.27	244.06	3.677	Alert
19,600.00	11,700.00	19,704.69	11,820.00	123.36	123.78	-97.67	-7,960.69	511.37	897.32	651.90	245.42	3.656	Alert
19,650.00	11,700.00	19,754.69	11,820.00	124.04	124.47	-97.67	-8,010.69	511.68	897.32	650.54	246.78	3.636	Alert
19,700.00	11,700.00	19,804.69	11,820.00	124.73	125.15	-97.67	-8,060.69	511.99	897.32	649.17	248.15	3.616	Alert
19,750.00	11,700.00	19,854.69	11,820.00	125.42	125.84	-97.67	-8,110.69	512.30	897.31	647.80	249.52	3.596	Alert
19,800.00	11,700.00	19,904.69	11,820.00	126.11	126.53	-97.67	-8,160.69	512.61	897.31	646.43	250.88	3.577	Alert
19,850.00	11,700.00	19,954.69	11,820.00	126.79	127.22	-97.67	-8,210.69	512.92	897.30	645.05	252.25	3.557	Alert
19,900.00	11,700.00	20,004.69	11,820.00	127.48	127.90	-97.67	-8,260.69	513.23	897.30	643.68	253.62	3.538	Alert
19,950.00	11,700.00	20,054.69	11,820.00	128.17	128.59	-97.67	-8,310.69	513.54	897.30	642.31	254.99	3.519	Alert
20,000.00	11,700.00	20,104.69	11,820.00	128.86	129.28	-97.67	-8,360.69	513.85	897.29	640.93	256.36	3.500	Alert
20,050.00	11,700.00	20,154.69	11,820.00	129.55	129.97	-97.67	-8,410.68	514.16	897.29	639.56	257.73	3.481	Alert
20,100.00	11,700.00	20,204.69	11,820.00	130.24	130.66	-97.67	-8,460.68	514.47	897.28	638.18	259.10	3.463	Alert
20,150.00	11,700.00	20,254.69	11,820.00	130.93	131.35	-97.67	-8,510.68	514.78	897.28	636.80	260.48	3.445	Alert
20,200.00	11,700.00	20,304.69	11,820.00	131.62	132.04	-97.67	-8,560.68	515.09	897.28	635.43	261.85	3.427	Alert
20,250.00	11,700.00	20,354.69	11,820.00	132.31	132.73	-97.67	-8,610.68	515.40	897.27	634.05	263.22	3.409	Alert
20,300.00	11,700.00	20,404.69	11,820.00	133.01	133.43	-97.67	-8,660.68	515.71	897.27	632.67	264.60	3.391	Alert
20,350.00	11,700.00	20,454.69	11,820.00	133.70	134.12	-97.67	-8,710.68	516.02	897.26	631.29	265.98	3.373	Alert
20,400.00	11,700.00	20,504.69	11,820.00	134.39	134.81	-97.67	-8,760.68	516.33	897.26	629.91	267.35	3.356	Alert
20,450.00	11,700.00	20,554.69	11,820.00	135.09	135.50	-97.67	-8,810.68	516.64	897.26	628.52	268.73	3.339	Alert
20,500.00	11,700.00	20,604.69	11,820.00	135.78	136.20	-97.67	-8,860.68	516.95	897.25	627.14	270.11	3.322	Alert
20,550.00	11,700.00	20,654.69	11,820.00	136.47	136.89	-97.67	-8,910.68	517.26	897.25	625.76	271.49	3.305	Alert
20,600.00	11,700.00	20,704.69	11,820.00	137.17	137.58	-97.67	-8,960.67	517.57	897.24	624.37	272.87	3.288	Alert
20,650.00	11,700.00	20,754.69	11,820.00	137.86	138.28	-97.67	-9,010.67	517.88	897.24	622.99	274.25	3.272	Alert
20,700.00	11,700.00	20,804.69	11,820.00	138.56	138.97	-97.67	-9,060.67	518.19	897.24	621.60	275.63	3.255	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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	11,700.00	20,854.69	11,820.00	139.25	139.67	-97.67	-9,110.67	518.50	897.23	620.22	277.01	3.239	Alert
20,800.00	11,700.00	20,904.69	11,820.00	139.95	140.36	-97.67	-9,160.67	518.81	897.23	618.83	278.40	3.223	Alert
20,850.00	11,700.00	20,954.69	11,820.00	140.64	141.06	-97.67	-9,210.67	519.12	897.22	617.44	279.78	3.207	Alert
20,900.00	11,700.00	21,004.69	11,820.00	141.34	141.76	-97.67	-9,260.67	519.43	897.22	616.06	281.16	3.191	Alert
20,950.00	11,700.00	21,054.69	11,820.00	142.04	142.45	-97.67	-9,310.67	519.74	897.22	614.67	282.55	3.175	Alert
21,000.00	11,700.00	21,104.69	11,820.00	142.73	143.15	-97.67	-9,360.67	520.05	897.21	613.28	283.93	3.160	Alert
21,050.00	11,700.00	21,154.69	11,820.00	143.43	143.85	-97.67	-9,410.67	520.36	897.21	611.89	285.32	3.145	Alert
21,100.00	11,700.00	21,204.69	11,820.00	144.13	144.54	-97.67	-9,460.66	520.67	897.20	610.50	286.71	3.129	Alert
21,150.00	11,700.00	21,254.69	11,820.00	144.83	145.24	-97.67	-9,510.66	520.98	897.20	609.11	288.09	3.114	Alert
21,200.00	11,700.00	21,304.69	11,820.00	145.52	145.94	-97.67	-9,560.66	521.29	897.20	607.71	289.48	3.099	Alert
21,250.00	11,700.00	21,354.69	11,820.00	146.22	146.64	-97.67	-9,610.66	521.60	897.19	606.32	290.87	3.085	Alert
21,300.00	11,700.00	21,404.69	11,820.00	146.92	147.34	-97.67	-9,660.66	521.91	897.19	604.93	292.26	3.070	Alert
21,350.00	11,700.00	21,454.69	11,820.00	147.62	148.03	-97.67	-9,710.66	522.22	897.18	603.53	293.65	3.055	Alert
21,400.00	11,700.00	21,504.69	11,820.00	148.32	148.73	-97.67	-9,760.66	522.53	897.18	602.14	295.04	3.041	Alert
21,450.00	11,700.00	21,554.69	11,820.00	149.02	149.43	-97.67	-9,810.66	522.84	897.18	600.75	296.43	3.027	Alert
21,500.00	11,700.00	21,604.69	11,820.00	149.72	150.13	-97.67	-9,860.66	523.15	897.17	599.35	297.82	3.012	Alert
21,550.00	11,700.00	21,654.69	11,820.00	150.42	150.83	-97.67	-9,910.66	523.46	897.17	597.95	299.21	2.998	Alert
21,600.00	11,700.00	21,704.69	11,820.00	151.12	151.53	-97.67	-9,960.65	523.77	897.16	596.56	300.61	2.985	Alert
21,650.00	11,700.00	21,754.69	11,820.00	151.82	152.23	-97.67	-10,010.65	524.08	897.16	595.16	302.00	2.971	Alert
21,700.00	11,700.00	21,804.69	11,820.00	152.52	152.93	-97.67	-10,060.65	524.39	897.16	593.76	303.39	2.957	Alert
21,750.00	11,700.00	21,854.69	11,820.00	153.22	153.64	-97.67	-10,110.65	524.70	897.15	592.37	304.79	2.944	Alert
21,800.00	11,700.00	21,904.69	11,820.00	153.93	154.34	-97.67	-10,160.65	525.01	897.15	590.97	306.18	2.930	Alert
21,850.00	11,700.00	21,954.69	11,820.00	154.63	155.04	-97.67	-10,210.65	525.32	897.14	589.57	307.58	2.917	Alert
21,900.00	11,700.00	22,004.69	11,820.00	155.33	155.74	-97.67	-10,260.65	525.63	897.14	588.17	308.97	2.904	Alert
21,950.00	11,700.00	22,054.69	11,820.00	156.03	156.44	-97.67	-10,310.65	525.94	897.14	586.77	310.37	2.891	Alert
21,964.16	11,700.00	22,068.85	11,820.00	156.23	156.64	-97.67	-10,324.81	526.03	897.14	586.37	310.76	2.887	Alert, SF

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
10,350.00	10,343.41	21,727.96	11,620.00	37.32	154.93	-30.28	150.29	-1,090.10	1,487.72	1,350.24	137.48	10.821	
10,400.00	10,393.37	21,728.91	11,620.00	37.50	154.95	-30.21	151.24	-1,090.11	1,444.85	1,305.67	139.18	10.381	
10,450.00	10,443.33	21,729.87	11,620.00	37.68	154.96	-30.13	152.20	-1,090.11	1,402.45	1,261.47	140.98	9.948	
10,500.00	10,493.29	21,730.82	11,620.00	37.86	154.97	-30.06	153.15	-1,090.12	1,360.57	1,217.68	142.88	9.522	
10,550.00	10,543.25	21,731.71	11,620.00	38.04	154.99	-29.65	154.04	-1,090.13	1,319.31	1,174.41	144.90	9.105	
10,600.00	10,593.24	21,732.32	11,620.00	38.22	154.99	-29.11	154.65	-1,090.13	1,278.99	1,131.94	147.06	8.697	
10,650.00	10,643.23	21,732.61	11,620.00	38.39	155.00	-28.63	154.94	-1,090.13	1,239.74	1,090.38	149.36	8.300	
10,700.00	10,693.23	21,732.64	11,620.00	38.57	155.00	-90.36	154.97	-1,090.13	1,201.60	1,049.79	151.81	7.915	
10,750.00	10,743.23	21,732.64	11,620.00	38.74	155.00	-90.36	154.97	-1,090.13	1,164.39	1,010.01	154.39	7.542	
10,800.00	10,793.23	21,732.64	11,620.00	38.91	155.00	-90.36	154.97	-1,090.13	1,128.18	971.09	157.09	7.182	
10,850.00	10,843.23	21,732.64	11,620.00	39.09	155.00	-90.36	154.97	-1,090.13	1,093.05	933.14	159.91	6.836	
10,900.00	10,893.23	21,732.64	11,620.00	39.26	155.00	-90.36	154.97	-1,090.13	1,059.12	896.29	162.83	6.504	
10,950.00	10,943.23	21,732.64	11,620.00	39.44	155.00	-90.36	154.97	-1,090.13	1,026.50	860.64	165.86	6.189	
11,000.00	10,993.23	21,732.64	11,620.00	39.61	155.00	-90.36	154.97	-1,090.13	995.33	826.37	168.96	5.891	
11,050.00	11,043.22	21,732.69	11,620.00	39.78	155.00	-4.14	155.02	-1,090.13	965.18	793.09	172.09	5.608	
11,100.00	11,092.99	21,733.01	11,620.00	39.97	155.00	-4.41	155.34	-1,090.13	933.54	758.45	175.09	5.332	
11,150.00	11,142.19	21,733.51	11,620.00	40.15	155.01	2.02	155.84	-1,090.14	900.23	722.31	177.92	5.060	
11,200.00	11,191.09	21,731.02	11,620.00	40.34	154.98	28.78	153.35	-1,090.12	867.56	686.90	180.66	4.802	Alert
11,250.00	11,239.59	21,724.19	11,620.00	40.52	154.88	48.82	146.52	-1,090.08	836.84	653.54	183.30	4.565	Alert
11,300.00	11,287.32	21,713.08	11,620.00	40.69	154.72	62.35	135.41	-1,090.01	808.43	622.66	185.77	4.352	Alert
11,350.00	11,333.92	21,702.24	11,620.00	40.85	154.57	71.35	120.09	-1,089.91	782.62	594.57	188.05	4.162	Alert
11,400.00	11,379.03	21,678.35	11,620.00	41.00	154.24	77.36	100.68	-1,089.79	759.64	569.76	189.89	4.001	Alert
11,450.00	11,422.32	21,655.00	11,620.00	41.14	153.91	81.32	77.33	-1,089.64	739.62	548.22	191.41	3.864	Alert
11,500.00	11,463.45	21,627.89	11,620.00	41.27	153.53	83.82	50.22	-1,089.46	722.60	530.09	192.51	3.754	Alert
11,550.00	11,502.11	21,602.78	11,620.00	41.39	153.18	85.24	19.55	-1,089.27	708.49	515.24	193.25	3.666	Alert
11,600.00	11,538.00	21,563.23	11,620.00	41.51	152.62	85.84	-14.44	-1,089.05	697.14	503.72	193.42	3.604	Alert
11,650.00	11,570.86	21,526.18	11,620.00	41.62	152.10	85.84	-51.49	-1,088.82	688.30	495.01	193.28	3.561	Alert
11,700.00	11,600.43	21,486.34	11,620.00	41.73	151.55	85.42	-91.33	-1,088.56	681.65	488.83	192.82	3.535	Alert
11,750.00	11,626.48	21,444.02	11,620.00	41.84	150.95	84.74	-133.64	-1,088.29	676.86	484.74	192.12	3.523	Alert
11,800.00	11,648.83	21,400.45	11,620.00	41.95	150.34	83.92	-178.11	-1,088.01	673.56	482.29	191.27	3.522	Alert, SF
11,850.00	11,667.29	21,353.26	11,620.00	42.06	149.68	83.09	-224.41	-1,087.72	671.41	481.09	190.31	3.528	Alert
11,900.00	11,681.74	21,305.50	11,620.00	42.17	149.01	82.34	-272.17	-1,087.41	670.08	480.72	189.37	3.539	Alert, ES
11,950.00	11,692.05	21,256.63	11,620.00	42.28	148.33	81.75	-321.03	-1,087.10	669.34	480.85	188.48	3.551	Alert
12,000.00	11,698.15	21,207.04	11,620.00	42.39	147.64	81.39	-370.62	-1,086.78	668.97	481.27	187.70	3.564	Alert
12,050.00	11,700.00	21,157.09	11,620.00	42.50	146.94	81.27	-420.57	-1,086.47	668.87	481.82	187.05	3.576	Alert
12,100.00	11,700.00	21,107.09	11,620.00	42.62	146.24	81.27	-470.57	-1,086.15	668.86	482.40	186.47	3.587	Alert
12,150.00	11,700.00	21,057.09	11,620.00	42.75	145.54	81.27	-520.57	-1,085.83	668.86	482.95	185.91	3.598	Alert
12,200.00	11,700.00	21,007.09	11,620.00	42.88	144.84	81.27	-570.57	-1,085.51	668.86	483.51	185.34	3.609	Alert
12,250.00	11,700.00	20,957.09	11,620.00	43.03	144.15	81.27	-620.56	-1,085.19	668.85	484.05	184.80	3.619	Alert
12,300.00	11,700.00	20,907.09	11,620.00	43.19	143.45	81.27	-670.56	-1,084.87	668.85	484.58	184.26	3.630	Alert
12,350.00	11,700.00	20,857.09	11,620.00	43.36	142.75	81.27	-720.56	-1,084.56	668.84	485.09	183.75	3.640	Alert
12,400.00	11,700.00	20,807.09	11,620.00	43.54	142.06	81.27	-770.56	-1,084.24	668.84	485.60	183.23	3.650	Alert
12,450.00	11,700.00	20,757.09	11,620.00	43.74	141.36	81.27	-820.56	-1,083.92	668.83	486.09	182.74	3.660	Alert
12,500.00	11,700.00	20,707.09	11,620.00	43.94	140.66	81.27	-870.56	-1,083.60	668.83	486.58	182.25	3.670	Alert
12,550.00	11,700.00	20,657.09	11,620.00	44.16	139.97	81.27	-920.56	-1,083.28	668.83	487.04	181.78	3.679	Alert
12,600.00	11,700.00	20,607.09	11,620.00	44.38	139.27	81.27	-970.56	-1,082.96	668.82	487.51	181.31	3.689	Alert
12,650.00	11,700.00	20,557.09	11,620.00	44.62	138.58	81.27	-1,020.56	-1,082.65	668.82	487.95	180.87	3.698	Alert
12,700.00	11,700.00	20,507.09	11,620.00	44.86	137.88	81.27	-1,070.56	-1,082.33	668.81	488.39	180.42	3.707	Alert
12,750.00	11,700.00	20,457.09	11,620.00	45.12	137.19	81.27	-1,120.55	-1,082.01	668.81	488.82	179.99	3.716	Alert
12,800.00	11,700.00	20,407.09	11,620.00	45.38	136.49	81.27	-1,170.55	-1,081.69	668.81	489.24	179.57	3.725	Alert
12,850.00	11,700.00	20,357.09	11,620.00	45.66	135.80	81.27	-1,220.55	-1,081.37	668.80	489.64	179.16	3.733	Alert
12,900.00	11,700.00	20,307.09	11,620.00	45.94	135.11	81.27	-1,270.55	-1,081.05	668.80	490.04	178.76	3.741	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
12,950.00	11,700.00	20,257.09	11,620.00	46.24	134.41	81.27	-1,320.55	-1,080.74	668.79	490.42	178.37	3.749	Alert
13,000.00	11,700.00	20,207.09	11,620.00	46.54	133.72	81.27	-1,370.55	-1,080.42	668.79	490.80	177.99	3.758	Alert
13,050.00	11,700.00	20,157.09	11,620.00	46.86	133.03	81.27	-1,420.55	-1,080.10	668.78	491.16	177.62	3.765	Alert
13,100.00	11,700.00	20,107.09	11,620.00	47.18	132.34	81.27	-1,470.55	-1,079.78	668.78	491.53	177.26	3.773	Alert
13,150.00	11,700.00	20,057.09	11,620.00	47.52	131.65	81.27	-1,520.55	-1,079.46	668.78	491.87	176.91	3.780	Alert
13,200.00	11,700.00	20,007.09	11,620.00	47.86	130.96	81.27	-1,570.54	-1,079.14	668.77	492.21	176.56	3.788	Alert
13,250.00	11,700.00	19,957.09	11,620.00	48.21	130.27	81.27	-1,620.54	-1,078.83	668.77	492.54	176.23	3.795	Alert
13,300.00	11,700.00	19,907.09	11,620.00	48.57	129.58	81.27	-1,670.54	-1,078.51	668.76	492.86	175.90	3.802	Alert
13,350.00	11,700.00	19,857.09	11,620.00	48.94	128.89	81.27	-1,720.54	-1,078.19	668.76	493.17	175.59	3.809	Alert
13,400.00	11,700.00	19,807.09	11,620.00	49.31	128.20	81.27	-1,770.54	-1,077.87	668.76	493.48	175.28	3.815	Alert
13,450.00	11,700.00	19,757.09	11,620.00	49.70	127.51	81.27	-1,820.54	-1,077.55	668.75	493.77	174.98	3.822	Alert
13,500.00	11,700.00	19,707.09	11,620.00	50.08	126.82	81.27	-1,870.54	-1,077.23	668.75	494.06	174.68	3.828	Alert
13,550.00	11,700.00	19,657.09	11,620.00	50.48	126.13	81.27	-1,920.54	-1,076.92	668.74	494.34	174.40	3.834	Alert
13,600.00	11,700.00	19,607.09	11,620.00	50.89	125.45	81.27	-1,970.54	-1,076.60	668.74	494.62	174.12	3.841	Alert
13,650.00	11,700.00	19,557.09	11,620.00	51.30	124.76	81.27	-2,020.54	-1,076.28	668.73	494.88	173.86	3.847	Alert
13,700.00	11,700.00	19,507.09	11,620.00	51.72	124.07	81.27	-2,070.53	-1,075.96	668.73	495.14	173.59	3.852	Alert
13,750.00	11,700.00	19,457.09	11,620.00	52.15	123.39	81.27	-2,120.53	-1,075.64	668.73	495.39	173.34	3.858	Alert
13,800.00	11,700.00	19,407.09	11,620.00	52.58	122.70	81.27	-2,170.53	-1,075.32	668.72	495.63	173.09	3.864	Alert
13,850.00	11,700.00	19,357.09	11,620.00	53.02	122.02	81.27	-2,220.53	-1,075.01	668.72	495.87	172.85	3.869	Alert
13,900.00	11,700.00	19,307.09	11,620.00	53.46	121.33	81.27	-2,270.53	-1,074.69	668.71	496.10	172.61	3.874	Alert
13,950.00	11,700.00	19,257.09	11,620.00	53.92	120.65	81.27	-2,320.53	-1,074.37	668.71	496.32	172.39	3.879	Alert
14,000.00	11,700.00	19,207.09	11,620.00	54.37	119.96	81.27	-2,370.53	-1,074.05	668.71	496.54	172.16	3.884	Alert
14,050.00	11,700.00	19,157.09	11,620.00	54.84	119.28	81.27	-2,420.53	-1,073.73	668.70	496.75	171.95	3.889	Alert
14,100.00	11,700.00	19,107.09	11,620.00	55.31	118.60	81.27	-2,470.53	-1,073.41	668.70	496.96	171.74	3.894	Alert
14,150.00	11,700.00	19,057.09	11,620.00	55.79	117.92	81.27	-2,520.53	-1,073.09	668.69	497.15	171.54	3.898	Alert
14,200.00	11,700.00	19,007.09	11,620.00	56.26	117.24	81.27	-2,570.52	-1,072.78	668.69	497.35	171.34	3.903	Alert
14,250.00	11,700.00	18,957.09	11,620.00	56.75	116.56	81.27	-2,620.52	-1,072.46	668.68	497.53	171.15	3.907	Alert
14,300.00	11,700.00	18,907.09	11,620.00	57.24	115.88	81.27	-2,670.52	-1,072.14	668.68	497.72	170.96	3.911	Alert
14,350.00	11,700.00	18,857.09	11,620.00	57.74	115.20	81.27	-2,720.52	-1,071.82	668.68	497.89	170.78	3.915	Alert
14,400.00	11,700.00	18,807.09	11,620.00	58.24	114.52	81.27	-2,770.52	-1,071.50	668.67	498.06	170.61	3.919	Alert
14,450.00	11,700.00	18,757.09	11,620.00	58.75	113.84	81.27	-2,820.52	-1,071.18	668.67	498.23	170.44	3.923	Alert
14,500.00	11,700.00	18,707.09	11,620.00	59.25	113.16	81.27	-2,870.52	-1,070.87	668.66	498.39	170.27	3.927	Alert
14,550.00	11,700.00	18,657.09	11,620.00	59.77	112.49	81.27	-2,920.52	-1,070.55	668.66	498.54	170.12	3.931	Alert
14,600.00	11,700.00	18,607.09	11,620.00	60.29	111.81	81.27	-2,970.52	-1,070.23	668.65	498.70	169.96	3.934	Alert
14,650.00	11,700.00	18,557.09	11,620.00	60.82	111.13	81.27	-3,020.52	-1,069.91	668.65	498.84	169.81	3.938	Alert
14,700.00	11,700.00	18,507.09	11,620.00	61.34	110.46	81.27	-3,070.51	-1,069.59	668.65	498.98	169.67	3.941	Alert
14,750.00	11,700.00	18,457.09	11,620.00	61.88	109.79	81.27	-3,120.51	-1,069.27	668.64	499.11	169.53	3.944	Alert
14,800.00	11,700.00	18,407.09	11,620.00	62.41	109.11	81.27	-3,170.51	-1,068.96	668.64	499.25	169.39	3.947	Alert
14,850.00	11,700.00	18,357.09	11,620.00	62.95	108.44	81.27	-3,220.51	-1,068.64	668.63	499.37	169.26	3.950	Alert
14,900.00	11,700.00	18,307.09	11,620.00	63.49	107.77	81.27	-3,270.51	-1,068.32	668.63	499.50	169.13	3.953	Alert
14,950.00	11,700.00	18,257.09	11,620.00	64.04	107.10	81.27	-3,320.51	-1,068.00	668.63	499.61	169.01	3.956	Alert
15,000.00	11,700.00	18,207.09	11,620.00	64.59	106.43	81.27	-3,370.51	-1,067.68	668.62	499.73	168.89	3.959	Alert
15,050.00	11,700.00	18,157.09	11,620.00	65.15	105.76	81.27	-3,420.51	-1,067.36	668.62	499.84	168.78	3.961	Alert
15,100.00	11,700.00	18,107.09	11,620.00	65.70	105.09	81.27	-3,470.51	-1,067.05	668.61	499.94	168.67	3.964	Alert
15,150.00	11,700.00	18,057.09	11,620.00	66.27	104.42	81.27	-3,520.51	-1,066.73	668.61	500.04	168.57	3.966	Alert
15,200.00	11,700.00	18,007.09	11,620.00	66.83	103.75	81.27	-3,570.50	-1,066.41	668.60	500.14	168.46	3.969	Alert
15,250.00	11,700.00	17,957.09	11,620.00	67.40	103.09	81.27	-3,620.50	-1,066.09	668.60	500.23	168.37	3.971	Alert
15,300.00	11,700.00	17,907.09	11,620.00	67.97	102.42	81.27	-3,670.50	-1,065.77	668.60	500.32	168.27	3.973	Alert
15,350.00	11,700.00	17,857.09	11,620.00	68.54	101.76	81.27	-3,720.50	-1,065.45	668.59	500.41	168.18	3.975	Alert
15,400.00	11,700.00	17,807.09	11,620.00	69.12	101.09	81.27	-3,770.50	-1,065.14	668.59	500.49	168.10	3.977	Alert
15,450.00	11,700.00	17,757.09	11,620.00	69.70	100.43	81.27	-3,820.50	-1,064.82	668.58	500.57	168.01	3.979	Alert
15,500.00	11,700.00	17,707.09	11,620.00	70.28	99.77	81.27	-3,870.50	-1,064.50	668.58	500.65	167.93	3.981	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
15,550.00	11,700.00	17,657.09	11,620.00	70.87	99.11	81.27	-3,920.50	-1,064.18	668.58	500.72	167.86	3.983	Alert
15,600.00	11,700.00	17,607.09	11,620.00	71.45	98.44	81.27	-3,970.50	-1,063.86	668.57	500.78	167.79	3.985	Alert
15,650.00	11,700.00	17,557.09	11,620.00	72.04	97.79	81.27	-4,020.50	-1,063.54	668.57	500.85	167.72	3.986	Alert
15,700.00	11,700.00	17,507.09	11,620.00	72.64	97.13	81.27	-4,070.49	-1,063.22	668.56	500.91	167.65	3.988	Alert
15,750.00	11,700.00	17,457.09	11,620.00	73.23	96.47	81.27	-4,120.49	-1,062.91	668.56	500.97	167.59	3.989	Alert
15,800.00	11,700.00	17,407.09	11,620.00	73.83	95.81	81.27	-4,170.49	-1,062.59	668.55	501.02	167.53	3.991	Alert
15,850.00	11,700.00	17,357.09	11,620.00	74.43	95.16	81.27	-4,220.49	-1,062.27	668.55	501.07	167.48	3.992	Alert
15,900.00	11,700.00	17,307.09	11,620.00	75.03	94.51	81.27	-4,270.49	-1,061.95	668.55	501.12	167.43	3.993	Alert
15,950.00	11,700.00	17,257.09	11,620.00	75.64	93.85	81.27	-4,320.49	-1,061.63	668.54	501.16	167.38	3.994	Alert
16,000.00	11,700.00	17,207.09	11,620.00	76.24	93.20	81.27	-4,370.49	-1,061.31	668.54	501.20	167.33	3.995	Alert
16,050.00	11,700.00	17,157.09	11,620.00	76.85	92.55	81.27	-4,420.49	-1,061.00	668.53	501.24	167.29	3.996	Alert
16,100.00	11,700.00	17,107.09	11,620.00	77.46	91.90	81.27	-4,470.49	-1,060.68	668.53	501.28	167.25	3.997	Alert
16,150.00	11,700.00	17,057.09	11,620.00	78.08	91.25	81.27	-4,520.49	-1,060.36	668.53	501.31	167.22	3.998	Alert
16,200.00	11,700.00	17,007.09	11,620.00	78.69	90.61	81.27	-4,570.48	-1,060.04	668.52	501.33	167.19	3.999	Alert
16,250.00	11,700.00	16,957.09	11,620.00	79.31	89.96	81.27	-4,620.48	-1,059.72	668.52	501.36	167.16	3.999	Alert
16,300.00	11,700.00	16,907.09	11,620.00	79.93	89.32	81.27	-4,670.48	-1,059.40	668.51	501.38	167.13	4.000	Alert
16,350.00	11,700.00	16,857.09	11,620.00	80.55	88.67	81.27	-4,720.48	-1,059.09	668.51	501.40	167.11	4.000	Alert
16,400.00	11,700.00	16,807.09	11,620.00	81.17	88.03	81.27	-4,770.48	-1,058.77	668.50	501.42	167.09	4.001	Alert
16,450.00	11,700.00	16,757.09	11,620.00	81.79	87.39	81.27	-4,820.48	-1,058.45	668.50	501.43	167.07	4.001	Alert
16,500.00	11,700.00	16,707.09	11,620.00	82.42	86.75	81.27	-4,870.48	-1,058.13	668.50	501.44	167.06	4.002	Alert
16,550.00	11,700.00	16,657.09	11,620.00	83.05	86.11	81.27	-4,920.48	-1,057.81	668.49	501.44	167.05	4.002	Alert
16,600.00	11,700.00	16,607.09	11,620.00	83.68	85.48	81.27	-4,970.48	-1,057.49	668.49	501.45	167.04	4.002	Alert
16,650.00	11,700.00	16,557.09	11,620.00	84.31	84.84	81.27	-5,020.48	-1,057.18	668.48	501.45	167.04	4.002	Alert
16,700.00	11,700.00	16,507.09	11,620.00	84.94	84.21	81.27	-5,070.47	-1,056.86	668.48	501.45	167.03	4.002	Alert
16,750.00	11,700.00	16,457.09	11,620.00	85.57	83.58	81.27	-5,120.47	-1,056.54	668.48	501.44	167.04	4.002	Alert
16,800.00	11,700.00	16,407.09	11,620.00	86.21	82.95	81.27	-5,170.47	-1,056.22	668.47	501.43	167.04	4.002	Alert
16,850.00	11,700.00	16,357.09	11,620.00	86.85	82.32	81.27	-5,220.47	-1,055.90	668.47	501.42	167.05	4.002	Alert
16,900.00	11,700.00	16,307.09	11,620.00	87.48	81.69	81.27	-5,270.47	-1,055.58	668.46	501.41	167.06	4.001	Alert
16,950.00	11,700.00	16,257.09	11,620.00	88.12	81.07	81.27	-5,320.47	-1,055.27	668.46	501.39	167.07	4.001	Alert
17,000.00	11,700.00	16,207.09	11,620.00	88.77	80.44	81.27	-5,370.47	-1,054.95	668.45	501.37	167.09	4.001	Alert
17,050.00	11,700.00	16,157.09	11,620.00	89.41	79.82	81.27	-5,420.47	-1,054.63	668.45	501.34	167.11	4.000	Alert
17,100.00	11,700.00	16,107.09	11,620.00	90.05	79.20	81.27	-5,470.47	-1,054.31	668.45	501.32	167.13	4.000	Alert
17,150.00	11,700.00	16,057.09	11,620.00	90.70	78.59	81.27	-5,520.46	-1,053.99	668.44	501.29	167.16	3.999	Alert
17,200.00	11,700.00	16,007.09	11,620.00	91.34	77.97	81.27	-5,570.46	-1,053.67	668.44	501.25	167.18	3.998	Alert
17,250.00	11,700.00	15,957.09	11,620.00	91.99	77.36	81.27	-5,620.46	-1,053.36	668.43	501.22	167.22	3.997	Alert
17,300.00	11,700.00	15,907.09	11,620.00	92.64	76.74	81.27	-5,670.46	-1,053.04	668.43	501.18	167.25	3.997	Alert
17,350.00	11,700.00	15,857.09	11,620.00	93.29	76.13	81.27	-5,720.46	-1,052.72	668.43	501.13	167.29	3.996	Alert
17,400.00	11,700.00	15,807.09	11,620.00	93.94	75.52	81.27	-5,770.46	-1,052.40	668.42	501.09	167.33	3.995	Alert
17,450.00	11,700.00	15,757.09	11,620.00	94.59	74.92	81.27	-5,820.46	-1,052.08	668.42	501.04	167.38	3.993	Alert
17,500.00	11,700.00	15,707.09	11,620.00	95.25	74.32	81.27	-5,870.46	-1,051.76	668.41	500.99	167.43	3.992	Alert
17,550.00	11,700.00	15,657.09	11,620.00	95.90	73.72	81.27	-5,920.46	-1,051.44	668.41	500.93	167.48	3.991	Alert
17,600.00	11,700.00	15,607.09	11,620.00	96.56	73.12	81.27	-5,970.46	-1,051.13	668.40	500.87	167.53	3.990	Alert
17,650.00	11,700.00	15,557.09	11,620.00	97.21	72.52	81.27	-6,020.45	-1,050.81	668.40	500.81	167.59	3.988	Alert
17,700.00	11,700.00	15,507.09	11,620.00	97.87	71.93	81.27	-6,070.45	-1,050.49	668.40	500.74	167.65	3.987	Alert
17,750.00	11,700.00	15,457.09	11,620.00	98.53	71.33	81.27	-6,120.45	-1,050.17	668.39	500.67	167.72	3.985	Alert
17,800.00	11,700.00	15,407.09	11,620.00	99.19	70.74	81.27	-6,170.45	-1,049.85	668.39	500.60	167.79	3.984	Alert
17,850.00	11,700.00	15,357.09	11,620.00	99.85	70.16	81.27	-6,220.45	-1,049.53	668.38	500.52	167.86	3.982	Alert
17,900.00	11,700.00	15,307.09	11,620.00	100.51	69.57	81.27	-6,270.45	-1,049.22	668.38	500.44	167.94	3.980	Alert
17,950.00	11,700.00	15,257.09	11,620.00	101.17	69.00	81.27	-6,320.45	-1,048.90	668.38	500.36	168.02	3.978	Alert
18,000.00	11,700.00	15,207.09	11,620.00	101.84	68.42	81.27	-6,370.45	-1,048.58	668.37	500.27	168.10	3.976	Alert
18,050.00	11,700.00	15,157.09	11,620.00	102.50	67.84	81.27	-6,420.45	-1,048.26	668.37	500.18	168.19	3.974	Alert
18,100.00	11,700.00	15,107.09	11,620.00	103.17	67.27	81.26	-6,470.45	-1,047.94	668.36	500.09	168.28	3.972	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
18,150.00	11,700.00	15,057.09	11,620.00	103.83	66.70	81.26	-6,520.44	-1,047.62	668.36	499.99	168.37	3.970	Alert
18,200.00	11,700.00	15,007.09	11,620.00	104.50	66.13	81.26	-6,570.44	-1,047.31	668.35	499.88	168.47	3.967	Alert
18,250.00	11,700.00	14,957.09	11,620.00	105.17	65.57	81.26	-6,620.44	-1,046.99	668.35	499.78	168.57	3.965	Alert
18,300.00	11,700.00	14,907.09	11,620.00	105.84	65.01	81.26	-6,670.44	-1,046.67	668.35	499.67	168.68	3.962	Alert
18,350.00	11,700.00	14,857.09	11,620.00	106.51	64.46	81.26	-6,720.44	-1,046.35	668.34	499.55	168.79	3.960	Alert
18,400.00	11,700.00	14,807.09	11,620.00	107.18	63.90	81.26	-6,770.44	-1,046.03	668.34	499.43	168.91	3.957	Alert
18,450.00	11,700.00	14,757.09	11,620.00	107.85	63.35	81.26	-6,820.44	-1,045.71	668.33	499.31	169.03	3.954	Alert
18,500.00	11,700.00	14,707.09	11,620.00	108.52	62.81	81.26	-6,870.44	-1,045.40	668.33	499.18	169.15	3.951	Alert
18,550.00	11,700.00	14,657.09	11,620.00	109.19	62.27	81.26	-6,920.44	-1,045.08	668.33	499.05	169.28	3.948	Alert
18,600.00	11,700.00	14,607.09	11,620.00	109.86	61.73	81.26	-6,970.44	-1,044.76	668.32	498.91	169.41	3.945	Alert
18,650.00	11,700.00	14,557.09	11,620.00	110.54	61.19	81.26	-7,020.43	-1,044.44	668.32	498.77	169.55	3.942	Alert
18,700.00	11,700.00	14,507.09	11,620.00	111.21	60.66	81.26	-7,070.43	-1,044.12	668.31	498.62	169.69	3.938	Alert
18,750.00	11,700.00	14,457.09	11,620.00	111.89	60.14	81.26	-7,120.43	-1,043.80	668.31	498.47	169.84	3.935	Alert
18,800.00	11,700.00	14,407.09	11,620.00	112.56	59.62	81.26	-7,170.43	-1,043.49	668.30	498.31	169.99	3.931	Alert
18,850.00	11,700.00	14,357.09	11,620.00	113.24	59.10	81.26	-7,220.43	-1,043.17	668.30	498.15	170.15	3.928	Alert
18,900.00	11,700.00	14,307.09	11,620.00	113.92	58.59	81.26	-7,270.43	-1,042.85	668.30	497.99	170.31	3.924	Alert
18,950.00	11,700.00	14,257.09	11,620.00	114.59	58.08	81.26	-7,320.43	-1,042.53	668.29	497.81	170.48	3.920	Alert
19,000.00	11,700.00	14,207.09	11,620.00	115.27	57.57	81.26	-7,370.43	-1,042.21	668.29	497.64	170.65	3.916	Alert
19,050.00	11,700.00	14,157.09	11,620.00	115.95	57.08	81.26	-7,420.43	-1,041.89	668.28	497.45	170.83	3.912	Alert
19,100.00	11,700.00	14,107.09	11,620.00	116.63	56.58	81.26	-7,470.43	-1,041.58	668.28	497.27	171.01	3.908	Alert
19,150.00	11,700.00	14,057.09	11,620.00	117.31	56.10	81.26	-7,520.42	-1,041.26	668.28	497.07	171.20	3.903	Alert
19,200.00	11,700.00	14,007.09	11,620.00	117.99	55.61	81.26	-7,570.42	-1,040.94	668.27	496.87	171.40	3.899	Alert
19,250.00	11,700.00	13,957.09	11,620.00	118.67	55.13	81.26	-7,620.42	-1,040.62	668.27	496.67	171.60	3.894	Alert
19,300.00	11,700.00	13,907.09	11,620.00	119.36	54.66	81.26	-7,670.42	-1,040.30	668.26	496.46	171.81	3.890	Alert
19,350.00	11,700.00	13,857.09	11,620.00	120.04	54.20	81.26	-7,720.42	-1,039.98	668.26	496.24	172.02	3.885	Alert
19,400.00	11,700.00	13,807.09	11,620.00	120.72	53.73	81.26	-7,770.42	-1,039.66	668.25	496.01	172.24	3.880	Alert
19,450.00	11,700.00	13,757.09	11,620.00	121.41	53.28	81.26	-7,820.42	-1,039.35	668.25	495.78	172.47	3.875	Alert
19,500.00	11,700.00	13,707.09	11,620.00	122.09	52.83	81.26	-7,870.42	-1,039.03	668.25	495.54	172.70	3.869	Alert
19,550.00	11,700.00	13,657.09	11,620.00	122.77	52.39	81.26	-7,920.42	-1,038.71	668.24	495.30	172.95	3.864	Alert
19,600.00	11,700.00	13,607.09	11,620.00	123.46	51.95	81.26	-7,970.42	-1,038.39	668.24	495.05	173.19	3.858	Alert
19,650.00	11,700.00	13,557.09	11,620.00	124.15	51.52	81.26	-8,020.41	-1,038.07	668.23	494.79	173.45	3.853	Alert
19,700.00	11,700.00	13,507.09	11,620.00	124.83	51.10	81.26	-8,070.41	-1,037.75	668.23	494.52	173.71	3.847	Alert
19,750.00	11,700.00	13,457.09	11,620.00	125.52	50.68	81.26	-8,120.41	-1,037.44	668.22	494.25	173.98	3.841	Alert
19,800.00	11,700.00	13,407.09	11,620.00	126.20	50.27	81.26	-8,170.41	-1,037.12	668.22	493.97	174.25	3.835	Alert
19,850.00	11,700.00	13,357.09	11,620.00	126.89	49.87	81.26	-8,220.41	-1,036.80	668.22	493.67	174.54	3.828	Alert
19,900.00	11,700.00	13,307.09	11,620.00	127.58	49.48	81.26	-8,270.41	-1,036.48	668.21	493.38	174.83	3.822	Alert
19,950.00	11,700.00	13,257.09	11,620.00	128.27	49.09	81.26	-8,320.41	-1,036.16	668.21	493.07	175.14	3.815	Alert
20,000.00	11,700.00	13,207.09	11,620.00	128.96	48.71	81.26	-8,370.41	-1,035.84	668.20	492.76	175.44	3.809	Alert
20,050.00	11,700.00	13,157.09	11,620.00	129.65	48.34	81.26	-8,420.41	-1,035.53	668.20	492.43	175.77	3.802	Alert
20,100.00	11,700.00	13,107.09	11,620.00	130.34	47.98	81.26	-8,470.41	-1,035.21	668.20	492.11	176.09	3.795	Alert
20,150.00	11,700.00	13,057.09	11,620.00	131.03	47.63	81.26	-8,520.40	-1,034.89	668.19	491.76	176.43	3.787	Alert
20,200.00	11,700.00	13,007.09	11,620.00	131.72	47.28	81.26	-8,570.40	-1,034.57	668.19	491.42	176.77	3.780	Alert
20,250.00	11,700.00	12,957.09	11,620.00	132.41	46.94	81.26	-8,620.40	-1,034.25	668.18	491.05	177.13	3.772	Alert
20,300.00	11,700.00	12,907.09	11,620.00	133.10	46.61	81.26	-8,670.40	-1,033.93	668.18	490.69	177.49	3.765	Alert
20,350.00	11,700.00	12,857.09	11,620.00	133.79	46.30	81.26	-8,720.40	-1,033.62	668.17	490.31	177.87	3.757	Alert
20,400.00	11,700.00	12,807.09	11,620.00	134.48	45.98	81.26	-8,770.40	-1,033.30	668.17	489.92	178.25	3.749	Alert
20,450.00	11,700.00	12,757.09	11,620.00	135.18	45.69	81.26	-8,820.40	-1,032.98	668.17	489.52	178.65	3.740	Alert
20,500.00	11,700.00	12,707.09	11,620.00	135.87	45.39	81.26	-8,870.40	-1,032.66	668.16	489.12	179.05	3.732	Alert
20,550.00	11,700.00	12,657.09	11,620.00	136.56	45.12	81.26	-8,920.40	-1,032.34	668.16	488.69	179.46	3.723	Alert
20,600.00	11,700.00	12,607.09	11,620.00	137.26	44.84	81.26	-8,970.40	-1,032.02	668.15	488.27	179.89	3.714	Alert
20,650.00	11,700.00	12,557.09	11,620.00	137.95	44.59	81.26	-9,020.39	-1,031.71	668.15	487.82	180.33	3.705	Alert
20,700.00	11,700.00	12,507.09	11,620.00	138.65	44.33	81.26	-9,070.39	-1,031.39	668.15	487.38	180.77	3.696	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
20,750.00	11,700.00	12,457.09	11,620.00	139.34	44.10	81.26	-9,120.39	-1,031.07	668.14	486.91	181.23	3.687	Alert
20,800.00	11,700.00	12,407.09	11,620.00	140.04	43.87	81.26	-9,170.39	-1,030.75	668.14	486.44	181.70	3.677	Alert
20,850.00	11,700.00	12,357.09	11,620.00	140.73	43.65	81.26	-9,220.39	-1,030.43	668.13	485.95	182.18	3.667	Alert
20,900.00	11,700.00	12,307.09	11,620.00	141.43	43.45	81.26	-9,270.39	-1,030.11	668.13	485.46	182.67	3.658	Alert
20,950.00	11,700.00	12,257.09	11,620.00	142.12	43.26	81.26	-9,320.39	-1,029.79	668.12	484.94	183.18	3.647	Alert
21,000.00	11,700.00	12,207.09	11,620.00	142.82	43.08	81.26	-9,370.39	-1,029.48	668.12	484.43	183.69	3.637	Alert
21,050.00	11,700.00	12,157.09	11,620.00	143.52	42.92	81.26	-9,420.39	-1,029.16	668.12	483.89	184.23	3.627	Alert
21,100.00	11,700.00	12,107.09	11,620.00	144.21	42.77	81.26	-9,470.38	-1,028.84	668.11	483.35	184.76	3.616	Alert
21,150.00	11,700.00	12,057.09	11,620.00	144.91	42.64	81.26	-9,520.38	-1,028.52	668.11	482.79	185.32	3.605	Alert
21,200.00	11,700.00	12,007.09	11,620.00	145.61	42.52	81.26	-9,570.38	-1,028.20	668.10	482.22	185.88	3.594	Alert
21,214.98	11,700.00	11,993.49	11,620.00	145.82	42.49	81.26	-9,585.37	-1,028.11	668.10	482.05	186.05	3.591	Alert, CC
21,250.00	11,700.00	11,962.49	11,619.20	146.31	42.43	81.19	-9,614.97	-1,027.92	668.24	481.76	186.49	3.583	Alert
21,300.00	11,700.00	11,920.38	11,615.43	147.01	42.36	80.87	-9,656.90	-1,027.65	668.94	481.93	187.01	3.577	Alert
21,350.00	11,700.00	11,879.03	11,608.74	147.71	42.30	80.31	-9,697.69	-1,027.39	670.28	482.85	187.42	3.576	Alert
21,400.00	11,700.00	11,838.85	11,599.44	148.40	42.25	79.53	-9,736.77	-1,027.14	672.36	484.65	187.71	3.582	Alert
21,450.00	11,700.00	11,800.00	11,587.87	149.10	42.21	78.56	-9,773.85	-1,026.91	675.32	487.48	187.84	3.595	Alert
21,500.00	11,700.00	11,763.22	11,574.62	149.80	42.17	77.46	-9,808.16	-1,026.69	679.32	491.51	187.81	3.617	Alert
21,550.00	11,700.00	11,728.18	11,559.97	150.50	42.13	76.25	-9,839.98	-1,026.49	684.53	496.95	187.57	3.649	Alert
21,600.00	11,700.00	11,695.16	11,544.41	151.20	42.09	74.99	-9,869.10	-1,026.30	691.11	503.98	187.13	3.693	Alert
21,650.00	11,700.00	11,664.17	11,528.31	151.90	42.05	73.69	-9,895.57	-1,026.13	699.22	512.78	186.44	3.750	Alert
21,700.00	11,700.00	11,635.21	11,511.98	152.60	42.01	72.40	-9,919.49	-1,025.98	708.99	523.48	185.51	3.822	Alert
21,750.00	11,700.00	11,608.21	11,495.70	153.31	41.97	71.12	-9,941.02	-1,025.84	720.52	536.19	184.34	3.909	Alert
21,800.00	11,700.00	11,583.08	11,479.65	154.01	41.93	69.88	-9,960.34	-1,025.72	733.89	550.97	182.93	4.012	Alert
21,850.00	11,700.00	11,559.74	11,463.98	154.71	41.89	68.69	-9,977.65	-1,025.61	749.14	567.85	181.30	4.132	Alert
21,900.00	11,700.00	11,538.06	11,448.82	155.41	41.85	67.56	-9,993.14	-1,025.51	766.29	586.82	179.47	4.270	Alert
21,950.00	11,700.00	11,517.93	11,434.22	156.11	41.81	66.49	-10,007.01	-1,025.42	785.31	607.83	177.47	4.425	Alert
21,964.16	11,700.00	11,512.49	11,430.20	156.31	41.80	66.19	-10,010.66	-1,025.40	791.03	614.15	176.88	4.472	Alert

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 611H - 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
11,200.00	11,191.09	21,916.81	11,700.00	40.34	155.97	27.53	149.35	-1,739.98	1,497.40	1,308.61	188.79	7.932	
11,250.00	11,239.59	21,909.98	11,700.00	40.52	155.88	46.79	142.52	-1,739.94	1,472.79	1,282.73	190.06	7.749	
11,300.00	11,287.32	21,898.87	11,700.00	40.69	155.72	59.90	131.41	-1,739.87	1,449.81	1,258.63	191.18	7.584	
11,350.00	11,333.92	21,883.55	11,700.00	40.85	155.50	68.83	116.09	-1,739.77	1,428.62	1,236.49	192.13	7.436	
11,400.00	11,379.03	21,864.14	11,700.00	41.00	155.23	75.06	96.68	-1,739.65	1,409.33	1,216.44	192.89	7.306	
11,450.00	11,422.32	21,840.79	11,700.00	41.14	154.90	79.50	73.33	-1,739.50	1,392.01	1,198.53	193.48	7.195	
11,500.00	11,463.45	21,813.67	11,700.00	41.27	154.52	82.70	46.22	-1,739.33	1,376.66	1,182.79	193.87	7.101	
11,550.00	11,502.11	21,783.01	11,700.00	41.39	154.09	84.98	15.55	-1,739.14	1,363.26	1,169.17	194.09	7.024	
11,600.00	11,538.00	21,749.01	11,700.00	41.51	153.61	86.58	-18.44	-1,738.93	1,351.73	1,157.60	194.13	6.963	
11,650.00	11,570.86	21,711.96	11,700.00	41.62	153.09	87.67	-55.50	-1,738.70	1,341.96	1,147.95	194.02	6.917	
11,700.00	11,600.43	21,672.12	11,700.00	41.73	152.53	88.37	-95.33	-1,738.45	1,333.84	1,140.06	193.77	6.884	
11,750.00	11,626.48	21,629.80	11,700.00	41.84	151.94	88.79	-137.65	-1,738.18	1,327.20	1,133.79	193.42	6.862	
11,800.00	11,648.83	21,585.33	11,700.00	41.95	151.31	89.02	-182.12	-1,737.90	1,321.92	1,128.95	192.97	6.850	
11,850.00	11,667.29	21,539.04	11,700.00	42.06	150.67	89.11	-228.42	-1,737.61	1,317.83	1,125.37	192.45	6.847	
11,900.00	11,681.74	21,508.72	11,700.00	42.17	150.24	89.12	-276.18	-1,737.31	1,314.81	1,122.67	192.14	6.843	
11,950.00	11,692.05	21,442.41	11,700.00	42.28	149.31	89.10	-325.04	-1,737.01	1,312.75	1,121.44	191.31	6.862	
12,000.00	11,698.15	21,407.18	11,700.00	42.39	148.82	89.07	-374.63	-1,736.69	1,311.58	1,120.66	190.91	6.870	
12,049.96	11,700.14	21,342.92	11,700.00	42.50	147.92	89.06	-424.53	-1,736.38	1,311.20	1,121.08	190.11	6.897	CC
12,050.00	11,700.00	21,342.87	11,700.00	42.50	147.92	89.06	-424.58	-1,736.38	1,311.22	1,121.11	190.11	6.897	
12,100.00	11,700.00	21,307.13	11,700.00	42.62	147.42	89.06	-474.58	-1,736.07	1,311.22	1,121.50	189.72	6.911	
12,150.00	11,700.00	21,242.87	11,700.00	42.75	146.52	89.06	-524.58	-1,735.75	1,311.22	1,122.27	188.95	6.940	
12,200.00	11,700.00	21,207.13	11,700.00	42.88	146.02	89.06	-574.58	-1,735.44	1,311.23	1,122.65	188.58	6.953	
12,250.00	11,700.00	21,142.87	11,700.00	43.03	145.12	89.06	-624.57	-1,735.13	1,311.23	1,123.40	187.83	6.981	
12,300.00	11,700.00	21,107.13	11,700.00	43.19	144.62	89.06	-674.57	-1,734.81	1,311.23	1,123.74	187.48	6.994	
12,350.00	11,700.00	21,042.87	11,700.00	43.36	143.72	89.06	-724.57	-1,734.50	1,311.23	1,124.47	186.76	7.021	
12,400.00	11,700.00	21,007.13	11,700.00	43.54	143.22	89.06	-774.57	-1,734.19	1,311.23	1,124.79	186.44	7.033	
12,450.00	11,700.00	20,942.87	11,700.00	43.74	142.32	89.06	-824.57	-1,733.87	1,311.23	1,125.49	185.74	7.060	
12,500.00	11,700.00	20,907.13	11,700.00	43.94	141.82	89.06	-874.57	-1,733.56	1,311.23	1,125.79	185.44	7.071	
12,550.00	11,700.00	20,842.87	11,700.00	44.16	140.93	89.06	-924.57	-1,733.25	1,311.23	1,126.47	184.76	7.097	
12,600.00	11,700.00	20,807.13	11,700.00	44.38	140.43	89.06	-974.57	-1,732.93	1,311.23	1,126.75	184.48	7.108	
12,650.00	11,700.00	20,742.87	11,700.00	44.62	139.53	89.06	-1,024.57	-1,732.62	1,311.23	1,127.40	183.83	7.133	
12,700.00	11,700.00	20,707.13	11,700.00	44.86	139.03	89.06	-1,074.57	-1,732.31	1,311.23	1,127.66	183.57	7.143	
12,750.00	11,700.00	20,642.87	11,700.00	45.12	138.14	89.06	-1,124.56	-1,731.99	1,311.23	1,128.29	182.94	7.167	
12,800.00	11,700.00	20,607.13	11,700.00	45.38	137.64	89.06	-1,174.56	-1,731.68	1,311.23	1,128.52	182.71	7.177	
12,850.00	11,700.00	20,542.87	11,700.00	45.66	136.75	89.06	-1,224.56	-1,731.37	1,311.23	1,129.14	182.10	7.201	
12,900.00	11,700.00	20,507.13	11,700.00	45.94	136.25	89.06	-1,274.56	-1,731.05	1,311.23	1,129.35	181.89	7.209	
12,950.00	11,700.00	20,442.87	11,700.00	46.24	135.36	89.06	-1,324.56	-1,730.74	1,311.24	1,129.94	181.30	7.233	
13,000.00	11,700.00	20,407.13	11,700.00	46.54	134.86	89.06	-1,374.56	-1,730.43	1,311.24	1,130.13	181.10	7.240	
13,050.00	11,700.00	20,342.87	11,700.00	46.86	133.97	89.06	-1,424.56	-1,730.11	1,311.24	1,130.70	180.53	7.263	
13,100.00	11,700.00	20,307.13	11,700.00	47.18	133.47	89.06	-1,474.56	-1,729.80	1,311.24	1,130.88	180.36	7.270	
13,150.00	11,700.00	20,242.87	11,700.00	47.52	132.58	89.06	-1,524.56	-1,729.48	1,311.24	1,131.43	179.81	7.292	
13,200.00	11,700.00	20,207.13	11,700.00	47.86	132.09	89.06	-1,574.56	-1,729.17	1,311.24	1,131.59	179.65	7.299	
13,250.00	11,700.00	20,142.87	11,700.00	48.21	131.20	89.06	-1,624.55	-1,728.86	1,311.24	1,132.12	179.12	7.321	
13,300.00	11,700.00	20,107.13	11,700.00	48.57	130.70	89.06	-1,674.55	-1,728.54	1,311.24	1,132.26	178.98	7.326	
13,350.00	11,700.00	20,042.87	11,700.00	48.94	129.81	89.06	-1,724.55	-1,728.23	1,311.24	1,132.78	178.46	7.347	
13,400.00	11,700.00	20,007.13	11,700.00	49.31	129.32	89.06	-1,774.55	-1,727.92	1,311.24	1,132.90	178.34	7.352	
13,450.00	11,700.00	19,942.87	11,700.00	49.70	128.43	89.06	-1,824.55	-1,727.60	1,311.24	1,133.40	177.85	7.373	
13,500.00	11,700.00	19,907.13	11,700.00	50.08	127.94	89.06	-1,874.55	-1,727.29	1,311.24	1,133.50	177.74	7.377	
13,550.00	11,700.00	19,842.87	11,700.00	50.48	127.05	89.06	-1,924.55	-1,726.98	1,311.24	1,133.98	177.26	7.397	
13,600.00	11,700.00	19,807.13	11,700.00	50.89	126.56	89.06	-1,974.55	-1,726.66	1,311.24	1,134.07	177.17	7.401	
13,650.00	11,700.00	19,742.87	11,700.00	51.30	125.67	89.06	-2,024.55	-1,726.35	1,311.24	1,134.54	176.70	7.421	
13,700.00	11,700.00	19,707.13	11,700.00	51.72	125.18	89.06	-2,074.55	-1,726.04	1,311.25	1,134.62	176.63	7.424	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 611H - 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
13,750.00	11,700.00	19,642.87	11,700.00	52.15	124.29	89.06	-2,124.55	-1,725.72	1,311.25	1,135.07	176.18	7.443	
13,800.00	11,700.00	19,607.13	11,700.00	52.58	123.80	89.06	-2,174.54	-1,725.41	1,311.25	1,135.13	176.12	7.445	
13,850.00	11,700.00	19,542.87	11,700.00	53.02	122.92	89.06	-2,224.54	-1,725.10	1,311.25	1,135.57	175.68	7.464	
13,900.00	11,700.00	19,507.13	11,700.00	53.46	122.43	89.06	-2,274.54	-1,724.78	1,311.25	1,135.62	175.63	7.466	
13,950.00	11,700.00	19,442.87	11,700.00	53.92	121.55	89.06	-2,324.54	-1,724.47	1,311.25	1,136.04	175.21	7.484	
14,000.00	11,700.00	19,407.13	11,700.00	54.37	121.06	89.06	-2,374.54	-1,724.16	1,311.25	1,136.07	175.17	7.485	
14,050.00	11,700.00	19,342.87	11,700.00	54.84	120.18	89.06	-2,424.54	-1,723.84	1,311.25	1,136.49	174.76	7.503	
14,100.00	11,700.00	19,307.13	11,700.00	55.31	119.69	89.06	-2,474.54	-1,723.53	1,311.25	1,136.51	174.74	7.504	
14,150.00	11,700.00	19,242.87	11,700.00	55.79	118.81	89.06	-2,524.54	-1,723.21	1,311.25	1,136.91	174.34	7.521	
14,200.00	11,700.00	19,207.13	11,700.00	56.26	118.32	89.06	-2,574.54	-1,722.90	1,311.25	1,136.92	174.33	7.521	
14,250.00	11,700.00	19,142.87	11,700.00	56.75	117.44	89.06	-2,624.54	-1,722.59	1,311.25	1,137.31	173.95	7.538	
14,300.00	11,700.00	19,107.13	11,700.00	57.24	116.95	89.06	-2,674.53	-1,722.27	1,311.25	1,137.30	173.95	7.538	
14,350.00	11,700.00	19,042.87	11,700.00	57.74	116.07	89.06	-2,724.53	-1,721.96	1,311.25	1,137.68	173.57	7.554	
14,400.00	11,700.00	19,007.13	11,700.00	58.24	115.59	89.06	-2,774.53	-1,721.65	1,311.25	1,137.67	173.59	7.554	
14,450.00	11,700.00	18,942.87	11,700.00	58.75	114.71	89.06	-2,824.53	-1,721.33	1,311.26	1,138.03	173.22	7.570	
14,500.00	11,700.00	18,907.13	11,700.00	59.25	114.22	89.06	-2,874.53	-1,721.02	1,311.26	1,138.01	173.25	7.569	
14,550.00	11,700.00	18,842.87	11,700.00	59.77	113.35	89.06	-2,924.53	-1,720.71	1,311.26	1,138.36	172.89	7.584	
14,600.00	11,700.00	18,807.13	11,700.00	60.29	112.87	89.06	-2,974.53	-1,720.39	1,311.26	1,138.33	172.93	7.583	
14,650.00	11,700.00	18,742.87	11,700.00	60.82	111.99	89.06	-3,024.53	-1,720.08	1,311.26	1,138.68	172.58	7.598	
14,700.00	11,700.00	18,707.13	11,700.00	61.34	111.51	89.06	-3,074.53	-1,719.77	1,311.26	1,138.63	172.63	7.596	
14,750.00	11,700.00	18,642.87	11,700.00	61.88	110.64	89.06	-3,124.53	-1,719.45	1,311.26	1,138.97	172.29	7.611	
14,800.00	11,700.00	18,592.87	11,700.00	62.41	109.96	89.06	-3,174.52	-1,719.14	1,311.26	1,139.11	172.15	7.617	
14,850.00	11,700.00	18,542.87	11,700.00	62.95	109.29	89.06	-3,224.52	-1,718.83	1,311.26	1,139.24	172.02	7.623	
14,900.00	11,700.00	18,507.13	11,700.00	63.49	108.80	89.06	-3,274.52	-1,718.51	1,311.26	1,139.18	172.08	7.620	
14,950.00	11,700.00	18,442.87	11,700.00	64.04	107.94	89.06	-3,324.52	-1,718.20	1,311.26	1,139.50	171.76	7.634	
15,000.00	11,700.00	18,407.13	11,700.00	64.59	107.45	89.06	-3,374.52	-1,717.89	1,311.26	1,139.43	171.83	7.631	
15,050.00	11,700.00	18,342.87	11,700.00	65.15	106.59	89.06	-3,424.52	-1,717.57	1,311.26	1,139.74	171.53	7.645	
15,100.00	11,700.00	18,307.13	11,700.00	65.70	106.11	89.06	-3,474.52	-1,717.26	1,311.26	1,139.66	171.60	7.641	
15,150.00	11,700.00	18,242.87	11,700.00	66.27	105.24	89.06	-3,524.52	-1,716.95	1,311.26	1,139.96	171.30	7.655	
15,200.00	11,700.00	18,207.13	11,700.00	66.83	104.76	89.06	-3,574.52	-1,716.63	1,311.27	1,139.88	171.39	7.651	
15,250.00	11,700.00	18,142.87	11,700.00	67.40	103.90	89.06	-3,624.52	-1,716.32	1,311.27	1,140.17	171.10	7.664	
15,300.00	11,700.00	18,107.13	11,700.00	67.97	103.43	89.06	-3,674.51	-1,716.00	1,311.27	1,140.08	171.19	7.660	
15,350.00	11,700.00	18,042.87	11,700.00	68.54	102.57	89.06	-3,724.51	-1,715.69	1,311.27	1,140.36	170.91	7.672	
15,400.00	11,700.00	18,007.13	11,700.00	69.12	102.09	89.06	-3,774.51	-1,715.38	1,311.27	1,140.26	171.01	7.668	
15,450.00	11,700.00	17,942.87	11,700.00	69.70	101.23	89.06	-3,824.51	-1,715.06	1,311.27	1,140.53	170.73	7.680	
15,500.00	11,700.00	17,907.13	11,700.00	70.28	100.76	89.06	-3,874.51	-1,714.75	1,311.27	1,140.43	170.84	7.675	
15,550.00	11,700.00	17,842.87	11,700.00	70.87	99.90	89.06	-3,924.51	-1,714.44	1,311.27	1,140.70	170.57	7.687	
15,600.00	11,700.00	17,792.87	11,700.00	71.45	99.24	89.06	-3,974.51	-1,714.12	1,311.27	1,140.77	170.50	7.691	
15,650.00	11,700.00	17,742.87	11,700.00	72.04	98.57	89.06	-4,024.51	-1,713.81	1,311.27	1,140.84	170.43	7.694	
15,700.00	11,700.00	17,707.13	11,700.00	72.64	98.10	89.06	-4,074.51	-1,713.50	1,311.27	1,140.73	170.55	7.689	
15,750.00	11,700.00	17,642.87	11,700.00	73.23	97.25	89.06	-4,124.51	-1,713.18	1,311.27	1,140.98	170.29	7.700	
15,800.00	11,700.00	17,607.13	11,700.00	73.83	96.78	89.06	-4,174.50	-1,712.87	1,311.27	1,140.85	170.42	7.694	
15,850.00	11,700.00	17,542.87	11,700.00	74.43	95.93	89.06	-4,224.50	-1,712.56	1,311.27	1,141.10	170.18	7.705	
15,900.00	11,700.00	17,507.13	11,700.00	75.03	95.46	89.06	-4,274.50	-1,712.24	1,311.27	1,140.97	170.31	7.699	
15,950.00	11,700.00	17,442.87	11,700.00	75.64	94.61	89.06	-4,324.50	-1,711.93	1,311.28	1,141.21	170.07	7.710	
16,000.00	11,700.00	17,407.13	11,700.00	76.24	94.14	89.06	-4,374.50	-1,711.62	1,311.28	1,141.07	170.21	7.704	
16,050.00	11,700.00	17,342.87	11,700.00	76.85	93.30	89.06	-4,424.50	-1,711.30	1,311.28	1,141.30	169.98	7.714	
16,100.00	11,700.00	17,307.13	11,700.00	77.46	92.83	89.06	-4,474.50	-1,710.99	1,311.28	1,141.16	170.12	7.708	
16,150.00	11,700.00	17,242.87	11,700.00	78.08	92.00	89.06	-4,524.50	-1,710.68	1,311.28	1,141.38	169.90	7.718	
16,200.00	11,700.00	17,207.13	11,700.00	78.69	91.53	89.06	-4,574.50	-1,710.36	1,311.28	1,141.23	170.04	7.711	
16,250.00	11,700.00	17,142.87	11,700.00	79.31	90.69	89.06	-4,624.50	-1,710.05	1,311.28	1,141.45	169.83	7.721	
16,300.00	11,700.00	17,107.13	11,700.00	79.93	90.23	89.06	-4,674.50	-1,709.73	1,311.28	1,141.30	169.98	7.714	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 611H - 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
16,350.00	11,700.00	17,042.87	11,700.00	80.55	89.40	89.06	-4,724.49	-1,709.42	1,311.28	1,141.51	169.77	7.724	
16,400.00	11,700.00	17,007.13	11,700.00	81.17	88.93	89.06	-4,774.49	-1,709.11	1,311.28	1,141.35	169.93	7.717	
16,450.00	11,700.00	16,942.87	11,700.00	81.79	88.10	89.06	-4,824.49	-1,708.79	1,311.28	1,141.55	169.73	7.726	
16,500.00	11,700.00	16,907.13	11,700.00	82.42	87.64	89.06	-4,874.49	-1,708.48	1,311.28	1,141.39	169.89	7.718	
16,550.00	11,700.00	16,842.87	11,700.00	83.05	86.81	89.06	-4,924.49	-1,708.17	1,311.28	1,141.59	169.70	7.727	
16,600.00	11,700.00	16,807.13	11,700.00	83.68	86.36	89.06	-4,974.49	-1,707.85	1,311.28	1,141.42	169.87	7.719	
16,650.00	11,700.00	16,742.87	11,700.00	84.31	85.53	89.06	-5,024.49	-1,707.54	1,311.28	1,141.61	169.68	7.728	
16,700.00	11,700.00	16,707.13	11,700.00	84.94	85.08	89.06	-5,074.49	-1,707.23	1,311.29	1,141.43	169.85	7.720	
16,750.00	11,700.00	16,642.87	11,700.00	85.57	84.26	89.06	-5,124.49	-1,706.91	1,311.29	1,141.62	169.67	7.728	
16,800.00	11,700.00	16,592.87	11,700.00	86.21	83.62	89.06	-5,174.49	-1,706.60	1,311.29	1,141.62	169.67	7.729	
16,850.00	11,700.00	16,542.87	11,700.00	86.85	82.99	89.06	-5,224.48	-1,706.29	1,311.29	1,141.61	169.67	7.728	
16,900.00	11,700.00	16,507.13	11,700.00	87.48	82.53	89.06	-5,274.48	-1,705.97	1,311.29	1,141.43	169.86	7.720	
16,950.00	11,700.00	16,442.87	11,700.00	88.12	81.72	89.06	-5,324.48	-1,705.66	1,311.29	1,141.60	169.69	7.728	
17,000.00	11,700.00	16,407.13	11,700.00	88.77	81.27	89.06	-5,374.48	-1,705.35	1,311.29	1,141.41	169.88	7.719	
17,050.00	11,700.00	16,342.87	11,700.00	89.41	80.46	89.06	-5,424.48	-1,705.03	1,311.29	1,141.57	169.72	7.726	
17,100.00	11,700.00	16,307.13	11,700.00	90.05	80.02	89.06	-5,474.48	-1,704.72	1,311.29	1,141.38	169.91	7.717	
17,150.00	11,700.00	16,242.87	11,700.00	90.70	79.21	89.06	-5,524.48	-1,704.41	1,311.29	1,141.53	169.76	7.724	
17,200.00	11,700.00	16,207.13	11,700.00	91.34	78.77	89.06	-5,574.48	-1,704.09	1,311.29	1,141.33	169.96	7.715	
17,250.00	11,700.00	16,142.87	11,700.00	91.99	77.97	89.06	-5,624.48	-1,703.78	1,311.29	1,141.48	169.81	7.722	
17,300.00	11,700.00	16,107.13	11,700.00	92.64	77.53	89.06	-5,674.48	-1,703.47	1,311.29	1,141.28	170.02	7.713	
17,350.00	11,700.00	16,042.87	11,700.00	93.29	76.73	89.06	-5,724.47	-1,703.15	1,311.29	1,141.42	169.88	7.719	
17,400.00	11,700.00	16,007.13	11,700.00	93.94	76.29	89.06	-5,774.47	-1,702.84	1,311.29	1,141.21	170.09	7.710	
17,450.00	11,700.00	15,942.87	11,700.00	94.59	75.51	89.06	-5,824.47	-1,702.52	1,311.30	1,141.34	169.95	7.716	
17,500.00	11,700.00	15,907.13	11,700.00	95.25	75.07	89.06	-5,874.47	-1,702.21	1,311.30	1,141.13	170.17	7.706	
17,550.00	11,700.00	15,842.87	11,700.00	95.90	74.29	89.06	-5,924.47	-1,701.90	1,311.30	1,141.25	170.04	7.712	
17,600.00	11,700.00	15,807.13	11,700.00	96.56	73.85	89.06	-5,974.47	-1,701.58	1,311.30	1,141.03	170.26	7.702	
17,650.00	11,700.00	15,742.87	11,700.00	97.21	73.08	89.06	-6,024.47	-1,701.27	1,311.30	1,141.15	170.15	7.707	
17,700.00	11,700.00	15,692.87	11,700.00	97.87	72.47	89.06	-6,074.47	-1,700.96	1,311.30	1,141.10	170.20	7.704	
17,750.00	11,700.00	15,642.87	11,700.00	98.53	71.87	89.06	-6,124.47	-1,700.64	1,311.30	1,141.04	170.26	7.702	
17,800.00	11,700.00	15,607.13	11,700.00	99.19	71.45	89.06	-6,174.47	-1,700.33	1,311.30	1,140.81	170.49	7.691	
17,850.00	11,700.00	15,542.87	11,700.00	99.85	70.68	89.06	-6,224.46	-1,700.02	1,311.30	1,140.91	170.39	7.696	
17,900.00	11,700.00	15,507.13	11,700.00	100.51	70.26	89.06	-6,274.46	-1,699.70	1,311.30	1,140.67	170.63	7.685	
17,950.00	11,700.00	15,442.87	11,700.00	101.17	69.50	89.06	-6,324.46	-1,699.39	1,311.30	1,140.77	170.54	7.689	
18,000.00	11,700.00	15,407.13	11,700.00	101.84	69.08	89.06	-6,374.46	-1,699.08	1,311.30	1,140.52	170.78	7.678	
18,050.00	11,700.00	15,342.87	11,700.00	102.50	68.33	89.06	-6,424.46	-1,698.76	1,311.30	1,140.61	170.69	7.682	
18,100.00	11,700.00	15,307.13	11,700.00	103.17	67.91	89.06	-6,474.46	-1,698.45	1,311.30	1,140.36	170.94	7.671	
18,150.00	11,700.00	15,242.87	11,700.00	103.83	67.17	89.06	-6,524.46	-1,698.14	1,311.30	1,140.44	170.87	7.674	
18,200.00	11,700.00	15,207.13	11,700.00	104.50	66.76	89.06	-6,574.46	-1,697.82	1,311.31	1,140.18	171.12	7.663	
18,250.00	11,700.00	15,142.87	11,700.00	105.17	66.02	89.06	-6,624.46	-1,697.51	1,311.31	1,140.25	171.05	7.666	
18,300.00	11,700.00	15,107.13	11,700.00	105.84	65.61	89.06	-6,674.46	-1,697.20	1,311.31	1,139.99	171.32	7.654	
18,350.00	11,700.00	15,042.87	11,700.00	106.51	64.88	89.06	-6,724.45	-1,696.88	1,311.31	1,140.05	171.26	7.657	
18,400.00	11,700.00	15,007.13	11,700.00	107.18	64.48	89.06	-6,774.45	-1,696.57	1,311.31	1,139.78	171.52	7.645	
18,450.00	11,700.00	14,942.87	11,700.00	107.85	63.76	89.06	-6,824.45	-1,696.25	1,311.31	1,139.83	171.48	7.647	
18,500.00	11,700.00	14,907.13	11,700.00	108.52	63.36	89.06	-6,874.45	-1,695.94	1,311.31	1,139.56	171.75	7.635	
18,550.00	11,700.00	14,842.87	11,700.00	109.19	62.65	89.06	-6,924.45	-1,695.63	1,311.31	1,139.60	171.71	7.637	
18,600.00	11,700.00	14,807.13	11,700.00	109.86	62.26	89.06	-6,974.45	-1,695.31	1,311.31	1,139.32	171.99	7.624	
18,650.00	11,700.00	14,742.87	11,700.00	110.54	61.56	89.06	-7,024.45	-1,695.00	1,311.31	1,139.34	171.97	7.625	
18,700.00	11,700.00	14,707.13	11,700.00	111.21	61.17	89.06	-7,074.45	-1,694.69	1,311.31	1,139.06	172.25	7.613	
18,750.00	11,700.00	14,642.87	11,700.00	111.89	60.48	89.06	-7,124.45	-1,694.37	1,311.31	1,139.07	172.24	7.613	
18,800.00	11,700.00	14,607.13	11,700.00	112.56	60.10	89.06	-7,174.45	-1,694.06	1,311.31	1,138.78	172.53	7.600	
18,850.00	11,700.00	14,542.87	11,700.00	113.24	59.42	89.06	-7,224.44	-1,693.75	1,311.31	1,138.78	172.53	7.600	
18,900.00	11,700.00	14,492.87	11,700.00	113.92	58.89	89.06	-7,274.44	-1,693.43	1,311.31	1,138.63	172.68	7.594	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 611H - 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
18,950.00	11,700.00	14,442.87	11,700.00	114.59	58.37	89.06	-7,324.44	-1,693.12	1,311.32	1,138.47	172.84	7.587	
19,000.00	11,700.00	14,407.13	11,700.00	115.27	58.00	89.06	-7,374.44	-1,692.81	1,311.32	1,138.17	173.15	7.573	
19,050.00	11,700.00	14,342.87	11,700.00	115.95	57.34	89.06	-7,424.44	-1,692.49	1,311.32	1,138.14	173.17	7.572	
19,100.00	11,700.00	14,307.13	11,700.00	116.63	56.98	89.06	-7,474.44	-1,692.18	1,311.32	1,137.83	173.49	7.559	
19,150.00	11,700.00	14,242.87	11,700.00	117.31	56.33	89.06	-7,524.44	-1,691.87	1,311.32	1,137.79	173.52	7.557	
19,200.00	11,700.00	14,207.13	11,700.00	117.99	55.98	89.06	-7,574.44	-1,691.55	1,311.32	1,137.47	173.85	7.543	
19,250.00	11,700.00	14,142.87	11,700.00	118.67	55.34	89.06	-7,624.44	-1,691.24	1,311.32	1,137.42	173.90	7.541	
19,300.00	11,700.00	14,107.13	11,700.00	119.36	54.99	89.06	-7,674.44	-1,690.93	1,311.32	1,137.09	174.23	7.526	
19,350.00	11,700.00	14,042.87	11,700.00	120.04	54.38	89.06	-7,724.44	-1,690.61	1,311.32	1,137.02	174.30	7.523	
19,400.00	11,700.00	14,007.13	11,700.00	120.72	54.03	89.06	-7,774.43	-1,690.30	1,311.32	1,136.68	174.64	7.509	
19,450.00	11,700.00	13,942.87	11,700.00	121.41	53.43	89.06	-7,824.43	-1,689.99	1,311.32	1,136.60	174.72	7.505	
19,500.00	11,700.00	13,907.13	11,700.00	122.09	53.10	89.06	-7,874.43	-1,689.67	1,311.32	1,136.25	175.07	7.490	
19,550.00	11,700.00	13,842.87	11,700.00	122.77	52.51	89.06	-7,924.43	-1,689.36	1,311.32	1,136.16	175.17	7.486	
19,600.00	11,700.00	13,807.13	11,700.00	123.46	52.18	89.06	-7,974.43	-1,689.04	1,311.32	1,135.80	175.53	7.471	
19,650.00	11,700.00	13,742.87	11,700.00	124.15	51.61	89.06	-8,024.43	-1,688.73	1,311.32	1,135.68	175.64	7.466	
19,700.00	11,700.00	13,707.13	11,700.00	124.83	51.29	89.06	-8,074.43	-1,688.42	1,311.33	1,135.31	176.01	7.450	
19,750.00	11,700.00	13,642.87	11,700.00	125.52	50.74	89.06	-8,124.43	-1,688.10	1,311.33	1,135.18	176.14	7.445	
19,800.00	11,700.00	13,607.13	11,700.00	126.20	50.43	89.06	-8,174.43	-1,687.79	1,311.33	1,134.80	176.52	7.429	
19,850.00	11,700.00	13,542.87	11,700.00	126.89	49.90	89.06	-8,224.43	-1,687.48	1,311.33	1,134.65	176.68	7.422	
19,900.00	11,700.00	13,507.13	11,700.00	127.58	49.60	89.06	-8,274.42	-1,687.16	1,311.33	1,134.26	177.07	7.406	
19,950.00	11,700.00	13,442.87	11,700.00	128.27	49.08	89.06	-8,324.42	-1,686.85	1,311.33	1,134.09	177.24	7.399	
20,000.00	11,700.00	13,407.13	11,700.00	128.96	48.79	89.06	-8,374.42	-1,686.54	1,311.33	1,133.69	177.64	7.382	
20,050.00	11,700.00	13,342.87	11,700.00	129.65	48.30	89.06	-8,424.42	-1,686.22	1,311.33	1,133.50	177.83	7.374	
20,100.00	11,700.00	13,307.13	11,700.00	130.34	48.02	89.06	-8,474.42	-1,685.91	1,311.33	1,133.08	178.25	7.357	
20,150.00	11,700.00	13,242.87	11,700.00	131.03	47.54	89.06	-8,524.42	-1,685.60	1,311.33	1,132.87	178.46	7.348	
20,200.00	11,700.00	13,207.13	11,700.00	131.72	47.28	89.06	-8,574.42	-1,685.28	1,311.33	1,132.44	178.89	7.330	
20,250.00	11,700.00	13,142.87	11,700.00	132.41	46.82	89.06	-8,624.42	-1,684.97	1,311.33	1,132.21	179.12	7.321	
20,300.00	11,700.00	13,107.13	11,700.00	133.10	46.57	89.06	-8,674.42	-1,684.66	1,311.33	1,131.77	179.56	7.303	
20,350.00	11,700.00	13,042.87	11,700.00	133.79	46.14	89.06	-8,724.42	-1,684.34	1,311.33	1,131.51	179.82	7.292	
20,400.00	11,700.00	13,007.13	11,700.00	134.48	45.90	89.06	-8,774.41	-1,684.03	1,311.33	1,131.06	180.28	7.274	
20,450.00	11,700.00	12,942.87	11,700.00	135.18	45.49	89.06	-8,824.41	-1,683.72	1,311.34	1,130.77	180.56	7.263	
20,500.00	11,700.00	12,907.13	11,700.00	135.87	45.26	89.06	-8,874.41	-1,683.40	1,311.34	1,130.31	181.03	7.244	
20,550.00	11,700.00	12,842.87	11,700.00	136.56	44.88	89.06	-8,924.41	-1,683.09	1,311.34	1,130.00	181.34	7.231	
20,600.00	11,700.00	12,807.13	11,700.00	137.26	44.66	89.06	-8,974.41	-1,682.77	1,311.34	1,129.52	181.82	7.212	
20,650.00	11,700.00	12,742.87	11,700.00	137.95	44.30	89.06	-9,024.41	-1,682.46	1,311.34	1,129.18	182.16	7.199	
20,700.00	11,700.00	12,707.13	11,700.00	138.65	44.11	89.06	-9,074.41	-1,682.15	1,311.34	1,128.69	182.65	7.179	
20,750.00	11,700.00	12,642.87	11,700.00	139.34	43.77	89.06	-9,124.41	-1,681.83	1,311.34	1,128.32	183.02	7.165	
20,800.00	11,700.00	12,607.13	11,700.00	140.04	43.59	89.06	-9,174.41	-1,681.52	1,311.34	1,127.81	183.53	7.145	
20,850.00	11,700.00	12,542.87	11,700.00	140.73	43.28	89.06	-9,224.41	-1,681.21	1,311.34	1,127.42	183.92	7.130	
20,900.00	11,700.00	12,507.13	11,700.00	141.43	43.12	89.06	-9,274.40	-1,680.89	1,311.34	1,126.89	184.45	7.109	
20,950.00	11,700.00	12,442.87	11,700.00	142.12	42.84	89.06	-9,324.40	-1,680.58	1,311.34	1,126.47	184.87	7.093	
21,000.00	11,700.00	12,407.13	11,700.00	142.82	42.69	89.06	-9,374.40	-1,680.27	1,311.34	1,125.93	185.42	7.072	
21,050.00	11,700.00	12,342.87	11,700.00	143.52	42.44	89.06	-9,424.40	-1,679.95	1,311.34	1,125.47	185.87	7.055	
21,100.00	11,700.00	12,307.13	11,700.00	144.21	42.31	89.06	-9,474.40	-1,679.64	1,311.34	1,124.91	186.43	7.034	
21,150.00	11,700.00	12,242.87	11,700.00	144.91	42.09	89.06	-9,524.40	-1,679.33	1,311.34	1,124.43	186.91	7.016	
21,200.00	11,700.00	12,207.13	11,700.00	145.61	41.97	89.06	-9,574.40	-1,679.01	1,311.35	1,123.85	187.49	6.994	
21,250.00	11,700.00	12,142.87	11,700.00	146.31	41.79	89.06	-9,624.40	-1,678.70	1,311.35	1,123.34	188.01	6.975	
21,300.00	11,700.00	12,107.13	11,700.00	147.01	41.68	89.06	-9,674.40	-1,678.39	1,311.35	1,122.74	188.61	6.953	
21,350.00	11,700.00	12,042.87	11,700.00	147.71	41.53	89.06	-9,724.40	-1,678.07	1,311.35	1,122.20	189.15	6.933	
21,400.00	11,700.00	11,994.34	11,698.74	148.40	41.42	89.01	-9,772.89	-1,677.77	1,311.37	1,121.63	189.74	6.911	
21,450.00	11,700.00	11,946.73	11,693.63	149.10	41.31	88.79	-9,820.22	-1,677.47	1,311.48	1,121.14	190.34	6.890	
21,500.00	11,700.00	11,900.27	11,684.86	149.80	41.20	88.40	-9,865.82	-1,677.19	1,311.71	1,120.78	190.93	6.870	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 611H - 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
21,550.00	11,700.00	11,855.52	11,672.95	150.50	41.10	87.88	-9,908.95	-1,676.92	1,312.16	1,120.65	191.52	6.851	ES
21,600.00	11,700.00	11,812.88	11,658.51	151.20	41.00	87.25	-9,949.06	-1,676.66	1,312.93	1,120.84	192.09	6.835	
21,650.00	11,700.00	11,772.65	11,642.18	151.90	40.91	86.54	-9,985.82	-1,676.43	1,314.13	1,121.50	192.64	6.822	
21,700.00	11,700.00	11,734.99	11,624.59	152.60	40.82	85.78	-10,019.11	-1,676.22	1,315.91	1,122.76	193.14	6.813	
21,750.00	11,700.00	11,700.00	11,606.33	153.31	40.74	84.98	-10,048.95	-1,676.04	1,318.38	1,124.78	193.60	6.810	SF
21,800.00	11,700.00	11,667.52	11,587.77	154.01	40.66	84.18	-10,075.60	-1,675.87	1,321.67	1,127.68	193.98	6.813	
21,850.00	11,700.00	11,637.58	11,569.35	154.71	40.60	83.39	-10,099.19	-1,675.72	1,325.89	1,131.60	194.29	6.824	
21,900.00	11,700.00	11,610.02	11,551.33	155.41	40.53	82.61	-10,120.04	-1,675.59	1,331.14	1,136.64	194.50	6.844	
21,950.00	11,700.00	11,584.67	11,533.88	156.11	40.47	81.86	-10,138.43	-1,675.48	1,337.51	1,142.90	194.61	6.873	
21,964.16	11,700.00	11,577.86	11,529.06	156.31	40.46	81.65	-10,143.24	-1,675.45	1,339.53	1,144.90	194.63	6.883	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 701H - 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
10,850.00	10,843.23	22,052.90	11,820.00	39.09	155.82	-90.36	153.01	-1,415.06	1,468.44	1,304.12	164.32	8.936	
10,900.00	10,893.23	22,052.90	11,820.00	39.26	155.82	-90.36	153.01	-1,415.06	1,436.41	1,269.85	166.56	8.624	
10,950.00	10,943.23	22,052.90	11,820.00	39.44	155.82	-90.36	153.01	-1,415.06	1,405.43	1,236.59	168.84	8.324	
11,000.00	10,993.23	22,052.90	11,820.00	39.61	155.82	-90.36	153.01	-1,415.06	1,375.57	1,204.42	171.15	8.037	
11,050.00	11,043.22	22,052.95	11,820.00	39.78	155.82	-4.12	153.05	-1,415.06	1,346.33	1,172.87	173.47	7.761	
11,100.00	11,092.99	22,053.27	11,820.00	39.97	155.82	-4.40	153.38	-1,415.06	1,315.15	1,139.48	175.67	7.486	
11,150.00	11,142.19	22,053.76	11,820.00	40.15	155.83	2.03	153.87	-1,415.07	1,281.83	1,104.08	177.76	7.211	
11,200.00	11,191.09	22,051.28	11,820.00	40.34	155.80	28.96	151.39	-1,415.05	1,248.69	1,068.92	179.77	6.946	
11,250.00	11,239.59	22,044.45	11,820.00	40.52	155.71	49.38	144.56	-1,415.01	1,216.94	1,035.23	181.72	6.697	
11,300.00	11,287.32	22,033.33	11,820.00	40.69	155.58	63.47	133.44	-1,414.94	1,186.89	1,003.32	183.57	6.466	
11,350.00	11,333.92	22,018.01	11,820.00	40.85	155.40	73.19	118.12	-1,414.84	1,158.78	973.47	185.30	6.253	
11,400.00	11,379.03	22,001.40	11,820.00	41.00	155.20	80.07	98.71	-1,414.72	1,132.79	945.89	186.90	6.061	
11,450.00	11,422.32	21,975.25	11,820.00	41.14	154.84	85.02	75.36	-1,414.58	1,109.09	920.89	188.21	5.893	
11,500.00	11,463.45	21,948.14	11,820.00	41.27	154.46	88.59	48.25	-1,414.41	1,087.76	898.42	189.34	5.745	
11,550.00	11,502.11	21,917.47	11,820.00	41.39	154.03	91.16	17.58	-1,414.21	1,068.83	878.58	190.25	5.618	
11,600.00	11,538.00	21,883.48	11,820.00	41.51	153.55	92.98	-16.41	-1,414.00	1,052.27	861.33	190.93	5.511	
11,650.00	11,570.86	21,846.43	11,820.00	41.62	153.03	94.21	-53.46	-1,413.77	1,038.01	846.61	191.40	5.423	
11,700.00	11,600.43	21,806.59	11,820.00	41.73	152.47	95.00	-93.30	-1,413.52	1,025.95	834.29	191.66	5.353	
11,750.00	11,626.48	21,764.27	11,820.00	41.84	151.88	95.47	-135.62	-1,413.25	1,015.95	824.22	191.73	5.299	
11,800.00	11,648.83	21,719.80	11,820.00	41.95	151.26	95.71	-180.09	-1,412.97	1,007.85	816.22	191.63	5.259	
11,850.00	11,667.29	21,673.50	11,820.00	42.06	150.61	95.80	-226.38	-1,412.68	1,001.50	810.11	191.39	5.233	
11,900.00	11,681.74	21,625.74	11,820.00	42.17	149.94	95.80	-274.14	-1,412.38	996.76	805.72	191.04	5.218	
11,950.00	11,692.05	21,576.88	11,820.00	42.28	149.26	95.76	-323.00	-1,412.08	993.49	802.89	190.60	5.213	
12,000.00	11,698.15	21,527.28	11,820.00	42.39	148.56	95.73	-372.60	-1,411.77	991.61	801.52	190.08	5.217	
12,049.98	11,700.14	21,477.36	11,820.00	42.50	147.87	95.71	-422.52	-1,411.45	991.00	801.49	189.51	5.229	
12,050.00	11,700.00	21,477.34	11,820.00	42.50	147.87	95.72	-422.54	-1,411.45	991.04	801.53	189.51	5.230	
12,100.00	11,700.00	21,427.34	11,820.00	42.62	147.17	95.72	-472.54	-1,411.14	991.04	802.12	188.92	5.246	
12,150.00	11,700.00	21,377.34	11,820.00	42.75	146.47	95.72	-522.54	-1,410.82	991.04	802.70	188.34	5.262	
12,200.00	11,700.00	21,327.34	11,820.00	42.88	145.77	95.72	-572.54	-1,410.51	991.04	803.27	187.77	5.278	
12,250.00	11,700.00	21,277.34	11,820.00	43.03	145.07	95.72	-622.54	-1,410.20	991.04	803.82	187.23	5.293	
12,300.00	11,700.00	21,227.34	11,820.00	43.19	144.37	95.72	-672.54	-1,409.88	991.04	804.36	186.68	5.309	
12,350.00	11,700.00	21,177.34	11,820.00	43.36	143.68	95.72	-722.54	-1,409.57	991.04	804.89	186.16	5.324	
12,400.00	11,700.00	21,127.34	11,820.00	43.54	142.98	95.72	-772.54	-1,409.26	991.04	805.41	185.63	5.339	
12,450.00	11,700.00	21,077.34	11,820.00	43.74	142.28	95.72	-822.54	-1,408.94	991.04	805.91	185.13	5.353	
12,500.00	11,700.00	21,027.34	11,820.00	43.94	141.59	95.72	-872.54	-1,408.63	991.04	806.41	184.63	5.368	
12,550.00	11,700.00	20,977.34	11,820.00	44.16	140.89	95.72	-922.53	-1,408.32	991.05	806.89	184.16	5.381	
12,600.00	11,700.00	20,927.34	11,820.00	44.38	140.19	95.72	-972.53	-1,408.00	991.05	807.36	183.68	5.395	
12,650.00	11,700.00	20,877.34	11,820.00	44.62	139.50	95.72	-1,022.53	-1,407.69	991.05	807.82	183.23	5.409	
12,700.00	11,700.00	20,827.34	11,820.00	44.86	138.80	95.72	-1,072.53	-1,407.37	991.05	808.27	182.77	5.422	
12,750.00	11,700.00	20,777.34	11,820.00	45.12	138.11	95.72	-1,122.53	-1,407.06	991.05	808.70	182.34	5.435	
12,800.00	11,700.00	20,727.34	11,820.00	45.38	137.42	95.72	-1,172.53	-1,406.75	991.05	809.14	181.91	5.448	
12,850.00	11,700.00	20,677.34	11,820.00	45.66	136.72	95.72	-1,222.53	-1,406.43	991.05	809.55	181.50	5.460	
12,900.00	11,700.00	20,627.34	11,820.00	45.94	136.03	95.72	-1,272.53	-1,406.12	991.05	809.96	181.09	5.473	
12,950.00	11,700.00	20,577.34	11,820.00	46.24	135.33	95.72	-1,322.53	-1,405.81	991.05	810.35	180.70	5.485	
13,000.00	11,700.00	20,527.34	11,820.00	46.54	134.64	95.72	-1,372.53	-1,405.49	991.05	810.74	180.31	5.496	
13,050.00	11,700.00	20,477.34	11,820.00	46.86	133.95	95.72	-1,422.52	-1,405.18	991.05	811.11	179.94	5.508	
13,100.00	11,700.00	20,427.34	11,820.00	47.18	133.26	95.72	-1,472.52	-1,404.87	991.05	811.49	179.56	5.519	
13,150.00	11,700.00	20,377.34	11,820.00	47.52	132.57	95.72	-1,522.52	-1,404.55	991.05	811.84	179.21	5.530	
13,200.00	11,700.00	20,327.34	11,820.00	47.86	131.87	95.72	-1,572.52	-1,404.24	991.05	812.19	178.86	5.541	
13,250.00	11,700.00	20,277.34	11,820.00	48.21	131.18	95.72	-1,622.52	-1,403.92	991.05	812.53	178.53	5.551	
13,300.00	11,700.00	20,227.34	11,820.00	48.57	130.49	95.72	-1,672.52	-1,403.61	991.05	812.86	178.19	5.562	
13,350.00	11,700.00	20,177.34	11,820.00	48.94	129.80	95.72	-1,722.52	-1,403.30	991.05	813.18	177.87	5.572	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 701H - 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	11,700.00	20,127.34	11,820.00	49.31	129.11	95.72	-1,772.52	-1,402.98	991.05	813.50	177.56	5.582	
13,450.00	11,700.00	20,077.34	11,820.00	49.70	128.42	95.72	-1,822.52	-1,402.67	991.05	813.80	177.26	5.591	
13,500.00	11,700.00	20,027.34	11,820.00	50.08	127.74	95.72	-1,872.52	-1,402.36	991.06	814.10	176.96	5.601	
13,550.00	11,700.00	19,977.34	11,820.00	50.48	127.05	95.72	-1,922.51	-1,402.04	991.06	814.38	176.67	5.610	
13,600.00	11,700.00	19,927.34	11,820.00	50.89	126.36	95.72	-1,972.51	-1,401.73	991.06	814.67	176.39	5.619	
13,650.00	11,700.00	19,877.34	11,820.00	51.30	125.67	95.72	-2,022.51	-1,401.42	991.06	814.94	176.12	5.627	
13,700.00	11,700.00	19,827.34	11,820.00	51.72	124.98	95.72	-2,072.51	-1,401.10	991.06	815.21	175.85	5.636	
13,750.00	11,700.00	19,777.34	11,820.00	52.15	124.30	95.72	-2,122.51	-1,400.79	991.06	815.46	175.60	5.644	
13,800.00	11,700.00	19,727.34	11,820.00	52.58	123.61	95.72	-2,172.51	-1,400.47	991.06	815.72	175.34	5.652	
13,850.00	11,700.00	19,677.34	11,820.00	53.02	122.93	95.72	-2,222.51	-1,400.16	991.06	815.96	175.10	5.660	
13,900.00	11,700.00	19,627.34	11,820.00	53.46	122.24	95.72	-2,272.51	-1,399.85	991.06	816.20	174.86	5.668	
13,950.00	11,700.00	19,577.34	11,820.00	53.92	121.56	95.72	-2,322.51	-1,399.53	991.06	816.43	174.63	5.675	
14,000.00	11,700.00	19,527.34	11,820.00	54.37	120.87	95.72	-2,372.51	-1,399.22	991.06	816.65	174.41	5.682	
14,050.00	11,700.00	19,477.34	11,820.00	54.84	120.19	95.72	-2,422.50	-1,398.91	991.06	816.87	174.19	5.690	
14,100.00	11,700.00	19,427.34	11,820.00	55.31	119.51	95.72	-2,472.50	-1,398.59	991.06	817.08	173.98	5.697	
14,150.00	11,700.00	19,377.34	11,820.00	55.79	118.82	95.72	-2,522.50	-1,398.28	991.06	817.29	173.77	5.703	
14,200.00	11,700.00	19,327.34	11,820.00	56.26	118.14	95.72	-2,572.50	-1,397.97	991.06	817.49	173.57	5.710	
14,250.00	11,700.00	19,277.34	11,820.00	56.75	117.46	95.72	-2,622.50	-1,397.65	991.06	817.68	173.38	5.716	
14,300.00	11,700.00	19,227.34	11,820.00	57.24	116.78	95.72	-2,672.50	-1,397.34	991.06	817.87	173.19	5.722	
14,350.00	11,700.00	19,177.34	11,820.00	57.74	116.10	95.72	-2,722.50	-1,397.02	991.06	818.05	173.01	5.728	
14,400.00	11,700.00	19,127.34	11,820.00	58.24	115.42	95.72	-2,772.50	-1,396.71	991.06	818.23	172.83	5.734	
14,450.00	11,700.00	19,077.34	11,820.00	58.75	114.74	95.72	-2,822.50	-1,396.40	991.06	818.40	172.66	5.740	
14,500.00	11,700.00	19,027.34	11,820.00	59.25	114.07	95.72	-2,872.50	-1,396.08	991.07	818.57	172.50	5.745	
14,550.00	11,700.00	18,977.34	11,820.00	59.77	113.39	95.72	-2,922.49	-1,395.77	991.07	818.73	172.34	5.751	
14,600.00	11,700.00	18,927.34	11,820.00	60.29	112.71	95.72	-2,972.49	-1,395.46	991.07	818.89	172.18	5.756	
14,650.00	11,700.00	18,877.34	11,820.00	60.82	112.03	95.72	-3,022.49	-1,395.14	991.07	819.04	172.03	5.761	
14,700.00	11,700.00	18,827.34	11,820.00	61.34	111.36	95.72	-3,072.49	-1,394.83	991.07	819.18	171.88	5.766	
14,750.00	11,700.00	18,777.34	11,820.00	61.88	110.68	95.72	-3,122.49	-1,394.52	991.07	819.32	171.74	5.771	
14,800.00	11,700.00	18,727.34	11,820.00	62.41	110.01	95.72	-3,172.49	-1,394.20	991.07	819.46	171.61	5.775	
14,850.00	11,700.00	18,677.34	11,820.00	62.95	109.34	95.72	-3,222.49	-1,393.89	991.07	819.59	171.48	5.780	
14,900.00	11,700.00	18,627.34	11,820.00	63.49	108.66	95.72	-3,272.49	-1,393.57	991.07	819.72	171.35	5.784	
14,950.00	11,700.00	18,577.34	11,820.00	64.04	107.99	95.72	-3,322.49	-1,393.26	991.07	819.84	171.23	5.788	
15,000.00	11,700.00	18,527.34	11,820.00	64.59	107.32	95.72	-3,372.49	-1,392.95	991.07	819.97	171.10	5.792	
15,050.00	11,700.00	18,477.34	11,820.00	65.15	106.65	95.72	-3,422.49	-1,392.63	991.07	820.08	170.99	5.796	
15,100.00	11,700.00	18,427.34	11,820.00	65.70	105.98	95.72	-3,472.48	-1,392.32	991.07	820.19	170.88	5.800	
15,150.00	11,700.00	18,377.34	11,820.00	66.27	105.31	95.72	-3,522.48	-1,392.01	991.07	820.30	170.78	5.803	
15,200.00	11,700.00	18,327.34	11,820.00	66.83	104.64	95.72	-3,572.48	-1,391.69	991.07	820.40	170.67	5.807	
15,250.00	11,700.00	18,277.34	11,820.00	67.40	103.97	95.72	-3,622.48	-1,391.38	991.07	820.50	170.57	5.810	
15,300.00	11,700.00	18,227.34	11,820.00	67.97	103.31	95.72	-3,672.48	-1,391.07	991.07	820.60	170.48	5.813	
15,350.00	11,700.00	18,177.34	11,820.00	68.54	102.64	95.72	-3,722.48	-1,390.75	991.07	820.68	170.39	5.817	
15,400.00	11,700.00	18,127.34	11,820.00	69.12	101.98	95.72	-3,772.48	-1,390.44	991.07	820.77	170.30	5.820	
15,450.00	11,700.00	18,077.34	11,820.00	69.70	101.31	95.72	-3,822.48	-1,390.12	991.08	820.86	170.22	5.822	
15,500.00	11,700.00	18,027.34	11,820.00	70.28	100.65	95.72	-3,872.48	-1,389.81	991.08	820.94	170.14	5.825	
15,550.00	11,700.00	17,977.34	11,820.00	70.87	99.99	95.72	-3,922.48	-1,389.50	991.08	821.01	170.06	5.828	
15,600.00	11,700.00	17,927.34	11,820.00	71.45	99.33	95.72	-3,972.47	-1,389.18	991.08	821.09	169.99	5.830	
15,650.00	11,700.00	17,877.34	11,820.00	72.04	98.67	95.72	-4,022.47	-1,388.87	991.08	821.15	169.92	5.833	
15,700.00	11,700.00	17,827.34	11,820.00	72.64	98.01	95.72	-4,072.47	-1,388.56	991.08	821.22	169.86	5.835	
15,750.00	11,700.00	17,777.34	11,820.00	73.23	97.35	95.72	-4,122.47	-1,388.24	991.08	821.28	169.80	5.837	
15,800.00	11,700.00	17,727.34	11,820.00	73.83	96.69	95.72	-4,172.47	-1,387.93	991.08	821.34	169.74	5.839	
15,850.00	11,700.00	17,677.34	11,820.00	74.43	96.03	95.72	-4,222.47	-1,387.62	991.08	821.40	169.68	5.841	
15,900.00	11,700.00	17,627.34	11,820.00	75.03	95.38	95.72	-4,272.47	-1,387.30	991.08	821.45	169.63	5.843	
15,950.00	11,700.00	17,577.34	11,820.00	75.64	94.73	95.72	-4,322.47	-1,386.99	991.08	821.50	169.58	5.844	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 701H - 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	11,700.00	17,527.34	11,820.00	76.24	94.07	95.72	-4,372.47	-1,386.67	991.08	821.55	169.53	5.846	
16,050.00	11,700.00	17,477.34	11,820.00	76.85	93.42	95.72	-4,422.47	-1,386.36	991.08	821.59	169.49	5.847	
16,100.00	11,700.00	17,427.34	11,820.00	77.46	92.77	95.72	-4,472.46	-1,386.05	991.08	821.63	169.45	5.849	
16,150.00	11,700.00	17,377.34	11,820.00	78.08	92.12	95.72	-4,522.46	-1,385.73	991.08	821.66	169.42	5.850	
16,200.00	11,700.00	17,327.34	11,820.00	78.69	91.47	95.72	-4,572.46	-1,385.42	991.08	821.70	169.39	5.851	
16,250.00	11,700.00	17,277.34	11,820.00	79.31	90.82	95.72	-4,622.46	-1,385.11	991.08	821.73	169.36	5.852	
16,300.00	11,700.00	17,227.34	11,820.00	79.93	90.18	95.72	-4,672.46	-1,384.79	991.08	821.75	169.33	5.853	
16,350.00	11,700.00	17,177.34	11,820.00	80.55	89.53	95.72	-4,722.46	-1,384.48	991.08	821.78	169.31	5.854	
16,400.00	11,700.00	17,127.34	11,820.00	81.17	88.89	95.72	-4,772.46	-1,384.17	991.09	821.80	169.29	5.855	
16,450.00	11,700.00	17,077.34	11,820.00	81.79	88.25	95.72	-4,822.46	-1,383.85	991.09	821.82	169.27	5.855	
16,500.00	11,700.00	17,027.34	11,820.00	82.42	87.61	95.72	-4,872.46	-1,383.54	991.09	821.83	169.25	5.856	
16,550.00	11,700.00	16,977.34	11,820.00	83.05	86.97	95.72	-4,922.46	-1,383.22	991.09	821.84	169.24	5.856	
16,600.00	11,700.00	16,927.34	11,820.00	83.68	86.33	95.72	-4,972.45	-1,382.91	991.09	821.85	169.24	5.856	
16,650.00	11,700.00	16,877.34	11,820.00	84.31	85.69	95.72	-5,022.45	-1,382.60	991.09	821.86	169.23	5.856	
16,700.00	11,700.00	16,827.34	11,820.00	84.94	85.06	95.72	-5,072.45	-1,382.28	991.09	821.86	169.23	5.857	
16,750.00	11,700.00	16,777.34	11,820.00	85.57	84.42	95.72	-5,122.45	-1,381.97	991.09	821.86	169.23	5.856	
16,800.00	11,700.00	16,727.34	11,820.00	86.21	83.79	95.72	-5,172.45	-1,381.66	991.09	821.86	169.23	5.856	
16,850.00	11,700.00	16,677.34	11,820.00	86.85	83.16	95.72	-5,222.45	-1,381.34	991.09	821.85	169.24	5.856	
16,900.00	11,700.00	16,627.34	11,820.00	87.48	82.53	95.72	-5,272.45	-1,381.03	991.09	821.84	169.25	5.856	
16,950.00	11,700.00	16,577.34	11,820.00	88.12	81.91	95.72	-5,322.45	-1,380.72	991.09	821.83	169.26	5.855	
17,000.00	11,700.00	16,527.34	11,820.00	88.77	81.28	95.72	-5,372.45	-1,380.40	991.09	821.81	169.28	5.855	
17,050.00	11,700.00	16,477.34	11,820.00	89.41	80.66	95.72	-5,422.45	-1,380.09	991.09	821.79	169.30	5.854	
17,100.00	11,700.00	16,427.34	11,820.00	90.05	80.04	95.72	-5,472.44	-1,379.77	991.09	821.77	169.32	5.853	
17,150.00	11,700.00	16,377.34	11,820.00	90.70	79.42	95.72	-5,522.44	-1,379.46	991.09	821.75	169.35	5.852	
17,200.00	11,700.00	16,327.34	11,820.00	91.34	78.80	95.72	-5,572.44	-1,379.15	991.09	821.72	169.38	5.851	
17,250.00	11,700.00	16,277.34	11,820.00	91.99	78.18	95.72	-5,622.44	-1,378.83	991.09	821.69	169.41	5.850	
17,300.00	11,700.00	16,227.34	11,820.00	92.64	77.57	95.72	-5,672.44	-1,378.52	991.09	821.65	169.44	5.849	
17,350.00	11,700.00	16,177.34	11,820.00	93.29	76.95	95.72	-5,722.44	-1,378.21	991.09	821.62	169.48	5.848	
17,400.00	11,700.00	16,127.34	11,820.00	93.94	76.34	95.72	-5,772.44	-1,377.89	991.10	821.58	169.52	5.846	
17,450.00	11,700.00	16,077.34	11,820.00	94.59	75.74	95.72	-5,822.44	-1,377.58	991.10	821.53	169.57	5.845	
17,500.00	11,700.00	16,027.34	11,820.00	95.25	75.13	95.72	-5,872.44	-1,377.27	991.10	821.48	169.61	5.843	
17,550.00	11,700.00	15,977.34	11,820.00	95.90	74.53	95.72	-5,922.44	-1,376.95	991.10	821.43	169.66	5.842	
17,600.00	11,700.00	15,927.34	11,820.00	96.56	73.92	95.72	-5,972.44	-1,376.64	991.10	821.38	169.72	5.840	
17,650.00	11,700.00	15,877.34	11,820.00	97.21	73.32	95.72	-6,022.43	-1,376.32	991.10	821.32	169.77	5.838	
17,700.00	11,700.00	15,827.34	11,820.00	97.87	72.73	95.72	-6,072.43	-1,376.01	991.10	821.26	169.83	5.836	
17,750.00	11,700.00	15,777.34	11,820.00	98.53	72.13	95.72	-6,122.43	-1,375.70	991.10	821.20	169.90	5.833	
17,800.00	11,700.00	15,727.34	11,820.00	99.19	71.54	95.72	-6,172.43	-1,375.38	991.10	821.13	169.97	5.831	
17,850.00	11,700.00	15,677.34	11,820.00	99.85	70.95	95.72	-6,222.43	-1,375.07	991.10	821.06	170.04	5.829	
17,900.00	11,700.00	15,627.34	11,820.00	100.51	70.37	95.72	-6,272.43	-1,374.76	991.10	820.99	170.11	5.826	
17,950.00	11,700.00	15,577.34	11,820.00	101.17	69.78	95.72	-6,322.43	-1,374.44	991.10	820.91	170.19	5.823	
18,000.00	11,700.00	15,527.34	11,820.00	101.84	69.20	95.72	-6,372.43	-1,374.13	991.10	820.83	170.27	5.821	
18,050.00	11,700.00	15,477.34	11,820.00	102.50	68.62	95.72	-6,422.43	-1,373.82	991.10	820.74	170.36	5.818	
18,100.00	11,700.00	15,427.34	11,820.00	103.17	68.04	95.72	-6,472.43	-1,373.50	991.10	820.66	170.45	5.815	
18,150.00	11,700.00	15,377.34	11,820.00	103.83	67.47	95.72	-6,522.42	-1,373.19	991.10	820.56	170.54	5.812	
18,200.00	11,700.00	15,327.34	11,820.00	104.50	66.90	95.72	-6,572.42	-1,372.87	991.10	820.47	170.64	5.808	
18,250.00	11,700.00	15,277.34	11,820.00	105.17	66.34	95.72	-6,622.42	-1,372.56	991.10	820.37	170.74	5.805	
18,300.00	11,700.00	15,227.34	11,820.00	105.84	65.77	95.72	-6,672.42	-1,372.25	991.10	820.26	170.84	5.801	
18,350.00	11,700.00	15,177.34	11,820.00	106.51	65.21	95.72	-6,722.42	-1,371.93	991.11	820.16	170.95	5.798	
18,400.00	11,700.00	15,127.34	11,820.00	107.18	64.65	95.72	-6,772.42	-1,371.62	991.11	820.04	171.06	5.794	
18,450.00	11,700.00	15,077.34	11,820.00	107.85	64.10	95.72	-6,822.42	-1,371.31	991.11	819.93	171.18	5.790	
18,500.00	11,700.00	15,027.34	11,820.00	108.52	63.55	95.72	-6,872.42	-1,370.99	991.11	819.81	171.30	5.786	
18,550.00	11,700.00	14,977.34	11,820.00	109.19	63.01	95.72	-6,922.42	-1,370.68	991.11	819.68	171.43	5.782	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 701H - 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	11,700.00	14,927.34	11,820.00	109.86	62.46	95.72	-6,972.42	-1,370.37	991.11	819.55	171.56	5.777	
18,650.00	11,700.00	14,877.34	11,820.00	110.54	61.92	95.72	-7,022.41	-1,370.05	991.11	819.42	171.69	5.773	
18,700.00	11,700.00	14,827.34	11,820.00	111.21	61.39	95.72	-7,072.41	-1,369.74	991.11	819.28	171.83	5.768	
18,750.00	11,700.00	14,777.34	11,820.00	111.89	60.86	95.72	-7,122.41	-1,369.42	991.11	819.14	171.97	5.763	
18,800.00	11,700.00	14,727.34	11,820.00	112.56	60.33	95.72	-7,172.41	-1,369.11	991.11	818.99	172.12	5.758	
18,850.00	11,700.00	14,677.34	11,820.00	113.24	59.81	95.72	-7,222.41	-1,368.80	991.11	818.84	172.27	5.753	
18,900.00	11,700.00	14,627.34	11,820.00	113.92	59.29	95.72	-7,272.41	-1,368.48	991.11	818.68	172.43	5.748	
18,950.00	11,700.00	14,577.34	11,820.00	114.59	58.78	95.72	-7,322.41	-1,368.17	991.11	818.52	172.60	5.742	
19,000.00	11,700.00	14,527.34	11,820.00	115.27	58.27	95.72	-7,372.41	-1,367.86	991.11	818.35	172.76	5.737	
19,050.00	11,700.00	14,477.34	11,820.00	115.95	57.76	95.72	-7,422.41	-1,367.54	991.11	818.17	172.94	5.731	
19,100.00	11,700.00	14,427.34	11,820.00	116.63	57.26	95.72	-7,472.41	-1,367.23	991.11	818.00	173.12	5.725	
19,150.00	11,700.00	14,377.34	11,820.00	117.31	56.77	95.72	-7,522.40	-1,366.92	991.11	817.81	173.30	5.719	
19,200.00	11,700.00	14,327.34	11,820.00	117.99	56.28	95.72	-7,572.40	-1,366.60	991.11	817.62	173.49	5.713	
19,250.00	11,700.00	14,277.34	11,820.00	118.67	55.79	95.72	-7,622.40	-1,366.29	991.11	817.43	173.69	5.706	
19,300.00	11,700.00	14,227.34	11,820.00	119.36	55.32	95.72	-7,672.40	-1,365.97	991.12	817.23	173.89	5.700	
19,350.00	11,700.00	14,177.34	11,820.00	120.04	54.84	95.72	-7,722.40	-1,365.66	991.12	817.02	174.10	5.693	
19,400.00	11,700.00	14,127.34	11,820.00	120.72	54.37	95.72	-7,772.40	-1,365.35	991.12	816.81	174.31	5.686	
19,450.00	11,700.00	14,077.34	11,820.00	121.41	53.91	95.72	-7,822.40	-1,365.03	991.12	816.59	174.53	5.679	
19,500.00	11,700.00	14,027.34	11,820.00	122.09	53.46	95.72	-7,872.40	-1,364.72	991.12	816.36	174.76	5.671	
19,550.00	11,700.00	13,977.34	11,820.00	122.77	53.01	95.72	-7,922.40	-1,364.41	991.12	816.13	174.99	5.664	
19,600.00	11,700.00	13,927.34	11,820.00	123.46	52.56	95.72	-7,972.40	-1,364.09	991.12	815.89	175.23	5.656	
19,650.00	11,700.00	13,877.34	11,820.00	124.15	52.12	95.72	-8,022.39	-1,363.78	991.12	815.64	175.48	5.648	
19,700.00	11,700.00	13,827.34	11,820.00	124.83	51.69	95.72	-8,072.39	-1,363.47	991.12	815.39	175.73	5.640	
19,750.00	11,700.00	13,777.34	11,820.00	125.52	51.27	95.72	-8,122.39	-1,363.15	991.12	815.13	175.99	5.632	
19,800.00	11,700.00	13,727.34	11,820.00	126.20	50.85	95.72	-8,172.39	-1,362.84	991.12	814.86	176.26	5.623	
19,850.00	11,700.00	13,677.34	11,820.00	126.89	50.44	95.72	-8,222.39	-1,362.52	991.12	814.59	176.54	5.614	
19,900.00	11,700.00	13,627.34	11,820.00	127.58	50.04	95.72	-8,272.39	-1,362.21	991.12	814.30	176.82	5.605	
19,950.00	11,700.00	13,577.34	11,820.00	128.27	49.64	95.72	-8,322.39	-1,361.90	991.12	814.01	177.11	5.596	
20,000.00	11,700.00	13,527.34	11,820.00	128.96	49.25	95.72	-8,372.39	-1,361.58	991.12	813.71	177.41	5.587	
20,050.00	11,700.00	13,477.34	11,820.00	129.65	48.87	95.72	-8,422.39	-1,361.27	991.12	813.41	177.72	5.577	
20,100.00	11,700.00	13,427.34	11,820.00	130.34	48.50	95.72	-8,472.39	-1,360.96	991.12	813.09	178.03	5.567	
20,150.00	11,700.00	13,377.34	11,820.00	131.03	48.13	95.72	-8,522.38	-1,360.64	991.12	812.77	178.36	5.557	
20,200.00	11,700.00	13,327.34	11,820.00	131.72	47.78	95.72	-8,572.38	-1,360.33	991.12	812.43	178.69	5.547	
20,250.00	11,700.00	13,277.34	11,820.00	132.41	47.43	95.72	-8,622.38	-1,360.02	991.13	812.09	179.03	5.536	
20,300.00	11,700.00	13,227.34	11,820.00	133.10	47.09	95.72	-8,672.38	-1,359.70	991.13	811.74	179.38	5.525	
20,350.00	11,700.00	13,177.34	11,820.00	133.79	46.76	95.72	-8,722.38	-1,359.39	991.13	811.38	179.74	5.514	
20,400.00	11,700.00	13,127.34	11,820.00	134.48	46.44	95.72	-8,772.38	-1,359.07	991.13	811.02	180.11	5.503	
20,450.00	11,700.00	13,077.34	11,820.00	135.18	46.12	95.72	-8,822.38	-1,358.76	991.13	810.64	180.49	5.491	
20,500.00	11,700.00	13,027.34	11,820.00	135.87	45.82	95.72	-8,872.38	-1,358.45	991.13	810.25	180.88	5.479	
20,550.00	11,700.00	12,977.34	11,820.00	136.56	45.53	95.72	-8,922.38	-1,358.13	991.13	809.85	181.28	5.467	
20,600.00	11,700.00	12,927.34	11,820.00	137.26	45.24	95.72	-8,972.38	-1,357.82	991.13	809.44	181.69	5.455	
20,650.00	11,700.00	12,877.34	11,820.00	137.95	44.97	95.72	-9,022.38	-1,357.51	991.13	809.02	182.11	5.443	
20,700.00	11,700.00	12,827.34	11,820.00	138.65	44.70	95.72	-9,072.37	-1,357.19	991.13	808.59	182.54	5.430	
20,750.00	11,700.00	12,777.34	11,820.00	139.34	44.45	95.72	-9,122.37	-1,356.88	991.13	808.15	182.98	5.417	
20,800.00	11,700.00	12,727.34	11,820.00	140.04	44.20	95.72	-9,172.37	-1,356.57	991.13	807.70	183.43	5.403	
20,850.00	11,700.00	12,677.34	11,820.00	140.73	43.97	95.72	-9,222.37	-1,356.25	991.13	807.24	183.89	5.390	
20,900.00	11,700.00	12,627.34	11,820.00	141.43	43.75	95.72	-9,272.37	-1,355.94	991.13	806.77	184.36	5.376	
20,950.00	11,700.00	12,577.34	11,820.00	142.12	43.53	95.72	-9,322.37	-1,355.62	991.13	806.28	184.85	5.362	
21,000.00	11,700.00	12,527.34	11,820.00	142.82	43.33	95.72	-9,372.37	-1,355.31	991.13	805.79	185.35	5.347	
21,050.00	11,700.00	12,477.34	11,820.00	143.52	43.14	95.72	-9,422.37	-1,355.00	991.13	805.28	185.85	5.333	
21,100.00	11,700.00	12,427.34	11,820.00	144.21	42.96	95.72	-9,472.37	-1,354.68	991.13	804.76	186.37	5.318	
21,150.00	11,700.00	12,377.34	11,820.00	144.91	42.79	95.72	-9,522.37	-1,354.37	991.13	804.23	186.90	5.303	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 701H - 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	11,700.00	12,327.34	11,820.00	145.61	42.63	95.72	-9,572.36	-1,354.06	991.13	803.69	187.45	5.288	
21,250.00	11,700.00	12,277.34	11,820.00	146.31	42.49	95.72	-9,622.36	-1,353.74	991.14	803.13	188.00	5.272	
21,300.00	11,700.00	12,227.34	11,820.00	147.01	42.35	95.72	-9,672.36	-1,353.43	991.14	802.56	188.57	5.256	
21,350.00	11,700.00	12,177.34	11,820.00	147.71	42.23	95.72	-9,722.36	-1,353.12	991.14	801.99	189.15	5.240	
21,400.00	11,700.00	12,119.62	11,818.21	148.40	42.09	95.61	-9,780.03	-1,352.75	990.99	801.29	189.70	5.224	
21,450.00	11,700.00	12,060.30	11,810.48	149.10	41.96	95.17	-9,838.82	-1,352.39	990.37	800.06	190.32	5.204	
21,500.00	11,700.00	12,003.15	11,797.33	149.80	41.85	94.41	-9,894.41	-1,352.04	989.38	798.39	191.00	5.180	
21,550.00	11,700.00	11,949.12	11,779.85	150.50	41.79	93.40	-9,945.51	-1,351.72	988.22	796.49	191.73	5.154	
21,600.00	11,700.00	11,898.83	11,759.33	151.20	41.75	92.21	-9,991.41	-1,351.43	987.13	794.64	192.49	5.128	
21,650.00	11,700.00	11,852.59	11,736.98	151.90	41.71	90.91	-10,031.86	-1,351.17	986.38	793.14	193.24	5.104	
21,683.93	11,700.00	11,823.57	11,721.32	152.38	41.68	90.00	-10,056.29	-1,351.02	986.21	792.49	193.73	5.091 CC	
21,700.00	11,700.00	11,810.47	11,713.84	152.60	41.67	89.57	-10,067.05	-1,350.95	986.26	792.31	193.94	5.085 ES	
21,750.00	11,700.00	11,772.34	11,690.71	153.31	41.62	88.22	-10,097.36	-1,350.76	987.00	792.45	194.56	5.073	
21,800.00	11,700.00	11,737.94	11,668.16	154.01	41.57	86.92	-10,123.33	-1,350.60	988.86	793.82	195.04	5.070 SF	
21,850.00	11,700.00	11,706.96	11,646.55	154.71	41.52	85.67	-10,145.51	-1,350.46	992.02	796.65	195.37	5.078	
21,900.00	11,700.00	11,679.09	11,626.10	155.41	41.47	84.49	-10,164.46	-1,350.34	996.66	801.14	195.52	5.097	
21,950.00	11,700.00	11,653.98	11,606.92	156.11	41.42	83.38	-10,180.65	-1,350.24	1,002.89	807.42	195.47	5.131	
21,964.16	11,700.00	11,647.32	11,601.72	156.31	41.41	83.09	-10,184.80	-1,350.22	1,004.96	809.54	195.41	5.143	

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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
10,450.00	10,443.33	22,102.39	11,820.00	37.68	156.27	-31.43	153.84	-840.18	1,460.59	1,336.04	124.55	11.727	
10,500.00	10,493.29	22,101.43	11,820.00	37.86	156.26	-31.32	154.79	-840.19	1,413.69	1,288.05	125.64	11.252	
10,550.00	10,543.25	22,100.54	11,820.00	38.04	156.25	-30.60	155.68	-840.19	1,367.04	1,240.23	126.81	10.780	
10,600.00	10,593.24	22,100.06	11,820.00	38.22	156.24	-29.62	156.29	-840.19	1,320.85	1,192.74	128.11	10.311	
10,650.00	10,643.23	22,100.35	11,820.00	38.39	156.25	-28.77	156.58	-840.20	1,275.17	1,145.63	129.54	9.844	
10,700.00	10,693.23	22,100.38	11,820.00	38.57	156.25	-90.36	156.61	-840.20	1,230.04	1,098.92	131.12	9.381	
10,750.00	10,743.23	22,100.38	11,820.00	38.74	156.25	-90.36	156.61	-840.20	1,185.32	1,052.50	132.82	8.924	
10,800.00	10,793.23	22,100.38	11,820.00	38.91	156.25	-90.36	156.61	-840.20	1,141.04	1,006.37	134.67	8.473	
10,850.00	10,843.23	22,100.38	11,820.00	39.09	156.25	-90.36	156.61	-840.20	1,097.26	960.58	136.68	8.028	
10,900.00	10,893.23	22,100.38	11,820.00	39.26	156.25	-90.36	156.61	-840.20	1,054.03	915.17	138.85	7.591	
10,950.00	10,943.23	22,100.38	11,820.00	39.44	156.25	-90.36	156.61	-840.20	1,011.42	870.20	141.22	7.162	
11,000.00	10,993.23	22,100.38	11,820.00	39.61	156.25	-90.36	156.61	-840.20	969.51	825.73	143.78	6.743	
11,050.00	11,043.22	22,100.43	11,820.00	39.78	156.25	-4.28	156.65	-840.20	928.02	781.50	146.52	6.334	
11,100.00	11,092.99	22,100.75	11,820.00	39.97	156.25	-4.91	156.98	-840.20	885.20	736.02	149.17	5.934	
11,150.00	11,142.19	22,101.25	11,820.00	40.15	156.26	2.40	157.47	-840.20	840.97	689.28	151.69	5.544	
11,200.00	11,191.09	22,101.24	11,820.00	40.34	156.26	34.03	154.99	-840.19	796.85	642.55	154.30	5.164	
11,250.00	11,239.59	22,091.94	11,820.00	40.52	156.13	58.05	148.16	-840.14	753.80	596.76	157.05	4.800	Alert
11,300.00	11,287.32	22,080.82	11,820.00	40.69	155.97	74.67	137.04	-840.07	712.26	552.27	159.99	4.452	Alert
11,350.00	11,333.92	22,065.50	11,820.00	40.85	155.76	86.03	121.72	-839.98	672.63	509.56	163.07	4.125	Alert
11,400.00	11,379.03	22,046.09	11,820.00	41.00	155.49	93.86	102.31	-839.86	635.30	469.03	166.27	3.821	Alert
11,450.00	11,422.32	22,022.74	11,820.00	41.14	155.16	99.23	78.96	-839.71	600.63	431.11	169.52	3.543	Alert
11,500.00	11,463.45	21,995.63	11,820.00	41.27	154.78	102.85	51.85	-839.54	568.91	396.16	172.76	3.293	Alert
11,550.00	11,502.11	21,964.96	11,820.00	41.39	154.35	105.16	21.18	-839.35	540.38	364.50	175.88	3.072	Alert
11,600.00	11,538.00	21,930.97	11,820.00	41.51	153.87	106.48	-12.81	-839.13	515.18	336.38	178.79	2.881	Alert
11,650.00	11,570.86	21,906.09	11,820.00	41.62	153.53	107.05	-49.86	-838.90	493.37	311.81	181.56	2.717	Alert
11,700.00	11,600.43	21,854.07	11,820.00	41.73	152.80	107.05	-89.70	-838.65	474.91	291.29	183.63	2.586	Alert
11,750.00	11,626.48	21,811.76	11,820.00	41.84	152.21	106.66	-132.01	-838.38	459.68	274.28	185.40	2.479	Minor Risk
11,800.00	11,648.83	21,767.28	11,820.00	41.95	151.59	106.01	-176.49	-838.10	447.47	260.75	186.72	2.396	Minor Risk
11,850.00	11,667.29	21,720.99	11,820.00	42.06	150.94	105.27	-222.78	-837.81	438.01	250.43	187.59	2.335	Minor Risk
11,900.00	11,681.74	21,673.23	11,820.00	42.17	150.27	104.54	-270.54	-837.51	431.05	243.01	188.04	2.292	Minor Risk
11,950.00	11,692.05	21,624.37	11,820.00	42.28	149.59	103.95	-319.40	-837.21	426.32	238.19	188.13	2.266	Minor Risk
12,000.00	11,698.15	21,574.77	11,820.00	42.39	148.90	103.56	-368.99	-836.89	423.62	235.70	187.92	2.254	Minor Risk
12,050.00	11,700.14	21,524.83	11,820.00	42.50	148.20	103.43	-418.94	-836.58	422.76	235.31	187.45	2.255	Minor Risk
12,050.00	11,700.00	21,524.82	11,820.00	42.50	148.20	103.44	-418.94	-836.58	422.82	235.37	187.44	2.256	Minor Risk
12,100.00	11,700.00	21,474.82	11,820.00	42.62	147.50	103.44	-468.94	-836.27	422.82	235.96	186.86	2.263	Minor Risk
12,150.00	11,700.00	21,424.82	11,820.00	42.75	146.81	103.44	-518.94	-835.95	422.82	236.52	186.29	2.270	Minor Risk
12,200.00	11,700.00	21,374.82	11,820.00	42.88	146.11	103.44	-568.94	-835.64	422.82	237.09	185.73	2.277	Minor Risk
12,250.00	11,700.00	21,324.82	11,820.00	43.03	145.42	103.44	-618.94	-835.32	422.82	237.63	185.19	2.283	Minor Risk
12,300.00	11,700.00	21,274.82	11,820.00	43.19	144.72	103.44	-668.94	-835.01	422.82	238.17	184.65	2.290	Minor Risk
12,350.00	11,700.00	21,224.82	11,820.00	43.36	144.02	103.44	-718.94	-834.70	422.82	238.69	184.13	2.296	Minor Risk
12,400.00	11,700.00	21,174.82	11,820.00	43.54	143.33	103.44	-768.93	-834.38	422.82	239.20	183.61	2.303	Minor Risk
12,450.00	11,700.00	21,124.82	11,820.00	43.74	142.63	103.44	-818.93	-834.07	422.82	239.70	183.12	2.309	Minor Risk
12,500.00	11,700.00	21,074.82	11,820.00	43.94	141.94	103.44	-868.93	-833.75	422.82	240.19	182.63	2.315	Minor Risk
12,550.00	11,700.00	21,024.82	11,820.00	44.16	141.25	103.44	-918.93	-833.44	422.82	240.66	182.16	2.321	Minor Risk
12,600.00	11,700.00	20,974.82	11,820.00	44.38	140.55	103.44	-968.93	-833.13	422.82	241.13	181.69	2.327	Minor Risk
12,650.00	11,700.00	20,924.82	11,820.00	44.62	139.86	103.44	-1,018.93	-832.81	422.82	241.58	181.24	2.333	Minor Risk
12,700.00	11,700.00	20,874.82	11,820.00	44.86	139.17	103.44	-1,068.93	-832.50	422.82	242.03	180.79	2.339	Minor Risk
12,750.00	11,700.00	20,824.82	11,820.00	45.12	138.47	103.44	-1,118.93	-832.18	422.82	242.45	180.36	2.344	Minor Risk
12,800.00	11,700.00	20,774.82	11,820.00	45.38	137.78	103.44	-1,168.93	-831.87	422.82	242.88	179.94	2.350	Minor Risk
12,850.00	11,700.00	20,724.82	11,820.00	45.66	137.09	103.44	-1,218.93	-831.56	422.82	243.28	179.53	2.355	Minor Risk
12,900.00	11,700.00	20,674.82	11,820.00	45.94	136.40	103.44	-1,268.92	-831.24	422.82	243.69	179.13	2.360	Minor Risk
12,950.00	11,700.00	20,624.82	11,820.00	46.24	135.71	103.44	-1,318.92	-830.93	422.82	244.08	178.74	2.366	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
13,000.00	11,700.00	20,574.82	11,820.00	46.54	135.02	103.44	-1,368.92	-830.61	422.82	244.46	178.36	2.371	Minor Risk
13,050.00	11,700.00	20,524.82	11,820.00	46.86	134.33	103.44	-1,418.92	-830.30	422.82	244.83	177.99	2.376	Minor Risk
13,100.00	11,700.00	20,474.82	11,820.00	47.18	133.64	103.44	-1,468.92	-829.99	422.82	245.19	177.62	2.380	Minor Risk
13,150.00	11,700.00	20,424.82	11,820.00	47.52	132.95	103.44	-1,518.92	-829.67	422.82	245.54	177.28	2.385	Minor Risk
13,200.00	11,700.00	20,374.82	11,820.00	47.86	132.26	103.44	-1,568.92	-829.36	422.82	245.89	176.93	2.390	Minor Risk
13,250.00	11,700.00	20,324.82	11,820.00	48.21	131.57	103.44	-1,618.92	-829.04	422.82	246.22	176.60	2.394	Minor Risk
13,300.00	11,700.00	20,274.82	11,820.00	48.57	130.88	103.44	-1,668.92	-828.73	422.82	246.55	176.27	2.399	Minor Risk
13,350.00	11,700.00	20,224.82	11,820.00	48.94	130.19	103.44	-1,718.92	-828.41	422.82	246.86	175.96	2.403	Minor Risk
13,400.00	11,700.00	20,174.82	11,820.00	49.31	129.51	103.44	-1,768.92	-828.10	422.82	247.17	175.64	2.407	Minor Risk
13,450.00	11,700.00	20,124.82	11,820.00	49.70	128.82	103.44	-1,818.91	-827.79	422.82	247.47	175.35	2.411	Minor Risk
13,500.00	11,700.00	20,074.82	11,820.00	50.08	128.13	103.44	-1,868.91	-827.47	422.82	247.77	175.05	2.415	Minor Risk
13,550.00	11,700.00	20,024.82	11,820.00	50.48	127.45	103.44	-1,918.91	-827.16	422.82	248.05	174.77	2.419	Minor Risk
13,600.00	11,700.00	19,974.82	11,820.00	50.89	126.76	103.44	-1,968.91	-826.84	422.82	248.33	174.49	2.423	Minor Risk
13,650.00	11,700.00	19,924.82	11,820.00	51.30	126.08	103.44	-2,018.91	-826.53	422.82	248.59	174.23	2.427	Minor Risk
13,700.00	11,700.00	19,874.82	11,820.00	51.72	125.39	103.44	-2,068.91	-826.22	422.82	248.86	173.96	2.431	Minor Risk
13,750.00	11,700.00	19,824.82	11,820.00	52.15	124.71	103.44	-2,118.91	-825.90	422.82	249.11	173.71	2.434	Minor Risk
13,800.00	11,700.00	19,774.82	11,820.00	52.58	124.03	103.44	-2,168.91	-825.59	422.82	249.36	173.46	2.438	Minor Risk
13,850.00	11,700.00	19,724.82	11,820.00	53.02	123.34	103.44	-2,218.91	-825.27	422.82	249.59	173.23	2.441	Minor Risk
13,900.00	11,700.00	19,674.82	11,820.00	53.46	122.66	103.44	-2,268.91	-824.96	422.82	249.83	172.99	2.444	Minor Risk
13,950.00	11,700.00	19,624.82	11,820.00	53.92	121.98	103.44	-2,318.90	-824.65	422.82	250.05	172.77	2.447	Minor Risk
14,000.00	11,700.00	19,574.82	11,820.00	54.37	121.30	103.44	-2,368.90	-824.33	422.82	250.28	172.54	2.451	Minor Risk
14,050.00	11,700.00	19,524.82	11,820.00	54.84	120.62	103.44	-2,418.90	-824.02	422.82	250.49	172.33	2.454	Minor Risk
14,100.00	11,700.00	19,474.82	11,820.00	55.31	119.94	103.44	-2,468.90	-823.70	422.82	250.70	172.12	2.457	Minor Risk
14,150.00	11,700.00	19,424.82	11,820.00	55.79	119.26	103.44	-2,518.90	-823.39	422.82	250.90	171.92	2.459	Minor Risk
14,200.00	11,700.00	19,374.82	11,820.00	56.26	118.58	103.44	-2,568.90	-823.08	422.82	251.09	171.73	2.462	Minor Risk
14,250.00	11,700.00	19,324.82	11,820.00	56.75	117.90	103.44	-2,618.90	-822.76	422.82	251.28	171.54	2.465	Minor Risk
14,300.00	11,700.00	19,274.82	11,820.00	57.24	117.22	103.44	-2,668.90	-822.45	422.82	251.47	171.35	2.468	Minor Risk
14,350.00	11,700.00	19,224.82	11,820.00	57.74	116.54	103.44	-2,718.90	-822.13	422.82	251.64	171.18	2.470	Minor Risk
14,400.00	11,700.00	19,174.82	11,820.00	58.24	115.87	103.44	-2,768.90	-821.82	422.82	251.82	171.00	2.473	Minor Risk
14,450.00	11,700.00	19,124.82	11,820.00	58.75	115.19	103.44	-2,818.89	-821.51	422.82	251.98	170.83	2.475	Minor Risk
14,500.00	11,700.00	19,074.82	11,820.00	59.25	114.52	103.44	-2,868.89	-821.19	422.82	252.15	170.67	2.477	Minor Risk
14,550.00	11,700.00	19,024.82	11,820.00	59.77	113.84	103.44	-2,918.89	-820.88	422.82	252.30	170.52	2.480	Minor Risk
14,600.00	11,700.00	18,974.82	11,820.00	60.29	113.17	103.44	-2,968.89	-820.56	422.82	252.46	170.36	2.482	Minor Risk
14,650.00	11,700.00	18,924.82	11,820.00	60.82	112.50	103.44	-3,018.89	-820.25	422.82	252.60	170.22	2.484	Minor Risk
14,700.00	11,700.00	18,874.82	11,820.00	61.34	111.82	103.44	-3,068.89	-819.93	422.82	252.75	170.07	2.486	Minor Risk
14,750.00	11,700.00	18,824.82	11,820.00	61.88	111.15	103.44	-3,118.89	-819.62	422.82	252.88	169.94	2.488	Minor Risk
14,800.00	11,700.00	18,774.82	11,820.00	62.41	110.48	103.44	-3,168.89	-819.31	422.82	253.02	169.80	2.490	Minor Risk
14,850.00	11,700.00	18,724.82	11,820.00	62.95	109.81	103.44	-3,218.89	-818.99	422.82	253.15	169.67	2.492	Minor Risk
14,900.00	11,700.00	18,674.82	11,820.00	63.49	109.14	103.44	-3,268.89	-818.68	422.82	253.27	169.55	2.494	Minor Risk
14,950.00	11,700.00	18,624.82	11,820.00	64.04	108.47	103.44	-3,318.88	-818.36	422.82	253.39	169.43	2.496	Minor Risk
15,000.00	11,700.00	18,574.82	11,820.00	64.59	107.80	103.44	-3,368.88	-818.05	422.82	253.51	169.31	2.497	Minor Risk
15,050.00	11,700.00	18,524.82	11,820.00	65.15	107.14	103.44	-3,418.88	-817.74	422.82	253.62	169.20	2.499	Minor Risk
15,100.00	11,700.00	18,474.82	11,820.00	65.70	106.47	103.44	-3,468.88	-817.42	422.82	253.73	169.09	2.501	Alert
15,150.00	11,700.00	18,424.82	11,820.00	66.27	105.80	103.44	-3,518.88	-817.11	422.82	253.83	168.99	2.502	Alert
15,200.00	11,700.00	18,374.82	11,820.00	66.83	105.14	103.44	-3,568.88	-816.79	422.82	253.93	168.89	2.504	Alert
15,250.00	11,700.00	18,324.82	11,820.00	67.40	104.47	103.44	-3,618.88	-816.48	422.82	254.02	168.80	2.505	Alert
15,300.00	11,700.00	18,274.82	11,820.00	67.97	103.81	103.44	-3,668.88	-816.17	422.82	254.12	168.70	2.506	Alert
15,350.00	11,700.00	18,224.82	11,820.00	68.54	103.15	103.44	-3,718.88	-815.85	422.82	254.20	168.62	2.508	Alert
15,400.00	11,700.00	18,174.82	11,820.00	69.12	102.49	103.44	-3,768.88	-815.54	422.82	254.29	168.53	2.509	Alert
15,450.00	11,700.00	18,124.82	11,820.00	69.70	101.83	103.44	-3,818.87	-815.22	422.82	254.37	168.45	2.510	Alert
15,500.00	11,700.00	18,074.82	11,820.00	70.28	101.17	103.44	-3,868.87	-814.91	422.82	254.45	168.37	2.511	Alert
15,550.00	11,700.00	18,024.82	11,820.00	70.87	100.51	103.44	-3,918.87	-814.60	422.82	254.52	168.30	2.512	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
15,600.00	11,700.00	17,974.82	11,820.00	71.45	99.85	103.44	-3,968.87	-814.28	422.82	254.59	168.23	2.513	Alert
15,650.00	11,700.00	17,924.82	11,820.00	72.04	99.20	103.44	-4,018.87	-813.97	422.82	254.65	168.17	2.514	Alert
15,700.00	11,700.00	17,874.82	11,820.00	72.64	98.54	103.44	-4,068.87	-813.65	422.82	254.72	168.10	2.515	Alert
15,750.00	11,700.00	17,824.82	11,820.00	73.23	97.89	103.44	-4,118.87	-813.34	422.82	254.78	168.05	2.516	Alert
15,800.00	11,700.00	17,774.82	11,820.00	73.83	97.23	103.44	-4,168.87	-813.02	422.82	254.83	167.99	2.517	Alert
15,850.00	11,700.00	17,724.82	11,820.00	74.43	96.58	103.44	-4,218.87	-812.71	422.82	254.88	167.94	2.518	Alert
15,900.00	11,700.00	17,674.82	11,820.00	75.03	95.93	103.44	-4,268.87	-812.40	422.82	254.93	167.89	2.518	Alert
15,950.00	11,700.00	17,624.82	11,820.00	75.64	95.28	103.44	-4,318.86	-812.08	422.82	254.98	167.84	2.519	Alert
16,000.00	11,700.00	17,574.82	11,820.00	76.24	94.63	103.44	-4,368.86	-811.77	422.82	255.02	167.80	2.520	Alert
16,050.00	11,700.00	17,524.82	11,820.00	76.85	93.98	103.44	-4,418.86	-811.45	422.82	255.06	167.76	2.520	Alert
16,100.00	11,700.00	17,474.82	11,820.00	77.46	93.33	103.44	-4,468.86	-811.14	422.82	255.10	167.72	2.521	Alert
16,150.00	11,700.00	17,424.82	11,820.00	78.08	92.69	103.44	-4,518.86	-810.83	422.82	255.13	167.69	2.521	Alert
16,200.00	11,700.00	17,374.82	11,820.00	78.69	92.05	103.44	-4,568.86	-810.51	422.82	255.16	167.66	2.522	Alert
16,250.00	11,700.00	17,324.82	11,820.00	79.31	91.40	103.44	-4,618.86	-810.20	422.82	255.19	167.63	2.522	Alert
16,300.00	11,700.00	17,274.82	11,820.00	79.93	90.76	103.44	-4,668.86	-809.88	422.82	255.21	167.61	2.523	Alert
16,350.00	11,700.00	17,224.82	11,820.00	80.55	90.12	103.44	-4,718.86	-809.57	422.82	255.23	167.59	2.523	Alert
16,400.00	11,700.00	17,174.82	11,820.00	81.17	89.48	103.44	-4,768.86	-809.26	422.82	255.25	167.57	2.523	Alert
16,450.00	11,700.00	17,124.82	11,820.00	81.79	88.84	103.44	-4,818.86	-808.94	422.82	255.27	167.56	2.523	Alert
16,500.00	11,700.00	17,074.82	11,820.00	82.42	88.21	103.44	-4,868.85	-808.63	422.82	255.28	167.54	2.524	Alert
16,550.00	11,700.00	17,024.82	11,820.00	83.05	87.57	103.44	-4,918.85	-808.31	422.82	255.29	167.54	2.524	Alert
16,600.00	11,700.00	16,974.82	11,820.00	83.68	86.94	103.44	-4,968.85	-808.00	422.82	255.29	167.53	2.524	Alert
16,650.00	11,700.00	16,924.82	11,820.00	84.31	86.31	103.44	-5,018.85	-807.69	422.82	255.30	167.53	2.524	Alert
16,700.00	11,700.00	16,874.82	11,820.00	84.94	85.68	103.44	-5,068.85	-807.37	422.82	255.30	167.53	2.524	Alert
16,750.00	11,700.00	16,824.82	11,820.00	85.57	85.05	103.44	-5,118.85	-807.06	422.82	255.29	167.53	2.524	Alert
16,800.00	11,700.00	16,774.82	11,820.00	86.21	84.42	103.44	-5,168.85	-806.74	422.82	255.29	167.54	2.524	Alert
16,850.00	11,700.00	16,724.82	11,820.00	86.85	83.80	103.44	-5,218.85	-806.43	422.82	255.28	167.55	2.524	Alert
16,900.00	11,700.00	16,674.82	11,820.00	87.48	83.17	103.44	-5,268.85	-806.11	422.82	255.26	167.56	2.523	Alert
16,950.00	11,700.00	16,624.82	11,820.00	88.12	82.55	103.44	-5,318.85	-805.80	422.82	255.25	167.57	2.523	Alert
17,000.00	11,700.00	16,574.82	11,820.00	88.77	81.93	103.44	-5,368.84	-805.49	422.82	255.23	167.59	2.523	Alert
17,050.00	11,700.00	16,524.82	11,820.00	89.41	81.31	103.44	-5,418.84	-805.17	422.82	255.21	167.61	2.523	Alert
17,100.00	11,700.00	16,474.82	11,820.00	90.05	80.70	103.44	-5,468.84	-804.86	422.82	255.19	167.64	2.522	Alert
17,150.00	11,700.00	16,424.82	11,820.00	90.70	80.08	103.44	-5,518.84	-804.54	422.82	255.16	167.67	2.522	Alert
17,200.00	11,700.00	16,374.82	11,820.00	91.34	79.47	103.44	-5,568.84	-804.23	422.82	255.13	167.70	2.521	Alert
17,250.00	11,700.00	16,324.82	11,820.00	91.99	78.86	103.44	-5,618.84	-803.92	422.82	255.09	167.73	2.521	Alert
17,300.00	11,700.00	16,274.82	11,820.00	92.64	78.25	103.44	-5,668.84	-803.60	422.82	255.06	167.77	2.520	Alert
17,350.00	11,700.00	16,224.82	11,820.00	93.29	77.64	103.44	-5,718.84	-803.29	422.82	255.02	167.81	2.520	Alert
17,400.00	11,700.00	16,174.82	11,820.00	93.94	77.04	103.44	-5,768.84	-802.97	422.82	254.97	167.85	2.519	Alert
17,450.00	11,700.00	16,124.82	11,820.00	94.59	76.43	103.44	-5,818.84	-802.66	422.82	254.93	167.90	2.518	Alert
17,500.00	11,700.00	16,074.82	11,820.00	95.25	75.83	103.44	-5,868.83	-802.35	422.82	254.88	167.94	2.518	Alert
17,550.00	11,700.00	16,024.82	11,820.00	95.90	75.24	103.44	-5,918.83	-802.03	422.82	254.83	168.00	2.517	Alert
17,600.00	11,700.00	15,974.82	11,820.00	96.56	74.64	103.44	-5,968.83	-801.72	422.82	254.77	168.05	2.516	Alert
17,650.00	11,700.00	15,924.82	11,820.00	97.21	74.05	103.44	-6,018.83	-801.40	422.82	254.71	168.11	2.515	Alert
17,700.00	11,700.00	15,874.82	11,820.00	97.87	73.46	103.44	-6,068.83	-801.09	422.82	254.65	168.17	2.514	Alert
17,750.00	11,700.00	15,824.82	11,820.00	98.53	72.87	103.44	-6,118.83	-800.78	422.82	254.58	168.24	2.513	Alert
17,800.00	11,700.00	15,774.82	11,820.00	99.19	72.28	103.44	-6,168.83	-800.46	422.82	254.52	168.31	2.512	Alert
17,850.00	11,700.00	15,724.82	11,820.00	99.85	71.70	103.44	-6,218.83	-800.15	422.82	254.44	168.38	2.511	Alert
17,900.00	11,700.00	15,674.82	11,820.00	100.51	71.12	103.44	-6,268.83	-799.83	422.82	254.37	168.46	2.510	Alert
17,950.00	11,700.00	15,624.82	11,820.00	101.17	70.54	103.44	-6,318.83	-799.52	422.82	254.29	168.54	2.509	Alert
18,000.00	11,700.00	15,574.82	11,820.00	101.84	69.96	103.44	-6,368.82	-799.21	422.82	254.20	168.62	2.508	Alert
18,050.00	11,700.00	15,524.82	11,820.00	102.50	69.39	103.44	-6,418.82	-798.89	422.82	254.12	168.71	2.506	Alert
18,100.00	11,700.00	15,474.82	11,820.00	103.17	68.82	103.44	-6,468.82	-798.58	422.82	254.03	168.80	2.505	Alert
18,150.00	11,700.00	15,424.82	11,820.00	103.83	68.26	103.44	-6,518.82	-798.26	422.82	253.93	168.89	2.504	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 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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
18,200.00	11,700.00	15,374.82	11,820.00	104.50	67.69	103.44	-6,568.82	-797.95	422.82	253.84	168.99	2.502	Alert
18,250.00	11,700.00	15,324.82	11,820.00	105.17	67.13	103.44	-6,618.82	-797.63	422.82	253.73	169.09	2.501	Alert
18,300.00	11,700.00	15,274.82	11,820.00	105.84	66.58	103.44	-6,668.82	-797.32	422.82	253.63	169.20	2.499	Minor Risk
18,350.00	11,700.00	15,224.82	11,820.00	106.51	66.02	103.44	-6,718.82	-797.01	422.82	253.52	169.31	2.497	Minor Risk
18,400.00	11,700.00	15,174.82	11,820.00	107.18	65.47	103.44	-6,768.82	-796.69	422.82	253.41	169.42	2.496	Minor Risk
18,450.00	11,700.00	15,124.82	11,820.00	107.85	64.93	103.44	-6,818.82	-796.38	422.83	253.29	169.54	2.494	Minor Risk
18,500.00	11,700.00	15,074.82	11,820.00	108.52	64.38	103.44	-6,868.81	-796.06	422.83	253.17	169.66	2.492	Minor Risk
18,550.00	11,700.00	15,024.82	11,820.00	109.19	63.84	103.44	-6,918.81	-795.75	422.83	253.04	169.78	2.490	Minor Risk
18,600.00	11,700.00	14,974.82	11,820.00	109.86	63.31	103.44	-6,968.81	-795.44	422.83	252.91	169.91	2.488	Minor Risk
18,650.00	11,700.00	14,924.82	11,820.00	110.54	62.78	103.44	-7,018.81	-795.12	422.83	252.78	170.05	2.486	Minor Risk
18,700.00	11,700.00	14,874.82	11,820.00	111.21	62.25	103.44	-7,068.81	-794.81	422.83	252.64	170.19	2.484	Minor Risk
18,750.00	11,700.00	14,824.82	11,820.00	111.89	61.72	103.44	-7,118.81	-794.49	422.83	252.49	170.33	2.482	Minor Risk
18,800.00	11,700.00	14,774.82	11,820.00	112.56	61.20	103.44	-7,168.81	-794.18	422.83	252.35	170.48	2.480	Minor Risk
18,850.00	11,700.00	14,724.82	11,820.00	113.24	60.69	103.44	-7,218.81	-793.87	422.83	252.19	170.63	2.478	Minor Risk
18,900.00	11,700.00	14,674.82	11,820.00	113.92	60.18	103.44	-7,268.81	-793.55	422.83	252.03	170.79	2.476	Minor Risk
18,950.00	11,700.00	14,624.82	11,820.00	114.59	59.67	103.44	-7,318.81	-793.24	422.83	251.87	170.95	2.473	Minor Risk
19,000.00	11,700.00	14,574.82	11,820.00	115.27	59.17	103.44	-7,368.80	-792.92	422.83	251.70	171.12	2.471	Minor Risk
19,050.00	11,700.00	14,524.82	11,820.00	115.95	58.67	103.44	-7,418.80	-792.61	422.83	251.53	171.29	2.468	Minor Risk
19,100.00	11,700.00	14,474.82	11,820.00	116.63	58.18	103.44	-7,468.80	-792.30	422.83	251.35	171.47	2.466	Minor Risk
19,150.00	11,700.00	14,424.82	11,820.00	117.31	57.69	103.44	-7,518.80	-791.98	422.83	251.17	171.66	2.463	Minor Risk
19,200.00	11,700.00	14,374.82	11,820.00	117.99	57.21	103.44	-7,568.80	-791.67	422.83	250.98	171.85	2.461	Minor Risk
19,250.00	11,700.00	14,324.82	11,820.00	118.67	56.73	103.44	-7,618.80	-791.35	422.83	250.79	172.04	2.458	Minor Risk
19,300.00	11,700.00	14,274.82	11,820.00	119.36	56.26	103.44	-7,668.80	-791.04	422.83	250.59	172.24	2.455	Minor Risk
19,350.00	11,700.00	14,224.82	11,820.00	120.04	55.80	103.44	-7,718.80	-790.72	422.83	250.38	172.45	2.452	Minor Risk
19,400.00	11,700.00	14,174.82	11,820.00	120.72	55.34	103.44	-7,768.80	-790.41	422.83	250.17	172.66	2.449	Minor Risk
19,450.00	11,700.00	14,124.82	11,820.00	121.41	54.88	103.44	-7,818.80	-790.10	422.83	249.95	172.88	2.446	Minor Risk
19,500.00	11,700.00	14,074.82	11,820.00	122.09	54.43	103.44	-7,868.79	-789.78	422.83	249.73	173.10	2.443	Minor Risk
19,550.00	11,700.00	14,024.82	11,820.00	122.77	53.99	103.44	-7,918.79	-789.47	422.83	249.50	173.33	2.439	Minor Risk
19,600.00	11,700.00	13,974.82	11,820.00	123.46	53.55	103.44	-7,968.79	-789.15	422.83	249.26	173.57	2.436	Minor Risk
19,650.00	11,700.00	13,924.82	11,820.00	124.15	53.12	103.44	-8,018.79	-788.84	422.83	249.02	173.81	2.433	Minor Risk
19,700.00	11,700.00	13,874.82	11,820.00	124.83	52.70	103.44	-8,068.79	-788.53	422.83	248.77	174.06	2.429	Minor Risk
19,750.00	11,700.00	13,824.82	11,820.00	125.52	52.28	103.44	-8,118.79	-788.21	422.83	248.51	174.32	2.426	Minor Risk
19,800.00	11,700.00	13,774.82	11,820.00	126.20	51.87	103.44	-8,168.79	-787.90	422.83	248.24	174.58	2.422	Minor Risk
19,850.00	11,700.00	13,724.82	11,820.00	126.89	51.47	103.44	-8,218.79	-787.58	422.83	247.97	174.85	2.418	Minor Risk
19,900.00	11,700.00	13,674.82	11,820.00	127.58	51.07	103.44	-8,268.79	-787.27	422.83	247.69	175.13	2.414	Minor Risk
19,950.00	11,700.00	13,624.82	11,820.00	128.27	50.68	103.44	-8,318.79	-786.96	422.83	247.41	175.42	2.410	Minor Risk
20,000.00	11,700.00	13,574.82	11,820.00	128.96	50.30	103.44	-8,368.79	-786.64	422.83	247.11	175.71	2.406	Minor Risk
20,050.00	11,700.00	13,524.82	11,820.00	129.65	49.93	103.44	-8,418.78	-786.33	422.83	246.81	176.02	2.402	Minor Risk
20,100.00	11,700.00	13,474.82	11,820.00	130.34	49.56	103.44	-8,468.78	-786.01	422.83	246.50	176.33	2.398	Minor Risk
20,150.00	11,700.00	13,424.82	11,820.00	131.03	49.20	103.44	-8,518.78	-785.70	422.83	246.18	176.64	2.394	Minor Risk
20,200.00	11,700.00	13,374.82	11,820.00	131.72	48.85	103.44	-8,568.78	-785.39	422.83	245.86	176.97	2.389	Minor Risk
20,250.00	11,700.00	13,324.82	11,820.00	132.41	48.51	103.44	-8,618.78	-785.07	422.83	245.52	177.30	2.385	Minor Risk
20,300.00	11,700.00	13,274.82	11,820.00	133.10	48.18	103.44	-8,668.78	-784.76	422.83	245.18	177.65	2.380	Minor Risk
20,350.00	11,700.00	13,224.82	11,820.00	133.79	47.86	103.44	-8,718.78	-784.44	422.83	244.83	178.00	2.375	Minor Risk
20,400.00	11,700.00	13,174.82	11,820.00	134.48	47.54	103.44	-8,768.78	-784.13	422.83	244.47	178.36	2.371	Minor Risk
20,450.00	11,700.00	13,124.82	11,820.00	135.18	47.24	103.44	-8,818.78	-783.81	422.83	244.10	178.73	2.366	Minor Risk
20,500.00	11,700.00	13,074.82	11,820.00	135.87	46.94	103.44	-8,868.78	-783.50	422.83	243.72	179.11	2.361	Minor Risk
20,550.00	11,700.00	13,024.82	11,820.00	136.56	46.65	103.44	-8,918.77	-783.19	422.83	243.33	179.50	2.356	Minor Risk
20,600.00	11,700.00	12,974.82	11,820.00	137.26	46.38	103.44	-8,968.77	-782.87	422.83	242.93	179.90	2.350	Minor Risk
20,650.00	11,700.00	12,924.82	11,820.00	137.95	46.11	103.44	-9,018.77	-782.56	422.83	242.52	180.31	2.345	Minor Risk
20,700.00	11,700.00	12,874.82	11,820.00	138.65	45.86	103.44	-9,068.77	-782.24	422.83	242.10	180.73	2.340	Minor Risk
20,750.00	11,700.00	12,824.82	11,820.00	139.34	45.61	103.44	-9,118.77	-781.93	422.83	241.67	181.16	2.334	Minor Risk

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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

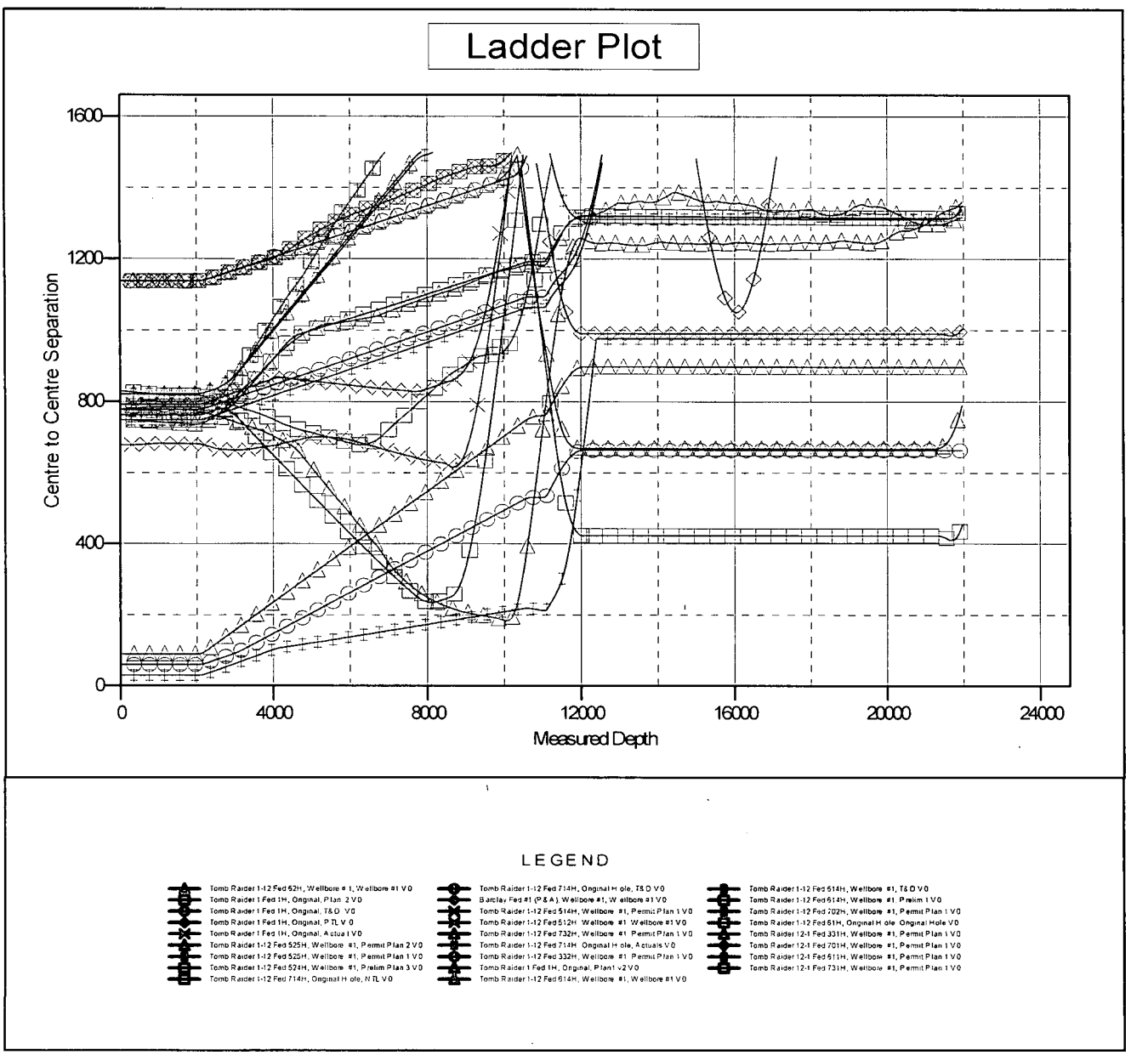
Offset Design Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

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
20,800.00	11,700.00	12,774.82	11,820.00	140.04	45.38	103.44	-9,168.77	-781.62	422.83	241.23	181.59	2.328	Minor Risk
20,850.00	11,700.00	12,724.82	11,820.00	140.73	45.16	103.44	-9,218.77	-781.30	422.83	240.78	182.04	2.323	Minor Risk
20,900.00	11,700.00	12,674.82	11,820.00	141.43	44.95	103.44	-9,268.77	-780.99	422.83	240.32	182.50	2.317	Minor Risk
20,950.00	11,700.00	12,624.82	11,820.00	142.12	44.76	103.44	-9,318.77	-780.67	422.83	239.85	182.98	2.311	Minor Risk
21,000.00	11,700.00	12,574.82	11,820.00	142.82	44.59	103.44	-9,368.77	-780.36	422.83	239.37	183.46	2.305	Minor Risk
21,050.00	11,700.00	12,524.82	11,820.00	143.52	44.42	103.44	-9,418.76	-780.05	422.83	238.88	183.95	2.299	Minor Risk
21,100.00	11,700.00	12,474.82	11,820.00	144.21	44.28	103.44	-9,468.76	-779.73	422.83	238.37	184.46	2.292	Minor Risk
21,150.00	11,700.00	12,424.82	11,820.00	144.91	44.16	103.44	-9,518.76	-779.42	422.83	237.86	184.97	2.286	Minor Risk
21,200.00	11,700.00	12,374.82	11,820.00	145.61	44.06	103.44	-9,568.76	-779.10	422.83	237.33	185.50	2.279	Minor Risk
21,250.00	11,700.00	12,324.82	11,820.00	146.31	43.98	103.44	-9,618.76	-778.79	422.83	236.79	186.04	2.273	Minor Risk
21,300.00	11,700.00	12,274.82	11,820.00	147.01	43.92	103.44	-9,668.76	-778.48	422.83	236.24	186.59	2.266	Minor Risk
21,350.00	11,700.00	12,224.82	11,820.00	147.71	43.88	103.44	-9,718.76	-778.16	422.83	235.68	187.15	2.259	Minor Risk
21,400.00	11,700.00	12,167.79	11,818.51	148.40	43.85	103.25	-9,775.75	-777.80	422.54	234.83	187.71	2.251	Minor Risk
21,450.00	11,700.00	12,108.42	11,811.17	149.10	43.83	102.27	-9,834.64	-777.43	421.17	232.60	188.57	2.233	Minor Risk
21,500.00	11,700.00	12,051.14	11,798.36	149.80	43.81	100.56	-9,890.44	-777.08	418.89	229.15	189.74	2.208	Minor Risk
21,550.00	11,700.00	11,996.92	11,781.16	150.50	43.80	98.23	-9,941.84	-776.76	416.16	225.06	191.10	2.178	Minor Risk
21,600.00	11,700.00	11,946.41	11,760.82	151.20	43.77	95.43	-9,988.06	-776.47	413.55	221.05	192.50	2.148	Minor Risk
21,650.00	11,700.00	11,899.92	11,738.58	151.90	43.74	92.35	-10,028.86	-776.21	411.72	217.99	193.73	2.125	Minor Risk
21,686.62	11,700.00	11,868.49	11,721.70	152.42	43.72	90.00	-10,055.37	-776.05	411.24	216.85	194.39	2.116	Minor Risk, CC
21,700.00	11,700.00	11,857.55	11,715.49	152.60	43.71	89.13	-10,064.38	-775.99	411.31	216.75	194.56	2.114	Minor Risk, ES, SF
21,750.00	11,700.00	11,819.17	11,692.35	153.31	43.67	85.92	-10,094.99	-775.80	412.97	218.18	194.79	2.120	Minor Risk
21,800.00	11,700.00	11,784.54	11,669.76	154.01	43.62	82.80	-10,121.23	-775.63	417.23	222.97	194.25	2.148	Minor Risk
21,850.00	11,700.00	11,753.36	11,648.10	154.71	43.58	79.85	-10,143.65	-775.49	424.48	231.62	192.85	2.201	Minor Risk
21,900.00	11,700.00	11,725.29	11,627.58	155.41	43.54	77.11	-10,162.80	-775.37	434.98	244.38	190.59	2.282	Minor Risk
21,950.00	11,700.00	11,700.00	11,608.31	156.11	43.49	74.58	-10,179.17	-775.27	448.84	261.28	187.56	2.393	Minor Risk
21,964.16	11,700.00	11,693.31	11,603.09	156.31	43.48	73.91	-10,183.37	-775.24	453.38	266.80	186.58	2.430	Minor Risk

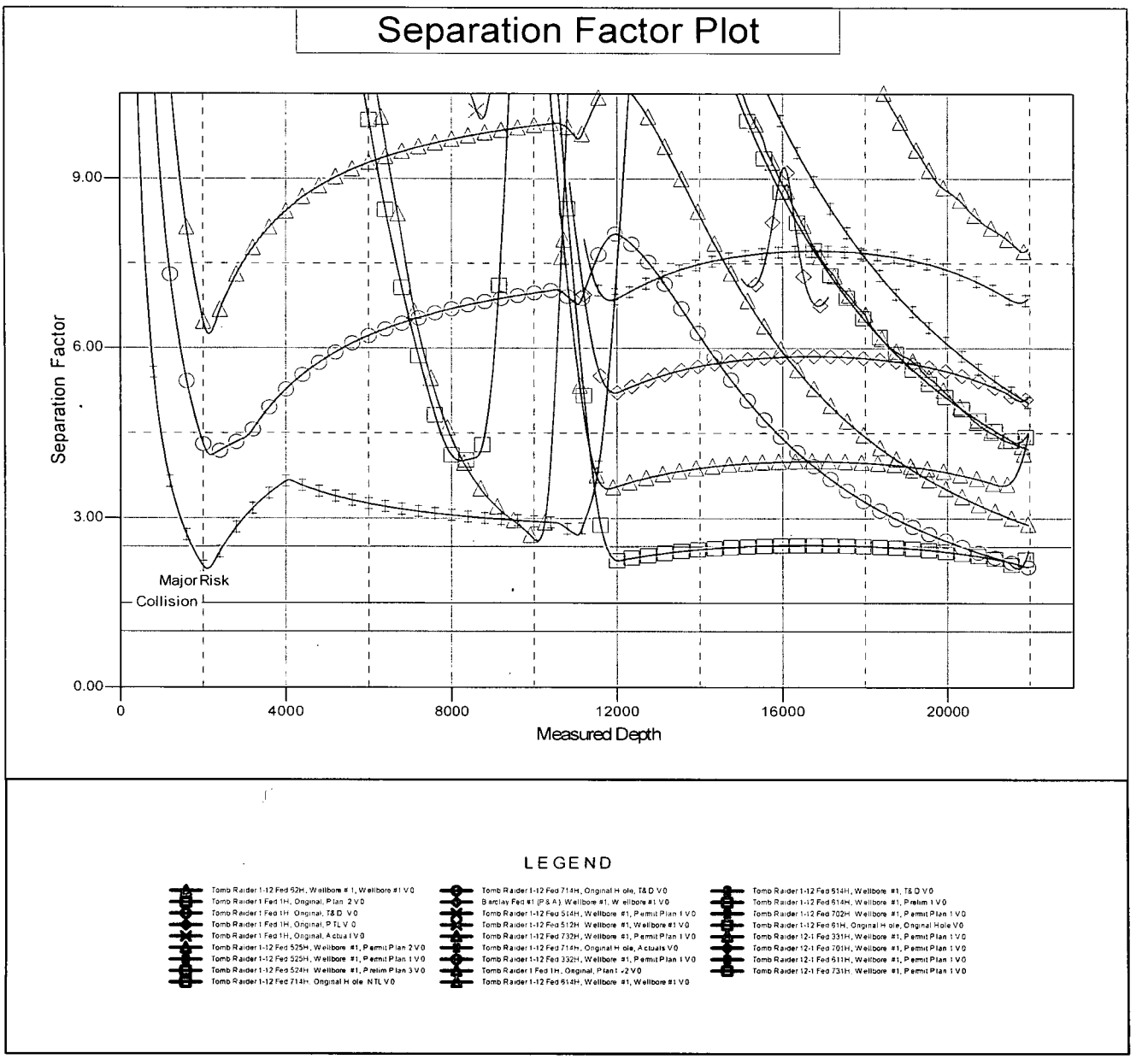
Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 @ 3491.90ft	Coordinates are relative to: Tomb Raider 1-12 Fed 612H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is -104.333334	Grid Convergence at Surface is: 0.32°



Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Project:	Eddy County (NAD 83 NM Eastern)	**TVD Reference:**	RKB @ 3491.90ft
Reference Site:	Sec 01-T23S-R31E	**MD Reference:**	RKB @ 3491.90ft
Site Error:	5.00 ft	**North Reference:**	Grid
Reference Well:	Tomb Raider 1-12 Fed 612H	**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 @ 3491.90ft	Coordinates are relative to: Tomb Raider 1-12 Fed 612H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is -104.333334	Grid Convergence at Surface is: 0.32°



WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)
Sec 01-T23S-R31E
Tomb Raider 1-12 Fed 612H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

30 November, 2018

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3491.90ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3491.90ft
Site:	Sec 01-T23S-R31E	**North Reference:**	Grid
Well:	Tomb Raider 1-12 Fed 612H	**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 612H				
Well Position	**+N/-S**	0.00 ft	**Northing:**	487,995.07 usft	**Latitude:** 32.340142
	+E/-W	0.00 ft	**Easting:**	726,704.84 usft	**Longitude:** -103.733130
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:** 3,466.90 ft

Wellbore	Wellbore #1			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	11/29/2018	6.88	60.12	47,840.27709545

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	182.01	

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

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,964.16	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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,229.78	2.30	298.07	2,229.72	2.17	-4.06	1.00	1.00	0.00	298.07	
10,518.58	2.30	298.07	10,511.86	158.55	-297.29	0.00	0.00	0.00	0.00	
10,671.77	0.00	0.00	10,665.00	160.00	-300.00	1.50	-1.50	0.00	180.00	
11,021.81	0.00	0.00	11,015.04	160.00	-300.00	0.00	0.00	0.00	0.00	
11,138.44	11.66	273.62	11,130.86	160.75	-311.80	10.00	10.00	0.00	273.62	
12,046.59	90.00	179.64	11,700.00	-412.95	-425.38	10.00	8.63	-10.35	-93.90	
21,964.16	90.00	179.64	11,700.00	-10,330.33	-363.07	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 612H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3491.90ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3491.90ft
Site:	Sec 01-T23S-R31E	**North Reference:**	Grid
Well:	Tomb Raider 1-12 Fed 612H	**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	487,995.07	726,704.84	32.340142	-103.733130
100.00	0.00	0.00	100.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
200.00	0.00	0.00	200.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
300.00	0.00	0.00	300.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
400.00	0.00	0.00	400.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
500.00	0.00	0.00	500.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
600.00	0.00	0.00	600.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
700.00	0.00	0.00	700.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
800.00	0.00	0.00	800.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
900.00	0.00	0.00	900.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
1,000.00	0.00	0.00	1,000.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
1,100.00	0.00	0.00	1,100.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
1,200.00	0.00	0.00	1,200.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
1,300.00	0.00	0.00	1,300.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
1,400.00	0.00	0.00	1,400.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
1,500.00	0.00	0.00	1,500.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
1,600.00	0.00	0.00	1,600.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
1,700.00	0.00	0.00	1,700.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
1,800.00	0.00	0.00	1,800.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
1,900.00	0.00	0.00	1,900.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
2,000.00	0.00	0.00	2,000.00	0.00	0.00	487,995.07	726,704.84	32.340142	-103.733130
2,100.00	1.00	298.07	2,099.99	0.41	-0.77	487,995.48	726,704.07	32.340143	-103.733132
2,200.00	2.00	298.07	2,199.96	1.64	-3.08	487,996.71	726,701.76	32.340147	-103.733140
2,229.78	2.30	298.07	2,229.72	2.17	-4.06	487,997.24	726,700.77	32.340148	-103.733143
2,300.00	2.30	298.07	2,299.88	3.49	-6.55	487,998.56	726,698.29	32.340152	-103.733151
2,400.00	2.30	298.07	2,399.80	5.38	-10.09	488,000.45	726,694.75	32.340157	-103.733162
2,500.00	2.30	298.07	2,499.72	7.27	-13.62	488,002.34	726,691.21	32.340162	-103.733174
2,600.00	2.30	298.07	2,599.64	9.15	-17.16	488,004.22	726,687.67	32.340168	-103.733185
2,700.00	2.30	298.07	2,699.56	11.04	-20.70	488,006.11	726,684.14	32.340173	-103.733197
2,800.00	2.30	298.07	2,799.48	12.93	-24.24	488,008.00	726,680.60	32.340178	-103.733208
2,900.00	2.30	298.07	2,899.40	14.81	-27.77	488,009.88	726,677.06	32.340183	-103.733219
3,000.00	2.30	298.07	2,999.32	16.70	-31.31	488,011.77	726,673.52	32.340189	-103.733231
3,100.00	2.30	298.07	3,099.24	18.59	-34.85	488,013.66	726,669.99	32.340194	-103.733242
3,200.00	2.30	298.07	3,199.16	20.47	-38.39	488,015.54	726,666.45	32.340199	-103.733254
3,300.00	2.30	298.07	3,299.08	22.36	-41.93	488,017.43	726,662.91	32.340204	-103.733265
3,400.00	2.30	298.07	3,399.00	24.25	-45.46	488,019.32	726,659.37	32.340209	-103.733277
3,500.00	2.30	298.07	3,498.92	26.13	-49.00	488,021.20	726,655.84	32.340215	-103.733288
3,600.00	2.30	298.07	3,598.84	28.02	-52.54	488,023.09	726,652.30	32.340220	-103.733299
3,700.00	2.30	298.07	3,698.76	29.91	-56.08	488,024.98	726,648.76	32.340225	-103.733311
3,800.00	2.30	298.07	3,798.68	31.79	-59.61	488,026.86	726,645.22	32.340230	-103.733322
3,900.00	2.30	298.07	3,898.60	33.68	-63.15	488,028.75	726,641.69	32.340236	-103.733334
4,000.00	2.30	298.07	3,998.52	35.57	-66.69	488,030.64	726,638.15	32.340241	-103.733345
4,100.00	2.30	298.07	4,098.43	37.45	-70.23	488,032.52	726,634.61	32.340246	-103.733356
4,200.00	2.30	298.07	4,198.35	39.34	-73.76	488,034.41	726,631.07	32.340251	-103.733368
4,300.00	2.30	298.07	4,298.27	41.23	-77.30	488,036.30	726,627.54	32.340257	-103.733379
4,400.00	2.30	298.07	4,398.19	43.11	-80.84	488,038.18	726,624.00	32.340262	-103.733391
4,500.00	2.30	298.07	4,498.11	45.00	-84.38	488,040.07	726,620.46	32.340267	-103.733402
4,600.00	2.30	298.07	4,598.03	46.89	-87.91	488,041.96	726,616.92	32.340272	-103.733414
4,700.00	2.30	298.07	4,697.95	48.77	-91.45	488,043.84	726,613.38	32.340278	-103.733425
4,800.00	2.30	298.07	4,797.87	50.66	-94.99	488,045.73	726,609.85	32.340283	-103.733436
4,900.00	2.30	298.07	4,897.79	52.55	-98.53	488,047.62	726,606.31	32.340288	-103.733448
5,000.00	2.30	298.07	4,997.71	54.43	-102.06	488,049.51	726,602.77	32.340293	-103.733459
5,100.00	2.30	298.07	5,097.63	56.32	-105.60	488,051.39	726,599.23	32.340299	-103.733471
5,200.00	2.30	298.07	5,197.55	58.21	-109.14	488,053.28	726,595.70	32.340304	-103.733482
5,300.00	2.30	298.07	5,297.47	60.09	-112.68	488,055.17	726,592.16	32.340309	-103.733494

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3491.90ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3491.90ft
Site:	Sec 01-T23S-R31E	**North Reference:**	Grid
Well:	Tomb Raider 1-12 Fed 612H	**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	2.30	298.07	5,397.39	61.98	-116.21	488,057.05	726,588.62	32.340314	-103.733505
5,500.00	2.30	298.07	5,497.31	63.87	-119.75	488,058.94	726,585.08	32.340320	-103.733516
5,600.00	2.30	298.07	5,597.23	65.75	-123.29	488,060.83	726,581.55	32.340325	-103.733528
5,700.00	2.30	298.07	5,697.15	67.64	-126.83	488,062.71	726,578.01	32.340330	-103.733539
5,800.00	2.30	298.07	5,797.07	69.53	-130.37	488,064.60	726,574.47	32.340335	-103.733551
5,900.00	2.30	298.07	5,896.99	71.41	-133.90	488,066.49	726,570.93	32.340340	-103.733562
6,000.00	2.30	298.07	5,996.91	73.30	-137.44	488,068.37	726,567.40	32.340346	-103.733573
6,100.00	2.30	298.07	6,096.83	75.19	-140.98	488,070.26	726,563.86	32.340351	-103.733585
6,200.00	2.30	298.07	6,196.75	77.08	-144.52	488,072.15	726,560.32	32.340356	-103.733596
6,300.00	2.30	298.07	6,296.67	78.96	-148.05	488,074.03	726,556.78	32.340361	-103.733608
6,400.00	2.30	298.07	6,396.59	80.85	-151.59	488,075.92	726,553.25	32.340367	-103.733619
6,500.00	2.30	298.07	6,496.51	82.74	-155.13	488,077.81	726,549.71	32.340372	-103.733631
6,600.00	2.30	298.07	6,596.42	84.62	-158.67	488,079.69	726,546.17	32.340377	-103.733642
6,700.00	2.30	298.07	6,696.34	86.51	-162.20	488,081.58	726,542.63	32.340382	-103.733653
6,800.00	2.30	298.07	6,796.26	88.40	-165.74	488,083.47	726,539.10	32.340388	-103.733665
6,900.00	2.30	298.07	6,896.18	90.28	-169.28	488,085.35	726,535.56	32.340393	-103.733676
7,000.00	2.30	298.07	6,996.10	92.17	-172.82	488,087.24	726,532.02	32.340398	-103.733688
7,100.00	2.30	298.07	7,096.02	94.06	-176.35	488,089.13	726,528.48	32.340403	-103.733699
7,200.00	2.30	298.07	7,195.94	95.94	-179.89	488,091.01	726,524.94	32.340409	-103.733710
7,300.00	2.30	298.07	7,295.86	97.83	-183.43	488,092.90	726,521.41	32.340414	-103.733722
7,400.00	2.30	298.07	7,395.78	99.72	-186.97	488,094.79	726,517.87	32.340419	-103.733733
7,500.00	2.30	298.07	7,495.70	101.60	-190.50	488,096.67	726,514.33	32.340424	-103.733745
7,600.00	2.30	298.07	7,595.62	103.49	-194.04	488,098.56	726,510.79	32.340430	-103.733756
7,700.00	2.30	298.07	7,695.54	105.38	-197.58	488,100.45	726,507.26	32.340435	-103.733768
7,800.00	2.30	298.07	7,795.46	107.26	-201.12	488,102.33	726,503.72	32.340440	-103.733779
7,900.00	2.30	298.07	7,895.38	109.15	-204.65	488,104.22	726,500.18	32.340445	-103.733790
8,000.00	2.30	298.07	7,995.30	111.04	-208.19	488,106.11	726,496.64	32.340451	-103.733802
8,100.00	2.30	298.07	8,095.22	112.92	-211.73	488,107.99	726,493.11	32.340456	-103.733813
8,200.00	2.30	298.07	8,195.14	114.81	-215.27	488,109.88	726,489.57	32.340461	-103.733825
8,300.00	2.30	298.07	8,295.06	116.70	-218.81	488,111.77	726,486.03	32.340466	-103.733836
8,400.00	2.30	298.07	8,394.98	118.58	-222.34	488,113.65	726,482.49	32.340472	-103.733848
8,500.00	2.30	298.07	8,494.90	120.47	-225.88	488,115.54	726,478.96	32.340477	-103.733859
8,600.00	2.30	298.07	8,594.82	122.36	-229.42	488,117.43	726,475.42	32.340482	-103.733870
8,700.00	2.30	298.07	8,694.74	124.24	-232.96	488,119.31	726,471.88	32.340487	-103.733882
8,800.00	2.30	298.07	8,794.66	126.13	-236.49	488,121.20	726,468.34	32.340492	-103.733893
8,900.00	2.30	298.07	8,894.58	128.02	-240.03	488,123.09	726,464.81	32.340498	-103.733905
9,000.00	2.30	298.07	8,994.50	129.90	-243.57	488,124.97	726,461.27	32.340503	-103.733916
9,100.00	2.30	298.07	9,094.41	131.79	-247.11	488,126.86	726,457.73	32.340508	-103.733927
9,200.00	2.30	298.07	9,194.33	133.68	-250.64	488,128.75	726,454.19	32.340513	-103.733939
9,300.00	2.30	298.07	9,294.25	135.56	-254.18	488,130.63	726,450.66	32.340519	-103.733950
9,400.00	2.30	298.07	9,394.17	137.45	-257.72	488,132.52	726,447.12	32.340524	-103.733962
9,500.00	2.30	298.07	9,494.09	139.34	-261.26	488,134.41	726,443.58	32.340529	-103.733973
9,600.00	2.30	298.07	9,594.01	141.22	-264.79	488,136.29	726,440.04	32.340534	-103.733985
9,700.00	2.30	298.07	9,693.93	143.11	-268.33	488,138.18	726,436.50	32.340540	-103.733996
9,800.00	2.30	298.07	9,793.85	145.00	-271.87	488,140.07	726,432.97	32.340545	-103.734007
9,900.00	2.30	298.07	9,893.77	146.88	-275.41	488,141.95	726,429.43	32.340550	-103.734019
10,000.00	2.30	298.07	9,993.69	148.77	-278.94	488,143.84	726,425.89	32.340555	-103.734030
10,100.00	2.30	298.07	10,093.61	150.66	-282.48	488,145.73	726,422.35	32.340561	-103.734042
10,200.00	2.30	298.07	10,193.53	152.54	-286.02	488,147.61	726,418.82	32.340566	-103.734053
10,300.00	2.30	298.07	10,293.45	154.43	-289.56	488,149.50	726,415.28	32.340571	-103.734064
10,400.00	2.30	298.07	10,393.37	156.32	-293.10	488,151.39	726,411.74	32.340576	-103.734076
10,500.00	2.30	298.07	10,493.29	158.20	-296.63	488,153.27	726,408.20	32.340582	-103.734087
10,518.58	2.30	298.07	10,511.86	158.55	-297.29	488,153.63	726,407.55	32.340583	-103.734089
10,600.00	1.08	298.07	10,593.24	159.68	-299.41	488,154.75	726,405.43	32.340586	-103.734096
10,671.77	0.00	0.00	10,665.00	160.00	-300.00	488,155.07	726,404.84	32.340587	-103.734098

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3491.90ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3491.90ft
Site:	Sec 01-T23S-R31E	**North Reference:**	Grid
Well:	Tomb Raider 1-12 Fed 612H	**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
10,700.00	0.00	0.00	10,693.23	160.00	-300.00	488,155.07	726,404.84	32.340587	-103.734098
10,800.00	0.00	0.00	10,793.23	160.00	-300.00	488,155.07	726,404.84	32.340587	-103.734098
10,900.00	0.00	0.00	10,893.23	160.00	-300.00	488,155.07	726,404.84	32.340587	-103.734098
11,000.00	0.00	0.00	10,993.23	160.00	-300.00	488,155.07	726,404.84	32.340587	-103.734098
11,021.81	0.00	0.00	11,015.04	160.00	-300.00	488,155.07	726,404.84	32.340587	-103.734098
KOP @ 11022' MD, 50' FNL, 1839' FWL									
11,100.00	7.82	273.62	11,092.99	160.34	-305.32	488,155.41	726,399.52	32.340588	-103.734115
11,138.44	11.66	273.62	11,130.86	160.75	-311.80	488,155.82	726,393.03	32.340589	-103.734136
11,200.00	12.79	244.72	11,191.09	158.23	-324.19	488,153.30	726,380.65	32.340582	-103.734177
11,300.00	19.18	215.94	11,287.32	140.16	-343.89	488,135.23	726,360.95	32.340533	-103.734241
11,308.85	19.88	214.34	11,295.66	137.74	-345.59	488,132.81	726,359.25	32.340526	-103.734246
FTP @ 11309' MD, 100' FNL, 1780' FWL									
11,400.00	27.73	202.70	11,379.03	105.31	-362.55	488,100.38	726,342.29	32.340437	-103.734302
11,500.00	36.97	195.51	11,463.45	54.74	-379.61	488,049.81	726,325.22	32.340298	-103.734358
11,600.00	46.50	190.91	11,538.00	-10.01	-394.56	487,985.06	726,310.28	32.340121	-103.734407
11,700.00	56.15	187.58	11,600.43	-86.99	-406.93	487,908.09	726,297.91	32.339909	-103.734449
11,800.00	65.88	184.93	11,648.83	-173.84	-416.35	487,821.23	726,288.49	32.339671	-103.734481
11,900.00	75.65	182.66	11,681.74	-267.93	-422.53	487,727.14	726,282.31	32.339412	-103.734503
12,000.00	85.44	180.58	11,698.15	-366.41	-425.29	487,628.66	726,279.55	32.339142	-103.734513
12,046.59	90.00	179.64	11,700.00	-412.95	-425.38	487,582.12	726,279.46	32.339014	-103.734515
12,100.00	90.00	179.64	11,700.00	-466.36	-425.04	487,528.71	726,279.79	32.338867	-103.734514
12,200.00	90.00	179.64	11,700.00	-566.36	-424.42	487,428.72	726,280.42	32.338592	-103.734514
12,300.00	90.00	179.64	11,700.00	-666.35	-423.79	487,328.72	726,281.05	32.338317	-103.734514
12,400.00	90.00	179.64	11,700.00	-766.35	-423.16	487,228.72	726,281.68	32.338042	-103.734514
12,500.00	90.00	179.64	11,700.00	-866.35	-422.53	487,128.72	726,282.31	32.337767	-103.734514
12,600.00	90.00	179.64	11,700.00	-966.35	-421.90	487,028.73	726,282.93	32.337492	-103.734513
12,700.00	90.00	179.64	11,700.00	-1,066.35	-421.27	486,928.73	726,283.56	32.337218	-103.734513
12,800.00	90.00	179.64	11,700.00	-1,166.34	-420.65	486,828.73	726,284.19	32.336943	-103.734513
12,900.00	90.00	179.64	11,700.00	-1,266.34	-420.02	486,728.73	726,284.82	32.336668	-103.734513
13,000.00	90.00	179.64	11,700.00	-1,366.34	-419.39	486,628.73	726,285.45	32.336393	-103.734512
13,100.00	90.00	179.64	11,700.00	-1,466.34	-418.76	486,528.74	726,286.08	32.336118	-103.734512
13,200.00	90.00	179.64	11,700.00	-1,566.34	-418.13	486,428.74	726,286.70	32.335843	-103.734512
13,300.00	90.00	179.64	11,700.00	-1,666.33	-417.50	486,328.74	726,287.33	32.335568	-103.734512
13,400.00	90.00	179.64	11,700.00	-1,766.33	-416.88	486,228.74	726,287.96	32.335293	-103.734511
13,500.00	90.00	179.64	11,700.00	-1,866.33	-416.25	486,128.74	726,288.59	32.335019	-103.734511
13,600.00	90.00	179.64	11,700.00	-1,966.33	-415.62	486,028.75	726,289.22	32.334744	-103.734511
13,700.00	90.00	179.64	11,700.00	-2,066.33	-414.99	485,928.75	726,289.85	32.334469	-103.734511
13,800.00	90.00	179.64	11,700.00	-2,166.32	-414.36	485,828.75	726,290.47	32.334194	-103.734511
13,900.00	90.00	179.64	11,700.00	-2,266.32	-413.73	485,728.75	726,291.10	32.333919	-103.734510
14,000.00	90.00	179.64	11,700.00	-2,366.32	-413.11	485,628.76	726,291.73	32.333644	-103.734510
14,100.00	90.00	179.64	11,700.00	-2,466.32	-412.48	485,528.76	726,292.36	32.333369	-103.734510
14,200.00	90.00	179.64	11,700.00	-2,566.32	-411.85	485,428.76	726,292.99	32.333094	-103.734510
14,300.00	90.00	179.64	11,700.00	-2,666.31	-411.22	485,328.76	726,293.62	32.332820	-103.734509
14,400.00	90.00	179.64	11,700.00	-2,766.31	-410.59	485,228.76	726,294.24	32.332545	-103.734509
14,500.00	90.00	179.64	11,700.00	-2,866.31	-409.96	485,128.77	726,294.87	32.332270	-103.734509
14,600.00	90.00	179.64	11,700.00	-2,966.31	-409.34	485,028.77	726,295.50	32.331995	-103.734509
14,700.00	90.00	179.64	11,700.00	-3,066.31	-408.71	484,928.77	726,296.13	32.331720	-103.734509
14,800.00	90.00	179.64	11,700.00	-3,166.30	-408.08	484,828.77	726,296.76	32.331445	-103.734508
14,900.00	90.00	179.64	11,700.00	-3,266.30	-407.45	484,728.78	726,297.39	32.331170	-103.734508
15,000.00	90.00	179.64	11,700.00	-3,366.30	-406.82	484,628.78	726,298.01	32.330895	-103.734508
15,100.00	90.00	179.64	11,700.00	-3,466.30	-406.20	484,528.78	726,298.64	32.330621	-103.734508
15,200.00	90.00	179.64	11,700.00	-3,566.30	-405.57	484,428.78	726,299.27	32.330346	-103.734507
15,300.00	90.00	179.64	11,700.00	-3,666.29	-404.94	484,328.78	726,299.90	32.330071	-103.734507
15,400.00	90.00	179.64	11,700.00	-3,766.29	-404.31	484,228.79	726,300.53	32.329796	-103.734507

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3491.90ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3491.90ft
Site:	Sec 01-T23S-R31E	**North Reference:**	Grid
Well:	Tomb Raider 1-12 Fed 612H	**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
15,500.00	90.00	179.64	11,700.00	-3,866.29	-403.68	484,128.79	726,301.16	32.329521	-103.734507
15,600.00	90.00	179.64	11,700.00	-3,966.29	-403.05	484,028.79	726,301.78	32.329246	-103.734507
15,700.00	90.00	179.64	11,700.00	-4,066.29	-402.43	483,928.79	726,302.41	32.328971	-103.734506
15,800.00	90.00	179.64	11,700.00	-4,166.28	-401.80	483,828.79	726,303.04	32.328696	-103.734506
15,900.00	90.00	179.64	11,700.00	-4,266.28	-401.17	483,728.80	726,303.67	32.328422	-103.734506
16,000.00	90.00	179.64	11,700.00	-4,366.28	-400.54	483,628.80	726,304.30	32.328147	-103.734506
16,100.00	90.00	179.64	11,700.00	-4,466.28	-399.91	483,528.80	726,304.93	32.327872	-103.734505
16,200.00	90.00	179.64	11,700.00	-4,566.28	-399.28	483,428.80	726,305.55	32.327597	-103.734505
16,300.00	90.00	179.64	11,700.00	-4,666.27	-398.66	483,328.81	726,306.18	32.327322	-103.734505
16,400.00	90.00	179.64	11,700.00	-4,766.27	-398.03	483,228.81	726,306.81	32.327047	-103.734505
16,500.00	90.00	179.64	11,700.00	-4,866.27	-397.40	483,128.81	726,307.44	32.326772	-103.734505
16,600.00	90.00	179.64	11,700.00	-4,966.27	-396.77	483,028.81	726,308.07	32.326497	-103.734504
16,700.00	90.00	179.64	11,700.00	-5,066.27	-396.14	482,928.81	726,308.70	32.326223	-103.734504
16,704.00	90.00	179.64	11,700.00	-5,070.27	-396.12	482,924.81	726,308.72	32.326212	-103.734504
Cross Section @ 16704' MD, 0' FNL, 1710' FWL									
16,800.00	90.00	179.64	11,700.00	-5,166.26	-395.51	482,828.82	726,309.32	32.325948	-103.734504
16,900.00	90.00	179.64	11,700.00	-5,266.26	-394.89	482,728.82	726,309.95	32.325673	-103.734504
17,000.00	90.00	179.64	11,700.00	-5,366.26	-394.26	482,628.82	726,310.58	32.325398	-103.734503
17,100.00	90.00	179.64	11,700.00	-5,466.26	-393.63	482,528.82	726,311.21	32.325123	-103.734503
17,200.00	90.00	179.64	11,700.00	-5,566.26	-393.00	482,428.83	726,311.84	32.324848	-103.734503
17,300.00	90.00	179.64	11,700.00	-5,666.26	-392.37	482,328.83	726,312.46	32.324573	-103.734503
17,400.00	90.00	179.64	11,700.00	-5,766.25	-391.74	482,228.83	726,313.09	32.324298	-103.734503
17,500.00	90.00	179.64	11,700.00	-5,866.25	-391.12	482,128.83	726,313.72	32.324024	-103.734502
17,600.00	90.00	179.64	11,700.00	-5,966.25	-390.49	482,028.83	726,314.35	32.323749	-103.734502
17,700.00	90.00	179.64	11,700.00	-6,066.25	-389.86	481,928.84	726,314.98	32.323474	-103.734502
17,800.00	90.00	179.64	11,700.00	-6,166.25	-389.23	481,828.84	726,315.61	32.323199	-103.734502
17,900.00	90.00	179.64	11,700.00	-6,266.24	-388.60	481,728.84	726,316.23	32.322924	-103.734501
18,000.00	90.00	179.64	11,700.00	-6,366.24	-387.97	481,628.84	726,316.86	32.322649	-103.734501
18,100.00	90.00	179.64	11,700.00	-6,466.24	-387.35	481,528.84	726,317.49	32.322374	-103.734501
18,200.00	90.00	179.64	11,700.00	-6,566.24	-386.72	481,428.85	726,318.12	32.322099	-103.734501
18,300.00	90.00	179.64	11,700.00	-6,666.24	-386.09	481,328.85	726,318.75	32.321825	-103.734500
18,400.00	90.00	179.64	11,700.00	-6,766.23	-385.46	481,228.85	726,319.38	32.321550	-103.734500
18,500.00	90.00	179.64	11,700.00	-6,866.23	-384.83	481,128.85	726,320.00	32.321275	-103.734500
18,600.00	90.00	179.64	11,700.00	-6,966.23	-384.20	481,028.86	726,320.63	32.321000	-103.734500
18,700.00	90.00	179.64	11,700.00	-7,066.23	-383.58	480,928.86	726,321.26	32.320725	-103.734500
18,800.00	90.00	179.64	11,700.00	-7,166.23	-382.95	480,828.86	726,321.89	32.320450	-103.734499
18,900.00	90.00	179.64	11,700.00	-7,266.22	-382.32	480,728.86	726,322.52	32.320175	-103.734499
19,000.00	90.00	179.64	11,700.00	-7,366.22	-381.69	480,628.86	726,323.15	32.319900	-103.734499
19,100.00	90.00	179.64	11,700.00	-7,466.22	-381.06	480,528.87	726,323.77	32.319626	-103.734499
19,200.00	90.00	179.64	11,700.00	-7,566.22	-380.43	480,428.87	726,324.40	32.319351	-103.734498
19,300.00	90.00	179.64	11,700.00	-7,666.22	-379.81	480,328.87	726,325.03	32.319076	-103.734498
19,400.00	90.00	179.64	11,700.00	-7,766.21	-379.18	480,228.87	726,325.66	32.318801	-103.734498
19,500.00	90.00	179.64	11,700.00	-7,866.21	-378.55	480,128.88	726,326.29	32.318526	-103.734498
19,600.00	90.00	179.64	11,700.00	-7,966.21	-377.92	480,028.88	726,326.92	32.318251	-103.734498
19,700.00	90.00	179.64	11,700.00	-8,066.21	-377.29	479,928.88	726,327.54	32.317976	-103.734497
19,800.00	90.00	179.64	11,700.00	-8,166.21	-376.66	479,828.88	726,328.17	32.317701	-103.734497
19,900.00	90.00	179.64	11,700.00	-8,266.20	-376.04	479,728.88	726,328.80	32.317427	-103.734497
20,000.00	90.00	179.64	11,700.00	-8,366.20	-375.41	479,628.89	726,329.43	32.317152	-103.734497
20,100.00	90.00	179.64	11,700.00	-8,466.20	-374.78	479,528.89	726,330.06	32.316877	-103.734496
20,200.00	90.00	179.64	11,700.00	-8,566.20	-374.15	479,428.89	726,330.69	32.316602	-103.734496
20,300.00	90.00	179.64	11,700.00	-8,666.20	-373.52	479,328.89	726,331.31	32.316327	-103.734496
20,400.00	90.00	179.64	11,700.00	-8,766.19	-372.89	479,228.89	726,331.94	32.316052	-103.734496
20,500.00	90.00	179.64	11,700.00	-8,866.19	-372.27	479,128.90	726,332.57	32.315777	-103.734496
20,600.00	90.00	179.64	11,700.00	-8,966.19	-371.64	479,028.90	726,333.20	32.315502	-103.734495

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Tomb Raider 1-12 Fed 612H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3491.90ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3491.90ft
Site:	Sec 01-T23S-R31E	**North Reference:**	Grid
Well:	Tomb Raider 1-12 Fed 612H	**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
20,700.00	90.00	179.64	11,700.00	-9,066.19	-371.01	478,928.90	726,333.83	32.315228	-103.734495
20,800.00	90.00	179.64	11,700.00	-9,166.19	-370.38	478,828.90	726,334.46	32.314953	-103.734495
20,900.00	90.00	179.64	11,700.00	-9,266.18	-369.75	478,728.91	726,335.08	32.314678	-103.734495
21,000.00	90.00	179.64	11,700.00	-9,366.18	-369.12	478,628.91	726,335.71	32.314403	-103.734494
21,100.00	90.00	179.64	11,700.00	-9,466.18	-368.50	478,528.91	726,336.34	32.314128	-103.734494
21,200.00	90.00	179.64	11,700.00	-9,566.18	-367.87	478,428.91	726,336.97	32.313853	-103.734494
21,300.00	90.00	179.64	11,700.00	-9,666.18	-367.24	478,328.91	726,337.60	32.313578	-103.734494
21,400.00	90.00	179.64	11,700.00	-9,766.17	-366.61	478,228.92	726,338.23	32.313303	-103.734494
21,500.00	90.00	179.64	11,700.00	-9,866.17	-365.98	478,128.92	726,338.85	32.313029	-103.734493
21,600.00	90.00	179.64	11,700.00	-9,966.17	-365.35	478,028.92	726,339.48	32.312754	-103.734493
21,700.00	90.00	179.64	11,700.00	-10,066.17	-364.73	477,928.92	726,340.11	32.312479	-103.734493
21,800.00	90.00	179.64	11,700.00	-10,166.17	-364.10	477,828.92	726,340.74	32.312204	-103.734493
21,884.15	90.00	179.64	11,700.00	-10,250.31	-363.57	477,744.78	726,341.27	32.311973	-103.734492
LTP @ 21884' MD, 100' FSL, 1710' FWL									
21,900.00	90.00	179.64	11,700.00	-10,266.16	-363.47	477,728.93	726,341.37	32.311929	-103.734492
21,964.15	90.00	179.64	11,700.00	-10,330.31	-363.07	477,664.78	726,341.77	32.311753	-103.734492
PBHL; 20' FSL, 1710' FWL									
21,964.16	90.00	179.64	11,700.00	-10,330.33	-363.07	477,664.77	726,341.77	32.311753	-103.734492

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	-10,329.70	-363.76	477,665.39	726,341.08	32.311754	-103.734494
- plan misses target center by 10336.10ft 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
11,021.81	11,015.04	160.00	-300.00	KOP @ 11022' MD, 50' FNL, 1839' FWL
11,308.85	11,295.66	137.74	-345.59	FTP @ 11309' MD, 100' FNL, 1780' FWL
16,704.00	11,700.00	-5,070.27	-396.12	Cross Section @ 16704' MD, 0' FNL, 1710' FWL
21,884.15	11,700.00	-10,250.31	-363.57	LTP @ 21884' MD, 100' FSL, 1710' FWL
21,964.15	11,700.00	-10,330.31	-363.07	PBHL; 20' FSL, 1710' FWL

Devon Energy

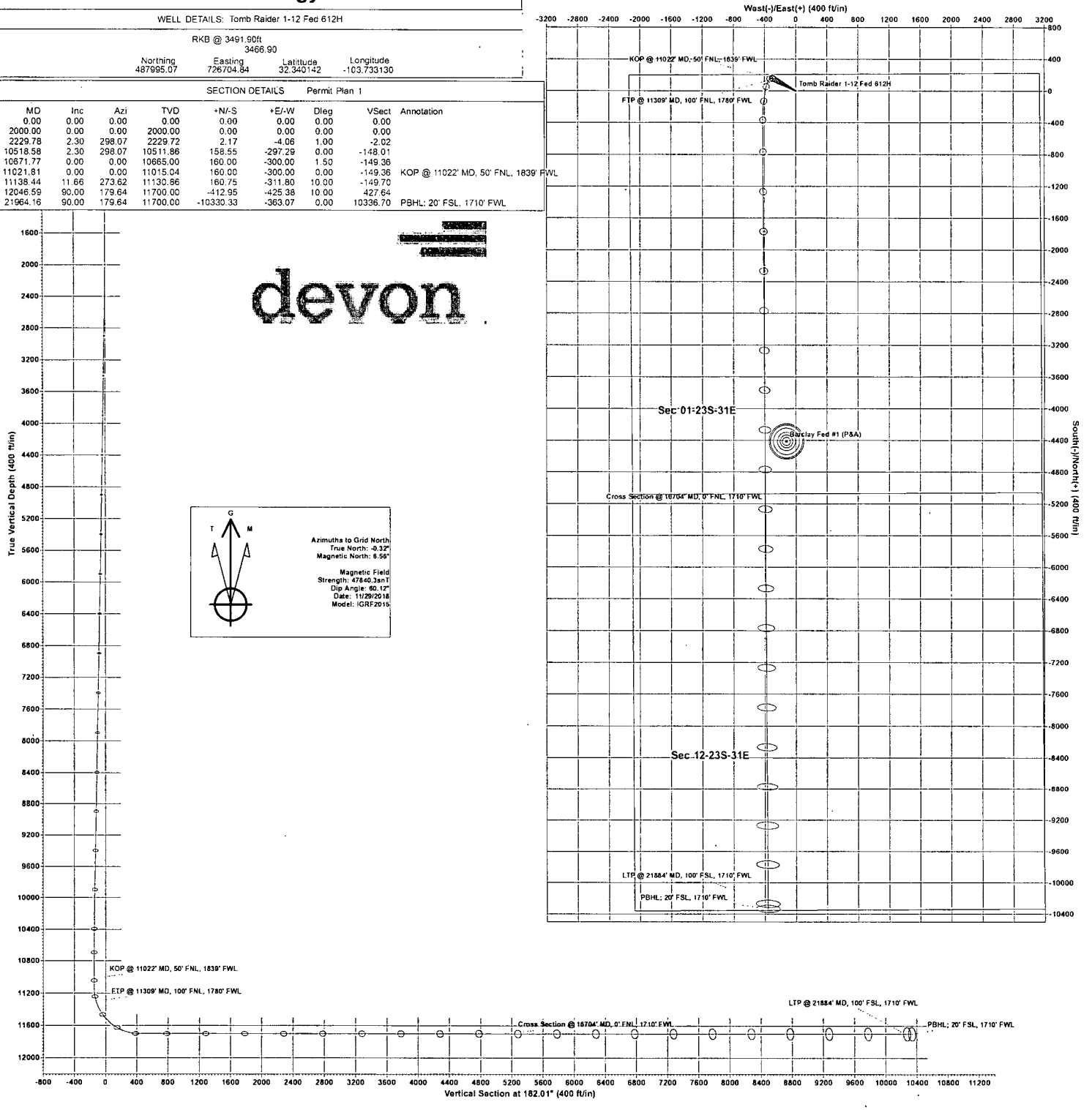
WELL DETAILS: Tomb Raider 1-12 Fed 612H

RKB @ 3491.90ft
3466.90

Northing	Easting	Latitude	Longitude
487995.07	726704.84	32.340142	-103.733130

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	
	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	
	2229.78	2.30	298.07	2229.72	2.17	-4.06	1.00	-2.02	
	10518.58	2.30	298.07	10511.86	158.55	-297.29	0.00	-148.01	
5	10671.77	0.00	0.00	10665.00	160.00	-300.00	1.50	-149.36	
6	11021.81	0.00	0.00	11015.04	160.00	-300.00	0.00	-149.36	KOP @ 11022' MD, 50' FNL, 1839' FWL
7	11138.44	11.66	273.62	11130.86	160.75	-311.80	10.00	-149.70	
8	12046.59	90.00	179.64	11700.00	-412.95	-425.38	10.00	427.64	
9	21964.16	90.00	179.64	11700.00	-10330.33	-363.07	0.00	10336.70	PBHL: 20' FSL, 1710' FWL



Tomb Raider 12-1 Fed 612H

1. Geologic Formations

TVD of target	11700	Pilot hole depth	N/A
MD at TD:	21964	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		
Wolfcamp	11651		
Wolfcamp X	11671		

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

Devon - Internal

2. Casing Program (Primary Design)

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Wt (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
14.75"	0	791	10.75"	40.5	J-55	STC	1.125	1.25	1.6
9.875"	0	11231	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 From	Casing Interval To	Csg. Size	Wt. (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
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.

Tomb Raider 12-1 Fed 612H

	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	1067	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	540	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
	560	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
	1067	Surf	9	3.31	Lead: Class C Cement + additives
	847	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Production	785	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%

Tomb Raider 12-1 Fed 612H

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	1147	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	580	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
	590	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
	1147	Surf	9	3.31	Lead: Class C Cement + additives
	831	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Production	1598	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"	10M	Annular (5M)	X	100% of rated working pressure
			Blind Ram	X	10M
			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	6388 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

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

LC Torque (ft-lbs)

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

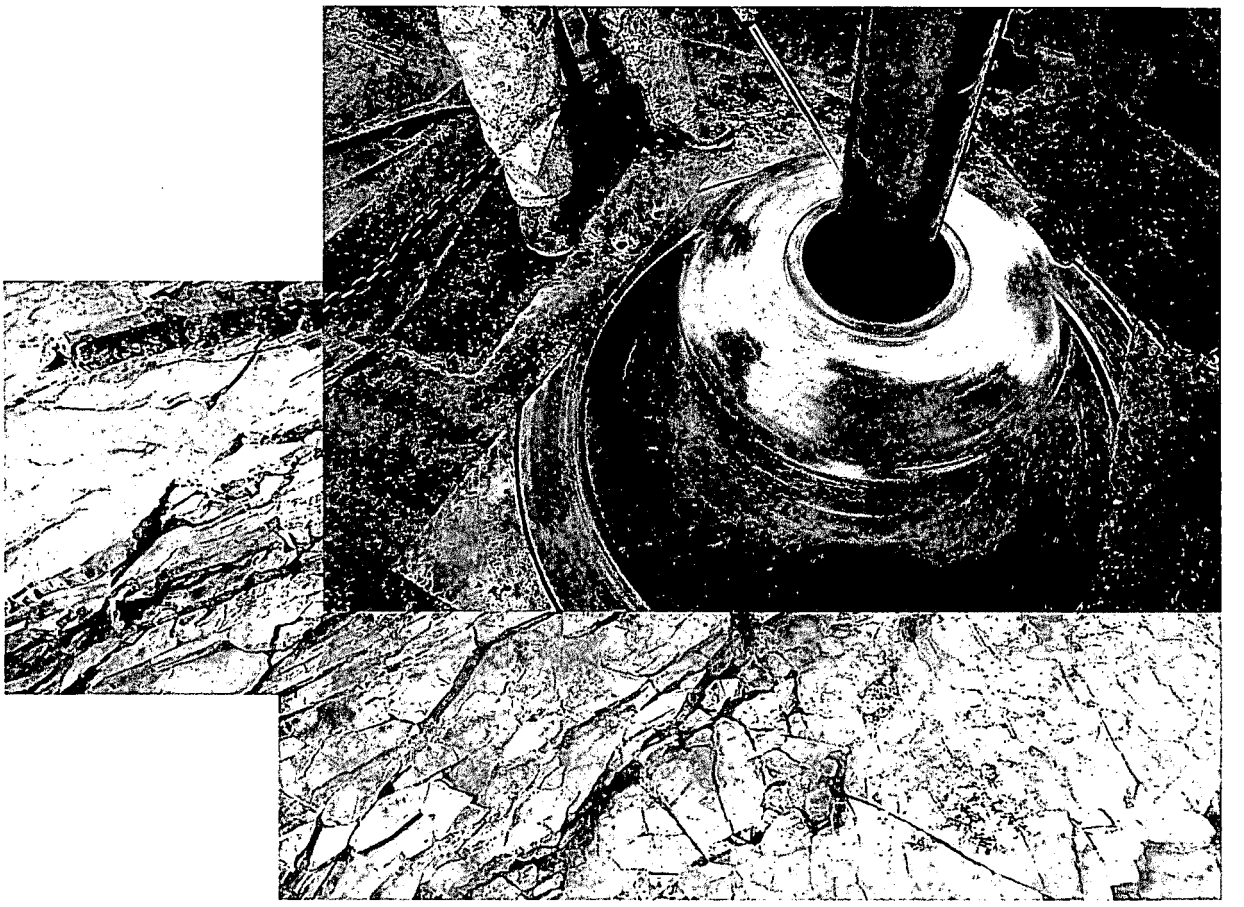
*Special drift must be ordered or API drift will be used for actual drifting of product.

**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.

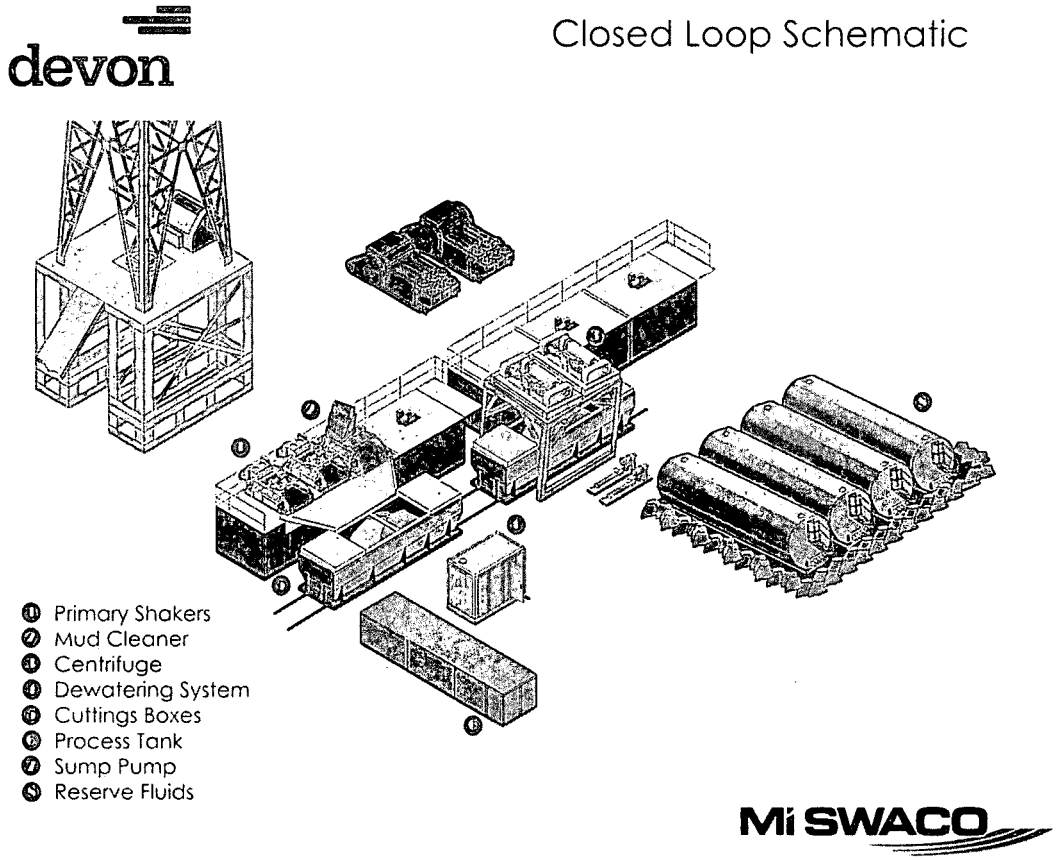
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

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

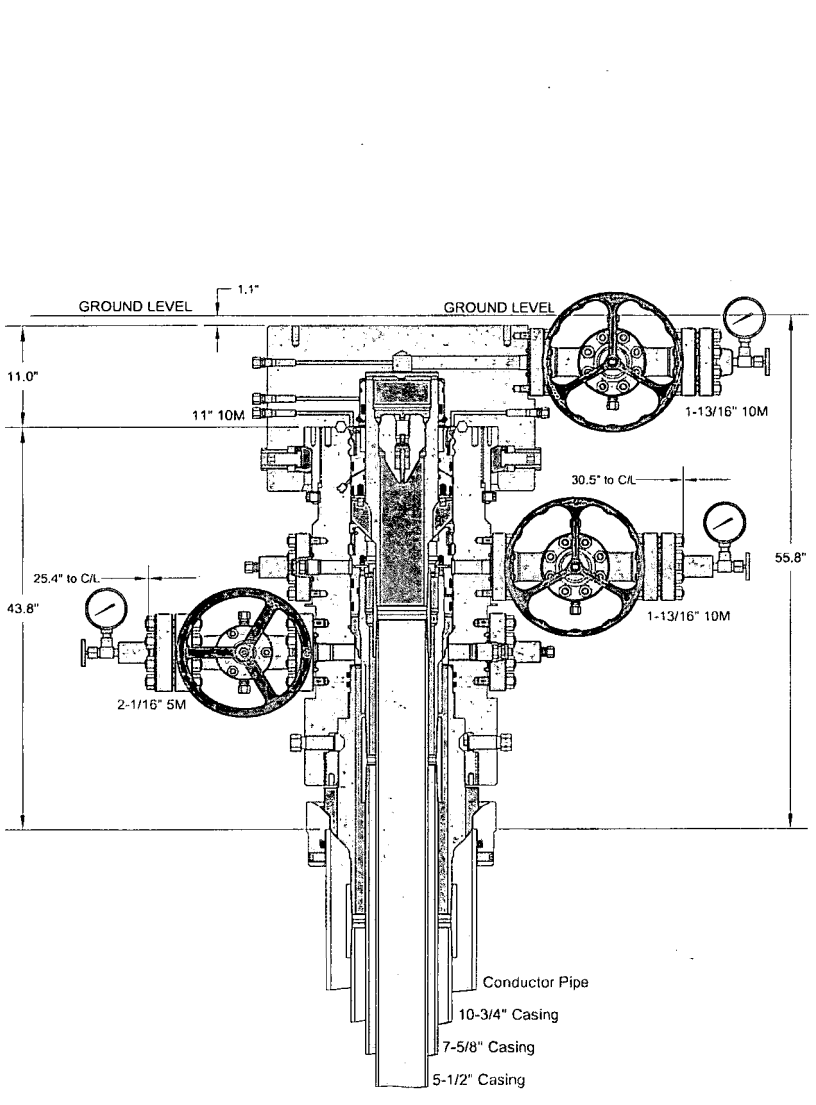
dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

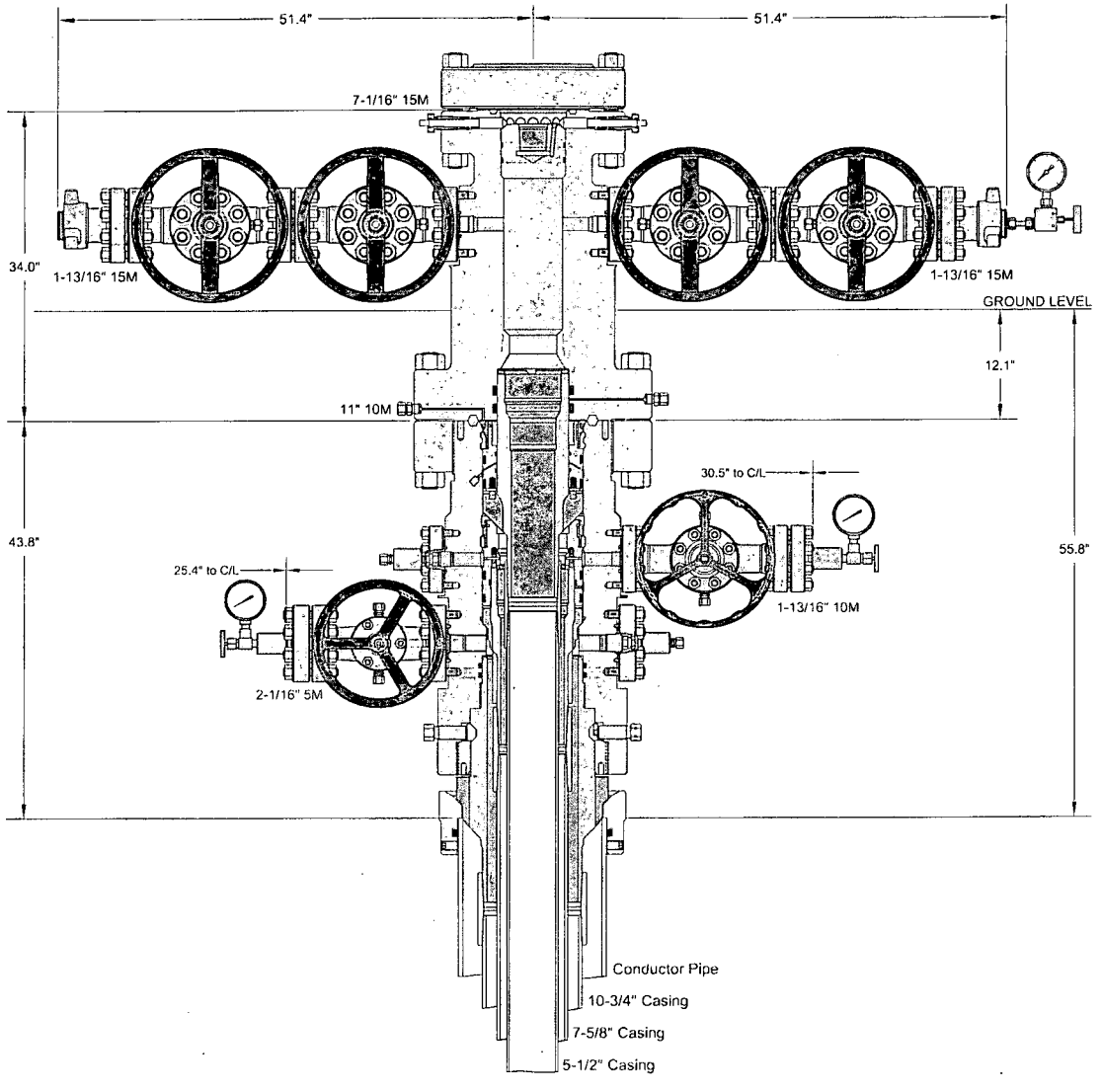
These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the 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.





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ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

DEVON ENERGY CORPORATION

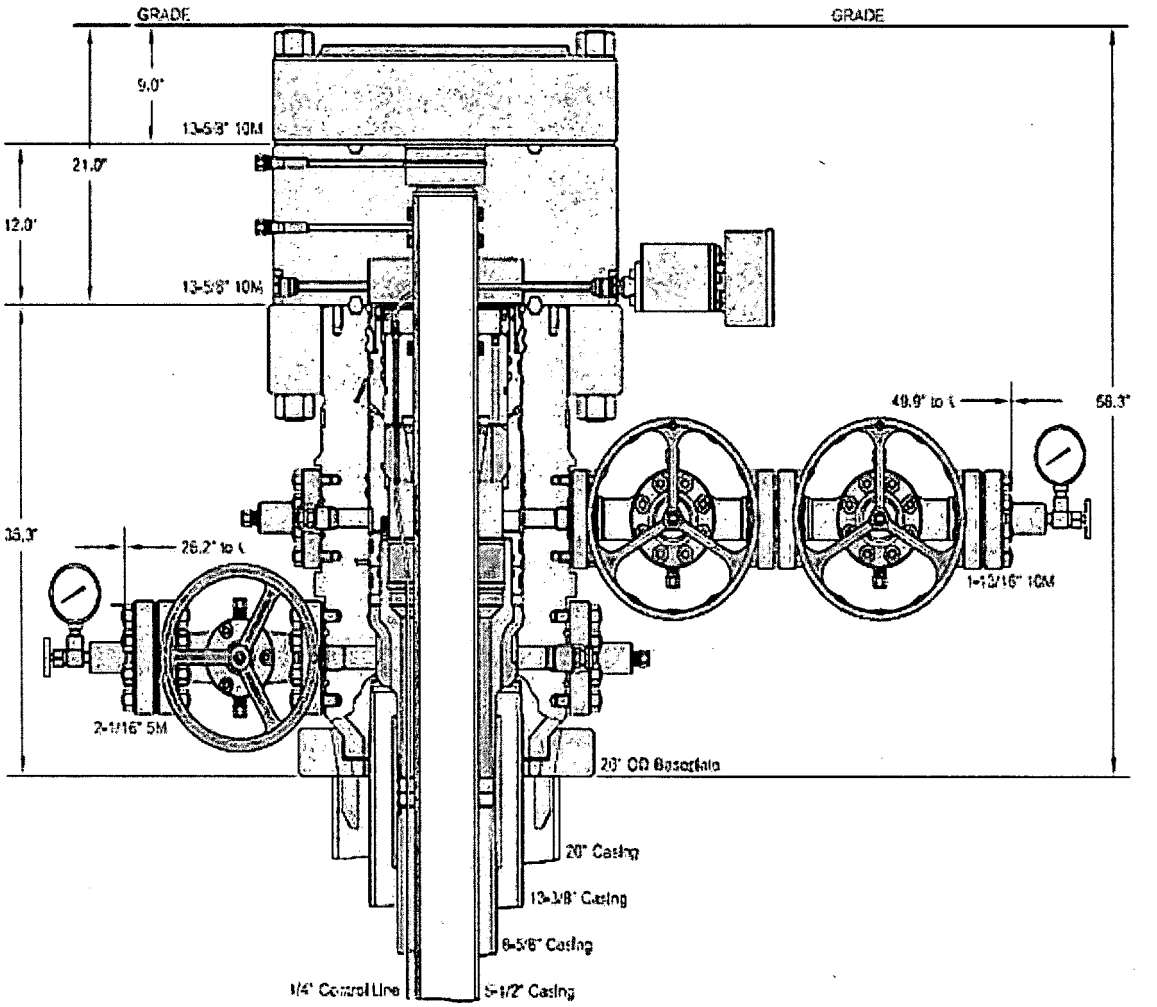
10-3/4" x 7-5/8" x 5-1/2" 5M MBU-T-CFL-R-DBLO Wellhead System
With 7-5/8" & 5-1/2" Pin Down Rotating Mandrel Hangers,
13-5/8" 5M x 11" 10M DSPA & 11" 10M x 7-1/16" 15M Tubing Head

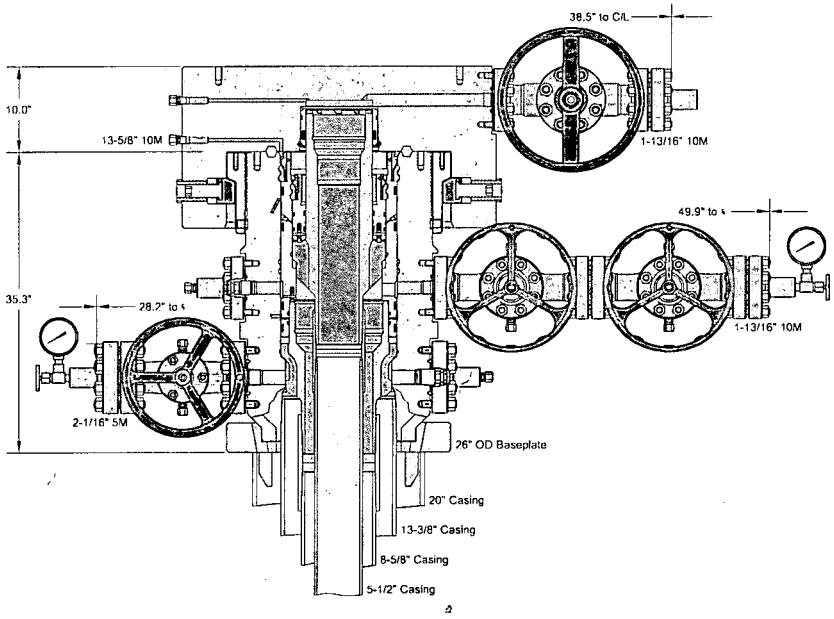
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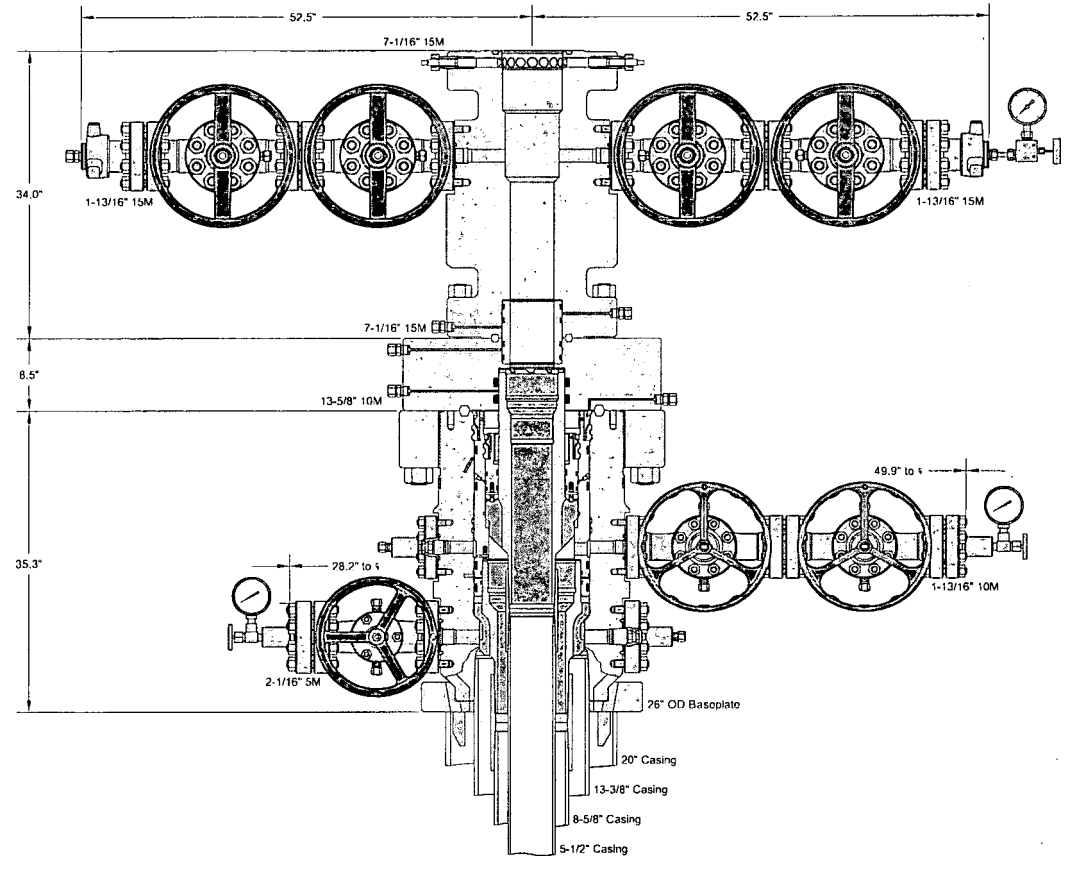
A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.
Devon proposes using a multi-bowl wellhead assembly. 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 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 BOP/BOPE system with a minimum rating of 10M 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.

MB Verb 5M WLFMP Alt Design







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CACTUS WELLHEAD LLC

DEVON ENERGY CORPORATION
DELAWARE BASIN

13-3/8" x 8-5/8" x 5-1/2" 10M MBÚ-3T Wellhead System
With 8-5/8" And 5-1/2" Mandrel Casing Hangers
And 7-1/16" 15M x 7-1/16" 15M CTH-EN Tubing Head

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APPRV		
DRAWING NO.	HBE0000013	

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

R16 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 4 1/16" Flange end	720 719	AISI 4130 AISI 4130	C7626 47357

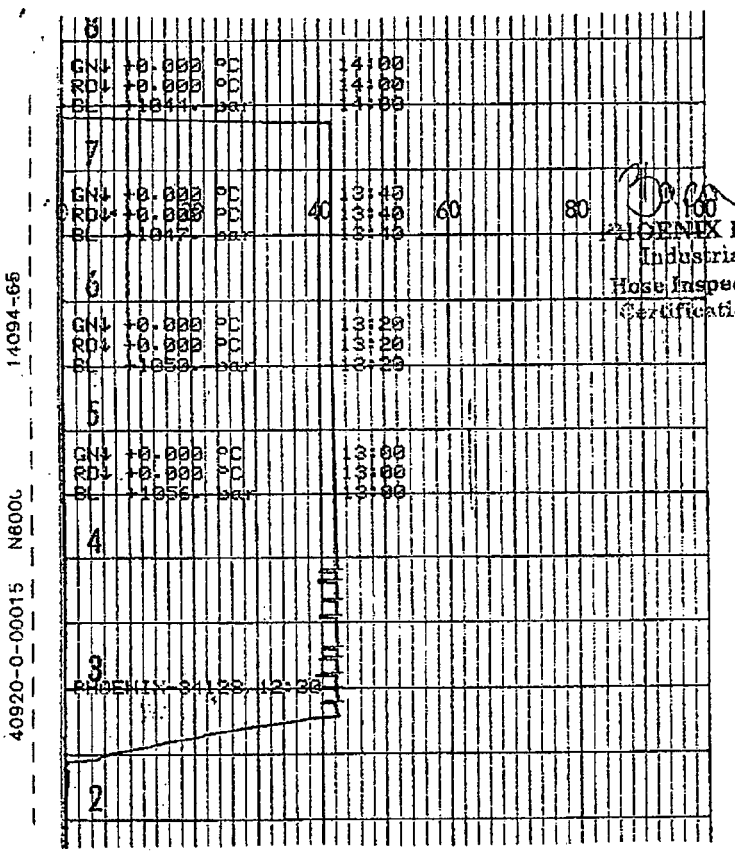
API Spec 16 C
Temperature rate:"B"

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 Verification Dept.

VERIFIED TRUE COPY
PHOENIX RUBBER Q.C.



PHOENIX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE CO.
PHOENIX RUBBER C.C.

APD ID: 10400037343 **Submission Date:** 12/14/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED **Well Number:** 612H

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_612H_EX_RD_20181214150602.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_20181214144637.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: na

Road Drainage Control Structures (DCS) description: Culvert installed when deemed necessary, per conditions of approval

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_612H_OneMileBuffer_WA017301194_20181214150646.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:** 612H

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): 500000 **Source volume (acre-feet):** 64.44655

Source volume (gal): 21000000

Water source and transportation map:

TOMB_RAIDER_1_12_FED_332H_612H_702H_732H_water_map_20181214141343.pdf

Water source comments: The attached Water Transfer Map is a proposal only and the final route and documentation will be provided by a Devon contractor prior to installation. When available Devon will always follow existing disturbance.
New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

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

Construction Materials source location attachment:

Todd_Apache_1_1_Pad_1_Caliche_Map_20181214141409.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: 1632 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:** 612H

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_20181214150738.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_612H_RECLAMATION_20181214150753.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): 0.0168
Other long term disturbance (acres): 5.74
Total long term disturbance: 10.5858

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:

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:** 612H

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:** 612H

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_20181214141816.pdf

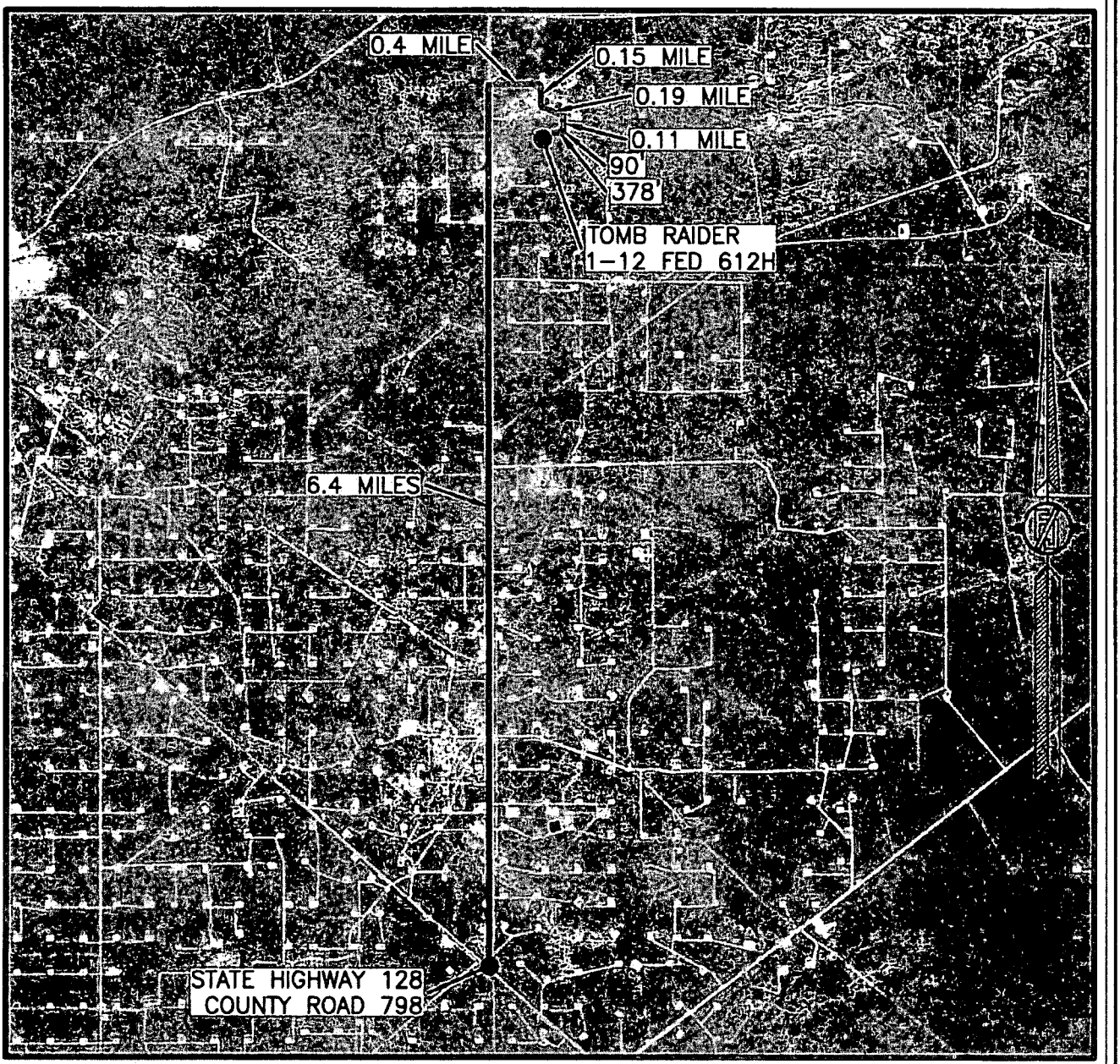
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SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 612H

LOCATED 210 FT. FROM THE NORTH LINE
AND 2139 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. 6667

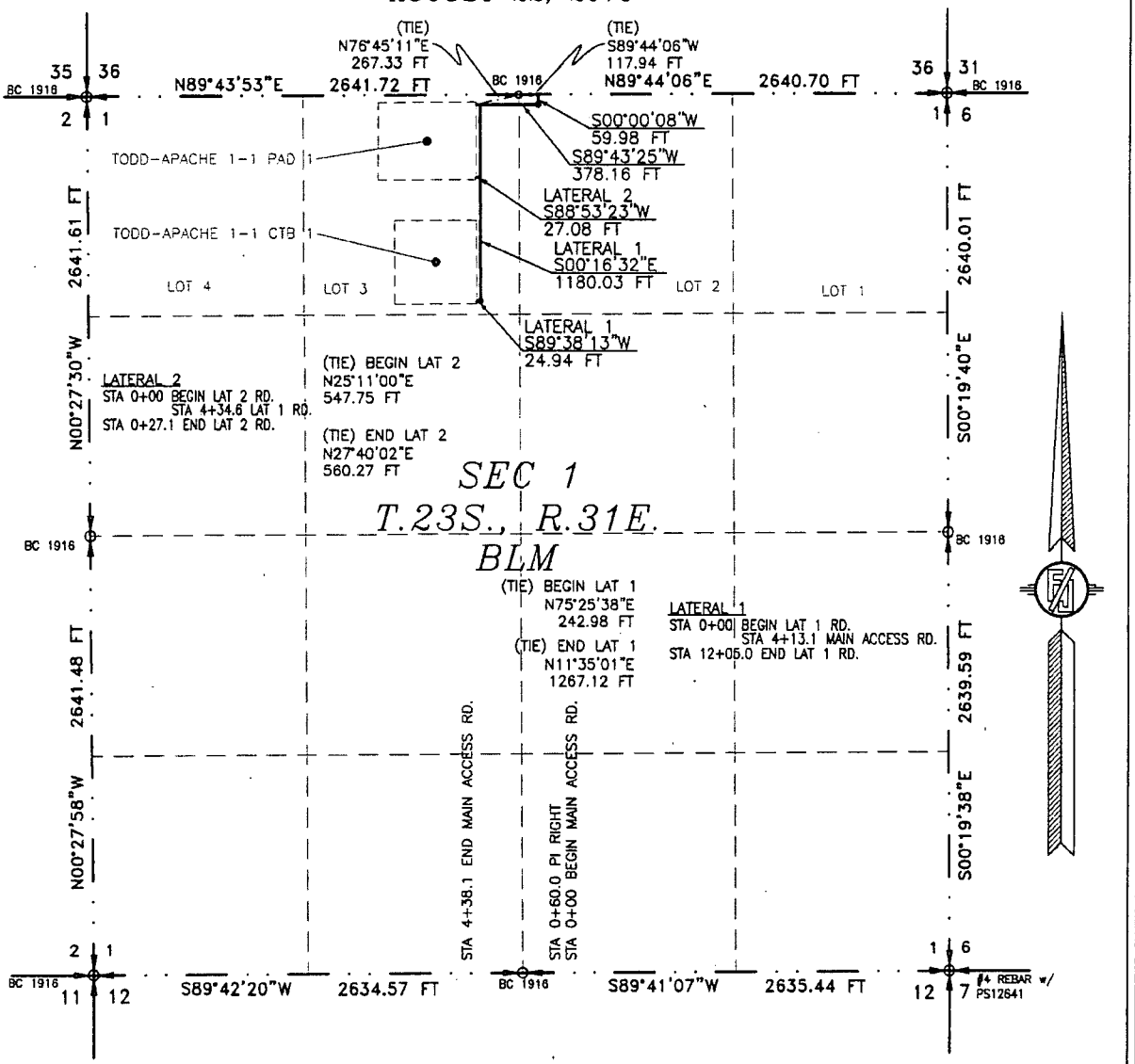
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

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, PS 12797
301 SOUTH CANAL
(575) 234-3341

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, P.L.S. 12797

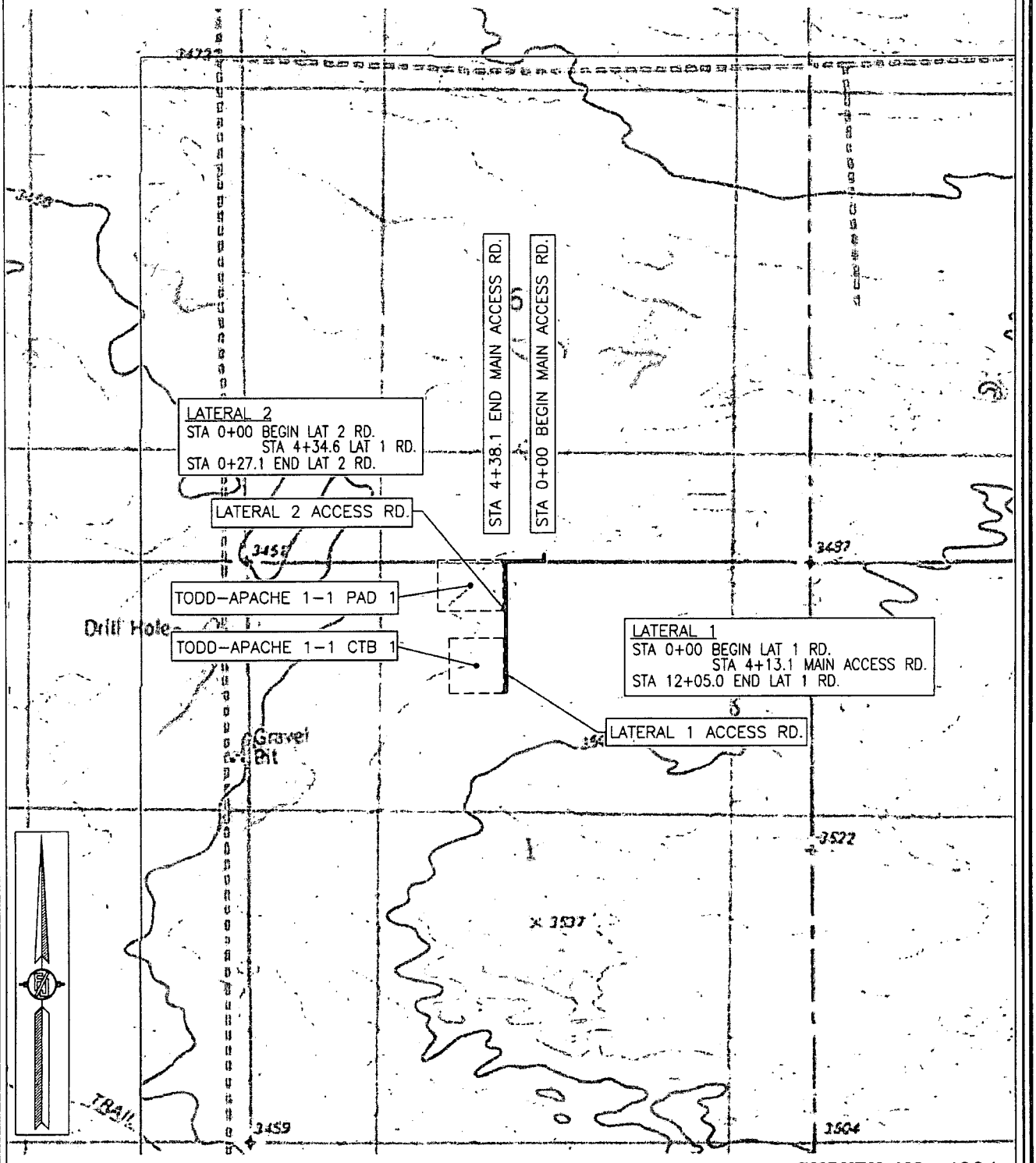
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

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

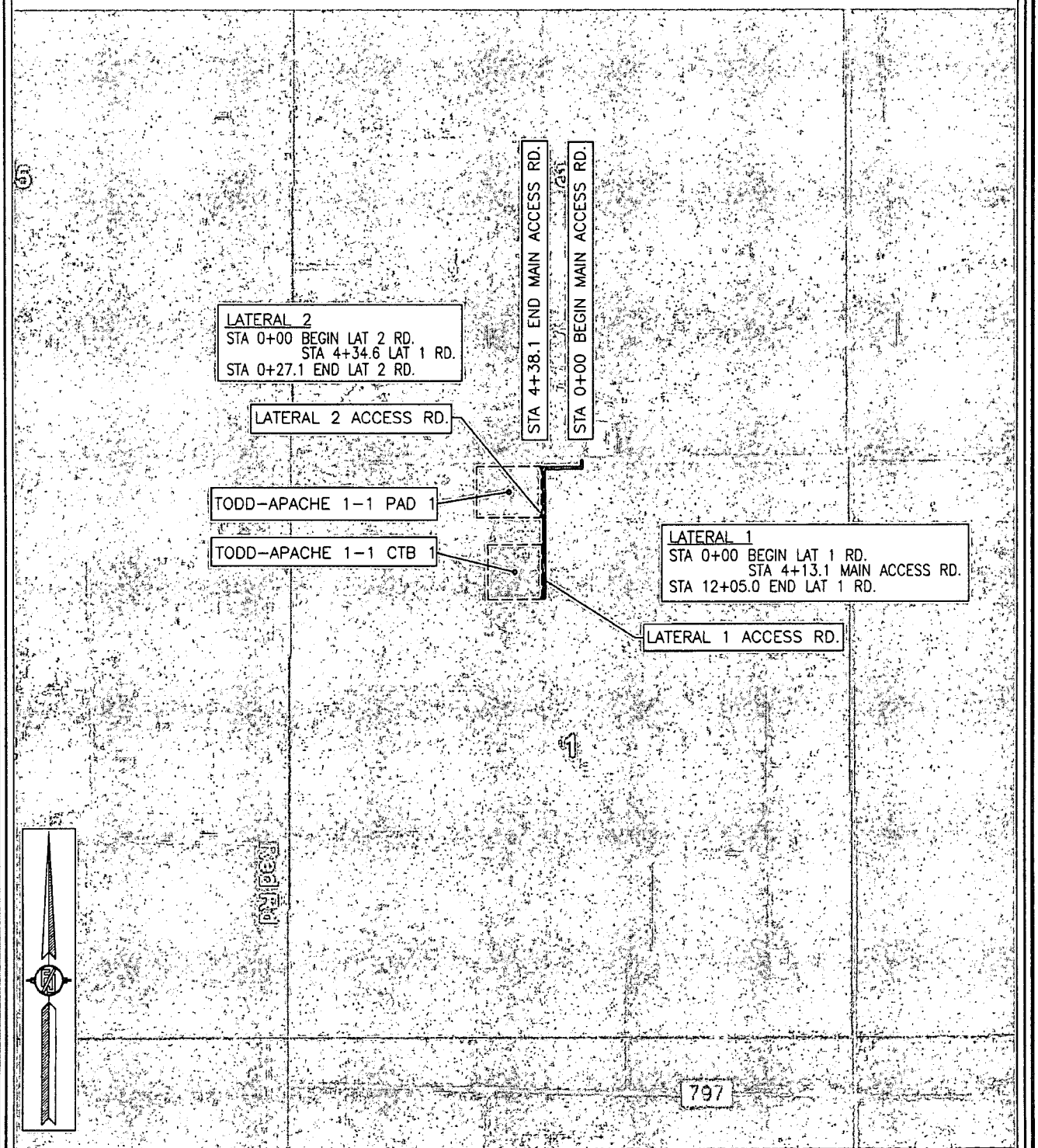
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

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

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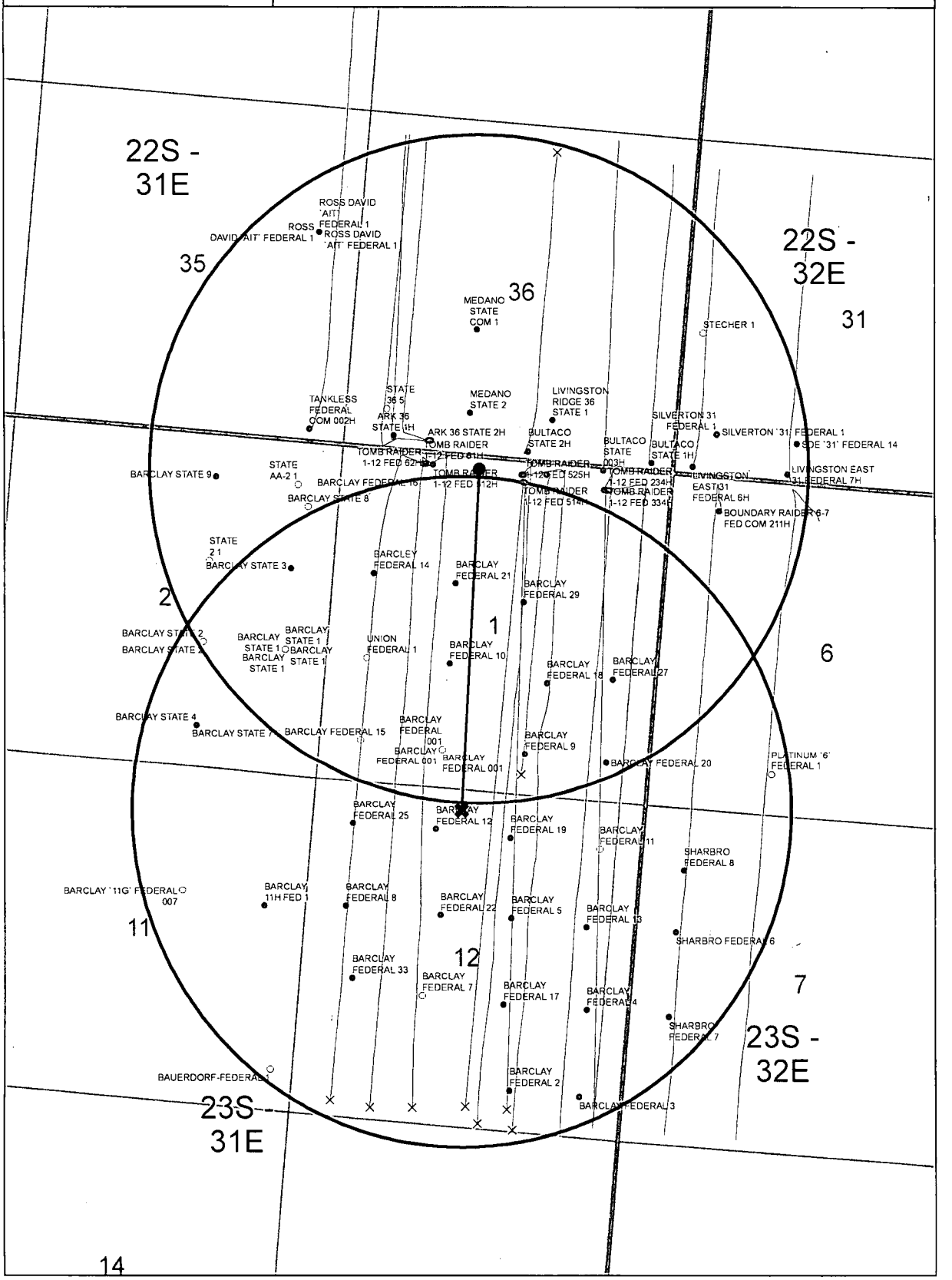
Miles
0 0.255 1 inch = 0.34 miles

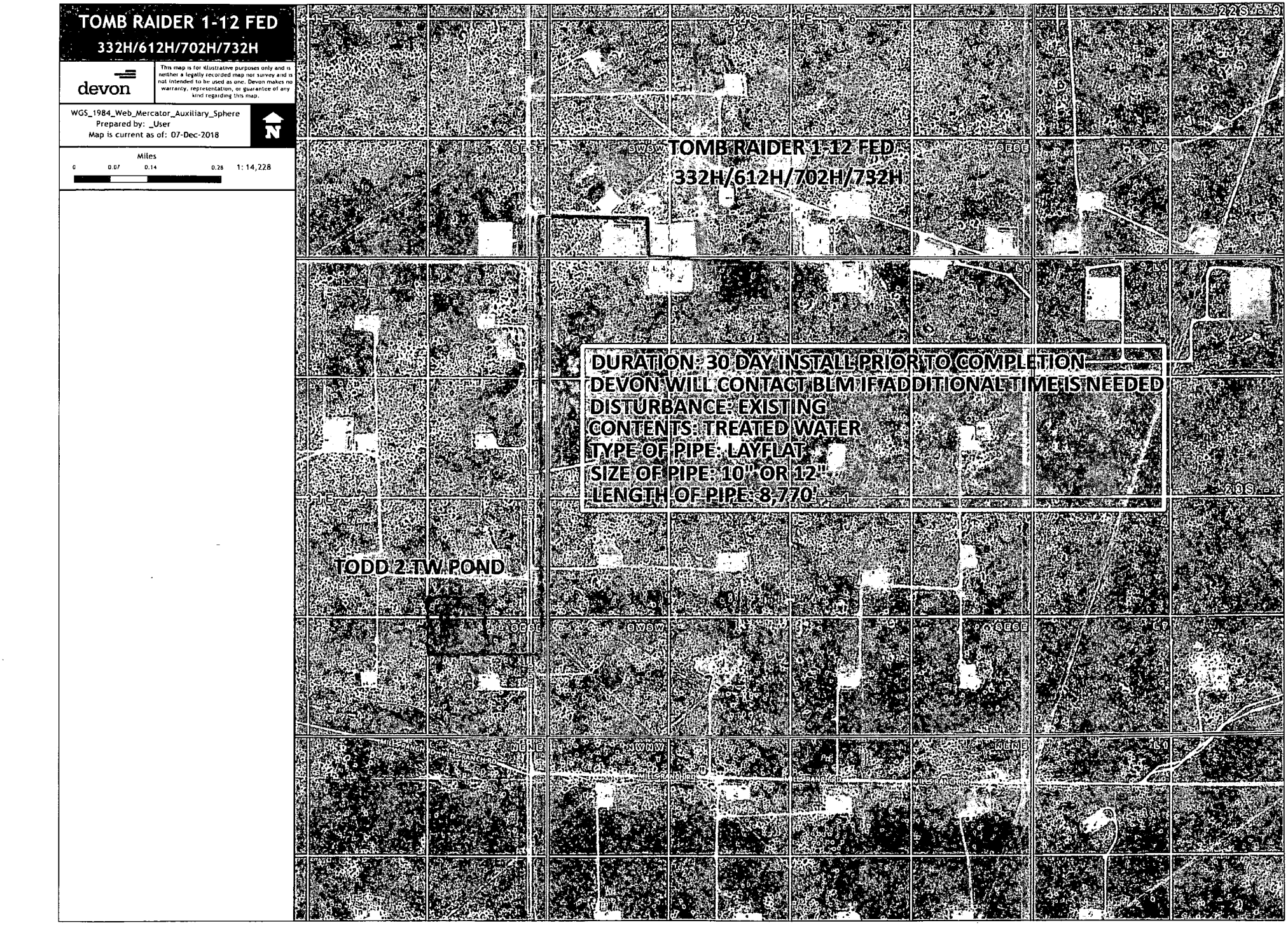
TOMB RAIDER 1-12 FED 612H
WA017301194

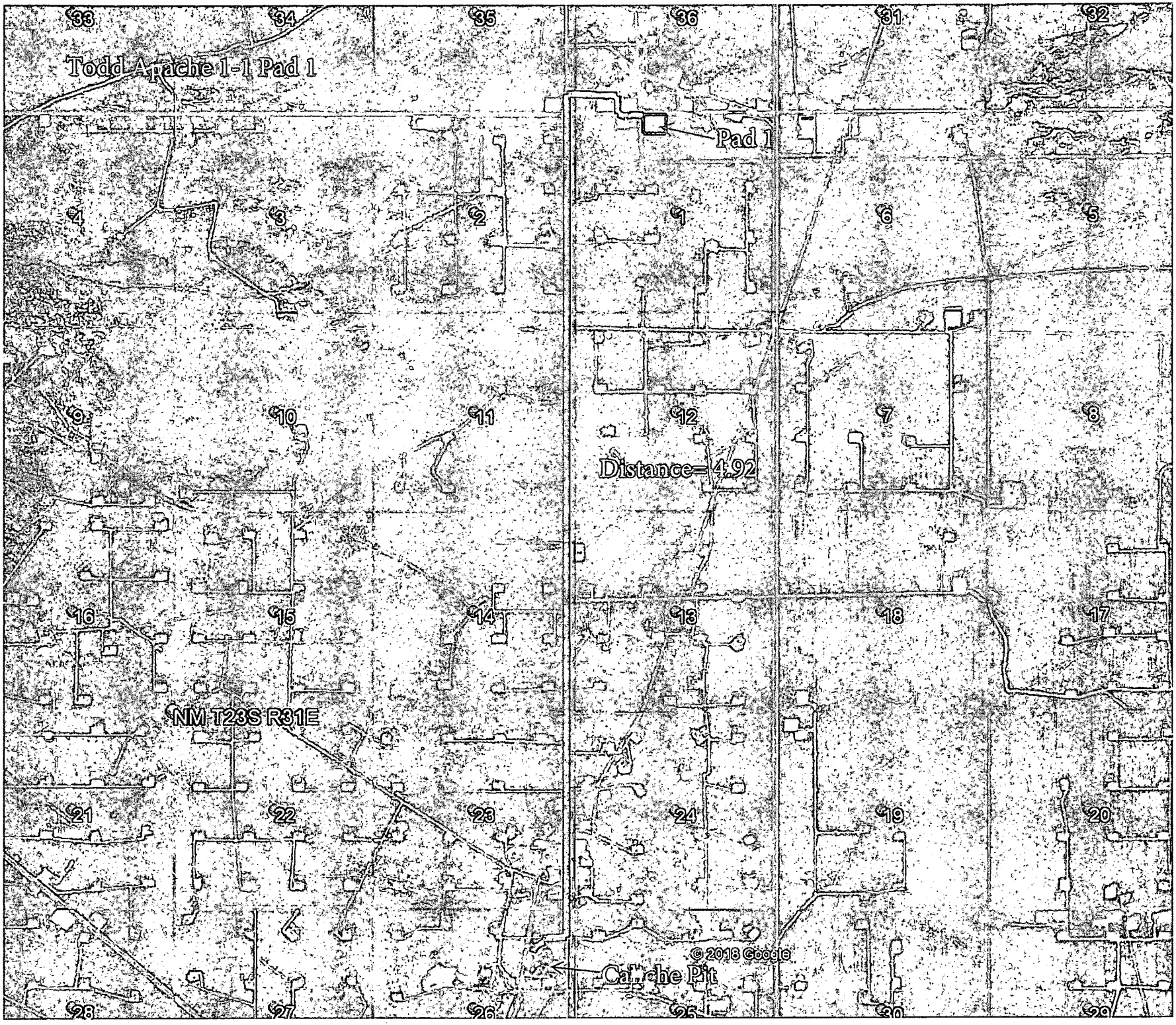
TOMB RAIDER 1-12 FED 62H
Nearest wellbore to SHL: 527 ft.

TOMB RAIDER 1-12 FED 514H
Nearest wellbore to BHL: 492 ft.

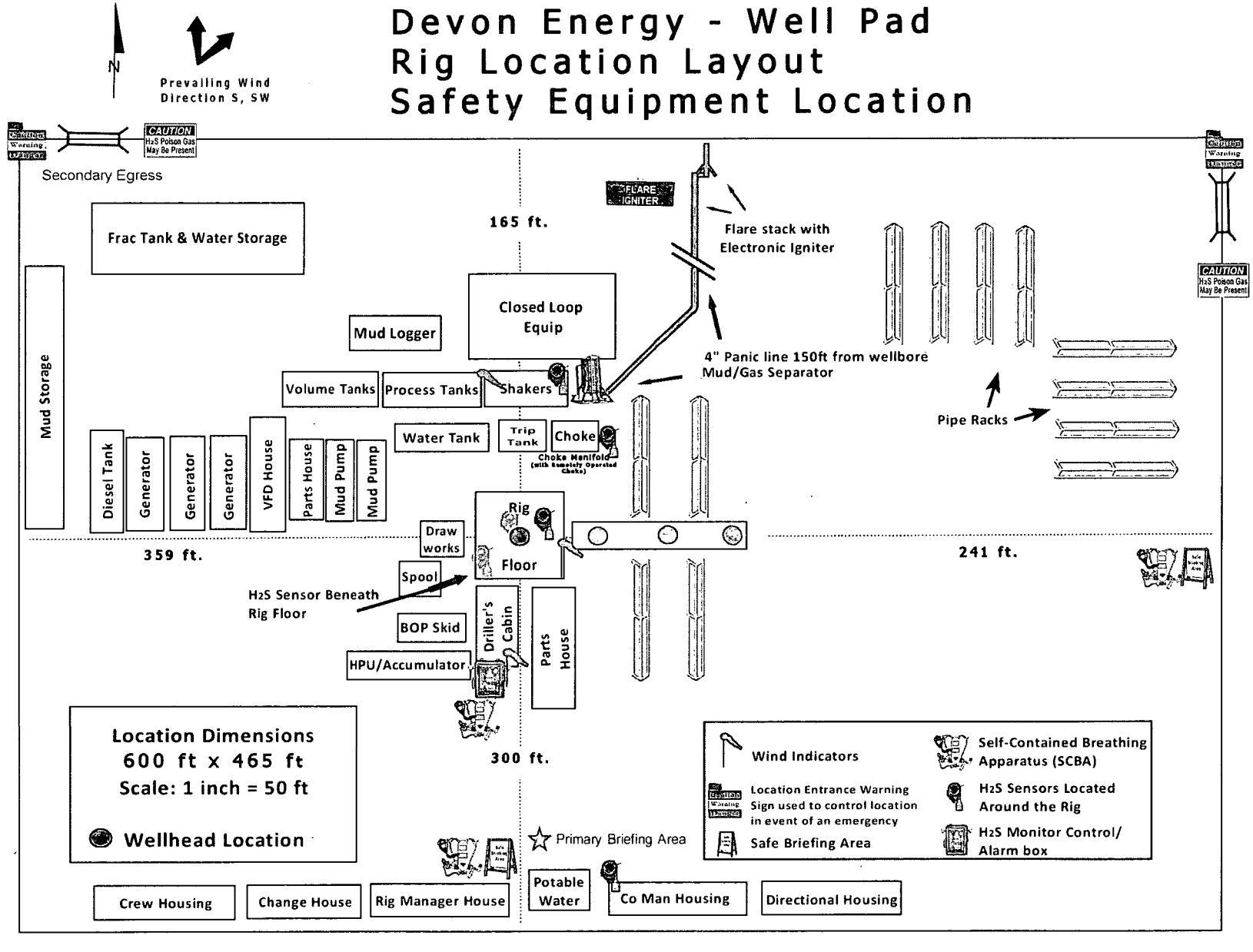
- ○ Unknown SHL
- • Active SHL
- ○ Inactive SHL
- × BHL



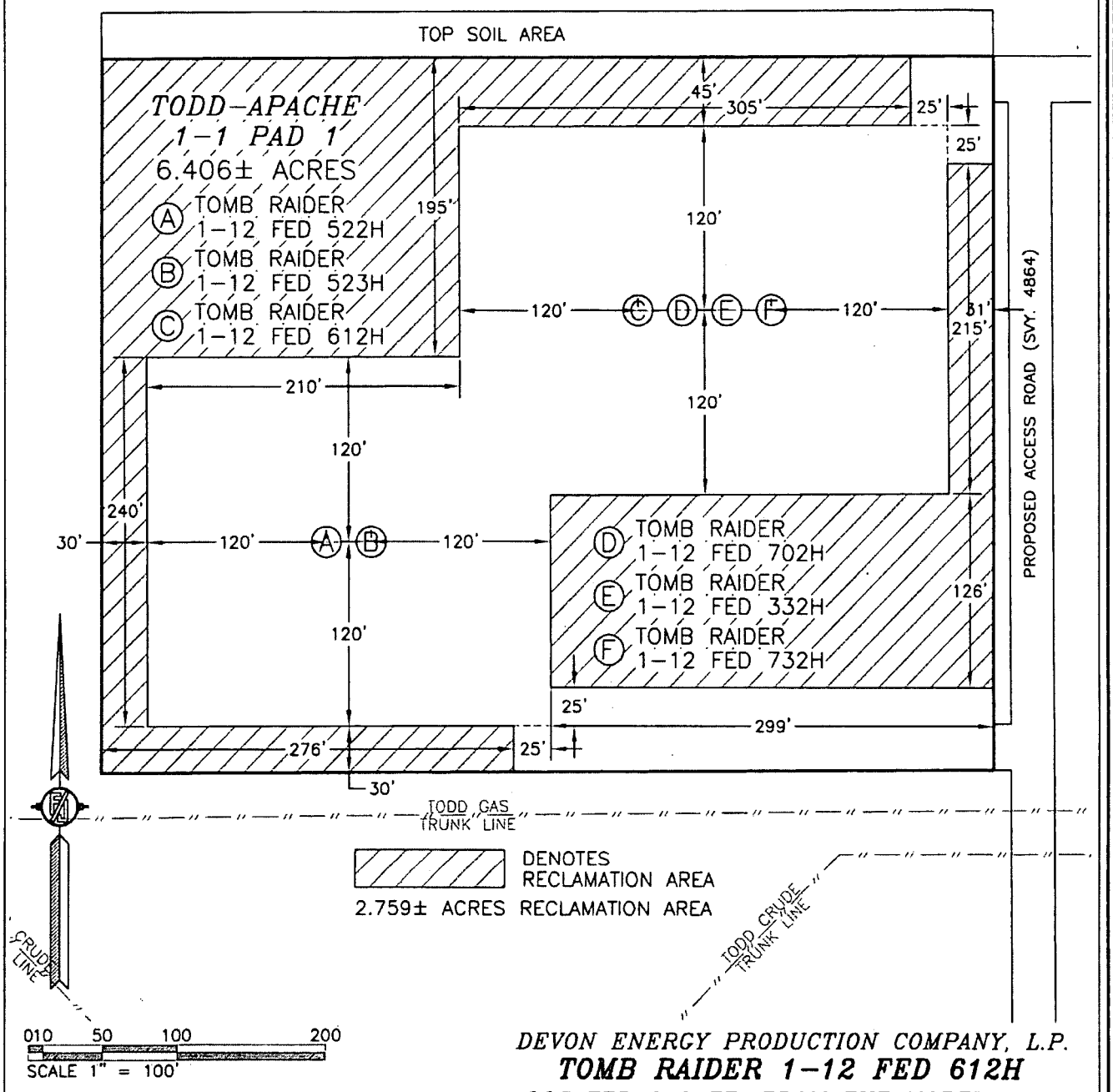

TOMB RAIDER 1-12 FED
332H/612H/702H/732H
devon
This map is for illustrative purposes only and is neither a legally recorded map nor survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.
WGS_1984_Web_Mercator_Auxiliary_Sphere
Prepared by: _User
Map is current as of: 07-Dec-2018
N
Miles
0 0.07 0.14 0.28
1: 14,228
TOMB RAIDER 1-12 FED
332H/612H/702H/732H
DURATION: 30 DAY INSTALL PRIOR TO COMPLETION
DEVON WILL CONTACT BLM IF ADDITIONAL TIME IS NEEDED
DISTURBANCE: EXISTING
CONTENTS: TREATED WATER
TYPE OF PIPE: LAYFLAT
SIZE OF PIPE: 10" OR 12"
LENGTH OF PIPE: 8,770'
TODD 2 TW POND
21S - 31E - 35
22S - 31E - 36
22S - 3
SESE
SWSW
SESE
LOT 4
LOT 3
LOT 2
LOT 1
SESE
SWSW
SESE
LOT 4
LOT 3
LOT 2
LOT 1
NENE
NWNW
NENE
LOT 4
LOT 3
LOT 2
LOT 1


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 612H

LOCATED 210 FT. FROM THE NORTH LINE AND 2139 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

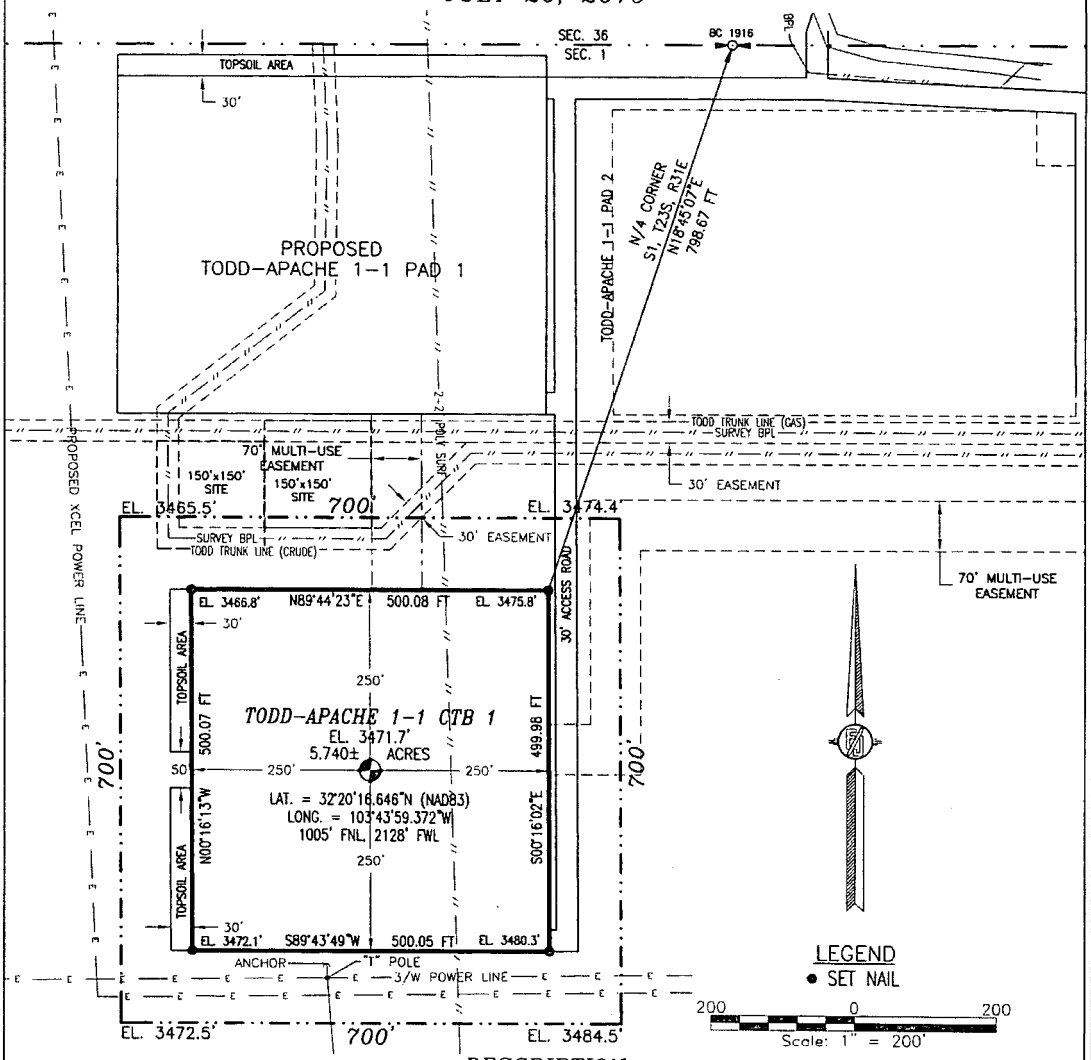
SURVEY NO. 6667

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 14TH DAY OF JULY 2016

FILIMON F. JARAMILLO, PLS 12797
301 SOUTH CANAL
(575) 234-3341

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

SURVEY NO. 4527D

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

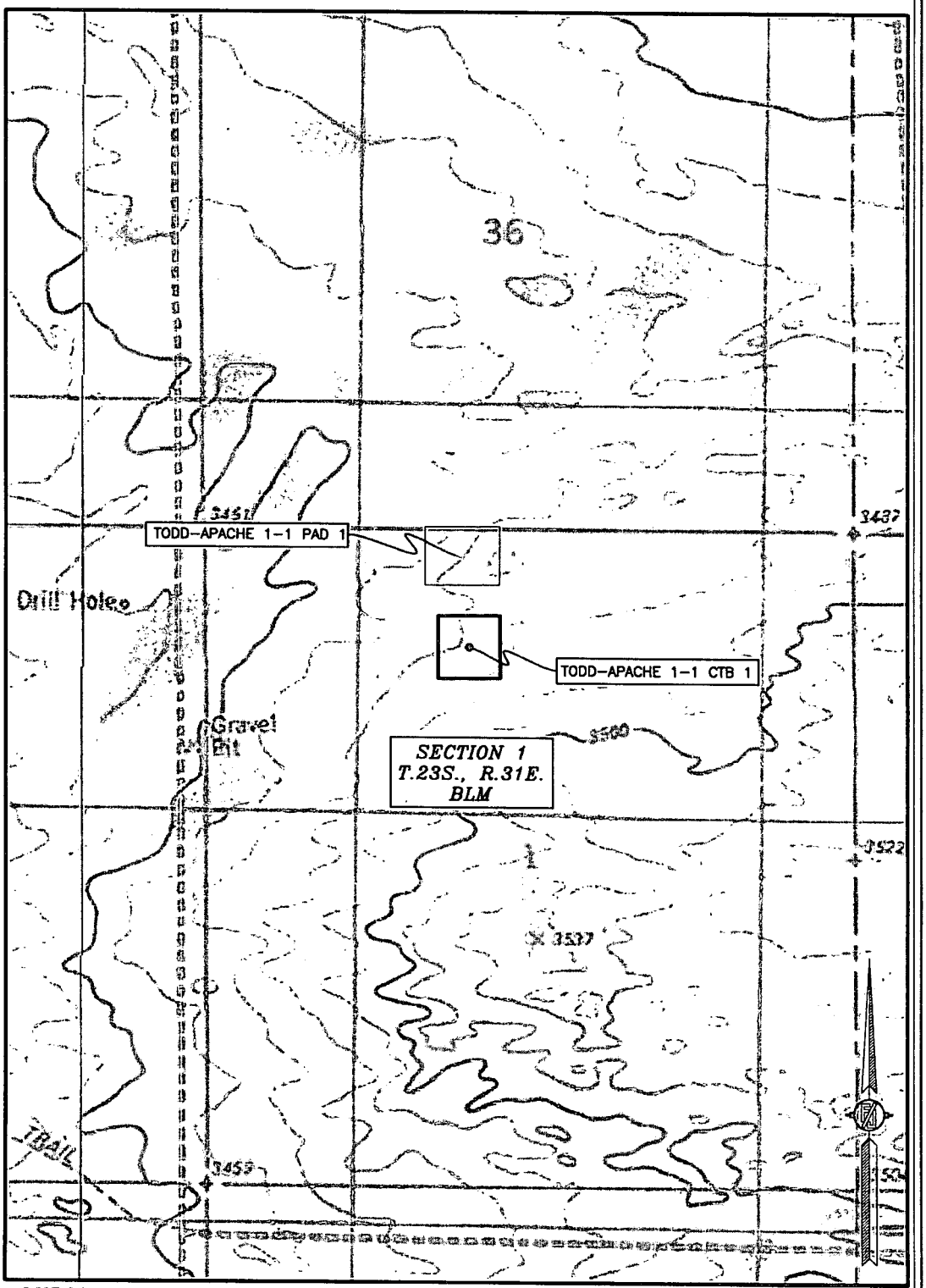
TODD-APACHE 1-1 CTB 1 (AA000056016)

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

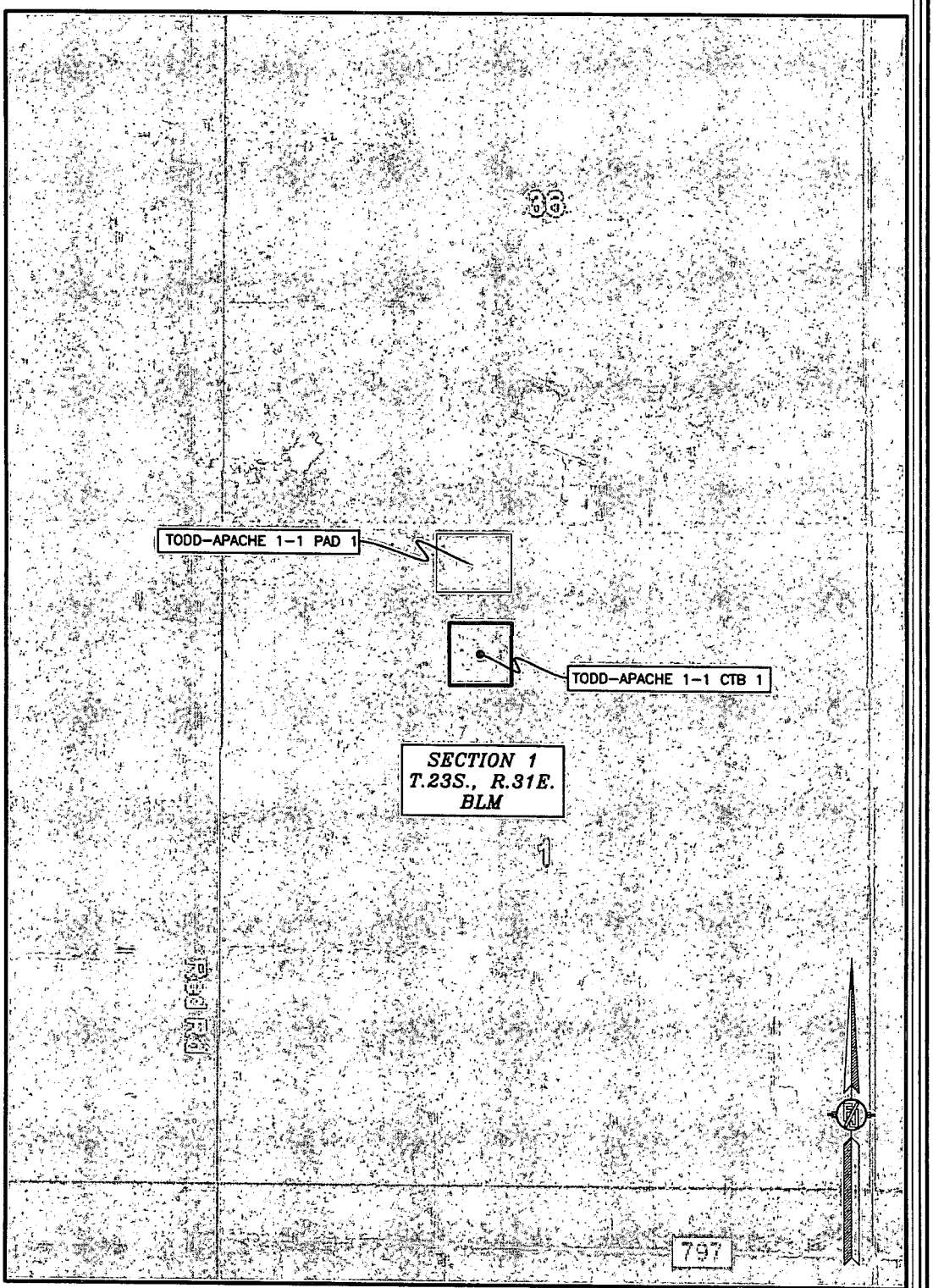
TODD-APACHE 1-1 CTB 1 (AA000056016)

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

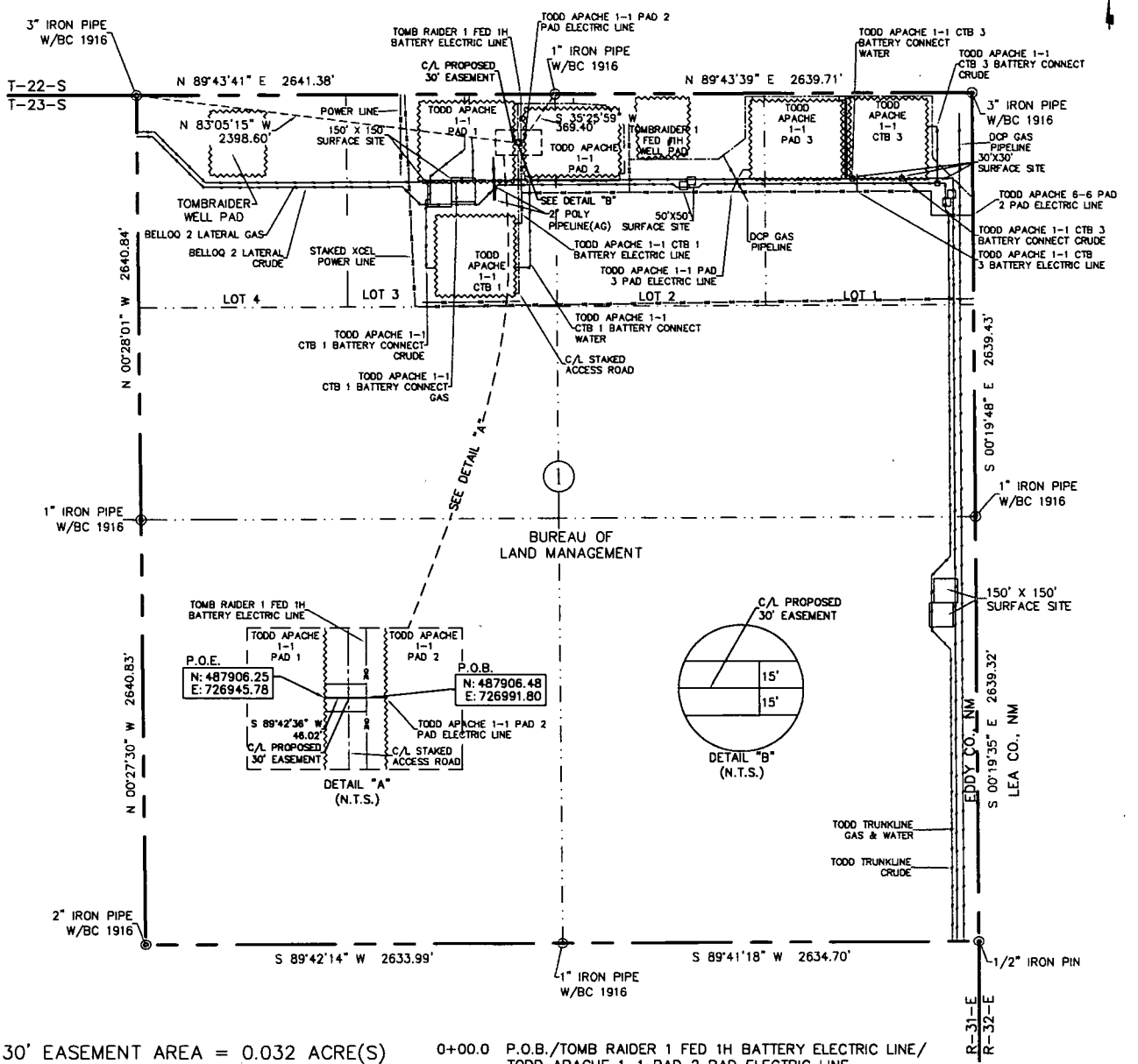


SHEET: 3-3

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.

0 1000 2000

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

HORIZON ROW LLC
Drawn for: devon
Drawn by: CHRIS MAAS
Date: 08/04/2016

DEVON ENERGY PRODUCTION COMPANY, L.P.
TODD APACHE 1-1 PAD 1
PAD ELECTRIC LINE
PROPOSED 30' EASEMENT
ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT
SECTION 1, T23S-R31E, N.M.P.M.

LINE NUMBER: EL7834
WBS NUMBER: XX-117680
SCALE: 1" = 1000'
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:

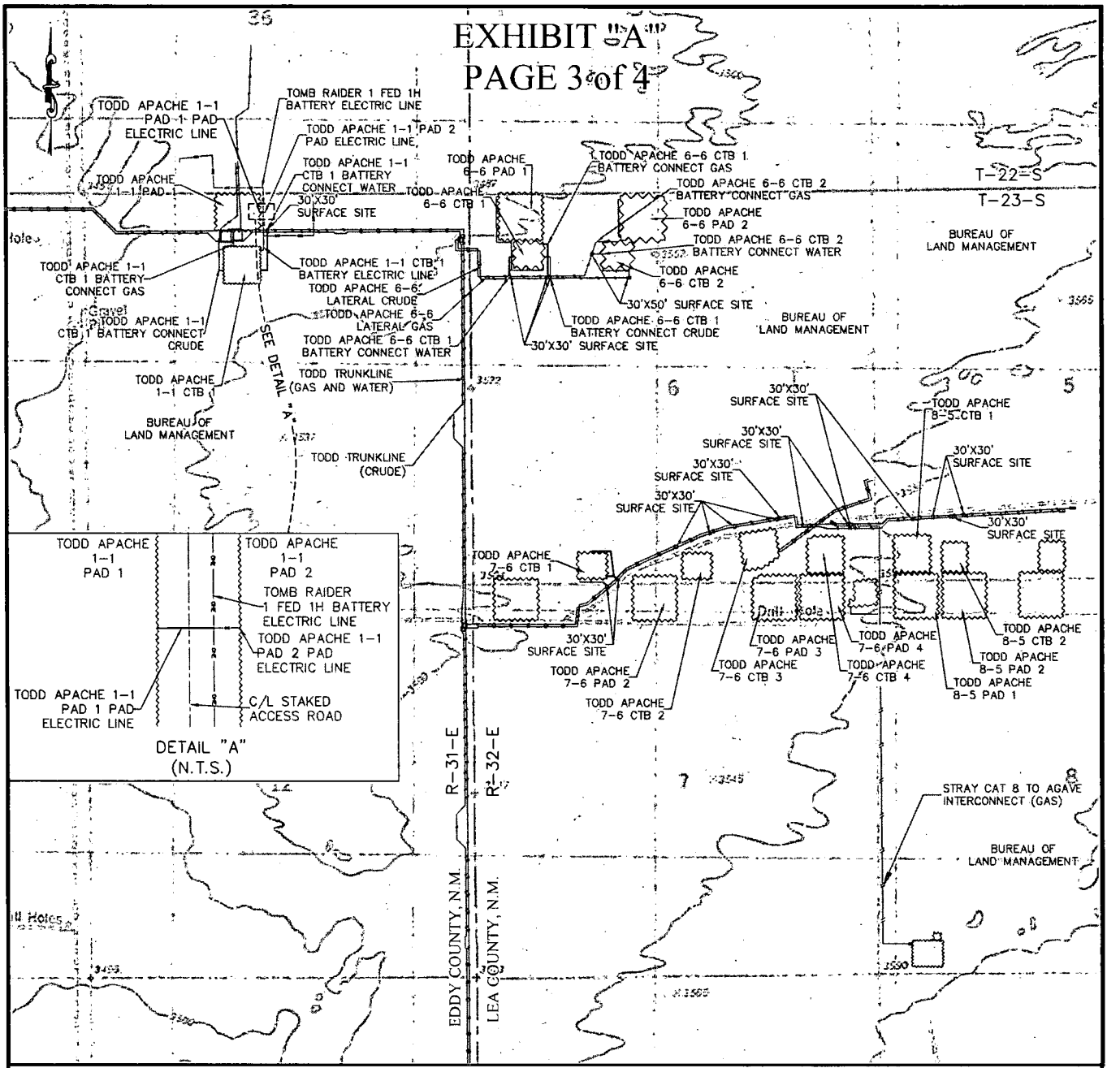
Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

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

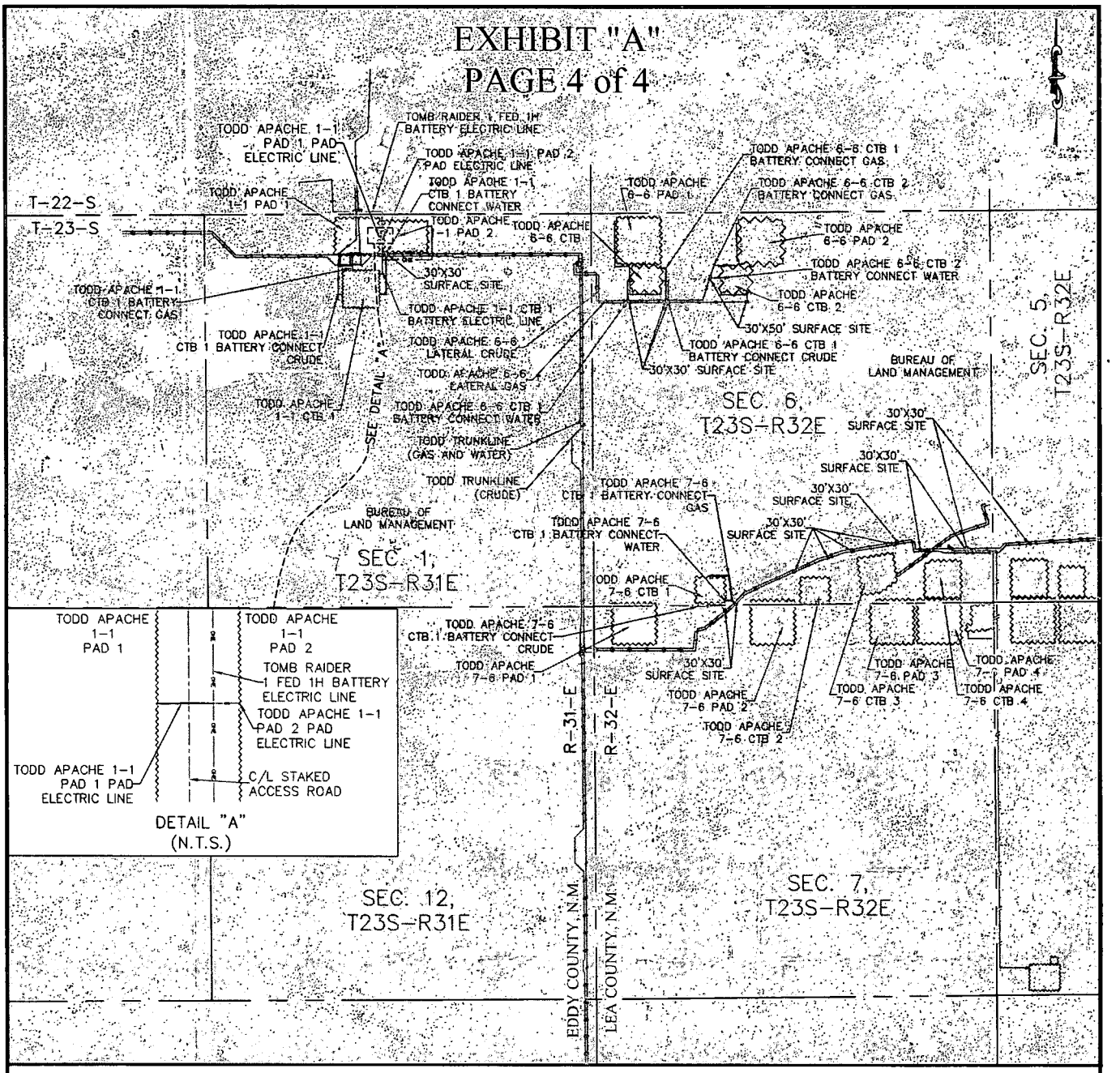


QUAD MAP

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.	devon	WBS NUMBER: XX-117660
PROPOSED 30' EASEMENT		SCALE: 1" = 2000'
Drawn by: CHRIS MAAS / Date: 08/04/2016		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

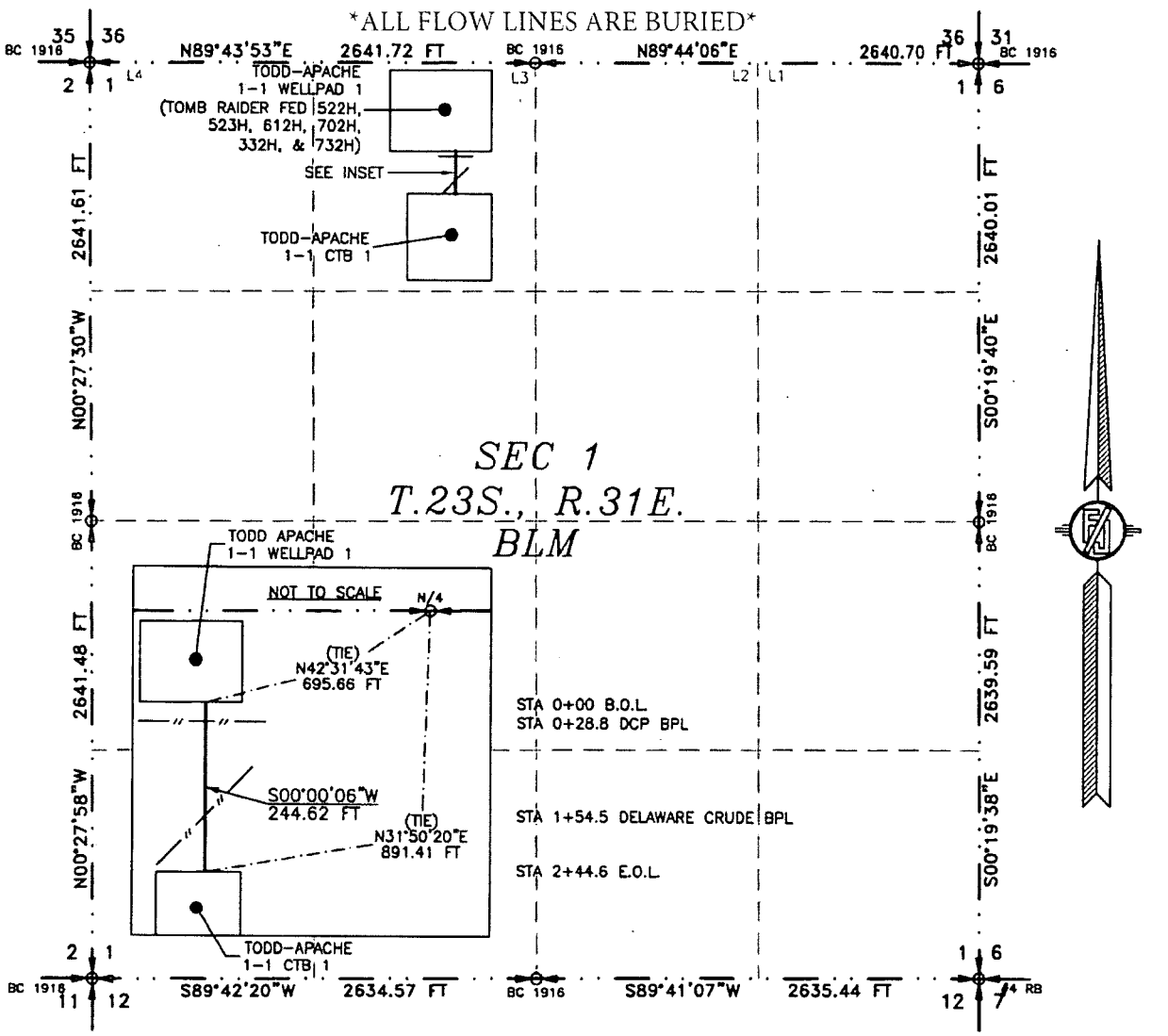
Account Number: **********9892

FLOWINE PLAT

SIX-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TODD-APACHE 1-1 WELLPAD 1 (TOMB RAIDER FED 522H, 523H, 612H, 702H, 332H, & 732H) TO TODD-APACHE 1-1 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
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 20 DAY OF NOVEMBER 2018

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

FILIMON F. JARAMILLO P.L.S. 12797

301 SOUTH CANAL
(575) 234-3341

SHEET: 1-4

SURVEY NO. 6668

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

FLOWINE PLAT

SIX-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TODD-APACHE 1-1 WELLPAD 1 (TOMB RAIDER FED 522H, 523H, 612H, 702H, 332H, & 732H) TO TODD-APACHE 1-1 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018

ALL FLOW LINES ARE BURIED

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:

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 N42°31'43"E, A DISTANCE OF 695.66 FEET;
THENCE S00°00'06"W A DISTANCE OF 244.62 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 N31° 50'20"E, A DISTANCE OF 891.41 FEET;

SAID STRIP OF LAND BEING 244.62 FEET OR 14.83 RODS IN LENGTH, CONTAINING 0.168 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

LOT 3	244.62 L.F.	14.83 RODS	0.168 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 20 DAY OF NOVEMBER 2018

FILIMON F. JARAMILLO NM. 12797

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

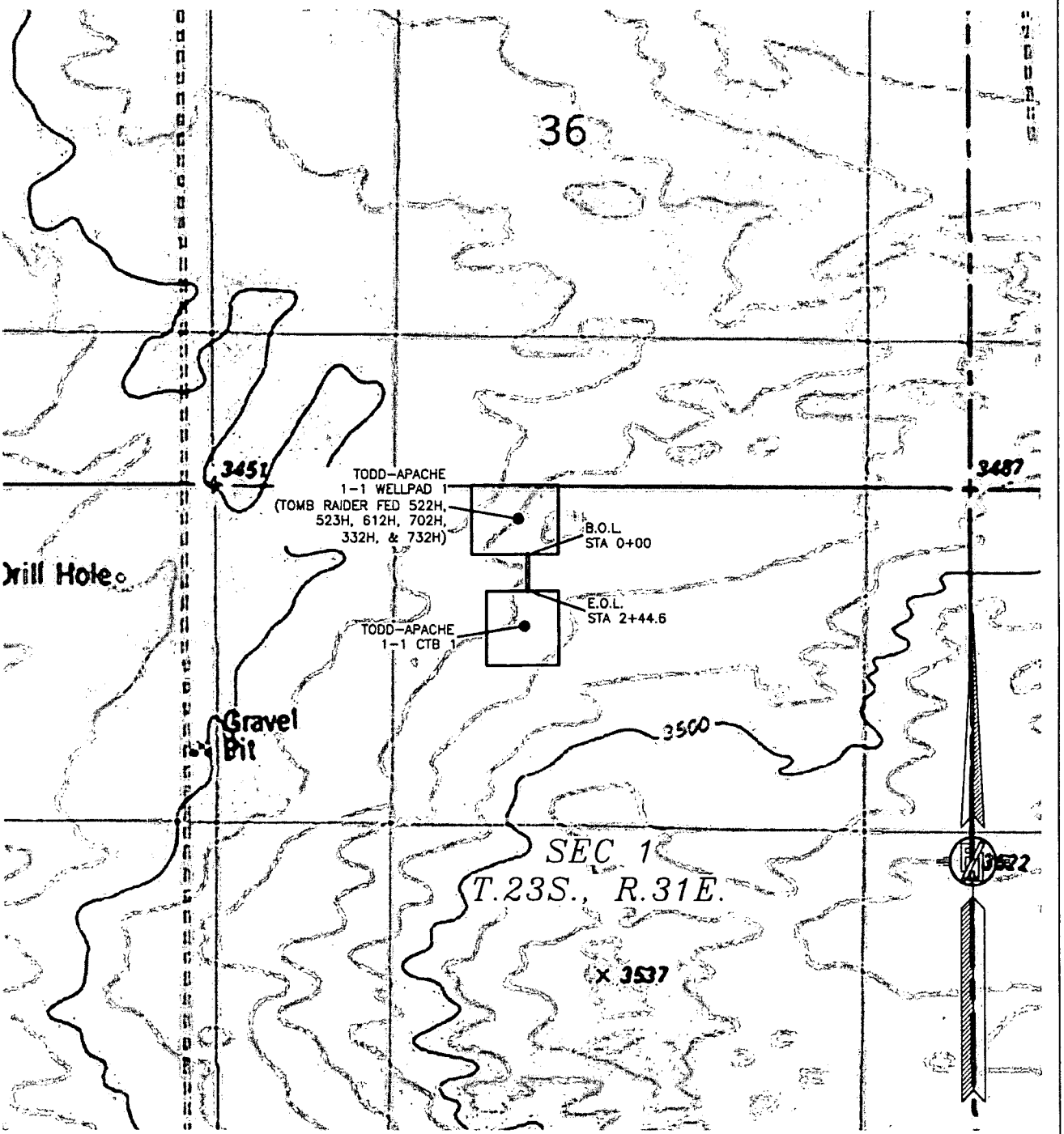
FLOWINE PLAT

SIX-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TODD-APACHE 1-1 WELLPAD 1 (TOMB RAIDER FED 522H, 523H, 612H, 702H, 332H, & 732H) TO TODD-APACHE 1-1 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018

ALL FLOW LINES ARE BURIED



SHEET: 3-4

SURVEY NO. 6668

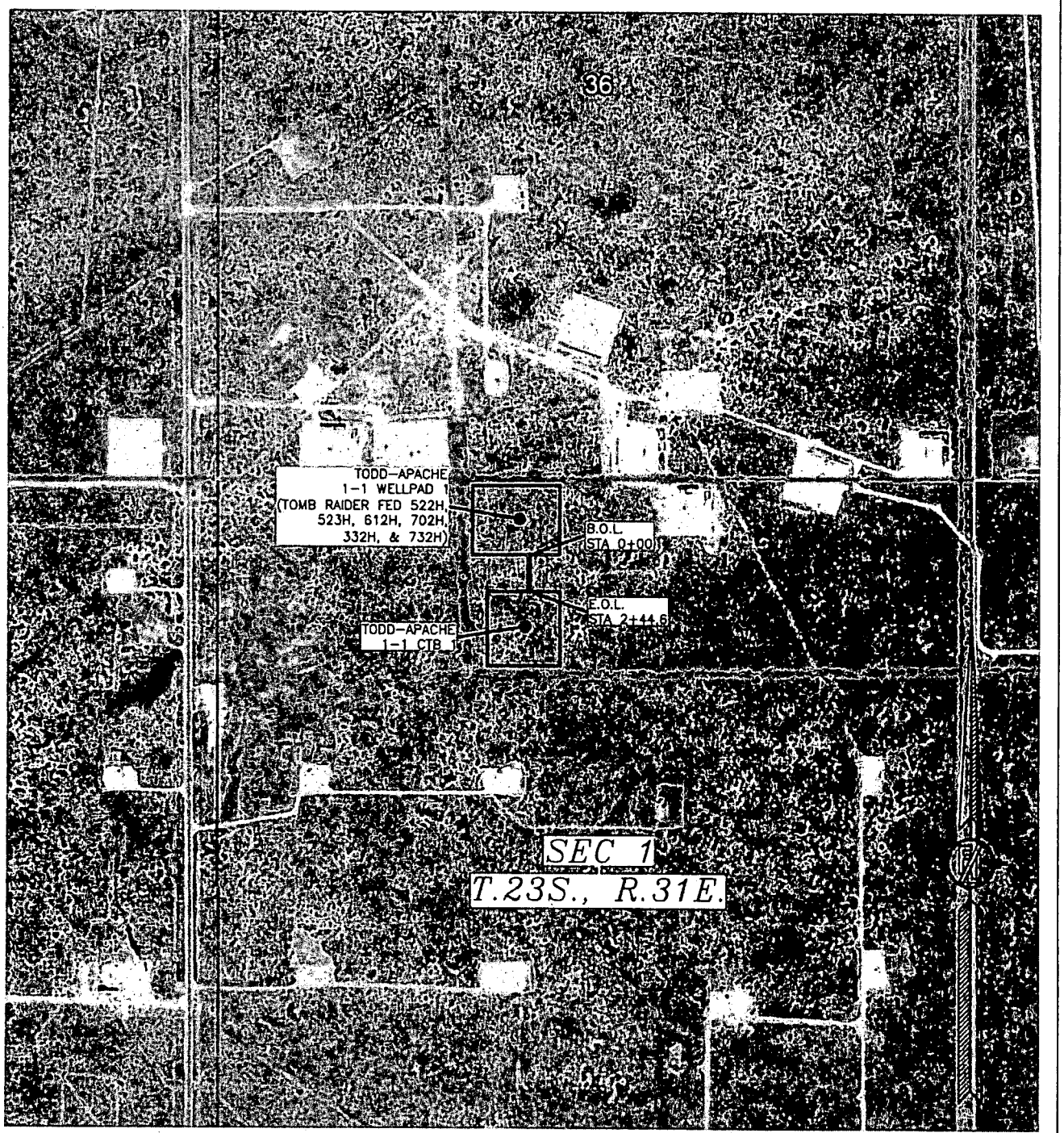
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

FLOWINE PLAT

SIX-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TODD-APACHE 1-1 WELLPAD 1 (TOMB RAIDER FED 522H, 523H, 612H, 702H, 332H, & 732H) TO TODD-APACHE 1-1 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018
ALL FLOW LINES ARE BURIED



SHEET: 4-4 SURVEY NO. 6668

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

ALL FLOW LINES ARE BURIED

S1, T23S, R31E

EDDY COUNTY, STATE OF NEW MEXICO
BUREAU OF LAND MANAGEMENT LAND
244.62 L.F.
14.83 RODS

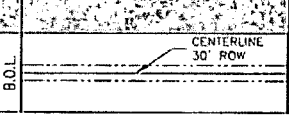
OWNERSHIP

PLAN ON AERIAL



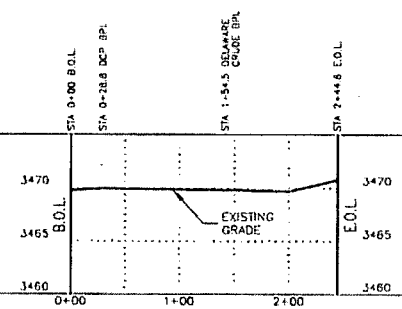
EASEMENT

N.T.S.



STATIONING

PROFILE



LEGEND

- CENTERLINE
- EASEMENT
- SECTION LINE
- QUARTER LINE
- EXISTING PIPELINE
- EXISTING POWER LINE
- EXISTING FENCE LINE
- 5' CONTOUR LINE

PIPE SPECIFICATIONS AND TEST REQUIREMENTS

FROM	TO	LIN. FT.	O.D.	W.T.	GRADE	D.P.	TEST PRESS. MIN	TEST DUR. HR.

BILL OF MATERIAL

X-RAY REQUIREMENTS

RECORD

APPROVED FOR CONSTRUCTION
NOVEMBER 6, 2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

SCALE
1"=50'

SIX-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TODD-APACHE 1-1 WELLPAD 1 (TOMB RAIDER FED 522H, 523H, 612H, 702H, 332H, & 732H) TO TODD-APACHE 1-1 CTB 1

NOVEMBER 6, 2018

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

SURVEY NO. 6668
SHEET: 1-1

AFMSS

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

PWD Data Report

05/06/2019

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

05/06/2019

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: