

NM OIL CONSERVATION

ARTESIA DISTRICT

NOV 13 2018

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

RECEIVED

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM022080
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY LP		8. Lease Name and Well No. TOMB RAIDER 1-12 FED 514H 316874
3a. Address 333 West Sheridan Avenue Oklahoma City OK 73102		9. API-Well No. 30-015-45440
3b. Phone No. (include area code) (405)552-6571		10. Field and Pool, or Exploratory LIVINGSTON RIDGE / BONE SPRING 39350
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface LOT 2 / 360 FNL / 2365 FEL / LAT 32.3397278 / LONG -103.7306 At proposed prod. zone SWSE / 330 FSL / 2520 FEL / LAT 32.3126056 / LONG -103.731144		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 EDDY
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 360 feet		13. State NM
16. No of acres in lease 1280		17. Spacing Unit dedicated to this well 320
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 400 feet		20. BLM/BIA Bond No. in file FED: CO1104
19. Proposed Depth 9185 feet / 18972 feet		21. Estimated duration 30 days
22. Approximate date work will start* 06/01/2019		23. Estimated duration 30 days
24. Attachments		

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

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 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). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) Jenny Harms / Ph: (405)552-6560	Date 07/13/2018
Title Regulatory Compliance Professional		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 10/31/2018
Title Assistant Field Manager Lands & Minerals CARLSBAD		

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

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

APPROVED WITH CONDITIONS
Approval Date: 10/31/2018

RWP 11-13-18.

INSTRUCTIONS

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

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

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

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

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

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

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 well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM connects this information to an 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 Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

1. SHL: LOT 2 / 360 FNL / 2365 FEL / TWSP: 23S / RANGE: 31E / SECTION: 1 / LAT: 32.3397278 / LONG: -103.7306 (TVD: 0 feet, MD: 0 feet)
PPP: LOT 2 / 330 FNL / 2520 FEL / TWSP: 23S / RANGE: 31E / SECTION: 1 / LAT: 32.3397273 / LONG: -103.731144 (TVD: 8974 feet, MD: 9011 feet)
BHL: SWSE / 330 FSL / 2520 FEL / TWSP: 23S / RANGE: 31E / SECTION: 12 / LAT: 32.3126056 / LONG: -103.731144 (TVD: 9185 feet, MD: 18972 feet)

BLM Point of Contact

Name: Sipra Dahal

Title: Legal Instruments Examiner

Phone: 5752345983

Email: sdahal@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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NOV 13 2018

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

RECEIVED

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION
LEASE NO.:	NMNM022080
WELL NAME & NO.:	514H:TOMB RAIDER 1-12 FED
SURFACE HOLE FOOTAGE:	360'/N & 2365'/E
BOTTOM HOLE FOOTAGE:	330'/S & 2520'/E
LOCATION:	T-23S, R-31E, S1. NMPM
COUNTY:	EDDY, NM

Potash	☐ None	☒ Secretary	☐ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

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

B. CASING

1. The 13 3/8 inch surface casing shall be set at approximately **815** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **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.

2. The minimum required fill of cement behind the 9 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 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 potash.**

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 string.. Operator shall provide method of verification.

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:

- i. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13 3/8** inch surface casing shoe shall be **3000 (3M)** psi.

Option 2:

- i. 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 **3000 (3M)** 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. 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.

D. SPECIAL REQUIREMENT(S)

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

MHH 10272018

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.

NOV 13 2018

RECEIVED

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION
LEASE NO.:	NMNM022080
WELL NAME & NO.:	514H:TOMB RAIDER 1-12 FED
SURFACE HOLE FOOTAGE:	360'/N & 2365'/E
BOTTOM HOLE FOOTAGE	330'/S & 2520'/E
LOCATION:	T-23S, R-31E, S1. NMPM
COUNTY:	EDDY, NM

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)

Build as you go, no Grading of all pad.

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 Drilling 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 Area, 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

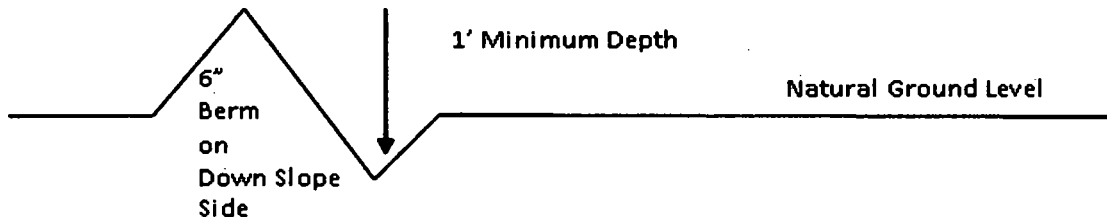
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and inslaping, 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:

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

Cattle guards

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

Fence Requirement

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

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

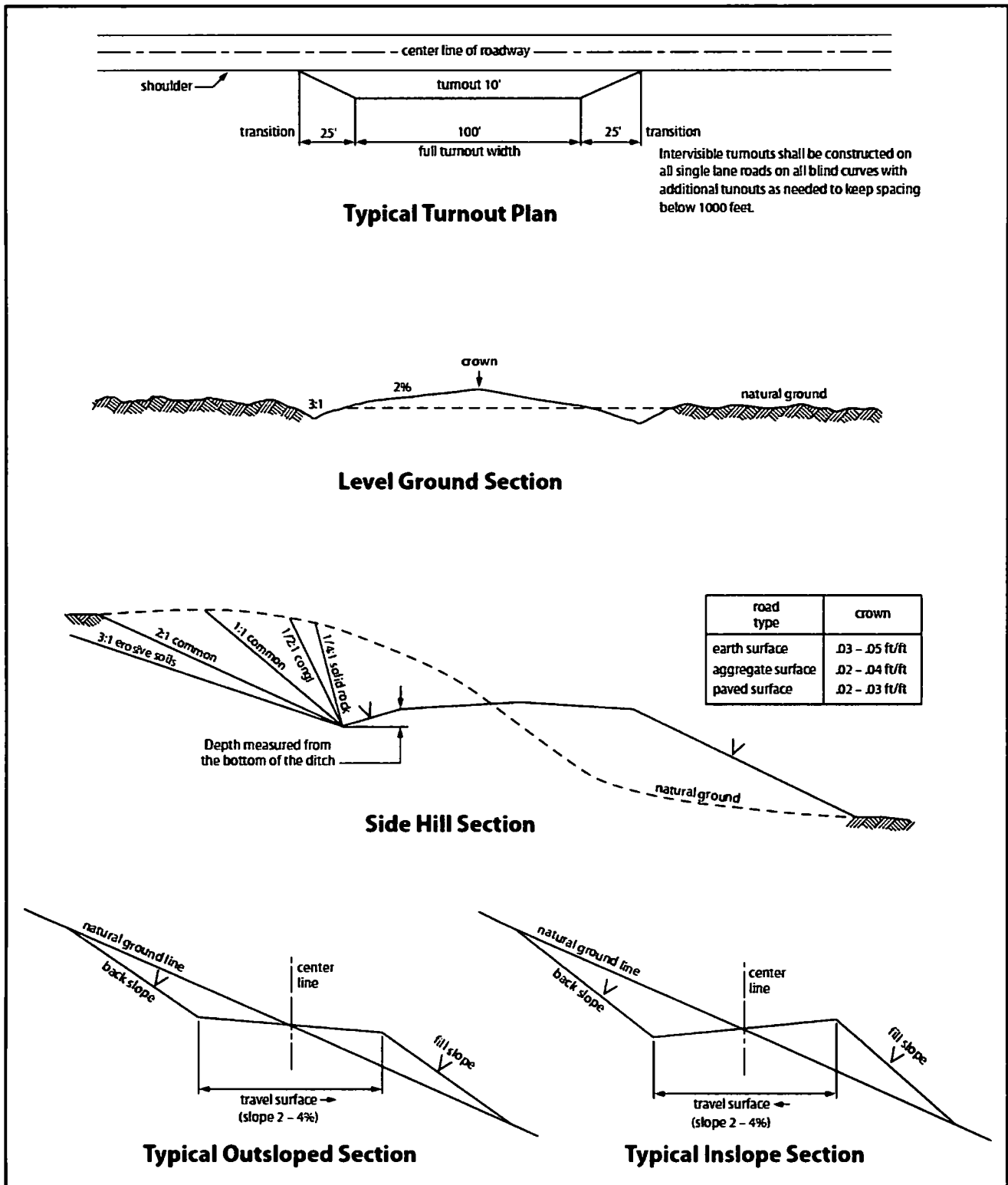


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

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

Exclosure Netting (Open-top Tanks)

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

Chemical and Fuel Secondary Containment and Exclosure Screening

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

Open-Vent Exhaust Stack Exclosures

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

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement

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

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 |
| ☒ 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 or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than 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:

<u>Species</u>	<u>lb/acre</u>
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



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

Operator Certification Data Report

11/01/2018

Operator Certification

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

NAME: Jenny Harms

Signed on: 07/11/2018

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: 6488 SEVEN RIVERS HWY

City: ARTESIA

State: NM

Zip: 88210

Phone: (575)748-1871

Email address: RAY.VAZ@DVN.COM



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

Application Data Report

11/01/2018

APD ID: 10400031815

Submission Date: 07/13/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

Section 1 - General

APD ID: 10400031815

Tie to previous NOS?

Submission Date: 07/13/2018

BLM Office: CARLSBAD

User: Jenny Harms

Title: Regulatory Compliance

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: (405)552-6571

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: 514H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: LIVINGSTON
RIDGE

Pool Name: BONE SPRING

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

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?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name: TODD-**Number:** 2

Well Class: HORIZONTAL

APACHE 1-1

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: DELINEATION

Describe sub-type:

Distance to town:

Distance to nearest well: 400 FT

Distance to lease line: 360 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: Tomb_Raider_1_12_Fed_514H__C102_20181015071958.pdf

Well work start Date: 06/01/2019

Duration: 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number: 6214A

	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	360	FNL	236 5	FEL	23S	31E	1	Lot 2	32.33972 78	- 103.7306	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	347 5	0	0
KOP Leg #1	100	FNL	252 0	FEL	23S	31E	1	Lot 2	32.33972 73	- 103.7311 144	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 513 7	861 8	861 2
PPP Leg #1	330	FNL	252 0	FEL	23S	31E	1	Lot 2	32.33972 73	- 103.7311 144	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 549 9	901 1	897 4

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

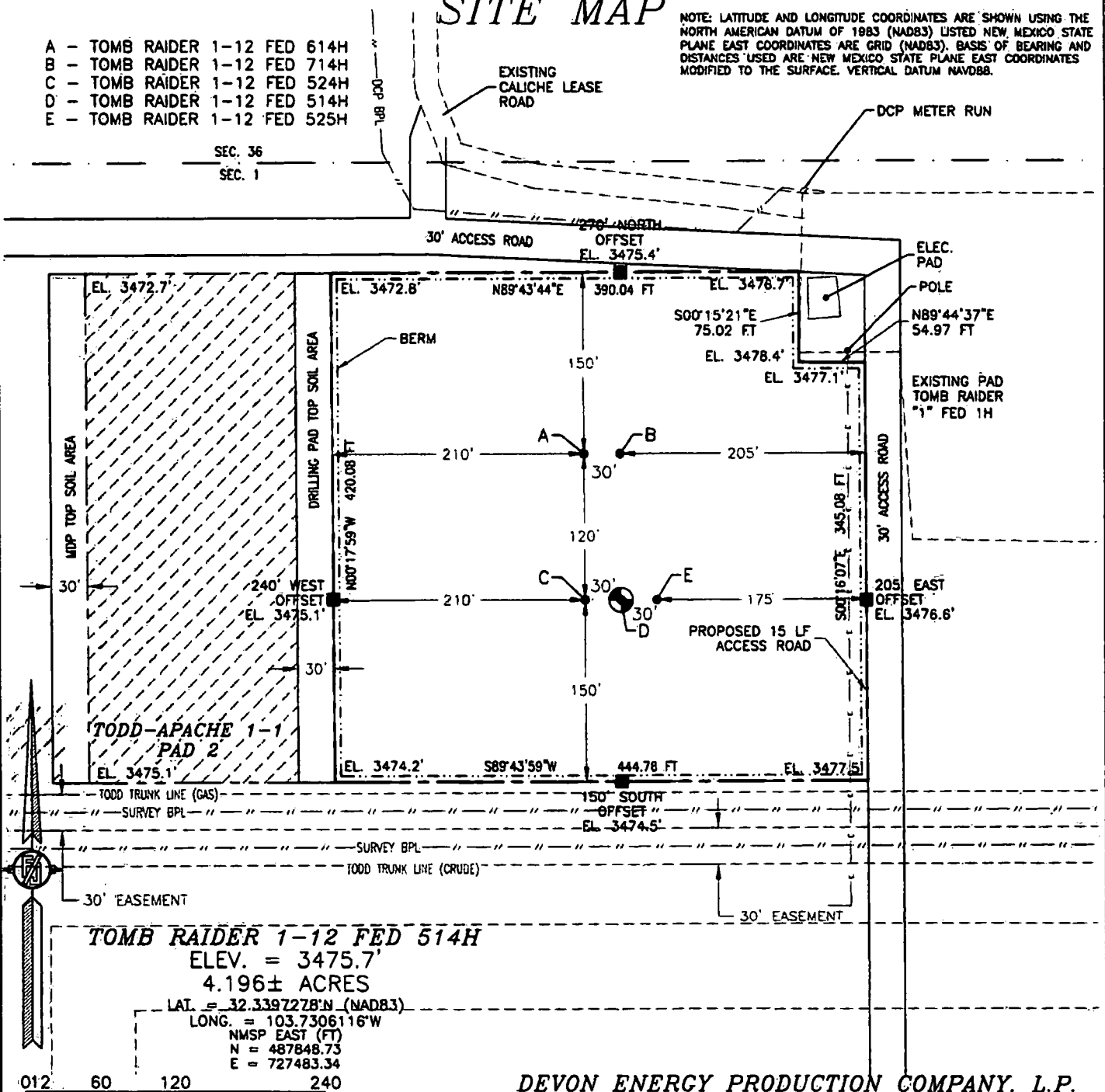
	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	330	FSL	252 0	FEL	23S	31E	12	Aliquot SWSE	32.31260 56	- 103.7311 144	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 571 0	189 72	918 5
BHL Leg #1	330	FSL	252 0	FEL	23S	31E	12	Aliquot SWSE	32.31260 56	- 103.7311 144	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 571 0	189 72	918 5

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

SITE MAP

- A - TOMB RAIDER 1-12 FED 614H
- B - TOMB RAIDER 1-12 FED 714H
- C - TOMB RAIDER 1-12 FED 524H
- D - TOMB RAIDER 1-12 FED 514H
- E - TOMB RAIDER 1-12 FED 525H

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83) LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD88.



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 815', BEND LEFT AND GO SOUTHEAST 944', TURN RIGHT AND GO SOUTH 583' TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS SOUTH 80', THEN EAST 379', THEN SOUTH 346', THEN WEST 15' TO THE SOUTHEAST PAD CORNER.

DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 1-12 FED 514H
LOCATED 360 FT. FROM THE NORTH LINE
AND 2365 FT. FROM THE EAST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

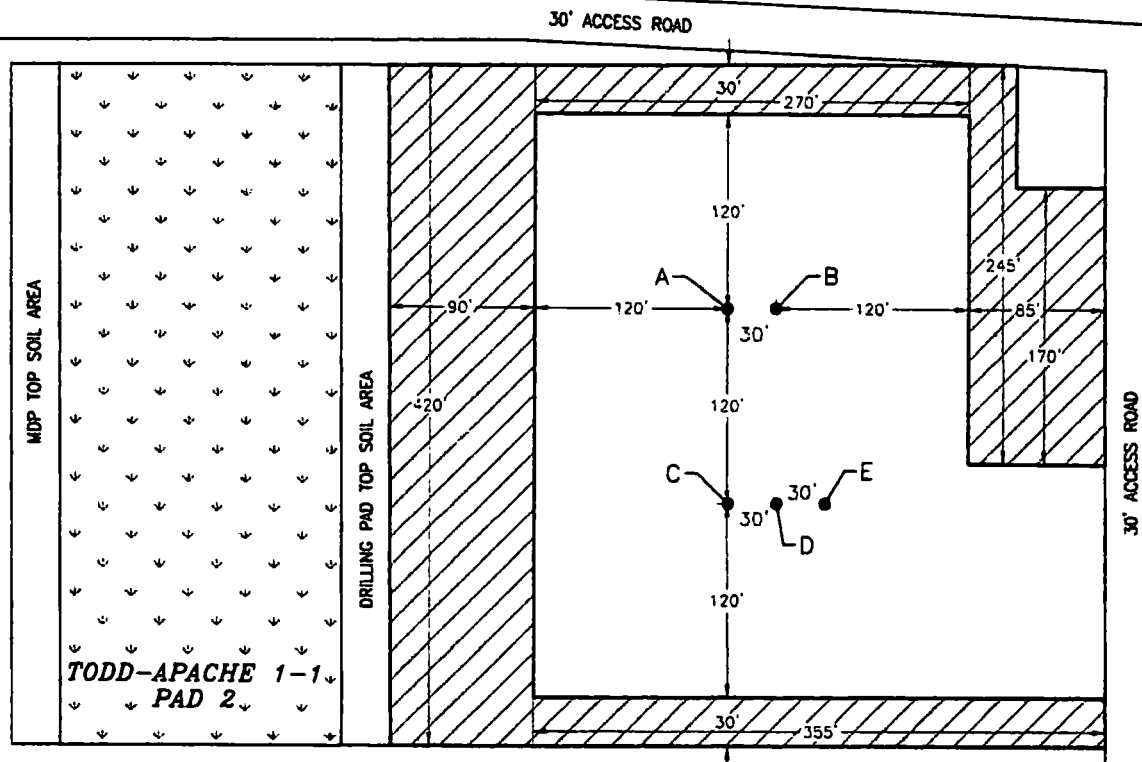
MAY 21, 2018

SURVEY NO. 6214A

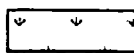
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

A - TOMB RAIDER 1-12 FED 614H
B - TOMB RAIDER 1-12 FED 714H
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D - TOMB RAIDER 1-12 FED 514H
E - TOMB RAIDER 1-12 FED 525H

SEC. 36
SEC. 1



DENOTES INTERIM PAD
RECLAMATION AREA



DENOTES GRADING SITE
RECLAMATION AREA

0 12 60 120 240

SCALE 1" = 120'

1.680± ACRES INTERIM PAD RECLAMATION AREA
1.687± ACRES GRADING SITE RECLAMATION AREA
2.807± ACRES NON-RECLAIMED AREA
6.174± ACRES TODD-APACHE 1-1 PAD 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
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EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

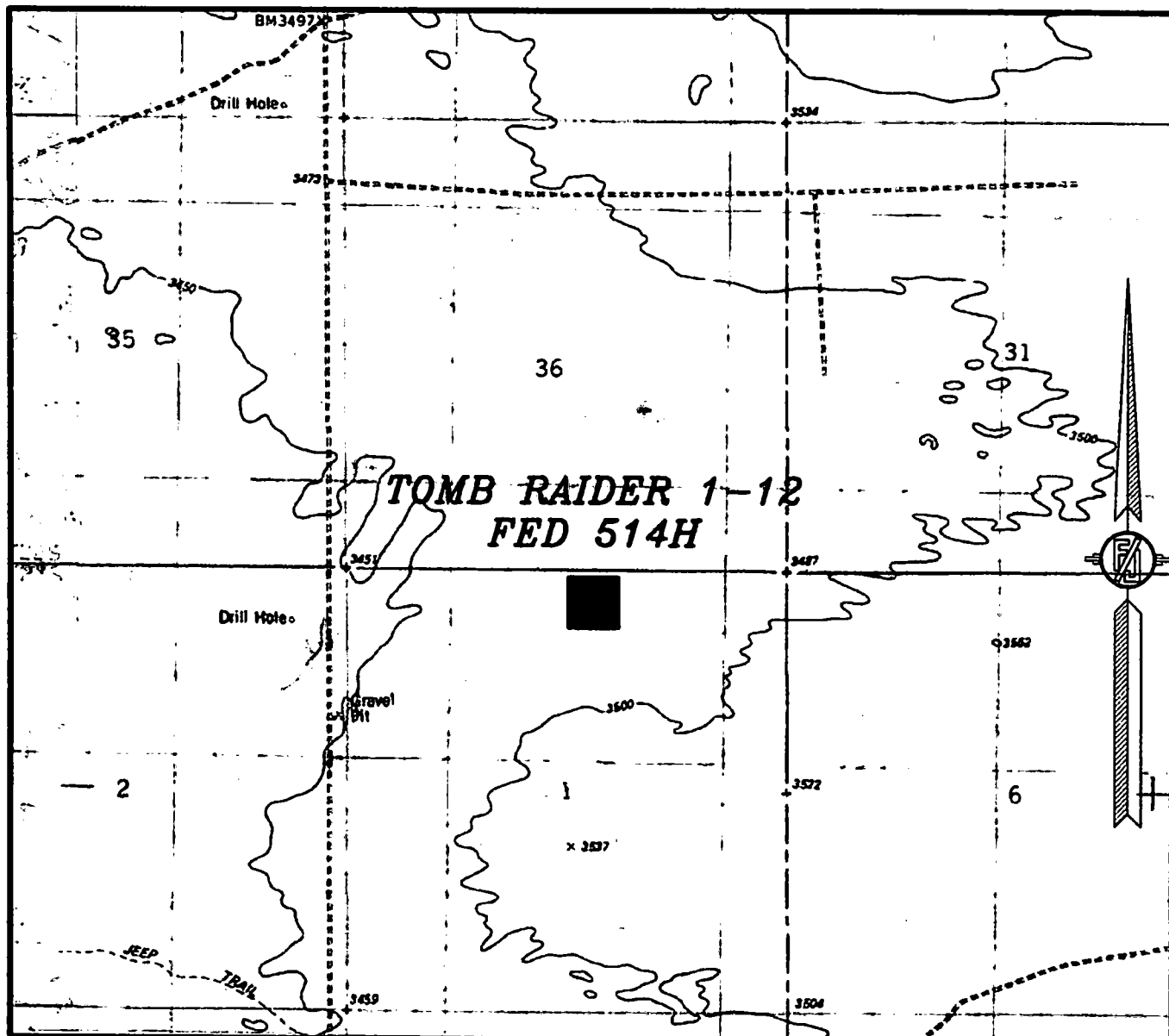
MAY 21, 2018

SURVEY NO. 6214A

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

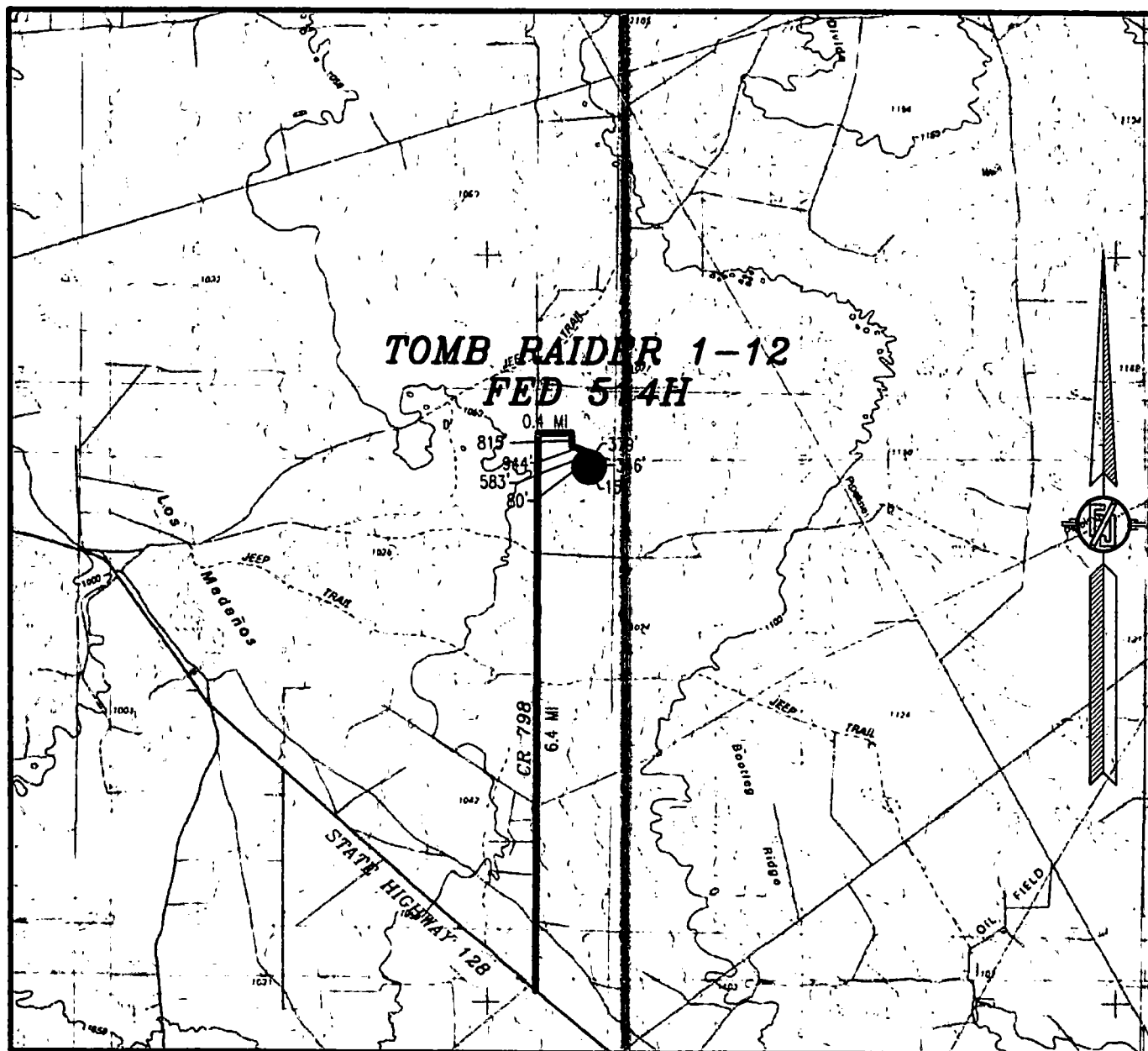
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EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MAY 21, 2018

SURVEY NO. 6214A

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
DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 514H

LOCATED 360 FT. FROM THE NORTH LINE
AND 2365 FT. FROM THE EAST LINE OF

SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

DIRECTIONS TO LOCATION

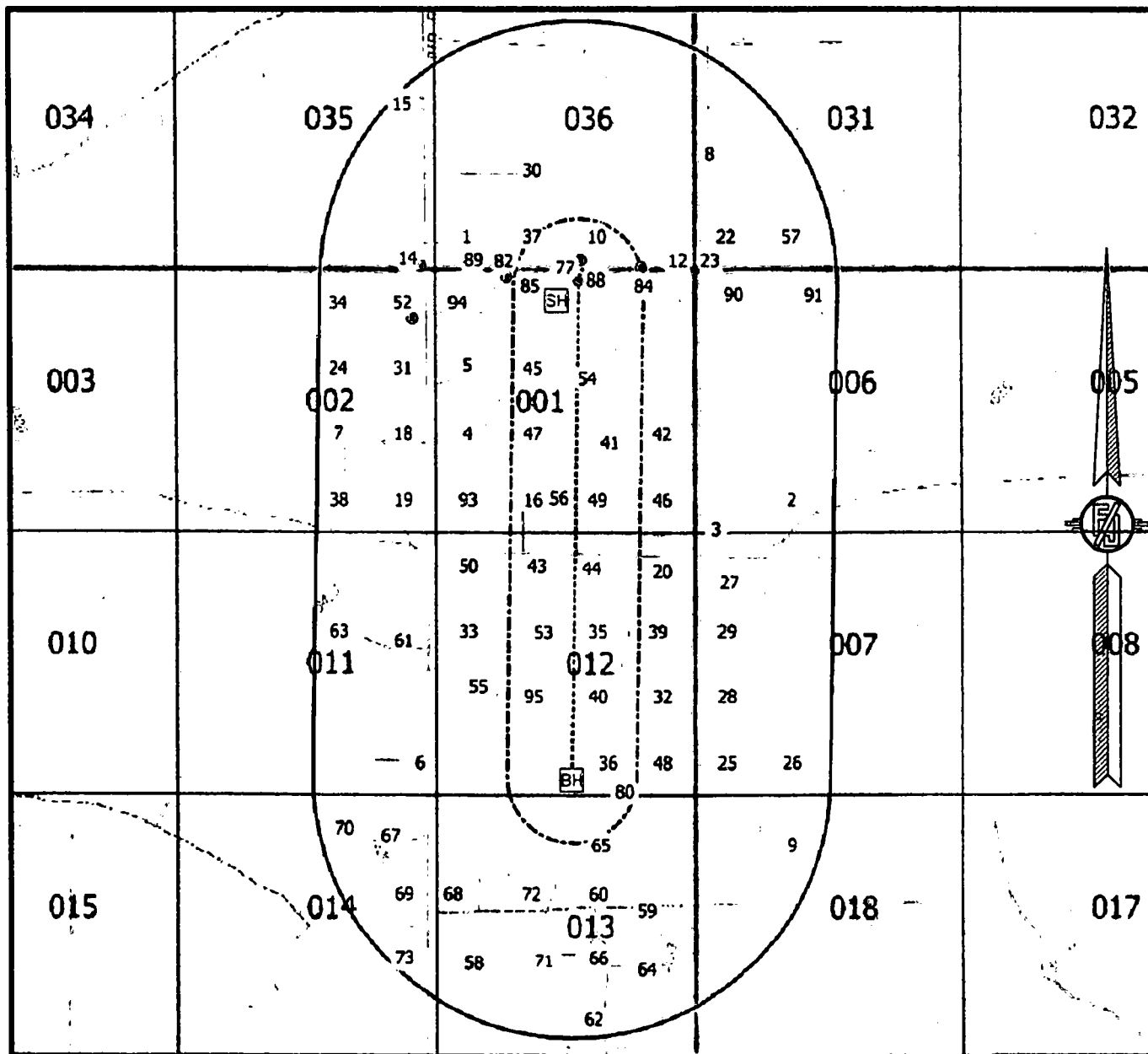
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SOUTH 80', THEN EAST 379', THEN SOUTH 346', THEN WEST 15' TO THE
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MAY 21, 2018

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

SURVEY NO. 6214A
CARLSBAD, NEW MEXICO

1-MILE MAP



NOT TO SCALE

WELL DATA FROM NMOC GIS - 5/17/18

SH SURFACE LOCATION

BH BOTTOM OF HOLE

XX WELLS WITHIN 1 MILE

----- WELL PATH

----- 1/4 MILE BOUNDARY

----- 1-MILE BOUNDARY

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 514H

LOCATED 360 FT. FROM THE NORTH LINE
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RANGE 31 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MAY 21, 2018

SURVEY NO. 6214A

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 PHOTO

TOMB RAIDER 1-12
FED 514H

2

1

6

11

12

7



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEBRUARY 2017

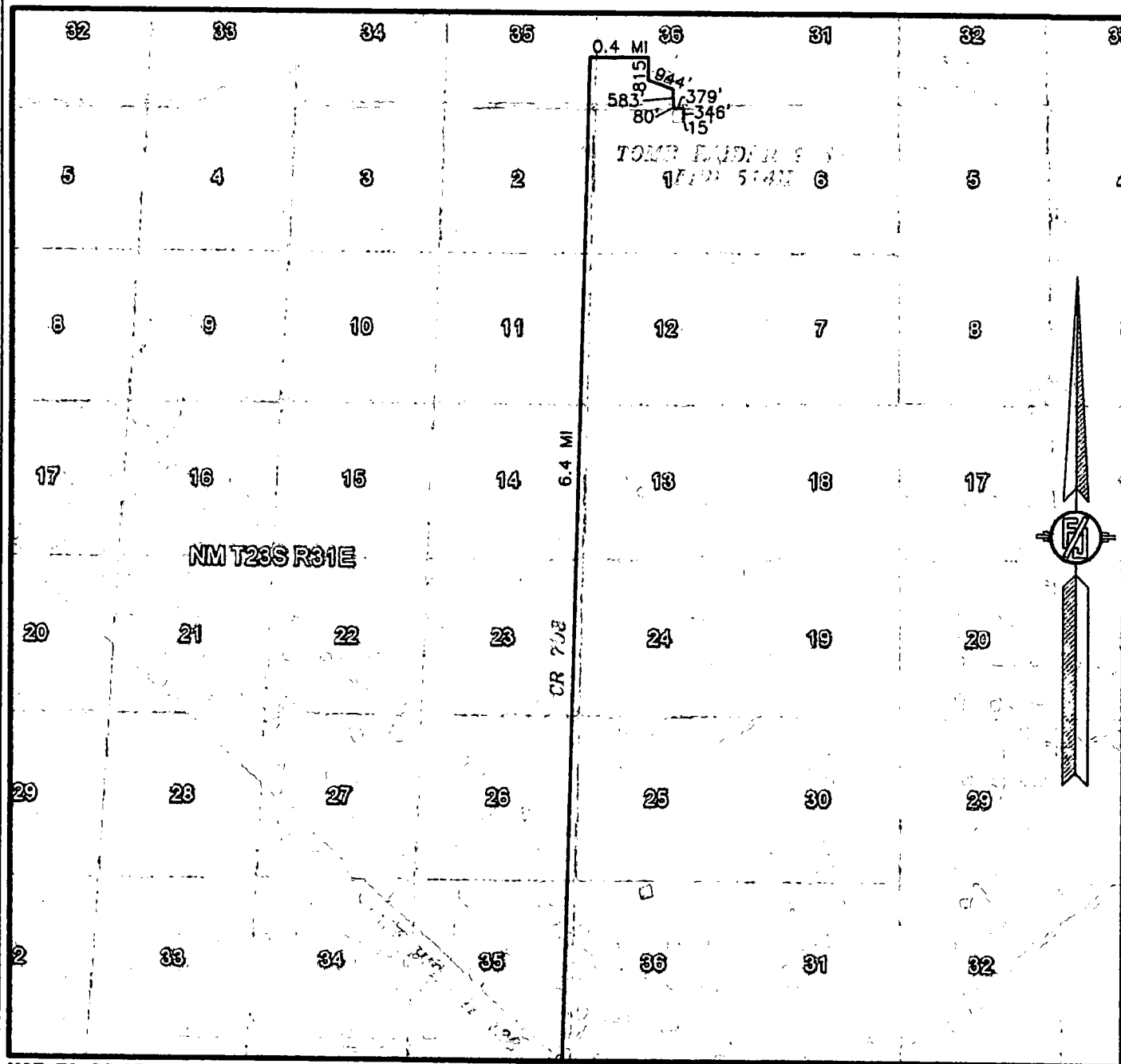
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EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MAY 21, 2018

SURVEY NO. 6214A

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
ACCESS AERIAL ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEBRUARY 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 1-12 FED 514H
LOCATED 360 FT. FROM THE NORTH LINE
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RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MAY 21, 2018

SURVEY NO. 6214A

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

PLAN VIEW

- A - TOMB RAIDER 1-12 FED 614H
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- C - TOMB RAIDER 1-12 FED 524H
- D - TOMB RAIDER 1-12 FED 514H
- E - TOMB RAIDER 1-12 FED 525H

SEC. 36
SEC. 1

30' ACCESS ROAD

LIMITS OF
EARTHWORK
3:1 SLOPE (TYP.)

ELEC.
PAD
POLE

EXISTING PAD
TOMB RAIDER
"1" FED 1H

LIMITS OF
EARTHWORK
3:1 SLOPE (TYP.)

ADJUST CUT SLOPE
TO REMAIN OUTSIDE
OF PIPELINE EASEMENT

TODD-APACHE 1-1 PAD 2
PROPOSED PAD
EL. 3474.0'

DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
TOMB RAIDER 1-12 FED 514H
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MAY 21, 2018

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

012 60 120 240
SCALE 1" = 120'

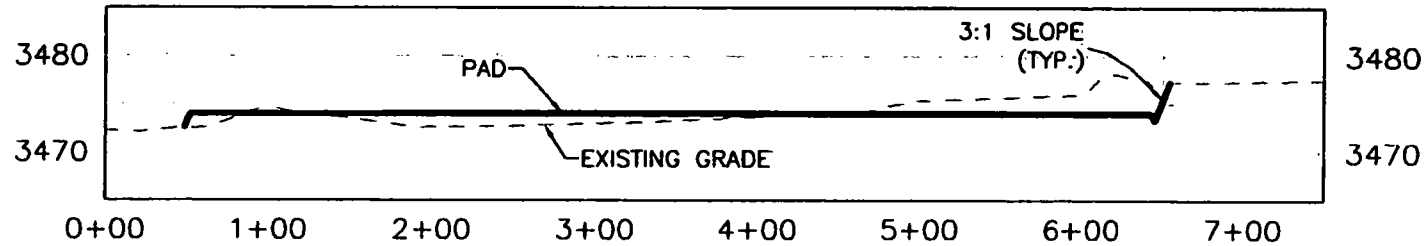
CUT	FILL	NET
9962 CU. YD.	8348 CU. YD.	1614 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

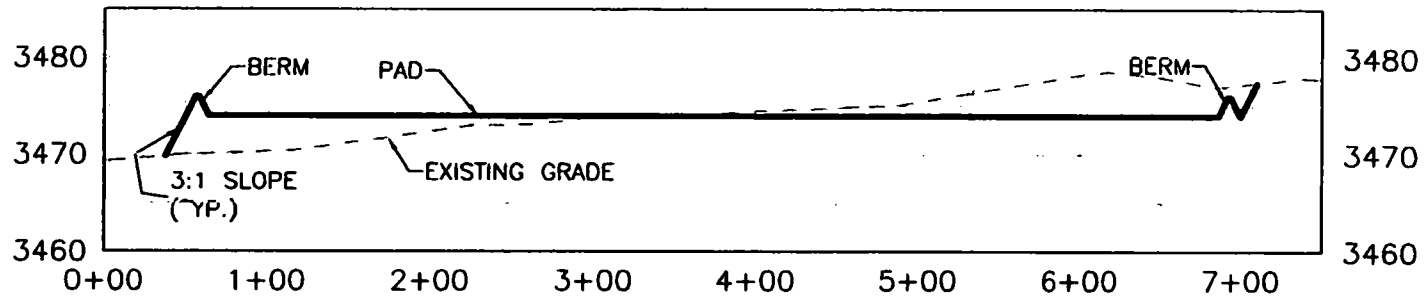
SHEET 1-2
SURVEY NO. 6214A

CROSS SECTIONS

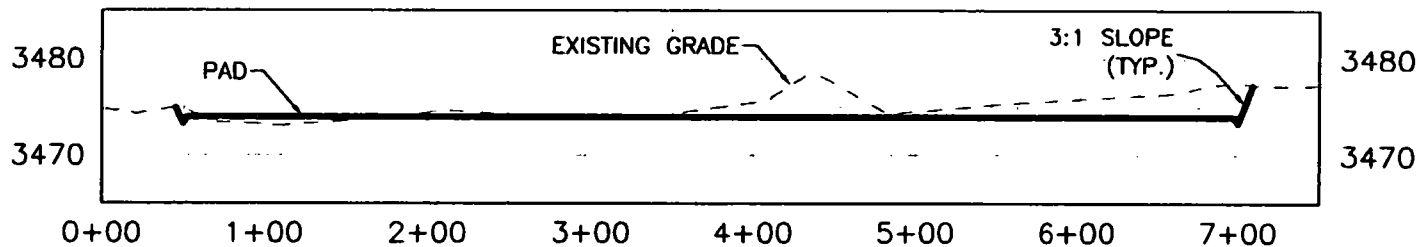
SECTION A-A



SECTION B-B



SECTION C-C



DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
TOMB RAIDER 1-12 FED 514H
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO.

MAY 21, 2018

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

012 60 120 240
SCALE 1" = 120' - 1" = 20' VER

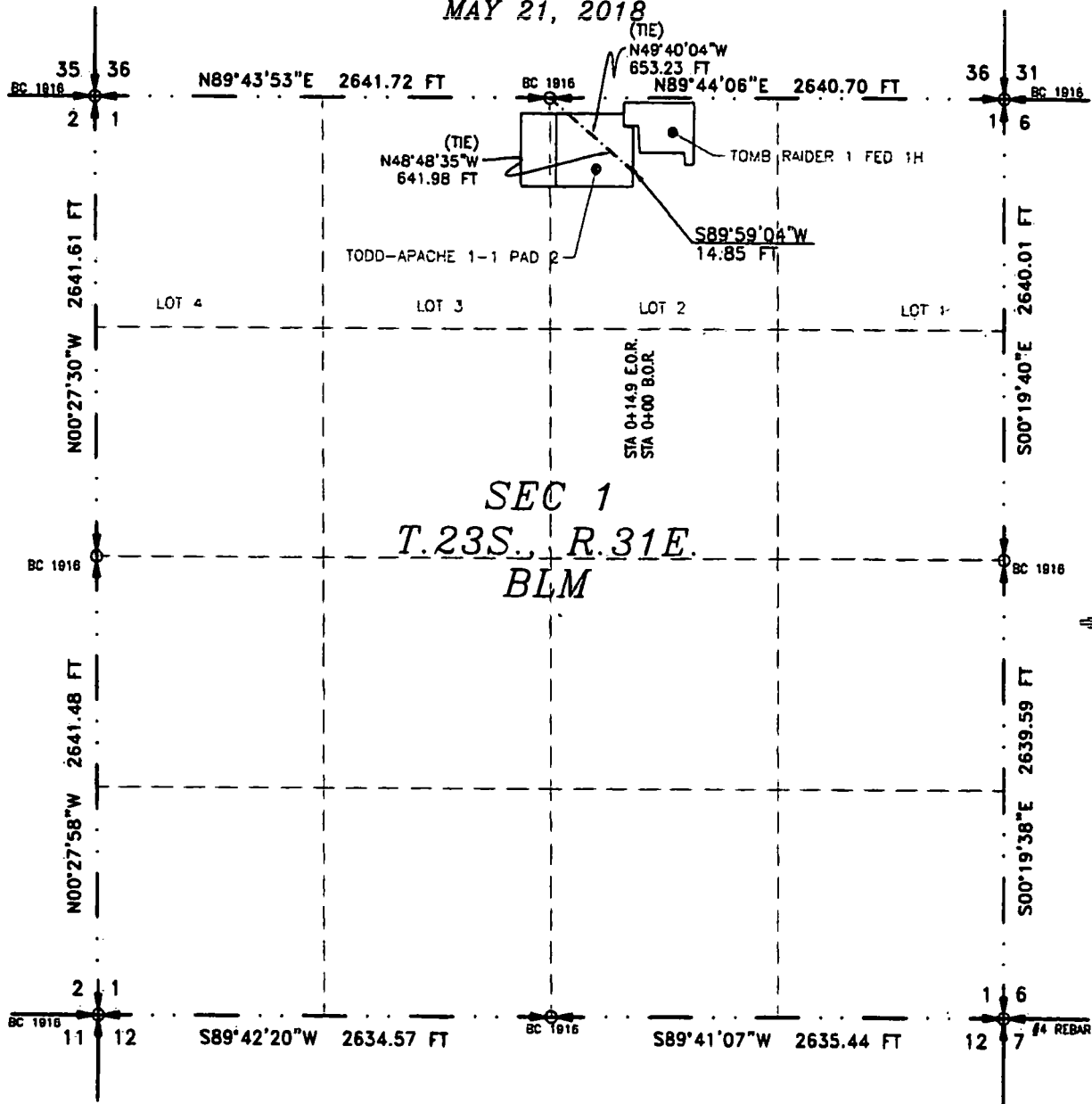
CUT	FILL	NET
9962 CU. YD	8348 CU. YD	1614 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

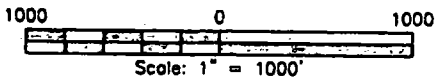
SHEET 2-2
SURVEY NO. 6214A

ACCESS ROAD PLAT
 ACCESS ROAD TO THE TODD-APACHE 1-1 PAD 2
 (TOMB RAIDER 1-12 FED 614H, 714H, 524H, 514H, & 525H)

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
 MAY 21, 2018



SEE NEXT SHEET (2-2) FOR DESCRIPTION



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.

SHEET: 1-2

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

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 21 DAY OF MAY 2018

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

SURVEY NO. 6214A

FILIMON F. JARAMILLO PLS. 12797

ACCESS ROAD PLAT
ACCESS ROAD TO THE TODD-APACHE 1-1 PAD 2
(TOMB RAIDER 1-12 FED 614H, 714H, 524H, 514H, & 525H)

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
MAY 21, 2018

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 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 N49°40'04"W A DISTANCE OF 653.23 FEET;

THENCE S89°59'04"W A DISTANCE OF 14.85 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 N48°48'35"W, A DISTANCE OF 641.98 FEET;

SAID STRIP OF LAND BEING 14.85 FEET OR 0.90 RODS IN LENGTH, CONTAINING 0.010 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

LOT 2 14.85 L.F. 0.90 RODS 0.010 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.

SHEET: 2-2

MADRON SURVEYING, INC.

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 21 DAY OF MAY, 2018

Filimon F. Jaramillo
FILIMON F. JARAMILLO, ELS. 12797
PROFESSIONAL SURVEYOR

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

SURVEY NO. 6214A

CARLSBAD, NEW MEXICO



APD ID: 10400031815

Submission Date: 07/13/2018

Highlighted data
reflects the most
recent changes

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

Show Final Text

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3475	0	0	ALLUVIUM	NONE	No
2	RUSTLER	-697	697	758	SALT	NONE	No
3	BASE OF SALT	-4480	4480	4453	SALT	NONE	No
4	DELAWARE	-4500	4500	4473	SANDSTONE	NATURAL GAS,OIL	No
5	BONE SPRING	-8352	8352	8310	SANDSTONE	OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M

Rating Depth: 6000

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M 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:

TOMB_RAIDER_1_12_FED_514H_3M_BOPE_20180711064903.pdf

BOP Diagram Attachment:

TOMB_RAIDER_1_12_FED_514H_3M_BOPE_20180711064912.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

Pressure Rating (PSI): 5M

Rating Depth: 9185

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M 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? NO

Variance request:

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:

TOMB_RAIDER_1_12_FED_514H_5M_BOPE_20180711065335.pdf

BOP Diagram Attachment:

TOMB_RAIDER_1_12_FED_514H_5M_BOPE_20180711065344.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	750	0	750	0		750	H-40	48	STC	1.125	1	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	6000	0	6000			6000	J-55	40	LTC	1.125	1	BUOY	1.6	BUOY	1.6
3	PRODUCTION	8.75	5.5	NEW	API	N	0	18972	0	9185			18972	P-110	17	OTHER - BTC	1.125	1	BUOY	1.6	BUOY	1.6

Casing Attachments

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

TOMB_RAIDER_1_12_FED_514H_SurfCsg_Ass_20180711093725.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

TOMB_RAIDER_1_12_FED_514H_Int_Csg_Ass_20180711093658.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

TOMB_RAIDER_1_12_FED_514H_ProdCasing_Ass_20180711093709.pdf

Section 4 - Cement

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	750	786	1.33	13.2	1046	100	C	Class C + adds

INTERMEDIATE	Lead		0	5500	1290	1.94	9	2503	50	C	Class C + Adds
INTERMEDIATE	Tail		5500	6000	190	1.33	13.2	252	50	C	Class C + Adds
PRODUCTION	Lead		0	5500	349	3.27	9	1248	25	Tuned	N/A
PRODUCTION	Tail		8157	18972	1807	1.2	14.5	2638	10	H	(50:50) Clas H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

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

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

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	750	OTHER : FW GEL	8.5	9				2			

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

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
750	6000	WATER-BASED MUD	10	10.5				2			
6000	9185	WATER-BASED MUD	8.5	9				12			

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:

CBL,DS,GR,MUDLOG

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4299

Anticipated Surface Pressure: 2278.3

Anticipated Bottom Hole Temperature(F): 152

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Tomb_Raider_1_12_Fed_514H_H2S_20180711094236.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Devon_Tomb_Raider_1_12_Fed_Com_514H_AC_Report_Permit_Plan_1_20180711094445.pdf

Devon_Tomb_Raider_1_12_Fed_Com_514H_Permit_Plan_1_20180711094445.pdf

Devon_Tomb_Raider_1_12_Fed_Com_514H_Plot_Permit_Plan_1_20180711094446.pdf

Devon_Tomb_Raider_1_12_Plot.wpc_20180711094446.pdf

Other proposed operations facets description:

REVISED DRILLING PLAN 10-18-2018

CLOSED LOOP DESIGN

MB WELLHEAD

REVISED MB VERB 10-18-2018

GAS CAPTURE PLAN

Other proposed operations facets attachment:

TOMB_RAIDER_1_12_FED_514H_Clsd_Loop_20180711094551.pdf

TOMB_RAIDER_1_12_FED_514H_MB_Wellhd_20180711094552.pdf

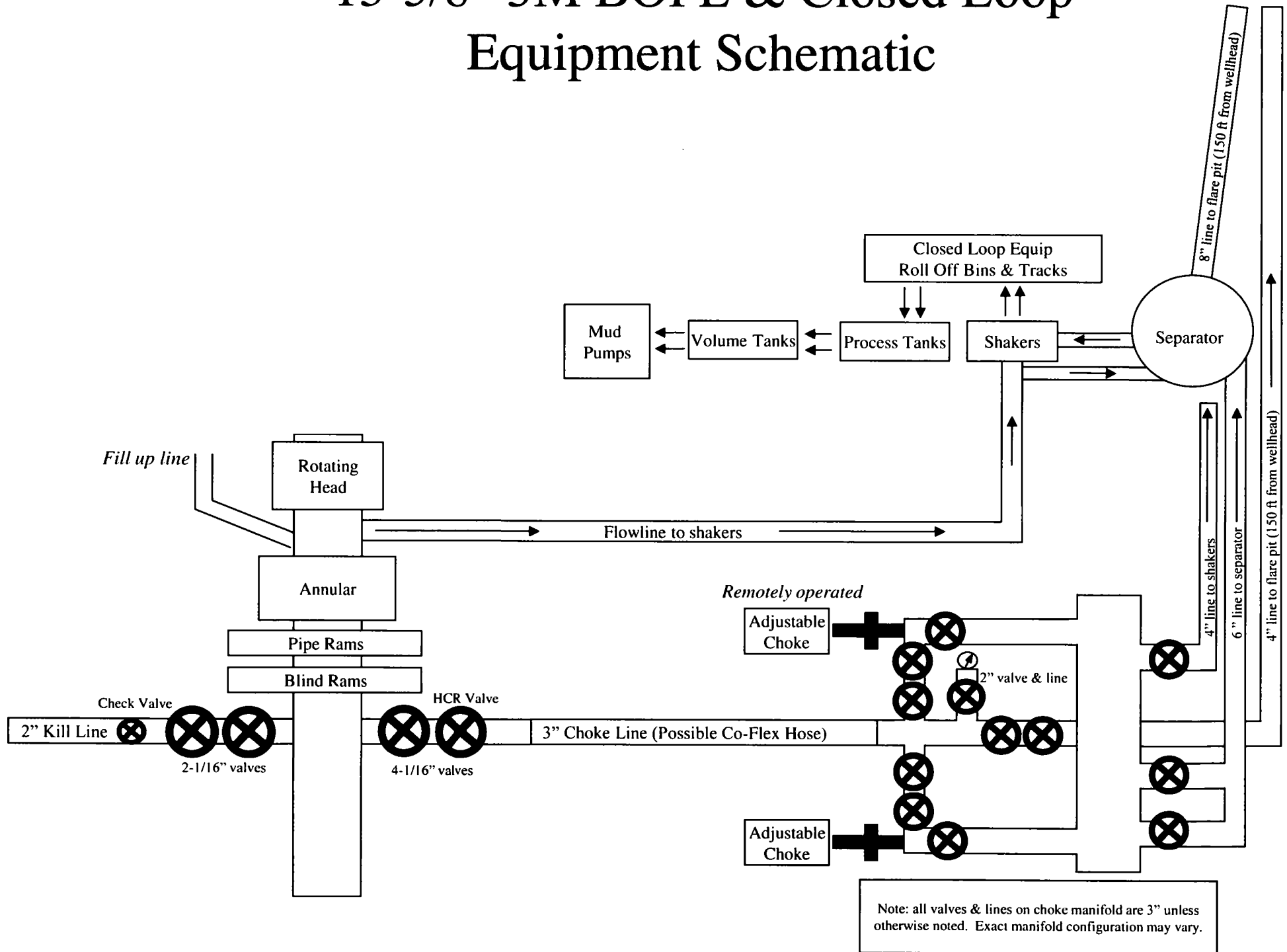
TOMB_RAIDER_1_12_GasCapturePlan_20180712091108.pdf

Tomb_Raider_1_12_Fed_514H_Drilling_Plan_Rev1_20181018075949.pdf

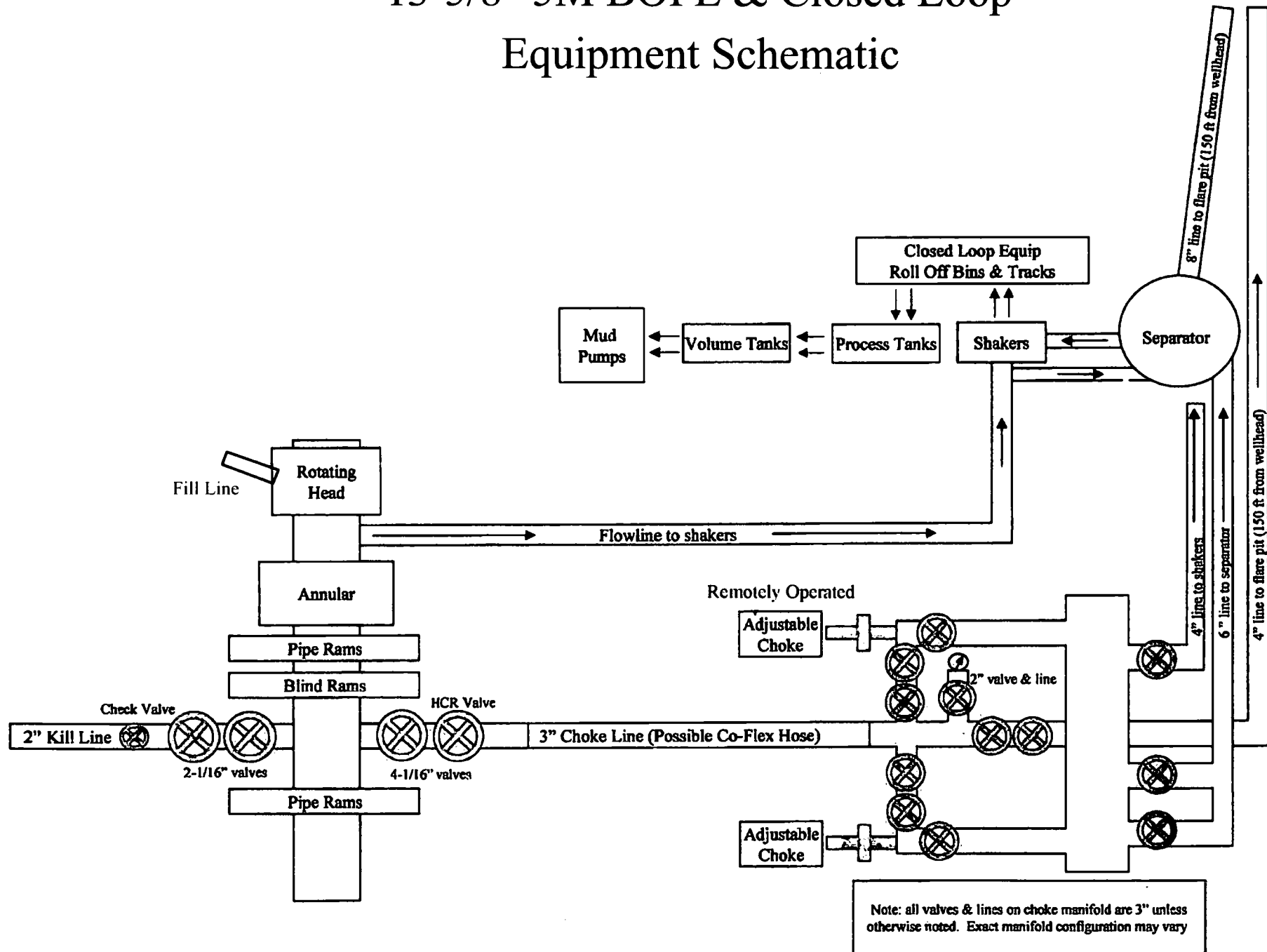
Other Variance attachment:

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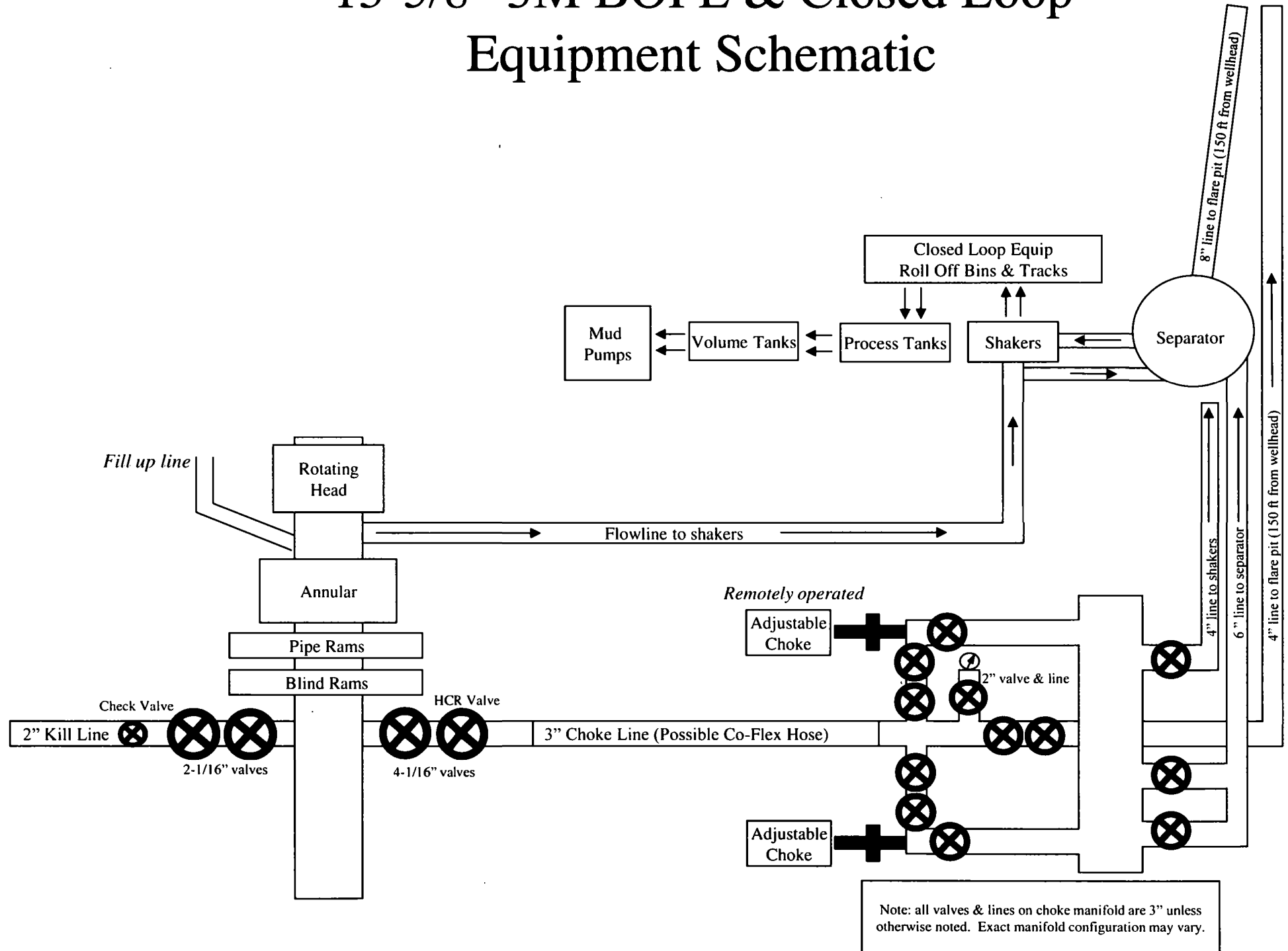
13-5/8" 3M BOPE & Closed Loop Equipment Schematic



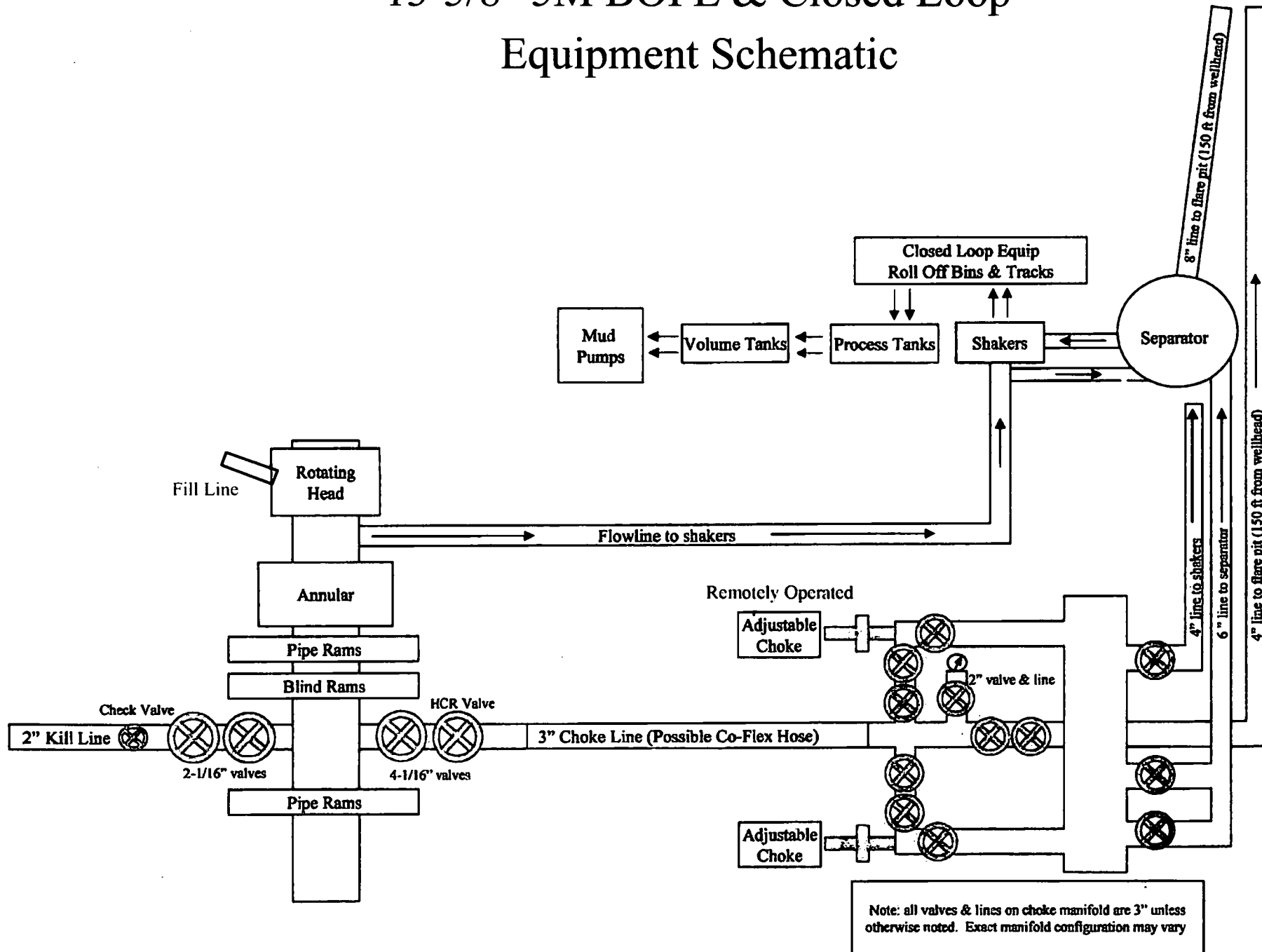
13-5/8" 5M BOPE & Closed Loop Equipment Schematic



13-5/8" 3M BOPE & Closed Loop Equipment Schematic



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



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

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



NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 13 2018

RECEIVED

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

Hydrogen Sulfide (H₂S) Contingency Plan

For

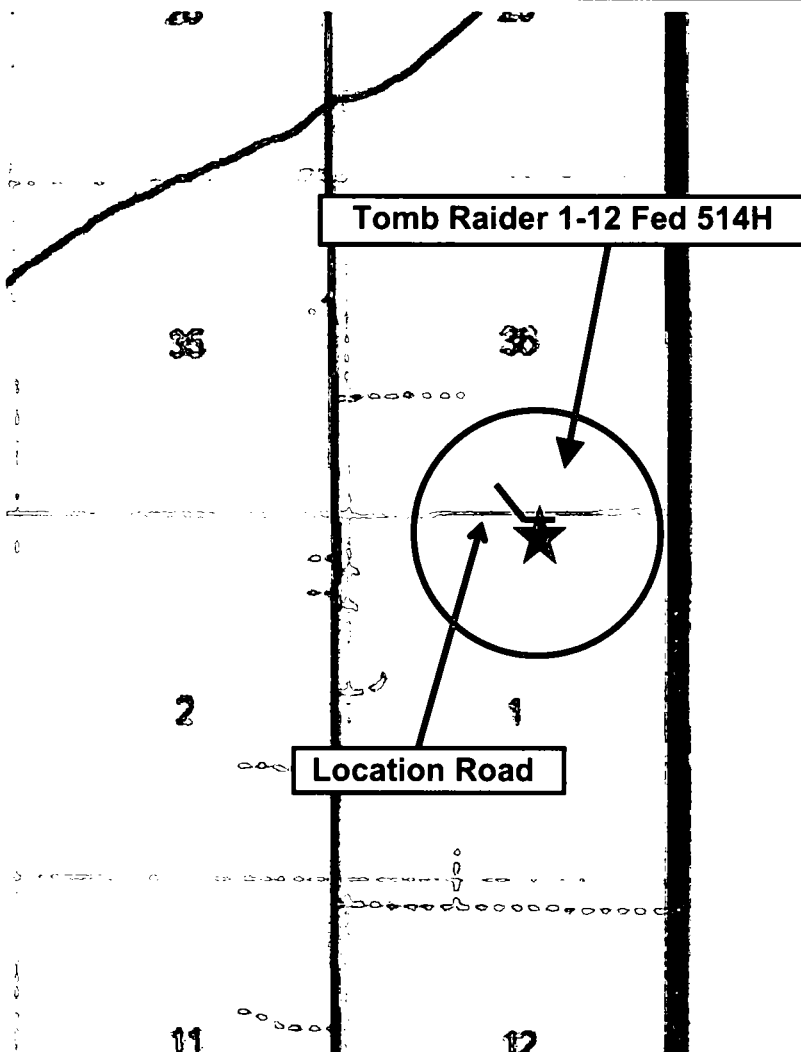
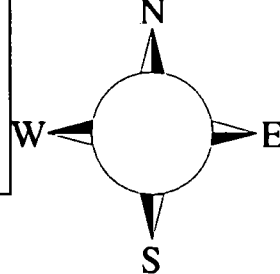
Tomb Raider 1-12 Fed 514H

**Sec-1 T-23S R-31E
360' FNL & 2365' FEL
LAT. = 32.3397278' N (NAD83)
LONG = 103.7306116' W**

Eddy County NM

Tomb Raider 1-12 Fed 514H

This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.



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

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

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, 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 H₂S 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 H₂S, 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 (SO₂). 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 H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H₂S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO₂	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 (H₂S) 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 (H₂S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S 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 H₂S 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 H₂S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H₂S 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 H₂S.

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. H₂S detection and monitoring equipment:

Portable H₂S monitors positioned on location for best coverage and response. These units have warning lights which activate when H₂S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

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

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 H₂S circulated to surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.

5. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H₂S trim.
- B. All elastomers used for packing and seals shall be H₂S 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 H₂S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

<u>Devon Energy Corp. Company Call List</u>		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
EHS Professional – Laura Wright		405-439-8129
<u>Agency Call List</u>		
<u>Lea County (575)</u>	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
<u>Eddy County (575)</u>	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
	Native Air – Emergency Helicopter – Hobbs	(575) 392-6429
	Flight For Life - Lubbock, TX	(806) 743-9911
<u>Give GPS position:</u>	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



NM OIL CONSERVATION
ARTESIA DISTRICT
NOV 13 2018

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WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 01-T23S-R31E

Tomb Raider 1-12 Fed 514H

Wellbore #1

Permit Plan 1

Anticollision Report

28 June, 2018

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are 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 6/28/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	18,972.90	Permit Plan 1 (Wellbore #1)	MWD+HDGM	OWSG MWD + HDGM

Summary						
Site Name	Reference Measure	Offset Measure	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation	Warning
Offset Well - Wellbore - Design						
Sec 01-T23S-R31E						
Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1	13,365.12	9,193.30	770.05	507.92	2.938	Alert, CC, ES
Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1	13,400.00	9,193.54	770.84	508.25	2.935	Alert, 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	0.00	3.17	393.75			
Tomb Raider 1 Fed 1H - Original - Actual	3,900.00	3,900.96	396.92	369.75	14.612	ES
Tomb Raider 1 Fed 1H - Original - Actual	8,950.00	8,929.97	578.70	516.16	9.253	SF
Tomb Raider 1 Fed 1H - Original - Plan 2	0.00	3.17	393.75			
Tomb Raider 1 Fed 1H - Original - Plan 2	13,700.00	14,685.73	1,177.83	950,536,931	0.000	Collision, ES, SF
Tomb Raider 1 Fed 1H - Original - Plan1v2	4,000.00	4,003.20	393.75	379.62	27.878	CC
Tomb Raider 1 Fed 1H - Original - Plan1v2	4,050.00	4,053.20	393.84	379.54	27.538	ES
Tomb Raider 1 Fed 1H - Original - Plan1v2	8,850.00	8,840.30	517.42	486.12	16.528	SF
Tomb Raider 1 Fed 1H - Original - PTL	0.00	3.17	393.75			
Tomb Raider 1 Fed 1H - Original - PTL	3,900.00	3,900.96	396.92	369.75	14.612	ES
Tomb Raider 1 Fed 1H - Original - PTL	8,950.00	8,929.97	578.70	516.16	9.253	SF
Tomb Raider 1 Fed 1H - Original - T&D	2,298.98	2,302.24	393.68	385.65	49.010	CC
Tomb Raider 1 Fed 1H - Original - T&D	4,040.25	4,045.67	393.76	379.49	27.600	ES
Tomb Raider 1 Fed 1H - Original - T&D	8,850.00	8,841.67	517.42	486.12	16.528	SF
Tomb Raider 1-12 Fed 334H - Wellbore #1 - Wellbore #1	1,693.18	1,698.10	1,289.47	1,277.84	110.865	CC
Tomb Raider 1-12 Fed 334H - Wellbore #1 - Wellbore #1	2,300.00	2,295.03	1,290.15	1,274.29	81.343	ES
Tomb Raider 1-12 Fed 334H - Wellbore #1 - Wellbore #1	6,000.00	5,963.30	1,499.70	1,457.42	35.467	SF
Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1	12,643.93	12,492.94	1,457.33	1,334.43	11.857	CC
Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1	18,972.90	18,827.61	1,481.03	1,186.01	5.020	ES, SF
Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1	18,972.90	18,975.01	554.09	258.56	1.875	Minor Risk, CC, ES, SF
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1	2,500.00	2,499.90	30.02	12.52	1.715	Minor Risk, CC
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1	2,550.00	2,549.58	30.29	12.43	1.696	Minor Risk, ES, SF
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2	2,500.00	2,499.90	30.02	12.52	1.715	Minor Risk, CC
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2	2,550.00	2,549.58	30.29	12.43	1.696	Minor Risk, ES, SF
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1	2,500.00	2,500.10	29.95	12.45	1.711	Minor Risk, CC
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1	2,550.00	2,549.85	30.16	12.30	1.689	Minor Risk, ES, SF
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 2	2,500.00	2,500.10	29.95	12.45	1.711	Minor Risk, CC

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are 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	Referenc e Measure	Offset Measure d	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separatio n	Warning
Offset Well - Wellbore - Design						
Sec 01-T23S-R31E						
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 2	2,550.00	2,549.84	30.17	12.31	1.689	Minor Risk, ES, SF
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1	2,500.00	2,501.30	123.70	106.20	7.067	CC
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1	2,550.00	2,550.28	123.92	106.06	6.939	ES
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1	8,650.00	8,659.56	309.47	247.99	5.034	SF
Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole						Out of range
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	8,550.57	8,541.07	1,077.97	1,017.73	17.896	CC
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	8,650.00	8,640.77	1,078.13	1,017.21	17.696	ES
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	18,972.90	20,458.64	1,439.12	1,225.29	6.730	SF
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals	2,094.14	2,101.30	119.49	105.18	8.354	CC
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals	2,400.00	2,406.60	119.57	103.09	7.257	ES
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals	2,650.00	2,651.41	125.59	107.36	6.890	SF
Tomb Raider 1-12 Fed 714H - Original Hole - NTL	2,094.14	2,101.30	119.49	105.18	8.354	CC
Tomb Raider 1-12 Fed 714H - Original Hole - NTL	2,400.00	2,406.60	119.57	103.09	7.257	ES
Tomb Raider 1-12 Fed 714H - Original Hole - NTL	2,650.00	2,651.41	125.59	107.36	6.890	SF
Tomb Raider 1-12 Fed Com 234H - Wellbore #1 - Wellbor	1,909.55	1,912.45	1,339.29	1,326.09	101.420	CC
Tomb Raider 1-12 Fed Com 234H - Wellbore #1 - Wellbor	2,500.00	2,493.82	1,342.15	1,324.89	77.731	ES
Tomb Raider 1-12 Fed Com 234H - Wellbore #1 - Wellbor	4,400.00	4,250.19	1,498.81	1,468.78	49.915	SF
Tomb Raider 1-12 Fed Com 528H - Wellbore #1 - Wellbor	0.00	2.37	1,384.72			
Tomb Raider 1-12 Fed Com 528H - Wellbore #1 - Wellbor	3,400.00	3,245.80	1,496.28	1,473.10	64.548	SF
Tomb Raider 1-12 Fed Com 718H - Wellbore #1 - Wellbor	3,421.05	3,425.81	1,311.79	1,287.93	54.979	CC
Tomb Raider 1-12 Fed Com 718H - Wellbore #1 - Wellbor	3,500.00	3,495.11	1,312.08	1,287.70	53.814	ES
Tomb Raider 1-12 Fed Com 718H - Wellbore #1 - Wellbor	5,250.00	5,101.74	1,496.19	1,460.22	41.598	SF
Sec 12-T23S-R31E						
Tomb Raider 12-1 Fed 516H - Wellbore #1 - Permit Plan 1	9,150.00	19,023.80	1,323.00	1,141.01	7.270	SF
Tomb Raider 12-1 Fed 516H - Wellbore #1 - Permit Plan 1	9,300.00	18,906.54	1,320.15	1,139.14	7.293	ES
Tomb Raider 12-1 Fed 516H - Wellbore #1 - Permit Plan 1	18,689.72	9,524.42	1,319.95	1,142.90	7.455	CC
Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan 1						Out of range

Offset Design												Offset Site Error:	5.00 ft
Sec 01-T23S-R31E - Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1												Offset Well Error:	10.00 ft
Survey Program: 228-INC-ONLY													
Reference		Offset		Semi Major Axis		Distance		Minimum		Separation		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
12,100.00	9,185.00	9,185.21	9,183.49	54.61	191.65	89.40	-4,264.42	-901.49	1,481.02	1,250.30	230.72	6.419	
12,150.00	9,185.00	9,185.51	9,183.79	55.20	191.66	89.42	-4,264.42	-901.49	1,438.55	1,207.21	231.34	6.218	
12,200.00	9,185.00	9,185.80	9,184.09	55.79	191.67	89.44	-4,264.42	-901.49	1,396.57	1,164.56	232.01	6.019	
12,250.00	9,185.00	9,186.10	9,184.38	56.38	191.67	89.46	-4,264.43	-901.49	1,355.14	1,122.40	232.74	5.823	
12,300.00	9,185.00	9,186.40	9,184.68	56.98	191.68	89.49	-4,264.43	-901.49	1,314.31	1,080.78	233.53	5.628	
12,350.00	9,185.00	9,186.70	9,184.99	57.58	191.69	89.51	-4,264.43	-901.49	1,274.12	1,039.74	234.38	5.436	
12,400.00	9,185.00	9,187.01	9,185.29	58.18	191.69	89.53	-4,264.43	-901.49	1,234.66	999.36	235.30	5.247	
12,450.00	9,185.00	9,187.31	9,185.60	58.79	191.70	89.55	-4,264.43	-901.49	1,195.98	959.68	236.30	5.061	
12,500.00	9,185.00	9,187.62	9,185.90	59.40	191.71	89.58	-4,264.44	-901.49	1,158.18	920.80	237.37	4.879	Alert
12,550.00	9,185.00	9,187.93	9,186.21	60.01	191.72	89.60	-4,264.44	-901.49	1,121.32	882.80	238.53	4.701	Alert
12,600.00	9,185.00	9,188.24	9,186.53	60.63	191.72	89.62	-4,264.44	-901.49	1,085.52	845.76	239.76	4.528	Alert
12,650.00	9,185.00	9,188.56	9,186.84	61.24	191.73	89.65	-4,264.44	-901.49	1,050.88	809.80	241.08	4.359	Alert
12,700.00	9,185.00	9,188.87	9,187.16	61.86	191.74	89.67	-4,264.44	-901.49	1,017.52	775.04	242.47	4.196	Alert
12,750.00	9,185.00	9,189.19	9,187.48	62.49	191.75	89.69	-4,264.45	-901.49	985.56	741.61	243.95	4.040	Alert
12,800.00	9,185.00	9,189.51	9,187.80	63.11	191.75	89.72	-4,264.45	-901.49	955.15	709.65	245.50	3.891	Alert
12,850.00	9,185.00	9,189.84	9,188.12	63.74	191.76	89.74	-4,264.45	-901.49	926.45	679.34	247.11	3.749	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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	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			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
12,900.00	9,185.00	9,190.16	9,188.45	64.36	191.77	89.77	-4,264.45	-901.49	899.61	650.83	248.78	3.616	Alert	
12,950.00	9,185.00	9,190.49	9,188.77	65.00	191.78	89.79	-4,264.46	-901.49	874.81	624.33	250.47	3.493	Alert	
13,000.00	9,185.00	9,190.82	9,189.10	65.63	191.79	89.81	-4,264.46	-901.49	852.22	600.04	252.18	3.379	Alert	
13,050.00	9,185.00	9,191.15	9,189.44	66.26	191.79	89.84	-4,264.46	-901.49	832.03	578.15	253.88	3.277	Alert	
13,100.00	9,185.00	9,191.49	9,189.77	66.90	191.80	89.86	-4,264.46	-901.49	814.41	558.89	255.52	3.187	Alert	
13,150.00	9,185.00	9,191.82	9,190.11	67.54	191.81	89.89	-4,264.46	-901.49	799.53	542.44	257.09	3.110	Alert	
13,200.00	9,185.00	9,192.16	9,190.45	68.18	191.82	89.91	-4,264.47	-901.49	787.55	529.01	258.54	3.046	Alert	
13,250.00	9,185.00	9,192.50	9,190.79	68.82	191.83	89.94	-4,264.47	-901.49	778.61	518.75	259.85	2.996	Alert	
13,300.00	9,185.00	9,192.85	9,191.13	69.46	191.83	89.97	-4,264.47	-901.49	772.80	511.82	260.98	2.961	Alert	
13,350.00	9,185.00	9,193.20	9,191.48	70.11	191.84	89.99	-4,264.47	-901.49	770.20	508.30	261.90	2.941	Alert	
13,365.12	9,185.00	9,193.30	9,191.58	70.30	191.84	90.00	-4,264.47	-901.49	770.05	507.92	262.13	2.938	Alert, CC, ES	
13,400.00	9,185.00	9,193.54	9,191.83	70.76	191.85	90.02	-4,264.48	-901.49	770.84	508.25	262.59	2.935	Alert, SF	
13,450.00	9,185.00	9,193.90	9,192.18	71.40	191.86	90.04	-4,264.48	-901.49	774.71	511.66	263.06	2.945	Alert	
13,500.00	9,185.00	9,194.25	9,192.53	72.05	191.87	90.07	-4,264.48	-901.49	781.77	518.49	263.29	2.969	Alert	
13,550.00	9,185.00	9,194.61	9,192.89	72.71	191.88	90.10	-4,264.48	-901.49	791.93	528.64	263.29	3.008	Alert	
13,600.00	9,185.00	9,194.96	9,193.25	73.36	191.88	90.12	-4,264.49	-901.49	805.07	541.98	263.09	3.060	Alert	
13,650.00	9,185.00	9,195.33	9,193.61	74.01	191.89	90.15	-4,264.49	-901.49	821.05	558.34	262.71	3.125	Alert	
13,700.00	9,185.00	9,195.69	9,193.97	74.67	191.90	90.18	-4,264.49	-901.49	839.71	577.55	262.17	3.203	Alert	
13,750.00	9,185.00	9,196.06	9,194.34	75.33	191.91	90.20	-4,264.49	-901.49	860.87	599.38	261.49	3.292	Alert	
13,800.00	9,185.00	9,196.43	9,194.71	75.99	191.92	90.23	-4,264.50	-901.49	884.36	623.64	260.72	3.392	Alert	
13,850.00	9,185.00	9,196.80	9,195.08	76.65	191.93	90.26	-4,264.50	-901.49	909.99	650.12	259.86	3.502	Alert	
13,900.00	9,185.00	9,197.17	9,195.46	77.31	191.94	90.29	-4,264.50	-901.49	937.58	678.63	258.95	3.621	Alert	
13,950.00	9,185.00	9,197.55	9,195.83	77.97	191.95	90.32	-4,264.50	-901.49	966.98	708.96	258.01	3.748	Alert	
14,000.00	9,185.00	9,197.93	9,196.21	78.63	191.95	90.34	-4,264.51	-901.49	998.01	740.96	257.05	3.883	Alert	
14,050.00	9,185.00	9,198.32	9,196.60	79.30	191.96	90.37	-4,264.51	-901.49	1,030.54	774.45	256.09	4.024	Alert	
14,100.00	9,185.00	9,198.70	9,196.98	79.96	191.97	90.40	-4,264.51	-901.49	1,064.42	809.29	255.13	4.172	Alert	
14,150.00	9,185.00	9,199.09	9,197.37	80.63	191.98	90.43	-4,264.52	-901.49	1,099.54	845.34	254.20	4.326	Alert	
14,200.00	9,185.00	9,199.48	9,197.76	81.30	191.99	90.46	-4,264.52	-901.49	1,135.77	882.49	253.28	4.484	Alert	
14,250.00	9,185.00	9,199.88	9,198.16	81.97	192.00	90.49	-4,264.52	-901.49	1,173.01	920.62	252.39	4.648	Alert	
14,300.00	9,185.00	9,200.28	9,198.56	82.64	192.01	90.52	-4,264.52	-901.49	1,211.17	959.63	251.54	4.815	Alert	
14,350.00	9,185.00	9,200.68	9,198.96	83.31	192.02	90.55	-4,264.53	-901.49	1,250.17	999.45	250.71	4.986	Alert	
14,400.00	9,185.00	9,201.08	9,199.36	83.98	192.03	90.58	-4,264.53	-901.49	1,289.92	1,040.00	249.93	5.161		
14,450.00	9,185.00	9,201.49	9,199.77	84.65	192.04	90.61	-4,264.53	-901.49	1,330.37	1,081.20	249.17	5.339		
14,500.00	9,185.00	9,201.90	9,200.18	85.32	192.05	90.64	-4,264.54	-901.49	1,371.45	1,122.99	248.46	5.520		
14,550.00	9,185.00	9,202.31	9,200.59	86.00	192.06	90.67	-4,264.54	-901.49	1,413.10	1,165.33	247.77	5.703		
14,600.00	9,185.00	9,202.73	9,201.01	86.68	192.07	90.70	-4,264.54	-901.49	1,455.28	1,208.15	247.12	5.889		
14,650.00	9,185.00	9,203.15	9,201.43	87.35	192.08	90.73	-4,264.55	-901.49	1,497.93	1,251.43	246.50	6.077		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.00	0.00	3.17	3.17	0.50	0.00	65.76	161.64	359.04	393.75					
50.00	50.00	52.66	52.66	0.50	0.07	65.75	161.76	359.03	393.78	393.21	0.57	687.922		
100.00	100.00	102.15	102.15	0.52	0.14	65.70	162.10	358.98	393.89	393.23	0.65	601.937		
150.00	150.00	152.79	152.79	0.59	0.31	65.64	162.51	358.90	393.98	393.07	0.90	435.716		
200.00	200.00	203.44	203.43	0.70	0.49	65.59	162.82	358.77	393.99	392.80	1.19	330.135		
229.49	229.49	232.74	232.73	0.78	0.59	65.56	162.99	358.69	393.98	392.61	1.37	286.877		
250.00	250.00	253.21	253.20	0.84	0.67	65.55	163.10	358.64	393.98	392.48	1.50	262.216		
250.25	250.25	253.45	253.45	0.84	0.67	65.55	163.10	358.64	393.98	392.48	1.50	261.944		
300.00	300.00	302.93	302.92	0.99	0.84	65.50	163.36	358.53	393.99	392.17	1.83	215.833		
350.00	350.00	352.23	352.22	1.15	1.01	65.48	163.56	358.53	394.07	391.92	2.16	182.821		
400.00	400.00	401.84	401.84	1.31	1.19	65.47	163.70	358.64	394.23	391.74	2.49	158.181		
450.00	450.00	451.99	451.98	1.48	1.36	65.43	164.01	358.68	394.40	391.56	2.83	139.131		
500.00	500.00	502.11	502.10	1.65	1.54	65.36	164.51	358.61	394.54	391.36	3.18	124.080		
550.00	550.00	552.22	552.21	1.82	1.71	65.28	165.02	358.52	394.68	391.15	3.53	111.911		
600.00	600.00	601.48	601.47	1.99	1.88	65.22	165.51	358.46	394.83	390.96	3.87	101.970		
650.00	650.00	650.27	650.25	2.16	2.06	65.15	166.07	358.52	395.13	390.91	4.22	93.706		
700.00	700.00	700.56	700.54	2.34	2.23	65.07	166.68	358.66	395.51	390.94	4.57	86.595		
750.00	750.00	751.44	751.41	2.51	2.41	65.02	167.13	358.76	395.79	390.87	4.92	80.435		
800.00	800.00	801.74	801.71	2.69	2.59	64.97	167.54	358.80	395.99	390.72	5.27	75.108		
850.00	850.00	851.95	851.92	2.87	2.76	64.90	168.08	358.74	396.16	390.54	5.62	70.440		
900.00	900.00	902.12	902.09	3.04	2.94	64.81	168.66	358.63	396.32	390.34	5.98	66.316		
950.00	950.00	952.29	952.26	3.22	3.11	64.73	169.22	358.52	396.45	390.12	6.33	62.644		
1,000.00	1,000.00	1,001.66	1,001.62	3.40	3.29	64.67	169.66	358.49	396.61	389.93	6.68	59.390		
1,050.00	1,050.00	1,051.44	1,051.40	3.58	3.46	64.64	169.99	358.58	396.84	389.81	7.03	56.454		
1,100.00	1,100.00	1,102.13	1,102.09	3.75	3.64	64.59	170.36	358.61	397.02	389.64	7.38	53.767		
1,150.00	1,150.00	1,152.25	1,152.21	3.93	3.82	64.53	170.80	358.53	397.14	389.40	7.74	51.330		
1,200.00	1,200.00	1,201.59	1,201.54	4.11	3.99	64.49	171.12	358.56	397.30	389.21	8.09	49.128		
1,250.00	1,250.00	1,251.41	1,251.37	4.29	4.16	64.48	171.28	358.74	397.54	389.10	8.44	47.106		
1,300.00	1,300.00	1,301.71	1,301.66	4.46	4.34	64.48	171.37	358.93	397.75	388.95	8.79	45.234		
1,350.00	1,350.00	1,352.24	1,352.20	4.64	4.51	64.48	171.44	359.08	397.91	388.77	9.15	43.497		
1,400.00	1,400.00	1,402.91	1,402.88	4.82	4.69	64.46	171.61	359.10	398.00	388.49	9.50	41.880		
1,450.00	1,450.00	1,452.83	1,452.79	5.00	4.87	64.42	171.89	359.01	398.04	388.18	9.86	40.386		
1,500.00	1,500.00	1,502.57	1,502.53	5.18	5.04	64.35	172.32	358.88	398.10	387.90	10.21	39.000		
1,550.00	1,550.00	1,552.84	1,552.79	5.36	5.22	64.29	172.76	358.74	398.17	387.61	10.56	37.700		
1,600.00	1,600.00	1,603.15	1,603.10	5.53	5.39	64.24	173.04	358.64	398.21	387.29	10.92	36.480		
1,650.00	1,650.00	1,653.19	1,653.14	5.71	5.57	64.21	173.23	358.56	398.22	386.95	11.27	35.339		
1,700.00	1,700.00	1,703.15	1,703.10	5.89	5.74	64.19	173.40	358.49	398.22	386.60	11.62	34.266		
1,750.00	1,750.00	1,752.66	1,752.61	6.07	5.92	64.18	173.46	358.51	398.27	386.29	11.97	33.264		
1,800.00	1,800.00	1,802.32	1,802.26	6.25	6.09	64.20	173.41	358.64	398.37	386.04	12.32	32.322		
1,850.00	1,850.00	1,852.30	1,852.24	6.43	6.26	64.22	173.32	358.82	398.49	385.81	12.68	31.431		
1,900.00	1,900.00	1,902.32	1,902.27	6.61	6.44	64.24	173.22	359.00	398.61	385.58	13.03	30.587		
1,950.00	1,950.00	1,952.40	1,952.35	6.78	6.61	64.27	173.12	359.17	398.72	385.33	13.39	29.787		
2,000.00	2,000.00	2,003.31	2,003.26	6.96	6.79	64.28	173.05	359.29	398.79	385.05	13.74	29.020		
2,050.00	2,050.00	2,054.87	2,054.82	7.14	6.97	64.28	173.04	359.17	398.69	384.59	14.10	28.275		
2,100.00	2,100.00	2,104.93	2,104.88	7.32	7.14	64.25	173.08	358.90	398.46	384.00	14.45	27.569		
2,150.00	2,150.00	2,154.48	2,154.42	7.50	7.31	64.23	173.14	358.67	398.27	383.47	14.80	26.902		
2,200.00	2,200.00	2,204.87	2,204.81	7.68	7.49	64.21	173.18	358.46	398.10	382.94	15.16	26.263		
2,250.00	2,250.00	2,255.40	2,255.35	7.86	7.66	64.20	173.18	358.19	397.87	382.35	15.51	25.647		
2,300.00	2,300.00	2,304.05	2,304.00	8.04	7.83	64.19	173.15	358.01	397.68	381.82	15.86	25.071		
2,329.45	2,329.45	2,332.71	2,332.65	8.14	7.93	64.19	173.13	357.99	397.65	381.59	16.07	24.749		
2,350.00	2,350.00	2,352.90	2,352.84	8.22	8.00	64.19	173.11	358.01	397.67	381.45	16.21	24.530		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,400.00	2,400.00	2,404.09	2,404.04	8.39	8.18	64.20	173.07	357.99	397.64	381.07	16.57	23.999		
2,450.00	2,450.00	2,455.01	2,454.95	8.57	8.36	64.19	173.05	357.80	397.46	380.54	16.92	23.484		
2,500.00	2,500.00	2,505.06	2,505.00	8.75	8.53	64.18	173.03	357.57	397.24	379.96	17.28	22.991		
2,550.00	2,550.00	2,554.59	2,554.54	8.93	8.71	64.17	173.00	357.34	397.02	379.39	17.63	22.520		
2,600.00	2,600.00	2,603.27	2,603.21	9.11	8.88	64.17	172.95	357.27	396.93	378.96	17.98	22.078		
2,600.40	2,600.40	2,603.66	2,603.60	9.11	8.88	64.17	172.95	357.27	396.93	378.95	17.98	22.075		
2,650.00	2,650.00	2,652.48	2,652.42	9.29	9.05	64.18	172.88	357.38	397.00	378.67	18.33	21.659		
2,700.00	2,700.00	2,702.33	2,702.28	9.47	9.22	64.21	172.80	357.54	397.11	378.43	18.68	21.256		
2,750.00	2,750.00	2,752.74	2,752.68	9.65	9.40	64.23	172.72	357.69	397.21	378.18	19.04	20.865		
2,800.00	2,800.00	2,803.55	2,803.49	9.83	9.57	64.23	172.71	357.72	397.23	377.83	19.39	20.482		
2,850.00	2,850.00	2,853.71	2,853.65	10.00	9.75	64.22	172.74	357.64	397.17	377.42	19.75	20.112		
2,900.00	2,900.00	2,903.64	2,903.58	10.18	9.92	64.21	172.79	357.55	397.12	377.02	20.10	19.756		
2,950.00	2,950.00	2,953.71	2,953.65	10.36	10.10	64.19	172.86	357.47	397.07	376.81	20.45	19.412		
3,000.00	3,000.00	3,003.80	3,003.74	10.54	10.27	64.17	172.95	357.35	397.00	376.20	20.81	19.079		
3,024.95	3,024.95	3,028.21	3,028.15	10.63	10.36	64.16	173.00	357.31	396.99	376.00	20.98	18.920		
3,050.00	3,050.00	3,052.70	3,052.64	10.72	10.44	64.16	173.05	357.31	397.00	375.85	21.16	18.764		
3,100.00	3,100.00	3,101.68	3,101.62	10.90	10.62	64.16	173.13	357.42	397.14	375.64	21.51	18.465		
3,150.00	3,150.00	3,151.79	3,151.73	11.08	10.79	64.16	173.20	357.60	397.34	375.47	21.86	18.175		
3,200.00	3,200.00	3,202.22	3,202.16	11.26	10.97	64.16	173.26	357.76	397.51	375.29	22.22	17.892		
3,250.00	3,250.00	3,253.83	3,253.77	11.44	11.15	64.14	173.37	357.74	397.54	374.96	22.58	17.609		
3,300.00	3,300.00	3,304.75	3,304.69	11.62	11.32	64.10	173.56	357.48	397.38	374.45	22.93	17.328		
3,350.00	3,350.00	3,354.59	3,354.53	11.80	11.50	64.05	173.81	357.16	397.21	373.92	23.29	17.058		
3,400.00	3,400.00	3,403.93	3,403.86	11.97	11.67	63.99	174.12	356.85	397.07	373.43	23.64	16.798		
3,429.12	3,429.12	3,432.39	3,432.32	12.08	11.77	63.96	174.28	356.74	397.04	373.20	23.84	16.654		
3,450.00	3,450.00	3,452.79	3,452.72	12.15	11.84	63.95	174.40	356.70	397.05	373.07	23.99	16.553		
3,500.00	3,500.00	3,502.56	3,502.49	12.33	12.02	63.91	174.64	356.69	397.15	372.81	24.34	16.317		
3,550.00	3,550.00	3,552.94	3,552.87	12.51	12.19	63.88	174.86	356.66	397.22	372.52	24.69	16.085		
3,600.00	3,600.00	3,603.81	3,603.74	12.69	12.37	63.85	175.07	356.55	397.21	372.16	25.05	15.856		
3,650.00	3,650.00	3,654.86	3,654.79	12.87	12.55	63.79	175.35	356.26	397.08	371.67	25.41	15.628		
3,700.00	3,700.00	3,704.56	3,704.49	13.05	12.72	63.73	175.69	355.88	396.89	371.13	25.76	15.406		
3,750.00	3,750.00	3,754.12	3,754.04	13.23	12.90	63.65	176.09	355.54	396.75	370.64	26.11	15.194		
3,800.00	3,800.00	3,803.39	3,803.31	13.41	13.07	63.57	176.57	355.23	396.69	370.23	26.46	14.990		
3,807.89	3,807.89	3,811.17	3,811.09	13.44	13.10	63.56	176.66	355.19	396.69	370.17	26.52	14.958		
3,850.00	3,850.00	3,852.67	3,852.59	13.59	13.24	63.48	177.16	354.97	396.72	369.91	26.82	14.794		
3,900.00	3,900.00	3,900.96	3,900.87	13.77	13.41	63.39	177.78	354.87	396.92	369.75	27.16	14.612 ES		
3,950.00	3,950.00	3,949.53	3,949.44	13.94	13.58	63.31	178.42	354.98	397.31	369.80	27.51	14.442		
4,000.00	4,000.00	3,998.91	3,998.81	14.12	13.75	63.27	178.91	355.29	397.82	369.96	27.86	14.278		
4,050.00	4,050.00	4,048.15	4,048.05	14.30	13.93	107.79	179.18	355.81	398.50	370.29	28.21	14.125		
4,100.00	4,099.99	4,097.03	4,096.92	14.48	14.10	107.92	179.31	356.53	399.46	370.90	28.56	13.987		
4,150.00	4,149.97	4,145.90	4,145.78	14.66	14.27	108.14	179.32	357.45	400.74	371.83	28.91	13.864		
4,200.00	4,199.94	4,194.75	4,194.62	14.83	14.44	108.47	179.16	358.61	402.33	373.08	29.25	13.754		
4,250.00	4,249.88	4,243.91	4,243.77	15.01	14.61	108.90	178.80	360.00	404.24	374.64	29.60	13.657		
4,300.00	4,299.78	4,293.49	4,293.31	15.19	14.78	109.44	178.30	361.52	406.38	376.43	29.95	13.569		
4,350.00	4,349.70	4,343.07	4,342.86	15.36	14.96	110.02	177.64	363.15	408.63	378.33	30.30	13.487		
4,400.00	4,399.60	4,392.63	4,392.39	15.54	15.13	110.63	176.76	364.89	410.94	380.29	30.65	13.409		
4,450.00	4,449.51	4,442.21	4,441.92	15.72	15.30	111.25	175.72	366.73	413.32	382.32	31.00	13.334		
4,500.00	4,499.41	4,491.81	4,491.47	15.90	15.48	111.87	174.72	368.57	415.77	384.42	31.35	13.263		
4,550.00	4,549.32	4,539.85	4,539.47	16.07	15.65	112.45	173.87	370.40	418.35	386.67	31.69	13.202		
4,600.00	4,599.23	4,587.47	4,587.05	16.25	15.81	112.99	173.25	372.38	421.23	389.20	32.03	13.152		
4,650.00	4,649.13	4,638.45	4,637.98	16.43	15.99	113.55	172.73	374.54	424.24	391.85	32.39	13.100		
4,700.00	4,699.04	4,690.18	4,689.67	16.61	16.17	114.11	172.15	376.51	427.06	394.31	32.75	13.041		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,750.00	4,748.95	4,741.64	4,741.09	16.79	16.35	114.66	171.46	378.27	429.70	396.59	33.11	12.979		
4,800.00	4,798.85	4,793.10	4,792.53	16.96	16.53	115.21	170.63	379.86	432.19	398.72	33.47	12.914		
4,850.00	4,848.76	4,842.14	4,841.53	17.14	16.70	115.74	169.82	381.36	434.68	400.87	33.81	12.855		
4,900.00	4,898.67	4,891.78	4,891.15	17.32	16.88	116.26	169.03	382.90	437.25	403.08	34.16	12.798		
4,950.00	4,848.57	4,841.95	4,841.29	17.50	17.05	116.76	168.35	384.39	439.82	405.30	34.52	12.742		
5,000.00	4,998.48	4,992.13	4,991.44	17.68	17.23	117.24	167.81	385.80	442.39	407.51	34.87	12.686		
5,050.00	5,048.39	5,042.28	5,041.58	17.86	17.40	117.70	167.34	387.14	444.94	409.72	35.22	12.632		
5,100.00	5,098.29	5,092.33	5,091.61	18.04	17.58	118.15	166.89	388.43	447.49	411.91	35.58	12.578		
5,150.00	5,148.20	5,142.28	5,141.53	18.22	17.75	118.61	166.30	389.74	450.04	414.11	35.93	12.526		
5,200.00	5,198.11	5,193.22	5,192.45	18.39	17.93	119.10	165.54	391.06	452.57	416.29	36.29	12.472		
5,250.00	5,248.01	5,244.62	5,243.83	18.57	18.11	119.58	164.69	392.25	454.97	418.32	36.65	12.415		
5,300.00	5,297.92	5,293.56	5,292.76	18.75	18.28	120.03	163.98	393.29	457.34	420.34	36.99	12.362		
5,350.00	5,347.82	5,342.18	5,341.36	18.93	18.45	120.42	163.67	394.35	459.86	422.52	37.34	12.315		
5,400.00	5,397.73	5,392.14	5,391.31	19.11	18.63	120.78	163.66	395.43	462.47	424.78	37.69	12.269		
5,450.00	5,447.64	5,442.26	5,441.42	19.29	18.80	121.12	163.83	396.45	465.08	427.03	38.05	12.224		
5,500.00	5,497.54	5,493.19	5,492.34	19.47	18.98	121.47	163.83	397.45	467.62	429.22	38.40	12.176		
5,550.00	5,547.45	5,543.97	5,543.11	19.65	19.16	121.87	163.44	398.42	470.07	431.31	38.76	12.127		
5,600.00	5,597.36	5,594.41	5,593.54	19.83	19.33	122.27	162.95	399.33	472.47	433.36	39.12	12.079		
5,650.00	5,647.26	5,644.96	5,644.08	20.01	19.51	122.66	162.50	400.16	474.83	435.35	39.47	12.029		
5,700.00	5,697.17	5,695.70	5,694.82	20.19	19.69	123.02	162.19	400.87	477.11	437.29	39.83	11.979		
5,750.00	5,747.08	5,746.05	5,745.16	20.37	19.86	123.37	162.00	401.47	479.34	439.15	40.18	11.929		
5,800.00	5,796.98	5,796.05	5,795.16	20.55	20.04	123.70	161.86	402.03	481.56	441.02	40.54	11.879		
5,850.00	5,846.89	5,846.27	5,845.38	20.73	20.21	124.03	161.71	402.58	483.77	442.88	40.89	11.831		
5,900.00	5,896.80	5,896.60	5,895.70	20.91	20.39	124.38	161.41	403.11	485.96	444.71	41.25	11.782		
5,950.00	5,946.70	5,946.88	5,945.97	21.09	20.56	124.74	161.01	403.61	488.11	446.51	41.60	11.733		
6,000.00	5,996.61	5,997.14	5,996.24	21.27	20.74	125.08	160.63	404.06	490.25	448.29	41.95	11.685		
6,050.00	6,046.52	6,047.01	6,046.10	21.45	20.91	125.42	160.27	404.49	492.38	450.07	42.31	11.638		
6,100.00	6,096.42	6,096.87	6,095.95	21.63	21.09	125.76	159.90	404.92	494.53	451.87	42.66	11.592		
6,150.00	6,146.33	6,147.12	6,146.21	21.81	21.26	126.09	159.63	405.32	496.68	453.67	43.02	11.547		
6,200.00	6,196.23	6,197.35	6,196.44	21.99	21.44	126.38	159.57	405.65	498.81	455.44	43.37	11.501		
6,250.00	6,246.14	6,247.38	6,246.46	22.17	21.61	126.67	159.59	405.94	500.92	457.20	43.72	11.457		
6,300.00	6,296.05	6,297.38	6,296.46	22.35	21.79	126.95	159.60	406.23	503.04	458.96	44.08	11.413		
6,350.00	6,345.95	6,347.33	6,346.41	22.53	21.96	127.25	159.47	406.52	505.16	460.73	44.43	11.370		
6,400.00	6,395.86	6,397.26	6,396.34	22.71	22.13	127.56	159.16	406.83	507.29	462.50	44.78	11.327		
6,450.00	6,445.77	6,447.19	6,446.27	22.89	22.31	127.87	158.86	407.13	509.43	464.29	45.14	11.286		
6,500.00	6,495.67	6,497.39	6,496.47	23.07	22.48	128.18	158.60	407.42	511.57	466.08	45.49	11.245		
6,550.00	6,545.58	6,547.80	6,546.87	23.25	22.66	128.46	158.48	407.65	513.68	467.83	45.85	11.204		
6,600.00	6,595.49	6,598.25	6,597.33	23.43	22.83	128.74	158.46	407.81	515.74	469.54	46.20	11.163		
6,650.00	6,645.39	6,648.73	6,647.80	23.62	23.01	129.01	158.42	407.92	517.77	471.21	46.56	11.121		
6,700.00	6,695.30	6,698.30	6,697.38	23.80	23.18	129.28	158.32	408.02	519.79	472.88	46.91	11.080		
6,750.00	6,745.21	6,747.72	6,746.79	23.98	23.36	129.56	158.08	408.17	521.86	474.60	47.26	11.042		
6,800.00	6,795.11	6,797.39	6,796.46	24.16	23.53	129.86	157.76	408.36	523.98	476.37	47.61	11.005		
6,850.00	6,845.02	6,847.06	6,846.13	24.34	23.70	130.14	157.47	408.57	526.14	478.17	47.97	10.969		
6,900.00	6,894.93	6,896.67	6,895.74	24.52	23.88	130.42	157.30	408.79	528.33	480.01	48.32	10.934		
6,950.00	6,944.83	6,946.33	6,945.40	24.70	24.05	130.67	157.32	409.03	530.56	481.88	48.67	10.901		
7,000.00	6,994.74	6,996.11	6,995.18	24.88	24.22	130.91	157.35	409.28	532.81	483.78	49.03	10.868		
7,050.00	7,044.65	7,045.75	7,044.82	25.06	24.40	131.16	157.32	409.54	535.08	485.71	49.38	10.837		
7,100.00	7,094.55	7,095.09	7,094.15	25.24	24.57	131.43	157.11	409.86	537.41	487.68	49.73	10.807		
7,150.00	7,144.46	7,144.98	7,144.04	25.43	24.74	131.72	156.72	410.23	539.79	489.71	50.08	10.778		
7,200.00	7,194.36	7,195.68	7,194.74	25.61	24.92	131.99	156.42	410.55	542.13	491.69	50.44	10.748		
7,250.00	7,244.27	7,245.61	7,244.67	25.79	25.09	132.25	156.26	410.80	544.43	493.63	50.79	10.719		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
7,300.00	7,294.18	7,294.93	7,293.99	25.97	25.27	132.50	156.09	411.08	546.77	495.63	51.14	10.691		
7,350.00	7,344.08	7,343.95	7,343.00	26.15	25.44	132.77	155.81	411.43	549.19	497.70	51.49	10.665		
7,400.00	7,393.99	7,392.78	7,391.83	26.33	25.61	133.06	155.22	411.87	551.71	499.87	51.84	10.642		
7,450.00	7,443.90	7,442.31	7,441.35	26.51	25.78	133.38	154.33	412.40	554.32	502.12	52.19	10.620		
7,500.00	7,493.80	7,492.05	7,491.08	26.69	25.95	133.71	153.28	412.93	556.95	504.40	52.55	10.599		
7,550.00	7,543.71	7,542.98	7,542.00	26.88	26.13	134.06	152.18	413.45	559.58	506.66	52.91	10.577		
7,600.00	7,593.62	7,594.12	7,593.12	27.06	26.31	134.38	151.24	413.84	562.08	508.82	53.26	10.553		
7,650.00	7,643.52	7,643.72	7,642.71	27.24	26.48	134.70	150.33	414.18	564.57	510.95	53.62	10.530		
7,700.00	7,693.43	7,693.39	7,692.37	27.42	26.66	135.03	149.30	414.54	567.03	513.06	53.97	10.507		
7,750.00	7,743.38	7,741.69	7,740.65	27.60	26.82	135.33	148.17	414.97	569.17	514.86	54.31	10.479		
7,800.00	7,793.35	7,790.25	7,789.19	27.78	26.99	135.59	146.89	415.51	570.98	516.32	54.66	10.448		
7,850.00	7,843.34	7,838.98	7,837.91	27.96	27.16	135.80	145.62	416.16	572.45	517.44	55.01	10.407		
7,900.00	7,893.33	7,888.87	7,887.78	28.14	27.34	135.96	144.41	416.92	573.54	518.18	55.36	10.360		
7,950.00	7,943.33	7,941.29	7,940.17	28.31	27.52	91.59	143.27	417.59	574.20	518.48	55.72	10.304		
8,000.00	7,993.33	7,992.22	7,991.09	28.49	27.70	91.68	142.30	418.05	574.68	518.60	56.08	10.247		
8,050.00	8,043.33	8,041.78	8,040.65	28.67	27.87	91.78	141.27	418.51	575.18	518.75	56.43	10.192		
8,100.00	8,093.33	8,091.27	8,090.12	28.85	28.05	91.89	140.14	419.00	575.71	518.93	56.78	10.139		
8,150.00	8,143.33	8,140.71	8,139.53	29.03	28.22	92.02	138.86	419.53	576.29	519.16	57.13	10.087		
8,200.00	8,193.33	8,191.02	8,189.82	29.20	28.39	92.16	137.44	420.09	576.90	519.41	57.49	10.036		
8,250.00	8,243.33	8,241.64	8,240.42	29.38	28.57	92.30	136.02	420.59	577.45	519.61	57.84	9.983		
8,300.00	8,293.33	8,293.59	8,292.35	29.56	28.75	92.43	134.62	421.01	577.90	519.70	58.20	9.929		
8,350.00	8,343.33	8,345.71	8,344.46	29.74	28.93	92.56	133.35	421.23	578.18	519.61	58.56	9.873		
8,400.00	8,393.33	8,397.32	8,396.05	29.91	29.11	92.67	132.19	421.30	578.29	519.37	58.92	9.814		
8,450.00	8,443.33	8,447.92	8,446.64	30.09	29.29	92.78	131.14	421.23	578.27	518.99	59.28	9.755		
8,452.62	8,445.95	8,450.43	8,449.15	30.10	29.30	92.78	131.08	421.23	578.27	518.98	59.30	9.752		
8,500.00	8,493.33	8,495.86	8,494.57	30.27	29.46	92.89	130.05	421.25	578.35	518.73	59.62	9.700		
8,550.00	8,543.33	8,545.18	8,543.87	30.45	29.63	93.01	128.80	421.43	578.59	518.62	59.97	9.648		
8,600.00	8,593.33	8,597.30	8,595.97	30.63	29.81	93.13	127.53	421.50	578.73	518.40	60.33	9.592		
8,650.00	8,643.32	8,649.26	8,647.92	30.80	29.99	-86.53	126.39	421.40	578.64	517.95	60.69	9.535		
8,700.00	8,693.06	8,700.90	8,699.55	30.96	30.17	-86.98	125.45	421.14	578.16	517.13	61.02	9.474		
8,750.00	8,742.19	8,750.08	8,748.73	31.11	30.34	-87.87	124.67	420.80	577.42	516.07	61.35	9.412		
8,800.00	8,790.32	8,797.67	8,796.31	31.26	30.51	-89.13	123.83	420.53	576.78	515.12	61.66	9.354		
8,846.82	8,834.17	8,841.03	8,839.67	31.39	30.66	-90.59	123.05	420.34	576.52	514.57	61.95	9.306		
8,850.00	8,837.10	8,843.93	8,842.56	31.39	30.67	-90.69	123.00	420.33	576.52	514.55	61.97	9.304		
8,900.00	8,882.17	8,888.42	8,887.04	31.52	30.82	-92.50	122.35	420.20	577.01	514.75	62.26	9.268		
8,950.00	8,925.18	8,929.97	8,928.60	31.64	30.97	-94.38	121.86	420.16	578.70	516.16	62.54	9.253 SF		
9,000.00	8,965.81	8,968.85	8,967.48	31.75	31.11	-96.24	121.43	420.26	582.10	519.30	62.80	9.269		
9,050.00	9,003.74	9,006.13	9,004.75	31.85	31.24	-98.02	121.03	420.47	587.66	524.60	63.06	9.320		
9,100.00	9,038.70	9,043.11	9,041.72	31.94	31.36	-99.76	120.64	420.64	595.65	532.34	63.30	9.409		
9,150.00	9,070.40	9,076.70	9,075.31	32.06	31.48	-101.14	120.30	420.69	606.40	542.87	63.53	9.545		
9,200.00	9,098.62	9,106.67	9,105.28	32.18	31.59	-102.07	120.01	420.66	620.24	556.50	63.74	9.730		
9,250.00	9,123.14	9,132.60	9,131.22	32.30	31.68	-102.42	119.82	420.56	637.38	573.45	63.93	9.970		
9,300.00	9,143.76	9,154.29	9,152.90	32.43	31.75	-102.09	119.71	420.41	657.88	593.79	64.09	10.265		
9,350.00	9,160.34	9,171.61	9,170.22	32.56	31.81	-101.00	119.66	420.25	681.69	617.47	64.22	10.615		
9,400.00	9,172.75	9,184.54	9,183.15	32.70	31.86	-99.06	119.63	420.11	708.60	644.28	64.32	11.017		
9,450.00	9,180.88	9,193.52	9,192.13	32.83	31.89	-96.26	119.61	420.01	738.30	673.90	64.40	11.465		
9,500.00	9,184.69	9,197.87	9,196.48	32.97	31.90	-92.51	119.60	419.96	770.40	705.96	64.44	11.955		
9,550.00	9,185.00	9,198.40	9,197.00	33.12	31.91	-90.88	119.60	419.95	804.46	739.99	64.47	12.478		
9,600.00	9,185.00	9,198.59	9,197.20	33.28	31.91	-90.89	119.60	419.95	840.12	775.63	64.49	13.028		
9,650.00	9,185.00	9,198.79	9,197.39	33.46	31.91	-90.91	119.60	419.95	877.18	812.67	64.51	13.597		
9,700.00	9,185.00	9,198.99	9,197.59	33.64	31.91	-90.93	119.60	419.94	915.47	850.94	64.53	14.187		

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 01-T23S-R31E
 Site Error: 5.00 ft
 Reference Well: Tomb Raider 1-12 Fed 514H
 Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 1

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed 514H
 TVD Reference: RKB @ 3500.70ft
 MD Reference: RKB @ 3500.70ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM r5000.141_Prod US
 Offset TVD Reference: Offset Datum

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			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,750.00	9,185.00	9,199.19	9,197.80	33.85	31.91	-90.95	119.59	419.94	954.84	890.30	64.55	14.793	
9,800.00	9,185.00	9,199.40	9,198.00	34.05	31.91	-90.98	119.59	419.94	995.17	930.61	64.56	15.414	
9,850.00	9,185.00	9,199.61	9,198.21	34.29	31.91	-91.00	119.59	419.94	1,036.35	971.76	64.58	16.047	
9,900.00	9,185.00	9,199.82	9,198.43	34.53	31.91	-91.02	119.59	419.93	1,078.27	1,013.67	64.60	16.692	
9,950.00	9,185.00	9,200.04	9,198.65	34.79	31.91	-91.04	119.59	419.93	1,120.85	1,056.23	64.62	17.346	
10,000.00	9,185.00	9,200.26	9,198.87	35.06	31.91	-91.06	119.59	419.93	1,164.02	1,099.39	64.63	18.011	
10,050.00	9,185.00	11,063.97	10,234.74	35.35	39.25	-153.05	-962.77	382.16	1,174.27	1,125.57	48.70	24.113	
10,100.00	9,185.00	11,112.75	10,234.35	35.64	39.75	-153.09	-1,011.55	381.21	1,173.34	1,124.22	49.12	23.886	
10,150.00	9,185.00	11,155.91	10,234.03	35.95	40.20	-153.11	-1,054.70	380.77	1,172.66	1,123.12	49.54	23.670	
10,200.00	9,185.00	11,203.23	10,233.72	36.27	40.71	-153.12	-1,102.02	380.77	1,172.23	1,122.22	50.01	23.440	
10,250.00	9,185.00	11,256.87	10,233.23	36.61	41.31	-153.12	-1,155.66	380.86	1,171.73	1,121.17	50.56	23.177	
10,300.00	9,185.00	11,309.85	10,232.56	36.94	41.91	-153.11	-1,208.63	380.96	1,171.08	1,119.97	51.11	22.913	
10,350.00	9,185.00	11,362.45	10,231.71	37.30	42.53	-153.10	-1,261.22	381.15	1,170.32	1,118.63	51.69	22.642	
10,400.00	9,185.00	11,404.97	10,231.06	37.66	43.04	-153.08	-1,303.74	381.36	1,169.63	1,117.44	52.19	22.410	
10,450.00	9,185.00	11,445.54	10,230.80	38.04	43.53	-153.08	-1,344.31	381.56	1,169.33	1,116.84	52.69	22.193	
10,461.85	9,185.00	11,455.15	10,230.79	38.14	43.65	-153.08	-1,353.92	381.61	1,169.32	1,116.51	52.81	22.144	
10,500.00	9,185.00	11,492.84	10,230.86	38.43	44.12	-153.08	-1,391.61	381.80	1,169.36	1,116.11	53.25	21.961	
10,550.00	9,185.00	11,546.33	10,230.84	38.83	44.80	-153.08	-1,445.10	382.01	1,169.31	1,115.43	53.88	21.703	
10,575.36	9,185.00	11,573.46	10,230.77	39.03	45.14	-153.09	-1,472.23	382.09	1,169.22	1,115.02	54.20	21.573	
10,600.00	9,185.00	11,591.27	10,230.76	39.23	45.38	-153.08	-1,490.03	382.26	1,169.24	1,114.79	54.44	21.476	
10,650.00	9,185.00	11,633.26	10,230.80	39.65	45.93	-153.07	-1,532.02	382.90	1,169.50	1,114.49	55.01	21.260	
10,700.00	9,185.00	11,682.42	10,230.94	40.07	46.58	-153.03	-1,581.16	384.05	1,170.02	1,114.36	55.66	21.020	
10,750.00	9,185.00	11,738.58	10,230.90	40.50	47.34	-152.99	-1,637.32	385.27	1,170.38	1,113.95	56.40	20.750	
10,800.00	9,185.00	11,778.09	10,230.91	40.94	47.88	-152.96	-1,676.82	386.09	1,170.72	1,113.74	56.98	20.546	
10,850.00	9,185.00	11,814.24	10,231.36	41.39	48.38	-152.95	-1,712.95	386.91	1,171.67	1,114.13	57.53	20.364	
10,900.00	9,185.00	11,853.89	10,232.33	41.84	48.94	-152.94	-1,752.58	387.91	1,173.19	1,115.07	58.12	20.185	
10,950.00	9,185.00	11,907.33	10,233.78	42.31	49.69	-152.93	-1,805.99	389.15	1,174.80	1,115.94	58.86	19.960	
11,000.00	9,185.00	11,963.94	10,235.22	42.78	50.51	-152.93	-1,862.57	390.20	1,176.23	1,116.61	59.62	19.728	
11,050.00	9,185.00	12,024.50	10,236.55	43.26	51.38	-152.95	-1,923.11	390.68	1,177.26	1,116.83	60.43	19.482	
11,100.00	9,185.00	12,074.20	10,237.56	43.74	52.11	-152.98	-1,972.80	390.69	1,178.04	1,116.92	61.12	19.275	
11,150.00	9,185.00	12,122.36	10,238.62	44.24	52.82	-153.02	-2,020.94	390.68	1,178.90	1,117.10	61.80	19.078	
11,200.00	9,185.00	12,178.46	10,239.73	44.74	53.66	-153.06	-2,077.04	390.75	1,179.67	1,117.10	62.58	18.852	
11,250.00	9,185.00	12,237.30	10,240.41	45.24	54.55	-153.08	-2,135.87	390.98	1,180.15	1,116.75	63.41	18.613	
11,300.00	9,185.00	12,302.29	10,240.48	45.75	55.54	-153.09	-2,200.86	391.06	1,180.10	1,115.78	64.32	18.349	
11,350.00	9,185.00	12,354.24	10,240.13	46.27	56.34	-153.10	-2,252.81	390.95	1,179.63	1,114.53	65.10	18.121	
11,400.00	9,185.00	12,402.70	10,239.86	46.79	57.09	-153.11	-2,301.27	390.85	1,179.20	1,113.36	65.84	17.910	
11,450.00	9,185.00	12,455.69	10,239.58	47.32	57.92	-153.12	-2,354.26	390.65	1,178.76	1,112.12	66.64	17.688	
11,500.00	9,185.00	12,509.35	10,239.27	47.85	58.76	-153.15	-2,407.92	390.16	1,178.16	1,110.72	67.44	17.470	
11,550.00	9,185.00	12,560.43	10,238.96	48.39	59.57	-153.19	-2,458.99	389.50	1,177.47	1,109.25	68.22	17.261	
11,600.00	9,185.00	12,610.26	10,238.65	48.94	60.36	-153.22	-2,508.81	388.75	1,176.73	1,107.76	68.98	17.060	
11,650.00	9,185.00	12,656.06	10,238.39	49.49	61.09	-153.25	-2,554.61	388.25	1,176.11	1,106.40	69.71	16.872	
11,700.00	9,185.00	12,702.82	10,238.16	50.04	61.84	-153.27	-2,601.37	388.06	1,175.66	1,105.20	70.46	16.685	
11,750.00	9,185.00	12,753.50	10,237.89	50.60	62.66	-153.28	-2,652.05	387.96	1,175.25	1,103.98	71.28	16.489	
11,800.00	9,185.00	12,806.36	10,237.56	51.16	63.52	-153.29	-2,704.90	387.82	1,174.80	1,102.68	72.12	16.290	
11,850.00	9,185.00	12,863.82	10,237.11	51.72	64.46	-153.32	-2,762.36	387.25	1,174.09	1,101.09	73.01	16.082	
11,900.00	9,185.00	12,918.64	10,236.52	52.29	65.36	-153.36	-2,817.17	386.33	1,173.11	1,099.25	73.85	15.884	
11,950.00	9,185.00	12,972.23	10,235.69	52.87	66.24	-153.39	-2,870.74	385.55	1,171.96	1,097.26	74.70	15.688	
12,000.00	9,185.00	13,012.30	10,235.06	53.44	66.91	-153.40	-2,910.81	385.16	1,170.92	1,095.52	75.41	15.528	
12,050.00	9,185.00	13,051.07	10,234.71	54.02	67.55	-153.40	-2,949.57	385.11	1,170.36	1,094.26	76.11	15.378	
12,100.00	9,185.00	13,094.90	10,234.57	54.61	68.28	-153.40	-2,993.40	385.39	1,170.23	1,093.35	76.88	15.221	
12,150.00	9,185.00	13,144.08	10,234.48	55.20	69.11	-153.39	-3,042.59	385.76	1,170.19	1,092.46	77.73	15.054	

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,200.00	9,185.00	13,194.56	10,234.42	55.79	69.96	-153.39	-3,093.07	386.12	1,170.17	1,091.57	78.60	14.887		
12,250.00	9,185.00	13,246.00	10,234.40	56.38	70.83	-153.39	-3,144.51	386.29	1,170.10	1,090.62	79.48	14.722		
12,300.00	9,185.00	13,299.80	10,234.36	56.98	71.74	-153.41	-3,198.30	386.24	1,169.93	1,089.55	80.38	14.555		
12,350.00	9,185.00	13,354.47	10,234.22	57.58	72.67	-153.43	-3,252.97	385.94	1,169.56	1,088.28	81.28	14.389		
12,400.00	9,185.00	13,404.82	10,233.92	58.18	73.53	-153.45	-3,303.32	385.77	1,169.09	1,086.95	82.14	14.232		
12,450.00	9,185.00	13,455.90	10,233.38	58.79	74.40	-153.44	-3,354.40	386.02	1,168.60	1,085.55	83.05	14.072		
12,500.00	9,185.00	13,511.15	10,232.58	59.40	75.35	-153.42	-3,409.64	386.35	1,167.96	1,083.94	84.02	13.902		
12,550.00	9,185.00	13,560.36	10,231.73	60.01	76.20	-153.40	-3,458.85	386.53	1,167.15	1,082.24	84.91	13.746		
12,600.00	9,185.00	13,601.38	10,231.24	60.63	76.90	-153.39	-3,499.86	386.78	1,166.62	1,080.93	85.69	13.614		
12,650.00	9,185.00	13,643.80	10,231.03	61.24	77.64	-153.38	-3,542.27	387.17	1,166.48	1,079.98	86.50	13.486		
12,700.00	9,185.00	13,695.43	10,230.88	61.86	78.54	-153.37	-3,593.90	387.66	1,166.44	1,079.01	87.43	13.342		
12,750.00	9,185.00	13,744.05	10,230.73	62.49	79.38	-153.36	-3,642.53	388.04	1,166.34	1,078.02	88.32	13.206		
12,752.58	9,185.00	13,746.19	10,230.72	62.52	79.42	-153.36	-3,644.66	388.06	1,166.34	1,077.98	88.36	13.200		
12,800.00	9,185.00	13,785.37	10,230.77	63.11	80.10	-153.35	-3,683.84	388.50	1,166.51	1,077.40	89.11	13.090		
12,850.00	9,185.00	13,826.94	10,231.06	63.74	80.83	-153.34	-3,725.40	389.16	1,167.05	1,077.13	89.91	12.979		
12,900.00	9,185.00	13,884.24	10,231.46	64.36	81.84	-153.32	-3,782.70	390.10	1,167.61	1,076.66	90.95	12.838		
12,950.00	9,185.00	13,941.14	10,231.58	65.00	82.84	-153.31	-3,839.59	390.81	1,167.85	1,075.88	91.97	12.698		
13,000.00	9,185.00	13,997.30	10,231.47	65.63	83.82	-153.30	-3,895.75	391.28	1,167.83	1,074.85	92.98	12.560		
13,050.00	9,185.00	14,044.09	10,231.34	66.26	84.65	-153.30	-3,942.54	391.49	1,167.68	1,073.82	93.85	12.441		
13,053.18	9,185.00	14,046.80	10,231.34	66.30	84.70	-153.30	-3,945.25	391.49	1,167.67	1,073.77	93.90	12.435		
13,100.00	9,185.00	14,086.57	10,231.55	66.90	85.40	-153.31	-3,985.02	391.58	1,167.82	1,073.16	94.65	12.338		
13,150.00	9,185.00	14,130.92	10,232.12	67.54	86.18	-153.33	-4,029.36	391.56	1,168.26	1,072.80	95.46	12.238		
13,200.00	9,185.00	14,177.35	10,233.02	68.18	87.00	-153.37	-4,075.78	391.32	1,168.88	1,072.61	96.27	12.142		
13,250.00	9,185.00	14,233.70	10,234.31	68.82	88.00	-153.44	-4,132.12	390.75	1,169.56	1,072.37	97.19	12.034		
13,300.00	9,185.00	14,303.49	10,234.99	69.46	89.24	-153.52	-4,201.89	389.79	1,169.57	1,071.28	98.29	11.900		
13,350.00	9,185.00	14,357.50	10,235.08	70.11	90.19	-153.58	-4,255.90	388.75	1,169.09	1,069.91	99.18	11.788		
13,400.00	9,185.00	14,407.83	10,235.10	70.76	91.09	-153.64	-4,306.21	387.48	1,168.42	1,068.41	100.01	11.683		
13,450.00	9,185.00	14,449.45	10,235.20	71.40	91.83	-153.69	-4,347.83	386.73	1,168.00	1,067.24	100.76	11.592		
13,484.25	9,185.00	14,477.98	10,235.33	71.85	92.34	-153.71	-4,376.35	386.46	1,167.91	1,066.63	101.28	11.531		
13,500.00	9,185.00	14,492.35	10,235.41	72.05	92.59	-153.72	-4,390.72	386.41	1,167.93	1,066.38	101.54	11.502		
13,550.00	9,185.00	14,546.73	10,235.63	72.71	93.57	-153.75	-4,445.10	386.19	1,167.89	1,065.40	102.50	11.395		
13,600.00	9,185.00	14,602.64	10,235.66	73.36	94.57	-153.78	-4,501.01	385.85	1,167.66	1,064.20	103.47	11.285		
13,650.00	9,185.00	14,655.37	10,235.54	74.01	95.51	-153.81	-4,553.73	385.25	1,167.18	1,062.80	104.38	11.182		
13,691.52	9,185.00	14,696.88	10,235.44	74.56	96.25	-153.84	-4,595.24	384.75	1,166.77	1,061.66	105.11	11.100		
13,700.00	9,185.00	14,690.00	10,235.45	74.67	96.13	-153.84	-4,588.36	384.83	1,166.78	1,061.72	105.06	11.106		
13,750.00	9,185.00	14,690.00	10,235.45	75.33	96.13	-153.84	-4,588.36	384.83	1,168.02	1,062.79	105.23	11.100		
13,800.00	9,185.00	14,690.00	10,235.45	75.99	96.13	-153.84	-4,588.36	384.83	1,171.38	1,066.11	105.28	11.127		
13,850.00	9,185.00	14,690.00	10,235.45	76.65	96.13	-153.84	-4,588.36	384.83	1,176.86	1,071.65	105.22	11.185		
13,900.00	9,185.00	14,690.00	10,235.45	77.31	96.13	-153.84	-4,588.36	384.83	1,184.43	1,079.39	105.05	11.275		
13,950.00	9,185.00	14,690.00	10,235.45	77.97	96.13	-153.84	-4,588.36	384.83	1,194.05	1,089.27	104.78	11.396		
14,000.00	9,185.00	14,690.00	10,235.45	78.63	96.13	-153.84	-4,588.36	384.83	1,205.67	1,101.25	104.42	11.547		
14,050.00	9,185.00	14,690.00	10,235.45	79.30	96.13	-153.84	-4,588.36	384.83	1,219.23	1,115.26	103.97	11.727		
14,100.00	9,185.00	14,690.00	10,235.45	79.96	96.13	-153.84	-4,588.36	384.83	1,234.66	1,131.22	103.44	11.936		
14,150.00	9,185.00	14,690.00	10,235.45	80.63	96.13	-153.84	-4,588.36	384.83	1,251.90	1,149.05	102.85	12.172		
14,200.00	9,185.00	14,690.00	10,235.45	81.30	96.13	-153.84	-4,588.36	384.83	1,270.88	1,168.68	102.20	12.436		
14,250.00	9,185.00	14,690.00	10,235.45	81.97	96.13	-153.84	-4,588.36	384.83	1,291.51	1,190.02	101.50	12.725		
14,300.00	9,185.00	14,690.00	10,235.45	82.64	96.13	-153.84	-4,588.36	384.83	1,313.73	1,212.97	100.76	13.039		
14,350.00	9,185.00	14,690.00	10,235.45	83.31	96.13	-153.84	-4,588.36	384.83	1,337.45	1,237.46	99.99	13.376		
14,400.00	9,185.00	14,690.00	10,235.45	83.98	96.13	-153.84	-4,588.36	384.83	1,362.58	1,263.39	99.20	13.736		
14,450.00	9,185.00	14,690.00	10,235.45	84.65	96.13	-153.84	-4,588.36	384.83	1,389.07	1,290.67	98.39	14.118		
14,500.00	9,185.00	14,690.00	10,235.45	85.32	96.13	-153.84	-4,588.36	384.83	1,416.82	1,319.24	97.58	14.519		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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			Distance						
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
14,550.00	9,185.00	14,690.00	10,235.45	86.00	96.13	-153.84	-4,588.36	384.83	1,445.77	1,349.00	96.77	14.941	
14,600.00	9,185.00	14,690.00	10,235.45	86.68	96.13	-153.84	-4,588.36	384.83	1,475.85	1,379.89	95.96	15.380	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9558-													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	3.17	3.17	0.50	0.00	65.76	161.64	359.04	393.75					
50.00	50.00	52.66	52.66	0.50	0.07	65.75	161.76	359.03	393.78	393.21	0.57	687.922		
100.00	100.00	102.15	102.15	0.52	0.14	65.70	162.10	358.98	393.89	393.23	0.65	601.937		
150.00	150.00	152.79	152.79	0.59	0.31	65.64	162.51	358.90	393.98	393.07	0.90	435.716		
200.00	200.00	203.44	203.43	0.70	0.49	65.59	162.82	358.77	393.99	392.80	1.19	330.135		
229.49	229.49	232.74	232.73	0.78	0.59	65.56	162.99	358.69	393.98	392.61	1.37	286.877		
250.00	250.00	253.21	253.20	0.84	0.67	65.55	163.10	358.64	393.98	392.48	1.50	262.218		
250.25	250.25	253.45	253.45	0.84	0.67	65.55	163.10	358.64	393.98	392.48	1.50	261.944		
300.00	300.00	302.93	302.92	0.99	0.84	65.50	163.36	358.53	393.99	392.17	1.83	215.833		
350.00	350.00	352.23	352.22	1.15	1.01	65.48	163.56	358.53	394.07	391.92	2.16	182.821		
400.00	400.00	401.84	401.84	1.31	1.19	65.47	163.70	358.64	394.23	391.74	2.49	158.181		
450.00	450.00	451.99	451.98	1.48	1.36	65.43	164.01	358.68	394.40	391.56	2.83	139.131		
500.00	500.00	502.11	502.10	1.65	1.54	65.36	164.51	358.61	394.54	391.36	3.18	124.080		
550.00	550.00	552.22	552.21	1.82	1.71	65.28	165.02	358.52	394.68	391.15	3.53	111.911		
600.00	600.00	601.48	601.47	1.99	1.88	65.22	165.51	358.46	394.83	390.96	3.87	101.970		
650.00	650.00	650.27	650.25	2.16	2.06	65.15	166.07	358.52	395.13	390.91	4.22	93.706		
700.00	700.00	700.56	700.54	2.34	2.23	65.07	166.68	358.66	395.51	390.94	4.57	86.595		
750.00	750.00	751.44	751.41	2.51	2.41	65.02	167.13	358.76	395.79	390.87	4.92	80.435		
800.00	800.00	801.74	801.71	2.69	2.59	64.97	167.54	358.80	395.99	390.72	5.27	75.108		
850.00	850.00	851.95	851.92	2.87	2.76	64.90	168.08	358.74	396.16	390.54	5.62	70.440		
900.00	900.00	902.12	902.09	3.04	2.94	64.81	168.66	358.63	396.32	390.34	5.98	66.316		
950.00	950.00	952.29	952.26	3.22	3.11	64.73	169.22	358.52	396.45	390.12	6.33	62.644		
1,000.00	1,000.00	1,001.66	1,001.62	3.40	3.29	64.67	169.66	358.49	396.61	389.93	6.68	59.390		
1,050.00	1,050.00	1,051.44	1,051.40	3.58	3.46	64.64	169.99	358.58	396.84	389.81	7.03	56.454		
1,100.00	1,100.00	1,102.13	1,102.09	3.75	3.64	64.59	170.36	358.61	397.02	389.64	7.38	53.767		
1,150.00	1,150.00	1,152.25	1,152.21	3.93	3.82	64.53	170.80	358.53	397.14	389.40	7.74	51.330		
1,200.00	1,200.00	1,201.59	1,201.54	4.11	3.99	64.49	171.12	358.56	397.30	389.21	8.09	49.128		
1,250.00	1,250.00	1,251.41	1,251.37	4.29	4.16	64.48	171.28	358.74	397.54	389.10	8.44	47.106		
1,300.00	1,300.00	1,301.71	1,301.66	4.46	4.34	64.48	171.37	358.93	397.75	388.95	8.79	45.234		
1,350.00	1,350.00	1,352.24	1,352.20	4.64	4.51	64.48	171.44	359.08	397.91	388.77	9.15	43.497		
1,400.00	1,400.00	1,402.91	1,402.86	4.82	4.69	64.46	171.61	359.10	398.00	388.49	9.50	41.880		
1,450.00	1,450.00	1,452.83	1,452.79	5.00	4.87	64.42	171.89	359.01	398.04	388.18	9.86	40.386		
1,500.00	1,500.00	1,502.57	1,502.53	5.18	5.04	64.35	172.32	358.88	398.10	387.90	10.21	39.000		
1,550.00	1,550.00	1,552.84	1,552.79	5.36	5.22	64.29	172.76	358.74	398.17	387.61	10.56	37.700		
1,600.00	1,600.00	1,603.15	1,603.10	5.53	5.39	64.24	173.04	358.64	398.21	387.29	10.92	36.480		
1,650.00	1,650.00	1,653.19	1,653.14	5.71	5.57	64.21	173.23	358.56	398.22	386.95	11.27	35.339		
1,700.00	1,700.00	1,703.15	1,703.10	5.89	5.74	64.19	173.40	358.49	398.22	386.60	11.62	34.266		
1,750.00	1,750.00	1,752.66	1,752.61	6.07	5.92	64.18	173.46	358.51	398.27	386.29	11.97	33.264		
1,800.00	1,800.00	1,802.32	1,802.26	6.25	6.09	64.20	173.41	358.64	398.37	386.04	12.32	32.322		
1,850.00	1,850.00	1,852.30	1,852.24	6.43	6.26	64.22	173.32	358.82	398.49	385.81	12.68	31.431		
1,900.00	1,900.00	1,902.32	1,902.27	6.61	6.44	64.24	173.22	359.00	398.61	385.58	13.03	30.587		
1,950.00	1,950.00	1,952.40	1,952.35	6.78	6.61	64.27	173.12	359.17	398.72	385.33	13.39	29.787		
2,000.00	2,000.00	2,003.31	2,003.26	6.96	6.79	64.28	173.05	359.29	398.79	385.05	13.74	29.020		
2,050.00	2,050.00	2,054.87	2,054.82	7.14	6.97	64.28	173.04	359.17	398.69	384.59	14.10	28.275		
2,100.00	2,100.00	2,104.93	2,104.88	7.32	7.14	64.25	173.08	358.90	398.46	384.00	14.45	27.569		
2,150.00	2,150.00	2,154.48	2,154.42	7.50	7.31	64.23	173.14	358.67	398.27	383.47	14.80	26.902		
2,200.00	2,200.00	2,204.87	2,204.81	7.68	7.49	64.21	173.18	358.46	398.10	382.94	15.16	26.263		
2,250.00	2,250.00	2,255.40	2,255.35	7.86	7.66	64.20	173.18	358.19	397.87	382.35	15.51	25.647		
2,300.00	2,300.00	2,304.05	2,304.00	8.04	7.83	64.19	173.15	358.01	397.68	381.82	15.86	25.071		
2,329.45	2,329.45	2,332.71	2,332.65	8.14	7.93	64.19	173.13	357.99	397.65	381.59	16.07	24.749		
2,350.00	2,350.00	2,352.90	2,352.84	8.22	8.00	64.19	173.11	358.01	397.67	381.45	16.21	24.530		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9558-													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,400.00	2,400.00	2,404.09	2,404.04	8.39	8.18	64.20	173.07	357.99	397.64	381.07	16.57	23.999		
2,450.00	2,450.00	2,455.01	2,454.95	8.57	8.36	64.19	173.05	357.80	397.46	380.54	16.92	23.484		
2,500.00	2,500.00	2,505.06	2,505.00	8.75	8.53	64.18	173.03	357.57	397.24	379.96	17.28	22.991		
2,550.00	2,550.00	2,554.59	2,554.54	8.93	8.71	64.17	173.00	357.34	397.02	379.39	17.63	22.520		
2,600.00	2,600.00	2,603.27	2,603.21	9.11	8.88	64.17	172.95	357.27	396.93	378.96	17.98	22.078		
2,600.40	2,600.40	2,603.66	2,603.60	9.11	8.88	64.17	172.95	357.27	396.93	378.95	17.98	22.075		
2,650.00	2,650.00	2,652.48	2,652.42	9.29	9.05	64.18	172.88	357.38	397.00	378.67	18.33	21.659		
2,700.00	2,700.00	2,702.33	2,702.28	9.47	9.22	64.21	172.80	357.54	397.11	378.43	18.68	21.256		
2,750.00	2,750.00	2,752.74	2,752.68	9.65	9.40	64.23	172.72	357.69	397.21	378.18	19.04	20.865		
2,800.00	2,800.00	2,803.55	2,803.49	9.83	9.57	64.23	172.71	357.72	397.23	377.83	19.39	20.482		
2,850.00	2,850.00	2,853.71	2,853.65	10.00	9.75	64.22	172.74	357.64	397.17	377.42	19.75	20.112		
2,900.00	2,900.00	2,903.64	2,903.58	10.18	9.92	64.21	172.79	357.55	397.12	377.02	20.10	19.756		
2,950.00	2,950.00	2,953.71	2,953.65	10.36	10.10	64.19	172.86	357.47	397.07	376.61	20.45	19.412		
3,000.00	3,000.00	3,003.80	3,003.74	10.54	10.27	64.17	172.95	357.35	397.00	376.20	20.81	19.079		
3,024.95	3,024.95	3,028.21	3,028.15	10.63	10.36	64.16	173.00	357.31	396.99	376.00	20.98	18.920		
3,050.00	3,050.00	3,052.70	3,052.64	10.72	10.44	64.16	173.05	357.31	397.00	375.85	21.16	18.764		
3,100.00	3,100.00	3,101.68	3,101.62	10.90	10.62	64.16	173.13	357.42	397.14	375.64	21.51	18.465		
3,150.00	3,150.00	3,151.79	3,151.73	11.08	10.79	64.16	173.20	357.60	397.34	375.47	21.86	18.175		
3,200.00	3,200.00	3,202.22	3,202.16	11.26	10.97	64.16	173.26	357.76	397.51	375.29	22.22	17.892		
3,250.00	3,250.00	3,253.83	3,253.77	11.44	11.15	64.14	173.37	357.74	397.54	374.96	22.58	17.609		
3,300.00	3,300.00	3,304.75	3,304.69	11.62	11.32	64.10	173.56	357.48	397.38	374.45	22.93	17.328		
3,350.00	3,350.00	3,354.59	3,354.53	11.80	11.50	64.05	173.81	357.16	397.21	373.92	23.29	17.058		
3,400.00	3,400.00	3,403.93	3,403.86	11.97	11.67	63.99	174.12	356.85	397.07	373.43	23.64	16.798		
3,429.12	3,429.12	3,432.39	3,432.32	12.08	11.77	63.96	174.28	356.74	397.04	373.20	23.84	16.654		
3,450.00	3,450.00	3,452.79	3,452.72	12.15	11.84	63.95	174.40	356.70	397.05	373.07	23.99	16.553		
3,500.00	3,500.00	3,502.56	3,502.49	12.33	12.02	63.91	174.64	356.69	397.15	372.81	24.34	16.317		
3,550.00	3,550.00	3,552.94	3,552.87	12.51	12.19	63.88	174.86	356.66	397.22	372.52	24.69	16.085		
3,600.00	3,600.00	3,603.81	3,603.74	12.69	12.37	63.85	175.07	356.55	397.21	372.16	25.05	15.856		
3,650.00	3,650.00	3,654.86	3,654.79	12.87	12.55	63.79	175.35	356.26	397.08	371.67	25.41	15.628		
3,700.00	3,700.00	3,704.56	3,704.49	13.05	12.72	63.73	175.69	355.88	396.89	371.13	25.76	15.406		
3,750.00	3,750.00	3,754.12	3,754.04	13.23	12.90	63.65	176.09	355.54	396.75	370.64	26.11	15.194		
3,800.00	3,800.00	3,803.39	3,803.31	13.41	13.07	63.57	176.57	355.23	396.69	370.23	26.46	14.990		
3,807.89	3,807.89	3,811.17	3,811.09	13.44	13.10	63.56	176.66	355.19	396.69	370.17	26.52	14.958		
3,850.00	3,850.00	3,852.67	3,852.59	13.59	13.24	63.48	177.16	354.97	396.72	369.91	26.82	14.794		
3,900.00	3,900.00	3,900.96	3,900.87	13.77	13.41	63.39	177.78	354.87	396.92	369.75	27.16	14.612		
3,950.00	3,950.00	3,949.53	3,949.44	13.94	13.58	63.31	178.42	354.98	397.31	369.80	27.51	14.442		
4,000.00	4,000.00	3,998.91	3,998.81	14.12	13.75	63.27	178.91	355.29	397.82	369.96	27.86	14.278		
4,050.00	4,050.00	4,048.15	4,048.05	14.30	13.93	107.79	179.18	355.81	398.50	370.29	28.21	14.125		
4,100.00	4,099.99	4,097.03	4,096.92	14.48	14.10	107.92	179.31	356.53	399.46	370.90	28.56	13.987		
4,150.00	4,149.97	4,145.90	4,145.78	14.66	14.27	108.14	179.32	357.45	400.74	371.83	28.91	13.864		
4,200.00	4,199.94	4,194.75	4,194.62	14.83	14.44	108.47	179.16	358.61	402.33	373.08	29.25	13.754		
4,250.00	4,249.88	4,243.91	4,243.77	15.01	14.61	108.90	178.80	360.00	404.24	374.84	29.60	13.657		
4,300.00	4,299.79	4,293.49	4,293.31	15.19	14.78	109.44	178.30	361.52	406.38	376.43	29.95	13.569		
4,350.00	4,349.70	4,343.07	4,342.86	15.36	14.96	110.02	177.64	363.15	408.63	378.33	30.30	13.487		
4,400.00	4,399.60	4,392.63	4,392.39	15.54	15.13	110.63	176.76	364.89	410.94	380.29	30.65	13.409		
4,450.00	4,449.51	4,442.21	4,441.92	15.72	15.30	111.25	175.72	366.73	413.32	382.32	31.00	13.334		
4,500.00	4,499.41	4,491.81	4,491.47	15.90	15.48	111.87	174.72	368.57	415.77	384.42	31.35	13.263		
4,550.00	4,549.32	4,539.85	4,539.47	16.07	15.65	112.45	173.87	370.40	418.35	386.67	31.69	13.202		
4,600.00	4,599.23	4,587.47	4,587.05	16.25	15.81	112.99	173.25	372.38	421.23	389.20	32.03	13.152		
4,650.00	4,649.13	4,638.45	4,637.98	16.43	15.99	113.55	172.73	374.54	424.24	391.85	32.39	13.100		
4,700.00	4,699.04	4,690.18	4,689.67	16.61	16.17	114.11	172.15	376.51	427.06	394.31	32.75	13.041		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9558-													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
4,750.00	4,748.95	4,741.64	4,741.09	16.79	16.35	114.66	171.46	378.27	429.70	396.59	33.11	12.979		
4,800.00	4,798.85	4,793.10	4,792.53	16.96	16.53	115.21	170.63	379.86	432.19	398.72	33.47	12.914		
4,850.00	4,848.76	4,842.14	4,841.53	17.14	16.70	115.74	169.82	381.36	434.68	400.87	33.81	12.855		
4,900.00	4,898.67	4,891.78	4,891.15	17.32	16.88	116.26	169.03	382.90	437.25	403.08	34.16	12.798		
4,950.00	4,948.57	4,941.95	4,941.29	17.50	17.05	116.76	168.35	384.39	439.82	405.30	34.52	12.742		
5,000.00	4,998.48	4,992.13	4,991.44	17.68	17.23	117.24	167.81	385.80	442.39	407.51	34.87	12.686		
5,050.00	5,048.39	5,042.28	5,041.58	17.86	17.40	117.70	167.34	387.14	444.94	409.72	35.22	12.632		
5,100.00	5,098.29	5,092.33	5,091.61	18.04	17.58	118.15	166.89	388.43	447.49	411.91	35.58	12.578		
5,150.00	5,148.20	5,142.28	5,141.53	18.22	17.75	118.61	166.30	389.74	450.04	414.11	35.93	12.526		
5,200.00	5,198.11	5,193.22	5,192.45	18.39	17.93	119.10	165.54	391.06	452.57	416.29	36.29	12.472		
5,250.00	5,248.01	5,244.62	5,243.83	18.57	18.11	119.58	164.69	392.25	454.97	418.32	36.65	12.415		
5,300.00	5,297.92	5,293.56	5,292.76	18.75	18.28	120.03	163.98	393.29	457.34	420.34	36.99	12.362		
5,350.00	5,347.82	5,342.18	5,341.36	18.93	18.45	120.42	163.67	394.35	459.86	422.52	37.34	12.315		
5,400.00	5,397.73	5,392.14	5,391.31	19.11	18.63	120.78	163.66	395.43	462.47	424.78	37.69	12.269		
5,450.00	5,447.64	5,442.26	5,441.42	19.29	18.80	121.12	163.83	396.45	465.08	427.03	38.05	12.224		
5,500.00	5,497.54	5,493.19	5,492.34	19.47	18.98	121.47	163.83	397.45	467.62	429.22	38.40	12.176		
5,550.00	5,547.45	5,543.97	5,543.11	19.65	19.16	121.87	163.44	398.42	470.07	431.31	38.76	12.127		
5,600.00	5,597.36	5,594.41	5,593.54	19.83	19.33	122.27	162.95	399.33	472.47	433.36	39.12	12.079		
5,650.00	5,647.26	5,644.96	5,644.08	20.01	19.51	122.66	162.50	400.16	474.83	435.35	39.47	12.029		
5,700.00	5,697.17	5,695.70	5,694.82	20.19	19.69	123.02	162.19	400.87	477.11	437.29	39.83	11.979		
5,750.00	5,747.08	5,746.05	5,745.16	20.37	19.86	123.37	162.00	401.47	479.34	439.15	40.18	11.929		
5,800.00	5,796.98	5,796.05	5,795.16	20.55	20.04	123.70	161.86	402.03	481.56	441.02	40.54	11.879		
5,850.00	5,846.89	5,846.27	5,845.38	20.73	20.21	124.03	161.71	402.58	483.77	442.88	40.89	11.831		
5,900.00	5,896.80	5,896.60	5,895.70	20.91	20.39	124.38	161.41	403.11	485.96	444.71	41.25	11.782		
5,950.00	5,946.70	5,946.88	5,945.97	21.09	20.56	124.74	161.01	403.61	488.11	446.51	41.60	11.733		
6,000.00	5,996.61	5,997.14	5,996.24	21.27	20.74	125.08	160.63	404.06	490.25	448.29	41.95	11.685		
6,050.00	6,046.52	6,047.01	6,046.10	21.45	20.91	125.42	160.27	404.49	492.38	450.07	42.31	11.638		
6,100.00	6,096.42	6,096.87	6,095.95	21.63	21.09	125.76	159.90	404.92	494.53	451.87	42.66	11.592		
6,150.00	6,146.33	6,147.12	6,146.21	21.81	21.26	126.09	159.63	405.32	496.68	453.67	43.02	11.547		
6,200.00	6,196.23	6,197.35	6,196.44	21.99	21.44	126.38	159.57	405.65	498.81	455.44	43.37	11.501		
6,250.00	6,246.14	6,247.38	6,246.46	22.17	21.61	126.67	159.59	405.94	500.92	457.20	43.72	11.457		
6,300.00	6,296.05	6,297.38	6,296.46	22.35	21.79	126.95	159.60	406.23	503.04	458.96	44.08	11.413		
6,350.00	6,345.95	6,347.33	6,346.41	22.53	21.96	127.25	159.47	406.52	505.16	460.73	44.43	11.370		
6,400.00	6,395.86	6,397.26	6,396.34	22.71	22.13	127.56	159.16	406.83	507.29	462.50	44.78	11.327		
6,450.00	6,445.77	6,447.19	6,446.27	22.89	22.31	127.87	158.86	407.13	509.43	464.29	45.14	11.286		
6,500.00	6,495.67	6,497.39	6,496.47	23.07	22.48	128.18	158.60	407.42	511.57	466.08	45.49	11.245		
6,550.00	6,545.58	6,547.80	6,546.87	23.25	22.66	128.46	158.48	407.65	513.68	467.83	45.85	11.204		
6,600.00	6,595.49	6,598.25	6,597.33	23.43	22.83	128.74	158.46	407.81	515.74	469.54	46.20	11.163		
6,650.00	6,645.39	6,648.73	6,647.80	23.62	23.01	129.01	158.42	407.92	517.77	471.21	46.56	11.121		
6,700.00	6,695.30	6,698.30	6,697.38	23.80	23.18	129.28	158.32	408.02	519.79	472.88	46.91	11.080		
6,750.00	6,745.21	6,747.72	6,746.79	23.98	23.36	129.56	158.08	408.17	521.86	474.60	47.26	11.042		
6,800.00	6,795.11	6,797.39	6,796.46	24.16	23.53	129.86	157.76	408.36	523.98	476.37	47.61	11.005		
6,850.00	6,845.02	6,847.06	6,846.13	24.34	23.70	130.14	157.47	408.57	526.14	478.17	47.97	10.969		
6,900.00	6,894.93	6,896.67	6,895.74	24.52	23.88	130.42	157.30	408.79	528.33	480.01	48.32	10.934		
6,950.00	6,944.83	6,946.33	6,945.40	24.70	24.05	130.67	157.32	409.03	530.56	481.88	48.67	10.901		
7,000.00	6,994.74	6,996.11	6,995.18	24.88	24.22	130.91	157.35	409.28	532.81	483.78	49.03	10.868		
7,050.00	7,044.65	7,045.75	7,044.82	25.06	24.40	131.16	157.32	409.54	535.08	485.71	49.38	10.837		
7,100.00	7,094.55	7,095.09	7,094.15	25.24	24.57	131.43	157.11	409.86	537.41	487.66	49.73	10.807		
7,150.00	7,144.46	7,144.98	7,144.04	25.43	24.74	131.72	156.72	410.23	539.79	489.71	50.08	10.778		
7,200.00	7,194.36	7,195.68	7,194.74	25.61	24.92	131.99	156.42	410.55	542.13	491.69	50.44	10.748		
7,250.00	7,244.27	7,245.61	7,244.67	25.79	25.09	132.25	156.26	410.80	544.43	493.63	50.79	10.719		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9558-													Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,300.00	7,294.18	7,294.93	7,293.99	25.97	25.27	132.50	156.09	411.08	546.77	495.63	51.14	10.691		
7,350.00	7,344.08	7,343.95	7,343.00	26.15	25.44	132.77	155.81	411.43	549.19	497.70	51.49	10.665		
7,400.00	7,393.99	7,392.78	7,391.83	26.33	25.61	133.06	155.22	411.87	551.71	499.87	51.84	10.642		
7,450.00	7,443.90	7,442.31	7,441.35	26.51	25.78	133.38	154.33	412.40	554.32	502.12	52.19	10.620		
7,500.00	7,493.80	7,492.05	7,491.08	26.69	25.95	133.71	153.28	412.93	556.95	504.40	52.55	10.599		
7,550.00	7,543.71	7,542.98	7,542.00	26.88	26.13	134.06	152.18	413.45	559.56	506.66	52.91	10.577		
7,600.00	7,593.62	7,594.12	7,593.12	27.06	26.31	134.38	151.24	413.84	562.08	508.82	53.26	10.553		
7,650.00	7,643.52	7,643.72	7,642.71	27.24	26.48	134.70	150.33	414.18	564.57	510.95	53.62	10.530		
7,700.00	7,693.43	7,693.39	7,692.37	27.42	26.66	135.03	149.30	414.54	567.03	513.06	53.97	10.507		
7,750.00	7,743.38	7,741.69	7,740.65	27.60	26.82	135.33	148.17	414.97	569.17	514.86	54.31	10.479		
7,800.00	7,793.35	7,790.25	7,789.19	27.78	26.99	135.59	146.89	415.51	570.98	516.32	54.66	10.446		
7,850.00	7,843.34	7,838.98	7,837.91	27.96	27.16	135.80	145.62	416.16	572.45	517.44	55.01	10.407		
7,900.00	7,893.33	7,888.87	7,887.78	28.14	27.34	135.96	144.41	416.92	573.54	518.18	55.36	10.360		
7,950.00	7,943.33	7,941.29	7,940.17	28.31	27.52	91.59	143.27	417.59	574.20	518.48	55.72	10.304		
8,000.00	7,993.33	7,992.22	7,991.09	28.49	27.70	91.68	142.30	418.05	574.68	518.60	56.08	10.247		
8,050.00	8,043.33	8,041.78	8,040.65	28.67	27.87	91.78	141.27	418.51	575.18	518.75	56.43	10.192		
8,100.00	8,093.33	8,091.27	8,090.12	28.85	28.05	91.89	140.14	419.00	575.71	518.93	56.78	10.139		
8,150.00	8,143.33	8,140.71	8,139.53	29.03	28.22	92.02	138.86	419.53	576.29	519.16	57.13	10.087		
8,200.00	8,193.33	8,191.02	8,189.82	29.20	28.39	92.16	137.44	420.09	576.90	519.41	57.49	10.036		
8,250.00	8,243.33	8,241.64	8,240.42	29.38	28.57	92.30	136.02	420.59	577.45	519.61	57.84	9.983		
8,300.00	8,293.33	8,293.59	8,292.35	29.56	28.75	92.43	134.62	421.01	577.90	519.70	58.20	9.929		
8,350.00	8,343.33	8,345.71	8,344.46	29.74	28.93	92.56	133.35	421.23	578.18	519.61	58.56	9.873		
8,400.00	8,393.33	8,397.32	8,396.05	29.91	29.11	92.67	132.19	421.30	578.29	519.37	58.92	9.814		
8,450.00	8,443.33	8,447.92	8,446.64	30.09	29.29	92.78	131.14	421.23	578.27	518.99	59.28	9.755		
8,452.62	8,445.95	8,450.43	8,449.15	30.10	29.30	92.78	131.08	421.23	578.27	518.98	59.30	9.752		
8,500.00	8,493.33	8,495.86	8,494.57	30.27	29.46	92.89	130.05	421.25	578.35	518.73	59.62	9.700		
8,550.00	8,543.33	8,545.18	8,543.87	30.45	29.63	93.01	128.80	421.43	578.59	518.62	59.97	9.648		
8,600.00	8,593.33	8,597.30	8,595.97	30.63	29.81	93.13	127.53	421.50	578.73	518.40	60.33	9.592		
8,650.00	8,643.32	8,649.26	8,647.92	30.80	29.99	-86.53	126.39	421.40	578.64	517.95	60.69	9.535		
8,700.00	8,693.06	8,700.90	8,699.55	30.96	30.17	-86.98	125.45	421.14	578.16	517.13	61.02	9.474		
8,750.00	8,742.19	8,750.08	8,748.73	31.11	30.34	-87.87	124.67	420.80	577.42	516.07	61.35	9.412		
8,800.00	8,790.32	8,797.67	8,796.31	31.26	30.51	-89.13	123.83	420.53	576.78	515.12	61.66	9.354		
8,846.82	8,834.17	8,841.03	8,839.67	31.39	30.66	-90.59	123.05	420.34	576.52	514.57	61.95	9.306		
8,850.00	8,837.10	8,843.93	8,842.56	31.39	30.67	-90.69	123.00	420.33	576.52	514.55	61.97	9.304		
8,900.00	8,882.17	8,888.42	8,887.04	31.52	30.82	-92.50	122.35	420.20	577.01	514.75	62.26	9.268		
8,950.00	8,925.18	8,929.97	8,928.60	31.64	30.97	-94.38	121.86	420.16	578.70	516.16	62.54	9.253		
9,000.00	8,965.81	8,968.85	8,967.48	31.75	31.11	-96.24	121.43	420.26	582.10	519.30	62.80	9.269		
9,050.00	9,003.74	9,006.13	9,004.75	31.85	31.24	-98.02	121.03	420.47	587.66	524.60	63.06	9.320		
9,100.00	9,038.70	9,043.11	9,041.72	31.94	31.36	-99.76	120.64	420.64	595.65	532.34	63.30	9.409		
9,150.00	9,070.40	9,076.70	9,075.31	32.06	31.48	-101.14	120.30	420.69	606.40	542.87	63.53	9.545		
9,200.00	9,098.62	9,106.67	9,105.28	32.18	31.59	-102.07	120.01	420.66	620.24	556.50	63.74	9.730		
9,250.00	9,123.14	9,132.60	9,131.22	32.30	31.68	-102.42	119.82	420.56	637.38	573.45	63.93	9.970		
9,300.00	9,143.76	9,154.29	9,152.90	32.43	31.75	-102.09	119.71	420.41	657.88	593.79	64.09	10.265		
9,350.00	9,160.34	9,171.61	9,170.22	32.56	31.81	-101.00	119.66	420.25	681.69	617.47	64.22	10.615		
9,400.00	9,172.75	9,184.54	9,183.15	32.70	31.86	-99.06	119.63	420.11	708.60	644.28	64.32	11.017		
9,450.00	9,180.88	9,193.52	9,192.13	32.83	31.89	-96.26	119.61	420.01	738.30	673.90	64.40	11.465		
9,500.00	9,184.69	9,197.87	9,196.48	32.97	31.90	-92.51	119.60	419.96	770.40	705.96	64.44	11.955		
9,550.00	9,185.00	9,198.40	9,197.00	33.12	31.91	-90.88	119.60	419.95	804.46	739.99	64.47	12.478		
9,600.00	9,185.00	9,198.59	9,197.20	33.28	31.91	-90.89	119.60	419.95	840.12	775.63	64.49	13.028		
9,650.00	9,185.00	9,198.79	9,197.39	33.46	31.91	-90.91	119.60	419.95	877.18	812.67	64.51	13.597		
9,700.00	9,185.00	9,198.99	9,197.59	33.64	31.91	-90.93	119.60	419.94	915.47	850.94	64.53	14.187		

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 01-T23S-R31E
Site Error: 5.00 ft
Reference Well: Tomb Raider 1-12 Fed 514H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 1

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed 514H
TVD Reference: RKB @ 3500.70ft
MD Reference: RKB @ 3500.70ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM r5000.141_Prod US
Offset TVD Reference: Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9558-													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
9,750.00	9,185.00	9,199.19	9,197.80	33.85	31.91	-90.95	119.59	419.94	954.84	890.30	64.55	14.793		
9,800.00	9,185.00	9,199.40	9,198.00	34.05	31.91	-90.98	119.59	419.94	995.17	930.61	64.56	15.414		
9,850.00	9,185.00	9,199.61	9,198.21	34.29	31.91	-91.00	119.59	419.94	1,036.35	971.76	64.58	16.047		
9,900.00	9,185.00	9,199.82	9,198.43	34.53	31.91	-91.02	119.59	419.93	1,078.27	1,013.67	64.60	16.692		
9,950.00	9,185.00	9,200.04	9,198.65	34.79	31.91	-91.04	119.59	419.93	1,120.85	1,056.23	64.62	17.346		
10,000.00	9,185.00	9,200.26	9,198.87	35.06	31.91	-91.06	119.59	419.93	1,164.02	1,099.39	64.63	18.011		
10,050.00	9,185.00	11,035.74	10,234.00	35.35	78,182,968	-152.81	-941.37	387.11	1,175.73,297,273,509	1,274,684.90		0.000	Collision	
10,100.00	9,185.00	11,085.74	10,234.00	35.64	72,603,851	-152.81	-991.36	387.45	1,175.76,357,701,125	1,702,301.20		0.000	Collision	
10,150.00	9,185.00	11,135.74	10,234.00	35.93	21,366,404	-152.80	-1,041.36	387.80	1,175.79,971,523,590	1,524,766.70		0.000	Collision	
10,200.00	9,185.00	11,185.74	10,234.00	36.22	77,615,422	-152.80	-1,091.36	388.14	1,175.82,990,441,482	1,044,658.60		0.000	Collision	
10,250.00	9,185.00	11,235.74	10,234.00	36.51	53,682,159	-152.80	-1,141.36	388.49	1,175.85,779,705,720	1,970,896.70		0.000	Collision	
10,300.00	9,185.00	11,285.74	10,234.00	36.80	21,141,245	-152.80	-1,191.36	388.83	1,175.87,459,510,514	1,519,511,690.60		0.000	Collision	
10,350.00	9,185.00	11,335.74	10,234.00	37.09	95,446,631	-152.79	-1,241.36	389.18	1,175.90,561,147,676	1,148,852.40		0.000	Collision	
10,400.00	9,185.00	11,385.74	10,234.00	37.38	30,735,666	-152.79	-1,291.36	389.52	1,175.93,813,134,111	1,135,287.70		0.000	Collision	
10,450.00	9,185.00	11,435.74	10,234.00	38.07	42,300,275	-152.79	-1,341.36	389.86	1,175.96,865,569,709	1,570,885.20		0.000	Collision	
10,500.00	9,185.00	11,485.74	10,234.00	38.36	25,912,756	-152.78	-1,391.35	390.21	1,175.99,219,290,458	1,929,634.50		0.000	Collision	
10,550.00	9,185.00	11,535.74	10,234.00	38.65	99,336,128	-152.78	-1,441.35	390.55	1,176.02,607,832,018	1,737,833,194.10		0.000	Collision	
10,600.00	9,185.00	11,585.74	10,234.00	39.24	349,784,485	-152.78	-1,491.35	390.90	1,176.05,391,046,940	1,048,116.30		0.000	Collision	
10,650.00	9,185.00	11,635.74	10,234.00	39.53	30,043,396	-152.78	-1,541.35	391.24	1,176.07,364,215,528	1,216,704.40		0.000	Collision	
10,700.00	9,185.00	11,685.74	10,234.00	40.02	223,038,553	-152.77	-1,591.35	391.59	1,176.10,793,836,815	1,337,837,991.90		0.000	Collision	
10,750.00	9,185.00	11,735.74	10,234.00	40.51	576,773,761	-152.77	-1,641.35	391.93	1,176.13,518,737,409	1,873,585.50		0.000	Collision	
10,800.00	9,185.00	11,785.74	10,234.00	40.90	635,421,454	-152.77	-1,691.35	392.28	1,176.16,742,002,732	1,200,908.40		0.000	Collision	
10,850.00	9,185.00	11,835.74	10,234.00	41.39	19,879,939	-152.77	-1,741.35	392.62	1,176.19,335,800,198	1,580,137,740.00		0.000	Collision	
10,900.00	9,185.00	11,885.74	10,234.00	41.88	75,139,785	-152.76	-1,791.35	392.97	1,176.22,457,880,659	1,788,836.10		0.000	Collision	
10,950.00	9,185.00	11,935.74	10,234.00	42.37	117,219,467	-152.76	-1,841.34	393.31	1,176.25,003,337,135	1,338,311.40		0.000	Collision	
11,000.00	9,185.00	11,985.74	10,234.00	42.76	86,406,337	-152.76	-1,891.34	393.65	1,176.28,098,057,047	1,380,582,244.10		0.000	Collision	
11,050.00	9,185.00	12,035.74	10,234.00	43.25	26,885,204	-152.75	-1,941.34	394.00	1,176.30,654,592,528	1,459,704.00		0.000	Collision	
11,100.00	9,185.00	12,085.74	10,234.00	43.74	18,189,051	-152.75	-1,991.34	394.34	1,176.33,775,627,408	1,562,585.00		0.000	Collision	
11,150.00	9,185.00	12,135.74	10,234.00	44.23	10,044,460	-152.75	-2,041.34	394.69	1,176.36,392,265,446	1,266,623.00		0.000	Collision	
11,200.00	9,185.00	12,185.74	10,234.00	44.72	682,366,513	-152.75	-2,091.34	395.03	1,176.39,586,787,082	1,678,258.00		0.000	Collision	
11,250.00	9,185.00	12,235.74	10,234.00	45.21	303,067,301	-152.74	-2,141.34	395.38	1,176.42,298,615,555	1,816,731.00		0.000	Collision	
11,300.00	9,185.00	12,285.74	10,234.00	45.70	323,325,536	-152.74	-2,191.34	395.72	1,176.45,596,890,954	1,368,921,131.00		0.000	Collision	
11,350.00	9,185.00	12,335.74	10,234.00	46.19	332,523,778	-152.74	-2,241.33	396.07	1,176.48,430,862,419	1,063,596.00		0.000	Collision	
11,400.00	9,185.00	12,385.74	10,234.00	46.68	794,470,127	-152.74	-2,291.33	396.41	1,176.51,858,523,856	1,525,033.00		0.000	Collision	
11,450.00	9,185.00	12,435.74	10,234.00	47.17	306,505,295	-152.73	-2,341.33	396.76	1,176.53,837,802,568	1,780,374,440.00		0.000	Collision	
11,500.00	9,185.00	12,485.74	10,234.00	47.66	85,318,892	-152.73	-2,391.33	397.10	1,176.56,417,031,539	1,703,271,500.00		0.000	Collision	
11,550.00	9,185.00	12,535.74	10,234.00	48.15	905,655,315	-152.73	-2,441.33	397.44	1,176.59,555,691,770	1,569,946.00		0.000	Collision	
11,600.00	9,185.00	12,585.74	10,234.00	48.64	262,729,116	-152.72	-2,491.33	397.79	1,176.62,297,327,023	1,373,280,200.00		0.000	Collision	
11,650.00	9,185.00	12,635.74	10,234.00	49.13	93,712,709	-152.72	-2,541.33	398.13	1,176.65,613,065,545	1,306,722.00		0.000	Collision	
11,700.00	9,185.00	12,685.74	10,234.00	50.00	474,361,868	-152.72	-2,591.33	398.48	1,176.68,537,544,332	1,745,508.00		0.000	Collision	
11,750.00	9,185.00	12,735.74	10,234.00	50.49	35,719,452	-152.72	-2,641.32	398.82	1,176.71,039,078,252	1,907,428.00		0.000	Collision	
11,800.00	9,185.00	12,785.74	10,234.00	51.15	49,456,209	-152.71	-2,691.32	399.17	1,176.73,150,438,836	1,044,013.00		0.000	Collision	
11,850.00	9,185.00	12,835.73	10,234.00	51.72	68,566,432	-152.71	-2,741.32	399.51	1,176.76,849,999,652	1,000,829.00		0.000	Collision	
11,900.00	9,185.00	12,885.73	10,234.00	52.29	49,901,745	-152.71	-2,791.32	399.86	1,176.79,163,746,580	1,374,757.00		0.000	Collision	
11,950.00	9,185.00	12,935.73	10,234.00	52.87	43,582,264	-152.71	-2,841.32	400.20	1,176.82,068,732,500	1,387,333,677.00		0.000	Collision	
12,000.00	9,185.00	12,985.73	10,234.00	53.44	02,270,720	-152.70	-2,891.32	400.55	1,176.85,589,027,936	1,929,113.00		0.000	Collision	
12,050.00	9,185.00	13,035.73	10,234.00	54.02	59,188,168	-152.70	-2,941.32	400.89	1,176.88,703,104,144	1,310,321.00		0.000	Collision	
12,100.00	9,185.00	13,085.73	10,234.00	54.61	423,462,128	-152.70	-2,991.32	401.23	1,176.91,433,415,282	1,341,459.00		0.000	Collision	
12,150.00	9,185.00	13,135.73	10,234.00	55.20	207,837,372	-152.70	-3,041.31	401.58	1,176.94,767,385,010	1,373,386,186.00		0.000	Collision	
12,200.00	9,185.00	13,185.73	10,234.00	55.79	68,300,495	-152.69	-3,091.31	401.92	1,176.96,721,445,742	1,144,819,919.00		0.000	Collision	
12,250.00	9,185.00	13,235.73	10,234.00	56.38	59,109,874	-152.69	-3,141.31	402.27	1,176.99,274,538,204	1,453,381.00		0.000	Collision	

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2											Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9558-											Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Tooface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	
12,300.00	9,185.00	13,285.73	10,234.00	56.98322,112,620	-152.69		-3,191.31	402.61	1,177.02,445,785,72015,786,898.00		0.000	Collision
12,350.00	9,185.00	13,335.73	10,234.00	57.58330,610,551	-152.68		-3,241.31	402.96	1,177.05,222,863,60712,864,784.00		0.000	Collision
12,400.00	9,185.00	13,385.73	10,234.00	58.18117,349,320	-152.68		-3,291.31	403.30	1,177.08,620,723,63410,724,812.00		0.000	Collision
12,450.00	9,185.00	13,435.73	10,234.00	58.78062,688,467	-152.68		-3,341.31	403.65	1,177.11,630,278,98110,280,158.00		0.000	Collision
12,500.00	9,185.00	13,485.73	10,234.00	59.4091,500,120	-152.68		-3,391.31	403.99	1,177.14,262,871,71512,872,892.00		0.000	Collision
12,550.00	9,185.00	13,535.73	10,234.00	60.0068,297,830	-152.67		-3,441.30	404.34	1,177.17,502,139,72512,140,902.00		0.000	Collision
12,600.00	9,185.00	13,585.73	10,234.00	60.60524,330,452	-152.67		-3,491.30	404.68	1,177.20,362,353,42112,354,598.00		0.000	Collision
12,650.00	9,185.00	13,635.73	10,234.00	61.20447,491,390	-152.67		-3,541.30	405.02	1,177.22,837,881,95717,883,134.00		0.000	Collision
12,700.00	9,185.00	13,685.73	10,234.00	61.80357,529,144	-152.67		-3,591.30	405.37	1,177.25,937,719,95317,721,130.00		0.000	Collision
12,750.00	9,185.00	13,735.73	10,234.00	62.40273,948,463	-152.66		-3,641.30	405.71	1,177.28,647,791,87617,793,053.00		0.000	Collision
12,800.00	9,185.00	13,785.73	10,234.00	63.10172,954,094	-152.66		-3,691.30	406.06	1,177.31,980,057,83210,059,009.00		0.000	Collision
12,850.00	9,185.00	13,835.73	10,234.00	63.70095,593,892	-152.66		-3,741.30	406.40	1,177.34,930,334,25210,335,430.00		0.000	Collision
12,900.00	9,185.00	13,885.73	10,234.00	64.30017,707,640	-152.65		-3,791.30	406.75	1,177.37,505,824,40615,825,583.00		0.000	Collision
12,950.00	9,185.00	13,935.73	10,234.00	65.00882,766,592	-152.65		-3,841.29	407.09	1,177.40,694,270,17214,271,350.00		0.000	Collision
13,000.00	9,185.00	13,985.73	10,234.00	65.60843,032,015	-152.65		-3,891.29	407.44	1,177.43,505,825,09815,826,276.00		0.000	Collision
13,050.00	9,185.00	14,035.73	10,234.00	66.20881,974,180	-152.65		-3,941.29	407.78	1,177.45,937,417,50517,418,683.00		0.000	Collision
13,100.00	9,185.00	14,085.73	10,234.00	66.80812,403,315	-152.64		-3,991.29	408.13	1,177.48,994,861,80714,862,984.00		0.000	Collision
13,150.00	9,185.00	14,135.73	10,234.00	67.50810,990,280	-152.64		-4,041.29	408.47	1,177.51,667,366,11517,367,292.00		0.000	Collision
13,200.00	9,185.00	14,185.73	10,234.00	68.10896,864,576	-152.64		-4,091.29	408.81	1,177.54,963,648,99313,650,170.00		0.000	Collision
13,250.00	9,185.00	14,235.73	10,234.00	68.80829,405,803	-152.64		-4,141.29	409.16	1,177.57,878,757,64617,758,824.00		0.000	Collision
13,300.00	9,185.00	14,285.73	10,234.00	69.40812,631,462	-152.63		-4,191.29	409.50	1,177.60,419,063,37019,064,547.00		0.000	Collision
13,350.00	9,185.00	14,335.73	10,234.00	70.10855,967,370	-152.63		-4,241.29	409.85	1,177.63,584,231,50614,232,684.00		0.000	Collision
13,400.00	9,185.00	14,385.73	10,234.00	70.70895,354,834	-152.63		-4,291.28	410.19	1,177.66,376,922,97316,924,151.00		0.000	Collision
13,450.00	9,185.00	14,435.73	10,234.00	71.40802,927,368	-152.62		-4,341.28	410.54	1,177.68,784,254,22714,255,404.00		0.000	Collision
13,500.00	9,185.00	14,485.73	10,234.00	72.00897,797,815	-152.62		-4,391.28	410.88	1,177.71,814,940,99914,942,177.00		0.000	Collision
13,550.00	9,185.00	14,535.73	10,234.00	72.70874,262,324	-152.62		-4,441.28	411.23	1,177.74,466,288,96316,290,141.00		0.000	Collision
13,600.00	9,185.00	14,585.73	10,234.00	73.30843,378,219	-152.62		-4,491.28	411.57	1,177.77,743,312,05313,313,230.00		0.000	Collision
13,650.00	9,185.00	14,635.73	10,234.00	74.00864,621,738	-152.61		-4,541.28	411.92	1,177.80,051,373,30511,374,483.00		0.000	Collision
13,700.00	9,185.00	14,685.73	10,234.00	74.60830,921,881	-152.61		-4,591.28	412.26	1,177.83,950,536,93110,536,109.00		0.000	Collision, ES, SF
13,750.00	9,185.00	14,682.85	10,234.00	75.30791,530,998	-152.61		-4,588.39	412.24	1,179.04,589,480,18719,481,366.00		0.000	Collision
13,800.00	9,185.00	14,682.85	10,234.00	75.90791,530,998	-152.61		-4,588.39	412.24	1,182.37,130,828,07710,829,259.00		0.000	Collision
13,850.00	9,185.00	14,682.85	10,234.00	76.50791,530,998	-152.61		-4,588.39	412.24	1,187.80,270,850,17710,851,365.00		0.000	Collision
13,900.00	9,185.00	14,682.85	10,234.00	77.10791,530,998	-152.61		-4,588.39	412.24	1,195.29,231,352,82411,354,020.00		0.000	Collision
13,950.00	9,185.00	14,682.85	10,234.00	77.70791,530,998	-152.61		-4,588.39	412.24	1,204.81,921,333,96811,335,173.00		0.000	Collision
14,000.00	9,185.00	14,682.85	10,234.00	78.30791,530,998	-152.61		-4,588.39	412.24	1,216.32,841,371,94111,373,157.00		0.000	Collision
14,050.00	9,185.00	14,682.85	10,234.00	79.00791,530,998	-152.61		-4,588.39	412.24	1,229.75,837,278,25617,279,486.00		0.000	Collision
14,100.00	9,185.00	14,682.85	10,234.00	79.60791,530,998	-152.61		-4,588.39	412.24	1,245.05,790,302,09910,303,344.00		0.000	Collision
14,150.00	9,185.00	14,682.85	10,234.00	80.20791,530,998	-152.61		-4,588.39	412.24	1,262.14,325,603,79815,605,060.00		0.000	Collision
14,200.00	9,185.00	14,682.85	10,234.00	81.00791,530,998	-152.61		-4,588.39	412.24	1,280.96,607,931,77117,933,052.00		0.000	Collision
14,250.00	9,185.00	14,682.85	10,234.00	81.90791,530,998	-152.61		-4,588.39	412.24	1,301.43,276,217,33216,218,834.00		0.000	Collision
14,300.00	9,185.00	14,682.85	10,234.00	82.60791,530,998	-152.61		-4,588.39	412.24	1,323.47,550,007,25310,008,577.00		0.000	Collision
14,350.00	9,185.00	14,682.85	10,234.00	83.30791,530,998	-152.61		-4,588.39	412.24	1,347.00,522,734,90012,736,247.00		0.000	Collision
14,400.00	9,185.00	14,682.85	10,234.00	83.90791,530,998	-152.61		-4,588.39	412.24	1,371.96,641,529,49211,530,864.00		0.000	Collision
14,450.00	9,185.00	14,682.85	10,234.00	84.60791,530,998	-152.61		-4,588.39	412.24	1,398.26,361,532,62911,534,027.00		0.000	Collision
14,500.00	9,185.00	14,682.85	10,234.00	85.30791,530,998	-152.61		-4,588.39	412.24	1,425.83,954,779,37514,780,801.00		0.000	Collision
14,550.00	9,185.00	14,682.85	10,234.00	86.00791,530,998	-152.61		-4,588.39	412.24	1,454.60,449,328,14119,329,595.00		0.000	Collision
14,600.00	9,185.00	14,682.85	10,234.00	86.60791,530,998	-152.61		-4,588.39	412.24	1,484.49,672,888,92112,890,405.00		0.000	Collision

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis		Highside Tooface To								

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

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		Offset		Semi Major Axis		Highside Tooface (")	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
2,550.00	2,550.00	2,553.20	2,553.20	8.93	0.00	65.76	161.64	359.04	393.75	384.82	8.93	44.087			
2,600.00	2,600.00	2,603.20	2,603.20	9.11	0.00	65.76	161.64	359.04	393.75	384.64	9.11	43.221			
2,650.00	2,650.00	2,653.20	2,653.20	9.29	0.00	65.76	161.64	359.04	393.75	384.46	9.29	42.388			
2,700.00	2,700.00	2,703.20	2,703.20	9.47	0.00	65.76	161.64	359.04	393.75	384.28	9.47	41.587			
2,750.00	2,750.00	2,753.20	2,753.20	9.65	0.00	65.76	161.64	359.04	393.75	384.10	9.65	40.815			
2,800.00	2,800.00	2,803.20	2,803.20	9.83	0.00	65.76	161.64	359.04	393.75	383.92	9.83	40.072			
2,850.00	2,850.00	2,853.20	2,853.20	10.00	0.00	65.76	161.64	359.04	393.75	383.74	10.01	39.355			
2,900.00	2,900.00	2,903.20	2,903.20	10.18	0.00	65.76	161.64	359.04	393.75	383.56	10.18	38.663			
2,950.00	2,950.00	2,953.20	2,953.20	10.36	0.00	65.76	161.64	359.04	393.75	383.39	10.36	37.995			
3,000.00	3,000.00	3,003.20	3,003.20	10.54	0.00	65.76	161.64	359.04	393.75	383.21	10.54	37.350			
3,050.00	3,050.00	3,053.20	3,053.20	10.72	0.00	65.76	161.64	359.04	393.75	383.03	10.72	36.726			
3,100.00	3,100.00	3,103.20	3,103.20	10.90	0.00	65.76	161.64	359.04	393.75	382.85	10.90	36.123			
3,150.00	3,150.00	3,153.20	3,153.20	11.08	0.00	65.76	161.64	359.04	393.75	382.67	11.08	35.539			
3,200.00	3,200.00	3,203.20	3,203.20	11.26	0.00	65.76	161.64	359.04	393.75	382.49	11.26	34.974			
3,250.00	3,250.00	3,253.20	3,253.20	11.44	0.00	65.76	161.64	359.04	393.75	382.31	11.44	34.426			
3,300.00	3,300.00	3,303.20	3,303.20	11.62	0.00	65.76	161.64	359.04	393.75	382.13	11.62	33.896			
3,350.00	3,350.00	3,353.20	3,353.20	11.80	0.00	65.76	161.64	359.04	393.75	381.95	11.80	33.381			
3,400.00	3,400.00	3,403.20	3,403.20	11.97	0.00	65.76	161.64	359.04	393.75	381.77	11.97	32.882			
3,450.00	3,450.00	3,453.20	3,453.20	12.15	0.00	65.76	161.64	359.04	393.75	381.59	12.15	32.397			
3,500.00	3,500.00	3,503.20	3,503.20	12.33	0.00	65.76	161.64	359.04	393.75	381.42	12.33	31.927			
3,550.00	3,550.00	3,553.20	3,553.20	12.51	0.00	65.76	161.64	359.04	393.75	381.24	12.51	31.470			
3,600.00	3,600.00	3,603.20	3,603.20	12.69	0.00	65.76	161.64	359.04	393.75	381.06	12.69	31.026			
3,650.00	3,650.00	3,653.20	3,653.20	12.87	0.00	65.76	161.64	359.04	393.75	380.88	12.87	30.594			
3,700.00	3,700.00	3,703.20	3,703.20	13.05	0.00	65.76	161.64	359.04	393.75	380.70	13.05	30.174			
3,750.00	3,750.00	3,753.20	3,753.20	13.23	0.00	65.76	161.64	359.04	393.75	380.52	13.23	29.766			
3,800.00	3,800.00	3,803.20	3,803.20	13.41	0.00	65.76	161.64	359.04	393.75	380.34	13.41	29.368			
3,850.00	3,850.00	3,853.20	3,853.20	13.59	0.00	65.76	161.64	359.04	393.75	380.16	13.59	28.981			
3,900.00	3,900.00	3,903.20	3,903.20	13.77	0.00	65.76	161.64	359.04	393.75	379.98	13.77	28.604			
3,950.00	3,950.00	3,953.20	3,953.20	13.94	0.00	65.76	161.64	359.04	393.75	379.80	13.94	28.236			
4,000.00	4,000.00	4,003.20	4,003.20	14.12	0.00	65.76	161.64	359.04	393.75	379.62	14.12	27.878 CC			
4,050.00	4,050.00	4,053.20	4,053.20	14.30	0.00	110.29	161.64	359.04	393.84	379.54	14.30	27.538 ES			
4,100.00	4,099.99	4,103.19	4,103.19	14.48	0.00	110.40	161.64	359.04	394.13	379.65	14.48	27.220			
4,150.00	4,149.97	4,153.17	4,153.17	14.66	0.00	110.58	161.64	359.04	394.60	379.95	14.66	26.925			
4,200.00	4,199.94	4,203.14	4,203.14	14.83	0.00	110.83	161.64	359.04	395.28	380.45	14.83	26.650			
4,250.00	4,249.88	4,253.08	4,253.08	15.01	0.00	111.15	161.64	359.04	396.16	381.15	15.01	26.396			
4,300.00	4,299.79	4,302.99	4,302.99	15.19	0.00	111.54	161.64	359.04	397.24	382.05	15.19	26.160			
4,350.00	4,349.70	4,352.90	4,352.90	15.36	0.00	111.95	161.64	359.04	398.37	383.01	15.36	25.933			
4,400.00	4,399.60	4,402.80	4,402.80	15.54	0.00	112.35	161.64	359.04	399.53	383.99	15.54	25.713			
4,450.00	4,449.51	4,452.71	4,452.71	15.72	0.00	112.76	161.64	359.04	400.70	384.99	15.71	25.498			
4,500.00	4,499.41	4,502.61	4,502.61	15.90	0.00	113.16	161.64	359.04	401.89	386.00	15.89	25.289			
4,550.00	4,549.32	4,552.52	4,552.52	16.07	0.00	113.56	161.64	359.04	403.11	387.04	16.07	25.086			
4,600.00	4,599.23	4,602.43	4,602.43	16.25	0.00	113.95	161.64	359.04	404.34	388.10	16.25	24.889			
4,650.00	4,649.13	4,652.33	4,652.33	16.43	0.00	114.35	161.64	359.04	405.59	389.17	16.42	24.697			
4,700.00	4,699.04	4,702.24	4,702.24	16.61	0.00	114.74	161.64	359.04	406.87	390.27	16.60	24.510			
4,750.00	4,748.95	4,752.15	4,752.15	16.79	0.00	115.13	161.64	359.04	408.16	391.38	16.78	24.327			
4,800.00	4,798.85	4,802.05	4,802.05	16.96	0.00	115.51	161.64	359.04	409.47	392.51	16.96	24.150			
4,850.00	4,848.76	4,851.96	4,851.96	17.14	0.00	115.90	161.64	359.04	410.79	393.66	17.13	23.977			
4,900.00	4,898.67	4,901.87	4,901.87	17.32	0.00	116.28	161.64	359.04	412.14	394.83	17.31	23.809			
4,950.00	4,948.57	4,951.77	4,951.77	17.50	0.00	116.66	161.64	359.04	413.50	396.02	17.49	23.645			
5,000.00	4,998.48	5,001.68	5,001.68	17.68	0.00	117.04	161.64	359.04	414.89	397.22	17.67	23.485			
5,050.00	5,048.39	5,051.59	5,051.59	17.86	0.00	117.41	161.64	359.04	416.29	398.44	17.84	23.330			

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.00	5,098.29	5,101.49	5,101.49	18.04	0.00	117.78	161.64	359.04	417.71	399.68	18.02	23.178		
5,150.00	5,148.20	5,151.40	5,151.40	18.22	0.00	118.15	161.64	359.04	419.14	400.94	18.20	23.030		
5,200.00	5,198.11	5,201.31	5,201.31	18.39	0.00	118.52	161.64	359.04	420.59	402.22	18.38	22.886		
5,250.00	5,248.01	5,251.21	5,251.21	18.57	0.00	118.88	161.64	359.04	422.06	403.51	18.56	22.746		
5,300.00	5,297.92	5,301.12	5,301.12	18.75	0.00	119.24	161.64	359.04	423.55	404.82	18.73	22.609		
5,350.00	5,347.82	5,351.02	5,351.02	18.93	0.00	119.60	161.64	359.04	425.05	406.14	18.91	22.475		
5,400.00	5,397.73	5,400.93	5,400.93	19.11	0.00	119.96	161.64	359.04	426.57	407.48	19.09	22.345		
5,450.00	5,447.64	5,450.84	5,450.84	19.29	0.00	120.31	161.64	359.04	428.11	408.84	19.27	22.218		
5,500.00	5,497.54	5,500.74	5,500.74	19.47	0.00	120.66	161.64	359.04	429.66	410.22	19.45	22.094		
5,550.00	5,547.45	5,550.65	5,550.65	19.65	0.00	121.01	161.64	359.04	431.23	411.61	19.63	21.973		
5,600.00	5,597.36	5,600.56	5,600.56	19.83	0.00	121.36	161.64	359.04	432.82	413.01	19.80	21.855		
5,650.00	5,647.26	5,650.46	5,650.46	20.01	0.00	121.70	161.64	359.04	434.42	414.44	19.98	21.740		
5,700.00	5,697.17	5,700.37	5,700.37	20.19	0.00	122.04	161.64	359.04	436.04	415.87	20.16	21.627		
5,750.00	5,747.08	5,750.28	5,750.28	20.37	0.00	122.38	161.64	359.04	437.67	417.33	20.34	21.518		
5,800.00	5,796.98	5,800.18	5,800.18	20.55	0.00	122.72	161.64	359.04	439.31	418.80	20.52	21.411		
5,850.00	5,846.89	5,850.09	5,850.09	20.73	0.00	123.05	161.64	359.04	440.98	420.28	20.70	21.306		
5,900.00	5,896.80	5,900.00	5,900.00	20.91	0.00	123.38	161.64	359.04	442.65	421.78	20.88	21.204		
5,950.00	5,946.70	5,949.90	5,949.90	21.09	0.00	123.71	161.64	359.04	444.34	423.29	21.05	21.104		
6,000.00	5,996.61	6,000.19	5,999.81	21.27	0.00	124.04	161.64	359.04	446.05	424.82	21.23	21.007		
6,050.00	6,046.52	6,049.72	6,049.72	21.45	0.00	124.36	161.64	359.04	447.77	426.36	21.41	20.912		
6,100.00	6,096.42	6,100.38	6,099.62	21.63	0.00	124.68	161.64	359.04	449.51	427.91	21.59	20.819		
6,150.00	6,146.33	6,149.53	6,149.53	21.81	0.00	125.00	161.64	359.04	451.25	429.48	21.77	20.728		
6,200.00	6,196.23	6,200.57	6,199.43	21.99	0.00	125.32	161.64	359.04	453.02	431.07	21.95	20.640		
6,250.00	6,246.14	6,249.34	6,249.34	22.17	0.00	125.63	161.64	359.04	454.79	432.66	22.13	20.553		
6,300.00	6,296.05	6,300.75	6,299.25	22.35	0.00	125.94	161.64	359.04	456.58	434.28	22.31	20.468		
6,350.00	6,345.95	6,349.15	6,349.15	22.53	0.00	126.25	161.64	359.04	458.39	435.90	22.49	20.386		
6,400.00	6,395.86	6,400.94	6,399.06	22.71	0.00	126.56	161.64	359.04	460.20	437.54	22.66	20.305		
6,450.00	6,445.77	6,448.97	6,448.97	22.89	0.00	126.86	161.64	359.04	462.03	439.19	22.84	20.226		
6,500.00	6,495.67	6,501.13	6,498.87	23.07	0.00	127.17	161.64	359.04	463.87	440.85	23.02	20.148		
6,550.00	6,545.58	6,548.78	6,548.78	23.25	0.00	127.47	161.64	359.04	465.73	442.53	23.20	20.073		
6,600.00	6,595.49	6,601.31	6,598.69	23.43	0.00	127.78	161.64	359.04	467.60	444.22	23.38	19.999		
6,650.00	6,645.39	6,648.59	6,648.59	23.62	0.00	128.06	161.64	359.04	469.48	445.92	23.56	19.927		
6,700.00	6,695.30	6,701.50	6,698.50	23.80	0.00	128.35	161.64	359.04	471.37	447.63	23.74	19.856		
6,750.00	6,745.21	6,748.41	6,748.41	23.98	0.00	128.64	161.64	359.04	473.27	449.36	23.92	19.787		
6,800.00	6,795.11	6,801.69	6,798.31	24.16	0.00	128.93	161.64	359.04	475.19	451.09	24.10	19.720		
6,850.00	6,845.02	6,848.22	6,848.22	24.34	0.00	129.21	161.64	359.04	477.12	452.84	24.28	19.653		
6,900.00	6,894.93	6,901.87	6,898.13	24.52	0.00	129.49	161.64	359.04	479.06	454.60	24.46	19.589		
6,950.00	6,944.83	6,948.03	6,948.03	24.70	0.00	129.78	161.64	359.04	481.01	456.38	24.64	19.526		
7,000.00	6,994.74	7,002.06	6,997.94	24.88	0.00	130.05	161.64	359.04	482.98	458.16	24.81	19.464		
7,050.00	7,044.65	7,047.85	7,047.85	25.06	0.00	130.33	161.64	359.04	484.95	459.96	24.99	19.403		
7,100.00	7,094.55	7,102.25	7,097.75	25.24	0.00	130.60	161.64	359.04	486.94	461.76	25.17	19.344		
7,150.00	7,144.46	7,147.66	7,147.66	25.43	0.00	130.88	161.64	359.04	488.93	463.58	25.35	19.286		
7,200.00	7,194.36	7,202.44	7,197.56	25.61	0.00	131.14	161.64	359.04	490.94	465.41	25.53	19.229		
7,250.00	7,244.27	7,247.47	7,247.47	25.79	0.00	131.41	161.64	359.04	492.96	467.25	25.71	19.173		
7,300.00	7,294.18	7,302.62	7,297.38	25.97	0.00	131.68	161.64	359.04	494.99	469.10	25.89	19.119		
7,350.00	7,344.08	7,347.28	7,347.28	26.15	0.00	131.94	161.64	359.04	497.03	470.96	26.07	19.066		
7,400.00	7,393.99	7,402.81	7,397.19	26.33	0.00	132.20	161.64	359.04	499.08	472.83	26.25	19.014		
7,450.00	7,443.80	7,447.10	7,447.10	26.51	0.00	132.46	161.64	359.04	501.14	474.71	26.43	18.963		
7,500.00	7,493.80	7,503.00	7,497.00	26.69	0.00	132.72	161.64	359.04	503.21	476.60	26.61	18.913		
7,550.00	7,543.71	7,546.91	7,546.91	26.88	0.00	132.97	161.64	359.04	505.29	478.50	26.79	18.864		
7,600.00	7,593.62	7,603.18	7,596.82	27.06	0.00	133.22	161.64	359.04	507.38	480.42	26.97	18.816		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis		Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,650.00	7,643.52	7,646.72	7,646.72	27.24	0.00	133.47	161.64	359.04	509.48	482.34	27.15	18.769		
7,700.00	7,693.43	7,703.37	7,696.63	27.42	0.00	133.73	161.64	359.04	511.53	484.20	27.32	18.720		
7,750.00	7,743.38	7,746.58	7,746.58	27.60	0.00	133.93	161.64	359.04	513.17	485.67	27.50	18.659		
7,800.00	7,793.35	7,803.45	7,796.55	27.78	0.00	134.09	161.64	359.04	514.37	486.69	27.68	18.581		
7,850.00	7,843.34	7,846.54	7,846.54	27.96	0.00	134.18	161.64	359.04	515.11	487.25	27.86	18.489		
7,900.00	7,893.33	7,903.47	7,896.53	28.14	0.00	134.22	161.64	359.04	515.40	487.37	28.04	18.382		
7,950.00	7,943.33	7,946.53	7,946.53	28.31	0.00	89.72	161.64	359.04	515.41	487.19	28.22	18.266		
8,000.00	7,993.33	8,003.47	7,996.53	28.49	0.00	89.72	161.64	359.04	515.41	487.01	28.39	18.152		
8,050.00	8,043.33	8,046.53	8,046.53	28.67	0.00	89.72	161.64	359.04	515.41	486.84	28.57	18.039		
8,100.00	8,093.33	8,103.47	8,096.53	28.85	0.00	89.72	161.64	359.04	515.41	486.66	28.75	17.927		
8,150.00	8,143.33	8,146.53	8,146.53	29.03	0.00	89.72	161.64	359.04	515.41	486.48	28.93	17.817		
8,200.00	8,193.33	8,203.47	8,196.53	29.20	0.00	89.72	161.64	359.04	515.41	486.30	29.11	17.708		
8,250.00	8,243.33	8,246.53	8,246.53	29.38	0.00	89.72	161.64	359.04	515.41	486.12	29.28	17.600		
8,300.00	8,293.33	8,303.47	8,296.53	29.56	0.00	89.72	161.64	359.04	515.41	485.95	29.46	17.494		
8,350.00	8,343.33	8,346.53	8,346.53	29.74	0.00	89.72	161.64	359.04	515.41	485.77	29.64	17.389		
8,400.00	8,393.33	8,403.47	8,396.53	29.91	0.00	89.72	161.64	359.04	515.41	485.59	29.82	17.285		
8,450.00	8,443.33	8,446.53	8,446.53	30.09	0.00	89.72	161.64	359.04	515.41	485.41	30.00	17.182		
8,500.00	8,493.33	8,503.47	8,496.53	30.27	0.00	89.72	161.64	359.04	515.41	485.23	30.17	17.081		
8,550.00	8,543.33	8,546.53	8,546.53	30.45	0.00	89.72	161.64	359.04	515.41	485.06	30.35	16.981		
8,600.00	8,593.33	8,603.47	8,596.53	30.63	0.00	89.72	161.64	359.04	515.41	484.88	30.53	16.882		
8,628.07	8,621.40	8,624.60	8,624.60	30.72	0.00	-90.00	161.64	359.04	515.41	484.78	30.63	16.828		
8,650.00	8,643.32	8,646.52	8,646.52	30.80	0.00	-90.05	161.64	359.04	515.41	484.71	30.70	16.787		
8,700.00	8,693.06	8,703.74	8,696.26	30.96	0.00	-90.59	161.64	359.04	515.44	484.57	30.86	16.702		
8,750.00	8,742.19	8,745.39	8,745.39	31.11	0.00	-91.57	161.64	359.04	515.61	484.60	31.01	16.625		
8,800.00	8,790.32	8,806.48	8,793.52	31.26	0.00	-92.96	161.64	359.04	516.17	485.01	31.16	16.564		
8,850.00	8,837.10	8,840.30	8,840.30	31.39	0.00	-94.65	161.64	359.04	517.42	486.12	31.31	16.528 SF		
8,900.00	8,882.17	8,885.37	8,885.37	31.52	0.00	-96.56	161.64	359.04	519.78	488.33	31.44	16.530		
8,950.00	8,925.18	8,928.38	8,928.38	31.64	0.00	-98.57	161.64	359.04	523.68	492.10	31.58	16.584		
9,000.00	8,965.81	8,969.01	8,969.01	31.75	0.00	-100.53	161.64	359.04	529.61	497.91	31.70	16.705		
9,050.00	9,003.74	9,006.94	9,006.94	31.85	0.00	-102.33	161.64	359.04	538.03	506.20	31.83	16.905		
9,100.00	9,038.70	9,041.90	9,041.90	31.94	0.00	-103.83	161.64	359.04	549.35	517.41	31.94	17.198		
9,150.00	9,070.40	9,073.60	9,073.60	32.06	0.00	-104.91	161.64	359.04	563.89	531.84	32.05	17.594		
9,200.00	9,098.62	9,101.82	9,101.82	32.18	0.00	-105.46	161.64	359.04	581.85	549.70	32.15	18.099		
9,250.00	9,123.14	9,126.34	9,126.34	32.30	0.00	-105.37	161.64	359.04	603.30	571.06	32.23	18.716		
9,300.00	9,143.76	9,146.96	9,146.96	32.43	0.00	-104.55	161.64	359.04	628.17	595.86	32.31	19.443		
9,350.00	9,160.34	9,163.54	9,163.54	32.56	0.00	-102.88	161.64	359.04	656.26	623.90	32.37	20.275		
9,400.00	9,172.75	9,175.95	9,175.95	32.70	0.00	-100.29	161.64	359.04	687.29	654.88	32.41	21.203		
9,450.00	9,180.88	9,184.08	9,184.08	32.83	0.00	-96.67	161.64	359.04	720.86	688.42	32.45	22.216		
9,500.00	9,184.69	9,187.89	9,187.89	32.97	0.00	-92.01	161.64	359.04	756.55	724.08	32.47	23.300		
9,550.00	9,185.00	9,188.20	9,188.20	33.12	0.00	-90.00	161.64	359.04	793.88	781.39	32.49	24.437		
9,600.00	9,185.00	9,188.20	9,188.20	33.28	0.00	-90.00	161.64	359.04	832.54	800.04	32.50	25.618		
9,650.00	9,185.00	9,188.20	9,188.20	33.46	0.00	-90.00	161.64	359.04	872.36	839.84	32.51	26.829		
9,700.00	9,185.00	9,188.20	9,188.20	33.64	0.00	-90.00	161.64	359.04	913.18	880.65	32.52	28.076		
9,750.00	9,185.00	9,188.20	9,188.20	33.85	0.00	-90.00	161.64	359.04	954.87	922.33	32.54	29.344		
9,800.00	9,185.00	9,188.20	9,188.20	34.05	0.00	-90.00	161.64	359.04	997.32	964.77	32.55	30.639		
9,850.00	9,185.00	9,188.20	9,188.20	34.29	0.00	-90.00	161.64	359.04	1,040.45	1,007.89	32.56	31.950		
9,900.00	9,185.00	9,188.20	9,188.20	34.53	0.00	-90.00	161.64	359.04	1,084.17	1,051.59	32.57	33.283		
9,950.00	9,185.00	9,188.20	9,188.20	34.79	0.00	-90.00	161.64	359.04	1,128.41	1,095.82	32.59	34.626		
10,000.00	9,185.00	11,038.99	10,234.00	35.06	0.00	-153.50	-889.20	370.87	1,168.53	1,145.73	22.80	51.244		
10,050.00	9,185.00	11,088.99	10,234.00	35.35	0.00	-153.49	-939.20	371.43	1,168.66	1,145.65	23.01	50.790		
10,100.00	9,185.00	11,138.99	10,234.00	35.64	0.00	-153.48	-989.19	371.99	1,168.78	1,145.57	23.22	50.343		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis		Highside Toolface	Offset Wellbore Centre		Distance		Minimum Separation	Separation Factor	Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset		+N/-S	+E/-W	Between Centres	Between Ellipses				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
10,150.00	9,185.00	11,188.99	10,234.00	35.95	0.00	-153.47	-1,039.19	372.56	1,168.91	1,145.47	23.44	49.870		
10,200.00	9,185.00	11,238.99	10,234.00	36.27	0.00	-153.46	-1,089.19	373.12	1,169.03	1,145.37	23.66	49.406		
10,250.00	9,185.00	11,288.99	10,234.00	36.61	0.00	-153.44	-1,139.18	373.68	1,169.16	1,145.26	23.90	48.920		
10,300.00	9,185.00	11,338.99	10,234.00	36.94	0.00	-153.43	-1,189.18	374.24	1,169.29	1,145.15	24.14	48.443		
10,350.00	9,185.00	11,388.99	10,234.00	37.30	0.00	-153.42	-1,239.17	374.81	1,169.41	1,145.02	24.39	47.948		
10,400.00	9,185.00	11,438.98	10,234.00	37.66	0.00	-153.41	-1,289.17	375.37	1,169.54	1,144.90	24.64	47.463		
10,450.00	9,185.00	11,488.98	10,234.00	38.04	0.00	-153.39	-1,339.17	375.93	1,169.66	1,144.76	24.91	46.962		
10,500.00	9,185.00	11,538.98	10,234.00	38.43	0.00	-153.38	-1,389.16	376.49	1,169.79	1,144.62	25.17	46.471		
10,550.00	9,185.00	11,588.98	10,234.00	38.83	0.00	-153.37	-1,439.16	377.06	1,169.91	1,144.46	25.45	45.969		
10,600.00	9,185.00	11,638.98	10,234.00	39.23	0.00	-153.36	-1,489.15	377.62	1,170.04	1,144.31	25.73	45.476		
10,650.00	9,185.00	11,688.98	10,234.00	39.65	0.00	-153.34	-1,539.15	378.18	1,170.17	1,144.15	26.02	44.974		
10,700.00	9,185.00	11,738.98	10,234.00	40.07	0.00	-153.33	-1,589.15	378.75	1,170.29	1,143.98	26.31	44.483		
10,750.00	9,185.00	11,788.98	10,234.00	40.50	0.00	-153.32	-1,639.14	379.31	1,170.42	1,143.81	26.61	43.985		
10,800.00	9,185.00	11,838.98	10,234.00	40.94	0.00	-153.31	-1,689.14	379.87	1,170.54	1,143.63	26.91	43.497		
10,850.00	9,185.00	11,888.98	10,234.00	41.39	0.00	-153.30	-1,739.13	380.43	1,170.67	1,143.45	27.22	43.004		
10,900.00	9,185.00	11,938.98	10,234.00	41.84	0.00	-153.28	-1,789.13	381.00	1,170.80	1,143.26	27.53	42.522		
10,950.00	9,185.00	11,988.98	10,234.00	42.31	0.00	-153.27	-1,839.13	381.56	1,170.92	1,143.07	27.86	42.036		
11,000.00	9,185.00	12,038.98	10,234.00	42.78	0.00	-153.26	-1,889.12	382.12	1,171.05	1,142.87	28.18	41.561		
11,050.00	9,185.00	12,088.97	10,234.00	43.26	0.00	-153.25	-1,939.12	382.68	1,171.18	1,142.67	28.51	41.083		
11,100.00	9,185.00	12,138.97	10,234.00	43.74	0.00	-153.23	-1,989.11	383.25	1,171.30	1,142.46	28.84	40.617		
11,150.00	9,185.00	12,188.97	10,234.00	44.24	0.00	-153.22	-2,039.11	383.81	1,171.43	1,142.25	29.18	40.149		
11,200.00	9,185.00	12,238.97	10,234.00	44.74	0.00	-153.21	-2,089.11	384.37	1,171.56	1,142.04	29.52	39.692		
11,250.00	9,185.00	12,288.97	10,234.00	45.24	0.00	-153.20	-2,139.10	384.94	1,171.68	1,141.82	29.86	39.235		
11,300.00	9,185.00	12,338.97	10,234.00	45.75	0.00	-153.19	-2,189.10	385.50	1,171.81	1,141.60	30.21	38.788		
11,350.00	9,185.00	12,388.97	10,234.00	46.27	0.00	-153.17	-2,239.10	386.06	1,171.94	1,141.37	30.56	38.343		
11,400.00	9,185.00	12,438.97	10,234.00	46.79	0.00	-153.16	-2,289.09	386.62	1,172.06	1,141.14	30.92	37.907		
11,450.00	9,185.00	12,488.97	10,234.00	47.32	0.00	-153.15	-2,339.09	387.19	1,172.19	1,140.91	31.28	37.473		
11,500.00	9,185.00	12,538.97	10,234.00	47.85	0.00	-153.14	-2,389.08	387.75	1,172.32	1,140.67	31.64	37.049		
11,550.00	9,185.00	12,588.97	10,234.00	48.39	0.00	-153.12	-2,439.08	388.31	1,172.44	1,140.43	32.01	36.626		
11,600.00	9,185.00	12,638.97	10,234.00	48.94	0.00	-153.11	-2,489.08	388.87	1,172.57	1,140.19	32.38	36.214		
11,650.00	9,185.00	12,688.97	10,234.00	49.49	0.00	-153.10	-2,539.07	389.44	1,172.70	1,139.94	32.75	35.804		
11,700.00	9,185.00	12,738.96	10,234.00	50.04	0.00	-153.09	-2,589.07	390.00	1,172.82	1,139.70	33.13	35.403		
11,750.00	9,185.00	12,788.96	10,234.00	50.60	0.00	-153.07	-2,639.06	390.56	1,172.95	1,139.44	33.51	35.005		
11,800.00	9,185.00	12,838.96	10,234.00	51.16	0.00	-153.06	-2,689.06	391.12	1,173.08	1,139.19	33.89	34.616		
11,850.00	9,185.00	12,888.96	10,234.00	51.72	0.00	-153.05	-2,739.06	391.69	1,173.21	1,138.93	34.27	34.231		
11,900.00	9,185.00	12,938.96	10,234.00	52.29	0.00	-153.04	-2,789.05	392.25	1,173.33	1,138.67	34.66	33.854		
11,950.00	9,185.00	12,988.96	10,234.00	52.87	0.00	-153.03	-2,839.05	392.81	1,173.46	1,138.41	35.05	33.480		
12,000.00	9,185.00	13,038.96	10,234.00	53.44	0.00	-153.01	-2,889.04	393.38	1,173.59	1,138.15	35.44	33.115		
12,050.00	9,185.00	13,088.96	10,234.00	54.02	0.00	-153.00	-2,939.04	393.94	1,173.72	1,137.88	35.84	32.753		
12,100.00	9,185.00	13,138.96	10,234.00	54.61	0.00	-152.99	-2,989.04	394.50	1,173.84	1,137.61	36.23	32.399		
12,150.00	9,185.00	13,188.96	10,234.00	55.20	0.00	-152.98	-3,039.03	395.06	1,173.97	1,137.34	36.63	32.049		
12,200.00	9,185.00	13,238.96	10,234.00	55.79	0.00	-152.96	-3,089.03	395.63	1,174.10	1,137.07	37.03	31.706		
12,250.00	9,185.00	13,288.96	10,234.00	56.38	0.00	-152.95	-3,139.02	396.19	1,174.23	1,136.79	37.43	31.367		
12,300.00	9,185.00	13,338.96	10,234.00	56.98	0.00	-152.94	-3,189.02	396.75	1,174.35	1,136.51	37.84	31.036		
12,350.00	9,185.00	13,388.95	10,234.00	57.58	0.00	-152.93	-3,239.02	397.31	1,174.48	1,136.23	38.25	30.708		
12,400.00	9,185.00	13,438.95	10,234.00	58.18	0.00	-152.92	-3,289.01	397.88	1,174.61	1,135.95	38.66	30.387		
12,450.00	9,185.00	13,488.95	10,234.00	58.79	0.00	-152.90	-3,339.01	398.44	1,174.74	1,135.67	39.07	30.070		
12,500.00	9,185.00	13,538.95	10,234.00	59.40	0.00	-152.89	-3,389.00	399.00	1,174.87	1,135.39	39.48	29.759		
12,550.00	9,185.00	13,588.95	10,234.00	60.01	0.00	-152.88	-3,439.00	399.57	1,174.99	1,135.10	39.89	29.453		
12,600.00	9,185.00	13,638.95	10,234.00	60.63	0.00	-152.87	-3,489.00	400.13	1,175.12	1,134.81	40.31	29.152		
12,650.00	9,185.00	13,688.95	10,234.00	61.24	0.00	-152.86	-3,538.99	400.69	1,175.25	1,134.52	40.73	28.856		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor		
						(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
12,700.00	9,185.00	13,738.95	10,234.00	61.86	0.00	-152.84	-3,588.99	401.25	1,175.38	1,134.23	41.15	28.565		
12,750.00	9,185.00	13,788.95	10,234.00	62.49	0.00	-152.83	-3,638.98	401.82	1,175.51	1,133.94	41.57	28.279		
12,800.00	9,185.00	13,838.95	10,234.00	63.11	0.00	-152.82	-3,688.98	402.38	1,175.63	1,133.64	41.99	27.997		
12,850.00	9,185.00	13,888.95	10,234.00	63.74	0.00	-152.81	-3,738.98	402.94	1,175.76	1,133.35	42.42	27.720		
12,900.00	9,185.00	13,938.95	10,234.00	64.36	0.00	-152.79	-3,788.97	403.50	1,175.89	1,133.05	42.84	27.448		
12,950.00	9,185.00	13,988.94	10,234.00	65.00	0.00	-152.78	-3,838.97	404.07	1,176.02	1,132.75	43.27	27.180		
13,000.00	9,185.00	14,038.94	10,234.00	65.63	0.00	-152.77	-3,888.96	404.63	1,176.15	1,132.45	43.70	26.917		
13,050.00	9,185.00	14,088.94	10,234.00	66.26	0.00	-152.76	-3,938.96	405.19	1,176.28	1,132.15	44.13	26.657		
13,100.00	9,185.00	14,138.94	10,234.00	66.90	0.00	-152.75	-3,988.96	405.75	1,176.41	1,131.85	44.56	26.402		
13,150.00	9,185.00	14,188.94	10,234.00	67.54	0.00	-152.73	-4,038.95	406.32	1,176.53	1,131.54	44.99	26.151		
13,200.00	9,185.00	14,238.94	10,234.00	68.18	0.00	-152.72	-4,088.95	406.88	1,176.66	1,131.24	45.42	25.905		
13,250.00	9,185.00	14,288.94	10,234.00	68.82	0.00	-152.71	-4,138.94	407.44	1,176.79	1,130.93	45.86	25.661		
13,300.00	9,185.00	14,338.94	10,234.00	69.46	0.00	-152.70	-4,188.94	408.01	1,176.92	1,130.63	46.29	25.423		
13,350.00	9,185.00	14,388.94	10,234.00	70.11	0.00	-152.68	-4,238.94	408.57	1,177.05	1,130.32	46.73	25.188		
13,400.00	9,185.00	14,438.94	10,234.00	70.76	0.00	-152.67	-4,288.93	409.13	1,177.18	1,130.01	47.17	24.956		
13,450.00	9,185.00	14,488.94	10,234.00	71.40	0.00	-152.66	-4,338.93	409.69	1,177.31	1,129.70	47.61	24.729		
13,500.00	9,185.00	14,538.94	10,234.00	72.05	0.00	-152.65	-4,388.93	410.26	1,177.44	1,129.39	48.05	24.505		
13,550.00	9,185.00	14,588.94	10,234.00	72.71	0.00	-152.64	-4,438.92	410.82	1,177.56	1,129.07	48.49	24.284		
13,600.00	9,185.00	14,638.93	10,234.00	73.36	0.00	-152.62	-4,488.92	411.38	1,177.69	1,128.76	48.93	24.067		
13,650.00	9,185.00	14,688.93	10,234.00	74.01	0.00	-152.61	-4,538.91	411.94	1,177.82	1,128.45	49.38	23.854		
13,700.00	9,185.00	14,738.93	10,234.00	74.67	0.00	-152.60	-4,588.91	412.51	1,177.95	1,128.13	49.82	23.644		
13,750.00	9,185.00	14,738.42	10,234.00	75.33	0.00	-152.60	-4,588.40	412.50	1,179.16	1,129.04	50.12	23.526		
13,800.00	9,185.00	14,738.42	10,234.00	75.99	0.00	-152.60	-4,588.40	412.50	1,182.49	1,132.12	50.37	23.476		
13,850.00	9,185.00	14,738.42	10,234.00	76.65	0.00	-152.60	-4,588.40	412.50	1,187.91	1,137.35	50.57	23.492		
13,900.00	9,185.00	14,738.42	10,234.00	77.31	0.00	-152.60	-4,588.40	412.50	1,195.41	1,144.70	50.71	23.573		
13,950.00	9,185.00	14,738.42	10,234.00	77.97	0.00	-152.60	-4,588.40	412.50	1,204.93	1,154.12	50.80	23.718		
14,000.00	9,185.00	14,738.42	10,234.00	78.63	0.00	-152.60	-4,588.40	412.50	1,216.43	1,165.59	50.85	23.924		
14,050.00	9,185.00	14,738.42	10,234.00	79.30	0.00	-152.60	-4,588.40	412.50	1,229.86	1,179.02	50.84	24.189		
14,100.00	9,185.00	14,738.42	10,234.00	79.96	0.00	-152.60	-4,588.40	412.50	1,245.16	1,194.36	50.80	24.513		
14,150.00	9,185.00	14,738.42	10,234.00	80.63	0.00	-152.60	-4,588.40	412.50	1,262.25	1,211.54	50.71	24.892		
14,200.00	9,185.00	14,738.42	10,234.00	81.30	0.00	-152.60	-4,588.40	412.50	1,281.07	1,230.48	50.58	25.325		
14,250.00	9,185.00	14,738.42	10,234.00	81.97	0.00	-152.60	-4,588.40	412.50	1,301.53	1,251.10	50.43	25.809		
14,300.00	9,185.00	14,738.42	10,234.00	82.64	0.00	-152.60	-4,588.40	412.50	1,323.57	1,273.33	50.25	26.342		
14,350.00	9,185.00	14,738.42	10,234.00	83.31	0.00	-152.60	-4,588.40	412.50	1,347.11	1,297.07	50.04	26.922		
14,400.00	9,185.00	14,738.42	10,234.00	83.98	0.00	-152.60	-4,588.40	412.50	1,372.06	1,322.25	49.81	27.546		
14,450.00	9,185.00	14,738.42	10,234.00	84.65	0.00	-152.60	-4,588.40	412.50	1,398.36	1,348.79	49.57	28.212		
14,500.00	9,185.00	14,738.42	10,234.00	85.32	0.00	-152.60	-4,588.40	412.50	1,425.93	1,376.62	49.31	28.918		
14,550.00	9,185.00	14,738.42	10,234.00	86.00	0.00	-152.60	-4,588.40	412.50	1,454.69	1,405.65	49.04	29.662		
14,600.00	9,185.00	14,738.42	10,234.00	86.68	0.00	-152.60	-4,588.40	412.50	1,484.58	1,435.81	48.77	30.442		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Highside Tooface (")	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
0.00	0.00	3.17	3.17	0.50	0.00	65.76	161.64	359.04	393.75				
50.00	50.00	52.66	52.66	0.50	0.07	65.75	161.76	359.03	393.78	393.21	0.57	687.922	
100.00	100.00	102.15	102.15	0.52	0.14	65.70	162.10	358.98	393.89	393.23	0.65	601.937	
150.00	150.00	152.79	152.79	0.59	0.31	65.64	162.51	358.90	393.98	393.07	0.90	435.716	
200.00	200.00	203.44	203.43	0.70	0.49	65.59	162.82	358.77	393.99	392.80	1.19	330.135	
229.49	229.49	232.74	232.73	0.78	0.59	65.56	162.99	358.69	393.98	392.61	1.37	286.877	
250.00	250.00	253.21	253.20	0.84	0.67	65.55	163.10	358.64	393.98	392.48	1.50	262.216	
250.25	250.25	253.45	253.45	0.84	0.67	65.55	163.10	358.64	393.98	392.48	1.50	261.944	
300.00	300.00	302.93	302.92	0.99	0.84	65.50	163.36	358.53	393.99	392.17	1.83	215.833	
350.00	350.00	352.23	352.22	1.15	1.01	65.48	163.56	358.53	394.07	391.92	2.16	182.821	
400.00	400.00	401.84	401.84	1.31	1.19	65.47	163.70	358.64	394.23	391.74	2.49	158.181	
450.00	450.00	451.99	451.98	1.48	1.36	65.43	164.01	358.68	394.40	391.56	2.83	139.131	
500.00	500.00	502.11	502.10	1.65	1.54	65.36	164.51	358.61	394.54	391.36	3.18	124.080	
550.00	550.00	552.22	552.21	1.82	1.71	65.28	165.02	358.52	394.68	391.15	3.53	111.911	
600.00	600.00	601.48	601.47	1.99	1.88	65.22	165.51	358.46	394.83	390.96	3.87	101.970	
650.00	650.00	650.27	650.25	2.16	2.06	65.15	166.07	358.52	395.13	390.91	4.22	93.706	
700.00	700.00	700.56	700.54	2.34	2.23	65.07	166.68	358.66	395.51	390.94	4.57	86.595	
750.00	750.00	751.44	751.41	2.51	2.41	65.02	167.13	358.76	395.79	390.87	4.92	80.435	
800.00	800.00	801.74	801.71	2.69	2.59	64.97	167.54	358.80	395.99	390.72	5.27	75.108	
850.00	850.00	851.95	851.92	2.87	2.76	64.90	168.08	358.74	396.16	390.54	5.62	70.440	
900.00	900.00	902.12	902.09	3.04	2.94	64.81	168.66	358.63	396.32	390.34	5.98	66.316	
950.00	950.00	952.29	952.26	3.22	3.11	64.73	169.22	358.52	396.45	390.12	6.33	62.644	
1,000.00	1,000.00	1,001.66	1,001.62	3.40	3.29	64.67	169.66	358.49	396.61	389.93	6.68	59.390	
1,050.00	1,050.00	1,051.44	1,051.40	3.58	3.46	64.64	169.99	358.58	396.84	389.81	7.03	56.454	
1,100.00	1,100.00	1,102.13	1,102.09	3.75	3.64	64.59	170.36	358.61	397.02	389.64	7.38	53.767	
1,150.00	1,150.00	1,152.25	1,152.21	3.93	3.82	64.53	170.80	358.53	397.14	389.40	7.74	51.330	
1,200.00	1,200.00	1,201.59	1,201.54	4.11	3.99	64.49	171.12	358.56	397.30	389.21	8.09	49.128	
1,250.00	1,250.00	1,251.41	1,251.37	4.29	4.16	64.48	171.28	358.74	397.54	389.10	8.44	47.106	
1,300.00	1,300.00	1,301.71	1,301.66	4.46	4.34	64.48	171.37	358.93	397.75	388.95	8.79	45.234	
1,350.00	1,350.00	1,352.24	1,352.20	4.64	4.51	64.48	171.44	359.08	397.91	388.77	9.15	43.497	
1,400.00	1,400.00	1,402.91	1,402.86	4.82	4.69	64.46	171.61	359.10	398.00	388.49	9.50	41.880	
1,450.00	1,450.00	1,452.83	1,452.79	5.00	4.87	64.42	171.89	359.01	398.04	388.18	9.86	40.386	
1,500.00	1,500.00	1,502.57	1,502.53	5.18	5.04	64.35	172.32	358.88	398.10	387.90	10.21	39.000	
1,550.00	1,550.00	1,552.84	1,552.79	5.36	5.22	64.29	172.76	358.74	398.17	387.61	10.56	37.700	
1,600.00	1,600.00	1,603.15	1,603.10	5.53	5.39	64.24	173.04	358.64	398.21	387.29	10.92	36.480	
1,650.00	1,650.00	1,653.19	1,653.14	5.71	5.57	64.21	173.23	358.56	398.22	386.95	11.27	35.339	
1,700.00	1,700.00	1,703.15	1,703.10	5.89	5.74	64.19	173.40	358.49	398.22	386.60	11.62	34.266	
1,750.00	1,750.00	1,752.66	1,752.61	6.07	5.92	64.18	173.46	358.51	398.27	386.29	11.97	33.264	
1,800.00	1,800.00	1,802.32	1,802.26	6.25	6.09	64.20	173.41	358.64	398.37	386.04	12.32	32.322	
1,850.00	1,850.00	1,852.30	1,852.24	6.43	6.26	64.22	173.32	358.82	398.49	385.81	12.68	31.431	
1,900.00	1,900.00	1,902.32	1,902.27	6.61	6.44	64.24	173.22	359.00	398.61	385.58	13.03	30.587	
1,950.00	1,950.00	1,952.40	1,952.35	6.78	6.61	64.27	173.12	359.17	398.72	385.33	13.39	29.787	
2,000.00	2,000.00	2,003.31	2,003.26	6.96	6.79	64.28	173.05	359.29	398.79	385.05	13.74	29.020	
2,050.00	2,050.00	2,054.87	2,054.82	7.14	6.97	64.28	173.04	359.17	398.69	384.59	14.10	28.275	
2,100.00	2,100.00	2,104.93	2,104.88	7.32	7.14	64.25	173.08	358.90	398.46	384.00	14.45	27.569	
2,150.00	2,150.00	2,154.48	2,154.42	7.50	7.31	64.23	173.14	358.67	398.27	383.47	14.80	26.902	
2,200.00	2,200.00	2,204.87	2,204.81	7.68	7.49	64.21	173.18	358.46	398.10	382.94	15.16	26.263	
2,250.00	2,250.00	2,255.40	2,255.35	7.86	7.66	64.20	173.18	358.19	397.87	382.35	15.51	25.647	
2,300.00	2,300.00	2,304.05	2,304.00	8.04	7.83	64.19	173.15	358.01	397.68	381.82	15.86	25.071	
2,329.45	2,329.45	2,332.71	2,332.65	8.14	7.93	64.19	173.13	357.99	397.65	381.59	16.07	24.749	
2,350.00	2,350.00	2,352.90	2,352.84	8.22	8.00	64.19	173.11	358.01	397.67	381.45	16.21	24.530	

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
2,400.00	2,400.00	2,404.09	2,404.04	8.39	8.18	64.20	173.07	357.99	397.64	381.07	16.57	23.999		
2,450.00	2,450.00	2,455.01	2,454.95	8.57	8.36	64.19	173.05	357.80	397.46	380.54	16.92	23.484		
2,500.00	2,500.00	2,505.06	2,505.00	8.75	8.53	64.18	173.03	357.57	397.24	379.96	17.28	22.991		
2,550.00	2,550.00	2,554.59	2,554.54	8.93	8.71	64.17	173.00	357.34	397.02	379.39	17.63	22.520		
2,600.00	2,600.00	2,603.27	2,603.21	9.11	8.88	64.17	172.95	357.27	396.93	378.96	17.98	22.078		
2,600.40	2,600.40	2,603.66	2,603.60	9.11	8.88	64.17	172.95	357.27	396.93	378.95	17.98	22.075		
2,650.00	2,650.00	2,652.48	2,652.42	9.29	9.05	64.18	172.88	357.38	397.00	378.67	18.33	21.659		
2,700.00	2,700.00	2,702.33	2,702.28	9.47	9.22	64.21	172.80	357.54	397.11	378.43	18.68	21.256		
2,750.00	2,750.00	2,752.74	2,752.68	9.65	9.40	64.23	172.72	357.69	397.21	378.18	19.04	20.865		
2,800.00	2,800.00	2,803.55	2,803.49	9.83	9.57	64.23	172.71	357.72	397.23	377.83	19.39	20.482		
2,850.00	2,850.00	2,853.71	2,853.65	10.00	9.75	64.22	172.74	357.64	397.17	377.42	19.75	20.112		
2,900.00	2,900.00	2,903.64	2,903.58	10.18	9.92	64.21	172.79	357.55	397.12	377.02	20.10	19.756		
2,950.00	2,950.00	2,953.71	2,953.65	10.36	10.10	64.19	172.86	357.47	397.07	376.61	20.45	19.412		
3,000.00	3,000.00	3,003.80	3,003.74	10.54	10.27	64.17	172.95	357.35	397.00	376.20	20.81	19.079		
3,024.95	3,024.95	3,028.21	3,028.15	10.63	10.36	64.16	173.00	357.31	396.99	376.00	20.98	18.920		
3,050.00	3,050.00	3,052.70	3,052.64	10.72	10.44	64.16	173.05	357.31	397.00	375.85	21.16	18.764		
3,100.00	3,100.00	3,101.68	3,101.62	10.90	10.62	64.16	173.13	357.42	397.14	375.64	21.51	18.465		
3,150.00	3,150.00	3,151.79	3,151.73	11.08	10.79	64.16	173.20	357.60	397.34	375.47	21.86	18.175		
3,200.00	3,200.00	3,202.22	3,202.16	11.26	10.97	64.16	173.26	357.76	397.51	375.29	22.22	17.892		
3,250.00	3,250.00	3,253.83	3,253.77	11.44	11.15	64.14	173.37	357.74	397.54	374.96	22.58	17.609		
3,300.00	3,300.00	3,304.75	3,304.69	11.62	11.32	64.10	173.56	357.48	397.38	374.45	22.93	17.328		
3,350.00	3,350.00	3,354.59	3,354.53	11.80	11.50	64.05	173.81	357.16	397.21	373.92	23.29	17.058		
3,400.00	3,400.00	3,403.93	3,403.86	11.97	11.67	63.99	174.12	356.85	397.07	373.43	23.64	16.798		
3,429.12	3,429.12	3,432.39	3,432.32	12.08	11.77	63.96	174.28	356.74	397.04	373.20	23.84	16.654		
3,450.00	3,450.00	3,452.79	3,452.72	12.15	11.84	63.95	174.40	356.70	397.05	373.07	23.99	16.553		
3,500.00	3,500.00	3,502.56	3,502.49	12.33	12.02	63.91	174.64	356.69	397.15	372.81	24.34	16.317		
3,550.00	3,550.00	3,552.94	3,552.87	12.51	12.19	63.88	174.86	356.66	397.22	372.52	24.69	16.085		
3,600.00	3,600.00	3,603.81	3,603.74	12.69	12.37	63.85	175.07	356.55	397.21	372.16	25.05	15.856		
3,650.00	3,650.00	3,654.86	3,654.79	12.87	12.55	63.79	175.35	356.26	397.08	371.67	25.41	15.628		
3,700.00	3,700.00	3,704.56	3,704.49	13.05	12.72	63.73	175.69	355.88	396.89	371.13	25.76	15.406		
3,750.00	3,750.00	3,754.12	3,754.04	13.23	12.90	63.65	176.09	355.54	396.75	370.84	26.11	15.194		
3,800.00	3,800.00	3,803.39	3,803.31	13.41	13.07	63.57	176.57	355.23	396.69	370.23	26.46	14.990		
3,807.89	3,807.89	3,811.17	3,811.09	13.44	13.10	63.56	176.66	355.19	396.69	370.17	26.52	14.958		
3,850.00	3,850.00	3,852.67	3,852.59	13.59	13.24	63.48	177.16	354.97	396.72	369.91	26.82	14.794		
3,900.00	3,900.00	3,900.96	3,900.87	13.77	13.41	63.39	177.78	354.87	396.92	369.75	27.16	14.612 ES		
3,950.00	3,950.00	3,949.53	3,949.44	13.94	13.58	63.31	178.42	354.98	397.31	369.80	27.51	14.442		
4,000.00	4,000.00	3,998.91	3,998.81	14.12	13.75	63.27	178.91	355.29	397.82	369.96	27.86	14.278		
4,050.00	4,050.00	4,048.15	4,048.05	14.30	13.93	107.79	179.18	355.81	398.50	370.29	28.21	14.125		
4,100.00	4,099.99	4,097.03	4,096.92	14.48	14.10	107.92	179.31	356.53	399.46	370.90	28.56	13.987		
4,150.00	4,149.97	4,145.90	4,145.78	14.66	14.27	108.14	179.32	357.45	400.74	371.83	28.91	13.864		
4,200.00	4,199.94	4,194.75	4,194.62	14.83	14.44	108.47	179.16	358.61	402.33	373.08	29.25	13.754		
4,250.00	4,249.88	4,243.91	4,243.77	15.01	14.61	108.90	178.80	360.00	404.24	374.64	29.60	13.657		
4,300.00	4,299.79	4,293.49	4,293.31	15.19	14.78	109.44	178.30	361.52	406.38	376.43	29.95	13.569		
4,350.00	4,349.70	4,343.07	4,342.86	15.36	14.96	110.02	177.64	363.15	408.63	378.33	30.30	13.487		
4,400.00	4,399.60	4,392.63	4,392.39	15.54	15.13	110.63	176.76	364.89	410.94	380.29	30.65	13.409		
4,450.00	4,449.51	4,442.21	4,441.92	15.72	15.30	111.25	175.72	366.73	413.32	382.32	31.00	13.334		
4,500.00	4,499.41	4,491.81	4,491.47	15.90	15.48	111.87	174.72	368.57	415.77	384.42	31.35	13.263		
4,550.00	4,549.32	4,539.85	4,539.47	16.07	15.65	112.45	173.87	370.40	418.35	386.67	31.69	13.202		
4,600.00	4,599.23	4,587.47	4,587.05	16.25	15.81	112.99	173.25	372.38	421.23	389.20	32.03	13.152		
4,650.00	4,649.13	4,638.45	4,637.98	16.43	15.99	113.55	172.73	374.54	424.24	391.85	32.39	13.100		
4,700.00	4,699.04	4,690.18	4,689.67	16.61	16.17	114.11	172.15	376.51	427.06	394.31	32.75	13.041		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Distance		Minimum		Separation		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,750.00	4,748.95	4,741.64	4,741.09	16.79	16.35	114.66	171.46	378.27	429.70	396.59	33.11	12.979		
4,800.00	4,798.85	4,793.10	4,792.53	16.96	16.53	115.21	170.63	379.86	432.19	398.72	33.47	12.914		
4,850.00	4,848.76	4,842.14	4,841.53	17.14	16.70	115.74	169.82	381.36	434.68	400.87	33.81	12.855		
4,900.00	4,898.67	4,891.78	4,891.15	17.32	16.88	116.26	169.03	382.90	437.25	403.08	34.16	12.798		
4,950.00	4,948.57	4,941.95	4,941.29	17.50	17.05	116.76	168.35	384.39	439.82	405.30	34.52	12.742		
5,000.00	4,998.48	4,992.13	4,991.44	17.68	17.23	117.24	167.81	385.80	442.39	407.51	34.87	12.686		
5,050.00	5,048.39	5,042.28	5,041.58	17.86	17.40	117.70	167.34	387.14	444.94	409.72	35.22	12.632		
5,100.00	5,098.29	5,092.33	5,091.61	18.04	17.58	118.15	166.89	388.43	447.49	411.91	35.58	12.578		
5,150.00	5,148.20	5,142.28	5,141.53	18.22	17.75	118.61	166.30	389.74	450.04	414.11	35.93	12.526		
5,200.00	5,198.11	5,193.22	5,192.45	18.39	17.93	119.10	165.54	391.06	452.57	416.29	36.29	12.472		
5,250.00	5,248.01	5,244.62	5,243.83	18.57	18.11	119.58	164.69	392.25	454.97	418.32	36.65	12.415		
5,300.00	5,297.92	5,293.56	5,292.76	18.75	18.28	120.03	163.98	393.29	457.34	420.34	36.99	12.362		
5,350.00	5,347.82	5,342.18	5,341.36	18.93	18.45	120.42	163.67	394.35	459.86	422.52	37.34	12.315		
5,400.00	5,397.73	5,392.14	5,391.31	19.11	18.63	120.78	163.66	395.43	462.47	424.78	37.69	12.269		
5,450.00	5,447.64	5,442.26	5,441.42	19.29	18.80	121.12	163.83	396.45	465.08	427.03	38.05	12.224		
5,500.00	5,497.54	5,493.19	5,492.34	19.47	18.98	121.47	163.83	397.45	467.62	429.22	38.40	12.176		
5,550.00	5,547.45	5,543.97	5,543.11	19.65	19.16	121.87	163.44	398.42	470.07	431.31	38.76	12.127		
5,600.00	5,597.36	5,594.41	5,593.54	19.83	19.33	122.27	162.95	399.33	472.47	433.36	39.12	12.079		
5,650.00	5,647.27	5,644.96	5,644.08	20.01	19.51	122.66	162.50	400.16	474.83	435.35	39.47	12.029		
5,700.00	5,697.17	5,695.70	5,694.82	20.19	19.69	123.02	162.19	400.87	477.11	437.29	39.83	11.979		
5,750.00	5,747.08	5,746.05	5,745.16	20.37	19.86	123.37	162.00	401.47	479.34	439.15	40.18	11.929		
5,800.00	5,796.98	5,796.05	5,795.16	20.55	20.04	123.70	161.86	402.03	481.56	441.02	40.54	11.879		
5,850.00	5,846.89	5,846.27	5,845.38	20.73	20.21	124.03	161.71	402.58	483.77	442.88	40.89	11.831		
5,900.00	5,896.80	5,896.60	5,895.70	20.91	20.39	124.38	161.41	403.11	485.96	444.71	41.25	11.782		
5,950.00	5,946.70	5,946.88	5,945.97	21.09	20.56	124.74	161.01	403.61	488.11	446.51	41.60	11.733		
6,000.00	5,996.61	5,997.14	5,996.24	21.27	20.74	125.08	160.63	404.06	490.25	448.29	41.95	11.685		
6,050.00	6,046.52	6,047.01	6,046.10	21.45	20.91	125.42	160.27	404.49	492.38	450.07	42.31	11.638		
6,100.00	6,096.42	6,096.87	6,095.95	21.63	21.09	125.76	159.90	404.92	494.53	451.87	42.66	11.592		
6,150.00	6,146.33	6,147.12	6,146.21	21.81	21.26	126.09	159.63	405.32	496.68	453.67	43.02	11.547		
6,200.00	6,196.23	6,197.35	6,196.44	21.99	21.44	126.38	159.57	405.65	498.81	455.44	43.37	11.501		
6,250.00	6,246.14	6,247.38	6,246.48	22.17	21.61	126.67	159.59	405.94	500.92	457.20	43.72	11.457		
6,300.00	6,296.05	6,297.38	6,296.46	22.35	21.79	126.95	159.60	406.23	503.04	458.96	44.08	11.413		
6,350.00	6,345.95	6,347.33	6,346.41	22.53	21.96	127.25	159.47	406.52	505.16	460.73	44.43	11.370		
6,400.00	6,395.86	6,397.26	6,396.34	22.71	22.13	127.56	159.16	406.83	507.29	462.50	44.78	11.327		
6,450.00	6,445.77	6,447.19	6,446.27	22.89	22.31	127.87	158.86	407.13	509.43	464.29	45.14	11.286		
6,500.00	6,495.67	6,497.39	6,496.47	23.07	22.48	128.18	158.60	407.42	511.57	466.08	45.49	11.245		
6,550.00	6,545.58	6,547.80	6,546.87	23.25	22.66	128.46	158.48	407.65	513.68	467.83	45.85	11.204		
6,600.00	6,595.49	6,598.25	6,597.33	23.43	22.83	128.74	158.46	407.81	515.74	469.54	46.20	11.163		
6,650.00	6,645.39	6,648.73	6,647.80	23.62	23.01	129.01	158.42	407.92	517.77	471.21	46.56	11.121		
6,700.00	6,695.30	6,698.30	6,697.38	23.80	23.18	129.28	158.32	408.02	519.79	472.88	46.91	11.080		
6,750.00	6,745.21	6,747.72	6,746.79	23.98	23.36	129.56	158.08	408.17	521.86	474.60	47.26	11.042		
6,800.00	6,795.11	6,797.39	6,796.46	24.16	23.53	129.86	157.76	408.36	523.98	476.37	47.61	11.005		
6,850.00	6,845.02	6,847.06	6,846.13	24.34	23.70	130.14	157.47	408.57	526.14	478.17	47.97	10.969		
6,900.00	6,894.93	6,896.67	6,895.74	24.52	23.88	130.42	157.30	408.79	528.33	480.01	48.32	10.934		
6,950.00	6,944.83	6,946.33	6,945.40	24.70	24.05	130.67	157.32	409.03	530.56	481.88	48.67	10.901		
7,000.00	6,994.74	6,996.11	6,995.18	24.88	24.22	130.91	157.35	409.28	532.81	483.78	49.03	10.868		
7,050.00	7,044.65	7,045.75	7,044.82	25.06	24.40	131.16	157.32	409.54	535.08	485.71	49.38	10.837		
7,100.00	7,094.55	7,095.09	7,094.15	25.24	24.57	131.43	157.11	409.86	537.41	487.68	49.73	10.807		
7,150.00	7,144.46	7,144.98	7,144.04	25.43	24.74	131.72	156.72	410.23	539.79	489.71	50.08	10.778		
7,200.00	7,194.36	7,195.68	7,194.74	25.61	24.92	131.99	156.42	410.55	542.13	491.69	50.44	10.748		
7,250.00	7,244.27	7,245.61	7,244.67	25.79	25.09	132.25	156.26	410.80	544.43	493.63	50.79	10.719		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,300.00	7,294.18	7,294.93	7,293.99	25.97	25.27	132.50	156.09	411.08	546.77	495.63	51.14	10.691		
7,350.00	7,344.08	7,343.85	7,343.00	26.15	25.44	132.77	155.81	411.43	549.19	497.70	51.49	10.665		
7,400.00	7,393.99	7,392.78	7,391.83	26.33	25.61	133.06	155.22	411.87	551.71	499.87	51.84	10.642		
7,450.00	7,443.90	7,442.31	7,441.35	26.51	25.78	133.38	154.33	412.40	554.32	502.12	52.19	10.620		
7,500.00	7,493.80	7,492.05	7,491.08	26.69	25.95	133.71	153.28	412.93	556.95	504.40	52.55	10.599		
7,550.00	7,543.71	7,542.98	7,542.00	26.88	26.13	134.06	152.18	413.45	559.56	506.66	52.91	10.577		
7,600.00	7,593.62	7,594.12	7,593.12	27.06	26.31	134.38	151.24	413.84	562.08	508.82	53.26	10.553		
7,650.00	7,643.52	7,643.72	7,642.71	27.24	26.48	134.70	150.33	414.18	564.57	510.95	53.62	10.530		
7,700.00	7,693.43	7,693.39	7,692.37	27.42	26.66	135.03	149.30	414.54	567.03	513.06	53.97	10.507		
7,750.00	7,743.38	7,741.69	7,740.65	27.60	26.82	135.33	148.17	414.97	569.17	514.86	54.31	10.479		
7,800.00	7,793.35	7,790.25	7,789.19	27.78	26.99	135.59	146.89	415.51	570.98	516.32	54.66	10.446		
7,850.00	7,843.34	7,838.98	7,837.91	27.96	27.16	135.80	145.62	416.16	572.45	517.44	55.01	10.407		
7,900.00	7,893.33	7,888.87	7,887.78	28.14	27.34	135.96	144.41	416.92	573.54	518.18	55.36	10.360		
7,950.00	7,943.33	7,941.29	7,940.17	28.31	27.52	91.59	143.27	417.59	574.20	518.48	55.72	10.304		
8,000.00	7,993.33	7,992.22	7,991.09	28.49	27.70	91.68	142.30	418.05	574.68	518.60	56.08	10.247		
8,050.00	8,043.33	8,041.78	8,040.65	28.67	27.87	91.78	141.27	418.51	575.18	518.75	56.43	10.192		
8,100.00	8,093.33	8,091.27	8,090.12	28.85	28.05	91.89	140.14	419.00	575.71	518.93	56.78	10.139		
8,150.00	8,143.33	8,140.71	8,139.53	29.03	28.22	92.02	138.86	419.53	576.29	519.16	57.13	10.087		
8,200.00	8,193.33	8,191.02	8,189.82	29.20	28.39	92.16	137.44	420.09	576.90	519.41	57.49	10.036		
8,250.00	8,243.33	8,241.64	8,240.42	29.38	28.57	92.30	136.02	420.59	577.45	519.61	57.84	9.983		
8,300.00	8,293.33	8,293.59	8,292.35	29.56	28.75	92.43	134.62	421.01	577.90	519.70	58.20	9.929		
8,350.00	8,343.33	8,345.71	8,344.46	29.74	28.93	92.56	133.35	421.23	578.18	519.61	58.56	9.873		
8,400.00	8,393.33	8,397.32	8,396.05	29.91	29.11	92.67	132.19	421.30	578.29	519.37	58.92	9.814		
8,450.00	8,443.33	8,447.92	8,446.64	30.09	29.29	92.78	131.14	421.23	578.27	518.99	59.28	9.755		
8,452.62	8,445.95	8,450.43	8,449.15	30.10	29.30	92.78	131.08	421.23	578.27	518.98	59.30	9.752		
8,500.00	8,493.33	8,495.86	8,494.57	30.27	29.46	92.89	130.05	421.25	578.35	518.73	59.62	9.700		
8,550.00	8,543.33	8,545.18	8,543.87	30.45	29.63	93.01	128.80	421.43	578.59	518.62	59.97	9.648		
8,600.00	8,593.33	8,597.30	8,595.97	30.63	29.81	93.13	127.53	421.50	578.73	518.40	60.33	9.592		
8,650.00	8,643.32	8,649.26	8,647.92	30.80	29.99	-86.53	126.39	421.40	578.64	517.95	60.69	9.535		
8,700.00	8,693.06	8,700.90	8,699.55	30.96	30.17	-86.98	125.45	421.14	578.16	517.13	61.02	9.474		
8,750.00	8,742.19	8,750.08	8,748.73	31.11	30.34	-87.87	124.67	420.80	577.42	516.07	61.35	9.412		
8,800.00	8,790.32	8,797.87	8,796.31	31.26	30.51	-89.13	123.83	420.53	576.78	515.12	61.66	9.354		
8,846.82	8,834.17	8,841.03	8,839.67	31.39	30.66	-90.59	123.05	420.34	576.52	514.57	61.95	9.306		
8,850.00	8,837.10	8,843.93	8,842.56	31.39	30.67	-90.69	123.00	420.33	576.52	514.55	61.97	9.304		
8,900.00	8,882.17	8,888.42	8,887.04	31.52	30.82	-92.50	122.35	420.20	577.01	514.75	62.26	9.268		
8,950.00	8,925.18	8,929.97	8,928.60	31.64	30.97	-94.38	121.86	420.16	578.70	516.16	62.54	9.253 SF		
9,000.00	8,965.81	8,968.85	8,967.48	31.75	31.11	-96.24	121.43	420.26	582.10	519.30	62.80	9.269		
9,050.00	9,003.74	9,006.13	9,004.75	31.85	31.24	-98.02	121.03	420.47	587.66	524.60	63.06	9.320		
9,100.00	9,038.70	9,043.11	9,041.72	31.94	31.36	-99.76	120.64	420.64	595.65	532.34	63.30	9.409		
9,150.00	9,070.40	9,076.70	9,075.31	32.06	31.48	-101.14	120.30	420.69	606.40	542.87	63.53	9.545		
9,200.00	9,098.62	9,106.67	9,105.28	32.18	31.59	-102.07	120.01	420.66	620.24	556.50	63.74	9.730		
9,250.00	9,123.14	9,132.60	9,131.22	32.30	31.68	-102.42	119.82	420.56	637.38	573.45	63.93	9.970		
9,300.00	9,143.76	9,154.29	9,152.90	32.43	31.75	-102.09	119.71	420.41	657.88	593.79	64.09	10.265		
9,350.00	9,160.34	9,171.61	9,170.22	32.56	31.81	-101.00	119.66	420.25	681.69	617.47	64.22	10.615		
9,400.00	9,172.75	9,184.54	9,183.15	32.70	31.86	-99.06	119.63	420.11	708.60	644.28	64.32	11.017		
9,450.00	9,180.88	9,193.52	9,192.13	32.83	31.89	-96.26	119.61	420.01	738.30	673.90	64.40	11.465		
9,500.00	9,184.69	9,197.87	9,196.48	32.97	31.90	-92.51	119.60	419.96	770.40	705.96	64.44	11.955		
9,550.00	9,185.00	9,198.40	9,197.00	33.12	31.91	-90.88	119.60	419.95	804.46	739.99	64.47	12.478		
9,600.00	9,185.00	9,198.59	9,197.20	33.28	31.91	-90.89	119.60	419.95	840.12	775.63	64.49	13.028		
9,650.00	9,185.00	9,198.79	9,197.39	33.46	31.91	-90.91	119.60	419.95	877.18	812.67	64.51	13.597		
9,700.00	9,185.00	9,198.99	9,197.59	33.64	31.91	-90.93	119.60	419.94	915.47	850.94	64.53	14.187		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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, 9648-MWD+IGRF, 9898-													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
9,750.00	9,185.00	9,199.19	9,197.80	33.85	31.91	-90.95	119.59	419.94	954.84	890.30	64.55	14.793		
9,800.00	9,185.00	9,199.40	9,198.00	34.05	31.91	-90.98	119.59	419.94	995.17	930.61	64.56	15.414		
9,850.00	9,185.00	9,199.61	9,198.21	34.29	31.91	-91.00	119.59	419.94	1,036.35	971.76	64.58	16.047		
9,900.00	9,185.00	9,199.82	9,198.43	34.53	31.91	-91.02	119.59	419.93	1,078.27	1,013.67	64.60	16.692		
9,950.00	9,185.00	9,200.04	9,198.65	34.79	31.91	-91.04	119.59	419.93	1,120.85	1,056.23	64.62	17.346		
10,000.00	9,185.00	9,200.26	9,198.87	35.06	31.91	-91.06	119.59	419.93	1,164.02	1,099.39	64.63	18.011		
10,050.00	9,185.00	9,200.48	9,199.09	35.35	31.91	-91.08	119.59	419.93	1,207.72	1,143.07	64.65	18.682		
10,100.00	9,185.00	9,200.71	9,199.32	35.64	31.91	-91.11	119.59	419.92	1,251.89	1,187.23	64.66	19.361		
10,150.00	9,185.00	9,200.95	9,199.56	35.95	31.91	-91.13	119.59	419.92	1,296.48	1,231.81	64.67	20.046		
10,200.00	9,185.00	9,201.19	9,199.79	36.27	31.92	-91.15	119.59	419.92	1,341.46	1,276.77	64.69	20.738		
10,250.00	9,185.00	10,530.09	10,234.00	36.61	34.93	-152.75	-421.49	385.62	1,379.53	1,327.01	52.51	26.271		
10,300.00	9,185.00	10,530.09	10,234.00	36.94	34.93	-152.75	-421.49	385.62	1,406.29	1,353.13	53.16	26.456		
10,350.00	9,185.00	10,530.09	10,234.00	37.30	34.93	-152.75	-421.49	385.62	1,434.29	1,380.51	53.79	26.686		
10,400.00	9,185.00	10,530.09	10,234.00	37.66	34.93	-152.75	-421.49	385.62	1,463.47	1,409.08	54.39	26.906		
10,450.00	9,185.00	10,530.09	10,234.00	38.04	34.93	-152.75	-421.49	385.62	1,493.76	1,438.78	54.98	27.169		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.00	0.00	3.20	3.20	0.50		65.76	161.64	359.04	393.75					
50.00	50.00	53.20	53.20	0.50		65.76	161.64	359.04	393.75	393.25	0.50	784.353		
100.00	100.00	103.20	103.20	0.52		65.76	161.64	359.04	393.75	393.23	0.52	760.491		
150.00	150.00	153.25	153.25	0.59		65.75	161.74	359.03	393.78	393.19	0.59	687.149		
200.00	200.00	203.81	203.80	0.70		65.77	161.60	359.05	393.74	393.04	0.70	560.791		
239.38	239.38	242.58	242.58	0.81		65.75	161.71	359.01	393.74	392.94	0.81	487.619		
250.00	250.00	253.19	253.18	0.84		65.75	161.70	359.01	393.74	392.91	0.84	470.022		
300.00	300.00	303.21	303.20	0.99		65.76	161.64	359.04	393.75	392.76	0.99	398.799		
350.00	350.00	353.22	353.21	1.15		65.75	161.69	359.02	393.75	392.60	1.15	343.739		
400.00	400.00	403.21	403.20	1.31		65.76	161.64	359.04	393.75	392.44	1.31	300.780		
450.00	450.00	453.57	453.56	1.48		65.76	161.66	359.07	393.78	392.30	1.48	266.730		
500.00	500.00	503.21	503.20	1.65		65.76	161.64	359.04	393.75	392.10	1.65	239.203		
550.00	550.00	553.57	553.55	1.82		65.75	161.71	359.03	393.77	391.95	1.82	216.633		
600.00	600.00	603.21	603.20	1.99		65.76	161.64	359.04	393.75	391.76	1.99	197.804		
650.00	650.00	653.57	653.55	2.16		65.76	161.68	359.03	393.76	391.59	2.16	181.912		
669.28	669.28	673.04	673.02	2.23		65.77	161.59	359.05	393.74	391.51	2.23	176.416		
700.00	700.00	703.22	703.20	2.34		65.76	161.64	359.04	393.75	391.41	2.34	168.318		
750.00	750.00	761.75	753.20	2.51		65.76	161.64	359.04	393.75	391.23	2.51	156.579		
800.00	800.00	803.23	803.20	2.69		65.76	161.64	359.04	393.75	391.06	2.69	146.343		
850.00	850.00	854.09	854.07	2.87		65.76	161.63	359.04	393.74	390.88	2.87	137.341		
856.94	856.94	861.15	861.13	2.89		65.77	161.60	359.03	393.73	390.84	2.89	136.172		
900.00	900.00	903.30	903.27	3.04		65.74	161.78	359.02	393.78	390.74	3.04	129.383		
950.00	950.00	953.94	953.91	3.22		65.77	161.58	359.05	393.73	390.51	3.22	122.259		
958.55	958.55	961.79	961.75	3.25		65.76	161.64	359.04	393.75	390.50	3.25	121.124		
1,000.00	1,000.00	1,003.35	1,003.31	3.40		65.75	161.76	359.01	393.77	390.37	3.40	115.895		
1,050.00	1,050.00	1,053.24	1,053.20	3.58		65.76	161.64	359.04	393.75	390.17	3.58	110.138		
1,100.00	1,100.00	1,103.62	1,103.58	3.75		65.76	161.70	359.07	393.80	390.04	3.75	104.940		
1,150.00	1,150.00	1,153.24	1,153.20	3.93		65.76	161.64	359.04	393.75	389.82	3.93	100.182		
1,200.00	1,200.00	1,203.40	1,203.36	4.11		65.75	161.72	359.02	393.76	389.65	4.11	95.849		
1,250.00	1,250.00	1,253.24	1,253.20	4.29		65.76	161.64	359.04	393.75	389.46	4.29	91.866		
1,300.00	1,300.00	1,303.90	1,303.86	4.46		65.76	161.66	359.07	393.78	389.32	4.46	88.209		
1,350.00	1,350.00	1,353.25	1,353.20	4.64		65.76	161.64	359.04	393.75	389.11	4.64	84.817		
1,400.00	1,400.00	1,403.82	1,403.78	4.82		65.76	161.64	359.06	393.76	388.94	4.82	81.684		
1,418.72	1,418.72	1,422.83	1,422.79	4.89		65.76	161.63	359.02	393.73	388.84	4.89	80.562		
1,450.00	1,450.00	1,453.25	1,453.20	5.00		65.76	161.64	359.04	393.75	388.75	5.00	78.768		
1,500.00	1,500.00	1,509.65	1,503.20	5.18		65.76	161.64	359.04	393.75	388.57	5.18	76.054		
1,550.00	1,550.00	1,553.25	1,553.20	5.36		65.76	161.64	359.04	393.75	388.39	5.36	73.520		
1,600.00	1,600.00	1,603.55	1,603.50	5.53		65.77	161.62	359.05	393.75	388.21	5.53	71.149		
1,606.01	1,606.01	1,609.60	1,609.55	5.56		65.77	161.59	359.06	393.74	388.19	5.56	70.873		
1,650.00	1,650.00	1,653.26	1,653.20	5.71		65.76	161.69	359.02	393.75	388.04	5.71	68.926		
1,700.00	1,700.00	1,703.25	1,703.20	5.89		65.76	161.64	359.04	393.75	387.86	5.89	66.836		
1,738.23	1,738.23	1,741.48	1,741.43	6.03		65.76	161.68	359.02	393.75	387.72	6.03	65.322		
1,750.00	1,750.00	1,753.25	1,753.20	6.07		65.76	161.67	359.02	393.75	387.68	6.07	64.870		
1,800.00	1,800.00	1,803.25	1,803.20	6.25		65.76	161.64	359.04	393.75	387.50	6.25	63.015		
1,850.00	1,850.00	1,853.45	1,853.40	6.43		65.77	161.62	359.07	393.77	387.34	6.43	61.267		
1,900.00	1,900.00	1,903.25	1,903.20	6.61		65.76	161.64	359.04	393.75	387.14	6.61	59.606		
1,950.00	1,950.00	1,953.53	1,953.48	6.78		65.77	161.62	359.07	393.77	386.98	6.78	58.039		
2,000.00	2,000.00	2,003.25	2,003.20	6.96		65.76	161.64	359.04	393.75	386.79	6.96	56.546		
2,050.00	2,050.00	2,053.54	2,053.49	7.14		65.77	161.63	359.06	393.76	386.62	7.14	55.132		
2,100.00	2,100.00	2,103.25	2,103.20	7.32		65.76	161.64	359.04	393.75	386.43	7.32	53.784		
2,111.88	2,111.88	2,115.11	2,115.05	7.36		65.76	161.65	358.97	393.69	386.32	7.36	53.466		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
2,150.00	2,150.00	2,152.44	2,152.39	7.50		65.76	161.64	359.02	393.73	386.23	7.50	52.499	
2,200.00	2,200.00	2,203.26	2,203.20	7.68		65.76	161.64	359.04	393.75	386.07	7.68	51.279	
2,207.08	2,207.08	2,210.31	2,210.26	7.70		65.76	161.65	359.00	393.71	386.01	7.70	51.105	
2,250.00	2,250.00	2,252.70	2,252.65	7.86		65.76	161.64	359.04	393.74	385.89	7.86	50.111	
2,298.98	2,298.98	2,302.24	2,302.18	8.03		65.76	161.63	358.97	393.68	385.65	8.03	49.010	CC
2,300.00	2,300.00	2,303.23	2,303.18	8.04		65.76	161.63	358.97	393.68	385.65	8.04	48.988	
2,350.00	2,350.00	2,353.26	2,353.20	8.22		65.76	161.64	359.04	393.75	385.53	8.22	47.929	
2,400.00	2,400.00	2,403.29	2,403.24	8.39		65.77	161.63	359.06	393.76	385.37	8.39	46.909	
2,450.00	2,450.00	2,453.26	2,453.20	8.57		65.76	161.64	359.04	393.75	385.18	8.57	45.928	
2,488.01	2,488.01	2,491.24	2,491.18	8.71		65.76	161.64	358.99	393.70	384.99	8.71	45.205	
2,500.00	2,500.00	2,503.01	2,502.95	8.75		65.76	161.64	358.99	393.70	384.95	8.75	44.984	
2,550.00	2,550.00	2,553.26	2,553.20	8.93		65.76	161.64	359.04	393.75	384.82	8.93	44.088	
2,581.29	2,581.29	2,584.52	2,584.47	9.04		65.76	161.63	358.98	393.69	384.65	9.04	43.536	
2,600.00	2,600.00	2,602.87	2,602.81	9.11		65.76	161.63	358.99	393.70	384.59	9.11	43.217	
2,650.00	2,650.00	2,653.26	2,653.20	9.29		65.76	161.64	359.04	393.75	384.46	9.29	42.389	
2,700.00	2,700.00	2,703.47	2,703.41	9.47		65.77	161.63	359.06	393.76	384.30	9.47	41.589	
2,750.00	2,750.00	2,753.26	2,753.20	9.65		65.76	161.64	359.04	393.75	384.10	9.65	40.816	
2,800.00	2,800.00	2,803.62	2,803.56	9.83		65.77	161.63	359.06	393.76	383.94	9.83	40.074	
2,850.00	2,850.00	2,853.26	2,853.20	10.00		65.76	161.64	359.04	393.75	383.74	10.00	39.356	
2,860.73	2,860.73	2,863.99	2,863.93	10.04		65.76	161.65	359.02	393.73	383.69	10.04	39.203	
2,860.78	2,860.78	2,864.04	2,863.98	10.04		65.76	161.65	359.02	393.73	383.69	10.04	39.203	
2,900.00	2,900.00	2,903.04	2,902.98	10.18		65.76	161.64	359.03	393.74	383.56	10.18	38.663	
2,950.00	2,950.00	2,953.26	2,953.20	10.36		65.76	161.64	359.04	393.75	383.39	10.36	37.996	
2,956.33	2,956.33	2,959.58	2,959.52	10.39		65.76	161.65	359.02	393.74	383.35	10.39	37.912	
3,000.00	3,000.00	3,003.07	3,003.01	10.54		65.76	161.64	359.04	393.75	383.21	10.54	37.351	
3,047.94	3,047.94	3,051.20	3,051.14	10.71		65.76	161.66	359.01	393.73	383.02	10.71	36.751	
3,050.00	3,050.00	3,053.25	3,053.19	10.72		65.76	161.66	359.01	393.73	383.01	10.72	36.725	
3,100.00	3,100.00	3,103.26	3,103.20	10.90		65.76	161.64	359.04	393.75	382.85	10.90	36.124	
3,150.00	3,150.00	3,153.41	3,153.35	11.08		65.76	161.66	359.08	393.79	382.71	11.08	35.544	
3,200.00	3,200.00	3,203.26	3,203.20	11.26		65.76	161.64	359.04	393.75	382.49	11.26	34.975	
3,250.00	3,250.00	3,253.48	3,253.42	11.44		65.76	161.65	359.08	393.78	382.35	11.44	34.430	
3,300.00	3,300.00	3,303.26	3,303.20	11.62		65.76	161.64	359.04	393.75	382.13	11.62	33.896	
3,331.00	3,331.00	3,334.22	3,334.16	11.73		65.75	161.69	358.97	393.70	381.97	11.73	33.571	
3,350.00	3,350.00	3,352.90	3,352.84	11.80		65.75	161.68	358.98	393.71	381.91	11.80	33.378	
3,400.00	3,400.00	3,403.27	3,403.20	11.97		65.76	161.64	359.04	393.75	381.77	11.97	32.882	
3,424.13	3,424.13	3,427.37	3,427.31	12.06		65.75	161.72	358.96	393.71	381.65	12.06	32.643	
3,450.00	3,450.00	3,452.87	3,452.81	12.15		65.75	161.69	358.99	393.72	381.57	12.15	32.396	
3,500.00	3,500.00	3,503.27	3,503.20	12.33		65.76	161.64	359.04	393.75	381.42	12.33	31.927	
3,550.00	3,550.00	3,553.58	3,553.52	12.51		65.76	161.67	359.04	393.76	381.25	12.51	31.471	
3,572.07	3,572.07	3,575.86	3,575.79	12.59		65.77	161.61	359.04	393.74	381.15	12.59	31.272	
3,600.00	3,600.00	3,603.27	3,603.20	12.69		65.76	161.64	359.04	393.75	381.06	12.69	31.026	
3,650.00	3,650.00	3,666.15	3,663.20	12.87		65.76	161.64	359.04	393.75	380.88	12.87	30.595	
3,700.00	3,700.00	3,703.27	3,703.20	13.05		65.76	161.64	359.04	393.75	380.70	13.05	30.175	
3,705.89	3,705.89	3,709.11	3,709.04	13.07		65.75	161.71	358.95	393.69	380.62	13.07	30.122	
3,750.00	3,750.00	3,752.38	3,752.31	13.23		65.76	161.64	359.04	393.75	380.52	13.23	29.766	
3,796.86	3,796.86	3,800.14	3,800.06	13.40		65.74	161.74	358.96	393.72	380.32	13.40	29.391	
3,800.00	3,800.00	3,803.24	3,803.17	13.41		65.74	161.74	358.96	393.72	380.31	13.41	29.366	
3,850.00	3,850.00	3,853.28	3,853.20	13.59		65.76	161.64	359.04	393.75	380.16	13.59	28.981	
3,900.00	3,900.00	3,903.31	3,903.23	13.77		65.74	161.78	358.99	393.76	379.99	13.77	28.605	
3,950.00	3,950.00	3,953.29	3,953.20	13.94		65.76	161.64	359.04	393.75	379.80	13.94	28.237	
4,000.00	4,000.00	4,003.90	4,003.80	14.12		65.75	161.78	359.08	393.84	379.71	14.12	27.885	

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
4,040.25	4,040.24	4,045.67	4,045.58	14.27		110.29	161.55	359.02	393.76	379.49	14.27	27.600	ES	
4,050.00	4,050.00	4,053.30	4,053.20	14.30		110.29	161.64	359.04	393.84	379.54	14.30	27.539		
4,100.00	4,099.99	4,104.50	4,104.40	14.48		110.40	161.68	359.14	394.24	379.76	14.48	27.228		
4,150.00	4,149.97	4,153.28	4,153.17	14.66		110.58	161.64	359.04	394.60	379.95	14.66	26.925		
4,200.00	4,199.94	4,205.60	4,205.48	14.83		110.85	161.64	359.17	395.40	380.57	14.83	26.659		
4,250.00	4,249.88	4,253.21	4,253.08	15.01		111.15	161.64	359.04	396.16	381.15	15.01	26.396		
4,300.00	4,299.79	4,307.07	4,306.92	15.19		111.58	161.61	359.15	397.34	382.16	15.18	26.168		
4,350.00	4,349.70	4,353.08	4,352.90	15.36		111.95	161.64	359.04	398.37	383.01	15.36	25.933		
4,400.00	4,399.60	4,414.28	4,402.80	15.54		112.35	161.64	359.04	399.53	383.99	15.54	25.713		
4,450.00	4,449.51	4,452.97	4,452.71	15.72		112.76	161.64	359.04	400.70	384.99	15.71	25.498		
4,500.00	4,499.41	4,509.22	4,508.93	15.90		113.19	161.72	358.90	401.84	385.95	15.89	25.289		
4,550.00	4,549.32	4,553.39	4,553.03	16.07		113.61	161.42	359.47	403.43	387.36	16.07	25.107		
4,600.00	4,599.23	4,610.31	4,609.93	16.25		113.98	161.80	358.73	404.18	387.93	16.24	24.882		
4,650.00	4,649.13	4,654.77	4,654.33	16.43		114.40	161.54	359.52	406.01	389.59	16.42	24.723		
4,700.00	4,699.04	4,702.75	4,702.24	16.61		114.74	161.64	359.04	406.87	390.27	16.60	24.510		
4,750.00	4,748.95	4,755.14	4,754.61	16.79		115.18	161.53	359.39	408.46	391.68	16.78	24.346		
4,800.00	4,798.85	4,802.62	4,802.05	16.96		115.51	161.64	359.04	409.47	392.51	16.95	24.150		
4,850.00	4,848.76	4,855.12	4,854.53	17.14		115.95	161.50	359.29	410.99	393.86	17.13	23.989		
4,900.00	4,898.67	4,902.49	4,901.87	17.32		116.28	161.64	359.04	412.14	394.83	17.31	23.809		
4,950.00	4,948.57	4,956.02	4,955.38	17.50		116.71	161.54	359.23	413.67	396.18	17.49	23.655		
5,000.00	4,998.48	5,002.36	5,001.68	17.68		117.04	161.64	359.04	414.89	397.22	17.67	23.486		
5,050.00	5,048.39	5,056.41	5,055.72	17.86		117.45	161.60	359.14	416.39	398.55	17.84	23.336		
5,100.00	5,098.29	5,102.21	5,101.49	18.04		117.78	161.64	359.04	417.71	399.68	18.02	23.178		
5,150.00	5,148.20	5,163.11	5,151.40	18.22		118.15	161.64	359.04	419.14	400.94	18.20	23.030		
5,200.00	5,198.11	5,202.06	5,201.31	18.39		118.52	161.64	359.04	420.59	402.22	18.38	22.886		
5,250.00	5,248.01	5,257.25	5,256.48	18.57		118.91	161.69	358.95	422.03	403.47	18.56	22.744		
5,300.00	5,297.92	5,302.21	5,301.41	18.75		119.28	161.44	359.29	423.73	405.00	18.73	22.619		
5,350.00	5,347.82	5,356.04	5,355.23	18.93		119.61	161.75	358.91	424.98	406.06	18.91	22.471		
5,400.00	5,397.73	5,402.83	5,402.01	19.11		119.98	161.62	359.29	426.81	407.72	19.09	22.357		
5,450.00	5,447.64	5,451.68	5,450.84	19.29		120.31	161.64	359.04	428.11	408.84	19.27	22.218		
5,500.00	5,497.54	5,503.27	5,502.43	19.47		120.68	161.69	359.24	429.87	410.42	19.45	22.104		
5,550.00	5,547.45	5,551.51	5,550.65	19.65		121.01	161.64	359.04	431.23	411.61	19.63	21.973		
5,600.00	5,597.36	5,603.26	5,602.39	19.83		121.39	161.55	359.20	432.96	413.16	19.80	21.862		
5,650.00	5,647.26	5,651.34	5,650.46	20.01		121.70	161.64	359.04	434.42	414.44	19.98	21.740		
5,700.00	5,697.17	5,703.27	5,702.39	20.19		122.07	161.58	359.15	436.13	415.97	20.16	21.632		
5,750.00	5,747.08	5,751.17	5,750.28	20.37		122.38	161.64	359.04	437.67	417.33	20.34	21.518		
5,800.00	5,796.98	5,802.93	5,802.04	20.55		122.74	161.62	359.09	439.37	418.85	20.52	21.413		
5,850.00	5,846.89	5,850.98	5,850.09	20.73		123.05	161.64	359.04	440.98	420.28	20.70	21.306		
5,900.00	5,896.80	5,912.28	5,900.00	20.91		123.38	161.64	359.04	442.65	421.78	20.88	21.204		
5,950.00	5,946.70	5,950.80	5,949.90	21.09		123.71	161.64	359.04	444.34	423.29	21.05	21.104		
6,000.00	5,996.61	6,002.75	6,001.85	21.27		124.05	161.65	359.03	446.04	424.81	21.23	21.006		
6,050.00	6,046.52	6,050.75	6,049.84	21.45		124.38	161.56	359.14	447.85	426.44	21.41	20.916		
6,100.00	6,096.42	6,102.46	6,101.55	21.63		124.69	161.67	359.00	449.48	427.88	21.59	20.817		
6,150.00	6,146.33	6,150.81	6,149.89	21.81		125.02	161.56	359.14	451.34	429.57	21.77	20.732		
6,200.00	6,196.23	6,200.35	6,199.43	21.99		125.32	161.64	359.04	453.02	431.07	21.95	20.640		
6,250.00	6,246.14	6,250.75	6,249.83	22.17		125.64	161.64	359.10	454.85	432.73	22.13	20.556		
6,300.00	6,296.05	6,300.17	6,299.25	22.35		125.94	161.64	359.04	456.58	434.28	22.31	20.469		
6,350.00	6,345.95	6,350.70	6,349.78	22.53		126.26	161.65	359.09	458.44	435.95	22.49	20.388		
6,400.00	6,395.86	6,399.98	6,399.06	22.71		126.56	161.64	359.04	460.20	437.54	22.66	20.305		
6,450.00	6,445.77	6,450.66	6,449.74	22.89		126.88	161.59	359.09	462.07	439.23	22.84	20.227		
6,500.00	6,495.67	6,499.80	6,498.87	23.07		127.17	161.64	359.04	463.87	440.85	23.02	20.149		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis		Highside Tooface (')	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
6,550.00	6,545.58	6,550.63	6,549.71	23.25		127.47	161.61	359.07	465.76	442.55	23.20	20.074		
6,600.00	6,595.49	6,599.61	6,598.69	23.43		127.76	161.64	359.04	467.60	444.22	23.38	19.999		
6,650.00	6,645.39	6,661.58	6,648.59	23.62		128.06	161.64	359.04	469.48	445.92	23.56	19.927		
6,700.00	6,695.30	6,699.43	6,698.50	23.80		128.35	161.64	359.04	471.37	447.63	23.74	19.856		
6,750.00	6,745.21	6,749.66	6,748.74	23.98		128.64	161.64	359.04	473.27	449.36	23.92	19.787		
6,800.00	6,795.11	6,799.29	6,798.36	24.16		128.94	161.56	359.08	475.23	451.13	24.10	19.721		
6,850.00	6,845.02	6,850.01	6,849.08	24.34		129.21	161.67	359.03	477.11	452.83	24.28	19.653		
6,900.00	6,894.93	6,899.25	6,898.32	24.52		129.50	161.58	359.09	479.10	454.65	24.46	19.591		
6,950.00	6,944.83	6,948.96	6,948.03	24.70		129.78	161.64	359.04	481.01	456.38	24.63	19.526		
7,000.00	6,994.74	6,999.28	6,998.35	24.88		130.05	161.66	359.09	483.03	458.21	24.81	19.466		
7,050.00	7,044.65	7,048.78	7,047.85	25.06		130.33	161.64	359.04	484.95	459.96	24.99	19.403		
7,100.00	7,094.55	7,099.31	7,098.37	25.24		130.61	161.63	359.09	486.98	461.81	25.17	19.346		
7,150.00	7,144.46	7,148.60	7,147.66	25.43		130.88	161.64	359.04	488.93	463.58	25.35	19.286		
7,200.00	7,194.36	7,199.62	7,198.68	25.61		131.16	161.58	359.10	490.99	465.46	25.53	19.231		
7,250.00	7,244.27	7,248.41	7,247.47	25.79		131.41	161.64	359.04	492.96	467.25	25.71	19.174		
7,300.00	7,294.18	7,299.16	7,298.22	25.97		131.68	161.63	359.06	495.01	469.12	25.89	19.120		
7,350.00	7,344.08	7,348.23	7,347.28	26.15		131.94	161.64	359.04	497.03	470.96	26.07	19.066		
7,400.00	7,393.99	7,410.88	7,397.19	26.33		132.20	161.64	359.04	499.08	472.83	26.25	19.014		
7,450.00	7,443.90	7,448.05	7,447.10	26.51		132.46	161.64	359.04	501.14	474.71	26.43	18.963		
7,500.00	7,493.80	7,500.67	7,499.71	26.69		132.73	161.66	359.03	503.20	476.60	26.61	18.911		
7,550.00	7,543.71	7,548.07	7,547.08	26.88		133.00	161.38	359.17	505.41	478.63	26.79	18.868		
7,600.00	7,593.62	7,601.04	7,600.05	27.06		133.23	161.76	358.98	507.34	480.37	26.97	18.813		
7,650.00	7,643.52	7,648.06	7,647.06	27.24		133.50	161.45	358.12	509.55	482.41	27.15	18.772		
7,700.00	7,693.43	7,697.65	7,696.63	27.42		133.73	161.64	359.04	511.53	484.20	27.32	18.721		
7,750.00	7,743.38	7,748.23	7,747.21	27.60		133.96	161.42	359.12	513.25	485.74	27.50	18.661		
7,800.00	7,793.35	7,797.60	7,796.55	27.78		134.09	161.64	359.04	514.37	486.69	27.68	18.581		
7,850.00	7,843.34	7,849.13	7,848.07	27.96		134.21	161.40	359.15	515.22	487.36	27.86	18.493		
7,900.00	7,893.33	7,897.63	7,896.53	28.14		134.22	161.64	359.04	515.40	487.37	28.04	18.382		
7,950.00	7,943.33	7,950.37	7,949.27	28.31		89.74	161.48	359.15	515.52	487.30	28.22	18.269		
8,000.00	7,993.33	7,997.65	7,996.53	28.49		89.72	161.64	359.04	515.41	487.01	28.39	18.152		
8,050.00	8,043.33	8,049.38	8,048.26	28.67		89.73	161.55	359.08	515.45	486.88	28.57	18.040		
8,071.27	8,064.61	8,071.72	8,070.59	28.75		89.71	161.76	358.98	515.36	486.71	28.65	17.988		
8,100.00	8,093.33	8,097.68	8,096.53	28.85		89.72	161.64	359.04	515.41	486.66	28.75	17.927		
8,150.00	8,143.33	8,159.23	8,146.53	29.03		89.72	161.64	359.04	515.41	486.48	28.93	17.817		
8,200.00	8,193.33	8,197.71	8,196.53	29.20		89.72	161.64	359.04	515.41	486.30	29.11	17.708		
8,250.00	8,243.33	8,250.94	8,249.75	29.38		89.72	161.70	359.02	515.39	486.11	29.29	17.599		
8,256.67	8,250.01	8,258.07	8,256.87	29.41		89.71	161.81	358.97	515.35	486.04	29.31	17.583		
8,300.00	8,293.33	8,297.97	8,296.74	29.56		89.76	161.32	359.15	515.52	486.05	29.46	17.498		
8,350.00	8,343.33	8,350.73	8,349.50	29.74		89.71	161.80	358.99	515.36	485.72	29.64	17.386		
8,352.28	8,345.61	8,353.14	8,351.90	29.75		89.70	161.84	358.97	515.35	485.70	29.65	17.381		
8,400.00	8,393.33	8,397.96	8,396.70	29.91		89.75	161.38	359.07	515.44	485.62	29.82	17.286		
8,450.00	8,443.33	8,447.81	8,446.53	30.09		89.72	161.64	359.04	515.41	485.41	30.00	17.183		
8,483.32	8,476.65	8,481.13	8,479.85	30.21		89.75	161.40	359.02	515.38	485.27	30.11	17.114		
8,500.00	8,493.33	8,497.62	8,496.34	30.27		89.75	161.43	359.02	515.39	485.21	30.17	17.081		
8,550.00	8,543.33	8,547.84	8,546.53	30.45		89.72	161.64	359.04	515.41	485.06	30.35	16.981		
8,600.00	8,593.33	8,598.43	8,597.12	30.63		89.75	161.41	359.08	515.45	484.92	30.53	16.883		
8,650.00	8,643.32	8,647.85	8,646.52	30.80		-90.05	161.64	359.04	515.41	484.71	30.70	16.787		
8,671.03	8,664.29	8,668.82	8,667.49	30.86		-90.19	161.38	359.02	515.39	484.62	30.77	16.750		
8,673.86	8,667.10	8,671.60	8,670.27	30.87		-90.22	161.38	359.02	515.39	484.61	30.78	16.745		
8,700.00	8,693.06	8,697.25	8,695.92	30.96		-90.56	161.48	359.03	515.42	484.56	30.86	16.702		
8,750.00	8,742.19	8,746.74	8,745.39	31.11		-91.57	161.64	359.04	515.61	484.60	31.01	16.625		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis		Highside Tooface (")	Offset Wellbore Centre		Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,800.00	8,790.32	8,793.47	8,792.12	31.26		-92.90	161.54	358.99	516.12	484.96	31.16	16.563		
8,850.00	8,837.10	8,841.67	8,840.30	31.39		-94.65	161.64	359.04	517.42	486.12	31.31	16.528 SF		
8,900.00	8,882.17	8,885.55	8,884.18	31.52		-96.49	161.51	359.01	519.73	488.29	31.44	16.529		
8,950.00	8,925.18	8,929.76	8,928.38	31.64		-98.57	161.64	359.04	523.68	492.10	31.58	16.585		
9,000.00	8,965.81	8,969.87	8,968.49	31.75		-100.49	161.53	359.02	529.57	497.87	31.70	16.704		
9,050.00	9,003.74	9,008.32	9,006.94	31.85		-102.33	161.64	359.04	538.03	506.20	31.83	16.905		
9,100.00	9,038.70	9,043.28	9,041.90	31.94		-103.82	161.52	359.12	549.38	517.44	31.94	17.200		
9,150.00	9,070.40	9,075.35	9,073.97	32.06		-104.94	161.58	359.08	563.90	531.85	32.05	17.595		
9,200.00	9,098.62	9,103.21	9,101.82	32.18		-105.46	161.64	359.04	581.85	549.70	32.15	18.100		
9,250.00	9,123.14	9,127.72	9,126.34	32.30		-105.37	161.64	359.04	603.30	571.06	32.23	18.716		
9,300.00	9,143.76	9,147.87	9,146.48	32.43		-104.50	161.53	359.03	628.10	595.79	32.31	19.441		
9,350.00	9,160.34	9,163.64	9,162.26	32.56		-102.75	161.56	359.04	656.21	623.85	32.37	20.274		
9,400.00	9,172.75	9,175.30	9,173.91	32.70		-100.07	161.60	359.04	687.27	654.85	32.41	21.203		
9,450.00	9,180.88	9,185.48	9,184.08	32.83		-96.67	161.64	359.04	720.86	688.42	32.45	22.216		
9,500.00	9,184.69	9,189.29	9,187.89	32.97		-92.01	161.64	359.04	756.55	724.08	32.47	23.300		
9,550.00	9,185.00	9,189.59	9,188.20	33.12		-90.00	161.64	359.04	793.88	761.39	32.49	24.437		
9,600.00	9,185.00	9,189.59	9,188.20	33.28		-90.00	161.64	359.04	832.54	800.04	32.50	25.618		
9,650.00	9,185.00	9,189.59	9,188.20	33.46		-90.00	161.64	359.04	872.36	839.84	32.51	26.830		
9,700.00	9,185.00	9,189.59	9,188.20	33.64		-90.00	161.64	359.04	913.18	880.65	32.52	28.076		
9,750.00	9,185.00	9,189.59	9,188.20	33.85		-90.00	161.64	359.04	954.87	922.33	32.54	29.344		
9,800.00	9,185.00	9,189.59	9,188.20	34.05		-90.00	161.64	359.04	997.32	964.77	32.55	30.640		
9,850.00	9,185.00	9,189.59	9,188.20	34.29		-90.00	161.64	359.04	1,040.45	1,007.89	32.56	31.950		
9,900.00	9,185.00	9,189.59	9,188.20	34.53		-90.00	161.64	359.04	1,084.17	1,051.59	32.57	33.283		
9,950.00	9,185.00	9,189.59	9,188.20	34.79		-90.00	161.64	359.04	1,128.41	1,095.82	32.59	34.626		
10,000.00	9,185.00	9,189.59	9,188.20	35.06		-90.00	161.64	359.04	1,173.11	1,140.51	32.60	35.987		
10,050.00	9,185.00	9,189.59	9,188.20	35.35		-90.00	161.64	359.04	1,218.22	1,185.61	32.61	37.357		
10,100.00	9,185.00	9,189.59	9,188.20	35.64		-90.00	161.64	359.04	1,263.70	1,231.08	32.62	38.740		
10,150.00	9,185.00	9,189.59	9,188.20	35.95		-90.00	161.64	359.04	1,309.51	1,276.88	32.63	40.129		
10,200.00	9,185.00	9,189.59	9,188.20	36.27		-90.00	161.64	359.04	1,355.62	1,322.98	32.64	41.530		
10,250.00	9,185.00	9,189.59	9,188.20	36.61		-90.00	161.64	359.04	1,402.00	1,369.34	32.65	42.935		
10,300.00	9,185.00	9,189.59	9,188.20	36.94		-90.00	161.64	359.04	1,448.81	1,415.95	32.66	44.349		
10,350.00	9,185.00	9,189.59	9,188.20	37.30		-90.00	161.64	359.04	1,495.45	1,462.77	32.68	45.766		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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 334H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 104-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	4.79	4.79	0.50	0.50	89.74	5.97	1,294.60	1,294.62					
50.00	50.00	53.67	53.67	0.50	0.51	89.73	6.01	1,294.63	1,294.64	1,293.64	1.01	1,285.242		
100.00	100.00	102.55	102.55	0.52	0.52	89.73	6.12	1,294.70	1,294.71	1,293.67	1.04	1,248.648		
150.00	150.00	156.19	156.19	0.59	0.60	89.72	6.22	1,294.72	1,294.74	1,293.55	1.19	1,091.842		
200.00	200.00	205.20	205.20	0.70	0.70	89.72	6.24	1,294.67	1,294.68	1,293.27	1.41	920.940		
205.67	205.67	210.57	210.57	0.72	0.72	89.72	6.24	1,294.66	1,294.68	1,293.25	1.43	903.086		
250.00	250.00	253.58	253.58	0.84	0.83	89.72	6.30	1,294.70	1,294.71	1,293.04	1.67	775.136		
300.00	300.00	304.85	304.85	0.99	0.98	89.72	6.33	1,294.73	1,294.74	1,292.78	1.97	657.786		
350.00	350.00	358.63	358.63	1.15	1.15	89.72	6.27	1,294.67	1,294.69	1,292.40	2.29	565.213		
400.00	400.00	413.65	413.65	1.31	1.32	89.72	6.29	1,294.40	1,294.45	1,291.82	2.63	492.514		
450.00	450.00	462.61	462.61	1.48	1.48	89.72	6.27	1,294.09	1,294.13	1,291.17	2.96	437.829		
500.00	500.00	511.86	511.85	1.65	1.64	89.73	6.10	1,293.82	1,293.85	1,290.56	3.29	393.355		
550.00	550.00	564.53	564.53	1.82	1.82	89.74	5.93	1,293.48	1,293.53	1,289.89	3.64	355.487		
600.00	600.00	615.04	615.03	1.99	1.99	89.74	5.89	1,293.07	1,293.12	1,289.14	3.98	324.583		
650.00	650.00	662.05	662.05	2.16	2.16	89.74	5.95	1,292.75	1,292.79	1,288.47	4.32	299.274		
700.00	700.00	711.18	711.17	2.34	2.33	89.73	6.08	1,292.52	1,292.55	1,287.89	4.66	277.101		
750.00	750.00	762.90	762.89	2.51	2.51	89.73	6.19	1,292.24	1,292.28	1,287.26	5.02	257.433		
800.00	800.00	813.81	813.80	2.69	2.68	89.72	6.24	1,291.89	1,291.94	1,286.57	5.37	240.429		
850.00	850.00	863.75	863.74	2.87	2.86	89.72	6.22	1,291.55	1,291.60	1,285.87	5.72	225.616		
900.00	900.00	911.09	911.08	3.04	3.02	89.73	6.18	1,291.26	1,291.29	1,285.23	6.07	212.841		
950.00	950.00	957.67	957.66	3.22	3.19	89.72	6.25	1,291.10	1,291.12	1,284.71	6.41	201.523		
1,000.00	1,000.00	1,009.65	1,009.63	3.40	3.37	89.72	6.34	1,290.97	1,291.00	1,284.23	6.77	190.818		
1,050.00	1,050.00	1,062.80	1,062.78	3.58	3.55	89.72	6.21	1,290.71	1,290.75	1,283.62	7.13	181.063		
1,100.00	1,100.00	1,107.44	1,107.42	3.75	3.71	89.73	6.00	1,290.55	1,290.57	1,283.11	7.46	172.997		
1,127.90	1,127.90	1,132.82	1,132.80	3.85	3.80	89.74	5.85	1,290.53	1,290.54	1,282.89	7.65	168.768		
1,150.00	1,150.00	1,153.31	1,153.29	3.93	3.87	89.75	5.71	1,290.54	1,290.56	1,282.76	7.80	165.544		
1,200.00	1,200.00	1,202.37	1,202.36	4.11	4.03	89.76	5.38	1,290.62	1,290.64	1,282.50	8.14	158.537		
1,250.00	1,250.00	1,253.57	1,253.55	4.29	4.21	89.78	5.05	1,290.73	1,290.74	1,282.25	8.49	151.951		
1,300.00	1,300.00	1,311.04	1,311.02	4.46	4.41	89.79	4.80	1,290.63	1,290.65	1,281.78	8.87	145.467		
1,350.00	1,350.00	1,361.40	1,361.38	4.64	4.59	89.79	4.72	1,290.34	1,290.36	1,281.13	9.23	139.853		
1,400.00	1,400.00	1,408.25	1,408.23	4.82	4.75	89.79	4.82	1,290.16	1,290.17	1,280.60	9.57	134.828		
1,450.00	1,450.00	1,457.95	1,457.93	5.00	4.92	89.78	5.00	1,290.05	1,290.06	1,280.14	9.92	130.026		
1,500.00	1,500.00	1,508.72	1,508.70	5.18	5.10	89.78	5.02	1,289.91	1,289.93	1,279.65	10.28	125.505		
1,550.00	1,550.00	1,558.95	1,558.93	5.36	5.28	89.78	4.90	1,289.76	1,289.78	1,279.14	10.63	121.295		
1,600.00	1,600.00	1,609.13	1,609.10	5.53	5.46	89.79	4.72	1,289.60	1,289.62	1,278.63	10.99	117.356		
1,650.00	1,650.00	1,656.76	1,656.74	5.71	5.62	89.79	4.64	1,289.50	1,289.51	1,278.17	11.33	113.784		
1,693.18	1,693.18	1,698.10	1,698.08	5.87	5.77	89.79	4.71	1,289.47	1,289.47	1,277.84	11.63	110.865 CC		
1,700.00	1,700.00	1,704.76	1,704.73	5.89	5.79	89.79	4.73	1,289.47	1,289.47	1,277.80	11.68	110.416		
1,750.00	1,750.00	1,753.69	1,753.67	6.07	5.96	89.79	4.80	1,289.49	1,289.50	1,277.48	12.02	107.236		
1,800.00	1,800.00	1,802.96	1,802.94	6.25	6.13	89.79	4.71	1,289.56	1,289.57	1,277.20	12.37	104.227		
1,850.00	1,850.00	1,854.06	1,854.04	6.43	6.30	89.79	4.74	1,289.62	1,289.62	1,276.90	12.73	101.329		
1,900.00	1,900.00	1,905.36	1,905.33	6.61	6.48	89.78	5.03	1,289.63	1,289.64	1,276.55	13.08	98.573		
1,950.00	1,950.00	1,957.09	1,957.06	6.78	6.66	89.77	5.29	1,289.57	1,289.58	1,276.14	13.44	95.936		
2,000.00	2,000.00	2,006.28	2,006.25	6.96	6.83	89.76	5.42	1,289.48	1,289.49	1,275.70	13.79	93.498		
2,018.96	2,018.96	2,023.88	2,023.86	7.03	6.89	89.76	5.44	1,289.47	1,289.48	1,275.56	13.92	92.633		
2,050.00	2,050.00	2,052.71	2,052.69	7.14	6.99	89.76	5.46	1,289.49	1,289.51	1,275.38	14.13	91.255		
2,100.00	2,100.00	2,101.49	2,101.46	7.32	7.16	89.76	5.44	1,289.63	1,289.64	1,275.17	14.48	89.078		
2,150.00	2,150.00	2,153.60	2,153.58	7.50	7.34	89.75	5.55	1,289.72	1,289.74	1,274.90	14.84	86.936		
2,200.00	2,200.00	2,203.05	2,203.02	7.68	7.51	89.74	5.80	1,289.76	1,289.78	1,274.59	15.18	84.938		
2,250.00	2,250.00	2,250.63	2,250.60	7.86	7.67	89.73	6.12	1,289.88	1,289.90	1,274.37	15.53	83.067		
2,300.00	2,300.00	2,295.03	2,295.01	8.04	7.83	89.71	6.52	1,290.09	1,290.15	1,274.29	15.88	81.343 ES		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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 334H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 104-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,350.00	2,350.00	2,337.43	2,337.39	8.22	7.97	89.68	7.24	1,290.54	1,290.68	1,274.49	16.19	79.745		
2,400.00	2,400.00	2,380.07	2,380.01	8.39	8.12	89.63	8.30	1,291.24	1,291.50	1,274.99	16.51	78.225		
2,450.00	2,450.00	2,423.17	2,423.08	8.57	8.27	89.57	9.65	1,292.17	1,292.60	1,275.76	16.84	76.774		
2,500.00	2,500.00	2,466.78	2,466.64	8.75	8.42	89.50	11.29	1,293.35	1,293.96	1,276.80	17.16	75.386		
2,550.00	2,550.00	2,512.96	2,512.76	8.93	8.58	89.41	13.37	1,294.76	1,295.52	1,278.01	17.50	74.019		
2,600.00	2,600.00	2,559.19	2,559.90	9.11	8.74	89.30	15.83	1,296.30	1,297.22	1,279.38	17.84	72.712		
2,650.00	2,650.00	2,606.30	2,605.88	9.29	8.91	89.17	18.77	1,297.99	1,299.05	1,280.86	18.18	71.444		
2,700.00	2,700.00	2,653.72	2,653.14	9.47	9.07	89.02	22.19	1,299.77	1,300.99	1,282.46	18.53	70.225		
2,750.00	2,750.00	2,706.08	2,705.30	9.65	9.26	88.84	26.39	1,301.72	1,302.94	1,284.05	18.89	68.976		
2,800.00	2,800.00	2,758.26	2,757.24	9.83	9.44	88.64	30.95	1,303.56	1,304.80	1,285.55	19.25	67.771		
2,850.00	2,850.00	2,810.03	2,808.78	10.00	9.62	88.44	35.56	1,305.30	1,306.59	1,286.98	19.62	66.611		
2,900.00	2,900.00	2,861.24	2,859.76	10.18	9.81	88.24	40.09	1,306.94	1,308.33	1,288.36	19.98	65.495		
2,950.00	2,950.00	2,911.68	2,909.98	10.36	9.98	88.05	44.52	1,308.53	1,310.05	1,289.72	20.33	64.427		
3,000.00	3,000.00	2,963.16	2,961.24	10.54	10.17	87.86	48.98	1,310.11	1,311.75	1,291.05	20.70	63.381		
3,050.00	3,050.00	3,015.55	3,013.43	10.72	10.36	87.67	53.35	1,311.63	1,313.37	1,292.31	21.06	62.355		
3,100.00	3,100.00	3,065.56	3,063.26	10.90	10.53	87.50	57.36	1,313.03	1,314.94	1,293.52	21.42	61.389		
3,150.00	3,150.00	3,114.68	3,112.22	11.08	10.71	87.34	61.14	1,314.43	1,316.54	1,294.77	21.77	60.465		
3,200.00	3,200.00	3,167.56	3,164.92	11.26	10.90	87.17	65.14	1,315.91	1,318.13	1,295.98	22.14	59.529		
3,250.00	3,250.00	3,221.42	3,218.61	11.44	11.09	86.99	69.31	1,317.25	1,319.57	1,297.06	22.52	58.607		
3,300.00	3,300.00	3,270.77	3,267.79	11.62	11.27	86.82	73.18	1,318.41	1,320.97	1,298.09	22.87	57.757		
3,350.00	3,350.00	3,320.45	3,317.30	11.80	11.45	86.66	77.08	1,319.60	1,322.38	1,299.15	23.23	56.930		
3,400.00	3,400.00	3,371.97	3,368.66	11.97	11.63	86.49	81.07	1,320.80	1,323.78	1,300.18	23.59	56.110		
3,450.00	3,450.00	3,421.99	3,418.52	12.15	11.81	86.33	84.86	1,321.91	1,325.13	1,301.18	23.95	55.326		
3,500.00	3,500.00	3,467.26	3,463.64	12.33	11.98	86.18	88.36	1,323.00	1,326.59	1,302.30	24.29	54.612		
3,550.00	3,550.00	3,513.17	3,509.38	12.51	12.14	86.03	92.01	1,324.26	1,328.23	1,303.60	24.63	53.920		
3,600.00	3,600.00	3,562.97	3,559.01	12.69	12.32	85.86	95.95	1,325.69	1,329.95	1,304.96	24.99	53.216		
3,650.00	3,650.00	3,611.59	3,607.46	12.87	12.50	85.70	99.71	1,327.10	1,331.69	1,306.34	25.35	52.542		
3,700.00	3,700.00	3,655.88	3,651.61	13.05	12.66	85.57	103.01	1,328.53	1,333.58	1,307.90	25.68	51.929		
3,750.00	3,750.00	3,700.00	3,695.59	13.23	12.82	85.44	106.17	1,330.14	1,335.69	1,309.67	26.01	51.343		
3,800.00	3,800.00	3,741.76	3,737.21	13.41	12.97	85.32	109.11	1,331.89	1,338.06	1,311.72	26.34	50.803		
3,850.00	3,850.00	3,783.50	3,778.80	13.59	13.12	85.20	112.03	1,333.89	1,340.74	1,314.08	26.66	50.290		
3,900.00	3,900.00	3,831.58	3,826.69	13.77	13.30	85.06	115.48	1,336.38	1,343.64	1,316.63	27.01	49.745		
3,950.00	3,950.00	3,881.24	3,876.13	13.94	13.48	84.91	119.32	1,338.95	1,346.56	1,319.19	27.37	49.201		
4,000.00	4,000.00	3,935.00	3,929.65	14.12	13.67	84.74	123.63	1,341.64	1,349.43	1,321.68	27.74	48.637		
4,050.00	4,050.00	3,989.72	3,984.14	14.30	13.87	129.04	127.94	1,344.21	1,352.31	1,324.18	28.12	48.084		
4,100.00	4,099.99	4,046.95	4,041.15	14.48	14.08	128.86	132.36	1,346.63	1,355.30	1,326.79	28.51	47.531		
4,150.00	4,149.97	4,103.75	4,097.75	14.66	14.29	128.71	136.69	1,348.73	1,358.38	1,329.48	28.90	47.002		
4,200.00	4,199.94	4,159.98	4,153.74	14.83	14.49	128.56	141.39	1,350.50	1,361.56	1,332.28	29.28	46.494		
4,250.00	4,249.88	4,210.74	4,204.28	15.01	14.68	128.42	145.92	1,351.90	1,364.93	1,335.28	29.65	46.040		
4,300.00	4,299.79	4,259.68	4,253.02	15.19	14.86	128.32	150.19	1,353.29	1,368.63	1,338.63	30.00	45.620		
4,350.00	4,349.70	4,312.72	4,305.85	15.36	15.05	128.25	154.67	1,354.77	1,372.37	1,342.00	30.37	45.186		
4,400.00	4,399.60	4,366.76	4,359.70	15.54	15.25	128.18	159.01	1,356.15	1,375.97	1,345.22	30.75	44.752		
4,450.00	4,449.51	4,414.03	4,406.80	15.72	15.42	128.13	162.74	1,357.34	1,379.54	1,348.45	31.09	44.368		
4,500.00	4,499.41	4,461.74	4,454.34	15.90	15.60	128.07	166.57	1,358.62	1,383.20	1,351.75	31.44	43.991		
4,550.00	4,549.32	4,513.00	4,505.42	16.07	15.79	128.01	170.76	1,359.99	1,386.87	1,355.06	31.81	43.603		
4,600.00	4,599.23	4,564.27	4,556.49	16.25	15.98	127.94	175.01	1,361.30	1,390.48	1,358.31	32.17	43.222		
4,650.00	4,649.13	4,612.25	4,604.29	16.43	16.15	127.88	178.94	1,362.55	1,394.12	1,361.60	32.52	42.867		
4,700.00	4,699.04	4,660.09	4,651.96	16.61	16.33	127.83	182.75	1,363.86	1,397.81	1,364.94	32.87	42.523		
4,750.00	4,748.95	4,705.36	4,697.06	16.79	16.49	127.77	186.44	1,365.20	1,401.63	1,368.42	33.21	42.203		
4,800.00	4,798.85	4,750.69	4,742.21	16.96	16.66	127.71	190.27	1,366.68	1,405.61	1,372.06	33.55	41.894		
4,850.00	4,848.76	4,796.76	4,788.08	17.14	16.83	127.65	194.23	1,368.31	1,409.74	1,375.85	33.89	41.592		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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 334H - Wellbore #1 - Wellbore #1													Offset Site Error: 5.00 ft
Survey Program: 104-MWD+HDGM													Offset Well Error: 0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.00	4,898.67	4,842.99	4,834.10	17.32	17.00	127.59	198.19	1,370.06	1,414.00	1,379.76	34.24	41.300	
4,950.00	4,948.57	4,899.00	4,889.88	17.50	17.21	127.52	202.86	1,372.15	1,418.22	1,383.59	34.62	40.960	
5,000.00	4,998.48	4,953.36	4,944.03	17.68	17.41	127.46	207.20	1,373.97	1,422.22	1,387.22	35.00	40.630	
5,050.00	5,048.39	5,003.82	4,994.31	17.86	17.59	127.41	211.11	1,375.61	1,426.16	1,390.79	35.37	40.326	
5,100.00	5,098.29	5,053.19	5,043.52	18.04	17.78	127.37	214.86	1,377.20	1,430.08	1,394.36	35.72	40.032	
5,150.00	5,148.20	5,100.93	5,091.09	18.22	17.95	127.32	218.51	1,378.79	1,434.06	1,397.99	36.07	39.753	
5,200.00	5,198.11	5,148.15	5,138.14	18.39	18.13	127.28	222.20	1,380.43	1,438.12	1,401.70	36.42	39.485	
5,250.00	5,248.01	5,194.64	5,184.44	18.57	18.30	127.22	226.04	1,382.12	1,442.28	1,405.52	36.77	39.227	
5,300.00	5,297.92	5,241.23	5,230.82	18.75	18.47	127.16	230.08	1,383.89	1,446.57	1,409.45	37.11	38.977	
5,350.00	5,347.82	5,288.02	5,277.39	18.93	18.64	127.10	234.15	1,385.77	1,450.95	1,413.49	37.46	38.733	
5,400.00	5,397.73	5,339.12	5,328.25	19.11	18.83	127.04	238.55	1,387.91	1,455.42	1,417.60	37.83	38.476	
5,450.00	5,447.64	5,399.61	5,388.48	19.29	19.06	126.96	243.78	1,390.12	1,459.64	1,421.40	38.24	38.174	
5,500.00	5,497.54	5,455.56	5,444.19	19.47	19.27	126.89	248.71	1,391.81	1,463.55	1,424.93	38.63	37.891	
5,550.00	5,547.45	5,509.95	5,498.33	19.65	19.47	126.80	253.73	1,393.25	1,467.30	1,428.29	39.01	37.616	
5,600.00	5,597.36	5,560.61	5,548.75	19.83	19.66	126.72	258.49	1,394.48	1,470.96	1,431.59	39.37	37.359	
5,650.00	5,647.26	5,611.21	5,599.11	20.01	19.84	126.64	263.21	1,395.68	1,474.60	1,434.86	39.74	37.107	
5,700.00	5,697.17	5,659.73	5,647.42	20.19	20.02	126.57	267.56	1,396.87	1,478.25	1,438.16	40.10	36.869	
5,750.00	5,747.08	5,709.09	5,696.59	20.37	20.21	126.51	271.75	1,398.16	1,481.94	1,441.48	40.46	36.632	
5,800.00	5,796.98	5,761.76	5,749.07	20.55	20.40	126.46	276.03	1,399.50	1,485.58	1,444.75	40.83	36.385	
5,850.00	5,846.89	5,813.59	5,800.72	20.73	20.59	126.40	280.12	1,400.74	1,489.14	1,447.94	41.20	36.145	
5,900.00	5,896.80	5,863.82	5,850.78	20.91	20.78	126.36	284.03	1,401.93	1,492.66	1,451.10	41.56	35.914	
5,950.00	5,946.70	5,913.75	5,900.55	21.09	20.96	126.31	287.84	1,403.10	1,496.18	1,454.25	41.92	35.688	
6,000.00	5,996.61	5,963.30	5,949.96	21.27	21.15	126.28	291.40	1,404.31	1,499.70	1,457.42	42.28	35.467 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	-84.00	153.15	-1,457.42	1,465.59					
50.00	50.00	29.92	29.92	0.50	0.50	-84.00	153.15	-1,457.42	1,465.44	1,464.44	1.00	1,459.979		
100.00	100.00	80.97	80.97	0.52	0.51	-84.00	153.13	-1,457.38	1,465.40	1,464.37	1.03	1,422.241		
150.00	150.00	131.14	131.14	0.59	0.54	-84.00	153.10	-1,457.31	1,465.33	1,464.20	1.13	1,292.828		
196.83	196.83	176.13	176.13	0.69	0.62	-84.00	153.10	-1,457.28	1,465.30	1,463.99	1.32	1,114.044		
200.00	200.00	179.18	179.18	0.70	0.63	-84.00	153.10	-1,457.28	1,465.30	1,463.97	1.33	1,102.081		
250.00	250.00	227.21	227.21	0.84	0.74	-84.00	153.15	-1,457.31	1,465.34	1,463.76	1.58	928.582		
300.00	300.00	275.27	275.27	0.99	0.87	-84.00	153.26	-1,457.40	1,465.44	1,463.59	1.86	788.664		
350.00	350.00	323.51	323.51	1.15	1.01	-83.99	153.38	-1,457.55	1,465.61	1,463.45	2.16	678.971		
400.00	400.00	372.68	372.68	1.31	1.17	-83.99	153.49	-1,457.76	1,465.84	1,463.36	2.47	592.364		
450.00	450.00	425.48	425.47	1.48	1.34	-83.99	153.55	-1,457.95	1,466.01	1,463.20	2.81	521.384		
500.00	500.00	475.18	475.18	1.65	1.50	-83.99	153.54	-1,458.05	1,466.12	1,462.98	3.15	466.118		
550.00	550.00	521.24	521.24	1.82	1.65	-83.99	153.56	-1,458.24	1,466.33	1,462.86	3.47	422.397		
600.00	600.00	568.73	568.73	1.99	1.82	-83.99	153.63	-1,458.55	1,466.66	1,462.85	3.81	385.392		
650.00	650.00	617.88	617.88	2.16	1.98	-83.98	153.77	-1,458.91	1,467.04	1,462.89	4.15	353.655		
700.00	700.00	666.40	666.39	2.34	2.15	-83.98	153.96	-1,459.29	1,467.45	1,462.96	4.49	326.786		
750.00	750.00	714.52	714.51	2.51	2.32	-83.98	154.07	-1,459.74	1,467.92	1,463.08	4.83	303.731		
800.00	800.00	765.11	765.10	2.69	2.50	-83.97	154.13	-1,460.24	1,468.42	1,463.24	5.19	283.195		
850.00	850.00	816.77	816.76	2.87	2.68	-83.97	154.27	-1,460.70	1,468.88	1,463.34	5.54	265.036		
900.00	900.00	868.43	868.41	3.04	2.86	-83.96	154.50	-1,461.09	1,469.28	1,463.38	5.90	249.032		
950.00	950.00	920.48	920.46	3.22	3.04	-83.95	154.76	-1,461.42	1,469.61	1,463.35	6.26	234.766		
1,000.00	1,000.00	972.76	972.74	3.40	3.22	-83.95	154.95	-1,461.67	1,469.88	1,463.26	6.62	222.000		
1,050.00	1,050.00	1,027.07	1,027.05	3.58	3.41	-83.94	155.11	-1,461.82	1,470.03	1,463.04	6.99	210.375		
1,100.00	1,100.00	1,080.27	1,080.25	3.75	3.60	-83.94	155.29	-1,461.81	1,470.04	1,462.69	7.35	200.014		
1,150.00	1,150.00	1,131.47	1,131.45	3.93	3.77	-83.93	155.45	-1,461.74	1,469.99	1,462.28	7.70	190.832		
1,200.00	1,200.00	1,181.96	1,181.94	4.11	3.95	-83.92	155.58	-1,461.64	1,469.90	1,461.85	8.05	182.529		
1,250.00	1,250.00	1,231.89	1,231.87	4.29	4.12	-83.92	155.64	-1,461.54	1,469.81	1,461.41	8.40	174.974		
1,300.00	1,300.00	1,281.72	1,281.70	4.46	4.29	-83.92	155.67	-1,461.46	1,469.73	1,460.98	8.75	167.999		
1,350.00	1,350.00	1,331.52	1,331.50	4.64	4.46	-83.91	155.84	-1,461.36	1,469.65	1,460.55	9.10	161.550		
1,400.00	1,400.00	1,384.02	1,384.00	4.82	4.64	-83.91	156.01	-1,461.22	1,469.53	1,460.08	9.46	155.417		
1,450.00	1,450.00	1,436.87	1,436.84	5.00	4.82	-83.91	155.97	-1,461.01	1,469.33	1,459.51	9.81	149.703		
1,500.00	1,500.00	1,481.96	1,481.93	5.18	4.97	-83.91	155.85	-1,460.88	1,469.17	1,459.02	10.15	144.793		
1,531.84	1,531.84	1,511.16	1,511.14	5.29	5.07	-83.91	155.76	-1,460.86	1,469.14	1,458.78	10.36	141.813		
1,550.00	1,550.00	1,528.46	1,528.44	5.36	5.13	-83.92	155.70	-1,460.87	1,469.15	1,458.66	10.48	140.139		
1,600.00	1,600.00	1,580.39	1,580.37	5.53	5.31	-83.92	155.58	-1,460.88	1,469.14	1,458.30	10.84	135.536		
1,650.00	1,650.00	1,631.87	1,631.85	5.71	5.48	-83.92	155.52	-1,460.82	1,469.08	1,457.88	11.19	131.231		
1,700.00	1,700.00	1,682.35	1,682.32	5.89	5.66	-83.92	155.55	-1,460.72	1,468.98	1,457.44	11.55	127.215		
1,750.00	1,750.00	1,733.72	1,733.69	6.07	5.83	-83.92	155.66	-1,460.59	1,468.86	1,456.96	11.90	123.399		
1,800.00	1,800.00	1,786.17	1,786.15	6.25	6.02	-83.91	155.69	-1,460.38	1,468.67	1,456.41	12.26	119.757		
1,850.00	1,850.00	1,833.80	1,833.78	6.43	6.18	-83.91	155.67	-1,460.17	1,468.45	1,455.84	12.61	116.470		
1,896.11	1,896.11	1,875.44	1,875.41	6.59	6.33	-83.91	155.67	-1,460.11	1,468.38	1,455.46	12.92	113.672		
1,900.00	1,900.00	1,878.95	1,878.92	6.61	6.34	-83.91	155.67	-1,460.11	1,468.38	1,455.44	12.94	113.443		
1,950.00	1,950.00	1,928.94	1,928.91	6.78	6.51	-83.91	155.71	-1,460.15	1,468.43	1,455.13	13.30	110.433		
2,000.00	2,000.00	1,982.46	1,982.44	6.96	6.70	-83.91	155.80	-1,460.09	1,468.38	1,454.72	13.66	107.472		
2,050.00	2,050.00	2,030.19	2,030.17	7.14	6.87	-83.90	155.92	-1,460.00	1,468.30	1,454.29	14.01	104.810		
2,062.29	2,062.29	2,041.61	2,041.59	7.19	6.91	-83.90	155.96	-1,459.99	1,468.29	1,454.20	14.09	104.185		
2,100.00	2,100.00	2,076.66	2,076.64	7.32	7.03	-83.90	156.10	-1,460.00	1,468.33	1,453.98	14.35	102.316		
2,150.00	2,150.00	2,124.37	2,124.34	7.50	7.20	-83.89	156.29	-1,460.11	1,468.46	1,453.77	14.70	99.917		
2,200.00	2,200.00	2,172.38	2,172.36	7.68	7.37	-83.89	156.33	-1,460.30	1,468.66	1,453.62	15.04	97.626		
2,250.00	2,250.00	2,226.45	2,226.42	7.86	7.55	-83.89	156.26	-1,460.51	1,468.85	1,453.44	15.41	95.318		
2,300.00	2,300.00	2,281.66	2,281.63	8.04	7.74	-83.90	156.18	-1,460.53	1,468.86	1,453.08	15.78	93.086		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,350.00	2,350.00	2,331.51	2,331.49	8.22	7.92	-83.90	156.14	-1,460.47	1,468.79	1,452.66	16.13	91.057		
2,400.00	2,400.00	2,379.74	2,379.72	8.39	8.08	-83.90	156.13	-1,460.40	1,468.72	1,452.24	16.48	89.141		
2,402.73	2,402.73	2,382.05	2,382.03	8.40	8.09	-83.90	156.13	-1,460.40	1,468.72	1,452.23	16.49	89.045		
2,450.00	2,450.00	2,422.06	2,422.03	8.57	8.23	-83.89	156.25	-1,460.48	1,468.84	1,452.03	16.80	87.416		
2,500.00	2,500.00	2,464.51	2,464.48	8.75	8.38	-83.88	156.53	-1,460.78	1,469.22	1,452.09	17.13	85.771		
2,550.00	2,550.00	2,509.32	2,509.29	8.93	8.54	-83.87	156.96	-1,461.27	1,469.81	1,452.34	17.47	84.155		
2,600.00	2,600.00	2,554.13	2,554.09	9.11	8.69	-83.85	157.51	-1,461.90	1,470.58	1,452.78	17.80	82.611		
2,650.00	2,650.00	2,594.76	2,594.71	9.29	8.84	-83.83	158.12	-1,462.66	1,471.59	1,453.47	18.12	81.208		
2,700.00	2,700.00	2,635.20	2,635.13	9.47	8.98	-83.81	158.84	-1,463.67	1,472.93	1,454.49	18.44	79.877		
2,750.00	2,750.00	2,680.47	2,680.37	9.65	9.14	-83.78	159.76	-1,465.04	1,474.54	1,455.76	18.78	78.530		
2,800.00	2,800.00	2,728.53	2,728.40	9.83	9.31	-83.75	160.73	-1,466.57	1,476.23	1,457.10	19.12	77.192		
2,850.00	2,850.00	2,781.32	2,781.15	10.00	9.50	-83.71	161.77	-1,468.26	1,477.93	1,458.44	19.49	75.830		
2,900.00	2,900.00	2,836.36	2,836.15	10.18	9.69	-83.68	162.83	-1,469.85	1,479.47	1,459.61	19.86	74.477		
2,950.00	2,950.00	2,887.13	2,886.89	10.36	9.87	-83.65	163.81	-1,471.22	1,480.92	1,460.69	20.22	73.228		
3,000.00	3,000.00	2,937.76	2,937.50	10.54	10.05	-83.61	164.83	-1,472.55	1,482.34	1,461.76	20.58	72.023		
3,050.00	3,050.00	2,977.49	2,977.20	10.72	10.19	-83.58	165.76	-1,473.73	1,483.94	1,463.04	20.90	71.011		
3,100.00	3,100.00	3,018.13	3,017.80	10.90	10.33	-83.54	166.91	-1,475.16	1,485.85	1,464.63	21.22	70.034		
3,150.00	3,150.00	3,064.21	3,063.81	11.08	10.50	-83.50	168.38	-1,477.00	1,488.01	1,466.45	21.56	69.029		
3,200.00	3,200.00	3,111.80	3,111.34	11.26	10.67	-83.44	169.95	-1,478.96	1,490.25	1,468.34	21.90	68.040		
3,250.00	3,250.00	3,158.33	3,157.80	11.44	10.83	-83.40	171.47	-1,480.97	1,492.58	1,470.34	22.24	67.099		
3,300.00	3,300.00	3,204.61	3,204.01	11.62	11.00	-83.35	172.88	-1,483.10	1,495.04	1,472.45	22.59	66.196		
3,350.00	3,350.00	3,252.54	3,251.87	11.80	11.17	-83.31	174.23	-1,485.41	1,497.59	1,474.66	22.93	65.304		
6,950.00	6,944.83	6,920.12	6,915.27	24.70	24.33	-40.65	250.45	-1,613.65	1,498.76	1,449.90	48.86	30.675		
7,000.00	6,994.74	6,970.17	6,965.32	24.88	24.51	-40.71	250.92	-1,613.90	1,496.73	1,447.52	49.22	30.411		
7,050.00	7,044.65	7,019.04	7,014.19	25.06	24.69	-40.77	251.45	-1,614.15	1,494.72	1,445.15	49.57	30.153		
7,100.00	7,094.55	7,067.41	7,062.55	25.24	24.86	-40.82	251.96	-1,614.45	1,492.76	1,442.83	49.92	29.901		
7,150.00	7,144.46	7,116.90	7,112.04	25.43	25.03	-40.88	252.44	-1,614.80	1,490.83	1,440.55	50.28	29.651		
7,200.00	7,194.36	7,166.74	7,161.87	25.61	25.21	-40.94	252.85	-1,615.16	1,488.92	1,438.28	50.64	29.403		
7,250.00	7,244.27	7,215.41	7,210.54	25.79	25.39	-41.01	253.22	-1,615.54	1,487.02	1,436.03	50.99	29.162		
7,300.00	7,294.18	7,263.92	7,259.04	25.97	25.56	-41.07	253.60	-1,615.96	1,485.17	1,433.83	51.34	28.926		
7,350.00	7,344.08	7,315.43	7,310.55	26.15	25.74	-41.13	254.01	-1,616.40	1,483.33	1,431.62	51.71	28.687		
7,400.00	7,393.99	7,367.14	7,362.26	26.33	25.93	-41.20	254.42	-1,616.79	1,481.43	1,429.36	52.07	28.450		
7,450.00	7,443.90	7,415.50	7,410.61	26.51	26.10	-41.26	254.81	-1,617.15	1,479.54	1,427.11	52.42	28.222		
7,500.00	7,493.80	7,464.56	7,459.67	26.69	26.28	-41.32	255.23	-1,617.56	1,477.68	1,424.90	52.78	27.997		
7,550.00	7,543.71	7,515.31	7,510.43	26.88	26.46	-41.39	255.57	-1,617.98	1,475.83	1,422.69	53.14	27.772		
7,600.00	7,593.62	7,565.96	7,561.07	27.06	26.64	-41.46	255.79	-1,618.39	1,473.95	1,420.44	53.50	27.550		
7,650.00	7,643.52	7,616.40	7,611.51	27.24	26.82	-41.53	256.01	-1,618.77	1,472.05	1,418.19	53.86	27.330		
7,700.00	7,693.43	7,666.95	7,662.06	27.42	27.00	-41.59	256.25	-1,619.13	1,470.20	1,415.98	54.22	27.115		
7,750.00	7,743.38	7,717.64	7,712.75	27.60	27.18	-41.64	256.44	-1,619.47	1,468.78	1,414.20	54.58	26.910		
7,800.00	7,793.35	7,766.91	7,762.01	27.78	27.35	-41.67	256.57	-1,619.80	1,467.83	1,412.89	54.94	26.719		
7,850.00	7,843.34	7,815.29	7,810.39	27.96	27.53	-41.69	256.62	-1,620.18	1,467.42	1,412.13	55.29	26.542		
7,862.57	7,855.90	7,827.45	7,822.56	28.00	27.57	-41.69	256.63	-1,620.28	1,467.40	1,412.03	55.37	26.499		
7,900.00	7,893.33	7,862.35	7,857.45	28.14	27.69	-41.70	256.61	-1,620.61	1,467.57	1,411.94	55.63	26.380		
7,950.00	7,943.33	7,908.78	7,903.88	28.31	27.86	-86.20	256.55	-1,621.15	1,468.15	1,412.17	55.98	26.228		
8,000.00	7,993.33	7,957.46	7,952.55	28.49	28.03	-86.20	256.46	-1,621.82	1,468.82	1,412.49	56.33	26.077		
8,050.00	8,043.33	8,007.36	8,002.44	28.67	28.20	-86.21	256.37	-1,622.51	1,469.51	1,412.83	56.68	25.926		
8,100.00	8,093.33	8,054.57	8,049.66	28.85	28.37	-86.21	256.29	-1,623.20	1,470.23	1,413.20	57.03	25.782		
8,150.00	8,143.33	8,100.97	8,096.05	29.03	28.53	-86.22	256.17	-1,623.99	1,471.07	1,413.70	57.37	25.643		
8,200.00	8,193.33	8,151.15	8,146.21	29.20	28.71	-86.23	256.02	-1,624.92	1,471.99	1,414.27	57.72	25.501		
8,250.00	8,243.33	8,202.65	8,197.71	29.38	28.89	-86.24	255.85	-1,625.83	1,472.86	1,414.78	58.08	25.358		
8,300.00	8,293.33	8,251.00	8,246.05	29.56	29.06	-86.25	255.65	-1,626.69	1,473.73	1,415.30	58.43	25.222		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
8,350.00	8,343.33	8,299.06	8,294.11	29.74	29.23	-86.26	255.37	-1,627.61	1,474.66	1,415.89	58.78	25.089		
8,400.00	8,393.33	8,350.46	8,345.49	29.91	29.41	-86.27	255.06	-1,628.60	1,475.61	1,416.47	59.14	24.952		
8,450.00	8,443.33	8,429.62	8,424.61	30.09	29.69	-86.33	253.71	-1,629.74	1,476.41	1,416.83	59.58	24.781		
8,500.00	8,493.33	8,500.00	8,551.89	30.27	29.92	-87.28	228.96	-1,626.36	1,473.79	1,413.91	59.88	24.612		
8,550.00	8,543.33	8,638.61	8,625.03	30.45	30.32	-88.38	200.73	-1,622.51	1,470.31	1,409.89	60.42	24.335		
8,600.00	8,593.33	8,679.86	8,660.94	30.63	30.44	-89.16	180.54	-1,620.59	1,467.05	1,406.29	60.76	24.147		
8,650.00	8,643.32	8,704.65	8,681.68	30.80	30.49	90.79	166.98	-1,619.69	1,464.55	1,403.49	61.06	23.986		
8,700.00	8,693.06	8,729.76	8,701.96	30.96	30.55	90.44	152.19	-1,619.11	1,463.08	1,401.75	61.33	23.855		
8,749.46	8,741.66	8,754.40	8,721.11	31.11	30.60	90.02	136.69	-1,618.86	1,462.61	1,401.03	61.58	23.753		
8,750.00	8,742.19	8,754.67	8,721.31	31.11	30.60	90.02	136.51	-1,618.86	1,462.61	1,401.03	61.58	23.752		
8,800.00	8,790.32	8,782.94	8,742.28	31.26	30.67	89.48	117.56	-1,618.96	1,463.07	1,401.26	61.81	23.671		
8,850.00	8,837.10	8,818.88	8,767.45	31.39	30.75	88.78	91.92	-1,619.30	1,464.17	1,402.13	62.04	23.600		
8,900.00	8,882.17	8,854.12	8,790.42	31.52	30.85	88.07	65.21	-1,619.81	1,465.78	1,403.53	62.25	23.545		
8,950.00	8,925.18	8,884.80	8,808.94	31.64	30.93	87.40	40.76	-1,620.40	1,467.89	1,405.46	62.44	23.510		
9,000.00	8,965.81	8,913.00	8,824.51	31.75	31.00	86.74	17.26	-1,621.18	1,470.60	1,408.00	62.59	23.494		
9,050.00	9,003.74	8,940.84	8,838.43	31.85	31.08	86.06	-6.82	-1,622.18	1,473.85	1,411.11	62.74	23.492		
9,100.00	9,038.70	8,960.00	8,847.16	31.94	31.13	85.45	-23.85	-1,623.00	1,477.65	1,414.80	62.84	23.514		
9,150.00	9,070.40	9,000.97	8,863.46	32.06	31.24	84.60	-61.37	-1,624.98	1,481.69	1,418.66	63.03	23.509		
9,200.00	9,098.62	9,031.92	8,873.63	32.18	31.33	83.87	-90.55	-1,626.62	1,486.04	1,422.86	63.17	23.524		
9,250.00	9,123.14	9,089.17	8,887.15	32.30	31.48	82.88	-146.07	-1,629.40	1,490.47	1,427.06	63.41	23.507		
9,300.00	9,143.76	9,176.84	8,897.66	32.43	31.74	81.59	-233.09	-1,630.19	1,493.32	1,429.59	63.73	23.431		
9,350.00	9,160.34	9,236.62	8,902.79	32.56	31.93	80.86	-292.63	-1,629.31	1,494.82	1,430.82	64.00	23.356		
9,400.00	9,172.75	9,268.75	8,907.15	32.70	32.11	80.46	-344.57	-1,628.37	1,495.57	1,431.29	64.27	23.269		
9,450.00	9,180.88	9,333.22	8,910.51	32.83	32.28	80.30	-388.91	-1,627.54	1,495.65	1,431.09	64.56	23.167		
9,500.00	9,184.69	9,377.09	8,912.97	32.97	32.46	80.30	-432.70	-1,626.75	1,495.21	1,430.35	64.86	23.051		
9,550.00	9,185.00	9,422.68	8,914.62	33.12	32.65	80.38	-478.26	-1,625.94	1,494.38	1,429.15	65.21	22.915		
9,600.00	9,185.00	9,468.81	8,915.34	33.28	32.85	80.40	-524.37	-1,625.09	1,493.60	1,428.03	65.57	22.779		
9,650.00	9,185.00	9,518.11	8,915.33	33.46	33.09	80.40	-573.66	-1,624.13	1,492.92	1,426.94	65.98	22.627		
9,700.00	9,185.00	9,568.55	8,915.09	33.64	33.33	80.39	-624.09	-1,623.10	1,492.23	1,425.83	66.40	22.474		
9,750.00	9,185.00	9,621.12	8,914.73	33.85	33.61	80.37	-678.64	-1,621.96	1,491.50	1,424.62	66.88	22.301		
9,800.00	9,185.00	9,673.99	8,914.36	34.05	33.90	80.35	-729.50	-1,620.71	1,490.87	1,423.30	67.37	22.127		
9,850.00	9,185.00	9,715.83	8,914.05	34.29	34.15	80.33	-771.33	-1,619.81	1,489.95	1,422.09	67.86	21.958		
9,900.00	9,185.00	9,758.63	8,913.69	34.53	34.40	80.31	-814.12	-1,619.09	1,489.47	1,421.12	68.35	21.793		
9,950.00	9,185.00	9,802.39	8,913.30	34.79	34.67	80.30	-857.88	-1,618.55	1,489.21	1,420.32	68.89	21.618		
9,987.05	9,185.00	9,834.91	8,912.98	34.99	34.88	80.28	-890.39	-1,618.26	1,489.15	1,419.86	69.29	21.491		
10,000.00	9,185.00	9,846.27	8,912.86	35.06	34.95	80.28	-901.76	-1,618.18	1,489.16	1,419.73	69.43	21.448		
10,050.00	9,185.00	9,885.30	8,912.39	35.35	35.22	80.26	-940.78	-1,618.05	1,489.38	1,419.39	69.99	21.281		
10,100.00	9,185.00	9,922.55	8,911.72	35.64	35.47	80.24	-978.03	-1,618.20	1,490.01	1,419.48	70.54	21.124		
10,150.00	9,185.00	9,960.81	8,910.79	35.95	35.73	80.21	-1,016.27	-1,618.65	1,491.07	1,419.95	71.12	20.966		
10,200.00	9,185.00	10,002.94	8,909.71	36.27	36.04	80.17	-1,058.37	-1,619.41	1,492.45	1,420.71	71.74	20.805		
10,250.00	9,185.00	10,045.05	8,908.67	36.61	36.34	80.14	-1,100.46	-1,620.39	1,494.09	1,421.71	72.38	20.643		
10,300.00	9,185.00	10,092.09	8,907.50	36.94	36.70	80.11	-1,147.47	-1,621.66	1,495.91	1,422.84	73.07	20.474		
10,350.00	9,185.00	10,139.24	8,906.28	37.30	37.06	80.07	-1,194.59	-1,623.01	1,497.82	1,424.05	73.78	20.302		
10,400.00	9,185.00	10,197.05	8,904.95	37.66	37.52	80.04	-1,252.36	-1,624.61	1,499.66	1,425.08	74.58	20.108		
10,750.00	9,185.00	10,650.02	8,906.28	40.50	41.54	80.09	-1,705.23	-1,621.99	1,499.40	1,418.16	81.24	18.457		
10,800.00	9,185.00	10,723.96	8,908.13	40.94	42.27	80.13	-1,779.07	-1,618.45	1,497.01	1,414.68	82.34	18.182		
10,850.00	9,185.00	10,769.27	8,909.40	41.39	42.72	80.17	-1,824.30	-1,616.16	1,494.56	1,411.31	83.25	17.952		
10,900.00	9,185.00	10,817.03	8,910.85	41.84	43.21	80.21	-1,871.99	-1,613.90	1,492.25	1,408.05	84.19	17.724		
10,950.00	9,185.00	10,867.24	8,912.67	42.31	43.72	80.27	-1,922.11	-1,611.58	1,489.94	1,404.76	85.18	17.492		
11,000.00	9,185.00	10,915.05	8,914.52	42.78	44.22	80.32	-1,969.83	-1,609.41	1,487.66	1,401.51	86.15	17.268		
11,050.00	9,185.00	10,961.68	8,915.75	43.26	44.71	80.36	-2,016.40	-1,607.30	1,485.48	1,398.35	87.13	17.049		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
11,100.00	9,185.00	11,006.47	8,916.38	43.74	45.19	80.37	-2,061.14	-1,605.29	1,483.43	1,395.34	88.09	16.839		
11,150.00	9,185.00	11,050.43	8,916.59	44.24	45.66	80.37	-2,105.06	-1,603.43	1,481.58	1,392.52	89.07	16.635		
11,200.00	9,185.00	11,100.45	8,916.41	44.74	46.20	80.35	-2,155.04	-1,601.38	1,479.87	1,389.78	90.09	16.427		
11,250.00	9,185.00	11,154.11	8,916.04	45.24	46.78	80.32	-2,208.65	-1,599.05	1,478.06	1,386.91	91.15	16.215		
11,300.00	9,185.00	11,198.46	8,915.61	45.75	47.27	80.30	-2,252.96	-1,597.11	1,476.27	1,384.11	92.15	16.020		
11,350.00	9,185.00	11,241.90	8,915.08	46.27	47.75	80.27	-2,296.35	-1,595.39	1,474.69	1,381.54	93.16	15.830		
11,400.00	9,185.00	11,282.29	8,914.54	46.79	48.20	80.24	-2,336.72	-1,593.99	1,473.38	1,379.24	94.14	15.651		
11,450.00	9,185.00	11,321.78	8,914.06	47.32	48.64	80.21	-2,376.19	-1,592.92	1,472.43	1,377.30	95.12	15.479		
11,500.00	9,185.00	11,364.53	8,913.59	47.85	49.12	80.19	-2,418.92	-1,592.06	1,471.80	1,375.66	96.14	15.309		
11,550.00	9,185.00	11,411.46	8,913.02	48.39	49.66	80.17	-2,465.84	-1,591.24	1,471.32	1,374.12	97.20	15.137		
11,600.00	9,185.00	11,465.71	8,912.32	48.94	50.28	80.14	-2,520.09	-1,590.32	1,470.88	1,372.54	98.34	14.957		
11,650.00	9,185.00	11,527.34	8,911.82	49.49	50.98	80.11	-2,581.70	-1,588.92	1,470.11	1,370.56	99.55	14.767		
11,700.00	9,185.00	11,582.16	8,911.90	50.04	51.62	80.10	-2,636.50	-1,587.46	1,469.06	1,368.34	100.72	14.586		
11,750.00	9,185.00	11,633.94	8,912.64	50.60	52.23	80.13	-2,688.25	-1,586.03	1,467.86	1,365.99	101.87	14.409		
11,800.00	9,185.00	11,678.88	8,913.58	51.16	52.76	80.16	-2,733.17	-1,584.93	1,466.75	1,363.78	102.97	14.245		
11,850.00	9,185.00	11,723.14	8,914.67	51.72	53.29	80.19	-2,777.41	-1,584.03	1,465.82	1,361.74	104.07	14.085		
11,900.00	9,185.00	11,765.26	8,915.51	52.29	53.79	80.22	-2,819.51	-1,583.35	1,465.12	1,359.97	105.16	13.933		
11,950.00	9,185.00	11,807.51	8,915.97	52.87	54.29	80.24	-2,861.75	-1,582.83	1,464.70	1,358.46	106.24	13.786		
12,000.00	9,185.00	11,853.35	8,916.25	53.44	54.84	80.25	-2,907.59	-1,582.41	1,464.48	1,357.11	107.37	13.640		
12,050.00	9,185.00	11,899.27	8,916.45	54.02	55.39	80.26	-2,953.51	-1,582.11	1,464.40	1,355.90	108.50	13.497		
12,100.00	9,185.00	11,960.52	8,916.84	54.61	56.13	80.27	-3,014.76	-1,581.58	1,464.20	1,354.41	109.79	13.336		
12,150.00	9,185.00	12,015.29	8,917.43	55.20	56.80	80.29	-3,069.51	-1,580.78	1,463.66	1,352.63	111.03	13.183		
12,200.00	9,185.00	12,062.74	8,917.77	55.79	57.38	80.30	-3,116.96	-1,580.08	1,463.15	1,350.95	112.19	13.041		
12,250.00	9,185.00	12,112.26	8,917.90	56.38	57.98	80.30	-3,166.47	-1,579.38	1,462.70	1,349.31	113.39	12.900		
12,300.00	9,185.00	12,164.14	8,918.09	56.98	58.62	80.31	-3,218.35	-1,578.60	1,462.21	1,347.61	114.61	12.758		
12,350.00	9,185.00	12,215.22	8,918.39	57.58	59.26	80.31	-3,269.42	-1,577.80	1,461.67	1,345.84	115.83	12.619		
12,400.00	9,185.00	12,265.91	8,918.82	58.18	59.89	80.33	-3,320.10	-1,577.01	1,461.10	1,344.05	117.05	12.482		
12,450.00	9,185.00	12,327.37	8,919.64	58.79	60.66	80.35	-3,381.55	-1,575.86	1,460.36	1,341.97	118.39	12.335		
12,500.00	9,185.00	12,383.22	8,920.77	59.40	61.36	80.39	-3,437.36	-1,574.44	1,459.20	1,339.52	119.68	12.192		
12,550.00	9,185.00	12,423.07	8,921.46	60.01	61.87	80.41	-3,477.20	-1,573.52	1,458.20	1,337.37	120.82	12.069		
12,600.00	9,185.00	12,464.00	8,921.88	60.63	62.38	80.43	-3,518.12	-1,572.82	1,457.55	1,335.57	121.97	11.950		
12,643.93	9,185.00	12,492.94	8,922.01	61.17	62.75	80.43	-3,547.06	-1,572.54	1,457.33	1,334.43	122.91	11.857 CC		
12,650.00	9,185.00	12,497.06	8,922.01	61.24	62.80	80.43	-3,551.18	-1,572.52	1,457.34	1,334.30	123.03	11.845		
12,700.00	9,185.00	12,531.03	8,921.93	61.86	63.23	80.43	-3,585.15	-1,572.55	1,457.68	1,333.58	124.10	11.746		
12,750.00	9,185.00	12,567.33	8,921.62	62.49	63.69	80.42	-3,621.45	-1,572.96	1,458.56	1,333.39	125.18	11.652		
12,800.00	9,185.00	12,612.68	8,921.17	63.11	64.26	80.41	-3,666.79	-1,573.70	1,459.73	1,333.37	126.36	11.552		
12,850.00	9,185.00	12,657.32	8,920.77	63.74	64.82	80.40	-3,711.42	-1,574.58	1,461.05	1,333.52	127.54	11.456		
12,900.00	9,185.00	12,697.44	8,920.29	64.36	65.33	80.39	-3,751.52	-1,575.57	1,462.65	1,333.99	128.66	11.369		
12,950.00	9,185.00	12,737.53	8,919.59	65.00	65.84	80.37	-3,791.59	-1,576.80	1,464.58	1,334.81	129.77	11.286		
13,000.00	9,185.00	12,784.53	8,918.63	65.63	66.43	80.35	-3,838.55	-1,578.45	1,466.76	1,335.78	130.98	11.198		
13,050.00	9,185.00	12,833.39	8,917.66	66.26	67.05	80.32	-3,887.37	-1,580.21	1,468.98	1,336.77	132.21	11.111		
13,100.00	9,185.00	12,890.45	8,916.61	66.90	67.78	80.30	-3,944.38	-1,582.18	1,471.12	1,337.56	133.56	11.014		
13,150.00	9,185.00	12,948.81	8,915.67	67.54	68.52	80.28	-4,002.71	-1,583.89	1,472.98	1,338.05	134.93	10.917		
13,200.00	9,185.00	12,990.36	8,914.98	68.18	69.06	80.26	-4,044.24	-1,585.17	1,474.91	1,338.82	136.08	10.838		
13,250.00	9,185.00	13,036.24	8,914.19	68.82	69.65	80.24	-4,090.08	-1,586.72	1,476.99	1,339.69	137.29	10.758		
13,300.00	9,185.00	13,087.83	8,913.32	69.46	70.31	80.22	-4,141.63	-1,588.49	1,479.10	1,340.52	138.58	10.673		
13,350.00	9,185.00	13,139.93	8,912.53	70.11	70.98	80.21	-4,193.70	-1,590.23	1,481.15	1,341.27	139.88	10.589		
13,400.00	9,185.00	13,193.12	8,912.25	70.76	71.67	80.21	-4,246.86	-1,591.99	1,483.10	1,341.90	141.20	10.503		
13,450.00	9,185.00	13,237.51	8,912.52	71.40	72.24	80.23	-4,291.22	-1,593.52	1,485.03	1,342.62	142.42	10.427		
13,500.00	9,185.00	13,274.68	8,913.00	72.05	72.72	80.26	-4,328.35	-1,595.13	1,487.34	1,343.81	143.52	10.363		
13,550.00	9,185.00	13,312.23	8,913.69	72.71	73.21	80.30	-4,365.85	-1,597.12	1,490.07	1,345.43	144.64	10.302		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,600.00	9,185.00	13,368.80	8,914.75	73.36	73.94	80.36	-4,422.32	-1,600.22	1,492.89	1,346.85	146.04	10.223		
13,650.00	9,185.00	13,429.79	8,915.68	74.01	74.73	80.42	-4,483.23	-1,603.21	1,495.47	1,347.96	147.50	10.139		
13,700.00	9,185.00	13,498.60	8,917.10	74.67	75.63	80.49	-4,551.97	-1,605.89	1,497.50	1,348.42	149.08	10.045		
13,750.00	9,185.00	13,556.25	8,918.48	75.33	76.38	80.56	-4,609.58	-1,607.65	1,499.08	1,348.58	150.50	9.961		
13,950.00	9,185.00	13,832.79	8,924.97	77.97	80.08	80.81	-4,886.00	-1,607.57	1,499.21	1,342.52	156.69	9.568		
14,000.00	9,185.00	13,892.58	8,926.37	78.63	80.89	80.86	-4,945.76	-1,605.96	1,497.97	1,339.86	158.12	9.474		
14,050.00	9,185.00	13,955.62	8,927.39	79.30	81.74	80.88	-5,008.75	-1,603.68	1,496.34	1,336.77	159.56	9.378		
14,100.00	9,185.00	14,000.96	8,927.72	79.96	82.36	80.89	-5,054.05	-1,601.78	1,494.50	1,333.64	160.86	9.291		
14,150.00	9,185.00	14,041.55	8,927.72	80.63	82.91	80.88	-5,094.61	-1,600.29	1,492.96	1,330.84	162.12	9.209		
14,200.00	9,185.00	14,086.45	8,927.47	81.30	83.53	80.86	-5,139.49	-1,598.85	1,491.70	1,328.30	163.40	9.129		
14,250.00	9,185.00	14,136.17	8,927.34	81.97	84.20	80.85	-5,189.18	-1,597.34	1,490.49	1,325.76	164.74	9.048		
14,300.00	9,185.00	14,184.45	8,927.36	82.64	84.86	80.84	-5,237.44	-1,595.91	1,489.31	1,323.25	166.06	8.969		
14,350.00	9,185.00	14,231.69	8,927.13	83.31	85.51	80.83	-5,284.66	-1,594.55	1,488.21	1,320.84	167.37	8.892		
14,400.00	9,185.00	14,278.32	8,926.66	83.98	86.14	80.80	-5,331.27	-1,593.27	1,487.21	1,318.53	168.67	8.817		
14,450.00	9,185.00	14,324.53	8,926.18	84.65	86.77	80.78	-5,377.46	-1,592.11	1,486.33	1,316.35	169.98	8.744		
14,500.00	9,185.00	14,372.71	8,925.71	85.32	87.43	80.76	-5,425.62	-1,591.01	1,485.56	1,314.26	171.30	8.673		
14,550.00	9,185.00	14,422.45	8,925.43	86.00	88.11	80.74	-5,475.35	-1,589.93	1,484.81	1,312.18	172.63	8.601		
14,600.00	9,185.00	14,483.66	8,925.46	86.68	88.85	80.74	-5,536.55	-1,588.50	1,483.94	1,309.85	174.09	8.524		
14,650.00	9,185.00	14,550.56	8,926.12	87.35	89.87	80.75	-5,603.41	-1,586.32	1,482.53	1,306.95	175.59	8.443		
14,700.00	9,185.00	14,582.09	8,926.55	88.03	90.31	80.76	-5,634.92	-1,585.49	1,481.31	1,304.52	176.79	8.379		
14,750.00	9,185.00	14,620.98	8,927.18	88.71	90.84	80.78	-5,673.80	-1,584.67	1,480.43	1,302.39	178.04	8.315		
14,800.00	9,185.00	14,667.31	8,927.82	89.39	91.48	80.80	-5,720.12	-1,583.94	1,479.81	1,300.45	179.37	8.250		
14,850.00	9,185.00	14,715.00	8,928.02	90.07	92.14	80.81	-5,767.81	-1,583.19	1,479.28	1,298.58	180.70	8.188		
14,900.00	9,185.00	14,770.23	8,928.09	90.75	92.90	80.81	-5,823.02	-1,582.26	1,478.72	1,296.61	182.11	8.120		
14,950.00	9,185.00	14,826.52	8,928.56	91.43	93.67	80.82	-5,879.30	-1,581.13	1,477.94	1,294.41	183.53	8.053		
15,000.00	9,185.00	14,867.20	8,929.02	92.11	94.24	80.84	-5,919.97	-1,580.44	1,477.27	1,292.47	184.80	7.994		
15,050.00	9,185.00	14,910.72	8,929.60	92.79	94.84	80.86	-5,963.49	-1,579.88	1,476.82	1,290.71	186.10	7.935		
15,100.00	9,185.00	14,959.40	8,930.28	93.47	95.51	80.88	-6,012.16	-1,579.40	1,476.49	1,289.03	187.46	7.876		
15,150.00	9,185.00	15,008.18	8,930.96	94.16	96.18	80.91	-6,060.93	-1,578.95	1,476.21	1,287.39	188.82	7.818		
15,200.00	9,185.00	15,057.86	8,931.26	94.84	96.87	80.92	-6,110.60	-1,578.46	1,475.95	1,285.77	190.18	7.761		
15,250.00	9,185.00	15,106.32	8,930.94	95.53	97.54	80.90	-6,159.06	-1,577.90	1,475.71	1,284.19	191.52	7.705		
15,298.37	9,185.00	15,148.83	8,930.19	96.19	98.13	80.87	-6,201.57	-1,577.46	1,475.62	1,282.85	192.77	7.655		
15,300.00	9,185.00	15,150.27	8,930.15	96.21	98.15	80.87	-6,203.00	-1,577.44	1,475.62	1,282.81	192.81	7.653		
15,350.00	9,185.00	15,194.39	8,928.89	96.90	98.76	80.82	-6,247.10	-1,577.09	1,475.73	1,281.64	194.09	7.603		
15,400.00	9,185.00	15,241.03	8,927.39	97.59	99.40	80.76	-6,293.71	-1,576.83	1,475.99	1,280.60	195.39	7.554		
15,450.00	9,185.00	15,287.81	8,925.98	98.28	100.05	80.71	-6,340.48	-1,576.69	1,476.37	1,279.67	196.70	7.506		
15,500.00	9,185.00	15,338.46	8,924.54	98.96	100.75	80.66	-6,391.11	-1,576.61	1,476.79	1,278.73	198.06	7.456		
15,550.00	9,185.00	15,390.75	8,923.22	99.65	101.47	80.61	-6,443.38	-1,576.51	1,477.18	1,277.75	199.43	7.407		
15,600.00	9,185.00	15,450.41	8,922.03	100.34	102.30	80.56	-6,503.03	-1,576.18	1,477.35	1,276.45	200.90	7.354		
15,650.00	9,185.00	15,504.51	8,921.26	101.03	103.05	80.53	-6,557.12	-1,575.64	1,477.25	1,274.94	202.31	7.302		
15,700.00	9,185.00	15,554.97	8,920.66	101.72	103.75	80.51	-6,607.57	-1,575.11	1,477.11	1,273.43	203.68	7.252		
15,750.00	9,185.00	15,608.61	8,920.21	102.42	104.50	80.49	-6,661.21	-1,574.52	1,476.91	1,271.83	205.08	7.202		
15,800.00	9,185.00	15,663.25	8,920.12	103.11	105.26	80.48	-6,715.84	-1,573.81	1,476.56	1,270.06	206.50	7.150		
15,850.00	9,185.00	15,713.84	8,920.14	103.80	105.97	80.48	-6,766.42	-1,573.08	1,476.12	1,268.24	207.89	7.101		
15,900.00	9,185.00	15,767.10	8,920.01	104.49	106.71	80.47	-6,819.68	-1,572.25	1,475.66	1,266.36	209.29	7.051		
15,950.00	9,185.00	15,833.17	8,920.10	105.18	107.64	80.47	-6,885.74	-1,570.78	1,474.83	1,264.00	210.82	6.996		
16,000.00	9,185.00	15,894.44	8,920.40	105.88	108.50	80.47	-6,946.97	-1,568.85	1,473.51	1,261.21	212.30	6.941		
16,050.00	9,185.00	15,954.32	8,920.33	106.57	109.35	80.45	-7,006.81	-1,566.50	1,471.86	1,258.11	213.75	6.886		
16,100.00	9,185.00	16,015.56	8,920.35	107.27	110.21	80.44	-7,067.98	-1,563.65	1,469.84	1,254.64	215.21	6.830		
16,150.00	9,185.00	16,060.99	8,920.57	107.96	110.86	80.43	-7,113.35	-1,561.37	1,467.62	1,251.05	216.57	6.777		
16,200.00	9,185.00	16,097.30	8,920.76	108.66	111.37	80.43	-7,149.63	-1,559.86	1,465.80	1,247.94	217.86	6.728		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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+HDCM													Offset Well Error:	0.50 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
16,250.00	9,185.00	16,132.00	8,920.84	109.35	111.86	80.43	-7.184.31	-1,558.74	1,464.44	1,245.32	219.12	6.683		
16,300.00	9,185.00	16,169.99	8,921.14	110.05	112.40	80.44	-7,222.29	-1,557.86	1,463.55	1,243.16	220.40	6.640		
16,350.00	9,185.00	16,206.35	8,921.33	110.75	112.91	80.44	-7,258.65	-1,557.38	1,463.13	1,241.49	221.64	6.601		
16,368.52	9,185.00	16,218.82	8,921.40	111.00	113.10	80.44	-7,272.11	-1,557.29	1,463.09	1,240.99	222.10	6.588		
16,400.00	9,185.00	16,249.95	8,921.57	111.44	113.52	80.45	-7,302.24	-1,557.17	1,463.12	1,240.16	222.98	6.562		
16,450.00	9,185.00	16,302.04	8,921.99	112.14	114.25	80.47	-7,354.34	-1,556.94	1,463.11	1,238.74	224.38	6.521		
16,478.51	9,185.00	16,331.75	8,922.30	112.54	114.66	80.48	-7,384.04	-1,556.79	1,463.08	1,237.89	225.18	6.497		
16,500.00	9,185.00	16,348.01	8,922.41	112.84	114.89	80.48	-7,400.30	-1,556.74	1,463.10	1,237.38	225.72	6.482		
16,550.00	9,185.00	16,390.74	8,922.54	113.54	115.49	80.49	-7,443.03	-1,556.71	1,463.32	1,236.30	227.02	6.446		
16,600.00	9,185.00	16,439.66	8,922.42	114.24	116.17	80.49	-7,491.95	-1,556.83	1,463.74	1,235.35	228.39	6.409		
16,650.00	9,185.00	16,495.94	8,922.28	114.94	116.96	80.48	-7,548.23	-1,556.80	1,464.02	1,234.17	229.85	6.369		
16,700.00	9,185.00	16,545.29	8,922.11	115.64	117.66	80.48	-7,597.57	-1,556.65	1,464.17	1,232.94	231.23	6.332		
16,750.00	9,185.00	16,592.73	8,921.71	116.34	118.32	80.46	-7,645.02	-1,556.54	1,464.40	1,231.82	232.58	6.296		
16,800.00	9,185.00	16,650.71	8,920.94	117.04	119.14	80.43	-7,702.99	-1,556.28	1,464.58	1,230.53	234.05	6.258		
16,850.00	9,185.00	16,711.24	8,919.93	117.74	119.99	80.39	-7,763.51	-1,555.55	1,464.40	1,228.86	235.54	6.217		
16,853.30	9,185.00	16,715.24	8,919.86	117.78	120.04	80.39	-7,767.50	-1,555.49	1,464.38	1,228.74	235.64	6.215		
16,900.00	9,185.00	16,743.38	8,919.63	118.44	120.44	80.38	-7,795.65	-1,555.41	1,464.47	1,227.76	236.72	6.187		
16,950.00	9,185.00	16,781.23	8,919.52	119.14	120.97	80.38	-7,833.50	-1,555.54	1,464.93	1,226.99	237.95	6.157		
17,000.00	9,185.00	16,840.10	8,919.95	119.84	121.80	80.40	-7,892.36	-1,555.98	1,465.53	1,226.07	239.46	6.120		
17,050.00	9,185.00	16,896.39	8,920.95	120.54	122.59	80.44	-7,948.64	-1,556.02	1,465.69	1,224.74	240.95	6.083		
17,100.00	9,185.00	16,934.32	8,921.63	121.24	123.12	80.47	-7,986.57	-1,556.20	1,466.05	1,223.85	242.20	6.053		
17,150.00	9,185.00	16,972.25	8,922.18	121.95	123.65	80.50	-8,024.49	-1,556.67	1,466.82	1,223.38	243.44	6.025		
17,200.00	9,185.00	17,018.78	8,922.71	122.65	124.31	80.52	-8,071.01	-1,557.49	1,467.88	1,223.09	244.79	5.997		
17,250.00	9,185.00	17,066.85	8,923.12	123.35	124.98	80.55	-8,119.06	-1,558.39	1,469.00	1,222.84	246.16	5.968		
17,300.00	9,185.00	17,119.50	8,923.65	124.06	125.71	80.58	-8,171.70	-1,559.38	1,470.13	1,222.53	247.60	5.937		
17,350.00	9,185.00	17,172.81	8,924.60	124.76	126.46	80.62	-8,225.00	-1,560.33	1,471.14	1,222.08	249.06	5.907		
17,400.00	9,185.00	17,218.77	8,925.01	125.46	127.11	80.64	-8,270.95	-1,561.11	1,472.18	1,221.77	250.40	5.879		
17,450.00	9,185.00	17,266.36	8,924.55	126.17	127.77	80.63	-8,318.54	-1,561.87	1,473.32	1,221.57	251.75	5.852		
17,500.00	9,185.00	17,322.68	8,923.60	126.87	128.56	80.60	-8,374.84	-1,562.62	1,474.39	1,221.17	253.23	5.822		
17,550.00	9,185.00	17,383.66	8,922.66	127.58	129.42	80.57	-8,435.81	-1,563.12	1,475.21	1,220.45	254.76	5.791		
17,600.00	9,185.00	17,450.92	8,921.83	128.28	130.37	80.54	-8,503.06	-1,563.00	1,475.51	1,219.15	256.38	5.758		
17,650.00	9,185.00	17,501.13	8,921.38	128.99	131.08	80.52	-8,553.27	-1,562.65	1,475.51	1,217.76	257.75	5.725		
17,700.00	9,185.00	17,554.77	8,921.07	129.69	131.84	80.51	-8,606.91	-1,562.27	1,475.49	1,216.30	259.19	5.693		
17,750.00	9,185.00	17,622.45	8,921.28	130.40	132.80	80.52	-8,674.58	-1,561.34	1,475.08	1,214.29	260.77	5.656		
17,800.00	9,185.00	17,664.93	8,921.74	131.11	133.41	80.53	-8,717.05	-1,560.57	1,474.37	1,212.26	262.11	5.625		
17,848.25	9,185.00	17,699.27	8,921.99	131.79	133.89	80.54	-8,751.39	-1,560.25	1,474.14	1,210.83	263.32	5.598		
17,850.00	9,185.00	17,700.52	8,921.99	131.81	133.91	80.54	-8,752.64	-1,560.24	1,474.14	1,210.78	263.36	5.597		
17,900.00	9,185.00	17,738.30	8,922.12	132.52	134.45	80.55	-8,790.42	-1,560.26	1,474.40	1,209.79	264.61	5.572		
17,950.00	9,185.00	17,789.21	8,922.51	133.23	135.17	80.56	-8,841.33	-1,560.46	1,474.82	1,208.78	266.03	5.544		
18,000.00	9,185.00	17,840.05	8,923.35	133.93	135.88	80.60	-8,892.16	-1,560.71	1,475.20	1,207.74	267.46	5.516		
18,050.00	9,185.00	17,890.74	8,923.98	134.64	136.60	80.63	-8,942.85	-1,560.90	1,475.56	1,206.68	268.89	5.488		
18,100.00	9,185.00	17,936.25	8,924.18	135.35	137.25	80.64	-8,988.35	-1,561.02	1,475.94	1,205.70	270.24	5.462		
18,150.00	9,185.00	17,975.20	8,924.08	136.06	137.80	80.64	-9,027.30	-1,561.33	1,476.63	1,205.15	271.48	5.439		
18,200.00	9,185.00	18,014.79	8,923.72	136.76	138.35	80.63	-9,066.89	-1,561.90	1,477.69	1,204.97	272.72	5.418		
18,250.00	9,185.00	18,076.11	8,923.15	137.47	139.22	80.61	-9,128.20	-1,562.75	1,478.73	1,204.44	274.28	5.391		
18,300.00	9,185.00	18,134.14	8,922.95	138.18	140.04	80.61	-9,186.23	-1,563.19	1,479.41	1,203.61	275.79	5.364		
18,350.00	9,185.00	18,188.82	8,923.15	138.89	140.81	80.62	-9,240.90	-1,563.47	1,479.90	1,202.63	277.27	5.337		
18,400.00	9,185.00	18,242.69	8,923.56	139.60	141.58	80.64	-9,294.77	-1,563.61	1,480.25	1,201.52	278.73	5.311		
18,450.00	9,185.00	18,296.33	8,923.83	140.31	142.34	80.65	-9,348.41	-1,563.59	1,480.47	1,200.28	280.19	5.284		
18,500.00	9,185.00	18,345.12	8,923.88	141.02	143.03	80.66	-9,397.20	-1,563.51	1,480.65	1,199.07	281.58	5.258		
18,550.00	9,185.00	18,394.31	8,923.71	141.73	143.73	80.65	-9,446.39	-1,563.42	1,480.87	1,197.90	282.97	5.233		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S	+E/-W	(ft)	(ft)	(ft)			
							(ft)	(ft)						
18,600.00	9,185.00	18,445.92	8,923.65	142.44	144.46	80.65	-9,498.00	-1,563.33	1,481.07	1,196.67	284.40	5.208		
18,650.00	9,185.00	18,502.19	8,923.99	143.15	145.26	80.66	-9,554.27	-1,563.20	1,481.20	1,195.31	285.89	5.181		
18,700.00	9,185.00	18,570.30	8,925.21	143.86	146.23	80.71	-9,622.36	-1,562.55	1,480.85	1,193.34	287.51	5.151		
18,750.00	9,185.00	18,608.77	8,926.01	144.57	146.78	80.74	-9,660.82	-1,562.06	1,480.35	1,191.53	288.82	5.125		
18,775.95	9,185.00	18,627.07	8,926.20	144.93	147.04	80.74	-9,679.12	-1,561.94	1,480.28	1,190.81	289.47	5.114		
18,800.00	9,185.00	18,644.02	8,926.26	145.28	147.28	80.75	-9,696.07	-1,561.89	1,480.34	1,190.28	290.07	5.103		
18,850.00	9,185.00	18,685.73	8,925.96	145.99	147.88	80.74	-9,737.78	-1,562.01	1,480.80	1,189.44	291.36	5.082		
18,900.00	9,185.00	18,748.52	8,925.14	146.70	148.77	80.71	-9,800.57	-1,561.91	1,481.11	1,188.19	292.92	5.056		
18,950.00	9,185.00	18,803.63	8,924.25	147.41	149.56	80.67	-9,855.66	-1,561.42	1,481.08	1,186.71	294.37	5.031		
18,972.90	9,185.00	18,827.61	8,923.83	147.73	149.90	80.66	-9,879.64	-1,561.17	1,481.03	1,186.01	295.02	5.020 ES, SF		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1		Offset Site Error: 5.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance									
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	Offset Wellbore Centre +E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)					
0.00	0.00	8.30	-8.30	0.50	0.50	-90.26	-4.42	-957.33	957.34							
50.00	50.00	41.70	41.70	0.50	0.50	-90.26	-4.42	-957.33	957.34	956.34	1.01	952.450				
100.00	100.00	108.30	91.70	0.52	0.53	-90.26	-4.42	-957.33	957.34	956.30	1.04	916.976				
150.00	150.00	141.70	141.70	0.59	0.57	-90.26	-4.42	-957.33	957.34	956.18	1.17	821.595				
200.00	200.00	208.30	191.70	0.70	0.72	-90.26	-4.42	-957.33	957.34	955.92	1.43	671.628				
250.00	250.00	241.70	241.70	0.84	0.81	-90.26	-4.42	-957.33	957.34	955.69	1.65	579.593				
300.00	300.00	308.30	291.70	0.99	1.01	-90.26	-4.42	-957.33	957.34	955.34	2.00	478.566				
350.00	350.00	341.70	341.70	1.15	1.12	-90.26	-4.42	-957.33	957.34	955.08	2.26	422.801				
400.00	400.00	408.30	391.70	1.31	1.34	-90.26	-4.42	-957.33	957.34	954.70	2.65	361.845				
450.00	450.00	441.70	441.70	1.48	1.45	-90.26	-4.42	-957.33	957.34	954.42	2.92	327.331				
500.00	500.00	508.30	491.70	1.65	1.67	-90.26	-4.42	-957.33	957.34	954.02	3.32	288.308				
550.00	550.00	541.70	541.70	1.82	1.79	-90.26	-4.42	-957.33	957.34	953.74	3.61	265.430				
600.00	600.00	608.30	591.70	1.99	2.02	-90.26	-4.42	-957.33	957.34	953.33	4.01	238.738				
650.00	650.00	641.70	641.70	2.16	2.14	-90.26	-4.42	-957.33	957.34	953.04	4.30	222.628				
700.00	700.00	708.30	691.70	2.34	2.37	-90.26	-4.42	-957.33	957.34	952.63	4.71	203.356				
750.00	750.00	741.70	741.70	2.51	2.49	-90.26	-4.42	-957.33	957.34	952.34	5.00	191.459				
800.00	800.00	808.30	791.70	2.69	2.72	-90.26	-4.42	-957.33	957.34	951.93	5.41	176.944				
850.00	850.00	841.70	841.70	2.87	2.84	-90.26	-4.42	-957.33	957.34	951.64	5.70	167.822				
900.00	900.00	908.30	891.70	3.04	3.07	-90.26	-4.42	-957.33	957.34	951.23	6.12	156.519				
950.00	950.00	941.70	941.70	3.22	3.19	-90.26	-4.42	-957.33	957.34	950.93	6.41	149.314				
1,000.00	1,000.00	1,008.30	991.70	3.40	3.43	-90.26	-4.42	-957.33	957.34	950.52	6.82	140.275				
1,050.00	1,050.00	1,041.70	1,041.70	3.58	3.55	-90.26	-4.42	-957.33	957.34	950.22	7.12	134.446				
1,100.00	1,100.00	1,108.30	1,091.70	3.75	3.78	-90.26	-4.42	-957.33	957.34	949.81	7.53	127.058				
1,150.00	1,150.00	1,141.70	1,141.70	3.93	3.90	-90.26	-4.42	-957.33	957.34	949.51	7.83	122.249				
1,200.00	1,200.00	1,208.30	1,191.70	4.11	4.14	-90.26	-4.42	-957.33	957.34	949.10	8.25	116.100				
1,250.00	1,250.00	1,241.70	1,241.70	4.29	4.26	-90.26	-4.42	-957.33	957.34	948.80	8.54	112.066				
1,300.00	1,300.00	1,308.30	1,291.70	4.46	4.49	-90.26	-4.42	-957.33	957.34	948.38	8.96	106.871				
1,350.00	1,350.00	1,341.70	1,341.70	4.64	4.61	-90.26	-4.42	-957.33	957.34	948.09	9.26	103.440				
1,400.00	1,400.00	1,408.30	1,391.70	4.82	4.85	-90.26	-4.42	-957.33	957.34	947.67	9.67	98.994				
1,450.00	1,450.00	1,441.70	1,441.70	5.00	4.97	-90.26	-4.42	-957.33	957.34	947.37	9.97	96.040				
1,500.00	1,500.00	1,508.30	1,491.70	5.18	5.21	-90.26	-4.42	-957.33	957.34	946.96	10.38	92.193				
1,550.00	1,550.00	1,541.70	1,541.70	5.36	5.33	-90.26	-4.42	-957.33	957.34	946.66	10.68	89.625				
1,600.00	1,600.00	1,608.30	1,591.70	5.53	5.56	-90.26	-4.42	-957.33	957.34	946.24	11.10	86.263				
1,650.00	1,650.00	1,641.70	1,641.70	5.71	5.68	-90.26	-4.42	-957.33	957.34	945.95	11.40	84.009				
1,700.00	1,700.00	1,708.30	1,691.70	5.89	5.92	-90.26	-4.42	-957.33	957.34	945.53	11.81	81.048				
1,750.00	1,750.00	1,741.70	1,741.70	6.07	6.04	-90.26	-4.42	-957.33	957.34	945.23	12.11	79.054				
1,800.00	1,800.00	1,808.30	1,791.70	6.25	6.28	-90.26	-4.42	-957.33	957.34	944.82	12.53	76.425				
1,850.00	1,850.00	1,841.70	1,841.70	6.43	6.40	-90.26	-4.42	-957.33	957.34	944.52	12.82	74.649				
1,900.00	1,900.00	1,908.30	1,891.70	6.61	6.64	-90.26	-4.42	-957.33	957.34	944.10	13.24	72.299				
1,950.00	1,950.00	1,941.70	1,941.70	6.78	6.75	-90.26	-4.42	-957.33	957.34	943.80	13.54	70.707				
2,000.00	2,000.00	2,008.30	1,991.70	6.96	6.99	-90.26	-4.42	-957.33	957.34	943.39	13.96	68.595				
2,050.00	2,050.00	2,041.70	2,041.70	7.14	7.11	-90.26	-4.42	-957.33	957.34	943.09	14.25	67.160				
2,100.00	2,100.00	2,108.30	2,091.70	7.32	7.35	-90.26	-4.42	-957.33	957.34	942.67	14.67	65.251				
2,150.00	2,150.00	2,141.70	2,141.70	7.50	7.47	-90.26	-4.42	-957.33	957.34	942.37	14.97	63.951				
2,200.00	2,200.00	2,208.30	2,191.70	7.68	7.71	-90.26	-4.42	-957.33	957.34	941.96	15.39	62.218				
2,250.00	2,250.00	2,241.70	2,241.70	7.86	7.83	-90.26	-4.42	-957.33	957.34	941.66	15.69	61.034				
2,300.00	2,300.00	2,308.30	2,291.70	8.04	8.07	-90.26	-4.42	-957.33	957.34	941.24	16.10	59.453				
2,350.00	2,350.00	2,341.70	2,341.70	8.22	8.19	-90.26	-4.42	-957.33	957.34	940.94	16.40	58.372				
2,400.00	2,400.00	2,408.30	2,391.70	8.39	8.42	-90.26	-4.42	-957.33	957.34	940.52	16.82	56.923				
2,450.00	2,450.00	2,441.70	2,441.70	8.57	8.54	-90.26	-4.42	-957.33	957.34	940.23	17.12	55.931				
2,500.00	2,500.00	2,491.70	2,491.70	8.75	8.72	-90.26	-4.42	-957.33	957.34	939.87	17.47	54.785				

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,550.00	2,550.00	2,548.44	2,548.44	8.93	8.92	-90.26	-4.31	-957.16	957.20	939.34	17.85	53.612		
2,600.00	2,600.00	2,606.52	2,606.51	9.11	9.13	-90.23	-3.87	-956.51	956.63	938.39	18.24	52.456		
2,650.00	2,650.00	2,664.57	2,664.55	9.29	9.33	-90.19	-3.10	-955.37	955.65	937.03	18.62	51.334		
2,700.00	2,700.00	2,722.59	2,722.54	9.47	9.54	-90.12	-2.01	-953.74	954.24	935.25	18.99	50.237		
2,750.00	2,750.00	2,780.57	2,780.46	9.65	9.74	-90.04	-0.60	-951.63	952.42	933.04	19.37	49.165		
2,800.00	2,800.00	2,835.39	2,835.21	9.83	9.93	-89.94	1.03	-949.21	950.20	930.46	19.74	48.138		
2,850.00	2,850.00	2,885.32	2,885.05	10.00	10.11	-89.85	2.56	-946.92	947.92	927.82	20.09	47.176		
2,900.00	2,900.00	2,935.24	2,934.90	10.18	10.29	-89.75	4.09	-944.63	945.63	925.18	20.45	46.247		
2,950.00	2,950.00	2,985.17	2,984.75	10.36	10.46	-89.66	5.62	-942.35	943.35	922.55	20.80	45.349		
3,000.00	3,000.00	3,035.09	3,034.60	10.54	10.64	-89.56	7.15	-940.06	941.07	919.91	21.16	44.481		
3,050.00	3,050.00	3,085.01	3,084.45	10.72	10.82	-89.47	8.69	-937.78	938.79	917.28	21.51	43.642		
3,100.00	3,100.00	3,134.94	3,134.29	10.90	10.99	-89.37	10.22	-935.49	936.51	914.65	21.87	42.830		
3,150.00	3,150.00	3,184.86	3,184.14	11.08	11.17	-89.28	11.75	-933.20	934.24	912.02	22.22	42.043		
3,200.00	3,200.00	3,234.79	3,233.99	11.26	11.35	-89.18	13.28	-930.92	931.97	909.39	22.58	41.281		
3,250.00	3,250.00	3,284.71	3,283.84	11.44	11.52	-89.09	14.82	-928.63	929.70	906.77	22.93	40.542		
3,300.00	3,300.00	3,334.63	3,333.69	11.62	11.70	-88.99	16.35	-926.34	927.44	904.15	23.29	39.826		
3,350.00	3,350.00	3,384.56	3,383.53	11.80	11.88	-88.89	17.88	-924.06	925.18	901.53	23.64	39.132		
3,400.00	3,400.00	3,434.48	3,433.38	11.97	12.06	-88.79	19.41	-921.77	922.92	898.92	24.00	38.457		
3,450.00	3,450.00	3,484.41	3,483.23	12.15	12.24	-88.70	20.95	-919.48	920.66	896.31	24.35	37.803		
3,500.00	3,500.00	3,534.33	3,533.08	12.33	12.41	-88.60	22.48	-917.20	918.41	893.70	24.71	37.167		
3,550.00	3,550.00	3,584.25	3,582.93	12.51	12.59	-88.50	24.01	-914.91	916.15	891.09	25.07	36.549		
3,600.00	3,600.00	3,634.18	3,632.77	12.69	12.77	-88.40	25.54	-912.63	913.91	888.48	25.42	35.949		
3,650.00	3,650.00	3,684.10	3,682.62	12.87	12.95	-88.30	27.08	-910.34	911.66	885.88	25.78	35.365		
3,700.00	3,700.00	3,734.03	3,732.47	13.05	13.13	-88.20	28.61	-908.05	909.42	883.28	26.14	34.797		
3,750.00	3,750.00	3,783.95	3,782.32	13.23	13.31	-88.09	30.14	-905.77	907.18	880.69	26.49	34.244		
3,800.00	3,800.00	3,833.87	3,832.17	13.41	13.49	-87.99	31.67	-903.48	904.94	878.09	26.85	33.708		
3,850.00	3,850.00	3,883.80	3,882.01	13.59	13.66	-87.89	33.20	-901.19	902.71	875.50	27.20	33.182		
3,900.00	3,900.00	3,933.72	3,931.86	13.77	13.84	-87.79	34.74	-898.91	900.47	872.91	27.56	32.672		
3,950.00	3,950.00	3,983.65	3,981.71	13.94	14.02	-87.68	36.27	-896.62	898.25	870.33	27.92	32.174		
4,000.00	4,000.00	4,033.57	4,031.56	14.12	14.20	-87.58	37.80	-894.33	896.02	867.74	28.28	31.689		
4,050.00	4,050.00	4,083.49	4,081.40	14.30	14.38	-43.02	39.33	-892.05	893.60	864.97	28.63	31.211		
4,100.00	4,099.99	4,133.40	4,131.24	14.48	14.56	-42.97	40.87	-889.76	890.78	861.79	28.99	30.731		
4,150.00	4,149.97	4,183.29	4,181.05	14.66	14.74	-42.95	42.40	-887.48	887.56	858.22	29.34	30.251		
4,200.00	4,199.94	4,233.16	4,230.84	14.83	14.92	-42.96	43.93	-885.19	883.95	854.26	29.69	29.768		
4,250.00	4,249.88	4,283.00	4,280.61	15.01	15.10	-43.00	45.46	-882.91	879.94	849.89	30.05	29.284		
4,300.00	4,299.79	4,332.80	4,330.34	15.19	15.28	-43.05	46.99	-880.63	875.56	845.16	30.40	28.800		
4,350.00	4,349.70	4,382.60	4,380.06	15.36	15.46	-43.08	48.51	-878.35	871.11	840.35	30.76	28.324		
4,400.00	4,399.60	4,432.40	4,429.78	15.54	15.64	-43.11	50.04	-876.07	866.66	835.55	31.11	27.859		
4,450.00	4,449.51	4,482.20	4,479.51	15.72	15.82	-43.14	51.57	-873.79	862.21	830.74	31.46	27.404		
4,500.00	4,499.41	4,532.00	4,529.23	15.90	15.99	-43.17	53.10	-871.51	857.76	825.94	31.82	26.959		
4,550.00	4,549.32	4,581.80	4,578.95	16.07	16.17	-43.20	54.63	-869.23	853.30	821.13	32.17	26.524		
4,600.00	4,599.23	4,631.60	4,628.68	16.25	16.35	-43.23	56.16	-866.95	848.85	816.33	32.52	26.099		
4,650.00	4,649.13	4,681.40	4,678.40	16.43	16.53	-43.26	57.69	-864.67	844.40	811.53	32.88	25.682		
4,700.00	4,699.04	4,731.20	4,728.13	16.61	16.71	-43.29	59.21	-862.39	839.95	806.72	33.23	25.274		
4,750.00	4,748.95	4,781.00	4,777.85	16.79	16.89	-43.33	60.74	-860.10	835.51	801.92	33.59	24.875		
4,800.00	4,798.85	4,830.80	4,827.57	16.96	17.07	-43.36	62.27	-857.82	831.06	797.11	33.94	24.484		
4,850.00	4,848.76	4,880.60	4,877.30	17.14	17.25	-43.39	63.80	-855.54	826.61	792.31	34.30	24.100		
4,900.00	4,898.67	4,930.40	4,927.02	17.32	17.43	-43.42	65.33	-853.26	822.16	787.50	34.65	23.725		
4,950.00	4,948.57	4,980.20	4,976.74	17.50	17.61	-43.46	66.86	-850.98	817.71	782.70	35.01	23.357		
5,000.00	4,998.48	5,029.99	5,026.47	17.68	17.79	-43.49	68.39	-848.70	813.26	777.90	35.36	22.997		
5,050.00	5,048.39	5,079.79	5,076.19	17.86	17.97	-43.53	69.91	-846.42	808.81	773.09	35.72	22.644		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1														Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,100.00	5,098.29	5,129.59	5,125.91	18.04	18.15	-43.56	71.44	-844.14	804.37	768.29	36.07	22.297			
5,150.00	5,148.20	5,179.39	5,175.64	18.22	18.33	-43.60	72.97	-841.86	799.92	763.49	36.43	21.957			
5,200.00	5,198.11	5,229.19	5,225.36	18.39	18.51	-43.63	74.50	-839.58	795.47	758.68	36.79	21.624			
5,250.00	5,248.01	5,278.99	5,275.09	18.57	18.69	-43.67	76.03	-837.30	791.02	753.88	37.14	21.297			
5,300.00	5,297.92	5,328.79	5,324.81	18.75	18.87	-43.70	77.56	-835.02	786.58	749.08	37.50	20.976			
5,350.00	5,347.82	5,378.59	5,374.53	18.93	19.05	-43.74	79.09	-832.74	782.13	744.28	37.85	20.662			
5,400.00	5,397.73	5,428.39	5,424.26	19.11	19.23	-43.78	80.61	-830.46	777.69	739.48	38.21	20.353			
5,450.00	5,447.64	5,478.19	5,473.98	19.29	19.41	-43.82	82.14	-828.18	773.24	734.67	38.57	20.050			
5,500.00	5,497.54	5,527.99	5,523.70	19.47	19.59	-43.85	83.67	-825.89	768.80	729.87	38.92	19.752			
5,550.00	5,547.45	5,577.79	5,573.43	19.65	19.77	-43.89	85.20	-823.61	764.35	725.07	39.28	19.459			
5,600.00	5,597.36	5,627.59	5,623.15	19.83	19.95	-43.93	86.73	-821.33	759.91	720.27	39.64	19.172			
5,650.00	5,647.26	5,677.39	5,672.87	20.01	20.13	-43.97	88.26	-819.05	755.46	715.47	39.99	18.890			
5,700.00	5,697.17	5,727.19	5,722.60	20.19	20.31	-44.01	89.78	-816.77	751.02	710.67	40.35	18.613			
5,750.00	5,747.08	5,776.99	5,772.32	20.37	20.49	-44.05	91.31	-814.49	746.58	705.87	40.71	18.341			
5,800.00	5,796.98	5,826.79	5,822.05	20.55	20.67	-44.09	92.84	-812.21	742.13	701.07	41.06	18.073			
5,850.00	5,846.89	5,876.58	5,871.77	20.73	20.85	-44.13	94.37	-809.93	737.69	696.27	41.42	17.810			
5,900.00	5,896.80	5,926.38	5,921.49	20.91	21.03	-44.17	95.90	-807.65	733.25	691.47	41.78	17.552			
5,950.00	5,946.70	5,976.18	5,971.22	21.09	21.22	-44.22	97.43	-805.37	728.81	686.67	42.13	17.298			
6,000.00	5,996.61	6,025.98	6,020.94	21.27	21.40	-44.26	98.96	-803.09	724.36	681.87	42.49	17.048			
6,050.00	6,046.52	6,075.78	6,070.66	21.45	21.58	-44.30	100.48	-800.81	719.92	677.08	42.85	16.802			
6,100.00	6,096.42	6,125.58	6,120.39	21.63	21.76	-44.35	102.01	-798.53	715.48	672.28	43.20	16.560			
6,150.00	6,146.33	6,175.38	6,170.11	21.81	21.94	-44.39	103.54	-796.25	711.04	667.48	43.56	16.322			
6,200.00	6,196.23	6,225.18	6,219.84	21.99	22.12	-44.44	105.07	-793.97	706.60	662.68	43.92	16.089			
6,250.00	6,246.14	6,274.98	6,269.56	22.17	22.30	-44.48	106.60	-791.69	702.16	657.89	44.28	15.858			
6,300.00	6,296.05	6,324.78	6,319.28	22.35	22.48	-44.53	108.13	-789.40	697.72	653.09	44.63	15.632			
6,350.00	6,345.95	6,374.58	6,369.01	22.53	22.66	-44.58	109.66	-787.12	693.29	648.29	44.99	15.409			
6,400.00	6,395.86	6,424.38	6,418.73	22.71	22.84	-44.62	111.18	-784.84	688.85	643.50	45.35	15.190			
6,450.00	6,445.77	6,474.18	6,468.45	22.89	23.02	-44.67	112.71	-782.56	684.41	638.70	45.71	14.974			
6,500.00	6,495.67	6,523.98	6,518.18	23.07	23.20	-44.72	114.24	-780.28	679.97	633.91	46.06	14.761			
6,550.00	6,545.58	6,573.78	6,567.90	23.25	23.38	-44.77	115.77	-778.00	675.54	629.11	46.42	14.552			
6,600.00	6,595.49	6,623.58	6,617.62	23.43	23.56	-44.82	117.30	-775.72	671.10	624.32	46.78	14.346			
6,650.00	6,645.39	6,673.37	6,667.35	23.62	23.74	-44.87	118.83	-773.44	666.67	619.53	47.14	14.143			
6,700.00	6,695.30	6,723.17	6,717.07	23.80	23.92	-44.92	120.35	-771.16	662.23	614.73	47.50	13.943			
6,750.00	6,745.21	6,772.97	6,766.80	23.98	24.11	-44.97	121.88	-768.88	657.80	609.94	47.85	13.746			
6,800.00	6,795.11	6,822.77	6,816.52	24.16	24.29	-45.02	123.41	-766.60	653.36	605.15	48.21	13.552			
6,850.00	6,845.02	6,872.57	6,866.24	24.34	24.47	-45.08	124.94	-764.32	648.93	600.36	48.57	13.361			
6,900.00	6,894.93	6,922.37	6,915.97	24.52	24.65	-45.13	126.47	-762.04	644.50	595.57	48.93	13.172			
6,950.00	6,944.83	6,972.17	6,965.69	24.70	24.83	-45.19	128.00	-759.76	640.06	590.78	49.29	12.987			
7,000.00	6,994.74	7,021.97	7,015.41	24.88	25.01	-45.24	129.53	-757.48	635.63	585.99	49.64	12.804			
7,050.00	7,044.65	7,071.77	7,065.14	25.06	25.19	-45.30	131.05	-755.19	631.20	581.20	50.00	12.623			
7,100.00	7,094.55	7,121.57	7,114.86	25.24	25.37	-45.36	132.58	-752.91	626.77	576.41	50.36	12.445			
7,150.00	7,144.46	7,171.37	7,164.58	25.43	25.55	-45.41	134.11	-750.63	622.34	571.62	50.72	12.270			
7,200.00	7,194.36	7,221.17	7,214.31	25.61	25.73	-45.47	135.64	-748.35	617.91	566.83	51.08	12.097			
7,250.00	7,244.27	7,270.97	7,264.03	25.79	25.91	-45.53	137.17	-746.07	613.48	562.05	51.44	11.927			
7,300.00	7,294.18	7,320.77	7,313.76	25.97	26.10	-45.59	138.70	-743.79	609.06	557.26	51.80	11.759			
7,350.00	7,344.08	7,370.57	7,363.48	26.15	26.28	-45.65	140.23	-741.51	604.63	552.48	52.15	11.593			
7,400.00	7,393.99	7,420.37	7,413.20	26.33	26.46	-45.72	141.75	-739.23	600.20	547.69	52.51	11.430			
7,450.00	7,443.90	7,470.17	7,462.93	26.51	26.64	-45.78	143.28	-736.95	595.78	542.91	52.87	11.269			
7,500.00	7,493.80	7,519.96	7,512.65	26.69	26.82	-45.84	144.81	-734.67	591.35	538.12	53.23	11.110			
7,550.00	7,543.71	7,569.76	7,562.37	26.88	27.00	-45.91	146.34	-732.39	586.93	533.34	53.59	10.953			
7,600.00	7,593.62	7,619.56	7,612.10	27.06	27.18	-45.98	147.87	-730.11	582.50	528.56	53.95	10.798			

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1													Offset Site Error: 5.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft	
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
7,650.00	7,643.52	7,669.36	7,661.82	27.24	27.36	-46.04	149.40	-727.83	578.08	523.78	54.31	10.645		
7,700.00	7,693.43	7,719.17	7,711.55	27.42	27.54	-46.08	150.93	-725.55	573.73	519.06	54.66	10.495		
7,750.00	7,743.38	7,769.01	7,761.32	27.60	27.72	-46.06	152.46	-723.26	569.78	514.75	55.02	10.355		
7,800.00	7,793.35	7,816.49	7,808.73	27.78	27.90	-46.00	153.89	-721.13	566.32	510.94	55.38	10.226		
7,850.00	7,843.34	7,860.94	7,853.13	27.96	28.06	-45.93	154.98	-719.50	563.73	508.00	55.73	10.115		
7,900.00	7,893.33	7,905.43	7,897.60	28.14	28.22	-45.85	155.79	-718.29	562.08	506.01	56.08	10.023		
7,950.00	7,943.33	7,949.96	7,942.12	28.31	28.38	-90.29	156.31	-717.51	561.20	504.79	56.42	9.947		
8,000.00	7,993.33	7,994.51	7,986.67	28.49	28.53	-90.27	156.54	-717.17	560.82	504.06	56.76	9.881		
8,023.79	8,017.12	8,016.66	8,008.82	28.58	28.61	-90.27	156.55	-717.15	560.79	503.88	56.92	9.853		
8,050.00	8,043.33	8,042.88	8,035.03	28.67	28.70	-90.27	156.55	-717.15	560.79	503.69	57.10	9.821		
8,100.00	8,093.33	8,107.12	8,085.03	28.85	28.93	-90.27	156.55	-717.15	560.79	503.29	57.51	9.751		
8,150.00	8,143.33	8,142.88	8,135.03	29.03	29.06	-90.27	156.55	-717.15	560.79	502.98	57.81	9.700		
8,200.00	8,193.33	8,207.12	8,185.03	29.20	29.28	-90.27	156.55	-717.15	560.79	502.58	58.22	9.633		
8,250.00	8,243.33	8,242.88	8,235.03	29.38	29.41	-90.27	156.55	-717.15	560.79	502.27	58.52	9.583		
8,300.00	8,293.33	8,307.12	8,285.03	29.56	29.63	-90.27	156.55	-717.15	560.79	501.87	58.93	9.517		
8,350.00	8,343.33	8,342.88	8,335.03	29.74	29.76	-90.27	156.55	-717.15	560.79	501.56	59.23	9.468		
8,400.00	8,393.33	8,407.12	8,385.03	29.91	29.99	-90.27	156.55	-717.15	560.79	501.16	59.64	9.404		
8,450.00	8,443.33	8,442.88	8,435.03	30.09	30.11	-90.27	156.55	-717.15	560.79	500.85	59.94	9.356		
8,500.00	8,493.33	8,507.12	8,485.03	30.27	30.34	-90.27	156.55	-717.15	560.79	500.45	60.35	9.293		
8,550.00	8,543.33	8,542.88	8,535.03	30.45	30.47	-90.27	156.55	-717.15	560.79	500.14	60.65	9.246		
8,600.00	8,593.33	8,592.88	8,585.03	30.63	30.64	-90.27	156.55	-717.15	560.79	499.79	61.00	9.193		
8,650.00	8,643.32	8,642.92	8,635.07	30.80	30.82	90.10	156.09	-717.15	560.79	499.44	61.35	9.141		
8,700.00	8,693.06	8,693.06	8,685.02	30.96	30.98	90.17	151.89	-717.12	560.79	499.13	61.67	9.094		
8,750.00	8,742.19	8,743.27	8,734.47	31.11	31.13	90.24	143.32	-717.07	560.79	498.82	61.97	9.049		
8,800.00	8,790.32	8,793.53	8,783.04	31.26	31.28	90.31	130.44	-716.98	560.78	498.52	62.27	9.006		
8,850.00	8,837.10	8,843.86	8,830.35	31.39	31.42	90.38	113.33	-716.88	560.78	498.22	62.55	8.965		
8,900.00	8,882.17	8,894.24	8,876.03	31.52	31.55	90.45	92.11	-716.74	560.77	497.94	62.83	8.926		
8,950.00	8,925.18	8,944.67	8,919.71	31.64	31.68	90.51	66.94	-716.58	560.76	497.66	63.09	8.888		
9,000.00	8,965.81	8,995.18	8,961.05	31.75	31.79	90.56	37.99	-716.40	560.74	497.39	63.35	8.852		
9,050.00	9,003.74	9,045.69	8,999.72	31.85	31.89	90.62	5.48	-716.20	560.72	497.13	63.60	8.817		
9,100.00	9,038.70	9,096.27	9,035.40	31.94	31.98	90.67	-30.34	-715.97	560.71	496.86	63.85	8.782		
9,150.00	9,070.40	9,146.88	9,067.81	32.06	32.08	90.71	-69.20	-715.72	560.68	496.59	64.09	8.748		
9,200.00	9,098.62	9,197.53	9,096.69	32.18	32.19	90.75	-110.79	-715.46	560.68	496.32	64.34	8.714		
9,250.00	9,123.14	9,248.21	9,121.79	32.30	32.32	90.78	-154.79	-715.18	560.64	496.04	64.59	8.680		
9,300.00	9,143.76	9,298.91	9,142.91	32.43	32.46	90.81	-200.86	-714.89	560.61	495.76	64.85	8.645		
9,350.00	9,160.34	9,349.63	9,159.89	32.56	32.59	90.83	-248.64	-714.59	560.58	495.47	65.11	8.610		
9,400.00	9,172.75	9,400.36	9,172.58	32.70	32.73	90.84	-297.74	-714.28	560.55	495.17	65.38	8.574		
9,450.00	9,180.88	9,451.10	9,180.88	32.83	32.88	90.85	-347.78	-713.97	560.52	494.86	65.65	8.538		
9,500.00	9,184.69	9,501.84	9,184.72	32.97	33.02	90.85	-398.35	-713.65	560.48	494.55	65.93	8.501		
9,550.00	9,185.00	9,552.10	9,185.00	33.12	33.17	90.85	-448.61	-713.33	560.45	494.22	66.23	8.462		
9,600.00	9,185.00	9,602.10	9,185.00	33.28	33.33	90.85	-498.61	-713.01	560.41	493.88	66.53	8.423		
9,650.00	9,185.00	9,652.10	9,185.00	33.46	33.52	90.85	-548.61	-712.70	560.38	493.49	66.89	8.377		
9,700.00	9,185.00	9,702.10	9,185.00	33.64	33.70	90.85	-598.61	-712.38	560.35	493.10	67.25	8.332		
9,750.00	9,185.00	9,752.10	9,185.00	33.85	33.91	90.85	-648.61	-712.07	560.31	492.64	67.67	8.280		
9,800.00	9,185.00	9,802.10	9,185.00	34.05	34.12	90.85	-698.61	-711.75	560.28	492.19	68.09	8.229		
9,850.00	9,185.00	9,852.10	9,185.00	34.29	34.36	90.85	-748.61	-711.44	560.24	491.68	68.56	8.171		
9,900.00	9,185.00	9,902.10	9,185.00	34.53	34.60	90.85	-798.61	-711.12	560.21	491.18	69.04	8.115		
9,950.00	9,185.00	9,952.10	9,185.00	34.79	34.87	90.85	-848.60	-710.81	560.18	490.61	69.56	8.053		
10,000.00	9,185.00	10,002.10	9,185.00	35.06	35.13	90.85	-898.60	-710.49	560.14	490.05	70.09	7.991		
10,050.00	9,185.00	10,052.10	9,185.00	35.35	35.42	90.85	-948.60	-710.17	560.11	489.44	70.67	7.925		
10,100.00	9,185.00	10,102.10	9,185.00	35.64	35.72	90.85	-998.60	-709.86	560.08	488.82	71.25	7.860		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,150.00	9,185.00	10,152.10	9,185.00	35.95	36.03	90.85	-1,048.60	-709.54	560.04	488.16	71.88	7.791		
10,200.00	9,185.00	10,202.10	9,185.00	36.27	36.35	90.85	-1,098.60	-709.23	560.01	487.49	72.51	7.723		
10,250.00	9,185.00	10,252.10	9,185.00	36.61	36.69	90.85	-1,148.60	-708.91	559.98	486.78	73.19	7.651		
10,300.00	9,185.00	10,302.10	9,185.00	36.94	37.03	90.85	-1,198.60	-708.60	559.94	486.07	73.87	7.580		
10,350.00	9,185.00	10,352.10	9,185.00	37.30	37.39	90.85	-1,248.60	-708.28	559.91	485.32	74.59	7.507		
10,400.00	9,185.00	10,402.10	9,185.00	37.66	37.75	90.85	-1,298.60	-707.97	559.87	484.56	75.31	7.434		
10,450.00	9,185.00	10,452.10	9,185.00	38.04	38.13	90.85	-1,348.59	-707.65	559.84	483.77	76.07	7.359		
10,500.00	9,185.00	10,502.10	9,185.00	38.43	38.51	90.85	-1,398.59	-707.33	559.81	482.97	76.84	7.286		
10,550.00	9,185.00	10,552.10	9,185.00	38.83	38.91	90.85	-1,448.59	-707.02	559.77	482.13	77.64	7.210		
10,600.00	9,185.00	10,602.10	9,185.00	39.23	39.31	90.85	-1,498.59	-706.70	559.74	481.30	78.44	7.136		
10,650.00	9,185.00	10,652.10	9,185.00	39.65	39.73	90.85	-1,548.59	-706.39	559.71	480.42	79.28	7.060		
10,700.00	9,185.00	10,702.10	9,185.00	40.07	40.15	90.85	-1,598.59	-706.07	559.67	479.55	80.12	6.985		
10,750.00	9,185.00	10,752.10	9,185.00	40.50	40.59	90.85	-1,648.59	-705.76	559.64	478.64	80.99	6.910		
10,800.00	9,185.00	10,802.10	9,185.00	40.94	41.03	90.85	-1,698.59	-705.44	559.60	477.74	81.87	6.835		
10,850.00	9,185.00	10,852.10	9,185.00	41.39	41.48	90.85	-1,748.59	-705.13	559.57	476.80	82.78	6.760		
10,900.00	9,185.00	10,902.10	9,185.00	41.84	41.93	90.85	-1,798.59	-704.81	559.54	475.85	83.68	6.686		
10,950.00	9,185.00	10,952.10	9,185.00	42.31	42.40	90.85	-1,848.58	-704.49	559.50	474.88	84.62	6.612		
11,000.00	9,185.00	11,002.10	9,185.00	42.78	42.87	90.85	-1,898.58	-704.18	559.47	473.91	85.56	6.539		
11,050.00	9,185.00	11,052.10	9,185.00	43.26	43.35	90.85	-1,948.58	-703.86	559.44	472.91	86.52	6.466		
11,100.00	9,185.00	11,102.10	9,185.00	43.74	43.84	90.85	-1,998.58	-703.55	559.40	471.91	87.49	6.394		
11,150.00	9,185.00	11,152.10	9,185.00	44.24	44.33	90.85	-2,048.58	-703.23	559.37	470.89	88.48	6.322		
11,200.00	9,185.00	11,202.10	9,185.00	44.74	44.83	90.85	-2,098.58	-702.92	559.33	469.86	89.47	6.251		
11,250.00	9,185.00	11,252.10	9,185.00	45.24	45.34	90.85	-2,148.58	-702.60	559.30	468.81	90.49	6.181		
11,300.00	9,185.00	11,302.10	9,185.00	45.75	45.85	90.85	-2,198.58	-702.29	559.27	467.76	91.51	6.112		
11,350.00	9,185.00	11,352.10	9,185.00	46.27	46.37	90.85	-2,248.58	-701.97	559.23	466.69	92.55	6.043		
11,400.00	9,185.00	11,402.10	9,185.00	46.79	46.89	90.85	-2,298.58	-701.65	559.20	465.61	93.59	5.975		
11,450.00	9,185.00	11,452.10	9,185.00	47.32	47.42	90.85	-2,348.57	-701.34	559.17	464.52	94.65	5.908		
11,500.00	9,185.00	11,502.10	9,185.00	47.85	47.95	90.85	-2,398.57	-701.02	559.13	463.42	95.71	5.842		
11,550.00	9,185.00	11,552.10	9,185.00	48.39	48.49	90.85	-2,448.57	-700.71	559.10	462.30	96.80	5.776		
11,600.00	9,185.00	11,602.10	9,185.00	48.94	49.03	90.85	-2,498.57	-700.39	559.06	461.19	97.88	5.712		
11,650.00	9,185.00	11,652.10	9,185.00	49.49	49.58	90.85	-2,548.57	-700.08	559.03	460.05	98.98	5.648		
11,700.00	9,185.00	11,702.10	9,185.00	50.04	50.13	90.85	-2,598.57	-699.76	559.00	458.91	100.08	5.585		
11,750.00	9,185.00	11,752.10	9,185.00	50.60	50.69	90.85	-2,648.57	-699.45	558.96	457.76	101.20	5.523		
11,800.00	9,185.00	11,802.10	9,185.00	51.16	51.25	90.85	-2,698.57	-699.13	558.93	456.61	102.32	5.462		
11,850.00	9,185.00	11,852.10	9,185.00	51.72	51.82	90.85	-2,748.57	-698.81	558.90	455.44	103.46	5.402		
11,900.00	9,185.00	11,902.10	9,185.00	52.29	52.39	90.85	-2,798.57	-698.50	558.86	454.27	104.59	5.343		
11,950.00	9,185.00	11,952.10	9,185.00	52.87	52.96	90.85	-2,848.56	-698.18	558.83	453.08	105.75	5.285		
12,000.00	9,185.00	12,002.10	9,185.00	53.44	53.54	90.85	-2,898.56	-697.87	558.80	451.90	106.90	5.227		
12,050.00	9,185.00	12,052.10	9,185.00	54.02	54.12	90.85	-2,948.56	-697.55	558.76	450.70	108.07	5.171		
12,100.00	9,185.00	12,102.10	9,185.00	54.61	54.70	90.85	-2,998.56	-697.24	558.73	449.50	109.23	5.115		
12,150.00	9,185.00	12,152.10	9,185.00	55.20	55.29	90.85	-3,048.56	-696.92	558.69	448.28	110.41	5.060		
12,200.00	9,185.00	12,202.10	9,185.00	55.79	55.88	90.85	-3,098.56	-696.61	558.66	447.07	111.59	5.006		
12,250.00	9,185.00	12,252.10	9,185.00	56.38	56.48	90.85	-3,148.56	-696.29	558.63	445.84	112.79	4.953 Alert		
12,300.00	9,185.00	12,302.10	9,185.00	56.98	57.08	90.85	-3,198.56	-695.97	558.59	444.61	113.98	4.901 Alert		
12,350.00	9,185.00	12,352.10	9,185.00	57.58	57.68	90.85	-3,248.56	-695.66	558.56	443.38	115.18	4.849 Alert		
12,400.00	9,185.00	12,402.10	9,185.00	58.18	58.28	90.85	-3,298.56	-695.34	558.53	442.14	116.39	4.799 Alert		
12,450.00	9,185.00	12,452.10	9,185.00	58.79	58.89	90.85	-3,348.55	-695.03	558.49	440.89	117.61	4.749 Alert		
12,500.00	9,185.00	12,502.10	9,185.00	59.40	59.50	90.85	-3,398.55	-694.71	558.46	439.64	118.82	4.700 Alert		
12,550.00	9,185.00	12,552.10	9,185.00	60.01	60.11	90.85	-3,448.55	-694.40	558.42	438.37	120.05	4.652 Alert		
12,600.00	9,185.00	12,602.10	9,185.00	60.63	60.72	90.85	-3,498.55	-694.08	558.39	437.11	121.28	4.604 Alert		
12,650.00	9,185.00	12,652.10	9,185.00	61.24	61.34	90.85	-3,548.55	-693.77	558.36	435.84	122.51	4.557 Alert		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)	
12,700.00	9,185.00	12,702.10	9,185.00	61.86	61.96	90.85	-3,598.55	-693.45	558.32	434.57	123.75	4.512	Alert	
12,750.00	9,185.00	12,752.10	9,185.00	62.49	62.58	90.85	-3,648.55	-693.13	558.29	433.29	125.00	4.466	Alert	
12,800.00	9,185.00	12,802.10	9,185.00	63.11	63.21	90.85	-3,698.55	-692.82	558.26	432.01	126.24	4.422	Alert	
12,850.00	9,185.00	12,852.10	9,185.00	63.74	63.84	90.85	-3,748.55	-692.50	558.22	430.72	127.50	4.378	Alert	
12,900.00	9,185.00	12,902.10	9,185.00	64.36	64.46	90.85	-3,798.55	-692.19	558.19	429.43	128.76	4.335	Alert	
12,950.00	9,185.00	12,952.10	9,185.00	65.00	65.09	90.85	-3,848.54	-691.87	558.15	428.13	130.02	4.293	Alert	
13,000.00	9,185.00	13,002.10	9,185.00	65.63	65.73	90.85	-3,898.54	-691.56	558.12	426.84	131.28	4.251	Alert	
13,050.00	9,185.00	13,052.10	9,185.00	66.26	66.36	90.85	-3,948.54	-691.24	558.09	425.53	132.56	4.210	Alert	
13,100.00	9,185.00	13,102.10	9,185.00	66.90	67.00	90.85	-3,998.54	-690.93	558.05	424.23	133.83	4.170	Alert	
13,150.00	9,185.00	13,152.10	9,185.00	67.54	67.64	90.85	-4,048.54	-690.61	558.02	422.91	135.11	4.130	Alert	
13,200.00	9,185.00	13,202.10	9,185.00	68.18	68.28	90.85	-4,098.54	-690.29	557.99	421.60	136.39	4.091	Alert	
13,250.00	9,185.00	13,252.10	9,185.00	68.82	68.92	90.85	-4,148.54	-689.98	557.95	420.28	137.67	4.053	Alert	
13,300.00	9,185.00	13,302.10	9,185.00	69.46	69.56	90.85	-4,198.54	-689.66	557.92	418.96	138.96	4.015	Alert	
13,350.00	9,185.00	13,352.10	9,185.00	70.11	70.21	90.85	-4,248.54	-689.35	557.88	417.63	140.25	3.978	Alert	
13,400.00	9,185.00	13,402.10	9,185.00	70.76	70.86	90.85	-4,298.54	-689.03	557.85	416.31	141.54	3.941	Alert	
13,450.00	9,185.00	13,452.10	9,185.00	71.40	71.50	90.85	-4,348.53	-688.72	557.82	414.97	142.84	3.905	Alert	
13,500.00	9,185.00	13,502.10	9,185.00	72.05	72.15	90.85	-4,398.53	-688.40	557.78	413.64	144.14	3.870	Alert	
13,550.00	9,185.00	13,552.10	9,185.00	72.71	72.81	90.85	-4,448.53	-688.09	557.75	412.30	145.45	3.835	Alert	
13,600.00	9,185.00	13,602.10	9,185.00	73.36	73.46	90.85	-4,498.53	-687.77	557.72	410.96	146.75	3.800	Alert	
13,650.00	9,185.00	13,652.10	9,185.00	74.01	74.11	90.85	-4,548.53	-687.45	557.68	409.62	148.06	3.766	Alert	
13,700.00	9,185.00	13,702.10	9,185.00	74.67	74.77	90.85	-4,598.53	-687.14	557.65	408.27	149.38	3.733	Alert	
13,750.00	9,185.00	13,752.10	9,185.00	75.33	75.43	90.85	-4,648.53	-686.82	557.62	406.92	150.69	3.700	Alert	
13,800.00	9,185.00	13,802.10	9,185.00	75.99	76.09	90.85	-4,698.53	-686.51	557.58	405.57	152.01	3.668	Alert	
13,850.00	9,185.00	13,852.10	9,185.00	76.65	76.75	90.85	-4,748.53	-686.19	557.55	404.22	153.33	3.636	Alert	
13,900.00	9,185.00	13,902.10	9,185.00	77.31	77.41	90.85	-4,798.53	-685.88	557.51	402.86	154.65	3.605	Alert	
13,950.00	9,185.00	13,952.10	9,185.00	77.97	78.07	90.85	-4,848.52	-685.56	557.48	401.50	155.98	3.574	Alert	
14,000.00	9,185.00	14,002.10	9,185.00	78.63	78.73	90.85	-4,898.52	-685.25	557.45	400.14	157.30	3.544	Alert	
14,050.00	9,185.00	14,052.10	9,185.00	79.30	79.40	90.85	-4,948.52	-684.93	557.41	398.78	158.63	3.514	Alert	
14,100.00	9,185.00	14,102.10	9,185.00	79.96	80.06	90.85	-4,998.52	-684.61	557.38	397.41	159.98	3.484	Alert	
14,150.00	9,185.00	14,152.10	9,185.00	80.63	80.73	90.85	-5,048.52	-684.30	557.35	396.05	161.30	3.455	Alert	
14,200.00	9,185.00	14,202.10	9,185.00	81.30	81.40	90.85	-5,098.52	-683.98	557.31	394.68	162.63	3.427	Alert	
14,250.00	9,185.00	14,252.10	9,185.00	81.97	82.07	90.85	-5,148.52	-683.67	557.28	393.30	163.97	3.399	Alert	
14,300.00	9,185.00	14,302.10	9,185.00	82.64	82.74	90.85	-5,198.52	-683.35	557.24	391.93	165.31	3.371	Alert	
14,350.00	9,185.00	14,352.10	9,185.00	83.31	83.41	90.85	-5,248.52	-683.04	557.21	390.55	166.66	3.343	Alert	
14,400.00	9,185.00	14,402.10	9,185.00	83.98	84.08	90.85	-5,298.52	-682.72	557.18	389.18	168.00	3.317	Alert	
14,450.00	9,185.00	14,452.10	9,185.00	84.65	84.75	90.85	-5,348.51	-682.41	557.14	387.80	169.35	3.290	Alert	
14,500.00	9,185.00	14,502.10	9,185.00	85.32	85.43	90.85	-5,398.51	-682.09	557.11	386.42	170.69	3.264	Alert	
14,550.00	9,185.00	14,552.10	9,185.00	86.00	86.10	90.85	-5,448.51	-681.77	557.08	385.03	172.04	3.238	Alert	
14,600.00	9,185.00	14,602.10	9,185.00	86.68	86.78	90.85	-5,498.51	-681.46	557.04	383.65	173.39	3.213	Alert	
14,650.00	9,185.00	14,652.10	9,185.00	87.35	87.45	90.85	-5,548.51	-681.14	557.01	382.26	174.75	3.187	Alert	
14,700.00	9,185.00	14,702.10	9,185.00	88.03	88.13	90.85	-5,598.51	-680.83	556.97	380.87	176.10	3.163	Alert	
14,750.00	9,185.00	14,752.10	9,185.00	88.71	88.81	90.85	-5,648.51	-680.51	556.94	379.48	177.46	3.138	Alert	
14,800.00	9,185.00	14,802.10	9,185.00	89.39	89.49	90.85	-5,698.51	-680.20	556.91	378.09	178.82	3.114	Alert	
14,850.00	9,185.00	14,852.10	9,185.00	90.07	90.17	90.85	-5,748.51	-679.88	556.87	376.70	180.18	3.091	Alert	
14,900.00	9,185.00	14,902.10	9,185.00	90.75	90.85	90.85	-5,798.51	-679.56	556.84	375.30	181.54	3.067	Alert	
14,950.00	9,185.00	14,952.10	9,185.00	91.43	91.53	90.85	-5,848.50	-679.25	556.81	373.90	182.90	3.044	Alert	
15,000.00	9,185.00	15,002.10	9,185.00	92.11	92.21	90.85	-5,898.50	-678.93	556.77	372.51	184.26	3.022	Alert	
15,050.00	9,185.00	15,052.10	9,185.00	92.79	92.89	90.85	-5,948.50	-678.62	556.74	371.11	185.63	2.999	Alert	
15,100.00	9,185.00	15,102.10	9,185.00	93.47	93.58	90.85	-5,998.50	-678.30	556.70	369.71	187.00	2.977	Alert	
15,150.00	9,185.00	15,152.10	9,185.00	94.16	94.26	90.85	-6,048.50	-677.99	556.67	368.30	188.37	2.955	Alert	
15,200.00	9,185.00	15,202.10	9,185.00	94.84	94.95	90.85	-6,098.50	-677.67	556.64	366.90	189.74	2.934	Alert	

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1														Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
15,250.00	9,185.00	15,252.10	9,185.00	95.53	95.63	90.85	-6,148.50	-677.36	556.60	365.50	191.11	2.913	Alert		
15,300.00	9,185.00	15,302.10	9,185.00	96.21	96.32	90.85	-6,198.50	-677.04	556.57	364.09	192.48	2.892	Alert		
15,350.00	9,185.00	15,352.10	9,185.00	96.90	97.01	90.85	-6,248.50	-676.72	556.54	362.68	193.85	2.871	Alert		
15,400.00	9,185.00	15,402.10	9,185.00	97.59	97.69	90.85	-6,298.50	-676.41	556.50	361.28	195.23	2.851	Alert		
15,450.00	9,185.00	15,452.10	9,185.00	98.28	98.38	90.85	-6,348.49	-676.09	556.47	359.87	196.60	2.830	Alert		
15,500.00	9,185.00	15,502.10	9,185.00	98.96	99.07	90.85	-6,398.49	-675.78	556.44	358.46	197.98	2.811	Alert		
15,550.00	9,185.00	15,552.10	9,185.00	99.65	99.76	90.85	-6,448.49	-675.46	556.40	357.04	199.36	2.791	Alert		
15,600.00	9,185.00	15,602.10	9,185.00	100.34	100.45	90.85	-6,498.48	-675.15	556.37	355.63	200.74	2.772	Alert		
15,650.00	9,185.00	15,652.10	9,185.00	101.03	101.14	90.85	-6,548.49	-674.83	556.33	354.22	202.12	2.753	Alert		
15,700.00	9,185.00	15,702.10	9,185.00	101.72	101.83	90.85	-6,598.49	-674.52	556.30	352.80	203.50	2.734	Alert		
15,750.00	9,185.00	15,752.10	9,185.00	102.42	102.52	90.85	-6,648.49	-674.20	556.27	351.38	204.88	2.715	Alert		
15,800.00	9,185.00	15,802.10	9,185.00	103.11	103.21	90.85	-6,698.49	-673.88	556.23	349.97	206.27	2.697	Alert		
15,850.00	9,185.00	15,852.10	9,185.00	103.80	103.90	90.86	-6,748.49	-673.57	556.20	348.55	207.65	2.679	Alert		
15,900.00	9,185.00	15,902.10	9,185.00	104.49	104.60	90.86	-6,798.48	-673.25	556.17	347.13	209.04	2.661	Alert		
15,950.00	9,185.00	15,952.10	9,185.00	105.18	105.29	90.86	-6,848.48	-672.94	556.13	345.71	210.42	2.643	Alert		
16,000.00	9,185.00	16,002.10	9,185.00	105.88	105.98	90.86	-6,898.48	-672.62	556.10	344.29	211.81	2.625	Alert		
16,050.00	9,185.00	16,052.10	9,185.00	106.57	106.68	90.86	-6,948.48	-672.31	556.06	342.87	213.20	2.608	Alert		
16,100.00	9,185.00	16,102.10	9,185.00	107.27	107.37	90.86	-6,998.48	-671.99	556.03	341.44	214.59	2.591	Alert		
16,150.00	9,185.00	16,152.10	9,185.00	107.96	108.07	90.86	-7,048.48	-671.68	556.00	340.02	215.98	2.574	Alert		
16,200.00	9,185.00	16,202.10	9,185.00	108.66	108.76	90.86	-7,098.48	-671.36	555.96	338.59	217.37	2.558	Alert		
16,250.00	9,185.00	16,252.10	9,185.00	109.35	109.46	90.86	-7,148.48	-671.04	555.93	337.17	218.76	2.541	Alert		
16,300.00	9,185.00	16,302.10	9,185.00	110.05	110.16	90.86	-7,198.48	-670.73	555.90	335.74	220.15	2.525	Alert		
16,350.00	9,185.00	16,352.10	9,185.00	110.75	110.85	90.86	-7,248.48	-670.41	555.86	334.31	221.55	2.509	Alert		
16,400.00	9,185.00	16,402.10	9,185.00	111.44	111.55	90.86	-7,298.47	-670.10	555.83	332.88	222.94	2.493	Minor Risk		
16,450.00	9,185.00	16,452.10	9,185.00	112.14	112.25	90.86	-7,348.47	-669.78	555.79	331.46	224.34	2.477	Minor Risk		
16,500.00	9,185.00	16,502.10	9,185.00	112.84	112.95	90.86	-7,398.47	-669.47	555.76	330.03	225.73	2.462	Minor Risk		
16,550.00	9,185.00	16,552.10	9,185.00	113.54	113.64	90.86	-7,448.47	-669.15	555.73	328.59	227.13	2.447	Minor Risk		
16,600.00	9,185.00	16,602.10	9,185.00	114.24	114.34	90.86	-7,498.47	-668.84	555.69	327.16	228.53	2.432	Minor Risk		
16,650.00	9,185.00	16,652.10	9,185.00	114.94	115.04	90.86	-7,548.47	-668.52	555.66	325.73	229.93	2.417	Minor Risk		
16,700.00	9,185.00	16,702.10	9,185.00	115.64	115.74	90.86	-7,598.47	-668.20	555.63	324.30	231.33	2.402	Minor Risk		
16,750.00	9,185.00	16,752.10	9,185.00	116.34	116.44	90.86	-7,648.47	-667.89	555.59	322.86	232.73	2.387	Minor Risk		
16,800.00	9,185.00	16,802.10	9,185.00	117.04	117.14	90.86	-7,698.47	-667.57	555.56	321.43	234.13	2.373	Minor Risk		
16,850.00	9,185.00	16,852.10	9,185.00	117.74	117.84	90.86	-7,748.47	-667.26	555.52	319.99	235.53	2.359	Minor Risk		
16,900.00	9,185.00	16,902.10	9,185.00	118.44	118.54	90.86	-7,798.46	-666.94	555.49	318.56	236.93	2.345	Minor Risk		
16,950.00	9,185.00	16,952.10	9,185.00	119.14	119.25	90.86	-7,848.46	-666.63	555.46	317.12	238.33	2.331	Minor Risk		
17,000.00	9,185.00	17,002.10	9,185.00	119.84	119.95	90.86	-7,898.46	-666.31	555.42	315.69	239.74	2.317	Minor Risk		
17,050.00	9,185.00	17,052.10	9,185.00	120.54	120.65	90.86	-7,948.46	-666.00	555.39	314.25	241.14	2.303	Minor Risk		
17,100.00	9,185.00	17,102.10	9,185.00	121.24	121.35	90.86	-7,998.46	-665.68	555.36	312.81	242.55	2.290	Minor Risk		
17,150.00	9,185.00	17,152.10	9,185.00	121.95	122.05	90.86	-8,048.46	-665.36	555.32	311.37	243.95	2.276	Minor Risk		
17,200.00	9,185.00	17,202.10	9,185.00	122.65	122.76	90.86	-8,098.46	-665.05	555.29	309.93	245.36	2.263	Minor Risk		
17,250.00	9,185.00	17,252.10	9,185.00	123.35	123.46	90.86	-8,148.46	-664.73	555.25	308.49	246.76	2.250	Minor Risk		
17,300.00	9,185.00	17,302.10	9,185.00	124.06	124.16	90.86	-8,198.46	-664.42	555.22	307.05	248.17	2.237	Minor Risk		
17,350.00	9,185.00	17,352.10	9,185.00	124.76	124.87	90.86	-8,248.46	-664.10	555.19	305.61	249.58	2.224	Minor Risk		
17,400.00	9,185.00	17,402.10	9,185.00	125.46	125.57	90.86	-8,298.45	-663.79	555.15	304.17	250.99	2.212	Minor Risk		
17,450.00	9,185.00	17,452.10	9,185.00	126.17	126.28	90.86	-8,348.45	-663.47	555.12	302.72	252.40	2.199	Minor Risk		
17,500.00	9,185.00	17,502.10	9,185.00	126.87	126.98	90.86	-8,398.45	-663.16	555.09	301.28	253.81	2.187	Minor Risk		
17,550.00	9,185.00	17,552.10	9,185.00	127.58	127.69	90.86	-8,448.45	-662.84	555.05	299.84	255.22	2.175	Minor Risk		
17,600.00	9,185.00	17,602.10	9,185.00	128.28	128.39	90.86	-8,498.45	-662.52	555.02	298.39	256.63	2.163	Minor Risk		
17,650.00	9,185.00	17,652.10	9,185.00	128.99	129.10	90.86	-8,548.45	-662.21	554.99	296.95	258.04	2.151	Minor Risk		
17,700.00	9,185.00	17,702.10	9,185.00	129.69	129.80	90.86	-8,598.45	-661.89	554.95	295.50	259.45	2.139	Minor Risk		
17,750.00	9,185.00	17,752.10	9,185.00	130.40	130.51	90.86	-8,648.45	-661.58	554.92	294.06	260.86	2.127	Minor Risk		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan 1											Offset Site Error: 5.00 ft		
Survey Program: 0-MWD+HDGM											Offset Well Error: 0.50 ft		
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
17,800.00	9,185.00	17,802.10	9,185.00	131.11	131.21	90.86	-8,698.45	-661.26	554.88	292.61	262.27	2.116 Minor Risk	
17,850.00	9,185.00	17,852.10	9,185.00	131.81	131.92	90.86	-8,748.45	-660.95	554.85	291.16	263.69	2.104 Minor Risk	
17,900.00	9,185.00	17,902.10	9,185.00	132.52	132.63	90.86	-8,798.44	-660.63	554.82	289.72	265.10	2.093 Minor Risk	
17,950.00	9,185.00	17,952.10	9,185.00	133.23	133.34	90.86	-8,848.44	-660.32	554.78	288.27	266.51	2.082 Minor Risk	
18,000.00	9,185.00	18,002.10	9,185.00	133.93	134.04	90.86	-8,898.44	-660.00	554.75	286.82	267.93	2.071 Minor Risk	
18,050.00	9,185.00	18,052.10	9,185.00	134.64	134.75	90.86	-8,948.44	-659.68	554.72	285.37	269.34	2.060 Minor Risk	
18,100.00	9,185.00	18,102.10	9,185.00	135.35	135.46	90.86	-8,998.44	-659.37	554.68	283.92	270.76	2.049 Minor Risk	
18,150.00	9,185.00	18,152.10	9,185.00	136.06	136.17	90.86	-9,048.44	-659.05	554.65	282.47	272.17	2.038 Minor Risk	
18,200.00	9,185.00	18,202.10	9,185.00	136.76	136.87	90.86	-9,098.44	-658.74	554.61	281.02	273.59	2.027 Minor Risk	
18,250.00	9,185.00	18,252.10	9,185.00	137.47	137.58	90.86	-9,148.44	-658.42	554.58	279.57	275.01	2.017 Minor Risk	
18,300.00	9,185.00	18,302.10	9,185.00	138.18	138.29	90.86	-9,198.44	-658.11	554.55	278.12	276.42	2.006 Minor Risk	
18,350.00	9,185.00	18,352.10	9,185.00	138.89	139.00	90.86	-9,248.44	-657.79	554.51	276.67	277.84	1.996 Minor Risk	
18,400.00	9,185.00	18,402.10	9,185.00	139.60	139.71	90.86	-9,298.43	-657.48	554.48	275.22	279.26	1.986 Minor Risk	
18,450.00	9,185.00	18,452.10	9,185.00	140.31	140.42	90.86	-9,348.43	-657.16	554.45	273.77	280.68	1.975 Minor Risk	
18,500.00	9,185.00	18,502.10	9,185.00	141.02	141.13	90.86	-9,398.43	-656.84	554.41	272.32	282.10	1.965 Minor Risk	
18,550.00	9,185.00	18,552.10	9,185.00	141.73	141.84	90.86	-9,448.43	-656.53	554.38	270.86	283.52	1.955 Minor Risk	
18,600.00	9,185.00	18,602.10	9,185.00	142.44	142.55	90.86	-9,498.43	-656.21	554.34	269.41	284.94	1.946 Minor Risk	
18,650.00	9,185.00	18,652.10	9,185.00	143.15	143.26	90.86	-9,548.43	-655.90	554.31	267.95	286.36	1.936 Minor Risk	
18,700.00	9,185.00	18,702.10	9,185.00	143.86	143.97	90.86	-9,598.43	-655.58	554.28	266.50	287.78	1.926 Minor Risk	
18,750.00	9,185.00	18,752.10	9,185.00	144.57	144.68	90.86	-9,648.43	-655.27	554.24	265.05	289.20	1.916 Minor Risk	
18,800.00	9,185.00	18,802.10	9,185.00	145.28	145.39	90.86	-9,698.43	-654.95	554.21	263.59	290.62	1.907 Minor Risk	
18,850.00	9,185.00	18,852.10	9,185.00	145.99	146.10	90.86	-9,748.43	-654.64	554.18	262.14	292.04	1.898 Minor Risk	
18,900.00	9,185.00	18,902.10	9,185.00	146.70	146.81	90.86	-9,798.42	-654.32	554.14	260.68	293.46	1.888 Minor Risk	
18,950.00	9,185.00	18,952.10	9,185.00	147.41	147.52	90.86	-9,848.42	-654.00	554.11	259.23	294.88	1.879 Minor Risk	
18,972.90	9,185.00	18,975.01	9,185.00	147.73	147.85	90.86	-9,871.33	-653.86	554.09	258.56	295.54	1.875 Minor Risk, CC, ES, SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.00	0.00	0.10	-0.10	0.50	0.50	-90.38	-0.20	-30.02	30.02					
50.00	50.00	49.90	49.90	0.50	0.50	-90.38	-0.20	-30.02	30.02	29.01	1.01	29.827		
100.00	100.00	100.10	99.90	0.52	0.52	-90.38	-0.20	-30.02	30.02	28.99	1.04	28.989		
150.00	150.00	149.90	149.90	0.59	0.59	-90.38	-0.20	-30.02	30.02	28.84	1.18	25.435		
200.00	200.00	200.10	199.90	0.70	0.70	-90.38	-0.20	-30.02	30.02	28.62	1.40	21.375		
250.00	250.00	249.90	249.90	0.84	0.84	-90.38	-0.20	-30.02	30.02	28.35	1.68	17.921		
300.00	300.00	300.10	299.90	0.99	0.99	-90.38	-0.20	-30.02	30.02	28.05	1.97	15.201		
350.00	350.00	349.90	349.90	1.15	1.15	-90.38	-0.20	-30.02	30.02	27.73	2.29	13.106		
400.00	400.00	400.10	399.90	1.31	1.31	-90.38	-0.20	-30.02	30.02	27.40	2.62	11.485		
450.00	450.00	449.90	449.90	1.48	1.48	-90.38	-0.20	-30.02	30.02	27.07	2.95	10.169		
500.00	500.00	500.10	499.90	1.65	1.65	-90.38	-0.20	-30.02	30.02	26.73	3.29	9.118		
550.00	550.00	549.90	549.90	1.82	1.82	-90.38	-0.20	-30.02	30.02	26.39	3.63	8.259		
600.00	600.00	600.10	599.90	1.99	1.99	-90.38	-0.20	-30.02	30.02	26.04	3.98	7.540		
650.00	650.00	649.90	649.90	2.16	2.16	-90.38	-0.20	-30.02	30.02	25.69	4.33	6.935		
700.00	700.00	700.10	699.90	2.34	2.34	-90.38	-0.20	-30.02	30.02	25.34	4.68	6.416		
750.00	750.00	749.90	749.90	2.51	2.51	-90.38	-0.20	-30.02	30.02	24.99	5.03	5.969		
800.00	800.00	800.10	799.90	2.69	2.69	-90.38	-0.20	-30.02	30.02	24.64	5.38	5.578		
850.00	850.00	849.90	849.90	2.87	2.87	-90.38	-0.20	-30.02	30.02	24.29	5.73	5.236		
900.00	900.00	900.10	899.90	3.04	3.04	-90.38	-0.20	-30.02	30.02	23.93	6.09	4.932 Alert		
950.00	950.00	949.90	949.90	3.22	3.22	-90.38	-0.20	-30.02	30.02	23.58	6.44	4.661 Alert		
1,000.00	1,000.00	1,000.10	999.90	3.40	3.40	-90.38	-0.20	-30.02	30.02	23.23	6.80	4.418 Alert		
1,050.00	1,050.00	1,049.90	1,049.90	3.58	3.57	-90.38	-0.20	-30.02	30.02	22.87	7.15	4.199 Alert		
1,100.00	1,100.00	1,100.10	1,099.90	3.75	3.75	-90.38	-0.20	-30.02	30.02	22.52	7.51	4.000 Alert		
1,150.00	1,150.00	1,149.90	1,149.90	3.93	3.93	-90.38	-0.20	-30.02	30.02	22.16	7.86	3.819 Alert		
1,200.00	1,200.00	1,200.10	1,199.90	4.11	4.11	-90.38	-0.20	-30.02	30.02	21.80	8.22	3.654 Alert		
1,250.00	1,250.00	1,249.90	1,249.90	4.29	4.29	-90.38	-0.20	-30.02	30.02	21.45	8.57	3.502 Alert		
1,300.00	1,300.00	1,300.10	1,299.90	4.46	4.46	-90.38	-0.20	-30.02	30.02	21.09	8.93	3.362 Alert		
1,350.00	1,350.00	1,349.90	1,349.90	4.64	4.64	-90.38	-0.20	-30.02	30.02	20.74	9.28	3.233 Alert		
1,400.00	1,400.00	1,400.10	1,399.90	4.82	4.82	-90.38	-0.20	-30.02	30.02	20.38	9.64	3.114 Alert		
1,450.00	1,450.00	1,449.90	1,449.90	5.00	5.00	-90.38	-0.20	-30.02	30.02	20.02	10.00	3.003 Alert		
1,500.00	1,500.00	1,500.10	1,499.90	5.18	5.18	-90.38	-0.20	-30.02	30.02	19.67	10.35	2.899 Alert		
1,550.00	1,550.00	1,549.90	1,549.90	5.36	5.36	-90.38	-0.20	-30.02	30.02	19.31	10.71	2.803 Alert		
1,600.00	1,600.00	1,600.10	1,599.90	5.53	5.53	-90.38	-0.20	-30.02	30.02	18.95	11.07	2.712 Alert		
1,650.00	1,650.00	1,649.90	1,649.90	5.71	5.71	-90.38	-0.20	-30.02	30.02	18.60	11.42	2.628 Alert		
1,700.00	1,700.00	1,700.10	1,699.90	5.89	5.89	-90.38	-0.20	-30.02	30.02	18.24	11.78	2.548 Alert		
1,750.00	1,750.00	1,749.90	1,749.90	6.07	6.07	-90.38	-0.20	-30.02	30.02	17.88	12.14	2.473 Minor Risk		
1,800.00	1,800.00	1,800.10	1,799.90	6.25	6.25	-90.38	-0.20	-30.02	30.02	17.52	12.50	2.402 Minor Risk		
1,850.00	1,850.00	1,849.90	1,849.90	6.43	6.43	-90.38	-0.20	-30.02	30.02	17.17	12.85	2.336 Minor Risk		
1,900.00	1,900.00	1,900.10	1,899.90	6.61	6.61	-90.38	-0.20	-30.02	30.02	16.81	13.21	2.272 Minor Risk		
1,950.00	1,950.00	1,949.90	1,949.90	6.78	6.78	-90.38	-0.20	-30.02	30.02	16.45	13.57	2.212 Minor Risk		
2,000.00	2,000.00	2,000.10	1,999.90	6.96	6.96	-90.38	-0.20	-30.02	30.02	16.09	13.93	2.156 Minor Risk		
2,050.00	2,050.00	2,049.90	2,049.90	7.14	7.14	-90.38	-0.20	-30.02	30.02	15.74	14.28	2.102 Minor Risk		
2,100.00	2,100.00	2,100.10	2,099.90	7.32	7.32	-90.38	-0.20	-30.02	30.02	15.38	14.64	2.050 Minor Risk		
2,150.00	2,150.00	2,149.90	2,149.90	7.50	7.50	-90.38	-0.20	-30.02	30.02	15.02	15.00	2.001 Minor Risk		
2,200.00	2,200.00	2,200.10	2,199.90	7.68	7.68	-90.38	-0.20	-30.02	30.02	14.66	15.36	1.955 Minor Risk		
2,250.00	2,250.00	2,249.90	2,249.90	7.86	7.86	-90.38	-0.20	-30.02	30.02	14.31	15.71	1.910 Minor Risk		
2,300.00	2,300.00	2,300.10	2,299.90	8.04	8.04	-90.38	-0.20	-30.02	30.02	13.95	16.07	1.868 Minor Risk		
2,350.00	2,350.00	2,349.90	2,349.90	8.22	8.21	-90.38	-0.20	-30.02	30.02	13.59	16.43	1.827 Minor Risk		
2,400.00	2,400.00	2,400.10	2,399.90	8.39	8.39	-90.38	-0.20	-30.02	30.02	13.23	16.79	1.788 Minor Risk		
2,450.00	2,450.00	2,449.90	2,449.90	8.57	8.57	-90.38	-0.20	-30.02	30.02	12.87	17.15	1.751 Minor Risk		
2,500.00	2,500.00	2,499.90	2,499.90	8.75	8.75	-90.38	-0.20	-30.02	30.02	12.52	17.50	1.715 Minor Risk, CC		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
2,550.00	2,550.00	2,549.58	2,549.58	8.93	8.93	-90.28	-0.15	-30.28	30.29	12.43	17.85	1.696	Minor Risk, ES, SF	
2,600.00	2,600.00	2,599.25	2,599.24	9.11	9.10	-89.98	0.01	-31.07	31.08	12.87	18.21	1.707	Minor Risk	
2,650.00	2,650.00	2,648.89	2,648.87	9.29	9.27	-89.52	0.27	-32.39	32.41	13.86	18.55	1.747	Minor Risk	
2,700.00	2,700.00	2,698.50	2,698.44	9.47	9.44	-88.93	0.64	-34.24	34.27	15.38	18.90	1.814	Minor Risk	
2,750.00	2,750.00	2,748.06	2,747.94	9.65	9.61	-88.27	1.11	-36.60	36.67	17.43	19.24	1.906	Minor Risk	
2,800.00	2,800.00	2,797.57	2,797.36	9.83	9.79	-87.56	1.68	-39.49	39.61	20.03	19.58	2.023	Minor Risk	
2,850.00	2,850.00	2,847.01	2,846.67	10.00	9.96	-86.86	2.36	-42.90	43.08	23.17	19.91	2.164	Minor Risk	
2,900.00	2,900.00	2,896.36	2,895.87	10.18	10.13	-86.17	3.14	-46.82	47.10	26.85	20.25	2.326	Minor Risk	
2,950.00	2,950.00	2,945.62	2,944.92	10.36	10.30	-85.52	4.02	-51.25	51.65	31.07	20.58	2.510	Alert	
3,000.00	3,000.00	2,994.78	2,993.82	10.54	10.47	-84.92	5.00	-56.19	56.74	35.83	20.91	2.713	Alert	
3,050.00	3,050.00	3,043.83	3,042.55	10.72	10.65	-84.37	6.08	-61.63	62.36	41.12	21.24	2.936	Alert	
3,100.00	3,100.00	3,092.75	3,091.10	10.90	10.82	-83.87	7.25	-67.56	68.52	46.96	21.56	3.178	Alert	
3,150.00	3,150.00	3,141.54	3,139.44	11.08	10.99	-83.42	8.53	-73.98	75.20	53.32	21.88	3.437	Alert	
3,200.00	3,200.00	3,190.17	3,187.57	11.26	11.16	-83.02	9.90	-80.89	82.42	60.22	22.20	3.712	Alert	
3,250.00	3,250.00	3,239.25	3,236.06	11.44	11.34	-82.66	11.36	-88.27	90.06	67.52	22.54	3.996	Alert	
3,300.00	3,300.00	3,288.65	3,284.88	11.62	11.51	-82.36	12.85	-95.73	97.75	74.86	22.89	4.271	Alert	
3,350.00	3,350.00	3,338.05	3,333.69	11.80	11.69	-82.09	14.33	-103.19	105.43	82.19	23.24	4.537	Alert	
3,400.00	3,400.00	3,387.46	3,382.51	11.97	11.86	-81.87	15.81	-110.65	113.12	89.53	23.59	4.795	Alert	
3,450.00	3,450.00	3,436.86	3,431.32	12.15	12.04	-81.67	17.29	-118.11	120.81	96.87	23.94	5.046		
3,500.00	3,500.00	3,486.26	3,480.13	12.33	12.22	-81.50	18.77	-125.58	128.50	104.21	24.29	5.290		
3,550.00	3,550.00	3,535.67	3,528.95	12.51	12.40	-81.34	20.25	-133.04	136.19	111.55	24.64	5.527		
3,600.00	3,600.00	3,585.07	3,577.76	12.69	12.57	-81.21	21.74	-140.50	143.88	118.89	25.00	5.756		
3,650.00	3,650.00	3,634.48	3,626.58	12.87	12.75	-81.08	23.22	-147.96	151.58	126.23	25.35	5.980		
3,700.00	3,700.00	3,683.88	3,675.39	13.05	12.93	-80.97	24.70	-155.42	159.27	133.57	25.70	6.197		
3,750.00	3,750.00	3,733.28	3,724.21	13.23	13.11	-80.87	26.18	-162.89	166.97	140.91	26.05	6.409		
3,800.00	3,800.00	3,782.69	3,773.02	13.41	13.29	-80.78	27.66	-170.35	174.66	148.26	26.41	6.614		
3,850.00	3,850.00	3,832.09	3,821.83	13.59	13.47	-80.69	29.14	-177.81	182.36	155.60	26.76	6.815		
3,900.00	3,900.00	3,881.49	3,870.65	13.77	13.65	-80.61	30.63	-185.27	190.05	162.94	27.11	7.010		
3,950.00	3,950.00	3,930.90	3,919.46	13.94	13.83	-80.54	32.11	-192.74	197.75	170.28	27.47	7.199		
4,000.00	4,000.00	3,980.30	3,968.28	14.12	14.01	-80.48	33.59	-200.20	205.44	177.62	27.82	7.384		
4,050.00	4,050.00	4,029.74	4,017.12	14.30	14.19	-80.41	35.07	-207.66	212.92	184.75	28.17	7.557		
4,100.00	4,099.99	4,079.24	4,066.03	14.48	14.37	-80.33	36.56	-215.14	219.98	191.44	28.53	7.711		
4,150.00	4,149.97	4,128.80	4,115.00	14.66	14.55	-80.26	38.04	-222.63	226.57	197.69	28.88	7.845		
4,200.00	4,199.94	4,178.41	4,164.02	14.83	14.74	-80.19	39.53	-230.12	232.74	203.50	29.23	7.961		
4,250.00	4,249.88	4,228.06	4,213.08	15.01	14.92	-80.13	41.02	-237.62	238.47	208.89	29.59	8.060		
4,300.00	4,299.79	4,277.76	4,262.18	15.19	15.10	-80.07	42.51	-245.13	243.82	213.88	29.94	8.143		
4,350.00	4,349.70	4,327.46	4,311.29	15.36	15.28	-80.00	44.00	-252.63	249.09	218.79	30.30	8.222		
4,400.00	4,399.60	4,377.16	4,360.40	15.54	15.47	-80.00	45.49	-260.14	254.36	223.71	30.65	8.299		
4,450.00	4,449.51	4,426.86	4,409.51	15.72	15.65	-80.00	46.98	-267.65	259.65	228.64	31.01	8.374		
4,500.00	4,499.41	4,476.56	4,458.61	15.90	15.83	-80.03	48.47	-275.15	264.94	233.58	31.36	8.448		
4,550.00	4,549.32	4,526.26	4,507.72	16.07	16.02	-80.00	49.96	-282.66	270.24	238.53	31.72	8.521		
4,600.00	4,599.23	4,575.96	4,556.83	16.25	16.20	-80.00	51.45	-290.17	275.55	243.48	32.07	8.592		
4,650.00	4,649.13	4,625.66	4,605.94	16.43	16.39	-80.00	52.94	-297.67	280.86	248.43	32.43	8.661		
4,700.00	4,699.04	4,675.36	4,655.04	16.61	16.57	-80.00	54.43	-305.18	286.18	253.40	32.78	8.729		
4,750.00	4,748.95	4,725.06	4,704.15	16.79	16.75	-80.00	55.92	-312.69	291.51	258.36	33.14	8.796		
4,800.00	4,798.85	4,774.76	4,753.26	16.96	16.94	-80.00	57.42	-320.20	296.84	263.34	33.50	8.861		
4,850.00	4,848.76	4,824.46	4,802.37	17.14	17.12	-80.00	58.91	-327.70	302.17	268.31	33.86	8.925		
4,900.00	4,898.67	4,874.16	4,851.47	17.32	17.31	-80.00	60.40	-335.21	307.51	273.30	34.21	8.988		
4,950.00	4,948.57	4,923.86	4,900.58	17.50	17.49	-80.00	61.89	-342.72	312.85	278.28	34.57	9.050		
5,000.00	4,998.48	4,973.56	4,949.69	17.68	17.68	-80.00	63.38	-350.22	318.20	283.27	34.93	9.110		
5,050.00	5,048.39	5,023.26	4,998.79	17.86	17.86	-80.00	64.87	-357.73	323.55	288.27	35.29	9.170		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance				Minimum Separation	Separation Factor	Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
5,100.00	5,098.29	5,072.96	5,047.90	18.04	18.05	-40.88	66.36	-365.24	328.91	293.26	35.64	9.228		
5,150.00	5,148.20	5,122.68	5,097.01	18.22	18.23	-41.07	67.85	-372.74	334.27	298.26	36.00	9.285		
5,200.00	5,198.11	5,172.36	5,146.12	18.39	18.42	-41.26	69.34	-380.25	339.63	303.27	36.36	9.341		
5,250.00	5,248.01	5,222.06	5,195.22	18.57	18.61	-41.43	70.83	-387.76	345.00	308.28	36.72	9.396		
5,300.00	5,297.92	5,271.76	5,244.33	18.75	18.79	-41.60	72.32	-395.26	350.36	313.29	37.08	9.449		
5,350.00	5,347.82	5,321.46	5,293.44	18.93	18.98	-41.77	73.81	-402.77	355.74	318.30	37.44	9.502		
5,400.00	5,397.73	5,371.16	5,342.55	19.11	19.16	-41.93	75.30	-410.28	361.11	323.32	37.80	9.554		
5,450.00	5,447.64	5,420.86	5,391.65	19.29	19.35	-42.09	76.79	-417.79	366.49	328.33	38.15	9.605		
5,500.00	5,497.54	5,470.56	5,440.76	19.47	19.54	-42.24	78.28	-425.29	371.87	333.36	38.51	9.655		
5,550.00	5,547.45	5,520.26	5,489.87	19.65	19.72	-42.39	79.77	-432.80	377.25	338.38	38.87	9.705		
5,600.00	5,597.36	5,569.96	5,538.98	19.83	19.91	-42.53	81.26	-440.31	382.64	343.40	39.23	9.753		
5,650.00	5,647.26	5,619.66	5,588.08	20.01	20.09	-42.67	82.75	-447.81	388.03	348.43	39.59	9.800		
5,700.00	5,697.17	5,669.36	5,637.19	20.19	20.28	-42.81	84.25	-455.32	393.42	353.46	39.95	9.847		
5,750.00	5,747.08	5,719.06	5,686.30	20.37	20.47	-42.94	85.74	-462.83	398.81	358.49	40.31	9.893		
5,800.00	5,796.98	5,768.76	5,735.40	20.55	20.65	-43.07	87.23	-470.33	404.20	363.53	40.67	9.938		
5,850.00	5,846.89	5,818.46	5,784.51	20.73	20.84	-43.19	88.72	-477.84	409.60	368.56	41.03	9.982		
5,900.00	5,896.80	5,868.16	5,833.62	20.91	21.03	-43.31	90.21	-485.35	415.00	373.60	41.39	10.025		
5,950.00	5,946.70	5,917.86	5,882.73	21.09	21.21	-43.43	91.70	-492.85	420.39	378.64	41.75	10.068		
6,000.00	5,996.61	5,967.56	5,931.83	21.27	21.40	-43.55	93.19	-500.36	425.80	383.68	42.12	10.110		
6,050.00	6,046.52	6,017.26	5,980.94	21.45	21.59	-43.66	94.68	-507.87	431.20	388.72	42.48	10.152		
6,100.00	6,096.42	6,066.96	6,030.05	21.63	21.78	-43.77	96.17	-515.38	436.60	393.77	42.84	10.192		
6,150.00	6,146.33	6,116.66	6,079.16	21.81	21.96	-43.88	97.66	-522.88	442.01	398.81	43.20	10.232		
6,200.00	6,196.23	6,166.36	6,128.26	21.99	22.15	-43.98	99.15	-530.39	447.42	403.86	43.56	10.271		
6,250.00	6,246.14	6,216.06	6,177.37	22.17	22.34	-44.08	100.64	-537.90	452.83	408.91	43.92	10.310		
6,300.00	6,296.05	6,265.76	6,226.48	22.35	22.52	-44.18	102.13	-545.40	458.24	413.96	44.28	10.348		
6,350.00	6,345.95	6,315.46	6,275.58	22.53	22.71	-44.28	103.62	-552.91	463.65	419.01	44.64	10.386		
6,400.00	6,395.86	6,365.16	6,324.69	22.71	22.90	-44.38	105.11	-560.42	469.06	424.06	45.00	10.422		
6,450.00	6,445.77	6,414.86	6,373.80	22.89	23.09	-44.47	106.60	-567.92	474.48	429.11	45.37	10.459		
6,500.00	6,495.67	6,464.56	6,422.91	23.07	23.27	-44.56	108.09	-575.43	479.89	434.16	45.73	10.494		
6,550.00	6,545.58	6,514.26	6,472.01	23.25	23.46	-44.65	109.58	-582.94	485.31	439.22	46.09	10.530		
6,600.00	6,595.49	6,563.96	6,521.12	23.43	23.65	-44.74	111.07	-590.44	490.73	444.28	46.45	10.564		
6,650.00	6,645.39	6,613.66	6,570.23	23.62	23.84	-44.82	112.57	-597.95	496.15	449.33	46.81	10.598		
6,700.00	6,695.30	6,663.36	6,619.34	23.80	24.03	-44.90	114.06	-605.46	501.57	454.39	47.18	10.632		
6,750.00	6,745.21	6,713.06	6,668.44	23.98	24.21	-44.99	115.55	-612.97	506.99	459.45	47.54	10.665		
6,800.00	6,795.11	6,762.76	6,717.55	24.16	24.40	-45.07	117.04	-620.47	512.41	464.51	47.90	10.697		
6,850.00	6,845.02	6,812.46	6,766.66	24.34	24.59	-45.14	118.53	-627.98	517.83	469.57	48.26	10.730		
6,900.00	6,894.93	6,862.16	6,815.77	24.52	24.78	-45.22	120.02	-635.49	523.26	474.63	48.62	10.761		
6,950.00	6,944.83	6,911.86	6,864.87	24.70	24.97	-45.29	121.51	-642.99	528.68	479.69	48.99	10.792		
7,000.00	6,994.74	6,961.56	6,913.98	24.88	25.15	-45.37	123.00	-650.50	534.11	484.76	49.35	10.823		
7,050.00	7,044.65	7,011.26	6,963.09	25.06	25.34	-45.44	124.49	-658.01	539.53	489.82	49.71	10.853		
7,100.00	7,094.55	7,060.96	7,012.19	25.24	25.53	-45.51	125.98	-665.51	544.96	494.89	50.08	10.883		
7,150.00	7,144.46	7,110.66	7,061.30	25.43	25.72	-45.58	127.47	-673.02	550.39	499.95	50.44	10.912		
7,200.00	7,194.36	7,160.37	7,110.41	25.61	25.91	-45.65	128.96	-680.53	555.82	505.02	50.80	10.941		
7,250.00	7,244.27	7,210.07	7,159.52	25.79	26.09	-45.71	130.45	-688.03	561.25	510.08	51.16	10.970		
7,300.00	7,294.18	7,259.77	7,208.62	25.97	26.28	-45.78	131.94	-695.54	566.68	515.15	51.53	10.998		
7,350.00	7,344.08	7,309.47	7,257.73	26.15	26.47	-45.84	133.43	-703.05	572.11	520.22	51.89	11.026		
7,400.00	7,393.99	7,359.17	7,306.84	26.33	26.66	-45.91	134.92	-710.56	577.54	525.29	52.25	11.053		
7,450.00	7,443.90	7,408.87	7,355.95	26.51	26.85	-45.97	136.41	-718.06	582.97	530.36	52.62	11.080		
7,500.00	7,493.80	7,458.57	7,405.05	26.69	27.04	-46.03	137.90	-725.57	588.41	535.43	52.98	11.106		
7,550.00	7,543.71	7,508.27	7,454.16	26.88	27.22	-46.09	139.39	-733.08	593.84	540.50	53.34	11.133		
7,600.00	7,593.62	7,557.97	7,503.27	27.06	27.41	-46.14	140.89	-740.58	599.28	545.57	53.71	11.159		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,650.00	7,643.52	7,607.67	7,552.38	27.24	27.60	-46.20	142.38	-748.09	604.71	550.64	54.07	11.184		
7,700.00	7,693.43	7,657.36	7,601.48	27.42	27.79	-46.28	143.87	-755.60	610.21	555.78	54.43	11.211		
7,750.00	7,743.38	7,707.01	7,650.53	27.60	27.98	-46.36	145.35	-763.10	616.11	561.32	54.79	11.244		
7,800.00	7,793.35	7,756.60	7,699.54	27.78	28.17	-46.39	146.84	-770.59	622.47	567.31	55.16	11.285		
7,850.00	7,843.34	7,813.26	7,755.55	27.96	28.38	-46.38	148.49	-778.89	629.06	573.47	55.59	11.317		
7,900.00	7,893.33	7,872.42	7,814.18	28.14	28.60	-46.33	150.05	-786.72	635.37	579.34	56.03	11.339		
7,950.00	7,943.33	7,931.77	7,873.10	28.31	28.82	-90.70	151.43	-793.68	641.21	584.74	56.47	11.355		
8,000.00	7,993.33	7,991.33	7,932.33	28.49	29.04	-90.58	152.63	-799.75	646.30	589.41	56.89	11.360		
8,050.00	8,043.33	8,051.06	7,991.83	28.67	29.26	-90.49	153.66	-804.94	650.63	593.33	57.31	11.354		
8,100.00	8,093.33	8,110.94	8,051.55	28.85	29.48	-90.41	154.51	-809.22	654.20	596.49	57.71	11.336		
8,150.00	8,143.33	8,170.95	8,111.46	29.03	29.69	-90.35	155.18	-812.58	657.00	598.90	58.10	11.308		
8,200.00	8,193.33	8,231.05	8,171.51	29.20	29.90	-90.30	155.67	-815.03	659.03	600.56	58.48	11.269		
8,250.00	8,243.33	8,291.22	8,231.66	29.38	30.11	-90.28	155.97	-816.55	660.30	601.45	58.85	11.220		
8,300.00	8,293.33	8,351.42	8,291.85	29.56	30.32	-90.27	156.09	-817.14	660.79	601.59	59.20	11.161		
8,350.00	8,343.33	8,402.80	8,343.23	29.74	30.50	-90.27	156.09	-817.15	660.79	601.24	59.55	11.096		
8,400.00	8,393.33	8,452.80	8,393.23	29.91	30.67	-90.27	156.09	-817.15	660.79	600.89	59.90	11.031		
8,450.00	8,443.33	8,502.80	8,443.23	30.09	30.84	-90.27	156.09	-817.15	660.79	600.54	60.25	10.967		
8,500.00	8,493.33	8,552.80	8,493.23	30.27	31.01	-90.27	156.09	-817.15	660.79	600.19	60.60	10.904		
8,550.00	8,543.33	8,602.80	8,543.23	30.45	31.18	-90.27	156.09	-817.15	660.79	599.84	60.95	10.841		
8,600.00	8,593.33	8,652.80	8,593.23	30.63	31.35	-90.27	156.09	-817.15	660.79	599.49	61.30	10.779		
8,650.00	8,643.32	8,702.86	8,643.28	30.80	31.52	90.06	155.24	-817.14	660.79	599.15	61.64	10.720		
8,700.00	8,693.06	8,752.95	8,693.12	30.96	31.68	90.06	150.32	-817.11	660.79	598.83	61.96	10.665		
8,750.00	8,742.19	8,803.05	8,742.33	31.11	31.83	90.06	141.08	-817.05	660.78	598.52	62.27	10.612		
8,800.00	8,790.32	8,853.14	8,790.55	31.26	31.98	90.06	127.57	-816.97	660.78	598.21	62.57	10.561		
8,850.00	8,837.10	8,903.23	8,837.41	31.39	32.13	90.05	109.90	-816.86	660.76	597.91	62.86	10.512		
8,900.00	8,882.17	8,953.32	8,882.54	31.52	32.26	90.05	88.21	-816.72	660.75	597.61	63.14	10.465		
8,950.00	8,925.18	9,003.41	8,925.61	31.64	32.38	90.05	62.67	-816.56	660.73	597.32	63.41	10.420		
9,000.00	8,965.81	9,053.49	8,966.27	31.75	32.49	90.05	33.47	-816.38	660.71	597.05	63.67	10.377		
9,050.00	9,003.74	9,103.57	9,004.23	31.85	32.59	90.05	0.83	-816.17	660.69	596.77	63.92	10.336		
9,100.00	9,038.70	9,153.64	9,039.19	31.94	32.68	90.04	-35.00	-815.95	660.67	596.50	64.17	10.296		
9,150.00	9,070.40	9,203.71	9,070.89	32.06	32.75	90.04	-73.73	-815.70	660.64	596.24	64.41	10.258		
9,200.00	9,098.62	9,253.77	9,099.08	32.18	32.82	90.04	-115.08	-815.44	660.62	595.98	64.64	10.220		
9,250.00	9,123.14	9,303.82	9,123.55	32.30	32.87	90.03	-158.72	-815.17	660.59	595.72	64.87	10.183		
9,300.00	9,143.76	9,353.87	9,144.12	32.43	32.90	90.03	-204.33	-814.88	660.58	595.46	65.10	10.147		
9,350.00	9,160.34	9,403.91	9,160.63	32.56	32.93	90.02	-251.55	-814.58	660.53	595.21	65.32	10.112		
9,400.00	9,172.75	9,453.94	9,172.96	32.70	32.95	90.02	-300.02	-814.28	660.49	594.95	65.54	10.077		
9,450.00	9,180.88	9,503.96	9,181.01	32.83	32.97	90.02	-349.37	-813.97	660.46	594.70	65.76	10.044		
9,500.00	9,184.69	9,553.98	9,184.73	32.97	33.01	90.01	-399.23	-813.65	660.43	594.46	65.97	10.011		
9,550.00	9,185.00	9,603.98	9,185.00	33.12	33.08	90.01	-449.23	-813.34	660.40	594.21	66.19	9.977		
9,600.00	9,185.00	9,653.98	9,185.00	33.28	33.17	90.01	-499.23	-813.02	660.36	593.94	66.42	9.942		
9,650.00	9,185.00	9,703.98	9,185.00	33.46	33.26	90.01	-549.23	-812.71	660.33	593.65	66.68	9.902		
9,700.00	9,185.00	9,753.98	9,185.00	33.64	33.36	90.01	-599.23	-812.39	660.30	593.34	66.96	9.861		
9,750.00	9,185.00	9,803.98	9,185.00	33.85	33.46	90.01	-649.23	-812.08	660.26	593.00	67.26	9.816		
9,800.00	9,185.00	9,853.98	9,185.00	34.05	33.57	90.01	-699.23	-811.76	660.23	592.65	67.58	9.770		
9,850.00	9,185.00	9,903.98	9,185.00	34.29	33.68	90.01	-749.23	-811.45	660.20	592.28	67.92	9.720		
9,900.00	9,185.00	9,953.98	9,185.00	34.53	33.81	90.01	-799.23	-811.14	660.17	591.89	68.28	9.668		
9,950.00	9,185.00	10,003.98	9,185.00	34.79	33.93	90.01	-849.22	-810.82	660.13	591.47	68.67	9.614		
10,000.00	9,185.00	10,053.98	9,185.00	35.06	34.07	90.01	-899.22	-810.51	660.10	591.04	69.07	9.558		
10,050.00	9,185.00	10,103.98	9,185.00	35.35	34.21	90.01	-949.22	-810.19	660.07	590.58	69.49	9.499		
10,100.00	9,185.00	10,153.98	9,185.00	35.64	34.36	90.01	-999.22	-809.88	660.03	590.11	69.93	9.439		
10,150.00	9,185.00	10,203.98	9,185.00	35.95	34.51	90.01	-1,049.22	-809.56	660.00	589.61	70.39	9.376		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,200.00	9,185.00	10,253.98	9,185.00	36.27	34.67	90.01	-1,099.22	-809.25	659.97	589.11	70.86	9.313		
10,250.00	9,185.00	10,303.98	9,185.00	36.61	34.83	90.01	-1,149.22	-808.93	659.94	588.57	71.36	9.248		
10,300.00	9,185.00	10,353.98	9,185.00	36.94	35.01	90.01	-1,199.22	-808.62	659.90	588.03	71.87	9.182		
10,350.00	9,185.00	10,403.98	9,185.00	37.30	35.18	90.01	-1,249.22	-808.30	659.87	587.47	72.40	9.114		
10,400.00	9,185.00	10,453.98	9,185.00	37.66	35.36	90.01	-1,299.22	-807.99	659.84	586.89	72.95	9.046		
10,450.00	9,185.00	10,503.98	9,185.00	38.04	35.55	90.01	-1,349.21	-807.67	659.80	586.29	73.51	8.976		
10,500.00	9,185.00	10,553.98	9,185.00	38.43	35.75	90.01	-1,399.21	-807.36	659.77	585.69	74.09	8.905		
10,550.00	9,185.00	10,603.98	9,185.00	38.83	35.94	90.01	-1,449.21	-807.04	659.74	585.06	74.68	8.834		
10,600.00	9,185.00	10,653.98	9,185.00	39.23	36.15	90.01	-1,499.21	-806.73	659.71	584.42	75.29	8.762		
10,650.00	9,185.00	10,703.98	9,185.00	39.65	36.36	90.01	-1,549.21	-806.41	659.67	583.76	75.91	8.690		
10,700.00	9,185.00	10,753.98	9,185.00	40.07	36.57	90.01	-1,599.21	-806.10	659.64	583.09	76.55	8.617		
10,750.00	9,185.00	10,803.98	9,185.00	40.50	36.79	90.01	-1,649.21	-805.79	659.61	582.40	77.20	8.544		
10,800.00	9,185.00	10,853.98	9,185.00	40.94	37.02	90.01	-1,699.21	-805.47	659.57	581.71	77.87	8.471		
10,850.00	9,185.00	10,903.98	9,185.00	41.39	37.25	90.01	-1,749.21	-805.16	659.54	581.00	78.54	8.397		
10,900.00	9,185.00	10,953.98	9,185.00	41.84	37.48	90.01	-1,799.21	-804.84	659.51	580.27	79.23	8.324		
10,950.00	9,185.00	11,003.98	9,185.00	42.31	37.72	90.01	-1,849.20	-804.53	659.48	579.54	79.94	8.250		
11,000.00	9,185.00	11,053.98	9,185.00	42.78	37.97	90.01	-1,899.20	-804.21	659.44	578.79	80.65	8.176		
11,050.00	9,185.00	11,103.98	9,185.00	43.26	38.21	90.01	-1,949.20	-803.90	659.41	578.03	81.38	8.103		
11,100.00	9,185.00	11,153.98	9,185.00	43.74	38.47	90.01	-1,999.20	-803.58	659.38	577.26	82.12	8.030		
11,150.00	9,185.00	11,203.98	9,185.00	44.24	38.72	90.01	-2,049.20	-803.27	659.34	576.47	82.87	7.956		
11,200.00	9,185.00	11,253.98	9,185.00	44.74	38.99	90.01	-2,099.20	-802.95	659.31	575.68	83.63	7.884		
11,250.00	9,185.00	11,303.98	9,185.00	45.24	39.25	90.01	-2,149.20	-802.64	659.28	574.88	84.40	7.811		
11,300.00	9,185.00	11,353.98	9,185.00	45.75	39.52	90.01	-2,199.20	-802.32	659.25	574.06	85.18	7.739		
11,350.00	9,185.00	11,403.98	9,185.00	46.27	39.80	90.01	-2,249.20	-802.01	659.21	573.24	85.97	7.668		
11,400.00	9,185.00	11,453.98	9,185.00	46.79	40.08	90.01	-2,299.20	-801.69	659.18	572.41	86.77	7.597		
11,450.00	9,185.00	11,503.98	9,185.00	47.32	40.36	90.01	-2,349.19	-801.38	659.15	571.56	87.58	7.526		
11,500.00	9,185.00	11,553.98	9,185.00	47.85	40.65	90.01	-2,399.19	-801.06	659.11	570.71	88.40	7.456		
11,550.00	9,185.00	11,603.98	9,185.00	48.39	40.93	90.01	-2,449.19	-800.75	659.08	569.85	89.23	7.386		
11,600.00	9,185.00	11,653.98	9,185.00	48.94	41.23	90.01	-2,499.19	-800.43	659.05	568.98	90.07	7.317		
11,650.00	9,185.00	11,703.98	9,185.00	49.49	41.52	90.01	-2,549.19	-800.12	659.02	568.10	90.92	7.249		
11,700.00	9,185.00	11,753.98	9,185.00	50.04	41.83	90.01	-2,599.19	-799.81	658.98	567.21	91.77	7.181		
11,750.00	9,185.00	11,803.98	9,185.00	50.60	42.13	90.01	-2,649.19	-799.49	658.95	566.32	92.63	7.114		
11,800.00	9,185.00	11,853.98	9,185.00	51.16	42.44	90.01	-2,699.19	-799.18	658.92	565.42	93.50	7.047		
11,850.00	9,185.00	11,903.98	9,185.00	51.72	42.75	90.01	-2,749.19	-798.86	658.88	564.51	94.38	6.981		
11,900.00	9,185.00	11,953.98	9,185.00	52.29	43.06	90.01	-2,799.19	-798.55	658.85	563.59	95.26	6.916		
11,950.00	9,185.00	12,003.98	9,185.00	52.87	43.38	90.01	-2,849.18	-798.23	658.82	562.67	96.15	6.852		
12,000.00	9,185.00	12,053.98	9,185.00	53.44	43.70	90.01	-2,899.18	-797.92	658.79	561.74	97.05	6.788		
12,050.00	9,185.00	12,103.98	9,185.00	54.02	44.02	90.01	-2,949.18	-797.60	658.75	560.80	97.95	6.725		
12,100.00	9,185.00	12,153.98	9,185.00	54.61	44.35	90.01	-2,999.18	-797.29	658.72	559.85	98.87	6.663		
12,150.00	9,185.00	12,203.98	9,185.00	55.20	44.68	90.01	-3,049.18	-796.97	658.69	558.90	99.78	6.601		
12,200.00	9,185.00	12,253.98	9,185.00	55.79	45.01	90.01	-3,099.18	-796.66	658.65	557.95	100.71	6.540		
12,250.00	9,185.00	12,303.98	9,185.00	56.38	45.35	90.01	-3,149.18	-796.34	658.62	556.98	101.64	6.480		
12,300.00	9,185.00	12,353.98	9,185.00	56.98	45.68	90.01	-3,199.18	-796.03	658.59	556.02	102.57	6.421		
12,350.00	9,185.00	12,403.98	9,185.00	57.58	46.02	90.01	-3,249.18	-795.71	658.55	555.04	103.51	6.362		
12,400.00	9,185.00	12,453.98	9,185.00	58.18	46.37	90.01	-3,299.18	-795.40	658.52	554.06	104.46	6.304		
12,450.00	9,185.00	12,503.98	9,185.00	58.79	46.71	90.01	-3,349.17	-795.08	658.49	553.08	105.41	6.247		
12,500.00	9,185.00	12,553.98	9,185.00	59.40	47.06	90.01	-3,399.17	-794.77	658.46	552.09	106.37	6.190		
12,550.00	9,185.00	12,603.98	9,185.00	60.01	47.41	90.01	-3,449.17	-794.46	658.42	551.09	107.33	6.134		
12,600.00	9,185.00	12,653.98	9,185.00	60.63	47.76	90.01	-3,499.17	-794.14	658.39	550.09	108.30	6.079		
12,650.00	9,185.00	12,703.98	9,185.00	61.24	48.12	90.01	-3,549.17	-793.83	658.36	549.08	109.27	6.025		
12,700.00	9,185.00	12,753.98	9,185.00	61.86	48.48	90.01	-3,599.17	-793.51	658.32	548.08	110.25	5.971		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offet Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,750.00	9,185.00	12,803.98	9,185.00	62.49	48.83	90.01	-3,649.17	-793.20	658.29	547.06	111.23	5.918		
12,800.00	9,185.00	12,853.98	9,185.00	63.11	49.20	90.01	-3,699.17	-792.88	658.26	546.04	112.22	5.866		
12,850.00	9,185.00	12,903.98	9,185.00	63.74	49.58	90.01	-3,749.17	-792.57	658.23	545.02	113.21	5.814		
12,900.00	9,185.00	12,953.98	9,185.00	64.36	49.93	90.01	-3,799.17	-792.25	658.19	543.99	114.20	5.763		
12,950.00	9,185.00	13,003.98	9,185.00	65.00	50.29	90.01	-3,849.16	-791.94	658.16	542.96	115.20	5.713		
13,000.00	9,185.00	13,053.98	9,185.00	65.63	50.66	90.01	-3,899.16	-791.62	658.13	541.92	116.20	5.664		
13,050.00	9,185.00	13,103.98	9,185.00	66.26	51.03	90.01	-3,949.16	-791.31	658.09	540.88	117.21	5.615		
13,100.00	9,185.00	13,153.98	9,185.00	66.90	51.41	90.01	-3,999.16	-790.99	658.06	539.84	118.22	5.566		
13,150.00	9,185.00	13,203.98	9,185.00	67.54	51.78	90.01	-4,049.16	-790.68	658.03	538.79	119.24	5.519		
13,200.00	9,185.00	13,253.98	9,185.00	68.18	52.16	90.01	-4,099.16	-790.36	658.00	537.74	120.25	5.472		
13,250.00	9,185.00	13,303.98	9,185.00	68.82	52.54	90.01	-4,149.16	-790.05	657.96	536.69	121.28	5.425		
13,300.00	9,185.00	13,353.98	9,185.00	69.46	52.92	90.01	-4,199.16	-789.73	657.93	535.63	122.30	5.380		
13,350.00	9,185.00	13,403.98	9,185.00	70.11	53.30	90.01	-4,249.16	-789.42	657.90	534.57	123.33	5.334		
13,400.00	9,185.00	13,453.98	9,185.00	70.76	53.69	90.01	-4,299.16	-789.10	657.86	533.50	124.36	5.290		
13,450.00	9,185.00	13,503.98	9,185.00	71.40	54.07	90.01	-4,349.15	-788.79	657.83	532.43	125.40	5.246		
13,500.00	9,185.00	13,553.98	9,185.00	72.05	54.46	90.01	-4,399.15	-788.48	657.80	531.36	126.43	5.203		
13,550.00	9,185.00	13,603.98	9,185.00	72.71	54.85	90.01	-4,449.15	-788.16	657.77	530.29	127.48	5.160		
13,600.00	9,185.00	13,653.98	9,185.00	73.36	55.24	90.01	-4,499.15	-787.85	657.73	529.21	128.52	5.118		
13,650.00	9,185.00	13,703.98	9,185.00	74.01	55.63	90.01	-4,549.15	-787.53	657.70	528.13	129.57	5.076		
13,700.00	9,185.00	13,753.98	9,185.00	74.67	56.03	90.01	-4,599.15	-787.22	657.67	527.05	130.62	5.035		
13,750.00	9,185.00	13,803.98	9,185.00	75.33	56.42	90.01	-4,649.15	-786.90	657.63	525.96	131.67	4.995 Alert		
13,800.00	9,185.00	13,853.98	9,185.00	75.99	56.82	90.01	-4,699.15	-786.59	657.60	524.88	132.73	4.955 Alert		
13,850.00	9,185.00	13,903.98	9,185.00	76.65	57.22	90.01	-4,749.15	-786.27	657.57	523.78	133.78	4.915 Alert		
13,900.00	9,185.00	13,953.98	9,185.00	77.31	57.62	90.01	-4,799.15	-785.96	657.54	522.69	134.84	4.876 Alert		
13,950.00	9,185.00	14,003.98	9,185.00	77.97	58.02	90.01	-4,849.14	-785.64	657.50	521.60	135.91	4.838 Alert		
14,000.00	9,185.00	14,053.98	9,185.00	78.63	58.42	90.01	-4,899.14	-785.33	657.47	520.50	136.97	4.800 Alert		
14,050.00	9,185.00	14,103.98	9,185.00	79.30	58.82	90.01	-4,949.14	-785.01	657.44	519.40	138.04	4.763 Alert		
14,100.00	9,185.00	14,153.98	9,185.00	79.96	59.23	90.01	-4,999.14	-784.70	657.40	518.29	139.11	4.726 Alert		
14,150.00	9,185.00	14,203.98	9,185.00	80.63	59.63	90.01	-5,049.14	-784.38	657.37	517.19	140.18	4.689 Alert		
14,200.00	9,185.00	14,253.98	9,185.00	81.30	60.04	90.01	-5,099.14	-784.07	657.34	516.08	141.26	4.653 Alert		
14,250.00	9,185.00	14,303.98	9,185.00	81.97	60.45	90.01	-5,149.14	-783.75	657.31	514.97	142.34	4.618 Alert		
14,300.00	9,185.00	14,353.98	9,185.00	82.64	60.86	90.01	-5,199.14	-783.44	657.27	513.86	143.42	4.583 Alert		
14,350.00	9,185.00	14,403.98	9,185.00	83.31	61.27	90.01	-5,249.14	-783.13	657.24	512.74	144.50	4.548 Alert		
14,400.00	9,185.00	14,453.98	9,185.00	83.98	61.68	90.01	-5,299.14	-782.81	657.21	511.63	145.58	4.514 Alert		
14,450.00	9,185.00	14,503.98	9,185.00	84.65	62.09	90.01	-5,349.13	-782.50	657.17	510.51	146.67	4.481 Alert		
14,500.00	9,185.00	14,553.98	9,185.00	85.32	62.50	90.01	-5,399.13	-782.18	657.14	509.39	147.75	4.448 Alert		
14,550.00	9,185.00	14,603.98	9,185.00	86.00	62.92	90.01	-5,449.13	-781.87	657.11	508.26	148.84	4.415 Alert		
14,600.00	9,185.00	14,653.98	9,185.00	86.68	63.33	90.01	-5,499.13	-781.55	657.08	507.14	149.94	4.382 Alert		
14,650.00	9,185.00	14,703.98	9,185.00	87.35	63.75	90.01	-5,549.13	-781.24	657.04	506.01	151.03	4.350 Alert		
14,700.00	9,185.00	14,753.98	9,185.00	88.03	64.17	90.01	-5,599.13	-780.92	657.01	504.89	152.12	4.319 Alert		
14,750.00	9,185.00	14,803.98	9,185.00	88.71	64.59	90.01	-5,649.13	-780.61	656.98	503.76	153.22	4.288 Alert		
14,800.00	9,185.00	14,853.98	9,185.00	89.39	65.01	90.01	-5,699.13	-780.29	656.94	502.62	154.32	4.257 Alert		
14,850.00	9,185.00	14,903.98	9,185.00	90.07	65.43	90.01	-5,749.13	-779.98	656.91	501.49	155.42	4.227 Alert		
14,900.00	9,185.00	14,953.98	9,185.00	90.75	65.85	90.01	-5,799.13	-779.66	656.88	500.36	156.52	4.197 Alert		
14,950.00	9,185.00	15,003.98	9,185.00	91.43	66.27	90.01	-5,849.12	-779.35	656.85	499.22	157.63	4.167 Alert		
15,000.00	9,185.00	15,053.98	9,185.00	92.11	66.69	90.01	-5,899.12	-779.03	656.81	498.08	158.73	4.138 Alert		
15,050.00	9,185.00	15,103.98	9,185.00	92.79	67.12	90.01	-5,949.12	-778.72	656.78	496.94	159.84	4.109 Alert		
15,100.00	9,185.00	15,153.98	9,185.00	93.47	67.54	90.01	-5,999.12	-778.40	656.75	495.80	160.95	4.081 Alert		
15,150.00	9,185.00	15,203.98	9,185.00	94.16	67.97	90.01	-6,049.12	-778.09	656.71	494.66	162.06	4.052 Alert		
15,200.00	9,185.00	15,253.98	9,185.00	94.84	68.39	90.01	-6,099.12	-777.77	656.68	493.51	163.17	4.025 Alert		
15,250.00	9,185.00	15,303.98	9,185.00	95.53	68.82	90.01	-6,149.12	-777.46	656.65	492.37	164.28	3.997 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
15,300.00	9,185.00	15,353.98	9,185.00	96.21	69.25	90.01	-6,199.12	-777.15	656.61	491.22	165.39	3.970	Alert	
15,350.00	9,185.00	15,403.98	9,185.00	96.90	69.68	90.01	-6,249.12	-776.83	656.58	490.07	166.51	3.943	Alert	
15,400.00	9,185.00	15,453.98	9,185.00	97.59	70.11	90.01	-6,299.12	-776.52	656.55	488.92	167.63	3.917	Alert	
15,450.00	9,185.00	15,503.98	9,185.00	98.28	70.54	90.01	-6,349.11	-776.20	656.52	487.77	168.75	3.891	Alert	
15,500.00	9,185.00	15,553.98	9,185.00	98.96	70.97	90.01	-6,399.11	-775.89	656.48	486.62	169.86	3.865	Alert	
15,550.00	9,185.00	15,603.98	9,185.00	99.65	71.40	90.01	-6,449.11	-775.57	656.45	485.46	170.99	3.839	Alert	
15,600.00	9,185.00	15,653.98	9,185.00	100.34	71.83	90.01	-6,499.11	-775.26	656.42	484.31	172.11	3.814	Alert	
15,650.00	9,185.00	15,703.98	9,185.00	101.03	72.26	90.01	-6,549.11	-774.94	656.38	483.15	173.23	3.789	Alert	
15,700.00	9,185.00	15,753.98	9,185.00	101.72	72.70	90.01	-6,599.11	-774.63	656.35	482.00	174.36	3.764	Alert	
15,750.00	9,185.00	15,803.98	9,185.00	102.42	73.13	90.01	-6,649.11	-774.31	656.32	480.84	175.48	3.740	Alert	
15,800.00	9,185.00	15,853.98	9,185.00	103.11	73.57	90.01	-6,699.11	-774.00	656.29	479.68	176.61	3.716	Alert	
15,850.00	9,185.00	15,903.98	9,185.00	103.80	74.00	90.01	-6,749.11	-773.68	656.25	478.52	177.74	3.692	Alert	
15,900.00	9,185.00	15,953.98	9,185.00	104.49	74.44	90.01	-6,799.11	-773.37	656.22	477.35	178.87	3.669	Alert	
15,950.00	9,185.00	16,003.98	9,185.00	105.18	74.88	90.01	-6,849.10	-773.05	656.19	476.19	180.00	3.646	Alert	
16,000.00	9,185.00	16,053.98	9,185.00	105.88	75.31	90.01	-6,899.10	-772.74	656.15	475.03	181.13	3.623	Alert	
16,050.00	9,185.00	16,103.98	9,185.00	106.57	75.75	90.01	-6,949.10	-772.42	656.12	473.86	182.26	3.600	Alert	
16,100.00	9,185.00	16,153.98	9,185.00	107.27	76.19	90.01	-6,999.10	-772.11	656.09	472.69	183.39	3.577	Alert	
16,150.00	9,185.00	16,203.98	9,185.00	107.96	76.63	90.01	-7,049.10	-771.80	656.06	471.53	184.53	3.555	Alert	
16,200.00	9,185.00	16,253.98	9,185.00	108.66	77.07	90.01	-7,099.10	-771.48	656.02	470.36	185.66	3.533	Alert	
16,250.00	9,185.00	16,303.98	9,185.00	109.35	77.51	90.01	-7,149.10	-771.17	655.99	469.19	186.80	3.512	Alert	
16,300.00	9,185.00	16,353.98	9,185.00	110.05	77.95	90.01	-7,199.10	-770.85	655.96	468.02	187.94	3.490	Alert	
16,350.00	9,185.00	16,403.98	9,185.00	110.75	78.39	90.01	-7,249.10	-770.54	655.92	466.85	189.08	3.469	Alert	
16,400.00	9,185.00	16,453.98	9,185.00	111.44	78.83	90.01	-7,299.10	-770.22	655.89	465.68	190.22	3.448	Alert	
16,450.00	9,185.00	16,503.98	9,185.00	112.14	79.28	90.01	-7,349.09	-769.91	655.86	464.50	191.36	3.427	Alert	
16,500.00	9,185.00	16,553.98	9,185.00	112.84	79.72	90.01	-7,399.09	-769.59	655.83	463.33	192.50	3.407	Alert	
16,550.00	9,185.00	16,603.98	9,185.00	113.54	80.16	90.01	-7,449.09	-769.28	655.79	462.15	193.64	3.387	Alert	
16,600.00	9,185.00	16,653.98	9,185.00	114.24	80.61	90.01	-7,499.09	-768.96	655.76	460.98	194.78	3.367	Alert	
16,650.00	9,185.00	16,703.98	9,185.00	114.94	81.05	90.01	-7,549.09	-768.65	655.73	459.80	195.93	3.347	Alert	
16,700.00	9,185.00	16,753.98	9,185.00	115.64	81.50	90.01	-7,599.09	-768.33	655.69	458.62	197.07	3.327	Alert	
16,750.00	9,185.00	16,803.98	9,185.00	116.34	81.94	90.01	-7,649.09	-768.02	655.66	457.44	198.22	3.308	Alert	
16,800.00	9,185.00	16,853.98	9,185.00	117.04	82.39	90.01	-7,699.09	-767.70	655.63	456.27	199.36	3.289	Alert	
16,850.00	9,185.00	16,903.98	9,185.00	117.74	82.83	90.01	-7,749.09	-767.39	655.60	455.09	200.51	3.270	Alert	
16,900.00	9,185.00	16,953.98	9,185.00	118.44	83.28	90.01	-7,799.09	-767.07	655.56	453.90	201.66	3.251	Alert	
16,950.00	9,185.00	17,003.98	9,185.00	119.14	83.73	90.01	-7,849.08	-766.76	655.53	452.72	202.81	3.232	Alert	
17,000.00	9,185.00	17,053.98	9,185.00	119.84	84.17	90.01	-7,899.08	-766.44	655.50	451.54	203.96	3.214	Alert	
17,050.00	9,185.00	17,103.98	9,185.00	120.54	84.62	90.01	-7,949.08	-766.13	655.46	450.36	205.11	3.196	Alert	
17,100.00	9,185.00	17,153.98	9,185.00	121.24	85.07	90.01	-7,999.08	-765.82	655.43	449.17	206.26	3.178	Alert	
17,150.00	9,185.00	17,203.98	9,185.00	121.95	85.52	90.01	-8,049.08	-765.50	655.40	447.99	207.41	3.160	Alert	
17,200.00	9,185.00	17,253.98	9,185.00	122.65	85.97	90.01	-8,099.08	-765.19	655.37	446.80	208.56	3.142	Alert	
17,250.00	9,185.00	17,303.98	9,185.00	123.35	86.42	90.01	-8,149.08	-764.87	655.33	445.62	209.71	3.125	Alert	
17,300.00	9,185.00	17,353.98	9,185.00	124.06	86.87	90.01	-8,199.08	-764.56	655.30	444.43	210.87	3.108	Alert	
17,350.00	9,185.00	17,403.98	9,185.00	124.76	87.32	90.01	-8,249.08	-764.24	655.27	443.24	212.02	3.091	Alert	
17,400.00	9,185.00	17,453.98	9,185.00	125.46	87.77	90.01	-8,299.08	-763.93	655.23	442.06	213.18	3.074	Alert	
17,450.00	9,185.00	17,503.98	9,185.00	126.17	88.22	90.01	-8,349.07	-763.61	655.20	440.87	214.33	3.057	Alert	
17,500.00	9,185.00	17,553.98	9,185.00	126.87	88.67	90.01	-8,399.07	-763.30	655.17	439.68	215.49	3.040	Alert	
17,550.00	9,185.00	17,603.98	9,185.00	127.58	89.12	90.01	-8,449.07	-762.98	655.14	438.49	216.65	3.024	Alert	
17,600.00	9,185.00	17,653.98	9,185.00	128.28	89.58	90.01	-8,499.07	-762.67	655.10	437.30	217.80	3.008	Alert	
17,650.00	9,185.00	17,703.98	9,185.00	128.99	90.03	90.01	-8,549.07	-762.35	655.07	436.11	218.96	2.992	Alert	
17,700.00	9,185.00	17,753.98	9,185.00	129.69	90.48	90.01	-8,599.07	-762.04	655.04	434.91	220.12	2.976	Alert	
17,750.00	9,185.00	17,803.98	9,185.00	130.40	90.94	90.01	-8,649.07	-761.72	655.00	433.72	221.28	2.960	Alert	
17,800.00	9,185.00	17,853.98	9,185.00	131.11	91.39	90.01	-8,699.07	-761.41	654.97	432.53	222.44	2.944	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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	Offset Wellbore Centre +E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
17,850.00	9,185.00	17,903.98	9,185.00	131.81	91.84	90.01	-8,749.07	-761.09	654.94	431.34	223.60	2.929	Alert	
17,900.00	9,185.00	17,953.98	9,185.00	132.52	92.30	90.01	-8,799.07	-760.78	654.90	430.14	224.76	2.914	Alert	
17,950.00	9,185.00	18,003.98	9,185.00	133.23	92.75	90.01	-8,849.06	-760.47	654.87	428.95	225.93	2.899	Alert	
18,000.00	9,185.00	18,053.98	9,185.00	133.93	93.21	90.01	-8,899.06	-760.15	654.84	427.75	227.09	2.884	Alert	
18,050.00	9,185.00	18,103.98	9,185.00	134.64	93.66	90.01	-8,949.06	-759.84	654.81	426.56	228.25	2.869	Alert	
18,100.00	9,185.00	18,153.98	9,185.00	135.35	94.12	90.01	-8,999.06	-759.52	654.77	425.36	229.41	2.854	Alert	
18,150.00	9,185.00	18,203.98	9,185.00	136.06	94.57	90.01	-9,049.06	-759.21	654.74	424.16	230.58	2.840	Alert	
18,200.00	9,185.00	18,253.98	9,185.00	136.76	95.03	90.01	-9,099.06	-758.89	654.71	422.97	231.74	2.825	Alert	
18,250.00	9,185.00	18,303.98	9,185.00	137.47	95.49	90.01	-9,149.06	-758.58	654.67	421.77	232.91	2.811	Alert	
18,300.00	9,185.00	18,353.98	9,185.00	138.18	95.94	90.01	-9,199.06	-758.26	654.64	420.57	234.07	2.797	Alert	
18,350.00	9,185.00	18,403.98	9,185.00	138.89	96.40	90.01	-9,249.06	-757.95	654.61	419.37	235.24	2.783	Alert	
18,400.00	9,185.00	18,453.98	9,185.00	139.60	96.86	90.01	-9,299.06	-757.63	654.58	418.17	236.41	2.769	Alert	
18,450.00	9,185.00	18,503.98	9,185.00	140.31	97.32	90.01	-9,349.05	-757.32	654.54	416.97	237.57	2.755	Alert	
18,500.00	9,185.00	18,553.98	9,185.00	141.02	97.77	90.01	-9,399.05	-757.00	654.51	415.77	238.74	2.742	Alert	
18,550.00	9,185.00	18,603.98	9,185.00	141.73	98.23	90.01	-9,449.05	-756.69	654.48	414.57	239.91	2.728	Alert	
18,600.00	9,185.00	18,653.98	9,185.00	142.44	98.69	90.01	-9,499.05	-756.37	654.44	413.37	241.08	2.715	Alert	
18,650.00	9,185.00	18,703.98	9,185.00	143.15	99.15	90.01	-9,549.05	-756.06	654.41	412.17	242.25	2.701	Alert	
18,700.00	9,185.00	18,753.98	9,185.00	143.86	99.61	90.01	-9,599.05	-755.74	654.38	410.96	243.41	2.688	Alert	
18,750.00	9,185.00	18,803.98	9,185.00	144.57	100.07	90.01	-9,649.05	-755.43	654.35	409.76	244.58	2.675	Alert	
18,800.00	9,185.00	18,853.98	9,185.00	145.28	100.53	90.01	-9,699.05	-755.11	654.31	408.56	245.75	2.662	Alert	
18,850.00	9,185.00	18,903.98	9,185.00	145.99	100.99	90.01	-9,749.05	-754.80	654.28	407.36	246.93	2.650	Alert	
18,900.00	9,185.00	18,953.98	9,185.00	146.70	101.45	90.01	-9,799.05	-754.49	654.25	406.15	248.10	2.637	Alert	
18,950.00	9,185.00	19,003.98	9,185.00	147.41	101.91	90.01	-9,849.04	-754.17	654.21	404.95	249.27	2.625	Alert	
18,972.90	9,185.00	19,026.88	9,185.00	147.73	102.12	90.01	-9,871.95	-754.03	654.20	404.40	249.80	2.619	Alert	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2												Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.10	-0.10	0.50	0.50	-90.38	-0.20	-30.02	30.02				
50.00	50.00	49.90	49.90	0.50	0.50	-90.38	-0.20	-30.02	30.02	29.01	1.01	29.827	
100.00	100.00	100.10	99.90	0.52	0.52	-90.38	-0.20	-30.02	30.02	28.99	1.04	28.989	
150.00	150.00	149.90	149.90	0.59	0.59	-90.38	-0.20	-30.02	30.02	28.84	1.18	25.435	
200.00	200.00	200.10	199.90	0.70	0.70	-90.38	-0.20	-30.02	30.02	28.62	1.40	21.375	
250.00	250.00	249.90	249.90	0.84	0.84	-90.38	-0.20	-30.02	30.02	28.35	1.68	17.921	
300.00	300.00	300.10	299.90	0.99	0.99	-90.38	-0.20	-30.02	30.02	28.05	1.97	15.201	
350.00	350.00	349.90	349.90	1.15	1.15	-90.38	-0.20	-30.02	30.02	27.73	2.29	13.106	
400.00	400.00	400.10	399.90	1.31	1.31	-90.38	-0.20	-30.02	30.02	27.40	2.62	11.465	
450.00	450.00	449.90	449.90	1.48	1.48	-90.38	-0.20	-30.02	30.02	27.07	2.95	10.169	
500.00	500.00	500.10	499.90	1.65	1.65	-90.38	-0.20	-30.02	30.02	26.73	3.29	9.118	
550.00	550.00	549.90	549.90	1.82	1.82	-90.38	-0.20	-30.02	30.02	26.39	3.63	8.259	
600.00	600.00	600.10	599.90	1.99	1.99	-90.38	-0.20	-30.02	30.02	26.04	3.98	7.540	
650.00	650.00	649.90	649.90	2.16	2.16	-90.38	-0.20	-30.02	30.02	25.69	4.33	6.935	
700.00	700.00	700.10	699.90	2.34	2.34	-90.38	-0.20	-30.02	30.02	25.34	4.68	6.416	
750.00	750.00	749.90	749.90	2.51	2.51	-90.38	-0.20	-30.02	30.02	24.99	5.03	5.969	
800.00	800.00	800.10	799.90	2.69	2.69	-90.38	-0.20	-30.02	30.02	24.64	5.38	5.578	
850.00	850.00	849.90	849.90	2.87	2.87	-90.38	-0.20	-30.02	30.02	24.29	5.73	5.236	
900.00	900.00	900.10	899.90	3.04	3.04	-90.38	-0.20	-30.02	30.02	23.93	6.09	4.932 Alert	
950.00	950.00	949.90	949.90	3.22	3.22	-90.38	-0.20	-30.02	30.02	23.58	6.44	4.661 Alert	
1,000.00	1,000.00	1,000.10	999.90	3.40	3.40	-90.38	-0.20	-30.02	30.02	23.23	6.80	4.418 Alert	
1,050.00	1,050.00	1,049.90	1,049.90	3.58	3.57	-90.38	-0.20	-30.02	30.02	22.87	7.15	4.199 Alert	
1,100.00	1,100.00	1,100.10	1,099.90	3.75	3.75	-90.38	-0.20	-30.02	30.02	22.52	7.51	4.000 Alert	
1,150.00	1,150.00	1,149.90	1,149.90	3.93	3.93	-90.38	-0.20	-30.02	30.02	22.16	7.86	3.819 Alert	
1,200.00	1,200.00	1,200.10	1,199.90	4.11	4.11	-90.38	-0.20	-30.02	30.02	21.80	8.22	3.654 Alert	
1,250.00	1,250.00	1,249.90	1,249.90	4.29	4.29	-90.38	-0.20	-30.02	30.02	21.45	8.57	3.502 Alert	
1,300.00	1,300.00	1,300.10	1,299.90	4.46	4.46	-90.38	-0.20	-30.02	30.02	21.09	8.93	3.362 Alert	
1,350.00	1,350.00	1,349.90	1,349.90	4.64	4.64	-90.38	-0.20	-30.02	30.02	20.74	9.28	3.233 Alert	
1,400.00	1,400.00	1,400.10	1,399.90	4.82	4.82	-90.38	-0.20	-30.02	30.02	20.38	9.64	3.114 Alert	
1,450.00	1,450.00	1,449.90	1,449.90	5.00	5.00	-90.38	-0.20	-30.02	30.02	20.02	10.00	3.003 Alert	
1,500.00	1,500.00	1,500.10	1,499.90	5.18	5.18	-90.38	-0.20	-30.02	30.02	19.67	10.35	2.899 Alert	
1,550.00	1,550.00	1,549.90	1,549.90	5.36	5.36	-90.38	-0.20	-30.02	30.02	19.31	10.71	2.803 Alert	
1,600.00	1,600.00	1,600.10	1,599.90	5.53	5.53	-90.38	-0.20	-30.02	30.02	18.95	11.07	2.712 Alert	
1,650.00	1,650.00	1,649.90	1,649.90	5.71	5.71	-90.38	-0.20	-30.02	30.02	18.60	11.42	2.628 Alert	
1,700.00	1,700.00	1,700.10	1,699.90	5.89	5.89	-90.38	-0.20	-30.02	30.02	18.24	11.78	2.548 Alert	
1,750.00	1,750.00	1,749.90	1,749.90	6.07	6.07	-90.38	-0.20	-30.02	30.02	17.88	12.14	2.473 Minor Risk	
1,800.00	1,800.00	1,800.10	1,799.90	6.25	6.25	-90.38	-0.20	-30.02	30.02	17.52	12.50	2.402 Minor Risk	
1,850.00	1,850.00	1,849.90	1,849.90	6.43	6.43	-90.38	-0.20	-30.02	30.02	17.17	12.85	2.336 Minor Risk	
1,900.00	1,900.00	1,900.10	1,899.90	6.61	6.61	-90.38	-0.20	-30.02	30.02	16.81	13.21	2.272 Minor Risk	
1,950.00	1,950.00	1,949.90	1,949.90	6.78	6.78	-90.38	-0.20	-30.02	30.02	16.45	13.57	2.212 Minor Risk	
2,000.00	2,000.00	2,000.10	1,999.90	6.96	6.96	-90.38	-0.20	-30.02	30.02	16.09	13.93	2.156 Minor Risk	
2,050.00	2,050.00	2,049.90	2,049.90	7.14	7.14	-90.38	-0.20	-30.02	30.02	15.74	14.28	2.102 Minor Risk	
2,100.00	2,100.00	2,100.10	2,099.90	7.32	7.32	-90.38	-0.20	-30.02	30.02	15.38	14.64	2.050 Minor Risk	
2,150.00	2,150.00	2,149.90	2,149.90	7.50	7.50	-90.38	-0.20	-30.02	30.02	15.02	15.00	2.001 Minor Risk	
2,200.00	2,200.00	2,200.10	2,199.90	7.68	7.68	-90.38	-0.20	-30.02	30.02	14.66	15.36	1.955 Minor Risk	
2,250.00	2,250.00	2,249.90	2,249.90	7.86	7.86	-90.38	-0.20	-30.02	30.02	14.31	15.71	1.910 Minor Risk	
2,300.00	2,300.00	2,300.10	2,299.90	8.04	8.04	-90.38	-0.20	-30.02	30.02	13.95	16.07	1.868 Minor Risk	
2,350.00	2,350.00	2,349.90	2,349.90	8.22	8.21	-90.38	-0.20	-30.02	30.02	13.59	16.43	1.827 Minor Risk	
2,400.00	2,400.00	2,400.10	2,399.90	8.39	8.39	-90.38	-0.20	-30.02	30.02	13.23	16.79	1.788 Minor Risk	
2,450.00	2,450.00	2,449.90	2,449.90	8.57	8.57	-90.38	-0.20	-30.02	30.02	12.87	17.15	1.751 Minor Risk	
2,500.00	2,500.00	2,499.90	2,499.90	8.75	8.75	-90.38	-0.20	-30.02	30.02	12.52	17.50	1.715 Minor Risk, CC	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
2,550.00	2,550.00	2,549.58	2,549.58	8.93	8.93	-90.28	-0.15	-30.28	30.29	12.43	17.86	1.696	Minor Risk, ES, SF	
2,600.00	2,600.00	2,599.25	2,599.24	9.11	9.10	-89.98	0.01	-31.07	31.08	12.87	18.21	1.707	Minor Risk	
2,650.00	2,650.00	2,648.89	2,648.87	9.29	9.27	-89.52	0.27	-32.39	32.41	13.86	18.55	1.747	Minor Risk	
2,700.00	2,700.00	2,698.50	2,698.44	9.47	9.44	-88.93	0.64	-34.24	34.27	15.38	18.90	1.814	Minor Risk	
2,750.00	2,750.00	2,748.06	2,747.94	9.65	9.61	-88.27	1.11	-36.60	36.67	17.43	19.24	1.906	Minor Risk	
2,800.00	2,800.00	2,797.57	2,797.36	9.83	9.79	-87.56	1.68	-39.49	39.61	20.03	19.58	2.023	Minor Risk	
2,850.00	2,850.00	2,847.01	2,846.67	10.00	9.96	-86.86	2.36	-42.90	43.08	23.17	19.91	2.164	Minor Risk	
2,900.00	2,900.00	2,896.36	2,895.87	10.18	10.13	-86.17	3.14	-46.82	47.10	26.85	20.25	2.326	Minor Risk	
2,950.00	2,950.00	2,945.62	2,944.92	10.36	10.30	-85.52	4.02	-51.25	51.65	31.07	20.58	2.510	Alert	
3,000.00	3,000.00	2,994.78	2,993.82	10.54	10.47	-84.92	5.00	-56.19	56.74	35.83	20.91	2.713	Alert	
3,050.00	3,050.00	3,043.83	3,042.55	10.72	10.65	-84.37	6.08	-61.63	62.36	41.12	21.24	2.936	Alert	
3,100.00	3,100.00	3,092.75	3,091.10	10.90	10.82	-83.87	7.25	-67.56	68.52	46.96	21.56	3.178	Alert	
3,150.00	3,150.00	3,141.54	3,139.44	11.08	10.99	-83.42	8.53	-73.98	75.20	53.32	21.88	3.437	Alert	
3,200.00	3,200.00	3,190.17	3,187.57	11.26	11.16	-83.02	9.90	-80.89	82.42	60.22	22.20	3.712	Alert	
3,250.00	3,250.00	3,239.25	3,236.06	11.44	11.34	-82.66	11.36	-88.27	90.06	67.52	22.54	3.996	Alert	
3,300.00	3,300.00	3,288.65	3,284.88	11.62	11.51	-82.36	12.85	-95.73	97.75	74.86	22.89	4.271	Alert	
3,350.00	3,350.00	3,338.05	3,333.69	11.80	11.69	-82.09	14.33	-103.19	105.43	82.19	23.24	4.537	Alert	
3,400.00	3,400.00	3,387.46	3,382.51	11.97	11.86	-81.87	15.81	-110.65	113.12	89.53	23.59	4.795	Alert	
3,450.00	3,450.00	3,436.86	3,431.32	12.15	12.04	-81.67	17.29	-118.11	120.81	96.87	23.94	5.046		
3,500.00	3,500.00	3,486.26	3,480.13	12.33	12.22	-81.50	18.77	-125.58	128.50	104.21	24.29	5.290		
3,550.00	3,550.00	3,535.67	3,528.95	12.51	12.40	-81.34	20.25	-133.04	136.19	111.55	24.64	5.527		
3,600.00	3,600.00	3,585.07	3,577.76	12.69	12.57	-81.21	21.74	-140.50	143.88	118.89	25.00	5.756		
3,650.00	3,650.00	3,634.48	3,628.58	12.87	12.75	-81.08	23.22	-147.96	151.58	126.23	25.35	5.980		
3,700.00	3,700.00	3,683.88	3,675.39	13.05	12.93	-80.97	24.70	-155.42	159.27	133.57	25.70	6.197		
3,750.00	3,750.00	3,733.28	3,724.21	13.23	13.11	-80.87	26.18	-162.89	166.97	140.91	26.05	6.409		
3,800.00	3,800.00	3,782.69	3,773.02	13.41	13.29	-80.78	27.66	-170.35	174.66	148.26	26.41	6.614		
3,850.00	3,850.00	3,832.09	3,821.83	13.59	13.47	-80.69	29.14	-177.81	182.36	155.60	26.76	6.815		
3,900.00	3,900.00	3,881.49	3,870.65	13.77	13.65	-80.61	30.63	-185.27	190.05	162.94	27.11	7.010		
3,950.00	3,950.00	3,930.90	3,919.46	13.94	13.83	-80.54	32.11	-192.74	197.75	170.28	27.47	7.199		
4,000.00	4,000.00	3,980.30	3,968.28	14.12	14.01	-80.48	33.59	-200.20	205.44	177.62	27.82	7.384		
4,050.00	4,050.00	4,029.74	4,017.12	14.30	14.19	-35.91	35.07	-207.66	212.92	184.75	28.17	7.557		
4,100.00	4,099.99	4,079.24	4,068.03	14.48	14.37	-35.93	36.56	-215.14	219.96	191.44	28.53	7.711		
4,150.00	4,149.97	4,128.80	4,115.00	14.66	14.55	-36.02	38.04	-222.63	226.57	197.69	28.88	7.845		
4,200.00	4,199.94	4,178.41	4,164.02	14.83	14.74	-36.19	39.53	-230.12	232.74	203.50	29.23	7.981		
4,250.00	4,249.88	4,228.06	4,213.08	15.01	14.92	-36.43	41.02	-237.62	238.47	208.89	29.59	8.060		
4,300.00	4,299.79	4,277.76	4,262.18	15.19	15.10	-36.75	42.51	-245.13	243.82	213.88	29.94	8.143		
4,350.00	4,349.70	4,327.46	4,311.29	15.36	15.28	-37.09	44.00	-252.63	249.09	218.79	30.30	8.222		
4,400.00	4,399.60	4,377.16	4,360.40	15.54	15.47	-37.42	45.49	-260.14	254.36	223.71	30.65	8.299		
4,450.00	4,449.51	4,426.86	4,409.51	15.72	15.65	-37.73	46.98	-267.65	259.65	228.64	31.01	8.374		
4,500.00	4,499.41	4,476.56	4,458.61	15.90	15.83	-38.03	48.47	-275.15	264.94	233.58	31.36	8.448		
4,550.00	4,549.32	4,526.26	4,507.72	16.07	16.02	-38.32	49.96	-282.66	270.24	238.53	31.72	8.521		
4,600.00	4,599.23	4,575.96	4,556.83	16.25	16.20	-38.60	51.45	-290.17	275.55	243.48	32.07	8.592		
4,650.00	4,649.13	4,625.66	4,605.94	16.43	16.39	-38.87	52.94	-297.67	280.86	248.43	32.43	8.661		
4,700.00	4,699.04	4,675.36	4,655.04	16.61	16.57	-39.12	54.43	-305.18	286.18	253.40	32.78	8.729		
4,750.00	4,748.95	4,725.06	4,704.15	16.79	16.75	-39.37	55.92	-312.69	291.51	258.36	33.14	8.796		
4,800.00	4,798.85	4,774.76	4,753.26	16.96	16.94	-39.61	57.42	-320.20	296.84	263.34	33.50	8.861		
4,850.00	4,848.76	4,824.46	4,802.37	17.14	17.12	-39.84	58.91	-327.70	302.17	268.31	33.86	8.925		
4,900.00	4,898.67	4,874.16	4,851.47	17.32	17.31	-40.07	60.40	-335.21	307.51	273.30	34.21	8.988		
4,950.00	4,948.57	4,923.86	4,900.58	17.50	17.49	-40.28	61.89	-342.72	312.85	278.28	34.57	9.050		
5,000.00	4,998.48	4,973.56	4,949.69	17.68	17.68	-40.49	63.38	-350.22	318.20	283.27	34.93	9.110		
5,050.00	5,048.39	5,023.26	4,998.79	17.86	17.86	-40.69	64.87	-357.73	323.55	288.27	35.29	9.170		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.00	5,098.29	5,072.96	5,047.90	18.04	18.05	-40.88	66.36	-365.24	328.91	293.26	35.64	9.228		
5,150.00	5,148.20	5,122.66	5,097.01	18.22	18.23	-41.07	67.85	-372.74	334.27	298.26	36.00	9.285		
5,200.00	5,198.11	5,172.36	5,146.12	18.39	18.42	-41.26	69.34	-380.25	339.63	303.27	36.36	9.341		
5,250.00	5,248.01	5,222.06	5,195.22	18.57	18.61	-41.43	70.83	-387.76	345.00	308.28	36.72	9.396		
5,300.00	5,297.92	5,271.76	5,244.33	18.75	18.79	-41.60	72.32	-395.26	350.36	313.29	37.08	9.449		
5,350.00	5,347.82	5,321.46	5,293.44	18.93	18.98	-41.77	73.81	-402.77	355.74	318.30	37.44	9.502		
5,400.00	5,397.73	5,371.16	5,342.55	19.11	19.16	-41.93	75.30	-410.28	361.11	323.32	37.80	9.554		
5,450.00	5,447.64	5,420.86	5,391.65	19.29	19.35	-42.09	76.79	-417.79	366.49	328.33	38.15	9.605		
5,500.00	5,497.54	5,470.56	5,440.76	19.47	19.54	-42.24	78.28	-425.29	371.87	333.36	38.51	9.655		
5,550.00	5,547.45	5,520.26	5,489.87	19.65	19.72	-42.39	79.77	-432.80	377.25	338.38	38.87	9.705		
5,600.00	5,597.36	5,569.96	5,538.98	19.83	19.91	-42.53	81.26	-440.31	382.64	343.40	39.23	9.753		
5,650.00	5,647.26	5,619.66	5,588.08	20.01	20.09	-42.67	82.75	-447.81	388.03	348.43	39.59	9.800		
5,700.00	5,697.17	5,669.36	5,637.19	20.19	20.28	-42.81	84.25	-455.32	393.42	353.46	39.95	9.847		
5,750.00	5,747.08	5,719.06	5,686.30	20.37	20.47	-42.94	85.74	-462.83	398.81	358.49	40.31	9.893		
5,800.00	5,796.98	5,768.76	5,735.40	20.55	20.65	-43.07	87.23	-470.33	404.20	363.53	40.67	9.938		
5,850.00	5,846.89	5,818.46	5,784.51	20.73	20.84	-43.19	88.72	-477.84	409.60	368.56	41.03	9.982		
5,900.00	5,896.80	5,868.16	5,833.62	20.91	21.03	-43.31	90.21	-485.35	415.00	373.60	41.39	10.025		
5,950.00	5,946.70	5,917.86	5,882.73	21.09	21.21	-43.43	91.70	-492.85	420.39	378.64	41.75	10.068		
6,000.00	5,996.61	5,967.56	5,931.83	21.27	21.40	-43.55	93.19	-500.36	425.80	383.68	42.12	10.110		
6,050.00	6,046.52	6,017.26	5,980.94	21.45	21.59	-43.66	94.68	-507.87	431.20	388.72	42.48	10.152		
6,100.00	6,096.42	6,066.96	6,030.05	21.63	21.78	-43.77	96.17	-515.38	436.60	393.77	42.84	10.192		
6,150.00	6,146.33	6,116.66	6,079.16	21.81	21.96	-43.88	97.66	-522.88	442.01	398.81	43.20	10.232		
6,200.00	6,196.23	6,166.36	6,128.26	21.99	22.15	-43.98	99.15	-530.39	447.42	403.86	43.56	10.271		
6,250.00	6,246.14	6,216.06	6,177.37	22.17	22.34	-44.08	100.64	-537.90	452.83	408.91	43.92	10.310		
6,300.00	6,296.05	6,265.76	6,226.48	22.35	22.52	-44.18	102.13	-545.40	458.24	413.96	44.28	10.348		
6,350.00	6,345.95	6,315.46	6,275.58	22.53	22.71	-44.28	103.62	-552.91	463.65	419.01	44.64	10.386		
6,400.00	6,395.86	6,365.16	6,324.69	22.71	22.90	-44.38	105.11	-560.42	469.06	424.06	45.00	10.422		
6,450.00	6,445.77	6,414.86	6,373.80	22.89	23.09	-44.47	106.60	-567.92	474.48	429.11	45.37	10.459		
6,500.00	6,495.67	6,464.56	6,422.91	23.07	23.27	-44.56	108.09	-575.43	479.89	434.16	45.73	10.494		
6,550.00	6,545.58	6,514.26	6,472.01	23.25	23.46	-44.65	109.58	-582.94	485.31	439.22	46.09	10.530		
6,600.00	6,595.49	6,563.96	6,521.12	23.43	23.65	-44.74	111.07	-590.44	490.73	444.28	46.45	10.564		
6,650.00	6,645.39	6,613.66	6,570.23	23.62	23.84	-44.82	112.57	-597.95	496.15	449.33	46.81	10.598		
6,700.00	6,695.30	6,663.36	6,619.34	23.80	24.03	-44.90	114.06	-605.46	501.57	454.39	47.18	10.632		
6,750.00	6,745.21	6,713.06	6,668.44	23.98	24.21	-44.99	115.55	-612.97	506.99	459.45	47.54	10.665		
6,800.00	6,795.11	6,762.76	6,717.55	24.16	24.40	-45.07	117.04	-620.47	512.41	464.51	47.90	10.697		
6,850.00	6,845.02	6,812.46	6,766.66	24.34	24.59	-45.14	118.53	-627.98	517.83	469.57	48.26	10.730		
6,900.00	6,894.93	6,862.16	6,815.77	24.52	24.78	-45.22	120.02	-635.49	523.26	474.63	48.62	10.761		
6,950.00	6,944.83	6,911.86	6,864.87	24.70	24.97	-45.29	121.51	-642.99	528.68	479.69	48.99	10.792		
7,000.00	6,994.74	6,961.56	6,913.98	24.88	25.15	-45.37	123.00	-650.50	534.11	484.76	49.35	10.823		
7,050.00	7,044.65	7,011.26	6,963.09	25.06	25.34	-45.44	124.49	-658.01	539.53	489.82	49.71	10.853		
7,100.00	7,094.55	7,060.96	7,012.19	25.24	25.53	-45.51	125.98	-665.51	544.96	494.89	50.08	10.883		
7,150.00	7,144.46	7,110.66	7,061.30	25.43	25.72	-45.58	127.47	-673.02	550.39	499.95	50.44	10.912		
7,200.00	7,194.36	7,160.37	7,110.41	25.61	25.91	-45.65	128.96	-680.53	555.82	505.02	50.80	10.941		
7,250.00	7,244.27	7,210.07	7,159.52	25.79	26.09	-45.71	130.45	-688.03	561.25	510.08	51.16	10.970		
7,300.00	7,294.18	7,259.77	7,208.62	25.97	26.28	-45.78	131.94	-695.54	566.68	515.15	51.53	10.998		
7,350.00	7,344.08	7,309.47	7,257.73	26.15	26.47	-45.84	133.43	-703.05	572.11	520.22	51.89	11.026		
7,400.00	7,393.99	7,359.17	7,306.84	26.33	26.66	-45.91	134.92	-710.56	577.54	525.29	52.25	11.053		
7,450.00	7,443.90	7,408.87	7,355.95	26.51	26.85	-45.97	136.41	-718.06	582.97	530.36	52.62	11.080		
7,500.00	7,493.80	7,458.57	7,405.05	26.69	27.04	-46.03	137.90	-725.57	588.41	535.43	52.98	11.106		
7,550.00	7,543.71	7,508.27	7,454.16	26.88	27.22	-46.09	139.39	-733.08	593.84	540.50	53.34	11.133		
7,600.00	7,593.62	7,557.97	7,503.27	27.06	27.41	-46.14	140.89	-740.58	599.28	545.57	53.71	11.159		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,650.00	7,643.52	7,607.67	7,552.38	27.24	27.60	-46.20	142.38	-748.09	604.71	550.64	54.07	11.184		
7,700.00	7,693.43	7,657.36	7,601.48	27.42	27.79	-46.28	143.87	-755.60	610.21	555.78	54.43	11.211		
7,750.00	7,743.38	7,707.01	7,650.53	27.60	27.98	-46.36	145.35	-763.10	616.11	561.32	54.79	11.244		
7,800.00	7,793.35	7,756.60	7,699.54	27.78	28.17	-46.39	146.84	-770.59	622.47	567.31	55.16	11.285		
7,850.00	7,843.34	7,813.26	7,755.55	27.96	28.38	-46.38	148.49	-778.89	629.06	573.47	55.59	11.317		
7,900.00	7,893.33	7,872.42	7,814.18	28.14	28.60	-46.33	150.05	-786.72	635.37	579.34	56.03	11.339		
7,950.00	7,943.33	7,931.77	7,873.10	28.31	28.82	-90.70	151.43	-793.68	641.21	584.74	56.47	11.355		
8,000.00	7,993.33	7,991.33	7,932.33	28.49	29.04	-90.58	152.63	-799.75	646.30	589.41	56.89	11.360		
8,050.00	8,043.33	8,051.06	7,991.83	28.67	29.26	-90.49	153.66	-804.94	650.63	593.33	57.31	11.354		
8,100.00	8,093.33	8,110.94	8,051.55	28.85	29.48	-90.41	154.51	-809.22	654.20	596.49	57.71	11.336		
8,150.00	8,143.33	8,170.95	8,111.46	29.03	29.69	-90.35	155.18	-812.58	657.00	598.90	58.10	11.308		
8,200.00	8,193.33	8,231.05	8,171.51	29.20	29.90	-90.30	155.67	-815.03	659.03	600.56	58.48	11.269		
8,250.00	8,243.33	8,291.22	8,231.66	29.38	30.11	-90.28	155.97	-816.55	660.30	601.45	58.85	11.220		
8,300.00	8,293.33	8,351.42	8,291.85	29.56	30.32	-90.27	156.09	-817.14	660.79	601.59	59.20	11.161		
8,350.00	8,343.33	8,402.80	8,343.23	29.74	30.50	-90.27	156.09	-817.15	660.79	601.24	59.55	11.096		
8,400.00	8,393.33	8,452.80	8,393.23	29.91	30.67	-90.27	156.09	-817.15	660.79	600.89	59.90	11.031		
8,450.00	8,443.33	8,502.80	8,443.23	30.09	30.84	-90.27	156.09	-817.15	660.79	600.54	60.25	10.967		
8,500.00	8,493.33	8,552.80	8,493.23	30.27	31.01	-90.27	156.09	-817.15	660.79	600.19	60.60	10.904		
8,550.00	8,543.33	8,602.80	8,543.23	30.45	31.18	-90.27	156.09	-817.15	660.79	599.84	60.95	10.841		
8,600.00	8,593.33	8,652.80	8,593.23	30.63	31.35	-90.27	156.09	-817.15	660.79	599.49	61.30	10.779		
8,650.00	8,643.32	8,702.86	8,643.28	30.80	31.52	90.06	155.24	-817.14	660.79	599.15	61.64	10.720		
8,700.00	8,693.06	8,752.95	8,693.12	30.96	31.68	90.06	150.32	-817.11	660.79	598.83	61.96	10.665		
8,750.00	8,742.19	8,803.05	8,742.33	31.11	31.83	90.06	141.08	-817.05	660.78	598.52	62.27	10.612		
8,800.00	8,790.32	8,853.14	8,790.55	31.26	31.98	90.06	127.57	-816.97	660.78	598.21	62.57	10.561		
8,850.00	8,837.10	8,903.23	8,837.41	31.39	32.13	90.05	109.90	-816.86	660.76	597.91	62.86	10.512		
8,900.00	8,882.17	8,953.32	8,882.54	31.52	32.26	90.05	88.21	-816.72	660.75	597.61	63.14	10.465		
8,950.00	8,925.18	9,003.41	8,925.61	31.64	32.38	90.05	62.67	-816.56	660.73	597.32	63.41	10.420		
9,000.00	8,965.81	9,053.49	8,966.27	31.75	32.49	90.05	33.47	-816.38	660.71	597.05	63.67	10.377		
9,050.00	9,003.74	9,103.57	9,004.23	31.85	32.59	90.05	0.83	-816.17	660.69	596.77	63.92	10.336		
9,100.00	9,038.70	9,153.64	9,039.19	31.94	32.68	90.04	-35.00	-815.95	660.67	596.50	64.17	10.296		
9,150.00	9,070.40	9,203.71	9,070.89	32.08	32.75	90.04	-73.73	-815.70	660.64	596.24	64.41	10.258		
9,200.00	9,098.62	9,253.77	9,099.08	32.18	32.82	90.04	-115.08	-815.44	660.62	595.98	64.64	10.220		
9,250.00	9,123.14	9,303.82	9,123.55	32.30	32.87	90.03	-158.72	-815.17	660.59	595.72	64.87	10.183		
9,300.00	9,143.76	9,353.87	9,144.12	32.43	32.90	90.03	-204.33	-814.88	660.56	595.46	65.10	10.147		
9,350.00	9,160.34	9,403.91	9,160.63	32.56	32.93	90.02	-251.55	-814.58	660.53	595.21	65.32	10.112		
9,400.00	9,172.75	9,453.94	9,172.96	32.70	32.95	90.02	-300.02	-814.28	660.49	594.95	65.54	10.077		
9,450.00	9,180.88	9,503.96	9,181.01	32.83	32.97	90.02	-349.37	-813.97	660.46	594.70	65.76	10.044		
9,500.00	9,184.69	9,553.98	9,184.73	32.97	33.01	90.01	-399.23	-813.65	660.43	594.46	65.97	10.011		
9,550.00	9,185.00	9,603.98	9,185.00	33.12	33.08	90.01	-449.23	-813.34	660.40	594.21	66.19	9.977		
9,600.00	9,185.00	9,653.98	9,185.00	33.28	33.17	90.01	-499.23	-813.02	660.36	593.94	66.42	9.942		
9,650.00	9,185.00	9,703.98	9,185.00	33.46	33.26	90.01	-549.23	-812.71	660.33	593.65	66.68	9.902		
9,700.00	9,185.00	9,753.98	9,185.00	33.64	33.36	90.01	-599.23	-812.39	660.30	593.34	66.96	9.861		
9,750.00	9,185.00	9,803.98	9,185.00	33.85	33.46	90.01	-649.23	-812.08	660.26	593.00	67.26	9.816		
9,800.00	9,185.00	9,853.98	9,185.00	34.05	33.57	90.01	-699.23	-811.76	660.23	592.65	67.58	9.770		
9,850.00	9,185.00	9,903.98	9,185.00	34.29	33.68	90.01	-749.23	-811.45	660.20	592.28	67.92	9.720		
9,900.00	9,185.00	9,953.98	9,185.00	34.53	33.81	90.01	-799.23	-811.14	660.17	591.89	68.28	9.668		
9,950.00	9,185.00	10,003.98	9,185.00	34.79	33.93	90.01	-849.22	-810.82	660.13	591.47	68.67	9.614		
10,000.00	9,185.00	10,053.98	9,185.00	35.06	34.07	90.01	-899.22	-810.51	660.10	591.04	69.07	9.558		
10,050.00	9,185.00	10,103.98	9,185.00	35.35	34.21	90.01	-949.22	-810.19	660.07	590.58	69.49	9.499		
10,100.00	9,185.00	10,153.98	9,185.00	35.64	34.36	90.01	-999.22	-809.88	660.03	590.11	69.93	9.439		
10,150.00	9,185.00	10,203.98	9,185.00	35.95	34.51	90.01	-1,049.22	-809.56	660.00	589.61	70.39	9.376		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,200.00	9,185.00	10,253.98	9,185.00	36.27	34.67	90.01	-1,099.22	-809.25	659.97	589.11	70.86	9.313		
10,250.00	9,185.00	10,303.98	9,185.00	36.61	34.83	90.01	-1,149.22	-808.93	659.94	588.57	71.36	9.248		
10,300.00	9,185.00	10,353.98	9,185.00	36.94	35.01	90.01	-1,199.22	-808.62	659.90	588.03	71.87	9.182		
10,350.00	9,185.00	10,403.98	9,185.00	37.30	35.18	90.01	-1,249.22	-808.30	659.87	587.47	72.40	9.114		
10,400.00	9,185.00	10,453.98	9,185.00	37.66	35.36	90.01	-1,299.22	-807.99	659.84	586.89	72.95	9.046		
10,450.00	9,185.00	10,503.98	9,185.00	38.04	35.55	90.01	-1,349.21	-807.67	659.80	586.29	73.51	8.976		
10,500.00	9,185.00	10,553.98	9,185.00	38.43	35.75	90.01	-1,399.21	-807.36	659.77	585.69	74.09	8.905		
10,550.00	9,185.00	10,603.98	9,185.00	38.83	35.94	90.01	-1,449.21	-807.04	659.74	585.06	74.68	8.834		
10,600.00	9,185.00	10,653.98	9,185.00	39.23	36.15	90.01	-1,499.21	-806.73	659.71	584.42	75.29	8.762		
10,650.00	9,185.00	10,703.98	9,185.00	39.65	36.36	90.01	-1,549.21	-806.41	659.67	583.76	75.91	8.690		
10,700.00	9,185.00	10,753.98	9,185.00	40.07	36.57	90.01	-1,599.21	-806.10	659.64	583.09	76.55	8.617		
10,750.00	9,185.00	10,803.98	9,185.00	40.50	36.79	90.01	-1,649.21	-805.79	659.61	582.40	77.20	8.544		
10,800.00	9,185.00	10,853.98	9,185.00	40.94	37.02	90.01	-1,699.21	-805.47	659.57	581.71	77.87	8.471		
10,850.00	9,185.00	10,903.98	9,185.00	41.39	37.25	90.01	-1,749.21	-805.16	659.54	581.00	78.54	8.397		
10,900.00	9,185.00	10,953.98	9,185.00	41.84	37.48	90.01	-1,799.21	-804.84	659.51	580.27	79.23	8.324		
10,950.00	9,185.00	11,003.98	9,185.00	42.31	37.72	90.01	-1,849.20	-804.53	659.48	579.54	79.94	8.250		
11,000.00	9,185.00	11,053.98	9,185.00	42.78	37.97	90.01	-1,899.20	-804.21	659.44	578.79	80.65	8.176		
11,050.00	9,185.00	11,103.98	9,185.00	43.26	38.21	90.01	-1,949.20	-803.90	659.41	578.03	81.38	8.103		
11,100.00	9,185.00	11,153.98	9,185.00	43.74	38.47	90.01	-1,999.20	-803.58	659.38	577.26	82.12	8.030		
11,150.00	9,185.00	11,203.98	9,185.00	44.24	38.72	90.01	-2,049.20	-803.27	659.34	576.47	82.87	7.956		
11,200.00	9,185.00	11,253.98	9,185.00	44.74	38.99	90.01	-2,099.20	-802.95	659.31	575.68	83.63	7.884		
11,250.00	9,185.00	11,303.98	9,185.00	45.24	39.25	90.01	-2,149.20	-802.64	659.28	574.88	84.40	7.811		
11,300.00	9,185.00	11,353.98	9,185.00	45.75	39.52	90.01	-2,199.20	-802.32	659.25	574.06	85.18	7.739		
11,350.00	9,185.00	11,403.98	9,185.00	46.27	39.80	90.01	-2,249.20	-802.01	659.21	573.24	85.97	7.668		
11,400.00	9,185.00	11,453.98	9,185.00	46.79	40.08	90.01	-2,299.20	-801.69	659.18	572.41	86.77	7.597		
11,450.00	9,185.00	11,503.98	9,185.00	47.32	40.36	90.01	-2,349.19	-801.38	659.15	571.56	87.58	7.526		
11,500.00	9,185.00	11,553.98	9,185.00	47.85	40.65	90.01	-2,399.19	-801.06	659.11	570.71	88.40	7.456		
11,550.00	9,185.00	11,603.98	9,185.00	48.39	40.93	90.01	-2,449.19	-800.75	659.08	569.85	89.23	7.386		
11,600.00	9,185.00	11,653.98	9,185.00	48.94	41.23	90.01	-2,499.19	-800.43	659.05	568.98	90.07	7.317		
11,650.00	9,185.00	11,703.98	9,185.00	49.49	41.52	90.01	-2,549.19	-800.12	659.02	568.10	90.92	7.249		
11,700.00	9,185.00	11,753.98	9,185.00	50.04	41.83	90.01	-2,599.19	-799.81	658.98	567.21	91.77	7.181		
11,750.00	9,185.00	11,803.98	9,185.00	50.60	42.13	90.01	-2,649.19	-799.49	658.95	566.32	92.63	7.114		
11,800.00	9,185.00	11,853.98	9,185.00	51.16	42.44	90.01	-2,699.19	-799.18	658.92	565.42	93.50	7.047		
11,850.00	9,185.00	11,903.98	9,185.00	51.72	42.75	90.01	-2,749.19	-798.86	658.88	564.51	94.38	6.981		
11,900.00	9,185.00	11,953.98	9,185.00	52.29	43.06	90.01	-2,799.19	-798.55	658.85	563.59	95.26	6.916		
11,950.00	9,185.00	12,003.98	9,185.00	52.87	43.38	90.01	-2,849.18	-798.23	658.82	562.67	96.15	6.852		
12,000.00	9,185.00	12,053.98	9,185.00	53.44	43.70	90.01	-2,899.18	-797.92	658.79	561.74	97.05	6.788		
12,050.00	9,185.00	12,103.98	9,185.00	54.02	44.02	90.01	-2,949.18	-797.60	658.75	560.80	97.95	6.725		
12,100.00	9,185.00	12,153.98	9,185.00	54.61	44.35	90.01	-2,999.18	-797.29	658.72	559.85	98.87	6.663		
12,150.00	9,185.00	12,203.98	9,185.00	55.20	44.68	90.01	-3,049.18	-796.97	658.69	558.90	99.78	6.601		
12,200.00	9,185.00	12,253.98	9,185.00	55.79	45.01	90.01	-3,099.18	-796.66	658.65	557.95	100.71	6.540		
12,250.00	9,185.00	12,303.98	9,185.00	56.38	45.35	90.01	-3,149.18	-796.34	658.62	556.98	101.64	6.480		
12,300.00	9,185.00	12,353.98	9,185.00	56.98	45.78	90.01	-3,199.18	-796.02	658.58	555.98	102.59	6.414		
12,350.00	9,185.00	12,403.98	9,185.00	57.58	46.23	90.01	-3,249.18	-795.70	658.54	554.98	103.53	6.340		
12,400.00	9,185.00	12,453.98	9,185.00	58.18	46.68	90.01	-3,299.18	-795.38	658.50	553.98	104.44	6.258		
12,450.00	9,185.00	12,503.98	9,185.00	58.79	47.15	90.01	-3,349.18	-795.06	658.46	552.98	105.33	6.188		
12,500.00	9,185.00	12,553.98	9,185.00	59.40	47.61	90.01	-3,399.18	-794.74	658.42	551.98	106.20	6.070		
12,550.00	9,185.00	12,603.98	9,185.00	60.01	48.08	90.01	-3,449.18	-794.42	658.38	550.98	107.03	5.965		
12,600.00	9,185.00	12,653.98	9,185.00	60.63	48.55	90.01	-3,499.18	-794.10	658.34	549.98	107.84	5.853		
12,650.00	9,185.00	12,703.98	9,185.00	61.24	49.03	90.01	-3,549.18	-793.78	658.30	548.98	108.61	5.735		
12,700.00	9,185.00	12,753.98	9,185.00	61.86	49.51	90.01	-3,599.18	-793.46	658.26	547.98	109.36	5.609		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,750.00	9,185.00	12,941.77	9,185.00	62.49	49.99	90.01	-3,781.33	-722.22	602.91	492.83	110.08	5.477		
12,800.00	9,185.00	12,981.06	9,185.00	63.11	50.30	90.01	-3,819.67	-713.69	592.32	481.04	111.28	5.323		
12,850.00	9,185.00	13,021.73	9,185.00	63.74	50.62	90.01	-3,859.50	-705.41	582.42	469.96	112.46	5.179		
12,900.00	9,185.00	13,062.63	9,185.00	64.36	50.94	90.01	-3,899.65	-697.66	573.22	459.58	113.64	5.044		
12,950.00	9,185.00	13,103.74	9,185.00	65.00	51.26	90.01	-3,940.12	-690.45	564.72	449.92	114.80	4.919 Alert		
13,000.00	9,185.00	13,145.04	9,185.00	65.63	51.59	90.01	-3,980.89	-683.79	556.94	440.97	115.97	4.803 Alert		
13,050.00	9,185.00	13,186.53	9,185.00	66.26	51.92	90.01	-4,021.92	-677.69	549.87	432.74	117.12	4.695 Alert		
13,100.00	9,185.00	13,228.18	9,185.00	66.90	52.25	90.01	-4,063.20	-672.16	543.51	425.25	118.26	4.596 Alert		
13,150.00	9,185.00	13,269.97	9,185.00	67.54	52.58	90.01	-4,104.70	-667.22	537.88	418.48	119.40	4.505 Alert		
13,200.00	9,185.00	13,311.89	9,185.00	68.18	52.92	90.01	-4,146.40	-662.88	532.98	412.46	120.52	4.422 Alert		
13,250.00	9,185.00	13,353.93	9,185.00	68.82	53.25	90.01	-4,188.26	-659.13	528.80	407.18	121.63	4.348 Alert		
13,300.00	9,185.00	13,396.06	9,185.00	69.46	53.58	90.01	-4,230.28	-656.00	525.36	402.64	122.72	4.281 Alert		
13,350.00	9,185.00	13,438.27	9,185.00	70.11	53.92	90.01	-4,272.41	-653.47	522.66	398.85	123.80	4.222 Alert		
13,400.00	9,185.00	13,480.53	9,185.00	70.76	54.25	90.01	-4,314.63	-651.57	520.69	395.82	124.86	4.170 Alert		
13,450.00	9,185.00	13,522.84	9,185.00	71.40	54.58	90.01	-4,356.92	-650.29	519.45	393.54	125.91	4.126 Alert		
13,500.00	9,185.00	13,565.16	9,185.00	72.05	54.91	90.01	-4,399.24	-649.63	518.96	392.02	126.94	4.088 Alert		
13,508.47	9,185.00	13,572.33	9,185.00	72.16	54.97	90.01	-4,406.41	-649.58	518.95	391.84	127.11	4.083 Alert		
13,550.00	9,185.00	13,607.49	9,185.00	72.71	55.24	90.01	-4,441.57	-649.60	519.20	391.26	127.94	4.058 Alert		
13,600.00	9,185.00	13,649.81	9,185.00	73.36	55.57	90.01	-4,483.88	-650.19	520.18	391.26	128.93	4.035 Alert		
13,650.00	9,185.00	13,692.09	9,185.00	74.01	55.90	90.01	-4,526.14	-651.41	521.91	392.01	129.89	4.018 Alert		
13,700.00	9,185.00	13,734.32	9,185.00	74.67	56.22	90.01	-4,568.33	-653.25	524.36	393.53	130.83	4.008 Alert		
13,750.00	9,185.00	13,776.48	9,185.00	75.33	56.54	90.01	-4,610.41	-655.70	527.56	395.80	131.76	4.004 Alert		
13,800.00	9,185.00	13,818.55	9,185.00	75.99	56.86	90.01	-4,652.37	-658.77	531.48	398.83	132.65	4.007 Alert		
13,850.00	9,185.00	13,860.51	9,185.00	76.65	57.17	90.01	-4,694.18	-662.44	536.14	402.62	133.52	4.015 Alert		
13,900.00	9,185.00	13,902.35	9,185.00	77.31	57.49	90.01	-4,735.80	-666.71	541.52	407.15	134.37	4.030 Alert		
13,950.00	9,185.00	13,944.05	9,185.00	77.97	57.79	90.01	-4,777.21	-671.57	547.63	412.44	135.19	4.051 Alert		
14,000.00	9,185.00	13,985.59	9,185.00	78.63	58.10	90.01	-4,818.39	-677.01	554.46	418.47	135.99	4.077 Alert		
14,050.00	9,185.00	14,026.96	9,185.00	79.30	58.40	90.01	-4,859.32	-683.03	562.01	425.24	136.76	4.109 Alert		
14,100.00	9,185.00	14,068.14	9,185.00	79.96	58.70	90.01	-4,899.97	-689.60	570.26	432.75	137.51	4.147 Alert		
14,150.00	9,185.00	14,109.11	9,185.00	80.63	59.00	90.01	-4,940.32	-696.71	579.22	440.99	138.23	4.190 Alert		
14,200.00	9,185.00	14,149.88	9,185.00	81.30	59.28	90.01	-4,980.34	-704.36	588.89	449.96	138.92	4.239 Alert		
14,250.00	9,185.00	14,190.37	9,185.00	81.97	59.57	90.01	-5,020.03	-712.53	599.25	459.65	139.59	4.293 Alert		
14,300.00	9,185.00	14,230.64	9,185.00	82.64	59.85	90.01	-5,059.34	-721.20	610.29	470.06	140.24	4.352 Alert		
14,350.00	9,185.00	14,268.46	9,185.00	83.31	60.26	90.01	-5,115.79	-733.78	621.46	479.84	141.62	4.388 Alert		
14,400.00	9,185.00	14,351.13	9,185.00	83.98	60.72	90.01	-5,177.22	-746.14	631.60	488.44	143.16	4.412 Alert		
14,450.00	9,185.00	14,414.34	9,185.00	84.65	61.17	90.01	-5,239.45	-757.24	640.66	495.99	144.67	4.428 Alert		
14,500.00	9,185.00	14,478.03	9,185.00	85.32	61.66	90.01	-5,302.38	-767.03	648.62	502.47	146.15	4.438 Alert		
14,550.00	9,185.00	14,542.16	9,185.00	86.00	62.15	90.01	-5,365.95	-775.48	655.49	507.90	147.59	4.441 Alert		
14,600.00	9,185.00	14,606.65	9,185.00	86.68	62.65	90.01	-5,430.05	-782.53	661.24	512.25	148.99	4.438 Alert		
14,650.00	9,185.00	14,671.44	9,185.00	87.35	63.17	90.01	-5,494.60	-788.17	665.87	515.52	150.35	4.429 Alert		
14,700.00	9,185.00	14,736.47	9,185.00	88.03	63.69	90.01	-5,559.49	-792.35	669.37	517.71	151.66	4.414 Alert		
14,750.00	9,185.00	14,801.68	9,185.00	88.71	64.22	90.01	-5,624.64	-795.07	671.73	518.82	152.91	4.393 Alert		
14,800.00	9,185.00	14,867.00	9,185.00	89.39	64.77	90.01	-5,689.94	-796.30	672.96	518.84	154.12	4.366 Alert		
14,850.00	9,185.00	14,926.27	9,185.00	90.07	65.26	90.01	-5,749.22	-796.20	673.14	517.88	155.26	4.336 Alert		
14,900.00	9,185.00	14,976.27	9,185.00	90.75	65.88	90.01	-5,799.22	-795.89	673.10	516.75	156.36	4.305 Alert		
14,950.00	9,185.00	15,026.27	9,185.00	91.43	66.10	90.01	-5,849.22	-795.58	673.07	515.61	157.46	4.275 Alert		
15,000.00	9,185.00	15,076.27	9,185.00	92.11	66.53	90.01	-5,899.22	-795.26	673.04	514.47	158.57	4.245 Alert		
15,050.00	9,185.00	15,126.27	9,185.00	92.79	66.95	90.01	-5,949.22	-794.95	673.01	513.33	159.67	4.215 Alert		
15,100.00	9,185.00	15,176.27	9,185.00	93.47	67.38	90.01	-5,999.22	-794.63	672.97	512.19	160.78	4.186 Alert		
15,150.00	9,185.00	15,226.27	9,185.00	94.16	67.80	90.01	-6,049.22	-794.32	672.94	511.05	161.89	4.157 Alert		
15,200.00	9,185.00	15,276.27	9,185.00	94.84	68.23	90.01	-6,099.21	-794.00	672.91	509.91	163.00	4.128 Alert		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
15,250.00	9,185.00	15,326.27	9,185.00	95.53	68.65	90.01	-6,149.21	-793.69	672.88	508.76	164.11	4.100	Alert	
15,300.00	9,185.00	15,376.27	9,185.00	96.21	69.08	90.01	-6,199.21	-793.38	672.85	507.62	165.23	4.072	Alert	
15,350.00	9,185.00	15,426.27	9,185.00	96.90	69.51	90.01	-6,249.21	-793.06	672.81	506.47	166.34	4.045	Alert	
15,400.00	9,185.00	15,476.27	9,185.00	97.59	69.94	90.01	-6,299.21	-792.75	672.78	505.32	167.46	4.018	Alert	
15,450.00	9,185.00	15,526.27	9,185.00	98.28	70.37	90.01	-6,349.21	-792.43	672.75	504.17	168.58	3.991	Alert	
15,500.00	9,185.00	15,576.27	9,185.00	98.96	70.80	90.01	-6,399.21	-792.12	672.72	503.02	169.70	3.964	Alert	
15,550.00	9,185.00	15,626.27	9,185.00	99.65	71.23	90.01	-6,449.21	-791.81	672.68	501.87	170.82	3.938	Alert	
15,600.00	9,185.00	15,676.27	9,185.00	100.34	71.66	90.01	-6,499.21	-791.49	672.65	500.71	171.94	3.912	Alert	
15,650.00	9,185.00	15,726.27	9,185.00	101.03	72.09	90.01	-6,549.21	-791.18	672.62	499.56	173.06	3.887	Alert	
15,700.00	9,185.00	15,776.27	9,185.00	101.72	72.53	90.01	-6,599.20	-790.86	672.59	498.40	174.19	3.861	Alert	
15,750.00	9,185.00	15,826.27	9,185.00	102.42	72.96	90.01	-6,649.20	-790.55	672.55	497.24	175.31	3.836	Alert	
15,800.00	9,185.00	15,876.27	9,185.00	103.11	73.40	90.01	-6,699.20	-790.23	672.52	496.08	176.44	3.812	Alert	
15,850.00	9,185.00	15,926.27	9,185.00	103.80	73.83	90.01	-6,749.20	-789.92	672.49	494.92	177.57	3.787	Alert	
15,900.00	9,185.00	15,976.27	9,185.00	104.49	74.27	90.01	-6,799.20	-789.61	672.46	493.76	178.70	3.763	Alert	
15,950.00	9,185.00	16,026.27	9,185.00	105.18	74.71	90.01	-6,849.20	-789.29	672.43	492.60	179.83	3.739	Alert	
16,000.00	9,185.00	16,076.27	9,185.00	105.88	75.14	90.01	-6,899.20	-788.98	672.39	491.44	180.96	3.716	Alert	
16,050.00	9,185.00	16,126.27	9,185.00	106.57	75.58	90.01	-6,949.20	-788.66	672.36	490.27	182.09	3.692	Alert	
16,100.00	9,185.00	16,176.27	9,185.00	107.27	76.02	90.01	-6,999.20	-788.35	672.33	489.11	183.22	3.669	Alert	
16,150.00	9,185.00	16,226.27	9,185.00	107.96	76.46	90.01	-7,049.20	-788.04	672.30	487.94	184.36	3.647	Alert	
16,200.00	9,185.00	16,276.27	9,185.00	108.66	76.90	90.01	-7,099.19	-787.72	672.26	486.77	185.49	3.624	Alert	
16,250.00	9,185.00	16,326.27	9,185.00	109.35	77.34	90.01	-7,149.19	-787.41	672.23	485.60	186.63	3.602	Alert	
16,300.00	9,185.00	16,376.27	9,185.00	110.05	77.78	90.01	-7,199.19	-787.09	672.20	484.43	187.77	3.580	Alert	
16,350.00	9,185.00	16,426.27	9,185.00	110.75	78.22	90.01	-7,249.19	-786.78	672.17	483.26	188.91	3.558	Alert	
16,400.00	9,185.00	16,476.27	9,185.00	111.44	78.66	90.01	-7,299.19	-786.46	672.13	482.09	190.04	3.537	Alert	
16,450.00	9,185.00	16,526.27	9,185.00	112.14	79.10	90.01	-7,349.19	-786.15	672.10	480.92	191.18	3.515	Alert	
16,500.00	9,185.00	16,576.27	9,185.00	112.84	79.55	90.01	-7,399.19	-785.84	672.07	479.74	192.33	3.494	Alert	
16,550.00	9,185.00	16,626.27	9,185.00	113.54	79.99	90.01	-7,449.19	-785.52	672.04	478.57	193.47	3.474	Alert	
16,600.00	9,185.00	16,676.27	9,185.00	114.24	80.43	90.01	-7,499.19	-785.21	672.01	477.40	194.61	3.453	Alert	
16,650.00	9,185.00	16,726.27	9,185.00	114.94	80.88	90.01	-7,549.19	-784.89	671.97	476.22	195.75	3.433	Alert	
16,700.00	9,185.00	16,776.27	9,185.00	115.64	81.32	90.01	-7,599.18	-784.58	671.94	475.04	196.90	3.413	Alert	
16,750.00	9,185.00	16,826.27	9,185.00	116.34	81.77	90.01	-7,649.18	-784.27	671.91	473.86	198.04	3.393	Alert	
16,800.00	9,185.00	16,876.27	9,185.00	117.04	82.21	90.01	-7,699.18	-783.95	671.88	472.69	199.19	3.373	Alert	
16,850.00	9,185.00	16,926.27	9,185.00	117.74	82.66	90.01	-7,749.18	-783.64	671.84	471.51	200.34	3.354	Alert	
16,900.00	9,185.00	16,976.27	9,185.00	118.44	83.11	90.01	-7,799.18	-783.32	671.81	470.33	201.48	3.334	Alert	
16,950.00	9,185.00	17,026.27	9,185.00	119.14	83.55	90.01	-7,849.18	-783.01	671.78	469.15	202.63	3.315	Alert	
17,000.00	9,185.00	17,076.27	9,185.00	119.84	84.00	90.01	-7,899.18	-782.69	671.75	467.96	203.78	3.296	Alert	
17,050.00	9,185.00	17,126.27	9,185.00	120.54	84.45	90.01	-7,949.18	-782.38	671.71	466.78	204.93	3.278	Alert	
17,100.00	9,185.00	17,176.27	9,185.00	121.24	84.90	90.01	-7,999.18	-782.07	671.68	465.60	206.08	3.259	Alert	
17,150.00	9,185.00	17,226.27	9,185.00	121.95	85.34	90.01	-8,049.18	-781.75	671.65	464.41	207.24	3.241	Alert	
17,200.00	9,185.00	17,276.27	9,185.00	122.65	85.79	90.01	-8,099.17	-781.44	671.62	463.23	208.39	3.223	Alert	
17,250.00	9,185.00	17,326.27	9,185.00	123.35	86.24	90.01	-8,149.17	-781.12	671.59	462.05	209.54	3.205	Alert	
17,300.00	9,185.00	17,376.27	9,185.00	124.06	86.69	90.01	-8,199.17	-780.81	671.55	460.86	210.69	3.187	Alert	
17,350.00	9,185.00	17,426.27	9,185.00	124.76	87.14	90.01	-8,249.17	-780.50	671.52	459.67	211.85	3.170	Alert	
17,400.00	9,185.00	17,476.27	9,185.00	125.46	87.59	90.01	-8,299.17	-780.18	671.49	458.49	213.00	3.152	Alert	
17,450.00	9,185.00	17,526.27	9,185.00	126.17	88.05	90.01	-8,349.17	-779.87	671.46	457.30	214.16	3.135	Alert	
17,500.00	9,185.00	17,576.27	9,185.00	126.87	88.50	90.01	-8,399.17	-779.55	671.42	456.11	215.31	3.118	Alert	
17,550.00	9,185.00	17,626.27	9,185.00	127.58	88.95	90.01	-8,449.17	-779.24	671.39	454.92	216.47	3.102	Alert	
17,600.00	9,185.00	17,676.27	9,185.00	128.28	89.40	90.01	-8,499.17	-778.92	671.36	453.73	217.63	3.085	Alert	
17,650.00	9,185.00	17,726.27	9,185.00	128.99	89.85	90.01	-8,549.17	-778.61	671.33	452.54	218.79	3.068	Alert	
17,700.00	9,185.00	17,776.27	9,185.00	129.69	90.31	90.01	-8,599.16	-778.30	671.29	451.35	219.95	3.052	Alert	
17,750.00	9,185.00	17,826.27	9,185.00	130.40	90.76	90.01	-8,649.16	-777.98	671.26	450.16	221.11	3.036	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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2											Offset Site Error:		5.00 ft
Survey Program: 0-MWD+IFR1											Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
17,800.00	9,185.00	17,876.27	9,185.00	131.11	91.21	90.01	-8,699.16	-777.67	671.23	448.96	222.27	3.020	Alert
17,850.00	9,185.00	17,926.27	9,185.00	131.81	91.67	90.01	-8,749.16	-777.35	671.20	447.77	223.43	3.004	Alert
17,900.00	9,185.00	17,976.27	9,185.00	132.52	92.12	90.01	-8,799.16	-777.04	671.17	446.58	224.59	2.988	Alert
17,950.00	9,185.00	18,026.27	9,185.00	133.23	92.58	90.01	-8,849.16	-776.73	671.13	445.38	225.75	2.973	Alert
18,000.00	9,185.00	18,076.27	9,185.00	133.93	93.03	90.01	-8,899.16	-776.41	671.10	444.19	226.91	2.958	Alert
18,050.00	9,185.00	18,126.27	9,185.00	134.64	93.49	90.01	-8,949.16	-776.10	671.07	442.99	228.07	2.942	Alert
18,100.00	9,185.00	18,176.27	9,185.00	135.35	93.94	90.01	-8,999.16	-775.78	671.04	441.80	229.24	2.927	Alert
18,150.00	9,185.00	18,226.27	9,185.00	136.06	94.40	90.01	-9,049.16	-775.47	671.00	440.60	230.40	2.912	Alert
18,200.00	9,185.00	18,276.27	9,185.00	136.76	94.85	90.01	-9,099.15	-775.15	670.97	439.41	231.57	2.898	Alert
18,250.00	9,185.00	18,326.27	9,185.00	137.47	95.31	90.01	-9,149.15	-774.84	670.94	438.21	232.73	2.883	Alert
18,300.00	9,185.00	18,376.27	9,185.00	138.18	95.77	90.01	-9,199.15	-774.53	670.91	437.01	233.90	2.868	Alert
18,350.00	9,185.00	18,426.27	9,185.00	138.89	96.22	90.01	-9,249.15	-774.21	670.87	435.81	235.06	2.854	Alert
18,400.00	9,185.00	18,476.27	9,185.00	139.60	96.68	90.01	-9,299.15	-773.90	670.84	434.61	236.23	2.840	Alert
18,450.00	9,185.00	18,526.27	9,185.00	140.31	97.14	90.01	-9,349.15	-773.58	670.81	433.41	237.40	2.826	Alert
18,500.00	9,185.00	18,576.27	9,185.00	141.02	97.60	90.01	-9,399.15	-773.27	670.78	432.21	238.56	2.812	Alert
18,550.00	9,185.00	18,626.27	9,185.00	141.73	98.05	90.01	-9,449.15	-772.96	670.75	431.01	239.73	2.798	Alert
18,600.00	9,185.00	18,676.27	9,185.00	142.44	98.51	90.01	-9,499.15	-772.64	670.71	429.81	240.90	2.784	Alert
18,650.00	9,185.00	18,726.27	9,185.00	143.15	98.97	90.01	-9,549.15	-772.33	670.68	428.61	242.07	2.771	Alert
18,700.00	9,185.00	18,776.27	9,185.00	143.86	99.43	90.01	-9,599.14	-772.01	670.65	427.41	243.24	2.757	Alert
18,750.00	9,185.00	18,826.27	9,185.00	144.57	99.89	90.01	-9,649.14	-771.70	670.62	426.21	244.41	2.744	Alert
18,800.00	9,185.00	18,876.27	9,185.00	145.28	100.35	90.01	-9,699.14	-771.39	670.58	425.01	245.58	2.731	Alert
18,850.00	9,185.00	18,926.27	9,185.00	145.99	100.81	90.01	-9,749.14	-771.07	670.55	423.80	246.75	2.718	Alert
18,900.00	9,185.00	18,976.27	9,185.00	146.70	101.27	90.01	-9,799.14	-770.76	670.52	422.60	247.92	2.705	Alert
18,950.00	9,185.00	19,026.27	9,185.00	147.41	101.70	90.01	-9,849.14	-770.44	670.49	421.43	249.05	2.692	Alert
18,972.90	9,185.00	19,049.18	9,185.00	147.73	101.88	90.01	-9,872.04	-770.30	670.47	420.91	249.56	2.687	Alert

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.00	0.00	0.10	0.10	0.50	0.50	89.79	0.11	29.95	29.95					
50.00	50.00	50.10	50.10	0.50	0.50	89.79	0.11	29.95	29.95	28.94	1.01	29.756		
100.00	100.00	100.10	100.10	0.52	0.52	89.79	0.11	29.95	29.95	28.91	1.04	28.921		
150.00	150.00	150.10	150.10	0.59	0.59	89.79	0.11	29.95	29.95	28.77	1.18	25.367		
200.00	200.00	200.10	200.10	0.70	0.70	89.79	0.11	29.95	29.95	28.55	1.40	21.325		
250.00	250.00	250.10	250.10	0.84	0.84	89.79	0.11	29.95	29.95	28.27	1.68	17.873		
300.00	300.00	300.10	300.10	0.99	0.99	89.79	0.11	29.95	29.95	27.98	1.97	15.165		
350.00	350.00	350.10	350.10	1.15	1.15	89.79	0.11	29.95	29.95	27.66	2.29	13.071		
400.00	400.00	400.10	400.10	1.31	1.31	89.79	0.11	29.95	29.95	27.33	2.62	11.438		
450.00	450.00	450.10	450.10	1.48	1.48	89.79	0.11	29.95	29.95	27.00	2.95	10.142		
500.00	500.00	500.10	500.10	1.65	1.65	89.79	0.11	29.95	29.95	26.66	3.29	9.096		
550.00	550.00	550.10	550.10	1.82	1.82	89.79	0.11	29.95	29.95	26.31	3.64	8.238		
600.00	600.00	600.10	600.10	1.99	1.99	89.79	0.11	29.95	29.95	25.97	3.98	7.522		
650.00	650.00	650.10	650.10	2.16	2.16	89.79	0.11	29.95	29.95	25.62	4.33	6.918		
700.00	700.00	700.10	700.10	2.34	2.34	89.79	0.11	29.95	29.95	25.27	4.68	6.401		
750.00	750.00	750.10	750.10	2.51	2.52	89.79	0.11	29.95	29.95	24.92	5.03	5.955		
800.00	800.00	800.10	800.10	2.69	2.69	89.79	0.11	29.95	29.95	24.57	5.38	5.565		
850.00	850.00	850.10	850.10	2.87	2.87	89.79	0.11	29.95	29.95	24.22	5.73	5.223		
900.00	900.00	900.10	900.10	3.04	3.04	89.79	0.11	29.95	29.95	23.86	6.09	4.920 Alert		
950.00	950.00	950.10	950.10	3.22	3.22	89.79	0.11	29.95	29.95	23.51	6.44	4.650 Alert		
1,000.00	1,000.00	1,000.10	1,000.10	3.40	3.40	89.79	0.11	29.95	29.95	23.15	6.80	4.407 Alert		
1,050.00	1,050.00	1,050.10	1,050.10	3.58	3.58	89.79	0.11	29.95	29.95	22.80	7.15	4.189 Alert		
1,100.00	1,100.00	1,100.10	1,100.10	3.75	3.75	89.79	0.11	29.95	29.95	22.44	7.51	3.990 Alert		
1,150.00	1,150.00	1,150.10	1,150.10	3.93	3.93	89.79	0.11	29.95	29.95	22.09	7.86	3.810 Alert		
1,200.00	1,200.00	1,200.10	1,200.10	4.11	4.11	89.79	0.11	29.95	29.95	21.73	8.22	3.645 Alert		
1,250.00	1,250.00	1,250.10	1,250.10	4.29	4.29	89.79	0.11	29.95	29.95	21.38	8.57	3.494 Alert		
1,300.00	1,300.00	1,300.10	1,300.10	4.46	4.46	89.79	0.11	29.95	29.95	21.02	8.93	3.354 Alert		
1,350.00	1,350.00	1,350.10	1,350.10	4.64	4.64	89.79	0.11	29.95	29.95	20.67	9.29	3.226 Alert		
1,400.00	1,400.00	1,400.10	1,400.10	4.82	4.82	89.79	0.11	29.95	29.95	20.31	9.64	3.106 Alert		
1,450.00	1,450.00	1,450.10	1,450.10	5.00	5.00	89.79	0.11	29.95	29.95	19.95	10.00	2.996 Alert		
1,500.00	1,500.00	1,500.10	1,500.10	5.18	5.18	89.79	0.11	29.95	29.95	19.60	10.35	2.892 Alert		
1,550.00	1,550.00	1,550.10	1,550.10	5.36	5.36	89.79	0.11	29.95	29.95	19.24	10.71	2.796 Alert		
1,600.00	1,600.00	1,600.10	1,600.10	5.53	5.53	89.79	0.11	29.95	29.95	18.88	11.07	2.706 Alert		
1,650.00	1,650.00	1,650.10	1,650.10	5.71	5.71	89.79	0.11	29.95	29.95	18.52	11.43	2.621 Alert		
1,700.00	1,700.00	1,700.10	1,700.10	5.89	5.89	89.79	0.11	29.95	29.95	18.17	11.78	2.542 Alert		
1,750.00	1,750.00	1,750.10	1,750.10	6.07	6.07	89.79	0.11	29.95	29.95	17.81	12.14	2.467 Minor Risk		
1,800.00	1,800.00	1,800.10	1,800.10	6.25	6.25	89.79	0.11	29.95	29.95	17.45	12.50	2.397 Minor Risk		
1,850.00	1,850.00	1,850.10	1,850.10	6.43	6.43	89.79	0.11	29.95	29.95	17.10	12.85	2.330 Minor Risk		
1,900.00	1,900.00	1,900.10	1,900.10	6.61	6.61	89.79	0.11	29.95	29.95	16.74	13.21	2.267 Minor Risk		
1,950.00	1,950.00	1,950.10	1,950.10	6.78	6.78	89.79	0.11	29.95	29.95	16.38	13.57	2.207 Minor Risk		
2,000.00	2,000.00	2,000.10	2,000.10	6.96	6.96	89.79	0.11	29.95	29.95	16.02	13.93	2.151 Minor Risk		
2,050.00	2,050.00	2,050.10	2,050.10	7.14	7.14	89.79	0.11	29.95	29.95	15.67	14.28	2.097 Minor Risk		
2,100.00	2,100.00	2,100.10	2,100.10	7.32	7.32	89.79	0.11	29.95	29.95	15.31	14.64	2.045 Minor Risk		
2,150.00	2,150.00	2,150.10	2,150.10	7.50	7.50	89.79	0.11	29.95	29.95	14.95	15.00	1.997 Minor Risk		
2,200.00	2,200.00	2,200.10	2,200.10	7.68	7.68	89.79	0.11	29.95	29.95	14.59	15.36	1.950 Minor Risk		
2,250.00	2,250.00	2,250.10	2,250.10	7.86	7.86	89.79	0.11	29.95	29.95	14.23	15.72	1.906 Minor Risk		
2,300.00	2,300.00	2,300.10	2,300.10	8.04	8.04	89.79	0.11	29.95	29.95	13.88	16.07	1.863 Minor Risk		
2,350.00	2,350.00	2,350.10	2,350.10	8.22	8.22	89.79	0.11	29.95	29.95	13.52	16.43	1.823 Minor Risk		
2,400.00	2,400.00	2,400.10	2,400.10	8.39	8.39	89.79	0.11	29.95	29.95	13.16	16.79	1.784 Minor Risk		
2,450.00	2,450.00	2,450.10	2,450.10	8.57	8.57	89.79	0.11	29.95	29.95	12.80	17.15	1.747 Minor Risk		
2,500.00	2,500.00	2,500.10	2,500.10	8.75	8.75	89.79	0.11	29.95	29.95	12.45	17.50	1.711 Minor Risk, CC		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning	
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Tooface (")	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor		
2,550.00	2,550.00	2,549.85	2,549.85	8.93	8.93	89.66	0.18	30.16	30.16	12.30	17.86	1.689	Minor Risk, ES, SF	
2,600.00	2,600.00	2,599.60	2,599.59	9.11	9.10	89.27	0.39	30.77	30.78	12.57	18.21	1.690	Minor Risk	
2,650.00	2,650.00	2,649.33	2,649.31	9.29	9.28	88.67	0.74	31.79	31.81	13.25	18.56	1.714	Minor Risk	
2,700.00	2,700.00	2,699.03	2,698.99	9.47	9.45	87.88	1.23	33.22	33.26	14.36	18.91	1.759	Minor Risk	
2,750.00	2,750.00	2,748.71	2,748.63	9.65	9.62	86.97	1.86	35.06	35.14	15.88	19.25	1.825	Minor Risk	
2,800.00	2,800.00	2,798.35	2,798.22	9.83	9.79	85.97	2.62	37.30	37.44	17.84	19.60	1.910	Minor Risk	
2,850.00	2,850.00	2,847.95	2,847.73	10.00	9.97	84.95	3.53	39.94	40.17	20.23	19.94	2.014	Minor Risk	
2,900.00	2,900.00	2,897.49	2,897.17	10.18	10.14	83.93	4.57	42.99	43.33	23.05	20.28	2.136	Minor Risk	
2,950.00	2,950.00	2,946.97	2,946.52	10.36	10.31	82.94	5.75	46.44	46.93	26.31	20.62	2.276	Minor Risk	
3,000.00	3,000.00	2,996.39	2,995.77	10.54	10.49	82.00	7.07	50.28	50.96	30.00	20.96	2.431	Minor Risk	
3,050.00	3,050.00	3,045.73	3,044.91	10.72	10.66	81.12	8.52	54.52	55.43	34.13	21.30	2.603	Alert	
3,100.00	3,100.00	3,104.87	3,094.07	10.90	10.87	80.31	10.10	59.15	60.31	38.64	21.67	2.783	Alert	
3,150.00	3,150.00	3,144.88	3,143.55	11.08	11.01	79.60	11.74	63.92	65.32	43.33	21.99	2.971	Alert	
3,200.00	3,200.00	3,205.38	3,193.04	11.26	11.23	78.99	13.37	68.69	70.33	47.96	22.38	3.143	Alert	
3,250.00	3,250.00	3,244.36	3,242.53	11.44	11.37	78.46	15.00	73.46	75.36	52.66	22.69	3.321	Alert	
3,300.00	3,300.00	3,305.90	3,292.01	11.62	11.59	78.00	16.63	78.23	80.39	57.30	23.09	3.482	Alert	
3,350.00	3,350.00	3,343.85	3,341.50	11.80	11.73	77.59	18.27	83.00	85.42	62.02	23.40	3.651	Alert	
3,400.00	3,400.00	3,406.41	3,390.98	11.97	11.95	77.23	19.90	87.77	90.46	66.66	23.80	3.801	Alert	
3,450.00	3,450.00	3,443.33	3,440.47	12.15	12.08	76.90	21.53	92.54	95.50	71.39	24.11	3.962	Alert	
3,500.00	3,500.00	3,506.93	3,489.96	12.33	12.31	76.61	23.16	97.31	100.54	76.03	24.51	4.102	Alert	
3,550.00	3,550.00	3,542.82	3,539.44	12.51	12.44	76.35	24.80	102.08	105.58	80.77	24.81	4.255	Alert	
3,600.00	3,600.00	3,607.44	3,588.93	12.69	12.68	76.11	26.43	106.85	110.63	85.41	25.22	4.387	Alert	
3,650.00	3,650.00	3,642.30	3,638.42	12.87	12.80	75.89	28.06	111.61	115.68	90.16	25.52	4.533	Alert	
3,700.00	3,700.00	3,692.04	3,687.90	13.05	12.98	75.69	29.69	116.38	120.73	94.85	25.88	4.666	Alert	
3,750.00	3,750.00	3,741.79	3,737.39	13.23	13.17	75.50	31.33	121.15	125.78	99.55	26.23	4.795	Alert	
3,800.00	3,800.00	3,808.47	3,786.88	13.41	13.41	75.33	32.96	125.92	130.83	104.19	26.65	4.910	Alert	
3,850.00	3,850.00	3,841.27	3,836.36	13.59	13.53	75.17	34.59	130.69	135.89	108.95	26.94	5.044		
3,900.00	3,900.00	3,908.99	3,885.85	13.77	13.78	75.03	36.22	135.46	140.94	113.58	27.36	5.152		
3,950.00	3,950.00	3,940.76	3,935.34	13.94	13.89	74.89	37.86	140.23	146.00	118.35	27.65	5.280		
4,000.00	4,000.00	4,009.50	3,984.82	14.12	14.14	74.77	39.49	145.00	151.06	122.98	28.07	5.381		
4,050.00	4,050.00	4,040.23	4,034.30	14.30	14.26	74.61	41.12	149.77	156.25	127.89	28.36	5.509		
4,100.00	4,099.99	4,089.93	4,083.74	14.48	14.44	74.46	42.75	154.53	161.70	132.99	28.71	5.631		
4,150.00	4,149.97	4,139.59	4,133.15	14.66	14.62	74.31	44.38	159.30	167.42	138.36	29.07	5.760		
4,200.00	4,199.94	4,189.22	4,182.52	14.83	14.81	74.16	46.01	164.05	173.42	144.00	29.42	5.895		
4,250.00	4,249.88	4,238.79	4,231.84	15.01	14.99	74.01	47.64	168.81	179.69	149.92	29.77	6.036		
4,300.00	4,299.79	4,288.32	4,281.11	15.19	15.17	73.86	49.26	173.56	186.24	156.12	30.12	6.183		
4,350.00	4,349.70	4,337.83	4,330.37	15.36	15.35	73.71	50.89	178.30	192.87	162.39	30.48	6.329		
4,400.00	4,399.60	4,387.35	4,379.63	15.54	15.54	73.56	52.51	183.05	199.51	168.69	30.83	6.472		
4,450.00	4,449.51	4,436.86	4,428.89	15.72	15.72	73.41	54.14	187.80	206.18	175.00	31.18	6.612		
4,500.00	4,499.41	4,486.38	4,478.15	15.90	15.90	73.26	55.76	192.55	212.86	181.33	31.53	6.750		
4,550.00	4,549.32	4,535.90	4,527.41	16.07	16.09	73.11	57.39	197.29	219.56	187.68	31.89	6.886		
4,600.00	4,599.23	4,585.41	4,576.67	16.25	16.27	72.96	59.01	202.04	226.28	194.04	32.24	7.019		
4,650.00	4,649.13	4,634.93	4,625.93	16.43	16.45	72.81	60.64	206.79	233.00	200.41	32.59	7.149		
4,700.00	4,699.04	4,684.44	4,675.19	16.61	16.64	72.66	62.26	211.54	239.74	206.80	32.95	7.277		
4,750.00	4,748.95	4,733.96	4,724.45	16.79	16.82	72.51	63.89	216.28	246.49	213.19	33.30	7.402		
4,800.00	4,798.85	4,783.47	4,773.71	16.96	17.01	72.36	65.51	221.03	253.25	219.60	33.65	7.525		
4,850.00	4,848.76	4,832.99	4,822.98	17.14	17.19	72.21	67.14	225.78	260.02	226.02	34.01	7.646		
4,900.00	4,898.67	4,882.51	4,872.24	17.32	17.38	72.06	68.76	230.53	266.80	232.44	34.36	7.764		
4,950.00	4,948.57	4,932.02	4,921.50	17.50	17.56	71.91	70.39	235.27	273.59	238.87	34.72	7.881		
5,000.00	4,998.48	4,981.54	4,970.76	17.68	17.74	71.76	72.01	240.02	280.39	245.31	35.07	7.995		
5,050.00	5,048.39	5,031.05	5,020.02	17.86	17.93	71.61	73.64	244.77	287.19	251.76	35.43	8.107		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.00	5,098.29	5,080.57	5,069.28	18.04	18.11	127.61	75.26	249.52	294.00	258.22	35.78	8.216		
5,150.00	5,148.20	5,130.08	5,118.54	18.22	18.30	127.86	76.89	254.27	300.81	264.68	38.14	8.324		
5,200.00	5,198.11	5,179.60	5,167.80	18.39	18.48	128.11	78.51	259.01	307.63	271.14	36.49	8.430		
5,250.00	5,248.01	5,229.12	5,217.06	18.57	18.67	128.34	80.14	263.76	314.46	277.61	36.85	8.534		
5,300.00	5,297.92	5,278.63	5,266.32	18.75	18.85	128.57	81.76	268.51	321.29	284.09	37.20	8.636		
5,350.00	5,347.82	5,328.15	5,315.58	18.93	19.04	128.79	83.39	273.26	328.13	290.57	37.56	8.736		
5,400.00	5,397.73	5,377.66	5,364.84	19.11	19.23	128.99	85.01	278.00	334.97	297.05	37.91	8.835		
5,450.00	5,447.64	5,427.18	5,414.10	19.29	19.41	129.19	86.64	282.75	341.81	303.54	38.27	8.931		
5,500.00	5,497.54	5,476.69	5,463.37	19.47	19.60	129.38	88.26	287.50	348.66	310.03	38.63	9.026		
5,550.00	5,547.45	5,526.21	5,512.63	19.65	19.78	129.57	89.89	292.25	355.51	316.53	38.98	9.120		
5,600.00	5,597.36	5,575.73	5,561.89	19.83	19.97	129.74	91.51	296.99	362.36	323.02	39.34	9.211		
5,650.00	5,647.26	5,625.24	5,611.15	20.01	20.15	129.91	93.14	301.74	369.22	329.53	39.70	9.301		
5,700.00	5,697.17	5,674.76	5,660.41	20.19	20.34	130.08	94.76	306.49	376.08	336.03	40.05	9.390		
5,750.00	5,747.08	5,724.27	5,709.67	20.37	20.53	130.24	96.39	311.24	382.95	342.54	40.41	9.477		
5,800.00	5,796.98	5,773.79	5,758.93	20.55	20.71	130.39	98.01	315.98	389.81	349.05	40.77	9.562		
5,850.00	5,846.89	5,823.30	5,808.19	20.73	20.90	130.53	99.64	320.73	396.68	355.56	41.12	9.647		
5,900.00	5,896.80	5,872.82	5,857.45	20.91	21.08	130.68	101.26	325.48	403.56	362.08	41.48	9.729		
5,950.00	5,946.70	5,922.34	5,906.71	21.09	21.27	130.81	102.89	330.23	410.43	368.59	41.84	9.810		
6,000.00	5,996.61	5,971.85	5,955.97	21.27	21.46	130.95	104.51	334.97	417.31	375.11	42.19	9.890		
6,050.00	6,046.52	6,021.37	6,005.23	21.45	21.64	131.08	106.14	339.72	424.19	381.64	42.55	9.969		
6,100.00	6,096.42	6,070.88	6,054.50	21.63	21.83	131.20	107.76	344.47	431.07	388.16	42.91	10.046		
6,150.00	6,146.33	6,120.40	6,103.76	21.81	22.02	131.32	109.39	349.22	437.95	394.69	43.26	10.123		
6,200.00	6,196.23	6,169.91	6,153.02	21.99	22.20	131.44	111.01	353.97	444.83	401.21	43.62	10.197		
6,250.00	6,246.14	6,219.43	6,202.28	22.17	22.39	131.55	112.64	358.71	451.72	407.74	43.98	10.271		
6,300.00	6,296.05	6,268.95	6,251.54	22.35	22.58	131.66	114.26	363.46	458.61	414.27	44.34	10.344		
6,350.00	6,345.95	6,318.46	6,300.80	22.53	22.76	131.77	115.89	368.21	465.50	420.80	44.69	10.415		
6,400.00	6,395.86	6,367.98	6,350.06	22.71	22.95	131.87	117.51	372.96	472.39	427.34	45.05	10.485		
6,450.00	6,445.77	6,417.49	6,399.32	22.89	23.14	131.97	119.14	377.70	479.28	433.87	45.41	10.554		
6,500.00	6,495.67	6,467.01	6,448.58	23.07	23.32	132.07	120.76	382.45	486.18	440.41	45.77	10.623		
6,550.00	6,545.58	6,516.52	6,497.84	23.25	23.51	132.16	122.39	387.20	493.07	446.95	46.13	10.690		
6,600.00	6,595.49	6,566.04	6,547.10	23.43	23.70	132.26	124.01	391.95	499.97	453.48	46.48	10.756		
6,650.00	6,645.39	6,615.56	6,596.36	23.62	23.88	132.35	125.64	396.69	506.87	460.02	46.84	10.821		
6,700.00	6,695.30	6,665.07	6,645.62	23.80	24.07	132.43	127.26	401.44	513.77	466.57	47.20	10.885		
6,750.00	6,745.21	6,714.59	6,694.89	23.98	24.26	132.52	128.89	406.19	520.67	473.11	47.56	10.948		
6,800.00	6,795.11	6,764.10	6,744.15	24.16	24.45	132.60	130.51	410.94	527.57	479.65	47.92	11.010		
6,850.00	6,845.02	6,813.62	6,793.41	24.34	24.63	132.68	132.14	415.68	534.47	486.20	48.28	11.071		
6,900.00	6,894.93	6,863.13	6,842.67	24.52	24.82	132.76	133.76	420.43	541.37	492.74	48.63	11.132		
6,950.00	6,944.83	6,912.65	6,891.93	24.70	25.01	132.84	135.39	425.18	548.28	499.29	48.99	11.191		
7,000.00	6,994.74	6,962.17	6,941.19	24.88	25.20	132.91	137.01	429.93	555.18	505.83	49.35	11.250		
7,050.00	7,044.65	7,011.68	6,990.45	25.06	25.38	132.99	138.64	434.68	562.09	512.38	49.71	11.308		
7,100.00	7,094.55	7,061.20	7,039.71	25.24	25.57	133.06	140.26	439.42	569.00	518.93	50.07	11.364		
7,150.00	7,144.46	7,110.71	7,088.97	25.43	25.76	133.13	141.89	444.17	575.91	525.48	50.43	11.421		
7,200.00	7,194.36	7,160.23	7,138.23	25.61	25.95	133.19	143.51	448.92	582.81	532.03	50.79	11.476		
7,250.00	7,244.27	7,209.74	7,187.49	25.79	26.13	133.26	145.14	453.67	589.72	538.58	51.14	11.531		
7,300.00	7,294.18	7,259.26	7,236.75	25.97	26.32	133.33	146.76	458.41	596.63	545.13	51.50	11.584		
7,350.00	7,344.08	7,308.78	7,286.01	26.15	26.51	133.39	148.39	463.16	603.55	551.68	51.86	11.637		
7,400.00	7,393.99	7,358.29	7,335.28	26.33	26.70	133.45	150.01	467.91	610.46	558.24	52.22	11.690		
7,450.00	7,443.90	7,407.81	7,384.54	26.51	26.88	133.51	151.64	472.66	617.37	564.79	52.58	11.741		
7,500.00	7,493.80	7,457.32	7,433.80	26.69	27.07	133.57	153.26	477.40	624.28	571.34	52.94	11.792		
7,550.00	7,543.71	7,506.84	7,483.06	26.88	27.26	133.63	154.89	482.15	631.20	577.90	53.30	11.843		
7,600.00	7,593.62	7,560.03	7,535.99	27.06	27.46	133.69	156.61	487.19	638.06	584.37	53.69	11.884		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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: O-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,650.00	7,643.52	7,619.03	7,594.76	27.24	27.68	133.78	158.28	492.08	644.32	590.20	54.12	11.905		
7,700.00	7,693.43	7,678.24	7,653.81	27.42	27.90	133.92	159.67	496.12	649.79	595.25	54.54	11.913		
7,750.00	7,743.38	7,737.66	7,713.14	27.60	28.12	134.05	160.76	499.31	654.13	599.17	54.96	11.903		
7,800.00	7,793.35	7,797.26	7,772.68	27.78	28.33	134.14	161.55	501.63	657.28	601.92	55.36	11.873		
7,850.00	7,843.34	7,856.97	7,832.38	27.96	28.54	134.20	162.05	503.07	659.23	603.48	55.75	11.824		
7,900.00	7,893.33	7,916.75	7,892.15	28.14	28.75	134.22	162.24	503.63	659.99	603.85	56.14	11.757		
7,950.00	7,943.33	7,968.04	7,943.43	28.31	28.93	89.73	162.24	503.63	660.00	603.51	56.49	11.683		
8,000.00	7,993.33	8,018.04	7,993.43	28.49	29.10	89.73	162.24	503.63	660.00	603.16	56.84	11.611		
8,050.00	8,043.33	8,068.04	8,043.43	28.67	29.27	89.73	162.24	503.63	660.00	602.81	57.20	11.539		
8,100.00	8,093.33	8,118.04	8,093.43	28.85	29.44	89.73	162.24	503.63	660.00	602.45	57.55	11.469		
8,150.00	8,143.33	8,168.04	8,143.43	29.03	29.61	89.73	162.24	503.63	660.00	602.10	57.90	11.399		
8,200.00	8,193.33	8,218.04	8,193.43	29.20	29.79	89.73	162.24	503.63	660.00	601.75	58.25	11.330		
8,250.00	8,243.33	8,268.04	8,243.43	29.38	29.96	89.73	162.24	503.63	660.00	601.40	58.61	11.262		
8,300.00	8,293.33	8,318.04	8,293.43	29.56	30.13	89.73	162.24	503.63	660.00	601.04	58.96	11.194		
8,350.00	8,343.33	8,368.04	8,343.43	29.74	30.30	89.73	162.24	503.63	660.00	600.69	59.31	11.128		
8,400.00	8,393.33	8,418.04	8,393.43	29.91	30.47	89.73	162.24	503.63	660.00	600.34	59.66	11.062		
8,450.00	8,443.33	8,468.04	8,443.43	30.09	30.65	89.73	162.24	503.63	660.00	599.98	60.02	10.997		
8,500.00	8,493.33	8,518.04	8,493.43	30.27	30.82	89.73	162.24	503.63	660.00	599.63	60.37	10.933		
8,550.00	8,543.33	8,568.04	8,543.43	30.45	30.99	89.73	162.24	503.63	660.00	599.28	60.72	10.869		
8,600.00	8,593.33	8,618.04	8,593.43	30.63	31.16	89.73	162.24	503.63	660.00	598.93	61.08	10.806		
8,650.00	8,643.32	8,668.00	8,643.38	30.80	31.33	-89.94	161.38	503.64	660.00	598.59	61.42	10.746		
8,700.00	8,693.06	8,717.94	8,693.07	30.96	31.49	-89.94	156.48	503.67	660.00	598.27	61.73	10.691		
8,750.00	8,742.19	8,767.89	8,742.14	31.11	31.64	-89.94	147.27	503.72	660.00	597.96	62.04	10.639		
8,800.00	8,790.32	8,817.83	8,790.23	31.26	31.78	-89.94	133.83	503.79	660.00	597.67	62.33	10.589		
8,850.00	8,837.10	8,867.78	8,836.96	31.39	31.92	-89.95	116.25	503.89	660.00	597.39	62.61	10.541		
8,900.00	8,882.17	8,917.72	8,881.98	31.52	32.05	-89.95	94.67	504.01	660.00	597.11	62.89	10.495		
8,950.00	8,925.18	8,967.67	8,924.96	31.64	32.17	-89.95	69.24	504.16	660.00	596.85	63.15	10.451		
9,000.00	8,965.81	9,017.62	8,965.56	31.75	32.27	-89.95	40.18	504.32	660.00	596.59	63.41	10.409		
9,050.00	9,003.74	9,067.57	9,003.48	31.85	32.37	-89.95	7.68	504.50	660.00	596.34	63.66	10.368		
9,100.00	9,038.70	9,117.53	9,038.42	31.94	32.45	-89.96	-27.99	504.70	660.00	596.10	63.90	10.328		
9,150.00	9,070.40	9,167.49	9,070.13	32.06	32.53	-89.96	-66.57	504.92	660.00	595.85	64.15	10.288		
9,200.00	9,098.62	9,217.45	9,098.36	32.18	32.61	-89.96	-107.78	505.15	660.00	595.60	64.40	10.249		
9,250.00	9,123.14	9,267.41	9,122.90	32.30	32.68	-89.97	-151.28	505.40	660.00	595.35	64.65	10.209		
9,300.00	9,143.76	9,317.38	9,143.55	32.43	32.77	-89.97	-198.76	505.65	660.00	595.10	64.90	10.169		
9,350.00	9,160.34	9,367.35	9,160.17	32.56	32.87	-89.98	-243.88	505.92	660.00	594.83	65.16	10.129		
9,400.00	9,172.75	9,417.33	9,172.62	32.70	32.99	-89.98	-292.26	506.19	660.00	594.57	65.43	10.087		
9,450.00	9,180.88	9,467.31	9,180.81	32.83	33.12	-89.98	-341.55	506.47	659.99	594.30	65.70	10.046		
9,500.00	9,184.69	9,517.30	9,184.67	32.97	33.27	-89.99	-391.37	506.75	659.99	594.02	65.98	10.004		
9,550.00	9,185.00	9,567.30	9,185.00	33.12	33.42	-89.99	-441.36	507.03	659.99	593.73	66.27	9.960		
9,600.00	9,185.00	9,617.30	9,185.00	33.28	33.58	-89.99	-491.36	507.31	659.99	593.42	66.58	9.913		
9,650.00	9,185.00	9,667.30	9,185.00	33.46	33.76	-89.99	-541.36	507.59	659.99	593.06	66.93	9.861		
9,700.00	9,185.00	9,717.30	9,185.00	33.64	33.95	-89.99	-591.36	507.87	659.99	592.70	67.29	9.808		
9,750.00	9,185.00	9,767.30	9,185.00	33.85	34.16	-89.99	-641.36	508.15	659.99	592.29	67.71	9.748		
9,800.00	9,185.00	9,817.30	9,185.00	34.05	34.38	-89.99	-691.36	508.43	659.99	591.86	68.13	9.688		
9,850.00	9,185.00	9,867.30	9,185.00	34.29	34.61	-89.99	-741.36	508.71	659.99	591.39	68.60	9.621		
9,900.00	9,185.00	9,917.30	9,185.00	34.53	34.86	-89.99	-791.36	509.00	659.99	590.91	69.07	9.555		
9,950.00	9,185.00	9,967.30	9,185.00	34.79	35.12	-89.99	-841.36	509.28	659.99	590.39	69.60	9.483		
10,000.00	9,185.00	10,017.30	9,185.00	35.06	35.39	-89.99	-891.36	509.56	659.99	589.86	70.13	9.411		
10,050.00	9,185.00	10,067.30	9,185.00	35.35	35.68	-89.99	-941.36	509.84	659.99	589.28	70.71	9.334		
10,100.00	9,185.00	10,117.30	9,185.00	35.64	35.97	-89.99	-991.36	510.12	659.99	588.70	71.29	9.258		
10,150.00	9,185.00	10,167.30	9,185.00	35.95	36.28	-89.99	-1,041.36	510.40	659.99	588.07	71.91	9.177		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,200.00	9,185.00	10,217.30	9,185.00	36.27	36.60	-89.99	-1,091.35	510.68	659.98	587.44	72.55	9.097		
10,250.00	9,185.00	10,267.30	9,185.00	36.61	36.93	-89.99	-1,141.35	510.96	659.98	586.77	73.22	9.014		
10,300.00	9,185.00	10,317.30	9,185.00	36.94	37.28	-89.99	-1,191.35	511.25	659.98	586.08	73.90	8.931		
10,350.00	9,185.00	10,367.30	9,185.00	37.30	37.63	-89.99	-1,241.35	511.53	659.98	585.37	74.62	8.845		
10,400.00	9,185.00	10,417.30	9,185.00	37.66	37.99	-89.99	-1,291.35	511.81	659.98	584.64	75.34	8.760		
10,450.00	9,185.00	10,467.30	9,185.00	38.04	38.37	-89.99	-1,341.35	512.09	659.98	583.88	76.10	8.673		
10,500.00	9,185.00	10,517.30	9,185.00	38.43	38.75	-89.99	-1,391.35	512.37	659.98	583.12	76.86	8.586		
10,550.00	9,185.00	10,567.30	9,185.00	38.83	39.15	-89.99	-1,441.35	512.65	659.98	582.32	77.66	8.498		
10,600.00	9,185.00	10,617.30	9,185.00	39.23	39.55	-89.99	-1,491.35	512.93	659.98	581.51	78.47	8.411		
10,650.00	9,185.00	10,667.30	9,185.00	39.65	39.97	-89.99	-1,541.35	513.21	659.98	580.68	79.30	8.322		
10,700.00	9,185.00	10,717.30	9,185.00	40.07	40.39	-89.99	-1,591.35	513.49	659.98	579.84	80.14	8.235		
10,750.00	9,185.00	10,767.30	9,185.00	40.50	40.82	-89.99	-1,641.35	513.78	659.98	578.96	81.01	8.147		
10,800.00	9,185.00	10,817.30	9,185.00	40.94	41.26	-89.99	-1,691.34	514.06	659.98	578.09	81.89	8.059		
10,850.00	9,185.00	10,867.30	9,185.00	41.39	41.70	-89.99	-1,741.34	514.34	659.98	577.18	82.79	7.971		
10,900.00	9,185.00	10,917.30	9,185.00	41.84	42.16	-89.99	-1,791.34	514.62	659.98	576.28	83.70	7.885		
10,950.00	9,185.00	10,967.30	9,185.00	42.31	42.62	-89.99	-1,841.34	514.90	659.97	575.34	84.63	7.798		
11,000.00	9,185.00	11,017.30	9,185.00	42.78	43.09	-89.99	-1,891.34	515.18	659.97	574.40	85.57	7.712		
11,050.00	9,185.00	11,067.30	9,185.00	43.26	43.57	-89.99	-1,941.34	515.46	659.97	573.44	86.54	7.627		
11,100.00	9,185.00	11,117.30	9,185.00	43.74	44.05	-89.99	-1,991.34	515.74	659.97	572.47	87.50	7.542		
11,150.00	9,185.00	11,167.30	9,185.00	44.24	44.54	-89.99	-2,041.34	516.03	659.97	571.48	88.49	7.458		
11,200.00	9,185.00	11,217.30	9,185.00	44.74	45.04	-89.99	-2,091.34	516.31	659.97	570.49	89.49	7.375		
11,250.00	9,185.00	11,267.30	9,185.00	45.24	45.54	-89.99	-2,141.34	516.59	659.97	569.47	90.50	7.292		
11,300.00	9,185.00	11,317.30	9,185.00	45.75	46.05	-89.99	-2,191.34	516.87	659.97	568.45	91.52	7.211		
11,350.00	9,185.00	11,367.30	9,185.00	46.27	46.56	-89.99	-2,241.34	517.15	659.97	567.41	92.56	7.130		
11,400.00	9,185.00	11,417.30	9,185.00	46.79	47.08	-89.99	-2,291.34	517.43	659.97	566.37	93.60	7.051		
11,450.00	9,185.00	11,467.30	9,185.00	47.32	47.61	-89.99	-2,341.33	517.71	659.97	565.31	94.66	6.972		
11,500.00	9,185.00	11,517.30	9,185.00	47.85	48.14	-89.99	-2,391.33	517.99	659.97	564.25	95.72	6.895		
11,550.00	9,185.00	11,567.30	9,185.00	48.39	48.68	-89.99	-2,441.33	518.27	659.97	563.16	96.80	6.818		
11,600.00	9,185.00	11,617.30	9,185.00	48.94	49.22	-89.99	-2,491.33	518.56	659.97	562.08	97.89	6.742		
11,650.00	9,185.00	11,667.30	9,185.00	49.49	49.76	-89.99	-2,541.33	518.84	659.97	560.98	98.99	6.667		
11,700.00	9,185.00	11,717.30	9,185.00	50.04	50.31	-89.99	-2,591.33	519.12	659.96	559.88	100.09	6.594		
11,750.00	9,185.00	11,767.30	9,185.00	50.60	50.87	-89.99	-2,641.33	519.40	659.96	558.76	101.21	6.521		
11,800.00	9,185.00	11,817.30	9,185.00	51.16	51.43	-89.99	-2,691.33	519.68	659.96	557.64	102.33	6.450		
11,850.00	9,185.00	11,867.30	9,185.00	51.72	51.99	-89.99	-2,741.33	519.96	659.96	556.50	103.46	6.379		
11,900.00	9,185.00	11,917.30	9,185.00	52.29	52.56	-89.99	-2,791.33	520.24	659.96	555.36	104.60	6.310		
11,950.00	9,185.00	11,967.30	9,185.00	52.87	53.13	-89.99	-2,841.33	520.52	659.96	554.21	105.75	6.241		
12,000.00	9,185.00	12,017.30	9,185.00	53.44	53.71	-89.99	-2,891.33	520.81	659.96	553.06	106.90	6.174		
12,050.00	9,185.00	12,067.30	9,185.00	54.02	54.29	-89.99	-2,941.33	521.09	659.96	551.89	108.07	6.107		
12,100.00	9,185.00	12,117.30	9,185.00	54.61	54.87	-89.99	-2,991.32	521.37	659.96	550.73	109.23	6.042		
12,150.00	9,185.00	12,167.30	9,185.00	55.20	55.45	-89.99	-3,041.32	521.65	659.96	549.55	110.41	5.977		
12,200.00	9,185.00	12,217.30	9,185.00	55.79	56.04	-89.99	-3,091.32	521.93	659.96	548.37	111.59	5.914		
12,250.00	9,185.00	12,267.30	9,185.00	56.38	56.64	-89.99	-3,141.32	522.21	659.96	547.17	112.78	5.852		
12,300.00	9,185.00	12,317.30	9,185.00	56.98	57.23	-89.99	-3,191.32	522.49	659.96	545.98	113.98	5.790		
12,350.00	9,185.00	12,367.30	9,185.00	57.58	57.83	-89.99	-3,241.32	522.77	659.96	544.78	115.18	5.730		
12,400.00	9,185.00	12,417.30	9,185.00	58.18	58.43	-89.99	-3,291.32	523.05	659.96	543.57	116.39	5.670		
12,450.00	9,185.00	12,467.30	9,185.00	58.79	59.04	-89.99	-3,341.32	523.34	659.96	542.35	117.60	5.612		
12,500.00	9,185.00	12,517.30	9,185.00	59.40	59.64	-89.99	-3,391.32	523.62	659.95	541.14	118.82	5.554		
12,550.00	9,185.00	12,567.30	9,185.00	60.01	60.25	-89.99	-3,441.32	523.90	659.95	539.91	120.04	5.498		
12,600.00	9,185.00	12,617.30	9,185.00	60.63	60.87	-89.99	-3,491.32	524.18	659.95	538.68	121.27	5.442		
12,650.00	9,185.00	12,667.30	9,185.00	61.24	61.48	-89.99	-3,541.32	524.46	659.95	537.44	122.51	5.387		
12,700.00	9,185.00	12,717.30	9,185.00	61.86	62.10	-89.99	-3,591.31	524.74	659.95	536.21	123.75	5.333		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,750.00	9,185.00	12,767.30	9,185.00	62.49	62.72	-89.99	-3,641.31	525.02	659.95	534.96	124.99	5.280		
12,800.00	9,185.00	12,817.30	9,185.00	63.11	63.34	-89.99	-3,691.31	525.30	659.95	533.71	126.24	5.228		
12,850.00	9,185.00	12,867.30	9,185.00	63.74	63.97	-89.99	-3,741.31	525.59	659.95	532.46	127.49	5.176		
12,900.00	9,185.00	12,917.30	9,185.00	64.36	64.59	-89.99	-3,791.31	525.87	659.95	531.20	128.75	5.126		
12,950.00	9,185.00	12,967.30	9,185.00	65.00	65.22	-89.99	-3,841.31	526.15	659.95	529.94	130.01	5.076		
13,000.00	9,185.00	13,017.30	9,185.00	65.63	65.85	-89.99	-3,891.31	526.43	659.95	528.67	131.28	5.027		
13,050.00	9,185.00	13,067.30	9,185.00	66.26	66.49	-89.99	-3,941.31	526.71	659.95	527.40	132.55	4.979 Alert		
13,100.00	9,185.00	13,117.30	9,185.00	66.90	67.12	-89.99	-3,991.31	526.99	659.95	526.13	133.82	4.932 Alert		
13,150.00	9,185.00	13,167.30	9,185.00	67.54	67.76	-89.99	-4,041.31	527.27	659.95	524.85	135.10	4.885 Alert		
13,200.00	9,185.00	13,217.30	9,185.00	68.18	68.40	-89.99	-4,091.31	527.55	659.95	523.57	136.38	4.839 Alert		
13,250.00	9,185.00	13,267.30	9,185.00	68.82	69.04	-89.99	-4,141.31	527.84	659.94	522.28	137.66	4.794 Alert		
13,300.00	9,185.00	13,317.30	9,185.00	69.46	69.68	-89.99	-4,191.31	528.12	659.94	521.00	138.95	4.750 Alert		
13,350.00	9,185.00	13,367.30	9,185.00	70.11	70.32	-89.99	-4,241.30	528.40	659.94	519.70	140.24	4.706 Alert		
13,400.00	9,185.00	13,417.30	9,185.00	70.76	70.97	-89.99	-4,291.30	528.68	659.94	518.41	141.53	4.663 Alert		
13,450.00	9,185.00	13,467.30	9,185.00	71.40	71.62	-89.99	-4,341.30	528.96	659.94	517.11	142.83	4.620 Alert		
13,500.00	9,185.00	13,517.30	9,185.00	72.05	72.27	-89.99	-4,391.30	529.24	659.94	515.81	144.13	4.579 Alert		
13,550.00	9,185.00	13,567.30	9,185.00	72.71	72.92	-89.99	-4,441.30	529.52	659.94	514.51	145.44	4.538 Alert		
13,600.00	9,185.00	13,617.30	9,185.00	73.36	73.57	-89.99	-4,491.30	529.80	659.94	513.20	146.74	4.497 Alert		
13,650.00	9,185.00	13,667.30	9,185.00	74.01	74.22	-89.99	-4,541.30	530.08	659.94	511.89	148.05	4.458 Alert		
13,700.00	9,185.00	13,717.30	9,185.00	74.67	74.87	-89.99	-4,591.30	530.37	659.94	510.58	149.36	4.418 Alert		
13,750.00	9,185.00	13,767.30	9,185.00	75.33	75.53	-89.99	-4,641.30	530.65	659.94	509.26	150.68	4.380 Alert		
13,800.00	9,185.00	13,817.30	9,185.00	75.99	76.19	-89.99	-4,691.30	530.93	659.94	507.94	151.99	4.342 Alert		
13,850.00	9,185.00	13,867.30	9,185.00	76.65	76.85	-89.99	-4,741.30	531.21	659.94	506.62	153.31	4.304 Alert		
13,900.00	9,185.00	13,917.30	9,185.00	77.31	77.51	-89.99	-4,791.30	531.49	659.94	505.30	154.64	4.268 Alert		
13,950.00	9,185.00	13,967.30	9,185.00	77.97	78.17	-89.99	-4,841.30	531.77	659.94	503.97	155.96	4.231 Alert		
14,000.00	9,185.00	14,017.30	9,185.00	78.63	78.83	-89.99	-4,891.29	532.05	659.93	502.65	157.29	4.196 Alert		
14,050.00	9,185.00	14,067.30	9,185.00	79.30	79.49	-89.99	-4,941.29	532.33	659.93	501.32	158.62	4.161 Alert		
14,100.00	9,185.00	14,117.30	9,185.00	79.96	80.16	-89.99	-4,991.29	532.62	659.93	499.99	159.95	4.126 Alert		
14,150.00	9,185.00	14,167.30	9,185.00	80.63	80.82	-89.99	-5,041.29	532.90	659.93	498.65	161.28	4.092 Alert		
14,200.00	9,185.00	14,217.30	9,185.00	81.30	81.49	-89.99	-5,091.29	533.18	659.93	497.31	162.62	4.058 Alert		
14,250.00	9,185.00	14,267.30	9,185.00	81.97	82.16	-89.99	-5,141.29	533.46	659.93	495.97	163.96	4.025 Alert		
14,300.00	9,185.00	14,317.30	9,185.00	82.64	82.83	-89.99	-5,191.29	533.74	659.93	494.63	165.30	3.992 Alert		
14,350.00	9,185.00	14,367.30	9,185.00	83.31	83.50	-89.99	-5,241.29	534.02	659.93	493.29	166.64	3.960 Alert		
14,400.00	9,185.00	14,417.30	9,185.00	83.98	84.17	-89.99	-5,291.29	534.30	659.93	491.95	167.98	3.929 Alert		
14,450.00	9,185.00	14,467.30	9,185.00	84.65	84.84	-89.99	-5,341.29	534.58	659.93	490.60	169.33	3.897 Alert		
14,500.00	9,185.00	14,517.30	9,185.00	85.32	85.51	-89.99	-5,391.29	534.86	659.93	489.25	170.67	3.867 Alert		
14,550.00	9,185.00	14,567.30	9,185.00	86.00	86.18	-89.99	-5,441.29	535.15	659.93	487.90	172.02	3.836 Alert		
14,600.00	9,185.00	14,617.30	9,185.00	86.68	86.86	-89.99	-5,491.28	535.43	659.93	486.55	173.38	3.806 Alert		
14,650.00	9,185.00	14,667.30	9,185.00	87.35	87.53	-89.99	-5,541.28	535.71	659.93	485.20	174.73	3.777 Alert		
14,700.00	9,185.00	14,717.30	9,185.00	88.03	88.21	-89.99	-5,591.28	535.99	659.93	483.84	176.08	3.748 Alert		
14,750.00	9,185.00	14,767.30	9,185.00	88.71	88.89	-89.99	-5,641.28	536.27	659.92	482.48	177.44	3.719 Alert		
14,800.00	9,185.00	14,817.30	9,185.00	89.39	89.56	-89.99	-5,691.28	536.55	659.92	481.13	178.80	3.691 Alert		
14,850.00	9,185.00	14,867.30	9,185.00	90.07	90.24	-89.99	-5,741.28	536.83	659.92	479.77	180.16	3.663 Alert		
14,900.00	9,185.00	14,917.30	9,185.00	90.75	90.92	-89.99	-5,791.28	537.11	659.92	478.41	181.52	3.636 Alert		
14,950.00	9,185.00	14,967.30	9,185.00	91.43	91.60	-89.99	-5,841.28	537.40	659.92	477.04	182.88	3.608 Alert		
15,000.00	9,185.00	15,017.30	9,185.00	92.11	92.28	-89.99	-5,891.28	537.68	659.92	475.68	184.24	3.582 Alert		
15,050.00	9,185.00	15,067.30	9,185.00	92.79	92.97	-89.99	-5,941.28	537.96	659.92	474.31	185.61	3.555 Alert		
15,100.00	9,185.00	15,117.30	9,185.00	93.47	93.65	-89.99	-5,991.28	538.24	659.92	472.94	186.98	3.529 Alert		
15,150.00	9,185.00	15,167.30	9,185.00	94.16	94.33	-89.99	-6,041.28	538.52	659.92	471.58	188.34	3.504 Alert		
15,200.00	9,185.00	15,217.30	9,185.00	94.84	95.01	-89.99	-6,091.28	538.80	659.92	470.21	189.71	3.479 Alert		
15,250.00	9,185.00	15,267.30	9,185.00	95.53	95.70	-89.99	-6,141.27	539.08	659.92	468.83	191.08	3.454 Alert		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
15,300.00	9,185.00	15,317.30	9,185.00	96.21	96.38	-89.99	-6,191.27	539.36	659.92	467.46	192.46	3.429	Alert	
15,350.00	9,185.00	15,367.30	9,185.00	96.90	97.07	-89.99	-6,241.27	539.64	659.92	466.09	193.83	3.405	Alert	
15,400.00	9,185.00	15,417.30	9,185.00	97.59	97.76	-89.99	-6,291.27	539.93	659.92	464.71	195.20	3.381	Alert	
15,450.00	9,185.00	15,467.30	9,185.00	98.28	98.44	-89.99	-6,341.27	540.21	659.92	463.34	196.58	3.357	Alert	
15,500.00	9,185.00	15,517.30	9,185.00	98.96	99.13	-89.99	-6,391.27	540.49	659.91	461.96	197.96	3.334	Alert	
15,550.00	9,185.00	15,567.30	9,185.00	99.65	99.82	-89.99	-6,441.27	540.77	659.91	460.58	199.33	3.311	Alert	
15,600.00	9,185.00	15,617.30	9,185.00	100.34	100.51	-89.99	-6,491.27	541.05	659.91	459.20	200.71	3.288	Alert	
15,650.00	9,185.00	15,667.30	9,185.00	101.03	101.20	-89.99	-6,541.27	541.33	659.91	457.82	202.09	3.265	Alert	
15,700.00	9,185.00	15,717.30	9,185.00	101.72	101.89	-89.99	-6,591.27	541.61	659.91	456.44	203.47	3.243	Alert	
15,750.00	9,185.00	15,767.30	9,185.00	102.42	102.58	-89.99	-6,641.27	541.89	659.91	455.05	204.86	3.221	Alert	
15,800.00	9,185.00	15,817.30	9,185.00	103.11	103.27	-89.99	-6,691.27	542.18	659.91	453.67	206.24	3.200	Alert	
15,850.00	9,185.00	15,867.30	9,185.00	103.80	103.96	-89.99	-6,741.27	542.46	659.91	452.28	207.63	3.178	Alert	
15,900.00	9,185.00	15,917.30	9,185.00	104.49	104.65	-89.99	-6,791.26	542.74	659.91	450.90	209.01	3.157	Alert	
15,950.00	9,185.00	15,967.30	9,185.00	105.18	105.34	-89.99	-6,841.26	543.02	659.91	449.51	210.40	3.136	Alert	
16,000.00	9,185.00	16,017.30	9,185.00	105.88	106.04	-89.99	-6,891.26	543.30	659.91	448.12	211.78	3.116	Alert	
16,050.00	9,185.00	16,067.30	9,185.00	106.57	106.73	-89.99	-6,941.26	543.58	659.91	446.73	213.17	3.096	Alert	
16,100.00	9,185.00	16,117.30	9,185.00	107.27	107.42	-89.99	-6,991.26	543.86	659.91	445.34	214.56	3.076	Alert	
16,150.00	9,185.00	16,167.30	9,185.00	107.96	108.12	-89.99	-7,041.26	544.14	659.91	443.95	215.95	3.056	Alert	
16,200.00	9,185.00	16,217.30	9,185.00	108.66	108.81	-89.99	-7,091.26	544.42	659.91	442.56	217.34	3.036	Alert	
16,250.00	9,185.00	16,267.30	9,185.00	109.35	109.51	-89.99	-7,141.26	544.71	659.90	441.17	218.74	3.017	Alert	
16,300.00	9,185.00	16,317.30	9,185.00	110.05	110.20	-89.99	-7,191.26	544.99	659.90	439.78	220.13	2.998	Alert	
16,350.00	9,185.00	16,367.30	9,185.00	110.75	110.90	-89.99	-7,241.26	545.27	659.90	438.38	221.52	2.979	Alert	
16,400.00	9,185.00	16,417.30	9,185.00	111.44	111.60	-89.99	-7,291.26	545.55	659.90	436.99	222.92	2.960	Alert	
16,450.00	9,185.00	16,467.30	9,185.00	112.14	112.29	-89.99	-7,341.26	545.83	659.90	435.59	224.31	2.942	Alert	
16,500.00	9,185.00	16,517.30	9,185.00	112.84	112.99	-89.99	-7,391.25	546.11	659.90	434.19	225.71	2.924	Alert	
16,550.00	9,185.00	16,567.30	9,185.00	113.54	113.69	-89.99	-7,441.25	546.39	659.90	432.80	227.10	2.906	Alert	
16,600.00	9,185.00	16,617.30	9,185.00	114.24	114.39	-89.99	-7,491.25	546.67	659.90	431.40	228.50	2.888	Alert	
16,650.00	9,185.00	16,667.30	9,185.00	114.94	115.08	-89.99	-7,541.25	546.96	659.90	430.00	229.90	2.870	Alert	
16,700.00	9,185.00	16,717.30	9,185.00	115.64	115.78	-89.99	-7,591.25	547.24	659.90	428.60	231.30	2.853	Alert	
16,750.00	9,185.00	16,767.30	9,185.00	116.34	116.48	-89.99	-7,641.25	547.52	659.90	427.20	232.70	2.836	Alert	
16,800.00	9,185.00	16,817.30	9,185.00	117.04	117.18	-89.99	-7,691.25	547.80	659.90	425.80	234.10	2.819	Alert	
16,850.00	9,185.00	16,867.30	9,185.00	117.74	117.88	-89.99	-7,741.25	548.08	659.90	424.40	235.50	2.802	Alert	
16,900.00	9,185.00	16,917.30	9,185.00	118.44	118.58	-89.99	-7,791.25	548.36	659.90	422.99	236.90	2.786	Alert	
16,950.00	9,185.00	16,967.30	9,185.00	119.14	119.28	-89.99	-7,841.25	548.64	659.90	421.59	238.31	2.769	Alert	
17,000.00	9,185.00	17,017.30	9,185.00	119.84	119.98	-89.99	-7,891.25	548.92	659.89	420.19	239.71	2.753	Alert	
17,050.00	9,185.00	17,067.30	9,185.00	120.54	120.69	-89.99	-7,941.25	549.20	659.89	418.78	241.11	2.737	Alert	
17,100.00	9,185.00	17,117.30	9,185.00	121.24	121.39	-89.99	-7,991.25	549.49	659.89	417.38	242.52	2.721	Alert	
17,150.00	9,185.00	17,167.30	9,185.00	121.95	122.09	-89.99	-8,041.24	549.77	659.89	415.97	243.92	2.705	Alert	
17,200.00	9,185.00	17,217.30	9,185.00	122.65	122.79	-89.99	-8,091.24	550.05	659.89	414.57	245.33	2.690	Alert	
17,250.00	9,185.00	17,267.30	9,185.00	123.35	123.49	-89.99	-8,141.24	550.33	659.89	413.16	246.73	2.675	Alert	
17,300.00	9,185.00	17,317.30	9,185.00	124.06	124.20	-89.99	-8,191.24	550.61	659.89	411.75	248.14	2.659	Alert	
17,350.00	9,185.00	17,367.30	9,185.00	124.76	124.90	-89.99	-8,241.24	550.89	659.89	410.34	249.55	2.644	Alert	
17,400.00	9,185.00	17,417.30	9,185.00	125.46	125.60	-89.99	-8,291.24	551.17	659.89	408.93	250.96	2.630	Alert	
17,450.00	9,185.00	17,467.30	9,185.00	126.17	126.31	-89.99	-8,341.24	551.45	659.89	407.52	252.37	2.615	Alert	
17,500.00	9,185.00	17,517.30	9,185.00	126.87	127.01	-89.99	-8,391.24	551.74	659.89	406.11	253.77	2.600	Alert	
17,550.00	9,185.00	17,567.30	9,185.00	127.58	127.72	-89.99	-8,441.24	552.02	659.89	404.70	255.18	2.586	Alert	
17,600.00	9,185.00	17,617.30	9,185.00	128.28	128.42	-89.99	-8,491.24	552.30	659.89	403.29	256.59	2.572	Alert	
17,650.00	9,185.00	17,667.30	9,185.00	128.99	129.12	-89.99	-8,541.24	552.58	659.89	401.88	258.01	2.558	Alert	
17,700.00	9,185.00	17,717.30	9,185.00	129.69	129.83	-89.99	-8,591.24	552.86	659.89	400.47	259.42	2.544	Alert	
17,750.00	9,185.00	17,767.30	9,185.00	130.40	130.54	-89.99	-8,641.24	553.14	659.89	399.06	260.83	2.530	Alert	
17,800.00	9,185.00	17,817.30	9,185.00	131.11	131.24	-89.99	-8,691.23	553.42	659.88	397.64	262.24	2.516	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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
17,850.00	9,185.00	17,867.30	9,185.00	131.81	131.95	-89.99	-8,741.23	553.70	659.88	396.23	263.65	2.503	Alert	
17,900.00	9,185.00	17,917.30	9,185.00	132.52	132.65	-89.99	-8,791.23	553.98	659.88	394.82	265.07	2.489	Minor Risk	
17,950.00	9,185.00	17,967.30	9,185.00	133.23	133.36	-89.99	-8,841.23	554.27	659.88	393.40	266.48	2.476	Minor Risk	
18,000.00	9,185.00	18,017.30	9,185.00	133.93	134.07	-89.99	-8,891.23	554.55	659.88	391.99	267.89	2.463	Minor Risk	
18,050.00	9,185.00	18,067.30	9,185.00	134.64	134.77	-89.99	-8,941.23	554.83	659.88	390.57	269.31	2.450	Minor Risk	
18,100.00	9,185.00	18,117.30	9,185.00	135.35	135.48	-89.99	-8,991.23	555.11	659.88	389.16	270.73	2.437	Minor Risk	
18,150.00	9,185.00	18,167.30	9,185.00	136.06	136.19	-89.99	-9,041.23	555.39	659.88	387.74	272.14	2.425	Minor Risk	
18,200.00	9,185.00	18,217.30	9,185.00	136.76	136.89	-89.99	-9,091.23	555.67	659.88	386.32	273.56	2.412	Minor Risk	
18,250.00	9,185.00	18,267.30	9,185.00	137.47	137.60	-89.99	-9,141.23	555.95	659.88	384.90	274.97	2.400	Minor Risk	
18,300.00	9,185.00	18,317.30	9,185.00	138.18	138.31	-89.99	-9,191.23	556.23	659.88	383.49	276.39	2.387	Minor Risk	
18,350.00	9,185.00	18,367.30	9,185.00	138.89	139.02	-89.99	-9,241.23	556.52	659.88	382.07	277.81	2.375	Minor Risk	
18,400.00	9,185.00	18,417.30	9,185.00	139.60	139.73	-89.99	-9,291.22	556.80	659.88	380.65	279.23	2.363	Minor Risk	
18,450.00	9,185.00	18,467.30	9,185.00	140.31	140.44	-89.99	-9,341.22	557.08	659.88	379.23	280.64	2.351	Minor Risk	
18,500.00	9,185.00	18,517.30	9,185.00	141.02	141.14	-89.99	-9,391.22	557.36	659.88	377.81	282.06	2.339	Minor Risk	
18,550.00	9,185.00	18,567.30	9,185.00	141.73	141.85	-89.99	-9,441.22	557.64	659.87	376.39	283.48	2.328	Minor Risk	
18,600.00	9,185.00	18,617.30	9,185.00	142.44	142.56	-89.99	-9,491.22	557.92	659.87	374.97	284.90	2.316	Minor Risk	
18,650.00	9,185.00	18,667.30	9,185.00	143.15	143.27	-89.99	-9,541.22	558.20	659.87	373.55	286.32	2.305	Minor Risk	
18,700.00	9,185.00	18,717.30	9,185.00	143.86	143.98	-89.99	-9,591.22	558.48	659.87	372.13	287.74	2.293	Minor Risk	
18,750.00	9,185.00	18,767.30	9,185.00	144.57	144.69	-89.99	-9,641.22	558.76	659.87	370.71	289.16	2.282	Minor Risk	
18,800.00	9,185.00	18,817.30	9,185.00	145.28	145.40	-89.99	-9,691.22	559.05	659.87	369.29	290.58	2.271	Minor Risk	
18,850.00	9,185.00	18,867.30	9,185.00	145.99	146.11	-89.99	-9,741.22	559.33	659.87	367.87	292.00	2.260	Minor Risk	
18,900.00	9,185.00	18,917.30	9,185.00	146.70	146.82	-89.99	-9,791.22	559.61	659.87	366.44	293.43	2.249	Minor Risk	
18,950.00	9,185.00	18,967.30	9,185.00	147.41	147.53	-89.99	-9,841.22	559.89	659.87	365.02	294.85	2.238	Minor Risk	
18,972.90	9,185.00	18,990.20	9,185.00	147.73	147.86	-89.99	-9,884.12	560.02	659.87	364.37	295.50	2.233	Minor Risk	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.10	0.10	0.50	0.50	89.79	0.11	29.95	29.95					
50.00	50.00	50.10	50.10	0.50	0.50	89.79	0.11	29.95	29.95	28.94	1.01	29.756		
100.00	100.00	100.10	100.10	0.52	0.52	89.79	0.11	29.95	29.95	28.91	1.04	28.921		
150.00	150.00	150.10	150.10	0.59	0.59	89.79	0.11	29.95	29.95	28.77	1.18	25.367		
200.00	200.00	200.10	200.10	0.70	0.70	89.79	0.11	29.95	29.95	28.55	1.40	21.325		
250.00	250.00	250.10	250.10	0.84	0.84	89.79	0.11	29.95	29.95	28.27	1.68	17.873		
300.00	300.00	300.10	300.10	0.99	0.99	89.79	0.11	29.95	29.95	27.98	1.97	15.165		
350.00	350.00	350.10	350.10	1.15	1.15	89.79	0.11	29.95	29.95	27.66	2.29	13.071		
400.00	400.00	400.10	400.10	1.31	1.31	89.79	0.11	29.95	29.95	27.33	2.62	11.438		
450.00	450.00	450.10	450.10	1.48	1.48	89.79	0.11	29.95	29.95	27.00	2.95	10.142		
500.00	500.00	500.10	500.10	1.65	1.65	89.79	0.11	29.95	29.95	26.66	3.29	9.096		
550.00	550.00	550.10	550.10	1.82	1.82	89.79	0.11	29.95	29.95	26.31	3.64	8.238		
600.00	600.00	600.10	600.10	1.99	1.99	89.79	0.11	29.95	29.95	25.97	3.98	7.522		
650.00	650.00	650.10	650.10	2.16	2.16	89.79	0.11	29.95	29.95	25.62	4.33	6.918		
700.00	700.00	700.10	700.10	2.34	2.34	89.79	0.11	29.95	29.95	25.27	4.68	6.401		
750.00	750.00	750.10	750.10	2.51	2.52	89.79	0.11	29.95	29.95	24.92	5.03	5.955		
800.00	800.00	800.10	800.10	2.69	2.69	89.79	0.11	29.95	29.95	24.57	5.38	5.565		
850.00	850.00	850.10	850.10	2.87	2.87	89.79	0.11	29.95	29.95	24.22	5.73	5.223		
900.00	900.00	900.10	900.10	3.04	3.04	89.79	0.11	29.95	29.95	23.86	6.09	4.920 Alert		
950.00	950.00	950.10	950.10	3.22	3.22	89.79	0.11	29.95	29.95	23.51	6.44	4.650 Alert		
1,000.00	1,000.00	1,000.10	1,000.10	3.40	3.40	89.79	0.11	29.95	29.95	23.15	6.80	4.407 Alert		
1,050.00	1,050.00	1,050.10	1,050.10	3.58	3.58	89.79	0.11	29.95	29.95	22.80	7.15	4.189 Alert		
1,100.00	1,100.00	1,100.10	1,100.10	3.75	3.75	89.79	0.11	29.95	29.95	22.44	7.51	3.990 Alert		
1,150.00	1,150.00	1,150.10	1,150.10	3.93	3.93	89.79	0.11	29.95	29.95	22.09	7.86	3.810 Alert		
1,200.00	1,200.00	1,200.10	1,200.10	4.11	4.11	89.79	0.11	29.95	29.95	21.73	8.22	3.645 Alert		
1,250.00	1,250.00	1,250.10	1,250.10	4.29	4.29	89.79	0.11	29.95	29.95	21.38	8.57	3.494 Alert		
1,300.00	1,300.00	1,300.10	1,300.10	4.46	4.46	89.79	0.11	29.95	29.95	21.02	8.93	3.354 Alert		
1,350.00	1,350.00	1,350.10	1,350.10	4.64	4.64	89.79	0.11	29.95	29.95	20.67	9.29	3.226 Alert		
1,400.00	1,400.00	1,400.10	1,400.10	4.82	4.82	89.79	0.11	29.95	29.95	20.31	9.64	3.106 Alert		
1,450.00	1,450.00	1,450.10	1,450.10	5.00	5.00	89.79	0.11	29.95	29.95	19.95	10.00	2.996 Alert		
1,500.00	1,500.00	1,500.10	1,500.10	5.18	5.18	89.79	0.11	29.95	29.95	19.60	10.35	2.892 Alert		
1,550.00	1,550.00	1,550.10	1,550.10	5.36	5.36	89.79	0.11	29.95	29.95	19.24	10.71	2.796 Alert		
1,600.00	1,600.00	1,600.10	1,600.10	5.53	5.53	89.79	0.11	29.95	29.95	18.88	11.07	2.706 Alert		
1,650.00	1,650.00	1,650.10	1,650.10	5.71	5.71	89.79	0.11	29.95	29.95	18.52	11.43	2.621 Alert		
1,700.00	1,700.00	1,700.10	1,700.10	5.89	5.89	89.79	0.11	29.95	29.95	18.17	11.78	2.542 Alert		
1,750.00	1,750.00	1,750.10	1,750.10	6.07	6.07	89.79	0.11	29.95	29.95	17.81	12.14	2.467 Minor Risk		
1,800.00	1,800.00	1,800.10	1,800.10	6.25	6.25	89.79	0.11	29.95	29.95	17.45	12.50	2.397 Minor Risk		
1,850.00	1,850.00	1,850.10	1,850.10	6.43	6.43	89.79	0.11	29.95	29.95	17.10	12.85	2.330 Minor Risk		
1,900.00	1,900.00	1,900.10	1,900.10	6.61	6.61	89.79	0.11	29.95	29.95	16.74	13.21	2.267 Minor Risk		
1,950.00	1,950.00	1,950.10	1,950.10	6.78	6.78	89.79	0.11	29.95	29.95	16.38	13.57	2.207 Minor Risk		
2,000.00	2,000.00	2,000.10	2,000.10	6.96	6.96	89.79	0.11	29.95	29.95	16.02	13.93	2.151 Minor Risk		
2,050.00	2,050.00	2,050.10	2,050.10	7.14	7.14	89.79	0.11	29.95	29.95	15.67	14.28	2.097 Minor Risk		
2,100.00	2,100.00	2,100.10	2,100.10	7.32	7.32	89.79	0.11	29.95	29.95	15.31	14.64	2.045 Minor Risk		
2,150.00	2,150.00	2,150.10	2,150.10	7.50	7.50	89.79	0.11	29.95	29.95	14.95	15.00	1.997 Minor Risk		
2,200.00	2,200.00	2,200.10	2,200.10	7.68	7.68	89.79	0.11	29.95	29.95	14.59	15.36	1.950 Minor Risk		
2,250.00	2,250.00	2,250.10	2,250.10	7.86	7.86	89.79	0.11	29.95	29.95	14.23	15.72	1.906 Minor Risk		
2,300.00	2,300.00	2,300.10	2,300.10	8.04	8.04	89.79	0.11	29.95	29.95	13.88	16.07	1.863 Minor Risk		
2,350.00	2,350.00	2,350.10	2,350.10	8.22	8.22	89.79	0.11	29.95	29.95	13.52	16.43	1.823 Minor Risk		
2,400.00	2,400.00	2,400.10	2,400.10	8.39	8.39	89.79	0.11	29.95	29.95	13.16	16.79	1.784 Minor Risk		
2,450.00	2,450.00	2,450.10	2,450.10	8.57	8.57	89.79	0.11	29.95	29.95	12.80	17.15	1.747 Minor Risk		
2,500.00	2,500.00	2,500.10	2,500.10	8.75	8.75	89.79	0.11	29.95	29.95	12.45	17.50	1.711 Minor Risk, CC		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,550.00	2,550.00	2,549.84	2,549.84	8.93	8.93	89.76	0.13	30.17	30.17	12.31	17.86	1.689	Minor Risk, ES, SF	
2,600.00	2,600.00	2,599.57	2,599.57	9.11	9.10	89.66	0.18	30.81	30.82	12.61	18.21	1.693	Minor Risk	
2,650.00	2,650.00	2,649.29	2,649.27	9.29	9.27	89.51	0.27	31.89	31.90	13.35	18.55	1.719	Minor Risk	
2,700.00	2,700.00	2,698.98	2,698.94	9.47	9.44	89.31	0.40	33.39	33.42	14.52	18.90	1.768	Minor Risk	
2,750.00	2,750.00	2,748.65	2,748.57	9.65	9.61	89.09	0.56	35.33	35.36	16.12	19.24	1.838	Minor Risk	
2,800.00	2,800.00	2,798.27	2,798.14	9.83	9.78	88.84	0.76	37.68	37.74	18.16	19.59	1.927	Minor Risk	
2,850.00	2,850.00	2,847.86	2,847.64	10.00	9.96	88.59	1.00	40.47	40.56	20.63	19.93	2.035	Minor Risk	
2,900.00	2,900.00	2,897.39	2,897.07	10.18	10.13	88.34	1.27	43.68	43.80	23.53	20.27	2.161	Minor Risk	
2,950.00	2,950.00	2,946.86	2,946.41	10.36	10.30	88.09	1.58	47.31	47.48	26.87	20.60	2.304	Minor Risk	
3,000.00	3,000.00	2,996.26	2,995.64	10.54	10.47	87.86	1.92	51.35	51.58	30.64	20.94	2.463	Minor Risk	
3,050.00	3,050.00	3,053.37	3,044.73	10.72	10.67	87.65	2.29	55.81	56.11	34.81	21.30	2.634	Alert	
3,100.00	3,100.00	3,104.67	3,094.27	10.90	10.85	87.45	2.69	60.56	60.90	39.24	21.66	2.812	Alert	
3,150.00	3,150.00	3,145.10	3,143.82	11.08	11.00	87.29	3.10	65.31	65.68	43.71	21.98	2.989	Alert	
3,200.00	3,200.00	3,205.13	3,193.36	11.26	11.21	87.14	3.50	70.06	70.47	48.10	22.36	3.151	Alert	
3,250.00	3,250.00	3,244.64	3,242.90	11.44	11.35	87.02	3.90	74.81	75.25	52.57	22.68	3.318	Alert	
3,300.00	3,300.00	3,305.59	3,292.44	11.62	11.56	86.91	4.30	79.55	80.04	56.97	23.07	3.469	Alert	
3,350.00	3,350.00	3,344.18	3,341.98	11.80	11.70	86.81	4.70	84.30	84.82	61.44	23.38	3.627	Alert	
3,400.00	3,400.00	3,406.05	3,391.52	11.97	11.92	86.72	5.10	89.05	89.61	65.83	23.78	3.769	Alert	
3,450.00	3,450.00	3,443.72	3,441.06	12.15	12.06	86.64	5.50	93.80	94.39	70.31	24.09	3.919	Alert	
3,500.00	3,500.00	3,493.49	3,490.61	12.33	12.24	86.57	5.90	98.55	99.18	74.74	24.44	4.058	Alert	
3,550.00	3,550.00	3,543.26	3,540.15	12.51	12.42	86.51	6.30	103.30	103.97	79.17	24.79	4.193	Alert	
3,600.00	3,600.00	3,606.97	3,589.69	12.69	12.64	86.45	6.70	108.05	108.75	83.56	25.20	4.316	Alert	
3,650.00	3,650.00	3,642.80	3,639.23	12.87	12.77	86.40	7.11	112.79	113.54	88.04	25.50	4.452	Alert	
3,700.00	3,700.00	3,707.43	3,688.77	13.05	13.01	86.35	7.51	117.54	118.33	92.42	25.91	4.568	Alert	
3,750.00	3,750.00	3,742.34	3,738.31	13.23	13.13	86.30	7.91	122.29	123.11	96.91	26.21	4.698	Alert	
3,800.00	3,800.00	3,792.11	3,787.86	13.41	13.31	86.26	8.31	127.04	127.90	101.34	26.56	4.815	Alert	
3,850.00	3,850.00	3,841.88	3,837.40	13.59	13.49	86.22	8.71	131.79	132.69	105.77	26.92	4.930	Alert	
3,900.00	3,900.00	3,908.35	3,886.94	13.77	13.74	86.18	9.11	136.54	137.47	110.14	27.33	5.030		
3,950.00	3,950.00	3,941.42	3,936.48	13.94	13.86	86.15	9.51	141.29	142.26	114.64	27.62	5.150		
4,000.00	4,000.00	4,008.81	3,985.02	14.12	14.10	86.12	9.91	146.04	147.05	119.01	28.04	5.244		
4,050.00	4,050.00	4,040.94	4,035.55	14.30	14.22	130.61	10.31	150.78	152.01	123.68	28.33	5.385		
4,100.00	4,099.99	4,109.34	4,085.03	14.48	14.47	130.76	10.71	155.53	157.33	128.58	28.75	5.472		
4,150.00	4,149.97	4,140.32	4,134.47	14.66	14.58	131.03	11.11	160.27	163.00	133.97	29.04	5.614		
4,200.00	4,199.94	4,189.94	4,183.86	14.83	14.76	131.42	11.51	165.00	169.04	139.65	29.39	5.752		
4,250.00	4,249.88	4,239.50	4,233.19	15.01	14.95	131.91	11.91	169.73	175.45	145.71	29.74	5.900		
4,300.00	4,299.79	4,289.00	4,282.47	15.19	15.13	132.50	12.31	174.45	182.21	152.12	30.09	6.055		
4,350.00	4,349.70	4,338.49	4,331.73	15.36	15.31	133.11	12.71	179.17	189.06	158.62	30.44	6.211		
4,400.00	4,399.60	4,387.99	4,380.99	15.54	15.49	133.67	13.11	183.90	195.93	165.14	30.79	6.363		
4,450.00	4,449.51	4,437.48	4,430.26	15.72	15.67	134.20	13.51	188.62	202.82	171.67	31.14	6.512		
4,500.00	4,499.41	4,486.97	4,479.52	15.90	15.85	134.69	13.91	193.34	209.72	178.22	31.50	6.659		
4,550.00	4,549.32	4,536.46	4,528.78	16.07	16.04	135.15	14.31	198.06	216.63	184.79	31.85	6.802		
4,600.00	4,599.23	4,585.95	4,578.05	16.25	16.22	135.58	14.70	202.78	223.56	191.36	32.20	6.943		
4,650.00	4,649.13	4,635.44	4,627.31	16.43	16.40	135.99	15.10	207.51	230.50	197.95	32.55	7.081		
4,700.00	4,699.04	4,684.93	4,676.57	16.61	16.58	136.37	15.50	212.23	237.46	204.55	32.90	7.217		
4,750.00	4,748.95	4,734.42	4,725.83	16.79	16.77	136.73	15.90	216.95	244.42	211.16	33.26	7.350		
4,800.00	4,798.85	4,783.91	4,775.10	16.96	16.95	137.07	16.30	221.67	251.39	217.78	33.61	7.480		
4,850.00	4,848.76	4,833.40	4,824.36	17.14	17.13	137.39	16.70	226.39	258.36	224.40	33.96	7.608		
4,900.00	4,898.67	4,882.89	4,873.62	17.32	17.32	137.69	17.10	231.12	265.35	231.04	34.31	7.733		
4,950.00	4,948.57	4,932.38	4,922.89	17.50	17.50	137.98	17.50	235.84	272.34	237.67	34.67	7.856		
5,000.00	4,998.48	4,981.87	4,972.15	17.68	17.68	138.26	17.89	240.56	279.34	244.32	35.02	7.976		
5,050.00	5,048.39	5,031.36	5,021.41	17.86	17.87	138.52	18.29	245.28	286.35	250.97	35.37	8.095		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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: O-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.00	5,098.29	5,080.85	5,070.67	18.04	18.05	138.77	18.69	250.00	293.36	257.63	35.73	8.211		
5,150.00	5,148.20	5,130.34	5,119.94	18.22	18.23	139.01	19.09	254.73	300.37	264.29	36.08	8.325		
5,200.00	5,198.11	5,179.83	5,169.20	18.39	18.42	139.23	19.49	259.45	307.39	270.96	36.44	8.438		
5,250.00	5,248.01	5,229.32	5,218.46	18.57	18.60	139.45	19.89	264.17	314.42	277.63	36.79	8.546		
5,300.00	5,297.92	5,278.81	5,267.73	18.75	18.79	139.66	20.29	268.89	321.45	284.30	37.14	8.654		
5,350.00	5,347.82	5,328.30	5,316.99	18.93	18.97	139.85	20.69	273.61	328.48	290.98	37.50	8.760		
5,400.00	5,397.73	5,377.79	5,366.25	19.11	19.16	140.04	21.08	278.34	335.52	297.67	37.85	8.864		
5,450.00	5,447.64	5,427.28	5,415.52	19.29	19.34	140.22	21.48	283.06	342.56	304.35	38.21	8.966		
5,500.00	5,497.54	5,476.77	5,464.78	19.47	19.52	140.40	21.88	287.78	349.60	311.04	38.56	9.066		
5,550.00	5,547.45	5,526.26	5,514.04	19.65	19.71	140.57	22.28	292.50	356.65	317.73	38.92	9.164		
5,600.00	5,597.36	5,575.75	5,563.30	19.83	19.89	140.73	22.68	297.22	363.70	324.43	39.27	9.261		
5,650.00	5,647.26	5,625.24	5,612.57	20.01	20.08	140.88	23.08	301.95	370.75	331.12	39.63	9.356		
5,700.00	5,697.17	5,674.73	5,661.83	20.19	20.26	141.03	23.48	306.67	377.81	337.82	39.98	9.449		
5,750.00	5,747.08	5,724.22	5,711.09	20.37	20.45	141.18	23.88	311.39	384.86	344.53	40.34	9.541		
5,800.00	5,796.98	5,773.72	5,760.36	20.55	20.63	141.31	24.27	316.11	391.92	351.23	40.69	9.631		
5,850.00	5,846.89	5,823.21	5,809.62	20.73	20.82	141.45	24.67	320.83	398.99	357.94	41.05	9.720		
5,900.00	5,896.80	5,872.70	5,858.88	20.91	21.00	141.58	25.07	325.56	406.05	364.65	41.40	9.807		
5,950.00	5,946.70	5,922.19	5,908.14	21.09	21.19	141.70	25.47	330.28	413.12	371.36	41.76	9.893		
6,000.00	5,996.61	5,971.68	5,957.41	21.27	21.37	141.82	25.87	335.00	420.18	378.07	42.12	9.977		
6,050.00	6,046.52	6,021.17	6,006.67	21.45	21.56	141.94	26.27	339.72	427.25	384.78	42.47	10.060		
6,100.00	6,096.42	6,070.66	6,055.93	21.63	21.74	142.05	26.67	344.44	434.32	391.50	42.83	10.141		
6,150.00	6,146.33	6,120.15	6,105.20	21.81	21.93	142.16	27.07	349.17	441.40	398.21	43.18	10.221		
6,200.00	6,196.23	6,169.64	6,154.46	21.99	22.11	142.27	27.46	353.89	448.47	404.93	43.54	10.300		
6,250.00	6,246.14	6,219.13	6,203.72	22.17	22.30	142.37	27.86	358.61	455.55	411.65	43.90	10.378		
6,300.00	6,296.05	6,268.62	6,252.99	22.35	22.49	142.47	28.26	363.33	462.62	418.37	44.25	10.454		
6,350.00	6,345.95	6,318.11	6,302.25	22.53	22.67	142.56	28.66	368.05	469.70	425.09	44.61	10.529		
6,400.00	6,395.86	6,367.60	6,351.51	22.71	22.86	142.66	29.06	372.78	476.78	431.82	44.97	10.603		
6,450.00	6,445.77	6,417.09	6,400.77	22.89	23.04	142.75	29.46	377.50	483.86	438.54	45.32	10.676		
6,500.00	6,495.67	6,466.58	6,450.04	23.07	23.23	142.84	29.86	382.22	490.95	445.27	45.68	10.748		
6,550.00	6,545.58	6,516.07	6,499.30	23.25	23.41	142.92	30.26	386.94	498.03	451.99	46.03	10.819		
6,600.00	6,595.49	6,565.56	6,548.56	23.43	23.60	143.01	30.65	391.66	505.11	458.72	46.39	10.888		
6,650.00	6,645.39	6,615.05	6,597.83	23.62	23.79	143.09	31.05	396.39	512.20	465.45	46.75	10.956		
6,700.00	6,695.30	6,664.54	6,647.09	23.80	23.97	143.16	31.45	401.11	519.28	472.18	47.11	11.024		
6,750.00	6,745.21	6,714.03	6,696.35	23.98	24.16	143.24	31.85	405.83	526.37	479.91	47.46	11.090		
6,800.00	6,795.11	6,763.52	6,745.62	24.16	24.34	143.32	32.25	410.55	533.46	485.64	47.82	11.156		
6,850.00	6,845.02	6,813.01	6,794.88	24.34	24.53	143.39	32.65	415.27	540.55	492.37	48.18	11.220		
6,900.00	6,894.93	6,862.50	6,844.14	24.52	24.72	143.46	33.05	420.00	547.64	499.10	48.53	11.284		
6,950.00	6,944.83	6,911.99	6,893.40	24.70	24.90	143.53	33.45	424.72	554.73	505.84	48.89	11.346		
7,000.00	6,994.74	6,961.48	6,942.67	24.88	25.09	143.59	33.84	429.44	561.82	512.57	49.25	11.408		
7,050.00	7,044.65	7,010.97	6,991.93	25.06	25.28	143.66	34.24	434.16	568.91	519.31	49.60	11.469		
7,100.00	7,094.55	7,060.46	7,041.19	25.24	25.46	143.72	34.64	438.88	576.00	526.04	49.96	11.529		
7,150.00	7,144.46	7,109.95	7,090.46	25.43	25.65	143.79	35.04	443.61	583.10	532.78	50.32	11.588		
7,200.00	7,194.36	7,159.45	7,139.72	25.61	25.83	143.85	35.44	448.33	590.19	539.51	50.68	11.646		
7,250.00	7,244.27	7,208.94	7,188.98	25.79	26.02	143.91	35.84	453.05	597.29	546.25	51.03	11.704		
7,300.00	7,294.18	7,258.43	7,238.24	25.97	26.21	143.96	36.24	457.77	604.38	552.99	51.39	11.760		
7,350.00	7,344.08	7,307.92	7,287.51	26.15	26.39	144.02	36.64	462.49	611.48	559.73	51.75	11.816		
7,400.00	7,393.99	7,357.41	7,336.77	26.33	26.58	144.08	37.03	467.22	618.57	566.47	52.11	11.871		
7,450.00	7,443.90	7,406.90	7,386.03	26.51	26.77	144.13	37.43	471.94	625.67	573.21	52.46	11.925		
7,500.00	7,493.80	7,456.39	7,435.30	26.69	26.95	144.18	37.83	476.66	632.77	579.95	52.82	11.979		
7,550.00	7,543.71	7,505.88	7,484.56	26.88	27.14	144.23	38.23	481.38	639.87	586.69	53.18	12.032		
7,600.00	7,593.62	7,555.37	7,533.82	27.06	27.33	144.29	38.63	486.10	646.96	593.43	53.54	12.084		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,650.00	7,643.52	7,614.58	7,592.81	27.24	27.55	144.35	39.07	491.30	653.70	599.73	53.97	12.111		
7,700.00	7,693.43	7,674.12	7,652.18	27.42	27.77	144.46	39.43	495.61	659.61	605.21	54.40	12.125		
7,750.00	7,743.38	7,733.90	7,711.87	27.60	27.99	144.57	39.72	499.01	664.30	609.48	54.82	12.118		
7,800.00	7,793.35	7,793.89	7,771.80	27.78	28.20	144.65	39.93	501.49	667.70	612.48	55.22	12.091		
7,850.00	7,843.34	7,854.01	7,831.90	27.96	28.41	144.70	40.06	503.03	669.82	614.20	55.62	12.042		
7,900.00	7,893.33	7,914.20	7,892.09	28.14	28.63	144.72	40.11	503.63	670.64	614.63	56.01	11.974		
7,950.00	7,943.33	7,965.54	7,943.43	28.31	28.80	100.23	40.11	503.63	670.65	614.28	56.36	11.899		
8,000.00	7,993.33	8,015.54	7,993.43	28.49	28.97	100.23	40.11	503.63	670.65	613.93	56.71	11.825		
8,050.00	8,043.33	8,065.54	8,043.43	28.67	29.14	100.23	40.11	503.63	670.65	613.58	57.07	11.752		
8,100.00	8,093.33	8,115.54	8,093.43	28.85	29.31	100.23	40.11	503.63	670.65	613.23	57.42	11.680		
8,150.00	8,143.33	8,165.54	8,143.43	29.03	29.49	100.23	40.11	503.63	670.65	612.88	57.77	11.609		
8,200.00	8,193.33	8,215.54	8,193.43	29.20	29.66	100.23	40.11	503.63	670.65	612.53	58.12	11.539		
8,250.00	8,243.33	8,265.54	8,243.43	29.38	29.83	100.23	40.11	503.63	670.65	612.17	58.47	11.469		
8,300.00	8,293.33	8,315.54	8,293.43	29.56	30.00	100.23	40.11	503.63	670.65	611.82	58.82	11.401		
8,350.00	8,343.33	8,365.54	8,343.43	29.74	30.17	100.23	40.11	503.63	670.65	611.47	59.18	11.333		
8,400.00	8,393.33	8,415.54	8,393.43	29.91	30.34	100.23	40.11	503.63	670.65	611.12	59.53	11.266		
8,450.00	8,443.33	8,465.54	8,443.43	30.09	30.52	100.23	40.11	503.63	670.65	610.76	59.88	11.200		
8,500.00	8,493.33	8,515.54	8,493.43	30.27	30.69	100.23	40.11	503.63	670.65	610.41	60.23	11.134		
8,550.00	8,543.33	8,565.54	8,543.43	30.45	30.86	100.23	40.11	503.63	670.65	610.06	60.59	11.069		
8,600.00	8,593.33	8,615.54	8,593.43	30.63	31.03	100.23	40.11	503.63	670.65	609.71	60.94	11.005		
8,650.00	8,643.32	8,660.00	8,637.89	30.80	31.18	-79.46	39.53	503.64	670.62	609.35	61.27	10.946		
8,700.00	8,693.06	8,701.20	8,678.94	30.96	31.32	-79.54	36.19	503.66	670.46	608.90	61.56	10.891		
8,750.00	8,742.19	8,742.46	8,719.70	31.11	31.45	-79.68	29.90	503.69	670.17	608.33	61.84	10.837		
8,800.00	8,790.32	8,783.81	8,760.00	31.26	31.58	-79.89	20.68	503.74	669.75	607.65	62.10	10.785		
8,850.00	8,837.10	8,825.29	8,799.66	31.39	31.71	-80.16	8.52	503.81	669.21	606.85	62.35	10.732		
8,900.00	8,882.17	8,866.94	8,838.48	31.52	31.83	-80.50	-6.53	503.90	668.56	605.96	62.60	10.680		
8,950.00	8,925.18	8,908.80	8,876.29	31.64	31.95	-80.89	-24.47	504.00	667.81	604.98	62.83	10.628		
9,000.00	8,965.81	8,950.90	8,912.90	31.75	32.06	-81.35	-45.24	504.12	666.99	603.93	63.07	10.576		
9,050.00	9,003.74	8,993.30	8,948.13	31.85	32.17	-81.87	-68.81	504.25	666.12	602.82	63.30	10.523		
9,100.00	9,038.70	9,036.02	8,981.76	31.94	32.28	-82.44	-95.14	504.40	665.22	601.67	63.54	10.469		
9,150.00	9,070.40	9,079.11	9,013.61	32.06	32.38	-83.06	-124.16	504.57	664.30	600.51	63.79	10.414		
9,200.00	9,098.62	9,122.63	9,043.46	32.18	32.48	-83.73	-155.81	504.75	663.39	599.34	64.05	10.357		
9,250.00	9,123.14	9,166.62	9,071.10	32.30	32.58	-84.45	-190.00	504.94	662.53	598.20	64.32	10.300		
9,300.00	9,143.76	9,211.12	9,096.32	32.43	32.68	-85.21	-226.65	505.15	661.72	597.12	64.60	10.243		
9,350.00	9,160.34	9,256.19	9,118.89	32.56	32.79	-86.00	-265.66	505.37	661.00	596.11	64.89	10.186		
9,400.00	9,172.75	9,301.88	9,138.56	32.70	32.90	-86.83	-306.89	505.61	660.39	595.19	65.19	10.130		
9,450.00	9,180.88	9,348.26	9,155.11	32.83	33.03	-87.68	-350.19	505.86	659.90	594.41	65.49	10.076		
9,500.00	9,184.69	9,395.36	9,168.27	32.97	33.17	-88.55	-395.41	506.11	659.56	593.76	65.79	10.024		
9,550.00	9,185.00	9,443.41	9,177.83	33.12	33.32	-89.37	-442.48	506.38	659.38	593.28	66.10	9.976		
9,600.00	9,185.00	9,492.71	9,183.50	33.28	33.48	-89.86	-491.44	506.66	659.34	592.94	66.41	9.929		
9,613.85	9,185.00	9,506.51	9,184.33	33.33	33.53	-89.93	-505.21	506.74	659.34	592.84	66.50	9.914		
9,650.00	9,185.00	9,542.63	9,185.00	33.46	33.66	-89.99	-541.32	506.94	659.35	592.59	66.75	9.877		
9,700.00	9,185.00	9,607.37	9,185.00	33.64	33.89	-89.99	-591.32	507.23	659.35	592.18	67.17	9.817		
9,750.00	9,185.00	9,642.63	9,185.00	33.85	34.04	-89.99	-641.32	507.51	659.35	591.83	67.52	9.766		
9,800.00	9,185.00	9,707.37	9,185.00	34.05	34.31	-89.99	-691.32	507.80	659.35	591.36	67.99	9.698		
9,850.00	9,185.00	9,742.63	9,185.00	34.29	34.47	-89.99	-741.32	508.08	659.36	590.97	68.39	9.641		
9,900.00	9,185.00	9,807.37	9,185.00	34.53	34.78	-89.99	-791.32	508.37	659.36	590.43	68.93	9.566		
9,950.00	9,185.00	9,842.63	9,185.00	34.79	34.96	-89.99	-841.32	508.65	659.36	589.99	69.37	9.504		
10,000.00	9,185.00	9,907.37	9,185.00	35.06	35.30	-89.99	-891.32	508.94	659.37	589.39	69.98	9.423		
10,050.00	9,185.00	9,942.63	9,185.00	35.35	35.50	-89.99	-941.31	509.22	659.37	588.90	70.47	9.357		
10,100.00	9,185.00	10,007.37	9,185.00	35.64	35.87	-89.99	-991.31	509.51	659.37	588.24	71.13	9.270		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,150.00	9,185.00	10,042.63	9,185.00	35.95	36.09	-89.99	-1,041.31	509.79	659.37	587.71	71.66	9.201		
10,200.00	9,185.00	10,107.37	9,185.00	36.27	36.49	-89.99	-1,091.31	510.07	659.38	587.00	72.38	9.110		
10,250.00	9,185.00	10,142.63	9,185.00	36.61	36.72	-89.99	-1,141.31	510.36	659.38	586.43	72.95	9.039		
10,300.00	9,185.00	10,207.37	9,185.00	36.94	37.15	-89.99	-1,191.31	510.64	659.38	585.86	73.72	8.944		
10,350.00	9,185.00	10,242.63	9,185.00	37.30	37.40	-89.99	-1,241.31	510.93	659.38	585.05	74.33	8.871		
10,400.00	9,185.00	10,307.37	9,185.00	37.66	37.86	-89.99	-1,291.31	511.21	659.39	584.23	75.16	8.774		
10,450.00	9,185.00	10,342.63	9,185.00	38.04	38.13	-89.99	-1,341.31	511.50	659.39	583.59	75.80	8.699		
10,500.00	9,185.00	10,407.37	9,185.00	38.43	38.62	-89.99	-1,391.31	511.78	659.39	582.72	76.67	8.600		
10,550.00	9,185.00	10,442.63	9,185.00	38.83	38.89	-89.99	-1,441.31	512.07	659.40	582.04	77.35	8.524		
10,600.00	9,185.00	10,507.37	9,185.00	39.23	39.41	-89.99	-1,491.31	512.35	659.40	581.13	78.27	8.425		
10,650.00	9,185.00	10,542.63	9,185.00	39.65	39.70	-89.99	-1,541.30	512.64	659.40	580.42	78.98	8.349		
10,700.00	9,185.00	10,592.63	9,185.00	40.07	40.11	-89.99	-1,591.30	512.92	659.40	579.59	79.82	8.261		
10,750.00	9,185.00	10,642.63	9,185.00	40.50	40.54	-89.99	-1,641.30	513.21	659.41	578.72	80.69	8.173		
10,800.00	9,185.00	10,707.37	9,185.00	40.94	41.10	-89.99	-1,691.30	513.49	659.41	577.73	81.68	8.073		
10,850.00	9,185.00	10,742.63	9,185.00	41.39	41.41	-89.99	-1,741.30	513.77	659.41	576.96	82.45	7.997		
10,900.00	9,185.00	10,807.37	9,185.00	41.84	41.99	-89.99	-1,791.30	514.06	659.42	575.92	83.49	7.898		
10,950.00	9,185.00	10,842.63	9,185.00	42.31	42.32	-89.99	-1,841.30	514.34	659.42	575.13	84.29	7.823		
11,000.00	9,185.00	10,907.37	9,185.00	42.78	42.92	-89.99	-1,891.30	514.63	659.42	574.06	85.36	7.725		
11,050.00	9,185.00	10,942.63	9,185.00	43.26	43.26	-89.99	-1,941.30	514.91	659.42	573.24	86.18	7.652		
11,100.00	9,185.00	11,007.37	9,185.00	43.74	43.88	-89.99	-1,991.30	515.20	659.43	572.14	87.29	7.555		
11,150.00	9,185.00	11,042.63	9,185.00	44.24	44.22	-89.99	-2,041.30	515.48	659.43	571.30	88.13	7.482		
11,200.00	9,185.00	11,107.37	9,185.00	44.74	44.86	-89.99	-2,091.30	515.77	659.43	570.17	89.27	7.387		
11,250.00	9,185.00	11,142.63	9,185.00	45.24	45.21	-89.99	-2,141.29	516.05	659.44	569.30	90.13	7.316		
11,300.00	9,185.00	11,207.37	9,185.00	45.75	45.86	-89.99	-2,191.29	516.34	659.44	568.14	91.30	7.223		
11,350.00	9,185.00	11,242.63	9,185.00	46.27	46.23	-89.99	-2,241.29	516.62	659.44	567.26	92.18	7.154		
11,400.00	9,185.00	11,307.37	9,185.00	46.79	46.90	-89.99	-2,291.29	516.91	659.44	566.07	93.37	7.063		
11,450.00	9,185.00	11,342.63	9,185.00	47.32	47.27	-89.99	-2,341.29	517.19	659.45	565.17	94.28	6.995		
11,500.00	9,185.00	11,407.37	9,185.00	47.85	47.95	-89.99	-2,391.29	517.48	659.45	563.96	95.49	6.906		
11,550.00	9,185.00	11,442.63	9,185.00	48.39	48.33	-89.99	-2,441.29	517.76	659.45	563.04	96.41	6.840		
11,600.00	9,185.00	11,507.37	9,185.00	48.94	49.02	-89.99	-2,491.29	518.04	659.46	561.80	97.65	6.753		
11,650.00	9,185.00	11,542.63	9,185.00	49.49	49.41	-89.99	-2,541.29	518.33	659.46	560.87	98.59	6.689		
11,700.00	9,185.00	11,607.37	9,185.00	50.04	50.12	-89.99	-2,591.29	518.61	659.46	559.61	99.85	6.604		
11,750.00	9,185.00	11,642.63	9,185.00	50.60	50.51	-89.99	-2,641.29	518.90	659.46	558.66	100.81	6.542		
11,800.00	9,185.00	11,707.37	9,185.00	51.16	51.23	-89.99	-2,691.29	519.18	659.47	557.38	102.09	6.460		
11,850.00	9,185.00	11,742.63	9,185.00	51.72	51.62	-89.99	-2,741.29	519.47	659.47	556.41	103.06	6.399		
11,900.00	9,185.00	11,807.37	9,185.00	52.29	52.35	-89.99	-2,791.28	519.75	659.47	555.11	104.36	6.319		
11,950.00	9,185.00	11,842.63	9,185.00	52.87	52.76	-89.99	-2,841.28	520.04	659.47	554.13	105.34	6.260		
12,000.00	9,185.00	11,907.37	9,185.00	53.44	53.50	-89.99	-2,891.28	520.32	659.48	552.82	106.66	6.183		
12,050.00	9,185.00	11,942.63	9,185.00	54.02	53.91	-89.99	-2,941.28	520.61	659.48	551.83	107.65	6.126		
12,100.00	9,185.00	12,007.37	9,185.00	54.61	54.66	-89.99	-2,991.28	520.89	659.48	550.49	108.99	6.051		
12,150.00	9,185.00	12,042.63	9,185.00	55.20	55.07	-89.99	-3,041.28	521.18	659.49	549.49	110.00	5.996		
12,200.00	9,185.00	12,107.37	9,185.00	55.79	55.83	-89.99	-3,091.28	521.46	659.49	548.14	111.35	5.923		
12,250.00	9,185.00	12,142.63	9,185.00	56.38	56.25	-89.99	-3,141.28	521.74	659.49	547.13	112.37	5.869		
12,300.00	9,185.00	12,207.37	9,185.00	56.98	57.02	-89.99	-3,191.28	522.03	659.49	545.76	113.73	5.799		
12,350.00	9,185.00	12,242.63	9,185.00	57.58	57.44	-89.99	-3,241.28	522.31	659.50	544.74	114.76	5.747		
12,400.00	9,185.00	12,307.37	9,185.00	58.18	58.22	-89.99	-3,291.28	522.60	659.50	543.36	116.14	5.678		
12,450.00	9,185.00	12,342.63	9,185.00	58.79	58.64	-89.99	-3,341.28	522.88	659.50	542.33	117.18	5.628		
12,500.00	9,185.00	12,407.37	9,185.00	59.40	59.43	-89.99	-3,391.27	523.17	659.51	540.93	118.57	5.562		
12,550.00	9,185.00	12,442.63	9,185.00	60.01	59.86	-89.99	-3,441.27	523.45	659.51	539.89	119.62	5.513		
12,600.00	9,185.00	12,507.37	9,185.00	60.63	60.65	-89.99	-3,491.27	523.74	659.51	538.49	121.02	5.449		
12,650.00	9,185.00	12,542.63	9,185.00	61.24	61.08	-89.99	-3,541.27	524.02	659.51	537.44	122.08	5.402		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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: O-MWD+HDMG														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
12,700.00	9,185.00	12,607.37	9,185.00	61.86	61.88	-89.99	-3,591.27	524.31	659.52	536.02	123.50	5.340			
12,750.00	9,185.00	12,642.63	9,185.00	62.49	62.32	-89.99	-3,641.27	524.59	659.52	534.96	124.56	5.295			
12,800.00	9,185.00	12,707.37	9,185.00	63.11	63.12	-89.99	-3,691.27	524.88	659.52	533.53	125.99	5.235			
12,850.00	9,185.00	12,742.63	9,185.00	63.74	63.56	-89.99	-3,741.27	525.16	659.53	532.47	127.06	5.191			
12,900.00	9,185.00	12,807.37	9,185.00	64.36	64.37	-89.99	-3,791.27	525.45	659.53	531.03	128.50	5.133			
12,950.00	9,185.00	12,842.63	9,185.00	65.00	64.81	-89.99	-3,841.27	525.73	659.53	529.96	129.57	5.090			
13,000.00	9,185.00	12,907.37	9,185.00	65.63	65.63	-89.99	-3,891.27	526.01	659.53	528.51	131.02	5.034			
13,050.00	9,185.00	12,942.63	9,185.00	66.26	66.07	-89.99	-3,941.27	526.30	659.54	527.43	132.11	4.992 Alert			
13,100.00	9,185.00	13,007.37	9,185.00	66.90	66.89	-89.99	-3,991.27	526.58	659.54	525.97	133.57	4.938 Alert			
13,150.00	9,185.00	13,042.63	9,185.00	67.54	67.34	-89.99	-4,041.26	526.87	659.54	524.89	134.66	4.898 Alert			
13,200.00	9,185.00	13,107.37	9,185.00	68.18	68.17	-89.99	-4,091.26	527.15	659.54	523.42	136.12	4.845 Alert			
13,250.00	9,185.00	13,142.63	9,185.00	68.82	68.62	-89.99	-4,141.26	527.44	659.55	522.33	137.22	4.807 Alert			
13,300.00	9,185.00	13,207.37	9,185.00	69.46	69.45	-89.99	-4,191.26	527.72	659.55	520.86	138.69	4.755 Alert			
13,350.00	9,185.00	13,242.63	9,185.00	70.11	69.90	-89.99	-4,241.26	528.01	659.55	519.76	139.80	4.718 Alert			
13,400.00	9,185.00	13,292.63	9,185.00	70.76	70.55	-89.99	-4,291.26	528.29	659.56	518.47	141.09	4.675 Alert			
13,450.00	9,185.00	13,342.63	9,185.00	71.40	71.19	-89.99	-4,341.26	528.58	659.56	517.17	142.39	4.632 Alert			
13,500.00	9,185.00	13,407.37	9,185.00	72.05	72.03	-89.99	-4,391.26	528.86	659.56	515.69	143.88	4.584 Alert			
13,550.00	9,185.00	13,442.63	9,185.00	72.71	72.49	-89.99	-4,441.26	529.15	659.56	514.58	144.99	4.549 Alert			
13,600.00	9,185.00	13,507.37	9,185.00	73.36	73.33	-89.99	-4,491.26	529.43	659.57	513.08	146.49	4.503 Alert			
13,650.00	9,185.00	13,542.63	9,185.00	74.01	73.79	-89.99	-4,541.26	529.72	659.57	511.97	147.60	4.469 Alert			
13,700.00	9,185.00	13,607.37	9,185.00	74.67	74.64	-89.99	-4,591.26	530.00	659.57	510.47	149.11	4.424 Alert			
13,750.00	9,185.00	13,642.63	9,185.00	75.33	75.10	-89.99	-4,641.25	530.28	659.58	509.35	150.23	4.391 Alert			
13,800.00	9,185.00	13,707.37	9,185.00	75.99	75.95	-89.99	-4,691.25	530.57	659.58	507.84	151.74	4.347 Alert			
13,850.00	9,185.00	13,742.63	9,185.00	76.65	76.42	-89.99	-4,741.25	530.85	659.58	506.72	152.86	4.315 Alert			
13,900.00	9,185.00	13,807.37	9,185.00	77.31	77.27	-89.99	-4,791.25	531.14	659.58	505.21	154.38	4.273 Alert			
13,950.00	9,185.00	13,842.63	9,185.00	77.97	77.74	-89.99	-4,841.25	531.42	659.59	504.08	155.51	4.241 Alert			
14,000.00	9,185.00	13,907.37	9,185.00	78.63	78.59	-89.99	-4,891.25	531.71	659.59	502.56	157.03	4.200 Alert			
14,050.00	9,185.00	13,942.63	9,185.00	79.30	79.06	-89.99	-4,941.25	531.99	659.59	501.43	158.16	4.170 Alert			
14,100.00	9,185.00	14,007.37	9,185.00	79.96	79.92	-89.99	-4,991.25	532.28	659.60	499.90	159.69	4.130 Alert			
14,150.00	9,185.00	14,042.63	9,185.00	80.63	80.39	-89.99	-5,041.25	532.56	659.60	498.77	160.83	4.101 Alert			
14,200.00	9,185.00	14,107.37	9,185.00	81.30	81.25	-89.99	-5,091.25	532.85	659.60	497.24	162.36	4.063 Alert			
14,250.00	9,185.00	14,142.63	9,185.00	81.97	81.72	-89.99	-5,141.25	533.13	659.60	496.10	163.50	4.034 Alert			
14,300.00	9,185.00	14,207.37	9,185.00	82.64	82.59	-89.99	-5,191.25	533.42	659.61	494.57	165.04	3.997 Alert			
14,350.00	9,185.00	14,242.63	9,185.00	83.31	83.06	-89.99	-5,241.24	533.70	659.61	493.43	166.18	3.969 Alert			
14,400.00	9,185.00	14,307.37	9,185.00	83.98	83.93	-89.99	-5,291.24	533.98	659.61	491.89	167.72	3.933 Alert			
14,450.00	9,185.00	14,342.63	9,185.00	84.65	84.40	-89.99	-5,341.24	534.27	659.61	490.74	168.87	3.906 Alert			
14,500.00	9,185.00	14,407.37	9,185.00	85.32	85.27	-89.99	-5,391.24	534.55	659.62	489.20	170.42	3.871 Alert			
14,550.00	9,185.00	14,442.63	9,185.00	86.00	85.75	-89.99	-5,441.24	534.84	659.62	488.05	171.57	3.845 Alert			
14,600.00	9,185.00	14,507.37	9,185.00	86.68	86.62	-89.99	-5,491.24	535.12	659.62	486.51	173.12	3.810 Alert			
14,650.00	9,185.00	14,542.63	9,185.00	87.35	87.09	-89.99	-5,541.24	535.41	659.63	485.36	174.27	3.785 Alert			
14,700.00	9,185.00	14,607.37	9,185.00	88.03	87.97	-89.99	-5,591.24	535.69	659.63	483.80	175.82	3.752 Alert			
14,750.00	9,185.00	14,642.63	9,185.00	88.71	88.45	-89.99	-5,641.24	535.98	659.63	482.65	176.98	3.727 Alert			
14,800.00	9,185.00	14,707.37	9,185.00	89.39	89.32	-89.99	-5,691.24	536.26	659.63	481.10	178.54	3.695 Alert			
14,850.00	9,185.00	14,742.63	9,185.00	90.07	89.80	-89.99	-5,741.24	536.55	659.64	479.94	179.70	3.671 Alert			
14,900.00	9,185.00	14,807.37	9,185.00	90.75	90.68	-89.99	-5,791.24	536.83	659.64	478.38	181.26	3.639 Alert			
14,950.00	9,185.00	14,842.63	9,185.00	91.43	91.16	-89.99	-5,841.24	537.12	659.64	477.22	182.42	3.616 Alert			
15,000.00	9,185.00	14,907.37	9,185.00	92.11	92.04	-89.99	-5,891.23	537.40	659.65	475.66	183.98	3.585 Alert			
15,050.00	9,185.00	14,942.63	9,185.00	92.79	92.52	-89.99	-5,941.23	537.69	659.65	474.50	185.15	3.563 Alert			
15,100.00	9,185.00	15,007.37	9,185.00	93.47	93.41	-89.99	-5,991.23	537.97	659.65	472.94	186.72	3.533 Alert			
15,150.00	9,185.00	15,042.63	9,185.00	94.16	93.89	-89.99	-6,041.23	538.25	659.65	471.77	187.88	3.511 Alert			
15,200.00	9,185.00	15,107.37	9,185.00	94.84	94.77	-89.99	-6,091.23	538.54	659.66	470.20	189.45	3.482 Alert			

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
15,250.00	9,185.00	15,142.63	9,185.00	95.53	95.25	-89.99	-6,141.23	538.82	659.66	469.04	190.62	3.461	Alert
15,300.00	9,185.00	15,207.37	9,185.00	96.21	96.14	-89.99	-6,191.23	539.11	659.66	467.47	192.20	3.432	Alert
15,350.00	9,185.00	15,242.63	9,185.00	96.90	96.62	-89.99	-6,241.23	539.39	659.67	466.30	193.37	3.411	Alert
15,400.00	9,185.00	15,307.37	9,185.00	97.59	97.51	-89.99	-6,291.23	539.68	659.67	464.72	194.94	3.384	Alert
15,450.00	9,185.00	15,342.63	9,185.00	98.28	98.00	-89.99	-6,341.23	539.96	659.67	463.55	196.12	3.364	Alert
15,500.00	9,185.00	15,392.63	9,185.00	98.96	98.68	-89.99	-6,391.23	540.25	659.67	462.18	197.49	3.340	Alert
15,550.00	9,185.00	15,442.63	9,185.00	99.65	99.37	-89.99	-6,441.23	540.53	659.68	460.81	198.87	3.317	Alert
15,600.00	9,185.00	15,507.37	9,185.00	100.34	100.26	-89.99	-6,491.22	540.82	659.68	459.23	200.45	3.291	Alert
15,650.00	9,185.00	15,542.63	9,185.00	101.03	100.75	-89.99	-6,541.22	541.10	659.68	458.05	201.63	3.272	Alert
15,700.00	9,185.00	15,607.37	9,185.00	101.72	101.64	-89.99	-6,591.22	541.39	659.69	456.47	203.21	3.246	Alert
15,750.00	9,185.00	15,642.63	9,185.00	102.42	102.13	-89.99	-6,641.22	541.67	659.69	455.29	204.39	3.228	Alert
15,800.00	9,185.00	15,707.37	9,185.00	103.11	103.02	-89.99	-6,691.22	541.95	659.69	453.71	205.98	3.203	Alert
15,850.00	9,185.00	15,742.63	9,185.00	103.80	103.51	-89.99	-6,741.22	542.24	659.69	452.53	207.16	3.184	Alert
15,900.00	9,185.00	15,807.37	9,185.00	104.49	104.41	-89.99	-6,791.22	542.52	659.70	450.95	208.75	3.160	Alert
15,950.00	9,185.00	15,842.63	9,185.00	105.18	104.89	-89.99	-6,841.22	542.81	659.70	449.77	209.93	3.142	Alert
16,000.00	9,185.00	15,907.37	9,185.00	105.88	105.79	-89.99	-6,891.22	543.09	659.70	448.18	211.52	3.119	Alert
16,050.00	9,185.00	15,942.63	9,185.00	106.57	106.28	-89.99	-6,941.22	543.38	659.70	447.00	212.71	3.101	Alert
16,100.00	9,185.00	15,992.63	9,185.00	107.27	106.97	-89.99	-6,991.22	543.66	659.71	445.61	214.10	3.081	Alert
16,150.00	9,185.00	16,042.63	9,185.00	107.96	107.67	-89.99	-7,041.22	543.95	659.71	444.22	215.49	3.061	Alert
16,200.00	9,185.00	16,107.37	9,185.00	108.66	108.57	-89.99	-7,091.21	544.23	659.71	442.63	217.08	3.039	Alert
16,250.00	9,185.00	16,142.63	9,185.00	109.35	109.06	-89.99	-7,141.21	544.52	659.72	441.45	218.27	3.022	Alert
16,300.00	9,185.00	16,207.37	9,185.00	110.05	109.96	-89.99	-7,191.21	544.80	659.72	439.85	219.87	3.001	Alert
16,350.00	9,185.00	16,242.63	9,185.00	110.75	110.45	-89.99	-7,241.21	545.09	659.72	438.67	221.06	2.984	Alert
16,400.00	9,185.00	16,307.37	9,185.00	111.44	111.35	-89.99	-7,291.21	545.37	659.72	437.07	222.66	2.963	Alert
16,450.00	9,185.00	16,342.63	9,185.00	112.14	111.84	-89.99	-7,341.21	545.66	659.73	435.88	223.85	2.947	Alert
16,500.00	9,185.00	16,407.37	9,185.00	112.84	112.74	-89.99	-7,391.21	545.94	659.73	434.28	225.45	2.926	Alert
16,550.00	9,185.00	16,442.63	9,185.00	113.54	113.24	-89.99	-7,441.21	546.22	659.73	433.10	226.64	2.911	Alert
16,600.00	9,185.00	16,507.37	9,185.00	114.24	114.14	-89.99	-7,491.21	546.51	659.74	431.49	228.24	2.891	Alert
16,650.00	9,185.00	16,542.63	9,185.00	114.94	114.63	-89.99	-7,541.21	546.79	659.74	430.31	229.43	2.876	Alert
16,700.00	9,185.00	16,607.37	9,185.00	115.64	115.54	-89.99	-7,591.21	547.08	659.74	428.70	231.04	2.856	Alert
16,750.00	9,185.00	16,642.63	9,185.00	116.34	116.03	-89.99	-7,641.21	547.36	659.74	427.51	232.23	2.841	Alert
16,800.00	9,185.00	16,707.37	9,185.00	117.04	116.93	-89.99	-7,691.21	547.65	659.75	425.91	233.84	2.821	Alert
16,850.00	9,185.00	16,742.63	9,185.00	117.74	117.43	-89.99	-7,741.20	547.93	659.75	424.72	235.03	2.807	Alert
16,900.00	9,185.00	16,807.37	9,185.00	118.44	118.33	-89.99	-7,791.20	548.22	659.75	423.11	236.64	2.788	Alert
16,950.00	9,185.00	16,842.63	9,185.00	119.14	118.83	-89.99	-7,841.20	548.50	659.76	421.92	237.84	2.774	Alert
17,000.00	9,185.00	16,907.37	9,185.00	119.84	119.74	-89.99	-7,891.20	548.79	659.76	420.31	239.45	2.755	Alert
17,050.00	9,185.00	16,942.63	9,185.00	120.54	120.23	-89.99	-7,941.20	549.07	659.76	419.12	240.64	2.742	Alert
17,100.00	9,185.00	17,007.37	9,185.00	121.24	121.14	-89.99	-7,991.20	549.36	659.76	417.51	242.26	2.723	Alert
17,150.00	9,185.00	17,042.63	9,185.00	121.95	121.63	-89.99	-8,041.20	549.64	659.77	416.31	243.45	2.710	Alert
17,200.00	9,185.00	17,107.37	9,185.00	122.65	122.54	-89.99	-8,091.20	549.92	659.77	414.70	245.07	2.692	Alert
17,250.00	9,185.00	17,142.63	9,185.00	123.35	123.04	-89.99	-8,141.20	550.21	659.77	413.51	246.27	2.679	Alert
17,300.00	9,185.00	17,207.37	9,185.00	124.06	123.95	-89.99	-8,191.20	550.49	659.77	411.90	247.88	2.662	Alert
17,350.00	9,185.00	17,242.63	9,185.00	124.76	124.44	-89.99	-8,241.20	550.78	659.78	410.70	249.08	2.649	Alert
17,400.00	9,185.00	17,307.37	9,185.00	125.46	125.35	-89.99	-8,291.20	551.06	659.78	409.09	250.70	2.632	Alert
17,450.00	9,185.00	17,342.63	9,185.00	126.17	125.85	-89.99	-8,341.19	551.35	659.78	407.89	251.90	2.619	Alert
17,500.00	9,185.00	17,407.37	9,185.00	126.87	126.76	-89.99	-8,391.19	551.63	659.79	406.27	253.51	2.603	Alert
17,550.00	9,185.00	17,442.63	9,185.00	127.58	127.26	-89.99	-8,441.19	551.92	659.79	405.07	254.72	2.590	Alert
17,600.00	9,185.00	17,507.37	9,185.00	128.28	128.17	-89.99	-8,491.19	552.20	659.79	403.46	256.33	2.574	Alert
17,650.00	9,185.00	17,542.63	9,185.00	128.99	128.67	-89.99	-8,541.19	552.49	659.79	402.26	257.54	2.562	Alert
17,700.00	9,185.00	17,592.63	9,185.00	129.69	129.37	-89.99	-8,591.19	552.77	659.80	400.85	258.95	2.548	Alert
17,750.00	9,185.00	17,642.63	9,185.00	130.40	130.08	-89.99	-8,641.19	553.06	659.80	399.44	260.36	2.534	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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
17,800.00	9,185.00	17,707.37	9,185.00	131.11	130.99	-89.99	-8,691.19	553.34	659.80	397.82	261.98	2.519	Alert	
17,850.00	9,185.00	17,742.63	9,185.00	131.81	131.49	-89.99	-8,741.19	553.63	659.81	396.62	263.18	2.507	Alert	
17,900.00	9,185.00	17,807.37	9,185.00	132.52	132.40	-89.99	-8,791.19	553.91	659.81	395.00	264.81	2.492	Minor Risk	
17,950.00	9,185.00	17,842.63	9,185.00	133.23	132.90	-89.99	-8,841.19	554.19	659.81	393.80	266.01	2.480	Minor Risk	
18,000.00	9,185.00	17,907.37	9,185.00	133.93	133.82	-89.99	-8,891.19	554.48	659.81	392.18	267.63	2.465	Minor Risk	
18,050.00	9,185.00	17,942.63	9,185.00	134.64	134.32	-89.99	-8,941.18	554.76	659.82	390.98	268.84	2.454	Minor Risk	
18,100.00	9,185.00	18,007.37	9,185.00	135.35	135.23	-89.99	-8,991.18	555.05	659.82	389.36	270.46	2.440	Minor Risk	
18,150.00	9,185.00	18,042.63	9,185.00	136.06	135.73	-89.99	-9,041.18	555.33	659.82	388.15	271.67	2.429	Minor Risk	
18,200.00	9,185.00	18,107.37	9,185.00	136.76	136.65	-89.99	-9,091.18	555.62	659.83	386.53	273.30	2.414	Minor Risk	
18,250.00	9,185.00	18,142.63	9,185.00	137.47	137.14	-89.99	-9,141.18	555.90	659.83	385.32	274.50	2.404	Minor Risk	
18,300.00	9,185.00	18,207.37	9,185.00	138.18	138.06	-89.99	-9,191.18	556.19	659.83	383.70	276.13	2.390	Minor Risk	
18,350.00	9,185.00	18,242.63	9,185.00	138.89	138.56	-89.99	-9,241.18	556.47	659.83	382.50	277.34	2.379	Minor Risk	
18,400.00	9,185.00	18,307.37	9,185.00	139.60	139.48	-89.99	-9,291.18	556.76	659.84	380.87	278.97	2.365	Minor Risk	
18,450.00	9,185.00	18,342.63	9,185.00	140.31	139.98	-89.99	-9,341.18	557.04	659.84	379.66	280.17	2.355	Minor Risk	
18,500.00	9,185.00	18,407.37	9,185.00	141.02	140.90	-89.99	-9,391.18	557.33	659.84	378.04	281.80	2.342	Minor Risk	
18,550.00	9,185.00	18,442.63	9,185.00	141.73	141.40	-89.99	-9,441.18	557.61	659.85	376.83	283.01	2.332	Minor Risk	
18,600.00	9,185.00	18,507.37	9,185.00	142.44	142.31	-89.99	-9,491.18	557.89	659.85	375.21	284.64	2.318	Minor Risk	
18,650.00	9,185.00	18,542.63	9,185.00	143.15	142.81	-89.99	-9,541.18	558.18	659.85	374.00	285.85	2.308	Minor Risk	
18,700.00	9,185.00	18,607.37	9,185.00	143.86	143.73	-89.99	-9,591.17	558.46	659.85	372.37	287.48	2.295	Minor Risk	
18,750.00	9,185.00	18,642.63	9,185.00	144.57	144.23	-89.99	-9,641.17	558.75	659.86	371.16	288.69	2.286	Minor Risk	
18,800.00	9,185.00	18,707.37	9,185.00	145.28	145.15	-89.99	-9,691.17	559.03	659.86	369.54	290.32	2.273	Minor Risk	
18,850.00	9,185.00	18,742.63	9,185.00	145.99	145.65	-89.99	-9,741.17	559.32	659.86	368.33	291.53	2.263	Minor Risk	
18,900.00	9,185.00	18,792.63	9,185.00	146.70	146.36	-89.99	-9,791.17	559.60	659.86	366.91	292.96	2.252	Minor Risk	
18,950.00	9,185.00	18,842.63	9,185.00	147.41	147.07	-89.99	-9,841.17	559.89	659.87	365.49	294.38	2.242	Minor Risk	
18,972.90	9,185.00	18,865.54	9,185.00	147.73	147.40	-89.99	-9,864.07	560.02	659.87	364.84	295.03	2.237	Minor Risk	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	1.30	1.30	0.50	0.50	-14.34	119.85	-30.64	123.70					
50.00	50.00	51.30	51.30	0.50	0.50	-14.34	119.85	-30.64	123.70	122.70	1.01	122.907		
100.00	100.00	101.30	101.30	0.52	0.52	-14.34	119.85	-30.64	123.70	122.67	1.04	119.430		
150.00	150.00	151.30	151.30	0.59	0.59	-14.34	119.85	-30.64	123.70	122.52	1.18	104.741		
200.00	200.00	201.30	201.30	0.70	0.70	-14.34	119.85	-30.64	123.70	122.30	1.40	88.049		
250.00	250.00	251.30	251.30	0.84	0.84	-14.34	119.85	-30.64	123.70	122.03	1.68	73.797		
300.00	300.00	301.30	301.30	0.99	0.99	-14.34	119.85	-30.64	123.70	121.73	1.98	62.616		
350.00	350.00	351.30	351.30	1.15	1.15	-14.34	119.85	-30.64	123.70	121.41	2.29	53.974		
400.00	400.00	401.30	401.30	1.31	1.31	-14.34	119.85	-30.64	123.70	121.09	2.62	47.230		
450.00	450.00	451.30	451.30	1.48	1.48	-14.34	119.85	-30.64	123.70	120.75	2.95	41.882		
500.00	500.00	501.30	501.30	1.65	1.65	-14.34	119.85	-30.64	123.70	120.41	3.29	37.564		
550.00	550.00	551.30	551.30	1.82	1.82	-14.34	119.85	-30.64	123.70	120.07	3.64	34.019		
600.00	600.00	601.30	601.30	1.99	1.99	-14.34	119.85	-30.64	123.70	119.72	3.98	31.064		
650.00	650.00	651.30	651.30	2.16	2.17	-14.34	119.85	-30.64	123.70	119.37	4.33	28.568		
700.00	700.00	701.30	701.30	2.34	2.34	-14.34	119.85	-30.64	123.70	119.03	4.68	26.434		
750.00	750.00	751.30	751.30	2.51	2.52	-14.34	119.85	-30.64	123.70	118.67	5.03	24.591		
800.00	800.00	801.30	801.30	2.69	2.69	-14.34	119.85	-30.64	123.70	118.32	5.38	22.984		
850.00	850.00	851.30	851.30	2.87	2.87	-14.34	119.85	-30.64	123.70	117.97	5.73	21.571		
900.00	900.00	901.30	901.30	3.04	3.04	-14.34	119.85	-30.64	123.70	117.62	6.09	20.319		
950.00	950.00	951.30	951.30	3.22	3.22	-14.34	119.85	-30.64	123.70	117.26	6.44	19.203		
1,000.00	1,000.00	1,001.30	1,001.30	3.40	3.40	-14.34	119.85	-30.64	123.70	116.91	6.80	18.202		
1,050.00	1,050.00	1,051.30	1,051.30	3.58	3.58	-14.34	119.85	-30.64	123.70	116.55	7.15	17.299		
1,100.00	1,100.00	1,101.30	1,101.30	3.75	3.75	-14.34	119.85	-30.64	123.70	116.20	7.51	16.480		
1,150.00	1,150.00	1,151.30	1,151.30	3.93	3.93	-14.34	119.85	-30.64	123.70	115.84	7.86	15.735		
1,200.00	1,200.00	1,201.30	1,201.30	4.11	4.11	-14.34	119.85	-30.64	123.70	115.49	8.22	15.054		
1,250.00	1,250.00	1,251.30	1,251.30	4.29	4.29	-14.34	119.85	-30.64	123.70	115.13	8.57	14.429		
1,300.00	1,300.00	1,301.30	1,301.30	4.46	4.47	-14.34	119.85	-30.64	123.70	114.78	8.93	13.854		
1,350.00	1,350.00	1,351.30	1,351.30	4.64	4.64	-14.34	119.85	-30.64	123.70	114.42	9.29	13.322		
1,400.00	1,400.00	1,401.30	1,401.30	4.82	4.82	-14.34	119.85	-30.64	123.70	114.06	9.64	12.830		
1,450.00	1,450.00	1,451.30	1,451.30	5.00	5.00	-14.34	119.85	-30.64	123.70	113.71	10.00	12.372		
1,500.00	1,500.00	1,501.30	1,501.30	5.18	5.18	-14.34	119.85	-30.64	123.70	113.35	10.36	11.946		
1,550.00	1,550.00	1,551.30	1,551.30	5.36	5.36	-14.34	119.85	-30.64	123.70	112.99	10.71	11.548		
1,600.00	1,600.00	1,601.30	1,601.30	5.53	5.54	-14.34	119.85	-30.64	123.70	112.64	11.07	11.175		
1,650.00	1,650.00	1,651.30	1,651.30	5.71	5.71	-14.34	119.85	-30.64	123.70	112.28	11.43	10.826		
1,700.00	1,700.00	1,701.30	1,701.30	5.89	5.89	-14.34	119.85	-30.64	123.70	111.92	11.78	10.498		
1,750.00	1,750.00	1,751.30	1,751.30	6.07	6.07	-14.34	119.85	-30.64	123.70	111.56	12.14	10.189		
1,800.00	1,800.00	1,801.30	1,801.30	6.25	6.25	-14.34	119.85	-30.64	123.70	111.21	12.50	9.898		
1,850.00	1,850.00	1,851.30	1,851.30	6.43	6.43	-14.34	119.85	-30.64	123.70	110.85	12.86	9.623		
1,900.00	1,900.00	1,901.30	1,901.30	6.61	6.61	-14.34	119.85	-30.64	123.70	110.49	13.21	9.363		
1,950.00	1,950.00	1,951.30	1,951.30	6.78	6.79	-14.34	119.85	-30.64	123.70	110.13	13.57	9.116		
2,000.00	2,000.00	2,001.30	2,001.30	6.96	6.96	-14.34	119.85	-30.64	123.70	109.78	13.93	8.882		
2,050.00	2,050.00	2,051.30	2,051.30	7.14	7.14	-14.34	119.85	-30.64	123.70	109.42	14.29	8.660		
2,100.00	2,100.00	2,101.30	2,101.30	7.32	7.32	-14.34	119.85	-30.64	123.70	109.06	14.64	8.448		
2,150.00	2,150.00	2,151.30	2,151.30	7.50	7.50	-14.34	119.85	-30.64	123.70	108.70	15.00	8.247		
2,200.00	2,200.00	2,201.30	2,201.30	7.68	7.68	-14.34	119.85	-30.64	123.70	108.35	15.36	8.055		
2,250.00	2,250.00	2,251.30	2,251.30	7.86	7.86	-14.34	119.85	-30.64	123.70	107.99	15.72	7.871		
2,300.00	2,300.00	2,301.30	2,301.30	8.04	8.04	-14.34	119.85	-30.64	123.70	107.63	16.07	7.696		
2,350.00	2,350.00	2,351.30	2,351.30	8.22	8.22	-14.34	119.85	-30.64	123.70	107.27	16.43	7.528		
2,400.00	2,400.00	2,401.30	2,401.30	8.39	8.40	-14.34	119.85	-30.64	123.70	106.92	16.79	7.368		
2,450.00	2,450.00	2,451.30	2,451.30	8.57	8.57	-14.34	119.85	-30.64	123.70	106.56	17.15	7.214		
2,500.00	2,500.00	2,501.30	2,501.30	8.75	8.75	-14.34	119.85	-30.64	123.70	106.20	17.51	7.067 CC		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,550.00	2,550.00	2,550.28	2,550.28	8.93	8.93	-14.22	120.11	-30.44	123.92	106.06	17.86	6.939	ES	
2,600.00	2,600.00	2,599.28	2,599.28	9.11	9.10	-13.88	120.88	-29.86	124.53	106.32	18.21	6.839		
2,650.00	2,650.00	2,648.24	2,648.20	9.29	9.28	-13.31	122.14	-28.90	125.55	106.99	18.56	6.765		
2,700.00	2,700.00	2,697.15	2,697.06	9.47	9.45	-12.54	123.90	-27.57	127.00	108.10	18.91	6.717		
2,750.00	2,750.00	2,745.99	2,745.82	9.65	9.62	-11.58	126.16	-25.86	128.90	109.64	19.26	6.694		
2,800.00	2,800.00	2,794.76	2,794.47	9.83	9.80	-10.45	128.91	-23.77	131.26	111.66	19.60	6.697		
2,850.00	2,850.00	2,843.43	2,842.97	10.00	9.97	-9.17	132.15	-21.32	134.11	114.17	19.94	6.725		
2,900.00	2,900.00	2,891.99	2,891.30	10.18	10.14	-7.75	135.87	-18.50	137.48	117.20	20.28	6.779		
2,950.00	2,950.00	2,940.42	2,939.44	10.36	10.31	-6.24	140.06	-15.32	141.40	120.78	20.62	6.858		
3,000.00	3,000.00	2,988.71	2,987.38	10.54	10.49	-4.65	144.73	-11.78	145.88	124.92	20.95	6.963		
3,050.00	3,050.00	3,036.95	3,035.18	10.72	10.66	-3.01	149.88	-7.88	150.95	129.66	21.28	7.093		
3,100.00	3,100.00	3,086.46	3,084.21	10.90	10.84	-1.37	155.37	-3.72	156.35	134.72	21.63	7.227		
3,150.00	3,150.00	3,135.98	3,133.25	11.08	11.02	0.16	160.86	0.44	161.87	139.89	21.98	7.363		
3,200.00	3,200.00	3,185.49	3,182.28	11.26	11.20	1.59	166.35	4.61	167.50	145.16	22.34	7.499		
3,250.00	3,250.00	3,235.00	3,231.31	11.44	11.38	2.92	171.84	8.77	173.22	150.54	22.69	7.635		
3,300.00	3,300.00	3,284.52	3,280.34	11.62	11.56	4.17	177.34	12.93	179.04	156.00	23.04	7.770		
3,350.00	3,350.00	3,334.03	3,329.37	11.80	11.74	5.34	182.83	17.09	184.93	161.53	23.40	7.905		
3,400.00	3,400.00	3,383.54	3,378.40	11.97	11.92	6.44	188.32	21.25	190.89	167.14	23.75	8.038		
3,450.00	3,450.00	3,433.06	3,427.43	12.15	12.10	7.47	193.81	25.42	196.92	172.82	24.10	8.170		
3,500.00	3,500.00	3,482.57	3,476.47	12.33	12.29	8.44	199.30	29.58	203.01	178.55	24.46	8.301		
3,550.00	3,550.00	3,532.08	3,525.50	12.51	12.47	9.36	204.79	33.74	209.15	184.34	24.81	8.430		
3,600.00	3,600.00	3,581.60	3,574.53	12.69	12.65	10.22	210.29	37.90	215.35	190.18	25.17	8.557		
3,650.00	3,650.00	3,631.11	3,623.56	12.87	12.84	11.03	215.78	42.07	221.58	196.06	25.52	8.682		
3,700.00	3,700.00	3,680.62	3,672.59	13.05	13.02	11.80	221.27	46.23	227.86	201.99	25.88	8.806		
3,750.00	3,750.00	3,730.14	3,721.62	13.23	13.21	12.53	226.76	50.39	234.18	207.95	26.23	8.927		
3,800.00	3,800.00	3,779.65	3,770.66	13.41	13.39	13.22	232.25	54.55	240.53	213.95	26.59	9.047		
3,850.00	3,850.00	3,829.16	3,819.69	13.59	13.58	13.87	237.74	58.72	246.92	219.98	26.94	9.164		
3,900.00	3,900.00	3,878.68	3,868.72	13.77	13.77	14.49	243.24	62.88	253.34	226.04	27.30	9.280		
3,950.00	3,950.00	3,928.19	3,917.75	13.94	13.95	15.08	248.73	67.04	259.78	232.12	27.66	9.393		
4,000.00	4,000.00	3,977.70	3,966.78	14.12	14.14	15.65	254.22	71.20	266.25	238.24	28.01	9.505		
4,050.00	4,050.00	4,027.22	4,015.82	14.30	14.33	16.05	259.71	75.37	272.61	244.24	28.37	9.610		
4,100.00	4,099.99	4,076.74	4,064.86	14.48	14.52	16.24	265.20	79.53	278.74	250.02	28.72	9.705		
4,150.00	4,149.97	4,126.27	4,113.90	14.66	14.71	16.90	270.70	83.69	284.65	255.57	29.08	9.790		
4,200.00	4,199.94	4,175.78	4,162.93	14.83	14.89	17.63	276.19	87.86	290.35	260.92	29.43	9.866		
4,250.00	4,249.88	4,226.27	4,212.94	15.01	15.09	18.34	281.77	92.09	295.84	266.05	29.79	9.929		
4,300.00	4,299.79	4,279.82	4,266.04	15.19	15.29	18.96	287.27	96.25	300.70	270.51	30.20	9.958		
4,350.00	4,349.70	4,333.53	4,319.39	15.36	15.49	19.56	292.18	99.98	304.92	274.33	30.60	9.966		
4,400.00	4,399.60	4,387.39	4,372.98	15.54	15.69	20.10	296.51	103.26	308.53	277.54	30.99	9.955		
4,450.00	4,449.51	4,441.39	4,426.77	15.72	15.89	20.68	300.24	106.09	311.51	280.13	31.38	9.926		
4,500.00	4,499.41	4,495.49	4,480.73	15.90	16.09	21.23	303.37	108.46	313.85	282.08	31.77	9.879		
4,550.00	4,549.32	4,549.68	4,534.82	16.07	16.29	21.73	305.90	110.37	315.56	283.40	32.15	9.814		
4,600.00	4,599.23	4,603.93	4,589.02	16.25	16.49	22.19	307.82	111.83	316.61	284.08	32.53	9.733		
4,650.00	4,649.13	4,658.23	4,643.29	16.43	16.68	22.60	309.12	112.82	317.00	284.10	32.90	9.635		
4,700.00	4,699.04	4,712.55	4,697.61	16.61	16.87	22.97	309.81	113.34	316.73	283.46	33.27	9.520		
4,750.00	4,748.95	4,765.19	4,750.25	16.79	17.06	23.30	309.93	113.43	315.84	282.21	33.63	9.392		
4,800.00	4,798.85	4,815.10	4,800.15	16.96	17.23	23.57	309.93	113.43	314.84	280.86	33.98	9.265		
4,850.00	4,848.76	4,865.00	4,850.06	17.14	17.41	23.80	309.93	113.43	313.87	279.54	34.34	9.141		
4,900.00	4,898.67	4,914.91	4,899.97	17.32	17.58	23.99	309.93	113.43	312.93	278.24	34.69	9.021		
4,950.00	4,948.57	4,964.81	4,949.87	17.50	17.76	24.16	309.93	113.43	312.01	276.97	35.04	8.903		
5,000.00	4,998.48	5,014.72	4,999.78	17.68	17.93	24.30	309.93	113.43	311.12	275.72	35.40	8.789		
5,050.00	5,048.39	5,064.63	5,049.69	17.86	18.11	24.44	309.93	113.43	310.26	274.51	35.75	8.678		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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: O-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.00	5,098.29	5,114.53	5,099.59	18.04	18.28	74.48	309.93	113.43	309.43	273.32	36.11	8.569		
5,150.00	5,148.20	5,164.44	5,149.50	18.22	18.46	75.03	309.93	113.43	308.62	272.16	36.47	8.464		
5,200.00	5,198.11	5,214.35	5,199.41	18.39	18.64	75.58	309.93	113.43	307.85	271.03	36.82	8.361		
5,250.00	5,248.01	5,264.25	5,249.31	18.57	18.81	76.13	309.93	113.43	307.10	269.92	37.18	8.261		
5,300.00	5,297.92	5,314.16	5,299.22	18.75	18.99	76.68	309.93	113.43	306.38	268.85	37.53	8.163		
5,350.00	5,347.82	5,364.07	5,349.12	18.93	19.16	77.24	309.93	113.43	305.69	267.80	37.89	8.068		
5,400.00	5,397.73	5,413.97	5,399.03	19.11	19.34	77.80	309.93	113.43	305.03	266.78	38.24	7.976		
5,450.00	5,447.64	5,463.88	5,448.94	19.29	19.52	78.36	309.93	113.43	304.39	265.79	38.60	7.886		
5,500.00	5,497.54	5,513.79	5,498.84	19.47	19.69	78.92	309.93	113.43	303.79	264.83	38.96	7.798		
5,550.00	5,547.45	5,563.69	5,548.75	19.65	19.87	79.49	309.93	113.43	303.22	263.90	39.31	7.713		
5,600.00	5,597.36	5,613.60	5,598.66	19.83	20.04	80.06	309.93	113.43	302.67	263.00	39.67	7.630		
5,650.00	5,647.26	5,663.51	5,648.56	20.01	20.22	80.63	309.93	113.43	302.16	262.13	40.03	7.549		
5,700.00	5,697.17	5,713.41	5,698.47	20.19	20.40	81.20	309.93	113.43	301.68	261.29	40.38	7.470		
5,750.00	5,747.08	5,763.32	5,748.38	20.37	20.57	81.77	309.93	113.43	301.22	260.48	40.74	7.394		
5,800.00	5,796.98	5,813.22	5,798.28	20.55	20.75	82.35	309.93	113.43	300.80	259.70	41.10	7.319		
5,850.00	5,846.89	5,863.13	5,848.19	20.73	20.92	82.92	309.93	113.43	300.41	258.95	41.45	7.247		
5,900.00	5,896.80	5,913.04	5,898.10	20.91	21.10	83.50	309.93	113.43	300.05	258.24	41.81	7.176		
5,950.00	5,946.70	5,962.94	5,948.00	21.09	21.28	84.08	309.93	113.43	299.71	257.55	42.17	7.108		
6,000.00	5,996.61	6,012.85	5,997.91	21.27	21.45	84.66	309.93	113.43	299.41	256.89	42.53	7.041		
6,050.00	6,046.52	6,062.76	6,047.82	21.45	21.63	85.24	309.93	113.43	299.14	256.26	42.88	6.976		
6,100.00	6,096.42	6,112.66	6,097.72	21.63	21.81	85.83	309.93	113.43	298.91	255.67	43.24	6.913		
6,150.00	6,146.33	6,162.57	6,147.63	21.81	21.98	86.41	309.93	113.43	298.70	255.10	43.60	6.851		
6,200.00	6,196.23	6,212.48	6,197.53	21.99	22.16	87.00	309.93	113.43	298.52	254.57	43.96	6.792		
6,250.00	6,246.14	6,262.38	6,247.44	22.17	22.34	87.58	309.93	113.43	298.38	254.07	44.31	6.733		
6,300.00	6,296.05	6,312.29	6,297.35	22.35	22.51	88.17	309.93	113.43	298.26	253.59	44.67	6.677		
6,350.00	6,345.95	6,362.20	6,347.25	22.53	22.69	88.75	309.93	113.43	298.18	253.15	45.03	6.622		
6,400.00	6,395.86	6,412.10	6,397.16	22.71	22.87	89.34	309.93	113.43	298.13	252.74	45.39	6.569		
6,450.00	6,445.77	6,462.01	6,447.07	22.89	23.04	89.92	309.93	113.43	298.11	252.37	45.74	6.517		
6,456.42	6,452.18	6,468.42	6,453.48	22.92	23.07	90.00	309.93	113.43	298.11	252.32	45.79	6.510		
6,500.00	6,495.67	6,511.92	6,496.97	23.07	23.22	90.51	309.93	113.43	298.12	252.02	46.10	6.466		
6,550.00	6,545.58	6,561.82	6,546.88	23.25	23.40	91.10	309.93	113.43	298.17	251.71	46.46	6.418		
6,600.00	6,595.49	6,611.73	6,596.79	23.43	23.58	91.68	309.93	113.43	298.24	251.42	46.82	6.370		
6,650.00	6,645.39	6,661.63	6,646.69	23.62	23.75	92.27	309.93	113.43	298.35	251.17	47.18	6.324		
6,700.00	6,695.30	6,711.54	6,696.60	23.80	23.93	92.85	309.93	113.43	298.48	250.95	47.54	6.279		
6,750.00	6,745.21	6,761.45	6,746.51	23.98	24.11	93.44	309.93	113.43	298.65	250.76	47.89	6.236		
6,800.00	6,795.11	6,811.35	6,796.41	24.16	24.28	94.02	309.93	113.43	298.85	250.60	48.25	6.193		
6,850.00	6,845.02	6,861.26	6,846.32	24.34	24.46	94.61	309.93	113.43	299.08	250.47	48.61	6.153		
6,900.00	6,894.93	6,911.17	6,899.23	24.52	24.64	95.19	309.93	113.43	299.34	250.37	48.97	6.113		
6,950.00	6,944.83	6,961.07	6,946.13	24.70	24.81	95.77	309.93	113.43	299.63	250.31	49.33	6.074		
7,000.00	6,994.74	7,010.98	6,996.04	24.88	24.99	96.35	309.93	113.43	299.96	250.27	49.69	6.037		
7,050.00	7,044.65	7,060.89	7,045.95	25.06	25.17	96.93	309.93	113.43	300.31	250.27	50.04	6.001		
7,100.00	7,094.55	7,110.79	7,095.85	25.24	25.35	97.50	309.93	113.43	300.70	250.29	50.40	5.966		
7,150.00	7,144.46	7,160.70	7,145.76	25.43	25.52	98.08	309.93	113.43	301.11	250.35	50.76	5.932		
7,200.00	7,194.36	7,210.61	7,195.66	25.61	25.70	98.65	309.93	113.43	301.56	250.44	51.12	5.899		
7,250.00	7,244.27	7,260.51	7,245.57	25.79	25.88	99.23	309.93	113.43	302.03	250.55	51.48	5.867		
7,300.00	7,294.18	7,310.42	7,295.48	25.97	26.06	99.80	309.93	113.43	302.54	250.70	51.84	5.836		
7,350.00	7,344.08	7,360.33	7,345.38	26.15	26.23	100.36	309.93	113.43	303.08	250.88	52.20	5.806		
7,400.00	7,393.99	7,410.23	7,395.29	26.33	26.41	100.93	309.93	113.43	303.64	251.09	52.56	5.778		
7,450.00	7,443.90	7,460.14	7,445.20	26.51	26.59	101.50	309.93	113.43	304.24	251.32	52.91	5.750		
7,500.00	7,493.80	7,510.05	7,495.10	26.69	26.77	102.06	309.93	113.43	304.86	251.59	53.27	5.723		
7,550.00	7,543.71	7,559.95	7,545.01	26.88	26.94	102.62	309.93	113.43	305.52	251.88	53.63	5.697		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
7,600.00	7,593.62	7,609.86	7,594.92	27.06	27.12	103.17	309.93	113.43	306.20	252.21	53.99	5.671		
7,650.00	7,643.52	7,659.76	7,644.82	27.24	27.30	103.73	309.93	113.43	306.91	252.56	54.35	5.647		
7,700.00	7,693.43	7,709.68	7,694.73	27.42	27.47	104.27	309.93	113.43	307.63	252.92	54.71	5.623		
7,750.00	7,743.38	7,759.62	7,744.68	27.60	27.65	104.71	309.93	113.43	308.22	253.16	55.07	5.597		
7,800.00	7,793.35	7,809.59	7,794.65	27.78	27.83	105.02	309.93	113.43	308.67	253.24	55.42	5.569		
7,850.00	7,843.34	7,859.58	7,844.64	27.96	28.01	105.22	309.93	113.43	308.95	253.17	55.78	5.539		
7,900.00	7,893.33	7,909.58	7,894.63	28.14	28.19	105.29	309.93	113.43	309.05	252.92	56.14	5.505		
7,950.00	7,943.33	7,959.58	7,944.63	28.31	28.36	60.80	309.93	113.43	309.06	252.56	56.49	5.471		
8,000.00	7,993.33	8,009.58	7,994.63	28.49	28.54	60.80	309.93	113.43	309.06	252.21	56.85	5.436		
8,050.00	8,043.33	8,059.58	8,044.63	28.67	28.72	60.80	309.93	113.43	309.06	251.85	57.21	5.403		
8,100.00	8,093.33	8,109.58	8,094.63	28.85	28.90	60.80	309.93	113.43	309.06	251.49	57.56	5.369		
8,150.00	8,143.33	8,159.58	8,144.63	29.03	29.08	60.80	309.93	113.43	309.06	251.14	57.92	5.336		
8,200.00	8,193.33	8,209.58	8,194.63	29.20	29.25	60.80	309.93	113.43	309.06	250.78	58.27	5.303		
8,250.00	8,243.33	8,259.58	8,244.63	29.38	29.43	60.80	309.93	113.43	309.06	250.43	58.63	5.271		
8,300.00	8,293.33	8,309.58	8,294.63	29.56	29.61	60.80	309.93	113.43	309.06	250.07	58.99	5.239		
8,350.00	8,343.33	8,359.58	8,344.63	29.74	29.79	60.80	309.93	113.43	309.06	249.71	59.34	5.208		
8,400.00	8,393.33	8,409.58	8,394.63	29.91	29.97	60.80	309.93	113.43	309.06	249.36	59.70	5.177		
8,450.00	8,443.33	8,459.58	8,444.63	30.09	30.14	60.80	309.93	113.43	309.06	249.00	60.06	5.146		
8,500.00	8,493.33	8,509.58	8,494.63	30.27	30.32	60.80	309.93	113.43	309.06	248.64	60.41	5.116		
8,550.00	8,543.33	8,559.58	8,544.63	30.45	30.50	60.80	309.93	113.43	309.06	248.29	60.77	5.086		
8,600.00	8,593.33	8,609.58	8,594.63	30.63	30.68	60.80	309.93	113.43	309.06	247.93	61.13	5.056		
8,650.00	8,593.33	8,609.58	8,594.63	30.63	30.68	60.80	309.93	113.43	309.06	247.93	61.13	5.056		
8,650.00	8,643.32	8,659.56	8,644.62	30.80	30.86	-118.98	309.93	113.43	309.47	247.99	61.48	5.034 SF		
8,700.00	8,693.06	8,709.30	8,694.36	30.96	31.03	-119.55	309.93	113.43	311.88	250.07	61.81	5.048		
8,750.00	8,742.19	8,758.43	8,743.49	31.11	31.21	-120.58	309.93	113.43	316.56	254.42	62.14	5.094		
8,800.00	8,790.32	8,806.57	8,791.62	31.26	31.38	-121.96	309.93	113.43	323.75	261.29	62.46	5.184		
8,850.00	8,837.10	8,853.34	8,838.40	31.39	31.55	-123.57	309.93	113.43	333.74	270.98	62.77	5.317		
8,900.00	8,882.17	8,901.59	8,883.47	31.52	31.72	-125.25	309.93	113.43	346.84	283.76	63.07	5.499		
8,950.00	8,925.18	8,941.42	8,926.48	31.64	31.86	-126.87	309.93	113.43	363.31	299.97	63.34	5.736		
9,000.00	8,965.81	8,982.05	8,967.11	31.75	32.00	-128.28	309.93	113.43	383.35	319.74	63.60	6.027		
9,050.00	9,003.74	9,019.98	9,005.04	31.85	32.14	-129.35	309.93	113.43	407.05	343.20	63.85	6.376		
9,100.00	9,038.70	9,054.94	9,040.00	31.94	32.26	-129.96	309.93	113.43	434.39	370.32	64.07	6.780		
9,150.00	9,070.40	9,086.64	9,071.70	32.06	32.38	-130.00	309.93	113.43	465.23	400.97	64.26	7.240		
9,200.00	9,098.62	9,114.86	9,099.92	32.18	32.48	-129.31	309.93	113.43	499.37	434.93	64.43	7.750		
9,250.00	9,123.14	9,139.38	9,124.44	32.30	32.57	-127.73	309.93	113.43	536.50	471.92	64.58	8.308		
9,300.00	9,143.76	9,160.00	9,145.06	32.43	32.64	-125.00	309.93	113.43	576.27	511.57	64.70	8.907		
9,350.00	9,160.34	9,176.58	9,161.64	32.56	32.70	-120.80	309.93	113.43	618.29	553.50	64.79	9.543		
9,400.00	9,172.75	9,188.99	9,174.05	32.70	32.74	-114.67	309.93	113.43	662.17	597.31	64.86	10.209		
9,450.00	9,180.88	9,202.87	9,182.18	32.83	32.79	-106.12	309.93	113.43	707.47	642.54	64.92	10.897		
9,500.00	9,184.69	9,200.94	9,185.99	32.97	32.79	-94.85	309.93	113.43	753.76	688.83	64.92	11.610		
9,550.00	9,185.00	9,201.24	9,186.30	33.12	32.79	-90.00	309.93	113.43	800.62	735.69	64.93	12.331		
9,600.00	9,185.00	9,201.24	9,186.30	33.28	32.79	-90.00	309.93	113.43	847.84	782.91	64.93	13.058		
9,650.00	9,185.00	9,201.24	9,186.30	33.46	32.79	-90.00	309.93	113.43	895.37	830.44	64.94	13.789		
9,700.00	9,185.00	9,201.24	9,186.30	33.64	32.79	-90.00	309.93	113.43	943.15	878.21	64.94	14.524		
9,750.00	9,185.00	9,201.24	9,186.30	33.85	32.79	-90.00	309.93	113.43	991.15	926.21	64.94	15.262		
9,800.00	9,185.00	9,201.24	9,186.30	34.05	32.79	-90.00	309.93	113.43	1,039.34	974.40	64.95	16.003		
9,850.00	9,185.00	9,201.24	9,186.30	34.29	32.79	-90.00	309.93	113.43	1,087.70	1,022.74	64.95	16.745		
9,900.00	9,185.00	9,201.24	9,186.30	34.53	32.79	-90.00	309.93	113.43	1,136.19	1,071.23	64.96	17.491		
9,950.00	9,185.00	9,201.24	9,186.30	34.79	32.79	-90.00	309.93	113.43	1,184.81	1,119.85	64.97	18.237		
10,000.00	9,185.00	9,201.24	9,186.30	35.06	32.79	-90.00	309.93	113.43	1,233.54	1,168.57	64.97	18.986		
10,050.00	9,185.00	9,201.24	9,186.30	35.35	32.79	-90.00	309.93	113.43	1,282.37	1,217.39	64.98	19.735		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,100.00	9,185.00	9,201.24	9,186.30	35.64	32.79	-90.00	309.93	113.43	1,331.29	1,266.30	64.99	20.486		
10,150.00	9,185.00	9,201.24	9,186.30	35.95	32.79	-90.00	309.93	113.43	1,380.28	1,315.29	64.99	21.238		
10,200.00	9,185.00	9,201.24	9,186.30	36.27	32.79	-90.00	309.93	113.43	1,429.35	1,364.35	65.00	21.990		
10,250.00	9,185.00	9,201.24	9,186.30	36.61	32.79	-90.00	309.93	113.43	1,478.47	1,413.46	65.01	22.743		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,700.00	4,699.04	4,816.70	4,815.21	16.61	16.74	-41.70	130.50	-1,511.67	1,497.94	1,464.73	33.21	45.102		
4,750.00	4,748.95	4,866.37	4,864.58	16.79	16.91	-41.67	133.11	-1,506.88	1,491.03	1,457.47	33.56	44.430		
4,800.00	4,798.85	4,916.29	4,914.19	16.96	17.08	-41.63	135.83	-1,502.02	1,484.10	1,450.19	33.91	43.770		
4,850.00	4,848.76	4,964.40	4,962.00	17.14	17.25	-41.59	138.43	-1,497.37	1,477.18	1,442.93	34.25	43.128		
4,900.00	4,898.67	5,011.88	5,009.20	17.32	17.41	-41.55	140.95	-1,492.82	1,470.32	1,435.73	34.59	42.501		
4,950.00	4,948.57	5,057.73	5,054.76	17.50	17.57	-41.51	143.69	-1,488.51	1,463.56	1,428.63	34.94	41.893		
5,000.00	4,998.48	5,104.88	5,101.60	17.68	17.73	-41.44	146.96	-1,484.16	1,456.93	1,421.65	35.28	41.297		
5,050.00	5,048.39	5,156.93	5,153.28	17.86	17.91	-41.36	150.81	-1,479.32	1,450.28	1,414.64	35.63	40.702		
5,100.00	5,098.29	5,206.17	5,202.16	18.04	18.08	-41.27	154.54	-1,474.67	1,443.56	1,407.58	35.98	40.122		
5,150.00	5,148.20	5,251.31	5,246.98	18.22	18.24	-41.20	157.93	-1,470.51	1,436.95	1,400.63	36.32	39.564		
5,200.00	5,198.11	5,298.73	5,294.08	18.39	18.40	-41.12	161.42	-1,466.27	1,430.49	1,393.82	36.66	39.015		
5,250.00	5,248.01	5,351.35	5,346.32	18.57	18.59	-41.02	165.56	-1,461.51	1,423.98	1,386.96	37.02	38.466		
5,300.00	5,297.92	5,403.81	5,398.36	18.75	18.77	-40.91	170.04	-1,456.61	1,417.37	1,380.00	37.37	37.924		
5,350.00	5,347.82	5,456.13	5,450.23	18.93	18.96	-40.79	174.70	-1,451.61	1,410.67	1,372.94	37.73	37.390		
5,400.00	5,397.73	5,503.94	5,497.62	19.11	19.13	-40.67	179.05	-1,446.99	1,403.92	1,365.85	38.08	36.872		
5,450.00	5,447.64	5,549.85	5,543.13	19.29	19.29	-40.56	183.17	-1,442.67	1,397.30	1,358.88	38.42	36.369		
5,500.00	5,497.54	5,597.72	5,590.61	19.47	19.46	-40.45	187.43	-1,438.27	1,390.79	1,352.03	38.77	35.874		
5,550.00	5,547.45	5,646.75	5,639.24	19.65	19.63	-40.33	191.84	-1,433.77	1,384.31	1,345.19	39.12	35.387		
5,600.00	5,597.36	5,694.40	5,686.49	19.83	19.80	-40.21	196.18	-1,429.44	1,377.87	1,338.41	39.47	34.912		
5,650.00	5,647.26	5,741.51	5,733.21	20.01	19.97	-40.09	200.52	-1,425.23	1,371.52	1,331.71	39.82	34.447		
5,700.00	5,697.17	5,788.82	5,780.14	20.19	20.14	-39.97	204.91	-1,421.07	1,365.27	1,325.10	40.16	33.992		
5,750.00	5,747.08	5,836.24	5,827.17	20.37	20.31	-39.84	209.31	-1,416.99	1,359.09	1,318.58	40.51	33.547		
5,800.00	5,796.98	5,888.57	5,879.09	20.55	20.50	-39.71	214.11	-1,412.49	1,352.93	1,312.06	40.87	33.102		
5,850.00	5,846.89	5,942.69	5,932.78	20.73	20.69	-39.57	218.88	-1,407.69	1,346.62	1,305.39	41.23	32.659		
5,900.00	5,896.80	6,010.41	5,999.95	20.91	20.94	-39.41	224.47	-1,401.14	1,339.90	1,298.29	41.61	32.199		
5,950.00	5,946.70	6,065.25	6,054.32	21.09	21.13	-39.30	228.66	-1,395.29	1,332.65	1,290.67	41.97	31.749		
6,000.00	5,996.61	6,110.65	6,099.35	21.27	21.30	-39.21	231.93	-1,390.52	1,325.47	1,283.14	42.32	31.318		
6,050.00	6,046.52	6,155.37	6,143.73	21.45	21.46	-39.13	234.99	-1,385.99	1,318.45	1,275.78	42.67	30.897		
6,100.00	6,096.42	6,199.43	6,187.49	21.63	21.62	-39.05	237.91	-1,381.71	1,311.63	1,268.61	43.02	30.490		
6,150.00	6,146.33	6,245.24	6,233.00	21.81	21.79	-38.98	240.86	-1,377.44	1,305.01	1,261.64	43.37	30.091		
6,200.00	6,196.23	6,293.88	6,281.34	21.99	21.97	-38.91	243.94	-1,372.99	1,298.46	1,254.74	43.72	29.698		
6,250.00	6,246.14	6,347.66	6,334.79	22.17	22.16	-38.83	247.23	-1,368.07	1,291.90	1,247.82	44.08	29.306		
6,300.00	6,296.05	6,408.37	6,395.12	22.35	22.38	-38.75	250.46	-1,362.14	1,285.00	1,240.54	44.45	28.907		
6,350.00	6,345.95	6,456.90	6,443.35	22.53	22.56	-38.71	252.73	-1,357.20	1,277.86	1,233.05	44.81	28.519		
6,400.00	6,395.86	6,503.46	6,489.63	22.71	22.73	-38.67	254.84	-1,352.58	1,270.83	1,225.67	45.16	28.141		
6,450.00	6,445.77	6,549.50	6,535.41	22.89	22.90	-38.63	256.91	-1,348.13	1,263.93	1,218.42	45.51	27.772		
6,500.00	6,495.67	6,595.47	6,581.13	23.07	23.07	-38.59	258.99	-1,343.81	1,257.16	1,211.30	45.86	27.412		
6,550.00	6,545.58	6,645.47	6,630.86	23.25	23.25	-38.55	261.21	-1,339.20	1,250.48	1,204.26	46.22	27.056		
6,600.00	6,595.49	6,696.50	6,681.63	23.43	23.44	-38.52	263.23	-1,334.47	1,243.74	1,197.16	46.58	26.703		
6,650.00	6,645.39	6,775.99	6,760.67	23.62	23.73	-38.52	265.25	-1,326.26	1,236.41	1,189.45	46.95	26.332		
6,700.00	6,695.30	6,842.19	6,826.38	23.80	23.98	-38.57	265.82	-1,318.21	1,228.04	1,180.73	47.31	25.957		
6,750.00	6,745.21	6,904.21	6,887.84	23.98	24.21	-38.60	266.48	-1,309.96	1,219.14	1,171.47	47.66	25.579		
6,800.00	6,795.11	6,937.44	6,920.79	24.16	24.33	-38.61	267.06	-1,305.69	1,210.44	1,162.42	48.02	25.207		
6,850.00	6,845.02	6,976.46	6,959.50	24.34	24.48	-38.61	267.98	-1,300.92	1,202.14	1,153.77	48.38	24.850		
6,900.00	6,894.93	7,027.33	7,010.00	24.52	24.67	-38.60	269.40	-1,294.89	1,194.06	1,145.33	48.73	24.503		
6,950.00	6,944.83	7,080.53	7,062.78	24.70	24.87	-38.58	270.89	-1,288.42	1,185.83	1,136.74	49.09	24.158		
7,000.00	6,994.74	7,113.17	7,095.19	24.88	24.99	-38.58	271.79	-1,284.65	1,177.88	1,128.44	49.44	23.824		
7,050.00	7,044.65	7,146.88	7,128.71	25.06	25.11	-38.58	272.71	-1,281.20	1,170.60	1,120.81	49.79	23.512		
7,100.00	7,094.55	7,182.89	7,164.57	25.24	25.24	-38.58	273.67	-1,278.00	1,163.97	1,113.84	50.13	23.218		
7,150.00	7,144.46	7,226.33	7,207.84	25.43	25.40	-38.57	275.04	-1,274.45	1,157.72	1,107.24	50.48	22.934		
7,200.00	7,194.36	7,270.10	7,251.45	25.61	25.56	-38.55	276.71	-1,271.07	1,151.74	1,100.91	50.83	22.659		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,250.00	7,244.27	7,317.90	7,299.08	25.79	25.74	-38.52	278.65	-1,267.52	1,145.92	1,094.73	51.18	22.389		
7,300.00	7,294.18	7,365.72	7,346.73	25.97	25.91	-38.50	280.56	-1,264.05	1,140.18	1,088.64	51.54	22.123		
7,350.00	7,344.08	7,410.62	7,391.49	26.15	26.08	-38.48	282.24	-1,260.94	1,134.58	1,082.70	51.89	21.867		
7,400.00	7,393.99	7,455.77	7,436.52	26.33	26.24	-38.47	283.77	-1,258.02	1,129.19	1,076.96	52.24	21.617		
7,450.00	7,443.90	7,503.08	7,483.71	26.51	26.41	-38.47	285.27	-1,255.12	1,123.96	1,071.37	52.59	21.373		
7,500.00	7,493.80	7,550.46	7,530.99	26.69	26.59	-38.47	286.71	-1,252.32	1,118.82	1,065.88	52.94	21.133		
7,550.00	7,543.71	7,597.98	7,578.42	26.88	26.76	-38.48	288.09	-1,249.62	1,113.79	1,060.50	53.29	20.899		
7,600.00	7,593.62	7,645.53	7,625.88	27.06	26.93	-38.49	289.40	-1,247.02	1,108.86	1,055.22	53.65	20.670		
7,650.00	7,643.52	7,692.88	7,673.15	27.24	27.10	-38.50	290.64	-1,244.53	1,104.03	1,050.04	54.00	20.446		
7,700.00	7,693.43	7,740.26	7,720.45	27.42	27.27	-38.49	291.84	-1,242.16	1,099.39	1,045.04	54.35	20.228		
7,750.00	7,743.38	7,785.07	7,765.20	27.60	27.43	-38.45	292.90	-1,240.08	1,095.37	1,040.68	54.69	20.027		
7,800.00	7,793.35	7,829.95	7,810.03	27.78	27.59	-38.41	293.89	-1,238.21	1,092.09	1,037.05	55.04	19.842		
7,850.00	7,843.34	7,877.64	7,857.67	27.96	27.76	-38.36	294.85	-1,236.40	1,089.49	1,034.10	55.39	19.670		
7,900.00	7,893.33	7,925.70	7,905.69	28.14	27.94	-38.29	295.75	-1,234.67	1,087.50	1,031.76	55.74	19.510		
7,950.00	7,943.33	7,972.59	7,952.55	28.31	28.10	-82.73	296.59	-1,233.09	1,085.94	1,029.85	56.09	19.361		
8,000.00	7,993.33	8,019.37	7,999.30	28.49	28.27	-82.67	297.46	-1,231.65	1,084.53	1,028.09	56.43	19.218		
8,050.00	8,043.33	8,065.15	8,045.06	28.67	28.43	-82.62	298.30	-1,230.39	1,083.29	1,026.51	56.78	19.080		
8,100.00	8,093.33	8,110.84	8,090.73	28.85	28.59	-82.57	299.05	-1,229.34	1,082.25	1,025.13	57.12	18.947		
8,150.00	8,143.33	8,158.97	8,138.84	29.03	28.76	-82.53	299.80	-1,228.38	1,081.36	1,023.89	57.47	18.817		
8,200.00	8,193.33	8,207.63	8,187.49	29.20	28.94	-82.48	300.54	-1,227.47	1,080.53	1,022.72	57.82	18.689		
8,250.00	8,243.33	8,253.41	8,233.26	29.38	29.10	-82.44	301.18	-1,226.73	1,079.83	1,021.67	58.16	18.567		
8,300.00	8,293.33	8,298.84	8,278.68	29.56	29.26	-82.41	301.67	-1,226.22	1,079.34	1,020.84	58.50	18.452		
8,350.00	8,343.33	8,348.18	8,328.02	29.74	29.43	-82.39	302.03	-1,225.82	1,078.98	1,020.14	58.85	18.335		
8,400.00	8,393.33	8,398.50	8,378.34	29.91	29.61	-82.38	302.27	-1,225.42	1,078.62	1,019.42	59.20	18.219		
8,450.00	8,443.33	8,446.37	8,426.21	30.09	29.77	-82.36	302.45	-1,225.08	1,078.29	1,018.75	59.55	18.108		
8,500.00	8,493.33	8,494.00	8,473.83	30.27	29.94	-82.35	302.69	-1,224.83	1,078.08	1,018.18	59.89	18.000		
8,550.00	8,543.33	8,540.59	8,520.42	30.45	30.10	-82.33	303.10	-1,224.68	1,077.97	1,017.74	60.23	17.897		
8,550.57	8,543.90	8,541.07	8,520.90	30.45	30.10	-82.33	303.11	-1,224.68	1,077.97	1,017.73	60.23	17.896 CC		
8,600.00	8,593.33	8,589.02	8,568.85	30.63	30.27	-82.29	303.83	-1,224.60	1,077.99	1,017.42	60.58	17.796		
8,650.00	8,643.32	8,640.77	8,620.59	30.80	30.44	98.11	304.62	-1,224.52	1,078.13	1,017.21	60.93	17.696 ES		
8,700.00	8,693.06	8,691.21	8,671.03	30.98	30.62	98.34	305.20	-1,224.41	1,078.81	1,017.55	61.26	17.611		
8,750.00	8,742.19	8,735.21	8,715.03	31.11	30.77	98.64	305.63	-1,224.45	1,080.31	1,018.75	61.56	17.549		
8,800.00	8,790.32	8,780.65	8,760.46	31.26	30.92	99.06	306.06	-1,224.62	1,082.73	1,020.87	61.86	17.502		
8,850.00	8,837.10	8,826.15	8,805.96	31.39	31.07	99.58	306.42	-1,224.90	1,086.17	1,024.01	62.16	17.474		
8,900.00	8,882.17	8,867.85	8,847.66	31.52	31.21	100.07	306.78	-1,225.21	1,090.75	1,028.31	62.44	17.469		
8,950.00	8,925.18	8,909.66	8,889.46	31.64	31.35	100.61	307.22	-1,225.61	1,096.71	1,033.99	62.72	17.487		
9,000.00	8,965.81	8,946.99	8,926.79	31.75	31.48	101.00	307.61	-1,226.01	1,104.16	1,041.19	62.97	17.534		
9,050.00	9,003.74	8,984.27	8,964.07	31.85	31.60	101.35	308.00	-1,226.48	1,113.33	1,050.09	63.23	17.607		
9,100.00	9,038.70	9,019.26	8,999.05	31.94	31.72	101.54	308.32	-1,226.93	1,124.32	1,060.84	63.48	17.711		
9,150.00	9,070.40	9,050.08	9,029.86	32.06	31.82	101.45	308.47	-1,227.39	1,137.29	1,073.58	63.71	17.850		
9,200.00	9,098.62	9,079.04	9,058.82	32.18	31.92	101.13	308.53	-1,227.83	1,152.32	1,088.38	63.94	18.022		
9,250.00	9,123.14	9,103.86	9,083.64	32.30	32.00	100.45	308.56	-1,228.21	1,169.46	1,105.31	64.15	18.230		
9,300.00	9,143.76	9,124.86	9,104.63	32.43	32.07	99.37	308.58	-1,228.53	1,188.76	1,124.41	64.35	18.474		
9,350.00	9,160.34	9,141.77	9,121.55	32.56	32.13	97.86	308.56	-1,228.78	1,210.15	1,145.62	64.53	18.754		
9,400.00	9,172.75	9,154.47	9,134.24	32.70	32.17	95.88	308.55	-1,228.97	1,233.54	1,168.86	64.69	19.069		
9,450.00	9,180.88	9,162.83	9,142.60	32.83	32.20	93.40	308.54	-1,229.09	1,258.78	1,193.95	64.83	19.417		
9,500.00	9,184.69	9,166.78	9,146.55	32.97	32.21	90.43	308.54	-1,229.15	1,285.65	1,220.70	64.95	19.796		
9,550.00	9,185.00	9,167.14	9,146.92	33.12	32.21	89.19	308.54	-1,229.16	1,313.91	1,248.86	65.05	20.198		
9,600.00	9,185.00	9,167.20	9,146.97	33.28	32.21	89.20	308.54	-1,229.16	1,343.44	1,278.29	65.15	20.620		
9,650.00	9,185.00	9,167.25	9,147.02	33.46	32.21	89.20	308.54	-1,229.16	1,374.16	1,308.90	65.26	21.057		
9,700.00	9,185.00	9,167.30	9,147.08	33.64	32.21	89.20	308.54	-1,229.16	1,405.98	1,340.62	65.36	21.512		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
9,750.00	9,185.00	9,167.36	9,147.13	33.85	32.21	89.21	308.54	-1,229.16	1,438.83	1,373.37	65.47	21.979		
9,800.00	9,185.00	9,167.41	9,147.18	34.05	32.21	89.21	308.54	-1,229.16	1,472.65	1,407.09	65.56	22.461		
18,200.00	9,185.00	19,759.03	10,401.63	136.76	144.36	146.35	-9,245.40	-928.58	1,496.31	1,295.82	200.48	7.463		
18,250.00	9,185.00	19,808.92	10,398.42	137.47	145.09	146.41	-9,295.02	-924.39	1,491.45	1,290.09	201.37	7.407		
18,300.00	9,185.00	19,862.56	10,394.76	138.18	145.87	146.46	-9,348.36	-920.01	1,486.51	1,284.24	202.28	7.349		
18,350.00	9,185.00	19,908.64	10,391.51	138.89	146.54	146.50	-9,394.17	-916.32	1,481.51	1,278.34	203.18	7.292		
18,400.00	9,185.00	19,948.90	10,388.87	139.60	147.13	146.54	-9,434.22	-913.19	1,476.79	1,272.73	204.06	7.237		
18,450.00	9,185.00	19,990.09	10,386.44	140.31	147.72	146.58	-9,475.22	-910.07	1,472.39	1,267.46	204.93	7.185		
18,500.00	9,185.00	20,034.31	10,383.99	141.02	148.37	146.62	-9,519.25	-906.82	1,468.21	1,262.41	205.80	7.134		
18,550.00	9,185.00	20,078.44	10,381.68	141.73	149.01	146.67	-9,563.21	-903.70	1,464.23	1,257.55	206.68	7.085		
18,600.00	9,185.00	20,121.36	10,379.61	142.44	149.63	146.71	-9,605.97	-900.72	1,460.46	1,252.93	207.54	7.037		
18,650.00	9,185.00	20,164.30	10,377.78	143.15	150.25	146.76	-9,648.77	-897.74	1,456.94	1,248.56	208.38	6.992		
18,700.00	9,185.00	20,206.96	10,376.19	143.86	150.87	146.82	-9,691.30	-894.81	1,453.65	1,244.44	209.21	6.948		
18,750.00	9,185.00	20,249.60	10,374.82	144.57	151.49	146.88	-9,733.82	-891.95	1,450.61	1,240.59	210.02	6.907		
18,800.00	9,185.00	20,293.90	10,373.56	145.28	152.13	146.94	-9,778.02	-889.09	1,447.81	1,236.97	210.84	6.867		
18,850.00	9,185.00	20,339.16	10,372.28	145.99	152.79	146.99	-9,823.18	-886.42	1,445.18	1,233.50	211.68	6.827		
18,900.00	9,185.00	20,386.38	10,370.97	146.70	153.47	147.04	-9,870.31	-883.86	1,442.68	1,230.14	212.55	6.788		
18,950.00	9,185.00	20,435.77	10,369.63	147.41	154.18	147.09	-9,919.61	-881.20	1,440.24	1,226.81	213.43	6.748		
18,972.90	9,185.00	20,458.64	10,369.02	147.73	154.51	147.11	-9,942.44	-879.97	1,439.12	1,225.29	213.83	6.730 SF		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
0.00	0.00	7.11	7.11	0.50	0.01	-0.31	120.02	-0.66	120.02					
50.00	50.00	57.20	57.20	0.50	0.09	-0.27	120.00	-0.57	120.00	119.41	0.59	204.475		
100.00	100.00	107.28	107.28	0.52	0.16	-0.17	119.94	-0.35	119.94	119.27	0.68	177.188		
150.00	150.00	157.36	157.36	0.59	0.23	0.00	119.85	0.01	119.85	119.03	0.82	145.502		
200.00	200.00	207.26	207.26	0.70	0.35	0.24	119.74	0.49	119.74	118.69	1.05	114.042		
220.54	220.54	227.65	227.64	0.76	0.42	0.34	119.73	0.71	119.73	118.55	1.18	101.771		
250.00	250.00	256.88	256.87	0.84	0.53	0.50	119.75	1.03	119.76	118.39	1.36	87.851		
300.00	300.00	306.85	306.84	0.99	0.70	0.77	119.88	1.61	119.89	118.20	1.69	70.873		
350.00	350.00	357.14	357.12	1.15	0.88	1.03	119.92	2.17	119.94	117.91	2.03	59.087		
400.00	400.00	407.21	407.20	1.31	1.06	1.29	119.87	2.69	119.90	117.53	2.37	50.526		
450.00	450.00	457.18	457.16	1.48	1.24	1.53	119.83	3.21	119.87	117.15	2.72	44.077		
500.00	500.00	507.14	507.11	1.65	1.42	1.78	119.80	3.72	119.85	116.78	3.07	39.059		
513.91	513.91	521.03	521.01	1.69	1.47	1.84	119.79	3.85	119.85	116.69	3.17	37.857		
550.00	550.00	557.09	557.06	1.82	1.60	2.00	119.78	4.18	119.86	116.44	3.42	35.054		
600.00	600.00	607.23	607.20	1.99	1.78	2.19	119.76	4.57	119.85	116.07	3.77	31.776		
650.00	650.00	657.38	657.36	2.16	1.96	2.32	119.67	4.85	119.77	115.65	4.13	29.035		
700.00	700.00	707.29	707.26	2.34	2.14	2.46	119.58	5.13	119.69	115.21	4.48	26.725		
750.00	750.00	757.20	757.17	2.51	2.32	2.62	119.51	5.47	119.64	114.81	4.83	24.757		
800.00	800.00	807.14	807.11	2.69	2.50	2.82	119.48	5.88	119.63	114.44	5.19	23.061		
850.00	850.00	857.19	857.16	2.87	2.68	2.98	119.45	6.22	119.61	114.07	5.54	21.579		
900.00	900.00	907.19	907.16	3.04	2.86	3.08	119.41	6.42	119.58	113.68	5.90	20.273		
927.51	927.51	934.65	934.61	3.14	2.95	3.11	119.40	6.49	119.57	113.48	6.09	19.622		
950.00	950.00	957.08	957.05	3.22	3.03	3.14	119.40	6.55	119.58	113.32	6.25	19.121		
1,000.00	1,000.00	1,007.03	1,007.00	3.40	3.21	3.17	119.43	6.62	119.61	113.01	6.61	18.109		
1,050.00	1,050.00	1,057.04	1,057.00	3.58	3.38	3.17	119.47	6.62	119.66	112.70	6.95	17.209		
1,100.00	1,100.00	1,107.06	1,107.03	3.75	3.55	3.14	119.51	6.55	119.69	112.39	7.30	16.402		
1,150.00	1,150.00	1,157.11	1,157.08	3.93	3.71	3.10	119.54	6.47	119.71	112.07	7.64	15.689		
1,200.00	1,200.00	1,207.17	1,207.14	4.11	3.88	3.07	119.54	6.41	119.71	111.72	7.99	14.986		
1,250.00	1,250.00	1,257.23	1,257.20	4.29	4.05	3.08	119.51	6.43	119.68	111.34	8.34	14.353		
1,300.00	1,300.00	1,307.20	1,307.16	4.46	4.23	3.13	119.47	6.53	119.64	110.95	8.69	13.762		
1,350.00	1,350.00	1,357.16	1,357.13	4.64	4.41	3.20	119.44	6.68	119.63	110.58	9.05	13.218		
1,400.00	1,400.00	1,407.17	1,407.13	4.82	4.59	3.27	119.42	6.83	119.62	110.21	9.41	12.715		
1,443.61	1,443.61	1,450.78	1,450.74	4.98	4.74	3.31	119.40	6.91	119.60	109.88	9.72	12.306		
1,450.00	1,450.00	1,457.10	1,457.07	5.00	4.76	3.32	119.40	6.92	119.60	109.84	9.76	12.251		
1,500.00	1,500.00	1,506.86	1,506.83	5.18	4.94	3.33	119.47	6.95	119.67	109.55	10.12	11.831		
1,550.00	1,550.00	1,556.88	1,556.85	5.36	5.11	3.31	119.61	6.92	119.81	109.34	10.47	11.448		
1,600.00	1,600.00	1,607.19	1,607.16	5.53	5.28	3.28	119.65	6.87	119.85	109.03	10.82	11.082		
1,650.00	1,650.00	1,657.31	1,657.27	5.71	5.45	3.26	119.59	6.82	119.79	108.62	11.17	10.729		
1,700.00	1,700.00	1,707.33	1,707.30	5.89	5.62	3.26	119.52	6.80	119.71	108.19	11.52	10.395		
1,750.00	1,750.00	1,757.31	1,757.28	6.07	5.80	3.27	119.43	6.83	119.63	107.76	11.87	10.079		
1,800.00	1,800.00	1,807.28	1,807.25	6.25	5.98	3.30	119.36	6.87	119.56	107.34	12.22	9.781		
1,850.00	1,850.00	1,857.21	1,857.18	6.43	6.15	3.32	119.31	6.92	119.51	106.93	12.58	9.502		
1,900.00	1,900.00	1,907.13	1,907.10	6.61	6.33	3.33	119.30	6.93	119.50	106.57	12.93	9.240		
1,950.00	1,950.00	1,957.13	1,957.10	6.78	6.50	3.33	119.30	6.93	119.50	106.21	13.28	8.995		
2,000.00	2,000.00	2,007.14	2,007.10	6.96	6.67	3.33	119.30	6.93	119.50	105.86	13.64	8.763		
2,050.00	2,050.00	2,057.15	2,057.11	7.14	6.85	3.36	119.29	6.99	119.49	105.50	13.99	8.541		
2,094.14	2,094.14	2,101.30	2,101.26	7.30	7.00	3.42	119.27	7.13	119.49	105.18	14.30	8.354 CC		
2,100.00	2,100.00	2,107.12	2,107.09	7.32	7.02	3.43	119.27	7.14	119.49	105.14	14.34	8.330		
2,150.00	2,150.00	2,157.01	2,156.98	7.50	7.20	3.48	119.29	7.26	119.52	104.82	14.70	8.130		
2,200.00	2,200.00	2,207.03	2,206.99	7.68	7.38	3.51	119.35	7.32	119.58	104.52	15.05	7.943		
2,250.00	2,250.00	2,257.22	2,257.18	7.86	7.55	3.53	119.36	7.36	119.58	104.17	15.41	7.760		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,300.00	2,300.00	2,307.25	2,307.22	8.04	7.73	3.55	119.30	7.41	119.53	103.76	15.77	7.581		
2,350.00	2,350.00	2,357.16	2,357.13	8.22	7.91	3.56	119.26	7.43	119.49	103.37	16.12	7.412		
2,366.87	2,366.87	2,374.00	2,373.97	8.28	7.97	3.56	119.26	7.43	119.49	103.25	16.24	7.357		
2,400.00	2,400.00	2,406.60	2,406.56	8.39	8.08	3.65	119.32	7.60	119.57	103.09	16.48	7.257 ES		
2,450.00	2,450.00	2,455.77	2,455.73	8.57	8.26	4.08	119.65	8.54	119.96	103.13	16.83	7.128		
2,500.00	2,500.00	2,504.94	2,504.86	8.75	8.43	4.90	120.25	10.31	120.71	103.53	17.18	7.026		
2,550.00	2,550.00	2,554.03	2,553.86	8.93	8.61	6.13	121.10	13.00	121.84	104.30	17.53	6.949		
2,600.00	2,600.00	2,602.80	2,602.50	9.11	8.78	7.69	122.23	16.50	123.42	105.54	17.88	6.902		
2,650.00	2,650.00	2,651.41	2,650.90	9.29	8.96	9.50	123.71	20.69	125.59	107.36	18.23	6.890 SF		
2,700.00	2,700.00	2,700.10	2,699.33	9.47	9.13	11.47	125.54	25.47	128.34	109.77	18.57	6.911		
2,750.00	2,750.00	2,748.71	2,747.61	9.65	9.30	13.49	127.68	30.63	131.65	112.74	18.91	6.962		
2,800.00	2,800.00	2,798.43	2,796.95	9.83	9.48	15.58	129.99	36.25	135.33	116.06	19.26	7.025		
2,850.00	2,850.00	2,848.17	2,846.30	10.00	9.68	17.70	132.17	42.17	139.15	119.53	19.62	7.092		
2,900.00	2,900.00	2,898.56	2,896.26	10.18	9.85	19.86	134.09	48.45	142.99	123.00	19.98	7.155		
2,950.00	2,950.00	2,948.75	2,946.00	10.36	10.03	22.05	135.62	54.94	146.75	126.40	20.34	7.213		
3,000.00	3,000.00	2,998.30	2,995.10	10.54	10.21	24.17	136.99	61.47	150.63	129.93	20.70	7.277		
3,050.00	3,050.00	3,047.91	3,044.26	10.72	10.39	26.19	138.35	68.05	154.71	133.65	21.05	7.348		
3,100.00	3,100.00	3,097.72	3,093.62	10.90	10.58	28.06	139.73	74.48	158.91	137.50	21.41	7.422		
3,150.00	3,150.00	3,147.67	3,143.17	11.08	10.76	29.75	141.15	80.67	163.17	141.40	21.77	7.495		
3,200.00	3,200.00	3,197.83	3,192.97	11.26	10.95	31.24	142.63	86.52	167.42	145.28	22.13	7.564		
3,250.00	3,250.00	3,247.60	3,242.41	11.44	11.14	32.55	144.14	92.01	171.64	149.14	22.49	7.631		
3,300.00	3,300.00	3,296.92	3,291.40	11.62	11.32	33.80	145.68	97.52	176.01	153.16	22.84	7.704		
3,350.00	3,350.00	3,345.25	3,339.38	11.80	11.50	35.00	147.25	103.12	180.64	157.45	23.19	7.791		
3,400.00	3,400.00	3,392.80	3,386.51	11.97	11.68	36.22	149.02	109.14	185.86	162.35	23.51	7.904		
3,450.00	3,450.00	3,440.77	3,433.99	12.15	11.86	37.46	151.04	115.72	191.67	167.82	23.85	8.038		
3,500.00	3,500.00	3,488.96	3,481.62	12.33	12.04	38.70	153.17	122.71	197.90	173.72	24.18	8.184		
3,550.00	3,550.00	3,538.73	3,530.77	12.51	12.23	39.95	155.40	130.15	204.41	179.87	24.54	8.329		
3,600.00	3,600.00	3,589.40	3,580.87	12.69	12.43	41.10	157.56	137.47	210.74	185.83	24.92	8.458		
3,650.00	3,650.00	3,639.80	3,630.73	12.87	12.62	42.18	159.52	144.56	216.89	191.60	25.28	8.578		
3,700.00	3,700.00	3,680.12	3,680.52	13.05	12.81	43.25	161.20	151.65	222.91	197.26	25.65	8.690		
3,750.00	3,750.00	3,740.68	3,730.55	13.23	13.01	44.33	162.56	158.79	228.79	202.77	26.02	8.792		
3,800.00	3,800.00	3,791.29	3,780.64	13.41	13.20	45.41	163.57	165.95	234.51	208.12	26.39	8.885		
3,850.00	3,850.00	3,842.13	3,830.99	13.59	13.40	46.46	164.37	172.99	240.05	213.29	26.77	8.969		
3,900.00	3,900.00	3,893.05	3,881.45	13.77	13.60	47.45	165.04	179.78	245.39	218.25	27.14	9.042		
3,950.00	3,950.00	3,943.99	3,931.97	13.94	13.79	48.38	165.56	186.32	250.51	223.00	27.51	9.105		
4,000.00	4,000.00	3,994.80	3,982.38	14.12	13.99	49.26	165.91	192.63	255.43	227.54	27.88	9.161		
4,050.00	4,050.00	4,045.29	4,032.49	14.30	14.18	94.64	165.99	198.87	260.23	231.98	28.25	9.212		
4,100.00	4,099.99	4,094.80	4,081.61	14.48	14.37	95.63	165.86	205.00	265.03	236.43	28.60	9.266		
4,150.00	4,149.97	4,143.34	4,129.76	14.66	14.56	96.68	165.79	211.13	270.11	241.16	28.95	9.331		
4,200.00	4,199.94	4,191.01	4,177.04	14.83	14.74	97.75	165.90	217.26	275.57	246.29	29.28	9.412		
4,250.00	4,249.88	4,238.08	4,223.70	15.01	14.92	98.77	166.60	223.34	281.61	252.00	29.61	9.512		
4,300.00	4,299.79	4,286.99	4,272.19	15.19	15.11	99.81	167.91	229.61	288.13	258.18	29.95	9.620		
4,350.00	4,349.70	4,337.38	4,322.18	15.36	15.31	100.84	169.46	235.78	294.63	264.32	30.32	9.719		
4,400.00	4,399.60	4,388.74	4,373.17	15.54	15.51	101.79	171.12	241.72	300.99	270.29	30.69	9.807		
4,450.00	4,449.51	4,440.56	4,424.66	15.72	15.70	102.71	172.61	247.37	307.03	275.96	31.07	9.882		
4,500.00	4,499.41	4,489.91	4,473.72	15.90	15.89	103.54	173.95	252.55	312.93	281.51	31.42	9.959		
4,550.00	4,549.32	4,538.96	4,522.47	16.07	16.08	104.33	175.36	257.72	318.95	287.18	31.77	10.040		
4,600.00	4,599.23	4,586.00	4,569.21	16.25	16.26	105.04	176.86	262.82	325.25	293.15	32.10	10.133		
4,650.00	4,649.13	4,632.95	4,615.82	16.43	16.44	105.72	178.57	268.20	331.96	299.54	32.42	10.238		
4,700.00	4,699.04	4,678.42	4,660.91	16.61	16.62	106.34	180.49	273.74	339.19	306.45	32.73	10.363		
4,750.00	4,748.95	4,723.74	4,705.79	16.79	16.79	106.92	182.73	279.68	347.02	313.98	33.04	10.504		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,800.00	4,798.85	4,770.38	4,751.90	16.96	16.98	107.48	185.29	286.15	355.35	322.00	33.36	10.654		
4,850.00	4,848.76	4,816.98	4,797.93	17.14	17.16	108.01	188.02	292.89	364.07	330.39	33.67	10.811		
4,900.00	4,898.67	4,865.94	4,846.26	17.32	17.36	108.55	190.94	300.15	373.01	338.98	34.03	10.962		
4,950.00	4,948.57	4,915.09	4,894.78	17.50	17.55	109.07	193.78	307.48	381.97	347.59	34.38	11.110		
5,000.00	4,998.48	4,965.69	4,944.74	17.68	17.76	109.60	196.57	314.86	390.86	356.10	34.75	11.246		
5,050.00	5,048.39	5,016.35	4,994.79	17.86	17.96	110.13	199.19	322.32	399.58	364.46	35.13	11.375		
5,100.00	5,098.29	5,065.69	5,043.56	18.04	18.16	110.63	201.65	329.43	408.25	372.76	35.49	11.504		
5,150.00	5,148.20	5,115.24	5,092.54	18.22	18.35	111.11	204.04	336.55	416.89	381.04	35.85	11.630		
5,200.00	5,198.11	5,164.82	5,141.56	18.39	18.55	111.59	206.34	343.65	425.50	389.30	36.21	11.752		
5,250.00	5,248.01	5,214.27	5,190.45	18.57	18.75	112.06	208.54	350.71	434.10	397.53	36.57	11.872		
5,300.00	5,297.92	5,263.48	5,239.11	18.75	18.95	112.52	210.63	357.77	442.70	405.78	36.92	11.990		
5,350.00	5,347.82	5,314.03	5,289.09	18.93	19.15	112.99	212.66	365.01	451.29	413.99	37.29	12.101		
5,400.00	5,397.73	5,365.97	5,340.49	19.11	19.36	113.47	214.52	372.24	459.64	421.96	37.68	12.198		
5,450.00	5,447.64	5,417.20	5,391.23	19.29	19.56	113.94	216.19	379.14	467.75	429.69	38.06	12.290		
5,500.00	5,497.54	5,468.14	5,441.71	19.47	19.76	114.37	217.87	385.80	475.70	437.27	38.43	12.378		
5,550.00	5,547.45	5,518.36	5,491.49	19.65	19.96	114.77	219.60	392.18	483.53	444.73	38.80	12.463		
5,600.00	5,597.36	5,568.48	5,541.19	19.83	20.16	115.14	221.47	398.40	491.30	452.14	39.16	12.545		
5,650.00	5,647.26	5,617.81	5,590.10	20.01	20.35	115.48	223.38	404.46	499.04	459.52	39.52	12.628		
5,700.00	5,697.17	5,667.21	5,639.09	20.19	20.55	115.81	225.28	410.53	506.80	466.93	39.88	12.709		
5,750.00	5,747.08	5,717.51	5,688.98	20.37	20.74	116.14	227.13	416.68	514.52	474.28	40.24	12.785		
5,800.00	5,796.98	5,767.72	5,738.79	20.55	20.94	116.47	228.88	422.75	522.17	481.56	40.61	12.858		
5,850.00	5,846.89	5,817.56	5,788.25	20.73	21.14	116.80	230.53	428.75	529.76	488.79	40.97	12.930		
5,900.00	5,896.80	5,867.41	5,837.71	20.91	21.33	117.12	232.10	434.71	537.33	496.00	41.33	13.000		
5,950.00	5,946.70	5,917.26	5,887.19	21.09	21.53	117.44	233.63	440.64	544.86	503.17	41.70	13.067		
6,000.00	5,996.61	5,967.14	5,936.69	21.27	21.72	117.75	235.12	446.53	552.37	510.31	42.06	13.133		
6,050.00	6,046.52	6,017.03	5,986.21	21.45	21.92	118.06	236.54	452.40	559.84	517.42	42.42	13.197		
6,100.00	6,096.42	6,066.32	6,035.15	21.63	22.11	118.37	237.90	458.18	567.30	524.52	42.78	13.261		
6,150.00	6,146.33	6,115.16	6,083.63	21.81	22.30	118.66	239.22	463.94	574.80	531.67	43.13	13.327		
6,200.00	6,196.23	6,162.96	6,131.06	21.99	22.49	118.94	240.55	469.64	582.40	538.92	43.48	13.396		
6,250.00	6,246.14	6,210.18	6,177.91	22.17	22.68	119.20	242.08	475.39	590.17	546.36	43.81	13.470		
6,300.00	6,296.05	6,259.60	6,226.92	22.35	22.87	119.44	243.84	481.47	598.07	553.90	44.17	13.539		
6,350.00	6,345.95	6,310.05	6,276.97	22.53	23.07	119.68	245.61	487.61	605.90	561.36	44.54	13.603		
6,400.00	6,395.86	6,360.50	6,327.02	22.71	23.27	119.93	247.31	493.67	613.65	568.74	44.91	13.664		
6,450.00	6,445.77	6,410.96	6,377.10	22.89	23.47	120.17	248.87	499.67	621.32	576.04	45.28	13.722		
6,500.00	6,495.67	6,460.91	6,426.68	23.07	23.67	120.42	250.32	505.56	628.93	583.28	45.64	13.779		
6,550.00	6,545.58	6,510.95	6,476.35	23.25	23.86	120.66	251.72	511.42	636.50	590.50	46.01	13.835		
6,600.00	6,595.49	6,562.16	6,527.21	23.43	24.06	120.91	253.06	517.34	643.99	597.61	46.38	13.884		
6,650.00	6,645.39	6,613.26	6,577.97	23.62	24.26	121.17	254.26	523.13	651.34	604.59	46.76	13.931		
6,700.00	6,695.30	6,663.95	6,628.32	23.80	24.46	121.42	255.33	528.78	658.60	611.48	47.12	13.976		
6,750.00	6,745.21	6,714.65	6,678.71	23.98	24.66	121.68	256.29	534.36	665.77	618.28	47.49	14.018		
6,800.00	6,795.11	6,765.38	6,729.13	24.16	24.85	121.94	257.15	539.86	672.86	625.00	47.86	14.058		
6,850.00	6,845.02	6,816.87	6,780.32	24.34	25.05	122.20	257.90	545.35	679.85	631.61	48.24	14.094		
6,900.00	6,894.93	6,869.05	6,832.22	24.52	25.25	122.47	258.56	550.74	686.66	638.05	48.62	14.124		
6,950.00	6,944.83	6,920.80	6,883.70	24.70	25.45	122.73	259.10	555.91	693.30	644.31	48.99	14.152		
7,000.00	6,994.74	6,972.41	6,935.07	24.88	25.65	123.00	259.51	560.93	699.81	650.44	49.36	14.176		
7,050.00	7,044.65	7,024.76	6,987.19	25.06	25.85	123.28	259.80	565.86	706.15	656.41	49.74	14.196		
7,100.00	7,094.55	7,077.25	7,039.46	25.24	26.05	123.56	259.96	570.60	712.30	662.18	50.12	14.212		
7,150.00	7,144.46	7,129.06	7,091.08	25.43	26.24	123.83	259.98	575.12	718.28	667.79	50.49	14.225		
7,200.00	7,194.36	7,181.29	7,143.11	25.61	26.44	124.12	259.87	579.51	724.12	673.25	50.87	14.235		
7,250.00	7,244.27	7,234.40	7,196.06	25.79	26.63	124.41	259.56	583.78	729.75	678.50	51.25	14.240		
7,300.00	7,294.18	7,287.23	7,248.73	25.97	26.83	124.72	259.05	587.81	735.16	683.53	51.62	14.241		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,350.00	7,344.08	7,339.75	7,301.11	26.15	27.02	125.02	258.37	591.62	740.38	688.39	52.00	14.239		
7,400.00	7,393.99	7,392.73	7,353.96	26.33	27.22	125.34	257.53	595.27	745.42	693.05	52.37	14.233		
7,450.00	7,443.90	7,445.94	7,407.05	26.51	27.41	125.65	256.60	598.69	750.24	697.50	52.75	14.223		
7,500.00	7,493.80	7,499.38	7,460.38	26.69	27.60	125.97	255.55	601.88	754.84	701.72	53.12	14.210		
7,550.00	7,543.71	7,552.87	7,513.78	26.88	27.79	126.29	254.41	604.81	759.20	705.71	53.50	14.192		
7,600.00	7,593.62	7,605.02	7,565.85	27.06	27.98	126.60	253.24	607.47	763.39	709.53	53.86	14.173		
7,650.00	7,643.52	7,656.80	7,617.55	27.24	28.16	126.90	252.05	609.93	767.43	713.20	54.23	14.152		
7,700.00	7,693.43	7,707.51	7,668.20	27.42	28.34	127.22	250.85	612.25	771.34	716.75	54.59	14.131		
7,750.00	7,743.38	7,758.84	7,719.46	27.60	28.52	127.51	249.63	614.53	774.84	719.89	54.95	14.102		
7,800.00	7,793.35	7,810.85	7,771.42	27.78	28.71	127.76	248.42	616.70	777.83	722.51	55.31	14.063		
7,850.00	7,843.34	7,862.30	7,822.81	27.96	28.89	127.96	247.24	618.71	780.29	724.62	55.67	14.016		
7,900.00	7,893.33	7,913.47	7,873.93	28.14	29.06	128.11	246.04	620.63	782.28	726.25	56.03	13.962		
7,950.00	7,943.33	7,964.38	7,924.79	28.31	29.24	83.73	244.80	622.47	783.95	727.56	56.39	13.903		
8,000.00	7,993.33	8,015.22	7,975.59	28.49	29.42	83.84	243.49	624.26	785.56	728.81	56.74	13.844		
8,050.00	8,043.33	8,067.70	8,028.02	28.67	29.60	83.95	242.10	626.00	787.06	729.96	57.11	13.783		
8,100.00	8,093.33	8,120.29	8,080.57	28.85	29.78	84.06	240.74	627.56	788.40	730.94	57.47	13.719		
8,150.00	8,143.33	8,170.99	8,131.23	29.03	29.96	84.17	239.40	628.97	789.65	731.83	57.82	13.656		
8,200.00	8,193.33	8,221.28	8,181.48	29.20	30.13	84.27	238.07	630.31	790.85	732.67	58.18	13.594		
8,250.00	8,243.33	8,270.60	8,230.78	29.38	30.30	84.34	237.24	631.60	792.06	733.54	58.53	13.533		
8,300.00	8,293.33	8,317.11	8,277.27	29.56	30.46	84.37	236.99	632.84	793.37	734.50	58.87	13.478		
8,350.00	8,343.33	8,360.61	8,320.74	29.74	30.62	84.37	237.13	634.28	795.03	735.83	59.20	13.428		
8,400.00	8,393.33	8,408.25	8,368.34	29.91	30.79	84.34	237.68	636.17	797.06	737.51	59.55	13.384		
8,450.00	8,443.33	8,464.60	8,424.65	30.09	30.98	84.27	238.93	638.10	798.87	738.94	59.93	13.330		
8,500.00	8,493.33	8,517.16	8,477.16	30.27	31.17	84.16	240.58	639.51	800.37	740.07	60.30	13.274		
8,550.00	8,543.33	8,567.58	8,527.54	30.45	31.35	84.06	242.10	640.82	801.81	741.16	60.65	13.220		
8,600.00	8,593.33	8,621.41	8,581.34	30.63	31.53	83.96	243.61	642.10	803.14	742.12	61.02	13.163		
8,650.00	8,643.32	8,676.35	8,636.25	30.80	31.72	-95.81	245.05	643.09	804.26	742.88	61.38	13.103		
8,700.00	8,693.06	8,733.08	8,692.96	30.96	31.92	-96.17	246.44	643.69	805.44	743.72	61.72	13.049		
8,750.00	8,742.19	8,788.14	8,748.01	31.11	32.10	-96.84	247.67	643.82	806.76	744.70	62.06	13.000		
8,800.00	8,790.32	8,840.79	8,800.65	31.26	32.27	-97.73	248.57	643.63	808.47	746.10	62.37	12.962		
8,850.00	8,837.10	8,891.69	8,851.54	31.39	32.43	-98.79	249.08	643.21	810.83	748.15	62.67	12.937		
8,900.00	8,882.17	8,940.84	8,900.69	31.52	32.59	-99.96	249.13	642.63	814.10	751.13	62.96	12.930		
8,950.00	8,925.18	8,985.74	8,945.58	31.64	32.73	-101.09	248.85	641.97	818.60	755.36	63.24	12.945		
9,000.00	8,965.81	9,027.46	8,987.29	31.75	32.86	-102.15	248.48	641.34	824.74	761.24	63.50	12.987		
9,050.00	9,003.74	9,065.45	9,025.27	31.85	32.98	-103.02	248.09	640.75	832.83	769.07	63.76	13.062		
9,100.00	9,038.70	9,099.03	9,058.86	31.94	33.08	-103.62	247.86	640.25	843.22	779.21	64.00	13.175		
9,150.00	9,070.40	9,129.25	9,089.08	32.06	33.18	-103.91	247.78	639.81	856.13	791.89	64.23	13.328		
9,200.00	9,098.62	9,156.20	9,116.02	32.18	33.26	-103.83	247.79	639.44	871.72	807.27	64.45	13.525		
9,250.00	9,123.14	9,179.93	9,139.74	32.30	33.34	-103.32	247.79	639.14	890.05	825.40	64.65	13.766		
9,300.00	9,143.76	9,199.96	9,159.77	32.43	33.40	-102.30	247.77	638.92	911.12	846.28	64.84	14.052		
9,350.00	9,160.34	9,216.13	9,175.94	32.56	33.45	-100.72	247.74	638.75	934.83	869.83	65.00	14.382		
9,400.00	9,172.75	9,228.30	9,188.11	32.70	33.49	-98.51	247.72	638.64	961.03	895.89	65.14	14.752		
9,450.00	9,180.88	9,236.35	9,196.16	32.83	33.52	-95.64	247.70	638.57	989.47	924.21	65.26	15.161		
9,500.00	9,184.69	9,240.26	9,200.07	32.97	33.53	-92.10	247.69	638.54	1,019.87	954.51	65.36	15.605		
9,550.00	9,185.00	9,240.69	9,200.51	33.12	33.53	-90.61	247.69	638.54	1,051.88	986.45	65.43	16.075		
9,600.00	9,185.00	9,240.82	9,200.63	33.28	33.53	-90.61	247.69	638.54	1,085.26	1,019.75	65.50	16.568		
9,650.00	9,185.00	9,240.95	9,200.76	33.46	33.53	-90.62	247.69	638.54	1,119.87	1,054.29	65.58	17.077		
9,700.00	9,185.00	9,241.08	9,200.89	33.64	33.53	-90.63	247.69	638.53	1,155.61	1,089.97	65.64	17.604		
9,750.00	9,185.00	9,241.21	9,201.02	33.85	33.53	-90.64	247.69	638.53	1,192.38	1,126.67	65.71	18.145		
9,800.00	9,185.00	9,241.33	9,201.15	34.05	33.53	-90.65	247.69	638.53	1,230.08	1,164.31	65.78	18.701		
9,850.00	9,185.00	9,241.46	9,201.27	34.29	33.53	-90.66	247.69	638.53	1,268.63	1,202.79	65.84	19.268		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,900.00	9,185.00	9,241.60	9,201.41	34.53	33.53	-90.67	247.69	638.53	1,307.96	1,242.06	65.90	19.848		
9,950.00	9,185.00	9,241.74	9,201.55	34.79	33.53	-90.68	247.68	638.53	1,347.99	1,282.03	65.96	20.437		
10,000.00	9,185.00	9,241.88	9,201.69	35.06	33.53	-90.69	247.68	638.53	1,388.67	1,322.66	66.01	21.037		
10,050.00	9,185.00	9,242.02	9,201.83	35.35	33.53	-90.70	247.68	638.53	1,429.94	1,363.88	66.07	21.644		
10,100.00	9,185.00	9,242.16	9,201.97	35.64	33.53	-90.71	247.68	638.53	1,471.76	1,405.64	66.11	22.261		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	7.11	7.11	0.50	0.01	-0.31	120.02	-0.66	120.02					
50.00	50.00	57.20	57.20	0.50	0.09	-0.27	120.00	-0.57	120.00	119.41	0.59	204.475		
100.00	100.00	107.28	107.28	0.52	0.16	-0.17	119.94	-0.35	119.94	119.27	0.68	177.188		
150.00	150.00	157.36	157.36	0.59	0.23	0.00	119.85	0.01	119.85	119.03	0.82	145.502		
200.00	200.00	207.26	207.26	0.70	0.35	0.24	119.74	0.49	119.74	118.69	1.05	114.042		
220.54	220.54	227.65	227.64	0.76	0.42	0.34	119.73	0.71	119.73	118.55	1.18	101.771		
250.00	250.00	256.88	256.87	0.84	0.53	0.50	119.75	1.03	119.76	118.39	1.36	87.851		
300.00	300.00	306.85	306.84	0.99	0.70	0.77	119.88	1.61	119.89	118.20	1.69	70.873		
350.00	350.00	357.14	357.12	1.15	0.88	1.03	119.92	2.17	119.94	117.91	2.03	59.087		
400.00	400.00	407.21	407.20	1.31	1.06	1.29	119.87	2.69	119.90	117.53	2.37	50.526		
450.00	450.00	457.18	457.16	1.48	1.24	1.53	119.83	3.21	119.87	117.15	2.72	44.077		
500.00	500.00	507.14	507.11	1.65	1.42	1.78	119.80	3.72	119.85	116.78	3.07	39.059		
513.91	513.91	521.03	521.01	1.69	1.47	1.84	119.79	3.85	119.85	116.69	3.17	37.857		
550.00	550.00	557.09	557.06	1.82	1.60	2.00	119.78	4.18	119.86	116.44	3.42	35.054		
600.00	600.00	607.23	607.20	1.99	1.78	2.19	119.76	4.57	119.85	116.07	3.77	31.776		
650.00	650.00	657.38	657.36	2.16	1.96	2.32	119.67	4.85	119.77	115.65	4.13	29.035		
700.00	700.00	707.29	707.26	2.34	2.14	2.46	119.58	5.13	119.69	115.21	4.48	26.725		
750.00	750.00	757.20	757.17	2.51	2.32	2.62	119.51	5.47	119.64	114.81	4.83	24.757		
800.00	800.00	807.14	807.11	2.69	2.50	2.82	119.48	5.88	119.63	114.44	5.19	23.061		
850.00	850.00	857.19	857.16	2.87	2.68	2.98	119.45	6.22	119.61	114.07	5.54	21.579		
900.00	900.00	907.19	907.16	3.04	2.86	3.08	119.41	6.42	119.58	113.68	5.90	20.273		
927.51	927.51	934.65	934.61	3.14	2.95	3.11	119.40	6.49	119.57	113.48	6.09	19.622		
950.00	950.00	957.08	957.05	3.22	3.03	3.14	119.40	6.55	119.58	113.32	6.25	19.121		
1,000.00	1,000.00	1,007.03	1,007.00	3.40	3.21	3.17	119.43	6.62	119.61	113.01	6.61	18.109		
1,050.00	1,050.00	1,057.04	1,057.00	3.58	3.38	3.17	119.47	6.62	119.66	112.70	6.95	17.209		
1,100.00	1,100.00	1,107.06	1,107.03	3.75	3.55	3.14	119.51	6.55	119.69	112.39	7.30	16.402		
1,150.00	1,150.00	1,157.11	1,157.08	3.93	3.71	3.10	119.54	6.47	119.71	112.07	7.64	15.669		
1,200.00	1,200.00	1,207.17	1,207.14	4.11	3.88	3.07	119.54	6.41	119.71	111.72	7.99	14.986		
1,250.00	1,250.00	1,257.23	1,257.20	4.29	4.05	3.08	119.51	6.43	119.68	111.34	8.34	14.353		
1,300.00	1,300.00	1,307.20	1,307.16	4.46	4.23	3.13	119.47	6.53	119.64	110.95	8.69	13.762		
1,350.00	1,350.00	1,357.16	1,357.13	4.64	4.41	3.20	119.44	6.68	119.63	110.58	9.05	13.218		
1,400.00	1,400.00	1,407.17	1,407.13	4.82	4.59	3.27	119.42	6.83	119.62	110.21	9.41	12.715		
1,443.61	1,443.61	1,450.78	1,450.74	4.98	4.74	3.31	119.40	6.91	119.60	109.88	9.72	12.306		
1,450.00	1,450.00	1,457.10	1,457.07	5.00	4.76	3.32	119.40	6.92	119.60	109.84	9.76	12.251		
1,500.00	1,500.00	1,506.86	1,506.83	5.18	4.94	3.33	119.47	6.95	119.67	109.55	10.12	11.831		
1,550.00	1,550.00	1,556.88	1,556.85	5.36	5.11	3.31	119.61	6.92	119.81	109.34	10.47	11.448		
1,600.00	1,600.00	1,607.19	1,607.16	5.53	5.28	3.28	119.65	6.87	119.85	109.03	10.82	11.082		
1,650.00	1,650.00	1,657.31	1,657.27	5.71	5.45	3.26	119.59	6.82	119.79	108.62	11.17	10.729		
1,700.00	1,700.00	1,707.33	1,707.30	5.89	5.62	3.26	119.52	6.80	119.71	108.19	11.52	10.395		
1,750.00	1,750.00	1,757.31	1,757.28	6.07	5.80	3.27	119.43	6.83	119.63	107.76	11.87	10.079		
1,800.00	1,800.00	1,807.28	1,807.25	6.25	5.98	3.30	119.36	6.87	119.56	107.34	12.22	9.781		
1,850.00	1,850.00	1,857.21	1,857.18	6.43	6.15	3.32	119.31	6.92	119.51	106.93	12.58	9.502		
1,900.00	1,900.00	1,907.13	1,907.10	6.61	6.33	3.33	119.30	6.93	119.50	106.57	12.93	9.240		
1,950.00	1,950.00	1,957.13	1,957.10	6.78	6.50	3.33	119.30	6.93	119.50	106.21	13.28	8.995		
2,000.00	2,000.00	2,007.14	2,007.10	6.96	6.67	3.33	119.30	6.93	119.50	105.86	13.64	8.763		
2,050.00	2,050.00	2,057.15	2,057.11	7.14	6.85	3.36	119.29	6.99	119.49	105.50	13.99	8.541		
2,094.14	2,094.14	2,101.30	2,101.26	7.30	7.00	3.42	119.27	7.13	119.49	105.18	14.30	8.354 CC		
2,100.00	2,100.00	2,107.12	2,107.09	7.32	7.02	3.43	119.27	7.14	119.49	105.14	14.34	8.330		
2,150.00	2,150.00	2,157.01	2,156.98	7.50	7.20	3.48	119.29	7.26	119.52	104.82	14.70	8.130		
2,200.00	2,200.00	2,207.03	2,206.99	7.68	7.38	3.51	119.35	7.32	119.58	104.52	15.05	7.943		
2,250.00	2,250.00	2,257.22	2,257.18	7.86	7.55	3.53	119.36	7.36	119.58	104.17	15.41	7.760		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,300.00	2,300.00	2,307.25	2,307.22	8.04	7.73	3.55	119.30	7.41	119.53	103.76	15.77	7.581		
2,350.00	2,350.00	2,357.16	2,357.13	8.22	7.91	3.56	119.26	7.43	119.49	103.37	16.12	7.412		
2,366.87	2,366.87	2,374.00	2,373.97	8.28	7.97	3.56	119.26	7.43	119.49	103.25	16.24	7.357		
2,400.00	2,400.00	2,408.60	2,408.56	8.39	8.08	3.65	119.32	7.60	119.57	103.09	16.48	7.257 ES		
2,450.00	2,450.00	2,455.77	2,455.73	8.57	8.26	4.08	119.65	8.54	119.96	103.13	16.83	7.128		
2,500.00	2,500.00	2,504.94	2,504.86	8.75	8.43	4.90	120.25	10.31	120.71	103.53	17.18	7.026		
2,550.00	2,550.00	2,554.03	2,553.86	8.93	8.61	6.13	121.10	13.00	121.84	104.30	17.53	6.949		
2,600.00	2,600.00	2,602.80	2,602.50	9.11	8.78	7.69	122.23	16.50	123.42	105.54	17.88	6.902		
2,650.00	2,650.00	2,651.41	2,650.90	9.29	8.96	9.50	123.71	20.69	125.59	107.36	18.23	6.890 SF		
2,700.00	2,700.00	2,700.10	2,699.33	9.47	9.13	11.47	125.54	25.47	128.34	109.77	18.57	6.911		
2,750.00	2,750.00	2,748.71	2,747.61	9.65	9.30	13.49	127.68	30.63	131.65	112.74	18.91	6.962		
2,800.00	2,800.00	2,798.43	2,796.95	9.83	9.48	15.58	129.99	36.25	135.33	116.06	19.26	7.025		
2,850.00	2,850.00	2,848.17	2,846.30	10.00	9.66	17.70	132.17	42.17	139.15	119.53	19.62	7.092		
2,900.00	2,900.00	2,898.56	2,896.26	10.18	9.85	19.86	134.09	48.45	142.99	123.00	19.98	7.155		
2,950.00	2,950.00	2,948.75	2,946.00	10.36	10.03	22.05	135.62	54.94	146.75	126.40	20.34	7.213		
3,000.00	3,000.00	2,998.30	2,995.10	10.54	10.21	24.17	136.99	61.47	150.63	129.93	20.70	7.277		
3,050.00	3,050.00	3,047.91	3,044.26	10.72	10.39	26.19	138.35	68.05	154.71	133.65	21.05	7.348		
3,100.00	3,100.00	3,097.72	3,093.62	10.90	10.58	28.06	139.73	74.48	158.91	137.50	21.41	7.422		
3,150.00	3,150.00	3,147.67	3,143.17	11.08	10.76	29.75	141.15	80.67	163.17	141.40	21.77	7.495		
3,200.00	3,200.00	3,197.83	3,192.97	11.26	10.95	31.24	142.63	86.52	167.42	145.28	22.13	7.564		
3,250.00	3,250.00	3,247.60	3,242.41	11.44	11.14	32.55	144.14	92.01	171.64	149.14	22.49	7.631		
3,300.00	3,300.00	3,296.92	3,291.40	11.62	11.32	33.80	145.68	97.52	176.01	153.16	22.84	7.704		
3,350.00	3,350.00	3,345.25	3,339.38	11.80	11.50	35.00	147.25	103.12	180.64	157.45	23.19	7.791		
3,400.00	3,400.00	3,392.80	3,386.51	11.97	11.68	36.22	149.02	109.14	185.86	162.35	23.51	7.904		
3,450.00	3,450.00	3,440.77	3,433.99	12.15	11.86	37.46	151.04	115.72	191.67	167.82	23.85	8.038		
3,500.00	3,500.00	3,488.96	3,481.62	12.33	12.04	38.70	153.17	122.71	197.90	173.72	24.18	8.184		
3,550.00	3,550.00	3,538.73	3,530.77	12.51	12.23	39.95	155.40	130.15	204.41	179.87	24.54	8.329		
3,600.00	3,600.00	3,589.40	3,580.87	12.69	12.43	41.10	157.56	137.47	210.74	185.83	24.92	8.458		
3,650.00	3,650.00	3,639.80	3,630.73	12.87	12.62	42.18	159.52	144.56	216.89	191.60	25.28	8.578		
3,700.00	3,700.00	3,690.12	3,680.52	13.05	12.81	43.25	161.20	151.65	222.91	197.26	25.65	8.690		
3,750.00	3,750.00	3,740.68	3,730.55	13.23	13.01	44.33	162.56	158.79	228.79	202.77	26.02	8.792		
3,800.00	3,800.00	3,791.29	3,780.64	13.41	13.20	45.41	163.57	165.95	234.51	208.12	26.39	8.885		
3,850.00	3,850.00	3,842.13	3,830.99	13.59	13.40	46.46	164.37	172.99	240.05	213.29	26.77	8.969		
3,900.00	3,900.00	3,893.05	3,881.45	13.77	13.60	47.45	165.04	179.78	245.39	218.25	27.14	9.042		
3,950.00	3,950.00	3,943.99	3,931.97	13.94	13.79	48.38	165.56	186.32	250.51	223.00	27.51	9.105		
4,000.00	4,000.00	3,994.80	3,982.38	14.12	13.99	49.26	165.91	192.63	255.43	227.54	27.88	9.161		
4,050.00	4,050.00	4,045.29	4,032.49	14.30	14.18	50.14	166.10	198.87	260.23	231.98	28.25	9.212		
4,100.00	4,099.99	4,094.80	4,081.61	14.48	14.37	51.02	166.18	205.00	265.03	236.43	28.60	9.266		
4,150.00	4,149.97	4,143.34	4,129.76	14.66	14.56	51.90	166.16	211.13	270.11	241.16	28.95	9.331		
4,200.00	4,199.94	4,191.01	4,177.04	14.83	14.74	52.78	166.14	217.26	275.57	246.29	29.28	9.412		
4,250.00	4,249.88	4,238.08	4,223.70	15.01	14.92	53.66	166.12	223.34	281.61	252.00	29.61	9.512		
4,300.00	4,299.79	4,286.99	4,272.19	15.19	15.11	54.54	167.91	229.61	288.13	258.18	29.95	9.620		
4,350.00	4,349.70	4,337.38	4,322.18	15.36	15.31	55.42	169.46	235.78	294.63	264.32	30.32	9.719		
4,400.00	4,399.60	4,388.74	4,373.17	15.54	15.51	56.30	171.12	241.72	300.99	270.29	30.69	9.807		
4,450.00	4,449.51	4,440.56	4,424.66	15.72	15.70	57.18	172.61	247.37	307.03	275.96	31.07	9.882		
4,500.00	4,499.41	4,489.91	4,473.72	15.90	15.89	58.06	173.95	252.55	312.93	281.51	31.42	9.959		
4,550.00	4,549.32	4,538.96	4,522.47	16.07	16.08	58.94	175.36	257.72	318.95	287.18	31.77	10.040		
4,600.00	4,599.23	4,588.00	4,569.21	16.25	16.26	59.82	176.86	262.82	325.25	293.15	32.10	10.133		
4,650.00	4,649.13	4,632.95	4,615.82	16.43	16.44	60.70	178.57	268.20	331.96	299.54	32.42	10.238		
4,700.00	4,699.04	4,678.42	4,660.91	16.61	16.62	61.58	180.49	273.74	339.19	306.45	32.73	10.363		
4,750.00	4,748.95	4,723.74	4,705.79	16.79	16.79	62.46	182.73	279.68	347.02	313.98	33.04	10.504		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,800.00	4,798.85	4,770.38	4,751.90	16.96	16.98	107.48	185.29	286.15	355.35	322.00	33.36	10.654		
4,850.00	4,848.76	4,816.98	4,797.93	17.14	17.16	108.01	188.02	292.89	364.07	330.39	33.67	10.811		
4,900.00	4,898.67	4,865.94	4,846.26	17.32	17.36	108.55	190.94	300.15	373.01	338.98	34.03	10.962		
4,950.00	4,948.57	4,915.09	4,894.78	17.50	17.55	109.07	193.78	307.48	381.97	347.59	34.38	11.110		
5,000.00	4,998.48	4,965.69	4,944.74	17.68	17.76	109.60	196.57	314.96	390.86	356.10	34.75	11.246		
5,050.00	5,048.39	5,016.35	4,994.79	17.86	17.96	110.13	199.19	322.32	399.58	364.46	35.13	11.375		
5,100.00	5,098.29	5,065.69	5,043.56	18.04	18.16	110.63	201.65	329.43	408.25	372.76	35.49	11.504		
5,150.00	5,148.20	5,115.24	5,092.54	18.22	18.35	111.11	204.04	336.55	416.89	381.04	35.85	11.630		
5,200.00	5,198.11	5,164.82	5,141.56	18.39	18.55	111.59	206.34	343.65	425.50	389.30	36.21	11.752		
5,250.00	5,248.01	5,214.27	5,190.45	18.57	18.75	112.06	208.54	350.71	434.10	397.53	36.57	11.872		
5,300.00	5,297.92	5,263.48	5,239.11	18.75	18.95	112.52	210.63	357.77	442.70	405.78	36.92	11.990		
5,350.00	5,347.82	5,314.03	5,289.09	18.93	19.15	112.99	212.66	365.01	451.29	413.99	37.29	12.101		
5,400.00	5,397.73	5,365.97	5,340.49	19.11	19.36	113.47	214.52	372.24	459.64	421.96	37.68	12.198		
5,450.00	5,447.64	5,417.20	5,391.23	19.29	19.56	113.94	216.19	379.14	467.75	429.69	38.06	12.290		
5,500.00	5,497.54	5,468.14	5,441.71	19.47	19.76	114.37	217.87	385.80	475.70	437.27	38.43	12.378		
5,550.00	5,547.45	5,518.36	5,491.49	19.65	19.96	114.77	219.60	392.18	483.53	444.73	38.80	12.463		
5,600.00	5,597.36	5,568.48	5,541.19	19.83	20.16	115.14	221.47	398.40	491.30	452.14	39.16	12.545		
5,650.00	5,647.26	5,617.81	5,590.10	20.01	20.35	115.48	223.38	404.46	499.04	459.52	39.52	12.628		
5,700.00	5,697.17	5,667.21	5,639.09	20.19	20.55	115.81	225.28	410.53	506.80	466.93	39.88	12.709		
5,750.00	5,747.08	5,717.51	5,688.98	20.37	20.74	116.14	227.13	416.68	514.52	474.28	40.24	12.785		
5,800.00	5,796.98	5,767.72	5,738.79	20.55	20.94	116.47	228.88	422.75	522.17	481.56	40.61	12.858		
5,850.00	5,846.89	5,817.56	5,788.25	20.73	21.14	116.80	230.53	428.75	529.76	488.79	40.97	12.930		
5,900.00	5,896.80	5,867.41	5,837.71	20.91	21.33	117.12	232.10	434.71	537.33	496.00	41.33	13.000		
5,950.00	5,946.70	5,917.26	5,887.19	21.09	21.53	117.44	233.63	440.64	544.86	503.17	41.70	13.067		
6,000.00	5,996.61	5,967.14	5,936.69	21.27	21.72	117.75	235.12	446.53	552.37	510.31	42.06	13.133		
6,050.00	6,046.52	6,017.03	5,986.21	21.45	21.92	118.06	236.54	452.40	559.84	517.42	42.42	13.197		
6,100.00	6,096.42	6,066.32	6,035.15	21.63	22.11	118.37	237.90	458.18	567.30	524.52	42.78	13.261		
6,150.00	6,146.33	6,115.16	6,083.63	21.81	22.30	118.66	239.22	463.94	574.80	531.67	43.13	13.327		
6,200.00	6,196.23	6,162.96	6,131.06	21.99	22.49	118.94	240.55	469.64	582.40	538.92	43.48	13.396		
6,250.00	6,246.14	6,210.18	6,177.91	22.17	22.68	119.20	242.08	475.39	590.17	546.36	43.81	13.470		
6,300.00	6,296.05	6,259.60	6,226.92	22.35	22.87	119.44	243.84	481.47	598.07	553.90	44.17	13.539		
6,350.00	6,345.95	6,310.05	6,276.97	22.53	23.07	119.68	245.61	487.61	605.90	561.36	44.54	13.603		
6,400.00	6,395.86	6,360.50	6,327.02	22.71	23.27	119.93	247.31	493.67	613.65	568.74	44.91	13.664		
6,450.00	6,445.77	6,410.96	6,377.10	22.89	23.47	120.17	248.87	499.67	621.32	576.04	45.28	13.722		
6,500.00	6,495.67	6,460.91	6,426.68	23.07	23.67	120.42	250.32	505.56	628.93	583.28	45.64	13.779		
6,550.00	6,545.58	6,510.95	6,476.35	23.25	23.86	120.66	251.72	511.42	636.50	590.50	46.01	13.835		
6,600.00	6,595.49	6,562.16	6,527.21	23.43	24.06	120.91	253.06	517.34	643.99	597.61	46.38	13.884		
6,650.00	6,645.39	6,613.26	6,577.97	23.62	24.26	121.17	254.26	523.13	651.34	604.59	46.76	13.931		
6,700.00	6,695.30	6,663.95	6,628.32	23.80	24.46	121.42	255.33	528.78	658.60	611.48	47.12	13.976		
6,750.00	6,745.21	6,714.65	6,678.71	23.98	24.66	121.68	256.29	534.36	665.77	618.28	47.49	14.018		
6,800.00	6,795.11	6,765.38	6,729.13	24.16	24.85	121.94	257.15	539.86	672.86	625.00	47.86	14.058		
6,850.00	6,845.02	6,816.87	6,780.32	24.34	25.05	122.20	257.90	545.35	679.85	631.61	48.24	14.094		
6,900.00	6,894.93	6,869.05	6,832.22	24.52	25.25	122.47	258.56	550.74	686.66	638.05	48.62	14.124		
6,950.00	6,944.83	6,920.80	6,883.70	24.70	25.45	122.73	259.10	555.91	693.30	644.31	48.99	14.152		
7,000.00	6,994.74	6,972.41	6,935.07	24.88	25.65	123.00	259.51	560.93	699.81	650.44	49.36	14.176		
7,050.00	7,044.65	7,024.76	6,987.19	25.06	25.85	123.28	259.80	565.86	706.15	656.41	49.74	14.196		
7,100.00	7,094.55	7,077.25	7,039.46	25.24	26.05	123.56	259.96	570.60	712.30	662.18	50.12	14.212		
7,150.00	7,144.46	7,129.06	7,091.08	25.43	26.24	123.83	259.98	575.12	718.28	667.79	50.49	14.225		
7,200.00	7,194.36	7,181.29	7,143.11	25.61	26.44	124.12	259.87	579.51	724.12	673.25	50.87	14.235		
7,250.00	7,244.27	7,234.40	7,196.06	25.79	26.63	124.41	259.56	583.78	729.75	678.50	51.25	14.240		
7,300.00	7,294.18	7,287.23	7,248.73	25.97	26.83	124.72	259.05	587.81	735.16	683.53	51.62	14.241		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,350.00	7,344.08	7,339.75	7,301.11	26.15	27.02	125.02	258.37	591.62	740.38	688.39	52.00	14.239		
7,400.00	7,393.99	7,392.73	7,353.96	26.33	27.22	125.34	257.53	595.27	745.42	693.05	52.37	14.233		
7,450.00	7,443.90	7,445.94	7,407.05	26.51	27.41	125.65	256.60	598.69	750.24	697.50	52.75	14.223		
7,500.00	7,493.80	7,499.38	7,460.38	26.69	27.60	125.97	255.55	601.88	754.84	701.72	53.12	14.210		
7,550.00	7,543.71	7,552.87	7,513.78	26.88	27.79	126.29	254.41	604.81	759.20	705.71	53.50	14.192		
7,600.00	7,593.62	7,605.02	7,565.85	27.06	27.98	126.60	253.24	607.47	763.39	709.53	53.88	14.173		
7,650.00	7,643.52	7,656.80	7,617.55	27.24	28.16	126.90	252.05	609.93	767.43	713.20	54.23	14.152		
7,700.00	7,693.43	7,707.51	7,668.20	27.42	28.34	127.22	250.85	612.25	771.34	716.75	54.59	14.131		
7,750.00	7,743.38	7,758.84	7,719.46	27.60	28.52	127.51	249.63	614.53	774.84	719.89	54.95	14.102		
7,800.00	7,793.35	7,810.85	7,771.42	27.78	28.71	127.76	248.42	616.70	777.83	722.51	55.31	14.063		
7,850.00	7,843.34	7,862.30	7,822.81	27.96	28.89	127.96	247.24	618.71	780.29	724.62	55.67	14.016		
7,900.00	7,893.33	7,913.47	7,873.93	28.14	29.06	128.11	246.04	620.63	782.28	726.25	56.03	13.962		
7,950.00	7,943.33	7,964.38	7,924.79	28.31	29.24	83.73	244.80	622.47	783.95	727.56	56.39	13.903		
8,000.00	7,993.33	8,015.22	7,975.59	28.49	29.42	83.84	243.49	624.26	785.56	728.81	56.74	13.844		
8,050.00	8,043.33	8,067.70	8,028.02	28.67	29.60	83.95	242.10	626.00	787.06	729.96	57.11	13.783		
8,100.00	8,093.33	8,120.29	8,080.57	28.85	29.78	84.06	240.74	627.56	788.40	730.94	57.47	13.719		
8,150.00	8,143.33	8,170.99	8,131.23	29.03	29.96	84.17	239.40	628.97	789.65	731.83	57.82	13.656		
8,200.00	8,193.33	8,221.28	8,181.48	29.20	30.13	84.27	238.07	630.31	790.85	732.67	58.18	13.594		
8,250.00	8,243.33	8,270.60	8,230.78	29.38	30.30	84.34	237.24	631.60	792.06	733.54	58.53	13.533		
8,300.00	8,293.33	8,317.11	8,277.27	29.56	30.46	84.37	236.99	632.84	793.37	734.50	58.87	13.476		
8,350.00	8,343.33	8,360.61	8,320.74	29.74	30.62	84.37	237.13	634.28	795.03	735.83	59.20	13.428		
8,400.00	8,393.33	8,408.25	8,368.34	29.91	30.79	84.34	237.68	636.17	797.06	737.51	59.55	13.384		
8,450.00	8,443.33	8,464.60	8,424.65	30.09	30.98	84.27	236.93	638.10	798.87	738.94	59.93	13.330		
8,500.00	8,493.33	8,517.16	8,477.16	30.27	31.17	84.16	240.58	639.51	800.37	740.07	60.30	13.274		
8,550.00	8,543.33	8,567.58	8,527.54	30.45	31.35	84.06	242.10	640.82	801.81	741.16	60.65	13.220		
8,600.00	8,593.33	8,621.41	8,581.34	30.63	31.53	83.96	243.61	642.10	803.14	742.12	61.02	13.163		
8,650.00	8,643.32	8,676.35	8,636.25	30.80	31.72	-95.81	245.05	643.09	804.26	742.88	61.38	13.103		
8,700.00	8,693.06	8,733.08	8,692.96	30.96	31.92	-96.17	246.44	643.69	805.44	743.72	61.72	13.049		
8,750.00	8,742.19	8,788.14	8,748.01	31.11	32.10	-96.84	247.67	643.82	806.76	744.70	62.06	13.000		
8,800.00	8,790.32	8,840.79	8,800.65	31.26	32.27	-97.73	248.57	643.63	808.47	746.10	62.37	12.962		
8,850.00	8,837.10	8,891.69	8,851.54	31.39	32.43	-98.79	249.08	643.21	810.63	748.15	62.67	12.937		
8,900.00	8,882.17	8,940.84	8,900.69	31.52	32.59	-99.96	249.13	642.63	814.10	751.13	62.96	12.930		
8,950.00	8,925.18	8,985.74	8,945.58	31.64	32.73	-101.09	248.85	641.97	818.60	755.36	63.24	12.945		
9,000.00	8,965.81	9,027.46	8,987.29	31.75	32.86	-102.15	248.48	641.34	824.74	761.24	63.50	12.987		
9,050.00	9,003.74	9,065.45	9,025.27	31.85	32.98	-103.02	248.09	640.75	832.83	769.07	63.76	13.082		
9,100.00	9,038.70	9,099.03	9,058.86	31.94	33.08	-103.62	247.86	640.25	843.22	779.21	64.00	13.175		
9,150.00	9,070.40	9,129.25	9,089.08	32.06	33.18	-103.91	247.78	639.81	856.13	791.89	64.23	13.328		
9,200.00	9,098.62	9,156.20	9,116.02	32.18	33.26	-103.83	247.79	639.44	871.72	807.27	64.45	13.525		
9,250.00	9,123.14	9,179.93	9,139.74	32.30	33.34	-103.32	247.79	639.14	890.05	825.40	64.65	13.766		
9,300.00	9,143.76	9,199.96	9,159.77	32.43	33.40	-102.30	247.77	638.92	911.12	846.28	64.84	14.052		
9,350.00	9,160.34	9,216.13	9,175.94	32.56	33.45	-100.72	247.74	638.75	934.83	869.83	65.00	14.382		
9,400.00	9,172.75	9,228.30	9,188.11	32.70	33.49	-98.51	247.72	638.64	961.03	895.89	65.14	14.752		
9,450.00	9,180.88	9,236.35	9,196.16	32.83	33.52	-95.64	247.70	638.57	989.47	924.21	65.26	15.161		
9,500.00	9,184.69	9,240.26	9,200.07	32.97	33.53	-92.10	247.69	638.54	1,019.87	954.51	65.36	15.605		
9,550.00	9,185.00	9,240.69	9,200.51	33.12	33.53	-90.61	247.69	638.54	1,051.88	986.45	65.43	16.075		
9,600.00	9,185.00	9,240.82	9,200.63	33.28	33.53	-90.61	247.69	638.54	1,085.26	1,019.75	65.50	16.568		
9,650.00	9,185.00	9,240.95	9,200.76	33.46	33.53	-90.62	247.69	638.54	1,119.87	1,054.29	65.58	17.077		
9,700.00	9,185.00	9,241.08	9,200.89	33.64	33.53	-90.63	247.69	638.53	1,155.61	1,089.97	65.64	17.604		
9,750.00	9,185.00	9,241.21	9,201.02	33.85	33.53	-90.64	247.69	638.53	1,192.38	1,126.67	65.71	18.145		
9,800.00	9,185.00	9,241.33	9,201.15	34.05	33.53	-90.65	247.69	638.53	1,230.08	1,164.31	65.78	18.701		
9,850.00	9,185.00	9,241.46	9,201.27	34.29	33.53	-90.66	247.69	638.53	1,268.63	1,202.79	65.84	19.268		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,900.00	9,185.00	9,241.60	9,201.41	34.53	33.53	-90.67	247.69	638.53	1,307.96	1,242.06	65.90	19.848		
9,950.00	9,185.00	9,241.74	9,201.55	34.79	33.53	-90.68	247.68	638.53	1,347.99	1,282.03	65.96	20.437		
10,000.00	9,185.00	9,241.88	9,201.69	35.06	33.53	-90.69	247.68	638.53	1,388.67	1,322.66	66.01	21.037		
10,050.00	9,185.00	9,242.02	9,201.83	35.35	33.53	-90.70	247.68	638.53	1,429.94	1,363.88	66.07	21.644		
10,100.00	9,185.00	9,242.16	9,201.97	35.64	33.53	-90.71	247.68	638.53	1,471.76	1,405.64	66.11	22.261		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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 Com 234H - Wellbore #1 - Wellbore #1													Offset Site Error: 5.00 ft	
Survey Program: 138-MWD+HDGM													Offset Well Error: 0.50 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)						
0.00	0.00	3.05	3.05	0.50	0.50	89.73	6.33	1,354.70	1,354.72					
50.00	50.00	57.50	57.50	0.50	0.51	89.73	6.41	1,354.60	1,354.63	1,353.62	1.01	1,342.164		
100.00	100.00	111.96	111.96	0.52	0.53	89.72	6.62	1,354.32	1,354.37	1,353.33	1.04	1,296.099		
150.00	150.00	166.03	166.03	0.59	0.59	89.71	6.95	1,353.87	1,353.95	1,352.78	1.18	1,150.641		
200.00	200.00	217.87	217.86	0.70	0.70	89.69	7.36	1,353.31	1,353.41	1,352.01	1.40	964.209		
250.00	250.00	267.31	267.30	0.84	0.84	89.67	7.79	1,352.77	1,352.87	1,351.19	1.67	808.645		
300.00	300.00	317.41	317.40	0.99	0.99	89.65	8.25	1,352.23	1,352.34	1,350.36	1.97	685.670		
350.00	350.00	368.52	368.49	1.15	1.15	89.63	8.72	1,351.66	1,351.78	1,349.48	2.29	589.776		
400.00	400.00	419.62	419.59	1.31	1.31	89.61	9.20	1,351.04	1,351.17	1,348.55	2.62	515.157		
450.00	450.00	469.71	469.67	1.48	1.48	89.59	9.68	1,350.41	1,350.55	1,347.59	2.96	456.625		
500.00	500.00	519.87	519.83	1.65	1.65	89.57	10.15	1,349.78	1,349.92	1,346.63	3.30	409.343		
550.00	550.00	570.25	570.20	1.82	1.83	89.55	10.61	1,349.13	1,349.29	1,345.64	3.64	370.449		
600.00	600.00	620.56	620.50	1.99	2.00	89.53	11.04	1,348.47	1,348.64	1,344.65	3.99	338.070		
650.00	650.00	670.73	670.67	2.16	2.18	89.51	11.46	1,347.81	1,347.98	1,343.64	4.34	310.755		
700.00	700.00	719.88	719.81	2.34	2.35	89.50	11.85	1,347.16	1,347.32	1,342.64	4.68	287.633		
750.00	750.00	768.65	768.58	2.51	2.52	89.48	12.13	1,346.57	1,346.72	1,341.68	5.03	267.712		
800.00	800.00	816.31	816.23	2.69	2.69	89.47	12.35	1,346.04	1,346.17	1,340.79	5.37	250.507		
850.00	850.00	863.34	863.26	2.87	2.85	89.46	12.57	1,345.62	1,345.72	1,340.01	5.72	235.441		
900.00	900.00	912.40	912.32	3.04	3.02	89.46	12.78	1,345.27	1,345.36	1,339.30	6.07	221.820		
950.00	950.00	962.28	962.20	3.22	3.20	89.45	12.87	1,344.91	1,345.01	1,338.59	6.42	209.576		
1,000.00	1,000.00	1,012.27	1,012.18	3.40	3.38	89.45	12.88	1,344.57	1,344.66	1,337.89	6.77	198.596		
1,050.00	1,050.00	1,062.27	1,062.18	3.58	3.55	89.45	12.88	1,344.22	1,344.31	1,337.19	7.12	188.695		
1,100.00	1,100.00	1,110.88	1,110.80	3.75	3.72	89.45	12.89	1,343.90	1,343.99	1,336.52	7.47	179.831		
1,150.00	1,150.00	1,160.24	1,160.15	3.93	3.90	89.45	12.92	1,343.63	1,343.71	1,335.89	7.83	171.699		
1,200.00	1,200.00	1,212.28	1,212.20	4.11	4.08	89.44	13.02	1,343.31	1,343.40	1,335.21	8.19	164.057		
1,250.00	1,250.00	1,263.73	1,263.64	4.29	4.27	89.44	13.19	1,342.91	1,343.02	1,334.47	8.55	157.092		
1,300.00	1,300.00	1,314.37	1,314.28	4.46	4.45	89.43	13.28	1,342.49	1,342.60	1,333.70	8.91	150.734		
1,350.00	1,350.00	1,363.72	1,363.62	4.64	4.62	89.43	13.30	1,342.07	1,342.18	1,332.92	9.26	144.935		
1,400.00	1,400.00	1,412.31	1,412.22	4.82	4.80	89.43	13.34	1,341.70	1,341.80	1,332.19	9.61	139.604		
1,450.00	1,450.00	1,462.09	1,461.99	5.00	4.97	89.43	13.41	1,341.36	1,341.46	1,331.49	9.97	134.592		
1,500.00	1,500.00	1,512.24	1,512.14	5.18	5.15	89.43	13.45	1,341.02	1,341.12	1,330.79	10.32	129.906		
1,550.00	1,550.00	1,559.74	1,559.64	5.36	5.32	89.42	13.51	1,340.73	1,340.81	1,330.14	10.67	125.652		
1,600.00	1,600.00	1,607.09	1,607.00	5.53	5.49	89.42	13.66	1,340.53	1,340.61	1,329.59	11.02	121.680		
1,650.00	1,650.00	1,657.91	1,657.81	5.71	5.67	89.41	13.85	1,340.35	1,340.43	1,329.06	11.38	117.823		
1,700.00	1,700.00	1,708.98	1,708.88	5.89	5.85	89.40	14.02	1,340.14	1,340.23	1,328.49	11.74	114.188		
1,750.00	1,750.00	1,760.98	1,760.88	6.07	6.04	89.40	14.12	1,339.87	1,339.97	1,327.87	12.10	110.733		
1,800.00	1,800.00	1,810.99	1,810.89	6.25	6.21	89.40	14.14	1,339.54	1,339.64	1,327.18	12.46	107.538		
1,850.00	1,850.00	1,857.53	1,857.43	6.43	6.38	89.40	14.13	1,339.32	1,339.40	1,326.60	12.80	104.630		
1,900.00	1,900.00	1,903.75	1,903.65	6.61	6.54	89.40	14.12	1,339.22	1,339.30	1,326.16	13.14	101.912		
1,909.55	1,909.55	1,912.45	1,912.35	6.64	6.57	89.40	14.12	1,339.22	1,339.29	1,326.09	13.21	101.420 CC		
1,950.00	1,950.00	1,949.29	1,949.19	6.78	6.70	89.40	14.11	1,339.27	1,339.35	1,325.87	13.47	99.396		
2,000.00	2,000.00	1,996.01	1,995.91	6.96	6.85	89.40	14.11	1,339.47	1,339.56	1,325.75	13.81	96.995		
2,050.00	2,050.00	2,046.52	2,046.42	7.14	7.02	89.39	14.16	1,339.72	1,339.81	1,325.65	14.16	94.648		
2,100.00	2,100.00	2,096.43	2,096.32	7.32	7.18	89.39	14.28	1,339.95	1,340.04	1,325.54	14.50	92.419		
2,150.00	2,150.00	2,145.25	2,145.15	7.50	7.35	89.38	14.42	1,340.21	1,340.31	1,325.46	14.84	90.308		
2,200.00	2,200.00	2,195.04	2,194.93	7.68	7.51	89.38	14.58	1,340.50	1,340.61	1,325.42	15.19	88.273		
2,250.00	2,250.00	2,246.19	2,246.08	7.86	7.68	89.37	14.73	1,340.78	1,340.88	1,325.34	15.54	86.298		
2,300.00	2,300.00	2,296.50	2,296.40	8.04	7.85	89.37	14.85	1,341.02	1,341.11	1,325.23	15.89	84.423		
2,350.00	2,350.00	2,346.15	2,346.05	8.22	8.02	89.36	14.94	1,341.26	1,341.36	1,325.13	16.23	82.639		
2,400.00	2,400.00	2,396.07	2,395.96	8.39	8.19	89.36	15.00	1,341.51	1,341.62	1,325.04	16.58	80.925		
2,450.00	2,450.00	2,446.14	2,446.04	8.57	8.36	89.36	15.06	1,341.77	1,341.87	1,324.94	16.93	79.277		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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 Com 234H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 138-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,500.00	2,500.00	2,493.82	2,493.72	8.75	8.52	89.35	15.15	1,342.04	1,342.15	1,324.89	17.27	77.731	ES	
2,550.00	2,550.00	2,540.68	2,540.57	8.93	8.68	89.35	15.29	1,342.41	1,342.55	1,324.95	17.60	76.263		
2,600.00	2,600.00	2,584.31	2,584.20	9.11	8.83	89.34	15.45	1,342.89	1,343.11	1,325.18	17.93	74.907		
2,650.00	2,650.00	2,626.66	2,626.54	9.29	8.97	89.34	15.59	1,343.59	1,343.94	1,325.69	18.25	73.634		
2,700.00	2,700.00	2,668.70	2,668.57	9.47	9.11	89.33	15.71	1,344.54	1,345.06	1,326.49	18.57	72.427		
2,750.00	2,750.00	2,710.40	2,710.25	9.65	9.26	89.33	15.83	1,345.72	1,346.49	1,327.60	18.89	71.284		
2,800.00	2,800.00	2,752.47	2,752.29	9.83	9.40	89.32	15.96	1,347.18	1,348.22	1,329.01	19.21	70.192		
2,850.00	2,850.00	2,796.13	2,795.93	10.00	9.55	89.32	16.13	1,348.92	1,350.21	1,330.68	19.53	69.127		
2,900.00	2,900.00	2,839.78	2,839.53	10.18	9.70	89.31	16.35	1,350.85	1,352.43	1,332.58	19.86	68.110		
2,950.00	2,950.00	2,883.53	2,883.22	10.36	9.85	89.29	16.66	1,353.00	1,354.89	1,334.71	20.18	67.135		
3,000.00	3,000.00	2,927.25	2,926.88	10.54	10.00	89.28	17.08	1,355.34	1,357.57	1,337.06	20.51	66.204		
3,050.00	3,050.00	2,967.95	2,967.50	10.72	10.14	89.26	17.55	1,357.74	1,360.53	1,339.71	20.82	65.355		
3,100.00	3,100.00	3,008.06	3,007.52	10.90	10.28	89.24	18.10	1,360.39	1,363.84	1,342.71	21.13	64.559		
3,150.00	3,150.00	3,049.30	3,048.65	11.08	10.42	89.21	18.72	1,363.40	1,367.50	1,346.06	21.44	63.788		
3,200.00	3,200.00	3,091.80	3,091.01	11.26	10.57	89.19	19.41	1,366.74	1,371.44	1,349.69	21.76	63.039		
3,250.00	3,250.00	3,134.86	3,133.91	11.44	10.72	89.16	20.14	1,370.36	1,375.65	1,353.58	22.07	62.318		
3,300.00	3,300.00	3,180.01	3,178.88	11.62	10.87	89.12	21.05	1,374.32	1,380.06	1,357.65	22.40	61.599		
3,350.00	3,350.00	3,225.68	3,224.35	11.80	11.03	89.08	22.15	1,378.48	1,384.63	1,361.89	22.74	60.902		
3,400.00	3,400.00	3,275.67	3,274.11	11.97	11.21	89.03	23.45	1,383.09	1,389.26	1,366.18	23.09	60.174		
3,450.00	3,450.00	3,327.06	3,325.26	12.15	11.39	88.98	24.81	1,387.82	1,393.89	1,370.44	23.45	59.449		
3,500.00	3,500.00	3,383.67	3,381.63	12.33	11.59	88.92	26.25	1,392.83	1,398.34	1,374.51	23.83	58.678		
3,550.00	3,550.00	3,434.75	3,432.52	12.51	11.77	88.87	27.46	1,397.17	1,402.60	1,378.42	24.19	57.986		
3,600.00	3,600.00	3,481.00	3,478.58	12.69	11.94	88.83	28.56	1,401.17	1,406.96	1,382.43	24.52	57.369		
3,650.00	3,650.00	3,524.32	3,521.71	12.87	12.09	88.79	29.62	1,405.05	1,411.46	1,386.61	24.85	56.807		
3,700.00	3,700.00	3,564.45	3,561.64	13.05	12.23	88.76	30.59	1,408.89	1,416.27	1,391.12	25.15	56.308		
3,750.00	3,750.00	3,605.31	3,602.27	13.23	12.38	88.72	31.57	1,413.08	1,421.42	1,395.96	25.46	55.829		
3,800.00	3,800.00	3,654.20	3,650.88	13.41	12.56	88.68	32.64	1,418.25	1,426.73	1,400.92	25.81	55.281		
3,850.00	3,850.00	3,703.52	3,699.91	13.59	12.73	88.65	33.56	1,423.49	1,432.07	1,405.91	26.16	54.744		
3,900.00	3,900.00	3,755.34	3,751.43	13.77	12.92	88.62	34.33	1,428.97	1,437.37	1,410.85	26.52	54.195		
3,950.00	3,950.00	3,809.88	3,805.66	13.94	13.11	88.61	34.91	1,434.64	1,442.59	1,415.69	26.90	53.630		
4,000.00	4,000.00	3,870.93	3,866.43	14.12	13.33	88.59	35.47	1,440.62	1,447.49	1,420.19	27.31	53.006		
4,050.00	4,050.00	3,922.89	3,918.16	14.30	13.52	133.03	35.94	1,445.42	1,452.31	1,424.64	27.67	52.486		
4,100.00	4,099.99	3,971.54	3,966.60	14.48	13.70	132.99	36.47	1,449.94	1,457.52	1,429.50	28.02	52.022		
4,150.00	4,149.97	4,013.72	4,008.59	14.66	13.85	132.95	37.02	1,453.95	1,463.22	1,434.89	28.33	51.646		
4,200.00	4,199.94	4,054.05	4,048.70	14.83	14.00	132.92	37.68	1,458.04	1,469.60	1,440.96	28.64	51.321		
4,250.00	4,249.88	4,098.77	4,093.16	15.01	14.16	132.88	38.54	1,462.82	1,476.63	1,447.66	28.96	50.986		
4,300.00	4,299.79	4,149.41	4,143.50	15.19	14.34	132.90	39.50	1,468.25	1,484.01	1,454.69	29.32	50.618		
4,350.00	4,349.70	4,199.87	4,193.66	15.36	14.53	132.95	40.40	1,473.62	1,491.42	1,461.75	29.67	50.262		
4,400.00	4,399.60	4,250.19	4,243.69	15.54	14.71	133.02	41.18	1,478.95	1,498.81	1,468.78	30.03	49.915	SF	

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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 Com 528H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 138-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)	
0.00	0.00	2.37	2.37	0.50	0.50	89.73	6.43	1,384.70	1,384.72					
50.00	50.00	46.23	46.23	0.50	0.50	89.73	6.43	1,384.81	1,384.84	1,383.83	1.01	1,375.536		
100.00	100.00	90.09	90.09	0.52	0.52	89.73	6.41	1,385.11	1,385.19	1,384.15	1.04	1,337.257		
150.00	150.00	133.94	133.94	0.59	0.54	89.74	6.40	1,385.61	1,385.75	1,384.62	1.13	1,227.179		
200.00	200.00	183.36	183.35	0.70	0.62	89.74	6.38	1,386.30	1,386.45	1,385.12	1.32	1,047.334		
250.00	250.00	233.35	233.33	0.84	0.74	89.74	6.38	1,387.00	1,387.15	1,385.57	1.58	878.203		
300.00	300.00	282.11	282.09	0.99	0.88	89.74	6.39	1,387.70	1,387.86	1,386.00	1.87	743.704		
350.00	350.00	331.30	331.28	1.15	1.03	89.74	6.40	1,388.45	1,388.63	1,386.46	2.17	638.697		
400.00	400.00	384.09	384.06	1.31	1.20	89.74	6.39	1,389.21	1,389.35	1,386.84	2.51	554.283		
450.00	450.00	435.81	435.77	1.48	1.37	89.74	6.37	1,389.86	1,389.98	1,387.13	2.84	488.672		
500.00	500.00	485.89	485.85	1.65	1.54	89.74	6.40	1,390.47	1,390.59	1,387.40	3.18	436.932		
550.00	550.00	536.66	536.62	1.82	1.71	89.73	6.48	1,391.08	1,391.18	1,387.66	3.53	394.411		
600.00	600.00	587.93	587.88	1.99	1.89	89.73	6.53	1,391.64	1,391.74	1,387.86	3.88	359.007		
650.00	650.00	638.20	638.15	2.16	2.06	89.73	6.56	1,392.17	1,392.26	1,388.04	4.22	329.538		
700.00	700.00	688.22	688.17	2.34	2.24	89.73	6.60	1,392.69	1,392.78	1,388.21	4.57	304.499		
750.00	750.00	736.95	736.89	2.51	2.41	89.73	6.63	1,393.23	1,393.33	1,388.41	4.92	283.200		
800.00	800.00	785.79	785.74	2.69	2.58	89.73	6.62	1,393.80	1,393.92	1,388.65	5.27	264.632		
850.00	850.00	838.72	838.66	2.87	2.77	89.73	6.57	1,394.39	1,394.48	1,388.85	5.63	247.691		
900.00	900.00	891.32	891.26	3.04	2.95	89.73	6.47	1,394.87	1,394.93	1,388.94	5.99	232.796		
950.00	950.00	942.45	942.39	3.22	3.13	89.74	6.39	1,395.27	1,395.32	1,388.97	6.35	219.747		
1,000.00	1,000.00	993.11	993.04	3.40	3.31	89.74	6.38	1,395.62	1,395.67	1,388.97	6.71	208.120		
1,050.00	1,050.00	1,043.26	1,043.19	3.58	3.49	89.74	6.41	1,395.97	1,396.01	1,388.95	7.06	197.705		
1,100.00	1,100.00	1,093.38	1,093.31	3.75	3.67	89.73	6.47	1,396.31	1,396.35	1,388.94	7.42	188.282		
1,150.00	1,150.00	1,143.48	1,143.41	3.93	3.84	89.74	6.44	1,396.64	1,396.69	1,388.92	7.77	179.716		
1,200.00	1,200.00	1,193.28	1,193.21	4.11	4.02	89.74	6.35	1,396.98	1,397.02	1,388.90	8.13	171.913		
1,250.00	1,250.00	1,243.06	1,242.99	4.29	4.20	89.74	6.32	1,397.32	1,397.37	1,388.89	8.48	164.760		
1,300.00	1,300.00	1,295.31	1,295.24	4.46	4.38	89.74	6.27	1,397.64	1,397.67	1,388.83	8.84	158.029		
1,350.00	1,350.00	1,347.22	1,347.15	4.64	4.57	89.75	6.13	1,397.88	1,397.90	1,388.70	9.21	151.841		
1,400.00	1,400.00	1,398.21	1,398.13	4.82	4.75	89.75	6.08	1,398.06	1,398.08	1,388.52	9.56	146.174		
1,450.00	1,450.00	1,448.57	1,448.49	5.00	4.93	89.75	6.16	1,398.21	1,398.23	1,388.31	9.92	140.937		
1,500.00	1,500.00	1,498.18	1,498.10	5.18	5.10	89.74	6.23	1,398.37	1,398.39	1,388.12	10.28	136.093		
1,550.00	1,550.00	1,549.23	1,549.15	5.36	5.28	89.74	6.29	1,398.53	1,398.55	1,387.91	10.63	131.526		
1,600.00	1,600.00	1,601.15	1,601.08	5.53	5.46	89.74	6.41	1,398.62	1,398.64	1,387.65	10.99	127.223		
1,650.00	1,650.00	1,649.82	1,649.75	5.71	5.63	89.73	6.55	1,398.70	1,398.71	1,387.37	11.34	123.312		
1,700.00	1,700.00	1,698.00	1,697.93	5.89	5.80	89.73	6.62	1,398.83	1,398.85	1,387.16	11.69	119.656		
1,750.00	1,750.00	1,748.59	1,748.52	6.07	5.98	89.73	6.67	1,398.99	1,399.01	1,386.96	12.05	116.112		
1,800.00	1,800.00	1,799.50	1,799.42	6.25	6.16	89.72	6.77	1,399.13	1,399.15	1,386.74	12.41	112.764		
1,850.00	1,850.00	1,853.26	1,853.18	6.43	6.35	89.72	6.90	1,399.18	1,399.20	1,386.43	12.77	109.565		
1,900.00	1,900.00	1,905.42	1,905.34	6.61	6.52	89.71	7.04	1,399.10	1,399.12	1,386.00	13.13	106.588		
1,950.00	1,950.00	1,954.11	1,954.04	6.78	6.69	89.71	7.08	1,399.04	1,399.05	1,385.59	13.47	103.878		
1,989.80	1,989.80	1,992.88	1,992.80	6.93	6.82	89.71	7.03	1,399.01	1,399.03	1,385.29	13.74	101.820		
2,000.00	2,000.00	2,000.78	2,000.70	6.96	6.85	89.71	7.03	1,399.02	1,399.04	1,385.24	13.81	101.342		
2,050.00	2,050.00	2,043.92	2,043.85	7.14	6.99	89.71	7.00	1,399.19	1,399.24	1,385.10	14.13	98.999		
2,100.00	2,100.00	2,086.78	2,086.71	7.32	7.14	89.71	7.02	1,399.57	1,399.68	1,385.21	14.46	96.784		
2,150.00	2,150.00	2,128.23	2,128.15	7.50	7.29	89.71	7.04	1,400.17	1,400.40	1,385.61	14.79	94.698		
2,200.00	2,200.00	2,169.67	2,169.58	7.68	7.44	89.71	7.04	1,401.02	1,401.43	1,386.32	15.11	92.726		
2,250.00	2,250.00	2,212.72	2,212.61	7.86	7.60	89.71	7.02	1,402.15	1,402.74	1,387.29	15.44	90.822		
2,300.00	2,300.00	2,255.99	2,255.86	8.04	7.75	89.71	7.02	1,403.49	1,404.29	1,388.51	15.78	89.009		
2,350.00	2,350.00	2,298.15	2,298.00	8.22	7.90	89.71	7.01	1,405.00	1,406.09	1,389.98	16.10	87.313		
2,400.00	2,400.00	2,339.77	2,339.58	8.39	8.05	89.72	6.89	1,406.75	1,408.18	1,391.75	16.43	85.715		
2,450.00	2,450.00	2,381.21	2,380.97	8.57	8.20	89.73	6.66	1,408.73	1,410.57	1,393.82	16.75	84.203		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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 Com 528H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 138-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
2,500.00	2,500.00	2,422.40	2,422.10	8.75	8.35	89.74	6.44	1,410.95	1,413.27	1,396.19	17.07	82.774		
2,550.00	2,550.00	2,463.64	2,463.28	8.93	8.50	89.75	6.28	1,413.43	1,416.27	1,398.88	17.40	81.418		
2,600.00	2,600.00	2,505.78	2,505.31	9.11	8.65	89.75	6.18	1,416.21	1,419.57	1,401.85	17.72	80.112		
2,650.00	2,650.00	2,547.88	2,547.31	9.29	8.80	89.75	6.16	1,419.21	1,423.13	1,405.09	18.04	78.871		
2,700.00	2,700.00	2,589.26	2,588.56	9.47	8.95	89.75	6.21	1,422.40	1,426.98	1,408.62	18.36	77.705		
2,750.00	2,750.00	2,630.45	2,629.61	9.65	9.10	89.75	6.29	1,425.82	1,431.13	1,412.45	18.68	76.601		
2,800.00	2,800.00	2,671.14	2,670.14	9.83	9.25	89.74	6.39	1,429.44	1,435.59	1,416.59	19.00	75.562		
2,850.00	2,850.00	2,711.38	2,710.19	10.00	9.40	89.74	6.53	1,433.29	1,440.37	1,421.06	19.31	74.584		
2,900.00	2,900.00	2,753.36	2,751.96	10.18	9.55	89.73	6.71	1,437.58	1,445.48	1,425.84	19.63	73.627		
2,950.00	2,950.00	2,804.55	2,802.87	10.36	9.74	89.72	6.99	1,442.89	1,450.66	1,430.67	20.00	72.548		
3,000.00	3,000.00	2,858.17	2,856.21	10.54	9.93	89.71	7.35	1,448.38	1,455.79	1,435.42	20.37	71.464		
3,050.00	3,050.00	2,917.30	2,915.05	10.72	10.15	89.70	7.65	1,454.14	1,460.66	1,439.89	20.77	70.320		
3,100.00	3,100.00	2,964.39	2,961.93	10.90	10.32	89.69	7.83	1,458.56	1,465.36	1,444.24	21.12	69.394		
3,150.00	3,150.00	3,006.29	3,003.63	11.08	10.48	89.69	8.02	1,462.70	1,470.30	1,448.86	21.44	68.586		
3,200.00	3,200.00	3,052.78	3,049.87	11.26	10.65	89.68	8.29	1,467.50	1,475.46	1,453.68	21.78	67.746		
3,250.00	3,250.00	3,105.33	3,102.14	11.44	10.84	89.67	8.58	1,472.90	1,480.60	1,458.45	22.15	66.844		
3,300.00	3,300.00	3,153.18	3,149.75	11.62	11.02	89.66	8.83	1,477.76	1,485.68	1,463.18	22.50	66.035		
3,350.00	3,350.00	3,197.97	3,194.29	11.80	11.19	89.65	9.03	1,482.44	1,490.91	1,468.08	22.83	65.298		
3,400.00	3,400.00	3,245.80	3,241.84	11.97	11.37	89.65	9.22	1,487.58	1,496.28	1,473.10	23.18	64.548 SF		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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 Com 718H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 138-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Offset Wellbore Centre		Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	4.96	4.96	0.50	0.50	89.74	6.09	1,324.74	1,324.76					
50.00	50.00	57.70	57.70	0.50	0.51	89.73	6.14	1,324.68	1,324.69	1,323.69	1.01	1,312.707		
100.00	100.00	110.45	110.45	0.52	0.53	89.73	6.28	1,324.50	1,324.53	1,323.49	1.04	1,269.369		
150.00	150.00	161.19	161.19	0.59	0.58	89.72	6.50	1,324.25	1,324.28	1,323.11	1.17	1,135.588		
200.00	200.00	210.60	210.60	0.70	0.68	89.71	6.76	1,324.03	1,324.06	1,322.67	1.38	957.170		
250.00	250.00	262.16	262.15	0.84	0.82	89.70	7.00	1,323.76	1,323.80	1,322.15	1.66	799.585		
300.00	300.00	312.30	312.29	0.99	0.97	89.69	7.24	1,323.48	1,323.52	1,321.56	1.95	677.467		
350.00	350.00	362.55	362.54	1.15	1.12	89.67	7.54	1,323.18	1,323.23	1,320.96	2.27	583.020		
400.00	400.00	412.91	412.90	1.31	1.29	89.66	7.76	1,322.88	1,322.92	1,320.33	2.60	509.372		
450.00	450.00	464.03	464.01	1.48	1.46	89.66	7.96	1,322.54	1,322.60	1,319.66	2.93	450.652		
500.00	500.00	515.25	515.23	1.65	1.63	89.64	8.27	1,322.15	1,322.22	1,318.94	3.28	403.344		
550.00	550.00	564.54	564.53	1.82	1.80	89.63	8.58	1,321.77	1,321.84	1,318.22	3.62	365.280		
600.00	600.00	614.23	614.22	1.99	1.97	89.62	8.84	1,321.41	1,321.48	1,317.51	3.96	333.427		
650.00	650.00	664.53	664.51	2.16	2.15	89.60	9.14	1,321.04	1,321.11	1,316.80	4.31	306.373		
700.00	700.00	714.20	714.18	2.34	2.32	89.59	9.49	1,320.67	1,320.74	1,316.08	4.66	283.401		
750.00	750.00	763.40	763.38	2.51	2.49	89.57	9.81	1,320.33	1,320.40	1,315.39	5.01	263.648		
800.00	800.00	813.95	813.93	2.69	2.67	89.56	10.09	1,320.00	1,320.07	1,314.70	5.36	246.206		
850.00	850.00	865.25	865.22	2.87	2.85	89.55	10.31	1,319.61	1,319.69	1,313.97	5.72	230.776		
900.00	900.00	914.69	914.66	3.04	3.03	89.55	10.44	1,319.22	1,319.30	1,313.23	6.07	217.382		
950.00	950.00	963.88	963.85	3.22	3.20	89.54	10.51	1,318.86	1,318.94	1,312.52	6.42	205.467		
1,000.00	1,000.00	1,014.82	1,014.78	3.40	3.38	89.54	10.59	1,318.49	1,318.57	1,311.80	6.78	194.591		
1,050.00	1,050.00	1,065.58	1,065.55	3.58	3.56	89.53	10.72	1,318.09	1,318.17	1,311.04	7.13	184.802		
1,100.00	1,100.00	1,115.77	1,115.73	3.75	3.74	89.53	10.85	1,317.67	1,317.76	1,310.27	7.49	175.977		
1,150.00	1,150.00	1,165.35	1,165.31	3.93	3.91	89.52	10.96	1,317.25	1,317.34	1,309.50	7.84	167.991		
1,200.00	1,200.00	1,214.09	1,214.05	4.11	4.09	89.52	11.06	1,316.88	1,316.96	1,308.77	8.19	160.751		
1,250.00	1,250.00	1,263.48	1,263.44	4.29	4.26	89.51	11.16	1,316.55	1,316.63	1,308.08	8.55	154.063		
1,300.00	1,300.00	1,313.42	1,313.37	4.46	4.44	89.51	11.26	1,316.22	1,316.29	1,307.39	8.90	147.871		
1,350.00	1,350.00	1,361.98	1,361.94	4.64	4.61	89.50	11.38	1,315.92	1,315.99	1,306.73	9.25	142.229		
1,400.00	1,400.00	1,410.04	1,409.99	4.82	4.78	89.50	11.53	1,315.69	1,315.75	1,306.15	9.60	137.030		
1,450.00	1,450.00	1,457.81	1,457.76	5.00	4.95	89.49	11.70	1,315.53	1,315.59	1,305.64	9.95	132.233		
1,500.00	1,500.00	1,505.52	1,505.47	5.18	5.12	89.48	11.87	1,315.46	1,315.51	1,305.22	10.30	127.771		
1,550.00	1,550.00	1,557.40	1,557.36	5.36	5.30	89.48	12.01	1,315.40	1,315.46	1,304.80	10.66	123.434		
1,600.00	1,600.00	1,609.72	1,609.68	5.53	5.49	89.48	12.05	1,315.25	1,315.31	1,304.29	11.02	119.356		
1,650.00	1,650.00	1,660.71	1,660.67	5.71	5.67	89.47	12.07	1,315.04	1,315.11	1,303.73	11.38	115.565		
1,700.00	1,700.00	1,711.16	1,711.11	5.89	5.85	89.47	12.11	1,314.79	1,314.86	1,303.13	11.74	112.021		
1,750.00	1,750.00	1,759.97	1,759.92	6.07	6.02	89.47	12.15	1,314.57	1,314.64	1,302.55	12.09	108.736		
1,800.00	1,800.00	1,808.43	1,808.38	6.25	6.19	89.47	12.18	1,314.41	1,314.47	1,302.03	12.44	105.669		
1,850.00	1,850.00	1,856.21	1,856.17	6.43	6.36	89.47	12.13	1,314.31	1,314.37	1,301.59	12.78	102.825		
1,891.46	1,891.46	1,896.21	1,896.16	6.58	6.49	89.48	12.01	1,314.30	1,314.35	1,301.28	13.07	100.584		
1,900.00	1,900.00	1,904.68	1,904.63	6.61	6.52	89.48	11.99	1,314.30	1,314.35	1,301.23	13.13	100.135		
1,950.00	1,950.00	1,954.28	1,954.23	6.78	6.69	89.48	11.86	1,314.31	1,314.36	1,300.89	13.47	97.584		
2,000.00	2,000.00	2,004.60	2,004.55	6.96	6.86	89.49	11.75	1,314.33	1,314.38	1,300.57	13.82	95.138		
2,050.00	2,050.00	2,055.82	2,055.77	7.14	7.03	89.50	11.53	1,314.31	1,314.36	1,300.20	14.17	92.782		
2,100.00	2,100.00	2,106.53	2,106.49	7.32	7.20	89.51	11.20	1,314.26	1,314.30	1,299.79	14.52	90.537		
2,150.00	2,150.00	2,156.89	2,156.84	7.50	7.37	89.52	10.91	1,314.18	1,314.23	1,299.36	14.87	88.396		
2,200.00	2,200.00	2,206.36	2,206.31	7.68	7.54	89.53	10.67	1,314.11	1,314.15	1,298.94	15.22	86.369		
2,250.00	2,250.00	2,255.44	2,255.39	7.86	7.71	89.54	10.47	1,314.07	1,314.11	1,298.55	15.56	84.441		
2,300.00	2,300.00	2,307.22	2,307.17	8.04	7.89	89.55	10.29	1,314.02	1,314.06	1,298.14	15.92	82.539		
2,350.00	2,350.00	2,359.74	2,359.69	8.22	8.07	89.56	10.11	1,313.87	1,313.92	1,297.64	16.28	80.701		
2,400.00	2,400.00	2,408.27	2,408.22	8.39	8.24	89.57	9.94	1,313.71	1,313.75	1,297.12	16.63	79.000		
2,450.00	2,450.00	2,456.64	2,456.59	8.57	8.41	89.57	9.78	1,313.61	1,313.65	1,296.67	16.98	77.375		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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 Com 718H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 138-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,500.00	2,500.00	2,507.33	2,507.28	8.75	8.58	89.58	9.63	1,313.53	1,313.57	1,296.23	17.33	75.780		
2,550.00	2,550.00	2,558.02	2,557.96	8.93	8.76	89.59	9.49	1,313.42	1,313.46	1,295.77	17.69	74.247		
2,600.00	2,600.00	2,608.22	2,608.17	9.11	8.94	89.59	9.37	1,313.29	1,313.33	1,295.28	18.05	72.774		
2,650.00	2,650.00	2,658.54	2,658.48	9.29	9.12	89.60	9.26	1,313.15	1,313.19	1,294.79	18.40	71.355		
2,700.00	2,700.00	2,709.02	2,708.96	9.47	9.30	89.60	9.20	1,313.00	1,313.04	1,294.28	18.76	69.984		
2,750.00	2,750.00	2,759.31	2,759.25	9.65	9.48	89.60	9.20	1,312.83	1,312.87	1,293.75	19.12	68.665		
2,800.00	2,800.00	2,809.24	2,809.19	9.83	9.65	89.60	9.18	1,312.66	1,312.70	1,293.22	19.48	67.397		
2,850.00	2,850.00	2,858.59	2,858.54	10.00	9.83	89.60	9.15	1,312.49	1,312.53	1,292.70	19.83	66.185		
2,900.00	2,900.00	2,907.22	2,907.17	10.18	10.00	89.60	9.21	1,312.38	1,312.41	1,292.23	20.18	65.028		
2,950.00	2,950.00	2,956.20	2,956.14	10.36	10.17	89.59	9.36	1,312.31	1,312.34	1,291.81	20.53	63.914		
3,000.00	3,000.00	3,005.53	3,005.48	10.54	10.34	89.58	9.57	1,312.26	1,312.30	1,291.41	20.88	62.838		
3,050.00	3,050.00	3,055.41	3,055.35	10.72	10.52	89.57	9.82	1,312.24	1,312.27	1,291.04	21.24	61.794		
3,100.00	3,100.00	3,105.69	3,105.63	10.90	10.69	89.56	10.08	1,312.21	1,312.24	1,290.65	21.59	60.780		
3,150.00	3,150.00	3,156.43	3,156.37	11.08	10.87	89.55	10.35	1,312.16	1,312.20	1,290.25	21.95	59.792		
3,200.00	3,200.00	3,207.40	3,207.34	11.26	11.05	89.53	10.66	1,312.07	1,312.12	1,289.81	22.30	58.831		
3,250.00	3,250.00	3,256.94	3,256.88	11.44	11.22	89.52	10.98	1,311.97	1,312.02	1,289.36	22.66	57.911		
3,300.00	3,300.00	3,306.14	3,306.08	11.62	11.39	89.51	11.26	1,311.90	1,311.95	1,288.94	23.01	57.023		
3,350.00	3,350.00	3,356.61	3,356.54	11.80	11.57	89.50	11.51	1,311.84	1,311.89	1,288.53	23.36	56.152		
3,400.00	3,400.00	3,407.24	3,407.17	11.97	11.75	89.49	11.76	1,311.76	1,311.81	1,288.09	23.72	55.304		
3,421.05	3,421.05	3,425.81	3,425.75	12.05	11.81	89.48	11.86	1,311.74	1,311.79	1,287.93	23.86	54.979 CC		
3,450.00	3,450.00	3,451.22	3,451.16	12.15	11.90	89.48	12.02	1,311.77	1,311.83	1,287.78	24.05	54.543		
3,500.00	3,500.00	3,495.11	3,495.04	12.33	12.05	89.46	12.35	1,311.99	1,312.08	1,287.70	24.38	53.814 ES		
3,550.00	3,550.00	3,537.38	3,537.31	12.51	12.20	89.44	12.76	1,312.41	1,312.59	1,287.89	24.70	53.134		
3,600.00	3,600.00	3,579.24	3,579.16	12.69	12.34	89.42	13.26	1,313.09	1,313.41	1,288.38	25.02	52.490		
3,650.00	3,650.00	3,620.03	3,619.94	12.87	12.48	89.40	13.80	1,314.01	1,314.54	1,289.21	25.34	51.885		
3,700.00	3,700.00	3,659.85	3,659.74	13.05	12.61	89.38	14.29	1,315.21	1,316.06	1,290.42	25.64	51.321		
3,750.00	3,750.00	3,699.57	3,699.43	13.23	12.75	89.36	14.71	1,316.72	1,317.96	1,292.01	25.95	50.788		
3,800.00	3,800.00	3,738.77	3,738.58	13.41	12.88	89.34	15.09	1,318.52	1,320.26	1,294.01	26.25	50.290		
3,850.00	3,850.00	3,777.93	3,777.69	13.59	13.01	89.33	15.45	1,320.63	1,322.97	1,296.41	26.55	49.822		
3,900.00	3,900.00	3,819.90	3,819.58	13.77	13.15	89.31	15.85	1,323.21	1,326.04	1,299.18	26.87	49.358		
3,950.00	3,950.00	3,862.97	3,862.54	13.94	13.30	89.29	16.36	1,326.08	1,329.38	1,302.20	27.18	48.906		
4,000.00	4,000.00	3,905.79	3,905.25	14.12	13.45	89.27	16.99	1,329.15	1,332.98	1,305.48	27.50	48.477		
4,050.00	4,050.00	3,948.36	3,947.68	14.30	13.59	133.70	17.81	1,332.43	1,337.03	1,309.22	27.81	48.079		
4,100.00	4,099.99	3,990.32	3,989.49	14.48	13.73	133.63	18.79	1,335.89	1,341.74	1,313.62	28.12	47.719		
4,150.00	4,149.97	4,030.83	4,029.83	14.66	13.87	133.57	19.88	1,339.50	1,347.14	1,318.72	28.42	47.407		
4,200.00	4,199.94	4,071.25	4,070.04	14.83	14.01	133.52	21.09	1,343.36	1,353.25	1,324.53	28.71	47.129		
4,250.00	4,249.88	4,122.17	4,120.69	15.01	14.19	133.47	22.69	1,348.40	1,359.90	1,330.83	29.07	46.787		
4,300.00	4,299.79	4,174.38	4,172.62	15.19	14.37	133.46	24.30	1,353.46	1,366.80	1,337.38	29.42	46.451		
4,350.00	4,349.70	4,230.00	4,227.98	15.36	14.56	133.50	25.90	1,358.69	1,373.61	1,343.81	29.80	46.094		
4,400.00	4,399.60	4,283.53	4,281.27	15.54	14.75	133.54	27.31	1,363.49	1,380.21	1,350.05	30.17	45.755		
4,450.00	4,449.51	4,333.14	4,330.66	15.72	14.92	133.58	28.81	1,367.89	1,386.77	1,356.26	30.51	45.450		
4,500.00	4,499.41	4,379.55	4,376.86	15.90	15.08	133.59	30.49	1,372.03	1,393.35	1,362.51	30.84	45.177		
4,550.00	4,549.32	4,421.82	4,418.91	16.07	15.23	133.60	32.32	1,375.98	1,400.14	1,368.99	31.15	44.946		
4,600.00	4,599.23	4,466.23	4,463.04	16.25	15.39	133.59	34.56	1,380.35	1,407.19	1,375.72	31.47	44.713		
4,650.00	4,649.13	4,521.63	4,518.10	16.43	15.58	133.57	37.45	1,385.74	1,414.19	1,382.34	31.85	44.402		
4,700.00	4,699.04	4,576.05	4,572.21	16.61	15.78	133.56	40.25	1,390.82	1,421.00	1,388.77	32.22	44.098		
4,750.00	4,748.95	4,629.24	4,625.12	16.79	15.96	133.55	42.91	1,395.64	1,427.66	1,395.07	32.59	43.806		
4,800.00	4,798.85	4,684.32	4,679.92	16.96	16.16	133.54	45.57	1,400.47	1,434.18	1,401.21	32.97	43.503		
4,850.00	4,848.76	4,740.46	4,735.80	17.14	16.36	133.54	48.15	1,405.15	1,440.48	1,407.13	33.35	43.193		
4,900.00	4,898.67	4,792.03	4,787.14	17.32	16.54	133.54	50.66	1,409.29	1,446.63	1,412.92	33.71	42.914		
4,950.00	4,948.57	4,843.38	4,838.25	17.50	16.73	133.51	53.61	1,413.34	1,452.71	1,418.65	34.07	42.640		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	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 Com 718H - Wellbore #1 - Wellbore #1													Offset Site Error: 5.00 ft
Survey Program: 138-MWD+HDGM													Offset Well Error: 0.50 ft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,000.00	4,998.48	4,875.37	4,870.07	17.68	16.84	133.50	55.47	1,416.07	1,459.10	1,424.77	34.33	42.502	
5,050.00	5,048.39	4,908.78	4,903.28	17.86	16.96	133.48	57.27	1,419.27	1,466.03	1,431.44	34.59	42.378	
5,100.00	5,098.29	4,945.60	4,939.84	18.04	17.09	133.48	59.08	1,423.21	1,473.50	1,438.62	34.87	42.251	
5,150.00	5,148.20	4,995.30	4,989.18	18.22	17.27	133.48	61.41	1,428.68	1,481.12	1,445.90	35.23	42.046	
5,200.00	5,198.11	5,046.54	5,040.06	18.39	17.46	133.48	63.70	1,434.30	1,488.73	1,453.14	35.59	41.835	
5,250.00	5,248.01	5,101.74	5,094.90	18.57	17.66	133.49	66.09	1,440.19	1,496.19	1,460.22	35.97	41.598 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 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 516H - Wellbore #1 - Permit Plan 1											Offset Site Error: 0.00 ft		
Survey Program: 0-MWD+HDGM											Offset Well Error: 0.50 ft		
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth Depth (ft)	Vertical Depth (ft)	Measured Depth Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
8,500.00	8,493.33	19,121.80	9,185.00	30.68	151.24	95.35	35.37	1,164.43	1,483.96	1,316.60	167.36	8.867	
8,550.00	8,543.33	19,121.80	9,185.00	30.86	151.24	95.35	35.37	1,164.43	1,462.23	1,293.00	169.23	8.640	
8,600.00	8,593.33	19,121.80	9,185.00	31.03	151.24	95.35	35.37	1,164.43	1,441.92	1,270.86	171.05	8.430	
8,650.00	8,643.32	19,121.80	9,185.00	31.20	151.24	-85.58	35.37	1,164.43	1,422.99	1,250.19	172.80	8.235	
8,700.00	8,693.06	19,121.80	9,185.00	31.36	151.24	-87.47	35.37	1,164.43	1,405.30	1,230.82	174.48	8.054	
8,750.00	8,742.19	19,121.80	9,185.00	31.51	151.24	-89.19	35.37	1,164.43	1,389.01	1,212.94	176.07	7.889	
8,800.00	8,790.32	19,121.80	9,185.00	31.65	151.24	-90.73	35.37	1,164.43	1,374.28	1,196.73	177.55	7.740	
8,850.00	8,837.10	19,121.80	9,185.00	31.79	151.24	-92.08	35.37	1,164.43	1,361.28	1,182.40	178.88	7.610	
8,900.00	8,882.17	19,121.80	9,185.00	31.92	151.24	-93.22	35.37	1,164.43	1,350.16	1,170.10	180.06	7.498	
8,950.00	8,925.18	19,121.80	9,185.00	32.04	151.24	-94.14	35.37	1,164.43	1,341.06	1,160.01	181.05	7.407	
9,000.00	8,965.81	19,121.80	9,185.00	32.14	151.24	-94.84	35.37	1,164.43	1,334.08	1,152.25	181.83	7.337	
9,050.00	9,003.74	19,101.83	9,185.00	32.24	151.00	-94.58	11.75	1,164.56	1,329.10	1,146.89	182.21	7.294	
9,100.00	9,038.70	19,062.45	9,185.00	32.33	150.45	-93.86	-23.98	1,164.76	1,325.49	1,143.34	182.15	7.277	
9,150.00	9,070.40	19,023.80	9,185.00	32.44	149.90	-93.05	-62.62	1,164.98	1,323.00	1,141.01	181.99	7.270 SF	
9,200.00	9,098.62	18,982.55	9,185.00	32.56	149.31	-92.20	-103.88	1,165.21	1,321.42	1,139.73	181.69	7.273	
9,250.00	9,123.14	18,938.99	9,185.00	32.69	148.69	-91.36	-147.44	1,165.46	1,320.54	1,139.24	181.30	7.284	
9,300.00	9,143.76	18,906.54	9,185.00	32.81	148.23	-90.59	-192.97	1,165.71	1,320.15	1,139.14	181.01	7.293 ES	
9,344.00	9,158.57	18,852.04	9,185.00	32.93	147.45	-89.99	-234.39	1,165.94	1,320.06	1,139.70	180.36	7.319	
9,350.00	9,160.34	18,846.30	9,185.00	32.94	147.37	-89.92	-240.12	1,165.97	1,320.07	1,139.77	180.30	7.322	
9,400.00	9,172.75	18,802.12	9,185.00	33.08	146.74	-89.39	-288.54	1,166.25	1,320.14	1,140.34	179.80	7.342	
9,450.00	9,180.88	18,748.57	9,185.00	33.21	145.98	-89.03	-337.85	1,166.52	1,320.25	1,141.09	179.16	7.369	
9,500.00	9,184.69	18,701.27	9,185.00	33.35	145.31	-88.86	-387.69	1,166.80	1,320.32	1,141.70	178.62	7.392	
9,550.00	9,185.00	18,648.73	9,185.00	33.50	144.56	-88.85	-437.69	1,167.08	1,320.32	1,142.30	178.02	7.417	
9,600.00	9,185.00	18,601.27	9,185.00	33.65	143.89	-88.85	-487.69	1,167.36	1,320.32	1,142.83	177.50	7.439	
9,650.00	9,185.00	18,548.73	9,185.00	33.83	143.14	-88.85	-537.69	1,167.64	1,320.32	1,143.39	176.93	7.463	
9,700.00	9,185.00	18,501.27	9,185.00	34.01	142.47	-88.85	-587.69	1,167.92	1,320.32	1,143.89	176.43	7.484	
9,750.00	9,185.00	18,448.73	9,185.00	34.21	141.72	-88.85	-637.69	1,168.20	1,320.32	1,144.43	175.89	7.506	
9,800.00	9,185.00	18,401.27	9,185.00	34.42	141.05	-88.85	-687.68	1,168.48	1,320.31	1,144.89	175.42	7.526	
9,850.00	9,185.00	18,348.73	9,185.00	34.65	140.31	-88.85	-737.68	1,168.76	1,320.31	1,145.40	174.91	7.548	
9,900.00	9,185.00	18,301.27	9,185.00	34.89	139.63	-88.85	-787.68	1,169.04	1,320.31	1,145.84	174.47	7.567	
9,950.00	9,185.00	18,248.73	9,185.00	35.15	138.89	-88.85	-837.68	1,169.32	1,320.31	1,146.32	173.99	7.588	
10,000.00	9,185.00	18,201.27	9,185.00	35.41	138.22	-88.85	-887.68	1,169.60	1,320.31	1,146.73	173.58	7.606	
10,050.00	9,185.00	18,148.73	9,185.00	35.70	137.47	-88.85	-937.68	1,169.88	1,320.30	1,147.18	173.12	7.627	
10,100.00	9,185.00	18,101.27	9,185.00	35.99	136.80	-88.85	-987.68	1,170.16	1,320.30	1,147.57	172.73	7.644	
10,150.00	9,185.00	18,048.73	9,185.00	36.30	136.06	-88.85	-1,037.68	1,170.44	1,320.30	1,148.00	172.30	7.663	
10,200.00	9,185.00	18,001.27	9,185.00	36.61	135.38	-88.85	-1,087.68	1,170.72	1,320.30	1,148.36	171.94	7.679	
10,250.00	9,185.00	17,948.73	9,185.00	36.95	134.64	-88.85	-1,137.68	1,171.00	1,320.30	1,148.76	171.53	7.697	
10,300.00	9,185.00	17,901.27	9,185.00	37.28	133.97	-88.85	-1,187.68	1,171.28	1,320.29	1,149.10	171.19	7.712	
10,350.00	9,185.00	17,848.73	9,185.00	37.64	133.23	-88.85	-1,237.68	1,171.56	1,320.29	1,149.48	170.81	7.730	
10,400.00	9,185.00	17,801.27	9,185.00	37.99	132.55	-88.85	-1,287.68	1,171.84	1,320.29	1,149.80	170.49	7.744	
10,450.00	9,185.00	17,748.73	9,185.00	38.37	131.81	-88.85	-1,337.67	1,172.12	1,320.29	1,150.16	170.13	7.760	
10,500.00	9,185.00	17,701.27	9,185.00	38.75	131.14	-88.85	-1,387.67	1,172.40	1,320.29	1,150.45	169.84	7.774	
10,550.00	9,185.00	17,648.73	9,185.00	39.15	130.40	-88.85	-1,437.67	1,172.68	1,320.28	1,150.79	169.49	7.790	
10,600.00	9,185.00	17,601.27	9,185.00	39.54	129.73	-88.85	-1,487.67	1,172.96	1,320.28	1,151.06	169.22	7.802	
10,650.00	9,185.00	17,548.73	9,185.00	39.96	128.99	-88.85	-1,537.67	1,173.24	1,320.28	1,151.39	168.89	7.817	
10,700.00	9,185.00	17,501.27	9,185.00	40.38	128.32	-88.85	-1,587.67	1,173.52	1,320.28	1,151.64	168.64	7.829	
10,750.00	9,185.00	17,448.73	9,185.00	40.81	127.58	-88.85	-1,637.67	1,173.80	1,320.28	1,151.94	168.33	7.843	
10,800.00	9,185.00	17,401.27	9,185.00	41.24	126.91	-88.85	-1,687.67	1,174.08	1,320.27	1,152.18	168.10	7.854	
10,850.00	9,185.00	17,348.73	9,185.00	41.69	126.17	-88.85	-1,737.67	1,174.36	1,320.27	1,152.47	167.81	7.868	
10,900.00	9,185.00	17,301.27	9,185.00	42.14	125.50	-88.85	-1,787.67	1,174.63	1,320.27	1,152.68	167.59	7.878	
10,950.00	9,185.00	17,248.73	9,185.00	42.61	124.76	-88.85	-1,837.67	1,174.91	1,320.27	1,152.95	167.31	7.891	

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 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 516H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
11,000.00	9,185.00	17,201.27	9,185.00	43.07	124.09	-88.85	-1,887.67	1,175.19	1,320.26	1,153.16	167.11	7.901		
11,050.00	9,185.00	17,148.73	9,185.00	43.55	123.35	-88.85	-1,937.67	1,175.47	1,320.26	1,153.41	166.85	7.913		
11,100.00	9,185.00	17,101.27	9,185.00	44.03	122.69	-88.85	-1,987.66	1,175.75	1,320.26	1,153.60	166.66	7.922		
11,150.00	9,185.00	17,048.73	9,185.00	44.52	121.95	-88.85	-2,037.66	1,176.03	1,320.26	1,153.84	166.42	7.934		
11,200.00	9,185.00	17,001.27	9,185.00	45.01	121.28	-88.85	-2,087.66	1,176.31	1,320.26	1,154.02	166.24	7.942		
11,250.00	9,185.00	16,948.73	9,185.00	45.52	120.54	-88.85	-2,137.66	1,176.59	1,320.25	1,154.25	166.01	7.953		
11,300.00	9,185.00	16,901.27	9,185.00	46.02	119.88	-88.85	-2,187.66	1,176.87	1,320.25	1,154.41	165.85	7.961		
11,350.00	9,185.00	16,848.73	9,185.00	46.54	119.14	-88.85	-2,237.66	1,177.15	1,320.25	1,154.62	165.63	7.971		
11,400.00	9,185.00	16,801.27	9,185.00	47.06	118.48	-88.85	-2,287.66	1,177.43	1,320.25	1,154.77	165.48	7.978		
11,450.00	9,185.00	16,748.73	9,185.00	47.59	117.74	-88.85	-2,337.66	1,177.71	1,320.25	1,154.98	165.27	7.988		
11,500.00	9,185.00	16,701.27	9,185.00	48.11	117.07	-88.85	-2,387.66	1,177.99	1,320.24	1,155.11	165.13	7.995		
11,550.00	9,185.00	16,648.73	9,185.00	48.65	116.34	-88.85	-2,437.66	1,178.27	1,320.24	1,155.31	164.94	8.005		
11,600.00	9,185.00	16,601.27	9,185.00	49.19	115.67	-88.85	-2,487.66	1,178.55	1,320.24	1,155.43	164.81	8.011		
11,650.00	9,185.00	16,548.73	9,185.00	49.74	114.94	-88.85	-2,537.66	1,178.83	1,320.24	1,155.62	164.62	8.020		
11,700.00	9,185.00	16,501.27	9,185.00	50.29	114.28	-88.85	-2,587.65	1,179.11	1,320.24	1,155.73	164.51	8.025		
11,750.00	9,185.00	16,448.73	9,185.00	50.84	113.54	-88.85	-2,637.65	1,179.39	1,320.23	1,155.91	164.33	8.034		
11,800.00	9,185.00	16,401.27	9,185.00	51.40	112.88	-88.85	-2,687.65	1,179.67	1,320.23	1,156.01	164.22	8.039		
11,850.00	9,185.00	16,348.73	9,185.00	51.96	112.15	-88.85	-2,737.65	1,179.95	1,320.23	1,156.18	164.06	8.047		
11,900.00	9,185.00	16,301.27	9,185.00	52.53	111.48	-88.85	-2,787.65	1,180.23	1,320.23	1,156.27	163.96	8.052		
11,950.00	9,185.00	16,248.73	9,185.00	53.10	110.75	-88.85	-2,837.65	1,180.51	1,320.23	1,156.43	163.80	8.060		
12,000.00	9,185.00	16,201.27	9,185.00	53.68	110.09	-88.85	-2,887.65	1,180.79	1,320.22	1,156.51	163.71	8.064		
12,050.00	9,185.00	16,148.73	9,185.00	54.26	109.36	-88.85	-2,937.65	1,181.07	1,320.22	1,156.66	163.56	8.072		
12,100.00	9,185.00	16,101.27	9,185.00	54.84	108.70	-88.85	-2,987.65	1,181.35	1,320.22	1,156.74	163.48	8.076		
12,150.00	9,185.00	16,048.73	9,185.00	55.42	107.97	-88.85	-3,037.65	1,181.63	1,320.22	1,156.88	163.34	8.083		
12,200.00	9,185.00	16,001.27	9,185.00	56.01	107.31	-88.85	-3,087.65	1,181.91	1,320.22	1,156.95	163.26	8.086		
12,250.00	9,185.00	15,948.73	9,185.00	56.60	106.58	-88.85	-3,137.65	1,182.19	1,320.21	1,157.09	163.13	8.093		
12,300.00	9,185.00	15,901.27	9,185.00	57.20	105.92	-88.85	-3,187.65	1,182.47	1,320.21	1,157.15	163.06	8.096		
12,350.00	9,185.00	15,848.73	9,185.00	57.80	105.19	-88.85	-3,237.64	1,182.75	1,320.21	1,157.28	162.93	8.103		
12,400.00	9,185.00	15,801.27	9,185.00	58.40	104.53	-88.85	-3,287.64	1,183.03	1,320.21	1,157.33	162.88	8.106		
12,450.00	9,185.00	15,748.73	9,185.00	59.00	103.80	-88.85	-3,337.64	1,183.31	1,320.21	1,157.45	162.75	8.112		
12,500.00	9,185.00	15,701.27	9,185.00	59.61	103.15	-88.85	-3,387.64	1,183.59	1,320.20	1,157.50	162.70	8.114		
12,550.00	9,185.00	15,648.73	9,185.00	60.22	102.42	-88.85	-3,437.64	1,183.87	1,320.20	1,157.61	162.59	8.120		
12,600.00	9,185.00	15,598.73	9,185.00	60.83	101.73	-88.85	-3,487.64	1,184.15	1,320.20	1,157.69	162.51	8.124		
12,650.00	9,185.00	15,548.73	9,185.00	61.45	101.04	-88.85	-3,537.64	1,184.43	1,320.20	1,157.76	162.43	8.128		
12,700.00	9,185.00	15,501.27	9,185.00	62.06	100.38	-88.85	-3,587.64	1,184.71	1,320.20	1,157.80	162.40	8.130		
12,750.00	9,185.00	15,448.73	9,185.00	62.69	99.66	-88.85	-3,637.64	1,184.99	1,320.19	1,157.90	162.29	8.135		
12,800.00	9,185.00	15,401.27	9,185.00	63.31	99.01	-88.85	-3,687.64	1,185.27	1,320.19	1,157.93	162.26	8.136		
12,850.00	9,185.00	15,348.73	9,185.00	63.93	98.28	-88.85	-3,737.64	1,185.55	1,320.19	1,158.03	162.16	8.141		
12,900.00	9,185.00	15,301.27	9,185.00	64.56	97.63	-88.85	-3,787.64	1,185.83	1,320.19	1,158.05	162.13	8.143		
12,950.00	9,185.00	15,248.73	9,185.00	65.19	96.91	-88.85	-3,837.64	1,186.11	1,320.19	1,158.14	162.04	8.147		
13,000.00	9,185.00	15,201.27	9,185.00	65.82	96.26	-88.85	-3,887.63	1,186.39	1,320.18	1,158.16	162.02	8.148		
13,050.00	9,185.00	15,148.73	9,185.00	66.45	95.54	-88.85	-3,937.63	1,186.67	1,320.18	1,158.25	161.93	8.153		
13,100.00	9,185.00	15,101.27	9,185.00	67.09	94.88	-88.85	-3,987.63	1,186.95	1,320.18	1,158.28	161.92	8.153		
13,150.00	9,185.00	15,048.73	9,185.00	67.72	94.17	-88.85	-4,037.63	1,187.23	1,320.18	1,158.34	161.83	8.158		
13,200.00	9,185.00	15,001.27	9,185.00	68.36	93.52	-88.85	-4,087.63	1,187.51	1,320.18	1,158.35	161.82	8.158		
13,250.00	9,185.00	14,948.73	9,185.00	69.00	92.80	-88.85	-4,137.63	1,187.79	1,320.17	1,158.43	161.75	8.162		
13,300.00	9,185.00	14,901.27	9,185.00	69.64	92.15	-88.85	-4,187.63	1,188.07	1,320.17	1,158.43	161.74	8.162		
13,350.00	9,185.00	14,848.73	9,185.00	70.29	91.43	-88.85	-4,237.63	1,188.35	1,320.17	1,158.50	161.67	8.166		
13,400.00	9,185.00	14,798.73	9,185.00	70.93	90.75	-88.85	-4,287.63	1,188.63	1,320.17	1,158.54	161.63	8.168		
13,450.00	9,185.00	14,748.73	9,185.00	71.58	90.07	-88.85	-4,337.63	1,188.91	1,320.17	1,158.57	161.60	8.169		
13,500.00	9,185.00	14,701.27	9,185.00	72.23	89.43	-88.85	-4,387.63	1,189.19	1,320.16	1,158.56	161.60	8.169		

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 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 516H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,550.00	9,185.00	14,648.73	9,185.00	72.88	88.71	-88.85	-4,437.63	1,189.47	1,320.16	1,158.62	161.54	8.172		
13,600.00	9,185.00	14,601.27	9,185.00	73.53	88.07	-88.85	-4,487.63	1,189.74	1,320.16	1,158.61	161.55	8.172		
13,650.00	9,185.00	14,548.73	9,185.00	74.18	87.36	-88.85	-4,537.62	1,190.02	1,320.16	1,158.67	161.49	8.175		
13,700.00	9,185.00	14,501.27	9,185.00	74.84	86.72	-88.85	-4,587.62	1,190.30	1,320.16	1,158.66	161.50	8.174		
13,750.00	9,185.00	14,448.73	9,185.00	75.49	86.01	-88.85	-4,637.62	1,190.58	1,320.15	1,158.71	161.45	8.177		
13,800.00	9,185.00	14,401.27	9,185.00	76.15	85.37	-88.85	-4,687.62	1,190.86	1,320.15	1,158.69	161.46	8.176		
13,850.00	9,185.00	14,348.73	9,185.00	76.81	84.66	-88.85	-4,737.62	1,191.14	1,320.15	1,158.74	161.41	8.179		
13,900.00	9,185.00	14,301.27	9,185.00	77.47	84.02	-88.85	-4,787.62	1,191.42	1,320.15	1,158.71	161.43	8.178		
13,950.00	9,185.00	14,248.73	9,185.00	78.13	83.31	-88.85	-4,837.62	1,191.70	1,320.15	1,158.76	161.39	8.180		
14,000.00	9,185.00	14,201.27	9,185.00	78.79	82.68	-88.85	-4,887.62	1,191.98	1,320.14	1,158.73	161.41	8.179		
14,050.00	9,185.00	14,148.73	9,185.00	79.45	81.97	-88.85	-4,937.62	1,192.26	1,320.14	1,158.77	161.37	8.181		
14,100.00	9,185.00	14,101.27	9,185.00	80.12	81.34	-88.85	-4,987.62	1,192.54	1,320.14	1,158.74	161.40	8.179		
14,150.00	9,185.00	14,048.73	9,185.00	80.78	80.64	-88.85	-5,037.62	1,192.82	1,320.14	1,158.77	161.37	8.181		
14,200.00	9,185.00	14,001.27	9,185.00	81.45	80.00	-88.85	-5,087.62	1,193.10	1,320.14	1,158.74	161.40	8.179		
14,250.00	9,185.00	13,948.73	9,185.00	82.12	79.30	-88.85	-5,137.62	1,193.38	1,320.13	1,158.76	161.37	8.181		
14,300.00	9,185.00	13,901.27	9,185.00	82.79	78.67	-88.85	-5,187.61	1,193.66	1,320.13	1,158.73	161.41	8.179		
14,350.00	9,185.00	13,848.73	9,185.00	83.46	77.98	-88.85	-5,237.61	1,193.94	1,320.13	1,158.75	161.38	8.180		
14,400.00	9,185.00	13,801.27	9,185.00	84.13	77.35	-88.85	-5,287.61	1,194.22	1,320.13	1,158.71	161.42	8.178		
14,450.00	9,185.00	13,748.73	9,185.00	84.80	76.65	-88.85	-5,337.61	1,194.50	1,320.13	1,158.73	161.40	8.179		
14,500.00	9,185.00	13,701.27	9,185.00	85.47	76.03	-88.85	-5,387.61	1,194.78	1,320.12	1,158.68	161.44	8.177		
14,550.00	9,185.00	13,648.73	9,185.00	86.15	75.33	-88.85	-5,437.61	1,195.06	1,320.12	1,158.70	161.43	8.178		
14,600.00	9,185.00	13,601.27	9,185.00	86.82	74.71	-88.85	-5,487.61	1,195.34	1,320.12	1,158.64	161.47	8.175		
14,650.00	9,185.00	13,548.73	9,185.00	87.49	74.02	-88.85	-5,537.61	1,195.62	1,320.12	1,158.66	161.46	8.176		
14,700.00	9,185.00	13,501.27	9,185.00	88.17	73.40	-88.85	-5,587.61	1,195.90	1,320.12	1,158.60	161.52	8.173		
14,750.00	9,185.00	13,448.73	9,185.00	88.85	72.71	-88.85	-5,637.61	1,196.18	1,320.11	1,158.61	161.51	8.174		
14,800.00	9,185.00	13,401.27	9,185.00	89.53	72.09	-88.85	-5,687.61	1,196.46	1,320.11	1,158.55	161.56	8.171		
14,850.00	9,185.00	13,348.73	9,185.00	90.20	71.41	-88.85	-5,737.61	1,196.74	1,320.11	1,158.55	161.56	8.171		
14,900.00	9,185.00	13,301.27	9,185.00	90.88	70.79	-88.85	-5,787.60	1,197.02	1,320.11	1,158.48	161.62	8.168		
14,950.00	9,185.00	13,248.73	9,185.00	91.56	70.11	-88.85	-5,837.60	1,197.30	1,320.11	1,158.48	161.62	8.168		
15,000.00	9,185.00	13,201.27	9,185.00	92.24	69.50	-88.85	-5,887.60	1,197.58	1,320.10	1,158.41	161.69	8.164		
15,050.00	9,185.00	13,148.73	9,185.00	92.93	68.83	-88.85	-5,937.60	1,197.86	1,320.10	1,158.40	161.70	8.164		
15,100.00	9,185.00	13,101.27	9,185.00	93.61	68.22	-88.85	-5,987.60	1,198.14	1,320.10	1,158.33	161.77	8.160		
15,150.00	9,185.00	13,048.73	9,185.00	94.29	67.54	-88.85	-6,037.60	1,198.42	1,320.10	1,158.32	161.78	8.160		
15,200.00	9,185.00	13,001.27	9,185.00	94.98	66.94	-88.85	-6,087.60	1,198.70	1,320.10	1,158.24	161.86	8.156		
15,250.00	9,185.00	12,948.73	9,185.00	95.66	66.27	-88.85	-6,137.60	1,198.98	1,320.09	1,158.22	161.87	8.155		
15,300.00	9,185.00	12,901.27	9,185.00	96.34	65.66	-88.85	-6,187.60	1,199.26	1,320.09	1,158.14	161.95	8.151		
15,350.00	9,185.00	12,848.73	9,185.00	97.03	65.00	-88.85	-6,237.60	1,199.54	1,320.09	1,158.11	161.98	8.150		
15,400.00	9,185.00	12,801.27	9,185.00	97.72	64.40	-88.85	-6,287.60	1,199.82	1,320.09	1,158.03	162.06	8.146		
15,450.00	9,185.00	12,748.73	9,185.00	98.40	63.74	-88.85	-6,337.60	1,200.10	1,320.08	1,158.00	162.09	8.144		
15,500.00	9,185.00	12,701.27	9,185.00	99.09	63.15	-88.85	-6,387.60	1,200.38	1,320.08	1,157.90	162.18	8.140		
15,550.00	9,185.00	12,648.73	9,185.00	99.78	62.49	-88.85	-6,437.59	1,200.66	1,320.08	1,157.87	162.21	8.138		
15,600.00	9,185.00	12,601.27	9,185.00	100.47	61.90	-88.85	-6,487.59	1,200.94	1,320.08	1,157.77	162.31	8.133		
15,650.00	9,185.00	12,548.73	9,185.00	101.16	61.25	-88.85	-6,537.59	1,201.22	1,320.08	1,157.73	162.35	8.131		
15,700.00	9,185.00	12,501.27	9,185.00	101.85	60.66	-88.85	-6,587.59	1,201.50	1,320.07	1,157.62	162.45	8.126		
15,750.00	9,185.00	12,448.73	9,185.00	102.54	60.02	-88.85	-6,637.59	1,201.78	1,320.07	1,157.58	162.50	8.124		
15,800.00	9,185.00	12,401.27	9,185.00	103.23	59.43	-88.85	-6,687.59	1,202.06	1,320.07	1,157.47	162.60	8.118		
15,850.00	9,185.00	12,348.73	9,185.00	103.92	58.79	-88.85	-6,737.59	1,202.34	1,320.07	1,157.41	162.66	8.116		
15,900.00	9,185.00	12,301.27	9,185.00	104.61	58.22	-88.85	-6,787.59	1,202.62	1,320.07	1,157.30	162.77	8.110		
15,950.00	9,185.00	12,248.73	9,185.00	105.30	57.58	-88.85	-6,837.59	1,202.90	1,320.06	1,157.23	162.83	8.107		
16,000.00	9,185.00	12,201.27	9,185.00	106.00	57.01	-88.85	-6,887.59	1,203.18	1,320.06	1,157.11	162.95	8.101		
16,050.00	9,185.00	12,148.73	9,185.00	106.69	56.38	-88.85	-6,937.59	1,203.46	1,320.06	1,157.04	163.02	8.098		

CC - Min centre to center distance or convergent 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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 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 516H - Wellbore #1 - Permit Plan 1											Offset Site Error: 0.00 ft		
Survey Program: 0-MWD+HDGM											Offset Well Error: 0.50 ft		
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
16,100.00	9,185.00	12,101.27	9,185.00	107.38	55.82	-88.85	-6,987.59	1,203.74	1,320.06	1,156.91	163.14	8.091	
16,150.00	9,185.00	12,048.73	9,185.00	108.08	55.20	-88.85	-7,037.59	1,204.02	1,320.06	1,156.84	163.22	8.088	
16,200.00	9,185.00	12,001.27	9,185.00	108.77	54.64	-88.85	-7,087.58	1,204.30	1,320.05	1,156.70	163.35	8.081	
16,250.00	9,185.00	11,948.73	9,185.00	109.47	54.02	-88.85	-7,137.58	1,204.58	1,320.05	1,156.62	163.43	8.077	
16,300.00	9,185.00	11,901.27	9,185.00	110.16	53.47	-88.85	-7,187.58	1,204.86	1,320.05	1,156.48	163.58	8.070	
16,350.00	9,185.00	11,848.73	9,185.00	110.86	52.87	-88.85	-7,237.58	1,205.13	1,320.05	1,156.38	163.67	8.066	
16,400.00	9,185.00	11,801.27	9,185.00	111.56	52.32	-88.85	-7,287.58	1,205.41	1,320.05	1,156.23	163.81	8.058	
16,450.00	9,185.00	11,748.73	9,185.00	112.25	51.72	-88.85	-7,337.58	1,205.69	1,320.04	1,156.13	163.91	8.053	
16,500.00	9,185.00	11,701.27	9,185.00	112.95	51.18	-88.85	-7,387.58	1,205.97	1,320.04	1,155.97	164.07	8.046	
16,550.00	9,185.00	11,648.73	9,185.00	113.65	50.59	-88.85	-7,437.58	1,206.25	1,320.04	1,155.86	164.18	8.040	
16,600.00	9,185.00	11,601.27	9,185.00	114.35	50.06	-88.85	-7,487.58	1,206.53	1,320.04	1,155.69	164.35	8.032	
16,650.00	9,185.00	11,548.73	9,185.00	115.04	49.48	-88.85	-7,537.58	1,206.81	1,320.04	1,155.57	164.47	8.026	
16,700.00	9,185.00	11,501.27	9,185.00	115.74	48.96	-88.85	-7,587.58	1,207.09	1,320.03	1,155.39	164.64	8.018	
16,750.00	9,185.00	11,448.73	9,185.00	116.44	48.39	-88.85	-7,637.58	1,207.37	1,320.03	1,155.26	164.77	8.011	
16,800.00	9,185.00	11,401.27	9,185.00	117.14	47.88	-88.85	-7,687.58	1,207.65	1,320.03	1,155.07	164.96	8.002	
16,850.00	9,185.00	11,348.73	9,185.00	117.84	47.32	-88.85	-7,737.57	1,207.93	1,320.03	1,154.93	165.10	7.995	
16,900.00	9,185.00	11,301.27	9,185.00	118.54	46.81	-88.85	-7,787.57	1,208.21	1,320.03	1,154.73	165.29	7.986	
16,950.00	9,185.00	11,248.73	9,185.00	119.24	46.27	-88.85	-7,837.57	1,208.49	1,320.02	1,154.58	165.45	7.979	
17,000.00	9,185.00	11,201.27	9,185.00	119.94	45.77	-88.85	-7,887.57	1,208.77	1,320.02	1,154.37	165.65	7.969	
17,050.00	9,185.00	11,148.73	9,185.00	120.65	45.24	-88.85	-7,937.57	1,209.05	1,320.02	1,154.20	165.82	7.961	
17,100.00	9,185.00	11,101.27	9,185.00	121.35	44.75	-88.85	-7,987.57	1,209.33	1,320.02	1,153.98	166.04	7.950	
17,150.00	9,185.00	11,048.73	9,185.00	122.05	44.23	-88.85	-8,037.57	1,209.61	1,320.02	1,153.80	166.22	7.942	
17,200.00	9,185.00	11,001.27	9,185.00	122.75	43.76	-88.85	-8,087.57	1,209.89	1,320.01	1,153.57	166.45	7.931	
17,250.00	9,185.00	10,948.73	9,185.00	123.45	43.25	-88.85	-8,137.57	1,210.17	1,320.01	1,153.37	166.64	7.921	
17,300.00	9,185.00	10,901.27	9,185.00	124.16	42.79	-88.85	-8,187.57	1,210.45	1,320.01	1,153.13	166.88	7.910	
17,350.00	9,185.00	10,848.73	9,185.00	124.86	42.30	-88.85	-8,237.57	1,210.73	1,320.01	1,152.91	167.09	7.900	
17,400.00	9,185.00	10,801.27	9,185.00	125.56	41.85	-88.85	-8,287.57	1,211.01	1,320.01	1,152.65	167.35	7.888	
17,450.00	9,185.00	10,748.73	9,185.00	126.27	41.38	-88.85	-8,337.57	1,211.29	1,320.00	1,152.43	167.58	7.877	
17,500.00	9,185.00	10,701.27	9,185.00	126.97	40.95	-88.85	-8,387.56	1,211.57	1,320.00	1,152.15	167.85	7.864	
17,550.00	9,185.00	10,648.73	9,185.00	127.68	40.49	-88.85	-8,437.56	1,211.85	1,320.00	1,151.90	168.10	7.853	
17,600.00	9,185.00	10,601.27	9,185.00	128.38	40.07	-88.85	-8,487.56	1,212.13	1,320.00	1,151.61	168.38	7.839	
17,650.00	9,185.00	10,548.73	9,185.00	129.08	39.63	-88.85	-8,537.56	1,212.41	1,320.00	1,151.35	168.65	7.827	
17,700.00	9,185.00	10,501.27	9,185.00	129.79	39.23	-88.85	-8,587.56	1,212.69	1,319.99	1,151.04	168.95	7.813	
17,750.00	9,185.00	10,448.73	9,185.00	130.50	38.81	-88.85	-8,637.56	1,212.97	1,319.99	1,150.76	169.23	7.800	
17,800.00	9,185.00	10,401.27	9,185.00	131.20	38.42	-88.85	-8,687.56	1,213.25	1,319.99	1,150.43	169.56	7.785	
17,850.00	9,185.00	10,348.73	9,185.00	131.91	38.02	-88.85	-8,737.56	1,213.53	1,319.99	1,150.13	169.86	7.771	
17,900.00	9,185.00	10,301.27	9,185.00	132.61	37.66	-88.85	-8,787.56	1,213.81	1,319.99	1,149.78	170.21	7.755	
17,950.00	9,185.00	10,248.73	9,185.00	133.32	37.28	-88.85	-8,837.56	1,214.09	1,319.98	1,149.45	170.53	7.740	
18,000.00	9,185.00	10,201.27	9,185.00	134.03	36.94	-88.85	-8,887.56	1,214.37	1,319.98	1,149.09	170.89	7.724	
18,050.00	9,185.00	10,148.73	9,185.00	134.73	36.58	-88.85	-8,937.56	1,214.65	1,319.98	1,148.74	171.24	7.708	
18,100.00	9,185.00	10,101.27	9,185.00	135.44	36.26	-88.85	-8,987.55	1,214.93	1,319.98	1,148.35	171.63	7.691	
18,150.00	9,185.00	10,048.73	9,185.00	136.15	35.92	-88.85	-9,037.55	1,215.21	1,319.98	1,147.97	172.00	7.674	
18,200.00	9,185.00	10,001.27	9,185.00	136.85	35.62	-88.85	-9,087.55	1,215.49	1,319.97	1,147.56	172.41	7.656	
18,250.00	9,185.00	9,948.73	9,185.00	137.56	35.32	-88.85	-9,137.55	1,215.77	1,319.97	1,147.16	172.81	7.638	
18,300.00	9,185.00	9,901.27	9,185.00	138.27	35.04	-88.85	-9,187.55	1,216.05	1,319.97	1,146.73	173.24	7.619	
18,350.00	9,185.00	9,848.73	9,185.00	138.98	34.76	-88.85	-9,237.55	1,216.33	1,319.97	1,146.30	173.67	7.600	
18,400.00	9,185.00	9,801.27	9,185.00	139.69	34.50	-88.85	-9,287.55	1,216.61	1,319.97	1,145.84	174.13	7.580	
18,450.00	9,185.00	9,748.73	9,185.00	140.40	34.25	-88.85	-9,337.55	1,216.89	1,319.96	1,145.38	174.58	7.561	
18,500.00	9,185.00	9,701.27	9,185.00	141.10	34.03	-88.85	-9,387.55	1,217.17	1,319.96	1,144.89	175.07	7.540	
18,550.00	9,185.00	9,648.73	9,185.00	141.81	33.80	-88.85	-9,437.55	1,217.45	1,319.96	1,144.40	175.55	7.519	
18,600.00	9,185.00	9,601.27	9,185.00	142.52	33.60	-88.85	-9,487.55	1,217.73	1,319.96	1,143.89	176.06	7.497	

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 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
18,650.00	9,185.00	9,548.73	9,185.00	143.23	33.41	-88.85	-9,537.55	1,218.01	1,319.96	1,143.37	176.58	7.475		
18,689.72	9,185.00	9,524.42	9,185.00	143.80	33.32	-88.85	-9,577.27	1,218.23	1,319.95	1,142.90	177.06	7.455 CC		
18,700.00	9,185.00	9,499.53	9,184.74	143.94	33.23	-88.83	-9,586.74	1,218.28	1,319.96	1,142.85	177.11	7.453		
18,750.00	9,185.00	9,452.02	9,181.35	144.65	33.06	-88.69	-9,634.11	1,218.55	1,320.03	1,142.38	177.65	7.431		
18,800.00	9,185.00	9,405.39	9,174.22	145.36	32.91	-88.38	-9,680.19	1,218.80	1,320.23	1,142.05	178.18	7.410		
18,850.00	9,185.00	9,360.20	9,163.75	146.07	32.75	-87.92	-9,724.14	1,219.05	1,320.61	1,141.92	178.69	7.390		
18,900.00	9,185.00	9,316.91	9,150.51	146.78	32.61	-87.35	-9,765.33	1,219.28	1,321.28	1,142.09	179.19	7.374		
18,950.00	9,185.00	9,275.88	9,135.13	147.49	32.47	-86.68	-9,803.36	1,219.49	1,322.33	1,142.69	179.65	7.361		
18,972.90	9,185.00	9,257.90	9,127.53	147.82	32.42	-86.35	-9,819.66	1,219.59	1,322.98	1,143.14	179.84	7.356		

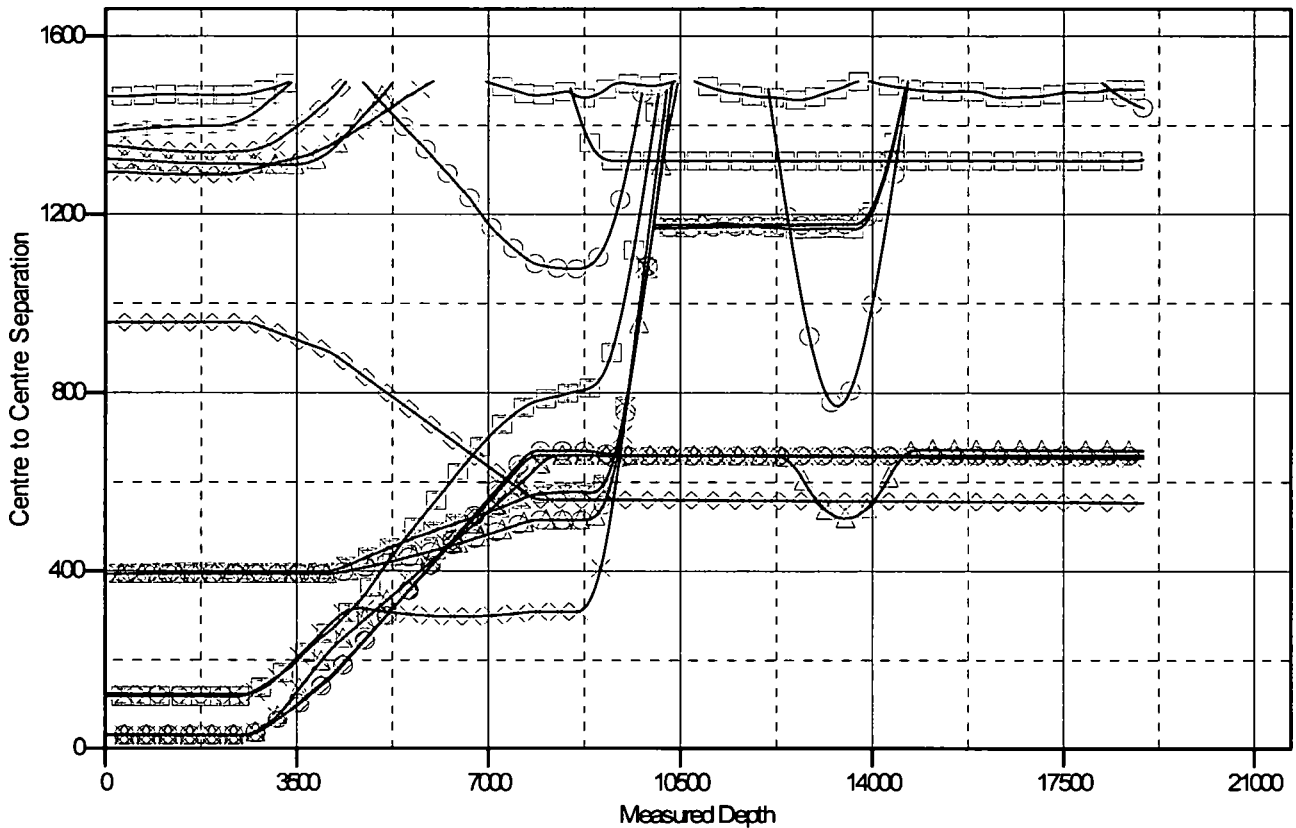
Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are 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 @ 3500.70ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Tomb Raider 1-12 Fed 514H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.32°

Ladder Plot



LEGEND

Tomb Raider 1-12 Fed 514H, Wellbore #1, Permit Plan 1 V0
 Bentley Fed #1 (P&A), Wellbore #1, Wellbore #1 V0
 Tomb Raider 1 Fed 1H, Original, Actual V0
 Tomb Raider 1 Fed 1H, Original, Plan 2 V0
 Tomb Raider 1 Fed 1H, Original, Plan 1 V0
 Tomb Raider 1 Fed 1H, Original, P.T.L. V0
 Tomb Raider 1 Fed 1H, Original, T.D. V0

Tomb Raider 1-12 Fed 334H, Wellbore #1, Wellbore #1 V0
 Tomb Raider 1-12 Fed 512H, Wellbore #1, Wellbore #1 V0
 Tomb Raider 1-12 Fed 523H, Wellbore #1, Wellbore #1 V0
 Tomb Raider 1-12 Fed 524H, Wellbore #1, Wellbore #1 V0
 Tomb Raider 1-12 Fed 524H, Wellbore #1, Wellbore #1 V0
 Tomb Raider 1-12 Fed 525H, Wellbore #1, Wellbore #1 V0
 Tomb Raider 1-12 Fed 525H, Wellbore #1, Wellbore #1 V0

Tomb Raider 1-12 Fed 514H, Wellbore #1, Wellbore #1 V0
 Tomb Raider 1-12 Fed 52H, Wellbore #1, Wellbore #1 V0
 Tomb Raider 1-12 Fed 714H, Original H. de, Actual V0
 Tomb Raider 1-12 Fed 714H, Original H. de, Actual V0
 Tomb Raider 1-12 Fed Com 224H, Wellbore #1, Wellbore #1 V0
 Tomb Raider 1-12 Fed Com 528H, Wellbore #1, Wellbore #1 V0
 Tomb Raider 1-12 Fed Com 718H, Wellbore #1, Wellbore #1 V0

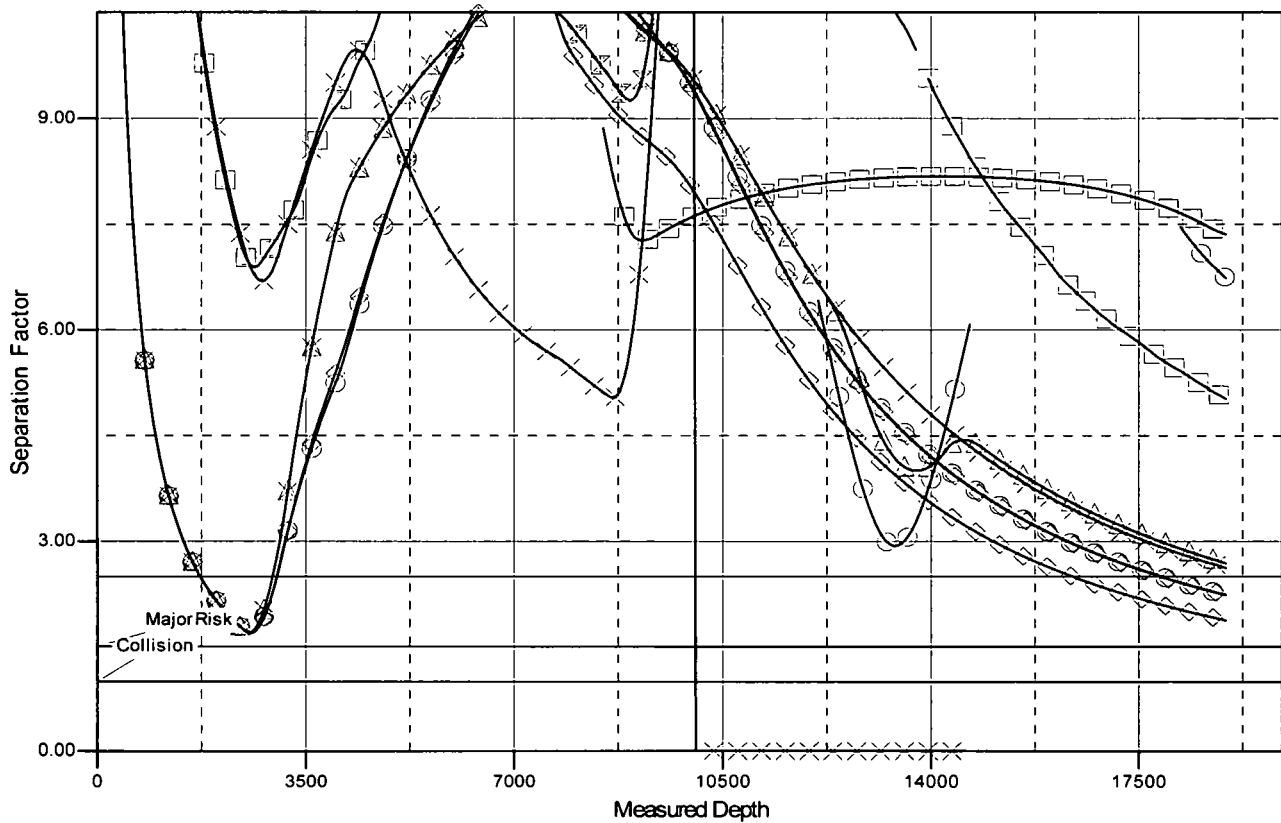
Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.70ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.70ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are 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 @ 3500.70ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Tomb Raider 1-12 Fed 514H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.32°

Separation Factor Plot



LEGEND

Tomb Raider 1-12 Fed 514H, Wellbore #1, Permit Plan 1 V0	Tomb Raider 1-12 Fed 512H, Wellbore #1, Wellbore #1 V0	Tomb Raider 1-12 Fed 614H, Wellbore #1, Permit 1 V0
Barclay Fed #1 (P&A), Wellbore #1, Wellbore #1 V0	Tomb Raider 1-12 Fed 512H, Wellbore #1, Wellbore #1 V0	Tomb Raider 1-12 Fed 62H, Wellbore #1, Wellbore #1 V0
Tomb Raider 1 Fed 1H, Original, Actual V0	Tomb Raider 1-12 Fed 523H, Wellbore #1, Permit Plan 1 V0	Tomb Raider 1-12 Fed 714H, Original H ole, Actual V0
Tomb Raider 1 Fed 1H, Original, Plan 2 V0	Tomb Raider 1-12 Fed 524H, Wellbore #1, Permit Plan 1 V0	Tomb Raider 1-12 Fed 714H, Original H ole, NTL V0
Tomb Raider 1 Fed 1H, Original, Plan 2 V0	Tomb Raider 1-12 Fed 524H, Wellbore #1, Permit Plan 2 V0	Tomb Raider 1-12 Fed Com 234H, Wellbore #1, Wellbore #1 V0
Tomb Raider 1 Fed 1H, Original, PTL V0	Tomb Raider 1-12 Fed 525H, Wellbore #1, Permit Plan 1 V0	Tomb Raider 1-12 Fed Com 528H, Wellbore #1, Wellbore #1 V0
Tomb Raider 1 Fed 1H, Original, T&D V0	Tomb Raider 1-12 Fed 525H, Wellbore #1, Permit Plan 2 V0	Tomb Raider 1-12 Fed Com 716H, Wellbore #1, Wellbore #1 V0

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 01-T23S-R31E

Tomb Raider 1-12 Fed 514H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

15 June, 2018

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3500.70ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.70ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed 514H	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 514H					
Well Position	+N/-S	0.00 ft	Northing:	487,848.73 usft	Latitude:	32.339728
	+E/-W	0.00 ft	Easting:	727,483.34 usft	Longitude:	-103.730612
Position Uncertainty		0.50 ft	Wellhead Elevation:		Ground Level:	3,475.70 ft

Wellbore	Wellbore #1				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/14/2018	6.93	60.13	47,887.59211898

Design	Permit Plan 1				
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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	180.58	

Plan Survey Tool Program	Date	6/15/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	18,972.90 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	
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,280.39	3.50	315.51	4,280.22	6.12	-6.01	1.25	1.25	0.00	315.51	
7,673.01	3.50	315.51	7,666.49	154.07	-151.35	0.00	0.00	0.00	0.00	
7,906.67	0.00	0.00	7,900.00	159.17	-156.36	1.50	-1.50	0.00	180.00	VP - Tomb Raider 1-1
8,618.71	0.00	0.00	8,612.04	159.17	-156.36	0.00	0.00	0.00	0.00	
9,518.71	90.00	179.68	9,185.00	-413.78	-153.13	10.00	10.00	0.00	179.68	PBHL - Tomb Raider
18,972.90	90.00	179.68	9,185.00	-9,867.83	-99.84	0.00	0.00	0.00	0.00	PBHL - Tomb Raider

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3500.70ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.70ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed 514H	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	487,848.73	727,483.34	32.339728	-103.730612
100.00	0.00	0.00	100.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
200.00	0.00	0.00	200.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
300.00	0.00	0.00	300.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
400.00	0.00	0.00	400.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
500.00	0.00	0.00	500.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
600.00	0.00	0.00	600.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
700.00	0.00	0.00	700.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
800.00	0.00	0.00	800.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
900.00	0.00	0.00	900.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
1,000.00	0.00	0.00	1,000.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
1,100.00	0.00	0.00	1,100.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
1,200.00	0.00	0.00	1,200.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
1,300.00	0.00	0.00	1,300.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
1,400.00	0.00	0.00	1,400.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
1,500.00	0.00	0.00	1,500.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
1,600.00	0.00	0.00	1,600.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
1,700.00	0.00	0.00	1,700.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
1,800.00	0.00	0.00	1,800.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
1,900.00	0.00	0.00	1,900.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
2,000.00	0.00	0.00	2,000.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
2,100.00	0.00	0.00	2,100.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
2,200.00	0.00	0.00	2,200.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
2,300.00	0.00	0.00	2,300.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
2,400.00	0.00	0.00	2,400.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
2,500.00	0.00	0.00	2,500.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
2,600.00	0.00	0.00	2,600.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
2,700.00	0.00	0.00	2,700.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
2,800.00	0.00	0.00	2,800.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
2,900.00	0.00	0.00	2,900.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
3,000.00	0.00	0.00	3,000.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
3,100.00	0.00	0.00	3,100.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
3,200.00	0.00	0.00	3,200.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
3,300.00	0.00	0.00	3,300.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
3,400.00	0.00	0.00	3,400.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
3,500.00	0.00	0.00	3,500.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
3,600.00	0.00	0.00	3,600.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
3,700.00	0.00	0.00	3,700.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
3,800.00	0.00	0.00	3,800.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
3,900.00	0.00	0.00	3,900.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
4,000.00	0.00	0.00	4,000.00	0.00	0.00	487,848.73	727,483.34	32.339728	-103.730612
4,100.00	1.25	315.51	4,099.99	0.78	-0.76	487,849.51	727,482.57	32.339730	-103.730614
4,200.00	2.50	315.51	4,199.94	3.11	-3.06	487,851.84	727,480.28	32.339736	-103.730622
4,280.39	3.50	315.51	4,280.22	6.12	-6.01	487,854.85	727,477.33	32.339745	-103.730631
4,300.00	3.50	315.51	4,299.79	6.97	-6.85	487,855.70	727,476.49	32.339747	-103.730634
4,400.00	3.50	315.51	4,399.60	11.33	-11.13	487,860.06	727,472.20	32.339759	-103.730648
4,500.00	3.50	315.51	4,499.41	15.69	-15.42	487,864.42	727,467.92	32.339771	-103.730661
4,600.00	3.50	315.51	4,599.23	20.05	-19.70	487,868.78	727,463.64	32.339783	-103.730675
4,700.00	3.50	315.51	4,699.04	24.42	-23.99	487,873.15	727,459.35	32.339795	-103.730689
4,800.00	3.50	315.51	4,798.85	28.78	-28.27	487,877.51	727,455.07	32.339807	-103.730703
4,900.00	3.50	315.51	4,898.67	33.14	-32.55	487,881.87	727,450.78	32.339819	-103.730717
5,000.00	3.50	315.51	4,998.48	37.50	-36.84	487,886.23	727,446.50	32.339832	-103.730730
5,100.00	3.50	315.51	5,098.29	41.86	-41.12	487,890.59	727,442.21	32.339844	-103.730744
5,200.00	3.50	315.51	5,198.11	46.22	-45.41	487,894.95	727,437.93	32.339856	-103.730758

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3500.70ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.70ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
:	Tomb Raider 1-12 Fed 514H	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
5,300.00	3.50	315.51	5,297.92	50.58	-49.69	487,899.31	727,433.65	32.339868	-103.730772
5,400.00	3.50	315.51	5,397.73	54.94	-53.97	487,903.67	727,429.36	32.339880	-103.730786
5,500.00	3.50	315.51	5,497.54	59.30	-58.26	487,908.03	727,425.08	32.339892	-103.730799
5,600.00	3.50	315.51	5,597.36	63.66	-62.54	487,912.40	727,420.79	32.339904	-103.730813
5,700.00	3.50	315.51	5,697.17	68.03	-66.83	487,916.76	727,416.51	32.339916	-103.730827
5,800.00	3.50	315.51	5,796.98	72.39	-71.11	487,921.12	727,412.23	32.339928	-103.730841
5,900.00	3.50	315.51	5,896.80	76.75	-75.40	487,925.48	727,407.94	32.339940	-103.730855
6,000.00	3.50	315.51	5,996.61	81.11	-79.68	487,929.84	727,403.66	32.339952	-103.730868
6,100.00	3.50	315.51	6,096.42	85.47	-83.96	487,934.20	727,399.37	32.339964	-103.730882
6,200.00	3.50	315.51	6,196.23	89.83	-88.25	487,938.56	727,395.09	32.339976	-103.730896
6,300.00	3.50	315.51	6,296.05	94.19	-92.53	487,942.92	727,390.80	32.339988	-103.730910
6,400.00	3.50	315.51	6,395.86	98.55	-96.82	487,947.28	727,386.52	32.340000	-103.730924
6,500.00	3.50	315.51	6,495.67	102.91	-101.10	487,951.64	727,382.24	32.340012	-103.730937
6,600.00	3.50	315.51	6,595.49	107.27	-105.38	487,956.01	727,377.95	32.340024	-103.730951
6,700.00	3.50	315.51	6,695.30	111.64	-109.67	487,960.37	727,373.67	32.340036	-103.730965
6,800.00	3.50	315.51	6,795.11	116.00	-113.95	487,964.73	727,369.38	32.340048	-103.730979
6,900.00	3.50	315.51	6,894.93	120.36	-118.24	487,969.09	727,365.10	32.340061	-103.730992
7,000.00	3.50	315.51	6,994.74	124.72	-122.52	487,973.45	727,360.82	32.340073	-103.731006
7,100.00	3.50	315.51	7,094.55	129.08	-126.81	487,977.81	727,356.53	32.340085	-103.731020
7,200.00	3.50	315.51	7,194.36	133.44	-131.09	487,982.17	727,352.25	32.340097	-103.731034
7,300.00	3.50	315.51	7,294.18	137.80	-135.37	487,986.53	727,347.96	32.340109	-103.731048
7,400.00	3.50	315.51	7,393.99	142.16	-139.66	487,990.89	727,343.68	32.340121	-103.731061
7,500.00	3.50	315.51	7,493.80	146.52	-143.94	487,995.25	727,339.39	32.340133	-103.731075
7,600.00	3.50	315.51	7,593.62	150.88	-148.23	487,999.62	727,335.11	32.340145	-103.731089
7,673.01	3.50	315.51	7,666.49	154.07	-151.35	488,002.80	727,331.98	32.340154	-103.731099
7,700.00	3.10	315.51	7,693.43	155.18	-152.44	488,003.91	727,330.89	32.340157	-103.731103
7,800.00	1.60	315.51	7,793.35	158.10	-155.32	488,006.83	727,328.02	32.340165	-103.731112
7,900.00	0.10	315.51	7,893.33	159.16	-156.36	488,007.89	727,326.98	32.340168	-103.731115
7,906.67	0.00	0.00	7,900.00	159.17	-156.36	488,007.90	727,326.98	32.340168	-103.731115
8,000.00	0.00	0.00	7,993.33	159.17	-156.36	488,007.90	727,326.98	32.340168	-103.731115
8,100.00	0.00	0.00	8,093.33	159.17	-156.36	488,007.90	727,326.98	32.340168	-103.731115
8,200.00	0.00	0.00	8,193.33	159.17	-156.36	488,007.90	727,326.98	32.340168	-103.731115
8,300.00	0.00	0.00	8,293.33	159.17	-156.36	488,007.90	727,326.98	32.340168	-103.731115
8,400.00	0.00	0.00	8,393.33	159.17	-156.36	488,007.90	727,326.98	32.340168	-103.731115
8,500.00	0.00	0.00	8,493.33	159.17	-156.36	488,007.90	727,326.98	32.340168	-103.731115
8,600.00	0.00	0.00	8,593.33	159.17	-156.36	488,007.90	727,326.98	32.340168	-103.731115
8,618.71	0.00	0.00	8,612.04	159.17	-156.36	488,007.90	727,326.98	32.340168	-103.731115
KOP @ 8619' MD, 200' FNL, 2521' FEL									
8,700.00	8.13	179.68	8,693.06	153.41	-156.33	488,002.14	727,327.01	32.340152	-103.731115
8,800.00	18.13	179.68	8,790.32	130.72	-156.20	487,979.45	727,327.14	32.340090	-103.731115
8,900.00	28.13	179.68	8,882.17	91.49	-155.98	487,940.22	727,327.36	32.339982	-103.731115
9,000.00	38.13	179.68	8,965.81	36.91	-155.67	487,885.64	727,327.66	32.339832	-103.731115
9,011.05	39.23	179.68	8,974.43	30.00	-155.63	487,878.73	727,327.70	32.339813	-103.731115
1st Take Point @ 9011' MD, 330' FNL, 2520' FEL									
9,100.00	48.13	179.68	9,038.70	-31.37	-155.29	487,817.36	727,328.05	32.339644	-103.731115
9,200.00	58.13	179.68	9,098.62	-111.26	-154.84	487,737.47	727,328.50	32.339424	-103.731115
9,300.00	68.13	179.68	9,143.76	-200.35	-154.33	487,648.38	727,329.00	32.339180	-103.731115
9,400.00	78.13	179.68	9,172.75	-295.93	-153.80	487,552.81	727,329.54	32.338917	-103.731115
9,500.00	88.13	179.68	9,184.69	-395.08	-153.24	487,453.65	727,330.10	32.338644	-103.731115
9,518.71	90.00	179.68	9,185.00	-413.78	-153.13	487,434.95	727,330.21	32.338593	-103.731115
9,600.00	90.00	179.68	9,185.00	-495.08	-152.67	487,353.66	727,330.66	32.338369	-103.731115
9,700.00	90.00	179.68	9,185.00	-595.07	-152.11	487,253.66	727,331.23	32.338095	-103.731115
9,800.00	90.00	179.68	9,185.00	-695.07	-151.55	487,153.66	727,331.79	32.337820	-103.731115

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3500.70ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.70ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed 514H	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
9,900.00	90.00	179.68	9,185.00	-795.07	-150.98	487,053.66	727,332.35	32.337545	-103.731115
10,000.00	90.00	179.68	9,185.00	-895.07	-150.42	486,953.66	727,332.92	32.337270	-103.731115
10,100.00	90.00	179.68	9,185.00	-995.07	-149.85	486,853.67	727,333.48	32.336995	-103.731115
10,200.00	90.00	179.68	9,185.00	-1,095.07	-149.29	486,753.67	727,334.05	32.336720	-103.731115
10,300.00	90.00	179.68	9,185.00	-1,195.06	-148.73	486,653.67	727,334.61	32.336445	-103.731115
10,400.00	90.00	179.68	9,185.00	-1,295.06	-148.16	486,553.67	727,335.17	32.336170	-103.731115
10,500.00	90.00	179.68	9,185.00	-1,395.06	-147.60	486,453.67	727,335.74	32.335896	-103.731115
10,600.00	90.00	179.68	9,185.00	-1,495.06	-147.04	486,353.67	727,336.30	32.335621	-103.731115
10,700.00	90.00	179.68	9,185.00	-1,595.06	-146.47	486,253.68	727,336.86	32.335346	-103.731115
10,800.00	90.00	179.68	9,185.00	-1,695.06	-145.91	486,153.68	727,337.43	32.335071	-103.731115
10,900.00	90.00	179.68	9,185.00	-1,795.05	-145.35	486,053.68	727,337.99	32.334796	-103.731115
11,000.00	90.00	179.68	9,185.00	-1,895.05	-144.78	485,953.68	727,338.55	32.334521	-103.731115
11,100.00	90.00	179.68	9,185.00	-1,995.05	-144.22	485,853.68	727,339.12	32.334246	-103.731115
11,200.00	90.00	179.68	9,185.00	-2,095.05	-143.65	485,753.69	727,339.68	32.333971	-103.731115
11,300.00	90.00	179.68	9,185.00	-2,195.05	-143.09	485,653.69	727,340.25	32.333697	-103.731115
11,400.00	90.00	179.68	9,185.00	-2,295.05	-142.53	485,553.69	727,340.81	32.333422	-103.731115
11,500.00	90.00	179.68	9,185.00	-2,395.05	-141.96	485,453.69	727,341.37	32.333147	-103.731115
11,600.00	90.00	179.68	9,185.00	-2,495.04	-141.40	485,353.69	727,341.94	32.332872	-103.731115
11,700.00	90.00	179.68	9,185.00	-2,595.04	-140.84	485,253.69	727,342.50	32.332597	-103.731115
11,800.00	90.00	179.68	9,185.00	-2,695.04	-140.27	485,153.70	727,343.06	32.332322	-103.731115
11,900.00	90.00	179.68	9,185.00	-2,795.04	-139.71	485,053.70	727,343.63	32.332047	-103.731115
12,000.00	90.00	179.68	9,185.00	-2,895.04	-139.15	484,953.70	727,344.19	32.331772	-103.731115
12,100.00	90.00	179.68	9,185.00	-2,995.04	-138.58	484,853.70	727,344.76	32.331498	-103.731115
12,200.00	90.00	179.68	9,185.00	-3,095.03	-138.02	484,753.70	727,345.32	32.331223	-103.731115
12,300.00	90.00	179.68	9,185.00	-3,195.03	-137.45	484,653.70	727,345.88	32.330948	-103.731115
12,400.00	90.00	179.68	9,185.00	-3,295.03	-136.89	484,553.71	727,346.45	32.330673	-103.731115
12,500.00	90.00	179.68	9,185.00	-3,395.03	-136.33	484,453.71	727,347.01	32.330398	-103.731115
12,600.00	90.00	179.68	9,185.00	-3,495.03	-135.76	484,353.71	727,347.57	32.330123	-103.731115
12,700.00	90.00	179.68	9,185.00	-3,595.03	-135.20	484,253.71	727,348.14	32.329848	-103.731115
12,800.00	90.00	179.68	9,185.00	-3,695.02	-134.64	484,153.71	727,348.70	32.329573	-103.731115
12,900.00	90.00	179.68	9,185.00	-3,795.02	-134.07	484,053.72	727,349.26	32.329299	-103.731115
13,000.00	90.00	179.68	9,185.00	-3,895.02	-133.51	483,953.72	727,349.83	32.329024	-103.731115
13,100.00	90.00	179.68	9,185.00	-3,995.02	-132.94	483,853.72	727,350.39	32.328749	-103.731115
13,200.00	90.00	179.68	9,185.00	-4,095.02	-132.38	483,753.72	727,350.96	32.328474	-103.731115
13,300.00	90.00	179.68	9,185.00	-4,195.02	-131.82	483,653.72	727,351.52	32.328199	-103.731115
13,400.00	90.00	179.68	9,185.00	-4,295.01	-131.25	483,553.72	727,352.08	32.327924	-103.731115
13,500.00	90.00	179.68	9,185.00	-4,395.01	-130.69	483,453.73	727,352.65	32.327649	-103.731115
13,600.00	90.00	179.68	9,185.00	-4,495.01	-130.13	483,353.73	727,353.21	32.327374	-103.731115
13,700.00	90.00	179.68	9,185.00	-4,595.01	-129.56	483,253.73	727,353.77	32.327100	-103.731115
13,800.00	90.00	179.68	9,185.00	-4,695.01	-129.00	483,153.73	727,354.34	32.326825	-103.731115
13,900.00	90.00	179.68	9,185.00	-4,795.01	-128.44	483,053.73	727,354.90	32.326550	-103.731115
14,000.00	90.00	179.68	9,185.00	-4,895.01	-127.87	482,953.74	727,355.47	32.326275	-103.731115
14,100.00	90.00	179.68	9,185.00	-4,995.00	-127.31	482,853.74	727,356.03	32.326000	-103.731115
14,200.00	90.00	179.68	9,185.00	-5,095.00	-126.74	482,753.74	727,356.59	32.325725	-103.731115
14,300.00	90.00	179.68	9,185.00	-5,195.00	-126.18	482,653.74	727,357.16	32.325450	-103.731115
14,400.00	90.00	179.68	9,185.00	-5,295.00	-125.62	482,553.74	727,357.72	32.325175	-103.731115
14,500.00	90.00	179.68	9,185.00	-5,395.00	-125.05	482,453.74	727,358.28	32.324901	-103.731115
14,600.00	90.00	179.68	9,185.00	-5,495.00	-124.49	482,353.75	727,358.85	32.324626	-103.731115
14,700.00	90.00	179.68	9,185.00	-5,594.99	-123.93	482,253.75	727,359.41	32.324351	-103.731115
14,800.00	90.00	179.68	9,185.00	-5,694.99	-123.36	482,153.75	727,359.97	32.324076	-103.731115
14,900.00	90.00	179.68	9,185.00	-5,794.99	-122.80	482,053.75	727,360.54	32.323801	-103.731115
15,000.00	90.00	179.68	9,185.00	-5,894.99	-122.23	481,953.75	727,361.10	32.323526	-103.731115
15,100.00	90.00	179.68	9,185.00	-5,994.99	-121.67	481,853.75	727,361.67	32.323251	-103.731115
15,200.00	90.00	179.68	9,185.00	-6,094.99	-121.11	481,753.76	727,362.23	32.322976	-103.731115

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3500.70ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.70ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed 514H	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
15,300.00	90.00	179.68	9,185.00	-6,194.98	-120.54	481,653.76	727,362.79	32.322702	-103.731115
15,400.00	90.00	179.68	9,185.00	-6,294.98	-119.98	481,553.76	727,363.36	32.322427	-103.731115
15,500.00	90.00	179.68	9,185.00	-6,394.98	-119.42	481,453.76	727,363.92	32.322152	-103.731115
15,600.00	90.00	179.68	9,185.00	-6,494.98	-118.85	481,353.76	727,364.48	32.321877	-103.731115
15,700.00	90.00	179.68	9,185.00	-6,594.98	-118.29	481,253.77	727,365.05	32.321602	-103.731115
15,800.00	90.00	179.68	9,185.00	-6,694.98	-117.73	481,153.77	727,365.61	32.321327	-103.731115
15,900.00	90.00	179.68	9,185.00	-6,794.98	-117.16	481,053.77	727,366.17	32.321052	-103.731115
16,000.00	90.00	179.68	9,185.00	-6,894.97	-116.60	480,953.77	727,366.74	32.320777	-103.731115
16,100.00	90.00	179.68	9,185.00	-6,994.97	-116.03	480,853.77	727,367.30	32.320503	-103.731115
16,200.00	90.00	179.68	9,185.00	-7,094.97	-115.47	480,753.77	727,367.87	32.320228	-103.731115
16,300.00	90.00	179.68	9,185.00	-7,194.97	-114.91	480,653.78	727,368.43	32.319953	-103.731115
16,400.00	90.00	179.68	9,185.00	-7,294.97	-114.34	480,553.78	727,368.99	32.319678	-103.731115
16,500.00	90.00	179.68	9,185.00	-7,394.97	-113.78	480,453.78	727,369.56	32.319403	-103.731115
16,600.00	90.00	179.68	9,185.00	-7,494.96	-113.22	480,353.78	727,370.12	32.319128	-103.731115
16,700.00	90.00	179.68	9,185.00	-7,594.96	-112.65	480,253.78	727,370.68	32.318853	-103.731115
16,800.00	90.00	179.68	9,185.00	-7,694.96	-112.09	480,153.79	727,371.25	32.318578	-103.731115
16,900.00	90.00	179.68	9,185.00	-7,794.96	-111.52	480,053.79	727,371.81	32.318304	-103.731115
17,000.00	90.00	179.68	9,185.00	-7,894.96	-110.96	479,953.79	727,372.38	32.318029	-103.731115
17,100.00	90.00	179.68	9,185.00	-7,994.96	-110.40	479,853.79	727,372.94	32.317754	-103.731115
17,200.00	90.00	179.68	9,185.00	-8,094.95	-109.83	479,753.79	727,373.50	32.317479	-103.731115
17,300.00	90.00	179.68	9,185.00	-8,194.95	-109.27	479,653.79	727,374.07	32.317204	-103.731115
17,400.00	90.00	179.68	9,185.00	-8,294.95	-108.71	479,553.80	727,374.63	32.316929	-103.731115
17,500.00	90.00	179.68	9,185.00	-8,394.95	-108.14	479,453.80	727,375.19	32.316654	-103.731115
17,600.00	90.00	179.68	9,185.00	-8,494.95	-107.58	479,353.80	727,375.76	32.316379	-103.731115
17,700.00	90.00	179.68	9,185.00	-8,594.95	-107.02	479,253.80	727,376.32	32.316105	-103.731115
17,800.00	90.00	179.68	9,185.00	-8,694.95	-106.45	479,153.80	727,376.88	32.315830	-103.731115
17,900.00	90.00	179.68	9,185.00	-8,794.94	-105.89	479,053.80	727,377.45	32.315555	-103.731115
18,000.00	90.00	179.68	9,185.00	-8,894.94	-105.32	478,953.81	727,378.01	32.315280	-103.731115
18,100.00	90.00	179.68	9,185.00	-8,994.94	-104.76	478,853.81	727,378.58	32.315005	-103.731115
18,200.00	90.00	179.68	9,185.00	-9,094.94	-104.20	478,753.81	727,379.14	32.314730	-103.731115
18,300.00	90.00	179.68	9,185.00	-9,194.94	-103.63	478,653.81	727,379.70	32.314455	-103.731115
18,400.00	90.00	179.68	9,185.00	-9,294.94	-103.07	478,553.81	727,380.27	32.314180	-103.731115
18,500.00	90.00	179.68	9,185.00	-9,394.93	-102.51	478,453.82	727,380.83	32.313906	-103.731115
18,600.00	90.00	179.68	9,185.00	-9,494.93	-101.94	478,353.82	727,381.39	32.313631	-103.731115
18,700.00	90.00	179.68	9,185.00	-9,594.93	-101.38	478,253.82	727,381.96	32.313356	-103.731115
18,800.00	90.00	179.68	9,185.00	-9,694.93	-100.81	478,153.82	727,382.52	32.313081	-103.731115
18,900.00	90.00	179.68	9,185.00	-9,794.93	-100.25	478,053.82	727,383.09	32.312806	-103.731115
18,972.90	90.00	179.68	9,185.00	-9,867.83	-99.84	477,980.92	727,383.50	32.312606	-103.731115
PBHL; 330' FSL, 2520' FEL									

Design Targets									
Target Name	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	0.01	0.00	-9,867.83	-99.84	477,980.92	727,383.50	32.312606	-103.731115
- plan misses target center by 9185.00ft at 18972.90ft MD (9185.00 TVD, -9867.83 N, -99.84 E)									
- Point									
VP - Tomb Raider 1-12 f	0.00	0.00	7,900.00	159.17	-156.36	488,007.90	727,326.98	32.340168	-103.731115
- plan hits target center									
- Point									

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 514H
Company:	WCDSO Permian NM	TVD Reference:	RKB @ 3500.70ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.70ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed 514H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,618.71	8,612.04	159.17	-156.36	KOP @ 8619' MD, 200' FNL, 2521' FEL
9,011.05	8,974.43	30.00	-155.63	1st Take Point @ 9011' MD, 330' FNL, 2520' FEL
18,972.90	9,185.00	-9,867.83	-99.84	PBHL: 330' FSL, 2520' FEL

Devon Energy

WELL DETAILS: Tomb Raider 1-12 Fed 514H

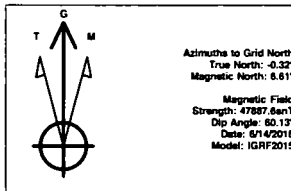
RKB @ 3500.70ft
3475.70

Northing 487848.73 Easting 727483.34 Latitude 32.339728 Longitude -103.730612

SECTION DETAILS Permil 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	
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	
4280.39	3.50	315.51	4280.22	6.12	-6.01	1.25	-6.05	
7873.01	3.50	315.51	7666.49	154.07	-151.35	0.00	-152.53	
7906.67	0.00	0.00	7900.00	159.17	-156.36	1.50	-157.58	
8618.71	0.00	0.00	8612.04	159.17	-156.36	0.00	-157.58	KOP @ 8619' MD, 200' FNL, 2521' FEL
9518.71	90.00	179.68	9185.00	-413.78	-153.13	10.00	415.31	
18972.90	90.00	179.68	9185.00	-9867.83	-99.84	0.00	9868.33	PBHL: 330' FSL, 2520' FEL

devon

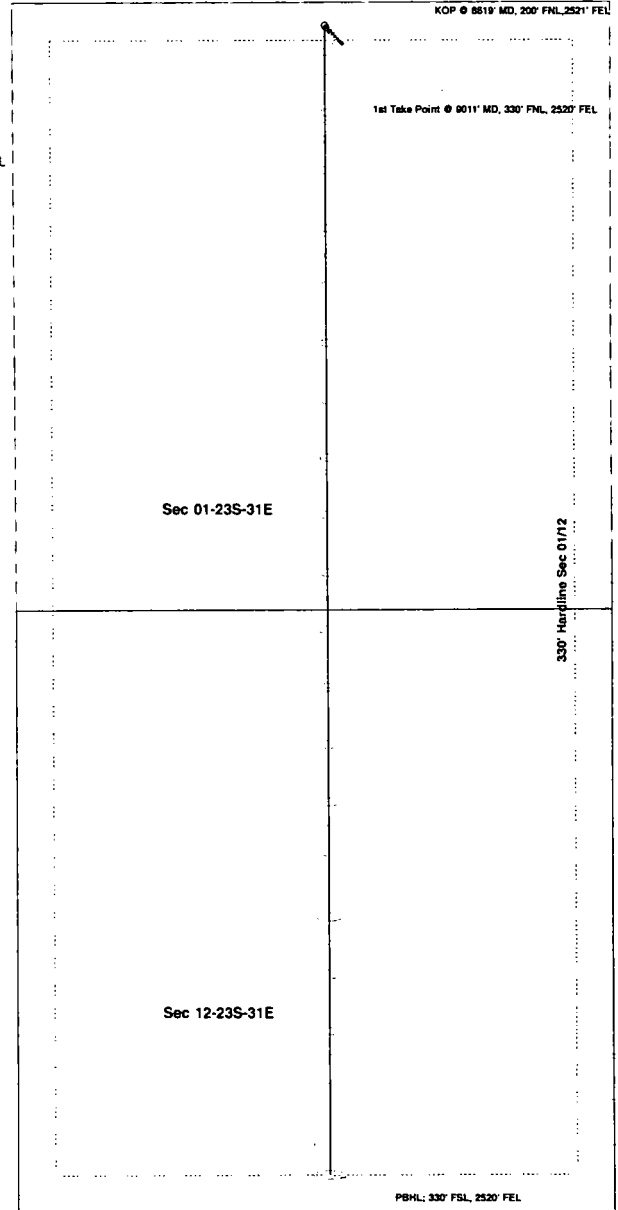


KOP @ 8619' MD, 200' FNL, 2521' FEL

1st Take Point @ 9011' MD, 330' FNL, 2520' FEL

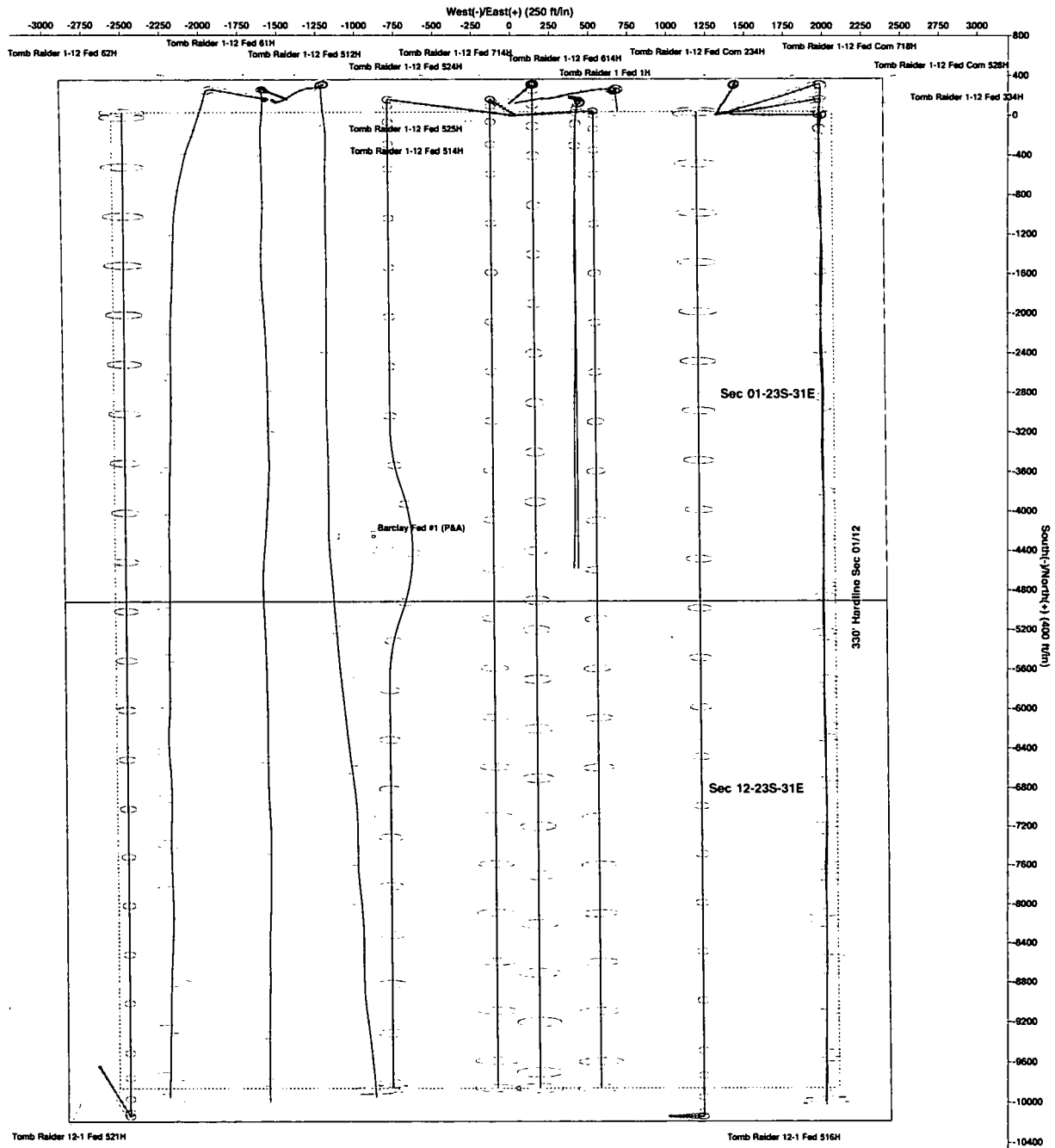
Vertical Section at 180.58° (400 ft/in)

West(-)/East(+) (400 ft/in)
Tomb Raider 1-12 Fed 514H



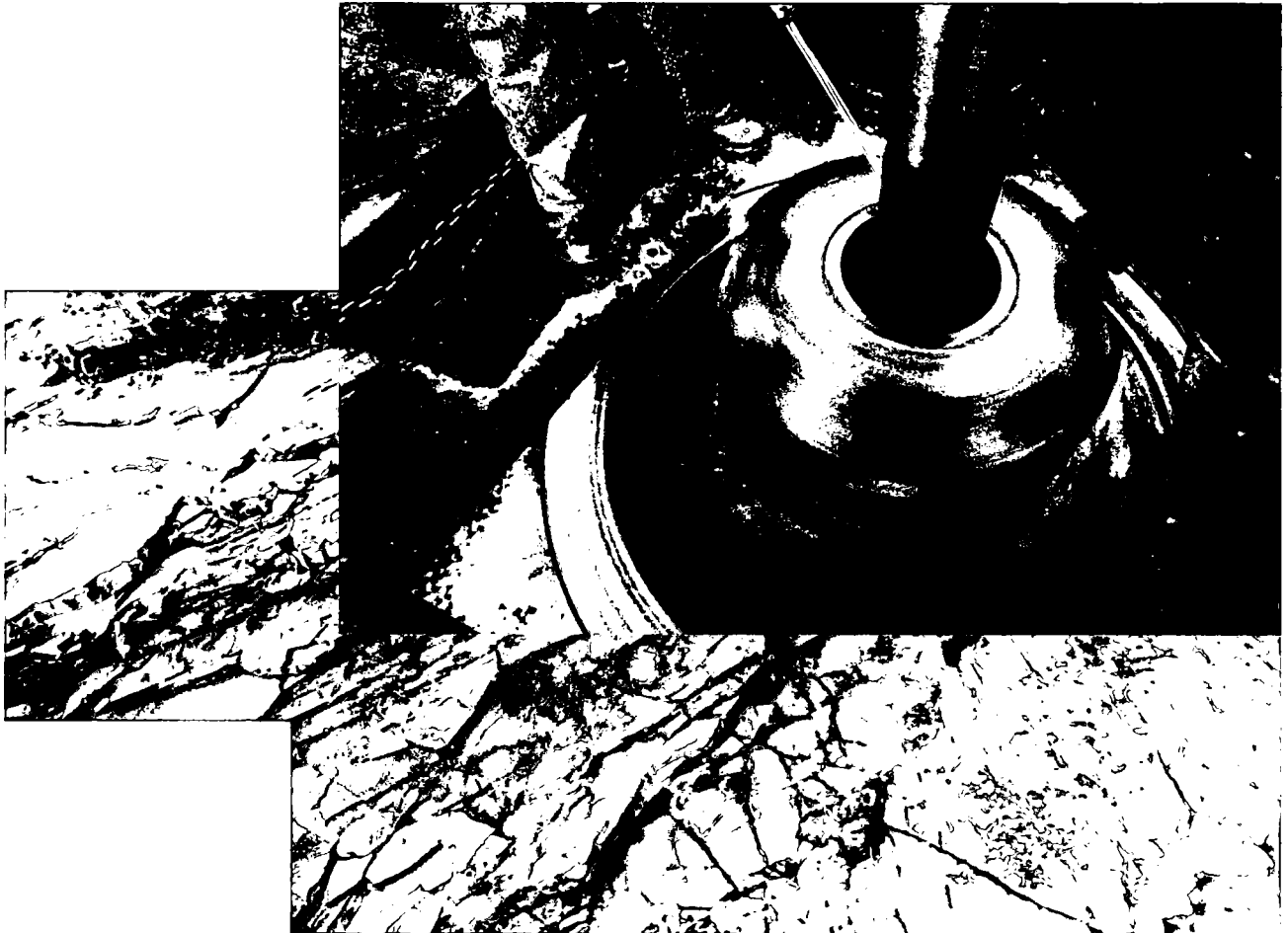
PBHL: 330' FSL, 2520' FEL

Devon Energy





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.

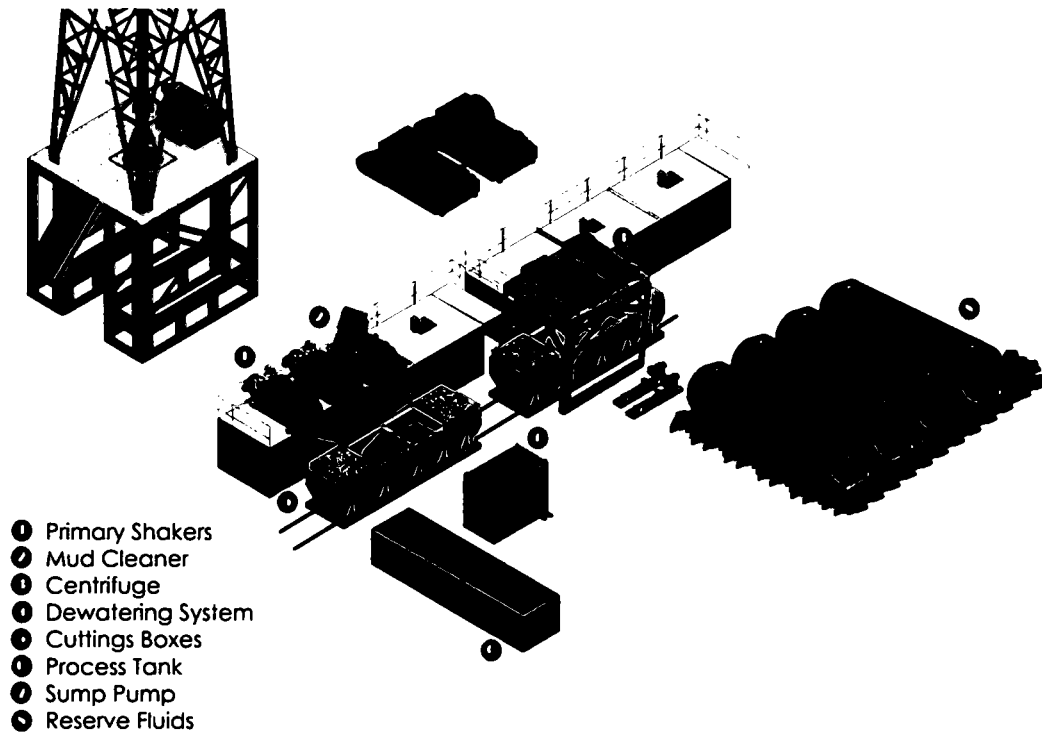
II. Operations and Maintenance Plan

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.



Closed Loop Schematic



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

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

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

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

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

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

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

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

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

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

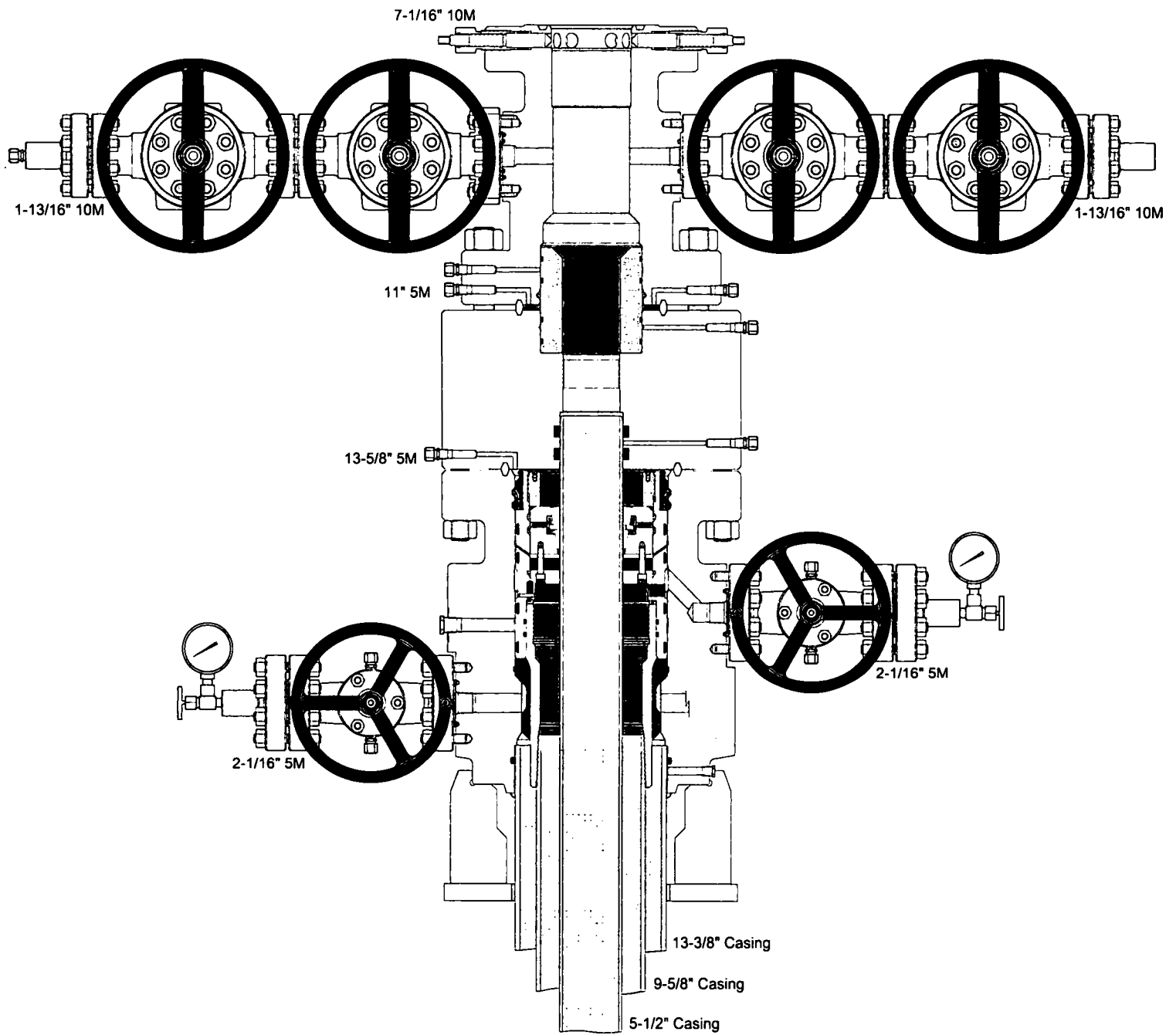
dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

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

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

III. Closure Plan

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



Devon Energy, Tomb Raider 1-12 Fed 514H

1. Geologic Formations

TVD of target	9185	Pilot hole depth	N/A
MD at TD:	18972	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	697		
Salado	1156		
Delaware	4500		
L.Brushy	8074		
1st BSPG Lime	8352		
Leonard A	8490		
Leonard B	8855		
Landing Pt	9185		

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

Devon Energy, Tomb Raider 1-12 Fed 514H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (PPF)	Grade	Conn.
	From	To				
17.5"	0	750'	13.375"	48	H-40	STC
12.25"	0	6,000'	9.625"	40	J-55	BTC
8.75"	0	TD	5.5"	17	P-110	BTC
BLM Minimum Safety Factor				Collapse: 1.125	Burst: 1.00	Tension: 1.6 Dry 1.8 Wet

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

Devon Energy, Tomb Raider 1-12 Fed 514H

	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 3 rd 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 2 nd 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?	

Devon Energy, Tomb Raider 1-12 Fed 514H

3. Cementing Program (3-String Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	H ₂ O (gal/sk)	Yld (ft ³ /sack)	Slurry Description
Surface	786	Surf	13.2	6.33	1.33	Lead: Class C Cement + additives
Int	1290	Surf	9	20.6	1.94	Lead: Class C Cement + additives
	190	500' above shoe	13.2	6.42	1.33	Tail: Class H / C + additives
Production	349	Surf	9	20.6	1.94	Lead: Class H / C + additives
	1807	KOP	13.2	5.31	1.6	Tail: Class H / C + additives

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

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

Devon Energy, Tomb Raider 1-12 Fed 514H

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	3M	Annular	X	50% of rated working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	3M	Annular (5M)	X	50% of rated working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

Devon Energy, Tomb Raider 1-12 Fed 514H

5. Mud Program

6. Depth		Type	Weight (ppg)	Vis	Water Loss
From	To				
0	750'	FW Gel	8.5 – 9.0	28-34	N/C
750'	6000'	WBM	10 – 10.5	28-34	N/C
6,000'	TD	WBM	8.5 – 9.0	28-34	N/C

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

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

6. Logging and Testing Procedures

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

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

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	5038 psi
Abnormal Temperature	No

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

Hydrogen Sulfide (H ₂ S) monitors will be installed prior to drilling out the surface shoe. If H ₂ S 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	H ₂ S is present
Y	H ₂ S Plan attached

Devon Energy, Tomb Raider 1-12 Fed 514H

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 nipped 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

- ☒ Directional Plan
☐ Other, describe



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.

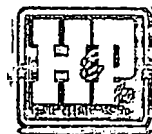
Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

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





QUALITY DOCUMENT

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

**PHOENIX RUBBER
INDUSTRIAL LTD.**

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	
3" coupling with 4 1/16" Flange end		720 719		AISI 4130	
				AISI 4130	
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: 29. April. 2002.		Inspector		Quality Control PHOENIX RUBBER Industrial Ltd. Hose Inspection and Vessel Dept.	

40920-0-00015 NB0006

[illegible]

GENEX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE CO.
PHOENIX RUBBER CO.



APD ID: 10400031815

Submission Date: 07/13/2018

Highlighted data
reflects the most
recent changes

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

Show Final Text

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Tomb_Raider_1_12_Fed_514H_EX_ACCESS_20180711095050.pdf

Existing Road Purpose: ACCESS

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? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

TOMB_RAIDER_1_12_FED_514H__1Mile_map_20180711095257.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

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 Tomb Raider 1 CTB 3.

Section 5 - Location and Types of Water Supply

Water Source Table

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: STATE

Water source transport method: PIPELINE

Source transportation land ownership: STATE

Water source volume (barrels): 270000

Source volume (acre-feet): 34.801136

Source volume (gal): 11340000

Water source and transportation map:

Tomb_Raider_1_12_Fed_514H_WATER_MAP_20180711101715.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.):

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

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

Construction Materials source location attachment:

Caliche_Map__Aleutian__Belloq__Tomb_Raider_20180711100522.pdf

Section 7 - Methods for Handling Waste

Waste type: COMPLETIONS/STIMULATION

Waste content description: Flow back water during completion operations.

Amount of waste: 3000 barrels

Waste disposal frequency : One Time Only

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY

Disposal location ownership: COMMERCIAL

Disposal type description:

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

Waste type: PRODUCED WATER

Waste content description: Produced water during flowback operations. This amount is a daily average during flowback (BWPD).

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: COMMERCIAL

Disposal type description:

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

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

Waste type: FLOWBACK

Waste content description: Produced water during flowback operations. This amount is a daily average during flowback (BWPD).

Amount of waste: 1500 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

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

Disposal type description:

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

Waste type: DRILLING

Waste content description: Water Based Cuttings

Amount of waste: 1954 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

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

Description of cuttings location

Cuttings area length (ft.)

Cuttings area width (ft.)

Cuttings area depth (ft.)

Cuttings area volume (cu. yd.)

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Tomb_Raider_1_12_Fed_514H_RIGLAYOUT_20180711100849.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: No New Surface Disturbance **Multiple Well Pad Name:** TODD-APACHE 1-1

Multiple Well Pad Number: 2

Recontouring attachment:

Tomb_Raider_1_12_Fed_514H_RECLAMATION_20180711101033.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.

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

Well pad proposed disturbance (acres): 0	Well pad interim reclamation (acres):	Well pad long term disturbance (acres):
Road proposed disturbance (acres): 0	Road interim reclamation (acres):	Road long term disturbance (acres):
Powerline proposed disturbance (acres): 0	Powerline interim reclamation (acres): 0	Powerline long term disturbance (acres): 0
Pipeline proposed disturbance (acres): 0	Pipeline interim reclamation (acres):	Pipeline long term disturbance (acres):
Other proposed disturbance (acres): 0	Other interim reclamation (acres):	Other long term disturbance (acres):
Total proposed disturbance: 0	Total interim reclamation:	Total long term disturbance:

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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre
-----------	-------------

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name:

Last Name:

Phone:

Email:

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: 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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

Section 11 - Surface Ownership

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

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:

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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 514H

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Section 12 - Other Information

Right of Way needed? NO

Use APD as ROW?

ROW Type(s):

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? NO

Previous Onsite information:

Other SUPO Attachment

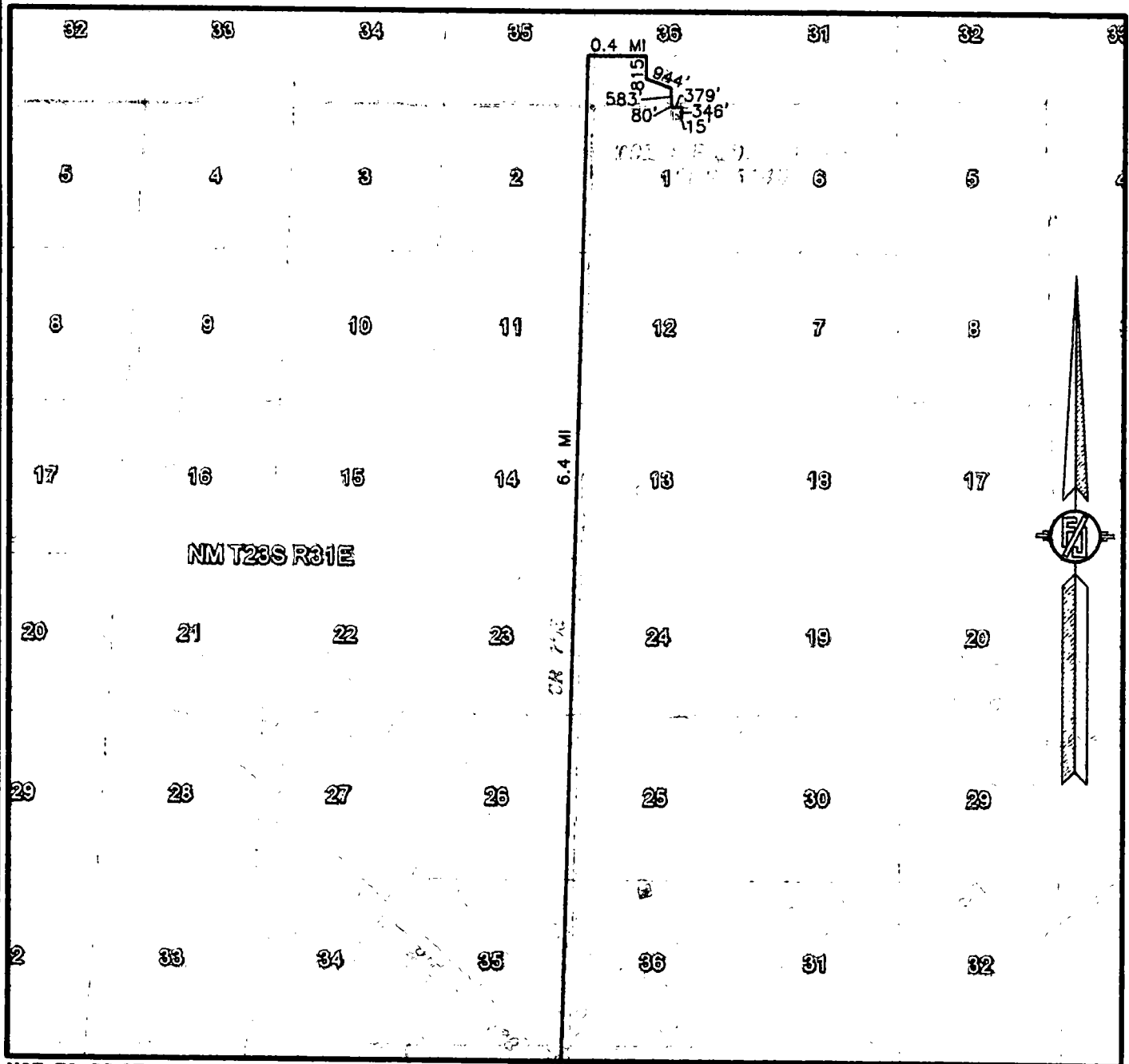
Todd_Apache_1_1_CTB_3_Plat_20180711101535.pdf

Todd_Apache_1_1_Wellpad_2_Electric_20180711101537.PDF

Todd_Apache_1_1_Wellpad_2_to_CTB_3_Pod_2_Flowlines_20180711101539.pdf

Pay.gov_Receipt_20180713081015.pdf

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



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 FEBRUARY 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 1-12 FED 514H
 LOCATED 360 FT. FROM THE NORTH LINE
 AND 2365 FT. FROM THE EAST LINE OF
 SECTION 1, TOWNSHIP 23 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 LAND STATUS: BLM

MAY 21, 2018

SURVEY NO. 6214A

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 6/12/2018



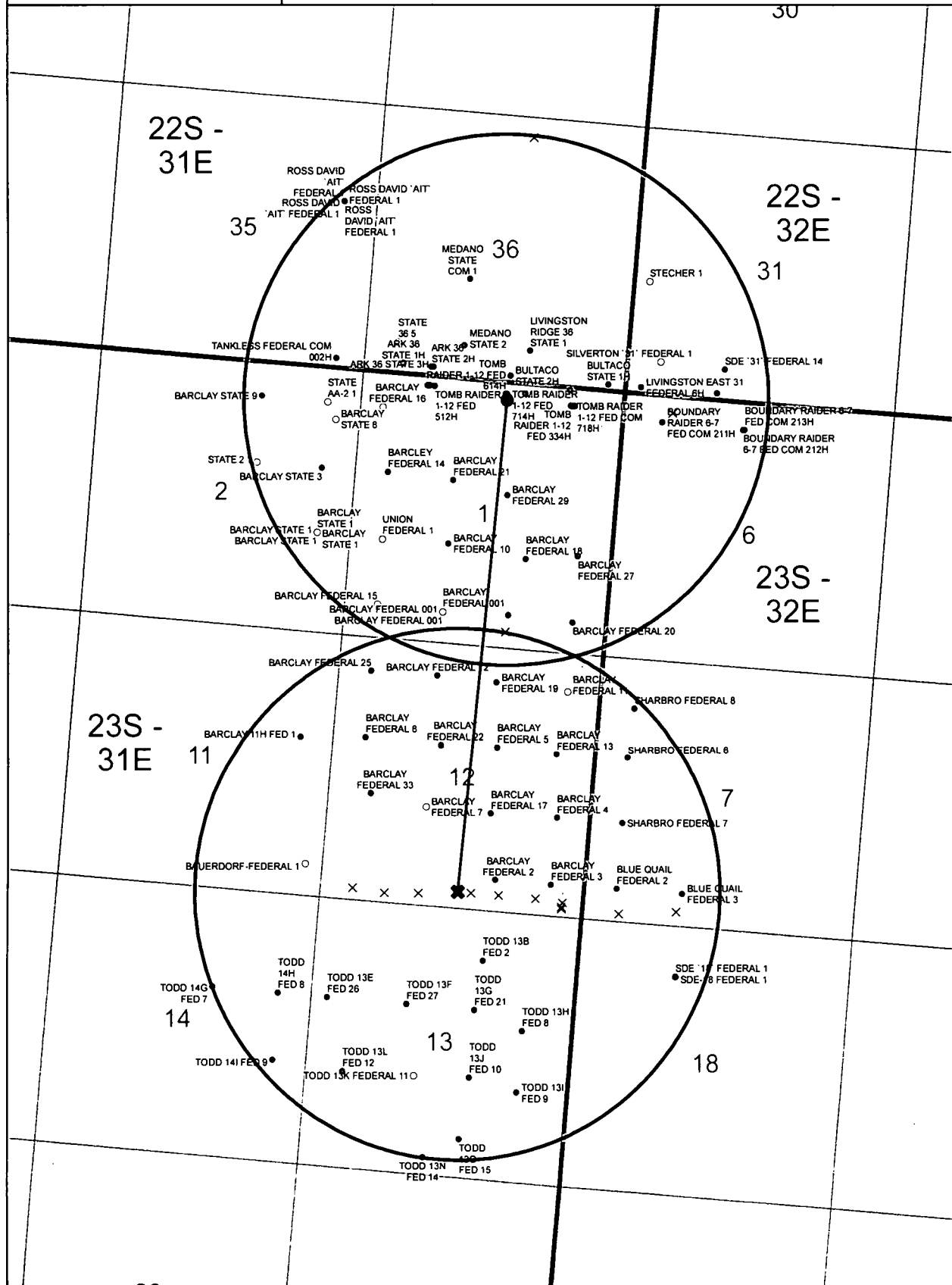
0 0.3 1 inch = 0.44 miles

TOMB RAIDER 1-12 FED 514H WA017271202

TOMB RAIDER 1-12 FED 714H
Nearest wellbore to SHL: 6 ft.

TOMB RAIDER 1-12 FED 614H
Nearest wellbore to BHL: 266 ft.

- Unknown SHL
- Active SHL
- Inactive SHL
- × BHL



TOMB RAIDER 1-12 FED 514H, TOMB RAIDER 1-12 FED 524H, TOMB RAIDER 1-12 FED 525H

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: 17-May-2018



Miles

0 0.07 0.14 0.28 1:14,228



Caliche Map

Todd Area - Aleutian, Belloq, Tomb Raider

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:

Map is current as of: 02-Jul-2018



Miles

0 0.14 0.28 0.56 1:28,457

22S - 31E - 54

22S - 31E - 53

22S - 31E - 52

22S - 32E - 51

22S - 31E - 5

23S - 31E - 2

22S - 31E - 1

22S - 32E - 6

22S - 31E - 10

22S - 31E - 11

22S - 31E - 12

22S - 32E - 7

22S - 31E - 15

22S - 31E - 14

22S - 31E - 13

22S - 32E - 13

Tomb Raider 1

Total: 8,537.89 ft

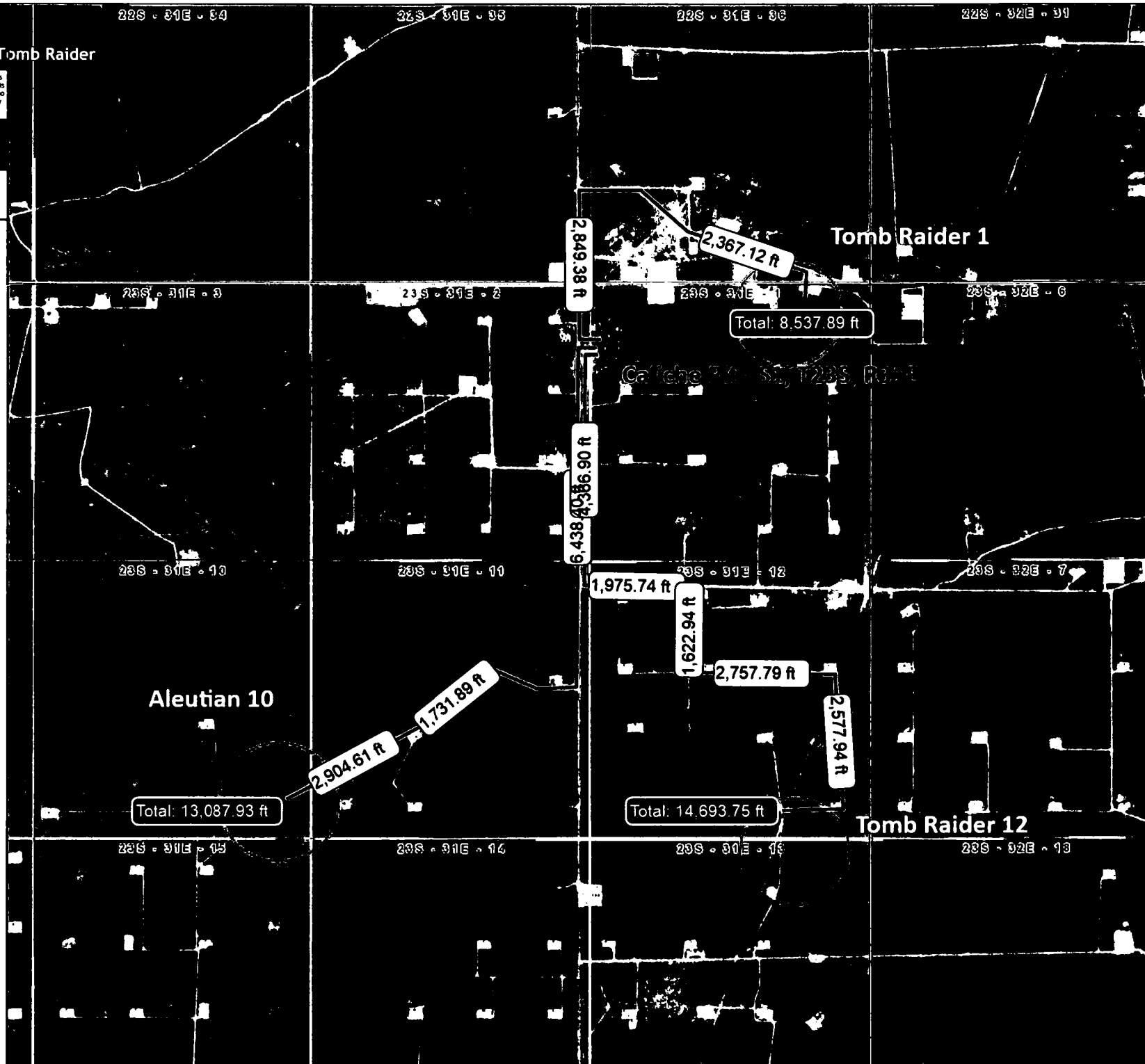
Caliche 2.4 - SE, T22S, R31E

Aleutian 10

Total: 13,087.93 ft

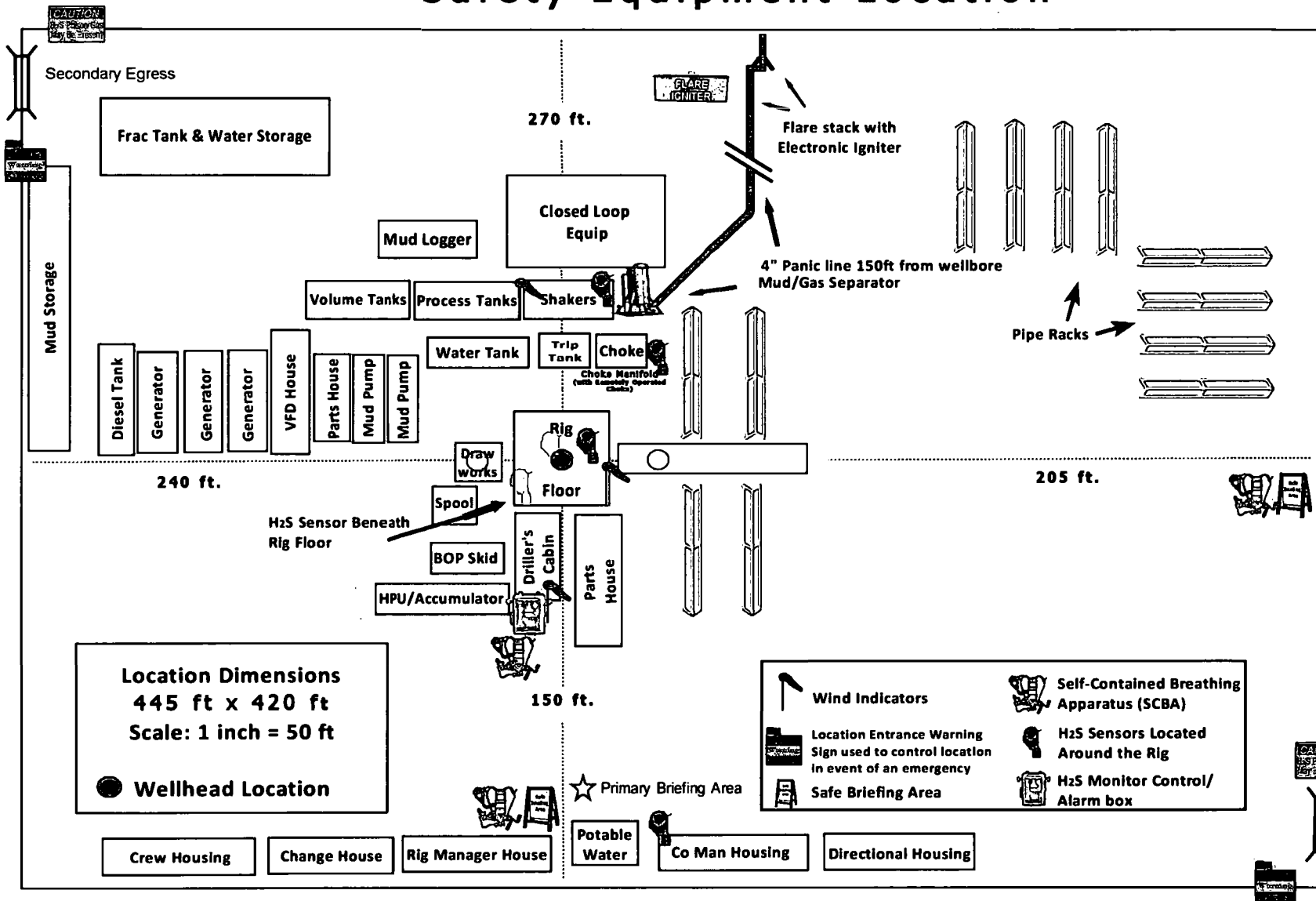
Tomb Raider 12

Total: 14,693.75 ft



Prevailing Wind
Direction S, SW

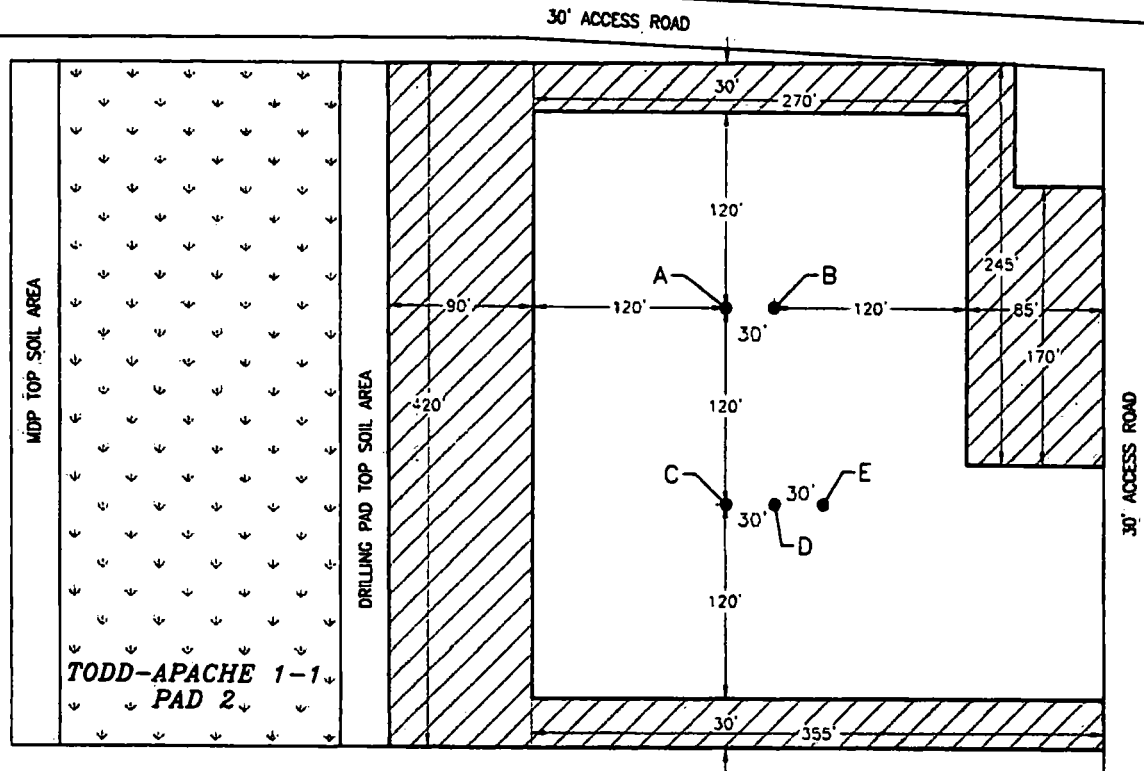
Devon Energy - Well Pad Rig Location Layout Safety Equipment Location



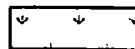
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN

- A - TOMB RAIDER 1-12 FED 614H
- B - TOMB RAIDER 1-12 FED 714H
- C - TOMB RAIDER 1-12 FED 524H
- D - TOMB RAIDER 1-12 FED 514H
- E - TOMB RAIDER 1-12 FED 525H

SEC. 36
SEC. 1



DENOTES INTERIM PAD
RECLAMATION AREA



DENOTES GRADING SITE
RECLAMATION AREA

0 12 60 120 240
SCALE 1" = 120'

1.680± ACRES INTERIM PAD RECLAMATION AREA
1.687± ACRES GRADING SITE RECLAMATION AREA
2.807± ACRES NON-RECLAIMED AREA
6.174± ACRES TODD-APACHE 1-1 PAD 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 1-12 FED 514H
LOCATED 360 FT. FROM THE NORTH LINE
AND 2365 FT. FROM THE EAST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MAY 21, 2018

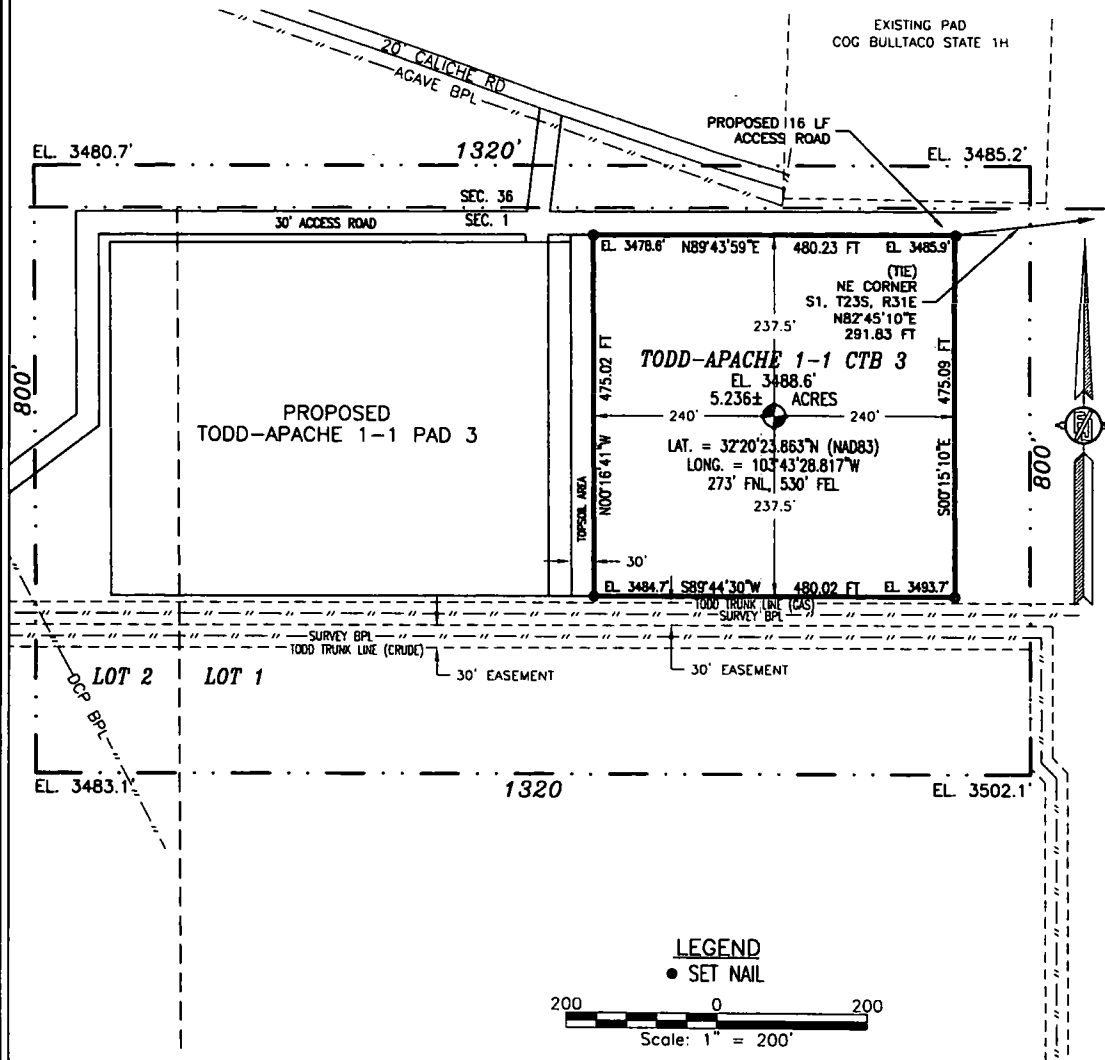
SURVEY NO. 6214A

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

TODD-APACHE 1-1 CTB 3 (AA000056005)

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN LOT 1 OF
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 12, 2016



DESCRIPTION

A CERTAIN PIECE OR PARCEL OF LAND AND REAL ESTATE LYING IN LOT 1 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 NORTHEAST CORNER OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N82°45'10"E, A DISTANCE OF 291.83 FEET;
THENCE S00°15'10"E A DISTANCE OF 475.09 FEET TO THE SOUTHEAST CORNER OF THE PARCEL;
THENCE S89°44'30"W A DISTANCE OF 480.02 FEET TO THE SOUTHWEST CORNER OF THE PARCEL;
THENCE N00°16'41"W A DISTANCE OF 475.02 FEET TO THE NORTHWEST CORNER OF THE PARCEL;
THENCE N89°43'59"E A DISTANCE OF 480.23 FEET TO THE NORTHEAST CORNER OF THE PARCEL, TO THE POINT OF BEGINNING;
CONTAINING 5.236 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 788 (RED ROAD) GO NORTH ON CR 788 8.2 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 0.5 OF A MILE TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS SOUTH 156', TURN LEFT GO EAST 541', GO SOUTH 16' TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

SURVEYOR CERTIFICATE

I, FILMON 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 12th DAY OF JULY 2016.

FILMON F. JARAMILLO
12797
NEW MEXICO
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

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

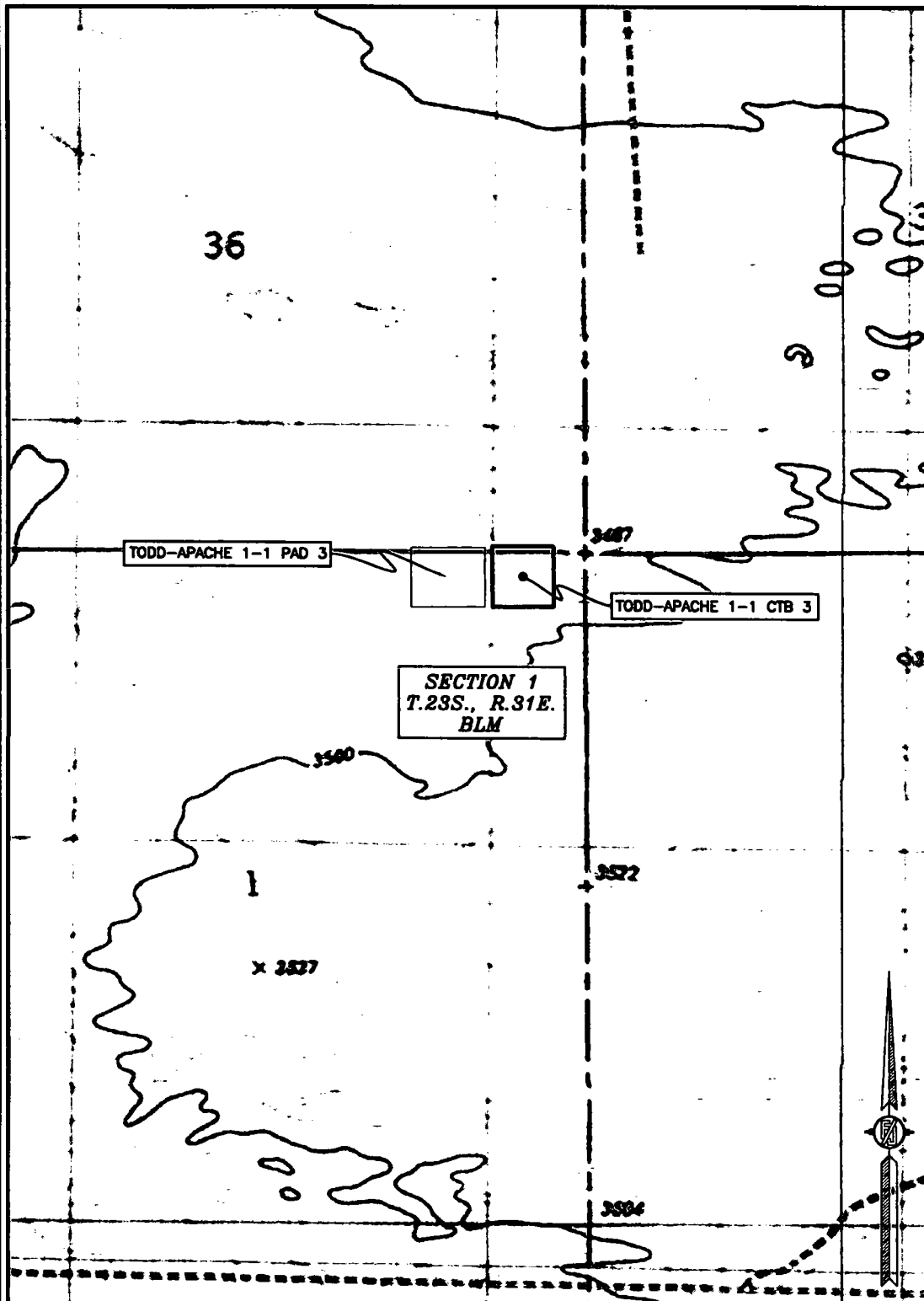
SURVEY NO. 4529B

SHEET: 1-3

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN LOT 1 OF
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

QUAD MAP



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

SURVEY NO. 4529B

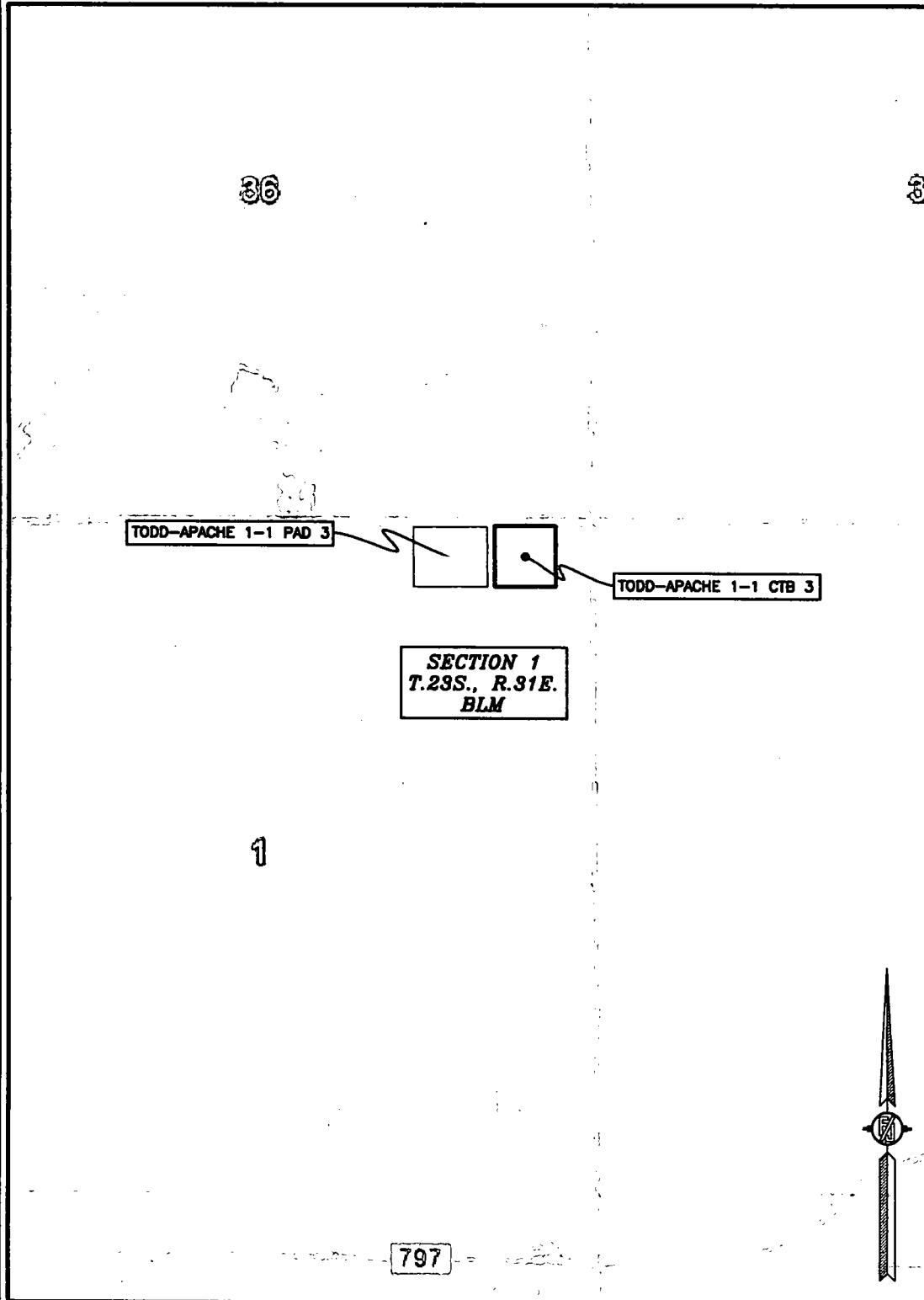
CARLSBAD, NEW MEXICO

TODD-APACHE 1-1 CTB 3 (AA000056005)

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN LOT 1 OF
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 12, 2016

AERIAL PHOTO

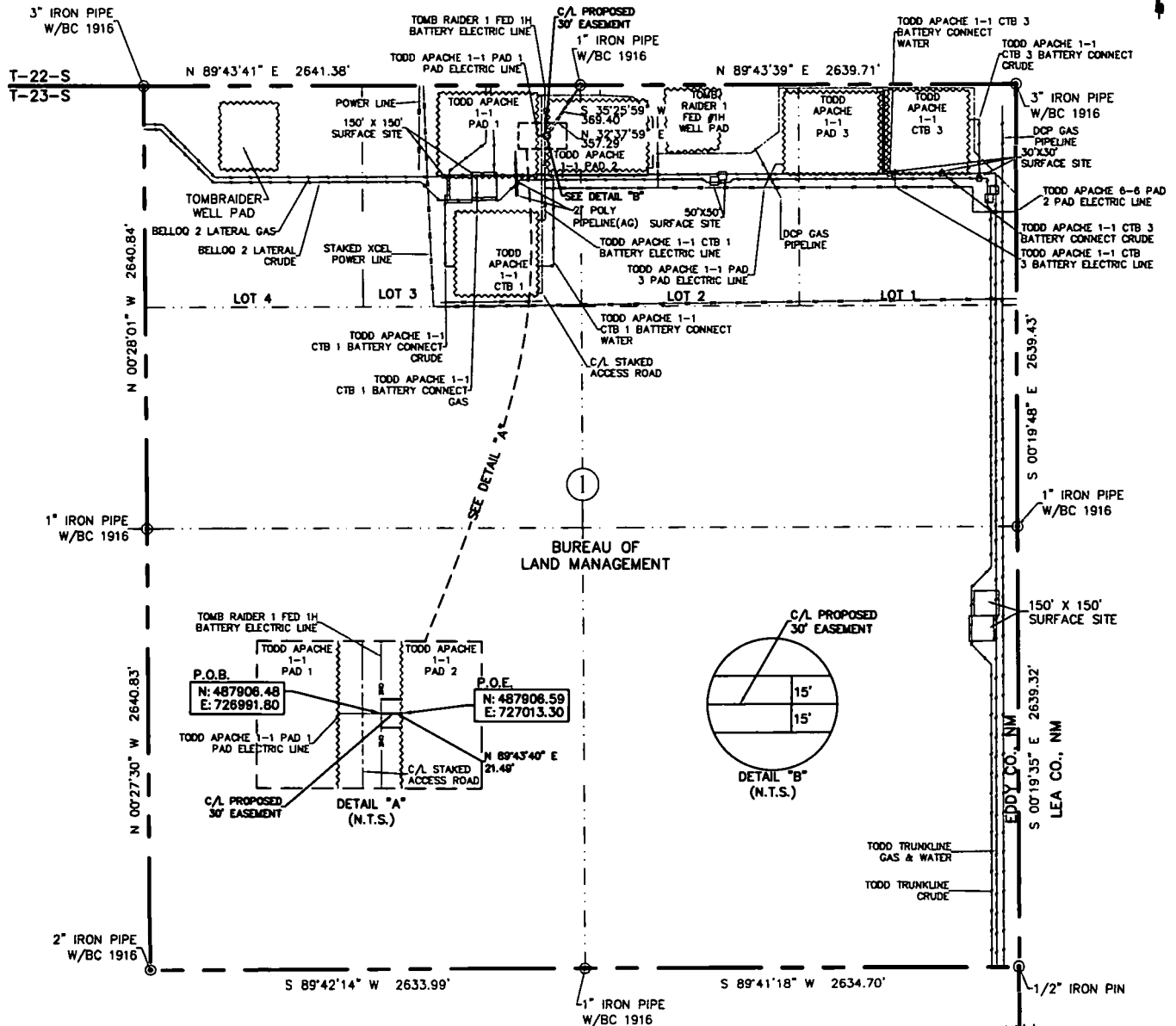


SHEET: 3-3

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

SURVEY NO. 4529B

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



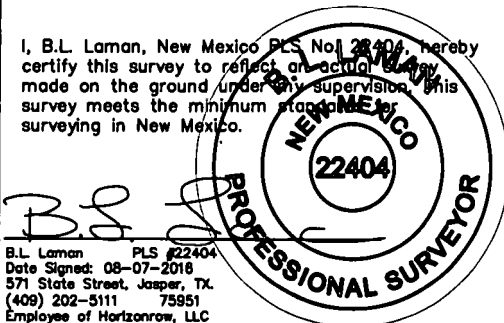
30' EASEMENT AREA = 0.015 ACRE(S)
21.49 FEET OR 1.30 RODS

0+00.0 P.O.B./TOMB RAIDER 1 FED 1H BATTERY ELECTRIC LINE/
TODD APACHE 1-1 PAD 1 PAD ELECTRIC LINE
0+21.5 P.O.E./TODD APACHE 1-1 PAD 1

SEE THE ATTACHED LEGAL DESCRIPTION

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

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



B.L. Laman PLS #22404
Date Signed: 08-07-2018
571 State Street, Jasper, TX.
(409) 202-5111 75951
Employee of Horizonrow, LLC

HORIZON ROW LLC

Drawn for:

devon

Drawn by:
CHRIS MAAS

Date: 08/05/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

TODD APACHE 1-1 PAD 2
PAD ELECTRIC LINE

PROPOSED 30' EASEMENT
ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT
SECTION 1, T23S-R31E, N.M.P.M.

LINE NUMBER:
EL7837

WBS NUMBER:
XX-117680

SCALE:
1" = 1000'

REVISIONS:

SHEET:
1 OF 4

0 1000 2000



**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 N 89°43'40" E a distance of 21.49' to the **Point of Ending** having coordinates of Northing=487906.59, Easting=727013.30 feet in Lot 3, from said point a 1" iron pipe w/ BC 1916 for the north quarter corner of Section 1, T23S-R31E bears N 32°37'59" E a distance of 357.29', covering **21.49'** or **1.30 rods** and having an area of **0.015 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.

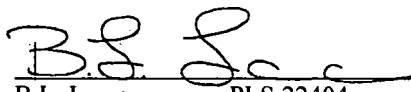
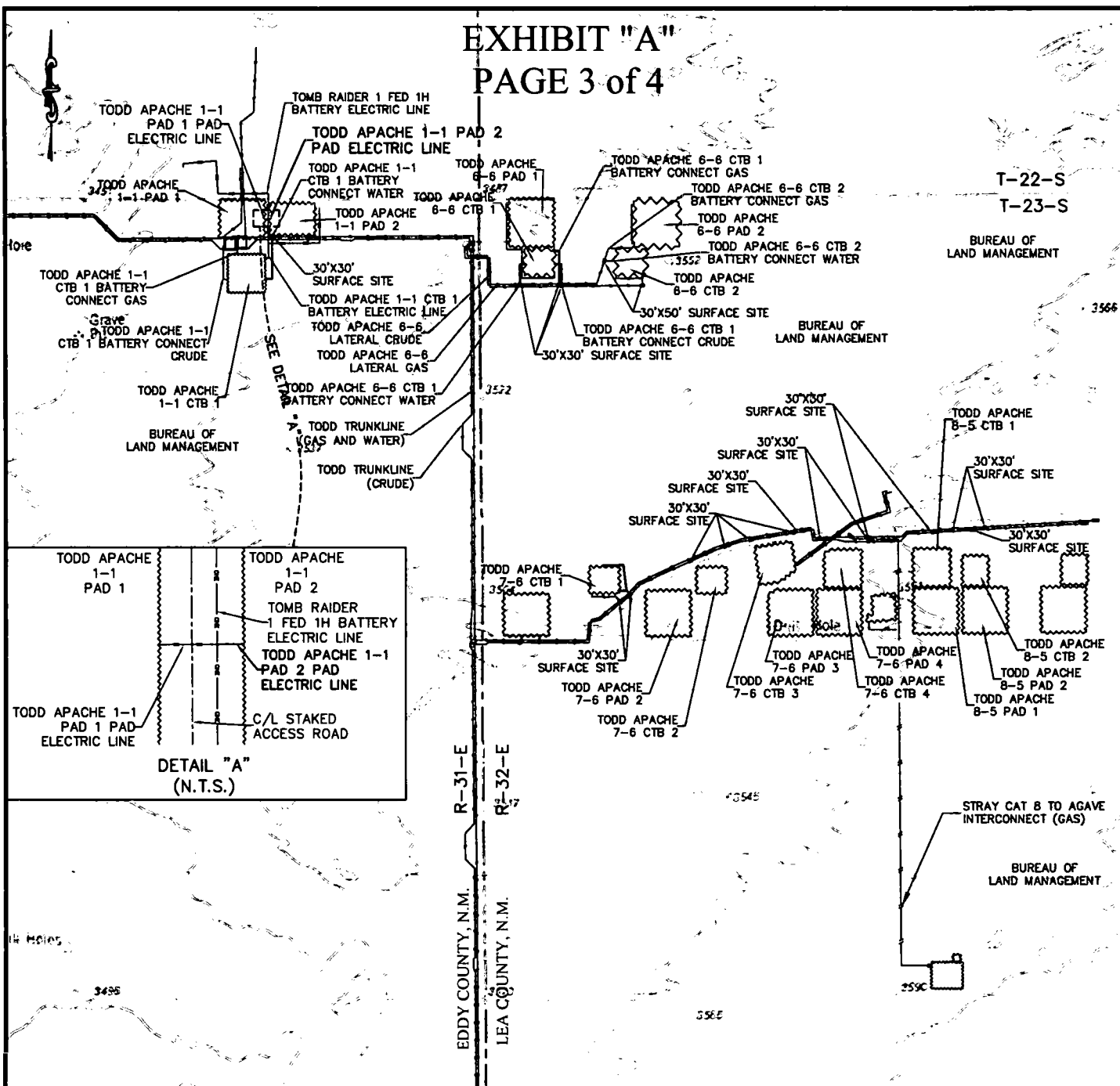

B.L. Laman PLS 22404
Date Signed: 08/07/2016
Horizon Row, LLC
571 State Street, Jasper, TX
(409) 202-5111 75951
Employee of Horizon Row, LLC



EXHIBIT "A"
PAGE 3 of 4



QUAD MAP

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

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:
CHRIS MAAS

Date: 08/05/2016

Drawn for:



devon

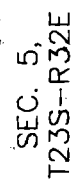
LINE NUMBER:
EL7837

WBS NUMBER:
XX-117680

SCALE:
1" = 2000'

REVISIONS:

SHEET:
3 OF 4



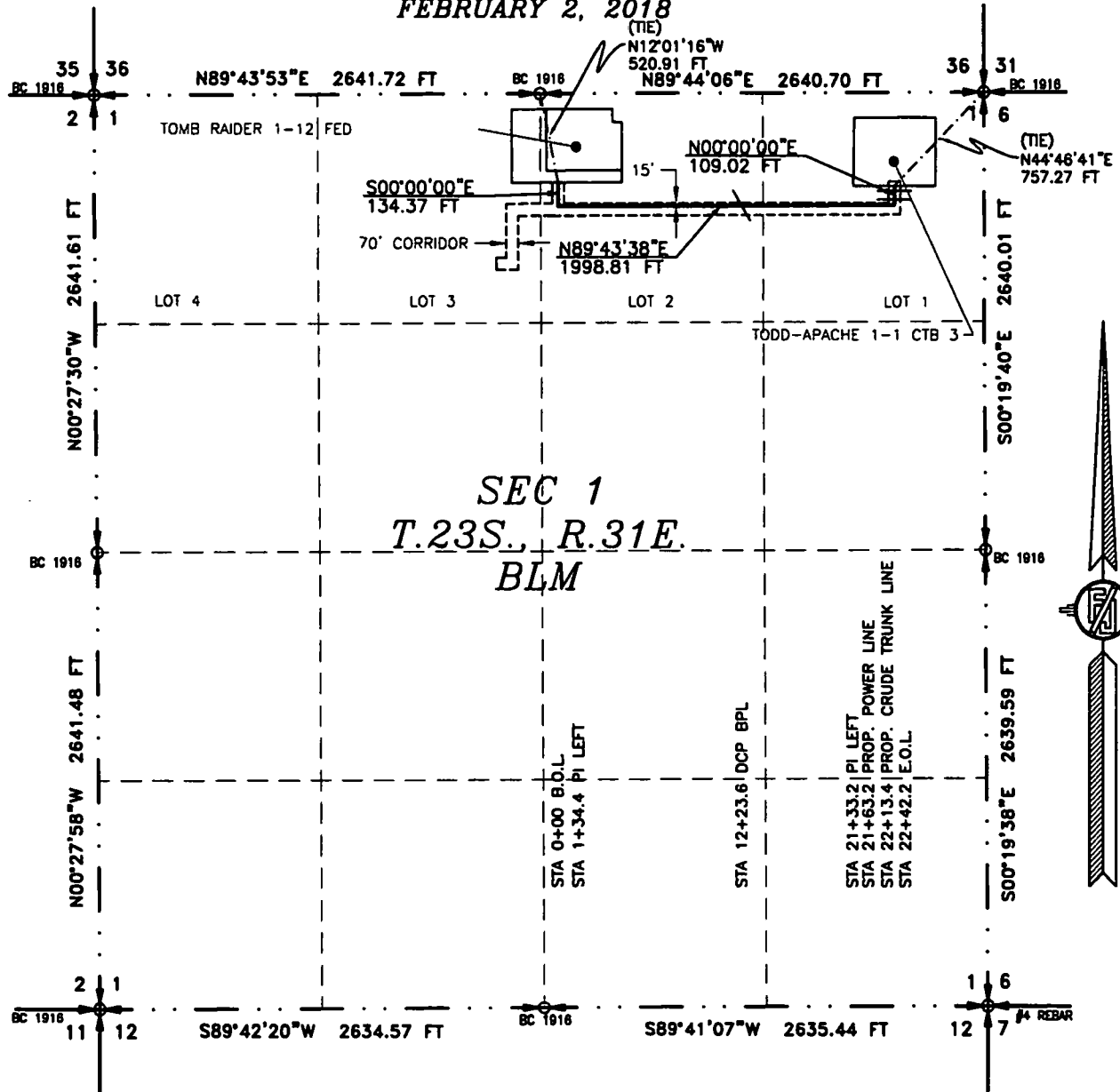
SECTION 1, T23S-R31E, N.M.P.M.;
EDDY COUNTY, NEW MEXICO

<i>HORIZON ROW LLC</i>		Drawn for: 	LINE NUMBER: EL7837
DEVON ENERGY PRODUCTION CO., L.P. PROPOSED 30' EASEMENT			WBS NUMBER: XX-117680 SCALE: 1" = 2000'
Drawn by: CHRIS MAAS	Date: 08/05/2016		REVISIONS: SHEET: 4 OF 4

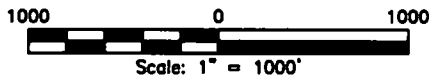
FLOWLINE PLAT

THREE 8" POLY FLOWLINES AND ONE 8" POLY GAS LIFT LINE, BURIED IN THE SAME TRENCH FROM
THE TOMB RAIDER 1-12 FED 514H, 524H, 525H TO THE TODD-APACHE 1-1 CTB 3

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** **FEBRUARY 2, 2018**



SEE NEXT SHEET (2-4) FOR DESCRIPTION



SURVEYOR CERTIFICATE

I, FILMON 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 2 DAY OF FEBRUARY 2018

FILMON F. JARAMILLO, PLS. 12797
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

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.

SHEET: 1-4

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

SURVEY NO. 6033

FLOWLINE PLAT

THREE 8" POLY FLOWLINES AND ONE 8" POLY GAS LIFT LINE, BURIED IN THE SAME TRENCH FROM
THE TOMB RAIDER 1-12 FED 514H, 524H, 525H TO THE TODD-APACHE 1-1 CTB 3

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
FEBRUARY 2, 2018

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 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 N12°01'16"W, A DISTANCE OF 520.91 FEET;

THENCE S00°00'00"E A DISTANCE OF 134.37 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N89°43'38"E A DISTANCE OF 1998.81 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N00°00'00"E A DISTANCE OF 109.02 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHEAST CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N44°46'41"E, A DISTANCE OF 757.27 FEET;

SAID STRIP OF LAND BEING 2242.20 FEET OR 135.89 RODS IN LENGTH, CONTAINING 1.544 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

LOT 2 1350.23 L.F. 81.83 RODS 0.930 ACRES
LOT 1 891.97 L.F. 54.06 RODS 0.614 ACRES

SURVEYOR CERTIFICATE

I, FILMON 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 2 DAY OF FEBRUARY 2018

[Signature]
FILMON F. JARAMILLO, P.E.S. 12797

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

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.

SHEET: 2-4

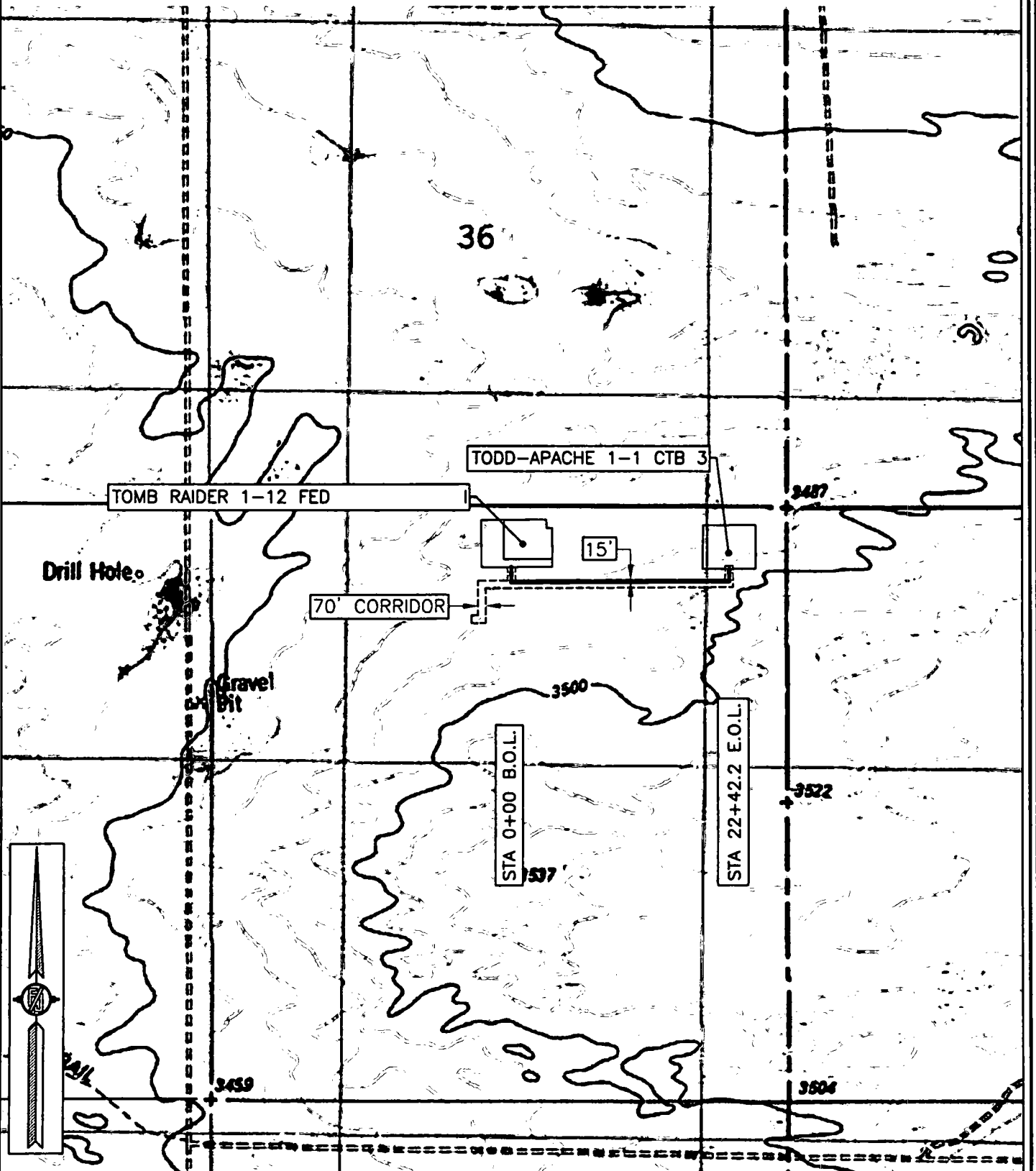
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SURVEY NO. 6033

FLOWLINE PLAT

THREE 8" POLY FLOWLINES AND ONE 8" POLY GAS LIFT LINE, BURIED IN THE SAME TRENCH FROM
THE TOMB RAIDER 1-12 FED 514H, 524H, 525H TO THE TODD-APACHE 1-1 CTB 3

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
FEBRUARY 2, 2018



SHEET: 3-4

SURVEY NO. 6033

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

FLOWLINE PLAT

THREE 8" POLY FLOWLINES AND ONE 8" POLY GAS LIFT LINE, BURIED IN THE SAME TRENCH FROM
THE TOMB RAIDER 1-12 FED 514H, 524H, 525H TO THE TODD-APACHE 1-1 CTB 3

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
FEBRUARY 2, 2018

36

TODD-APACHE 1-1 CTB 3

TOMB RAIDER 1-12 FED

15'

70' CORRIDOR

STA 0+00 B.O.L.

STA 22+42.2 E.O.L.



SHEET: 4-4

SURVEY NO. 6033

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



Receipt

Your payment is submitted

Pay.gov Tracking ID: 26AU19C5

Agency Tracking ID: 75529014779

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: \$29,370.00

Transaction Date: 07/13/2018 10:09:09 AM EDT

Payment Date: 07/16/2018

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

APD IDs: 10400031815, 10400031998, 10400032006

Lease Numbers: NMNM022080, NMNM022080, NMNM022080

Well Numbers: 514H, 524H, 525H

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

Email Confirmation Receipt

Confirmation Receipts have been emailed to:

JENNY.HARMS@DVN.COM

JEFF.WALLA@DVN.COM

LISA.OTHON@DVN.COM



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:

Describe 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:

Describe 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:



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

Bond Info Data Report

11/01/2018

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: